

IUFRO international seminar-workshop towards better management practices in tropical humid forests: developing principles and recommendations for the Amazon Basin

Plinio SIST¹
Carmen GARCIA-FERNANDEZ²
Cesar SABOGAL³

¹ Centre de coopération
internationale en recherche
agronomique pour
le développement (CIRAD)
Convênio CIRAD-EMBRAPA,
Belém
Brasil

² Universidad Autónoma
de Madrid (UAM)
Madrid
Spain

³ Center for International
Forestry Research (CIFOR)
Convênio EMBRAPA-CIFOR,
Belém
Brasil



Field visit to Cauaxi training center of Instituto Floresta Tropical (IFT). The group of participants is listening to an instructor responsible for road planning and opening.
Photo R. de Graaf.

Organized under the auspices of the International Union of Forestry Research Organizations (IUFRO), the international seminar-workshop *Towards better management practices in tropical humid forests: developing principles and recommendations for the Amazon Basin* was held in Belém do Pará, Brazil (14-19 November 2004).

Context and objectives

Over the past 20 years, deforestation in the tropics has increased to such an alarming rate (14 million ha lost annually during the decade 1990-2000; FAO, 2001) that the long-term sustainability of this valuable resource is in question. Although uncontrolled timber harvesting is an important cause of deforestation, it is also largely recognized that the conservation of large areas of tropical forest, outside protected areas, can be effectively achieved through sustainable



The team of instructors of the IFT.
Photo C. Cunha.



Leonardo Sobral presenting the Cikel company at the forest camp.
Photo C. Cunha.

management for timber and non-timber products. In this context, several guidelines or codes of best management practices have been developed or proposed over the past decade. One of the most important steps towards sustainable harvesting has been the implementation of Reduced-impact logging (RIL) techniques in the three major regions with tropical humid forests (Amazonia, Indo-Malaysia and the Congo Basin; DYKSTRA, HEINRICH, 1996; SIST, 2000). The main objective of these techniques is to reduce logging damage to both stand and soil. The hypothesis behind the reduction of logging damage is that forests will recover faster and better. However, though harvesting operations in polycyclic systems should be considered as the first and also the most important silvicultural treatment, they remain engineering techniques telling the forester how to harvest the forest but not how many trees, nor what species. Indeed RIL is, as most harvesting systems applied in the tropics, based on a single set of rules: the minimum cutting diameter applied to all commercial trees and a cutting cycle of between 20-60 years. Besides harvesting systems, post-harvesting silviculture has usually been poorly practiced in natural tropical forests, often ignoring the economic constraints as well as the infrastructure and qualified personal they require to be efficiently implemented. Tropical forests cannot be considered as a source of timber only, as they also include a large number of products and provide essential environmental services. Modern silviculture should therefore maintain and promote the high diversity of tropical forest as it represents an important biological and potential economic value for the future.

So far, tree ecology has received limited consideration in the development of harvesting and regeneration protocols (SHEIL, VAN HEIST, 2000; JENNINGS *et al.*, 2001; SIST *et al.*,

2003). This has resulted in the capacity of current selective harvesting systems in tropical forests to achieve sustainability being now largely questioned. It is therefore essential to define new silvicultural practical recommendations including harvesting operations aiming at maintaining productivity, tree diversity, viable habitat and ecological functions. These new recommendations should not only incorporate our knowledge of tree and forest ecology, but also be defined taking into account the economic and social constraints impeding their implementation in the field by forest managers. One important issue is for example to consider small-scale forestry in the framework of partnership between forest companies and local communities.

In this general context, the seminar-workshop held in Belém, Brazil, had three main objectives:

- To present the state-of-the-art of RIL techniques implemented in South American tropical humid forests in order to evaluate the strengths and weaknesses of these techniques.
- To define principles and practical recommendations for developing best management practices in tropical humid forests that integrate other forest products and services.
- To evaluate the technical, social, and economic feasibility of these recommendations to overcome the main constraints considering different scenarios and scales for their adoption by forest managers.

The meeting aimed to bring together different actors of the forestry sector (forest companies, communities, engineers, government officials, scientists) to share experience and opinions on the challenge of bringing forest management towards better practices in order to achieve sustainability.

Workshop organization and format

The workshop was attended by 34 participants representing 9 countries of Latin America, mostly from Amazonia (Brazil, Bolivia, Colombia, Peru, Equator, French Guiana, Surinam, Argentina and Costa Rica), and originated from 15 countries. The first three days were dedicated to a field visit to the Cauaxi training center of IFT (Instituto Floresta Tropical) and of the production forest of Fazenda Rio Capim managed by Cikel and including a forest management plan covering 100 000 ha with an FSC certification. This gave the participants the opportunity to discuss the state of the art and to share their own experience.

The last three days were dedicated to a one day seminar and two days of working groups session in Belém. The seminar was attended by 111 participants and aimed to present the context of the discussion to be held over the next two days through the presentation of four key papers, as well as country case-study presentations covering seven Amazonian countries (Table I).



A working group at work.
Photo C. Cunha.

The working groups sessions were restricted to the invited participants. The discussion covered two main topics: multiple use and species ecology considering both industrial and small-scale forest management, with particular emphasis on communities-companies' partnerships scenarios. Participants were split into four groups of 8-10 participants each. The recommendations made by the groups had to follow a standard format. The secretary was in charge of presenting in the plenary sessions the main results of the discussion that occurred in the group.

