

# **REDUCED IMPACT LOGGING: MAKING IT WORK**

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## **FOREWARD**

The Tropical Forest Foundation (TFF) is a non-government, non-profit training institution dedicated to the promotion of sustainable forest management in the tropical forests. TFF has become widely recognized for establishing demonstration models and training schools to show the advantages and teach the principles of sustainable forest management and operational strategies such as Reduced Impact Logging (RIL). TFF's global activities are overseen from its head office in Alexandria, Virginia, USA.

The TFF traces its origin to a coming-together of like-minded professionals from the International Hardwood Products Association<sup>1</sup> and the Smithsonian Institution in 1990. TFF is governed by a board of directors representing leaders from the forestry community in industry, conservation, scientific and academic fields. TFF's board of directors provides a rare example of how individuals and institutions representing, often divergent viewpoints, can work together towards a common goal, namely the conservation of the tropical rain forest through promoting responsible and sustainable utilization.

TFF initiated its field activities with a program in Brazil in 1992. This program of training, demonstration, and research into RIL strategies, has proven so successful that preparations are now under way to create a permanent RIL training centre in the Amazon with multi-stakeholder funding and participation.

In January, 2000, TFF expanded its activities into South-East Asia with the start of a program based in Indonesia. Further expansion occurred in 2002 with the initiation of a RIL training program in Guyana. Arrangements are now being made to expand the RIL program to Gabon, West Africa.

This report provides a brief overview of the TFF activities in Indonesia. Of particular interest should be the recent initiatives to link markets with specific forest management units. Under this initiative, TFF will establish the legality of wood products being marketed through an independent audit process, and link sustainable forest management, as defined by the principles and practices of a RIL system, to specific market access.

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<sup>1</sup> Now known as the International Wood Products Association (IWPA)

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### **1.0 INTRODUCTION**

#### **1.1 Background**

There is a general and widespread recognition of the need for better harvesting practices if sustainable forest management is to be achieved in the natural forests of Indonesia and Malaysia. No one will argue that damage to the residual stand and to other environmental values can be dramatically reduced through the application of better practices, which are commonly referred to as “Reduced Impact Logging” (RIL). And no one will argue that the significant reduction of logging damage is central to the achievement of sustainable forest management.

Increasingly, research into RIL is supporting the assertion that pragmatically applied RIL planning and harvesting methods not only result in a very substantial reduction in environmental damage, but, are also cost effective. Four days of technical papers presented at the International Conference on Reduced Impact Logging in Kuching<sup>2</sup> in early 2001, support this general statement with the exception of RIL cost studies geared towards the more rigorous objectives of carbon offset schemes. The application of RIL in this very limited context, is by its nature, not intended to be cost effective, hence it is of only limited relevance in the RIL discussion as it applies to normal forest management units.

The TFF, an active supporter of the Kuching conference, committed itself to meeting the challenge of taking the RIL agenda to the forest concession companies. The focus of this paper is the the Tropical Forest Foundation (TFF), which operates a Regional program in RIL training based in Indonesia.

The Kuching conference on RIL, originated out of the Asia Pacific Forestry Commission’s (APFC) work in developing and promoting both a regional and country-specific ‘Codes of Forest Practices’<sup>3</sup>. This conference brought together experts from around the world who are actively engaged in RIL research, demonstration, and promotion. An underlying assumption of the conference was the recognition that RIL needs to be more actively promoted as a matter of necessity, if sustainable forest management is to be achieved in the tropical forests of the world.

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<sup>2</sup> International Conference on Reduced Impact Logging held in Kuching, Sarawak between February 26 to March 1, 2001.

<sup>3</sup> Code of Practice for Forest Harvesting in Asia-Pacific, FAO, RAP Publication: 1999/12, and, Principles and Practices for Forest Harvesting in Indonesia, Ministry of Forestry and Estate Crops, Indonesia, 2000.

The obstacles to the adoption of RIL, were the subject of much debate. The single most common obstacle to adoption mentioned by the majority of speakers, was the lack of practical training at all levels of the forest management unit. It is precisely this need for training which is the Tropical Forest Foundation's principle reason for existing.

