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**EX-POST EVALUATION REPORT
EXECUTIVE SUMMARY**

**ITTO Project PD 233/03 Rev.2 (I)
Application of Intermediate Technologies
for Sustainable Forest Harvesting
(Peru)**

Prepared for ITTO

by

Mr. Vicente A. Molinos

[The full final report is available on request from the Secretariat]

Executive Summary

Introduction

Project PD 233/03 Rev.2 (I), "Application of Intermediate Technologies for Sustainable Forest Harvesting", with a total budget of US\$ 745,907, was implemented in Peru by FONDEBOSQUE until December 2010. This ex-post evaluation was approved by the 47th Session of the ITTO Council.

Problem to be addressed: Low forest yield levels and high production costs resulting from the use of unsuitable equipment and tools in forest harvesting and from the selective harvesting of timber species.

Development objective: Contribute to technological and environmental development in the country through the incorporation of appropriate intermediate technologies in forest harvesting.

Specific objective: Improve the production of small timber industries in six regions of the Peruvian Amazon.

Evaluation scope, focus and approach

The travel agenda was prepared after a review of documents and reports related to the project and to other recent ITTO missions and projects in Peru. The problem to be addressed is enormous and training needs are increasing. There have been a large number of policy changes, a regionalization process, new forest law and regulations, and FONDEBOSQUE has been deactivated. For all of these reasons, the focus of the evaluation was the sustainability of participating production companies, forests under concession and institutions involved, including trade associations at the regional and national levels.

From 11 to 23 July 2012, the Consultant visited the Amazon cities of Pucallpa, Iquitos and Puerto Maldonado, the three key centers of the project's field actions. During these visits, the Consultant was able to personally interview the purchasing officers of seven of the fourteen sawmills promoted by the project. In the Madre de Dios region, he visited a 12,000-ha forest management concession run by a small producer who had bought a portable sawmill through the Project, and he was able to verify the good status of the forest, which had been harvested in 2008-2010. In order to assess overall industry efficiency as well as quality levels, prices, costs and profitability, the Consultant visited a number of selected companies, including sawmills, plywood mills, manufacturing plants, sales yards, and collection and shipping points in Lima, Pucallpa and Madre de Dios.

The Project

The Project executing agency was the Forest Development Promotion Fund - FONDEBOSQUE. The duration originally approved for the Project was 24 months but it was granted two extensions without additional ITTO funding, amounting to a total of 73 months to its completion in December 2010. The total budget approved for the Project was US\$ 745,907, with ITTO's contribution amounting to US\$ 552,089 and a contribution of US\$ 193,818 from FONDEBOSQUE.

The total amount spent was US\$ 694,994, a savings of 7% on the approved overall budget. The total contribution requested from ITTO was US\$ 456,696, or 17% below the approved budget, due to the cancellation of the purchase of four demonstration modules which were deemed unnecessary given the fast uptake rate. The savings amount also includes the balance of the Guarantee Revolving Fund in the amount of US\$ 40,353, which was returned to ITTO by Caja Maynas. FONDEBOSQUE's total contribution was US\$ 238,928, a 23% increase on the original budget due to additional administration costs associated with the three-fold extension of the Project duration.

Outputs

Output 1: Harvesting modules installed and operational in six Amazon regions.

These modules were initially planned for six Amazon regions but the plan was later scaled down to three regions: Loreto, Ucayali and Madre de Dios. A US\$ 288,000 Revolving Fund was originally budgeted for the acquisition of 14 harvesting modules. This fund was later replaced by a guarantee fund of US\$ 50,000 as a term deposit with the micro-financial institution "Caja Municipal de Ahorro y Crédito Maynas", which has more than 30 outlets throughout the Amazon and other neighbouring regions in Peru as well as equity of more than US\$ 30 million.

Target achievement: All 14 modules were purchased. Upon project completion, 11 modules have been paid in full by their buyers.

Output 2: Development and implementation of training, extension, dissemination and promotion program for the application of appropriate intermediate technologies in forest harvesting.

Dissemination, promotion and training activities related to these intermediate technologies were addressed at small and medium forest concessions that, for the most part, were not aware of the existence of appropriate intermediate technologies for forest harvesting.

Target achievement: According to the initial plan, the project's awareness activities would be targeted to 250 people but the program actually targeted 258 people. It was initially planned to implement 10 workshops on technology use and maintenance, and all 10 workshops were completed. Out of the 200 workers that were to receive on-the-job training, the project could only train 42.

Output 3: Technical assistance for the formulation and implementation of annual harvesting plans, business plans, monitoring, evaluation and validation.

Yearly plans of operation for each forest concession enabled them to develop a business plan for the beneficiaries, which included the monitoring of both financial (including the revolving fund) and forest management aspects.

Target achievement: The Project's significant achievements took place in a particularly difficult environment. Between 2002 and 2004 (i.e. two years before the ITTO project) FONDEBOSQUE fully or partially financed the acquisition of sawmilling and manufacturing equipment through a system known as "Competitive Funds", established in a climate of heightened political urgency.

