Conservation and Sustainable Use of Tropical Peat Swamp Forests and Associated Wetland Ecosystems

Government of Malaysia and UNDP/GEF Project

Terminal Evaluation Report

UNDP

GEF

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PROJECT IDENTIFICATION

Title	:	Conservation and Sustainable Use of Tropical Peat Swamp Forests and Associated Wetland Ecosystems
Project Number	:	MAL/99/G31
Executing Agency	:	Ministry of Natural Resources and Environment (NRE) Government of Malaysia
Implementing Agency	:	Forest Research Institute of Malaysia
Duration	:	Five (5) years, starting 11 June 2002
Expected End	:	December 2008 (extended with the endorsement of the National Steering Committee)
Project Sites	:	Loagan Bunut National Park (Sarawak); Klias Peninsula (Sabah); and South-East Pahang Peat Swamp Forest (Peninsular Malaysia)
Project Costs	:	TOTAL USD 13,665,000
UNDP/GEF	:	USD 5,985,000
Government	:	USD 5,280,000
Danida	:	USD 1,600,000
Netherlands	:	USD 800,000

LIST OF ABBREVIATIONS

APR	Annual Project Report
CBD	Convention on Biological Diversity
CBO	Community-based Organisation
CLG	Community Liaison Group
Danida	Danish International Development Agency
DFO	District Forest Officer
DID	Department of Irrigation and Drainage
DO	District Officer
DOE	Department of Environment
ECOSAN	Ecological Sanitation
EE	Environment Education
EIA	Environmental Impact Assessment
ELP	Environmental Local Planning
EMS	Ecological Monitoring System
ENSEARCH	Environmental Management and Research Association of Malaysia
EPU	Economic Planning Unit
ESA	Environmentally Sensitive Area
FD	Forestry Department
FIBA	Forest Inventory and Biodiversity Assessment
FMP	Forest Management Plan
FR	Forest Reserve
FRIM	Forest Research Institute Malaysia
GEC	Global Environment Centre
GEF	Global Environment Facility
GIS	Geographic Information System
HG	Heritage Garden
IBSE	Integrated Biophysical and Socio-economic Database
IDMS	Integrated Database Management System
IK	Indigenous Knowledge
IMP	Integrated Management Plan
INWQS	Malaysia Interim National Water Quality Standard
IPPA	Identification of Potential Protected Areas
IR	Inception Report
JHEOA	Jabatan Hal Ehwal Orang Asli
JKKK	(Jawatankuasa Kemajuan dan Keselamatan Kampung) Village Development and Security Committee
JPBD	Jabatan Perancang Bandar dan Desa (Town and Country Planning Department)
JPSM	Jabatan Perhutanan Semenanjung Malaysia (Forestry Department Peninsular Malaysia)

KPA	Kelab Pencinta Alam / Nature Clubs
KSAS	Kawasan Sensitif Alam Sekitar
LBNP	Loagan Bunut National Park
LBSE04	Loagan Bunut Scientific Expedition 2004
MAI	Mean Annual Increment
MC&I	Malaysian Criteria and Indicators
MCL	Maximum Concentration Limit
MDA	Multi-Disciplinary Assessment
MDF	Mixed Dipterocarp Forest
MNS	Malaysian Nature Society
MOU	Memorandum of Understanding
MPCT	Management Plan Core Team
MTR	Mid-term Review
NCR	Native Customary Right
NGO	Non-governmental Organisation
NIT	Nature Interpretation Trail
NPDWR	National Primary Drinking Water Regulation
NPP	National Physical Plan
NRE	Natural Resources and Environment
NREB	Natural Resources and Environment Board (Sarawak)
NSC	National Steering Committee
NTFP	Non-timber Forest Product
PA	Protected Area
PACOS	Partners of Community Organisations Trust
PALS	Environmental Awareness Club
PERHILITAN	Department of Wildlife and National Parks
PIR	Project Implementation Review
PRA	Participatory Rural Appraisal
PSF	Peat Swamp Forest
PTR	Project Terminal Report
Rh.	Rumah / Longhouse
RIH	Reduced Impact Harvesting
SEPPSF	South-East Pahang Peat Swamp Forest
SFC	Sarawak Forestry Corporation
SFM	Sustainable Forest Management
Sg.	Sungai (river)
SGP PTF	Small Grants Programme for Operations to Promote Tropical Forests
SOP	Standard Operating Procedures
SPNS	Sinui Pai Nanek Sengik
SPSC	State Project Steering Committee
SPU	State Planning Unit (Sarawak)

TE	Terminal Evaluation
TPA	Totally Protected Area
UKM	Universiti Kebangsaan Malaysia
UMS	Universiti Malaysia Sabah
UNDP	United Nations Development Programme
UNIMAS	Universiti Malaysia Sarawak
UPM	Universiti Putra Malaysia
USM	Universiti Sains Malaysia
WMC	Wetland Management Committee
WWF	Worldwide Fund for Nature

EXECUTIVE SUMMARY

The Government of Malaysia, with the assistance from the United Nations Development Programme (UNDP) and the Global Environment Facility (GEF), has implemented the project Conservation and Sustainable Use of Tropical Peat Swamp Forests and Associated Wetland Ecosystems (Project MAL/99/G31). The project's primary objective was to develop and implement plans for respective sites, encouraging processes to ensure the conservation and sustainable use of globally significant biological diversity, and contribute towards better understanding of peat swamp forests in Malaysia as well as the region. Three project sites were selected based on the importance of their diverse and threatened species:

- Loagan Bunut National Park (LBNP) in Sarawak,
- Klias Peninsula in Sabah,
- South-East Pahang Peat Swamp Forest (SEPPSF) in Pahang.

The project has been effective in creating a more positive attitude towards the conservation and sustainable use of biodiversity in some of the main Peat Swamp Forest (PSF) areas of Malaysia. The project has created a better understanding of the ecology and economy of PSF for both local communities and government agencies. The development of integrated management plans (IMP) has been essential to shift the management focus at the sites from the sole consideration of timber harvesting to the more holistic ecosystem approach. At the national level the project has contributed to the implementation of the Biodiversity Action Plan of Malaysia and the National Wetlands Plan, and has supported the implementation of the Convention on Biological Diversity and the Ramsar Convention in Malaysia.

