

# Demographic factors that make more complex the management of the natural commons resources in three forest regions of Mexico

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## **Abstract**

This paper is a brief analysis of a demographic profile of the owners of forest land communally owned and the characteristics of the collective property lands in Mexico. The aim of this study was to identify the out-migration processes in the management of natural common resources. We observed the existence of an underrepresentation of young people and women in the decision processes about their land management and community resources. We will present the findings of case studies conducted in three forest regions located in “Low mountain region” in Guerrero, “Sierra Norte” and “Sierra Sur” of Oaxaca. Also, we will discuss how demographic factors, such as migration processes, create an environment that make the management of common natural resources more complex.

**Key words: Social property, out-migration, Mexico, Demographic profile**

## ***¿Who owns the forests regions in Mexico?***

### ***General characteristics of collective property lands in Mexico***

Forest and collective property are close related in rural Mexico. About 80% of the forests, 64% of the highest biodiversity and two-thirds of all Mexican beaches are under land tenure collective property (INEGI 2009). The fact that the vast majority of the forest land is collectively owned, are the result of two main things. First, is the extensive agrarian reforms implemented during 1930's to the early 1980's. Second, the mountainous nature of vast regions.

There are two legal types of collective property in Mexico: “*ejidos*” and “*comunidades agrarias*”. *Ejidos* are land concessions with certain rights. The most extended one was created when the Federal government granted use rights over lands to groups of solicitors. While in the cases of the “*comunidades agrarias*” (that are mostly indigenous origin), the State recognized historical property rights to ancient communities over the territories they claimed as their own.

Today are recognized 102 million hectares (ha) of land tenure social property<sup>1</sup> which are spread over 31 480 “*ejidos*” and “*comunidades agrarias*”. This represents 70% of the total covered area of the country. The 30% of these social property lands have been divided into plots for individual use. The 1% has been

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<sup>1</sup> The information presented covers only 91% of social property lands in the country as the rest information was not available.

used for human settlements. The 69% was divided for common use. Interestingly, in these regions we found the highest vegetation cover in the country (INEGI 2009).

In this context, the following tables (table 1, table 2) represent the most common land uses in Mexico. Highlighting, the principal use of common land areas is for livestock. In Mexico is very common the free grazing in the forest. Unexpectedly, there are a 0.7% of parceled areas are no longer worked. Finally, it is important to point that a large proportion of lands in Mexico are rainfed. There are no conditions for artificial irrigation.

**Table 1. Use and distribution of social property lands**

Uses	Common uses areas	Areas with plots
Agricultural	15.6%	65%
Livestock	45.4%	21.9%
Agricultural-cattle	14.4%	10.2%
Forest	17.5%	0.7%
Other uses*	7.1%	2.1%

Source: (INEGI 2009)

\* Mining use, biosphere reserve, salt, fish farming etc..

Common uses areas =62,318,613.1 ha

Areas with plots = 27,419,864.9 ha

**Table 2. Percentage distribution per land type**

Type of land	Common use areas	Areas with parcels
Induced irrigation	0.9%	14.7%
Rainfed	29.4%	61.5%
Rangeland quality	15.8%	9.1%
Mount or arid rangeland	52.1%	13.9%
Infrastructure and Other	1.8%	0.8%

Common uses areas =62,318,613.1 ha

Areas with plots = 27,419,864.9 ha

Source: (INEGI 2009)

### ***Demographic profile of the forest owners with collective land ownership***

In terms of population, there are recognized 4, 440, 506 social property land owners (agrarian land owners). If we consider that one of them is “head of household” then we estimate at least 20 million people inhabit this lands. The forest and jungles conservation or degradation in Mexico rely heavily on the use and collective management of natural resources done by these groups.

