



# Ecosystem Services and Climate Change



GOBIERNO  
FEDERAL

SEMARNAT



Photo: Julio Adams

**National Forestry Commission**



[www.conafor.gob.mx](http://www.conafor.gob.mx)





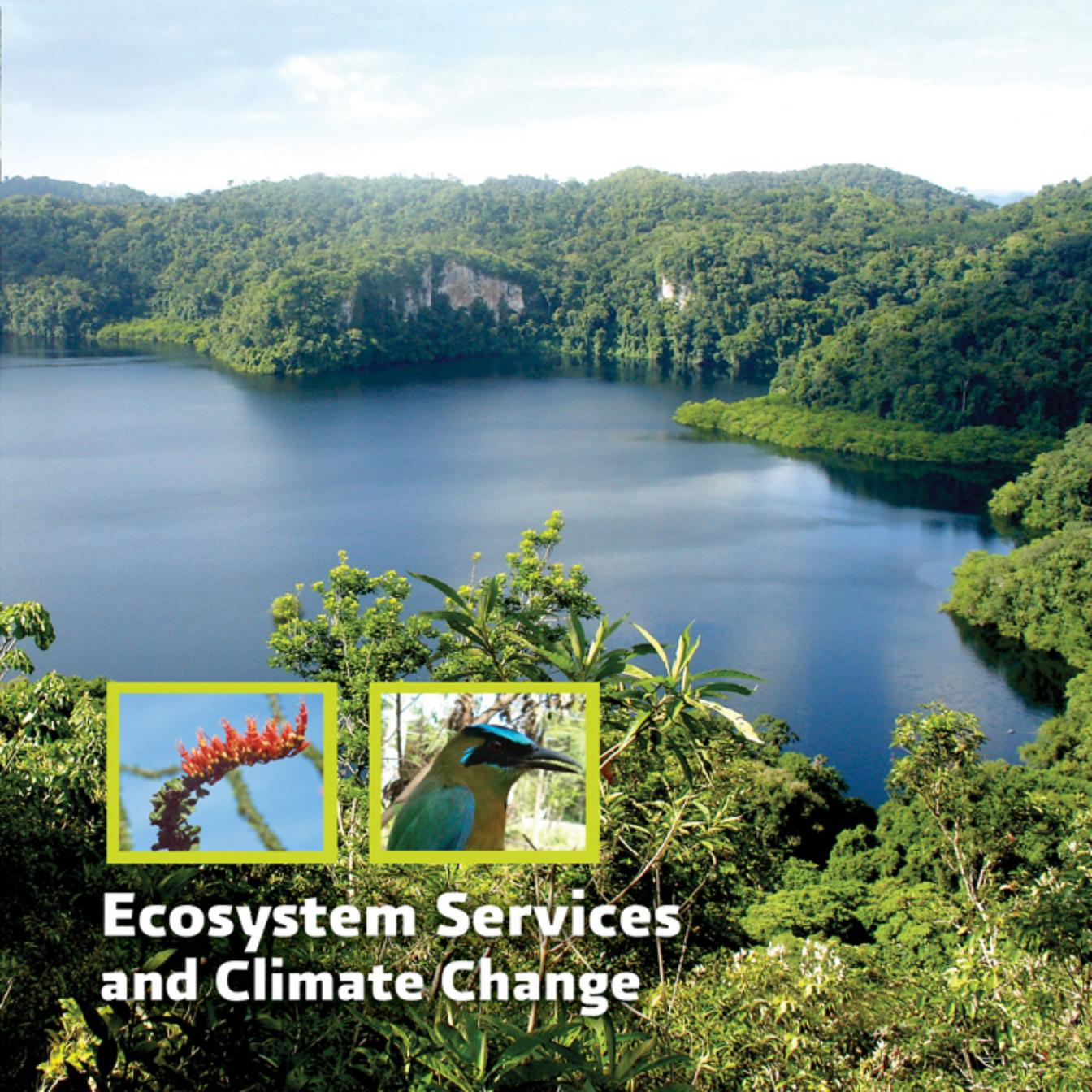
*"Our ancestors have bequeathed to us the value of community conservation. In our community, the conservation of natural resources is a tradition that is passed on from generation to generation. For us, the forest is the "cradle of the jaguar" which creates the habitat for birds and wildlife. This is why taking care of the places where the great curassow, brocket deer, jaguar, armadillo and gallinule live is the same as taking care of our own land."*

*Natural Resource Commission  
of Chinantla Alta. Oaxaca, Mexico.*



 **MEXICO IS ONE OF THE MOST  
BIODIVERSE COUNTRIES IN THE WORLD**

**CONAFOR** is committed to Mexico's forestland holders and to promoting actions that contribute to prosperity, conservation and restoration.



# **Ecosystem Services and Climate Change**



## Contents

### Ecosystem Services and Climate Change

- Mexico's Vast Forest Wealth... 2 ■
- Ecosystem Services... 4 ■
- Payments for Ecosystem Services... 6 ■
- International and National Perspectives... 8
- on Payments for Ecosystem Services... 8 ■
- Institutional Arrangements for Payments for Ecosystem Services... 10 ■
- Ecosystem Services and Climate Change... 14 ■

### Cases of Payments for Ecosystem Services in Mexico...19



# **Ecosystem Services and Climate Change**





# Mexico's vast forest wealth

## A mosaic of ecosystems and cultures



Mexico is one of the most biodiverse countries in the world. Its geographic location, its orographic and geological complexity and its varied climate enable 70.2% of the total land area to host almost all known types of natural terrestrial vegetation.

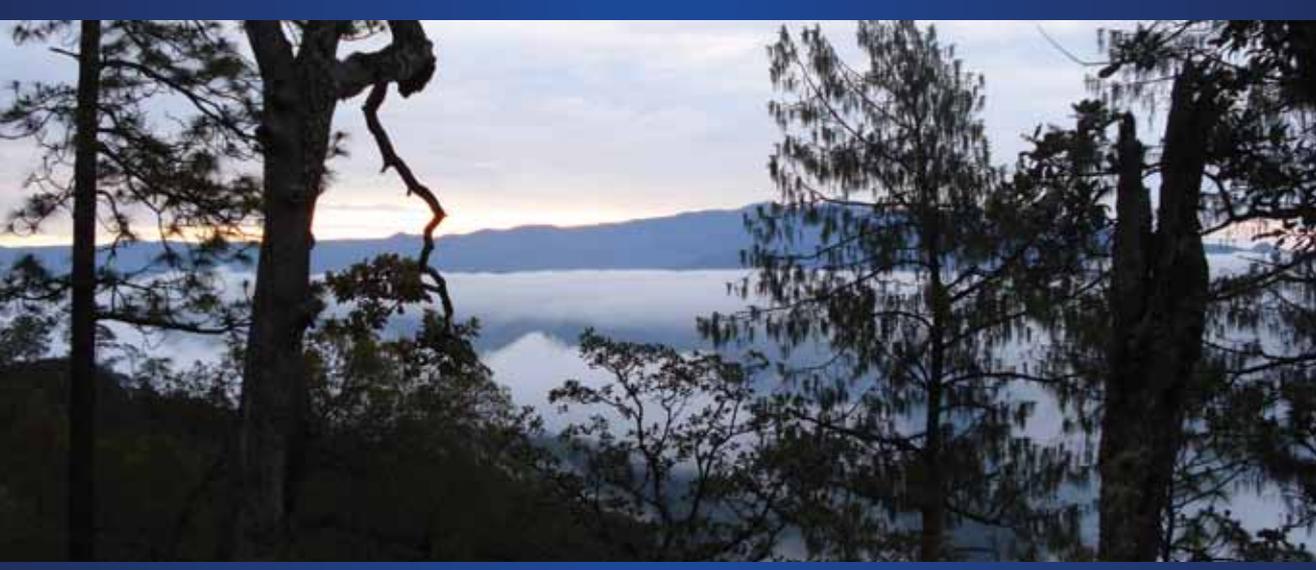
Regarding land with natural vegetation, 33% consists of wooded forest ecosystems (forests and tropical forests), while 29% is made up of xeric scrubland and 8.2% consists of other forest areas (mainly rangelands, halophilic grasslands, gypsophilous grasslands and popoay and tule vegetation). In contrast, 29.74% of the land in Mexico is used for purposes other than forestry such as agriculture, livestock keeping, aquaculture and urban development.<sup>1</sup>

Around 70% of Mexico's forest and tropical forests lands are in the hands of communities and ejidos, and about 3,000 communities participate in forest-related activities, of which 600 have started community forestry businesses. Of the total population living in forest areas, about 5 million are indigenous.

Community forest management is important for the conservation and protection of forest ecosystems, which in turn provide several ecosystem services to society such as water, biodiversity conservation and the sequestration and maintenance of carbon stocks.

<sup>1</sup> Data from: CONAFOR 2010, National Forest and Soil Inventory, Basic Forest Information based on the Cartography of Land Use and Vegetation Series IV scale 1:250,000 by INEGI.





Since Mexico is a highly diverse country, it is a challenge as well as an opportunity for both the government and the owners of these forestlands to change their mindset in regards to the indiscriminate use of forest areas in such a way that will make it possible to achieve sustainable forest management, conserve the biological richness of forest ecosystems and create revenue sources that will improve the quality of life of the country's inhabitants.



# Ecosystem Services





## **Forests as a source of water quality, habitat for hundreds of species and for climate change mitigation**

Ecosystem Services generated by forest ecosystems directly contribute to the well-being of society at the local, regional and global levels.

### **Some of the most significant ecosystem services are:**

- Catchment, infiltration and supply of sufficient amounts of quality water
- Biodiversity conservation
- Climate change mitigation through the sequestration and storage of atmospheric carbon
- Soil formation and conservation
- Scenic beauty

### **Ensuring the provision of ecosystem services**

Over time, human activity has significantly altered all the planet's ecosystems. Population growth and pressures to change land use to accommodate a range of economic activities have brought about deforestation and forest degradation.

To ensure that forest ecosystems continue to provide these ecosystem services, and because people depend on them directly or indirectly for their livelihoods, health and welfare, it is vital to keep them in good condition.



# Payments for Ecosystem Services





## Valuing the services provided by forests and paying for their conservation

Payments for Ecosystem Services (PES) were created as an economic incentive scheme for the owners of the forestlands where these services are generated. More specifically, they are designed to compensate for the costs of conservation and the expenses incurred in the implementation of best land management practices.

PES programs are voluntary, as they are based on mutual interest and agreement between participating parties. Under these arrangements, ecosystem services users (cities, water utilities, businesses, etc.) are willing to pay to continue receiving them, and providers (forestland owners) are willing to adopt measures needed to maintain or enhance the provision of ecosystem services in exchange for payments.



# International and national perspectives on Payments for Ecosystem Services



## New schemes to compensate forestland owners have been developed

Many market-based initiatives and other types of schemes for payment for ecosystem services have been developed over the last ten years.

Certain cases have become benchmarks for understanding how ecosystem services payment schemes can be created. In Costa Rica, Ecuador and Mexico, payments to suppliers are made with the support of their governments through tax revenues and donated funds. Private schemes are those where users pay suppliers directly, as in the cases of Pimampiro (Ecuador), Valle del Cauca (Colombia), Santa Rosa (Bolivia) and New York City (United States).

Mexico has developed initiatives to pay for hydrological ecosystem services in the mountains of Coahuila and Veracruz, for carbon sequestered in the tropical forests of Chiapas, or to finance protection of the scenic beauty of the Oaxacan coastline. In addition, the Federal Government, through **CONAFOR**, has spearheaded efforts to preserve ecosystem services through several programs that have been modified and updated in order to improve their operation and enhance their impact.





## Mexico, leader in Payments for Ecosystem Services

As part of its strategy to promote payment for ecosystem services in Mexico, the Federal Government, through the National Forestry Commission, launched two initiatives: the Hydrological Ecosystem Services Program (PSAH) in 2003, and the Program to Develop Ecosystem Services Markets from Carbon Sequestration and Biodiversity (PSA-CABSA) in 2004.

In 2006, the two programs were merged under a single concept called Ecosystem Services and are now part of the ProÁrbol Program. Since 2007, the budget for the PES Program has increased five-fold.

Between 2003 and 2011, **CONAFOR** allocated 520 million USD under the PES Program for the implementation of 5,085 conservation projects covering a surface area of 3,113,000 hectares. It also supported the preparation of 760 proposal documents (2004 - 2009) at an additional cost of 8.5 million USD. These funds have benefited over 5,800 ejidos, communities and private landowners throughout the country.

In 2010 and 2011, differentiated payments were made to link the amount paid to the opportunity costs incurred by forest landowners from the implementation of conservation activities.