Project formulation was appropriate. Key stakeholders participated during its formulation and there was good technical and financial support from the Government through FRIM, the Forestry Departments and Ministry of Natural Resources and the Environment. The project has used the logical framework approach in planning and implementation stages, as reflected in the Inception Report and the Annual Reports. Work was carried out as scheduled. All parties involved in the project, especially principle stakeholders, have regularly updated their work plans to suite current and emerging needs and ongoing development related to the project.

Overall, project implementation at the site level was satisfactory to highly satisfactory. However, the effectiveness of the implementation of data collection and monitoring was regarded as moderately unsatisfactory as the Integrated Database Management (IDBM) system is currently not operational at all sites.

- Data collection and monitoring programmes were implemented as planned. Multi-Disciplinary Assessment (MDA's) have been organized at all three sites. Most data seems to have been placed in a GIS database. The Standard Operational Procedures (SOP) were tested in the field between January-June 2008. Unfortunately at neither of the three sites the IDBM system was operational during the time of the field visit of the Terminal Evaluation (TE) team.
- Integrated Management Plans (IMP) have been developed in a participatory way using core teams composed of the relevant stakeholders. During this lengthy (nearly 2 years) multi-stakeholder process IMPs were developed following an ecosystem approach which ensured that all relevant components (ecological, socio-economic, spatial etc.) have been considered.
- At each site a range of management actions have been implemented, ranging from stimulating fish cage culture, rehabilitation trials, optimum forest harvesting rules in peat swamp forests.
- Management Plan Core Teams (MPCT) were established at all thee sites. Wetland Management Committee's (WMC) were established in Pahang and Sabah.
- Awareness programmes were conducted and project publications were widely disseminated in print and in the electronic media.
- Training courses have enhanced the institutional and human capacities of involved agencies at all sites.

Project management has been highly efficient. The State Project Steering Committees (SPSCs) in the three states have been working well with regular meetings. The project's monitoring and evaluation system is regarded as highly satisfactory. It enabled good tracking of progress towards project objectives. Recommendations based on the mid-term evaluation of the project were generally well adhered to.

The project is likely to have long-term impacts as it provides an example of how sustainable forest management (SFM) practices can be strengthened and demonstrated.

- At all three sites more detailed information about the flora and fauna became available through inventory and assessments that formed part of the multi-disciplinary assessments (MDA) at each project site. The participatory rural appraisal (PRA) enabled local communities to become more aware of the importance of biodiversity conservation.
- Ownership of the IMPs is strong which could well be the result of the interactive approach used to develop these plans. The IMPs were endorsed by the respective State authorities in 2007. In Pahang a core zone for conservation of biodiversity was identified which will not be harvested which is compatible with sustainable forest management (SFM) requirements. In Sarawak the IMP provides opportunities for a possible extension of a buffer area to the north of Loagan Bunut NP. In Sabah the KLIAS forest reserve area was extended to the Bukau Api-Api area.

- At all sites Integrated Management Plans (IMP) have been formulated. The presence of local communities dependent on continuing sustainable use of the areas were realistically acknowledged and factored into the IMPs to ensure positive co-existence of the biodiversity conservation areas and local communities.
- The establishment of Wetland Management Committee's (WMC) is considered a useful and necessary step in ensuring continued inter-agency network and effective implementation of the developed IMPs. Also the development of the MPCT's for the IMP development has led to better inter-agency level communication.
- Generally the project has contributed to a more positive attitude towards conservation of biodiversity in the Forest Department in all three states. Awareness programmes were conducted at all sites and the publications produced were widely disseminated in the print and electronic media. Much is available about the outputs from the project where lists of its activities, training courses, partners, publications etc have been published on the website of the project.
- A large number of staff from involved agencies as well as local communities received some form of training. The TE team did observed well trained staff, especially at Loagan Bunut NP and Klias.

Preliminary results show that the project has been meaningful and important to the nation. Project ownership in all sites is generally strong, although it seems strongest at Loagan Bunut NP and Klias. In Pahang PSF, on the other hand, the establishment of Wetland Management Committee (WMC) could help to improve ownership. To ensure a long run impact, it is important to maintain, at least in the near future, most institutional arrangements and enhanced capacity.

The main recommendations of the terminal evaluation are:

1. The parties involved in the project (EPU, MONRE/FRIM, UNDP) should collaborate to initiate the establishment of the trust fund for sustainable management and conservation of all threatened peat swamp forests sites in Malaysia.
2. In order to ensure sustainable management and continued implementation of the IMPs at all three sites ownership is needed by the respective states. The national wetland policy of NRE could support this through liberation of resources and maintained support.
3. Ecological monitoring should be incorporated as a standard operational procedure (SOP) in the forest departments in Pahang, Sabah and Sarawak. The IMS should be made a standard Forestry Department software package and be implemented by the GIS sections in each Forestry Department. FRIM and the Forest Research Divisions at Sarawak and Sabah should provide technical support in implementation of both the SOP and IMS.

4. Access to Loagan Bunut NP should be seriously addressed and improved. We recommend stronger action in addressing erosion problems with plantation establishment and forestry activities in the areas surrounding Loagan Bunut NP to stop sedimentation of the lake.
5. The market for voluntary carbon-offset programme should be further investigated. The funds can be used to further improve management at all three project sites.
6. The developed capacity and information on PSF currently being kept at FRIM UNDP office should be safeguarded for future use.

1 INTRODUCTION

The Government of Malaysia, with the assistance from the United Nations Development Programme and the Global Environment Facility (UNDP/GEF), implemented the project Conservation and Sustainable Use of Tropical Peat Swamp Forests and Associated Wetland Ecosystems (Project MAL/99/G31) to promote the conservation and sustainable use of peat swamp forests (PSF). The project's primary objective is to develop and implement plans, which encourage processes to ensure the conservation and sustainable use of globally significant genetic, species, and ecosystem diversity within these forests.

The project sites—the Loagan Bunut National Park (LBNP) in Sarawak, the Klias Peninsula in Sabah, and the South-East Pahang Peat Swamp Forest (SEPPSF) in Pahang—were selected based on the importance of their diverse and threatened species. The three sites also serve as representative examples of Malaysian PSFs, and collectively, they support at least 60 globally significant species of plants and animals. Apart from being ecologically important, they are also of economic significance as they harbour high quality timber species, provide many non-timber forest species for local use, support fisheries, provide drinking water, mitigate floodwaters and help maintain water levels in rivers and streams. Increasingly, they are also becoming important for ecotourism, recreation and as sites for research on ecosystem services.