Macro-impediments to sustainable forest management need to be understood even though they are external to the control of the forest concession and their resolution is outside the reach of organizations such as the TFF. This paper briefly reviews the main 'external' constraints to the adoption of RIL and then looks at the constraints to better practices which are within the context of an average forest concession or forest management unit in Indonesia. It is these 'internal' impediments, which are the focus of the TFF program and the main subject of this paper.

## **2.0 IMPEDIMENTS TO ADOPTION OF RIL**

### **2.1 External Impediments**

The situation in Indonesia today is not conducive to the widespread adoption of RIL or, for that matter, to the adoption of sustainable forest management practices.

- Effective implementation of regulations and monitoring of forest operations was never strongly developed and has been further weakened by uncertainty related to the lack of clear jurisdictional boundaries as Indonesia moves along an uncertain path to decentralization.
- Security of tenure remains highly uncertain. Large scale reduction of Annual Allowable Cut and lack of transparency in concession renewal, seriously undermines the forest industry's perception that there is a future in managing the forest sustainably.
- Poor enforcement of regulations has led to a situation where forest companies have become accustomed to operating in an environment where performance requirements can easily be manipulated.
- Despite recent reversals in policy, locally issued harvesting permits without meaningful silvicultural requirements or regulatory controls, are still generating significant timber volumes, thereby detracting from the viability of the legally licensed concessions where the cost of doing business is much higher.
- Local communities are asserting their rights to forest land and are increasingly using forest roads as a means of occupying the land and converting it to non-forest uses or selling their rights to unscrupulous business interests.

- Illegal and unregulated harvesting activities are totally out of control of the central government and are threatening the sustainability of legitimate license holders as well as seriously distorting the market.
- A huge over capacity in the wood processing sector continues to fuel over-harvesting beyond sustainable limits.

The cost of satisfying an increasing set of complex and often conflicting regulation, has steadily eroded profit margins to the legitimate forest sector while the illegal logging activities flourish unencumbered by royalties, regulations, or high overheads. Furthermore, international prices for plywood remain weak, thereby further detracting from serious efforts to change management systems and to pursue a policy of sustainable forest management.

The list could go on. Suffice it to say, that these are serious issues, the solutions of which will require strong political will and effective institutions.

## **2.2 Impediments Internal to the Forest Concession**

There is no pretext that TFF or any other like-minded institution can influence the resolution of these major issues, however, there are obstacles to the adoption of RIL which can be addressed within the context of the working forest management units as they currently exist. These obstacles are equally as real as the larger issues mentioned above and it is these obstacles that are the primary focus of the TFF program in Indonesia.

Companies who's past success and who's hope for the future, still lies within the forest sector, are increasingly coming to realize that the adoption of RIL is in their immediate and long-term interest. Other companies who, as a result of market pressures, are developing an interest in forest certification, are also realizing that the adoption of RIL practices is a necessity to achieve certification. However, these companies are also coming to realize that the adoption of RIL presents certain challenges, which they may be poorly equipped to face.

### **2.2.1 Perception (Attitude)**

First of all, the perception of managers at all levels, is often still one of satisfaction with the *status quo*. "What has worked up to now has served our company quite well so why should we change?" . . . is still a common sentiment.

A second common perception is that RIL stands for "reduced income logging". This perception is as much a result of complacency and a failure to stay informed with current developments in research as it is a failure to fully understand the true costs of harvesting activities. There is a consensus developing among researchers, that RIL can provide immediate financial benefit in terms of higher productivity per machine unit and direct cost savings. The longer term economic benefits are not as well studied but perhaps even more obvious.

Both of these perceptions need to be addressed through an active campaign of information dissemination and applied research. This is a necessity if we expect an interest in better harvesting practices (RIL) to grow.