# Institutional arrangements for Payments for Ecosystem Services



**CONAFOR** currently operates its PES strategy through several policies and schemes: I) The National Program of Payments for Ecosystem Services, II) the Biodiversity Endowment Fund, and III) the creation of local PES schemes through matching funds, all under the auspices of ProÁrbol.

## The National Program of Payments for Ecosystem Services

Through this program, support is offered for the conservation and sustainable management of forest ecosystems. ProÁrbol's support concept known as Ecosystem Services includes two modalities: hydrologic ecosystem services and biodiversity conservation. Both modalities are based on financial compensation to forestland owners and were created with the aim of maintaining ecosystem conditions that favor the provision of a number of ecosystem services. To achieve the latter, a contract is created between landowners and **CONAFOR** in which the landowners agree to maintain forest cover or implement practices to conserve natural land ecosystems, and **CONAFOR** agrees to pay a fixed compensation per hectare over a period of five years. As beneficiaries of the program, the landowners agree not to allow or implement land use changes in exchange for payments, and they are encouraged to conduct surveillance activities in order to prevent illegal logging, unregulated hunting and other activities harmful to ecosystems. Monitoring activities are financed by **CONAFOR** and allow for the continuance of payments.





## Biodiversity Endowment Fund

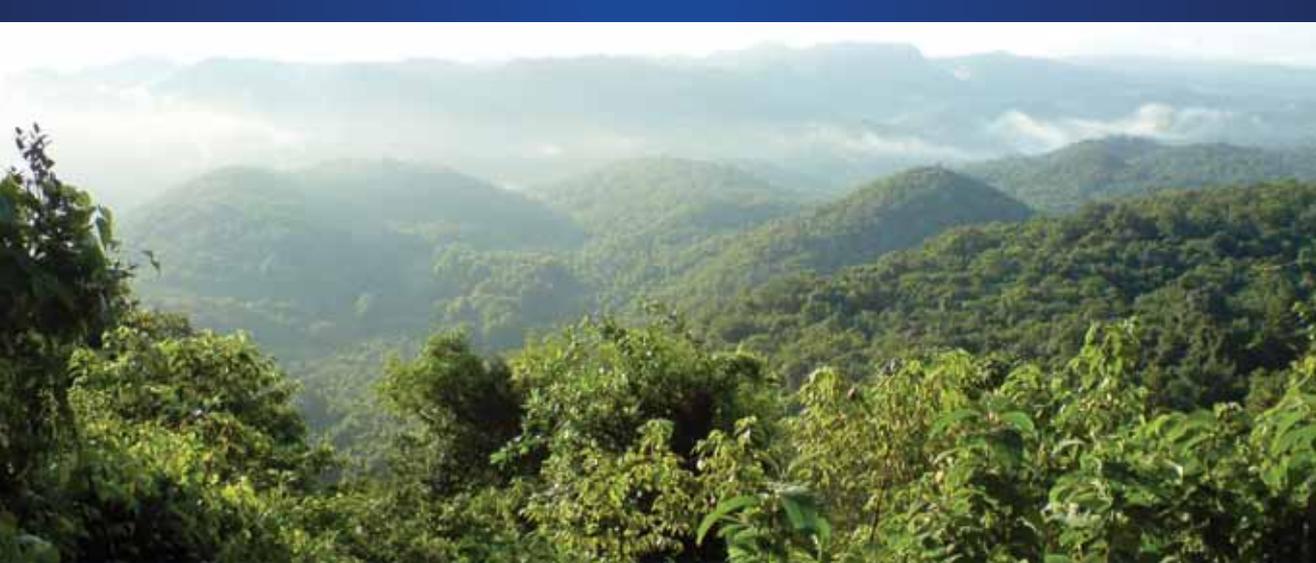
This fund was established with the aim of creating a long-term funding program for the conservation of forest ecosystems with globally significant biodiversity.

The Fund started with 10 million USD contributed in equal shares by the Global Environment Facility (GEF) and the Mexican Government through **CONAFOR**. In 2011 the fund was increased by another 10 million USD, also contributed in equal shares.

This innovative scheme will only use the interest generated by capital to make payments for ecosystem services in eligible areas which have been identified based on a regional approach and with an emphasis on biological corridors. The fund will operate through investment packages for each eligible area, with an effort to stimulate more investment for the purposes of conservation from other private or public sources in the same area.

Resources from the Biodiversity Endowment Fund will be allocated through a technical committee made up of both public sector institutions and private sector organizations with extensive experience in the field of biodiversity conservation.





## Creation of local PES schemes through matching funds

Although since 2003 **CONAFOR** has made payments for ecosystem services generated by forestlands in Mexico, federal resources are limited and it is not possible to cover the whole country. Therefore, the creation of local PES schemes is being promoted.

Local PES schemes are institutional arrangements to transfer resources from users of ecosystem services to the owners of the forestland where the services are generated, with the aim of promoting the adoption of best management practices and the conservation of land that will maintain and/or improve the provision of these services. This strategy takes into account water basins, biological corridors and/or priority areas for the conservation of forest ecosystems.

**CONAFOR** encourages ecosystem service users to become involved in these local programs through a matching funds arrangement whereby users of ecosystem services (cities, water utilities, businesses, etc.) are called on to make financial contributions to be used for best management practices for the conservation and restoration of forest ecosystems.





The scheme is temporary, and **CONAFOR** contributes up to 50% of the amount necessary to establish the PES mechanism for periods between five and 15 years.

This innovative financing scheme began in 2008 and so far has enabled collaboration with civil society organizations, water utilities, the National Water Commission, state governments, municipalities and an intermunicipal decentralized public body in a way which strengthens local capacities to support the conservation of the forests of Mexico and the development of their inhabitants.





# Ecosystem services and climate change



## Mexico is designing a national strategy to reduce emissions from deforestation and forest degradation (REDD+)

Climate change and forests are intimately related. As they grow, trees and forests absorb carbon dioxide (a greenhouse gas) from the atmosphere and through photosynthesis turn it into carbon that is “stored” in wood and vegetation. So by sequestering and storing carbon dioxide, forests make a considerable contribution to climate change mitigation. Nevertheless, when forests are destroyed by land use change, over-logging or forest fires, stored carbon is released as carbon dioxide into the atmosphere, thereby worsening the climate change problem.

About 13 million<sup>1</sup> hectares of forests are destroyed around the world each year, making deforestation one of the most important sources of gas emissions; deforestation releases more carbon into the atmosphere than the world’s entire transportation sector (land, air and sea).

Therefore, **CONAFOR** has begun to design a strategy to reduce emissions from deforestation and forest degradation in Mexico (known internationally as REDD+) to deal with the drivers and agents of deforestation and degradation in our forests while simultaneously promote the conservation, carbon stocks increasing and the forest sustainable management.

<sup>1</sup> FAO 2010 Global Forest Resources Assessment 2010 Main Report FAO forestry paper 163 Rome, Italy. p.340.





## Mexico's REDD+ initiative

REDD+ is one of the issues being negotiated as part of the United Nations Framework Convention on Climate Change, which seeks to promote the development of strategies that promote proper management of forest ecosystems and provide sufficient incentives for local communities in which such ecosystems are located to stop deforestation and degradation.

Mexico is designing a national REDD+ strategy to address deforestation and forest degradation, as well as to promote conservation and enhancement of carbon in forest ecosystems through sustainable forest management. This strategy, designed with data of deforestation and degradation that has occurred over the past 10 years, will establish expected emission reduction levels through the implementation of national or regional activities as deemed appropriate.

The resulting reductions in emissions will be monitored through a national system based on satellite imagery in combination with the National Forest and Soils Inventory that **CONAFOR** updates annually, similarly the accounting of emission reductions will take place at national level, thus seeking to ensure that there are no leaks. Furthermore, the financing initiatives required for the implementation of these activities could come from markets, endowments or a combination of both, with national benefit distribution schemes based on the experience of the Payments for Ecosystem Services Program and the Mexican Forest Fund.





## **Payment for Ecosystem Services as a tool for REDD+**

The PES program is a positive experience that will serve as a tool for the development of REDD+ in Mexico.

The central idea of REDD+ is to establish a scheme for financial transfers that will encourage activities aimed at reducing emissions from deforestation and forest degradation. The initiative will also recognize the role of forest management and carbon storage enhancement through tree planting, as well as the rehabilitation of degraded lands. In this regard, PES is a mechanism for providing incentives to local communities, forestland owners and for the maintenance and enhancement of carbon in forests.

There are two distinctive characteristics of PES in Mexico that contribute as a learning experience for the development of benefit sharing schemes for REDD+ in the country. The first of these is the payment differentiation by ecosystem type to compensate the opportunity cost incurred by forestland owners who prevent deforestation or forest degradation through changes in land use associated with business activities. These payments are made in different amounts depending on the risk of loss of woodland cover.

The other key element is the strategy for the development of local schemes for ecosystem services that allows for the financing of conservation activities and the management of forest ecosystems using contributions from direct users of ecosystem services.





Although PES has played a successful role in the conservation of forests in Mexico and the development of REDD+ in the country, the latter initiative has a broader scope and employs cross-cutting strategies to create effective institutional and governance structures which promote sustainable rural development that allows levels of deforestation and forest degradation to be reduced.







# **Cases of Payments for Ecosystem Services in Mexico**







**Cases of Payments for  
Ecosystem Services in Mexico**



# THE MONARCH BUTTERFLY BIOSPHERE RESERVE AND ITS ENDOWMENT FUND



## PROJECT LOCATION

The Monarch Butterfly Biosphere Reserve is located in the states of Mexico and Michoacán, both in south-central Mexico. The reserve is made up of 56,259 hectares, with fir, pine-fir, pine, pine-oak, oak and cedar forests. It houses 93 lots that belong to rural residents, including 59 ejidos (land pertaining to farming cooperatives), as well as 13 *Mazahua* and *Otomí* indigenous communities and 21 distinct private properties. The reserve has three core areas where forest harvesting is prohibited and two buffer zones in which sustainable harvesting activities are carried out.

## ACTIONS AND RESULTS

In 2000, an endowment fund of 6.5 million USD was established to ensure the conservation of the core area of the Monarch Butterfly Biosphere Reserve. This endowment led to the creation of the Monarch Fund—an initiative of Fondo Mexicano para la Conservación de la Naturaleza, A.C. (FMCN) and the World Wildlife Fund (WWF), with financial support from the Packard Foundation, the Mexican Ministry of Environment and Natural Resources (SEMARNAP), and the governments of the states of Mexico and Michoacán. In 2010, the endowment fund reached close to 7 million USD thanks to recent contributions from the government of the State of Mexico.





This endowment is administered by a trust fund managed by FMCN and supported by a multi-sector technical committee, through which two types of economic incentives are offered:

- Support for ejidos, indigenous communities, and private property owners whose forestry use permits in the core area have been modified, all of whom are offered 18 USD per cubic meter of wood not harvested.
- Payments to ejidos, indigenous communities, and private property owners (without usage permits) for conservation-related services. These stakeholders receive 12 USD per hectare conserved. These payments are made in exchange for a commitment to conserve the core area and work in conjunction with the managing entity of the Monarch Butterfly Biosphere Reserve to ensure its protection.

### CONAFOR'S PARTICIPATION

During the first phase (between 2000 and 2009), the Monarch Fund supported forestland owners with payments totaling approximately 2.1 million USD.

CONAFOR has promised to commit resources to the initiative's second phase (to be carried out from 2009 to 2018) in the form of matching funds. Together, the Monarch Fund and CONAFOR have earmarked about 5 million USD for direct disbursement to 38 landowners in the core area over a 10-year period.

For every dollar that CONAFOR contributes per hectare of preserved forest, the Monarch Fund contributes 1.21 USD.

### FEATURES AND STRENGTHS OF THE PROJECT

The Monarch Fund mechanism has been replicated on a national level due to its well-defined and transparent financial design. The initiative has also been successful in securing the commitment of national and foreign civil organizations, federal and state agencies and ejido, community, and private land owners.

Forest monitoring conducted by the Monarch Fund in 2010 showed a significant reduction in deforestation in the core area, thus ensuring the survival of several species and the maintenance of processes such as aquifer recharge in the upper parts of the Cutzamala watershed—another important site for Monarch butterfly hibernation.





# A VOLUNTARY FOREST CARBON MARKET SCHEME. EXPERIENCE OF INDIGENOUS COMMUNITIES IN OAXACA



## PROJECT LOCATION

The project is being implemented in 10 indigenous communities in the northern and southern mountains of Oaxaca and benefits about 590 families living in communities with high rates of marginalization. These communities belong to the Mixe, Chinanteca and Zapoteca ethnic groups. The project is supported by **CONAFOR** with technical assistance from Servicios Ambientales de Oaxaca, A.C. (SAO), *tequio* (indigenous tradition of community service) for forest conservation as well as Pronatura México, A.C.