Regarding to the gender structure of *social property land owners*, women represent only 20.2% against 79.8% of men. This means that for every 7 men there are only

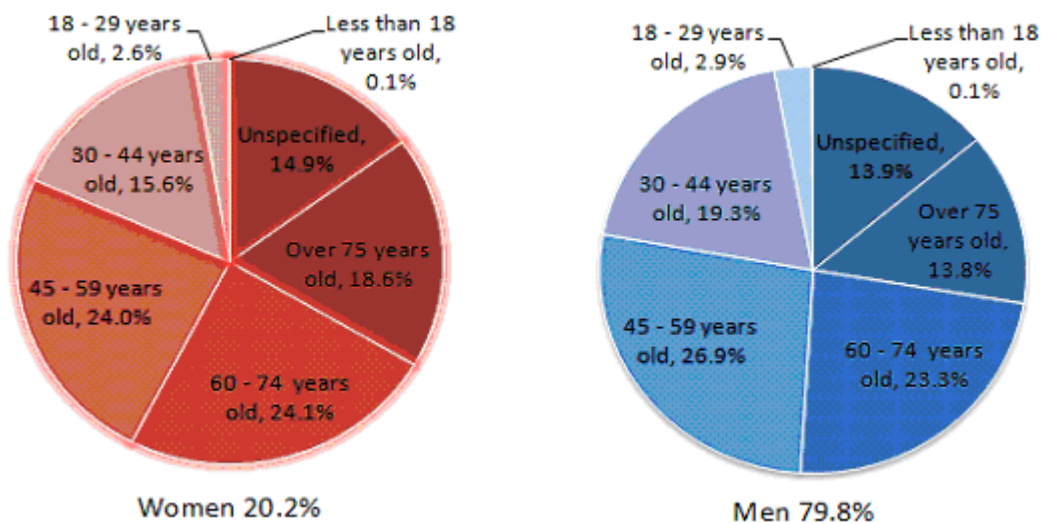
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two women with property titles and consequently, “land rights”. Therefore, the land decisions rely mostly on men (Fig. 1).

Most women that are “legally recognized” (social property title owners) have more than 60 years old and represent the 42.7%. In many cases are widows who inherited the land rights of their husbands and are not necessarily active participants. The 24% have between 45 to 60 years old and only 18.6% have less than 45 years.

In the case of men, holders over 60 years old also represent a significant proportion with 37.1%. The 26.9% men holders have between 45 and 60 years old and less than 22.2% have less than 45 years old. The fact that a large proportion of older adults are the owners of the lands of social property implicates that there are is a significant proportion of young people who have no legal rights to participate in decisions making on common resources. Without property rights, young people do not have incentives to invest in the management and protection of forest resources. Also, they are not interested to use the forest resources as “economically productive assets”. The former, generates young people migrate.

