

EX-POST EVALUATION REPORT

ITTO Project PD 10/97 Rev.1 (F)

“A Sustainable Management Model in the Iwokrama Rain Forest”

Prepared for ITTO
by
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Last, but not least, conversations with field staff and representatives of indigenous communities in the project's zone of influence completed the picture, and for which I am grateful.

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Acronyms

AAC	Annual Allowable Cut
CIDA	Canadian International Development Agency
DFID	Department of International Development (UK)
FTCI	Forest Training Centre Inc.
GEF	Global Environmental Facility
GFC	Guyana Forestry Commission
ITI	Iwokrama Timber Inc.
ITTC	International Tropical Timber Council
ITTO	International Tropical Timber Organization
NOA	Net Operable Area
NRDDB	North Rupununi District Development Board
NTFPs	Non Timber Forest Products
ODA	Overseas Development Agency (UK)
SFM	Sustainable Forest Management
SUA	Sustainable Use Area
UNDP	United Nations Development Programme
WP	Wilderness Preserve

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1. EXECUTIVE SUMMARY

In 1989 the Government of Guyana ensured some 370 000 ha of rainforest, the Iwokrama forest, for research into methods of sustainable forest management, as well as practical management and production of both non- timber products as well as timber.

One of the early achievements of Iwokrama was the zoning of the forest into 3 Wilderness Preserves (WP), and a Sustainable Use Area (SUA) of some 180 000 ha.

PD 10/97 Rev. 1 (F) was approved by the 22nd Session of the ITTC in May 1997 in Santa Cruz, Bolivia, and the first disbursement of the total ITTO budget of USD 780,000 was made in July 1999.

The Development Objective of the project was to optimise the sustainable supply of economic and environmental goods and services from Guyana's forests, and the Specific Objective to develop a demonstration model of sustainable, commercial scale management in the Iwokrama Forest to deliver multiple products and services.

The 6 planned Outputs of the project were:

- A forest management plan for the 180 000 ha of SUA
- A feasibility Study and Business Plan for both timber and NTFPs
- Commercial arrangements for utilization
- Increased availability of timber and NTFPs
- Women and men trained in SFM with multiple products
- Improvement of national guidelines for SFM

Most of the planned outputs have been reached and in some, like training, the results have surpassed what was planned. However, there was a delay in the production of the management plan as new inventories had to be done. This led to an extension of the project and efficiency thus suffered. Also, as no logging has yet taken place, obviously there is not yet any availability of timber. Also commercial arrangement for utilization has suffered.

Nevertheless, the achievements of the project are many, and details of its contribution to SFM in Guyana and beyond could be summarized as follows:

- Forest policy

The project has had a number of positive effects on the overall understanding of tropical forest management, although actual logging has not taken place. The project, through Iwokrama, has cooperated and continues to cooperate closely with forest authorities in the country, Guyana Forestry Commission (GFC).

The forceful examples that the project has given in following and achieving ITTO Criteria and Indicators as well as the Yokohama Action Plan and Objective 2000 within the project area, undoubtedly has had a positive effect on national forest policies.

- Securing the permanent forest estate

The efforts to define the boundaries of the Iwokrama forest and the zoning efforts have secured a permanent forest estate in the area. If anything, the work that has gone into these efforts has been exaggerated in order to provide a model for the country or the private concessionaires. What is needed is in fact a simplified procedure, which can serve as a model for private concessionaires lacking the support of foreign donors.

- Sustained yield

The fact that the project management plan attempts to treat the forest silviculturally as stands through logging of some 25 timber species, represents a drastic departure from standard practices of selective logging in the country. It is expected that this innovative departure will have an impact on official GFC Code of Practice.

The stipulated AAC in the Management Plan is higher than the GFC Code of Practice, but is nevertheless well below sustained yield capacity in the forest. The relatively high AAC also represents a contribution to economic sustainability both in Iwokrama forest as well as providing a model for the country as a whole.

- Reduced impact logging(RIL)

ITTO has financed a reduced impact logging project in the country, PD 68/01 Rev. 2 (I), with the Forest Training Centre Incorporated (FTCI). Experiences from this project will be applied during the extension of the project, provided the project proposal PD 297/04 will be accepted and funded, as FTCI and Iwokrama hope to have a MOU under a new proposed project, PD 297/04 Rev 1. (F). Excellent opportunities will thus be offered to apply and monitor reduced impact logging in a realistic commercial logging operation.

- Public awareness

Iwokrama has made strenuous efforts to provide material for raising public awareness on SFM in Guyana, basically through the maintenance and updating of an excellent Web- site. The Iwokrama Field Station has served as a demonstration site through numerous workshops and training sessions.

- Research

The Iwokrama bibliography includes some 150 titles and the research efforts go far beyond what is needed and may be expected to run an ordinary forest holding. Iwokrama has enjoyed the support of some 20 international donors over the years, and it is in some instances difficult to disentangle the forest research efforts of the ITTO project as distinct from those of other donors.

- Impact

The project has had a profound impact on the local communities in terms of training and production of NTFP's, including ecotourism. As no base line studies had been carried out on the standard of living among the indigenous communities prior to project start-up, it is not possible to ascertain this impact in material terms. This will be rectified during the follow-up project PD 297/04 Rev.1 (F) if this project proposal is accepted and receives funding.

