

Forest Management in the Community Enterprise of Santa Catarina Ixtepeji, Oaxaca, Mexico

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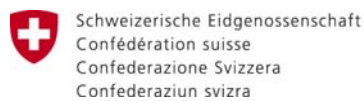


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1. Community Forest Management in Mexico

Mexico has 127.6 million of hectares of forest surface; 63.5 million are temperate and tropical forests and 64.1 millions correspond to xerophytic grasslands and other types of vegetation. This surface represents 66% of total territory (Semarnat, 2002).

According to the National Forest Inventory, Mexico has 21.6 million ha of temperate and tropical forests with commercial potential, but only 8.6 millions are being managed, equivalent to 40% of the total surface (Conafor, 2001).

Eighty percent of the total surface is in collective land grants ("ejidos"¹ or indigenous community's categories), 15% is private property and 5% is national territory. Forest areas in Mexico hold a 12 million population, mostly affected by extreme poverty and high rate migration (Conafor, 2001).

Forest production in Mexico presents a three year decrease. In year 2000, 9.4 million cubic meters of timber were produced, while in year 2003 this figure only reached 6.7 millions (CCMSS, 2005). In the other hand, imported timber almost has duplicated in value during last ten years, increasing from \$ 2.9 million dollars in 1995 to \$ 5.6 million in 2004, while the deficit in the forestry commercial balance in this period moved from \$1.9 to \$4 million dollars (De la Mora, 2005).

Forestry activity in Mexico is characterized by the role and importance that communities and "ejidos" have in timber production. It is estimated that out of the 30,000 agrarian nuclei from the social sector existing in Mexico, approximately 8,000 have forestry resources (Bray y Merino (a). 2004). It is unknown how many communities and "ejidos" in Mexico develop forestry activities; nevertheless Bray and Merino (a), (2004), show that according to the logging permits issued in 1992, it was calculated that 30% corresponded to indigenous communities and "ejidos", representing 525 woodlots from the social sector. An evaluation in nine states in the country shows that 1,302 permits for forest management were issued in year 2000 in benefit of "ejidos" and indigenous communities.

According to the Conservation and Sustainable Management of Forest Resources Program (Procymaf) (2003), it is possible to group forests communities and "ejidos" in Mexico into four types of producers: Type I or also called Potential producers, includes land owners with forestry resources, but do not manage their forest for commercial purposes. Type II or Forest lessees, are those owners that rent their forest areas to local or regional industries to develop all extractive activities in the forest. Type III includes producers who provide raw materials. They have community forest units, develop extraction activities and sale the standing trees or timber roles. Finally, Type IV refers to those communities or "ejidos" with forest enterprises that also transform, in certain way, the raw materials harvested all the way to sawed timber.

Follow with this typology, Procymaf has found 323 community forest enterprises (CFE) (raw materials producers and enterprises with some industrial activities) and 905 communities that develop forest activities in nine forestry states in the country (CCMSS. 2004; Procymaf. 2003).

"Ejidos" and agrarian communities were originated during Mexico's agrarian reform process, which initiated in the 1930's, which also aroused from the Mexican Revolution movement at the beginning of the century. However, the truly rising of CFE's began during the 1960's and 1970's, when several communities in Oaxaca, Durango and Quintana Roo opposed to forests exploitation from private and public enterprises supported by the Mexican legislation at that time, without participation and agreement from the owners of forestry resources in Mexico: the indigenous communities and "ejidos" (Bray, D y Merino (b), 2004).

This struggle produced fruit at the beginning of 1980's when "ejidos" and indigenous communities from Oaxaca, Durango, Quintana Roo and Guerrero achieved the suspension of these concessions given by the federal government for 25 year periods over extensive forests lands including the territory of several communities and "ejidos". Thus in the mid-1980's, the federal government passed a new forestry law

¹ Ejido refers to a form of land tenure in Mexico that emerged with revolutionary Agrarian Reform. It recognizes individual land ownership with the possibility of collective administration and management.

that recognizes the rights and capacities of forest communities and "ejidos". From that moment authorizations are only given to the legal owners of woodlots, establishing the basis for community forest enterprises.

During the 1980's, forests communities and "ejidos" were backed up by consultants, civil groups and technicians from the Forest Development Program of the Ministry of Agriculture (SARH). They started to promote the establishment of the first CFE in Mexico; to train agrarian authorities on administration and forestry management, as well as, train community technicians. They developed a new movement in order to obtain the concession of their own forest technical providers, who where in charged to lead extraction activities within forest units called Conservation and Forest Development Units (UCODEFOS in Spanish).

The social pressure given by forest communities, allowed the federal government the extension of concessions from technical providers to forest communities and "ejidos". To fulfill this task, they needed to get organized under a legal figure recognized by the Mexican Agrarian Law: Communities and "Ejidos" Union. This way, in Oaxaca were formed the Union of Forestry Communities and "Ejidos" from Oaxaca (UCEFO); and the Zapotec-Chinantec Union (UZACHI), Union of Forestry Communities from Ixtlan-Etla (IXETO), still in operation. In Durango, it was formed the Union of Ejidos Emiliano Zapata; the Societies of Rural Production in Quintana Roo in the south area; and the Union of Forestry Organizations in the Maya Zone. In Guerrero, it was formed the Hermenegildo Galeana "Ejidos" Union, among others.

