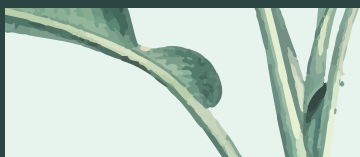


AUGUST 2020

# Productive activities

for the sustainable management of forests



**GCF**  
task force



 **NICFI**  
Norway's International Climate and Forest Initiative

**pro  
natura**  
sur, a.c.



**Productive Activities for the  
sustainable management of forests**





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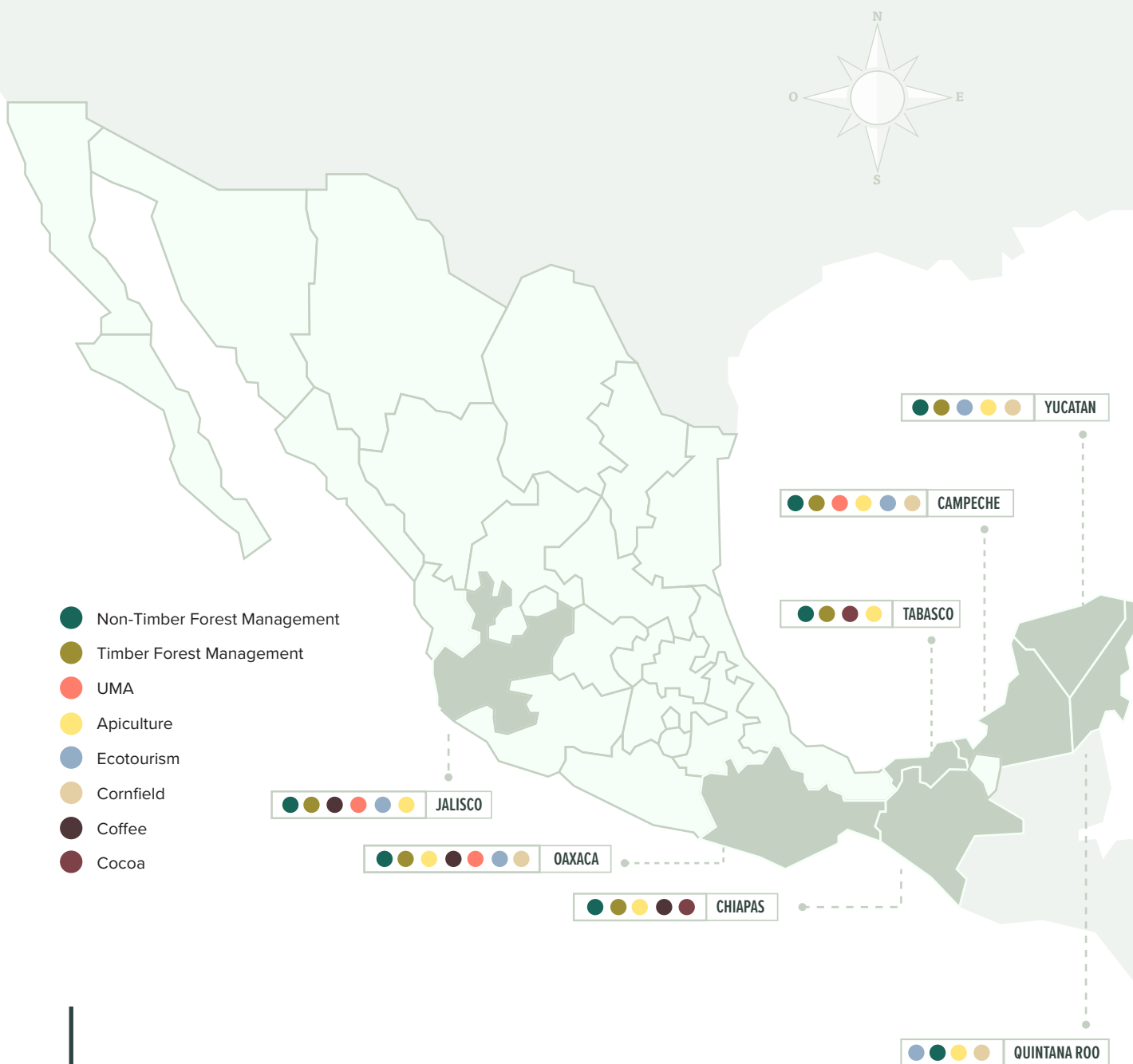
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# 01 Map



## 02

# About this Document

The Mexican forests are our main carbon reservoirs, our water factories and the habitat of our mega-diversity. About 10% of the Mexican population lives in them, the most vulnerable population in the country. The protection of natural resources rests in a special way, on the indigenous population, since this population lives where the largest areas of forests are located



In the last three decades, Mexico has lost almost a third of its original forests<sup>1</sup>, in a large extent due to not being able to turn them into a productive asset from which to generate wealth and encourage its safekeeping. Nevertheless, the productive potential is great: Mexico has two thirds of its territory covered with forest vegetation, one of them densely populated with trees.

This document is part of a collective effort of the seven member states of the Governors' Climate and Forests (GCF) Task Force in Mexico, to create tools that contribute to the conservation of forests, while maintaining and improving the livelihoods of its inhabitants. Having identified that the expansion of agriculture and livestock are important drivers for the loss of these forests, the GCF Task Force began to create synergies with the private sector to achieve deforestation-free supply chains. However, it also identifies that the context of deforestation in Mexico has different realities. The large number of community projects that have as characteristics an undefined land tenure, legal compliance limitations and the involvement of a large number of small producers, make the value chain approach difficult and represent an important challenge to achieve sustainability. However, also in this reality there are opportunities to generate value from the forests from the local level, thus enhancing the benefits and environmental services that they provide and impacting the livelihoods and the well-being of its inhabitants.

This brochure seeks to make visible the sustainable management activities of forests in Mexico, which give it value and encourage its conservation. Show experiences in the territory with the participation

of communities that make sustainable resource management possible. The objective is to promote its scope, progress and results to attract potential collaborators who, inspired by this valuable work, are interested in contributing to safeguarding these natural resources in the member jurisdictions of the GCF Task Force in Mexico.

In addition to this and in the face of the crisis caused by the COVID-19 pandemic, these seven States have identified that supporting the reactivation, strengthening and permanence of this type of projects is key to reducing the risks of pressure on forests.



<sup>1</sup> <https://www.gcftf.org/about>



## 03

### Importance of the sustainable management of forest through productive activities that add value

Mexico is a country that has a great forestry capacity which is reinforced by a long history of cultural practices on resource management that the inhabitants of the communities have done where they are located. The importance of consensual management, rational and equitable resources for its own inhabitants is a priority aspect for the sustainable development in this sector at the national level (Valdes, O. et.al., 2011).

Community forest management is a strategy that is giving results for subsistence and autonomy for rural communities and the conservation of the forests under their management. The community property regime allows to regulate access to the forest and use of their resources through mutual dependence, shared values of cooperation and partnership, and of traditional laws. Communities consider that they are making use of the forest that is lent to them by their children.

A key element to favor an integrated management of the territory is to know the compensations, synergies and relationships between ecosystem services generated by forests and the impact of developed activities. Thus, jurisdictions in Mexico consider activities that stop the main causes of deforestation and they also incorporate activities that add value to the forest and encourage its conservation.



## 04 The work of the GCF Task Force and the subnational effort to reduce deforestation

The GCF Task Force is a subnational collaboration of 38 states and provinces working to protect tropical forests, reduce emissions from deforestation and degradation, and promote sustainable low-emission rural development<sup>1</sup>.

In Mexico, the members of this global network are Jalisco, Oaxaca, Chiapas, Tabasco, Quintana Roo, Campeche and Yucatan, who over several years have developed a series of significant advances in legal frameworks, institutional arrangements, financing mechanisms and in their monitoring, reporting and verification systems. The members of the GCF Task Force have a commitment to continue strengthening the conditions and actions for the implementation of low-emission sustainable rural development strategies.

The proposed activities in this brochure consider a productive orientation that adds value to the forest and to the ecosystem services under the logic of community management. These types of activities are of special importance in Mexico, where about 60% of forests are owned or managed by communities and ejidos. Likewise, in an environment of economic recovery after the COVID-19 pandemic, the dynamization of economic activities at the local and regional level will be of vital importance as part of a sustainable development path.

In the context of the construction of the Emissions Reduction Initiative<sup>2</sup> (IRE, for its acronym in Spanish), it was considered that in order to face the causes of deforestation and degradation it is necessary: i) to modify economic activities that generate deforestation or forest degradation and which are activities that generate income, ii) the increase in the economic value of the forest and, iii) the effective limitation of activities that harm forests.

In accordance with the IRE and through a participatory exercise, the member states of the GCF Task Force identified two approaches in order to address activities with an impact on the conservation of forests in their jurisdictions (Martinez-Murillo, 2020).

On one hand, they identified the production chains that represent a driver of deforestation due to agricultural expansion and in which the States seek to generate transparency, traceability and incorporation of sustainable production practices. On the other hand, the States expressed the importance of incorporating into an integrated management strategy of the territory, productive activities that add value to the forest and provide ecosystem services, since they allow generating income, creating additionality and stopping leaks, while recognizing ancestral knowledge and strengthen community participation<sup>3</sup>.

# 60%

of the forests are owned or managed by communities and ejidos.

The **criteria** proposed to consider the incorporation of productive activities that add value to the forest are the following:



**1. Income generation (additionality).**



**2. Contribution to the reduction of leakages in the territory.**



**3. Participation of ejidos and communities: Property and social use.**



**4. Generation of key ecosystem services.**



**5. Cultural heritage.**

<sup>2</sup> The Emissions Reduction Initiative (IRE) was a proposal submitted by Mexico to the Forest Carbon Partnership Facility (FCPF), for its acronym in Spanish) to provide positive incentives to reduce greenhouse gas (GHG, for its acronym in Spanish) emissions, while seeking to protect forests, conserve biodiversity and improve the livelihoods of indigenous peoples and local communities dependent on forests.

<sup>3</sup> According to the Benefit Distribution Plan, the term "additionality" refers to the fact that the benefits will be awarded to actions that prove emission reductions in the forest sector that would not have occurred in the absence of the reducing emissions from deforestation and forest degradation (REDD)+ mechanism. The term "leakages" refers to the risk of displacement of emissions in the territories outside the intervention areas of intervention.

<sup>1</sup> <https://www.gcftf.org/about>



## Proposed criteria to consider the incorporation of productive activities



### Income Generation (additionality)

While the proposed activities do not generate income of the magnitude that productive activities such as ranching and agriculture can in some sites, they do assist communities in sustainably diversifying income and increasing their capacity to adapt to changes and challenges (resilience). Reducing deforestation should not result in a decrease in livelihoods and / or production levels. On the contrary, the productive intensification can be combined with the conservation of ecosystems, based on the activities traditionally developed by the actors in the territory (IRE, 2017).



### Contribution to the Reduction of Leakages in the Territory

The implementation of the selected activities will contribute even more to the reduction of greenhouse gas emissions and will reduce the possibility that they will move to areas without intervention. This is because they are activities that increase the standard of living of people in the territory, seek an articulation with markets and are inserted in a logic of integrated management of territory (IRE, 2017).



### Participation of ejidos and communities: property and social use

The activities implemented in forests shall respond to the needs and they shall be implemented by the owners, users and usufructuaries of the forest resources in order to have the expected impacts.



### Generation of key ecosystem services

Forests are the source of many ecosystem benefits. The selected activities contribute to the increase and maintenance of various ecosystem goods and services:

- Supply services such as food, medicine, energy sources and construction materials, non-timber forest resources.
- Regulatory services such as erosion control, improvement in water quality, reduction of landslides and flood regulation, temperature regulation or carbon capture.
- Cultural services related to spiritual and educational values, which are also a cultural capital that attracts tourism.
- Support services for primary production through basic functions such as soil formation and pollination (Monarrez-Gonzalez, et.al. 2018).



### Cultural heritage

Many of the non-timber resources are part of the diet of rural families or they are associated to important religious and civil festivities for the community as embellishment elements and they are part of one of a particular ritual, they are also used in the day-to-day activities in both the home (brooms, washing, kitchenware), and the field (tool handles, sacks) (FAO, 2001).

The states selected eight activities that add value to the forest, strengthen the ecosystem services and have a root in the culture of the communities and towns in their jurisdictions:



Apiculture



Cocoa



Shade-grown  
Coffee



Ecotourism



Timber  
Forest  
Management



Non-Timber  
Forest  
Management



Milpa



Environmental  
Management  
Units

These activities add value to the forest because they generate sources of employment and income through the implementation of alternative livelihoods respecting their knowledge and traditions. In addition, they are a source of medicinal goods; they strengthen food security and fuel generation; they allow the strengthening of the social fabric, culture and recreation. In doing so, they allow the empowerment of communities by improving their quality of life, reducing the pressure to migrate from rural areas, and strengthening the social and community fabric.

The beauty of these systems is that they depend on and are closely linked to the sustainable management of natural resources. Its implementation depends on the existence of key ecosystem services such as the quality of soils, water and air; the maintenance and development of wildlife habitat, and biological diversity. At the same time, these activities also contribute to its conservation.



## 05

**Productive activities that add value to the forest  
with a community management approach in  
GCF Task Force States**

# Apiculture

Apiculture is a perfect symbiosis with nature. It rests on natural resources that we take for granted: It depends on freely available bees, on the existence of water, flowering vegetation and the shelter of trees for habitat. Through pollination, beekeeping guarantees the continuity of plants and food for future generations of bees and for us as human beings.



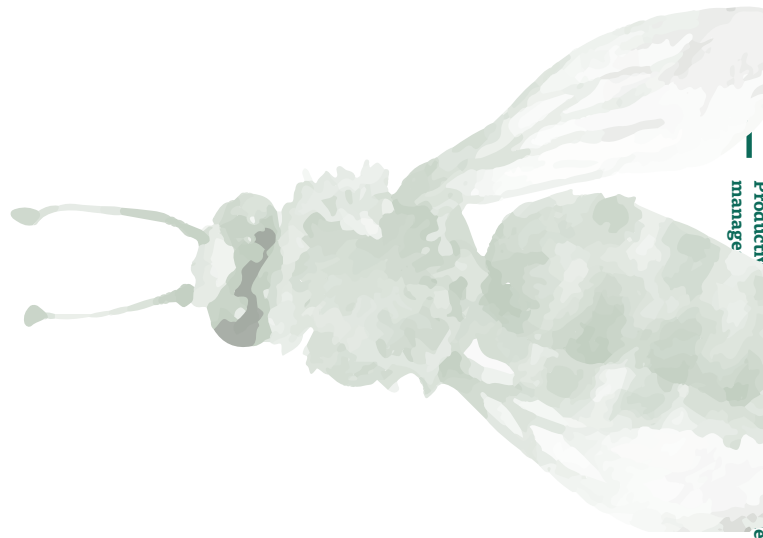
Despite the fact that agriculture and biodiversity are closely linked to pollinators such as bees, unfortunately their abundance, diversity and health face serious threats: loss of habitat, intensive agricultural management, use of pesticides, environmental pollution, invasive alien species, pests and diseases (FAO, 2016). In addition, as it depends heavily on climatic variations, beekeeping is very sensitive to the impacts of climate change.

Throughout the world, at all times, beekeeping has been part of the agriculture of peoples and communities. In Mexico, it is of great economic and social importance, since more than 43 thousand beekeepers depend directly on it. 95% are low-income peasants, most of them indigenous people with limited technology (Martinez-Perez de Ayala et al., 2017). Honey production is a secondary activity for most producers and, therefore, a support network to strengthen their income and nutrition. Beekeeping is undoubtedly a means to strengthen the life and development system of people in rural areas, and to ensure the continuity of habitat and biological diversity (Bradbear, 2005).

