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META-EVALUATION OF PREVIOUSLY EVALUATED ITTO PROJECTS

Lessons learned & good practices towards sustainable management of tropical forests

Summary Report

9. Reduced impact logging

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THEMATIC SUMMARY REPORT No. 9

Reduced Impact Logging

1. INTRODUCTION

Reduced impact logging (RIL) was developed to facilitate and improve the implementation of sustainable forest management (SFM) of tropical forests. The original purpose was to reduce impacts of harvesting operations, but RIL has become a new management approach for improving operational planning, harvesting methods, and supervision and monitoring. RIL is part of the implementation of forest management plans with which its planning is closely linked. RIL, therefore, is one element of the toolbox for SFM at the forest management unit (FMU) level. It is applicable both in large-scale concession operations, for which it was originally developed, and small-scale community and privately managed forests.

In addition to reducing damage to the remaining vegetation, soil and water, RIL also contributes to improved regeneration in harvested areas and future sustainable production of timber and non-timber forest products. As the technology also aims at reducing costs, its application contributes to profitability. RIL also improves working conditions and occupational safety and health of the workers. In addition, RIL-based operations usually meet the forest certification standards related to harvesting.

The ITTA Objectives calls for the promotion of practices that contribute to improve sustainable management of tropical forests, such as RIL. The development and promotion of RIL are related to several ITTA Objectives including objective (f) *Promoting and supporting research and development with a view to improving forest management and efficiency of wood utilization and the competitiveness of wood products relative to other materials, as well as increasing the capacity to conserve and enhance other forest values in timber producing tropical forests*, objective (m) *Encouraging members to develop national policies aimed at sustainable utilization and conservation of timber producing forests, and maintaining ecological balance, in the context of the tropical timber trade*, and objective (p) *Promoting access to, and transfer of, technologies and technical cooperation*.

ITTO has been supporting the development of low-impact logging models, testing operational options in specific forest conditions and training of planners, supervisors and workers in several countries. Some projects have supported governmental and non-governmental organizations to establish training centers to develop human resources for the timber industry and to facilitate the adoption of reduced impact logging operations.

2. KEY ISSUES

- RIL is not yet adequately mainstreamed in the policy and regulatory requirements set for forest operations.
- The government policies and regulations are not always compatible with RIL and may need to be revised to allow its adoption.
- Implementation of RIL largely depends on the commitment of the timber industry management to improve operational forestry practices. There is a perception among many companies that RIL leads to increased costs even though the improved operations have been demonstrated to be cost-efficient.
- Convincing company management of the benefits of RIL is not enough. Field managers should be supportive to the necessary changes and adequately trained to implement RIL in their particular area of responsibility.
- Full implementation of the RIL approach requires effective supervision and communication within the organization. This often means a fundamental change to a logging company's organizational structure and rules of procedure/operational standards.
- In some cases companies are not interested in RIL because it disrupts the *status quo* of their management systems and operational practices, and because many companies are mainly concerned

about their immediate supply of raw material rather than optimizing their costs and minimizing their environmental impacts.

- Introduction of RIL has in many pilot projects involved the use of expensive equipment which has been necessary for improved forestry practices. Mainstreaming of the technology has been constrained by limited investment capacity of FMUs.
- Adaptation of RIL to community forests and other small-scale FMUs is still at initial stages. This would require specific concerted efforts.
- Specialized RIL training centers have suffered problems of sustainability when external financial support has finished. Adequate training fees from private companies sending their staff for training have not been adequate to ensure financial sustainability.

3. LESSONS LEARNED

Project design

- RIL projects usually involve participation of pilot FMUs which can serve as training grounds and experimental areas. This approach has proved to be useful for the introduction of RIL. However, this is only the first step and mainstreaming RIL needs other efforts.
- The pilot area selected for the implementation of RIL practices is often remote and located in steep terrain which tends to slow down the pace of work and reduce the demonstration potential of the area.
- The RIL model is currently mainly applicable to large logging enterprises that use heavy equipment. Medium-sized and small-scale operations and community-based forest enterprises use simpler technologies that also tend to result in adverse environmental impacts. As these smaller FMUs are numerous in many countries, their particular conditions should be taken into consideration in project design (choice of technology, FMU-level capacity building strategy, etc.).
- For the successful application of RIL it is necessary to have technically competent planners, operators, and supervisors. Well-trained operators need equally well-trained supervisors to ensure that work is carried out properly and to provide feedback to improve practices continually.
- The field-level operational staffs, the core target group of many RIL projects, needs to be fully consulted in the determination of training requirements in the planning phase.
- Participating companies should be prepared to meet the costs of training of their staff.
- Collaborating agencies have not always actively participated in the project which calls for clear statement of intention from all the planned parties.
- A feasibility study on a special RIL training center should be carried out before its financing can be justified.

