



Protecting the Sierra Gorda Biosphere Reserve in Queretaro, Mexico



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CONAFOR was created by Presidential Decree in 2001. It is a Mexican public agency whose objective is to develop, support and promote conservation and restoration in Mexico's forests. In 2003, it started the Hydrologic Environmental Services program. The aim was to conserve threatened natural forests to maintain downstream flow and water quality. Funding for CONAFOR's Hydrologic Environmental Services program comes from a 2.5% federal fee on water users.

Project Description

The Sierra Gorda, in the Mexican State of Queretaro, is considered one of the most ecologically diverse areas on the planet. Extensive cattle and goat ranching, inefficient agricultural practices, inadequate forest management, poaching, and solid waste pollution threaten the Sierra Gorda's dynamic ecosystem.

To protect it, a local non-profit, the Grupo Ecologico Sierra Gorda, was created in 1987. Thanks to its efforts, in 1997, the Mexican government created a biosphere reserve. The Sierra Gorda Biosphere Reserve covers an area of 4,000 km² (1 million acres) of mountainous terrain and has approximately 100,000 citizens living in 638 localities. Grupo Ecologico has around 20,000 local people involved in conservation projects.



Sierra Gorda Biosphere Preserve

This project was made possible with local and international financial partners. In 2003, Mexico's National Forest Commission (CONAFOR) started the "Mexican Forest Fund". This government run program pays Mexican landowners \$30-\$40 per hectare per year to protect watershed and provide watershed services by keeping their forest cover intact. This compensation creates a real opportunity for local residents to preserve forests.

In addition, the ecotourism market is being promoted extensively in the Biosphere Reserve. Eco-lodges, hiking trails, and wild bird books have been created, and local residents have been trained as licensed ecotourism guides. Other alternative livelihood programs such as beekeeping, ceramics, and embroidery are run by various communities to further increase income from the project.

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After several years of trying, Grupo Ecologico Sierra Gorda realized that the rules to comply and to be accredited by the Clean Development Mechanism of the Kyoto protocol are too complicated and too expensive. They decided to change their strategy and pursue certification in the voluntary carbon market. Today, 73 landowners have sold carbon credits on the voluntary market. Sixty percent of the royalties by reforestation, benefits the landowners directly. The remaining 40% is used to pay forestry experts who provide technical service and monitoring.

Project Status

In addition to land under the Mexican Forest Fund, conservation payments were made possible through an international grant. Grupo Ecologico is managing the grant and using funds to lease lands from landowners who agree to conserve their natural resources by avoiding land use changes, lumber extraction, hunting activities, and wildfires.

CONAFOR has selected the areas to be included in the program, and signed a letter of agreement for five years with the landowners. They use satellite imagery to obtain a baseline of forest cover and at the end of each year, if the forest cover is maintained, they pay the landowners.



“The legacy of the planet biodiversity is in the hands of extremely poor communities... We are trying to develop an economy on conservation where people that live in the forest may live, and live well, with the products that they are producing with their forest.”

“First, one has to look for customers in the local population, in the town, voluntary payment for hydrological provision from upper part of the watershed. In the case of Sierra Gorda it is not worth trying it because we are surrounded by communities in extreme poverty and we are not going to charge the water to the local community. Sometimes, you have a factory on the way down in your watershed and it is easy to find a client. I have many colleagues in Mexico that have customers right there.”

- Pati Ruiz Corzo, Federal Director of Sierra Gorda Biosphere Reserve

Successes

Today, the payment scheme is applied on 32,000 hectares of forest with more than 100 landowners, providing an average yearly income of \$500,000 for all landowners combined. The project has been very efficient in reducing human impacts on the local ecosystems. The project has also provided economic benefits larger than any other activity in the area (agriculture, cattle ranching, logging, etc.).

For the participants, the CONAFOR program has been a success in Sierra Gorda as Grupo Ecologico



does on-site monitoring to ensure that conservation actually takes place. Grupo Ecologico Sierra Gorda, doing both paperwork and fieldwork, has succeeded in bridging the gap between institutions and

local landowners. It allowed local communities to access national and international sources of funding that finance environmental protection and improvement. The project is very comprehensive and includes carbon sequestration, biodiversity, water, soil, and poverty alleviation.

Furthermore, Grupo Ecologico Sierra Gorda has purchased land with special biological value to ensure that conservation will be maintained forever. A recent survey has shown that 86% of

the residents believe that life is better since Sierra Gorda and Grupo Ecologico purchased the land. Additionally, 96% of local residents report that they now desire to maintain or protect the environment.

Looking Forward

The Sierra Gorda Biosphere Reserve is a pilot project that involves private-public partnerships and management decentralization. This model may have wide replication potential in other protected areas in Mexico. The project receives private sources of income from ecotourism and carbon markets on one hand, and payments from CONAFOR, a government run organization, for biodiversity and watershed services on the other.

Ecotourism is the smallest source of income for landowners because of the industry's seasonal nature. The carbon market provides landowners income based on a 30 year contract, and landowners are paid according to predetermined schedule. The

main source of income for landowners is selling biodiversity and hydrological services. The funding to buy these services comes from CONAFOR and a private foundation. As long as the Government of Mexico is willing pay for the program, landowners will continue to benefit financially from practicing conservation.

However, a market-based mechanism where users that profit from high-quality water pay for watershed services, could sustain the project even if government funding disappears. Unfortunately, this option seems unlikely at this point; local farmers located downstream are very scattered, and have little financial capacity to pay for ecosystem services.