In 1992, a new reform to the Forestry Law was made, leading, among other results, to liberate forest technical providers and to the de-regulation of documents needed to transport raw materials. These two changes allowed the communities to freely contract technical providers, and to the decrease of quality of the service provided, but also in the other hand, encouraged the illegal extraction, due to the lack of follow up and control mechanisms.

With the creation of the Ministry of the Environment (Semarnap) in 1996, the Conservation and Sustainable Management of Forest Resources Program (Procymaf)², and the Forest Development Program (Prodefor), a new institutional impulse was given to community forestry in Mexico through projects aimed to improve community forestry, train technicians and directives from community forest enterprises. It also increased community's social capital; diversify forest management and develop organizational and coordination processes through participation forums. Procymaf started as a pilot project in Oaxaca and it has been expanded to Michoacan, Guerrero, Jalisco, Durango and Quintana Roo.

With the creation of Conafor in 2001, an important amount of public financial resources were channeled to the forest sector. Nevertheless, the attention to forest enterprises has only been included in programs like Procymaf, while the rest of Conafor's programs have not developed an attention focus on communities and "ejidos". In 2004 Conafor assigned Prodefor – the main forest development program from this institution - ten times more financial resources than Procymaf's. Nevertheless, the struggle of national forest organizations before the chamber of deputies allowed Procymaf to increase its budget three times more than the one assigned initially at a 4 to 1 ratio (CCMSS et al, 2004).

Community forestry in Mexico has progressed gradually during last 25 years. At the beginning, fights against concessions to private and public enterprises; then the development of administration and communities' forest management experiences and the opportunity to freely decide the contracting of forest technical providers. Recently, community forestry processes have been oriented to improve transformation processes and forest management certification, as well as to diversify the use of forests and natural resources.

The forest capital left by private and public enterprises to forest community enterprises was impaired since these harvested the best trees and left the low quality forests to the "ejidos" and communities. In the Sierra Norte in Oaxaca, Garcia (2000) mentions that when the operations of the State-owned Tuxtepec Paper Company (FAPATUX) started, the trees had an average diameter of 1m (1940-50). When

² Project financed by the World Bank and the Mexican Government.

the local communities started to develop their community forest enterprises, the trees' average diameter was 85 cm (1980), while in 1997 this value diminished to 40 cm. From this condition most of CFE's have had to initiate a community development process with forest management activities in order to increase their productive possibilities.

In Mexico the first forest production systems were observed: the temperate forests system from the South, Center and North parts of the country, where oak and pine species. In the other hand, there is the management of tropical forests developed in south-eastern states which based their management on the so called "precious species" (mahogany and cedar), as well as on several hard wooden species called "common tropical species".

Of the forestry production in the year 2000, 94% came from temperate forests (pine and oak), 4% came from tropical forests and 2% from different latifoliated species (Semarnat, 2001). There are successful community forest management experiences from both types of ecosystems. Mainly in temperate areas in the states of Durango, Michoacan, Guerrero, Oaxaca and Puebla, while in tropical areas in Quintana Roo there are several forests enterprises.

Community Forest Enterprises are characterized by a solid General Assembly in their communities or "ejidos", democratic and participative who backup their community and "ejido" representatives who are obligated to report constantly their functions and forest administration. The "Comisariados" or agrarian authorities are elected in General Assemblies and occupy this "cargo" or position as an obligation of high responsibility before the community. Besides the agrarian authority, the CFE has Units or Committees designed specially for the administration of forests enterprises. In these communities, the Technical Forests Manager can develop his duty under the following alternatives: a) be part of the CFE; b) form a Union of "Ejidos" or Communities, or c) a Technical provider can be contracted only during extraction activities, to develop the Forest Management Program or to prepare reports for the federal authority.

The CFE's use to organize extraction activities, transport and transformation of raw materials, employing members of the same communities, becoming an important source for the generation of new local employment. CFE's profits are invested for social benefit in many communities: roads, school buildings, rural medical centers, churches, etc. Profits also could be invested in new forest enterprise infrastructure such as trucks, cranes, sawmill, stoves, etc.; or the profits are distributed equally among community or "ejido" members.

Regarding income-yield capacity, a research by Antinori (2000) in several CFE's in Oaxaca, shows that according on the type of community, the income percentage (profit/sales) could vary from 4% for lessees, 52% for raw material producers and 32% for those CFE's producing finished timber products.

Nevertheless commercialization processes and marketing of timber products from the CFE's are being left only for local or national markets, and the community have no experience on production of timber forest products for exportation purposes. Most of CFE's have established a community industry based on sawed timber and lumber production. A small proportion of CFE's have drying stoves, and even less CFE's have any other level of process such as furniture production or plywood industries. 71 CFE's are identified in six states in Mexico where Procymaf has influence. All these CFE's have infrastructure for timber transformation.