## ACTIONS AND RESULTS

One of the factors that drove these communities to participate in the ecosystem services project was the significant deterioration their land has suffered because of agriculture. Deforestation resulted in a drop in the water supply and the released carbon dioxide into the atmosphere. That is why one of the biggest challenges of SAO was to propose a change in agricultural and forestry management in the community and convince residents of the benefits that reforestation and forest management could offer. The work now performed by communities in Oaxaca includes the maintenance and management of 2,973 reforested hectares, the maintenance of natural regeneration, the enrichment of coffee plantations and the restoration of forests. Thanks to the reforestation work, the inhabitants of these communities now have plenty of water, and the landscape has been restored.





## CONAFOR'S PARTICIPATION

In 2004, **CONAFOR** contributed the initial capital for this project, which was called "Carbon Sequestration in Indigenous and Rural Communities of Oaxaca", through the program known as PSA-CABSA. A total of 370,000 USD was raised from 2004 to 2009, in line with the tonnage of additional carbon sequestered from the above activities, and for which they had the technical support of **CONAFOR**.

## FEATURES AND STRENGTHS OF THE VOLUNTARY PAYMENTS FOR CARBON SALES PROGRAM

The work of the Oaxacan indigenous people is distinguished by its contribution to the environment, and this initiative has also become the first national ecosystem services project to join the voluntary carbon offset market.

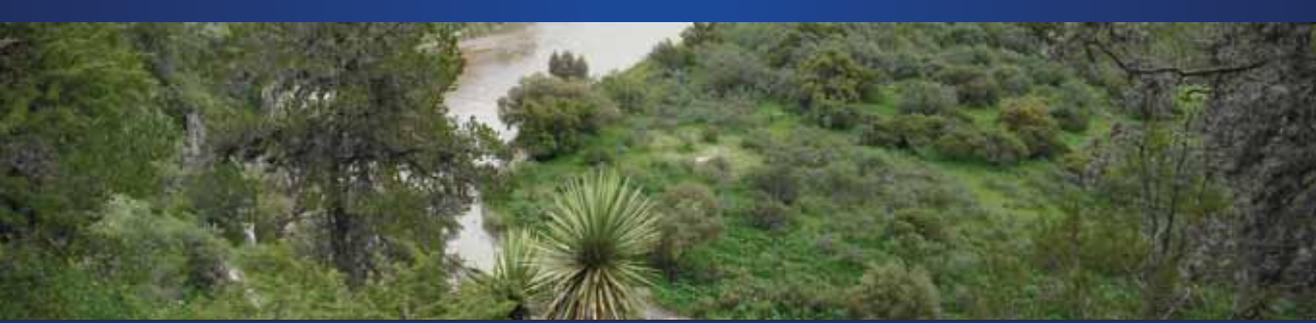
With the support and advice of **CONAFOR**, SAO and Pronatura México A.C., in May 2008 the project welcomed three companies to the voluntary market for the sale of carbon credits through the Neutralízate program: Televisa, Chinoin Productos Farmacéuticos and Grupo CP. The purpose of this program is to "neutralize" or offset some of the greenhouse gas emissions generated by their business activities.

The companies have pledged to offset their carbon footprint, which amounts to a total of 39,400 tons of carbon dioxide and corresponds to sales revenues of 340,000 USD.

## What has been achieved

The hard work of 10 Oaxacan communities combined with the parallel efforts of several institutions have made the "Carbon Sequestration in Indigenous and Rural Communities of Oaxaca" an example of the successful implementation of a voluntary forest carbon market scheme aimed at breaking into the international ecosystem services markets. This achievement fosters community management of natural resources and contributes to improvements in the quality of life of participating families, hence confirming that the PES program has objectives beyond that of mere financial reward.





# VOLUNTARY PAYMENT FOR HYDROLOGICAL ECOSYSTEM SERVICES IN THE CUENCA DEL ALTO NAZAS REGION



## PROJECT LOCATION

The region covered by the project entitled Irritila includes 8,622 hectares belonging to 14 ejidos in the municipalities of Santiago Papasquiario, Tepehuanes and Guanacevi, all located in the Sierra Madre Occidental mountain range in the state of Durango.

The Durango Sierra is the the Comarca Lagunera region's water catchment site for agricultural, domestic and industrial use. This region is also the confluence site of the Nazas and Aguanaval rivers, and its 13 dams serve Mexico's ninth largest conurbation and one of the most productive agricultural and industrial areas in the country.

The Nazas River basin covers an area of 35,036.8 square kilometers. Its affluents feed dams such as Lázaro Cárdenas, Francisco Zarco, El Palmito and Santiaguillo Lake. Some of its major tributaries are the San Juan, Ramos, Potreritos, Del Oro, Nazas, Santiago, Tepehuanes and Peñón Blanco rivers.

There has been a noticeable decline in available groundwater in the region due to extraction for domestic and industrial use, as well as for use by Irrigation District 017. This decline can be attributed to anthropogenic activities that have historically had an impact on the region's natural resources such as fishing, farming and industry.





## ACTIONS AND RESULTS

The National Water Commission (CONAGUA) has organized the inhabitants of the upper watershed areas so that they may carry out activities for the conservation and improvement of forest cover. CONAGUA, through the Aguanaval Nazas Basin Commission, drove participatory initiatives from society and different levels of government to promote conservation and reduce the loss of forest cover in the Nazas River basin.

## CONAFOR'S PARTICIPATION

In 2009 **CONAFOR** joined this effort through the creation of local schemes for ecosystem services through matching funds. It signed a five-year agreement with Comisión de Cuenca del Alto Nazas, A.C. for conservation work covering 8,622 hectares. **CONAFOR** pledged a contribution of 1 million USD, while the Basin Commission matched that pledge for a total 2 million USD.

## FEATURES AND STRENGTHS OF THE PROJECT

The non-profit civic organization Comisión de Cuenca del Alto Nazas promotes the creation of a voluntary payment scheme for hydrological ecosystem services which seeks to integrate ecosystem service payments from water users in Irrigation District 017 with those of other users. This funding will benefit the upper parts of the basin and encourage owners of forestland in the upper parts of the Nazas basin to carry out activities to preserve the provision of hydrological ecosystem services.

Also of value is the promotional work done by Comisión de Cuenca del Alto Nazas, A.C. that resulted in direct contributions from well concessionaires. It is also the first local scheme to make use of the Mexican Forest Fund as a tax deduction strategy, offering those who pay compensation for ecosystem services a tax incentive for doing so.





## INTEGRATED MANAGEMENT OF THE YUCATÁN AQUIFER



### PROJECT LOCATION

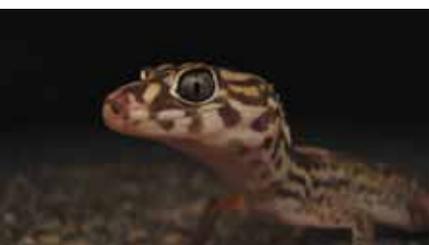
The project is being implemented in an area south of Mérida, Yucatán bordered by the ring of cenotes. The Cuxtal Municipal Reserve is located in this area, and within it there are three extraction plants of the water utility Junta de Agua Potable y Alcantarillado de Yucatán (JAPAY) which together provide 66 % of water for urban consumption.

Preserving this source of water resources is important because the Yucatán Peninsula has no surface runoff. In addition, because of its geological, physiographic and climatic features, groundwater is the only source of water supply for the region.

### ACTIONS AND RESULTS

Increased population density has resulted in an increase in the number of industries such as assembly plants and water bottling plants in the municipality of Mérida. Likewise, electricity generation is one of the industries with the highest levels of water consumption in Mérida, where three thermoelectric plants supply the metropolitan region from deep wells.

Because of this, the non-profit civil organization Niños y Crías operates projects for the protection of flamingos, forest fire prevention and management of solid waste on the coast of Yucatán. It is also developing a project to conserve the forest areas surrounding the city of Mérida, which serve as recharging areas for the aquifers that supply the city.





The project's objective is to promote communication, advocacy and financing strategies to help the inhabitants of the Yucatán basin take a proactive role with respect to environmental responsibility through the implementation of a functional scheme of compensation for ecosystem water services.

In 2007, Niños y Crías signed a matching funds agreement with the Yucatán State Government. Half of the capital was supplied by the State Government and the other half by the non-profit organization Fundación Pedro y Elena Hernández, A.C., to establish a trust fund entitled Fondo de Áreas Naturales Protegidas y Acuífero de Yucatán (FANAY).

### CONAFOR'S PARTICIPATION

In 2010 CONAFOR joined this effort through the creation of local matching funds schemes for ecosystem services, with the aim of conserving an area of 3,000 hectares in the region for a period of five years.

### FEATURES AND STRENGTHS OF THE PROJECT

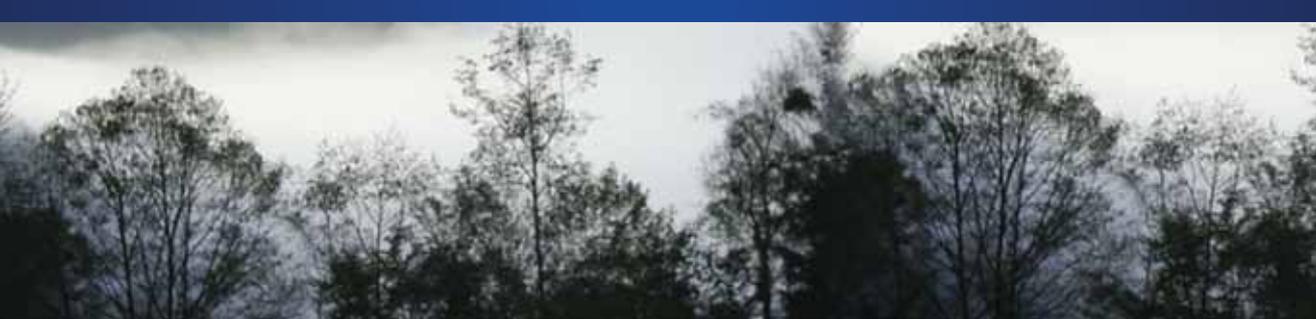
A technical committee has been formed to make decisions on the management of contributions from participants in the project, including Fundación Pedro y Elena Hernández, A.C. and a number of distinguished citizens of Mérida. A contract to establish a trust has already been signed, and resources have been assigned to compile extensive information on the state's water situation. The aim is to support projects of Alianza Intermunicipal de la Costa de Yucatán as well as those which will strengthen sustainable development, including the management of forest biomass in areas important for water catchment for the city of Mérida.

Three strategic lines of the project are:

- The development of a public communication campaign on the responsible use of water.
- Assisting in the reform of the JAPAY Organic Act to facilitate its integration into a compensation scheme for environmental hydrological services.
- Creating a local scheme of compensation for ecosystem services.

This project operates in partnership with the Watershed and Cities program of Fondo Mexicano para la Conservación de la Naturaleza and Fundación Gonzalo Río Arronte, I.A.F.





## THE PES PROGRAM IN THE PIXQUIAC RIVER BASIN, VERACRUZ



### PROJECT LOCATION

The Pixquiac River basin begins on the eastern slopes of Cofre de Perote and is located west of the city of Xalapa, Veracruz. It is an important supplier of water to the metropolitan area of Xalapa and also serves communities in its region. The basin area is home to 7,150 people living in 72 communities.

The upper basin is a natural home to pine-oak and cloud forest, which is one of the most threatened ecosystems in the world. The Pixquiac basin contains the most important segments of this natural environment to be found in central Veracruz.

The Pixquiac River basin is an economically marginalized area where illegal logging is a primary business activity. Among other factors, poverty and lack of viable economic and employment opportunities have led to the destruction of natural resources in the region of Cofre de Perote and particularly around the upper part of the Pixquiac River basin.

### ACTIONS AND RESULTS

Interest in preserving one of Xalapa's main water sources led to the establishment of the Compensation Program for Ecosystem Services of the City of Xalapa (PCSAX) in 2006. It is the instrument through which the city supports the conservation and restoration of areas that provide water and other ecosystem services.





Participants in the PCSAX program include organized civil society groups, academics and landowners in the Pixquiatic River basin appointed through the Pixquiatic River Basin Committee (COCUPIX).

Between 2006 and 2009, PCSAX invested in restoration, conservation and productive restructuring activities.

**The following goals were achieved:**

- The conservation of 1,078 hectares of forest.
- The reforestation and maintenance of 131 hectares of plantations.
- Support for dozens of people engaged in sustainable productive projects (ecotourism, flower growing, using livestock areas more efficiently and reducing the impact of trout farming on water).

Aside from the acres conserved or restored, PCSAX has had significant success in changing the mindset of program participants, who now realize that their properties play a strategic role in the welfare of themselves and the region.

