

# INTERNATIONAL TROPICAL TIMBER ORGANIZATION

## ITTO

### PROJECT DOCUMENT

TITLE	TRAINING IN REDUCED-IMPACT LOGGING IN GUYANA
SERIAL NUMBER	PD 68/01 REV.2 (I)
COMMITTEE	FOREST INDUSTRY
SUBMITTED BY	GOVERNMENT OF GUYANA
ORIGINAL	ENGLISH

#### SUMMARY

The project will contribute to the improvement of forest management in Guyana through the adoption of sustainable forest management (FM) and Reduced-Impact Logging (RIL) practices, resulting in a more competitive sector and enhanced livelihoods for forest operators and communities. The project's specific objective is to establish local capability to deliver training of forestry practitioners (managers, supervisors and workforce) in FM-RIL. The project's major outputs will be a RIL training programme - including curricula and training materials, trained trainers, a number of site-specific RIL models developed as a demonstration of RIL good practice, a RIL field-training facility, and delivery of training courses for forest managers / supervisors and operators (120 graduates by end of project).

The project will be coordinated by the Guyana Forestry Commission and implemented by the Tropical Forest Foundation (TFF) building on the experience of the FM-RIL training course in Brazil, and a RIL model developed by Tropenbos-Guyana Programme (TGP). Delivery of training will be approached through separate modules for managerial / supervisory staff and for forest workers. Trainers to be employed by the project will be trained by specialised training experts. The TGP RIL site will be used as training ground and demonstration of good logging practice. Additional RIL models will be established while the training programme is ongoing.

Beneficiaries are the trainers employed by the project and managerial / supervisory staff and forest workers of timber companies, Amerindian communities, small operators and forestry students at whom the training will be addressed. This will enhance job satisfaction, workers' safety, skills (certified), job security, and income and career structure. Timber companies and agencies for which they work will benefit indirectly through reduced operational costs, improved safety records, reduced labour turnover, less wastage of resource, compliance with operational standards (Code of Practice) and certification. In the end, the country will benefit through the implementation of sustainable forest management practices, improved national economic returns and improved rural livelihoods.

EXECUTING AGENCY	The Guyana Forestry Commission (GFC)	
DURATION	24 MONTHS	
APPROXIMATE STARTING DATE	UPON APPROVAL	
PROPOSED BUDGET AND OTHER FUNDING SOURCES	Source	Contribution in (US\$)
	<b>ITTO</b>	<b>427,710</b>
	Gov't of Guyana	395,650
	Other:	
	Forest Industry	182,000
	TFF	158,150
	<b>TOTAL</b>	<b>1,163,510</b>

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## PART I: CONTEXT

### **1. Origin (revised)**

Guyana has an area of 21.5 million hectares and a population of 800,000. Forests cover 16.5 million ha (76% of the total land area). Of this, 13.6 million ha (63% of the land area) is classified as State Forest (permanent forest estate). Forty-one percent of the State Forest (6.2 million ha) has been allocated for timber harvesting, while a total 5% (500,000 ha) is set-aside as parks, reserves and research sites. The majority of the area allocated for timber harvesting is comprised by 24 concessions – covering 4.2 million ha, the remainder by annual cutting permits (SFPs)

In 1997, timber production peaked at an all time high of 540,000 m<sup>3</sup> per annum with forest based activities contributing 4.5% of Guyana's Gross Domestic Product, generating US\$ 39 million in revenue and providing employment for around 15,000 people. Since 1997, timber production has dropped again and is presently at 430,000 m<sup>3</sup> per annum, of which 80% is from concessions; and the balance from annual cutting permits and Amerindian owned forest areas. The 24 concessions employ 100 management and supervisory staff and 1,500 skilled and semi-skilled workers. A further 5000 workers are employed on 400 SFPs and in the 25 Amerindian communities that depend on timber harvesting for a significant portion of their livelihoods

The forest industry has identified a serious shortage of trained field and management personnel, as the most critical constraint to achieving desired improvements in efficiency and environmental standards. At present, there are no vocational training programmes for forestry in Guyana. The University of Guyana offers a Degree and a Diploma course in Forestry, while the Guyana School of Agriculture offers a certificate course. Due to lack of resources, in terms of both staff and finances, courses are restricted to classroom instruction.

A one-day stakeholder consultation meeting on vocational training for the timber industry was held in Georgetown, Guyana, on 26 September 2000. Representatives from GFC and other government agencies, TFF, Tropenbos, forest industry, academic and training institutions, NGOs, and international forest-sector organizations attended the workshop. All relevant stakeholders supported the development of an on-site RIL training program and vowed commitment to its realisation

### **2. Sectoral Policies (revised)**

The Guyana Forestry Commission (GFC) was created in 1979 out of the pre-existing Forest Department that had its origins in 1925. The GFC is responsible for advising the Minister and making submissions on issues relating to forest policy, forestry laws and regulations. The Commission is also responsible for administration and management of all State forestland. The work of the Commission is guided by a national forest plan that has been developed to address the forest policy. The Commission also develops and monitors standards for forest sector operations, develops and implements forest protection and conservation strategies, oversees forest research, and provides support and guidance to forest education and training.

A National Forest Policy, which was implemented in 1997, facilitated by the GFC, and a National Forest Plan are being finalised. Revised forestry legislation has been drafted and this is now being forwarded to the Cabinet for approval by Parliament. The President is the Minister responsible for Forestry, the Environment and for Natural Resources. There are two statutory bodies responsible for co-ordinating developments in the natural resources sectors:

- i. Cabinet Sub-Committee on Natural Resources and Environment. This Committee discusses all matters requiring policy decisions before being presented to the full Cabinet.
- ii. Natural Resources and Environment Advisory Committee (NREAC) which includes the Commissioners of Forestry, Geology and Mines, and Lands and Surveys, the Head of the Guyana Natural Resources Agency, the Heads of the Energy Agencies, the Land Use Planning Unit, the Institute of Applied Sciences and Technology, the Hydromet Department and the Director of the

Environmental Protection Agency. This committee meets every week and is chaired by the Presidential Adviser on Science, Technology and the Environment

The GFC is responsible for the management of an area of 13.6 million ha classified as State Forest. The remainder of the forest is either State Land, Amerindian Land or private property. Forest Concessions are allocated following three categories based on area and contractual length, and they carry differing conditions as set out in the Code of Practice for responsible forest operations. These Categories are:

- i. State Forest Permission: granted on an annual basis for area up to 8,000 ha of State Forest;
- ii. Wood Cutting Lease (WCL): granted on a 3 – 10 years lease for areas of 8,000 - 24,000 ha of State Forest; and
- iii. Timber Sales Agreement (TSA): granted on a lease for 20 years or more for an area of 24,000 ha or more.

Before a WCL or TSA is issued, there is an exploratory period of 3 years to get all the necessary information for preparation of an investment proposal, environmental and social impact assessment and a forest management plan. This requires an Exploratory Permit. The exploratory permit process has been developed to ensure that proposed investment is in the national interest and is designed to achieve maximum beneficial use of the forest resource. The permit does not convey the right to harvest or remove any forest produce or to construct roads, buildings or other infrastructure. Permission may be granted to fell and remove forest produce for research purposes only. The following are the stages prior to the granting of a WCL or TSA:

- i. Application for an exploratory permit.
- ii. Application is evaluated and recommendation made to the board.
- iii. Permit is issued detailing conditions.
- iv. Exploratory operations are monitored.
- v. An environmental impact assessment including environmental management plan is prepared.
- vi. A forest management plan is prepared.
- vii. Application for a forest concession is prepared and submitted to GFC with environmental management plan and forest management plan.

The Environmental Protection Agency (EPA) was established in 1996 to provide for the management, conservation, protection and improvement of the environment, the prevention or control of pollution, the assessment of the impact of economic development on the environment and the sustainable use of natural resources. The EPA has entered into a Memorandum of Understanding with the GFC that provides for co-operation in the assessment and monitoring of Environmental Impact Assessment. Before any operation can commence in a forest concession, the company must submit an Environmental Impact Assessment for approval by the EPA and the GFC. The GFC has also established an Environmental Monitoring Unit to monitor all environmental matters pertaining to forestry.

The Forest Producers Association was formed by the forest industry to promote and develop the interests of the forest sector and to collaborate on activities such as training, information, public awareness and institutional development. The association is a member of the Public Sector Commission.

### **3. Programs and Operational Activities (revised)**

International assistance is being received in the following fields:

- i. The Guyana Forestry Commission Support Project: commenced in 1995 and is funded by the UK Department for International Development. The purpose of the project is to enable the GFC to effectively fulfil functions in support of sustainable, ecologically sound and socially integrated forest management systems. The goal is to optimise the economic and environmental goods and services from Guyana's forests for the benefit of all communities. Project output will include a revised national forest policy and law; strengthened GFC structure and functioning; strengthened

GFC procedures and capabilities; strengthened forest sector training capacity and improved forest information systems.

- ii. The Natural Resources Management Project: funded by the German Government, is designed to ensure that decision making for natural resources management is based on improved information. The project will develop a database on natural resources, establish land use planning procedures, prepare policy guidelines and legislation for natural resources management and strengthen institutional capacity.
- iii. The Canadian International Development Agency has also provided funding towards the execution of a national forest inventory.

The proposed National Protected Areas System Project funded by GEF will assist the Government of Guyana with the establishment of a representative system of protected areas, which will also conserve globally important biological diversity. The project will establish an independent Protected Areas Commission and initiate the process of establishing a protected areas system by identifying and supporting the management and development of two pilot areas. The system will contribute to the conservation of ecosystems and biological diversity, watershed protection, and the maintenance of the country's cultural heritage. Project components include the design and identification of a Protected Areas System and selection of protected areas; supporting the management and development of two pilot areas; institutional strengthening and training; legislation and policy development and the identification of long-term sources of financing.

The Tropenbos-Guyana Programme (TGP) is a forest research programme that started in 1989, with core-funding of the Dutch government. The objective of this research programme is to achieve an understanding of the lowland tropical rainforest ecosystems in the area to such a degree that timber harvesting (and possible other non-wood forest products) under a sustainable forest management system can be achieved. At the same time, a satisfactory level of biological diversity is maintained and an appropriate area of rainforest can be conserved. The programme includes forest management oriented research and training programmes. Notable contributions include a range of technical publications. The TGP will end by the end of 2001; continued accessibility to its assets, knowledge and expertise and continuation of its projects – in particular the monitoring a large number of PSP's - will be achieved by fostering an independent, locally owned forest research unit.

The Iwokrama International Centre for Rainforest Conservation and Development is responsible for the management, conservation and sustainable development of 360,000 ha tropical rainforest, which the Government of Guyana dedicated to the international community to demonstrate that tropical forests can provide economic benefits without destroying biological diversity.

The forestry sector has participated in the development of the Amazon Co-operation Treaty (ACT) 'Criteria and indicators for the sustainability of the Amazon forest'. The ACT criteria and indicators, together with those produced by CIFOR and ITTO have been reviewed by the GFC during the preparation of the National Forest Plan. Actions required by the sector have been identified for all appropriate indicators and these have been incorporated into the Plan.

The GFC has secured funding from the UNDP to assist the development of national standards for certification. The objective is to develop standards that comply with all criteria and indicators. The process will also seek to involve and develop the interest of potential local certification agencies so that certification services become available at acceptable cost to producers. UNDP funding has also been made available for a comprehensive study of existing harvesting operations to determine the main obstacles to improved forest management and certification. The results of this study will be used to design further interventions that may be required to assist the introduction of sustainable forest management systems.

