

Mexico's Federal Forestry Legislation: Curse or Blessing for Sustainable Resource Management by Forest *Ejid*os in the State of Campeche?

La legislación forestal federal mexicana: ¿maldición o bendición para el manejo sustentable de recursos naturales por parte de los ejidos forestales en el estado de Campeche?

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ABSTRACT

This article examines the manifold relations between the use of natural forest resources by forest *ejidos* in southern Mexico and the territorial rights situation. By using Elinor Ostrom's theory of common property, the land rights are analyzed from the perspective of the local population, which contradicts with the national forestry legislation. It is shown how local actors pursue their strategies to access, manage and exploit their timber resources, and what implications the federal regulations bring about in this context. The study concludes that the environmental laws, actually designed to protect the tropical forests and to curb illegal logging, in complex ways contribute to a rise in uncontrolled extraction of natural resources.

RESUMEN

Este artículo examina las múltiples relaciones entre el uso de los recursos forestales por ejidos forestales en el sur de México y la situación de los derechos territoriales. Utilizando la teoría de la propiedad común de Elinor Ostrom, los derechos a la tierra se analizan desde la perspectiva de la población local, que contradice la legislación forestal nacional. Se muestra cómo los actores locales aplican sus estrategias para acceder, administrar y explotar sus recursos madereros, y qué implicaciones tienen las regulaciones federales en este contexto. El estudio concluye que las leyes ambientales, en realidad diseñadas para proteger los bosques tropicales y frenar la tala ilegal, en formas complejas contribuyen a un aumento en la extracción incontrolada de recursos naturales.

KEY WORDS: forest management; land rights; common property; forestry policies.

PALABRAS CLAVE: manejo forestal; derechos territoriales; propiedad común; políticas forestales.

Introduction

Tropical forests can be seen as a valuable resource rendering a number of services to the local as well as to the global population. They absorb CO₂ emissions, provide oxygen, firewood, timber for construction, edible fruits and medicine, regulate the climate, and protect biodiversity and the fertility of

soils. SEMARNAT, the Mexican Ministry for the Management of Natural Resources, together with the Forest Commission (CONAFOR), both established in 2002, have since issued a range of forestry laws in order to protect its tropical forests. In the following, the impact of these forestry laws on the indigenous population living in forest areas in

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southern Campeche will be discussed. In this region, the indigenous population is living in *ejidos*¹, where forests are managed as common property resource (Turner II et al., 2001, p. 359). According to Ostrom (2009), such common property management depends on the ability of local resource users to organize themselves, and national legislation that undermines local resource regimes can have a negative effect on successful resource management. In this article, the implications of national forestry legislation will be analyzed in order to understand the interplay between local management practices and federal legislation. By using Elinor Ostrom's theory of common property, the land rights are analyzed from the perspective of the local population, which contradicts with the national forestry legislation. The objective of this article is to show how local actors pursue their strategies to access, manage and exploit their timber resources, and what implications the federal regulations bring about in this context.

Methodological and conceptual framework

This article draws on data gathered during six ethnographic field research visits to the Montaña Region between 2006 and 2013. The methodology applied encompassed ethnographic interviews and participant observation in the initial stages. The thematic foci of these were the locally relevant forms of land use, local conceptions of the environment, and the territorial rights situation. The results obtained from these methods were used to construct cognitive models which were subsequently tested against data obtained by structured interviews with a higher number of informants in the final stages of field research. The investigation was led by research questions about the interrelations between land use, land rights and tropical deforestation from an ethnographic perspective. Conceptually, the comparative study of the *ejidos* in the research region aimed at understanding why deforestation rates varied between different *ejidos*, and how the different actors' contributions to deforestation was dependent on

1 *Ejidos* are collectives whose members are granted usufruct rights to a portion of land by the state.

their individual combinations of different strategies to secure their livelihoods. Timber extraction was one important aspect among others in the overall investigation².

Research area

In the Montaña Region of southern Campeche, seven *ejidos* host a population of around 5,000 inhabitants on approximately 180,000 ha of land. The study area is located on the borders of the Calakmul Biosphere Reserve and within the Mesoamerican Bio-Corridor (Corredor Biológico Mesoamericano), and therefore represents an interface between tropical deforestation and international conservation efforts. From 2001 to 2017, Hopelchén, the municipality to which the region belongs, lost 168 kha of tree cover, equivalent to a 15% decrease since 2000 (Global Forest Watch, 2019). Timber extraction was introduced to the region in the 1960s, initially done by large companies possessing concessions for logging. At present, the local population holds usufruct rights to the forest resources, regulated through federal forestry legislation (Porter-Bolland et al., 2008). Since no individual parcels exist in the region, the forest is to be seen as common property of the *ejidos*. The seven *ejidos* considered in this study differ in the number of their inhabitants (158 – 2019 persons), the amount of land they are entitled to use (15,606 – 49,684 ha) and, as a result, in the land per inhabitant ratio.