In the other hand, it is important to highlight that a high number of CFE's have decided to certify their management processes under Forest Stewardship Council's (FSC) standards in order to improve their extractive, transformation and marketing procedures. There are 26 certified communities and "ejidos" in Mexico (Anta, 2005) covering an extension of 587,143 ha (Alatorre, 2003).

There are still some pending issues in Mexico regarding the reforms needed to improve community forestry, among these are: a) development of incentives or improvements in the regulatory processes for "ejidos" and communities, who have proven a remarkable fulfillment of the law such as the certified CFE's; b) promote greater attributions and recognition to community participation on the definition of

public policies; c) development of programs, financial and credit schemes to support industrial infrastructure; d) initiate a decentralization process to encourage self regulation of communities and "ejidos" in some forest regions; e) development of fiscal incentives to encourage major investment from the communities; and f) development of policies and programs to promote productive integration and production of quality products for exportation.

2. Community of Santa Catarina Ixtepeji, Ixtlan, Oaxaca.

Santa Catarina Ixtepeji is a community located in the region known as Sierra Juarez in the state of Oaxaca. It has pre-Hispanic background, and has been established in its actual territory since before the Spanish conquest. Ixtepeji, also called Latziyela ("plain by the lagoon"), has a Presidential Resolution since 1964 which recognizes 21,058.9 ha under the agrarian community of communal land system. The current census list of registered citizens with agrarian rights includes 792 members and a total population of 2,532. Ixtepeji's territory has been divided into zones by the Technical Forest Manager and presents the following land uses and vegetation types:

Table 1. Territory Zoning in Santa Catarina Ixtepeji

Community zoning	Land uses and vegetation types	Surface (ha)
Conservation areas	Pine forest, pine-oak forest, "oyamel" and Pseudotsuga	1,981
Forest productive areas (timber and non-timber)	Pine-oak forests	15,036
Restoration areas	Pine-oak forests and grasslands	1,915
Farming areas	Agriculture and cattle ranching	1,810
Urban areas and communication routes	settlements and roads	365
TOTAL		21,107

Source: Chavez, E. 2005.

As can be observed, 80% of Ixtepeji's territory is covered by forests, 71% is dedicated to timber and non-timber forest management activities.

Main economic activities of the community are timber production, extraction of non timber forest resources, basic agriculture and cattle ranching, complemented with other activities like flower cultivation, aquaculture and fuel wood extraction. Some families provide services for the ecotourism activities as well as preparing food for tourist and visitors.

Santa Catarina Ixtepeji is a community with indigenous background. Still during last century most of the population use to speak the "Zapotec" language in the variation from the Sierra Norte region. Today most of the population speak Spanish and only 18% speak Zapotec (CDI, 2003).

Ixtepeji has the municipality category and has 13 small communities within its communal territory: Santa Catarina Ixtepeji as the head of the municipality, Yuvila, El Punto and Tierra Colorada with the Municipal Agency category; and El Estudiante, El Cebollal, El Cerezal, Llano Grande, Yovaneli, Xia, La Cumbre, Las Animas and Xielave, recognized as "*rancherías*" (small settlements).

Ixtepeji's forests, as others from many communities in Sierra Juarez, were controlled by the public enterprise FAPATUX for 25 years, between 1957 and 1980. This enterprise extracted and commercialized forests materials from this community's and from most of the Sierra Norte's forests. During this period FAPATUX had a timber harvesting concession of 251,000 ha of the forests in several communities in Sierra Juarez.

At the end of the 1970's, a social movement was promoted by the own communities in Sierra Juarez trying to avoid most of concessions from being renewed. Through constitutional trials promoted by several communities, concessions were not renewed, and communities took control over forest exploitation activities (Abardia and Solano, 1995).

SARH's technical staff and several consultants oriented communities during the struggle to avoid concessions to be renewed, the promotion for the creation of the first CFE's in Oaxaca began.

Ixtepeji was one of the first CFE's constituted in Oaxaca. Thus, in 1983 it was created the Forest Raw Material Unit (FRMU) in Santa Catarina Ixtepeji as a pilot project, expected to be replicated in other communities (ASETECO, 2002).

This FRMU was integrated by a coordinator, an administrator, a field chief and a document keeper who where trained and advised by technical staff from the SARH. Later this technical team and advisor also promoted the design of the Community's General Regulations, the rights and obligations of community members, authorities and positions within the FRMU where clearly expressed.

In 1984 in "El Estudiante" community it was trained the first community technical team from this and other communities like Pueblos Mancomunados, Santiago Textitlan and San Pedro El Alto, in order to face a common problem: forests plagues. This way, and due to the success of this initiative, community technicians started define the organization structures of the CFE's (ASETECO, 2002).