## I. CHARACTERISTICS

Of the nine families of bee species, six are present in Mexico. Beekeeping in Mexico dates back to pre-Hispanic times, when different cultures such as the Maya, the Tarasca, Lacandona, Olmeca and Popoluca cultivated native bees without sting, for food, medicine and religious purposes. (Echazarreta Gonzalez et al., 2002). Native bees species, of the genus *Melipona*, are characteristic of the tropics and they live in the coastal areas from Yucatan to the center of Tamaulipas, and from Chiapas to southern Sonora. Their home is the jungle, the acahuales, the mangroves, the chaparral and the cultivated areas (Valadez Azua et al., 2004); although currently the *Apis mellifera* is the best known for its production characteristics (INEGI-SADER, 2020). It was introduced in Mexico between 1760 and 1770 (Calkins, 1975).

Beekeeping is a tremendously flexible activity, as it can be developed in arid areas or terrain where other crops are not feasible. For this reason, it occurs in marginal conditions and contributes to making people less vulnerable to poverty (Bradbear, 2005).



## II. SUSTAINABLE PRACTICES

Products such as honey and pollen or royal jelly are obtained directly from beekeeping. Increasingly, agricultural producers value and require the service of hives for the pollination of intensive crops such as melon, strawberry, blackberry and blueberry. Hives are mobilized from producing states to other states with pollinator deficiencies, mainly due to the indiscriminate use of insecticides and herbicides and the reduction of habitat for bees.

Some sustainable practices are: i) traceability systems in the quality, care and safety of the production units; ii) restriction of the use of agrochemicals in production and pollination areas; iii) biological control of pests and diseases. The conservation and restoration of native flower vegetation is essential to maintain ecosystems and their environmental services. In all these practices, traditional culture plays an important role and can benefit from the adoption of technical innovations.

Good practices of forest management and production, friendly with pollinators are an opportunity to increase productivity as well as the long-term viability and profitability of food production systems. The wider use of pollinators in agriculture could be a transformative agent to promote sustainable practices and holistic farming systems (FAO, 2018).





### III. Economic and social relevance

Mexico is the eighth producer of honey worldwide and the third exporter<sup>4</sup>. The 43 thousand beekeepers and their more than 2 million hives are registered in 508 livestock associations specialized in beekeeping (INEGI-SADER, 2020). This organizational seed is a wealth of social capital when beekeepers strengthen processes of productive integration and trust.

Only some medium-sized beekeepers and entrepreneurs integrated into value chains have modern technology and keep beekeeping as their main economic activity (Martinez-Perez de Ayala et al., 2017). However, honey production has a social and economic relevance for rural families. A hive produces food and income for a family; if well managed, it can produce more than 30 kilograms of honey per year and other by-products such as wax, which can be marketed. In addition, bees have the enormous advantage that they can produce where they have food.

Beekeeping is related to cultural wealth, traditional

knowledge and the sustainable use of biodiversity. For example, indigenous peoples and local communities continue to produce Melipona honey, applying knowledge passed down from generation to generation. These stingless bees pollinate crops and wild fruits and most produce honey that is used for medical purposes. (FAO, 2018).

## México: 8th

Honey producer worldwide

## 43 thousand

With more than 2 million hives

## 508

Livestock associations specialized in apiculture

<sup>4</sup> With a total production of 61.9 thousand tons in 2019 and 34 thousand tons per year for export, which generates an average annual income of 124 million dollars. If we compare it with the foreign exchange generated by the avocado, the main agricultural crop with the highest sales abroad, beekeeping represents 5% without counting the enormous ecosystem benefits with a difficult value to quantify (INEGI-SADER, 2020); Forbes Mexico, 2020).

<sup>5</sup> Mexico registers 2,172,107 hives (SIAP, 2020).



## IV. Relationship with the conservation of forests and biodiversity

Pollinators are a fundamental part of the integrity of ecosystems and their maintenance. They are an important link between agriculture, forestry, biological diversity and food security. In the case of bees, the loss of biodiversity that would ensue if they disappeared would mean an environmental catastrophe. In a single day, a bee visits thousands of flowers of the same species, collecting nectar and pollen and spreading pollen over all the flowers it visits (INEGI, SADER, 2020). Despite being difficult to measure, the value of pollination would undoubtedly be the greatest of all the contributions of beekeeping (FAO, 2016; FAO, 2018).

Beekeeping complements other activities associated with the conservation of forests; for example, timber forest management, agroforestry systems, sustainable agriculture, and conservation activities.

## V. Importance in GCF Task Force States

In 2019, 70% of the production was concentrated in eight states among those Yucatan, Campeche, Jalisco, Chiapas, Veracruz, Oaxaca and Quintana Roo stood out (SIAP 2020). Clearly, beekeeping represents a huge opportunity for GCF Task Force member.<sup>7</sup>



**70%**

Of the production is concentrated in 8 states

## VI. Market Opportunities

Mexico has an opportunity in the differentiation of type of honey by their region, flowering, beneficial properties for health and the relation with the culture and sustainable management. Small producers in Mexico sell it in bulk, unsorted and without stamps or labels. So, their quality is not recognized and they are vulnerable to market volatility and unfair competition from adulterated honey.

Differentiation in the market contributes to the rescue of native bees and the conservation of biodiversity; it also opens up a market opportunity. An example is the melipona honey from the tropics with its antioxidant properties or the mangrove honey (Cauch Kumul et al., 2015).

Another opportunity is in the added value and use of by-products of the hive such as pollen, propolis, the wax or the royal jelly, which have proven healing and antioxidant properties (InfoRural, 2020)<sup>8</sup>.

<sup>7</sup> Yucatan produced nine thousand and 810 tons; Campeche seven thousand 520; Jalisco five thousand 948; Chiapas five thousands 500; Veracruz four thousand 798 tons; Oaxaca four thousand 668; Quintana Roo three thousand 255 (SIAP 2020).

<sup>8</sup> In regulatory terms, the Official Mexican Standard NOM-004-SAG / GAN-2018: Honey production and specifications (SADER, 2020) sets the guidelines for having clear quality standards, which allow promoting internal production and positioning the country in the international market (UNAM- DGCS, 2020)



## Apiculture- Illustrative case

# Apiflor

Biological corridors Selva Maya Zoque and Sierra Madre from the South of Chiapas.



## Participating parties and institutions

Productores Apícolas de Chiapas S.A. de C.V. (PROADECH, for its acronym in Spanish) is an inclusive company that provides specialized services to members. It is integrated by 5 groups of producers that add 290 beekeepers; 70% belong to the Chol and Tzotzil ethnic groups.

## Description

The producer groups carry out the production of honey under friendly practices in the productive spaces of the Mesoamerican biological corridor. In this way, they contribute to the conservation and protection of the biodiversity of Chiapas and to stop deforestation through the production of quality differentiated honey. Its main lines of action are the botanical differentiation of honey, production of pollen and propolis; establishment of queen bee farms; training to increase production and reduce costs; diversification of hive products; conservation and sustainable use of biodiversity.

## Results

- Diversification of honey according to its flowering and the ecosystem: Campanita, mangrove, coffee plantation under shade, cinnamon, organic, melipona
- Differentiated markets.
- Friendly honey with biodiversity certificates.



## Its relationship with the conservation and sustainable management of forests

Beekeeping is of great ecological relevance due to the work carried out by bees as pollinating agents, which contributes to the maintenance of biodiversity and, therefore, of ecosystems, as well as the production of crops that require its participation. It contributes to the creation of jobs in rural areas and to the generation of foreign exchange in the country, since Mexico is the third largest exporter in the world. The diversification of bee products represents higher income for beekeepers and thus a better standard of living. By increasing the productivity of the system, the non-adoption of more intensive forms of land use is encouraged.



## Investment opportunities and partnerships

The project was developed in collaboration with the National Commission for the Knowledge and Use of Biodiversity (CONABIO, for its acronym in Spanish) resources from the GEF and the World Bank, the Mexican Civil Council for the Sustainable Forestry, UNAM stores and Social Promotion Banamex who supported with a marketing mechanism. The producers continue to specialize and work to diversify their products and to reach other markets.

Currently, they are probably already subject of credits from the National Development Bank and can access other financial instruments coming from impact investing.

### CONTACT

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# Apicultural Production of Santa Elena

Ejido Santa Elena, Santa Elena, Yucatán



## Participating parties and institutions

- Secretary of Sustainable Development (SDS, for its acronym in Spanish), Secretary of Rural Development (SEDER, for its acronym in Spanish) and the Forestry National Commission - State contribution.
- Ejido Intermunicipal Biocultural Board of Puuc (JIBIOPUUC, for its acronym in Spanish) Decentralized Public Organization - as link between government institutions and the ejido.
- Santa Elena Ejido.

## Description

The Santa Elena Ejido has taken care of its forests for more than 10 consecutive years and has received payment for Environmental Services (PSA, for its acronym in Spanish) from the National Forestry Commission (CONAFOR, for its acronym in Spanish) since 2007. It is made up of 211 ejidatarios and represents almost 60% of the total municipal area. The main activity is corn planting and beekeeping, but they lack training in the use of new tools and sustainable practices. There is low social participation and conflicts between internal groups in addition to migration, land abandonment and speculation by the tourism sector.

The project and mission of the JIBIOPUUC is to generate social cohesion and sustainable strategies with a landscape vision. The project aims to strengthen the capacities in the production and transformation of honey and its by-products, through the design of short marketing chains and derived products. The lines of work include a queen bee farm, wildlife monitoring, and fire management, inclusion of women, organizational training and business plan development.



## Investment opportunities and alliances

Allies that allow strengthening the capacities of the communities, to expand sustainable productive activities and care for the forest. The JIBIOPUUC promotes the beekeeping of Apis and Melipona honey at the Mocontun ejido, in the municipality of Tekax, which is also part of JIBIOPUUC. ejido Mocontún, en el municipio de Tekax, el cual también forma parte de la JIBIOPUUC.

## Results

- Link between two state secretariats and one federal government to fund the development of sustainable rural and environmental conservation activities.
- Agreement for the installation of an ejidal queen bee farm as a supplier to the State Government.
- Agreement for the conservation of 500 hectares of lowland forest.
- Fauna monitoring, with special attention to jaguar and its biodiversity chain.
- Integration of ecotechnologies for rainwater capture and supply for fauna and beekeeping.
- Integration to the National Institute of Anthropology and History (INAH, for its acronym in Spanish) project; low impact tourism promotion in archaeological zones.
- The ejido has proposed to become ADVC for the next few years and continue conserving its forest.



## Its relationship with the conservation and sustainable management of forests.

Beekeeping contributes to the maintenance of the biodiversity and ecosystems. Through a comprehensive management approach to the forest, aspects of biological monitoring, habitat conservation and community development are integrated, to promote the care of resources, social participation and cultural rescue. The JIBIOPUUC is a governance instrument that allows a better articulation of efforts in the territory to promote sustainable production and conservation of the forest.

### CONTACT

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# Selva Tropical Honey – Organic Apiculture

Ejido Nuevo Becal, Calakmul, Campeche



## Participating parties and institutions

- o Rural Production Society “Floracion de la Naturaleza Maya de RL de CV”. Group of 8 partners.
- o Reforestamos Mexico A.C.

## Description

Ejido Nuevo Becal is one of the communities with the largest land provisions in the Calakmul region. Of its 52,800 hectares, 25 thousand are permanent forest area and, from those, 12 thousand are used for apiculture. The relationship with Reforestamos Mexico AC was originated to overcome the challenges of rural entrepreneurship and to generate greater incentives of forest conservation. They agreed to work together on the empowerment through entrepreneurship, focusing on:

- Schemes for the sustainable use of its resources;
- Development of value-added products in already established markets;
- Measures to detonate skills in rural entrepreneurship;
- Establishing agreements and plans to recognize changes and advances in entrepreneurship.

## Main results

- o 2014: Financial skills strengthen and credit access to double their production.
- o 2015: Definition of clear associativity rules; the constitution of a Rural Production society. Trademark registration of “Miel Selva Tropical” and packed product with profits 5 times greater than in bulk.
- o 2017: Approval of the program “Small Producer” and the safety and hygiene audit to become Walmart Mexico providers.
- o 2018. Obtained the organic certification of their apiaries, and of the processing and commercialization of packaged honey, by Mexican Certifier of Ecological Products and Processes (CERTIMEX, for its acronym in Spanish) for Mexico and Europe.

- o 2019. Development of the project to build an organic honey packaging center for a more efficient production and standardization of processes, according to the requirements of the market.



## Its relationship with the conservation and sustainable management of forests

Nuevo Becal has been consolidating in a model of integral forest harnessing, with an articulation and optimization of timber and non-timber value chains, including apiculture, among others. This has generated economic benefits and a strong interest in protecting forests. Apiculture allows the regeneration of the forest, making it more biodiverse. Through organic activity and good practices, it influences to eliminate the use of pesticides and agrochemicals that degrade soils and contaminate honey. In addition, it promotes the restoration with local honey species since the apiarists give greater value to the standing trees in order to carry out his activity.



## Investment opportunities and alliances

- o Greater inclusion of women and youth in apiculture.
- o Regional transition from conventional to organic apiculture and strengthening the local economy through its commercialization.
- o To promote the culture of rural entrepreneurship. To have adequate infrastructures to consolidate rural enterprises.

## CONTACT

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## 05

### Productive activities that add value to the forest with a community management approach in GCF Task Force States

# Cocoa

Currently, conventional and organic cocoa cultivations have wide opportunities for Mexico, which can be exploited in benefit of the producers. First, cocoa grows in integration with the vegetation of the tropical forests and, to that extent, it is a great ally for their conservation. The production system associated with shade trees favors the capture of CO<sub>2</sub> and harbors high levels of biodiversity, which is why they can benefit from payment for environmental services incentives. An important competitive advantage for Mexican cocoa is the production of fine flavored cocoa, resulting from the white beans present in *Creole cocoa* (Arrazate Avendaño et al. 2011).



Cocoa has been part of the culture of Mesoamerica for more than 3,000 years (OIRSA, 2016), with Mexico being a center of domestication. The Mayans used it as medicine, currency and food; the bond to its cultural, social and economic activities influenced the diffusion of its harnessing in the region. It is interesting that in ancient times it was only consumed as a highly nutritious and energetic drink (CONABIO 2020). The Spaniards conquerors found it under cultivation by the indigenous Mexicans and, through trade, it is now cultivated in the humid regions of the world.



## The harnessing of Agroforestry Systems

where the use of local resources is optimized

### I. CHARACTERISTICS

It is a tropical plant of warm and humid weather, from the same family as hibiscus and vanilla (SDET, 2017).<sup>9</sup> Cocoa is used mainly to produce chocolate, either as confectionery products or beverages. Cocoa butter or its natural fat is used in the manufacturing of medicines, cosmetics, pharmaceuticals and soaps, among other uses.

In Mexico, 61% of cocoa plantations are older than 20 years, with a great diversity of varieties and shade-grown with different trees.<sup>10</sup> For these reasons, it is a crop that coexists within biodiverse systems and provides important ecosystems services for the well-being of the communities.

The small and medium producers who are in charge of producing Mexico's cocoa: 90% of the plantations do not exceed 5 hectares (Arrazate Avendaño et al. 2011). They do so under agroforestry systems (SAF, for its acronym in Spanish) where the use of local resources and components of production is optimized, through ecological agriculture (Vega-Jarquín 2018).

### II. SUSTAINABLE PRACTICES

For the conservation of forests, the increase of productivity and a greater economic and social resilience, the diversification of native species such as timber, fruit or ornamental trees is recommended, accessing the multi-functionality of the system. The diversity of shade trees provides a better variety of litter, for the soil, the basis of nutrition of the ecosystem and the crop.