This terminal evaluation of the Project reviews the implementation experience and achievement of results of the project against the project objectives as endorsed by GEF, including changes agreed during implementation. It includes an assessment of the achievement of the project in terms of global environmental benefits and lessons learned that can guide future conservation efforts. The extent to which planned project outcomes and outputs have been achieved, their relevance, effectiveness and efficiency were also assessed. The detailed objectives and scope of the evaluation is given in Annex 1.

After describing the project and its development context this report gives its main findings and conclusions with regard to project formulation, its implementation, achieved outputs, impacts and sustainability of the processes initiated during the project towards the conservation and management of biodiversity and peat swamp resources in the project sites. Also evaluated are the responses of the project to the recommendations of the mid-term review and ratings are given for the key review criteria. The report ends with a list of recommendations and lessons learned from the project.

2 THE PROJECT AND ITS DEVELOPMENT CONTEXT

The largest tracts of the world's tropical Peat Swamp Forests (PSFs) are found in Southeast Asia, pre-dominantly in Malaysia and Indonesia. They support many specialized flora and fauna species and are often the last refuge for lowland species. Over the past two decades PSF ecosystems have increasingly been threatened by development pressures. Large areas of PSF have already been lost due to drainage, timber extraction, land conversion, fires and poaching of wildlife. Actions are urgently required to prevent the PSFs from being lost altogether.

In response, the Government of Malaysia, with the assistance from the United Nations Development Programme (UNDP) and the Global Environment Facility (GEF), has been implementing the project on Conservation and Sustainable Use of Tropical Peat Swamp Forests and Associated Wetland Ecosystems to help safeguard the country's remaining tropical PSFs.

The project's main objective was to develop and implement plans that will strongly contribute to the conservation and sustainable use of these forests. The project design was guided by two main policies that provide the framework for PSF management and conservation in Malaysia, namely the National Policy on Biological Biodiversity (NPBD, 1998) and the National Forestry Policy (NFP, 1978; revised 1992). The project was expected to contribute to the implementation of the Biodiversity Action Plan of Malaysia and the National Wetlands Plan by demonstrating conservation and sustainable management of PSFs. The project was also designed to support the implementation of the Convention on Biological Diversity and the RAMSAR Convention in Malaysia.

Technically, the project began in 2001 involving the Ministry of Science, Technology and Environment (MOSTE) as the recipient of the PDF-B grant, Ministry of Primary Industries (MPI) as Executive Agency, and the Regional Centre for Forest Management (FCFM) as Implementing Agency. Later, following various institutional changes in 2002, the Ministry of Natural Resources and Environment (MNRE) was appointed as the Executive Agency, and Forest Research Institute Malaysia (FRIM) became the designated Implementing Agency. In demonstrating the project, three sites harbouring the largest remaining areas of this habitat type in the country have been chosen: the Loagan Bunut National Park (LBNP) in Sarawak, the Klias FR at Klias Peninsula in Sabah, and the South-East Pahang Peat Swamp Forest (SEPPSF) in Pahang.

The project has been important to the development of the country. Ecologically, it has been important for the conservation of biodiversity. For example, the Klias Peninsula has increasingly become a sanctuary for several species of monkeys, hornbills and other species. In addition, the

awareness programme initiated through various channels has had an important impact on the conservation efforts. Apart from being ecologically important, the project also had an important economic significance; it helped to materialize the reforestation of high quality timber species, as well as non-timber forest species for local use. The project did support fisheries and provided drinking water, mitigated floodwaters and helped to maintain water levels in rivers and streams. It has also been important for ecotourism, recreation, and research purposes. In conclusion, the implementation of this project has encouraged stakeholders and state agencies to fulfil their responsibility in developing various facilities and in providing other support systems.

3 FINDINGS AND CONCLUSIONS

3.1 Project formulation

The project is appropriately formulated. Key stakeholders participated during its formulation and there was good technical and financial support from the Government through FRIM, the Forestry Departments and Ministry of Natural Resources and the Environment. Despite differences (extent/size, harvesting regime, land-use status, threats) between project sites a unified project planning approach was adopted and an overall operational framework developed (Fig 1 page 17 PTR, 2008). This involved the conduct of individual multidisciplinary assessments (MDA) at each project site, followed by detailed assessments as necessary. Additional assessments were undertaken to fill in any gaps identified in the range of data, the development of the integrated management plans and the information management system.

As noted in the Mid-term Review (MTR) report, the project design is adequate at a macro (output) level, but there were shortcomings in the formulation of the activities to achieve each output (examples are given in the MTR). These were however rectified in response to the MTR (see section 3.5). In addition one-off biodiversity surveys at specific localities do not provide an overall picture and level of detail of the spatial and temporal variability required to properly develop biodiversity management plans. However, inventories of timber species were of sufficient detail at all sites to justify the development of zonation plans, predominantly based on the dominant timber species in any one zone.

The inclusion of an information management system (IMS) as a tool to aid management decision-making in the project was an essential step towards achieving the objectives of long-term monitoring and management of PSFs for biodiversity and environmental conservation. The success of any ecological monitoring system (EMS) is however dependent on sustaining the long-term data collection and processing activities that would enable the tool to be used with accuracy. The plan to incorporate the EMS as standard operating procedures (SOP) of the forestry departments at each site was a far-sighted move.

The development of integrated management plans (IMP) for each project site was essential to shift the management focus at the sites from the sole consideration of timber harvesting to the more holistic approach of ecosystem management that took into account the hydrology, biodiversity and ecosystem services at each PSF. The approach adopted to develop these IMPs required all stakeholder participation with the forest department taking the lead. This enabled the

plan to be owned by the stakeholders, an important factor in the success of many management plans.

Outreach and awareness programmes were formulated along with training courses/workshops and field visits to other PSF sites from the onset of the project. This was a good strategy to demonstrate the project to a large number of individuals and local communities, as well as to the technical staff of the relevant government agency. While these activities increased awareness and technical capacity, the project did not (or could not) demonstrate biodiversity conservation in a direct way.

The establishment of Project Management Core Teams (PMCT) for the preparation of the IMPs provided the opportunity for inter-agency cooperation during the early stages of the project. The State Planning Unit has traditionally provided the platform for inter-agency interaction and this is the forum for collaborative decision-making involving the agencies. The establishment of the State Wetlands Management Committees in Pahang and Sabah, provide the basis of longer-term inter-agency collaboration.