Later in 1985, Santa Catarina Ixtepeji, along with communities like Pueblos Mancomunados, Santiago Textitlan, San Pedro El Alto and San Miguel Aloapam decided to create the Forests Communities and Ejidos Union (UCEFO) looking to request the concession of the Forest Technical Services, which at that time, was only given to professionals operating the UCODEFO's. UCEFO was the first union of this kind in Oaxaca.

Between 1985 and 1989 Ixtepeji continued as a member of UCEFO and had technical and administration advisory from the union. Nevertheless, due to internal conflicts, Ixtepeji decided to suspend forest exploitation from 1989 to 1993. In 1993 Ixtepeji renewed its forestry activities and decided to work independently, contracting technical services from UCEFO's technical director, but didn't participate in this organization's activities.

Thus Ixtepeji has being working for the last 12 years on forestry activities, and has been able to establish a sawmill, improve sawing processes and industrial organization; diversify forest activities and strengthen its community structure with the creation of an Advisory Council integrated by representatives from all its communities and managers of their CFE's.

To date, due to the level of development reached, the Ixtepeji is considered as a community Type IV, according to Procymaf's typology mentioned above. The community extracts annually an average of 12,825 cubic meters of pine and 5,057 cubic meters of oak timber. The CFE has a 6" sawmill, trucks for transportation of raw material and extraction and road maintenance equipment.

Extraction of timber resources is developing on the basis established by the Forest Management Program (FMP) authorized by Ministry of the Environment (Semarnat) for a 10 year period. The current surface included in the FMP is 2,684 ha, which represents 13% of the community's territory and 18% of community's commercial forest surface. 4,960 ha of Ixtepeji's forests are Smartwood certified under FSC's principles and criteria since 2001.

Actually Ixtepeji community commercializes 100% of its wood as lumber, which means that it does not longer sale uncut timber. Besides the forest enterprise, Ixtepeji has developed other community enterprises like spring bottling water, extraction of non-timber forest resources (white mushrooms, velvet

grass and tapping pine resin) and ecotourism. All this community enterprises generate year-round employment for at least 150 community members.

As it happens in most communities in Sierra Juarez, the agrarian authority is the "*Comisariado de Bienes Comunales*" integrated by a president, a secretary and a treasurer, with its corresponding substitutes. Also there is a Surveillance Council integrated at the same time by a president and two secretaries with their substitutes as well. This directive body has a three year period function, and it's elected by the General Assembly of registered citizens ("*comuneros*"); the highest authority is the community.

The "*Comisariado de Bienes Comunales*" besides representing the community before the government institutions and other instances is responsible for coordination of the other community enterprises' activities. Each community enterprise has at the same time a coordinator or responsible manager which is also designed by the General Assembly, whose charge generally last the same period as the "*Comisariado's*".

3. Community Forest Enterprise Organization, Management and Governance.

CFE has almost 25 years since its creation, 22 are functioning and 3 stopped its operations due to internal problems as mention above. Ixtepeji's CFE is the most important enterprise from the community's economy point of view, even though in the communal structure it has the same importance as the other community enterprises. (See figure 1).

CFE has the following organization structure: a coordinator who is always a community member designed by the General Assembly, who is supported by the responsible of the Technical Forest Direction and the enterprise accountant.

The manager of the Forest Raw Material Unit (FRMU) is in charge of three areas:

- a. Administration unit
- b. Field Chief supervision
- c. Industry chief supervision

The Administration Unit is in charge of the unit's financial management, accountability, cost-production analysis, vehicles administration and acquisitions.

The Field Chief is in charge of forest extraction activities, mainly wood loggers, crane operators, supervising the loads for its transportation, truck maintenance, document transportation of raw materials, attends forest plagues control and maintenance and plant production in tree nurseries.

In the other hand, the Industry Chief is in charge of community's sawmill activities which are divided in the following areas: saws sharpening, sawing, documentation, secondary materials shop and attends the timber yard located near the urban area in Oaxaca City.

The "Comisariado" is in charge to negotiate the authorizations from the Semarnat, and also has to ensure the effective operation of communal enterprises. Coordinators are in charge of the adequate operation of the enterprise. The FRMU is the enterprise with more staff and infrastructure in the community; even part of the economic utilities of the CFE are invested to strengthen other enterprises like bottling water, ecotourism and non-timber forest products extraction, etc.

Santa Catarina Ixtepeji has a Communal Statute approved since 1994, where rights and obligations of all community members are specified. In this Statute reference is made to the regulations and penalties for the internal use of the territory and its natural resources. The Communal Statute is registered before the National Agrarian Register. Besides the statute, Ixtepeji has a Forest Management Program (FMP)

authorized and validated by the community through the General Assembly and recorded into Semarnat's National Forest Register.

Within their FMP are specified several areas in which the territory has been zoned: forest management, conservation and restoration areas; farming and animal husbandry, urban use and roads. The FMP has been integrated into a geographic information system (GIS), and the "*comuneros*" are aware that based on the Communal Statute and the FMP, forest resources are regulated and managed collectively through the agrarian authorities. No community members are authorized to use timber with commercial purposes without General Assembly's authorization. Hunting is also a prohibited activity within the community's territory. If the community members need to use the timber for domestic use, like house building, fuel wood, fences, etc., it is required the agrarian authority's authorization.