### **CONAFOR'S PARTICIPATION**

In 2008 and 2009 the Pixquiatic River Basin Committee, the water utility of Xalapa (CMAS) and **CONAFOR** signed a matching funds agreement to offer compensation to forestland owners who maintain or improve

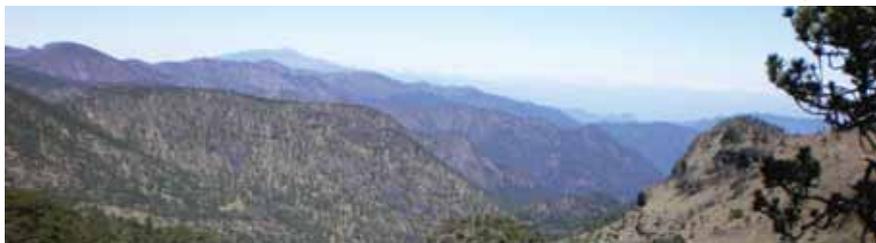
forest conservation and cover in the area of interest. This agreement strengthened the conservation of 65 hectares of forest area with water resources belonging to 28 families of foresters, who received an annual payment per hectare for forest conservation and restoration. About 230,000 residents of the city of Xalapa have also benefited.

### **FEATURES AND STRENGTHS OF THE PROJECT**

The actions of this program are delivered through shared responsibility between the rural and urban areas so as to create partnerships and support among users of ecosystem services. There is also non-monetary compensation which may take the form of advice, training or other incentives where amounts can be determined using criteria appropriate for owners and users of resources.

Another positive aspect is the seed investment for the restructuring of production. Such investment fosters the formation of working groups for the project where the training is collective and the organization of production is promoted.

This project operates in partnership with the Watershed and Cities program of Fondo Mexicano para la Conservación de la Naturaleza and Fundación Gonzalo Río Arronte, I.A.F.





## THE RECOVERY OF A BASIN: THE EXPERIENCE OF FÁBRICAS DE AGUA CENTRO DE SINALOA



### PROJECT LOCATION

Fábricas de Agua Centro de Sinaloa (FACES), a private charitable institution founded to promote environmental protection and the preservation and restoration of ecological balance in Sinaloa, operates primarily around the Tamazula River, specifically in the Imala ejido located in the upper areas of Valle de Culiacán. The project of conservation and restoration of 2,807 hectares of the ejido was undertaken because runoff from the Imala ejido was flowing into the La Sanalona dam. The objective is to reduce the process of silting of the dam and increase its water capacity.

### ACTIONS AND RESULTS

In late 2009, **CONAFOR** and FACES signed a matching funds agreement for the preservation and restoration of La Sanalona dam's area of influence. Firstly, conservation and restoration activities were carried out in the Imala ejido in Culiacán, whose geographic location and forest cover make it a strategic site for water catchment and filtration.

The aim of this local payment scheme for ecosystem services is to improve the provision of water services to the agricultural area and the city of Culiacán.





## CONAFOR'S PARTICIPATION

With support agreed through the matching funds scheme, in 2009 **FACES** and **CONAFOR** pledged to provide, in equal parts, a total of 1 million USD over a five-year period.

With these resources, ejido owners from Imala will carry out conservation and recovery activities in a proposed initial area of 2,807 hectares.

Contributions to the matching fund program by **FACES** originate from payments of 2 USD per hectare made by farmers in their respective irrigation districts.

One of the first actions to be undertaken with the proceeds will be the construction of a nursery that will produce between 250,000 and 500,000 Palo Rojo trees. These trees will be used for the reforestation of degraded areas of the ejido. Other actions include those designed to preserve the good condition of the remaining forest.

## FEATURES AND STRENGTHS OF THE PROJECT

**The three cornerstones of this project are:**

- Reforestation and conservation of the soil in order to increase water supplies.
- Undertaking environmental cleanup actions.
- Generating employment in the community.

Thanks to this scheme and leadership by **FACES**, the Imala community has taken an active role in actions related to conservation, waste collection and rational water use.

One aspect that makes this local PES scheme exemplary is that it brings together the goodwill and contributions of authorities, farmers and ejido owners. It also helps to raise awareness of the importance of returning to the highlands the benefits they give to agricultural and urban areas as well as conserving and restoring their forest areas.





# CONSERVATION INITIATIVES IN LA CHINANTLA ALTA, OAXACA, AND ITS COMMUNITY STRATEGY



## PROJECT LOCATION

The six participating communities, located in the northern highlands of Oaxaca, are: Santa Cruz Tepetotutla, San Antonio del Barrio, San Pedro Tlatepusco, Santiago Tlatepusco and San Antonio Analco (from the municipality of San Felipe Usila) and Nopalera del Rosario (from the municipality of Valle Nacional). All of these towns are located in sub-basins of the Usila and Valle Nacional rivers that belong to the Papaloapan River basin. Since 2004, these communities have participated in the Committee on Natural Resources of La Chinantla Alta (CORENCHI).

CORENCHI communities are home to 2,039 inhabitants, and the Chinantec language is spoken by almost 100% of the population. The area has a high rate of migration and high rates of marginalization.

The communities have a natural and continuous corridor of over 26,770 hectares of vegetation in good condition, mostly in cloud forests, rain forests and dry forests. There are also temperate pine and oak forests.

## ACTIONS AND RESULTS

From 2004 to the present, CORENCHI communities, through **CONAFOR** Payments for Ecosystem Services program, have pledged to conserve the vegetation of their communities, to avoid changing land use in forest areas and to prevent the pollution of the territory. They have also pledged to promote the total, partial or temporary exclusion of grazing areas and





to conduct surveillance of their properties to ensure the conservation of their forest cover.

With the proceeds, the CORENCHI created a community savings fund to encourage negotiations between providers and users of water resources.

### CONAFOR'S PARTICIPATION

The six CORENCHI member communities administered hydrological ecosystem service resources from 2004 to 2009 and have pledged to undertake conservation works until 2013. These resources will have a monetary value of 4.5 million USD and will impact a conservation area of 22,103 hectares.

Starting in 2009, CORENCHI and the non-profit organization Geoconservación (community advisor on environmental issues, management processes and technical design) have undertaken to participate with CONAFOR in the creation of local PES schemes.

Financial resources obtained from the migrant community of La Chinantla, combined with funding from Geoconservación, A.C., has produced an initial fund of 51,000 USD for PES and 8,000 USD per year for technical assistance (for a period of two years) contributed by each party. The overall total of 243,500 USD will enable the establishment of a local PES scheme.

CORENCHI recognizes that the support obtained for hydrological ecosystem services has been an important factor in the consolidation of their organizational process.

### FEATURES AND STRENGTHS OF THE PROJECT

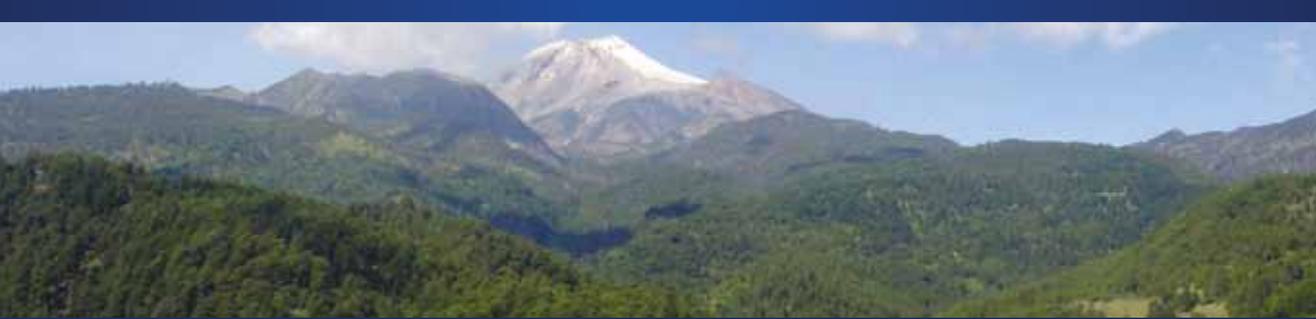
The communities have administered the compensation they have obtained for the care of ecosystem services efficiently and with social sensibility. Such resources are used for emergency medical care, infrastructure development, in addition to productive and conservation projects. The authorities responsible for financial management of the communities have been involved in preparing and updating administrative processes.

These Chinanteco communities have already adopted community conservation strategies which include activities to maintain their forests in good condition pursuant to agreements reached within CORENCHI and that are supported by the agricultural authorities of each community.

The work of CORENCHI has influenced the thinking of other communities that have joined this conservation initiative through the signing of an agreement for the negotiation of payment and collection of ecosystem services, to help secure the conservation of a natural and continuous corridor of 39,000 hectares of vegetation in this region of Chinantla.

Foto jaguar: Bolaños, A<sup>1</sup>, Mondragón, F<sup>1</sup>, Manuel<sup>2</sup>, E., Carmona H<sup>1</sup>, Gamboa E<sup>1</sup>.  
<sup>1</sup>Geoconservacion AC <sup>2</sup>CORENCHI AC, Santiago Tlatepusco.





## PAYMENTS FOR ECOSYSTEM SERVICES IN PICO DE ORIZABA, VERACRUZ



### PROJECT LOCATION

Hydrologic Region No. 28 Papaloapan is located in the Jamapa-Cotaxtla River basin, in the central part of the state of Veracruz.

The Jamapa-Cotaxtla basin covers an area of 3,912 square kilometers and is in the Pico de Orizaba National Park's area of influence.

### ACTIONS AND RESULTS

There is currently a payment scheme for ecosystem services in the region by which Sistema de Agua y Saneamiento (SAS), the water utilities operator in the municipalities of Veracruz-Boca del Río-Medellín, charges citizens a maximum fee of 1 USD in their water bill. However, this charge is not mandatory as citizens can choose not to pay it.

The yearly proceeds are used to make payments to landowners in the upper parts of the basin for actions to be implemented for the recovery of forests in the area of Pico de Orizaba, and to contribute to the processes of recharging the Cotaxtla and Jamapa basins and rivers.





Likewise, an institutional and multidisciplinary work group was formed in which the various entities from different levels of government and representatives of the private sector, civil society and universities analyze and determine the projects and lines of action for the Pico de Orizaba area.

The project also established a system or network of communication that allows for the publicizing of activities undertaken, the teaching of environmental education workshops and the promotion of alternative business activities.

### **SUPPORT FROM CONAFOR**

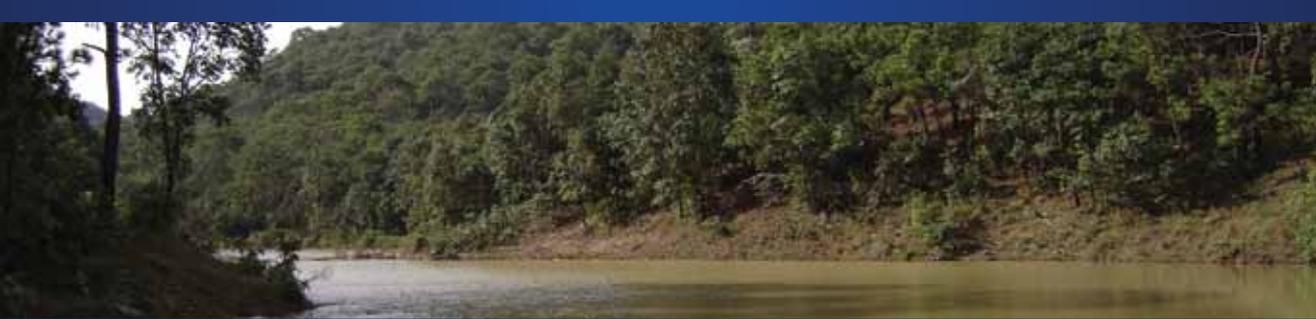
In 2010 **CONAFOR** joined this conservation initiative to establish local schemes for ecosystem services through matching funds by signing a five-year agreement with Comisión de Cuenca del Alto Nazas, A.C.

### **FEATURES AND STRENGTHS OF THE PROJECT**

This initiative has succeeded in developing a financing scheme from contributions made by water users through their bills and that are collected by the water and sanitation service in the metropolitan area of Veracruz. These contributions are used at present to take action to conserve and restore forest ecosystems in the catchment area of the Pico de Orizaba National Park.

Citizen participation is part of the payment and collection scheme for ecosystem services. Financial contributions are currently made to the metropolitan water and sanitation system by 200,000 water users in the Veracruz-Boca del Río-Medellín metropolitan area (amounting to 1 % of the cost of water service for a month). As of December 2009, contributions amounted to 27,000 USD for the Fondo Ambiental Pico de Orizaba (FAPO).