The design of the capacity building (institutional and human) was comprehensive and many training courses were implemented. There was however little direct evidence that the capacity will be used for the management of the PSFs in future with the possible exception of the PSF in Loagan Bunut.

3.2 Implementation

3.2.1 Approach

The project has used the logical framework approach in planning and implementation stages, as reflected in the Inception Report and the Annual Reports. Work was carried out as scheduled. All parties involved in the project, especially principle stakeholders, have regularly updated their work plans to suite current and emerging needs and ongoing development related to the project. In all stages, i.e. planning, implementation and monitoring the project, all agencies were generally in a good relationship and understanding with one another. They mostly worked as a team, shared problems and issues, and looked for solutions. In addition to commitments given by all stakeholders, there was also experienced and qualified staff to run the project.

3.2.2 Achievements

Project management has been highly efficient. The State Project Steering Committees (SPSCs) in the three states have been working well with regular meetings. Coordination between National Project Director and CTA has been satisfactorily, as well as coordination between CTA and NEs. There appeared to be good sharing of information between the various project sites. Throughout the project Annual Performance Reports (APR)/Project Implementation Review (PIR) have been prepared following UNDP-GEF requirements. The PIRs seemed to have been an objective and standardized way of getting a good overview of the projects delivery rate. The UNDP country representative had regular meetings with project management (CTA) to discuss project progress and delivery rate as provided by the PIRs.

The project achieved most of its outcomes despite the occurrence of several challenges in the course of the project. The most important challenges are mentioned in the MTR (e.g. changes in project organization, maintaining commitment, monitoring & evaluation, inter-agency cooperation). The evaluation team was informed about some additional challenges during the second part of the project, most notably relating to NCR issues at Loagan Bunut (use of modern, unsustainable fishing techniques), the flooding responsibility issue at KLIAS, and the establishment of the Sabah Wetland Management Committee (which took more time than anticipated). The evaluation team is of the opinion that project management has responded adequately to these challenges, and although some challenges may have slowed down and complicated project progress none of them has caused a major upset of the project (see also Project Terminal Report, chapter VI).

Below we will elaborate on project implementation at the site level, following the 6 anticipated outcomes of the project. Due to the very limited time at each site it is unfortunately not possible to give very detailed observations here. A ranking for relevance, efficiency, and effectiveness of the project implementation in relation to the 6 outputs of the project is given in Table 1.

Outcome 1. Data Collection & Monitoring Programme

At all three sites (Loagan Bunut, Klias, SEPPSF) the MDA and additional habitat/species distribution surveys have been concluded leading to detailed information on the bio-physical environment. Hydrological assessments have been done and soils maps and land-use maps have been produced. A demographic & socio-economic evaluation of the areas and the surrounding areas and villages has been made for all three sites. In SEPPSF a timber resource assessment was made as well. Detailed ecological monitoring programs have been designed and are documented extensively in the IMPs of the three sites. The Standard Operational Procedures (SOP) were tested in the field between January-June 2008. Staff was being recruited and trained at Loagan Bunut and Klias. In SEPPSF FRIM is assisting with setting up monitoring plots. Unfortunately at neither of the three sites the IDBM system was operational during the time of the

field visit of the TE team and thus it could not be verified to what extent (1) monitoring had taken place and (2) whether survey data had been entered in the IDMS/EMS system.

Outcome 2. Well-formulated site management plans.
At all three sites IMPs have been developed in a participatory way using core teams composed of the relevant stakeholders. During this lengthy (nearly 2 years) multi-stakeholder process IMPs were developed following an ecosystem approach which ensured that all relevant components (ecological, socio-economic, spatial etc.) have been considered. The participatory approach which was used during the IMP formulation has created a sense of ownership of the plan among the stakeholders (this is in contrast to management plans compiled by individual resource persons). The involvement of the state agencies facilitated the implementation of management actions in favour of PSF conservation prior to the formal adoption of the IMPs by the state governments. To what extent it will influence the state decision-making authorities however remains to be seen.

Outcome 3: Demonstration of conservation, management and sustainable use of PSF
In LBNP a number of new staff has been recruited to ensure implementation of EMS. Research facilities have been developed, some times in combination with tourist facilities (e.g. hydrological trial) and there is potential to further develop the burial sites, but this remains marginal and will probably never attract large number of tourists. There seems to be good communications between park management and local Iban and Berawan communities. Some small additional projects have been established (fruit trees, fish-ponds etc.).

At Klias FR the Conservation Plan prescribed 26 measures to mitigate the identified threats. Zoning has been developed. The forest rehabilitation trials have been established with several local species and are ongoing. Canal blocking has been implemented, and local people have been involved in the implementation of several activities such as seed collection and setting up nurseries.

In SEPPSF the IMP lists 53 management actions. In the terminal report a selection of 25 actions which have been initiated is described. Some of these actions however were observed to have been somewhat problematic during a short field visit of the evaluation team. For instance the rehabilitation trials were not successful and have been replanted. A proper analysis of local circumstance could have avoided the failure of Ramin plantings. The fish cage culture at Sungai Bebar and the Heritage Garden at Kg. Simpai were observed to have stopped functioning during the time of the field visit (25 Nov 2008). The FRIM guideline for optimum harvest rules have been applied, based on preliminary guidelines which are still being completed.

Outcome 4: Network of inter-agency at the state level

The establishment and functioning of the management plan core teams (MPCT) for the development of the IMPs has been successfully implemented. The core teams were composed of all relevant stakeholders although it was observed that NGO's had a minimal representation. A Wetland Management Committee's (WMC) has been established in Pahang. In Sarawak there was already an active WMC. In Sabah an agreement has been made by the Water Resource Council for the establishment of a WMC in the near future. In general the approach chosen to improve inter-agency networking is considered to be successful. There were also additional benefits like increased training level and capacities of agencies involved.

Outcome 5: Enhanced stakeholders awareness on PSF conservation

Wide ranges of awareness raising campaigns and activities have been conducted by the project. A large number of media events were organized at local, state, national and international levels. The project has yielded an impressive number of publications which are generally of good quality and sound lay-out. An active media approach seemed to have been successful. Several scientific workshops were held as well. In this respect the number of interactions with private industries and plantations could have been more substantial. The number of scientific publications is somewhat limited in comparison to the number of popular publications.