### 2.2.2 Lack of Understanding

Lack of understanding of what RIL really means in terms of implementation requirements, is still a major problem with many concessions. This problem starts with the top management and exhibits itself all the way down to the field worker level. A few examples of how lack of understanding can prevent effective implementation of RIL:

- The management of the concession often has some ideas about RIL. RIL needs maps and planning of the skid trails. What the management may not realize is that it also requires a different way of organizing logging operations. The usual way of allocating operating areas to a logging team will not result in successful implementation of RIL. Much greater emphasis will have to be placed on operational standards or guidelines, as well as closer supervision of the activities. In other words, a different approach to organizing the key production activities may be required.
- Basic skills such as the use of maps, or even the creation of maps, can form major stumbling blocks to the effective implementation of an RIL system.
- Even when maps are available and the planning department is able to interpret them and prepare a logging plan, they may lack the technical understanding about the limitation of the logging equipment. The result could be skid trail locations which are not realistic in terms of machine capability.
- Environmental considerations such as slope or riparian protection are poorly understood concepts and often overlooked when planning for RIL.
- Poor liaison between the planning department and the production department within a company, can lead to poor implementation of the logging plan and a failure to optimize the benefits of RIL.
- Typically there is very little appreciation of the need for deactivation and monitoring and evaluation activities.

The list could be expanded into all aspects of the concession operations. Suffice it to say that a failure to understand the significance of one aspect of the RIL system can jeopardize successful implementation. This explains why at the 2001 Kuching conference on RIL, the large majority of speakers emphasized the need for further training. The training required is often one of education and information rather than the development of new skills.

### 2.2.3 Lack of Clear Technical Guidance

Technical guidance has often been cited as an impediment to the adoption of RIL. In an effort to address this situation and to demonstrate the Government's recognition of RIL as an integral part of the TPTI system, the Ministry of Forests has issued a letter of technical guidance and definition concerning RIL<sup>4</sup> to the Provincial and District Forestry Departments. While this letter goes a long way to define RIL, there is still a great lack of technical guidance in "how to" perform many of the functions of an RIL system and how to put the entire system into effective practice.

General guidelines for RIL have been developed by CIFOR<sup>5,6</sup> and by the SFMP<sup>7</sup> among others. Despite a wide distribution and publicizing of these guidelines, few managers have attempted to utilize them as a template for their operations, largely because they find them lacking in specific implementation details.

#### 2.2.4 Deficiencies in Technical Skills

Although related to the observations under section 2.2.2, "Lack of Understanding", deficiencies in technical skills are often cited as an impediment in the application of RIL practices. This excuse is most frequently brought forward in the context of specific technical activities.

The ability to make a contour map, the ability to interpret such a map, and the ability to create and implement a detailed logging plan, are all technical activities.

Even the ability to fell a tree according to the direction that causes the least impact, could be viewed as a technical activity.

#### 2.2.5 Inappropriate Tools

Carrying out the various functions of an RIL system often involves the use of tools. If the appropriate survey equipment and mapping facilities is not available in the concession, it will be very difficult to carry out these very important preparatory activities.

Similarly, if the fallers don't have felling wedges, directional felling will not be possible in many situations. Numerous further examples of the lack of tools or the use of inappropriate tools, could be listed. The main point, however, is that often such simple

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<sup>4</sup> Reduced Impact Logging (RIL): Surat Dirjen PHP No. 274/VI-PHA/2001 (Feb. 23)

<sup>5</sup> *Reduced-Impact Logging Guidelines for Lowland and Hill Dipterocarp Forests in Indonesia*, Plinio Sist, Dennis Dykstra, Robert Fimbel, 1998, CIFOR Occasional Paper No. 15

<sup>6</sup> *Reduced Impact Logging Guidelines for Indonesia*, Elias, Graham Applegate, Kuswata Kartawinata, Machfudh, Art Klassen, 2001

<sup>7</sup> *Technical Guideline for Reduced Impact Tractor Logging*, Yosep Ruslim, Alexander Hinrichs, Rolf Ulbricht, 1999, SFMP Document No 10a (1999)

issues as appropriate tools, can seriously affect the correct implementation of important aspects of the RIL process.