However, all *ejidos* in the region can be regarded as land rich. Moreover, in all of these seven *ejidos*, inhabitants reported that their forest resources are degrading since decades and expressed severe concerns about the continuing deforestation affecting their future livelihoods. The intensification of forest conversion in this region has also been reported by other researchers, for example Porter-Bolland et al. (2007). Ethnographic research in the region has shown that the *ejidos'* ability to manage the common resource sustainably varies. This variation can only partly be attributed to the differences in population density, other important factors are the individual

2 Unless otherwise indicated, the statements made are the results from observations and data analysis during this research.

ejido's capacity to achieve internal consensus, path dependency, and the availability of income alternatives. The forest is not only used for timber extraction. The local population combines a number of different strategies to secure their livelihoods, which position timber in a more complex setting of interrelations. However, the discussion of those is beyond the scope of this article.

Legal situation and economic consequences

Throughout the 20th century the Mexican governments made changes to its forestry laws, shifting back and forth between conservation and exploitation as well as between centralized government control and the partial permitting of self-management by forest *ejidos* (Merino-Pérez y Segura-Warnholtz, 2007).

The forestry law from 1986 recognized the forest *ejidos'* rights to benefit from their forest resources in general, but also required an integral forest management plan to do so. The financial burden of requiring the forest *ejidos* to employ and pay forest engineers was exacerbated during the neo-liberal policies of the 1990s, when governmental support to these management costs was even more declining (Fernández y Mendoza, 2015; Merino-Pérez y Segura-Warnholtz, 2007). At present, the *ejidos* in the region that want to engage in legal timber extraction need to enter a contract with timber companies who will pre-finance the development of a forest management plan³. Therefore, the companies have a strong position in the negotiations about the price they pay for the wood, and also buy the whole portion of legally logged timber. This leads to the exclusion of local carpenters from access to their own *ejido's* timber resource, which has further implications for the resource use. Around 20 carpentry workshops exist in the region. They all rely on the use of wood that has been logged illegally. Once

3 This view, that there are no known alternatives to rely on such contracts with the buying company, was observed in all *ejidos* of the research region. In other parts of Mexico, examples of forestry communities which manage their forests without pre-financing by private companies have been studied (see Klooster (2000) providing some examples). However, in the Montaña Region, lack of financial resources and access to knowledge impede such developments.

converted in a piece of furniture, the carpenters can transport and sell their products without legal problems. But the raw wood stored in their workshops can lead to sanctions when government authorities conduct an inspection. As a consequence, only small amounts of wood are stored by local carpenters and their mode of operation is to produce simple furniture quickly which then is sold at low prices.

Discussion

Analyzed from the perspective of Elinor Ostrom's theory on common property rights, the *ejido* members are *de jure* proprietors of the *ejido* lands in general with the rights of access, withdrawal, management and exclusion (Schlager y Ostrom, 1992). For the forested *ejido* lands in particular, their right to withdraw forest resources for commercialization is restricted and only possible under the condition of the establishment of a forest management plan. This is causing costs that are too high for the *ejido* to bear alone and, hence, making the *ejido* dependent on private companies to finance the administrative prerequisites⁴.

Ejido members commonly report that the government authorities fail to effectively monitor and sanction the violation of forestry laws (see also Merino-Pérez and Segura-Warnholtz, 2007, p. 90). While some of the *ejidos* have established their own internal mechanisms to control and prevent their members from illegal logging, in other *ejidos* the population tolerates these illicit practices, turning their forests into *de facto* open-access regimes. Two important factors in this respect are the *ejido's* ability to achieve internal consensus and path dependency. In *ejidos* that regularly engage in legal timber extraction, more members possess the equipment for logging and are likely to use it outside the government permits for additional, uncontrolled logging, rendering the objective of the prescribed forest management plans, which is to limit extraction to sustainable levels, ineffective.

4 For a more detailed account of the administrative efforts and related costs necessary to obtain logging permits, see also Fernández and Mendoza (2015).

Illegally logged timber is not only being sold to the local carpenters, but also through regional intermediaries. In any case, this wood is sold at prices significantly lower than the normal market value. As has been explained above, the legally logged timber is also sold at unfavorable prices because of the necessary arrangements with the buying company.