**Fig 1. Percentage distribution by sex and age of the social property land owners**



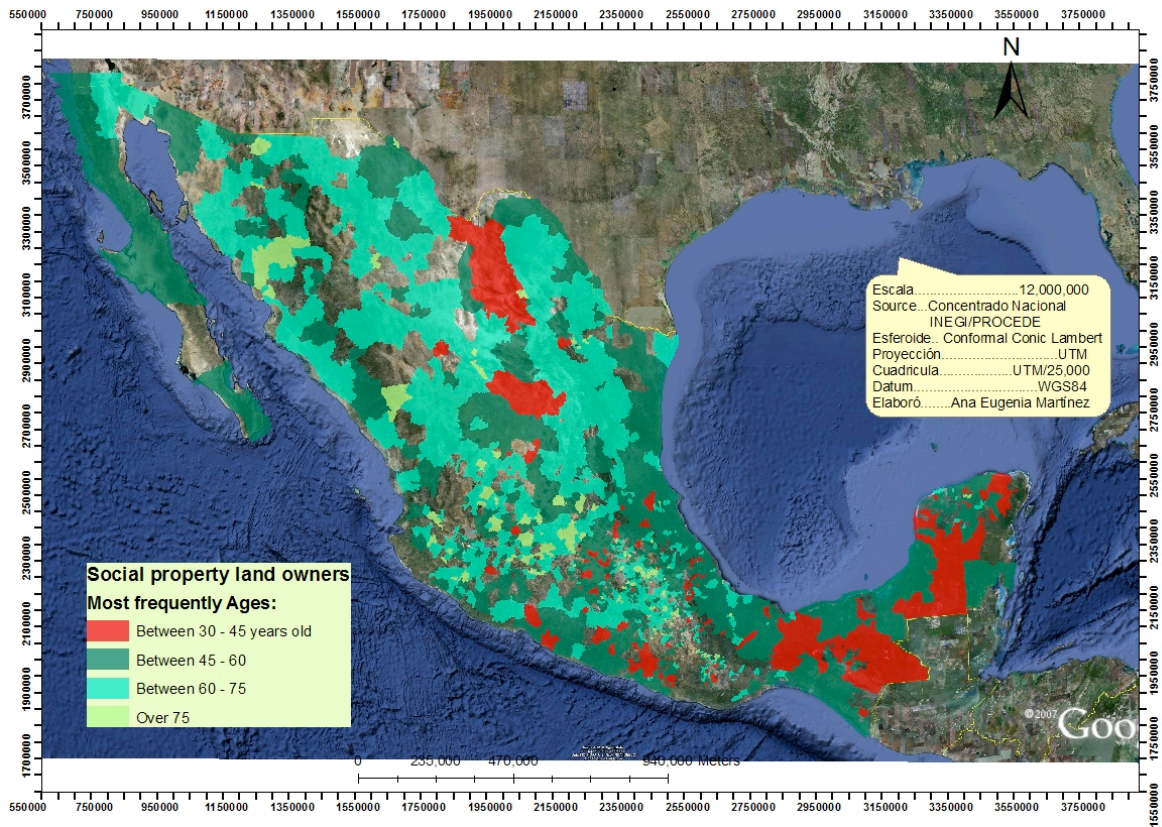
Source:(INEGI 2009)  
N = 4440506

The following chart (Fig. 2) shows the spatial distribution according to the most common age group disaggregated at the municipal level <sup>2</sup>. The green shades indicate that these areas, have the majority of *social property land owners* that are

<sup>2</sup> This map was realized by using the information of the Certification Program of Ejido Rights and Titling of Lots (PROCEED) collected to December 2006. Referencing municipal *ejidos* and *comunidades agrarias* was elaborated by the INEGI based on their geographic location.  
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more than 45 years old. The red color represent the regions in which young people under 45 years old “holders” that have an important participation in decision making regarding the management and use of common resources.

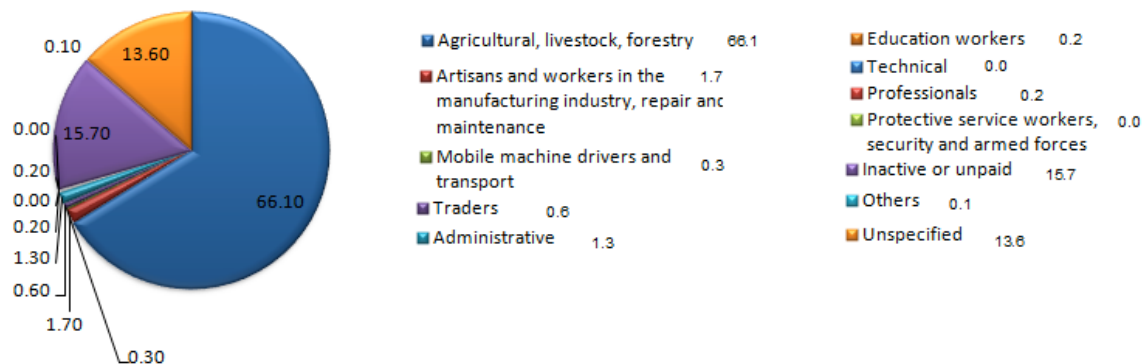
**Fig 2. Spatial distribution of age groups most common of the land social property owners**



Source: Authors' calculations based on the results of PROCEDE

Regarding to holder's occupations, the vast majority (66.1%) is engaged into agriculture, livestock or forestry (Fig. 3).

