

## INFORMATION BRIEF FOR FOREST MANAGERS AND FOREST OPERATORS

# Reduced-Impact Logging to improve forest practices and reduce carbon emissions



*Conventional logging degrades forests and reduces future yields.*



*Implementation of RIL and appropriate silvicultural treatments can maintain forest productivity and sustain yields. RIL results in less loss of carbon than conventional logging because it reduces damage, retains more trees, and promotes vigorous regeneration and growth.*

### *What is Reduced-Impact Logging?*

Reduced-impact logging (RIL) can be defined as ‘the careful planning and control of timber harvesting operations to minimize the environmental impact and waste that result from conventional forms of logging’. RIL is implemented through codes of practice and guidelines that include activities such as improved forest management planning, road construction, tree felling, bucking and log yarding.

Implementation of RIL is a fundamental component of sustainable forest management and a critical step towards forest certification.

### *What are the benefits of RIL?*

The use of RIL improves worker safety and minimizes the harmful impacts of logging on forest soils, hydrology, forest growth, and biodiversity.

Following RIL guidelines can greatly improve forest management and future returns by providing good information about tree volumes and locations, ensuring that roads and skid trails are efficiently located, reducing wood waste, and enhancing post-logging regeneration and growth.

The implementation of RIL can substantially reduce the emission of CO<sub>2</sub> from selectively logged forests by as much as 40% compared with conventional logging (CL). RIL's carbon benefits derive from protection of forest along streams and on steep slopes as well as from minimization of damage to the residual growing stock.

### *Is RIL more expensive than conventional logging?*

The relative financial costs and benefits of RIL vary with forest type, terrain, logging intensity, logging equipment and worker skills.

RIL can provide immediate financial savings and long-term economic benefits as a result of better planning and training of workers in felling and bucking techniques as well as from the careful design and use of logging roads and skid trails. In contrast, short-term profit margins may be reduced due to prohibitions on logging in sensitive areas such as in riparian buffer zones and on steep slopes. However, RIL can increase future harvest volumes by 25 to 75% through avoiding unnecessary stand damage and by enhancing regeneration and growth.

Even if RIL is initially more expensive than conventional logging it is increasingly regarded as a ‘necessary cost of doing business’ by most forest certification programs and international markets.



*Excessively cleared and poorly constructed roads and bridges have major impacts on environmental values and often fail, causing disruption to haulage systems and necessitating high maintenance and repair costs.*



*Well designed roads and bridges provide reliable and cost-effective access while minimizing the impacts on environmental values.*

### *Are there opportunities to make money or gain carbon credits from RIL under REDD+?*

Mechanisms for carbon accounting under REDD+ are most likely to apply at the national or regional scale, with monitoring systems based on combinations of remote sensing and field data. Individual forest management units may be able to get carbon credits by implementing RIL as part of emerging carbon trading markets.

### *Can the carbon gains from RIL be readily measured?*

Yes; standard forest inventory methods can be used to estimate forest carbon stocks and to monitor the losses and gains from harvesting and post-logging regeneration.

### *Where can I get more information about the benefits of RIL and its role in improving forest practices and reducing carbon emissions?*

The following websites and publications provide further information about RIL

Reduced Impact Logging in Tropical Forests (FAO)  
<http://www.fao.org/docrep/007/j4290e/j4290e00.htm>

Reduced Impact Logging (International Tropical Timber Organization)  
<http://www.itto.int/feature15/>

Reduced Impact Logging - Sustaining Tropical Forests with Reduced Impact Logging (Tropical Forest Foundation)  
<http://www.tropicalforestfoundation.org/get-verified/reduced-impact-logging>

Applying Reduced Impact Logging to Advance Sustainable Forest Management (International Conference Proceedings, Kuching, Malaysia 2001)  
<http://www.fao.org/docrep/005/AC805E/AC805E00.HTM>

Reduced-impact logging: Challenges and opportunities (Putz, FE, Sist, P, Frederickson, D and Dykstra, D (2008)  
<http://naldc.nal.usda.gov/download/21098/PDF>

Report from the May 2012 Asia-Pacific Workshop, Kota Kinabalu, Malaysia  
<http://www.leafasia.org/library/reduced-impact-logging-challenges-opportunities-and-strategies-emerging-forest-carbon>



*Poor felling techniques result in excessive waste and damage to logs, lower timber yields, the release of more carbon and higher risk of injury to fellers.*