2. INTRODUCTION.

In 1989 the Government of Guyana ensured some 370 000 ha of rainforest, the Iwokrama forest, for research into methods of sustainable forest management, as well as practical management and production of both non- timber products as well as timber. Thus the origin of the Iwokrama International Centre (hereafter referred to as Iwokrama), and its Field Station created in 1994, and situated on the North-eastern fringe of the Iwokrama forest, and on the banks of the Essequibo river, some 340 km from Georgetown by surface road.

The forest is typical of the Guyana Shield, an old geological formation with acidic rocks overlaid largely by poor sandy soils. The Southern boundary of the forest is only some 150 km from the Brazil/Guyana border by road, and the Rupununi river, which runs parallel to the forest boundary in the South-East, flows both southwards into the Amazon and northwards through Guyana during the wet season, thus allowing migration of Amazonian fish species, like *Arapaima gigas* into Rupununi river. Nevertheless, the environment in Iwokrama forest itself is not truly Amazonian, and many of the tree species in the Amazon forest, like typically the mahogany (*Swietenia macrophylla*), are missing, although many valuable commercial tree species abound.

The Iwokrama forest is uninhabited, save for one indigenous village, the Fairview village, a comparatively recent settlement, in the North-east and very close to the Field Station. To the South- West and North- West of the forest however, there are numerous indigenous communities of predominantly the Makushi, Patamona and Wapishana peoples. These have traditionally utilized the Iwokrama forest for hunting, fishing and gathering of various non-wood forest products, and also some spasmodic, low tech. gold mining.

During the first years, Iwokrama was administered by the Guyana Natural Resource Agency. From 1993, the United Nations Development Programme (UNDP) and the Global Environmental Facility (GEF) became involved as donors of the activities.

In addition, a number of international donors have been active in financing various aspects of the Centre's activities. These include the Overseas Development Agency UK (ODA), later Department of International Development (DFID), the European Union, the Canadian International Development Agency (CIDA) and a host of other institutions and NGOs. Since its inception, the Centre has received some USD 14 million in donations for its activities.

In 1996, the Gov. of Guyana passed a law, the *Iwokrama International Centre for Rain Forest Conservation and Development Act*, establishing Iwokrama as an autonomous entity with its own board of International Trustees. An important aspect of the law is that it ensures the rights of the indigenous peoples to their continued traditional use of the forest.

The mission statement of Iwokrama is the following:

Promoting the conservation and the sustainable and equitable use of tropical rain forests in a manner that leads to lasting ecological, economic, and social benefits to the people of Guyana and to the world in general, by undertaking research, training, and the development and dissemination of technologies.

One of the early achievements of Iwokrama was the zoning of the forest into 3 Wilderness Preserves (WP), and a Sustainable Use Area (SUA) of some 180 000 ha.

3. THE ITTO- PROJECT

PD 10/97 Rev. 1 (F), (hereinafter referred to as the project) was approved by the 22nd Session of the ITTC in May 1997 in Santa Cruz, Bolivia, and the first disbursement of the total ITTO budget of USD 780,000 was made in July 1999.

Project Objectives

Development Objective

To optimize the sustainable supply of economic and environmental goods and services from Guyana's forests for the benefit of present and future generations and contributing to the international communities' understanding of the ecological, economic, social and institutional requirements for the sustainable management of tropical rainforest communities.

Specific Objective.

To develop a demonstration model of sustainable, commercial scale management in the Iwokrama Forest to deliver multiple products and services through adaptive management fully integrating action-research, training and education activities at all stages.

Project Strategy and Activities

The project was directed at the 180,000 ha of the Iwokrama forest destined for sustainable forest management mentioned above (SUA). Its main focus was to design, plan and initiate model commercial forest management of the aforementioned area, in order to improve practices in Guyana and elsewhere. It also envisaged to help Iwokrama produce a state-of-the-art forest management plan for multiple products and services, and feasibility studies for management and harvest based on this plan. It would further assist in finding appropriate business partners and negotiating contracts that would assure adherence to the principles of sustainable forest management. Demonstration, research and training in improved practices were also to be integrated into these model commercial operations. The planned Outputs were:

1. A forest management plan to guide the operational management of the 180,000 ha Sustainable Utilization Area (SUA) in the Iwokrama Forest, and to be used by the Guyana Forest Commission (GFC) and others as a model and training tool.
2. A feasibility study and business strategy for utilization of the Iwokrama Forest in accordance with the ITTO guidelines and GFC Codes of Practice.
3. Commercial arrangements for sustainable utilization and management of the Iwokrama Forest as a demonstration forest.
4. Increased availability of sustainably produced tropical timber and other forest products and services for both the national and international markets.
5. Women and men trained in sustainable forest management and planning for multiple products.
6. The establishment of trials and the execution of studies to gradually supply the information needed for adaptive management to refine national and regional guidelines for more sustainable management and harvesting regimes.

4. THE EX-POST EVALUATION

The fieldwork for the evaluation took place in the period 08.04.05 - 18.04.05 and included consultations with Iwokrama Centre staff in their offices in Georgetown as well as at the Field Station in the Iwokrama forest. Consultations were also carried out with a wide range of stakeholders, members of the communities in and around the project area, members of the Project Steering Committee as well as other authorities, including the Minister for Amerindian Affairs.

