

The effectiveness of Reduced Impact Logging: A review of its status in Southeast Asia

There appears to be a lot of misconception about the effectiveness of reduced impact logging in the Southeast Asia, as nations are continuously under scrutiny for their harvesting practices. In this report, Dr. Jegatheswaran Ratnasingam gives an independent assessment of the effectiveness of RIL practices in SEA, and its challenges.

In recent years, a great deal of attention has focused on reduced impact logging (RIL), as most Southeast Asian countries, especially Malaysia and Indonesia, move toward sustainable forest management. While there are some who insist that the only way to protect forests from destruction is to ban all forms of timber harvesting, economists have been quick to point out that if timber production were to cease, tropical forests would be viewed by many governments and individuals as a resource of little value, perhaps more logically and profitably converted to their productive uses. Hence, there are a growing number of pragmatists who promote the improved management of the majority of the world's forest that will likely remain outside protected forest areas. They contend that improved logging can greatly reduce damage to forests, and help maintain a natural resource whose productive and sustainable use is important to many national economies.

However, even proponents of RIL recognize that RIL alone will not bring about sustainable forest management – it may be a necessary condition, but it is not a

sufficient one. There are a number of linkages between RIL and other necessary conditions for sustainable forest management. The existing linkages between RIL, illegal logging, profitability of logging operations and forest law enforcement must be addressed. The link between illegal logging and RIL may not be readily obvious, since the application of RIL neither stops illegal logging nor the trade of illegally cut timber. The links only become apparent when examining the impediments to the adoption of RIL, and in particular, the effects that illegal logging has on profitability and decision making by forest concessionaires.

The principles of Reduced Impact Logging (RIL)

RIL is actually a package of practices and technologies. RIL is nothing new for the most part; it is simply the transfer of well-established approaches from temperate forests to the tropics. Although practices vary somewhat according to local conditions and circumstances, RIL generally includes the following:

- (1) Pre-harvest inventory and mapping of individual crop trees.
- (2) Pre-harvest planning of roads, skid trails and landings to provide access to the harvest area and to the individual trees scheduled for harvest while minimizing soil disturbances and protecting streams and waterways with appropriate crossings.
- (3) Pre-harvest vine cutting in areas where vines bridge across tree crowns.
- (4) The use of appropriate felling and

bucking techniques, including directional felling, cutting stumps low to the ground to avoid waste, and optimal crosscutting of tree stems into logs in a way that will maximize recovery of useful wood.

- (5) Construction of roads, landings and skid trails so that they adhere to engineering and environmental design guidelines.
- (6) Winching logs to planned skid trails and ensuring that skidding machines remain on the skid trails at all times.
- (7) Where feasible, utilizing yarding systems that protect soils and residual vegetation by suspending logs above the ground.
- (8) Conducting a post-harvest assessment in order to provide feedback to the concession holder and logging crews and to evaluate the degree to which RIL guidelines were successfully applied.

On this account, it is clear that RIL involves systematic harvesting operation, which ensures minimal damage to the forest stand. However, the opponents of RIL have argued that RIL will incur higher costs, and therefore, the benefits to be gained are indeed minimal.

Benefits of RIL

When properly applied, these techniques can have dramatic results. A recent review of more than 200 studies and articles on RIL and conventional logging in tropical forests revealed the following environmental benefits from RIL:

- (1) On average, RIL results in 41 per cent less damage to residual stands when compared with conventional logging systems.
- (2) The area covered by skid trails in RIL operations is almost 50 per cent less than in conventional logging.
- (3) The area damaged by road construction is about 40 per cent less in RIL operations than with conventional logging.
- (4) Overall site damage (compaction, exposure of soil, etc.) in RIL operations is generally less than half that in conventional logging
- (5) Canopy opening is generally about one-third less in RIL compared with conventional harvesting practices (16 per cent versus 25 per cent)
- (6) The volume of lost timber (i.e. merchantable logs that have been prepared for extraction but not found by skidder operators) is reduced by more than a third in RIL operations.

In dollar terms, the benefits of RIL far exceed that on non-RIL harvesting practices. Hence, the benefits of pursuing RIL practices in the Southeast Asian forest stands is indeed significant, considering the fact that most of the logging activities are currently confined to highland forests. Despite such positive remarks, the application of RIL practices is rather limited in the region.

Challenges to the implementation of RIL

Many factors have been found to be constraining the adoptions of RIL and among the important ones are:

- (1) Lack of awareness and appreciation of the benefits of RIL.
- (2) Lack of security of tenure of the concession or logging area – this is by far the single biggest constraining factor in the SEA region, as the awarding of concession or logging area is rather not transparent. In this context, the concession holder will attempt to maximize his return, rather than ensuring sustainability through RIL practices.
- (3) Lack of trained and experienced personnel – the lack of skilled personnel has been identified as a major constraint, but the lack of trainers on RIL is a compounding factor that cannot be overlooked.
- (4) Lack of government policies and incentives to encourage RIL – this is another drawback that has severely affected the implementation of RIL in the SEA region. Although the necessary laws and regulations are available, its enforcement leaves little to be desired. Perhaps, the 'stick and carrot' approach should be formulated to encourage the

- adoption of RIL on a wider scale in the region.
- (5) The high relative costs of implementing RIL – studies of the costs of RIL versus conventional logging remain inconclusive for a number of reasons. Nonetheless, evidence show that sustainable timber production can produce acceptable financial returns. However, the evidence also suggests that in the short term however, unsustainable harvesting practices may be more profitable than RIL.
 - (6) Huge demand for wood – the extremely important factor constraining the adoption of RIL is the voracious appetite that the timber processing industry has for wood – especially in Asia.

Conclusion

Obviously, the stricter-than-normal requirements of RIL suggest a direct linkage with stepped-up enforcement of regulations. The success of the RIL practices in the Southeast Asia region will depend heavily not only on enforcement of regulation, but also to ensure that prices of timber in the market is not distorted by supplies from illegal sources.

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