Implementation

- It is important to identify environmental impacts associated with logging operations, particularly in steeply sloping areas and highly erodible watersheds. Especially planning of forest roads and other infrastructure should be carefully done, and measures to minimize adverse impacts should be taken.
- Alternatives to opening forest tracks and skidding can be analyzed for possible feasibility in specific local conditions. Helicopter logging reduces the need for road building in steep terrain and eliminates impacts on soil and water but it is costly and therefore applicable only in special cases. Cable logging systems are usually applicable in steep terrain.
- In many cases, the same road standards and road construction practices are used on steep slopes as in lowland forests. This can lead to significant stream sedimentation and loss of water quality, with serious

downstream impacts on drinking water, river transportation, irrigation, hydroelectric projects, and activities such as fish and shrimp farming.

- Detailed operational planning of RIL harvesting needs to consider, inter alia, differences in the wood technological characteristics of the lesser known timber species, and needs for taxonomical identification of additional species to ensure their due consideration in operations. Simple field guides for quick species identification have proved to be useful for lesser-used species.
- Machinery has been inappropriate in some local conditions and should therefore be specified, applicable to local conditions.
- Import procedures of improved logging machinery for RIL should be clarified in advance before their procurement.
- Overly optimistic scheduling of activities should be avoided. Collecting the necessary baseline data for RIL planning has often taken longer than originally anticipated.
- RIL projects are rarely successful for effective transfer of knowledge if the implementation is mainly based on short-term visits by overseas consultants.
- Training of trainers and pilot FMU staff has been useful in the initial stages of RIL introduction but it needs to be complemented by broader awareness raising among industry management and the government staff and expanding training activities to other target groups.
- It is important to understand that the targeted benefits may require a longer period of implementation than anticipated which can reduce the possibilities for convincing industry management on RIL's ultimate benefits.
- For effective dissemination of RIL project outputs to the public and private sector stakeholders requires a ready access to the results through short-term training courses, workshops, seminars, videos and posters in exhibitions, printed material, and a well-designed web-page.
- Technical reports of RIL projects are crucial for informing management and professional staff in private and public organizations. They should include comparative analyses on costs and productivity as well as environmental impacts of the RIL and conventional logging approaches.
- Reaching small-scale enterprises and community forests which are scattered in the country and experience limitations in the access to information would need specifically tailored dissemination activities.

Sustainability

- Some RIL activities and their promotion have lost momentum after the project completion.
- Monitoring of RIL's success based on a set of relevant indicators can help in communicating on the long-term benefits obtained.
- Comparative analyses between traditional logging and RIL have often been lacking in many projects limiting the industry's interest in improved practices.
- Independent RIL training centers usually need continual external funding even if demand for training services can be created through the project.
- It is difficult to sustain RIL training operations and promotion based on training courses fees.

4. GOOD PRACTICES

Project design and implementation

- RIL project design needs to be realistic and overambitious goals should be avoided.

- Essential aspects of RIL projects include (i) establishment of baseline information, (ii) identification of specific causes of accelerated soil erosion, (iii) development of guidelines for road construction and other practices that would significantly reduce the erosion rates, and (iv) training.
- Careful selection of sites for pilot areas at the very beginning can ensure that the areas meet criteria related to access and representativeness.
- Comparative cost and benefit analysis of RIL is an efficient tool to promote awareness raising on benefits among stakeholders.
- External experts are often required but resident staff or experts working continuously over long period with local counterparts would be preferable.

Sustainability

- Measures for systematic follow-up training and harnessing of knowledge and applicability to local conditions of the RIL technology, including among medium and small-sized operators and community forests, can ensure sustainability.
- Carefully planned exit strategies have proved to be critical for the continuous adoption of the RIL technology. They can include among others
 - Full involvement of national specialists
 - A follow-up mechanism for tracking cost-benefit ratios and other impacts
 - Assessment of the post-training performance of field operatives
 - Widespread awareness raising among forest industry management
 - Targeted dissemination on the benefits and costs, practical demonstration and technical documentation.
 - Partnerships with educational forestry institutions to ensure RIL to be included in their curriculum
- The government should consider establishing policies that encourage forest industry and communities to make available their workers for training on a regular basis.
- In order to address future sustainability when establishing training facilities, the project could make funding conditional for incorporating RIL in training.
- RIL training centers could eventually acquire a corporate status before the external funding is exhausted to enable self-financing from beneficiary organizations. However, as training fees charged to participants have not generally been sufficient for ensuring sustainability.

SOURCES

This thematic summary is based on the ex-post evaluation reports of the following projects:

PD 47/94 Rev.3 (I)	INDUSTRIAL UTILIZATION OF LESSER-KNOWN FOREST SPECIES IN SUSTAINABLY MANAGED FORESTS
PD 3/96 Rev.2 (I)	DEVELOPMENT AND EXTENSION OF RUBBERWOOD PROCESSING AND UTILIZATION TECHNOLOGY
PD026/96 Rev.4 (F)	STUDIES ON THE MANAGEMENT STANDARDS OF HILL DIPTEROCARP FORESTS IN SARAWAK FROM A WATERSHED MANAGEMENT POINT OF VIEW - PHASE II
PD39/06 REV.2 (F).	REGIONAL PROJECT TO PROMOTE REDUCED IMPACT LOGGING IN THE CONGO BASIN. PHASE 1.