4.1. The attainment of Outputs

Output 1.

The development of the management plan underwent many stages, and built on a number of inventories and surveys, some that were carried out prior to the ITTO project. Other efforts were financed by ITTO in conjunction with other donors, like the zoning of the forest. Preliminary work to determine species groupings, growth models, cutting cycles, Annual Allowable Cuts (AAC), and annual harvest was done by an international consultant (Denis Alder 2001), using information of these early surveys and inventories. This work resulted in a user- friendly computer software product, the IWOPLAN.

An international consultant, Mr. Kenneth P. Rodney, did a study of all these deliverables for ITTO in 2002, and came to the conclusion that the previous inventories were insufficient for the purpose of establishing a workable management plan at the management unit level. The consultant also identified shortcomings in the IWOPLAN model, for instance in the sense that it could only generate data for parts of the SUA, and that it generated 5- year management plans, but not yearly ones.

The result of this was that the consultant was contracted as an International Business Development Adviser with the task of developing a comprehensive management level inventory for a Net Operable Area (NOA) within the SUA.

This work was concluded in 2003 (Kenneth P. Rodney 2003). Inventory design, methodology and data processing procedures were developed in strict collaboration with the Guyana Forestry Commission (GFC). The GFC also assisted with crew training, provided key personnel to assist with the fieldwork and carried out consistency checks during the course of the inventory.

In the view of this author, this is a state of the art product, carried out with solid and elegant methodology. It defines the NOA, excluding the following non- commercial areas from the SUA as follows:

- *Reserves for Eco-tourism sites and wildlife habitat viewing;*
- *Reserves for special use areas (Fairview Village, Field Station, airstrip);*
- *Reserves for cultural and archaeological sites;*
- *Buffers for main rivers: Essequibo, Siparuni and Burro Burro (30 m both sides);*
- *Buffers for roads and secondary watercourses (20 m both sides);*
- *Slopes >40% extending for more than 30 m;*
- *Small, isolated (inaccessible) stands;*
- *Non-commercial forest types.*

This reduced the NOA to 116,563 ha, as compared to the 180 000 ha of the SUA.

The inventory also identifies 4 commercial forest types by abundance of some dominant commercial species. These forest types hold many more commercial species than the dominant ones (some 25 species of varying abundance), and of course a very high total number of species.

Iwokrama NOA by Commercial Forest Type

Commercial Forest Type	Code	Net Area - ha
Mixed Greenheart, Black Kakaralli, Wamara Forest	MGK	61,279
Mixed Greenheart, Sand Baromalli, Soft Wallaba Forest	MGB	16,193
Mora, Manicole, Crabwood, Trysil Forest	MMC	33,084
Wallaba Forest	WF	6,007
TOTAL NOA – ha		116,563

The most abundant species in the identified most important commercial forest types are: Greenheart (*Chlorocardium rodiei*), Black Karakalli (*Eschweilera subglandulosa*), Wamara (*Swartzia leicalycina*), Soft Wallaba (*Eperua falcata*), Waramadang (*Dicorynia guianensis*), Mora (*Mora excelsa*), Baromalli (*Catostemma* spp), Manicole (*Euterpe oleracea*), Crabwood (*Carapa guianensis*), Kokerite (*Attelea maripa*) and Trysil (*Pentaclethra macroloba*). The NOA has later been further reduced to 107 750 ha. in agreement with GFC, as some temporarily flooded and inaccessible areas of the forest were removed from the Inventory and the Management Plan.

The methodology and inventory design, including sampling intensity, respected the requirements set by GFC. As the area is large, a multistage, stratified sampling design with probability proportional to size was chosen. This allowed for a reduction of sampling plots caused by the reduction in NOA, without compromising the sampling error, and by the same token increasing the efficiency of the inventory and thus leading to major cost savings.

Both the Inventory as well as the Management Plan were finalized during the extension of the project. (The project was extended three times, to March 2003; to December 2003, and finally to April 2004 without additional funding)

The Management Plan is included in the Environmental Impact Assessment Study, Volume III, (Ref. CEA 2004), and is now undergoing some late modifications, with identification of the first management units, including layout of roads for skidding of timber. However, agreements on annual allowable cuts need to be concluded before logging can commence.

Also on NTFPs, feasibility- and market studies were carried out for selected products; Lianas, Kufa (*Clusia* spp.) and Nibbi (*Heteropsis* spp.) for furniture making, Balata gum (*Manilkara bidentata*) for handicrafts and Haiawa (*Protium/Tetragastris* spp.) for essential oils. (URS February 2002, Hamond June 2002)

Output 2.

The timber feasibility study was carried out in two stages, first through the services of a consultancy firm LTS (LTS July 2001). However, as this study did not have the advantage of the final inventory mentioned above, it had incomplete data on the forest resources, resulting in an underestimation of production potential.

After the final inventory, the international Business Development Adviser, Mr. Kenneth P. Rodney produced a second, and final feasibility study, including also a concrete wood supply study. (Kenneth P. Rodney August 2003)

Output 3.