Soil management is one of the pillars. This is achieved with vegetative covers that help to avoid erosion, minimum ploughing, and the management of contour lines for hillside planting, and biological control of pests and diseases. To maintain crop productivity, it is necessary to replace diseased or unproductive trees, as well as pruning. It is important to develop capacities for the rescue and conservation of the genetic diversity of cocoa, and the recovery of traditional knowledge as part of the local culture.

<sup>9</sup> There are 22 cocoa species known, the most commercial ones are the creole, the foreigner and the Trinitario.

<sup>10</sup> The Calabacillo, Criollo and Guayaquil cocoa stand out; Common shade trees are the bunting (*Erythrina* sp.), yaite or moharnessing-killer (*Gliricidia sepium*), guachipilín (*Diphysa americana* Mill), crotalaria (*Crotalaria vitellina*) and saman (*Pithecollobium* sp.).



### III. Economic and social relevance

Cocoa is a generator of income derived from exports and from employment in rural areas. The effort of small farmers generates between 80 to 90% of the world production and, in Mexico, most of these producers are over 60 years old (InfoRural 2020). In 2018, Mexico was the 14th producer worldwide<sup>11</sup> a huge growth potential because it requires around 120 thousand tons just to cover the domestic demand.

From 2013 to 2016 more than 180 cocoa producer groups have been organized within the social economy to maintain their crops, rehabilitate their plots, to increase their production or to insert themselves in other chains within the value chain, generating benefits for more than 7 thousand people (National Institute of Social Economy 2017).

When comparing cocoa agroforestry systems with monocultures, although the returns are lower, the income

derived from agroforestry by-products, such as tropical fruit trees, timber and non-timber, financially compensate for this difference, in addition to that the performance of labor over the years is approximately the double (Armengot et al. 2016).

## Mexico:14th

Cocoa worldwide producer in 2018

## +180

Groups of cocoa producers have been organized within the social economy

## +7 thousand

People benefited

<sup>11</sup> With a contribution of 0.54% and 28 thousand tons (FAOSTAT, 2019) and involving 45 thousand producers.





## IV. Relationship with the conservation of forests and biodiversity

Cocoa cultivation systems can be true productive forests, with similar functioning and structure as the forest, without diminishing its potential production. They allow the recovery of habitats, the restoration of ecosystems, the protection of endangered species and the connection between native forests. The threatened species of fauna and native flora, some of them in danger of extinction, will find in cocoa a refuge for their development.

Other ecosystem services are a greater pollination success, a natural pest and weed control, an increased nitrogen contribution by legume shade trees and a more efficient nutrient and water cycle. In general, it is a system that increases the resilience capacity to the adverse effects of climate change (Vega-Jarquín 2018; Abou Rajab et al. 2016). In addition, the protection of water sources, soils and other ecosystems associated to cultivation guarantees the long-term sustainability of resources (Larrea 2008).

## V. Importance in GCF Task Force States

Tabasco and Chiapas, member states of the GCF Task Force, are the most important regions in the cultivation of cocoa in Mexico<sup>12</sup>. The production of cocoa in Tabasco has a great economic impact, being the fourth production chain regarding the value of production in the State and third in number of producers (SDET 2017).

Other producing states are Guerrero, Oaxaca and Veracruz<sup>13</sup>.

## VI. Market Opportunities

To benefit from the competitive advantage of the fine Mexican cocoa with aroma, it is necessary to give value to local knowledge for the production and processing, as well as how to position Mexican chocolate in the taste of the consumers. Even though Mexican cocoa has won several awards in recent years, there is very little promotion and lack of incentives to maintain the activity.

Agro-tourism is a complementary alternative. For example, the agro-tourism in La Chontalpa, territory of the Chontal Maya in eastern Tabasco, has had a special boom and has become the main source of income from several cocoa farms (SDET 2017).

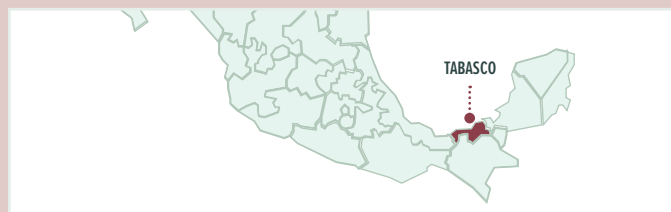


<sup>12</sup> Tabasco represents 67% of the planted area and 64.4% of the National Production; Chiapas 30.9% and 34.6% respectively (SIAP, 2020). Tabasco has approximately 22,000 producers.

<sup>13</sup> Nationwide in 2019, 59,555 hectares were planted with a production of 28,473 tons and a return of 0.486 tons per hectare (SIAP, 2020).

# Cocoa Ambassadors

Comalcalco, Tabasco



## Participating parties and institutions

Cooperative Society of Women (producers and marketers)

### Description

The main objective of the project has been the increase and improvement of artisanal production of cocoa to enhance the well-being of the women that constitute the cooperative, through the rescue and diffusion of the culture and traditions in artisan production of cocoa and chocolate. The group wishes to safeguard a Mexican tradition committed to the whole community from Tabasco. Currently, there are 60 cocoa producer families integrated into this project, which not only includes children, older adults and young people, but also seeks to get people with different abilities involved.



### Its relationship with conservation and sustainable management of forests

Cocoa projects that are promoted by the Cacao Ambassadors encourage positive environmental, social and economic impacts. In one side, they allow the increase in coverage and forestry diversity, the increment in the contribution of nutrients to the soil, the conservation of water sources, and fauna. In addition, they generate income for the family financial support, and contribute to the empowerment of women as part of the economically active force, contributing to the gender equality in the region.

## Main results

- The Improvement of artisanal production of cocoa and the dissemination of cocoa as an agroforestry product.
- Higher quality products that can be exported to other countries.
- Empowerment of women, through incentives to generate entrepreneurship.
- Improvement in the income of those who participate in the cooperative.



### Investment opportunities and alliances

So far, the project has been developed with the group own resources. The political instances for rural production have supported them in promoting their products at fairs and events. The project could be subject to impact investment, development bank loans and alliances to access to markets.

## CONTACT

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## 05

**Productive activities that add value to the forest  
with a community management approach in  
GCF Task Force States**

# Coffee

Mexico is one of the countries with the highest percentage of shade-grown coffee areas, which gives enormous potential for the conservation of natural resources and mitigation of climate change. The coffee growing areas coincide with the forests with highest biodiversity in the country. In addition, it is a market advantage since shade-grown coffee allows to obtain a higher quality.

By having cooler temperatures, the ripening process is slower and highlights the specific attributes and flavors that denote high quality in the cup.



Under the global trend of conversion in exposed plantations to the sun, it is expected that the segment of shade-grown coffee decreases considerably in the world. Mexico has an invaluable market advantage over other producing regions, in addition to a great opportunity to take advantage of its natural capital through sustainable systems like coffee under shade.



In Mexico, shade-grown coffee represents more than

**90%**

## I. CHARACTERISTICS

Since its origin, coffee has been an under-shade plant; emerged as a shrub that grows so wild under the rain forests in the highlands of what is today Ethiopia. In Mexico, coffee under shade represents more than 90%.

Coffee production in agroforestry systems has two great advantages over systems in full sun. First, they are economically and socially more resilient, producers obtain wood, food and medicinal species that complement their well-being (Avelino et al. 1999; Montagnini et al. 2015; Roupsard et al. 2017).

In addition, they are systems capable of capturing higher percentages of carbon, by containing more biomass; they show fewer weeds and pests; they are capable of generating a more resilient microclimate and with a more balanced water cycle.

The second advantage is the possibility of obtaining higher quality in cup (Muschler 2004; Vaast et al, 2006; DaMatta et al. 2007). The systems in full sun or under little shade, adopted by the great producing countries like Brazil, Vietnam, Indonesia and Colombia, are highly productive as monocultures and require intensive management generally based on agrochemicals and with improved varieties that achieve very high returns. However, they offer an inferior quality and limited provision of key ecosystem services.

## II. SUSTAINABLE PRACTICES

Shade tree diversification as well as the arrangement and management of the strata in the agroforestry system is important for both biodiversity and natural resources as well as for quality and productivity. It is recommended to privilege and combine native species.

The agroforestry system is very beneficial to avoid erosion and health in soils, for example, using cover plants or live barriers for steep slopes. The renewal of coffee plantations has been a challenge for producers due to low prices that inhibit investment in their farms, but it is vitally important to consider renovating plants in the system (trees and coffee trees) and to consider nurseries.

The management of pests, weeds and diseases can be done with low impact environmental practices, as well as the disposal and management of waste. The rational harnessing of water can also be considered during fermentation processes and washing the coffee. Finally, the traceability system is one of the great opportunities for shade-grown coffee and of special quality in Mexico, as it allows the producer to have information to take better decisions, to have better access to differentiated markets and transparency for the final consumer.



### III. Economic and social relevance

Mexico is the ninth largest coffee producer in the world; this activity directly and indirectly connects almost 3 million people and it is practiced by just over 500 thousand producers in Mexico (CEDRSSA, 2018). Most coffee growers are very small: 64% have surfaces smaller than one hectare and only 2.6% have surfaces greater than 5 hectares (AMECAFE 2012; Moguel & Toledo 1996).

Coffee activity is affected by the instability and fluctuations in international prices. The producers are the most vulnerable; in high areas of marginalization, more than 70% of their income depends on the coffee activity (Sagarpa et al 2011). The production of coffee represents a challenge as an income alternative. To the average prices on the New York Stock Exchange, producer families do not cover their costs and they leave the activity in favor of other land uses<sup>14</sup>. Due to market distortions and the configuration of the production chain, a considerable gap prevails between the price paid by the consumer and what the producers receive.

It is possible that the initial investment to improve practices on the farm is a challenge for small producers (R. de Adelhart 2017). However, appropriate financial schemes will play an important role, as well as the alliances to generate market channels that value the differentiation of the quality and sustainability of Mexican coffee.

## Mexico: 9th

Coffee producer worldwide

## +3 million

people are directly and indirectly involved

## 70%

of the income of producers in marginalized areas depends on the coffee activity

<sup>14</sup> The Average Rural Price (PMR) for cherry coffee in Mexico has oscillated between 2010 and 2016 between \$ 4.30 and \$ 6.47 pesos, varying according to the price of the contract "C" on the New York Stock Exchange (SIAP).



## IV. Relationship with the conservation of forests and biodiversity

The coffee growing areas coincide with the richest and most diverse regions in flora and fauna of Mexico: 99% of the coffee plantations are found in areas with rainforest, pine and oak forests, or mountain forests (Moguel & Toledo 1996). Under the global trend of conversion to sun plantations, the current percentage of shade-grown coffee (34% of world production) is expected to decrease in the absence of climate-smart strategies.

Mexico has an invaluable advantage over other regions of Central and South America, which have convey to monocultures and have lost ecosystems, natural wealth and the quality of coffee under shade.

Compared to coffee plantations in full sun, under shade farms reduce the erosion and have richer soils. They sequester more carbon, at levels that compensate greenhouse effect gas emissions, something that does not happen with systems in full sun which emit more than they capture (Roupsard et al. 2017).

## V. Importance in GCF Task Force States

Chiapas is the main national producer. 40% of the production comes from Chiapas and 61% of its producers are indigenous. More than a million Chiapanecans are dedicated and benefited from the coffee production chain (INCAFECH 2019).

Oaxaca is the fourth largest producer nationwide; its more than 70 thousand producers generate an income of more than 314 million pesos<sup>15</sup>. The variety of coffee Pluma Hidalgo is recognized, which obtained the Denomination of Origin "PLUMA" for coffee in 2020 (Secretary of the Economy 2020).

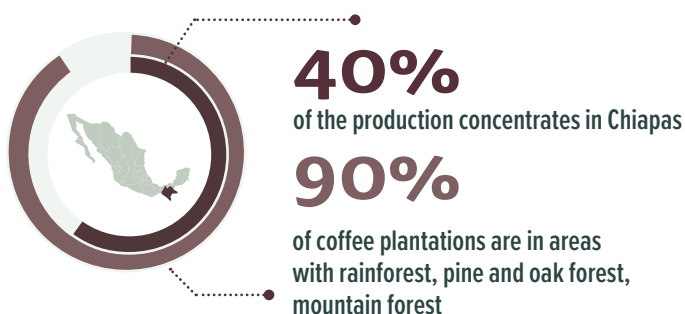
Although Jalisco does not stand out for the volume produced, it is relevant for the conservation of the forests associated to the cultivation and the interest of positioning the coffee region as a tourist reference. In addition, there are the conditions for the production of specialty coffee in Jalisco.<sup>16</sup>

## VI. Market Opportunities

Specialty coffee with designation of origin<sup>17</sup> can reach prices 50% higher than conventional coffee (Roberts & Trewick 2018). Chiapas has a designation of origin for its excellent quality. On the other hand, organic coffee, fair trade and specialty coffee are within the market for differentiated coffees; the first for having ecological characteristics where it is grown, the second for the social impact and the third for the physical characteristics of the grain and sensory effects when drinking (Läderach et al. 2006). It is very common that the specialty coffee often combines the other two dimensions.

Coffee consumers show great interest in the environmental protection of shade-grown coffee and its quality: the smoothest, sweetest and most aromatic Arabica coffee.

Without a doubt, this is a differentiation opportunity for mexican coffee (Daviron & Ponte 2005; Sanders, 2017; Roberts & Trewick 2018). An important task is to explore different market channels, more direct and associated to specialty or gourmet and sustainable coffee.



<sup>15</sup> Oaxaca produces 66 thousand tons per year in an area of 139 thousand 674 hectares (Government of the State of Oaxaca 2019)

<sup>16</sup> In regulatory terms, the Official Mexican Standard NOM-004-SAG GAN-2018: Honey production and specifications (SADER, 2020) sets the guidelines for having clear quality standards, which allow promoting production and positioning the country in the international market (UNAMDGCS, 2020).

<sup>17</sup> Designation of origin are geographical regions that designate the product characteristics exclusively to its geography



# Tzeltal Tzotzil SCL Production Cooperative

High Lands of Chiapas Region (municipalities Pantelho, Chenalho, San Juan Cancuc, Chalchihuitan)



## Participating parties and institutions

- Impacto Consultores A.C.: Promoters of the participation of women through artisan textiles.
- Mharnessingo Cafe A.C.: Space for the promotion of organic and fair-trade products.
- SADER. State Committee Coffee Product System: Project to improve wet mills with the acquisition of coffee pulper machines.
- Universities: Link with students of similar careers for mutual strengthening and learning

## Description

The Production Cooperative Tzeltal Tzotzil SCL has the purpose of improving the life conditions of its 311 partners and their families, who are dedicated to the production of organic coffee, organic honey and the cultural preservation, through three groups of textiles embroiderers women. With organic production practices for honey and coffee it seeks to maintain the existing biodiversity in the High Lands Region; the Fair Trade seal guarantees a social and cultural impact, in a region whose main characteristic is the existence of indigenous population.



## Its relationship with conservation and sustainable management of forests

The work of the cooperative has as pillars the conservation of the environment through organic and agro-ecological practices for the production of coffee and honey; the social impact through the compliance with the principles of fair-trade systems and, finally, the preservation of the cultural heritage of native peoples.



## Investment opportunities and partnerships

The Cooperative maintains objectives where alliances can be established:

- The establishment of a textile development center that allows the participation of women.
- A study of the potential of melliferous plants for Apiculture, as well as the identification of possible plants that increase the presence of alkaloids in honey, which damage the quality of the honey.
- A reforestation program with fruit and timber trees, as an action to mitigate climate change and benefits for Apiculture.
- Food safety program.