### **3.0 THE TFF PROGRAM – MAKING RIL WORK**

The Indonesian Forestry Sector has been the recipient of numerous technical projects<sup>8</sup>. In recent years, some of these projects have initiated research, demonstrations, and training in RIL with their respective concession partners. These projects have produced some convincing data regarding the benefits of an RIL system and have also carried out training in support of their research and demonstration activities. Some technical manuals have also been produced<sup>9</sup> as out-put of these projects. All of these initiatives have contributed to the wider recognition of the need for forest management units to carry out their logging in a more planned and careful manner.

However, despite these significant efforts, very few concessions have made any serious attempt to adopt RIL strategies. Part of the explanation for this failure to adopt better harvesting practices, may lie with the nature of the Projects and their relationships to their industry partners. Certainly, much of the blame can be placed on the macro-impediments, which have been mentioned earlier. Without doubt, some of the explanation must rest with the Ministry of Forestry for failing to ensure proper stewardship of the forest resource. And the forest industry can also be blamed for taking a short-sighted approach to its management responsibilities.

TFF prefers to look for positive solutions. Since it is becoming increasingly clear that RIL is a strategy, which is in the best interests of the forest companies, then surely the forest companies should pursue the objective of adopting RIL from their own initiative. Consequently, a positive approach would be to foster the adoption of RIL through information dissemination, practical training, demonstration, operational research, and the development of technical guidelines that can assist management unit staff and personnel in adopting RIL techniques.

In early 2000, the Tropical Forest Foundation initiated an RIL program in Indonesia with the aim to promote the adoption of RIL within the forest concession community. A program based on information dissemination and training has emerged and is receiving increasing interest from the forest sector. This program is being gradually expanded and strengthened to address the previously mentioned impediments to adoption in the following ways.

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<sup>8</sup> Strek Project, NRMP, SFMP-GTZ, BFMP-EU Berau, CIFOR, DIFID

<sup>9</sup> *Petunjuk Teknis Survei Pohon dan Topografi*, BFMP, Sept. 1999



### **3.1 Information Dissemination**

Information dissemination is an important aspect of TFF's program. To-date TFF has published 5 newsletters and numerous articles in the bi-monthly journal<sup>10</sup> of the APHI<sup>11</sup>.

Under an ITTO funding agreement, TFF has also committed to producing and publishing a series of technical procedures manuals which can guide forest concessions through the steps of RIL in a practical, "how-to-do" approach. The first of these manuals dealing with contour and tree position mapping, has already been published in Bahasa Indonesia and English<sup>12</sup>.

### **3.2 Applied Training – A Modular Approach**

Applied training is the centre-piece of the TFF effort at promoting RIL adoption. A modular approach to training has been developed based on the recognition that:

- Forest concessions vary in terms of their human resources.
- Differences exist in the development of technical skills and the sophistication of management systems.
- Terrain and forest conditions vary.
- Motivation levels differ.

The result of these differences is that concessions are at different stages in their ability to implement RIL and consequently, have different training needs. Some concessions may not have maps, which are the basic tool for planning RIL. Others may have developed the capability to make maps but lack the skills to utilize them effectively for planning and operational control. Still others may be in need of management training in order to better understand how their organization and their activities need to be adjusted to make RIL adoption possible.

The modular approach recognizes that the RIL system can be divided into a number of discrete functions. Each function represents unique skills. Hence a concessions' lack of map reading and planning skills can be seen as a gap in the management's ability to implement RIL. The modular approach is designed to fill these specific gaps by delivering on-site training tailored to the specific needs of a concession within its own operating environment.

TFF, has already delivered numerous training modules to forest concessions and continues to receive requests for an expanding list of training assistance. As a result, training modules are continuously being developed to meet the growing need. The following is a list of modules which are either immediately available or are in the process of being developed.

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<sup>10</sup> *Hutan Indonesia* is published every two months and is distributed to member companies.

<sup>11</sup> *Asosiasi Pengusaha Hutan Indonesia* (Association of Indonesian Forest Concessionaires)

<sup>12</sup> *Technical Procedures for Topographic Forest Surveys and Tree Mapping*, Tropical Forest Foundation, August 2003, Second Edition.