Outcome 6: Enhanced institutional and human capacities

Training needs assessments were carried out in each State during the early stages of the project. A wide range of trainings were given addressing various relevant themes which were all directly related to peat swamp forest conservation and use. Trainings were given at various levels, focusing on various stakeholder groups, ranging from forest departments, private industries, and local communities. The trainings were given by relevant institutions and (international) consultants. A large number of participants have been involved in the training sessions. The syllabus developed for PSF national training was used as training for the core teams involved in the development of the IMPs.

Table 1. Ranking for relevance, efficiency, and effectiveness of the project implementation in relation to the 6 outputs of the project.

Project Objectives and Outcomes	*Relevance*	*Efficiency*	*Effectiveness*
Objective 1: To demonstrate the necessary steps in planning for biodiversity conservation and sustainable resource utilisation in peat swamp forests			
■ ***Output 1:*** Data collection and setting up of a monitoring programme and information management system to facilitate management and decision-making.	Highly satisfactory	Satisfactory	Moderately unsatisfactory (system currently not operational at all sites)
■ ***Output 2:*** Well-formulated site management plans, addressing issues such as biodiversity, physical functions and sustainable use.	Highly satisfactory	Satisfactory	Highly satisfactory
Objective 2: To demonstrate the implementation of biodiversity conservation and sustainable resource utilization strategies in peat swamp forests			
■ ***Output 3:*** Conservation and sustainable use of PSF ecosystem resources and functions demonstrated.	Highly satisfactory	Highly satisfactory	Highly satisfactory (from publications produced and disseminated)
■ ***Output 4:*** Inter-agency networks at state level to integrate biodiversity overlays into development planning on peatlands	Satisfactory	Satisfactory	Satisfactory
Objective 3: To strengthen institutional and human technical capacities and awareness			
■ ***Output 5:*** Decision-makers, communities and other stakeholders better aware of the importance of conserving peat swamp forests and associated wetland ecosystems.	Highly satisfactory	Satisfactory	Satisfactory
■ ***Output 6:*** Strengthened institutional and human capacities to conserve and sustainably manage biological diversity in peat swamp forests and associated wetland ecosystems	Highly satisfactory	Satisfactory	Satisfactory

3.2.3 Financial assessment

The financial arrangements for the project worked well. The total contribution committed by the UNDP/GEF amounted to USD 5.985 million for the five-year implementation (Inception Report). Non-GEF international financing amounted to USD 2.4 million while the Government of Malaysia including the state governments provided USD 5.339 million in financial support and an estimated USD 4.389 million of in-kind support.

The largest project expenditure was on project management which included remunerations for consultant and project staff, as well as meeting and travel costs. In terms of the substantive outputs of the project the largest expenditure item is on Output 1 Data Collection and Monitoring System, followed by Output 5 Awareness Raising Programme, Output 2 Development of Management Plan, Output 6 Strengthening of Institutional And Human Capacities, and Output 3 Demonstration of Biodiversity Conservation. Expenditure was the least on Output 4 Inter-agency Networking.

Annual Project Accounts (year ending 2002 – 2006 seen) were audited by the Auditor General of Malaysia according to the Audit Act 1957 Approved Standards on Auditing. In general all procedures related to advances of funds required by the UNDP Procedures for National Execution have been complied with by FRIM as the Implementing Agency in accordance with regulations and procedures of the government of Malaysia. It would appear that due diligence was observed in the management of the funds for the Project.

The likelihood that some financial and other resources will be available to sustain the project outcome/benefits after project closure is moderately high. Already during the course of the project additional funds were raised like a contribution of the UNDP/EU- Small Grant Program to the Heritage Garden in Pahang. Such resources will be applied to the implementation of the IMP that has taken on a local ownership by the forestry departments in all states involved with the project. There is also a high likelihood of the development of new and additional sources of finance from the recently launched carbon offset program spearheaded by Malaysia Airlines (MAS) and other organizations such as the palm oil producing and processing industry. It is also likely that other states may receive financial support from the Ministry to follow the example of the project and be required to produce a similar IMP for the management of their PSFs. FRIM could also receive funding to implement the EMS in the long-term.

3.2.4 Stakeholder participation

Stakeholders' participation in both project implementation and decision-making has been highly satisfactory. The establishment of partnerships and collaborative relationship developed by the project at the local, national and international levels seems to have been vital and meaningful in achieving the main objective of the project. At the local level, strong support from the local politicians and communities has successfully facilitated the project. In addition, some local communities have been actively involved in the rehabilitations programmes i.e. the Klias project site. At the national level, on the other hand, the involvement of various ministries, government agencies and NGOs is important in gathering inputs and providing the support system, especially at the implementation stage. The involvement of the Department of Orang Asli Affairs in the Peninsular Malaysia, for instance, has helped to solve several problems and issues brought up by the local communities, especially related to rights to access into the proposed area. In Sabah and Sarawak, on the other hand, the involvement of the Department of Agriculture, Department of Fisheries, etc had assisted the surrounding communities with all support systems in order to up-lift their socio-economic status. The role of government agencies in addressing local issues is crucial in making the project successful. However, the socio-economic achievement of the local communities is still relatively low and will need more concrete efforts from state agencies.

3.3 Results: Project Impacts

The project is likely to have long-term impacts as it provides an example of how sustainable forest management (SFM) practices can be strengthened and demonstrated. Below we will address the impacts of each of the 6 outputs.

Outcome 1. Data Collection & Monitoring Programme

In the short-term, the data collection and monitoring programme conducted over the duration of the project enabled more to be known about the flora and fauna of peat swamp forests in Malaysia. At all three sites more detailed information about the flora and fauna became available through inventory and assessments that formed part of the multi-disciplinary assessments (MDA) at each project site. Population and species richness, endemism, species distributions, and the socio-economic role of species in the livelihoods of local communities were documented, in general as well as in detail at selected survey sites. The information gathered provided estimates of baseline levels of biological diversity that would form the basis for a longer-term monitoring programme. Data from biodiversity "expeditions" were published widely disseminated in technical and popular publications. This would not have happened if the project had not been implemented. The biodiversity surveys and monitoring provided an assessment of the integrity of the forest

ecosystem in the project sites. In addition, all data were placed in a GIS database that formed the basis for the development of a common information management system at all project sites.

The participatory rural appraisal (PRA) included appraisal of the biodiversity in the project areas and their value. This enabled local communities to become more aware of the importance of biodiversity conservation. Such participatory appraisal also provide local communities with insights into the need for inter-sectoral coordination in planning resource use and of the complex nature of decision-making with regard to balancing resource use for enhancing human wellbeing, and the need to reduce threats to biodiversity in peat swamp forests (PSF).