## Results

Up to 2020 the Cooperative keeps the organic certification for both coffee and honey (550 hectares of coffee and 3,600 certified hives), which enables the commercialization in the European, American and National markets. The Cooperative promoted also the brand Kotantik to be competitive in the national market. In the last 5 years, a nursery was established for the production of 150 thousand coffee plants within the coffee plantation renovation program and a program to increase honey production through the establishment of new apiaries, in collaboration with coffee producers as part of productive diversification.

## CONTACT

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# Anonimo Coffee

Coffee-producing areas of Chiapas, Oaxaca, Jalisco and other states



## Participating parties and institutions

- o Anonimo Coffee: Coordinators of the initiative under the e-commerce model
- o Coffee-producing families
- o Grader Q Tasters: Quality Certifiers
- o Dry Benefit: Classification and selection of Coffee
- o Coffee Roaster: Coffee roasting
- o Otro Mexico: Digital marketing

## Description

The project is focused on revaluing coffee quality produced by secluded rural families, living in areas of enormous biodiversity and that have difficulties to differentiate their product.

Anonimo Coffee is an online sales model (e-commerce) and a direct sale from the producer to the final consumer, based on three axes:

1. **Cup quality.** Anonimo Coffee buys coffee from regions with high quality and with the profiles of those microclimates. It is associated with professional tasters and roasters. All types of coffee have a score and tab that expresses its characteristics.
2. **Sustainability.** They buy only shade-grown coffee. Through agroforestry systems it seeks to preserve forests and key ecosystem services.
3. **Return to Origin.** The commitment is to give greater value to producers to encourage their activity. It pays over the price of organic coffee + fair trade.

## Results

- o Higher price for families that produce coffee, double price is returned from the average conventional price.
- o Direct sales channel between consumers and producers.
- o Consumers pay a lower price than other alternatives on the market, receiving a certified quality, freshness, convenience opportunity to contribute to maintain biodiversity and improve the standard of living of coffee families.



## Its relationship with conservation and sustainable management of forests

By giving greater value to their product and a better payment thanks to the direct online sales channel, producers have incentives to maintain their activity with the benefits of shade-grown coffee: a) high quality product for differentiated markets; b) provision of environmental key services and forest conservation; c) promotion of social welfare of marginalized rural families.



## Investment opportunities and Alliances

Alliances to strengthen marketing strategies, the generation of capacities with producers and the strengthening of supply chains to achieve scale.

## CONTACT

<http://anonimocafe.com/>

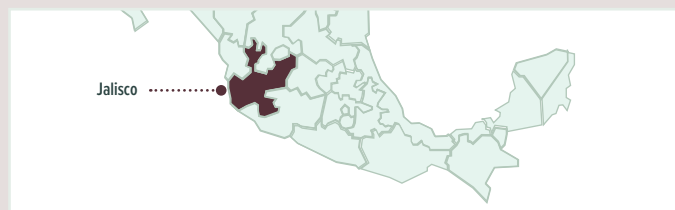
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## Coffee- Illustrative Case

# Roasting and strengthening business capabilities in shade-grown coffee

Ejido Concepción del Bramador, Jalisco



## Participating parties and institutions

- Ejidatarios of Concepcion del Bramador: coffee producers
- National Steering Committee of the Specific Dedicated Mechanism: Promoting organization and adjudicator of the project
- World Bank Rainforest Alliance - Project Financing

## Description

The Ejido faces negative impacts derived of improper management of coffee cultivation: soil impoverishment and contamination with pesticides; habitat destruction and loss of biodiversity; affectation to pollinators and the health and safety of workers; pollution from poor disposal of organic waste, and the damage to final product quality. Additionally, producers do not have practices that add value to coffee; coffee is sold almost entirely green, and they waste the sales opportunity of drawing a distinction for its quality.

To face these challenges, the project suggests adding value by toasting the coffee (coffee roasting), and the strengthening of business capacities of coffee-growing at the Ejido. The value of coffee is increased by its packaging, labeling and marketing as high quality coffee. This represents more sources of employment and economic income, at the same time that a sustainable management of forests in the community is done. The project includes lines of work in the establishment of good environmental management and production practices, added value to coffee products and social inclusion.



## Investment opportunities and alliances

The project may be strengthened through alliances for marketing and the inclusion of more producers working under good practices.

## Results

The project is under development and it expects to preserve cloud forests, high, medium and low forests, where coffee trees are integrated under the canopy of such forest masses, in an agro-ecological accommodation. The diversity of flora and wild fauna and the management based on good practices are the key to green coffee high quality harvest.

It is expected that from the implementation of the project, up to a 90% of added value to the coffee produced can be reached up, and a 30% increase in sources of employment. Also an increase in the economic income of producers and entrepreneurs of the coffee product.



## Its relationship with conservation and sustainable management of forests

By implementing good coffee plantation management practices, producers preserve forest coverage, facilitate carbon capture and the biological diversity in addition to the improvement of the soil, the health of the ecosystem and the provision of services, such as water capture and regulation of the microclimate. The project's sustainability schemes are based on the Emission Reduction policies resulting from Deforestation and Forest Degradation (REDD +), under components of conservation, sustainable management of forests with the participation of the local population and increased forest carbon stocks.

### CONTACT

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mde@ra.org



## 05

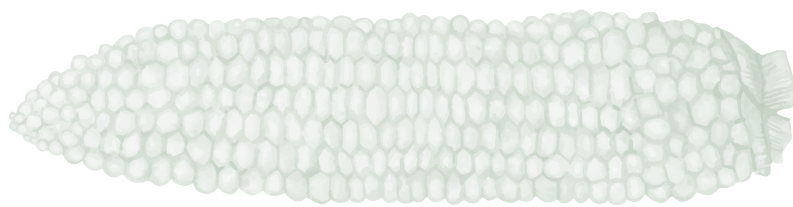
**Productive activities that add value to the  
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# Milpa and recovery of creole corn

Mexican rural and indigenous agriculture has the Milpa (cornfield) at its center as a traditional system for diversifying food production. It is a cultural element of the Mesoamerican region, which was the economic and nutritional base since before the Spanish conquest and which is still alive with practices and rituals from several centuries ago.



Associated crops interact in the milpa in an ecosystem that favors beneficial interactions such as soil fertility, pollination and the biological control of insects. The milpa is a source of cultural wealth and support for the food security of rural families in Mexico (CONABIO).



## I. CHARACTERISTICS

Mexico is considered the center of origin and genetic diversity of corn. Its cultivation and the associations with other species in the milpa, constitutes the most important crop and 35.1% of the cultivated area. The corn producers have been and are the custodians and administrators of agro-biodiversity. Through care and selection, producers of the traditional milpa have preserved the native races, the knowledge, uses and traditions and the enormous social, cultural and biological wealth that it generates (Forbes México 2020; CONANP-SEMARNAT 2016).

Unlike corn as a monoculture in the north of the country, in the south it is sown as an associated crop (Lazos & Chauvet 2012). In the milpa, corn is integrated with beans and squash, in addition of a great variety of crops such as chilies, tomatoes and quelites (edible herbs) depending to the region. The milpa varies and depends on the local environmental

conditions such as soil and weather, as well as the culture, preferences and practices of each site. Therefore, there is not a single type of milpa, but multiple ones.

The small and medium producers of white corn mostly produce seasonal sowing corn, with a return deficit (43%) below its potential. If this deficit were eliminated within the milpa, national production would increase by 9 million tons (Turrent 2008).

In recent years, the milpa system has undergone drastic changes due to the introduction of hybrid varieties of maize and the migration of the rural population to the cities. Consequently, the number of local varieties has decreased and millenary cultural knowledge is lost (Mijangos-Cortes et al., 2019).

Other problems impact production: soil degradation, effects of climate change, water scarcity, expensive inputs and lack of access to markets (MasAgro 2014).

## II. SUSTAINABLE PRACTICES

It is possible to incorporate sustainable innovative actions that help increase profits, protect the soil quality, water availability and capacity building of farmers to cope with the climate change (CIMMYT 2020). Among the practices is the rescue or diffusion of native maize<sup>18</sup>, some of which achieve returns of up to 6 tons per hectare, about double the return of the national average.

The pertinent and dosed nutrition is another essential practice, since the lands where corn is grown are one of the most eroded nationwide. The use of organic fertilizers and vegetative covers, the addition of organic materials and soil testing where possible, will help reverse pesticide contamination and reduce the incidence of pests and diseases. Also, Agro-ecological Pest Management (MAP) is a strategy to restore the balance between populations of harmful and beneficial insects. The collection and storage of rainwater, and efficient irrigation systems increase productivity and strengthen resilience to climate change. Since producers lose and see damage up to 40% of their grain, the use of silos and hermetic storage bags is fundamental.

<sup>18</sup> Through the exchange of experiences for their selection, cultivation and protection.





### III. Economic and social relevance

The milpa is an important economic contribution to rural families, but its greatest contribution is to food security through availability, access and use of food (Rodríguez Canto et al. 2016). The corn together with beans provide 75% of the caloric intake of rural families. On the other hand, the milpa generates a considerable number of jobs and allows self-employment in rural areas, discouraging youth migration to cities (Rodríguez Canto et al. 2016).

The cultural richness of corn is invaluable: it is the ingredient par excellence of Mexican multicultural cuisine, which includes more than 600 edible preparations based on native corn, including 300 types of tamales (Turrent et al 2012). In addition, the milpa is a conservation space of agrobiodiversity. Farmers watch, select and exchange seeds with their neighbors; pass and preserve the knowledge of many generations and different peoples. If that knowledge is lost, we would all lose the genes and animal species,

plants and microorganisms that allow keep producing food in conditions every time more changeable (CONABIO).

**75%**

of the caloric intake of farmers is provided by corn and beans

**+600**

edible preparations based on native corn



## IV. Relationship with the conservation of forests and biodiversity

The ancient system of the milpa has coexisted with the forest, allowing the resting of the land and the recovery of the vegetation. For many indigenous peoples, sowing cornfields comprises a broad and inclusive concept, associated to the care and respect for the management of natural resources (Sanchez Morales & Romero Arenas 2017). This diversified crop makes a rational harnessing of water, light and soil, which favors the control of insects in an ecological manner and promotes an integral and balanced diet for “milpera” families (CONANP-SEMARNAT 2016).

One of its principles is to use small portions of land, such as the Mayan rainforest, the forests in Chiapas or Oaxaca, to establish the milpa for two or three years and then allow the recovery of the natural vegetation<sup>19</sup>. However, the excessive burning and shortened rest periods lead to the degradation of the soil and forest fragmentation. The improperly managed milpa becomes an engine of significant forest degradation. Therefore, this system requires of becoming an ally of the proper management of forests, mitigating degradation and deforestation.

## V. Importance in the GCF Task Force States

In the area of influence of the GCF Task Force Member States, the milpa is a central system. For example, in the Yucatan Peninsula (Campeche, Yucatan and Quintana Roo), the majority of the Mayan speaking population represents 79% of agricultural producers, who practice the milpa as a basic function (Rodríguez Canto et al. 2016).

In Chiapas, the fourth national producer of corn, there are about 300 thousand producers of which 92% are considered traditional milperos. They are dedicated to self-consumption, the use of simple technologies and rely on ancient agricultural traditions, they are dependent on government subsidies and have little or no access to credits (Gómez 2015; SDR 2005). Both in Chiapas and Tabasco, the milpa is closely related to the coffee plantations or cocoa plantations.

## VI. Market Opportunities

Varieties of native corn are grown in the milpa with the potential to meet the specialized market demand, where their production obtains greater value and best prices; specialty corn includes those of color blue, black, red, purple; the pozolero type corn (Pozole, a corn broth with pork) and the popcorn type (Hellin & Keleman 2013). There are an increasingly number of chefs interested in knowing and innovating in the Mexican cuisine, using locally produced inputs, including the products of the milpa. Some restaurants in this spectrum are Pujol and Quintonil, both in Mexico City; Itanoni in Oaxaca; Kokono in San Cristobal de las Casas, among many others.

Chiapas is the 4th producer nationwide and

**92%**

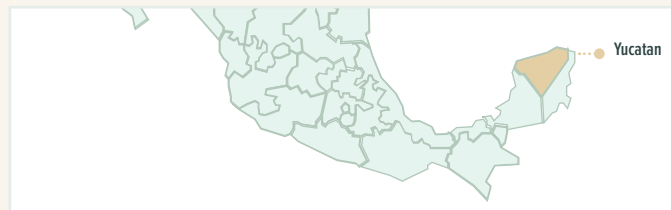
of its producers consider themselves traditional milperos (cornfield farmers)

<sup>19</sup> Among the most common production systems is the skim-topple-burn, which consists on cleaning small lots through burning and sowing later to take advantage of the fertility generated by the ashes. In other cases, the milpa harnessing machinery or animal traction to sow and, in all cases, associations, interactions and crop succession are practiced (CONANP-SEMARNAT 2016).



# Biocultural landscape transformation through strengthening of the Mayan milpa

Xkobenhaltun Community, Ejido San Agustin, Tekax, Yucatan



## Participating parties and institutions

Kaxil Kiuc A.C., International Maize and Wheat Improvement Center, (CIMMYT) and the Puuc Intermunicipal Biocultural Initiative (JIBIOPUUC, for its acronym in Spanish), as a link between governmental institutions and the Ejido.

## Description

Xkobenhaltun is a community that belongs to the Ejido of San Agustin, but without a productive bond. It is the heart of the Puuc State Biocultural Reserve, with a high threat of deforestation and invasion of hunters. Its population is small and lacks services, in addition to depending on the production of milpa for their food.

The project aims to strengthen the local capacities to raise awareness among communities on sustainable productive activities through agricultural conservation and the promotion of ecotourism activities in a community and regional rural development model, focusing on the Mayan cornfield. It particularly promotes crops in sustainable agricultural systems, of conservation or organic within the community, strengthening the organization among youth and women in vegetable production, Mayan milpa, reforestation of surrounding areas and tourism activities of low impact.

## Main results

- The project is expected to strengthen food security and the farm income, increase sustainability and productivity.

- It is expected to receive inputs to feed the Xkobenhaltun families and generate surplus for responsible markets.
- The project seeks to share knowledge with other communities and build local capacities in governance and social inclusion of women and youth.
- The long-term purpose is to improve the means of living of young producers of Xkobenhaltun, and the people who carry out sightseeing tours, valuing flora and fauna of the region.



## Its relationship with conservation and sustainable management of forests

In addition to the establishment of milpa systems that do not impact deforestation, the project contemplates the restoration of the forest landscape in the surrounding areas, start wildlife monitoring and contribute to the conservation of nearby habitat. At the level of the production system, the project contributes to reduce greenhouse gases emissions, and the reduction in the use of chemicals and the improvement in soil quality.



## Investment opportunities and alliances

Allies that allow strengthening the capacities of communities, expand productive sustainable activities and the protection of the forest.