At the time of the ex-post evaluation, commercial arrangements for timber extraction were not yet in place. Iwokrama has created an entity, the Iwokrama Timber Incorporated (ITI) to enter into business relationship with potential extraction companies, but so far no concrete contract has been closed. Provided these arrangements are finalized, logging should be able to go ahead this year (2005) for three identified management units.

On ecotourism however, guided tours are in operation with trained guides. Also, a canopy walkway is in place and operational.

Output 4.

As there has been no logging so far, obviously no production of timber has been achieved. If there are further delays in commencing logging, a number of problems could create serious risks to the project and Iwokrama as a whole.

As for the NTFPs, the production by indigenous peoples is ongoing. However, the products do not seem to be the same that were planned for. Honey, crabwood oil (from *Carapa guianensis*) and aquarium fish seem to have been the most successful products. Unfortunately it has not been possible to obtain quantitative data from Iwokrama on this production. Neither has it been possible to ascertain how much of these efforts are really attributable to the ITTO project, as several other donors have been active in this field.

Output 5

A wide range of training activities has taken place through the initiative of Iwokrama. This includes training of Iwokrama staff as well as training of representatives of the surrounding indigenous communities, and particularly in development of NTFPs and ecotourism.

Prior to the training, participatory consultations with the local communities were carried out in order to strengthen the relationship between Iwokrama and the communities. It has been recorded that initially, a certain amount of suspicion existed on the part of the indigenous communities. This probably stemmed from the fact that these communities had claimed land title for the Iwokrama forest already in the early sixties. After the passing of the Iwokrama Act however, which confirms indigenous users rights to the forests, and through extensive consultation as well as tangible benefits accruing from employment at Iwokrama, and also in production of NTFP's, the relationship between Iwokrama and the communities has evolved very harmoniously. The production of NTFPs is in large part a result of training by Iwokrama staff through the ITTO project, although as mentioned other donors have also been active.

In response to Iwokrama activities and contact with the local communities, these communities formed a body, the Northern Rupununi District Development Board (NRDDB), in order to speak with one voice vis a vis Iwokrama. This creation of NRDDB can only be described as an unmitigated success. It has improved relationship between the communities and Iwokrama, but also improved the internal organization of the communities themselves, and indeed taken these communities to an entirely new and higher level of development and organization. NRDDB and Iwokrama have a Memorandum of Understanding, and NRDDB is also represented on Iwokrama's International Board of Trustees. Likewise, Iwokrama participates in NRDDB- meetings. Among other achievements, NRDDB has created the Bina Hill Institute, a training institute for both children and adults, and with a wide range of training activities and research. In addition to training in improved agriculture and natural resource management like conservation programmes for important fish species (*Arapaima gigas*), activities also includes revival and research into indigenous languages and culture, and the running of a local radio station which broadcasts both in English and vernacular languages. All these wonderful activities cannot be attributed entirely to the ITTO project, but the project has certainly contributed significantly to such developments.

Output 6.

A Report on Impact Motoring Protocols for the Iwokrama Forest has been finalized, outlining the methodology for establishing permanent sampling plots and a limited number of permanent plots have been chosen for long term monitoring. (Andrew G. Johns February 2003).

However, as no logging has commenced, very little practical activity has started, although during the ex-post evaluation a zoologist who is preparing for monitoring of impacts on wildlife was interviewed.

4.2 Contributions of the project

- Forest policy

The project has had a number of positive effects on the overall understanding of tropical forest management, although actual logging has not taken place. The project, through Iwokrama, has cooperated and continues to cooperate closely with forest authorities in the country (GFC).

The present forest legislation in Guyana dates from 1953, although the country has a newer Forest Policy Statement from 1991 and a National Forest Plan from 2001. The project is in accord with these policy papers. Presently a new Forestry Act has been endorsed by the government, and is expected to be passed by Parliament this year.

There is little doubt that the cooperation between GFC and Iwokrama and the project, and the exposure that forest authorities have had to many innovative approaches in inventory techniques, as well as the principles underlying the forest management plan has had an influence on GFC, and by implication on the new Forestry Act.

The forceful examples that the project has given in following and achieving ITTO Criteria and Indicators as well as the Yokohama Action Plan and Objective 2000 within the project area, undoubtedly has had a positive effect on national forest policies.

- Securing the permanent forest estate

The efforts to define the boundaries of the Iwokrama forest, as well as the massive zoning and other mapping efforts have secured a permanent forest estate in the area. If anything, the work that has gone into these efforts has been exaggerated in order to provide a model for the country or the private concessionaires. Iwokrama has strived to achieve an ideal, and inventories and research has gone far beyond what was needed to define the Sustainable Use Area (SUA) and the net Operable Area (NOA) with forest types, estimates of standing volume and AAC. Particularly, the zoning exercise was overly theoretical and cumbersome, and even the result with the definition of 3 separate Wilderness areas is less than satisfactory from a practical land- use management point of view.

What is needed is in fact a simplified procedure, which can serve as a model for private concessionaires lacking the support of foreign donors.

- Sustained yield

The fact that the project management plan attempts to treat the forest silviculturally as stands through logging of some 25 timber species, represents a drastic departure from standard practices of selective logging in the country. It is expected that this innovative departure will have an impact on official GFC Code of Practice.