Outcome 2. Well-formulated site management plans.
The IMP reports are generally clear and sound, following a logical sequence. They give substantial and relevant background information on the assets and threats to the sites, and give a range of concrete strategies and actions which will neutralize these threats. In each site different management zones were identified based on both bio-physical and socio-economic factors which enable more logical preparation of biodiversity and other plans (e.g. ecotourism). For instance, at SEPPSF a core zone for conservation of biodiversity was identified. This area will not be harvested in order that its biodiversity may be conserved. Such core conservation zone is compatible with sustainable forest management (SFM) requirements. At LBNP the zonation enables better development of tourism and biodiversity conservation and possible an extension of a buffer area to the north of the Park. In Klias the forest reserve area was extended to the Bukau Api-Api area (approximately 2,000 ha of mixed peat swamp area) which provides better connectivity to resident wildlife habitat.

The IMPs had a direct influence on local policies and were endorsed by the respective State authorities in 2007. Ownership of the IMPs seems to be strong which is a direct result of the interactive approach chosen for its development.

To ensure sustainable use of the peat swamp forest areas overlays of GIS maps were used and incorporated into the Information Management System (IMS) in all the project sites. The application of the IMS software by the relevant stakeholders was still at its initial stage as collection of various field information pertaining to the conservation targets (selected Bio-D parameters) is just being implemented (see also above).

Outcome 3: Demonstration of conservation, management and sustainable use of PSF
At all three sites the IMP establishes an area/Park management system. The presence of local communities dependent of continuing sustainable use of the areas were realistically acknowledged and factored into the planning and decision-making process, to ensure positive co-existence of the biodiversity conservation areas and local communities.

In LBNP the number of staff seems low to implement the IMP as well as specific action plans (e.g. community fishing regulating, lake pollution, NCR facilitation). Ecotourism numbers are low and did not rise during the course of the project, and those tourists who visit the area do mainly stay at private lodges in the Park. The road remains a major impediment to further development of tourism. Focus on specific groups of tourist seems to have most potential (e.g. birdwatchers). Sedimentation remains a major problem which can only be dealt with at the State Level through NREB.

At Klias FR the establishment of the Klias PSF Centre is a considerable help in the continued implementation of the IMP and associated monitoring activities. The forest rehabilitation trials demonstrated the possibility to rehabilitate degraded areas (burnt) thus identifying the right species and the needed management necessities for large areas. The local communities were successfully engaged throughout the process, adding to alternative livelihoods and also ensuring better understanding and awareness on the need for PSF conservation. The canal blocking will regulate water outflow from the reserve thus providing avenues for delays in peat subsidence incident.

In SEPPSF, there appears to have been some integration of biodiversity conservation into the forest exploitation plan. It is envisaged that the reduced impact harvesting (RIH) system started in 2000 will continue to be used to further reduce the impacts of harvesting timber in a peat swamp forest. The gazettement of extension zone 2 is underway. At all sites training was conducted to enable technical forestry staff to engage in activities that can lead to conservation of biodiversity. At the SEPPSF although there were plans to promote tourist attractions, there was no evidence that this would materialize. The remoteness of the location would contribute to the inability to develop further tourism in the area. In addition, Pahang got an award for environmental work.

The SEPPSF is also the first forest site that could benefit from a commercial airlines carbon off-set programme. Malaysia Airlines' (MAS) carbon offset scheme will help fund selected United Nations-sanctioned programmes such as the SEPPSF areas to protect a natural carbon sink. This aims to not only generate awareness of the carbon footprint of air travellers but will also provide a means of compensating countries that maintain carbon sinks. At the global level this would ultimately mitigate the adverse effects of climate change. The availability of such carbon offset funds can ensure strict observation of sustainable forest management guidelines that can contribute to enhanced biodiversity conservation in the SEPPSF. This will have significant long-term impacts on biodiversity conservation in PSF in Malaysia.

Outcome 4: Network of inter-agency at the state level

The establishment of Wetland Management Committee's (WMC) is considered a useful and necessary step in ensuring continued inter-agency network and effective implementation of the developed IMPs. Also the development of the MPCT's for the IMP development has led to better inter-agency level communication.

In *Sarawak* the existing WMC under the State acted as the SPSC to supervise the project. In that sense the project did not create new inter-agency networks or collaboration. In *Sabah* the WMC is still under construction through its chosen set up with WRC (state level) and a specific Klias PSF management Committee (District level) be potentially effective in the sustainable management of Klias FR. In *Pahang*, inter-agency networks have been enhanced through the establishment of the state's Wetland Management Council. This is a committee of the state's economic planning unit that is well placed to promote better inter-agency coordination among the government departments of the state. The Council is tasked with coordinating applications and proposals for development of all wetland areas in Pahang of which the SEPPSF is one. In addition, environmentally sensitive areas in the local plans of the local authorities have to be identified (state regulation under the Town and Country Planning Department) which will reduce the threats that can potentially affect the conservation of biodiversity. These local plans provide the basis for greater inter-sectoral coordination for land-use planning and decision-making.

Outcome 5:Enhanced stakeholders awareness on PSF conservation

Generally the project has contributed to a more positive attitude towards conservation of biodiversity in the Forest Department in all three states. Awareness programmes were conducted at all sites and the publications produced were widely disseminated in the print and electronic media. Much is available about the outputs from the project where lists of its activities, training courses, partners, publications etc have been published on the website of the project (http://www.undp.org/gef/05/portfolio/writeups/bd/malaysia.html) . The positive attitude towards biodiversity/forest conservation has been nurtured to such an extent that it enabled FRIM's participation in the carbon off-set programme of Malaysia's airlines, MAS.

The number of brochures, leaflets, media releases, books produced by the project was impressive and it will in all probability continue to enhance awareness of importance peatswamp forest in Malaysia and elsewhere.

Outcome 6: Enhanced institutional and human capacities

As mentioned above a large number of staff from involved agencies as well as local communities received some form of training. We did observe increased skills & knowledge of local personnel at LBNP (e.g. water quality monitoring) & Klias FR (e.g. hydrological monitoring). Unfortunately we did not observe this at SEPPSF staff (which may have been due to short visit). Obviously at

all three sites the local capacity had improved to (potentially) implement the IMPs. For instance training reports have been prepared and relevant manuals & training materials have been published. However the biodiversity monitoring programme is not completely operational as yet. One of the observations made during the visits was that in all three locations replacement of staff through transfers is a major threat. Improved capacity should as much as possible be passed on before switching to another position.