## CONTACT

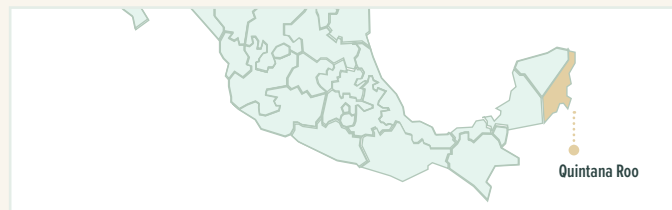
<http://jibiopuuc.org.mx/>

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## Milpa- Illustrative Case

# REPSE RAM

José María Morelos, Quintana Roo



## Participating parties and institutions

- Network of Ejidos Producers of Environmental Services Ya ax Sot' Ot' Yook'ol Kaab, A.C (REPSE RAM, for its acronym in Spanish)
- CONAFOR, CIMMYT, INCA Rural (National Institute for the Development of Capacities of the Rural Sector A.C., INCA, for its acronym in Spanish), Secretary of Agriculture and Rural Development (SAGARPA, for its acronym in Spanish), Community Forestry Companies (EMFOCO, for its acronym in Spanish), Kellogg Foundation, The Nature Conservancy, the Global Environment Facility (GEF), Small Grants Program (PPD, for its acronym in Spanish), Rainforest Alliance & World Bank, as funders and partners.
- PRODIVERSA A.C and TROPICAL RURAL, Security Systems and Equipment (SESISSA, for its acronym in Spanish), Consultants.
- Environmental Producers Network Jose Maria Morelos (40 leading producers of 10 Ejidos)
- PRODIVERSA A.C and TROPICAL RURAL, Security Systems and Equipment (SESISSA, for its acronym in Spanish), Consultants.
- Environmental Producers Network Jose Maria Morelos (40 leading producers of 10 Ejidos)

## Description

The lack of technical capacity and investment, the loss of phylogenetic resources (seeds), the family low income, and the distrust in local institutions, led to the abandonment of milpa areas and the opening of new jungle sites to establish the agriculture dependent on technological packages.

REPSE RAM has improved the productivity through the reinsertion of native maize varieties, the agro-ecological production, community nurseries and work under a network model where young people, women and producers share knowledge.

REPSE RAM was established in 2010, it is constituted by the union of 36 Mayan Ejidos (more than 3,750 ejido farmers) and they represent just under 6% of the surface in Quintana Roo. Community representatives and a technical team of young people from the communities, graduated from the Intercultural Maya University of Quintana Roo (UIMQROO, for its acronym in Spanish), govern the organization. REPSE RAM allocates great part of its territory to conservation and management forestry, and 12% to the agricultural activity.

## Main Results

- The creation of sale options for products of a short cycle, which capitalize and generate income to the producers, in agroforestry systems with an integral landscape approach.
- The purchase of more than 10,000 ramon plants, ciricote, chestnut, tangerine, sweet orange and achiote to introduce in the sustainable milpa.

- The reintroduction of 9 varieties of creole corn in the plots and a variety of plants associated, contributing to the return of agriculture biodiversity.
- Reproduction of the Maya “Pet Pach” system in the agro-forestry system.
- Restoration of degraded soils.

## Its relation with the conservation and sustainable management of forests

“We want to stop the effects of climate change and we do not pollute the environment. We work the entire process, from sowing the seeds to the harvest, to be able to satisfy all the needs in a sustainable way. We know it is hard work, but we must do it, since there are many people and companies who want to destroy nature. We promote the good living.” Miguel Kú Balam, representative of the Network of Environmental Producers of José María Morelos.

## Investment opportunities and alliances

REPSE RAM would benefit from alliances and opportunities that strengthen their activity and allow them to share their experience with other ejidos and communities. They have explored support with organizations that operate in the region of Mexico and Central America.

### CONTACT

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## 05

Productive activities that add value to the forest with a community management approach in GCF Task Force States

# Ecotourism

Ecotourism emerges as an alternative to conventional<sup>20</sup> tourism to promote the conservation of natural and cultural heritage, and encourage the sustainable development. Traveling or visiting natural areas is an experience to be appreciated by the visitor, enjoy and study the landscape, flora and wildlife, as well as cultural events. Thus, tourism promotes conservation, has a low environmental impact, respects local culture and encourages active involvement and it is socioeconomically beneficial to local populations (Ceballos-Lascurain 1996).

<sup>20</sup> The term was born in the eighties as the result of the growing acceptance of more productive sustainable practices with less negative environmental impacts (Diamantis and Ladkin, 1999).



## I. CHARACTERISTICS

In Mexico, the development of ecotourism began formally in the nineties as a cost efficient option to reversing associated problems of mass tourism; its setting has been given mainly in Natural Protected Areas (ANP, for its acronym in Spanish) from southern Mexico (Barkin and Pailles 1999).

It is the segment of tourism with the highest growth in the world and with greater potential to integrate the dimensions of sustainability (Camacho-Ruiz et al 2016). Besides its low environmental impact, it generates income for the conservation and economic profits in local communities.

Ecotourism is the segment of tourism with  
**higher growth**  
in the world

## II. SUSTAINABLE PRACTICES

The planning and design of ecotourism destinations is based on establishing use limits based on the capacity of the local natural and socio-cultural resources. In that sense, territorial ordering plans are an important tool (Camacho-Ruiz et al. 2016). In the case that the destination is within an ANP, zoning allows prioritizing activities to guarantee the continuity of the ecosystems processes (Vanegas 2006).

Under the current trend, nature tourism runs the risk of becoming a new modality of mass tourism (Bringas & Ojeda 2000), with negative impacts such as the change of land use, pollution, destruction or alteration of habitats and the overload of infrastructure. In Mexico, the certification through the Mexican Regulation NMX-AA-133-SCFI-201322 is a voluntary compliance option for service providers in this industry. Furthermore, in 2019 the CONANP presented the Strategic Framework of Sustainable Tourism in Natural Protected Areas in Mexico.

<sup>21</sup> "Requisitos y especificaciones de sustentabilidad del ecoturismo"





### III. Economic and social relevance

The importance of tourism in Mexico is enormous. In 2018, tourism contributed 8.7% of Gross Domestic Product (PIB, for its acronym in Spanish), ranking only underneath the income received from remittances (SECTUR 2020). During 2018, Mexico was in the seventh place in the world ranking in foreigner tourist arrivals and tenth in the generation of foreign exchange tourism<sup>22</sup>. In 2017, 25% of tourists made at least an activity related to ecotourism or tourism of nature, mainly in a Natural Protected Area (CONANP 2018).

This growth has reached the figures of 8,000 million visits per year to terrestrial protected natural areas of the world (Balmford et al. 2015). The ecotourism as an opportunity for community development allows the creation of jobs, the decrease in local migration and potential entrepreneurship (CONANP 2018).

## 8.7%

of the Gross Domestic Product in 2018

## Mexico: 7th

Place of the world ranking in tourist arrivals

<sup>22</sup> "Ecotourism sustainability requirements and specifications"





## IV. Relationship with conservation of forests and biodiversity

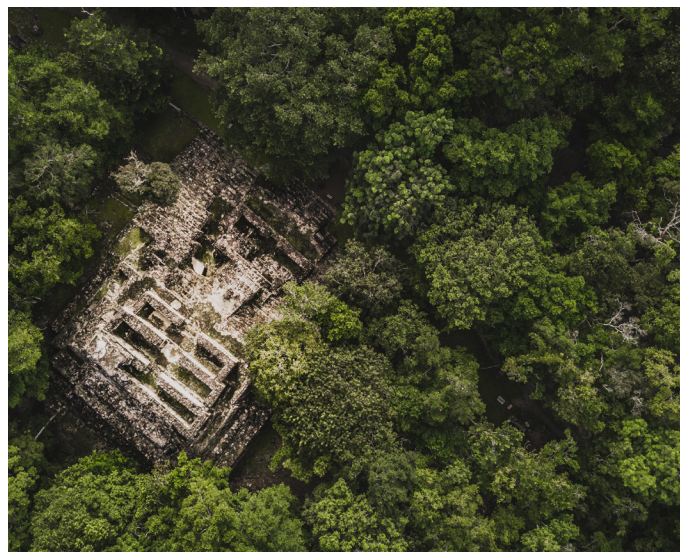
Ecotourism and sustainable tourism provide incentives to preserve natural resources and ecosystem services. In that extent it slows down the deforestation and degradation of forests and jungles. It encourages alliances between parties in the territory to ensure the provision of ecosystem services that make the tourism activity possible.

Unlike traditional tourism, ecotourism requires little investment in infrastructure and high investment in training, knowledge, organization and information; its application under sustainable outlines contributes to mitigate the pressure on ecosystems and their biodiversity.

The environmental services found in the ecosystems of forests where ecotourism projects are developed, include from the accessibility of water and food, to cultural identity and artistic manifestations, going through the conservation of infrastructure against climatic impacts (Balvenera 2012).

## V. Importance in the GCF Task Force States

The main ecotourism efforts in Mexico have been developed in the south and southeast of the country, where there are important forest and rainforest areas, and where a large part of the Natural Protected Areas are concentrated. Chiapas has 12, Quintana Roo 7, Jalisco 5, Oaxaca and Campeche 4 (CONANP 2020). In addition, they have a large number of state parks and municipal reserves. Currently the State of Oaxaca clusters the highest amount of natural areas dedicated voluntarily to conservation (ADVC) and it is also the state with the largest number of certifications in accordance with the NMX-133.



By 2030 there will travel internationally

**1,800 million**  
people

## VI. Market opportunities

Growth prospects indicate that by 2030 1.8 billion people will travel internationally, with annual growth rates of 4% to 5% (UNWTO 2011). This volume of the tourist flow requires migrating to schemes that link communities, local culture and mitigate negative environmental impacts.

The characteristic of Mexico being a mega diverse country, as well such as its geographical location with respect to the most important ecotourism markets, the United States and Canada, constitutes a determining factor for their growth (Ceballos-Lascurain 1994; SECTUR 2006; SECTUR 2020).

In the last decade, nature tourism in natural protected areas grew by 20% (CONANP 2018).

In addition the federal ANP, state parks and reserves<sup>23</sup>, rural areas and community enterprises have a unique cultural and natural attraction. Ecotourism in these areas make it possible to strengthen the social structures, the conservation and connectivity between natural landscapes and biodiversity.

<sup>23</sup> Of the 182 federal ANP, at least 100 have a tourist potential to visit them (CONANP 2019).

# Adventure Ecotourism Miguel Colorado

Miguel Colorado, Champoton, Campeche



## Participating parties and institutions

- o Ejido members from Miguel Colorado: Landowners
- o Tourism services Providers: Community guides for walking around paths, zip line operators, kayak, bicycle rental, rural or cultural tourism that includes artisan workshops (baskets of bejuco, apiculture and agriculture)
- o Providers of complementary services: Local residents who provide motorbike transport services to the ecotourism center, as well as food services.
- o SEMARNAT-CONANP: Institutions in charge of granting the certification as Voluntary Conservation Area (ADVC, for its acronym in Spanish).

## Description

Pressure on natural resources by extractive activities, timber and non timber, motivated the ejido to seek sources of alternative income and preserve the natural wealth of the site.

Since the 60's, the ejido Miguel Colorado has made timber and non-timber forest harnessings. The internal organization has allowed the harnessing of the territory in an orderly and sustainable manner, promoting the development of activities compatible with conservation, such as Apiculture and ecotourism, maintaining environmental balance.

## Main Results

In 2019, the ejido achieved the certification of 8,000 hectares as Intended Voluntary Conservation Areas (ADVC, for its acronym in Spanish) by CONANP, to a large extent thanks to a strong social organization around the project.



## Its relationship with the conservation and sustainable management of forests

Miguel Colorado has an area of 36,600 hectares (60% of the surface in good conservation condition) and it is part of a corridor that connects the forest from Calakmul and the wetlands of Laguna de Terminos. It is home to diverse species of flora and fauna including endangered species such as the jaguar. The conservation of the rainforest and wetlands is essential to keep the hydrological cycle at the local and regional levels. From the health of these ecosystems depends water accessibility, as well as other vital ecosystem services.



## Investment opportunities and alliances

Link with other tourism sustainable strategies, such as the Peninsular Alliance for Community Tourism. Strengthen their capacities and increase the investment capacities for infrastructure and services.

## CONTACT

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Facebook: Ecoturismo Miguel Colorado Oficial



## Ecotourism- Illustrative Case

# Huella del Jaguar Route

La Chinantla, Oaxaca



## Participating parties and institutions

- Communities of Santa Cruz Tepetotutla, San Antonio del Barrio, San Antonio Analco, and San Pedro Tlatepusco that constitute Ecoturismo Tierra del Faisan, R.L. de C.V.
- Rainforest Alliance, World Bank: Donors.

## Description

Through the integration of projects and local nature tourism efforts from the communities in the region, the project has the objective of avoiding and mitigating possible negative impacts of tourist activities. The initiatives and productive activities of the participating communities are grouped in a strategy of conservation of the natural system constituting a community called “Huella del Jaguar Route”. It is a regional project that integrates several communities and community businesses: the Company of Coffee Growers “La Orquídea” of San Antonio del Barrio, the Apiculture Union of la Chinantla Alta (UACHIA, for its acronym in Spanish) integrated by three rural businesses.



## Its relationship with the conservation and sustainable management of forests

The project seeks to reinforce nature tourism in the Chinantla communities through a process of diagnosis and the strengthening of their tourism focal products, productive projects, efforts of biodiversity conservation, cultural and natural attractions to integrate them into a single focal regional nature tourism product called “Huella del Jaguar Route”.



## Investment opportunities and alliances

The project has areas of opportunity in the development of capacities, promotion and connection with other participants to detonate the activity. In this context, there is potential to generate alliances and investment opportunities with government agents, organizations of the civil society, development banking and impact investment.

## Main Results

The project has developed new products and services of nature tourism as part of the “Huella del Jaguar Route”, which integrate gastronomy, productive systems of the humid tropics, handicrafts (textiles and basketry), scenic beauty and Chinantecos cultural aspects, walking route, camping, bicycling and rafting. In the same way, it seeks to strengthen companies, nature tourism groups and local services providers (transport, artisans, cocoa, coffee, corn and vanilla producers).

## CONTACT

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mde@ra.org

## Peninsular Alliance for Community Based Tourism (APTC, for its acronym in Spanish)

Campeche, Quintana Roo, Yucatan



### Participating parties and institutions

- 24 social enterprises
- Program Small Grants (PPD, for its acronym in Spanish), Global Environment Facility (GEF), United Nations Development Programme (PNUD, for its acronym in Spanish)
- University Autonoma de Yucatan (UADY, for its acronym in Spanish)

### Description

The APTC seeks to strengthen tourism in communities and rural areas, through the collaborative work of 24 social enterprises, made up of a total of 230 members from indigenous communities and rural women in the Yucatan Peninsula.

APTC integrates the efforts of three state networks of community tourism in Campeche, Yucatan and Quintana Roo.



### Its relationship with the conservation and sustainable management of forests

The platform promotes nature tourism under sustainable conditions. It strengthens the conservation and the respect of nature, the economy of local populations and the conservation of Mayan traditions and culture.



### Investment opportunities and alliances

An alliance with the GEF to expand its action as an international co-financing mechanism that grants donations to countries, in order to invest in global environmental projects in support of the nexus between agriculture and environment. An alliance with

- Campeche Rural Tourism Council,
- Sacred Paths of Quintana Roo and
- Co'ox Mayab of Yucatan to enhance its action.

### Main Results

The dissemination of participating tourism organizations which are the Rural Tourism Council of Campeche with 7 social enterprises; the Community Tourism Network of the Mayan Area of Quintana Roo "Caminos Sagrados" (Sacred Paths) that gathers 8 social enterprises; and the Alternative Tourism Community known as Co'ox Mayab, in Yucatan, with 9 social enterprises.

### CONTACT

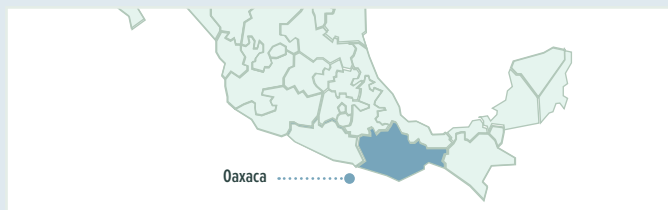
<http://viajaturismocomunitario.com/>

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## Ecotourism- Illustrative Case

# Ecological Community Based Tourism Capulalpam Mágico

Capulalpam de Mendez, Oaxaca



## Participating parties and institutions

- Community Ecological Tourism Capulalpam Magico S.P.R. of R.I.
- Unidad Económica Especializada de Aprovechamiento Forestal Comunal “San Mateo”

## Description

Ecological Community Tourism “Capulalpam Mágico” started in 2005 as an initiative endorsed by the General Assembly of Comuneros (jointly owners) of Capulalpam de Mendez and the society in general. This project has as its priorities the sustainable use of natural and cultural heritage, the generation of jobs for rural men and women, training of its collaborators to increase the competitiveness of the services and activities that they offer, the consumption of local products, as well as to generate the conditions for the diversification of tourist activities in this destination.