In April 1999, the Iwokrama Int'l Centre for Rainforests Conservation and Development (IICRCD) in partnership with the TGP and the GFC hosted an international workshop on reduced-impact logging, which brought together individuals who had participated in many of the seminal projects looking at the

use of RIL. Subsequently, the TGP in collaboration with the IICRCD and the GFC embarked upon a practical scale study on the economic and practical feasibility of RIL in Guyana.

In late 1999, twelve persons from Guyana including managerial staff from the GFC, NGOs and Industry participated in a RIL training course in Brazil conducted by the Tropical Forestry Foundation (TFF). The attendance to the course by these twelve persons was funded by USAID.

The GFC is involved in a number of activities to promote more involvement and participation in the forestry sector. These are:

- i. Educational outreach programmes to Amerindian and hinterland communities;
- ii. Sponsorship of five Amerindian students annually to pursue a certificate in forestry;
- iii. Outreach programmes to secondary schools, educating students about all aspects of forestry and the environment;
- iv. Support for the University of Guyana to run a Diploma, Degree and Master programme in Forestry.

## PART II: THE PROJECT

### **1. Project Objectives (revised)**

#### **1.1. Development Objective**

The developmental objective of the project is to improve the quality and efficiency of forest operations by implementing sound forest management and reduced impact logging practices. This will contribute to a more competitive sector and enhanced livelihoods for forest operators and communities.

#### **1.2. Specific Objective**

The specific objective of the project is to strengthen the national capacity to deliver training in practical forest operational and managerial skills and knowledge to personnel at all levels of the forest sector by means of establishing an on-site RIL training programme.

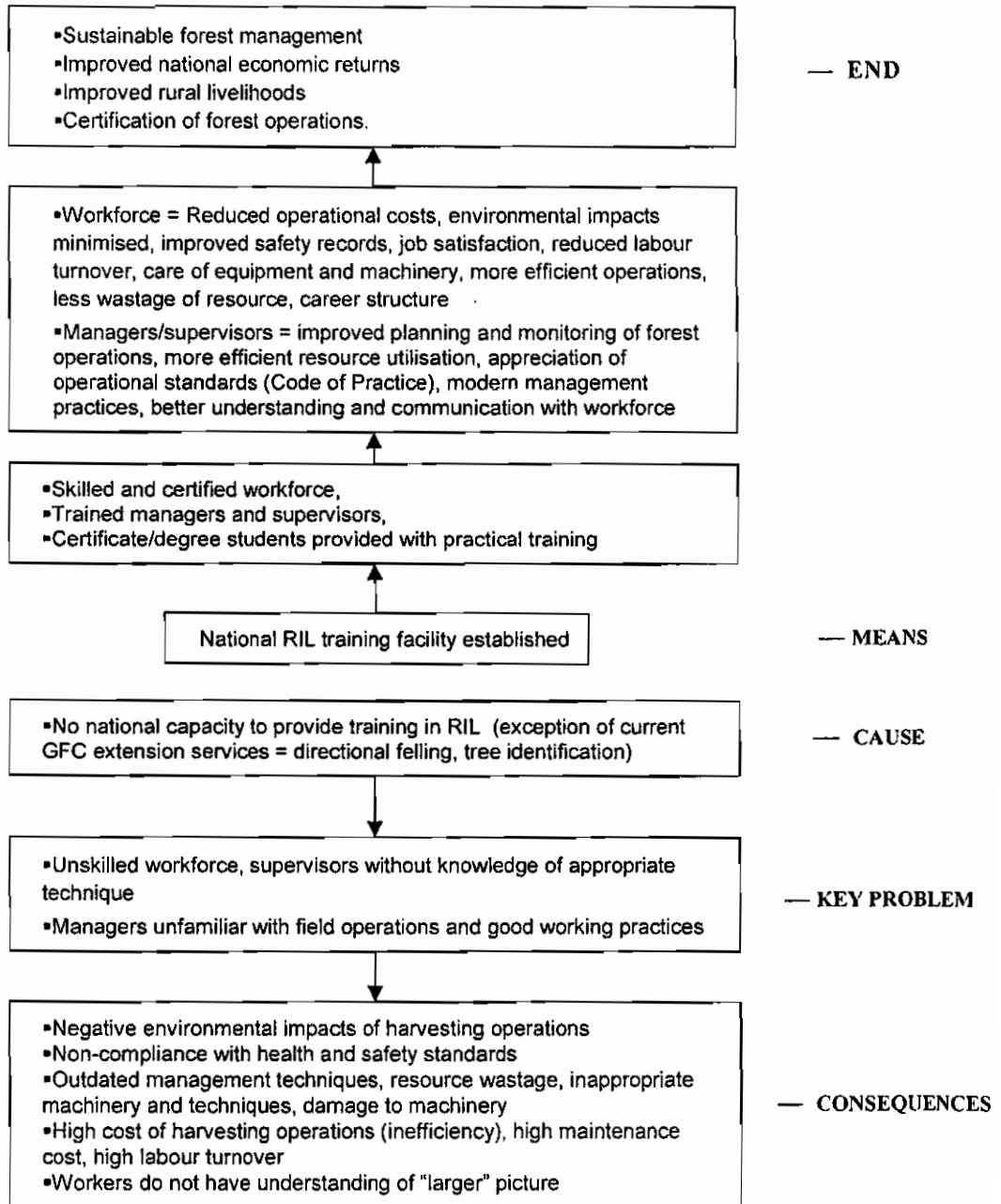
### **2. Justification (revised)**

#### **2.1. Problems to be addressed**

Guyana and the region have only recently embarked on large-scale logging by multinational and national firms. The forest resources in the region are still largely intact. Guyana has a secure Permanent Forest Estate; forest concessions are awarded under stringent conditions and by a penetrating process, which requires a management plan, an environmental impact assessment, and an environmental management plan. However, most harvesting operations are characterised by an unacceptably high level of negative environmental impacts, non-compliance with health and safety standards, outdated management techniques, resource wastage, high cost of harvesting operations, damage to machinery, high maintenance cost, high labour turnover, and workers that do not have understanding of "the larger picture". These problems can be traced back to unskilled workforces, supervisors without knowledge of appropriate techniques, managers unfamiliar with field operations and good working practices. Increasing the national capacity to provide vocational training to the forest sector will mitigate these problems.

In addition, a key component of carrying out sustainable and environmentally responsible logging is the application of sound forest management and RIL. In this respect, there is a severe shortage of trained operators, supervisors, and managers who understand and can apply FM-RIL. Experience from the FFT RIL training program in Brazil, and other programmes, has shown that training is best delivered in an on-site setting and through demonstration forests.

PD 68/01 Training in RIL in Guyana  
Problem / objective Tree





## 2.2. Intended situation after Project completion

- RIL training programme designed that addresses identified stakeholder needs
- Site-specific RIL models developed as a demonstration of RIL good practice
- A training facility established with accompanying training materials and equipment, which will function as a running forest operation providing on-site, hands-on, real-world experience with RIL-FM techniques and issues
- A cadre of a dozen trained trainers covering all aspects of RIL-FM from pre-harvest, through post-harvest activities
- 10 Training courses organised and delivered
- 120 participants trained; 20 managerial and supervisory staff, 20 inventory staff and tree markers, 20 chainsaw operators, 20 skidder operators, 15 forest rangers and persons from other government agencies, 25 students and persons from Amerindian communities and NGOs
- A business and marketing plan prepared and funding for non-core activities secured to secure long term sustainability of facility
- Local Project Director trained to take over the training programme

The extensive amount of training provided in the two years of the project should contribute significantly to addressing the current serious shortage of trained forest sector workers and managers. Once industry has access to trained workers, operators, and supervisors, they should be able to achieve higher productivity, better use of the available timber resources within their allocated sites, and sustainable timber harvesting.

Forest sector government and non-government agencies will have field and management staff that understand RIL-FM methods and can better monitor and evaluate the use of forest timber resources by industry and improve the economic, social, and environmental returns deriving from the allocation of parts of the forest estate to industry.

## 2.3. Project strategy

Summarizing the September 2000 Workshop conclusions, an adequate training program needs to include:

- a) Training for management and supervisory staff
- b) Vocational training for forest workers and operators
- c) Field training site and facilities
- d) Field opportunities for students at the School of Agriculture and University of Guyana

Parts "a" and "b" were seen as having the highest priority.

Several strategies can be followed to upgrade skills in the forest sector. 1) Curricula and training materials can be developed and trainers trained inside an existing formal institution. 2) Curricula and training materials can be developed and trainers trained with training delivered on a peripatic basis. 3) Timber companies seek training on an individual, ad hoc basis. 4) Set up a well-equipped and staffed training site at a forest concession to deliver practical and hands-on training in a real-life situation.

There are several reasons to opt for solution 4). Vocational training in forestry practices not only requires curricula, training materials and instructors; it also requires (relatively large) parcels of forest, heavy equipment, and field staff to carry out preparatory work and maintenance on the training site (forest parcels). The existing formal institutions such as the School of Agriculture and the University of Guyana do not offer field training; have no experience with field training; and are not in the position to establish and maintain links with a partner that can offer what is mostly needed: forest, heavy equipment and labour. **The Guyana School of Agriculture currently offers a Diploma in Agriculture (2 years full time), and a Certificate in Forestry (1 year full time). Both of these programmes are currently very theoretically oriented, with a minimal or even non-existent practical component. This can be**

attributed to lack of both human and financial resources, and lack of appropriate facilities to carry out practical training. The same can be said of the University of Guyana's Diploma and Degree programmes in Forestry.

**In actual fact, these institutions will be beneficiaries of the GFC/TFF proposed RIL training project, since it would present a training opportunity for the students.**

Delivery of training on a peripatic basis is not likely to be successful (except maybe for operators), because the course will have to rely on the equipment and logistics available at a particular forest concession. It will be difficult to carry out the necessary preparatory work in the forest in that case. In addition, different site will require site-specific training materials and site-specific RIL models, which will have to be developed. Seeking of training by individual timber companies usually entails bringing training consultants in the country for short periods. Because RIL involves a large number of specialties – felling, skidding, inventory, planning, map making, tree marking etc. – it can not be expected that training in all these aspects can be delivered by one training consultant. The cost of tackling the problem by bringing trainers in from elsewhere is most likely prohibitive. The strength of the proposed method is that a coherent team of local trainers and field staff will be one of the outputs of the project. **The success of this project depends on the initial presence of a capable, experienced, qualified Project Director; someone who is familiar with RIL both in theory and practice, and someone who is familiar with the Guyana Forest Sector- both in terms of forest composition, and labour force. This person must also have excellent communication skills.**

**Unfortunately, there is currently no Guyanese available, who can efficiently function as Project Director. The proposed strategy therefore is to employ a suitable expatriate Project Director for a maximum period of two (2) years. An appropriately qualified Guyanese will be employed as Local Coordinator and understudy the Project Director during the two-year project period. At the completion of the project, the local project coordinator will take over the management of the training programme. This guarantees a low-cost training programme, which will be affordable to the forest sector and thus stands a better chance of continued existence.**

A general 14-day training course for managerial and supervisory staff from forest concessions, forest rangers, students and persons from Amerindian communities and other NGOs will be designed for this purpose. An extended – 18-day - training course will be designed for operators and forest workers. The training courses will emphasize the implementation and training of FM-RIL principles and practices. Both courses will be practical and hands-on.