**Fig. 3 Percentage distribution according to main occupations of social property land owners**

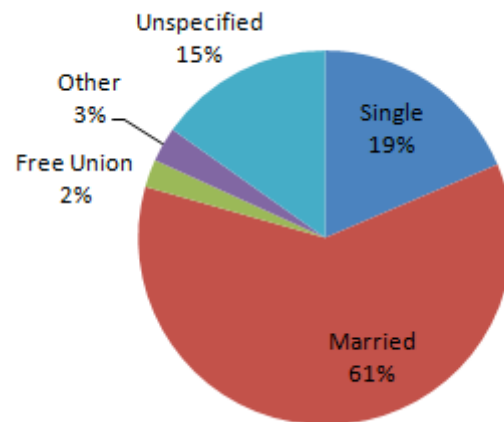


Source: (INEGI 2009) N = 4440506

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In terms of marital status, most are married (60.8%) and only 18.6% are single. (Fig. 4)

**Fig. 4 Percentage distribution according to marital status of social property land owners**



Source:(INEGI 2009)  
N = 4440506

In conclusion, the demographic profile of the *social property holders* of forest regions are mostly people who have more than 45 years, usually men, whose main activity is livestock or rainfed agriculture. Also, they live under high marginal conditions. In overall, they are facing: 1) strong population aging process, 2) intergenerational transfer difficulties and 3) strong out-migration processes.

### ***Characteristics of ejidos and comunidades agrarias self governance and social organization related to the management of common property resources***

Self governance in *ejidos and comunidades agrarias* is based on a traditional system of participation and shared responsibilities. Most of the rights and obligations of community members are established by this system.

The assembly<sup>3</sup> of agrarian land owner is considered the ultimate authority within communities, the one with the highest decision making rights over common assets, such as communal forests. Participation in the assemblies is both, an obligation and a right of agrarian land owner. Those responsible of the different authority's positions –called *cargos*- are elected periodically by communal assemblies. Rule making and/or rule approval are also part of the assembly's rights and duties. Local rules or institutions define what is possible for individuals to do, what is

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<sup>3</sup> Assembly: The group of members with ownership rights in the community  
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prohibited and what is obligated in diverse situations of community life. Communal institutions rule, at a good extent the ways forests are used, managed and protected; they also distribute rolls, duties, and rights involved in the application, monitoring and enforcement of the rules. Even when a great deal of the contents of the forest management rules are developed by technical advisors -as in commercial forestry operations- often external to communities, the capacity of approval, refusal or modification of this rules lies on the assembly.

Forests are legally defined as resources of “public value”; as a consequence the federal government and federal laws set the framework of the constitutional, collective choice and even some of the operational forest management rules. The match of federal forest regulations and communities’ institutions has often been non functional or even conflictive, leading to over-regulation, disregarding communities’ rights and frequent illegal activity.

Different *cargos* cover various spaces of communities’ social life such as religious practices, justice administration and development and maintenance of urban public services among others. Forest management and use are at a large extent responsibilities of those occupying the *cargos* related to the governance of communal property assets, known as agrarian *cargos*: three members of the *comisariado de bienes comunales*” (or *ejidales*) and three participants in the *comité de vigilancia* (surveillance committee). The efficiency of the *sistema de cargos* requires that community members actively assume the *cargos*. Most of the times the *cargos* are highly demanding, and unpaid, their fulfillment is based on criteria of prestige and reciprocity. *Cargos* are seen as work and responsibilities that people assume as retribution to the access to communal assets and benefits. The good functioning of the *cargos* and the assemblies is based on strict norms of accountability, transparency and on formal and informal monitoring of the performance of the *cargos*.