## Its relationship with the conservation and sustainable management of forests

The company is firmly committed to preserving natural and cultural resources, providing visitors the opportunity to enjoy the adventure, to learn about the traditions and customs of Capulalpam. The ecotourism center implements practices of separation of waste, monitoring of flora and fauna, security tours and reforestation activities. This project is part of a broader strategy of the community of Capulalpam, in which the integral management of forests and their natural resources include timber harvesting, community based tourism, local food and handicraft production.

## Main Results

Resulting from a community initiative, this project has managed to consolidate itself in a community business that provides services of cabins, camping areas, restaurant, meeting room with audiovisual equipment and a diversity of day and night tours on routes of forest and caves.



## Investment opportunities and alliances

The community of Capulalpam de Mendez not only seeks to find new strategies that allow the promotion of the tourist company and the services it provides, but also to promote the purchase of the various products generated in the community. It seeks to position their services and products in the market, through some commercial agreement with government agencies, the private initiative, among other interested parties.

### CONTACT

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05

Productive activities that add value to the  
forest with a community management approach in  
GCF Task Force States

# Non-Timber Forest Management

Non-Timber Forest Products (NTFP) are all plant and animal products and services derived from the forest ecosystems and trees outside the forest. They are a collection of biological resources with a wide variety of benefits, for example: fruits, nuts, seeds, oils, spices, resins, gums, medicinal plants, specific to the areas where they are collected (Tapia & Reyes Chilpa 2008). They are of great importance to the economies of local communities and that are sold both in the local market and in the international market (FAO 2006).



Despite the social and economic importance, the data on production and its economic value are hard to access. In many cases the activities related to the Non-timber forest products and their production are carried out within the framework of the informal economy and subsistence use, making it difficult to quantify its value. (FAO 2006).

## I. CHARACTERISTICS

Official records in Mexico identify seven NTFP categories susceptible to harvest (Tapia Tapia & Reyes Chilpa 2008). These are: a) resins, b) fibers, c) gums, d) waxes, e) rhizomes of pharmaceutical and alimentary importance, f) hill ground and g) other products. This last general category encompasses a great diversity of goods such as fruits, mushrooms, seeds, medicinal plants, ornamental plants; and is the most relevant by volume of use (65.1%) (CONAFOR 2019; SEMARNAT 2016b).

While most NTFP are products of subsistence collected from nature and consumed locally with minimal elaboration, some of them have been domesticated; they are grown and made using sophisticated technologies to meet the demand of the world markets. On one side, the livelihood production is based almost entirely on the ancestral knowledge (FAO 2009).

## Candelilla, Lechuguilla and Camedor Palm

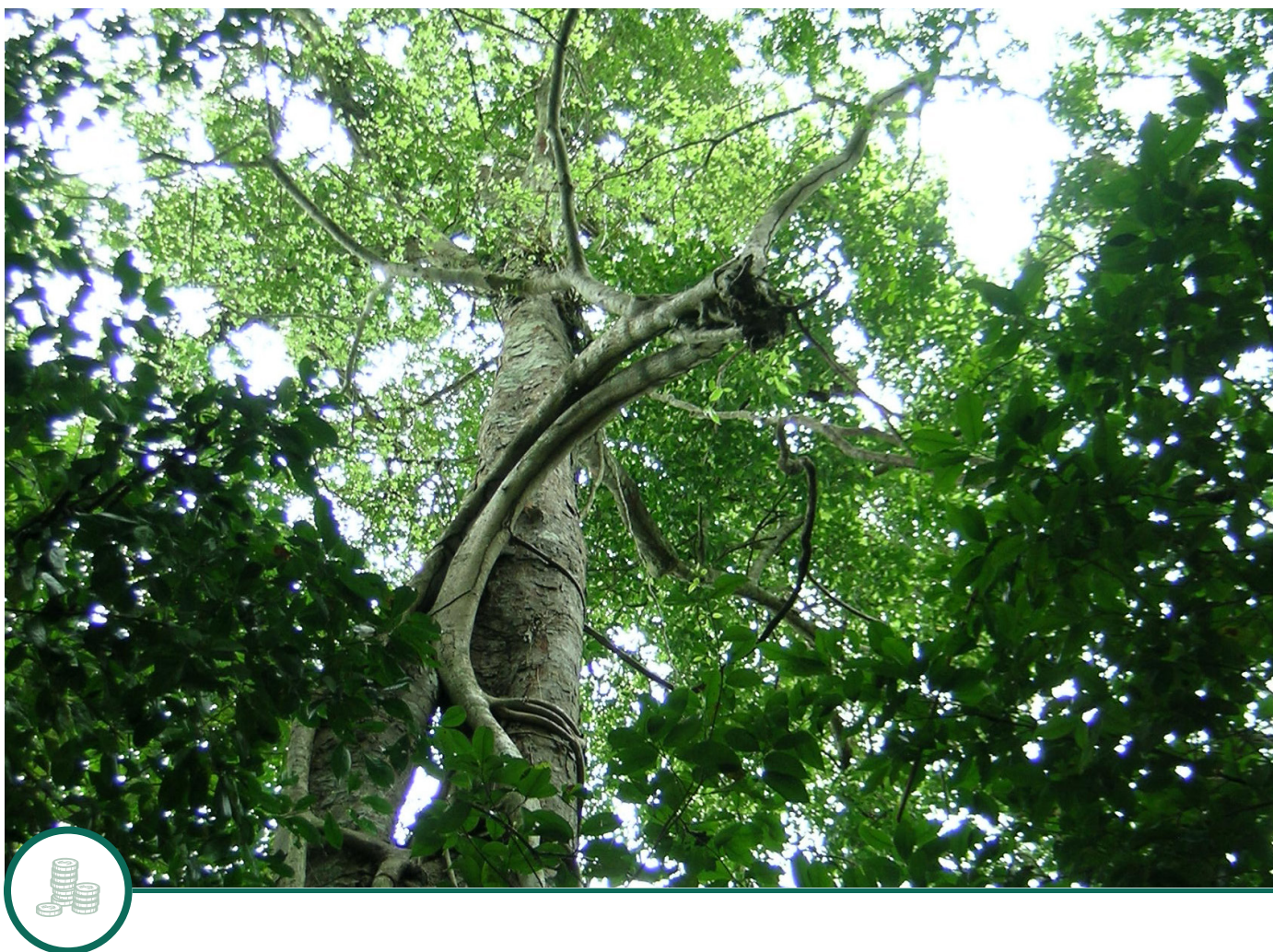
are the main species used

## II. SUSTAINABLE PRACTICES

To take advantage of the non-timber resources in Mexico it may be required only a written notice to the appropriate authority; or a prior authorization, for example for forest land or plants of the families of agaves and cacti; or in other cases, as expressly determined in the corresponding Official Mexican Standard.

In Mexico there are already forest commercial plantations for the non-timber use. The main species used are Candelilla, Lechuguilla, Camedor palm, and for Christmas trees which concentrate 93% of the established surface (CONAFOR 2019).

In practice, communities carry out the collection of NTFP on a daily and informal basis. Products such as palms, vines, dyes and chewing gum, among others, have been undervalued as basic satisfiers of the population. Many face exploitation conditions and are frequently ignored to favor the change of land use. In particular, the collection of firewood is one of the forestry activities that contributes the most in the income and self-consumption.



### III. Economic and social relevance

The NTFP offers the opportunity to increase the economic benefits of the forests, contribute to the improvement of the economic conditions of the poorest sectors of the population and promotes the sustainable forestry management (FAO 2006). Even though most of these products are obtained by harvesting and generate precarious and seasonal profits, in some areas they represent the only source of income for rural families. They provide a safety net for low-income people that are complementary to activities such as agriculture. They are one of the few opportunities to generate income for women in marginalized rural communities (Marshall et al. 2006).

The total volume of the non-timber forest harnessing is significant: 1.2 million tons per year<sup>25</sup>, and has an interesting potential, since only 10% of the plant species with recognized uses for NTFP is marketed under government regulation. The exclusive emphasis on the economic value can guide the overexploitation, leading to a slope in native populations and to strong ecological

and economic implications (Lopez Camacho 2008; Tapia & Reyes Chilpa 2008). Therefore, it is essential to keep an eye that considers traditional knowledge and the relationship with the forest and ecosystem services.

**1.2 million**

tons harvested annually

**20%**

are plant species recognized for Non-Timber  
Forest Management

<sup>25</sup> The total authorizations granted in 2016 correspond to an area of 585,553ha; 429 notices and authorizations were granted. 67.7% of the surface corresponds to the states of Durango, Coahuila, San Luis Potosi, Zacatecas and Tamaulipas (SEMARNAT, 2016a).





## IV. Relationship with the conservation and sustainable management of forests and biodiversity

The NTFP increase incentives for forest conservation, contributing to the prevention of land use changes. Its harvesting is usually of low impact compared to other activities such as timber products (Lopez Camacho 2008). The NTFP can be part of strategies for adaptation, as they strengthen the livelihood of rural populations, the preservation of biodiversity and resilience in the face of climate change. Thus, it is necessary to integrate its harnessing into forest management programs.

The NTFP are an important part of the goods and services generated by forest ecosystems. As such, they are determinants for the maintenance of the ecosystem balance. For example, in coniferous forests, edible fungi fulfill relevant functions in the formation and structure of the soil, in addition to integrating carbon reservoirs in the system formed by plants, soil and the environment. Also, some bushes of medicinal use, perform the function of a nurse plant during the first years of development of the oyamel (sacred fir). Others are atmospheric nitrogen-fixing plants, allowing healthy soils with availability of nutrients (Zamora Martinez 2017).

## V. Importance in the GCF Task Force States

The southeastern states of the country, for their location and climate, have a great potential for harvesting of NTFP from tropical areas (CONAFOR 2008). Despite not reporting a large exploited volume, they have a great potential for products such as Camedor palm and other palms, bamboo, pepper, ramon tree, among many others (CONAFOR 2008 and 2019; SEMARNAT 2016a). In addition, Chiapas and Yucatan already participate in commercial forest plantations for non-timber use.

The NTFPs are crucial for the

**maintenance  
of a balanced  
ecosystem**

## VI. Market opportunities

Developing markets for some specific NTFP, could create incentives to increase their commercial production. Only NTFP that are grown on a large scale will have greater potential market expansion, based mainly on more competitive prices. Some examples are the hevea brasiliensis (rubber tree), chicle tree and medicinal herbs (FAO 2006).

The organization of producers is required, especially the ejido members and comuneros, to guarantee the quantity and quality supply of the products that they offer. A better sectoral coordination would help producers, processors and traders to be better positioned to meet the legal and institutional requirements for the formal commercialization. The Communities are required to negotiate NTFP in the informal sector because they do not have the capacity to comply with the legal requirements for formal commercialization. Additionally, support is necessary to facilitate the entrance to differentiated markets such as sustainable management, community and participation of gender recognitions. (Marshall et al. 2006).



# Regional Production Strategy and Commercialization of Pine Resin in Chiapas

Region in the municipalities of Angel Albino Corzo, Cintalapa, Jiquipilas, La Concordia, Ocozucuaula de Espinosa, Villa Corzo and Villaflores



## Participating parties and institutions

SEMARNAT, CONAFOR, PROFEPA, CONANP, SEMAHN, Pronatura Sur

### Description

In 2018, the participants involved detected an incipient resin production upon the cease of the purchase of the only company that acquired it. The company stopped buying due to high operating costs and the little volume that was produced. Consequently, the involved institutions analyzed the need to have new commercialization channels and proposed an integral strategy that would strengthen production and commercialization, as well as its access to fair markets.

The strategy has focused on strengthening the necessary capacities in the producers such as: community organization, regional associativity, tool sharpening, resination techniques, legal aspects, administration and accounting.



### Its relationship with the conservation and sustainable management of forests

Non-timber forest management contributes to the processes of conservation of tropical forests that constitute a means of subsistence of the communities that inhabit them. They are also a source of income and generate complementary jobs. On the other hand, they contribute to the livelihoods, including food security, health and wellness. Sustainable forest conservation depends on the ability to reconcile the ecological productivity of the ecosystem with human exploitation.



### Investment opportunities and alliances

This process has been triggered by several institutions: SEMARNAT, CONAFOR, PROFEPA, CONANP, SEMAHN, and Pronatura Sur A.C., who through grant programs and resources from national and International donations can focus on the concurrence of resources to implement this strategy.

The Trusts Established in Relation to Agriculture (FIRA, for its acronym in Spanish) and the National Financial for Agricultural, Rural, Forestry and Fisheries Development (FND, for its acronym in Spanish) can also be relevant participants for those producer groups that are more developed and are in the condition to acquire financial commitments through more flexible credits at lower rates.

## Main Results

- To constitute an associative figure to operate the regional strategy, in addition to strengthening the training process of producers.
- To seek external financing to solve the costs of infrastructure construction and forest services by preparing technical studies and Manifestation of Environmental Impact documents.
- To increase production volume to ensure profitability of the operations of the organization.
- To obtain operation authorizations for the Regional Collection Centers (CAR, for its acronym in Spanish), and to process forest resh shipments on time.

### CONTACT

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# Sustainable Use of the Ramon Tree by Women

Ejido Nuevo Becal, Calakmul, Campeche



## Participating parties and institutions

- Ejido and its technical team SOSETEC, Selvas de Calakmul S.C.
- Group of 16 female partners
- Rainforest Alliance, Small Grants Program (FMAM-GEF-PNUD)

## Description

The Ejido Nuevo Becal has an area of 51,135.49 hectares and is an outstanding example of community management of the forest. Its main economic activity is forest harvesting. The main objective of the project has been to strengthen the organized work of the group of 16 women for the elaboration and commercialization of high-quality nutritious products for human consumption, as of the sustainable harvest of the seed and the Ramon leaf and its transformation. This project is part of the diversification of the sustainable forest management in the ejido and harnessing with activities such as sapodilla latex (*Manilkara zapota*), mahogany germplasm (*Swietenia macrophylla*) and the Wildlife Management Units (UMA).



## Its relationship with the conservation and sustainable management of forests

The ejido Nuevo Becal is certified since 2016 by the Forest Stewardship Council (FSC) and recently it obtained the first FSC community certificate for Demonstration of the Impact on Ecosystem Services for Mexico and for all North America. Since 2018, 99% of the ejido is a Voluntarily Area Designated for Conservation, it is the largest surface area under this category in Mexico. 90.28% of the ejido keeps ecosystem services, specifically emblematic biodiversity species such as Jaguar, Tapir, White-lipped Peccary, Temazate Deer, Spider Monkey, Saraguato Monkey, and key tree types (Mahogany, Cedar, Machiche, Tzalam, Red Chaca) in 4 types of ecosystems of great biocultural interest.

## Main Results

- The preparation and commercialization of the seed and Ramon leaf for the benefit of 16 partners and their families.
- Strengthening local governance and community support for the integral forest management with landscape perspective.
- Generation of jobs for women and the youth in the execution of the productive activity.