**In Guyana, for RIL to be implemented successfully, an enabling environment has to be created. In this context, training of managerial and supervisory staff is critical, and equally important as training of field operators. In fact, the experience of some RIL experts who have worked in Guyana is that it is relatively easy to train field operators. However, these operators experience tremendous difficulty when trying to implement the RIL techniques learnt, since their supervisors are not very supportive of them introducing the RIL techniques that they (the supervisors) are not familiar with. It is therefore crucial that the supervisory and management staff be given appropriate training so that they can also appreciate that RIL necessitates a different approach than the traditional mode of operation.**

A number of preparatory and follow-up activities will be necessary to realize the courses. Key preparatory activities include: scheduling and promoting courses, site selection and preparation, partner identification, training of trainers to be employed, upgrading facilities, developing of training materials, screening of applicants, etc.

#### 2.4. Target beneficiaries

Target beneficiaries will be the trainers and field staff employed by the project and managerial / supervisory staff and forest workers of timber companies, forest rangers, Amerindian communities, small operators and forestry students (**from both the Guyana School of Agriculture, and the University of Guyana**) at whom the training will be addressed. This will enhance job satisfaction, workers' safety, skills (certified), job security, and income and career structure. Timber companies and agencies for which they work will benefit indirectly through reduced operational costs, improved safety records, reduced labour turnover, less wastage of resource, compliance with operational standards (Code of Practice) and certification. In the end, the country will benefit through the implementation of sustainable forest management practices, improved national economic returns and improved rural livelihoods.

#### 2.5. Technical and scientific aspects

The project will draw upon experience with RIL and RIL training programmes worldwide. For instance, the workshop hosted by the Iwokrama Int'l Centre for Rainforests Conservation and Development (IICRCD) in partnership with the Tropenbos-Guyana Programme and the Guyana Forestry Commission brought together individuals who had participated in many of the seminal projects looking at the use of RIL. (See the Intl Forestry Review special Issue on RIL (Intl. For. Rev. Vol. 2 (1), March 2000). Subsequently, the TGP in collaboration with the IICRCD and the GFC embarked upon a practical scale study on the economic and practical feasibility of RIL in Guyana, which will be completed by the end of 2001.

**The administration of the GFC/TFF RIL Project requires that a Technical Advisory Committee (TAC) be established. Both the Guyana School of Agriculture and Iwokrama will be represented on the TAC. Additionally, there is a Memorandum of Understanding between the Guyana Forestry Commission and Iwokrama- this will ensure that there are ample opportunities for collaboration and discussion between the 2 entities with regards to RIL training.**

The RIL program in Brazil, run by TFF and its affiliate, FFT, in Belém, Brazil, completed an independent cost/benefit analysis, "Financial costs and benefits of reduced-impact logging in the Eastern Amazon", in collaboration with ITTO, CIFOR, USAID, and the US Forest Service. This showed a clear cost advantage for RIL harvest methods over conventionally logged sites. A condensed version is available on the TFF web site at: <http://www.tropicalforestfoundation.org/costbenefits.html> and in its full-length version at: [http://www.tropicalforestfoundation.org/Tom\\_Holmes\\_report.doc](http://www.tropicalforestfoundation.org/Tom_Holmes_report.doc).

There is also a book-length study of RIL in Guyana, *Reduced Impact Logging in the Tropical Rain Forest of Guyana* (1999), written originally as a doctoral dissertation by Peter van der Hout, currently directing a "Feasibility Study of Reduced Impact Logging" for the Tropenbos-Guyana Program.

Aspects to be covered in the course will be:

- Block lay-out and line cutting;
- 100% forest inventory;
- Data entry, data analysis and map making;
- Planning and construction of roads and log landings;
- Pre-harvest activities - such as tree selection, climber cutting, tree marking, identifying protected trees;
- Skid trail planning and lay-out;
- Felling and cross-cutting;
- Skidding;
- Loading and other landing operations;
- Log scaling;
- Compliance to forest regulations (Code of Practice)
- Forest Certification (Criteria and Indicators)
- Harvest damage and waste evaluation;
- Workers safety;
- Production and quality;
- Understanding production costs;
- Supervision, operating and maintenance of heavy equipment and chainsaws.

## 2.6. Economic aspects

There is a growing literature relating to the costs and benefits of implementing RIL techniques. The April 1999, Georgetown RIL workshop clearly identified a set of operational elements, which could be considered as key attributes to a successful RIL system (see Hammond, Van der Hout et al, *Intl.For.Rev.* Vol.2 (1): pp.45-53). Most participants, and nearly all literature sources, view these as the basic framework on which RIL is practiced. There are still many unanswered questions, particularly with regard to the actual cost of implementing RIL and the scope for extending benefits by finding a market for spin-off services (such as carbon offset) or rewarding private industry for minimizing its impact on important forest functions where this entails a cost.

It is certain, that without well-trained, motivated and satisfactorily paid field crews, the likelihood of achieving the objectives of RIL is extremely low. The cost of training, extra wage demands, monitoring, verification and foregone timber have not always been accounted for in cost comparisons between RIL and conventional logging systems. Higher wage demands than might otherwise arise may reduce the total benefits received through implementation of RIL practices, but this can be seen as a medium to long-term investment. The unit cost of this one-time investment should be recouped over a specific term of production, unless job turnover rate or wage demand frequency is low enough to limit unit cost reduction. Within this perspective, it is difficult to produce definite figures relating to the economics of the training programme, but it is clearly indicated that the role of external financial support in the training of logging crews to reduce employer risk may be crucial for implementation.

Theoretically, limiting the output of the project to the persons trained for the duration of the project (sic), the cost per trainee amounts to almost US\$ 10,000. However, as mentioned above, the one-time investment of training should be related to the volume of timber production (and related area). The majority of the area allocated for timber harvesting in Guyana is comprised by 24 concessions – covering 4.2 million ha, with an annual timber production of approximately 350,000 m<sup>3</sup>. These concessions employ 100 management and supervisory staff and 1,500 skilled and semi-skilled workers. A further 5000 workers are employed on 400 SFPs and in the 25 Amerindian communities that depend on timber harvesting for a significant portion of their livelihoods. Conservatively therefore, there are: 300 managers/supervisors; 600 chainsaw operators; 250 skidder/tractor operators; and 50 inventory staff (concessions only).

Focusing on the concessions only, there are a conservatively estimated: 100 managerial and supervisory staff, 100 chainsaw operators, 75 skidder operators, 75 operators of other heavy equipment (road

construction and maintenance, loader operators, etc.), 100 inventory and other field based workers. The project will train about one-fifth of this pool of potential trainees. **Even though this estimate is conservative, it is apparent that there is a sizeable forest sector labour force that has been exposed to little or no formal training. There is clearly a dire need for this project to provide training in RIL to as many persons as is possible.**

In terms of timber, this relates to an annual production of about 70,000 m<sup>3</sup>. Assuming a labour turnover rate of 5 years, training will impact on a production of 350,000 m<sup>3</sup>. Translating this figure to land area by including the average logging intensity, which is relatively low in Guyana (7 m<sup>3</sup>/ha), a figure of 50,000 ha is produced. In conclusion, - unrealistically - limiting the output of the project to the persons trained during project (sic), a cost of training of US\$ 3.40 per m<sup>3</sup> or US\$ 23.80 per hectare is indicated.

More realistically, however, training will continue after completion of the project (build in the project as such). In addition, there will be a spin-off through the multiplication of knowledge by course participants at their workplaces. The cost to run the training programme after completion of the project can be estimated at US\$ 200,000 per annum, indicating a cost per trainee of US\$ 3,000. The cost of training in terms of volume and area is therefore more realistically translated to US\$ 2.00 per m<sup>3</sup>, or US\$ 14.00 per hectare

## 2.7. Environmental aspects

Of course, any logging operation has an environmental impact. However, by its nature, Reduced Impact Logging works to mitigate the environmental impact of logging operations. It does this in two ways. First, directly, by applying extensive planning to the harvesting operations and by using trained personnel and appropriate equipment and machinery. Secondly, indirectly, by emphasizing sustainable forest management so that areas are harvested more effectively and efficiently, significantly lessening the need to re-enter a harvested area until it has matured and is ready for harvest again.

## 2.8. Social aspects

Most social impacts of the project will be indirect. However, to the extent that the project can develop an effective way to provide training to small-scale forest sector enterprises, including Amerindian reservations, the project should have a positive impact on their ability to increase productivity and decrease the costs arising from conventional timber harvesting. This should maintain the ability of these small-scale operations to provide local employment opportunities.

## 2.9. Risks

At the Developmental Objective level, there are several risks involved that are not under control of the management of the project. RIL is only one, albeit vital, component of good forest management. Sustainability will not be achieved through the adoption of RIL alone, when other aspects of forest management (e.g. harvesting intensities, post-harvest silvicultural control) are not considered in the same framework. Implementation of RIL depends largely on the timber industry's willingness to pay. If the costs of implementing RIL (net of financial benefits) are at a level acceptable to industry and traditional views become more amenable to emerging perspectives (e.g. due to declining market access), then RIL will be widely adopted. Important risks are that the national and international macro-economic and sectoral policies erode instead of promote the incentive to adopt good forest management practices. National and international mechanisms to reduce the financial burden for producers who wish to make the transition from traditional logging to RIL should be developed to achieve the development objective.

For the Specific Objective of the project:

Programme needs to remain competitive and attractive to forest sector clients. The risk is that other institutions in the region – e.g. training centre in Suriname or individual logging companies, or NGOs – may provide similar training. This will be addressed by ensuring that the programmes offered are continually revised to meet stakeholder needs, that the centre delivers value for money – i.e. efficiency, and by maintaining close liaison with these other institutions.

Risks at Output level (See logical framework)

- Output 2: Site-specific RIL models developed as a demonstration of RIL good practice  
Assumption: Adequate incentives for concessionaires to donate areas for training and demonstration implemented  
Approach: A number of logging companies (e.g. Demerara Timbers Ltd. (DTL), Barama Company Ltd. (BCL)) have pledged support to the project. Moreover, experience indicates that this need not pose any problems in Guyana. In the past, DTL has granted TGP 2 areas covering 1000 ha each to conduct logging studies on the sole condition that all produce remained the property of the logging company. Similar arrangements existed between BCL and the Edinburgh Centre for Tropical Forestry. The GFC has indicated that acreage fees may be lifted when areas are used for scientific or training purposes.
- Output 3: Training facility established and equipment acquired  
Assumption: Companies, suppliers and manufacturers contribute training equipment to the programme.  
Approach: TFF already has close working relationship with companies (e.g. Caterpillar, Stihl) who have been willing to supply equipment for training. It is therefore most likely that similar arrangements can be developed in Guyana. If not, alternatives can be explored – e.g. use of equipment at concession where training is taking place. Past arrangements between the Tropenbos-Guyana Programme (TGP) and DTL, whereby equipment was loaned to TGP, while extracted logs remained the property of DTL, have proven to be workable and satisfactory to both parties. Existing field stations (e.g. Tropenbos, GFC) will be upgraded to deliver classroom instructions.
- Output 4: Training staff identified and staff development programme delivered  
Assumption: Suitable staff can be attracted and retained by the programme  
Approach: Persons who would be suitable for posts of Director and course coordinator have been identified – GFC is confident that these posts can be filled. Project co-ordinator will be supplied by GFC. Priority given to staff development will ensure retention.
- Output 5: Training courses organised and delivered  
Assumption: Forest industry responds to training opportunities and is willing to pay for training courses  
Approach: Positive indication from industry at stakeholder workshop. Industry is already supporting (and paying for) training in timber grading provided by GFC – and courses in directional felling. Industry is paying for staff to attend management-training course delivered by IOB. Budget assumption is that 50% of industry will support course at start – rising to 60% as reputation of course is established. This will be adequate to ensure courses are fully subscribed – and that core funding for centre is secured.
- Output 6: Long term sustainability of facility secured  
Assumption: Government, GFC and other donors support non-core training activities  
Approach: Government and GFC already have scholarship funding that is made available to Amerindian communities and other groups. They have indicated that these scholarships could be made available for training centre courses. Donor funding is also available – particularly for Amerindian, small businesses and private sector. It is therefore very likely that the centre will be able to attract such funding – or facilitate other organisations to secure funding that will allow placements on the course.

