

Electronic timber traceability

An ITTO project has piloted a technique to verify the legal origin of Peruvian timber

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In 2008, the International Tropical Timber Council approved and funded a project¹ with the aim of developing a timber traceability system in Peru based on a pilot scheme for tracking mahogany from Peru's tropical forests to the end-consumer in the United States of America.

In Peru, forest concessionaires are legally required to follow "general sustainable forest management plans" and "yearly plans of operation" to ensure the sustainability and efficiency of their operations. The need to demonstrate compliance with these instruments, and the desire to improve production efficiency and therefore competitiveness, has given rise to efforts to provide real-time, verifiable information on harvested timber by tracking it through the entire production process. A reliable, transparent forest traceability system is an essential element of sustainable forest management.

The stated objectives of the ITTO project, which was implemented by *Bosques, Sociedad y Desarrollo* (BSD), were to facilitate the traceability of Peruvian export timber, assess the status of the export chain, and identify the requirements for the implementation of a traceability system, including institutional and budgetary needs for the voluntary implementation of the system by Peruvian companies. A key output was to be a proposal for the widespread implementation of such a traceability system on a voluntary and collaborative basis in the country's forest regions. The need for such a system is summarized in Box 1. The traceability system, when fully implemented, is expected to support the consolidation of Peru's forest concession system by establishing favourable conditions in which concessionaires and communities can demonstrate to markets the legal and sustainable origins of their products.

Box 1. Reasons for a timber traceability system in Peru

- The forest-related agenda included in the Peru–United States of America Free Trade Agreement requires timber traceability in conformity with the United States' Lacey Act. The free-trade agreement between Peru and the European Union also addresses timber traceability through FLEGT rules.
- Timber traceability will lead to better performance reports for the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which requires export certificates for mahogany (*Swietenia macrophylla*) and cedar (*Cedrela odorata*).
- Major markets are increasingly demanding verifiable information demonstrating the legality of timber and the sustainable management of the forests in which it is harvested, which requires, among other things, the tracking of products from the forest to the end-consumer. Government accreditation is not considered sufficiently reliable for this purpose; internationally recognized independent certification is therefore required.
- Electronic traceability enhances and complements existing voluntary certification schemes, such as that of the Forest Stewardship Council.

The pilot exercise

Under the ITTO project, ten mahogany trees were tracked from the forest in Ucayali, Peru, through processing, to the arrival of the mahogany sawnwood at its final destination in the United States. This pilot exercise was carried out using timber harvested in the Yaminahua El Dorado native community near the Peru–Brazil border, in cooperation with the community's forest regent², the forest enterprise *Forestal Venao*.

The pilot electronic traceability system used radio frequency (RFID) and barcode identification technology as vehicles for the electronic product code (EPC), with the capacity to generate information at each stage of the production chain. The EPC is a globally unique international identification code that reduces the potential for duplication and copying and is a transparent and reliable way of sharing data at the global level. The EPC can provide a unique identity for any physical product and can be used to identify individual products and objects among millions of similar items. Barcodes and RFIDs are expected to remain key vehicles for EPCs for many years and will become increasingly inexpensive.



From the tree...



...to the log...



...to the mill. Photos: M. Torres

1 PPD138/07 Rev.1 (M)

2 The Forest Regent scheme was developed to allow small landowners to apply for forest certification as a group. A forest regent is responsible for the sustainable forest management of its community partners.

... Electronic timber traceability

In the pilot system, RFID chips were placed on standing trees, stumps and logs, while barcoded labels were used on subsequent products, thus electronically upgrading the forms and codification methods used under Forest Stewardship Council forest certification. In the future, these data can be made available on the Web, thus providing transparent monitoring of the entire process for companies, certifying agencies, authorities and end-consumers. RFID chips have the benefit of being able to integrate social and environmental information in multimedia formats. In addition to the usual commercial data, they can be used to convey, to end-consumers, other information, such as the history and cultural characteristics of native communities (which own one-third of Peruvian forests).

Launching the pilot system

The pilot electronic traceability system was launched in August 2009 with the establishment of the project steering committee. A company, MAP GeoSolutions, was engaged to conduct an electronic inventory of the timber to be traced; geo-reference the location of the timber using state-of-the-art satellite technology; codify standing trees, and logs and branches after logging; apply the RFID chips and labels; take measurements; and set up a database of standing tree-to-log yield rates. In undertaking these tasks, MAP GeoSolutions worked closely with *Forestal Venao*. As a first milestone in the traceability process, timber was tracked from the log yard in the forest, through control posts and river transport, to the processing plant (a sawmill) in Pucallpa. During the exercise, the performance of control posts, waybills, forms and private-sector and public-sector entities was evaluated.

A second traceability milestone was achieved the following month at the *Forestal Venao* sawmill in Pucallpa. In addition to verifying the chain of custody, log-to-sawnwood yield monitoring data were recorded. A third traceability milestone was attained with the tracking of the timber through control posts from Pucallpa to Lima, the processing of the CITES export certificate, and shipping from the port of Callao in Lima. The final traceability milestone was the arrival of the mahogany sawnwood in New Orleans in the United States, in conformity with end-consumer requirements.

A public-private partnership

To implement the pilot electronic traceability system, a public-private partnership was established in which each of the parties (Box 2) financed their own participation, provided relevant technology and licences, and invited relevant suppliers to participate in the same way. BSD served as facilitator, overseer and coordinator. All partners participated in the steering committee that guided the initiative and discussed the findings and proposals

for future action. Cooperation between participating companies facilitated the analysis of alternative approaches and made it possible to identify anomalies and errors in the system that could be rectified in the future development of a general-access forest traceability system.

Box 2. The participants

The following Peruvian public-sector stakeholders participated in the initiative:

- Ministry of Agriculture
- Ministry for the Environment
- National Agrarian University of La Molina
- Ministry for Foreign Trade and Tourism
- Ministry for Production
- Tax and Customs Authority
- Regional Government of Ucayali and its regional offices
- Ministry of the Interior – National Police Force of Peru
- Ministry of Defence – Armed Forces
- Forest Supervisory Agency

The following national and international private-sector stakeholders participated:

- Certified mahogany-logging native communities:
 - El Dorado Native Community and the forest regent, *Forestal Venao S.R.L.*
 - *Unión de Comunidades Indígenas de la Frontera*
 - The certified forest stakeholders' union
- Electronic forest census and geo-referencing agencies – MAPS GeoSolution and GTza
- Export companies and other forest service industries – *Forestal Venao* and One Tree International
- Traceability and hosting technology providers – Helveta, GS1, Trimble and Nitta
- Logistic operators – ALSA and Bertling Logistics
- Financial sector – Macroconsult, Apoyo and Arowana
- Shipping companies and customs agencies – TransOceanic
- End-consumers in the United States

The project tested a set of compatible traceability options. Suitable software was also tested to ensure compatibility between the databases and software of various forest stakeholders and the proposed additional software required to implement the timber traceability system. This cooperative approach offers the best way to establish a workable, transparent and cost-effective timber traceability system in Peru.

Scaling up

The work carried out under this pilot project is now being scaled up to the national level to allow the tracking of timber from all Peruvian forests. The USA and Peru recently agreed to a five point action plan following continuing allegations of illegal logging and illegal trade of timber between the two countries. The plan includes increasing the number and training of logging inspectors, more on-site inspections in remote concessions, continued development of systems to track the supply chain of timber, and criminal prosecutions of anyone—including public officials—involved in illegal logging.