

## BRAZIL RAIN FOREST PILOT PROGRAM SUCCESS STORY 7

### EXTRACTIVE RESERVES: MAKING CHICO MENDES' DREAM A REALITY<sup>1</sup>

#### The Innovation

An “extractive reserve” is a model for combining effective natural resource conservation and socio-economic development, based on partnerships between local communities living in the reserve and public institutions. Extractive reserves demonstrate that biodiversity and natural resource protection and poverty reduction can be simultaneously pursued.

#### The Impacts

After six years of testing and evaluating this new kind of conservation unit by the Pilot Program, extractive reserves have been broadly accepted by the Brazilian Government and local municipalities as an appropriate way to promote sustainable development, poverty reduction and natural resource protection. The direct involvement of the local population guarantees maintenance of the reserves at low cost and sometimes more effective conservation of natural resources than in the case of parks, especially in remote area with little public and private infrastructure. During the last eight years, 16 extractive reserves have been created in the Amazon with a total protected area of nine million hectares. Another 20 reserves are in the process of being created.

#### Background

Rubber tappers and forest dwellers settled in the Amazon at the end of the nineteenth century, attracted by the rubber boom. With the end of the boom, the rain forest has been under increasing pressure from loggers and cattle ranchers. Forest dwellers, under the leadership of Chico Mendes, opposed the destruction of the forest which represented their only source of income. After the assassination of Chico Mendes, Brazilian groups and the international community pressured for adequate solutions for these people – and the forest.

By 1995, only four extractive reserves had been created by the federal government under strong opposition from local and regional authorities who supported a different way of using the forest. The challenge was to empower and train local people to effectively oppose unauthorized settlements, illegal timber extraction and cattle ranching. The fact that these traditional people were hardly organized and their illiteracy rate was close to 80% made it even more doubtful that the objective of creating a participatory conservation model could work, especially in regions with little or no public infrastructure.

#### The Initiative

The Pilot Program took on the challenge of supporting the rubber tapper movement and developed, together with the local population and the environmental protection agency (IBAMA), an innovative model for a conservation unit that includes the needs and practices of the local population living in the forest. The objective was to test whether partnerships between public institutions and the local population for the management of reserves would

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<sup>1</sup> This note is part of an occasional series produced by the Bank's Rain Forest Pilot Program highlighting success stories and best practice examples from projects funded by the Pilot Program to Conserve the Brazilian Rain Forest.

lead to effective protection of the standing forest and result in improved living conditions for the forest dwellers.

The initial and most important step was to provide land rights to the population, which offered for the first time in history a certain legal security for these people. In order to guarantee effective natural resource protection, these land titles are linked to the sustainable use of forest resources, based on forest management plans. Most of these rules were defined by the population itself, based on best traditional practices and only afterwards approved by IBAMA.

To provide conditions for economic and social development in these regions, forest dwellers had to be trained and organized into associations. Considering the low educational level and technical capacity of these people, who live in remote areas lacking communication and transportation facilities, this process was very slow and suffered several setbacks. Nevertheless, 672 training and capacity building events were implemented during the project, and the ability and capacity of local organizations increased substantially. Now, most of the administrative tasks have been handed over to the rubber tapper organizations.

The most difficult task was to provide income to the population to prevent migration from the reserves to the periphery of Amazonian cities, leaving the forest unprotected. The project undertook various measures to promote alternative forest products, such as improving the marketability of tropical fruits, fish, vegetable oils, handicrafts, Brazil nuts, rubber, and other sustainably harvested goods. More recently, sustainable community logging is being tested as an economic alternative by some communities living in extractive reserves. In addition to promoting non-timber forest products, an effort was made to improve subsistence agriculture to guarantee a minimum standard of living. In many cases, subsistence agriculture had been forbidden by the former landlords (often "rubber barons") in order to keep the population dependent on controlled food supplies.

Environmental monitoring and law enforcement tasks are divided between IBAMA and the communities, which have been trained to monitor their areas to prevent illegal encroachment by settlements, commercial fishing, hunting and logging. Inhabitants of the extractive reserves who do not follow the rules run the risk of losing their land rights and being asked to leave.

The four reserves total two million hectares in size with a population of 2,900 families. At the beginning of the project, forest dwellers were excluded from receiving any municipal services. It was therefore a major challenge for the project to provide basic infrastructure, such as schools, transportation, radios and basic health posts. These investments were made in close cooperation with the local population, which provided counterpart funding and labor to guarantee ownership. Altogether, more than 4,500 small-scale projects were implemented by the population, including more than 2000 subsistence activities, such as beekeeping, seedling farms and agroforestry schemes, and 2,500 small infrastructure projects.