### 3. Outputs (revised)

#### 3.2. Specific Objective: Capability established to deliver training in RIL

- Output 1: RIL training programme designed to address identified stakeholder needs
- Output 2: Site-specific RIL models developed as a demonstration of RIL good practice
- Output 3: Training facility established and equipment acquired
- Output 4: Training staff identified and staff development programme delivered
- Output 5: Training courses organised and delivered
- Output 6: Long term sustainability of facility secured

#### 4. Activities (revised)

##### 4.2. Output 1: RIL training programme designed to address identified stakeholder needs

- Activity 1.1: Review of training needs analysis
- Activity 1.2: Needs assessment of training materials
- Activity 1.3: Course design and development
- Activity 1.4: Consultation with stakeholders
- Activity 1.5: Preparation of training materials and student manuals
- Activity 1.6: Review of training programme, materials and manuals

##### 4.3. Output 2: Site-specific RIL models developed as a demonstration of RIL good practice

- Activity 2.1: Identification of partners and sites
- Activity 2.2: Demarcation of logging blocks and access roads
- Activity 2.3: Construction of access roads
- Activity 2.4: Completion of field and technical activities for course preparation
- Activity 2.5: Discuss and elaborate alternative options for FM-RIL
- Activity 2.6: Field test of FM-RIL alternatives
- Activity 2.7: Compilation, analysis and synthesis of test results

##### 4.4. Output 3: Training facility established and equipment acquired

- Activity 3.1: Needs assessment of facilities
- Activity 3.2: Preparation of plans and bill of quantities
- Activity 3.3: Upgrade existing infrastructure and install new infrastructure (camp)
- Activity 3.4: Purchase and other acquisition of equipment

##### 4.5. Output 4: Training staff identified and staff development programme delivered

- Activity 4.1: Identification and appointment of Project Director
- Activity 4.2: Advertisement and recruitment of staff
- Activity 4.3: Identification of part time and contracted teaching inputs
- Activity 4.4: Skill gap analysis and training plan
- Activity 4.5: Implementation of staff development plan
- Activity 4.6: Arrangements for & scheduling of training courses and consultants
- Activity 4.7: Training of trainers on on-site training course (TFF-Brazil)
- Activity 4.8: On-site training of trainers by training consultants

##### 4.6. Output 5: Training courses organised and delivered

- Activity 5.1: Course schedule developed
- Activity 5.2: Course planning and promotion
- Activity 5.3: On-site training - managerial & supervisory staff course
- Activity 5.4: On-site training - operators and forest workers course
- Activity 5.5: Course evaluation trainees
- Activity 5.6: Trainee evaluation

##### 4.7. Output 6: Long term sustainability of facility secured

- Activity 6.1: Business plan preparation
- Activity 6.2: Marketing plan and national and regional marketing
- Activity 6.3: Funding for non-core activities



5. Logical Framework (revised)

Project structure	Indicators of achievement	Means of verification	Important assumptions
<u>Development Objective</u> 1. Improved forest management through the adoption of FM-RIL methods, resulting in a more competitive sector and enhanced livelihoods for forest operators and communities	1.1 Compliance with ITTO standards for forest management 1.2 Contribution of forest sector to GDP 1.3 Improved benefits to Amerindian communities and small operators	1.1 Reports of ITTO and other international bodies 1.2 Government reports and statistics 1.3 Findings of stakeholder surveys and GFC social development programme	
<u>Specific Objective</u> 1. Capability established to deliver training in RIL	1.1 Programme of 6 on-site training courses per year established by end of 2002	1.1 Graduation records 1.2 Publication in TFF media	Programme remains competitive and attractive to forest sector clients
<u>Outputs</u> 1. RIL training programme designed to address identified stakeholder needs	1.1 Programme acceptable to key stakeholders 1.2 Course material of high quality prepared	1.1 Findings of consultation process 1.2 Peer review of course materials and curricula	
2. Site-specific RIL models developed as a demonstration of RIL good practice	2.1 Forest parcels logged following RIL approach established in different regions	2.1 Director's reports 2.2 Publication in TFF media	Adequate incentives for concessionaires to donate areas for training and demonstration implemented
3. Training facility established and equipment acquired	3.1 Facility fully operational by 10/02	3.1 Director's reports	Companies, suppliers and manufacturers contribute training equipment to the programme
4. Training staff identified and staff development programme delivered	4.1 Permanent and part-time staff identified and contracted by 8/02 4.2 Staff development plan implemented by 12/02	4.1 Director's reports 4.2 HR development plan and monitoring reports	Suitable staff can be attracted and retained by the programme
5. Training courses organised and delivered	5.1 Twelve graduates by end of 02, 84 by end of 03, 120 by end of project (5/04)	5.1 Graduation records	Forest industry responds to training opportunities and is willing to pay for training courses
6. Long term sustainability of facility secured	6.1 Business plan prepared by 12/02, marketing plan by 3/03 6.2 Funding for non-core activities secured by 6/03	6.1 Documents prepared and plans implemented 6.2 Project documents identifying donor support	Government, GFC and other donors support non-core training activities



6. Work Plan (revised)

OUTPUTS/ACTIVITIES	RESPONSIBLE PARTY	2002								2003								2004							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
<b>Output 1: RIL training programme designed to address identified stakeholder needs</b>																									
1.1 Review of training needs analysis		■																							
1.2 Needs assessment of training materials		■	■																						
1.3 Course design and development		■	■	■	■																				
1.4 Consultation with stakeholders																■								■	
1.5 Preparation of training materials and student manuals			■	■	■																				
1.6 Review of training programme, materials and manuals															■	■	■							■	■
<b>Output 2: Site-specific RIL models developed as a demonstration of RIL good practice</b>																									
2.1 Identification of partners and sites			■	■																					
2.2 Demarcation of logging blocks and access roads				■	■																				
2.3 Construction of access roads					■	■																			
2.4 Completion of field and technical activities for course preparation					■	■	■									■	■				■	■			
2.5 Discuss and elaborate alternative options for FM-RIL															■	■	■								
2.6 Field test of FM-RIL alternatives																	■	■	■	■					
2.7 Compilation, analysis and synthesis of test results																					■	■			
<b>Output 3: Training facility established and equipment acquired</b>																									
3.1 Needs assessment of facilities				■	■																				
3.2 Preparation of plans and bill of quantities				■	■																				
3.3 Upgrade existing infrastructure and install new infrastructure (camp)				■	■	■																			
3.4 Purchase and other acquisition of equipment				■	■	■																			
<b>Output 4: Training staff identified and staff development programme delivered</b>																									
4.1 Identification and appointment of Project Director		■																							

OUTPUTS/ACTIVITIES	RESPONSIBLE PARTY	2002								2003								2004							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
		May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
4.2 Advertisement and recruitment of staff																									
4.3 Identification of part time and contracted teaching inputs																									
4.4 Skill gap analysis and training plan																									
4.5 Implementation of staff development plan																									
4.6 Arrangements for & scheduling of training courses and consultants																									
4.7 Training of trainers on on-site training course (TFF-Brazil)																									
4.8 On-site training of trainers by training consultants																									
<b>Output 5: Training courses organised and delivered</b>																									
5.1 Course schedule developed																									
5.2 Course planning and promotion																									
5.3 On-site training - managerial & supervisory staff course																									
5.4 On-site training - operators and forest workers course																									
5.5 Course evaluation trainees																									
5.6 Trainee evaluation																									
<b>Output 6: Long term sustainability of facility secured</b>																									
6.1 Business plan preparation																									
6.2 Marketing plan and national and regional marketing																									
6.3 Funding for non-core activities																									

## 7. Budget

### 7.1 Overall Budget by Activity

	10. Project Personnel	20. Sub-contracts	30. D trav
<b>OUTPUTS / ACTIVITIES + Non-Activity Based Expenses</b>			
<b>Output 1: RIL training programme designed to address identified stakeholder needs</b>			
1.1 Review of training needs analysis	1,000 (I/C)	-	
1.2 Needs assessment of training materials	2,000 (I/C)	-	
1.3 Course design and development	10,000 (I/C)	-	
1.4 Consultation with stakeholders	7,500 (I/C)	-	
1.5 Preparation of training materials and student manuals	3,000 (I/C)	-	
1.6 Review of training programme, materials and manuals	2,500 (I/C)	-	
<b>Subtotal 1</b>	<b>26,000</b>	-	
<b>Output 2: Site-specific RIL models developed as a demonstration of RIL good practice</b>			
2.1 Identification of partners and sites	4,000 (I/C)	-	
2.2 Demarcation of logging blocks and access roads	5,000 (I/C)	-	
2.3 Construction of access roads	1,000 (I/C)	-	
2.4 Completion of field and technical activities for course preparation	35,000 (I/C)	-	
2.5 Discuss and elaborate alternative options for FM-RIL	7,500 (I/C)	-	
2.6 Field test of FM-RIL alternatives	10,000 (I/C)	-	
2.7 Compilation, analysis and synthesis of test results	7,500 (I/C)	-	
<b>Subtotal 2</b>	<b>70,000</b>	-	
<b>Output 3: Training facility established and equipment acquired</b>			
3.1 Needs assessment of facilities	1,000 (C)	-	
3.2 Preparation of plans and bill of quantities	500 (C)	2,500 (C)	
3.3 Upgrade existing infrastructure and install new infrastructure	500 (C)	7,500 (C)	
3.4 Purchase and other acquisition of equipment	2,000 (I/C)	-	
<b>Subtotal 3</b>	<b>4,000</b>	<b>10,000</b>	
<b>Output 4: Training staff identified and staff development programme delivered</b>			
4.1 Identification and appointment of Project Director	-	-	
4.2 Advertisement and recruitment of staff	1,500 (I/C)	-	
4.3 Identification of part time and contracted teaching inputs	1,000 (I/C)	-	
4.4 Skill gap analysis and training plan	8,000 (I/C)	-	
4.5 Implementation of staff development plan	2,000 (C)	-	
4.6 Arrangements for & scheduling of training courses and consultants	1,000 (I/C)	-	
4.7 Training of trainers on on-site training course (TFF-Brazil)	10,000 (I/C)	-	
4.8 On-site training of trainers by training consultants	7,500 (I/C)	-	
<b>Subtotal 4</b>	<b>31,000</b>	-	
<b>Output 5: Training courses organized and delivered</b>			
5.1 Course schedule developed	1,500 (C)	-	
5.2 Course planning and promotion	50,000 (I/C)	-	
5.3 On-site training - managerial & supervisory staff course	50,000 (I/C)	-	
5.4 On-site training - operators and forest workers course	75,000 (I/C)	-	
5.5 Course evaluation trainees	5,000 (I/C)	-	
5.6 Trainee evaluation	15,000 (I/C)	-	
<b>Subtotal 5</b>	<b>196,500</b>	-	

**Output 6: Long term sustainability of facility secured**

6.1 Business plan preparation	7,000 (I/C)	-
6.2 Marketing plan and national and regional marketing	10,000 (I)	-
6.3 Funding for non-core activities	10,000 (I)	-
<b>Subtotal 6</b>	<b>27,000</b>	<b>-</b>
<b>7: Non-activity based expenses</b>		
Fuel and utilities	-	-
Administration & Support	54,000 (I/C)	-
Office supplies	-	-
Auditing	50,000 (I/C)	-
<b>Subtotal 7</b>	<b>104,000</b>	<b>-</b>
<b>Subtotal ITTO</b>	<b>252,500</b>	<b>-</b>
<b>Subtotal Counterpart funding</b>	<b>206,000</b>	<b>10,000</b>
<b>Total</b>	<b>458,500</b>	<b>10,000</b>

