

The road to sustainability

An ITTO project has assisted the development of a sustainable forest management regime in Bolivia's Pando region. A recent measure of success was the certification of one of the area's forestry operations

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Passed: this forest road is part of a certified forest operation in Pando. *Photo: J. Leigh*

THE Department of Pando, located in the moist Amazon region of northern Bolivia, has a population of about 60 000, half of whom live in the town of Cobija, the department's capital. The department contains nearly six million hectares of forest with a potential annual sustainable timber production of about four million m³ of roundwood. However, the clearing of forest for cattle-ranching is accelerating in the department; the development of a sustainable timber industry is therefore urgently needed if widespread forest destruction is to be avoided.

The Pando Forestry Project (PANFOR) was established under ITTO PROJECT PD 24/97 REV.1 (F) in 1999. Implemented by the Prefecture of the Department of Pando and supported by the USAID-funded Bolivian Forestry Project (BOLFOP), PANFOR aims to reduce the degradation of forest, water and soil resources and to preserve biodiversity throughout the department by strengthening the institutional capacity of the public and private forest sectors in the region. In its first few years PANFOR has taken some initial steps towards establishing the technical and institutional foundations of forest development in the department, but much more needs to be done.

Review of progress

Training

PANFOR's training objective is to improve the level of knowledge about the principles and standards of the Bolivian Forest Regime, as well as about the technical aspects of sustainable forest management. Training activities have been geared to all major groups concerned with forestry issues at

the regional level, including forest company technicians and staff, independent forest professionals, rural and indigenous communities, local social groups (agrupaciones sociales del lugar—ASLs¹), technicians from municipal forest units, mayors, technicians in the Forestry Commission and the Prefecture's Forestry Unit, university teachers and students, and NGO personnel. Short courses have been held in: forestry law and technical standards; the establishment of ASLs and the creation of municipal forest reserve areas; the technical basis of sustainable forest management; the installation and assessment of permanent sample plots; the ecological basis of forest management; dendrology; systematic botany; community forest management plans; directional felling; timber sawing and grading; timber drying and preservation; and forest certification and markets.

A total of 35 training events have been conducted with the participation of 476 beneficiaries. The degree of interest and motivation shown by participants has been very high. Further, the courses have been highly practical, to the point that municipal forest reserve areas (áreas de reserva forestal municipal—ARFMs) have been demarcated during courses so that the ASLs could then apply to the government for concessions. Six ARFM areas, covering 233 000 hectares, have been demarcated using a geographic information system (GIS) and satellite images. Financing and technical assistance has also been provided to ten students from two local universities for the preparation of their theses on various aspects of forest management.

¹These are legally established groups of people who live in and use forests within the jurisdiction of a Municipality. According to the Bolivian Forestry Law, these groups may be beneficiaries of concessions in municipal forest reserve areas.

Departmental forest development plan

The project has supported the formulation of a forest development plan for the department. This plan is intended to guide the authorities, the industry and civil society in the appropriate utilisation and conservation of forest resources as well as in the formulation of departmental policies on forest development.

With the support of experts, the project conducted a diagnosis of forest resources and forest-sector institutions. On this basis, a technical commission made up of PANFOR staff, BOLFOR consultants and departmental authorities formulated a proposal for the development plan. This proposal outlined strategic objectives, departmental policies and programs, projects and indicators in:

- land-use planning and management;
- promoting sustainable forest management;
- encouraging forest product marketing;
- supporting the titling of forest lands;
- education for sustainable development;
- biodiversity conservation; and
- forest research.

The implementation of projects in these areas and the execution of the general development plan are aimed at strengthening the forest sector and promoting the development of a forestry-based local economy to increase the value of forests and thus encourage their sustainable management and conservation. This process is expected to arrest the replacement of forests for the establishment of pasturelands in a region where 68% of the lands have been classified as suitable for forest production and 17% designated as natural reserves (ZONISIG/DHV 1996).

Various forest-sector institutions, municipal governments, private companies and civil-society organisations reviewed the development plan proposal, a process that helped refine the plan and ensured the participation and support of all relevant stakeholders in its implementation. When this stage was completed, the plan was incorporated into the Prefecture's general development plan for the Department of Pando.

Forest research

One objective of the project is to conduct studies that increase understanding of socioeconomic and ecological aspects of forest management. Project studies have been carried out with the participation of expert consultants, local and external university students, BOLFOR professionals and PANFOR technicians. Issues addressed include:

- the structure and floral composition of major forest types in Pando;
- the ecology of abundant, non-traditional timber and non-timber species;
- the dynamics of managed forests;
- the impact of logging on forest structure and on the regeneration of some species;
- the effects of silvicultural treatments on timber species' growth and regeneration; and
- the impact of hunting on wildlife resources during the collection of Brazil nuts (*Bertholletia excelsa*).