## Investment opportunities and alliances

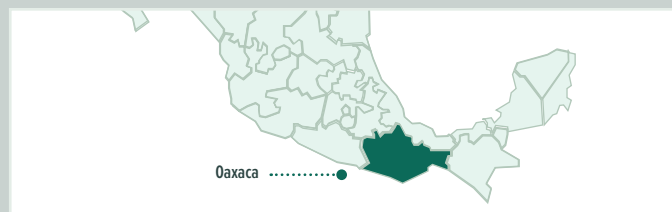
To promote greater access to markets. To promote the transfer of knowledge to other interested ejidos in the community forest management with a focus on landscape.

## CONTACT

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# UZACHI - Charcoal

Sierra de Juarez, Oaxaca



## Participating parties and institutions

Union of Forest Producing Communities Zapotecos-Chinantecos from Sierra Juarez de RI. Integrated by four communities: three Zapotec communities (La Trinidad, Ixtlan, Santiago Xiacui and Capulalpam de Mendez) and one Chinantecan (Santiago Camaltepec).

Various institutions and donors have collaborated with the UZACHI over the time. For this Project Rainforest Alliance-World Bank are allies and donors.

## Description

The UZACHI is a Union of Indigenous Communities dedicated to the use, management and integral conservation of natural resources. Their goal is to contribute to the moral, economic and social benefit of their partners, through local technical capabilities. The Union is integrated by four communities, each of them is autonomous and has its own internal governance mechanisms and gathers 950 community members, who have a total area of 24,000 hectares, from which 88% are forest areas.

Within the organizational structure of the UZACHI, the highest authority are the assemblies of the four communities. It has an interdisciplinary technical team composed of members of the community. One of the lines of work of the UZACHI is the production and commercialization of charcoal, which strengthens the diversification of activities and the use of new technologies. Within the project, unconventional forest species are harvested that until now have remained as a waste in the forest; an aggregated value will be given to the product which will promote the conservation of forest areas.

- Training on financial culture.
- Participatory monitoring and evaluation system of the project.



## Its relationship with the conservation and sustainable management of forests

In Mexico, the communities of the Sierra Juarez, among them UZACHI, are an international referent in the management and sustainable harnessing of forest resources. These communities were organized to manage their forests, because until the end of the eighties, the forests and jungles of the country were licensed to private companies and parastatals who gave a very low symbolic payment to the communities that owned these resources, in exchange for their harnessing.

The UZACHI was born from this process and its community forestry companies have been the first entities in Mexico to obtain the forest management certification of the Forest Stewardship Council (FSC), who recognizes the compliance with the international standards of good forest management and guarantees sustainability and production legality.



## Investment opportunities and alliances

- To give greater visibility to community forest management for strengthening and access to markets.
- Alliances to reduce excessive regulatory processes, and to reduce forest product competition of illegal origins.
- To promote the incorporation of other communities in the integral forest use vision.

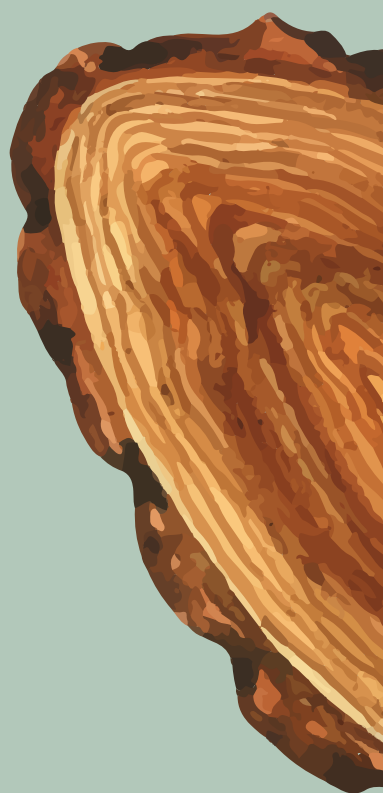
## Main Results

Withing the current project, the following activities will be promoted for the production of charcoal:

- Establishing a storage and transformation center with a social focus.
- The application of good practices, including the monitoring of avoided deforestation.
- The adoption of new technologies that allow the improvement of efficiency and reducing the greenhouse emissions gases (GHG).
- A market study to identify conventional and non-conventional markets, as well as technical studies for the activity.

### CONTACT

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## 05

**Productive activities that add value to the forest with a community management approach in GCF Task Force States**

# Community Timber Forest Management

Half of the rural population lives in areas with forest vegetation, with the representation of the indigenous ethnic groups of our country and enormous biological diversity<sup>26</sup>. Mexico has a great wealth in community forest management that helps protect, preserve and restore biodiversity, since a large part of the forest ecosystems of the country are owned by ejidos and communities. Under the world's current trend of transferring the rights over the forest land to local communities, the case of community forestry in Mexico deserves greater attention as an important contribution to the international community (Segura et al. 2003).

<sup>26</sup> With a forest area of 137.8 million hectares, 70% of the country's surface has a forest area of diverse ecosystems ranging from scrub to forests and mangroves (CONAFOR 2019).



## I. CHARACTERISTICS

Community Forest Management is a planned use of different types of forest by the local populations and their strengthening has two fundamental objectives: 1) to improve rural communities welfare; 2) to contribute to the conservation of forests to ensure to the society in general, the services they provide.

Unlike the more widespread conception at the international level focused on domestic consumption, community forest management in Mexico is oriented to a commercial production of timber products and has an authentically social quality, it is the result of a long historical process. Communities have established forest companies for the transformation and commercialization of finished products (Segura et al. 2003).



Sustainable Production:

**practices that regulate the impact on the forest and monitoring systems**

## II. SUSTAINABLE PRACTICES

Community forest management emphasizes the sustainable production considering mainly: 1) the application of a set of practices that regulate the impact in the forest, and 2) monitoring systems of the dynamics of the forest to determine the volume of sustainable harnessing. In order to obtain the authorization to carry out management of timber forest resources in Mexico, producers need to have Forest Management Programs. These Programs sustain permissions and contain the activities of protection, conservation, restoration, harvesting, harnessing, as well as the prevention and mitigation measures of environmental impacts, respecting the productive capacity of forests<sup>27</sup>.

Despite innovations and learnings over time, the activity faces important challenges such as poor logging practices, transportation and sawing that produce environmental impacts and inefficiencies within the forestry company. Another important area to improve is the organizational and managerial capabilities that are necessary to serve different markets and to access to conditions that many times are not known from the communities and producers.

<sup>27</sup> The Official Mexican Standard (NOM)-152- SEMARNAT-2006 establishes the guidelines, criteria and specifications that forest management programs must contain for the use of timber forest resources in forests, jungles and vegetation of arid zones.



@TNC 2017

### III. Economic and social relevance

In Mexico, rural and indigenous communities are owners of more than 80% of the ecosystems in good conservation status, where a large part of the country's biodiversity concentrates (FAO 2018)<sup>28</sup>. The forestry regions in Mexico are the most marginalized since more than 50% of its population lives in conditions of extreme poverty (Segura et al 2003). The number of people is significant: according to 2010 data, 10.8 million reside in forest areas locations.

Many of the communities that manage their forests have increased their income from forestry production and have invested in social works (schools, clinics health, road infrastructure and drinking water) and creating jobs. The most advanced community forestry companies have managed to consolidate production processes for commercial purposes; they have improved their management outlines; and implemented targeted measures to productivity and conservation of ecosystems (Segura et al 2002).

In 2014, community certified forests under the Forest Stewardship Council (FSC) certification, added 21 communities with more than 510,000 certified hectares and

200,000 hectares in the process of being certified. The volume of certified timber from these areas represented at that date 10% of the timber production of native forest nationwide. Mexico reports the highest community forest certification figures in the world.

**10.8 million**  
inhabitants in forest areas

**+ 510,000**  
**hectares**

Certified under the outlines of the Forest Stewardship Council

<sup>28</sup> Between 2012 and 2016, the participation of the forestry sector was 0.2% of the national PIB (CONAFOR, 2019). Around 20% of jobs are found in forest harnessing and 80% in the timber industry (166 thousand jobs in 2016) (CONAFOR, 2019). In Mexico it is estimated that there are 8,420 forest communities, from which a high percentage belong to indigenous groups.



## IV. Relationship with conservation of forests and biodiversity

The best way to care for the forest landscapes has been the consolidation of areas where communities of foresters are developing the crop and managing natural forest areas. Inadequate managing generates degradation and deforestation directly impacting the quality of life from the nearby towns, but when people manage them sustainably, they strengthen their livelihoods, provide air and clean water, preserve biodiversity and are able to respond better to climate change.

Forests are renewable and constitute one of the largest terrestrial reservoirs in biomass and carbon, above and below ground, the organic matter, and in timber products. The management activities that maintain and improve stored carbon are a contribution to the mitigation of climate change.

## V. Importance in the GCF Task Force States

Community forest management is a critical strategy for the GCF Task Force States given the presence and experience of communities and ejidos as custodians of the forests and jungles in the region. The two states with the largest indigenous population in forest ecosystems are Chiapas and Oaxaca, and there is also a significant presence in the rest of the GCF Task Force States (CONAFOR 2019). At a national wide level there are 224 Forest Management Units (UMAFORES), a legal entity for the sustainable management of forest resources; from the total number, 66 are in GCF Task Force States. (CONAFOR 2019).

## VI. Market opportunities

Both nationally and internationally, the timber demand and its by-products are increasing; and the certification of sustainable production can contribute to the surface increasement in the area under management (FAO 2006). The developing regions have currently minuscule certified forest areas (Bowyer, 2004), which opens an opportunity for the management in tropical areas. Regarding the domestic market, Mexico is in deficit, both in its trade balance for timber products, as well as its pulp and paper manufactures, a trend that is increasing (CONAFOR 2019; SEMARNAT 2016b). For example, from 2012 to 2016 the national perceived consumption in round wood grew 52% (CONAFOR 2019; SEMARNAT 2016b).

Some of the most advanced community enterprises have managed to access more competitive national and international markets and are beginning to invest in productive processes with higher added value. Even, they are diversifying their investment in activities such as communal ecotourism, non-timber forest products and even spring water bottling. A challenge and great opportunity that is already being capitalized in Mexico, it is the transition from an approach that privileges timber use towards the integral management of forest resources with landscape vision and self-managed communities.

The national consumption of round wood between 2012 and 2016 grew

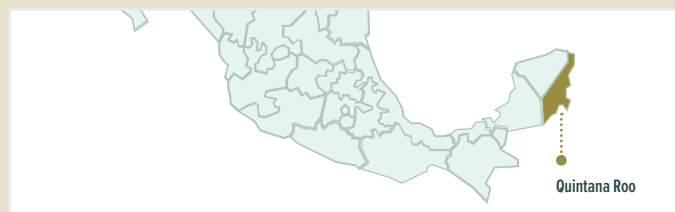
**52%**



## TFM- Illustrative Case

# Alliance Selva Maya Quintana Roo U.E. de R.L. (ASM)

Quintana Roo



## Participating parties and institutions

- The ASM is a union of forest ejidos comprised by Bacalar, Felipe Carrillo Puerto, Noh Bec, Petcacab and Polinkin, X-hazil and others responsible of forest management.
- Within the institutions that have supported the ASM through different programs and projects are CONAFOR, SEMARNAT, CONABIO and the Global Environment Facility (GEF).

## Description

ASM arises from the need of the forestry ejidos in the area to gather together to face the new challenges of the certification forestry management, the market access and the continuity of community forest management. Their goal is to promote trade and to benefit ejido members that take advantage of the tropical forest resources from southeastern Mexico. The ASM offers timber products from tropical timbers certified by the Forest Stewardship Council (FSC); it promotes the development of community-based rural forestry in the responsible management of forest resources in addition to performing best practices in the conservation of the biodiversity of the Mayan jungle especially in the jaguar habitat.



## Its relationship with the conservation and sustainable management of forests

The FSC certification guarantees that products have their origin in well-managed forests and that their processes provide environmental, social and economic benefits. As part of the management, new carbon capture areas are opened, and the landscape and the habitat of wildlife such as the jaguar is preserved. With the developed activities, they generate 500 direct and indirect jobs. The five ejidos that are part of the Sian Ka'an–Calakmul Biological Corridor, constitute a chain of protection and management of forest and wildlife that guarantees the ecosystems interconnectivity and the continuity of the peninsular jungles at the Mayan Jungle.



## Investment opportunities and alliances

The promotion and access to eco-friendly markets with biodiversity. Collaborations to expand and disseminate the best productive practices.

## Main Results

The ASM has managed to preserve more than 45 thousand hectares of voluntary nature reserves and has more than 126 thousand forest hectares: 67 thousand certified by the FSC for its responsible forest management and 37 thousand are already authorized for forest harnessing. They have an industry (K'aax Mayas) and two ejidos have the FSC chain of custody certification. As a result, the five ejidos can market forest products and prove its legal origin.

### CONTACT

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# Juguete Arte

Capulalpam de Mendez, Oaxaca



## Participating parties and institutions

- Juguete Arte Capulalpam, S.C. de R.L. de C.V.
- Commissary of Bienes Comunales and Municipal Authority of Capulalpam de Mendez
- Estudios Rurales y Asesoría Campesina A.C. (ERA) and Bandui Laboratorio de Procesos Creativo Culturales, A.C
- Rainforest Alliance - Donor
- Forest Stewardship Council (FSC) Timber certifiers

## Description

The project initiated from the coordinated work between the Commissariat of Capulalpam de Mendez, ERA and Bandui Laboratory, with resources provided by the Rainforest Alliance to rescue the intangible cultural heritage (legends, myths, festivals, traditions, characters, stories, etc.), and to create a certified timber innovative hand craft that allowed to give an identity to the community in response to the growing tourist activity in the region and to its recent denomination as Pueblo Mágico (Magic Town). Juguete Arte lies in the added value, the innovation and incursion into profitable distribution channels in conjunction with strengthening local governance.

- Tours around the territory for the recognition of the use and management of the territory, as well as the biodiversity that is present in the region.



## Its relationship with the conservation and sustainable management of forests

Juguete Arte Capulalpam, through the design and production of low-carbon timber handicrafts, promotes the importance of forests and environmental services in order to prevent its degradation. The project strengthens the commercialization processes and the incorporation of good practices in the production process that ensure the reduction of CO2 emissions and increases the measures of conservation and management of the forests of the Sierra Juárez.



## Investment opportunities and alliances

Juguete Arte Capulalpam has had collaborations from foundations and donors, organizations and state and federal government institutions. The next step is to access to simple liquid guarantees for credits to the indigenous population through the National Financial for Agricultural, Rural, Forestry and Fisheries Development.

## Main Results

- The production of certified FSC toys and crafts that guarantees good forestry managing. The pieces are inspired by the traditional imaginary and the environment of the inhabitants.
- Summer workshops for boys, girls and young people from the community with a duration of 20 days, are taught to strengthen their cultural and environmental values in order to strengthen the identity and sense of belonging in the region.

## CONTACT

<https://www.facebook.com/CapulalpamToys/>

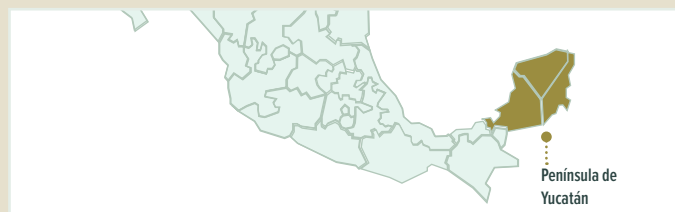
[hola@bandui.org](mailto:hola@bandui.org)

<https://es-la.facebook.com/CapulalpamToys/>

## TFM- Illustrative Case

# Commercial Cooperation Platform (PLACCO)

## Yucatan Peninsula



## Participating parties and institutions

- Mexican Civil Council for the Sustainable Silviculture (CCMSS, for its acronym in Spanish) in the Yucatan Peninsula: Platform operator
- Producer organization: Suppliers

## Description

PLACCO is a management scheme to improve the position of community enterprises in the value chains associated with community forestry; they seek to improve the profits of these ventures, adopting a market approach and intertwining agreements of cooperative collaboration between organizations of producers. PLACCO develops trade exchanges between the hotel and tourism sectors of the Yucatan Peninsula with the local providers, under the principles of social and environmental responsibility. Some PLACCO suppliers are the Cooperativa Carbon de Leña Verde (CALEÑA, for its acronym in Spanish) and the Union de Sociedades Apícolas y Ecológicas de Calakmul (USAEC, for its acronym in Spanish), among others.