**7.2 Yearly Project Budget by Source**

**1. ITTO**

Budget Components		Total	Annual Disbursements	
			Year 1	Year 2
10	Project Personnel	<b>252,500</b>	114,900	137,600
20	Sub-contracts	-	-	-
30	Duty Travel	15,000	9,500	5,500
40	Capital Items	46,000	46,000	-
50	Consumable Items	70,000	36,500	33,500
60	Miscellaneous	10,000	5,000	5,000
<b>Subtotal 1</b>		<b>393,500</b>	211,900	181,600
80	ITTO Administration, Monitoring & Evaluation			
81	Monitoring & Evaluation	10,000		
<b>Subtotal 2</b>		<b>403,500</b>		
<i>82. Program Support Costs (6.0% of subtotal 2)</i>		<i>24,210</i>		
<b>ITTO TOTAL</b>		<b>427,710</b>		

**2. Executing agency**

		<b>Annual Disbursements</b>		
<b>Budget Components</b>		<b>Total</b>	<b>Year 1</b>	<b>Year 2</b>
10	Project Personnel	<b>194,000</b>	109,600	84,400
20	Sub-contracts	<b>10,000</b>	10,000	-
30	Duty Travel	<b>7,000</b>	6,400	600
40	Capital Items	<b>66,000</b>	46,000	20,000
50	Consumable Items	<b>40,000</b>	20,000	20,000
60	Miscellaneous	<b>5,000</b>	2,500	2,500
70	Executing Agency Management Cost (7.5% of Overall Budget by Activity)	<b>73,650</b>	36,825	36,825
<b>EXECUTING AGENCY / HOST GOVT. TOTAL</b>		<b>395,650</b>	231,325	164,325

**3. Implementing agency**

		<b>Annual Disbursements</b>		
<b>Budget Components</b>		<b>Total</b>	<b>Year 1</b>	<b>Year 2</b>
10	Project Personnel	-	-	-
20	Sub-contracts	-	-	-
30	Duty Travel	-	-	-
40	Capital Items	<b>4,500</b>	4,500	-
50	Consumable Items	<b>80,000</b>	32,000	48,000
60	Miscellaneous	-	-	-
70	Executing Agency Management Cost (7.5% of Overall Budget by Activity)	<b>73,650</b>	36,825	36,825
<b>IMPLEMENTING AGENCY / TFF TOTAL</b>		<b>158,150</b>	73,325	84,825

**4. Industry**

		<b>Annual Disbursements</b>		
<b>Budget Components</b>		<b>Total</b>	<b>Year 1</b>	<b>Year 2</b>
10	Project Personnel	<b>12,000</b>	4,800	7,200
20	Sub-contracts	-	-	-
30	Duty Travel	<b>10,000</b>	3,000	7,000
40	Capital Items	<b>120,000</b>	48,000	72,000
50	Consumable Items	<b>40,000</b>	16,000	24,000
60	Miscellaneous	-	-	-
<b>INDUSTRY TOTAL</b>		<b>182,000</b>	71,800	110,200

7]3 Consolidated Yearly Budget by Source <i>Budget Components</i>		Total				
		Total cost	ITTO	GFC	Industry	TFF
<b>10</b>	<b>Project Personnel</b>					
	11. <i>National experts</i>					
	Forester (Course coordinator)	36,000	-	36,000	-	-
	Forestry Technicians (Trainers)	42,000	42,000	-	-	-
	12. <i>Other labour</i>					
	Operators (Trainers)	48,000	24,000	12,000	12,000	-
	Tree spotters (Trainers)	24,000	-	24,000	-	-
	GIS/Mapping Technician	8,000	-	8,000	-	-
	Field Assistants	40,000	40,000	-	-	-
	Support staff	16,000	8,000	8,000	-	-
	Administrative Personnel	16,500	16,500	-	-	-
	13. <i>Training courses</i>	16,000	-	16,000	-	-
	14. <i>International experts</i>					
	Project Director	144,000	72,000	72,000	-	-
	15. <i>International Consultants</i>					
	Int'l Training Consultants	18,000	-	18,000	-	-
	Int'l Promotion & Marketing Expert	50,000	50,000	-	-	-
	<b>19. Component Total</b>	<b>458,500</b>	<b>252,500</b>	<b>194,000</b>	<b>12,000</b>	<b>-</b>
<b>20</b>	<b>Sub-contracts</b>					
	21. <i>Infrastructure Upgrade (classroom)</i>	10,000	-	10,000	-	-
	<b>29. Component Total</b>	<b>10,000</b>	<b>-</b>	<b>10,000</b>	<b>-</b>	<b>-</b>
<b>30</b>	<b>Duty Travel</b>					
	31. <i>International Travel</i>	13,000	10,000	3,000	-	-
	32. <i>Local Travel</i>	15,000	5,000	-	10,000	-
	33. <i>Daily Subsistence Allowance</i>	4,000	-	4,000	-	-
	<b>39. Component Total</b>	<b>32,000</b>	<b>15,000</b>	<b>7,000</b>	<b>10,000</b>	<b>-</b>
<b>40</b>	<b>Capital Items</b>					
	41. <i>Camp</i>	10,000	10,000	-	-	-
	42. <i>Office Rent</i>	40,000	-	40,000	-	-
	43. <i>Office Equipment</i>	10,000	10,000	-	-	-
	44. <i>Vehicles</i>	52,000	26,000	26,000	-	-
	45. <i>Chainsaws</i>	4,500	-	-	-	4,500
	46. <i>Heavy Machinery</i>	120,000	-	-	120,000	-
	<b>49. Component Total</b>	<b>236,500</b>	<b>46,000</b>	<b>66,000</b>	<b>120,000</b>	<b>4,500</b>
<b>50</b>	<b>Consumable Items</b>					
	51. <i>Vehicle Operating Cost</i>	20,000	20,000	-	-	-
	52. <i>Heavy Mach Operating Cost</i>	120,000	-	-	40,000	80,000
	53. <i>Chainsaw Operating Cost</i>	10,000	10,000	-	-	-
	54. <i>Training Materials</i>	25,000	25,000	-	-	-
	55. <i>Extension &amp; Promotion Material</i>	10,000	10,000	-	-	-
	56. <i>Office Supplies</i>	40,000	-	40,000	-	-
	57. <i>Camp Utilities and Supplies</i>	5,000	5,000	-	-	-
	<b>59. Component Total</b>	<b>230,000</b>	<b>70,000</b>	<b>40,000</b>	<b>40,000</b>	<b>80,000</b>

60	Miscellaneous					
	61. Sundries	5,000	5,000	-	-	-
	62. Auditing	10,000	5,000	5,000	-	-
	69. Component Total	15,000	10,000	5,000	-	-
	<b>SUBTOTAL 1</b>	<b>982,000</b>	<b>393,500</b>	<b>322,000</b>	<b>182,000</b>	<b>84,500</b>
70	Executing Agency Management Cost (15% of Overall Budget by Activity)					
	79. Component Total	147,300	-	73,650	-	73,650
	<b>SUBTOTAL 2</b>	<b>1,129,300</b>	<b>393,500</b>	<b>395,650</b>	<b>182,000</b>	<b>158,150</b>
80	ITTO Administration, Monitoring & Evaluation					
	81. Monitoring & Evaluation		10,000	-	-	-
	82. Program Support Costs		24,210	-	-	-
	89. Component Total	34,210	34,210	-	-	-
90	Refund of Pre-Project Costs	-	-	-	-	-
100	<b>GRAND TOTAL</b>	<b>1,163,510</b>	<b>427,710</b>	<b>395,650</b>	<b>182,000</b>	<b>158,150</b>

7.4 Consolidated Yearly Budget by Source		Year 1				
		Total cost	ITTO	GFC	Industry	TFF
<b>Budget Components</b>						
<b>10</b>	<b>Project Personnel</b>					
	11. <i>National experts</i>					
	Forester (Course coordinator)	18,000	-	18,000	-	-
	Forestry Technicians (Trainers)	16,800	16,800	-	-	-
	12. <i>Other labour</i>					
	Operators (Trainers)	19,200	9,600	4,800	4,800	-
	Tree spotters (Trainers)	9,600	-	9,600	-	-
	GIS/Mapping Technician	3,200	-	3,200	-	-
	Field Assistants	16,000	16,000	-	-	-
	Support staff	8,000	4,000	4,000	-	-
	Administrative Personnel	7,500	7,500	-	-	-
	13. <i>Training courses</i>	16,000	-	16,000	-	-
	14. <i>International experts</i>					
	Project Director	72,000	36,000	36,000	-	-
	15. <i>International Consultants</i>					
	Int'l Training Consultants	18,000	-	18,000	-	-
	Int'l Promotion & Marketing Expert	25,000	25,000	-	-	-
	<b>19. Component Total</b>	<b>229,300</b>	<b>114,900</b>	<b>109,600</b>	<b>4,800</b>	<b>-</b>
<b>20</b>	<b>Sub-contracts</b>					
	21. <i>Infrastructure Upgrade (classroom)</i>	10,000	-	10,000	-	-
	<b>29. Component Total</b>	<b>10,000</b>	<b>-</b>	<b>10,000</b>	<b>-</b>	<b>-</b>
<b>30</b>	<b>Duty Travel</b>					
	31. <i>International Travel</i>	10,400	8,000	2,400	-	-
	32. <i>Local Travel</i>	4,500	1,500	-	3,000	-
	33. <i>Daily Subsistence Allowance</i>	4,000	-	4,000	-	-
	<b>39. Component Total</b>	<b>18,900</b>	<b>9,500</b>	<b>6,400</b>	<b>3,000</b>	<b>-</b>
<b>40</b>	<b>Capital Items</b>					
	41. <i>Camp</i>	10,000	10,000	-	-	-
	42. <i>Office Rent</i>	20,000	-	20,000	-	-
	43. <i>Office Equipment</i>	10,000	10,000	-	-	-
	44. <i>Vehicles</i>	52,000	26,000	26,000	-	-
	45. <i>Chainsaws</i>	4,500	-	-	-	4,500
	46. <i>Heavy Machinery</i>	48,000	-	-	48,000	-
	<b>49. Component Total</b>	<b>144,500</b>	<b>46,000</b>	<b>46,000</b>	<b>48,000</b>	<b>4,500</b>
<b>50</b>	<b>Consumable Items</b>					
	51. <i>Vehicle Operating Cost</i>	8,000	8,000	-	-	-
	52. <i>Heavy Mach Operating Cost</i>	48,000	-	-	16,000	32,000
	53. <i>Chainsaw Operating Cost</i>	4,000	4,000	-	-	-
	54. <i>Training Materials</i>	12,500	12,500	-	-	-
	55. <i>Extension &amp; Promotion Material</i>	10,000	10,000	-	-	-
	56. <i>Office Supplies</i>	20,000	-	20,000	-	-
	57. <i>Camp Utilities and Supplies</i>	2,000	2,000	-	-	-
	<b>59. Component Total</b>	<b>104,500</b>	<b>36,500</b>	<b>20,000</b>	<b>16,000</b>	<b>32,000</b>