3.4 Results: Project Sustainability

Preliminary results show that the project has been meaningful and important to the nation. Project ownership in all sites is generally strong, although it seems stronger at Loagan Bunut and Klias Peninsula. In Pahang, on the other hand, the establishment of Wetland Management Committee (WMC) could help to improve ownership. Sustainability of the project has also been ensured by utilizing the Integrated Management Plans (IMPs). The IMPs provide a good base for sustainable management at all three sites. In the long run, the IMP could probably facilitate RAMSAR application throughout the nation. To ensure a long run impact, it is important to maintain, at least in the near future, most institutional arrangements and enhanced capacity. It will be more meaningful if all parties could strengthen their cooperation and put more collective effort to achieve the target of this project, i.e. conservation and sustainable use of the PSF resources.

3.5 Response to the Mid-term Review

Overall the majority of the recommendations of the MTR had been implemented. In response to the MTR recommendation that the project pursue broader stakeholder involvement to include plantation managers and local communities, the project engaged a communications specialist to develop the required strategies. At the corporate level, the target of the communications programme were oil palm plantation owners and developers, loggers, tour operators, and politicians. Site specific information kits were developed for this target group. Specialists in communications with local communities were engaged as partners of the project team through community-based organizations such as Partners of Community Organizations Trust (PACOS) and Sinui Pai Nanek Sengit (New livelihoods, One Vision)(SPNS).

The recommendation by the MTR that a full-time biodiversity expert be employed by the project could not be implemented because no suitable expert was found to be available for the position. It was envisaged that the expert would support the PSU and the National Experts and activities specific to biodiversity planning and conservation at all project sites. Instead and Expert Panel on Biodiversity consisting of local experts was established to assists an international biodiversity specialist who was assigned to design the EMS, provide technical input and to gauge local

capacity available to undertake monitoring of selected indicators required for a long-term biodiversity monitoring programme.

The MTR recommendations on end-user consultation and field testing of survey templates/forms were implemented. The development of the IMS was integrated with the development of the monitoring system at all three sites. Field-testing of data collection sheets was replicated three times at a minimum.

In response to the recommendation that the project in Klias should conduct hydrological and rehabilitation trials a canal was blocked to demonstrate the feasibility of mitigation measures as prescribed in the management plan for the Klias PSF. Draft Guidelines for reduced impact logging and for optimum harvest in peat swamp forest have been developed for SEPPSF as recommended in the MTR. These guidelines are being finalized.

In LBNP the recommendation that better enforcement of erosion control measures by the surrounding oil palm plantations be undertaken has resulted in better monitoring of sediment erosion from the plantation areas. However measures for stricter control on soil erosion from these plantations have yet to be enforced.

The MTR recommendation for intensifying awareness programmes and to focus it more towards specific target groups other than local communities (for which materials were already available) was also acted upon. Two sets of brochures were distributed to politicians and to plantation owners.

As recommended by the MTR additional training programmes were conducted at the managerial and operational level personnel. At the managerial level training modules were prepared on biodiversity conservation and wetlands management. Syllabi were developed in cooperation with the Forestry Training Unit of the Forestry Department of Peninsular Malaysia and Wetlands International. At the operational level training courses were conducted on fire prevention and management, biodiversity surveys and mapping, and on integrated database management system (IDMS).

Thematic training courses were conducted at all sites. These included courses on handicraft making, conservation awareness, environmental education, and plant nursery development and maintenance.

3.6 Ratings of key review criteria

Ratings of Sustainability of Project Outcomes

In Table 2 an evaluation of the sustainability of the project outcomes is given. The ratings used follow the GEF Guidelines for Terminal Evaluations (see Annex 1).

Table 2. Rating of the sustainability of the project for financial resources, social political, institutional, and environmental outcomes.

Sustainability Dimension	*Outcomes*	*Rating*
Financial Resources	Increased knowledge on biodiversity of PSF	Likely
	Well formulated site management plans	Likely
	Demonstration of conservation, management and sustainable use of PSF	Moderately likely
	Network of inter-agency at the state level	Likely
	Enhanced stakeholder awareness	Moderately likely
	Enhanced institutional and human capacities	Likely
Socio-political	Increased knowledge on biodiversity of PSF	Moderately likely
	Well formulated site management plans	Likely
	Demonstration of conservation, management and sustainable use of PSF	Likely
	Network of inter-agency at the state level	Likely
	Enhanced stakeholder awareness	Moderately likely
	Enhanced institutional and human capacities	Moderately likely
Institutional Framework and Governance	Increased knowledge on biodiversity of PSF	Likely
	Well formulated site management plans	Likely
	Demonstration of conservation, management and sustainable use of PSF	Likely
	Network of inter-agency at the state level	Likely
	Enhanced stakeholder awareness	Moderately likely
	Enhanced institutional and human capacities	Moderately likely
Environmental	Increased knowledge on biodiversity of PSF	Likely
	Well formulated site management plans	Likely
	Demonstration of conservation, management and sustainable use of PSF	Likely
	Network of inter-agency at the state level	Likely
	Enhanced stakeholder awareness	Moderately likely
	Enhanced institutional and human capacities	Moderately likely

3.7 Project M&E systems

In terms of its three primary objectives, the project's achievements were impressive. It promoted better understanding of the nature and role of peat swamp forests in the ecology and economy of local communities and the government through the information generated by its multidisciplinary assessments and through the data gathered for the development of the IMP and EMS. Well formulated integrated management plans were produced at all sites that addressed biodiversity conservation issues, the issue of sustainable and wise use and the physical functions of peat swamps especially in relation to hydrological regulation.

The project's M & E system is highly satisfactory. It enabled good tracking of progress towards project objectives. There were regular quarterly meetings, and minutes of meetings were properly kept. Annual Project Implementation Reports (PIR) were produced and an independent mid-term review was conducted. At the end a final evaluation was undertaken. However there were no plans to monitor the project after its termination. The project accounts were audited annually and annual reports of the finances of the project were produced as a Report of the Auditor General of the government of Malaysia.