Agreement needs to be reached on the Harvesting Planning and the AAC Scenario to be applied during logging. The original Iwokrama Management Plan included in the EIA stipulates an average AAC of 12 m³/ha. The existing GFC guidelines prescribe a max. AAC

of 20 m³/ha., whereas the latest revised Iwokrama Management Plan forecasts an AAC of 22,7 m³/ha gross volume of "perfect " trees.

Growth and yield data for Iwokrama forest itself is lacking, but older inventories from comparable areas in the country and developed by Tropenbos suggest a mean annual growth of 1,5 m³ per ha. With a 60 year cutting cycle this implies an average total production of 90 m³/ha.

With an average of standing volume of commercial perfect trees above 40 cm dbh, in the order of 40 m³/ha, and a cutting cycle of 60 years, an AAC of some 22 m³/ha still represents a timber harvest which respects sustained yield capacity (indeed it is 4 times lower). In the view of this author, even the maximum AAC scenario will leave a very good margin for forest regrowth, and will be conducive to reduced impact logging practices.

The ITI plans to harvest 3 management units during the first year of operation over an area of some 1800 ha with a total of possibly some 40 000 m³, providing the maximum AAC Scenario is chosen.

- Reduced impact logging(RIL)

As for reduced impact logging, no experiences have been done in Iwokrama due to lacking logging operation. However, ITTO has financed a reduced impact logging project in the country, PD 68/01 Rev. 2 (I), with the Forest Training Centre Incorporated (FTCI). Experiences from this project will be applied during the extension of the project, provided the project proposal PD 297/04 will be accepted and funded, as FTCI and Iwokrama hope to have a MOU under the new project PD 297/04 Rev 1. (F).

- Training

Based on the Management Plan, excellent opportunities will thus be offered to apply and monitor reduced impact logging in a realistic commercial logging operation. This of course also includes training of the work force, including the supervisors, and with particular emphasis on involvement by the indigenous communities. A significant number of Iwokrama staff and local stakeholders have already been trained in inventory and other forestry management skills. Such training will be put to a practical test during logging operations.

- Public awareness

Iwokrama has made strenuous efforts to provide material for raising public awareness on SFM in Guyana, basically through the maintenance and updating of an excellent Web- site. It is however not known to this author to what extent the site has been visited. The field station itself has served as a demonstration site through numerous workshops and training sessions that have included local stakeholders, official forestry staff as well as members of the general public. However, the outreach must necessarily be somewhat limited by the remoteness of the field station from major population centres.

- Research

Research has no doubt been Iwokrama's main activity, as an impressive bibliography of some 150 publications bears witness to. Much of this research goes far beyond what is needed and may be expected to run an ordinary forest holding. The gathering of detailed information on all aspects of the forest ecology, including for instance rather esoteric archaeological and herpetological data was by some analysts in Guyana described as going completely overboard, and could only have been realized through the massive support enjoyed by Iwokrama by over 20 international donors, including the ITTO, and also the government of Guyana.

Because of the involvement of so many donors, it is in fact difficult to disentangle the forest research efforts of the ITTO project as distinct from other activities as funds seem to have been pooled from various sources into the same activities.

In the view of this author the main output of the ITTO project has been the Inventory as well as the Feasibility Study for Timber Production and Final Management Plan, all extremely valuable products.

Also design of the impact monitoring protocols are valuable, and will prove useful during logging operations.

- Impact

The project has had a profound impact on the local communities in terms of training and production of NTFP's, including ecotourism. However, as no base line studies had been carried out on the standard of living among the indigenous communities prior to project start-up, it is not possible to ascertain this impact in material terms. This will be rectified during the follow-up project PD 297/04, and the economic benefits accruing from timber production is expected to be high, both in terms of earnings by the labour force as well as the actual share of proceeds assured the indigenous communities through the tripartite contract ITI/Logging Company/Indigenous communities.

There is a risk for the project if there are any further delays the logging operation. The logging for the first years is planned in the Essequibo Compartment of the forest, which corresponds to the community user area of the indigenous community Fairview. The Fairview villagers have also initiated a process to claim this entire area as titled land, and the Minister for Amerindian Affairs seems to be sympathetic to the claim and will apparently pursue the issue. Altogether, the logging needs to get underway soon.

4.3. Overall assessment

- The design and objectives of the project have been appropriate and laudable. The particular feature of making a Demonstration Centre for SFM in the country with application beyond the national borders, and coupled with the ambition to make the Centre economically self sufficient through earnings from the forest is valuable, and represents the link to the follow- up project PD 297/04 Rev. 1(F) which will realize the actual sustainable forest management.
- The efficiency of the project has been less successful in that the original project did not manage to produce inventories and a management plan fit for practical implementation. This however, together with a final feasibility plan for timber production was achieved

during the extension of the project, and without enhancing the budget. But as the planned logging operation did not start during the project implementation period either, not even during the extension, the overall efficiency must be said to have been low. There are good reasons to believe that the low efficiency in part was due to the absence of a full time project coordinator during the initial stages. Only during the extension phase, when efficiency picked up and many planned outputs were achieved, was a full time coordinator in place.