<b>60</b>	<b>Miscellaneous</b>					
	61. <i>Sundries</i>	2,500	2,500	-	-	-
	62. <i>Auditing</i>	5,000	2,500	2,500	-	-
	<b>69. Component Total</b>	<b>7,500</b>	<b>5,000</b>	<b>2,500</b>	<b>-</b>	<b>-</b>
	<b>SUBTOTAL 1</b>	<b>514,700</b>	<b>211,900</b>	<b>194,500</b>	<b>71,800</b>	<b>36,500</b>
<b>70</b>	<b>Executing Agency Management Cost (15% of Overall Budget by Activity)</b>					
	<b>79. Component Total</b>	<b>73,650</b>	<b>-</b>	<b>36,825</b>	<b>-</b>	<b>36,825</b>
	<b>SUBTOTAL 2</b>	<b>588,350</b>	<b>211,900</b>	<b>231,325</b>	<b>71,800</b>	<b>73,825</b>

7.4 Consolidated Yearly Budget by Source		Year 2				
		Total cost	ITTO	GFC	Industry	TFF
<b>Budget Components</b>						
<b>10</b>	<b>Project Personnel</b>					
	11. <i>National experts</i>					
	Forester (Course coordinator)	18,000	-	18,000	-	-
	Forestry Technicians (Trainers)	25,200	25,200	-	-	-
	12. <i>Other labour</i>					
	Operators (Trainers)	28,800	14,400	7,200	7,200	-
	Tree spotters (Trainers)	14,400	-	14,400	-	-
	GIS/Mapping Technician	4,800	-	4,800	-	-
	Field Assistants	24,000	24,000	-	-	-
	Support staff	8,000	4,000	4,000	-	-
	Administrative Personnel	9,000	9,000	-	-	-
	13. <i>Training courses</i>	-	-	-	-	-
	14. <i>International experts</i>					
	Project Director	72,000	36,000	36,000	-	-
	15. <i>International Consultants</i>					
	Int'l Training Consultants	-	-	-	-	-
	Int'l Promotion & Marketing Expert	25,000	25,000	-	-	-
	<b>19. Component Total</b>	<b>229,200</b>	<b>137,600</b>	<b>84,400</b>	<b>7,200</b>	<b>-</b>
<b>20</b>	<b>Sub-contracts</b>					
	21. <i>Infrastructure Upgrade (classroom)</i>	-	-	-	-	-
	<b>29. Component Total</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>30</b>	<b>Duty Travel</b>					
	31. <i>International Travel</i>	2,600	2,000	600	-	-
	32. <i>Local Travel</i>	10,500	3,500	-	7,000	-
	<b>39. Component Total</b>	<b>13,100</b>	<b>5,500</b>	<b>600</b>	<b>7,000</b>	<b>-</b>
<b>40</b>	<b>Capital Items</b>					
	41. <i>Camp</i>	-	-	-	-	-
	42. <i>Office Rent</i>	20,000	-	20,000	-	-
	43. <i>Office Equipment</i>	-	-	-	-	-
	44. <i>Vehicles</i>	-	-	-	-	-
	45. <i>Chainsaws</i>	-	-	-	-	-
	46. <i>Heavy Machinery</i>	72,000	-	-	72,000	-
	<b>49. Component Total</b>	<b>92,000</b>	<b>-</b>	<b>20,000</b>	<b>72,000</b>	<b>-</b>
<b>50</b>	<b>Consumable Items</b>					
	51. <i>Vehicle Operating Cost</i>	12,000	12,000	-	-	-
	52. <i>Heavy Mach Operating Cost</i>	72,000	-	-	24,000	48,000
	53. <i>Chainsaw Operating Cost</i>	6,000	6,000	-	-	-
	54. <i>Training Materials</i>	12,500	12,500	-	-	-
	55. <i>Extension &amp; Promotion Material</i>	-	-	-	-	-
	56. <i>Office Supplies</i>	20,000	-	20,000	-	-
	57. <i>Camp Utilities and Supplies</i>	3,000	3,000	-	-	-
	<b>59. Component Total</b>	<b>125,500</b>	<b>33,500</b>	<b>20,000</b>	<b>24,000</b>	<b>48,000</b>

<b>60</b>	<b>Miscellaneous</b>					
	61. Sundries	2,500	2,500	-	-	-
	62. Auditing	5,000	2,500	2,500	-	-
	<b>69. Component Total</b>	<b>7,500</b>	<b>5,000</b>	<b>2,500</b>	<b>-</b>	<b>-</b>
	<b>SUBTOTAL 1</b>	<b>467,300</b>	<b>181,600</b>	<b>127,500</b>	<b>110,200</b>	<b>48,000</b>
<b>70</b>	<b>Executing Agency Management Cost (15% of Overall Budget by Activity)</b>					
	<b>79. Component Total</b>	<b>73,650</b>	<b>-</b>	<b>36,825</b>	<b>-</b>	<b>36,825</b>
	<b>SUBTOTAL 2</b>	<b>540,950</b>	<b>181,600</b>	<b>164,325</b>	<b>110,200</b>	<b>84,825</b>

## PART III: OPERATIONAL ARRANGEMENTS

### **1. Management Structures**

The Guyana Forestry Commission and the Tropical Forest Foundation will jointly implement the project. The GFC will have overall responsibility for coordinating the project. TFF will have responsibility for all field activities and will report to ITTO. The project will have a Technical Advisory Committee made up of representatives from various private and public sector organizations and the academic and NGO community. There will be a project Steering Committee, similarly structured, to monitor the execution of the project and deliberate on operational and administrative issues. *See Annex A for an Organization Chart.*

A contracted Director will lead the project. The project staff will also include a Course Coordinator and three Junior Foresters. The Course Coordinator would be supplied by GFC. Other technical and management staff will include three technicians (including two people dedicated to tree identification and another for data processing and map-making), all supplied by GFC. There will be two chain saw operators (one supplied by GFC), two heavy equipment operators (one supplied by forest industry). There will be four forest workers, a cook and two support staff, one supplied by GFC. Administrative staff will number two: a secretary, and an accountant. This gives 21 staff for the project, most of which are field-based staff. *See Annex C for a chart of the Project Staffing.*

### **2. Monitoring, Reporting, and Evaluation**

Bi-annual (mid-year and end-of-year) progress reports will be prepared and submitted to ITTO at mutually agreed dates. These financial and operational progress reports will be submitted to GFC for analysis and approval; if approved, GFC will forward them to ITTO.

Additional technical reports, workshop reports, and other similar documents will be printed and made available to ITTO and other interested parties as appropriate. This will facilitate the national monitoring process and increase interactions with stakeholders and assist in developing and maintaining support for the project.

The project completion report will be completed and submitted to ITTO and GFC within 3 months of project completion.

The project will be subject to monitoring by ITTO representatives. The project will also be subject to GFC monitoring on behalf of the government of Guyana. The project will also be subject to mid-term and *ex-post* evaluation by ITTO. GFC will also evaluate the project in accordance with Guyana technical cooperation guidelines.

### **3. Future Operation and Maintenance (revised)**

The project will result in the establishment of a training site, a functioning FM-RIL harvest operation on an existing timber concession, a coherent cadre of local trainers and a local project director. Training materials and curricula will have been developed.

A business and marketing plan will have been developed. The long-term aim is to have courses for concessions to be fully funded by concession holders. This will secure "core-funding" for the programme. A second aim is to subsidise non-core activities = training for Amerindian communities, small chainsaw operations – plus secure supplemental funding for these activities through Govt/GFC/NGO scholarships – donor grants.

The predicted cost per trainee will be around US\$ 3000 per trainee once the programme is run nationally. The Government of Guyana is subsidizing the programme and probably continues to do so. The price industry will have to pay for per trainee will then be US\$ 1,600, which equals the course fee of TFF-Brazil

## **PART IV: TROPICAL TIMBER FRAMEWORK**

### **1. Compliance with ITTA 1994 Objectives**

This project is consistent with the following ITTA objectives:

- To encourage national policies for the sustainable use and conservation of tropical forests and their genetic resources and for the maintenance of the ecological balances in the regions concerned
- To encourage tropical timber reforestation and forest management
- To help research and development that will improve forest management and wood use

The project complies with ITTO criteria established by the *Committee on Reforestation and Forest Management*, principally related to the following areas:

- Natural Resource Management
- Harvesting, logging infrastructure, and training of technical personnel

The project also complies with the following criteria established by the Committee:

- Relation to production and use of industrial tropical timber
- Benefits to the tropical timber economy and relevance to producing and consuming nations
- Relation to maintenance and expansion of the international tropical timber trade
- Prospects for positive economic returns
- Use of existing research institutions and relationship to other efforts supported by ITTO

The project achieves this compliance by its very nature. As a training project, it has direct relevance to, and benefits to, the tropical timber industry and the tropical timber economy of the region. Assuming a successful project, governments in the region should remain encouraged to adopt, continue, or extend national policies for the sustainable use and conservation of their tropical timber resources. Assuming, as experience has shown elsewhere, that the tropical timber industry realizes productivity gains and lower costs through applying FM-RIL methods taught in the project, they should be able to increase production of desirable species and thereby increase tropical timber products exports, benefiting themselves and the regional economies. Finally, the project, through its intent to establish linkages with regional tropical forest sector organizations, should encourage continued research that will add to ITTO's other efforts in this regard.

### **2. Compliance with Libreville Action Plan (revised)**

This project is consistent with the Libreville Action Plan and relates to the priorities established in the area of *Reforestation and Forest Management* as follows:

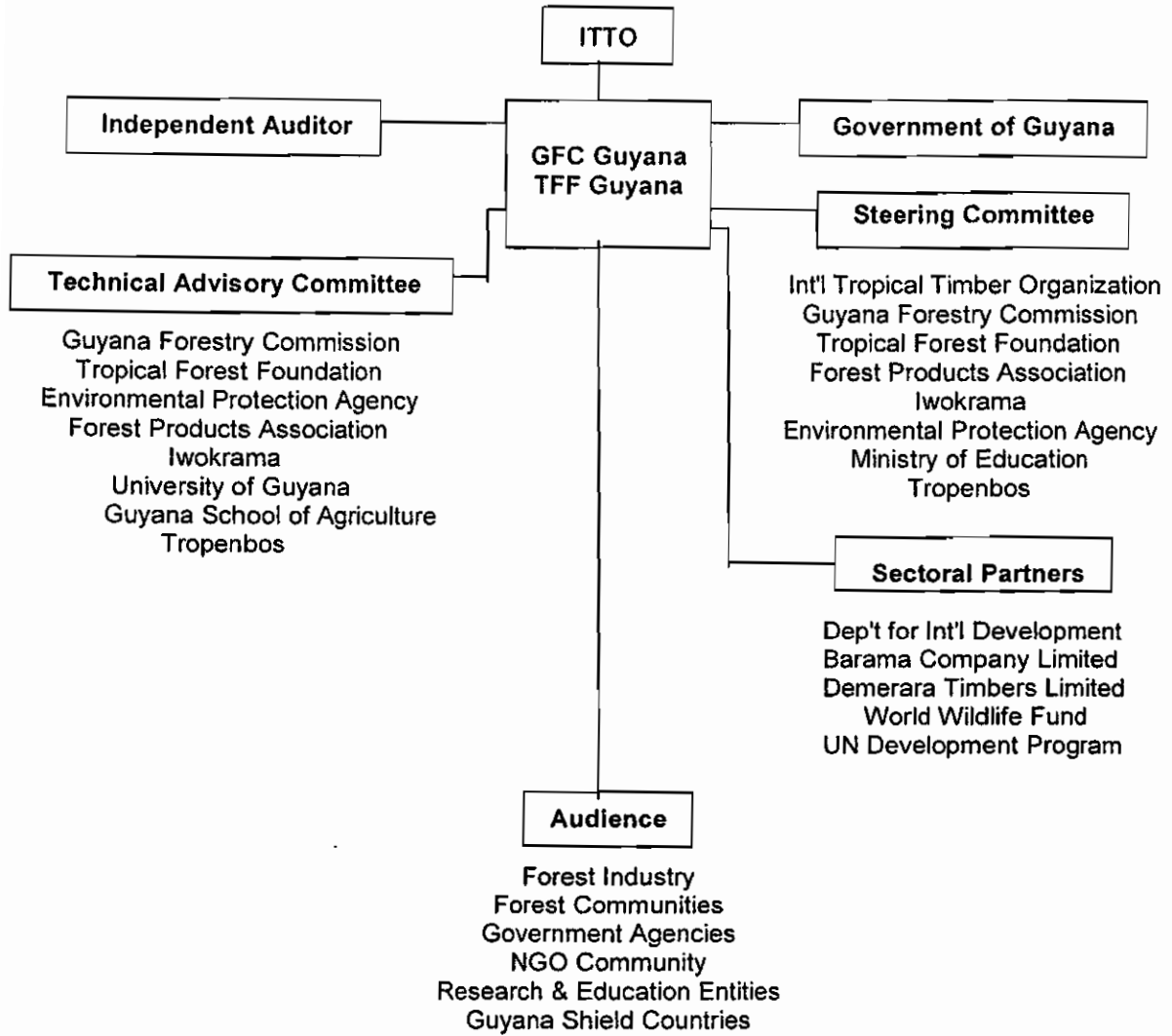
Goal 3: Enhance technical, financial and human capacities to manage the tropical timber resource base:

- Promote access to, and transfer of, technologies and encourage technical co-operation for sustainable forest management...
- Enhance networking and technology transfers amongst forest education centres, forest owners and managers, in the fields of natural forest management, harvesting and forest restoration
- Design and conduct regional training events to enhance technical and human capabilities to manage the resource base
- Facilitate exchange of information and experience on natural forest management, ... amongst member countries, non-governmental organisations and industries
- Disseminate results and lessons learned from ITTO projects and activities to interested member countries, non-governmental organisations and industries
- Encourage and assist members to :
  - Train timber company managers and the workforce in RIL ...
  - Intensify training of forestry personnel and other stakeholders in. the management of natural forests
  - Allocate adequate numbers of trained people to implement effectively sustainable forest management

This is a training project, with human resource development at its core. Experience from TFF-implemented FM-RIL projects, as well as from other such projects, provides the basis for implementing forest management systems and shows the feasibility and economic viability of investing in sustainable forest management. The core of the project is the establishment of a demonstration site that will serve to promote research, academic exchange and field-based learning opportunities, and the provision of the skills and conceptual knowledge necessary for regional forest sector personnel to advance the economic and environmental returns from the region's tropical forest timber operations.

**ANNEXES**

**ANNEX A  
Project Organization Chart**



## ANNEX B

### Profile of the Executing Agency

#### The Expertise of the Executing Agency

The Guyana Forestry Commission's mission is "To provide excellence in forestry management services to our stakeholders through the application of professional skills to contribute to our nation's development." It is the Government Agency that is responsible for the management of Guyana's forest resources in accordance with the National Forest Policy, which was approved by Cabinet in 1997.

The GFC is mandated by law to:

- Advise the Government on, and implement the National Forest Policy;
- Be responsible for the management and control of the utilization of the forests to ensure an optimum yield of forest produce and the maintenance or improvement of the environment.

The GFC is governed by a Board of Directors appointed by the President. The Commissioner of Forests is the Chief Executive Officer and an ex-officio member of this Board.

The GFC is structured with the following Divisions to address its policy mandate:

1. Planning and Development: responsible for the co-ordination and preparation of forest sector plans and reports and GFC reports and publications, for conducting special studies, for providing a market information service and specialist advice and services to industry.
2. Forest Resources Management Division: responsible for data collection on national forest resource, conducting surveys and inventories, researching and making recommendations on forest dynamics and silviculture, planning and recommending the allocation of concession areas, preparing operational guidelines for forest management planning, evaluating management and operational plans, providing advice on forestry policies and legislation, prescribing standards for forest management and providing support to forestry extension.
3. Forest Monitoring Division: responsible for the enforcement of Forest Laws and regulations, monitoring and control of environmental and social impacts of operations within the forest estate and collection of revenue.
4. Human Resources Division: responsible for staff management and development, production and implementation of Human resources policies and procedures, education, training, including in-service training and liaison with relevant teaching and training institutions.
5. Finance Division: responsible for financial and board matters.

The GFC is also equipped with a library, which provides library services to staff at the GFC and to the public.

*A copy of the organizational chart is attached in Annex D*

The main projects and studies that were completed/initiated within the last three years include the following:

- Revision of the National Forest Legislation
- Preparation of a Draft National Forest Plan
- Classification of State Forest by predominant use (in consultation with other land use agencies)
- Preparation of Forest Area management plans
- Initiation of a National Forest Inventory
- Development of procedures for allocation of forest concessions
- Introduction of log tagging systems and improved forest monitoring to combat illegal forest operations
- The development of national standards for forest certification
- FOR EXPO 2000 – A national exhibition to showcase products that originate from Guyana's Forests.



- Promotion of and participation in the university of Guyana's and the Guyana School of Agriculture's training programs (MSc; BSc; Diploma; Certificate).
- The use of GIS as a tool to inform Forest Management planning and processes.
- Preparation of several manuals/documents which include
  - Guidelines for the preparation of forest management plans
  - Code of practice for forest operations (operational standards)
  - Forestry in Guyana (fact sheet)
  - Manual of procedures for forest concession allocation
  - Quarterly market reports
  - Timber grading rules for Guyana

Funding to undertake the activities mentioned above was provided principally by the Government of Guyana and the UK Department of International Development. Some activities were partially funded by the Canadian International Development Agency, UNDP Global Program on Forests, and World Wide Fund for Nature.

Previous projects submitted to ITTO by Guyana are:

FUNDED : A Sustainable Management Model in the Iwokrama Rain Forest {ITTO 10/97 Rev. 1 (F)}

NOT FUNDED: Forest Industry Training Project (1997)

NOT FUNDED: Design and Implementation of an Information System within the GFC (1997)

### **The Infrastructure of the Executing Agency**

The GFC has a main headquarters building in Demerara, with Divisional offices in Berbice and Essequibo. In addition to these central Division offices, 15 field stations are distributed throughout the country. All stations are equipped with radio/telephone communication equipment for easy exchange of information across the entire country. The Divisional offices are all computerized, and there is access to key databases via this medium.

The GFC also has two training facilities located in the forest. These facilities are strategically located for training, but the infrastructure needs to be renovated. The GFC has a fleet of field vehicles and a substantial amount of field equipment to carry out its routine operations.

### **3. Budget**

The GFC's accounts for the period 1994 onwards are now in the process of being audited. This was primarily due to lack of qualified/appropriate staff being employed in the Division. The Division has now been strengthened, however, and one of the immediate tasks is to ensure that the financial accounts are brought up to date and audited by December 2001. As soon as this is completed, the budget information will be supplied to ITTO.

### **4. Personnel**

a) Experts with post-graduate degrees:	10
b) Experts with baccalaureate degrees:	15
c) Middle-level technicians:	35
d) Administrative personnel:	40
e) Total number of personnel in forestry-related fields:	120

## ANNEX C

### Project Staff (revised)

Terms of Reference for Key Staff positions (*Additional information has been provided in ANNEX C (1)*)

#### Project Director

The Project Director will have overall responsibility for project implementation and for the establishment, management and administration of the training programme. In particular he will:

1. supervise the design of the RIL programme including the planning and co-ordination of specialist inputs
2. supervise the establishment of the training facility and demonstration areas
3. supervise the training of project staff
4. co-ordinate the organisation and delivery of training courses
5. supervise the development of a business plan and marketing plan

#### Course co-ordinator

The course co-ordinator will be primarily responsible for design and delivery of training courses to meet stakeholder needs and will also act as counterpart to the Project Director. In particular s/he will:

1. conduct a review of the training needs analysis and supervise the preparation of training programmes
2. identify teaching inputs and support the implementation of the staff development programme
3. develop and promote the course schedule
4. assist with training delivery and evaluation

Below is a list of the staff positions for the project and which agency has been charged with their support. It is anticipated that almost every position will be filled by a local hire, including, perhaps, the Project Director and the Senior Forester. The Junior Forester, two forestry technicians, and one chainsaw operator are to come from GFC.

#### Project Staff Positions and Source

POSITION (# of staff)	SOURCE	
	ITTO	Counterpart
1 Project Director	1	
1 Course coordinator		1
3 Junior Foresters	3	
2 Tree Identifiers		2
1 Data Processor/Mapper		1
2 Heavy Equipment Operator	1	1
2 Chain Saw Operator	1	1
5 Forest Labour	5	
2 Support	2	
2 Administrative	2	

## 5. ANNEX C (1)

### Terms of Reference for Key Staff positions

**Function:** Project Management

**Title:** Project Director

**Qualifications:**

- 10+ years of forest management experience in Guyana with expertise in Reduced-Impact Logging
- 5 years experience in project management, personnel management and training
- 5 years experience in research and development of Reduced-Impact Logging methods
- Experience working with and creating linkages between government, industry, NGOs and international development organizations

**Responsibilities**

- Manage and supervise all project activities including preparation, training, evaluation, and follow-up
- Manage and supervise all project personnel
- Manage project finances and supervise accounting
- Meet with Steering and Technical Advisory Committees to review project results
- Meet with Independent Auditor to review financial accounts
- General course design and development
- Supervise preparation and review of training materials and student manuals
- Identification of partners and sites
- Supervise completion of field and technical activities for course preparation
- Supervise arrangements for & scheduling of training courses and consultants
- Approve purchase of all capital items
- Coordinate advertisement and recruitment of staff
- On-site training of trainers in
  - Block lay-out and line cutting
  - 100% forest inventory
  - Data entry, data analysis and map making
  - Pre-harvest activities - such as tree selection, climber cutting, tree marking, identifying protected trees
  - Skid trail planning and lay-out
  - Compliance to forest regulations (Code of Practice)
  - Harvest damage and waste evaluation
  - Production and quality
  - Understanding production costs
- Supervise on-site training courses and trainee evaluation
- Approve progress reports
- Develop and analyze alternative options for RIL with stakeholders, including supervision of field tests
- Coordinate the development of a business and marketing plan

**Function:** Course Coordination

**Title:** Course Coordinator

**Qualifications:**

- Guyanese national
- Professional with background in tropical forestry and / or forest ecology, and in education or training
- 2 years of forest management experience in Guyana
- 2 years experience in international project coordination and administration
- Strong communication and organizational skills

Responsibilities

- Coordinate logistical and technical part of project
- Write progress reports in accordance with ITTO guidelines
- Consultation with stakeholders
- Review training needs
- Needs assessment of facilities
- Develop training materials
- Coordinate production of training materials
- Assist in the development of course promotional material
- Coordinate purchase and other acquisition of equipment
- Implement of staff development plan
- Develop course schedule
- Coordinate on-site training
- Understudy Project Director

Function:            **Course Promotion**

Title:                *International Promotion and Marketing Expert*

Qualifications:

- 30 years experience and expertise in information dissemination with specific experience in the tropical timber industry
- Specific experience with the forest industry and project experience in the LAC region
- Ability to organize and run major international events

Responsibilities

- Advise officials in relevant government agencies, universities, and NGOs in LAC countries of training opportunity
- request cooperation and assistance in advertising and promoting courses
- Establish and maintain database of all relevant contacts for courses
- Work with Project Director and Coordinator to develop course promotional materials
- Supervise production and distribution of promotional materials
- Supervise development and distribution of application materials
- Coordinate marketing plan and national and regional marketing
- Request funding for non-core activities