## Main Results

In 2018, the platform placed more than 157 tons of organic packaged honey and charcoal of legal origin in more than 20 hotels and restaurants in the Riviera Maya, establishing direct commercial alliances between consumers and rural organizations. In 2019, business relationships were done with more than 25 hotel corporations. PLACCO has a Distribution Center located in Playa del Carmen to guarantee the effective distribution of the products. It currently distributes honey and charcoal from organizations from the Yucatan Peninsula that show high standards of organization, quality, social and environmental values.



## Its relationship with the conservation and sustainable management of forests

Through the promotion of charitable commercial exchanges for communities and cooperatives that carry out sustainable management of the forest and the territory, PLACCO promotes reduction of deforestation levels, as well as the degradation of soils, as a result of the irregular and unsustainable harnessing, and incentivizes the creation of sustainable local markets that are underpinned by Mayans and rural communities.



## Investment opportunities and alliances

- Collaborations with public policy officers to encourage the purchases of community forestry products from legal sources and to help curb irregular and unsustainable harnessing.
- Collaborations to strengthen the sustainable supply chain in the hotel and tourism industries Cancun-Riviera Maya, which reflects the aggregated value that involves a legal product from the community and with sustainable and cooperative production criteria.
- Allies to overcome the situation caused by the COVID-19, which forced PLACCO to search for new commercialization channels such as the digital market, direct distribution to final consumers and in other regions of the country. The initiative would benefit from alliances to overcome the connectivity gap that rural communities face.

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## 05

Productive activities that add value to the forest with a community management approach in GCF Task Force States

# Management Units for Conservation of the Wildlife

Despite wildlife landscape value, as a source of meat, or its commercial, religious or cultural value, it generally does not generate profits comparable to fisheries or forestry resources. In the absence of a clear value, wildlife can be overexploited, or its habitat can be degraded. However, when properly managed, it can be an important complementary resource to rural income through activities such as nature tourism or recreational hunting.



An UMA's (for its acronym in Spanish) goal is to create opportunities for the harnessing of wildlife that guarantees sustainability and promotes the development of alternative sources of income for rural communities. UMAs are a tool to give value to biological diversity and to encourage its conservation.

The central idea is to dedicate land and effort to produce goods or services, as it is the case with agriculture, livestock or forest management; with the exception in this case, that the product is the wildlife. This concept contrasts with the popular idea that wildlife is produced by itself, and that it only requires to be "harvested." This approach is based on the sustainable management of resources in order to be able to use them and to guarantee their permanence.

## I. CHARACTERISTICS

UMAs are extensive (in free life) and intensive (confinement) hatcheries of wildlife, also nurseries, greenhouses as well as all the viable alternatives that allow the propagation of species and the elaboration of products and by-products that can be incorporated into the legal wildlife market (SEMARNAT-CONAFOR 2009). UMAs are integrated by all properties and operate in accordance with a management plan approved by the authority, which is an essential element.

The units seek to promote sustainable alternatives, to generate additional sources of income for rural communities, giving value to biological diversity to promote its conservation (SEMARNAT-CONAFOR 2009). The owners of UMAs require a Management Plan and to submit the censuses or population estimates, which show that the specimens that are intended to be extracted do not affect the balance of the wild populations (General Law of Wildlife 2018).

Extensive Management includes techniques for the **conservation and management of the habitat, population monitoring and reproduction of species**



## II. SUSTAINABLE PRACTICES

UMAs can use an intensive, extensive or mixed<sup>29</sup> management. Extensive management uses habitat conservation and management techniques, population monitoring and reproduction of species to preserve those that have usage value, as well as the communities and associated ecosystems. Intensive management is performed in captivity or in confinement.

Harnessing can take place in an extractive manner by collecting, capturing or hunting wild species. When it is done in a sustainable manner, it can help repopulate or maintain populations of species that otherwise would be in danger. Some types of exploitation are hunting sports, breeding animals as pets, for decoration, as supplies for the food and craft industries, scientific exhibition and collection. Non-extractive harnessing includes activities such as ecotourism, research, environmental education, photography, video and filming. Finally, in mixed harnessing, both extractive and non-extractive activities are considered (SEMARNAT-CONAFOR 2009).

<sup>29</sup> In Mexico there are 1,892 UMAs, 97% are intensive management and 3% are managed in free life





### III. Economic and social relevance

In the social sphere, the UMAs involve the creation of conditions for community work, with different benefits as alternative sources of employment, of income for rural communities, of generation of foreign exchange, of coexistence of the community, and the potential flow of supports and resources to meet basic needs of the population. Likewise, through the management plan, UMAs promote self-management allowing the taking of decisions of the communities to develop productive and harnessing projects.

The activities include wild animal reproduction to commercialize their skin and meat; adventure tourism and environmental education, where tours are offered, for example, the whale watching in the Mexican coasts, the photographic hunting of animals such as the pronghorn or the puma in the north of the country.

In hunting UMAs of the northern Mexico, hunters, particularly Americans, leave an important economic revenue and incentives to monitor and maintain wildlife populations and preserve their habitat. The UMAs of central and southeastern Mexico face different conditions

and greater difficulties for development (Gallina Tessaro et al. 2009). The Mesoamerican Biological corridor in Southeastern Mexico supported and has experiences of sustainable use of resources, including UMAs (CONABIO 2020).

UMAs involve the creation of

**Conditions for  
Community work**



## IV. Relationship with conservation of forests and biodiversity

In fragmented landscapes, the connectivity, that is, the degree of movement of species and processes in the ecosystems, is drastically reduced for many species and the viability of their populations is compromised (CONABIO 2020). In the Mexican tropics, there are few areas where the original forests cover continually worthy surfaces. The landscape generates patches of vegetation that grow among paddock areas, agricultural activities, dams, roads, power lines, human settlements and tourism infrastructure (Gallina et al. 2009; Robles 2009).

The UMAs in conjunction with other strategies such as the Natural Protected Areas, the Ecological Regulations, the Biological Corridors, the restoration of degraded areas, among others, constitute instruments for conservation of biodiversity and promotion of connectivity in Mexico. Lands frequently considered as unused can be dedicated to conservation, generating economic, social and environmental service benefits of invaluable value.

## V. Importance in the GCF Task Force States

Michoacan and Sonora report 73% of UMA management in free living. Regarding the States of the GCF Task Force there are UMA experiences in all of them<sup>30</sup>. Additionally, in the southeast of Mexico the implementation of the Mesoamerican Biological Corridor was developed in the states of Chiapas, Quintana Roo, Yucatan, Campeche, Tabasco and Oaxaca. Within their experiences, the Corridor has integrated the UMAs as part of the sustainable production processes (CONABIO 2020).

## VI. Market opportunities

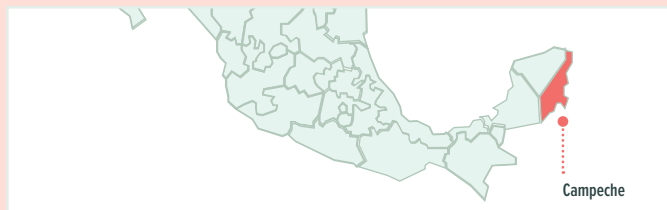
There is a growing interest for the markets that demand products and services of sustainable use and under the processes of low environmental impact. In these markets, the communities, owners or UMA holders have an option to commercialize their products at better prices (CONABIO, 2020).

There is an interesting demand for products and services such as sport hunting, animal husbandry for pets, animals for decoration, food, industrial and craft supplies, exhibition and scientific collections or ecotourism.

<sup>30</sup> The states with the highest UMA records, whether intensive or extensive, are Michoacan with 9.8%, the State of Mexico with 7.8% and Jalisco with 6%, then we have other states such as Yucatan with 4.3%, Oaxaca with 3.5%, Quintana Roo with 2.7%, Tabasco with 2.5%, Campeche with 1.8% and Chiapas with 1.6% of all UMAs in Mexico (SEMARNAT, 2020a).

# UMA Ejido Carlos Cano Cruz

Ejido Carlos Cano Cruz, Campeche



## Participating parties and institutions

- Ejido Carlos Cano Cruz: 55 Partners
- School of Chemical-Biological Sciences of the Autonomous University of Campeche, the Technological Institute of Chiná, El Colegio de la Frontera Sur, Unit Campeche: Professional practices and thesis.

## Description

The UMA was established since 1999 by people coming from Tlaxcala and it involves producers of the Mayan indigenous sector, as an alternative to reduce illegal hunting that was affecting the ecosystem's balance. With an area of 9,656 hectares, the UMA contributes to preserve, protect and promote the sustainable use of the fauna through hunting, ecotourism, and the observation of flora and fauna activities. The modality is free living management.

The key to the success of the community is its organization, its internal regulations and the involvement of the owners. 10% of the obtained resources are assigned to habitat management and complementary activities. It has been a place that promotes visits for exchanging experiences among other UMAs. And it is considered by the National Wild Turkey Federation and the International Safari Club, a model of the quality to preserve and harness ocellated turkeys.

- A motivation for the participation of young people and women. A source of employment and income for the local population.
- The monitoring of species and community surveillance at UMAs surroundings, which has achieved a decrease in illegal logging and furtive hunting.



## Its relationship with the conservation and sustainable management of forests

- Conservation of the ecosystem and an increase in the ocellated turkey populations and associated species.
- Healthy habitat with the presence of indicator species such as felines (jaguar, puma, jaguarundi and ocelot), ornate hawk-eagle, tapir.



## Investment opportunities and alliances

- Alliances for the research and the relocation of specimens and the genetic regeneration of the species. The replication of the capture and release of specimens in places where there is presence of these species.
- Exchange of experiences.

## Main Results

- Registered UMA for the conservation, management and sustainable harnessing of free living species such as the ocellated turkey, the red brocket and the white-tailed deer, the collared peccary, the spotted paca (tepezcuittle) and the coati. In order to keep steady populations in the UMA, the habitat management activities performed are: the installation of troughs and the production of cornfields for the consumption of wildlife to face the dry season.

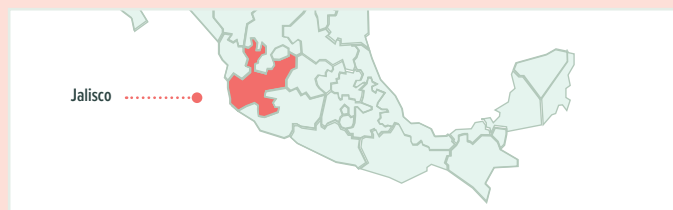
## CONTACT

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## UMA- Illustrative Case

# Non-Extractive UMA of river crocodile.

Ejido La Manzanilla, La Huerta, Jalisco



## Participating parties and institutions

- Ejido La Manzanilla
- Rain Forest Alliance, World Bank

## Description

The Ejido established the UMA with the vision to promote *Crocodylus acutus* conservation, research, rehabilitation, exhibition and ecotourism in its free living and the confinement habitat at La Manzanilla estuary. The efforts have focused on increasing the number of visitors received in the ecological path, at the crocodile museum and in the boat rides, ensuring that the carrying capacity of the ecosystem and that the crocodile population are not affected. The project contributes to increase crocodile nesting success in free living as a result of the monitoring and patrol activities. It is expected that the effects on nesting can be evaluated, thanks to the systematic monitoring of the population of crocodiles and their habitat.

## Main Results

- UMA with an area of 419 hectares
- An ecological path, with two bird observation towers, an interpretive trail, a station to host scientists and a museum.
- The conserved and managed species are: 3 mangrove species present in the estuary, 1 species of reptile (Green Iguana), 7 species of birds (the Green Macaw, the Orange-fronted Parakeet, the Lilac-crowned Parrot, the White Heron, common the Kingfisher, common Black Hawk and the Green Heron) and 4 mammal species (the white-tailed deer, the Collared Peccary, the Raccoon, the Badger).
- Crocodile and mangrove swamp management and conservation.



## Its relationship with the conservation and sustainable management of forests

The UMA has the goal of consolidating the conservation of the river crocodile and its habitat, through the management and monitoring of its population and of the mangrove to mitigate the environmental impact of ecotourism. It conducts a non-extractive harnessing oriented to ecotourism. The surface of the UMA covers 419 hectares, including valuable wetlands and very well-preserved tropical forest areas. The ejido preserves and manages more species in addition to the crocodile, that are present in the estuary, such as the green Iguana, the green macaw, the orange-fronted parakeet, the lilac-crowned parrot, the white heron, the common kingfisher, the common black hawk, the green heron, the white-tailed deer, the collared Peccary, the raccoon, badger.



## Investment opportunities and alliances

To promote continuous actions for economic sustainability of the project.

### CONTACT

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## Acronyms (for its acronym in Spanish)

<b>CIMMYT</b>	International Maize and Wheat Improvement Center
<b>CONABIO</b>	National Commission for the Knowledge and Use of Biodiversity
<b>CONAFOR</b>	National Forestry Commission
<b>CONANP</b>	National Commission of Natural Protected Areas
<b>GEF</b>	Global Environment Facility
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FIRA</b>	Trusts Established in Relation to Agriculture
<b>FND</b>	National Financial for Agricultural, Rural, Forestry and Fisheries Development
<b>FSC</b>	Forest Stewardship Council
<b>UNDP</b>	United Nations Development Program
<b>PROFEPA</b>	Federal Attorney for Environmental Protection
<b>SADER</b>	Secretary of Agriculture and Rural Development
<b>SEMAHN</b>	Secretary of Environment and Natural History of the State of Chiapas
<b>SEMARNAT</b>	Secretary of Environment and Natural Resources

## 07

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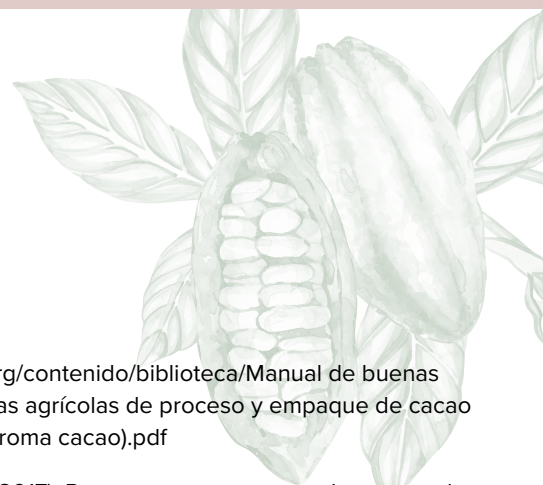
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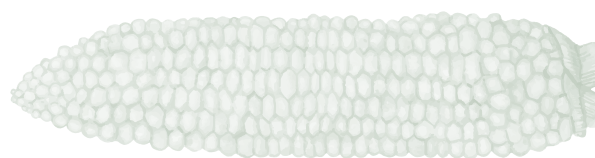
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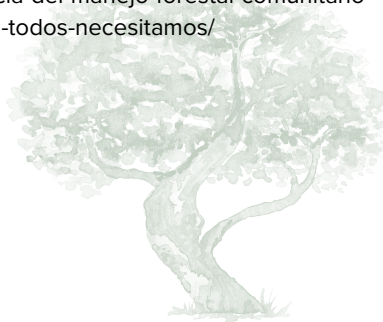
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## Productive Activities

for the sustainable management of forests