Table I.
List of key papers presented at the one-day seminar in Belém.

Authors	Title
Froylan CASTAÑEDA	Status of tropical forest management in South America
Plinio SIST Milton KANASHIRO Edson VIDAL Marc SCHULZE	Sustainable management of tropical rainforest: what do we need to implement beyond RIL
Cesar SABOGAL Laura SNOOK Benno POKORNY Marco BOSCOLO Natalino SILVA	Challenges for the adoption of good forest management practices in the Amazon basin
Carmen GARCIA-FERNANDEZ Edson VIDAL Bastiaan LOUMAN Noemí PORRO André DIAS Manuel AMARAL	New trends in community forest management models: partnerships with forest companies
Joberto VELOSO	Forest management in Brazil
Reitze DE GRAAF	Forest management in Surinam
Oscar MELGAREJO Tedi PACHECO Favio RIOS Verónica SOBREVILLA	Forest management in Peru
Olvis CAMACHO Marielos PENA Rudy GUZMAN Alberto ARCE Marco ALBORNOZ	Forest management in Bolivia
Anibal PASPUEL	Forest management in Equador
Stéphane GUITET	Forest management in French Guiana
Ricardo LINARES	Forest management in Colombia



Carmen Garcia-Fernandez presenting the key paper about partnership between forest companies and communities.
Photo C. Cunha.

Outcomes of the working group sessions

During the first day, group discussions were focused on identifying the list of recommendations to overcome barriers for improving current RIL practices. Most of the recommendations were in response to the list of general problems identified as critical. These problems fall out of the harvesting operations context, but participants expressed their concern about talking only about technical recommendations without considering the broader picture. Some of the groups also produced a list of technical recommendations. After the first day, the work in groups was directed to produce a list of activities needed to implement each technical recommendation, as well as a list of strategic actions for the selected general recommendations.

A general concern across the four groups was the need to disseminate the information available about the topics discussed (species ecology and multi-use management). There is a wealth of data coming from permanent plot inventories, forest dynamics research projects, and other studies that need to be compiled in regional databases with open access. Participants from the different countries and institutions discussed the steps to establish a regional network to connect national initiatives to monitor permanent forest plots.

Alliances between timber companies and research institutions were also identified as a strategic action to produce information assessing the impact of harvesting operations, as well as the data to improve current management guidelines. Representatives from timber industries welcomed this recommendation, but indicated that the industries are not the sole agents responsible for the funding of the research expenses. Some participants pointed out that industries are not only strategic partners for research institutions, but also for communities that could benefit from their managerial and operational capacity. Nonetheless, collaboration between companies and communities needs the supervision of third parties to reduce the risks of these collaborations and mediate in case of conflict.

Species ecology and silviculture were largely debated in the working groups. The need to improve our knowledge of the ecology of commercial species was generally recognized and emphasized, although this would require a more detailed inventory. The need to define a new tropical silviculture approach able to take into account the high diversity of products appeared to be a priority.



Claudia Ramos, coordinator, during a working group session.
Photo C. Cunha.

Future steps

A report, including all presentations and the results of working groups and discussions will be prepared by the Organizing Committee and distributed to all participants. The key papers (subject to a strict peer-review process) as well as the recommendations issued from the working groups sessions will be published as a special issue (or part of a regular issue) of a major international scientific journal.

The committee has identified the need to bring together a small group of experts to work with the list of recommendations provided by the working groups and the ones resulting from the plenary sessions. The prime objective will be to produce a consolidated list of recommendations, which specifies the activities and the steps required to integrate them into current guidelines. The expert meeting will be organized in May-June 2005 once the committee has prepared a first draft of the principles and practical recommendations, which includes the needs to be assessed.

Acknowledgements

This workshop-seminar was organized under the auspices of IUFRO and received the financial support of US Department of Agriculture (USDA) represented by the US Embassy in Brasilia, US Forest Service, US Agency for International Development (USAID), Food and Agriculture Organization of the United Nations (FAO) and the French Embassy (Services de Coopération et d'Action Culturelle, SCAC).

References

- DYKSTRA D., HEINRICH R., 1996. FAO model code of forest harvesting practice. Rome, Italy, FAO, 85 p.
- FAO, 2001. State of the World's Forests. Rome, Italy, FAO.
- JENNINGS S.B., BROWN N.D., BOSHIER D.H., WHITMORE T.C., DO LOPES C.A. J., 2001. Ecology provides a pragmatic solution to the maintenance of genetic diversity in sustainably managed tropical rain forests. *Forest Ecology and Management*, 154: 1-10.
- SHEIL D., VAN HEIST M., 2000. Ecology for tropical forest management. *International Forestry Review*, 2: 261-270.
- SIST P., 2000. Reduced-impact logging in the tropics: objectives, principles and impacts. *International Forestry Review*, 2: 3-10.
- SIST P., FIMBEL R., NASI R., SHEIL D., CHEVALLIER M.-H., 2003. Towards sustainable management of mixed dipterocarp forests of South East Asia: moving beyond minimum diameter cutting limits. *Environmental Conservation*, 30 (4): 364-374.