Function:           **Administration**

Title:                *Administrative Manager*

Qualifications:

- Guyanese national
- 10 years experience in business administration with an emphasis on personnel management
- Accounting knowledge and experience
- Experience in purchasing and acquisition of materials, supplies and equipment for forest management projects in Guyana

Responsibilities

- Coordinate the administrative services of the office
- Maintain accurate and up-to-date accounting records
- Acquire all necessary materials, supplies and equipment
- Maintain contacts with all project personnel
- Maintain communication with field crews

Function:        **Forest Technician**

Title:            *Harvest planning specialist*

Qualifications:

- Guyanese national
- Professional with 5 years experience implementing RIL in Guyana
- Proven ability to supervise field crews
- Good communication skills and prior training experience
- Experience giving lectures
- Computer skills

Responsibilities

- Supervise crews during execution of field activities
- Review and disseminate practical and theoretical knowledge during the courses
- Discuss field practices with crews and course participants
- Develop and give lectures on harvest planning methods
- Assign work detail to field crew

Function:           **Forest Technician**

Title:               *Pre-harvest activity specialist*

Qualifications:

- Guyanese national
- Professional with 5 years experience implementing RIL in Guyana
- Proven ability to supervise field crews
- Good communication skills and prior training experience
- Experience giving lectures
- Computer skills

Responsibilities

- Supervise crews during execution of field activities
- Review and disseminate practical and theoretical knowledge during the courses
- Discuss field practices with crews and course participants
- Develop and give lectures on pre-harvest activity methods
- Assign work detail to field crew

Function:        **Forest Technician**

Title:            *Logging specialist*

Qualifications:

- Guyanese national
- Professional with 5 years experience implementing RIL in Guyana
- Proven ability to supervise field crews
- Good communication skills and prior training experience
- Experience giving lectures
- Computer skills



Responsibilities

- Supervise crews during execution of field activities
- Review and disseminate practical and theoretical knowledge during the courses
- Discuss field practices with crews and course participants
- Develop and give lectures on directional felling, skidding and winching
- Supervise the use and maintenance of chainsaws, forestry machines and related equipment
- Assign work detail to field crew

Function:           **Field Assistant**

Title:               *Booker / Crew Chief*

Qualifications:

- Guyanese national
- Professional with 10 years carrying out forest surveys and inventories
- Good verbal skills and prior training experience
- Assign work detail to field crew
- Experience conveying basic knowledge on forest surveying and inventory
- Computer skills

Responsibilities

- Survey and inventory areas for RIL training models
- Establish block lines and inventory lines
- Carry out forest inventories
- Data processing and mapping
- Assist in Harvest Planning and Pre-harvest Activities training
- Discuss field practices with crews and course participants
- Supervise the use and maintenance of surveying and inventory tools

Function:            **Field Assistant**

Title:                *Compass man*

Qualifications:

- Guyanese national
- Professional with 10 years carrying out forest surveys
- Good verbal skills and prior training experience
- Experience conveying basic knowledge on forest surveying

Responsibilities

- Survey areas for RIL training models
- Establish block lines and inventory lines
- Establish skid trail alignments
- Assist in Harvest Planning and Pre-harvest Activities training
- Discuss field practices with crews and course participants
- Supervise the use and maintenance of surveying tools

Function:            **Field Assistant**

Title:                *Tree marker*

Qualifications:

- Guyanese national
- Professional with 10 years forest inventory and tree felling
- Good verbal skills and prior training experience
- Experience conveying basic knowledge on tree marking

Responsibilities

- Carry out tree marking in RIL training model blocks
- Mark felling directions, trees for protection
- Assist in Pre-harvest activities training
- Discuss field practices with crews and course participants
- Supervise the use and maintenance of tree marking tools

Function:        **Field Assistant (2)**

Title:            *Line cutter*

Qualifications:

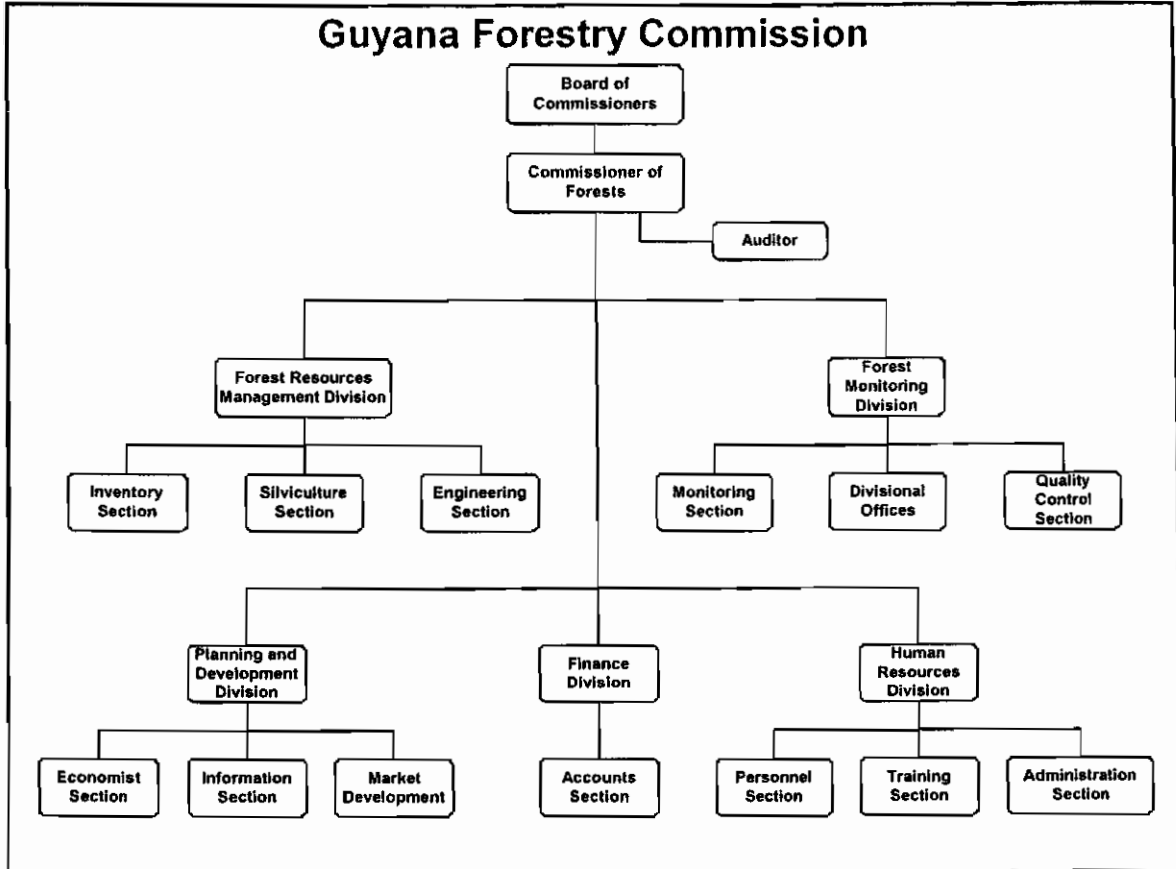
- Guyanese national
- Professional with 5 years carrying out forest inventory
- Good verbal skills and prior training experience
- Experience conveying basic knowledge on forest inventory

### Responsibilities

- Survey areas for RIL training models
- Establish block lines and inventory lines
- Carry out forest inventories
- Establish skid trail alignments
- Assist in Harvest Planning training
- Discuss field practices with crews and course participants
- Supervise the use and maintenance of surveying tools

ANNEX D

ORGANIZATIONAL CHART: GUYANA FORESTRY COMMISSION



## ANNEX E

### SUMMARY OF MODIFICATIONS MADE IN RESPONSE TO RECOMMENDATIONS OF EXPERT PANEL

#### Comment 1: Need for more direct involvement and collaboration with the national School of Agriculture.

The Guyana School of Agriculture currently offers a Diploma in Agriculture (2 years full time), and a Certificate in Forestry (1 year full time). Both of these programmes are currently very theoretically oriented, with a minimal or even non-existent practical component. This can be attributed to lack of both human and financial resources, and lack of appropriate facilities to carry out practical training.

This was pointed out in the revised project submission in the section captioned: Part I : Context. 1 Origin (revised), paragraph 3. It was also mentioned in Part II : The Project. 2.3 Project Strategy, paragraph 3.

In actual fact, the Guyana School of Agriculture and the University of Guyana would be beneficiaries of the GFC/TFF proposed RIL training, since it would present a training opportunity for the students.

The Administration of the GFC/TFF project also requires that a Technical Advisory Committee (TAC) be established (see Annex A of revised submission). The Guyana School of Agriculture will be represented on the TAC.

#### Comment 2: Avoid duplication of project activities with specific reference to Iwokrama.

It is recognized that Iwokrama is involved to some extent in RIL. However, this is already in collaboration with the GFC and Tropenbos. As indicated in the revised submission: Part 1: Content. Programs and operational activities (revised), last paragraph on page 3; as recently as 1999, Iwokrama, Tropenbos and the GFC hosted an international workshop on RIL. Subsequent to that, the 3 parties again embarked upon a practical scale study on the economic and practical feasibility of RIL in Guyana.

Additionally, there is an MOU between GFC and Iwokrama; informal linkages also exist between staff of these entities. Iwokrama is also a member of the TAC; thus there will be every opportunity for collaboration, and discussion, to avoid any duplication of project activities.

#### Comment 3: Budgetary emphasis should be placed on field operators and not on managerial or supervisory staff.

In Guyana, for RIL to be implemented successfully, an enabling environment has to be created. In this context, training of managerial and supervisory staff is critical, and equally important as training of field operators. In fact, the experience of some RIL experts who have worked in Guyana is that it is relatively easy to train field operators. However, these operators encounter tremendous difficulty when trying to implement the RIL techniques learnt, since their supervisors are not supportive of them introducing so called "new" techniques that they have no (or little) knowledge of. It is therefore crucial that the supervisory and management staff be given appropriate training so that they can also appreciate that RIL necessitates a different approach than the traditional mode of operation.

#### Budget by activity table to eliminate activities listed, but which have no associated cost.

This will be done

Numbers of people to be trained to be reduced with corresponding reduction in Budget.

The number of persons can be reduced. However if we look in the Revised submission: Part II : The Project. 2.6 Economic aspects, paragraphs 3 and 4; it is apparent that there is an extremely large work force in Guyana's forestry sector. The majority of these persons have had no formal training, thus there is a great need for this project to provide training in RIL to as large a number of persons as is possible.

Also, a reduction in the number of persons trained, does not necessarily mean that there will be a significant reduction in the budget.

The cost of Administrative personnel is too high.

This cost will be reduced from 33,000 to 16,500. If any further input is necessary, the GFC will provide same.

National Expert be appointed as Project Director (PD)

The success of this project depends on the initial presence of a capable, experienced, qualified PD; someone who is familiar with RIL both in theory and practice, and someone who is familiar with the Guyana Forest Sector- both in terms of the forest composition, and the workforce.

Unfortunately, there is currently no Guyanese who has all of these attributes to function as PD. The proposed strategy is to employ a suitable PD (Expatriate), and identify an appropriately qualified Guyanese to under-study the Expatriate PD for a maximum period of two (2) years. After this period is completed, the Guyanese will then assume the role of PD.

The costs budgeted for the expatriate PD should not be considered to be excessive, since it is a 2 year contract position, and to attract a suitably qualified person for the position, one would have to offer a competitive salary. However, it must be emphasized that the GFC will be contributing 50 % of the PD salary, a further indication of our commitment to this RIL project.

4. Recalculate ITTO's Programme support costs.

This will be done.