- The project has however been effective in achieving most of its objectives and outputs apart from output 4, the production of timber. In some respects the project has achieved more than it planned for, particularly in relation to involvement by local communities. The greatly enhanced level of organization and training among local communities is in fact an outstanding achievement. The effectiveness as a demonstration model for SFM will be greatly enhanced with the implementation of the management plan and actual logging operations under the PD 297/4. Facilities at the Field Station are excellent and capable of catering for a sizeable number of visitors.
- The management of funds has been correct, and the actual expenditure upon project termination was slightly below the planned amount.

4.4 Recommendations

- As described above, and during a consultancy in 2002, an ITTO consultant, Mr. Kenneth P. Rodney discovered certain shortcomings in the computer software IWOPLAN. This tool which is in itself extremely useful for the modelling of long term sustainable forest management scenarios is only able to generate time-periods of 5 years, whereas yearly harvesting planning is of course desirable. Also, IWOPLAN is not applicable for the entire areas of the NOA, for reasons unknown. There are also other minor shortcomings in the model. To overcome these difficulties and in order to take full advantage of this useful tool, and in the event of acceptance of PD 297/04, it is recommended that a consultancy of one month be offered to the developer of the model, Mr Alder, to rectify deficiencies.
- Already in the proposed PD 297/04 a full time project manager as well as a full time silviculturalist are foreseen. Based on the past experience which proved reduced efficiency due to lack of full time expert staff, these recruitments are deemed crucial for the continuation of the project and are strongly recommended.
- The implications of the land claim made by the indigenous village Fairview claim on the logging activities need to be ironed out in direct negotiations with the Fairview villagers and authorities, and the split of proceeds from the logging needs to be agreed upon. Also, if satisfactory arrangement for logging cannot be reached with a logging company very soon, Iwokrama should explore possibilities to undertake the logging itself.
- As logging activities get under way, Iwokrama will be able to exploit its full capacity in demonstration of sustainable forest management, including reduced impact logging. Therefore closer contacts with concessionaires and the entire private timber sector in the country need to be cultivated.
- In relation to the private sector, the methods used in Iwokrama for development of inventories and management plans are not attractive. Simpler and more cost-effective methods could no doubt be worked out without sacrificing accuracy, and a consultancy should be considered for such an activity. Given the ample existing material, this could be realized as a desk study.
- The only growth models and volume functions that have been applied as basis for the Inventory and Management Plan in Iwokrama Forest use data from other parts of Guyana, although presumably ecologically comparable. However, as silvicultural monitoring will be an important aspect of PD297/04 it is recommended that the basis for development of specific growth and volume functions be established under the project.
- No activities in the Wilderness Preserves have been foreseen in the follow-up project PD 297/04. This is understandable as the project aims to focus on practical activities, like logging and commercialisation of timber. Nevertheless, the planning horizon for Iwokrama includes a first cutting cycle of 60 years, and although nobody can forecast the future, the project aims at a very long term presence in the area. It would therefore be extremely valuable to establish some basic ecological monitoring procedures in the WPs.

- As it is somewhat difficult to distinguish the activities of various projects and donors under Iwokrama, a rationalized bibliography of publications and other reports and outputs should be produced, giving cross- references to donors and projects.

Terms of Reference

Ex-Post Evaluation of ITTO Project PD 10/97 Rev.1 (F)

“A Sustainable Management Model in the Iwokrama Rain Forest”

I. Background

ITTO is an intergovernmental commodity organization established in 1986 to administer the provisions and operation of the International Tropical Timber Agreement (ITTA), particularly in the promotion of international trade in tropical timber, the sustainable management of tropical forests and the development of tropical forest industries through international cooperation, policy work and project activities.

The project that will be the subject of the Ex-post Evaluation is PD 10/97 Rev.1 (F) “A Sustainable Management Model in the Iwokrama Rain Forest”. The background information of the project is provided in Annex to the Terms of Reference.

II. Purpose and Scope of Evaluation

A) Purpose

The primary purpose of the evaluation is to provide a concise diagnosis of the project related to Sustainable Forest Management so as to point out the successful and unsuccessful outcomes, the reasons for successes and failures, and the contribution of the projects towards the achievement of ITTO’s Objective 2000, and to draw lessons that can be used to improve similar projects in the future.

B) Scope of Work

a) Analyze and assess for the project:

- The overall role and contribution of the project in light of sectoral policies, development programmes, priorities and requirements to achieve sustainable forest management in the country concerned.
- The current management status of the forests within the project’s area of influence, the effectiveness of the project’s implementation and its effectiveness in promoting sustainable forest management as defined in the ITTO Guidelines and Criteria and Indicators for Sustainable Forest Management.
- The effectiveness of the project area as a demonstration area or model forest for sustainable forest management.
- The contributions of the specific studies in various disciplines (inventory, ecology, socio-economy, forest engineering, forest industry, silviculture, etc.) prepared by the project to the development of forestry in the project’s area of influence.
- The results and potential impact of the applied research conducted by the project on the application of forest management practices and its contribution to the overall forestry-related knowledge in the region.
- The impact of project activities on the livelihoods of target populations.
- The effectiveness of dissemination of project results.
- The overall post-project situation in the project’s area of influence.

