INTERNATIONAL TROPICAL TIMBER COUNCIL

Distr.
GENERAL

ITTC-JC(XLV)/2 – Annex II
26 September 2011

ENGLISH

FORTY-SEVENTH SESSION
14-19 November 2011
La Antigua Guatemala, Guatemala

META-EVALUATION OF PREVIOUSLY EVALUATED ITTO PROJECTS

Lessons learned & good practices towards sustainable management of tropical forests

Summary Report

2. Demonstration areas, model forests and permanent sample plots and for sustainable forest management

Markku Simula, Hosny El-Lakany and Ivan Tomaselli

THEMATIC SUMMARY REPORT No. 2

DEMONSTRATION AREAS, MODEL FORESTS AND PERMANENT SAMPLE PLOTS FOR SUSTAINABLE FOREST MANAGEMENT

1. INTRODUCTION

Demonstration areas and model forests are developed to help achieve sustainable forest management (SFM) by providing location specific information and experience that can be shared among stakeholders through lessons learned. Permanent Sample Plots (PSP) often form part of the demonstration areas and model forests but they can also be established independently.

The concept of demonstration areas in tropical production forests stems from the early 1990s as a tool to develop, share and disseminate good experiences in practical forest management. The idea was that producing member countries would select one or more among the best managed forest areas for timber production to further step up the quality of forest management and to demonstrate the feasibility of SFM in practice. Some of these experiences have been evaluated and compiled in success stories providing a source of ideas for other forest management units (FMU) in the country and elsewhere.

A model forest is a related approach with largely similar objectives. In this case sustainable management is implemented at a designated management area (often predominantly logged over forest) in which a number of concessionaires are, or have been, operating. Some model forests are established for research; monitoring and training purposes rather than serving as demonstration areas. Some projects have been primarily implemented as demonstration areas of integrated land use approach, focusing on conservation and sustainable use of tropical forests for various purposes at various scales and in different site types.

Both demonstration areas and model forests are applicable in forest concessions and community forests in natural and planted forests but they can also include formally protected areas.

Permanent sample plots are established to study forest ecosystems with respect to tree growth and canopy structure, forest health and vitality, non-timber forest resources, biodiversity, soil and water conditions, and forest utilization. Both demonstration areas and model forests can include PSPs for monitoring and research. PSPs are usually also a necessary element in national and FMU level forest inventories.

2. KEY ISSUES

- The formulation of demonstration and model forest projects has often suffered from an inadequately structured logical framework for proper integration of activities and clarification of responsibilities of the parties involved.
- It is not always understood that the establishment of designated areas for demonstration and model forests through a project is only the first step. Adequate project exit strategies, including the parties' commitment to maintain these areas in the medium and long term, have not always been duly considered in the project design stage jeopardizing the sustainability of project achievements.
- A model logging concession can serve as an area for training, research and demonstration increasing its strategic value but this can easily make the project highly complex to implement. Demonstration and dissemination have not always been successful in spite of being part of the original project strategy.
- The accountability of concession holders plays a significant role to reach demonstration goals but it has proved to be difficult to ensure in some projects.
- Lack of provisions for statistical and physical coordination between the various inventory and plot monitoring systems is an issue for many projects of this nature.
- Poor accessibility of demonstration areas and PSPs has proved to be a critical constraint. Ensuring access to sites in the long run is necessary to benefit through learning from the changes in the forest.
- In some cases, re-measurement data from PSPs has not been compiled, analyzed and reported seriously questioning the justification of investment in re-measurements.

- The mensuration and taxonomic weaknesses of some databases have cast doubts on the credibility of yield projections which are needed to establish future sustainable harvesting levels.
- Ambiguity and inconsistency of the interchanging use of the key terms such as “forest sustainability”, “forest condition” and “forest health” can undermine the project’s strategic value. The objective of data collection, reporting and assessment becomes therefore easily diffused. Different interpretations of key terms and assessment indicators tend to limit possibilities to draw general conclusions based on the measurement results.
- The ultimate positive impact on forest management practices in demonstration areas and model forests remains limited in situations where law enforcement is weak or lacking and the forest sector continues to be dominated by a few powerful timber holdings aiming at short-term profitability rather than long-term sustainability.
- Weak competence of government agencies and confusion about forest use rights can undermine any efforts to improve forest management through demonstration areas and model forest projects.

3. LESSONS LEARNED

Project design

- Four prerequisites need to be fulfilled to achieve the objectives of successful demonstration areas. (i) The forest manager, often a concessionaire, should be committed to further improve forest management. (ii) The forest manager should allow and ensure documentation and analysis of the management measures and their impact. (iii) The interested parties should be allowed to visit the forest management unit and to access information. (iv) A dissemination and extension plan should be developed and implemented.
- Participation by the major stakeholders in demonstration projects needs to be provided starting with the design stage, then speeded up over the project cycle. Some of the timber companies may lack a sense of commitment, responsibility or urgency, while others such as the local forest communities may participate willingly and constructively if awareness of benefits can be created and adequate incentives provided.
- Demonstration projects can increase awareness among the forest authority and the private sector on (a) how to implement SFM in practice, (b) the implications of environmental damage for the concessions, and (c) the need to cooperate with each other. Concession holders and contractors can be made aware of the fact that changes are not only necessary but also beneficiary for them as well.
- The most noticeable effects of the introduction of SFM procedures in the demonstration and model forest areas may include (i) improved water quality in downstream areas, (ii) reduction of timber waste and damage to soil and residual forest growing stock, and (iii) improvements in road and other infrastructure design and construction (e.g., banks in skid trails to prevent run off and lowering of maximum road gradients).
- Reduced impact logging (RIL) experiments in model forests and demonstration areas, using ground equipment, can effectively confirm that harvesting under SFM is technically and economically feasible. Results can demonstrate that residual stands after the second cutting cycle are promising for the third cutting cycle while there has been no convincing evidence which would indicate loss of biodiversity from species to genes.