The community decided in the year 2000 to establish a Community Protected Area with a total surface of 1,359 ha in order to protect some areas where *Pseudotsuga mensiezii*, of restricted distribution in southeast areas in Mexico, and the endemic bird to Sierra Juarez, *Cyanolyca nana* (SERBO, 2000). This area is segregated to any productive activity that represents a risk for its protection.

The use of farming and husbandry parcels is done individually, even though there is always present the communal property or the land; and if for any reason the community member or his family emigrate, they could lose possession on the land and the community has the faculty to re-distribute the parcels to another petitioner.

According to the FMP, forests areas could not be used for husbandry purposes, therefore clearing in forest areas to establish agriculture or cattle ranching parcels is forbidden.

In Santa Catarina Ixtepeji, obligatory community labour has been established as the "*tequio*". The "*Comisariado*", or Agrarian Authority convokes the "*comuneros*", men and women older than 18 years to work collectively in benefit of the community or their forests. The most common activities of the "*tequio*" are: cleaning of border line breaches, road clearance, reforestation among others.

Also inside the community there has been established a Cargo System, where each community member is assigned, according to his age, experience and moral quality to work in the different cargos as a community service, called since ancient times as "*Topil*". The "*topil*" is responsible of a special commission or committee. Also there are the cargos of Secretary, Treasurer, Municipal Agent, Municipal President and President of the "*Comisariado*". This is the most important charge in the community and stays in function for a three year period. He also represents the community and coordinates protection activities, use and management of the territory and its natural resources. The Municipal President (Head of the Municipality) is being elected through a traditional system called "*Usos y Costumbres*": local practices of governance based on indigenous systems of community service, and is in charge for one and a half year period.

Sanctions for those community members that break the regulations established in the Communal Statute and in the FMP depend on the fault. It could be from an economic penalty to suspension of his community rights.

The Surveillance Council is the instance in charge to ensure that forest areas are managed according to the FMP. It is also this Council who carry out surveillance activities inside the forest, regarding littering in extraction areas, supervising that the Field Chief carries out complementary cleaning in these areas.

During last years, in order to avoid continuous celebration of General Assemblies, a Community Advisory Council was formed by representatives from all communities, enterprises coordinators and the "*Comisariado*", in order to analyze and discuss every day operation of community enterprises, as well to review problems and aspects related to the use of territory its natural resources. This Council meets every 15 days or every month, according to the kind of activities developed. When needed to decide over

important matters for the community, a General Assembly of registered citizens is convoked, usually every 2 or 3 months.

Depending on the severity of the problems or conflicts presented, these are discussed at different levels: with the coordinators of every area from each enterprise; with the coordinators of CFE's; with the "*Comisariado*"; with the Advisory Council or finally with the General Assembly.

4. Economy of the Community Forest Enterprise

Ixtepeji's CFE develops forest management planning activities, extraction, transportation and transformation into timber. One of the main purposes of the CFE is the generation of employments for the inventory activities, marking, extraction, transportation and processing, generating approximately 100 new employments in the area.

This enterprise has been conformed through a vertical process. This means that an extra value is being added through the further process of its raw material. The CFE produces at this moment a major proportion of sawed timber with commercial diameters; but it is especially during last years, that its marketing scheme has been transformed. During 2001-2002 periods, 37% of wood sales were done as uncut timber; 46% was sold as sawed timber and 17% as secondary uncut timber. After two years, from 2003 to 2004, this marketing proportion was modified as follows: 77% of sawed timber, 2% of primary uncut timber and 26% as secondary timber, which gives a better idea of the improvement of the transformation process achieved by this community (Chavez, 2005).

This improvement is the result of an analysis process carried out by the community regarding the operation of their industry; thus, the community decided to improve some aspects like: acquire new equipment, make some organization processes more efficient, initiate training activities, define steady work positions, etc. An important part of this process was achieved thanks to training and coaching received from one of the most advanced forest communities in Sierra Juarez regarding transformation processes and forest industry: Pueblos Mancomunados.

At the same way the CFE has become more efficient each time in the extraction and volume of timber processed, since in 2001-2002 only 2,897 cubic meters of pine were processed; while in 2003-2004 period 7,717 cubic meters of timber from this species were processed (Chavez, 2005). This is the same case of the classification of timber, which has allowed the communities to achieve better sales due to their timber quality. In Oaxaca, the called fourth class lumber is the best quality lumber produced. Only 26.5% of sawed timber produced in 2001-2002 period was classified as fourth quality lumber. In 2003-2004 the fourth quality lumber constituted 41.6% of total volume processed, having greater profits from the selling of better quality wood.

To date, Ixtepeji has several clients, mainly from industries established in Oaxaca City. The timber sold is placed in the storehouse located in the community of San Agustin Yatareni, a municipality close from Oaxaca City, where their clients choose the sawmill lumber.