## A LOCAL SCHEME SUPPORTED BY THE MUNICIPALITY, FEDERATION AND COMMUNITY: THE EXPERIENCE OF TAXCO, GUERRERO



### PROJECT LOCATION

The project is being implemented in the community Comunales de San Pedro y San Felipe Chichila in the state of Guerrero, a few kilometers from the city of Taxco. The project entails the preservation of 1,315 hectares of oak forest which is home to the San Marcos I and San Marcos II micro-basins. The primary user of hydrological ecosystem services generated by these micro-basins is the city of Taxco.

### ACTIONS AND RESULTS

Since 2004, the community has carried out actions for the protection, monitoring and restoration of forest areas. These include the construction of firebreaks, establishing a nursery for native plant production system to supply reforestation actions in the region, payment of firefighting services, as well as the development of a forest management program.

Since October 2009, **CONAFOR** and the municipal government of Taxco de Alarcón, Guerrero, have collaborated in an effort to conserve 1,315 hectares of oak forest through the creation of a local matching funds payment scheme for ecosystem services. The municipal government of Taxco de Alarcón uses resources that come from contributions by service users such as the soft drink company Yoli de Acapulco and a water tanker company.



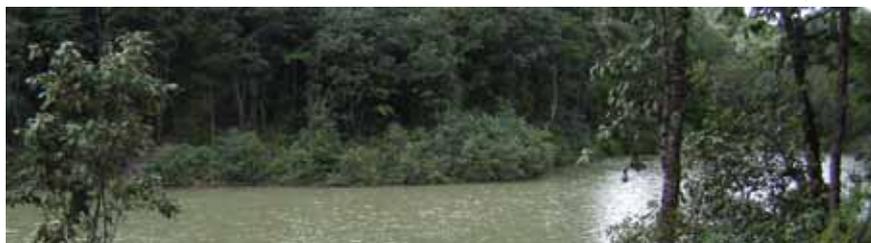


## CONAFOR'S PARTICIPATION

Through the participation of the municipality of Taxco and **CONAFOR** in the matching funds payment scheme, the municipality pledged a contribution of more than 200,000 USD, while the National Forestry Commission pledged about 180,000 USD for the conservation of an area of 1,315 hectares in the abovementioned ejidos.

## FEATURES AND STRENGTHS OF THE PROJECT

A strength of this project is that the community Bienes Comunales de San Pedro y San Felipe Chichila, the municipality and **CONAFOR** all recognize that this scheme does not entail the community "selling" water to the municipality. On the contrary, the community receives financial compensation from the latter for ecosystem services provided by forest areas. Moreover, providing these services enables inhabitants of the city of Taxco to receive water in adequate amounts and of suitable quality.





## AN EXEMPLARY PROJECT FOR THE PRESERVATION OF THE HABITAT OF MIGRATORY BIRDS AND FLORA AND FAUNA SPECIES IN METZABOK, CHIAPAS



### PROJECT LOCATION

Metzabok, which in the Mayan language means “the thunder-making god”, is located in the northern region of the Lacandona Jungle, in the municipality of Ocosingo, Chiapas, and in the sub-region known as Las Cañadas. The area of ecosystem services covers 3,368 hectares and is home to one of the two major Lacandona communities in Chiapas.

The region is also home to countless species of migratory birds and endemic flora and fauna species.

### ACTIONS AND RESULTS

Over the past five years, this project supported by **CONAFOR** has supported the habitat for birds in rainforests and dry forests, coffee plantations under diversified shade cover and in areas of acahuals located within the protected area of flora and fauna of Metzabok and its area of influence in the northern part of the Lacandona Jungle.

Key actions undertaken by local people to achieve their conservation objectives include biological monitoring, protection and surveillance, the promotion of ecotourism, environmental education and fire prevention. One result of the monitoring program has been the recording and registration of 222 bird species, of which 174 are breeding residents (78.37%), while temporary resident species represent 22.52%.





Other actions include the following: periodic inspection and surveillance tours to prevent illegal logging and poaching; signage placed in the areas under conservation; the formation of a community surveillance program; the establishment of 8 kilometers of firebreaks; preparing materials for the promotion of ecotourism (brochures, websites, bird guides and posters) and attention to local and foreign visitors in the protected area.

Environmental education activities have included workshops on bird and mammal monitoring techniques, firefighting and control techniques, the training guides and environmental advocates, and organic coffee production under diversified shade cover.

### CONAFOR'S PARTICIPATION

In 2004, **CONAFOR** supported the community by providing project development funding, and in 2005 resources were supplied for the execution of the project through the PES-CABSA Program (now managed by ProÁrbol under its Ecosystem Services/Biodiversity Conservation programs). Annual investment came to 50,000 USD which totaled 250,000 USD over five years of support.

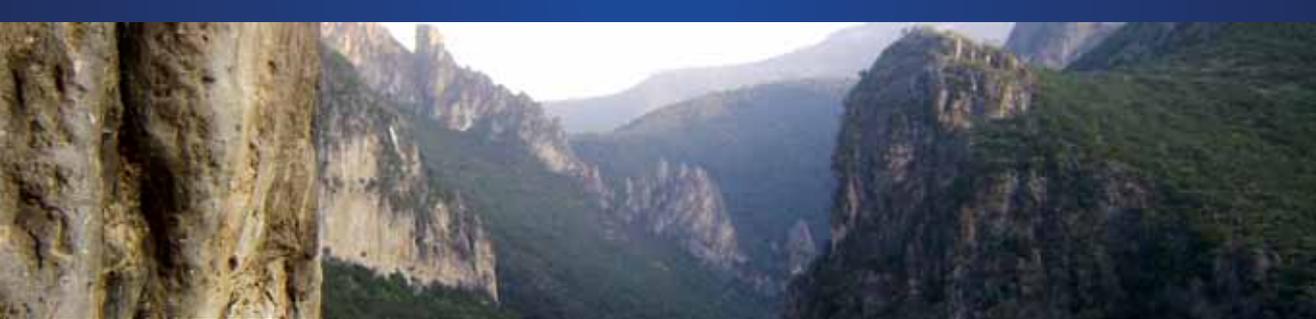
### FEATURES AND STRENGTHS OF THE PROJECT

The protection and maintenance of bird habitats in protected forests and coffee plantations has been achieved in the Protected Area for Flora and Fauna of Metzabok.

A distinguishing feature of this project is the development and implementation of an efficient monitoring system that has made it possible to record the different birds species found in the area.

With the participation of the residents of Metzabok, actions related to environmental education, the protection and monitoring of the mountains to prevent the depletion of species and ecotourism have been promoted as a source of income.





## PES AND SOCIAL SUPPORT FOR SIERRA DE ZAPALINAMÉ, COAHUILA



### PROJECT LOCATION

The Sierra de Zapalinamé mountain region, located southeast of the state of Coahuila, includes part of the municipalities of Saltillo and Arteaga and is the main source of natural resources and ecosystem services for the city of Saltillo.

Currently, the non-profit civil organization PROFAUNA operates the management program in the protected area and engages in conservation and restoration activities covering more than 72,000 hectares.

### ACTIONS AND RESULTS

With municipal support, a fundraising scheme was established to receive voluntary contributions from water users in Saltillo wishing to participate in the conservation of Zapalinamé. This scheme consists of collecting donations through water bills issued by the para-municipal agency Aguas de Saltillo.

A technical group and a citizens' group were formed to obtain technical advice and promote financial monitoring and transparency with respect to funds raised.





In 2006, the Government of Coahuila pledged to contribute one Mexican peso for every Mexican peso collected from donors.

This project works in partnership with the Watershed and Cities Project of Fondo Mexicano para la Conservación de la Naturaleza and Fundación Gonzalo Río Arronte, I.A.F.

### CONAFOR'S PARTICIPATION

In 2008, **CONAFOR** and PROFAUNA directly pledged matching funds of about 100,000 USD for the protection of 474 hectares, while they contributed indirectly to the protection of more than 45,226 hectares in Sierra de Zapalinamé.

### FEATURES AND STRENGTHS OF THE PROJECT

This project is one of the first in the country to consolidate a local PES program.

Actions coordinated by PROFAUNA and the creation of technical and citizen help groups have made it possible to support the owners of forest resources and raise awareness among the urban population of the city of Saltillo, who now make voluntary contributions through their water bills for the conservation of Sierra de Zapalinamé, which is the main source of water for the city.

**The three main areas that guide the work of PROFUNA in Zapalinamé are:**

- Education for environmental conservation
- Wildlife management
- Management of Protected Areas





# THE INTERMUNICIPAL ENVIRONMENT BOARD FOR THE INTEGRATED MANAGEMENT OF THE LOWER AYUQUILA RIVER BASIN (JIRA) AND FOREST CONSERVATION



## PROJECT LOCATION

The Intermunicipal Environment Board for the Integrated Management of the Lower Ayuquila River Basin (JIRA), by its Spanish acronym, is carrying out its work in 10 municipalities in Jalisco: Autlán, El Grullo, El Limón, Ejuta, Tolimán, Tonaya, Tuxcacuesco, San Gabriel, Unión de Tula and Zapotitlán de Vadillo. The entire territory covers an area of 4,210 square kilometers and is home to 135,000 people.

## ACTIONS AND RESULTS

JIRA aims to achieve integrated management of land and natural resources in the abovementioned municipalities. It also seeks to establish social conditions and economic policies that will enhance the quality of life of their inhabitants and recover the basin's natural heritage.

Some of the main problems in this area are: outdoor disposal of solid waste, discharge of untreated wastewater, heavy use of agrochemicals, industrial discharges, deforestation resulting from changes in land use and atmospheric emissions from burning.





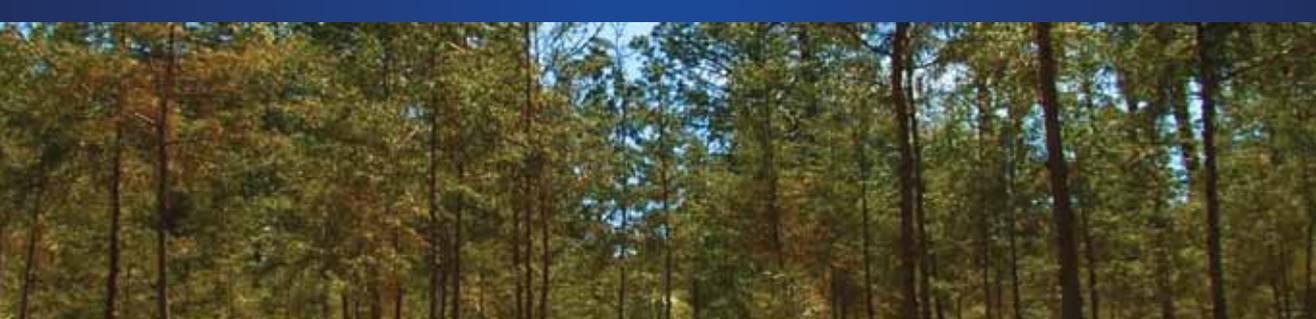
## CONAFOR'S PARTICIPATION

In 2009 **CONAFOR** joined this initiative to create local PES matching funds schemes in the JIRA area, with both institutions pledging a total of about 500,000 USD to be used over a period of five years. The area where work is carried out consists of 2,670 hectares where actions such as fuel management, firebreaks, fighting forest fires, seed collection, demarcation of managed areas, signage, monitoring and other activities are performed under a program of best management practices.

## FEATURES AND STRENGTHS OF THE PROJECT

JIRA is the first decentralized public entity of its kind in Mexico. It was established by unanimous agreement of the 10 governments in Jalisco that are members. The strengths of this intermunicipal association are summarized as follows: it has a governing structure under a system of governance, its potential for management of public and private resources, its inter-institutional and inter-sectoral outreach potential, the reproducibility of its model by other municipalities.





## THE HYDROLOGICAL PES PROJECT FOR CERRO GRANDE, COLIMA



### PROJECT LOCATION

The Cerro Grande region, one of the most important locations for biodiversity conservation in the state of Colima and the southwestern part of Jalisco, is situated in the Sierra Manantlán Biosphere Reserve in the Ayuquila-Armería river basin. Cerro Grande's biodiversity is largely a result of its geomorphological and climatic complexity, as manifested by the rich variety of habitats distributed over a relatively small area. Cerro Grande is home to seven farming communities and 3,000 people who live under high to very high levels of marginalization. Cerro Grande supplies water to 90% of the inhabitants of the conurbation of Colima-Villa de Álvarez.

### ACTIONS AND RESULTS

Community conservation projects for forests and tropical forests have led to major advances, including: the establishment of the Cerro Grande Sub-Council; a number of fire prevention actions such as reopening 109 kilometers of firebreaks and opening 55 kilometers of new firebreaks; pruning of more than 290 hectares; the establishment of 27.8 kilometers of enclosures in areas of interest; the placement of 73 signs; the reforestation of 55 hectares and pruning of 230 previously reforested hectares. Communication and the exchange of experiences among members of six ejidos and an indigenous community has been enhanced (Zacualpan). Strategies for fire management and surveillance in Cerro Grande were jointly defined by land owners, government institutions, social organizations and academics. Work was also begun by two recently reactivated ecotourism committees.