“*Tequio*” or non-paid collective work is another common practice spread throughout the Mexican countryside, especially in indigenous regions. The participation of the family heads in “*tequios*” is compulsory and provides communities with the manpower necessary to build, maintain and protect community’ s assets, communal forests among them. Reforestation, forest roads building and repairing, and forest fires fighting are some of the most relevant investments of community work in forest protection (Bray, David and Leticia Merino; 2004; Merino Leticia, 2004)

These practices and communities’ social capital have provided a strong base for conservation. During the last twenty five years the experiences of community forestry in different regions of Mexico have also arisen from this base, while successful forest management and use under the communal frame has enhanced communities’ institutions and collective action (Bray, D., Merino, L. and Barry D., 2005; Merino, 2004; Taylor, 2005).

However we also acknowledge that communities’ social and institutional capacities are affected on their turn by different key “context variables” such as market,

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policies, legal systems and demographic factors. This paper focus on the impacts of migration processes on local institutions and communities' self governance.

Our general hypothesis is: migration weakens communities' collective action, social capital and organization. When emigrants leave, there is less participation, less opportunity for cooperation and often poor understanding of local rules and values. Y por tanto hace más complejo el manejo de los recursos naturales colectivos.

### ***“Ejidos” and “Comunidades agrarias”*: Studies cases**

Recently (2008-2010), I worked with a researchers group from the Institute for Social Research at the National Autonomous University of Mexico (IIS-UNAM) and two non-governmental organizations<sup>4</sup>. We developed a research project in three forest regions of Mexico. The main objective was to identify demographic factors such as out-migration (both national and international destinations) and its impacts over social organization and local institutions related with the management of natural resources commons. We made around 400 interviews in 25 “*ejidos*” and “*comunidades agrarias*” in three forest regions in Mexico. We work on 9 communities of Región Baja Montaña of Guerrero (dominated by dry lowlands and oak areas), 11 communities in the Sierra Sur of Oaxaca (dominated by dry forests to temperate forests) and finally 5 communities in Sierra Norte of Oaxaca (dominated by temperate forests).

We studied “*ejidos*” and “*comunidades agrarias*” with high and very high levels of marginality, with considerable out-migration resources and territories. We interviewed several members<sup>5</sup> of the communities with processes and which participate in conservation, sustainable use and/or restoration of natural the aim of collect different perspectives for the same subject. It should be noted that the selected sample of communities in each forest is not representative of the regions. Therefore, the results presented below refer only to the communities in where we worked.

Eventhought the communities studied here have different characteristics, in this paper we wanted to emphasize that migration impacts are similar among them. We considered that these impacts in the communities, encouragea more complex situation for the using and management of natural common resources.

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<sup>4</sup> Project entitled "Reflection and community vision on the migration impacts in three forest regions of Mexico," coordinated by Dr. Leticia Merino from Social Research Institute of the National Autonomous University of Mexico (IIS-UNAM), with the participation of the Grupo Autónomo para la Investigación Ambiental (GAIA) and the Grupo de Estudios Ambientales (GEA) funded by the Ford Foundation

<sup>5</sup> Ejido, or communal authorities that are an internal organ composed of social property holders, who elect a president and a board in charge of the receipt of the commons. Usually these posts are democratically elected at a meeting, women heads of household, whit their husbands and / or children were emigrants; Land owners with out-migration experience; Youth with and without out-migration experience, and key informants as they were movement leaders, teachers, doctors etc.

