

BOManejo software - harvest planning and control of the forest production

José Francisco Pereira¹, Fabricio Nascimento Ferreira², Milton Kanashiro²

¹Embrapa Amapá, Macapá, Brasil; ²Embrapa Amazônia Oriental, Belém, Brasil (jose-francisco.pereira@embrapa.br; fabricio.ferreira@embrapa.br; milton.kanashiro@embrapa.br)

BOManejo is a free software developed by Embrapa to assist the elaboration and execution of Sustainable Forest Management Plans (SFMP) in the Amazon. From the information of the forest inventory, together with the definitions of the desired selected criteria and the applicable legal restrictions, through an interactive process of planning and verification of results, this tool allows a more careful tree selection to be harvested and a better control of timber production, therefore improving production and sustainability of the managed forests. The control of the production is a legal and necessary requirement for the authorization of the logs transportation and commercialization, and also can be facilitated by the integration between BOManejo and the electronic control systems of the environmental agencies. A plug-in was developed for the QGIS software to connect to BOManejo, adding features to facilitate the preparation of operational and licensing maps, with the location of trees to be harvested and preserved ones in the forest. It also permits to see the evolution of the harvesting on the map. BOManejo has a licensing module that can be used by environmental licensing agencies to assist in the analysis of the Annual Operational Plans (AOP) prepared with this software tool, in order to streamline and improve the analyzes for its licensing procedures. BOManejo is a platform where new technologies and knowledge can be more easily made available and potentially incorporated into the activities of sustainable forest management throughout the Amazon region.

Rapid screening by fluorescence of finished wood products for targeted sampling

Cady Lancaster¹

¹US Forest Service International Programs, Ashland, OR, USA (cady Lancaster@fs.fed.us)

One of the many considerations for screening timber declarations is determining the presence of a mixture of species in a single shipment. The Wood Identification and Screening Center (WISC) of the US Forest Service International Programs (USFS-IP) has developed a screening protocol for targeted sampling of mixed-wood products. The protocol uses fluorescence to identify probable inconsistencies in species declarations of finished products when multiple species are suspected. Many timber species have a native fluorescence that can be easily observed with exposure to 365 nm light. In traditional wood anatomy, fluorescence of water and ethanol extract of heartwood is used as an indicator in species identification. By using inconsistent fluorescence responses to guide sampling, the shipment can be efficiently targeted for more advanced forensic identification techniques (e.g. anatomy, chemistry). As part of this screening protocol for customs agents, WISC is developing a visual database of wood fluorescence for high and low risk species.

Traceability system improves forest governance in Panama

Felix Magallon¹, Melanio Aguilar¹, Victor Francisco Cadavid¹

¹Ministry of Environment (MiAmbiente), Panama City, Panama (fmagallon@miambiente.gob.pa; vcadavid@miambiente.gob.pa)

A timber traceability system recently put in place in Darien, has already reduced forest illegality, with benefits for forests, managers, companies and Panama's Ministry of Environment. The traceability system enables the tracking of trees using electronic devices — chips — from the moment they are identified to the point at which the timber reaches consumers. In its phase, the system is collecting information on around 700 crop trees per day, and the Ministry of Environment is planning to expand its use to other regions of the country. According to Panama's Ministry of Environment, as reported in the newspaper La Estrella de Panama (6 May 2018), the timber-tracking system has helped reduce illegal logging in the country by 68%. The system is an output of an ITTO-financed project entitled "Strengthening the management capacity of ANAM to reduce illegal timber logging and trade in the East region of Panama (Bayano and Darien) through monitoring and control mechanisms" and is being executed by WWF-Panama in collaboration with the Panama Ministry of Environment.

Technologies to verify the origin and species or genus of wood and wood products

Andrea Olbrich¹, Tereza Cristina Monteiro Pastore²

¹Thünen Institute, Hamburg, Germany; ²Laboratório de Produtos Florestais, Serviço Florestal Brasileiro, Brasília, Brazil (andrea.olbrich@thuenen.de)

For the implementation of national and international legislation that forbids the use of illegally logged or endangered species the identification of timbers in all kind of materials made of timber is becoming increasingly important. The Thünen Centre of Competence on the Origin of Timber is the central contact facility for government agencies, timber trade, consumers and associations to verify the species of wood and/or wood products and its origin. The Centre combines the analytical expertise and competence of the three Thünen institutes of Wood Research, Forest Genetics and International Forestry and Forest Economics responsible for wood identification, proof of origin, certification and timber trade structures. The timber identification in pulp, paper and fiber boards is aggravated since the most of the forensic anatomical characteristics of wood refer on the tissue and nearly all materials of fibers contain a mixture of timbers. Therefore the anatomical identification is the only established method by now. For hardwoods, the characteristics of vessel elements of an unknown sample have to match with the descriptions and high valued micrographs of the vessel elements of known timbers as references. In the past, such references for Asian timbers were missing. The team of authors from the Thünen Institute analyzed 38 species or species groups (including a bamboo and a palm) and published references for them, so now these timbers can be identified in paper and fiber boards as well.

C3e: PRECISION FORESTRY

New generation of forestry based on precision management practices

José Leonardo de Moraes Gonçalves¹, Alexandre de Vicente Ferraz²

¹Escola Superior de Agricultura "Luiz de Queiroz", Universidade de São Paulo, Departamento de Ciências Florestais, Piracicaba, Brasil; ²Instituto de Pesquisas e Estudos Florestais, Piracicaba, Brasil (jlmgonca@usp.br)

The development of improved forest planning and operations can minimize site impacts, increase utilization and minimize or avoid adverse environmental effects. Some principles, aims, strategies and silvicultural practices must be followed for developing sustainable forest plantations based on holistic approach of the productive process. Precision Forestry (PF) is a great tool that aims to provide a silviculture customized for each unit area. It is a new model of forest plantation management. Such tools are becoming more available and applicable to different stages of fast growth forest plantation, and with proven gains in