In a recent diagnosis carried out by the CFE's Forest Technical Manager along with the "*Comisariado de Bienes Comunales*", it was defined a market strategy for their forest products including: a) a record of potential clients for the different products offered by the FRMU; b) give priority to those clients with financial capacity and moral solvency, c) offer a competitive, well dimensioned and classified product in the market; fulfil the shipment on time and quality of the product; e) carry out and adequate management of sawed timber in the storehouse in order to avoid quality and financial losses, and f) offer transportation service to client's storehouses in order to increase income due to cargo fees.

Among community's plans there is the acquisition of a drying stove, looking to increase sawmill's timber value. With the income resources from timber sales, Ixtepeji community pays its debts derived from production costs like salaries, acquisitions, and other services; save for the operation of the next harvest

season; forest management investments or improvement of the infrastructure and annual profit shares to all registered citizens.

Ixtepeji, as most of other CFE's in Oaxaca use most of its profits and revenues derived from forest activities to social benefit for the community. Arguelles and coll. (2003) founded that between 75 and 95% of the profits generated from forest enterprises in four CFE's, the benefits stay within the community. Most of the profits are invested annually in service provision like building schools and its maintenance, construction of rural clinics, restoration of the church, road maintenance, and individual loans for registered citizens, community celebrations, etc.

During last two years, parts of the profits have been invested to strengthen new community enterprises like ecotourism (building cabins, signs, vehicles, etc.) and the bottling spring water enterprise. Also some resources have been invested in new equipment to improve sawmill's management such as a tool carrying tractor.

Ixtepeji has an annual income of \$ 7 million Mexican pesos. \$5 millions are use to pay production costs, leaving a profit of \$ 2 million pesos a year. Out of the \$5 million pesos for production costs, most of it (\$ 4 million) is used as salary for the "*comuneros*" working as employees in inventory activities, extraction, management, transformation and commercialization. Also there is included maintenance of forests roads, transport trucks (property of the "*comuneros*"), and the compensation given to all the members of the "*Comisariado de Bienes Comunales*", including the staff in municipal presidency

The General Assembly generally decides to keep part of the profits in order to invest in new community projects or to strengthen existing community enterprises. Other part of the profit is divided equally among all the "*comuneros*" (active or not)³, and the rest is kept as working capital or fund for future administration and disbursement in the next harvesting season.

Regarding the use of the "certified wood" seal, the community of Ixtepeji is very interested to use it and is looking for market alternatives for its certified products, especially those that appreciate this condition. In years 2003 and 2004, Ixtepeji, along with other nine certified communities analyzed the possibility to create an Integrating Enterprise for Certified Wood, with the objective to look for markets where they could use its forest certificates, and explore the possibility to produce simple wood items with the FSC logo. Unfortunately the constitution process has not been concluded, and it seems that Ixtepeji is not very sure to join this enterprise due to previous experiences as a member of community organizations like UCEFO.

Nevertheless having not achieved yet any economic incentive or direct advantages from forest certification, agrarian authorities as well as the CFE's manager mentioned that the certification process has been very useful to identify weaknesses on community forest management; and those certification conditionings have allowed to improve some forest management aspects as well as those referring to the enterprise's administration and efficient transformation processes.

Financing of the CFE is given through the income from previous annual sales and from advanced payments from contracts. Ixtepeji, as most of CFE's in Oaxaca does not use credit to cover enterprise's operations due to the lack of confidence towards credit institutions. The acquisitions of new equipment and infrastructure are immediately paid once some savings have been made, or the annual profits shares have been reduced. Co-investment with government resources could be another way to acquire some assets.

One of the main problems and challenges of the Ixtepeji's CFE are the continuous changes given at all levels of the community government structure, as well as in the administration staff. Every three years, and according to the "*Usos y Costumbres*" and to the Agrarian Law, all the "*Comisariado*" and the

³ In Ixtepeji, the "*comuneros*" older than 60 are exempted from occupying charges within the community and have the right to receive profits from the forestry enterprise every year.

Surveillance Council members are removed, as well as those coordinators of the CFE's, including the FRMU. This situation produce an impasse and reduction of the production, while the new CFE' coordinators get to know the operation of the enterprise.

As established by the "*Usos y Costumbres*" practices, no FRMU coordinator will stay longer than three years in his post, having this situation a direct impact on the continuity of the CFE's performance. There is a similar effect if a sawmill worker is designated to occupy a position within the community's cargo system. He must quit his job in order to attend his new cargo. The CFE loses temporarily a qualified worker in specific tasks like saw sharpening, wood classification, sawmill tower operation, etc.

Smartwood evaluators (2002) points that the CFE needs to clearly define a future operation plan. It needs to be created the manager position and allow the extension of the Administration Council to working period.

Supported by WWF's staff and the Technical Forest Direction, in year 2004, at the end of the agrarian authorities' period, a training exercise was carried out, transferring responsibilities to the new agrarian authorities and to the coordination of the FRMU in order to promote continuity between current and new authorities. A product of this training process was an Annual Operation Program for new agrarian authorities and for the FRMU for year 2005.