## **Impact**

After six years of testing and monitoring the project's activities and results, the conclusions and impacts are outstanding and reveal that the extractive reserve model is feasible and replicable in the Amazon, other Brazilian regions and other countries where similar conditions exist.

Monitoring data show that the forest cover remained the same throughout the project. Biodiversity indicators show that in three of the four reserves the number of mammals increased even though hunting for subsistence is permitted.

The costs of social and economic development as well as maintenance of the reserves are less than US\$1.00 per hectare. This low cost could only be achieved through cooperation with the local population.

The forest population in the reserves increased, which is a good indicator that the model has been accepted by the people, with former inhabitants who had migrated to cities returning to their original homes.

Income also improved. An average monthly income of \$100 per family was achieved, including the value of subsistence activities such as fishing and hunting. Compared to the population in nearby Amazonian cities, overall average income in the reserves is now higher than that in peri-urban areas.

After several years of implementing the project, with effective organization of associations and improvement of infrastructure and living conditions, most of the municipalities and state governments started to perceive the importance of this model and assume responsibility for infrastructure investments in the reserves. Today, the four reserves can count on partnerships with their municipalities and, in two states, the model of extractive reserves has been adopted and is currently being financed and replicated in other areas.

After the Pilot Program demonstrated success in the first four extractive reserves, another 17 Reserves have been created and 20 more are on the drawing board. Furthermore, the model has been expanded to other regions, mostly in the Atlantic coastal zone, where 15 marine extractive reserves have been created in cooperation with traditional fishing communities.

### **Lessons Learned**

- Economic and social development of local populations and environmental protection of pristine forest land do not have to be in conflict. Extractive reserves can achieve better environmental results and lower maintenance costs than classic conservation models that operate without the participation of local residents.
- Extractive reserves are only feasible with the participation of the local community. Stakeholder involvement with capacity building is a key to success.
- Understanding and integrating traditional best practices in a reserve's forest management plan is essential.
- Long-run sustainability is only possible when neighboring municipalities participate by investing in and maintaining basic infrastructure and providing health care and education services.
- Land tenure for the local population is an appropriate way to assure the sustainable use of natural resources, especially where the environmental protection agency maintains leverage to intervene.
- Effective monitoring of huge forest areas is practically impossible without the help of the local population. The integration of forest dwellers in the environmental monitoring system proved to be the most effective tool in preventing the destruction of the forest, especially by reducing pressure from outside.

### **Future Challenges**

- The number of marketable forest goods will have to be increased. Great transportation distances and precarious infrastructure are comparative

disadvantages. It will be essential to continue research on appropriate technology, find private sector partners and explore new forest goods from the reserves in order to guarantee that forest dwellers will be able to continue living sustainably from forest resources.

- The impact of further economic development and improved living standards on the conservation and sustainable use of natural resources needs to be monitored in more depth. The model is based on a limited number of people earning their livelihood from a fixed area. If the population increases, the pressure on natural resources will increase as well. One will have to observe if there is a limit or a trade off between economic wealth and forest conservation based on the present model.
- Extractive reserves in forests need buffer zones in order to guarantee recuperation of fauna. Reserves should be integrated in an overall protection and development strategy to avoid the creation of protected but vulnerable islands.
- Even though conservation via extractive reserves costs only US\$1/ha/year, long-term financing is needed to ensure that the process will be sustainable over time.

For further information, please have a look at the following websites:

<http://www.bdt.fat.org.br/ibama/flonas/>

<http://www2.ibama.gov.br/resex/resex.htm>

<http://www.worldbank.org/rfpp/projects/projetos.htm>

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For more information on the Pilot Program to Conserve the Brazilian Rain Forest or to receive copies of the previously published Success Stories, please visit our website at [www.worldbank.org/rfpp](http://www.worldbank.org/rfpp), or contact our staff in Brasília, (55-61) 329-1015, and Washington, D.C., (202) 458-8012.

Success Story No. 1:

New Environmental Control System Helps Reduce Deforestation by One-Third in Mato Grosso

Success Story No. 2:

Innovative Project Contributes to Regularizing 20% of Amazon as Indigenous Lands

Success Story No. 3:

Fostering "Sustainable" Cosmetics from the Amazon – A Private Sector Partnership to Conserve the Rain Forest

Success Story No. 4:

Lessons from the Rain Forest: Ten Years of Civil Society Participation in the Pilot Program

Success Story No. 5:

Revitalizing Scientific Research in the Amazon: the Science and Technology Subprogram

Success Story No. 6:

Preserving the World's Largest Area of Biodiversity: Ecological Corridors – from Concept to Reality