MODULE	SUBJECT MATTER	ESTIMATED COURSE TIME
<b>Technical Procedures for Topographic Forest Surveys</b>	This module covers the theory and practice of contour mapping based on the 100% inventory required under the TPTI. Candidates learn how to collect the necessary data and then how to process it and produce detailed contour maps. Tree mapping is a usual add-on to this training module.	6-7 days of field and office training, usually out of a HPH camp.  (minimum one week notice based on available time slots)
<b>ROADENG (Software) Training for Contour Mapping</b>	This module is a step-by-step approach to the use of the ROADENG <sup>13</sup> program for the purpose of contour and tree mapping. The training uses real field data collected during conventional 100% inventory surveys	3 - 4 days office  (next training course will probably be in August, 2001)
<b>ROADENG (Software) Training for Road Design</b>	This module is a step-by-step approach to the use of the ROADENG program for the purpose of road design. The training also includes data collection requirements and procedures.	2 days office  (next training course will probably be in Sept. or Oct., 2001)
<b>Road Planning, Field Location and Survey</b>	A field-orientated training in road planning and location. The course covers road network planning using contour maps. Special emphasis is placed on actual road location and survey techniques.	5 days (approximate) field and office training, usually out of a HPH camp. (Minimum two weeks notice based on available time slots. Participants to supply maps)
<b>RIL Planning</b>	This module focuses on the application of petak level contour maps for maximum operational benefit. Participants are required to develop a detailed harvesting plan including the location of skid trails. Environmental concerns such as steep slopes and riparian protection zones are included in the planning exercise. The course then requires participants to carry out field location of the skid trails according to technical guidelines	7 days (approximate) field and office training based in a HPH camp.  (Minimum two weeks notice based on available time slots. Participants either supply detailed contour maps or provide an operational petak which has already been opened with road access. The focus is on preparing for logging.
<b>RIL Operations</b>	This module is often combined with the RIL Planning module. Once skid trails are located, they are opened prior to felling. Logging activities are initiated and logging crews are required to consider simple guidelines intended to improve their activities. Emphasis is placed on improving efficiency	Approximately 6 days  If combined with RIL Planning, 10 days is usually allocated for the combined training module. (planning meeting is recommended as a prerequisite; at least two weeks notice)
<b>Workshop on Forest Certification</b>	This module is intended for companies who are interested in pursuing the goal of forest certification. The activities can vary from a simple, introductory workshop on forest certification, to a pre-scoping field evaluation followed by a detailed analysis .	1-3 days pending on the depth of coverage required.  (One week notice)
<b>Management's Role in Implementing RIL</b>	Workshop on what management needs to do to implement RIL. Emphasis is placed on structural and functional adjustments within a clearly defined RIL framework.	1 day workshop  (One week notice)
<b>Development of RIL Operations Guidelines</b>	In this module, management and supervisory personnel are taken through the steps of RIL implementation and are asked to develop practical guidelines for the various job functions involved in the implementation of	1 day workshop (can include a 1 day field exercise where operational guidelines for fallers and skidder operators are tested against local conditions)

<sup>13</sup> ROADENG is a commercial forest engineering program.

	the RIL system.	(One week notice)
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### 3.3 Extension Services

Extension services are essentially support functions which are intended to follow up on training activities. A one week course can be useful in teaching the theory and demonstrating how to carry out a certain activity, however, follow-up support is an essential ingredient to ensure that the initial training takes firm root.

In the implementation of a RIL system, the benefits of some of the initial data collection, mapping, and planning functions have an additional cost and do not always have an apparent, immediate benefit. It has been TFF's experience that unless follow-up services are made available, management may lose interest in an activity which has no apparent immediate benefit and which appears to be difficult for the untrained staff to implement.

TFF offers such follow-up extension services to ensure that management is supported and encouraged through the initial learning phase of changing over to an RIL system.

Demonstration activities are a crucial aspect of extension work. As concessions begin to understand the essential differences between their conventional method of operation and how an RIL system could improve the productivity and quality of the harvesting activities, the need for demonstration becomes more apparent. Demonstration can involve the entire range of activities comprising an RIL system or, be limited to selected elements of the system. The most important point is that demonstrations on "how to correctly" carry out the activity should be a service that is available to the forest management unit.