Impacts

Improved forest harvesting. The Project has achieved remarkable technological improvements in forest harvesting. This includes harvesting options for very hard woods that cannot be sawn using traditional circular sawmills; non-floating logs; or remote distances where total transport costs can be reduced by quartering the timber close to the forest site. In addition to offering an option for small producers, it is not uncommon to see this type of arrangements in facilities grouping three to four sawmills that operate together within the same site or warehouse.

Good uptake and replication. As a result of the dissemination and promotion work carried out by the Project, more than 15 additional sawmills have been sold in Peru since 2010, even though the Project's credit guarantee scheme is no longer available. An unexpected outcome is that regional mechanical woodworking workshops in the Peruvian Amazon Region have established more than 50 semi-portable sawmills using strengthened designs that cost half as much as the imported equivalent.

Effective financing mechanism. Twenty months after the completion of the Project, its main impact seems to have been the successful demonstration of an innovative financing mechanism which combines guarantee funds with technical and business assistance. This mechanism enabled the ITTO to leverage credits for a total amount that is 15 times higher than the Organization's final investment in the guarantee fund (US\$ 9,647), offering small and medium forest sector producers in Peru a real financing alternative linked to good forest management.

Design and Implementation

From November 2002 to June 2003, the National Institute for Natural Resources – INRENA implemented Pre-Project PPD 6/00 Rev.1 (I) “Formulation of a Project Proposal to Support the Sustainable Development of Small Forest Industries”. This activity was conducted with the participation of experts, who carried out good yield studies comparing various types of sawmills in the field (López, 2004). As a result, a number of technological packages were selected for Project PD 233/03 Rev.2 (I).

The PSC and ITTO showed good judgement and flexibility in their decision to scale down the number of target regions from six to three and eliminate technological package no. 2 (portable horizontal band sawmills) to focus on technological package no. 1 (tilting circular sawmills). Both the PSC and ITTO approved the reallocation of budget items to enable FONDEBOSQUE to extend its role as executing agency in spite of losing the Peruvian Government's funding by the end of 2007.

The success of this Project should ultimately be credited to the participating producers, who took financial risks, paid up their loans and endured significant delays in the approval of their yearly plans of operation by the relevant regional forest authorities.

Lessons Learned

- Eight-month pre-project PPD 6/00 Rev.1 (I) assisted the experts to quite adequately define technological packages based on technical studies and cost analyses.
- The initial two-year duration of the project and the original target of six regions were unrealistic.
- Key partners in the implementation of this type of projects are training institutions, regional forest regulatory agencies and regional producers' organizations.
- Technological development projects should be accompanied by practical activities aimed at the development of products and markets.

Conclusions and Recommendations to the General Forest and Wildlife Directorate

In 2003 an ITTO mission (Diagnostic Mission Towards Objective 2000) recommended to improve cross-sectoral coordination, assess forest sector competitiveness, and identify market opportunities.

Similarly, in 2012 we recommend to secure specialized international assistance to design and guide a multi-year integrated strategy for forest sector and natural resource development. This strategy should comprise the following overlapping phases:

- Years 1-2. Development of regional cross-sectoral visions and avenues for phased commercial, social and environmental development geared to products and services with marketing potential;
- Years 1-4. Identification and development of a number of strategic and complementary regional projects for the promotion of private and public investment. These projects should be consistent with the previous phase and should strengthen public-private sector cooperation and training on all levels; and
- Years 3-6. Design and implementation of a Sustainable Forest Development Promotion Fund. This Fund should act as a second-tier bank focused on the forest sector. It should be privately managed by a high-level public-private sector board of directors.

Conclusions and Recommendations to ITTO

In order to strengthen the forest sector decision-making process in Peru and improve project implementation capacities, it is advisable to strengthen in a coordinated manner the capacity of three different types of institutions:

- regional producers' associations,
- regional institutions specialized in training such as CITE Maderas de Pucallpa (training, technical services, product development); and
- regional agencies responsible for approving and implementing forest management plans..

We recommend ITTO to consider the following:

Capitalize on the financing mechanisms developed and lessons learned in Project PD 233/03 Rev.2 (I) to establish a regional project focused on the commercial development of specific strategic markets and products linked to good forest management:

- Targeting one region at a time but including interventions throughout the value chain down to selected end-products.
- Implementing an expanded and more flexible version of the Guarantee Revolving Fund of Project PD 233/03 Rev.2 (I) to provide business credit.
- Comprising two phases of up to four years each. Any extension should be subject to rigorous international technical and auditing reviews.
- Implemented in such a way that will improve the sustainable management capacity of regional producers' associations, regional training institutions, field forest monitoring agencies and financial institutions.
- Aimed at strengthening practices and expediting field implementation and monitoring related to certifiable forest management schemes.
- Privately executed by a Steering Council including different institutional members and ITTO.

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