Another important aspect regarding the forestry legislation from the view of the local population is the mistrust towards their government's intentions. As the *ejido* members perceive the forestry regulations as an obstacle to benefit from the forest resources on their *ejido* lands, they fear that in the future another change in the forest laws might completely prohibit timber extraction. This view, which has been repeatedly expressed, is causing the following effects. First, the conclusion by many inhabitants is that it is best to exploit the timber resources without hesitation as long as state authorities are still rather incapable to effectively control and sanction illegal logging. And second, the carpenters in the region are not investing their returns to improve or even maintain their equipment, but rather trying to shift their efforts towards alternative ways to secure their livelihoods.

Ostrom (2009) compiled a list of variables that affect the likeliness of resource users to organize themselves. Applied to the area of the present study, it can be seen that the forest resources are neither abundant nor already completely exhausted, and of significant importance to the population, which is increasing this likelihood. The number of users is small enough to keep the cost of organizing low, as do the shared ethical standards⁵. Also important in this aspect is the fact that the *ejidos* are *per se* self-organizing entities with a considerable degree of autonomy. The *ejido* members possess considerable knowledge about the resource system, and information is easily shared among them, which are also factors that foster successful self-organization. What they are lacking from the perspective of this theory, is the full autonomy at the collective-choice level to craft and enforce their own rules regarding

⁵ "Standards regarding how to behave in groups they form, and thus the norms of reciprocity", according to Ostrom (2009, p. 421).

the extraction and commercialization of their own *ejido's* forest resources.

Conclusions

The restrictive and complex federal forest regulations make legal timber extraction rather unattractive to the local population, exclude local carpenters from legal access to local timber resources and contribute to illegal and uncontrolled logging instead of preventing it.

Efforts by some *ejidos* to prevent uncontrolled logging through internal arrangements exist, but do not seem to be developing in all *ejidos*, nor are they rewarded.

Both legally and illegally logged wood is sold at prices significantly lower than its original value, and the local population is discouraged from engaging in activities like carpentry that could generate a surplus value by using the wood instead of selling it as a raw material.

The problem is centered around the fact that the *ejidos* are obliged to obtain an approved forest management plan without having the knowledge, capacities nor funds to do so on their own behalf. Since the current situation is not protecting the forests from over-harvesting, one possible way out of this dilemma might be to empower the *ejidos* to govern the forest resource themselves.

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References

- Fernández, E., Mendoza, N., 2015. Sobrerregulación forestal: Un obstáculo para el desarrollo sustentable de México. Consejo Civil Mexicano para la Silvicultura Sostenible, Mexico DF.
- Global Forest Watch, 2019. Global Forest Watch, 2019. Available at: www.globalforestwatch.org; consulted: January, 2019.
- Klooster, D., 2000. Institutional choice, community, and struggle: a case study of forest co-management in Mexico. *World Dev.* 28, 1-20. DOI: 10.1016/S0305-750X(99)00108-4
- Merino-Pérez, L., Segura-Warnholtz, G., 2007. Las políticas forestales y de conservación y sus impactos en las comunidades forestales en México. In Bray, D., Merino-Pérez, L., Barry, D. (Eds.), *Los bosques comunitarios de México. Manejo sustentable de paisajes forestales*. Instituto Nacional de Ecología, Mexico DF. pp. 77-98.
- Ostrom, E., 2009. A general framework for analyzing sustainability of social-ecological systems. *Science* 325, 419-422. DOI: 10.1126/science.1172133
- Porter-Bolland, L., Ellis, E., Gholz, H., 2007. Land use dynamics and landscape history in La Montaña, Campeche, Mexico. *Landsc. Urban Plan.* 82, 198-207. DOI: 10.1016/j.landurbplan.2007.02.008
- Porter-Bolland, L., Sánchez González, M., Ellis, E., 2008. La conformación del paisaje y el aprovechamiento de los recursos naturales por las comunidades mayas de La Montaña, Hopelchén, Campeche. *Investig. Geogr.* (66), 65-80.
- Schlager, E., Ostrom, E., 1992. Property-rights regimes and natural resources: a conceptual analysis. *Land Econ.* 68, 249-262. DOI: 10.2307/3146375
- Turner II, B., Villar, S., Foster, D., Geoghegan, J., Keys, E., Klepeis, P., Lawrence, D., Mendoza, P., Manson, S., Ogneva-Himmelberger, Y., Plotkin, A., Pérez, D., Chowdhury, R., Savitsky, B., Schneider, L., Schmook, B., Vance, C., 2001. Deforestation in the southern Yucatán peninsular region: an integrative approach. *Forest Ecol. Manage.* 154, 353-370. DOI: 10.1016/S0378-1127(01)00508-4