TFF's program spans a wide range of activities including direct training in different aspects of RIL, demonstrations of RIL implementation, technical guidance, workshops, information sessions, participation in national, regional, and international workshops and conferences, and the development of technical literature, newsletters, and training materials. TFF's extension services go hand-in-hand with field training. To-date TFF has carried out some 45 field visits to concessions for training and demonstration activities involving participants from some 28 forest management units.

### 3.4 Operational Research

Research for the sake of research has, in the past often failed to convince forest managers that the results of the research have relevance in a normal operating environment.

TFF is currently implementing an operational research and demonstration trial in RIL on a 200 ha logging block in West Kalimantan. The operational research is being done in close partnership with a major concession and is supported by Caterpillar Inc. which is providing the loan of a Cat 527 track skidder for a comparative machine study.

The overall objectives of the research aspects of the study are intended to quantify and compare basic productivity and logging impact under three treatments:

1. Conventional logging using a Cat D-7G with no planning or operational constraints.
2. RIL using a Cat D-7G where contour and tree position maps are used to plan logging; skid trails are opened before felling and simple operational and environmental guidelines are imposed.
3. RIL using a Cat 527 track skidder where contour and tree position maps are used to plan logging; skid trails are opened before felling and simple operational and environmental guidelines are imposed.

The three treatments each occupy roughly one third of the study area and are separated by natural boundaries. Four variables are recorded for each log extracted: round trip time, distance from the landing, piece size (weight), and elevation relevant to the landing.

Two impact parameters are being sampled. All skid trails are surveyed and severity of soil disturbance, according to three categories, are measured at 20 m cross-sectional intervals along the skid trails. All trees over 20 cm diameter in 20 x 10 m plots at 100 m intervals along the skid trails, are evaluated according to their original condition. Damage is recorded according to position on the tree and according to three severity categories.

Caterpillar Inc. has provided a Cat 527 track skidder for this study while the collaborating concession has provide a Cat D-7G bulldozer. Evaluation of the post harvesting evaluation has attracted the attention of the Food and Agriculture Organization who have sent an observer. Data analysis for this study will be carried out in early 2003 with the help of the Centre for International Forest Research.

It is hoped that this study will provide both a clear demonstration of RIL in action as well as generate credible data, which will quantify any differences between treatments in both productivity and impact.

#### **4.0 DIFFICULT CONDITIONS REQUIRE INOVATIVE APPROACHES**

TFF's Indonesia program started with a heavy orientation towards training activities, particularly as related to the need to improve mapping and planning capabilities in the forest management units. These training activities have gradually expanded to include more RIL demonstrations as companies began to realize the potential benefits of modifying their logging activities towards an RIL system.

During the past four years, however, the situation in the Indonesian forestry sector has deteriorated noticeably. Uncertainties related to illegal logging, increasing assertiveness of local communities and, above all, uncertainties due to decentralization and

increasingly onerous regulatory policies, and continuing weak international prices for plywood, have undermined the forest industries confidence in the future and have removed any positive incentives to practice sustainable forest management.

The deteriorating condition with respect to illegal logging has not gone unnoticed in the European and North American markets as increasingly the perception has grown that forest products from Indonesia are synonymous with illegal logging. This has presented both a challenge and an opportunity for the TFF program.

By mid-2002, TFF was able to secure market backing to test a concept that would link RIL to specific market access. This concept received support from USAID, a major North American retailer, and an Indonesian forest concession. The past 10 months has seen this concept being put into practice on a pilot project basis.

Basic preconditions for this forest-market linking mechanism were as follows:

**Condition 1:** Product purchased under this mechanism must be manufactured from logs originating from a valid harvesting permit within a legally licensed forest management unit that complies with basic forest laws.

**Condition 2:** The participating forest management unit shall commit to implementing a reduced impact logging management strategy as the first step in its long-term commitment to achieving sustainable forest management.

**Condition 3:** The participating forest management unit and the associated manufacturing facility, shall pass an independent and credible chain-of-custody audit covering the log movement from the forest to the mill and through the manufacturing process in the mill. This is intended to ensure that all products sold under this mechanism are legal and come from an identifiable and well-managed source.