- The unexpected effects and impacts, either harmful or beneficial, and the reasons for their occurrences.
- The cost efficiency in the implementation of the project, including the technical, financial and managerial aspects.
- Follow-up actions in order to enhance uptake of project results.
- The project's relative success or failure, including a summary of the key lessons learnt; and the identification of any issues or problems that should be taken into account in designing and implementing similar projects in the future, particularly as regards the follow-up project PD 297/04 Rev.1 (F) Implementation of the Sustainable Forest Management Programme of the Iwokrama International Centre.

b) Provide a synthesis to:

- assess the overall role and meaningful contribution of the project in achieving sustainable forest management in tropical timber producing countries taking into account ITTO's objectives, Yokohama Action Plan and Objective 2000, in particular as regards the implementation of priority actions identified by the ITTO as essential for progress towards the Objective 2000, as follows:
 - Adopt a forest policy and apply legislation;
 - Secure the permanent forest estate;
 - Apply reduced impact logging;
 - Train the work force, including supervisors, in reduced impact logging;
 - Limit timber harvest to the sustained yield capacity;
 - Raise public awareness that timber harvesting can be consistent with the sustainability of tropical forests; and
 - Focus forest research on the analysis and use of existing data and knowledge.
- assess the overall appropriateness of the design and objectives, outputs and implementation approach of the project in light of its efficiency and effectiveness to assist promoting sustainable forest management and to contribute to achieve Objective 2000, and its linkages with the follow-up project PD 297/04 Rev.1 (F) Implementation of the Sustainable Forest Management Programme of the Iwokrama International Centre.
- evaluate the overall impact on and relevance of the project for the Executing Agency, the forest industry sector and local communities being served and the country concerned.
- evaluate the overall attainment of the objectives and to assess the overall effectiveness of the project.
- evaluate the overall effectiveness of the project as a model or demonstration area for sustainable forest management.
- evaluate the overall appropriateness of the costs and cost structure and use of resources within the project.

And make recommendations on:

- the needs for similar projects in the future.
- the objectives of such future projects.
- innovative approaches/designs for projects aiming at promoting sustainable forest management in the tropics.
- the effectiveness of IWOKRAMA's approach to promoting sustainable forest management.
- appropriate target groups, e.g. countries, government, organizations, forestry sector, local communities.

- the organizational arrangements of the project.
- follow-up and evaluation practices, including the second phase to PD 10/97 Rev.1 (F) i.e. project proposal PD 297/04 Rev.1 (F) Implementation of the Sustainable Forest Management Programme of the Iwokrama International Centre.
- supplemental, alternative activities, processes, procedures, and/or follow-up programmes in the field of Sustainable Forest Management, if appropriate.
- further actions needed to sustain or increase the intended effects on sustainable forest management and Objective 2000 and to draw conclusions which may be of relevance to other ITTO projects in the field of sustainable forest management.

III. Approach

A) Evaluation Consultant

The evaluation will be carried out by one consultant who will be responsible for the final report and the presentation of the results at the Thirty-eighth Council Session in Brazzaville, Congo in June 2005.

B) Consultation during evaluation exercise

The consultant will maintain close liaison with ITTO and will carry out the work in close cooperation with the concerned Executing Agency and Government in the country concerned. Although the consultant should feel free to discuss with the authorities concerned all matters relevant to the assignment, he/she is not authorized to make any commitments on behalf of ITTO.

C) Activities and report of the consultant

The work required in this evaluation will consist of:

Desk review of project-related documents and materials provided by ITTO.

Mission in Guyana. The consultant will visit the project's Executing Agency headquarters for a further desk review of project materials and to carry out evaluation work in collaboration with the Executing Agency. The mission shall also include a field visit to the project's area of influence to review field implementation and to evaluate the project results and impact, and should include discussions with project stakeholders and target beneficiaries. A minimum of six working days is required for this project.

Preparation of an Ex-post Evaluation Report for the project in accordance with the Scope of Work and the checklist contained in the ITTO Manual for Project Monitoring, Review and Evaluation. The report should be in English

Preparation of a synthesis report [see b) Scope of Work] of the ex-post evaluation report in English, focusing on the overall assessment of the project's relative success in contributing to ITTO's Objectives, the Objective 2000 and the ITTO Yokohama Action Plan 2002-2006, summarizing the key lessons learnt; and identifying any issues or problems which constrained their contribution to the achievement of Objective 2000.

Presentation of the synthesis report (to be called: Executive Summary) at the Thirty-eighth Council Session in Brazzaville, Congo in June 2005.

Preparation of an article for possible publication in the ITTO Tropical Forest Update (TFU), in consultation with the editor, containing an overview of the project and summarizing the

lessons learned from the evaluation work. Appropriate high-resolution photographs should be provided.

In writing the Ex-post Evaluation report, the consultant will have the opportunity to discuss its preliminary findings, conclusions and recommendations with the representatives of the Executing Agency, Government and ITTO before the final version of the report is made. Responsibility for the final content of the report, however, remains with the consultant.

Duration of the assignment

The duration of the assignment will be one month Total travel time, including the final presentation in Congo should not exceed fifteen days. The remaining time will be used for preparation of the evaluation and report writing.