## CONAFOR'S PARTICIPATION

In 2003 the seven communities in the Cerro Grande region joined the hydrological PES program, and their contract was renewed in 2008. Starting in 2009, and with a renewal in 2010, the communities of Cerro Grande joined the matching funds scheme through contributions from Consejo Civil Mexicano para la Silvicultura Sostenible, A.C. and **CONAFOR** amounting to just over 200,000 USD to be put to use over two years in an area of about 2,800 hectares.

## FEATURES AND STRENGTHS OF THE PROJECT

The establishment of a local long-term PES scheme is under way. Under this scheme, users of resources in the Colima-Villa de Álvarez conurbation compensate the owners of land through which water from Cerro Grande is filtered, hence reducing poverty and ensuring water quality for all. The Cerro Grande Trust began operations in 2011 and serves as the scheme's financial instrument. The hydrological PES scheme in Cerro Grande will benefit 3,000 people living in local communities and ejidos. In addition, the water captured in Cerro Grande will supply the metropolitan area of Colima-Villa de Álvarez, which is home to more than 40 % of the total population of the State of Colima.

### The goals of this project are:

- To ensure the implementation of a financial instrument that will enable the administration of resources assigned to local PES programs.
- To raise public awareness in the Colima-Villa de Álvarez conurbation regarding the importance of the conservation of Cerro Grande to ensure the provision of sufficient quantities and quality of water.
- To drive socioeconomic development in these communities.





# EL TRIUNFO BIOSPHERE RESERVE IN CHIAPAS, AND ITS ENDOWMENT FUND



## PROJECT LOCATION

El Triunfo Biosphere Reserve is located in the basin of the Chiapas Sierra Madre where the borders of two of the three of the state's watershed regions meet: Grijalva-Usumacinta and the Coastal region. Important hydroelectric plants have been built along the Grijalva riverbed, and the reservoir in the upper part of the basin that feeds the Chicoasén dam currently supplies electricity to about 30 % of the country.

This protected natural area covers of 119,177 hectares, including five core areas and a buffer zone.

The El Triunfo Biosphere Reserve has a significant number of endemisms and hosts a great variety of species, genetic types and ecosystems, as well as myriad environmental resources and services that support the human population.





## ACTIONS AND RESULTS

The Fondo de Conservación El Triunfo, A.C. (FONCET) was established in 2002 with the aim of conserving natural resources and promoting social development in the El Triunfo Biosphere Reserve and its region of influence through continued and long-term economic support.

## CONAFOR'S PARTICIPATION

In 2010, FONCET announced plans to participate in the program to create local PES mechanisms for a period of 10 years in an area of about 4,000 hectares within the reserve. Through this scheme, El Triunfo Conservation Fund and **CONAFOR** will provide about 3 million USD to strengthen conservation and restoration activities in the region.





# THE PES INITIATIVE IN THE COPALITA-ZIMATÁN-HUATULCO (OAXACA) BASIN SYSTEM



## PROJECT LOCATION

The project is located within the Copalita-Zimatán-Huatulco basin system on the central coast of Oaxaca and covers an area of approximately 281,200 hectares. It is one of the most important river basin systems in the state of Oaxaca and also an important supplier to the Bahías de Huatulco resort. The region in which it is located suffers from high rates of socioeconomic marginalization and low levels of human development, especially in its middle and upper communities. It supports a population of 78,510 inhabitants living in 30 farming communities and 23 municipalities.

It also has a number of important biological features: an Important Bird Conservation Area which is a priority marine and terrestrial region of the National Commission for Knowledge and Use of Biodiversity. It is located in an important wetland area according to the Ramsar Convention and in the National Protected Area of Bahías de Huatulco National Park.

## ACTIONS AND RESULTS

The social organization schemes developed in the region have led to the establishment of the Community System for Biodiversity (SICOB), which is made up of ten agricultural communities in the coastal and mountainous southern state of Oaxaca and aims to promote sustainable projects in coordination and with the advice of Grupo Autónomo para la Investigación Ambiental A.C. (GAIA).





This initiative aims primarily to contribute to the productive development of the region and gradually establish better living conditions and development at the local-regional level. It does this through participatory assessments of work among communities that help to strategically apply resources while channeling support to meet the needs of the region. This support is specifically geared towards conservation activities that allow for increased uptake of water, soil conservation, and conservation and management of forests and biodiversity.

These joint strategies promote the development of control schemes and strengthen the management of environmental projects, negotiations with users and governments and the development of PES programs that these and the other communities involved provide to the region.

SICOBÍ activities cover a total area of 98,604 hectares, which represents 35% of the total area of the Copalita-Zimatán-Huatulco water resources complex and 52% of all territories within the community.

The work of SICOBÍ is premised on four fundamental areas: the development of food support systems; the development of appropriate production systems; the development of marketing and financing systems; and the development of ecosystem services support and management systems driven by community agreements covering both development and monitoring activities.

## CONAFOR'S PARTICIPATION

**CONAFOR** has been a part of this initiative since 2003 with the Hydrological PES program. The program covers 9,669 hectares and is supported with more than 1.8 million USD in nine communities.

Since 2009, **CONAFOR** and GAIA have partnered on the creation of local PES matching funds schemes for conservation work covering 3,998 hectares of the Copalita hydrologic complex for a period of two years.

## FEATURES AND STRENGTHS

A strength of SICOBÍ is its effort to establish a local payment scheme for hydrological ecosystem services that would be unique in the country. It would classify tourist developments along the coast as the main users of water and ecosystem services and would support the development of local communities through action plans for community management of the territory. Such plans would enable the provision of ecosystem services through integrated and intercommunity management schemes as well as with the cooperation of different stakeholders, including GAIA, **CONAFOR**, the National Fund for Tourism Development (FONATUR) and the inhabitants of the communities in the region.





## COATEPEC, VERACRUZ: THE FIRST MUNICIPAL PES PROJECT IN MEXICO



### PROJECT LOCATION

The municipality of Coatepec is situated in the central region of the state of Veracruz. Its municipal seat is 8 kilometers from Xalapa, which shares its waters. Coatepec and Xalapa obtain their water from rivers whose sources are runoff from the Cofre de Perote, in the central region of the state. The main basin that supplies Coatepec, the Gavilanes river, belongs to the sub-basin of the La Antigua River.

This area is a large source of water not only for Coatepec, but for the whole region, favoring the presence of pine, pine-oak forest and cloud forest on the eastern slopes of the Cofre de Perote. It also has a positive effect on the recharge of groundwater by promoting its infiltration into the subsoil.

### ACTIONS AND RESULTS

The origins of the PES project go back to 1998, when the city of Coatepec was about to run out of water as a result of a prolonged dry season. In 2002, the municipal government established the public trust FIDECOAGUA for the promotion and preservation of forests. This was the first municipal project in Mexico to emerge in response to the need to recover, conserve and increase forest resources in the mountainous parts of the municipality, which is the location of sources that supply water to a part of the city of Coatepec.





The primary objective of FIDECOAGUA is to promote the conservation and enhancement of forest vegetation.

**Particular objectives include the following:**

- Ensuring the quality and quantity of the water flow to the municipality.
- Reducing the costs of drinking water purification.
- Promoting the recharging of aquifers.
- Reducing erosion, risk and damage by natural phenomena.

FIDECOAGUA seeks to exchange the culture of slash and burn for one of conservation and sustainable use. A key aspect is its emphasis on community involvement.

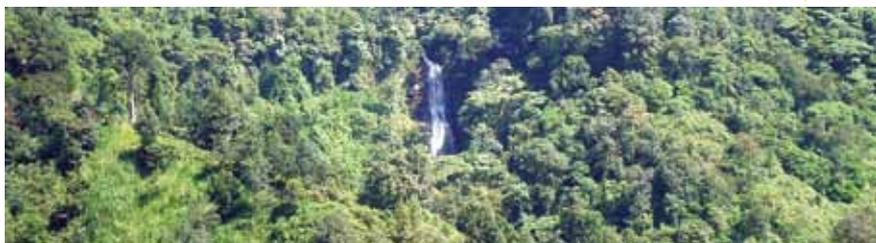
**CONAFOR'S PARTICIPATION**

In 2008, **CONAFOR** joined forces with FIDECOAGUA to conserve cloud and pine-oak forests in the water recharge and catchment area belonging to families who now receive an annual payment per hectare for their conservation actions. This initiative has benefited over 45,000 inhabitants of the city of Coatepec.

**FEATURES AND STRENGTHS OF THE PROJECT**

FIDECOAGUA is comprised of a technical committee and a task force. The former determines working guidelines and how resources are to be allocated. The task force develops the database and analyzes satellite imagery to locate the properties of producers and thus identify the surface area of forests so that the trust committee may later determine which properties will be subjected to payment.

Coatepec has created an emerging market consisting of producers of ecosystem services and forestland owners located in this mountainous area as well as citizens who benefit from ecosystem services.





## PES IN THE SIERRA GORDA BIOSPHERE RESERVE IN QUERÉTARO



### PROJECT LOCATION

Sierra Gorda Biosphere Reserve (RBSG) is located north of the state of Querétaro and comprises 383,567 hectares. It has 11 core areas which cover 24,803 hectares and a buffer zone of 358,764 hectares. It is an emblematic site for Mexican biodiversity and has been targeted as a priority region for conservation.

### ACTIONS AND RESULTS

A result of 15 years of hard work and innovation, the RBSG conservation project is the first in Mexico to have been validated under two global carbon market standards developed to ensure ecological integrity and community benefits.

The “Carbon Sequestration in Communities of Extreme Poverty in the Sierra Gorda of Mexico” project has been validated under the standards of Climate, Community and Biodiversity (CCB) and the Verified Carbon Standard (VCS). These validations clearly demonstrate the role that carbon projects can play in the restoration of protected areas and the enhancement of opportunities for residents.

Launched in 1997 by Grupo Ecológico Sierra Gorda, I.A.P. and currently operated by Bosque Sustentable, A.C., it is one of the first conservation projects to go beyond traditional philanthropy and develop a new financing strategy to offset greenhouse gas emissions that generates revenue from tree planting and carbon sequestration.





Forest Trends, an international organization that seeks to promote ecosystem markets, supported the design and validation of the project through its Katoomba Incubator initiative. Rainforest Alliance conducted the external validation for this project.

This learning experience has led RBSG into new financing niches and the promotion of a state-run offsetting scheme. In partnership with **CONAFOR**, new protocols applicable to the situations of rural communities have been developed which take advantage of opportunities for these communities to mitigate global warming and poverty.

RBSG and the airline Volaris are currently in the process of launching a customer awareness campaign for voluntary offsetting. In addition, the State Government of Querétaro has launched an initiative to offset emissions from its vehicle plant and thus promote voluntary offsetting in other sectors with the aim of securing the State of Querétaro's biocapacity within a few years.

To date, we have successfully entered the worldwide voluntary market through sales of 28,000 tons of carbon to seven European countries.

### **CONAFOR'S PARTICIPATION**

About 49,000 hectares have benefited from the PES program operated by **CONAFOR**. Since 2009, conservation projects in the Sierra Gorda Biosphere Reserve have been supported through the matching funds scheme.

**CONAFOR** currently participates in the development of protocols for the implementation of a REDD+ under the state PES scheme that creates national training initiatives.

### **FEATURES AND STRENGTHS OF THE PROJECT**

RBSG is located mostly within the state of Querétaro and has 14 different types of vegetation and a significant wealth of fauna.

Grupo Ecológico Sierra Gorda, I.A.P. and the Directorate of Natural Protected Area operate in RBSG under a joint cooperation arrangement. They also implement the five strategic guidelines established in the Program for Conservation and Management of the Reserve.

The strength of RBSG lies in its territorial management as well as societal participation in activities. Most noteworthy among these activities have been those associated with the provision of hydrological ecosystem services, biodiversity conservation, carbon sequestration and ecotourism. RBSG thus benefits from a comprehensive scheme that has led to the recovery of 13,000 hectares of natural regeneration and the organization of 32,000 mountain residents for the implementation of remedial, conservation, community environmental education and productive diversification actions.





## PES IN THE AMANALCO-VALLE DE BRAVO BASIN



### PROJECT LOCATION

The project is located in the Amanalco-Valle de Bravo basin, which is situated west of the State of Mexico and covers a total of 61,593 hectares. It includes the municipality of Amanalco, Valle de Bravo, and smaller areas in the municipalities of Donato Guerra, Villa de Allende, Villa Victoria, Temascaltepec and Zinacantepec.