TFF has worked both with the forest management unit providing training and technical input to promote adoption of RIL, and with the forest industry providing technical advice on how to prepare for a chain-of-custody audit. By late April, preparations were ready for an independent audit to verify both the log tracking system as well as the chain-of-custody arrangements through the plywood factory.

Minor adjustments were requested by the audit company and have now been put in place. The first shipment of plywood under this mechanism and bearing the label “RIL Verified” arrived in North America on the 5<sup>th</sup> of August, 2003.

“RIL Verified” provides assurance that the product bearing this mark, originates from a legally operated and managed forest management unit. A credible, internationally recognized audit agency, provides assurances regarding the origin of the wood. TFF provides the ‘in-country’ oversight, technical advice, and training to ensure that the forest management unit progresses towards physical sustainable forest management as defined by the RIL program.

There should be no misunderstandings. This is not certification, neither does it claim to replace certification. It is, however, a clear demonstration that legality can be verified and that forest products originating in Indonesia can be linked to sound forest management practices. It should also be noted, that the RIL system of forest management is an integral part of the requirements for forest certification. By combining issues of legality, chain-of-custody, and improved forest management practices, a significant step has been taken to provide assurances to the market concerns as well as providing a practical and achievable step-wise approach to forest certification.

## **5.0 CONCLUSIONS**

RIL is a reality that must be adopted if forest management units in the tropical forests wish to achieve sustainable forest management. In Indonesia, however, the current social, political, and economic situation provides no incentive for companies to practice sustainable forestry or implement RIL. TFF's experience has shown that interest in RIL can only be sustained if it is applied pragmatically and if the management of the concession can see and appreciate tangible benefits from the adoption of RIL practices.

In response to this difficult domestic operating environment, and in response to the increasingly widespread perception that Indonesian forest products are largely produced from illegally sourced wood, TFF has pioneered a direct connection with market access and forest management as defined by RIL practices as a pilot project. This market linking has generally been well received and it is now TFF's intention to expand this mechanism to additional forest management units.

In this regard, TFF's efforts are very much in step with an increasing trend among other organizations to develop step-wise approaches or support programs for sustainable forest management where a market connection is an integral part of the support effort. This is an approach which has the advantage of providing a clear market incentive for the forest management companies to improve their forest practices and to avoid illegal activities

Within the context of a pragmatic approach to RIL promotion and in coordination with innovative approaches such as the forest-market linking program, the TFF's Indonesia program offers training services and technical advice tailored to the individual needs of forest management units. In this regard, we welcome inquiries from companies or forest management units who wish to learn more about RIL or who wish to develop the capability to convert to RIL practices.



## **PERSONAL BACKGROUND**

### **A.W. Klassen**

Regional Director, Tropical Forest Foundation

Mr. Klassen is the Southeast Asia representative of the Tropical Forest Foundation and is based in Jakarta, Indonesia. He brings with him over 30 years of broad ranging forestry experience, 17 years of which has been in international forestry work in Tanzania, Guyana, Iran, Bhutan, and currently in Indonesia. During the past 8 years, Mr. Klassen has completed 12 short-term consultancies in Indonesia on assignments ranging from forest policy review to operational research.

Mr. Klassen is a forestry graduate from the British Columbia Institute of Technology as well as the Faculty of Forestry at the University of British Columbia, Canada. His first experience with tropical forest harvesting was in 1982-83 and then again in 1985-87 in Guyana, South America, where he worked as forest manager of a large timber concession. During this period he developed an approach to harvesting similar to what is now referred to as Reduced Impact Logging. In Indonesia, he has carried out operational trials in RIL under the USAID, Natural Forest Management Project, and has also been closely involved in training and implementation of RIL as a consultant in CIFOR's Bulungan forest research area in East Kalimantan.

Mr. Klassen assumed the position of Regional Director of the Tropical Forest Foundation in January, 2000, and has, since then, been working to promote the adoption of RIL through information dissemination, training, operational demonstrations, and applied research with the Indonesian and Malaysian forestry sectors.