## ***Out-migration impacts that make more complex the management of the natural commons resources***

- One of the most direct impacts of migration is the gradual aging (relatively large presence of older adults over 64 years old) and a growing presence of female-headed single-parent households and elderly couples with no family in the community.
- We found an increasing number of families without land and land rights, and since the activities have been accelerated profitability and productivity. In recent years (1980-2010) the role of remittances has increased exponentially.
- There are different families for which remittances are the only source of cash income. This total dependence on external resources, coupled with the lack of access to land, places these families in conditions of extreme vulnerability.
- There are more and more households that keeps affections and interests in both countries (EUA and Mexico). Transterritorial *livelihood families*.
- Among the members of these communities there is a loss of interest in farming and communal areas (the migration processes take greater importance). Some *agrarian authorities* interviewed reported weakening of the *assemblies* and rules difficult to drive resource management from the perspective of the Community.
- In different degrees, migration generates, new lifestyle, new family survival strategies in where use of land and the community become less important, the income of young people rely less and less on the communal territory and resources. Migration becomes an important activity.
- Less manpower available for cultivation, firewood collection, and housing construction.
- Women have to face (in the absence of their husbands) the obligations of community involvement (ex. Assembly and *tequio*). Women have more responsibilities and pressures but no legal recognition to make decisions regarding the management of common forest resources .
- The fact of migration (agrarian land owner) does not make you lose your rights to forest resources, unless you stop *tequios* or participate in community activities for the benefit of all.
- Migration has not influenced into the interest in selling land or privatize the *ejido* or "*comunidades agrarias*". In the cases when we found property auctions, the buyers are always people of the community. So far, in these regions the income of migration have not hoarding lands or extensive use of areas (ex. cattle ranching or plantation).
- Another important change in relation to resource management, is that we found that migrants who are still interested in the work of the land, when they return to their communities are more interested in implementing irrigation for their crops. The problema is the lack of funding. In the cases of having funding, this situation is generating the problem among the members of the community of the water using.
- Due to the loss of manpower and enough members at home, in many cases

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the women that are in charge of the field prefer to use herbicides for weed cleaning.

- The impacts of migration on land tenure in the study communities are diverse and there is no currently a clear line of influence.
- Young people are more interested in to migrate than the communitie's problems.
- Migration erodes comunal social capital and hinders the generational change, not only in the demographic sense, but because young migrants do not participate in practices generating social capital.
- Migration limits the number of agrarian land owners susceptible to occupy *cargos*, which in turn contributes to system erosion: sometimes a commoner must do several positions simultaneously, or community members do not have enough "rest" time between a *cargo* and another.
- Migration weakens the capacity of assemblies to resolve conflicts and makes people unaware of mechanisms.
- The migration generates that community's rules are not known and respected.
- As a result of migration, including migrants and those who remain in the communities there is less interest and willingness to participate in collective projects between them.
- Given the difficulties of migrants to meet the "tequios", there has opened the possibility that families who do not have the ability to participate in work, pay a wage equivalent to the appropriate authorities, contributing to the monetization of this system.
- It needs more and more money to support families (food, housing, energy)
- Loss of ability to cover family consumption from own production
- There are community members who do not participate in decision making (for absence)
- Sometimes migrants do not know or respect the forms of community organization
- Less attendance at assemblies
- Sometimes those who replaced the absent not believe in the assemblies and their commitment is less
- Assembly decisions lose power and legitimacy in the absence of community
- There are fewer people to fill positions
- Difficulty in the rotation of offices: shorter periods and continued compliance charges
- Lack necessary expertise of the newcomers that meet important positions
- Decreases the extraction of forest products for domestic use

In conclusion, although at different levels, migration becomes more complex the management of common resources because it hinders the participation of migrants in many of the activities and practices that endorse community identity, allowing the social and cultural reproduction of communities, the protection of communal lands In this regard generates uprooting and weakens the sense of belonging of migrants to communities

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The migration usually follows a personal decision, but the impacts affect not just migrants but also their families and communities. Although most of the ties between migrants and their communities are personal relationships with members of their families, these relationships and projects of migrants occur in the context of their participation and their families and community identities collective heritage.

Although forest communities studied have similar impacts, the major difference lies in the strategies to develop each one to meet them.. Some communities are more able than others to respond to new conditions, maintaining, at some extent trust, cooperation and reciprocity among their members, even when a significant proportion of them spend long periods away from the territory collectively owned. Therefore the understanding of the reasons of these differences is fundamental to develop future scenarios for conservation and rural development.

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