5. Environmental Benefits; Conservation and Impact on Biodiversity.

Common land in Santa Catarina Ixtepeji is located in one of the Priority regions for Biodiversity Conservation in Mexico called "Sierra Norte of Oaxaca" TPR-130 (Arriaga and coll. 2000), as well within the Conservation Area for Important Bird Species G1 (AICA) (Arizmendi and Marquez 2000) due to the presence in the area of *Cyanolyca nana* or dwarf chara, and endemic species of restricted distribution in Mexico. Aragon (2005) reports 107 bird species for Ixtepeji.

In Ixtepeji there are pine-oak forests (*Pinus oaxacana*, *P. douglasina*, *P. rudis*, *Quercus crassifolia*, *Q. rugosa*), oak-pine forests (*Pinus oaxacana*, *Pinus teocote*, *P. leiophylla*, *Quercus crassifolia*, *Q. castanea*), oak forests (*Quercus crassifolia*, *Q. laurina* y *Q. rugosa*), "oyamel" forests (*Abies guatemalensis*, *A. zapotekensis*) and fir forests (*Pseudotsuga mienziesii* var. *oaxacana*), as well as low land deciduous forests (*Lysiloma acapulcensis*, *Acacia* sp, *Prosopis laevigata*) (Smartwood, 2002).

The following species are under threat or with remarkable biological attributes:

Species	Common name	Comments
<i>Abies guatemalensis</i>	"Oyamel"	Endanger and excluded from commercial uses
<i>Abies hickelii</i>		
<i>Artorima erubescens</i>	Lily, Orchid	Endemic
<i>Pseudotsuga mienziesii</i> var. <i>oaxacana</i>	Fir forests	New variety with southern distribution of gender

<i>Abronia fuscolabalia</i>	Chintete	Rare and endemic
<i>Cyanollica nana</i>	Dwarf Chara	Endanger and endemic. Forests included in the Community Protected Area.

Besides pine and oak timber yielding species, the community carries out commercial extractions authorized by Semarnat of non timber forest products like velvet grass (*Tillandsia usneoides*), oak moss (*Squamidium* sp), moss (*Politrichum aculeatum*), laurel (*Litsea glaucescens*), "poleo" (*Saturea laevigata*), child flower (*Rumfordia floribunda*), oak maguey (*Tillandsia* sp.), cross maguey (*Tillandsia* sp.), white mushroom (*Tricholoma magnivelare*), epazote mushroom (*Amanita caesarea*), milk mushroom (*Lactarius* sp.) and bread mushroom (*Boletus* sp) among others. Some of these are ornament species, others are use as medicine and others are eatable species.

Another product of commercial importance which complements the campesino's economy is the fuel wood and charcoal sale obtained from different oak species. It is estimated that almost 200 families get complementary income from this activity. Families, who need to sale these products in Oaxaca City, require the "Comisariado's" permit to extract wood only from certain areas.

Resulting from the fulfillment of all forest certification conditions, and with WWF's support, Ixtepeji is developing biodiversity monitoring studies and evaluations of the social impact of forest activities. One of these projects is "Determination of diversity, relative abundance and bird distribution in temperate forests in Santa Catarina Ixtepeji" (Aragon, 2005). This survey has the objective to evaluate the impact of forests activities on the ecological structure of commercial forests and among bird populations. Also Arreola (2005) is working on the design of the Management Plan for the Community Protected Area.

As a complementary survey, Negreros *et al* (2005) are working on the evaluation of social and forests changes as a result of forest management in Ixtepeji in order to fulfil criteria number 4.4 of the FSC's standards. This criteria states that "planning and implementation of forest management should include the results of social impacts evaluations", and criteria number 8 points that "forest condition, forest products yield, chain of custody, management activities and social and environmental impacts must be evaluated according to the scale and intensity of forest management".

Ixtepeji has also explored marketing processes for environmental services. In 2003 Ixtepeji joined to the Hydrological Environmental Services Program promoted by CONAFOR, including 1,581 ha of its territory and receiving \$474 thousand Mexican pesos a year during a five year period. The final objective is to develop environmental services markets after this period.

6. Link with government regulations and its policies. Conditions for this relationship

Ixtepeji community keeps an excellent relationship with state and federal government institutions. Ixtepeji, as most of the communities in Sierra Norte, keeps a mutual respect relationship, and its capacity to generate important income from wood sales, allows the community to keep a relative autonomy and independence from government institutions

Ixtepeji respects federal and state legislation related to natural resources management. It has Semarnat's authorization to use its forests timber and non-timber resources with commercial purposes and any of these activities are developed out of the law. Also there is an internal regulation expressed in the Communal Statute and in the "*Usos y Costumbres*", where government instances do not interfere such as in the establishment of agreements to access and use natural resources within the community; election of municipal and agrarian authorities; definition of commissions, charges and tasks; income sharing

mechanisms or sanctions, among others. All these activities are community's responsibilities, its agreement mechanisms and decision making processes.

