

# Extending the reach of RIL

**A locally developed log-extraction technique is reducing damage to the peat swamp forests of Peninsular Malaysia**

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The Rimbaka Timber Harvester in action in peat swamp forest near Kuantan, Peninsular Malaysia. Photo: A. Sarre

**E**MPLOYEES of Rimbaka Forestry refer to themselves as “born-again loggers”. For three decades or more, the company has logged its forest concessions in the conventional—and highly damaging—way common in the tropics. Recently, though, it started introducing reduced impact logging (RIL) to its operations.

Rimbaka Forestry operates in peat swamp and mixed hill dipterocarp forest near Kuantan in the Peninsular Malaysian state of Pahang. Its logs supply a sawmill that produces about 6 000 m<sup>3</sup> of sawn wood per month, most of which is exported to Europe, the United States and elsewhere.

The impetus for the change in forest management was provided partly by the company’s desire to have its forests certified as well managed, and partly by the State government, which is insisting that concessionaires conform to the Malaysian *Criteria, indicators, activities and standards of performance* (MC&I). The MC&I, which are based on the ITTO *Criteria and indicators for sustainable forest management*, specify a range of forest management standards that loggers must achieve. For example, the density of skid trails must be less than or equal to 300 m per hectare and overall disturbance should be less than 30% of the surface area of the logged compartment.

According to Rimbaka Forestry chairman Dato’ Dr Wong Yeon Chai, such a standard cannot be met using conventional machinery—tractors. So he set about developing his own, tailor-made piece of logging equipment.

This machine, dubbed the Rimbaka Timber Harvester, is a mobile highlift with an extended boom and a powerful winching system. It operates like a mobile highlead yarding system: a cable is dragged into the forest from the skid trail and attached to the log. The log is lifted and then winched to the track by the harvester, the long boom enabling the front of the log to be raised off the ground, thereby reducing damage caused by the passage of the log through the forest. The machine is prevented from toppling by its grapple, which grabs hold of

a log or other support on the ground and thereby acts as a counterbalance. The grapple is also used to place the logs along the side of the skid trail, eliminating the need for local log landings.

Besides reducing the damage caused by the log as it is dragged over the ground, the ability to winch logs for up to 150 m on flat terrain means that the density of skid trails can be greatly reduced over that required for bulldozers. A recent survey by forest monitoring company SGS (MALAYSIA) SDN BHD found that the average length of skid trails in forest logged with the Rimbaka Timber Harvester was less than 40 m per hectare, well below the threshold required under the MC&I. The same survey found that the total area damaged by the harvesting operation was about 15%, which is 50% below the MC&I threshold.

The company is now testing the machine in mixed dipterocarp hill forest. It is expected to perform better there than in the peat swamp forest because the terrain will enable the harvester to lift the front end of the logs from the ground at a greater distance from the machine. This means that the density of skid trails can be lower than in peat swamp forest.

Innovative harvesting technology such as the Rimbaka Timber Harvester is not, on its own, sufficient for achieving RIL. The company is also improving its harvest planning, including pre-harvest inventory of standing trees and the marking of trees for felling and retention. It is confident that such measures will ensure that the peat swamp forest will support a second harvest within 20 years. It should also ensure that the company retains access to the forest, since the State government is likely to look favourably on those companies practising responsible forest management.

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