Proposed Work Schedule

- 1 April -
30 April 2005 Desk and field studies
- 15 May 2005 Submission of draft reports to ITTO and to the Project Executing Agency for comments and suggestions.
- 31 May 2005 Submission of the final ex-post evaluation report and the executive summary to ITTO.
- 22-23 June 2005 Submission and presentation of the Final Report at the Thirty-sixth Session of the Committee on Reforestation and Forest Management during the Thirty-eighth Council Session in Brazzaville, Congo.

Persons met

Dr. David A. Singh	Director General, Iwokrama
Kenneth P. Rodney	Iwokrama Forest Manager
Dane Gobin	Iwokrama Director
Roxroy Bollers	Computer specialist, Iwokrama
Vanda Radzig	Sociologist
Emily Allicock	Administrator, Bina Hill Institute
Alfonso Forde	Tourism coordinator, Bina Hill
Rodney Davis	Executive Director, North Rupununi District Development Board (NRDDB)
Norbert Salti	Announcer, Radio Paiwomak, Bina Hill
Ben Biggs	Volunteer, Bina Hill
Ben Colman	-" -"
John Van't Slot	-" -"
Benita Roberts	Makushi Research Unit, Bina Hill
Lucilla Singh	-" -"
Colin Jacobus	Forest Ranger
Gary Sway	Tour Guide, Canopy walkway
Majodin Jamir	Driver, Iwokrama
Jean Anton	Farview villager
Albertino Peters	-"
Bradford Allicock	-"
Ethel Andrés	-"
Frank Clarke	Volunteer, Zoologist, Iwokrama
Sidney Allicock	NRDDB Board member, Head of Bina Hill
Carolyn Rodriguez	Minister of Amerindian Affairs, Board Member NRDDB
James Singh	Head of Guyana Forestry Commission(GFC) Member of Iwokrama/ITTO Project Steering Committee
Mona Bynoe	Forest Producers Association, Steering Committee
Clayton Hall	Director, Conservation International, Guyana, Steering Committee
Phillip Da Silva	Dean, Faculty of Natural Sciences, University of Guyana, Steering Committee
Lawrence Lewis	Faculty of Forestry, University of Guyana, Steering Committee
Godfrey Marshall	Director, Forestry Training Centre Inc, Steering Committee

Literature consulted

Gov. of Guyana

The Iwokrama Act (1996)

Iwokrama

Preliminary Report on Discussions with
North Rupununi Communities (1996)

David S. Hammond & David A Hugell

Policy and Planning Brief- Zoning the Iwokrama Forest (June 2001)

David S. Hammond & David A. Hughall

Zoning the Forest (December 2001)

Denis Alder

Design and Implications of a Decision- Support System
for Planning Timber and Non- Timber Production
in the Iwokrama Forest. ITTO (9. August 2001)

Denis Alder

IWOPLAN User's Guide and Technical manual (20 August 2002)

Iwokrama

Report of the SUA Planning Management Team Meeting no 3 (7- 9 august 2001)

LTS International

Iwokrama Timber Forest Marketing Study. Final Report (October 2001) Includes 1.st quasi
feasibility study.

David Hammond

The Feasibility of Non- Timber Forest Plant Product Business Development
at Iwokrama. DFID/ITTO (June 2002)

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Report of the SUS Planning Management Team Meeting no 4 (12-14 January 2002)

URS

Non- Timber Forest Products Marketing Feasibility Study. ITTO. (February 2002)

Iwokrama

Progress Report (February 2002)

Joel Strong

Phenology Monitoring Report (March 2002)

Kenneth P. Rodney

ITTO Consultancy Report (Nov 2002)

Iwokrama
Draft Report of the Inaugural SUA
Planning Management Team meeting (18- 21 October 2002)

D. Hammond
The Feasibility of Wood Products Business Development
at Iwokrama (Sept 2001-2002)

Iwokrama
PD 10/97 Rev. 1 (F) Workplan (March 1 – June 30 2003)
-"- (July 1- Sept. 2003

Andrew G. Jones
Impact Monitoring Protocols for the Iwokrama Forest (February 2003)

Iwokrama
Extension of PD 10/97 Rev. 1 (March 2003)

Kenneth P. Rodney
Project Completion Report (April 2003)

Kenneth P. Rodney
SUA Management Level Inventory Report (July 2003)

Iwokrama
Progress Report (Extension) July 2003
-"- October 2003

Kenneth P. Rodney
Technical Feasibility Report ITTO. (August 2003) The 2.nd feasibility Report Deliverable
under the extension.

Kenneth P. Rodney
Sustainable Forest Management Plan. Draft 1. (September 2003)
Deliverable under Extension.

Peter Drake & associates
• Iwokrama Sawmill Market Research (Sept. 2003)
• Final Market Report (Sept 2003)

Minutes of the 4'the Meeting of the
Project Steering (Technical) Committee (02. October 2003)

CEA limited, Nova Scotia (December 2004)
Sustainable Timber Harvesting in the Iwokrama Forest in Guyana. December 2004)
Volume I Environmental Impact Statement
-"- II Environmental Baseline and Assessment
-"- III Environmental & Forest Management Plan (Final Version)

ITTO Project Proposal
PD 297/04 Rev 1. (F)
Implementation of Sustainable Forest Management in Iwokrama Forest (2004)