Preliminary results have confirmed the enormous biological wealth of the region and underscore the fact that Pando's forests remain almost

unexplored. For example, several tree species have been recorded that have either not previously been reported in Bolivia or are new to science. It is also likely that new fauna will be discovered. Evidence has been found confirming the high regeneration capacity of these forests and their enormous potential for the sustainable production of timber and other non-timber products such as seeds, oils, fibre and medicinal plants. Preliminary data indicate that the impact of timber and Brazil-nut harvesting, when conducted in accordance with the standards of the new Bolivian Forest Regime, is not severe (with the exception of the hunting of wildlife species; Paredes 2000) and that it is feasible to improve these practices and to keep their impacts within a range that will ensure the conservation of most of the original biodiversity. However, it will be necessary to promote the regeneration and development of commercial species through silvicultural treatments (Fredericksen & Mostacedo 2000). These results are similar to those found in other tropical regions (eg Salick 1995; Webb & Peralta 1998) and underscore the significant potential of properly managed forests in achieving conservation objectives (Chazdon 1998).

Technical support for forest management

The project also aims to provide support and technical assistance for sustainable forest management to companies and rural and indigenous communities and social associations covering an area of approximately 400 000 hectares.

The PANFOR technical team, in collaboration with BOLFOR technicians, has provided support to four companies, one rural community and an indigenous territory, which altogether have rights over an area of nearly 800 000 hectares—almost twice the area originally anticipated. Assistance has been provided mainly in:

- property geo-referencing for land titling;
- support for the resolution of land-tenure conflicts;
- the development of forest management plans for the production of timber and Brazil nuts;
- forest censuses and annual operational plans for eight compartments of various companies, covering an area of 27 000 hectares;
- the establishment and measurement of permanent sample plots;
- the identification of markets for alternative species; and
- forest harvesting planning.

PANFOR's GIS has been particularly useful. On the basis of recent satellite images it has facilitated planning and ensured the reliability of management mapping tools.

The assistance provided to companies has been closely linked to their interest in obtaining forest certification and has focused on two companies that together hold

concessions covering 124 000 hectares. One of these concessionaires went through the process of certification in 2001 thanks, to a great extent, to support provided by the project; the other company is getting ready to initiate the process of evaluation. As for the other two companies, one had previously obtained certification and the other recently expressed its interest in starting a certification process.

With regard to community support, cooperation has required a different approach. Rural and indigenous groups in Pando have a low management and organisational capacity. Therefore, even though the project has been willing and has had the resources to start the development of management plans, it has been necessary to initiate the process with very basic activities that will allow the communities to establish the basis for the subsequent implementation of appropriate forest management activities. The project has supported the geo-referencing of properties, training on forest management basics and environmental considerations, and community organisation.

The experience acquired to date in the development of the community forest management plan for the beneficiary peoples of the indigenous territory, which covers more than 300 000 hectares, has shown that this must be a gradual process. A considerable amount of time is needed to achieve an adequate level of organisation and training, and internal agreements must be forged between the different communities within the territory to avoid future conflicts in the execution of forest management plans. In this context it has been necessary to strengthen the technical capacity of the project in the social field; professional expertise is required to address these complex problems at the regional level. Although the project strategy was to start with a pilot area of up to 30 000 hectares and a limited number of communities, to date it has only been possible to complete the sociological diagnosis and internal agreements, on the basis of which it will be possible to start the implementation of field activities in the short term as established in the management plan.

The difficulties

The main obstacle hindering forest development in Pando is by far the lack of consolidated land-rights and the overlapping of rights. On the one hand this generates land-tenure conflicts and, on the other, it weakens the legal security required for the implementation of long-term activities such as forest management. Both these factors also act as a disincentive for investment, which are required by the forest sector to ensure the economic viability of forest management. As described earlier, the project has needed to devote considerable resources to supporting beneficiaries in the settlement of land-tenure conflicts and in property geo-referencing. These activities have also included providing logistical support to the National Land Reform Institute in a national land-titling process initiated recently in Pando.

The problem posed by the low level of community organisation in the department has already been described. It would be highly beneficial for rural development in general if the social welfare organisations operating in the region were to provide greater support and training to rural and indigenous communities in this field.

The project's administrative personnel, recruited as local counterpart staff, should continue to improve the quality of resource administration and support to the technical team. Other limitations have stemmed from the fact that the project is based in a remote location—the small town of Cobija (more than a thousand kilometres from any major Bolivian cities); these have included the unavailability of supplies and specialised equipment and some limitations in facilities.

The future

Much of the initial success of the project has been possible because of the availability of expertise and infrastructure previously developed by BOLFOP. However, PANFOR has increasingly been gaining independence and has now been institutionalised as the José Manuel Pando Foundation, which comprises representatives of civil society, industry and local (including indigenous) communities.

Even though the results achieved to date are important, they constitute only the first few steps on a long road—a monumental task lies ahead to ensure effective sustainable forest management and conservation. The ITTO project officially ended in late 2002; some funding for PANFOR continues through BOLFOP. Equally important to sustainable forest management is the further development of the timber sector in areas such as industrial timber processing, market development, production diversification and investment incentives; a profitable and sustainable timber industry will go a long way to ensuring that the Pando forests are spared devastation by fire and clearing.

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