The basin is a particularly important source of quality water, timber and non-timber forest resources, carbon sequestration and scenic beauty (in addition to other products and services) for the inhabitants of the State of Mexico and the Federal District. In addition, the basin's natural resources provide livelihoods to 53 ejidos and rural communities living under high levels of marginalization. Resources in the basin include 35,444 hectares of fir, pine, pine-oak and other types of forest, close to 18,000 hectares of farmland, 5,300 hectares of natural grassland and water bodies covering 1,770 hectares. In addition, the scenic beauty of the basin, and in particular the dam and its surrounding area, make it a tourist destination that has been a source of economic vitality for the municipality of Valle de Bravo for 70 years.

The environmental quality of the basin has deteriorated over the last 30 years due to a number of factors, including: rapid urbanization and the unorganized growth of urban agglomerations; increased demand for water, roads and recreational sites; sudden closures which weaken local forest-based businesses; the gradual loss of traditional farming practices and techniques and their replacement by techniques with greater environmental impact; minimal improvements in basic education and the relatively low level of technical and business capabilities acquired by the region's landowners.





## CONAFOR'S PARTICIPATION

**CONAFOR** signed a matching funds agreement with CCMSS in 2009 under which each organization would invest 1.4 million USD for the conservation and proper management of 40,618 hectares in 43 communities and ejidos in eight Mexican states. The project for this basin received close to 250,000 USD through this agreement. **CONAFOR**-World Bank resources have also funded a study to monitor water erosion and sediment transport to the Valle de Bravo dam.

## ACTIONS AND RESULTS

The proposed PES program in the Amanalco-Valle de Bravo Basin is driven by Consejo Civil Mexicano para la Silvicultura Sostenible, A.C. (CCMSS) and Unión de Ejidos Emiliano Zapata de Amanalco. Over the past four years, a participatory scheme has been developed which involves field testing and the development of a monitoring scheme that includes measurement of five strategic components: environmental functionality, local governance and institutional establishment, economic impact, social impact and territorial management.

The payment scheme has two components: payments for best territorial management practices for agricultural parcels and payments for best management practices in ejidos or communal areas (forests, grasslands, canyons, roads, streams, etc.). These two components are based on instruments such as community land use planning and management and conservation plans for the parcels.

Landscape planning is carried out and best practices and management and exploitation rules for natural resources are defined under the planning mechanisms. The aim of such measures is to enhance the provision of hydrological services (in regards to water quality, erosion prevention, infiltration, runoff flow regulation, etc.) and other environmental and social values such as protection of biocultural diversity and sustainability of livelihoods. Payments made to land owners hence compensate for the cost of planning and implementation of best management practices. Additionally, the scheme provides support for training and technical assistance to the social players involved in it.

## FEATURES AND STRENGTHS OF THE PROJECT

This payment scheme drives planned, sustainable and self-administered management of the basin's territory. This, in turn, improves the provision of ecosystem services and the quality of rural livelihoods, two aspects which are intertwined and influence the quality of life of urban populations who depend heavily on environmental products and services from rural communities.

PES schemes are designed to recover the traditional knowledge and institutional capacity to manage natural resources, increase the availability of resources for planning and implementation of best agricultural practices and management of land and common resources (forests, roads, ravines, pasturelands, etc.), extend the technical capabilities of the landowners, facilitate the management of household waste, mitigate the impact of population centers on water bodies and provide economic incentives for people to remain in rural communities and manage their resources in a sustainable way.

The effectiveness and robustness of the scheme can be attributed to the following factors: a) an approach to landscape and basin management that goes beyond payment schemes for the conservation of woodland sites; b) the strengthening of local governance structures; c) the implementation of a scheme for monitoring the effects of PES on both the environment and the local economy and government.





## LOCAL PES SCHEME IN QUINTANA ROO



### PROJECT LOCATION

The region of interest spans the northern municipalities of Quintana Roo: Lázaro Cárdenas, the mainland part of Isla Mujeres, Benito Juárez, Solidaridad and Tulum. Bordered to the north by the Yum-Balam Protected Natural Area and to the south by the Sian Ka'an Biosphere Reserve, it plays an important role in connecting the two protected areas. Close to 80% of the land cover consists of medium-height evergreen forest, and it is also the region with the highest levels of biodiversity and endemism in the Yucatán Peninsula.

The state is home to rainforests, dry forests and most of the wetlands of the northern Yucatán Peninsula, which are noted for their richness and abundance of wildlife species (migratory birds and emblematic or endangered species such as the jaguar).

La Riviera Maya has three commercial ports (Punta Venado, Cozumel and Mahahual) and several tourist wharfs. There are 285 hotels and 30 international chains operating in the region.

### ACTIONS AND RESULTS

This initiative aims to develop a local PES scheme to achieve conservation of biodiversity, water resources and contribute to mitigation and adaptation to climate change in northern Quintana Roo through a comprehensive fundraising strategy and the establishment of a private trust that will work in tandem with various other funding sources:

- The hotel sector, through a voluntary funding scheme with direct users (tourists).

Fotos: Garth Lenz / Roy Toft / ILCP-ASK



- Water utilities, through user-generated funding (home and tourism-related usage).
- International carbon funds and/or carbon markets (REDD+).
- The State Government, from public funds.
- The Federal Government, through **CONAFOR** under a matching funds scheme.
- Other private sources.

### CONAFOR'S PARTICIPATION

In 2011, **CONAFOR** joined this effort to develop the local matching funds PES scheme by signing a partnership agreement with Amigos de Sian Ka'an A.C. and The Nature Conservancy for a period of five years, to carry out conservation work in 410 hectares, with a total contribution of just over 150,000 USD.

### FEATURES AND QUALITIES OF THE REGION

The last few years have seen increased loss of forests in central and northern Quintana Roo due to the fragmentation of forests and a rise in the number of forest fires.

Local forests are strategic for the capture of fresh water that feeds a complex underground hydrological system connected to coastal wetlands. Several studies have demonstrated the importance of local forests in terms of water recharge and infiltration, which are necessary for the maintenance of ecosystem processes and also play an essential economic role by supplying water to a population of 804,967 people (2005 Population and Housing Census) and to this important Mexican tourism destination.

Added to this, high biomass content of the tropical forests of Quintana Roo produces a significant amount of stored carbon, which makes the conservation of these forests a strategic priority since they provide water to most important tourist destination in the country. In addition, local biodiversity is a key factor for tourism promotion, as it generates a quarter of the national revenue in this sector.





# THE CONSERVATION AND SUSTAINABLE DEVELOPMENT OF THE PUERTO VALLARTA MOUNTAIN REGION THROUGH PES



## PROJECT LOCATION

The municipality of Puerto Vallarta is located in the westernmost part of the state of Jalisco, in the region known as Costa Norte. Its terrain is highly uneven, with elevations ranging from 100 to 1,900 meters above sea level. Sierra El Cuale is the mountainous part of the municipality and has been targeted as a priority conservation site because of its extraordinary abundance of wildlife. The physical and biological features of the Puerto Vallarta mountain region supply a number of important ecosystem services to residents and tourists, including the scenic beauty of its beach, marsh and mountain areas, climate regulation and water provision, in addition to others.

## ACTIONS AND RESULTS

The Puerto Vallarta mountain region has been fundamental to the development of tourism, the municipality's main business activity. Today, rapid urban growth and the expansion of agricultural activities, as well as poor land use planning, threaten landscape quality, biodiversity and the sustainability of local livelihoods. As a result, the Jalisco State Government, in partnership with the concerned municipalities, the Federal Government, academic institutions and civil society have developed a conservation agenda for the Puerto Vallarta mountain region.





Actions in the conservation agenda include a PES scheme which will transfer economic resources from users of ecosystem services (tourists and residents of Puerto Vallarta) to residents of the mountain region, making it possible for them to adopt sustainable management practices.

### **CONAFOR'S PARTICIPATION**

The local PES scheme was recently launched by the State Government of Jalisco through the Ministry of Rural Development and **CONAFOR**. It is hoped that more players will join these efforts in the near future.

### **FEATURES AND STRENGTHS OF THE PROJECT**

The local PES scheme is part of a conservation strategy for this key location in the state of Jalisco and the municipality of Puerto Vallarta. The involvement of all three levels of government, the academic community and civil society will undoubtedly ensure long-term success.





# FORESTS CONSERVATION IN THE MESETA PURÉPECHA THROUGH PES



## PROJECT LOCATION

The municipality of Uruapan is located in the state of Michoacán, and the communities involved in shaping the local matching funds PES scheme are found in the Meseta Purépecha geographical region. This region, located in the most elevated part of the state, belongs to the central mountain range, through which the Eje Neovolcanico range also passes.

## ACTIONS AND RESULTS

The Meseta Purépecha natural region is of great hydrological importance to other regions because of its biophysical and climatic conditions, which include high levels of rainfall and soil permeability, an elevated topography and lush forest vegetation. The surrounding areas are home to springs and rivers such as the Cupatitzio and Duero with significant flow rates. The Meseta Purépecha also provides hydrological services to the city of Uruapan, Michoacán. There is currently significant pressure to implement significant land use changes that would threaten the local climate as well as the provision of hydrological services to surrounding communities. This is why the City of Uruapan, the Commission for Water, Sewage and Sanitation of Uruapan (CAPASU), the Federal Government, and academic institutions are developing a PES fund and supporting projects that will contribute to the conservation and management of the region's forest resources.





## CONAFOR'S PARTICIPATION

The PES scheme was implemented under a matching funds mechanism involving CAPASU and **CONAFOR**, with the cooperation of indigenous communities in Angahuan, Capácuaro, Corupo, San Juan Nuevo and San Lorenzo.

## STRENGTHS OF THE PROJECT

The local PES scheme in Uruapan is being carried out in a location which is vital to the provision of hydrological ecosystem services, and is offered as a tool that uses the synergy between different actors and sources of funding to comprehensively address the management and conservation of the forests of the Meseta Purépecha.



The National Forestry Commission acknowledges the valuable support of each of the non-profit civil organizations and institutions with whom we partner:

#### **NON-PROFIT ORGANIZATIONS**

- Asociación Regional de Silvicultores de Motozintla, A.C.
- Bosque Sustentable, A.C.
- Comité de Recursos Naturales de la Chinantla Alta, A.C.
- Comité de Cuenca del Río Pixquiac, A.C.
- Comité de Cuenca Alto Nazas A.C.
- Comunidad de Metzabok, Chiapas
- Consejo Civil Mexicano para la Silvicultura Sostenible, A.C.
- Espacios Naturales, A.C.
- Fábricas de Agua Centro de Sinaloa, I.A.P.
- Fondo de Conservación El Triunfo, A.C.
- Fondo Mexicano para la Conservación de la Naturaleza, A.C.
- Fondo para la Conservación de la Mariposa Monarca
- Fundación Gonzalo Río Arronte, I.A.F.
- Fundación Manantlán para la Biodiversidad de Occidente, A. C.
- Fundación Pedro y Elena Hernández, A.C.
- Geoconservación, A.C.
- Grupo Autónomo para la Investigación Ambiental, A.C.
- Grupo de Estudios Ambientales, A.C.
- Grupo Ecológico Sierra Gorda, A.C.
- Natura Mexicana, A.C.
- Amigos de Sian Ka'an, A.C.
- Niños y Crías, A.C.
- Pronatura, A.C.
- Pronatura Chiapas, A.C.
- Protección de la Fauna Mexicana, A.C.
- Servicios Ambientales de Oaxaca, A.C.

#### **ACADEMIC INSTITUTIONS AND UNIVERSITIES**

- University of Guadalajara
- National Autonomous University of Mexico

#### **GOVERNMENT INSTITUTIONS**

- Municipal Government of Taxco, Guerrero
- Municipal Government of Coatepec, Veracruz
- The Commission for Water, Sewage and Sanitation of Uruapan, Michocán
- The Ayuquila-Armería River Basin Commission
- The Mesoamerican Biological Corridor of Mexico

- The Valle de Bravo-Amanalco Basin Commission
- Comisión Federal de Electricidad
- National Commission of Protected Natural Areas
- National Water Commission
- National Commission for Knowledge and Use of Biodiversity
- Manantlán Institute of Ecology and Biodiversity Conservation
- Intermunicipal Environment Board for the Integrated Management of the Lower Ayuquila River Basin
- Ministry of Rural Development of Jalisco
- Ministry of Sustainable Environment and Development of Jalisco
- Ministry of Environmental and Natural History of State of Chiapas
- Ministry of Farming and Agricultural, Rural and Indigenous Development of the State of Quintana Roo
- Ministry of Urban Development and Environment of the State of Yucatán
- Ministry of Environment and Sustainable Use of the State of Campeche
- Water and Sanitation System of Veracruz-Boca del Río-Medellín

#### **INTERNATIONAL COOPERATION INSTITUTIONS**

- European Union
- French Agency for Development
- Inter-American Development Bank
- Spanish International Cooperation Agency
- World Bank

#### **INTERNATIONAL NON-GOVERNMENTAL ORGANIZATIONS**

- Conservation Internacional
- The Nature Conservancy
- World Wildlife Fund



COMISIÓN NACIONAL FORESTAL

Reprinted October, 2011

## REDD+ Early Actions in Mexico

The REDD+ Early Actions initiative is a set of institutional efforts implemented at the sub-national (regional and local) level that address the causes of forest land and carbon loss using a range of public policy instruments aimed at creating opportunities for community development.