In general, Ixtepeji fulfils agrarian and environmental laws of Mexican legislation system, and in some regulation aspects within the community, specially referring to the use and management of natural resources, are even more severe.

For the development of its enterprises and forest activities, the community has all the authorizations required by the Mexican legislation: forest exploitation permits and documents needed to transport raw materials and processed products; land use changes permits regarding new road openings in forest areas; cleaning of plagued wood; fuel wood and timber and non-timber product extraction, etc. This means that they have all the documentation required to prove an adequate management of their natural resources.

Nevertheless all related aspects concerning the management of its territory are exclusively defined by the community, even the conservation and protection processes of its natural patrimony is agreed and established by the community. Therefore Ixtepeji has decided to establish a Community Protected Area in order to administrate and define themselves the best conservation model required, avoiding state and federal government's attempts to establish protected areas through a decree as it has happened in the past.

On the other hand, Ixtepeji is a community characterized by the negotiation of their financial resources in order to support exploitation and forest conservation projects. During last years it has had federal government's support through programs like Prodefor, Procymaf, Pronare (National Reforestation Program), etc., as well as from international funding from WWF's. In general Ixtepeji has done good use of these funds, which have been applied as committed.

Nevertheless it is important to mention that during last two years, Semarnat has become more strict and over-regulating the evaluation of forests reports, which has represented a problem for the community to meet the deadline of their exploitation permits, specially those referring to clearance of their plagued areas.

7. Perspectives and opportunities

Ixtepeji is a pioneer community in community forest management in Oaxaca and in the country. In Ixtepeji was established one of the first CFE's in the state and also participated actively in the creation of the first Forest Community Union (UCEFO). To date Ixtepeji has a forest enterprise integrating a complete process until sized sawed timber production. Ixtepeji is also one of the first FSC certified forest communities in Oaxaca and in the country, and it's one of the most diversified communities regarding the use and management of their forests including ecotourism, spring bottling water, timber and non timber forests products extraction; besides being interested to preserve and give a sustainable use to their natural resources. Nevertheless the community still faces many challenges and perspectives to attend in order to strength its different community enterprises, improve the registered citizen's income and manage their forests and natural resources.

As mentioned before, this community is considering the possibility to acquire a drying stove in order to increase sawmill's timber value and participate in WWF's initiative to produce certified wood toys. Nevertheless Ixtepeji, as many other communities in Sierra Juarez needs to evaluate the feasibility to develop strategic alliances for a horizontal and vertical inter-community production through integrating enterprises.

The State Government of Oaxaca have decided to sign contracts with forest communities for the production of school furniture, and only two CFE's have the opportunity to respond to this demand. In order to satisfy this need, it is possible to include new CFE's like Ixtepeji as raw processed materials

providers, and in the middle time be able to produce parts of complete furniture. In this sense, there are also opportunities that could be considered through an Integrating Enterprise in order to identify potential markets for certified forest products or to produce materials products with an added value like furniture parts, wood frames, etc., and once again Ixtepeji could be a key actor for the process.

Ixtepeji has been improving its forest management and processing processes due to the following up and forest certification conditionings. Therefore it is fundamental to continue with the re-certification process, and follow up regulations, as well as recommendations from FSC's evaluation. Now the community is discussing the possibility to create a Follow up Commission for certification process, including man and women participation.

There is the need to strengthen administration and management processes of the FMRU in order to make it more efficient and promote CFE's development. Therefore it is important that the community of Ixtepeji considers the possibility to define a management policy and continuity of staff members (sawmill operators, saw sharpeners, saw operators, etc.) and other positions or directive areas like the CFE's Manager and among others, FMRU's administration staff.

Also they need to look forward to strengthen other community enterprises like ecotourism, non timber forest products, spring bottling water, tapping pine resin, etc. in order to diversify income and employment sources and diminish the pressure over the forest.

Ixtepeji has several advantages and opportunities to develop marketing mechanisms for hydrologic environmental services due to it's proximity to Oaxaca City and water supply from forests and mountains from community's territory. Also it is required to promote greater participation of some community's sectors like women and youths.

The possibility to reproduce Ixtepeji's experience in Mexico in other places in the world will depend on the fulfilment of some basic conditions like:

- a. Existence of minimal local government conditions with genuine community's mechanisms and representative for the community.
- b. The recognition and legitimacy of authorities from the community as their representatives before society, that also have solid moral prestige.
- c. Existence of an important natural capital; in this case a forest with potential commercial products greater than 15 thousand ha, that could allow the generation of considerable income for the community.
- d. Experience from over 20 years of forest management; first as a State-owned enterprise and then as a community enterprise.
- e. Coexistence of a community's vision and an industrial and commercial vision from forest activity has allowed the generation of income and employments, strengthening at the same time community's organization and the development of a consolidation strategy for several community enterprises.
- f. Maintaining a technical forests direction capable, committed and permanent that also has the support and participation of community's technical teams.
- g. Counselling and technical support, as well as funding from government and non-government institutions for projects related to forests management like forestry, biodiversity, ecosystem's conservation and community's strengthening.

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