Project implementation

- Project management and funding agencies should be aware that it takes a long time to reach the stage of a fully operational demonstration area even in sites which may at the first sight look to have a good potential for demonstrating sustainable forest management, including timber production. Planning for additional phases needs to be considered in the initial project design by including respective activities.

- The more complex a project design, the higher the risk that management cannot cope with it. For example, while certain project sites are confined to one concession area, including the surrounding areas of its influence, others may include many concessions, even straddling the boundaries. This implies an unnecessary large number of actors in the project which tends to dissipate the attention of project management and commitment by actors.
- When the project is large and very ambitious, it easily becomes unnecessarily complex. Such a situation should be avoided. Complexity may also be inherent to an area which has been chosen to implement the project (e.g. due to forest characteristics, illegal logging in the area, or other external impacts on the forest resource). To some extent, complexity can be addressed through a strong project management structure and capacity as well as firm partner commitments.
- When log supply and harvesting volumes are still ruled by diameter limits, harvesting volumes are not based on accurate growth data related to the basal area. Permanent sample plots are needed to provide the basis for establishing sustainable harvesting levels.
- Continuous periodic monitoring of sample plots is necessary for generating information that can be effectively used for achieving sustainable forest management.
- Technical measuring difficulties and logistic obstacles to access plot locations can significantly add to project costs and should be duly considered in the project design phase. Close integration of monitoring activities and simultaneous execution of plot measurements can improve the project's cost efficiency.
- The project must show credible evidence that a growth and yield monitoring system is in place to ensure the dissemination of credible results.
- Sustainability of research forests can be difficult to achieve, hence their role to serve as a demonstration area for sustainable timber production can be limited, especially where accessibility is a major constraint.

4. GOOD PRACTICES

Project design

- Good design of demonstration and model forest projects avoids unnecessary complexity, and is based on firm commitments of parties, with clear exit strategies.
- Good documentation of the project development process helps assessment of the proposal, in particular with respect to involvement of stakeholders and the degree to which ownership of activities and outputs is perceived.
- Careful project design secures integration and spatial linkage of measurements and related activities among all national demonstration projects.
- Full commitment and proactive participation from those actors who should play indispensable roles during the later stages of the project or even after project completion needs to be ensured during the formulation phase and maintained during the implementation phase.

Project implementation

- Technical soundness, a critical factor for the credibility of project outputs, relies on the clarity of terms used, as well as scientific methods in sampling, measurements and data analysis.
- Assessment indicators can be linked with the ITTO Criteria and Indicators for SFM and relevant ITTO Guidelines.
- In PSPs for studying forest dynamics, measurements should go beyond tree height and diameter. The added value of permanent plots is in the study of the spatial and temporal changes in the structure of the forest as well as species behavior during and after management interventions or disturbances. Monitoring can include phenology, mortality, distribution of tree crowns, volume, stem diameter and age.

Permanent plots are also useful for monitoring of changes in biodiversity and soil and water conditions.

- Data collection should continue in the same plots over a time series, and research is needed to refine the methodologies. In PSPs, marking of trees for permanent identification and regular updating of measurements are essential good practices.
- After re-measurement, data analysis and reporting should be ensured.
- The databases constructed should allow modeling the behavior of the forests in different scenarios of forestry and environmental parameters. Analysis and reporting are needed to draw the first lessons on the behavior of natural forests and to guide the next measurements in study plots.
- With proper management, a research forest can serve as a protected area and some plots can be developed as demonstration areas even if they lack the context of a larger forest management unit.
- Maintenance of demonstration plots in private concessions requires clear and firm commitment and sense of responsibility among company shareholders, management and staff, as well as other partners.
- Effective support to local communities in model forests aims at developing practical approaches to improve technology and livelihoods based on forest activities. In such projects due consideration of socio-economic aspects can ensure the applicability of results in local and other similar conditions.
- Careful site selection is crucial for efficient and effective model forest project implementation. Representativeness and accessibility are key criteria for site selection.
- Even parts of the community forests and forests gazetted as Permanent Forest Estate can successfully be developed for demonstration, especially when they are fairly easy to reach.
- Variation in topography and forest characteristics offers excellent opportunities to demonstrate site-adapted silvicultural and logging techniques.
- Cooperation with local communities is essential and the choice of other project partners is crucial for successful development of practical approaches through model forests and demonstration areas.

SOURCES

This thematic summary is based on the ex-post evaluation report of the following project and other relevant documents:

PD053/00 Rev.3 (F)	IMPLEMENTATION OF A PERMANENT NETWORK OF STANDS DYNAMICS MONITORING PLOTS FOR THE GAZETTED FORESTS OF CÔTE D'IVOIRE