The development of the strategic vision of Mexico proposed by REDD+ is expected to be strengthened through the creation and implementation of early actions. These actions will allow different models and schemes (governance, implementation, financing, MRV systems) to be tested at different levels and under different conditions, while also strengthening technical and institutional capacities and allowing actions at the local, sub-national and national levels to be scaled in a consistent manner.

REDD+ Early Actions seek to give new impetus to rural development through the promotion of sustainable models based on improving cross-cutting coordination of public policies and inter-organizational management within the agricultural and environmental sectors. They are also designed to enhance the kind of cooperation at various levels of government that contribute to the improvement of production systems, help to conserve forest ecosystems and foster local development.

In short, actions aimed at building and strengthening local capacities must be carried out, and there also needs to be a push to establish local governance systems that allow suitable inter-governmental collaboration and comprehensive public policies and programs that address the underlying causes of deforestation and degradation (within the logic of sustainable rural development). We must also be able to verify emission reductions through a measurement system that is effective, transparent, fully compatible with the national system and that provides sufficient and reliable information needed to make decisions at the regional and local levels.

Under this scheme, Mexico is promoting short-term initiatives whose main function is to advance the establishment and strengthening of institutions as well as the development of local capacities that also strengthen the national strategy. These initiatives are being implemented in the states of Jalisco, Campeche, Quintana Roo, Yucatán and Chiapas.

*A tree grew in the palm of your hand  
And that tree laughed sang prophesied  
Its divinations filled the air with wings  
There were simple miracles called birds  
Everything was for everyone*

*Everyone was everything*

*Octavio Paz  
From the poem "Fable"*



# REDD+ EARLY ACTIONS FOR INTEGRATED LAND MANAGEMENT IN THE COASTAL BASINS OF JALISCO



## BACKGROUND AND CONTEXT

REDD+ Early Actions in the coastal basins of Jalisco are based on a model of partnerships between municipalities<sup>1</sup> in the Ayuquila lower river basin (JIRA). This model facilitates the implementation of the project within three levels of government and the strengthening of local capacities for integrated land management, bringing together a number of government sectors and civil society. The project is being supported by the Federal Government through the Ministry of Environment and Natural Resources (SEMARNAT), the National Forestry Commission (CONAFOR) and the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA), in cooperation with the Jalisco State Government through the Ministry of Rural Development (SEDER), the Ministry of Environment and Sustainable Development (SEMADES) in order to establishment of inter-municipal councils as technical bodies for their programs.



<sup>1</sup> MEXICAN BASIC POLITICAL AND TERRITORIAL DIVISION.

## LOCATION AND FEATURES

Jalisco's coastal basin region hosts a variety of natural ecosystems and boasts high levels of biodiversity. It is also a region with 10 Protected Natural Areas, a priority site for the conservation of the Jaguar (*Panthera onca*) and also one of the most important areas for migratory bird conservation in North America. Furthermore, this region supplies water to all of the state of Colima as well as the tourist development of Costa Alegre in Jalisco, including the City of Puerto Vallarta.

Although it is an important region, it has serious environmental problems attributed to the misuse of natural resources and a lack of coordination and continuity of integrated land management.

## CURRENT SITUATION

The Intermunicipal Environment Board for the Integrated Management of the Ayuquila Lower River Basin (JIRA) is comprised of a group of municipalities that share the same basin. It thus provides a coordinated platform for addressing climate change mitigation and adaptation concerns with the co-benefits of biodiversity conservation and improvements in water supply and quality. This timely action is designed to lead to the creation of other intermunicipal



councils for environmental management in the state of Jalisco, under the legal concept of an intermunicipal decentralized public entity.

**This project is being developed under the following two main areas of implementation:**

- Governance for mitigation and adaptation to climate change and integration of public policies aimed at stopping the underlying causes of deforestation and forest degradation.
- Developing a System for Measuring, Reporting and Verification (MRV) of emissions. Both of these proposals imply extensive participation of the three levels of government as well as civil society, academic and research organizations and institutions.

In addition, in order to achieve effective implementation of the project, a process of socialization and strategic planning with the owners and stakeholders of forest land (including ejidos and communities) as well as forestry service providers and technical consultants has been started.

## **INSTRUMENTATION**

The chair of each intermunicipal council will serve as the technical agent charged with the comprehensive implementation of SEMARNAT, **CONAFOR** and SAGARPA programs through their micro-basins programs as well as through

the SEDER and SEMADES programs. They will also take part in a process of strengthening the capacity of local governments to implement policies and programs for conservation and sustainable rural development, thus ensuring their integrity within the territory.

**The implementation of the pilot project will take place from 2010 to 2012 and consist of three phases:**

- Institutional strengthening through the consolidation of intermunicipal bodies.
- Development of local REDD+ strategies to strengthen the strategy for mitigation and adaptation to climate change.
- Implementation of sustainable rural development activities.

Finally, an integrated monitoring system for carbon, biodiversity and water in the region will be developed throughout the three phases. The system will be implemented at local and state levels in accordance with the national monitoring scheme.

## **FINANCING**

This early action will be jointly financed by the French Development Agency (AFD), the Spanish Agency for International Development Cooperation (AECID), the European Union through the Latin America Investment Facility (LAIF), the Government of Jalisco and **CONAFOR**.



# REDD+ EARLY ACTIONS TO PRESERVE JUNGLE DIVERSITY IN THE YUCATÁN PENINSULA



## BACKGROUND AND CONTEXT

The initiative for this REDD+ Early Action (ATREDD+) originated from a general coordination agreement signed by the Ministries of Environment of the states of Yucatán, Quintana Roo and Campeche which established the Regional Strategy for Mitigation and Adaptation to Climate Change for the Yucatán Peninsula. In response to this initiative and in coordination with the ministries of the three states, the Federal Government, through SEMARNAT, **CONAFOR** and SAGARPA, has joined this important strategy to develop and implement ATREDD+ in the Yucatán Peninsula.

## LOCATION AND FEATURES

The importance of this project is associated with the Yucatán Peninsula being one of the areas with the highest number of Primary rainforests in the country. However, changing land use and forest degradation in this area (caused by unsustainable use of forest resources) account

for a large percentage of the net loss of forests in the country. As part of the Strategy for Mitigation and Adaptation to Climate Change in the Peninsula, the following potential areas for REDD+ were first defined as follows:

- Campeche: Area of Influence of Natural Protected Area of Calakmul.
- Yucatán: Sierrita de Ticul.
- Quintana Roo: the municipalities of Bacalar, Felipe Carrillo Puerto, José María Morelos and Othón P. Blanco.

## CURRENT SITUATION

Based on the Regional Strategy for Mitigation and Adaptation to Climate Change in Yucatán Peninsula, the following institutional arrangements to implement a specific agenda in this area have been established:

- Inter-ministerial Climate Change Commissions of Campeche, Yucatán and Quintana Roo states.
- Negotiations for the establishment of a Peninsular Council on Climate Change.
- Negotiations for the creation of a Regional REDD+ Technical Committee.





Moreover, the organized civil society and private sector have been conducted forums in a participatory way to develop shared visions for the conservation of ecosystems of the Peninsula. These forums have helped bring together civil society, private sector organizations and state and federal government.

## **INSTRUMENTATION**

This action will be implemented from an interstate partnership perspective in the following areas:

- Development of a Measuring, Reporting and Verification System (MRV).
- Building and strengthening local capacities.
- Establishment of a peninsular fund as a mechanism for channeling resources.

The initial implementation will be conducted locally through SAGARPA'S project of Sustainable Rural Development in Biological Corridors and a **CONAFOR** special program with a technical agent shared as the Mexican Mesoamerican Biological Corridor (CBMM) so that get integrated territorially the productive conversion activities are paired with the conservation and sustainable management actions.

CBMM will support the creation of intermunicipal boards in selected areas, which must have sufficient territorial operational capacity to ensure proper coordination of sectoral policies in the land management and natural resources.

### **This project is proposed in two key areas of implementation:**

- Governance for climate change and the inclusion of public policies aimed at stop the causes of deforestation and forest degradation.
- Development of a Measuring, Reporting and Verification System (MRV) for emissions where the peninsular agreement is reflected in both key axes.

## **FINANCING**

This early action will be jointly funded by AECID, LAIF, and the governments of the states of Yucatán, Campeche and Quintana Roo, The Nature Conservancy (TNC) and **CONAFOR** through various initiatives being promoted in the region.



# REDD+ EARLY ACTIONS FOR THE CONSERVATION, RESTORATION AND SUSTAINABLE USE IN BIOLOGICAL CORRIDORS AND THE LACANDONA RAINFOREST IN THE STATE OF CHIAPAS



## BACKGROUND AND CONTEXT

The state of Chiapas has one of the highest net deforestation rates in the country. It contributes more than 20% of CO<sub>2</sub> emissions within the national Land Use and Land Use Change (USCUS) sector. In response to this situation, the Chiapas state government is developing the Program of Action in Response to Climate Change in Chiapas, which will include the REDD+ Early Actions initiative (ATREDD+).

There are several initiatives in the state that promote REDD+ activities. These activities will have to be coordinated in a preparation phase in order to test institutional capacities and build local capacities. One of these initiative is designated for the Biological Corridor (CBMM) and the Lacandona Rainforest.

The Biological Corridor and the Lacandona Rainforest area is significant because it is the only forest massif in our country classified as Tropical rainforest. It is also one of the most

important natural regions in Mexico owing to the environmental services it provides and also because it is the most important and with high biodiversity center in the tropical regions of Mexico as well as in the rest of North America.

These sites have been subject to strong pressures that have brought about a loss of a third of its original forest cover over the past three decades.

To preserve these ecosystems, the Federal Government (SAGARPA-SEMARNAT-CONAFOR), in partnership with the State Government, has promoted the maintenance of this ecosystem through programs implemented in conjunction with the Mexican Mesoamerican Biological Corridor (CBMM) as the key agent for the implementation of strategies to reduce emissions from deforestation and degradation of forests and jungles in the region.

## LOCATION AND FEATURES

The area under consideration covers more than five million hectares and includes 57 municipalities in the state of Chiapas as well as sixteen federal Protected Natural Areas (ANP) which have a strong human pressure by process of deforestation and degradation.





## INSTRUMENTATION

The Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA) and the Ministry of Environment and Natural Resources (SEMARNAT) signed a collaboration agreement to perform environmental sustainability actions in agricultural areas in priority regions for biodiversity that support the conservation of wild flora and fauna.

This agreement operates through the project of Sustainable Rural Development in Biological Corridors in the State of Chiapas, under the coordination of the National Commission for Knowledge and Use of Biodiversity (CONABIO) through CBMM.

As part of this agreement, **CONAFOR** has been implementing the Special Program for the Conservation, Restoration and Sustainable Use of the Lacandona Rainforest since 2010. Activities for 2011 in this special program are grouped into five support components:

1. Restoration and restructuring component
  - Tropical rainforest regeneration
  - Restoration of river banks and streams
  - Diversified reforestation
2. Conservation component
  - Payment for Ecosystem Services

3. Sustainable forest use component

- Forest studies
- Forestry

4. Community forest development component

- Strengthening human and social capital
- Conservation and diversification

5. Comprehensive plan for technical intervention and support component

The activities of SAGARPA, **CONAFOR** and SEMARNAT have territorial complements and work towards the conservation and restoration of forests and conversion productive activities through integrated projects at small or production unit level.

In 2011, **CONAFOR** will reissue guidelines for the Special Program for Conservation, Restoration and Sustainable Use of the Lacandona Rainforest. This program contributes to conservation efforts and sustainable management of natural resources, while SAGARPA promotes sustainable rural development activities in Biological Corridors in the State of Chiapas, both implemented in coordination with CBMM.





**Vivir Mejor**

**[www.conafor.gob.mx](http://www.conafor.gob.mx)**

Periférico Poniente 5360 C.P. 45019. Zapopan, Jalisco. Mexico

Ph. +52 (33) 3777-7000 / 01 800 - 7370 000.

[conafor@conafor.gob.mx](mailto:conafor@conafor.gob.mx)



This product was made from recycled paper  
from sustainably managed forests.