4 RECOMMENDATIONS

1. All parties involved in the project (EPU, MONRE/FRIM, UNDP) should collaborate to initiate the establishment of the trust fund for sustainable management and conservation of all threatened peat swamp forests sites in Malaysia. Funds should be used to ensure the use of the IMPs at all locations and where IMPs have yet to be developed, commission management authorities to prepare IMPs using funds made available by the Trust Fund. The source of finances of the Trust Fund should be as diversified as possible and include monies raised from cess and levies collected from timber harvesting revenues and other sources like the Malaysia Airways carbon-offset programme.
2. In order to ensure sustainable management and continued implementation of the IMPs at all three sites ownership is needed by the respective states. The national wetland policy of NRE could support this through liberation of resources and maintained support.
3. Ecological monitoring should be incorporated as a standard operational procedure (SOP) in the forest departments in Pahang, Sabah and Sarawak. The IMS should be made a standard Forestry Department software package and be implemented by the GIS sections in each Forestry Department. FRIM and the Forest Research Divisions at Sarawak and Sabah should provide technical support in implementation of both the SOP and IMS.
4. Access to LBNP should be seriously addressed and improved. The road to Loagan Bunut needs to be improved so that tourists can visit the Park more easily. We recommend stronger action of the NREB in addressing erosion problems with plantation establishment and forestry activities in the areas surrounding LBNP in order to stop sedimentation of the lake.
5. The market for voluntary carbon-offset programme should be further investigated as PSF contain a lot of carbon both below and above ground. The existing monitoring programs form a good base for carbon accounting but may need to be expanded. The funds can be used to further improve management at all three project sites, for instance to further progress rehabilitation activities. There is also potential to involve local stakeholder groups here.
6. The developed capacity and information on PSF currently being kept at FRIM UNDP office should be safeguarded for future use. We applaud the plans to maintain the UNDP office at FRIM as a PSF information centre.

5 LESSONS LEARNED

General

1. The voluntary carbon market can be an effective way to improve sustainable management and conservation of PSF. The SEPPSF approach for Carbon project MAS is coordinated by WMC. There will be a trust fund under NRE. The fund will be used for better management and control of the FR.
2. The SEPPSF IMP was used as a blue-print for the development of an integrated management plan for Perak Protected Forest (300 ha; Belum-Temenggor Rainforest).This was done in cooperation with WWF and MNS.
3. Communications strategies and their implementation must be developed by experienced communication professionals. More often than not different target groups require different communications skills and the communications professional engaged to influence the private and commercial sector interests need not necessarily be the same professional effective with community groups.
4. The profile of a project can be raised by involving senior politicians in its key events. This contributes considerably to public awareness of the project and peat swamp forest conservation through the media exposure brought about by the publication of news on the activities of the senior politicians.
5. Good relations with a varied media community (print and electronic) are essential for successful and widespread coverage of the project and peat swamp conservation in the press.
6. Ownership of the IMP was very strong because of the interactive way it was developed. The establishment of the MPCT (Management Plan Core Team) was essential in this.

Pahang

1. Pahang approach for Carbon project MAS is coordinated by WMC. There will be a trust fund under NRE. The fund will be used for better management and control of the FR.
2. Perak 300 ha of Protected Forest (Belum-Temenggor Rainforest). An integrated management plan has been made in cooperation with WWF and MNS. The Pahang IMP was used as a blue-print.

Sabah

1. Formation of core team (acting as a hands-on task force) essential to obtain inputs from all stakeholders and for the preparation of the MDA reports that provided input into the IMP.
2. Any gaps identified by the core team needs to be quickly rectified by the appointment of suitable experts/specialist to produce the necessary information.

3. Ownership of management plan is very important and will pave the way for smoother implementation.
4. Management plans needs to complement existing statutory plans (local authority structure and local plans).
5. In dealing with specific issues within management plans (e.g. boundary extension) it is important to determine which agency is taking the lead.
6. MDA's are a useful and essential tool for rapid appraisal of the status of an area and provide indispensable information for the development of sound management. However, if more time and money had been available specialist studies would have been a better way to organize these assessments.

Sarawak

1. Allowing the Sarawak Forestry Corporation (SFC) to take the lead in preparing business and tourism plans led to their ownership of the management plan. This ensured more committed engagement and strong adoption of the IMP by the stakeholders.

ANNEX 1. TOR (DRAFT) FOR THE TERMINAL EVALUATION

United Nations Development Programme /
Global Environment Facility Funded Project
"Conservation and Sustainable Use of Tropical Peat Swamp Forests and Associated Wetland Ecosystems"

UNDP/GEF PROJECT FINAL EVALUATION
MAL/99/G31

UNDP Malaysia and the Government of Malaysia will be conducting the Final Evaluation of the UNDP/GEF-GOM Project on "**Conservation and Sustainable Use of Tropical Peat Swamp Forests and Associated Wetland Ecosystems**". To do this, UNDP will appoint an independent evaluation team, which will consist of an independent international consultant specialising in natural resources management, and two national experts in biodiversity conservation and social/socio-economy.

a) Natural Resources Management Specialist (International Consultant) (Team Leader):

b) Biodiversity Conservation Specialist (National Consultant)

c) Social/Socio-economic Specialist (National Consultant):

1. PROJECT BACKGROUND

Tropical Peat Swamp Forests (PSFs) are the hidden backbone to our world's important ecosystems. Peat swamps support many specialised flora and fauna species which are often endemic or rare. These forests are significant for both economic and ecological reasons. High-quality timber species are selectively extracted, while local communities depend on the forest and non-forest products for food and other household needs. PSFs often fringe the intricate network of canals and rivers serving as waterways to inland areas and providing access to fishing and wildlife sanctuaries. The ecological role of these forests and their associated ecosystems as a hydrological buffer is of paramount importance to serve agricultural land.

The Government of Malaysia, with the assistance from the United Nations Development Programme and the Global Environment Facility (UNDP/GEF), has been implementing a project to promote the conservation and sustainable use of these tropical PSFs. The project's primary objective was to develop and implement plans, which encourage processes to ensure the conservation and sustainable use of globally significant genetic, species, and ecosystem diversity within these forests. The Project set out to ensure the conservation and sustainable use of these forests in Sarawak, Sabah and Pahang, by demonstrating how this could be done including through the adoption of a multi-sectoral approach to the PSF management.

The demonstration sites—the Loagan Bunut National Park (LBNP) in Sarawak, the Klias Peninsula in Sabah, and the South-East Pahang Peat Swamp Forest (SEPPSF) in Pahang—were selected based on the importance of their diverse and threatened species. The three sites also serve as representative examples of Malaysian PSFs, and collectively, they support at least 60 globally significant species of plants and animals.

The major threats to this fragile ecosystems include *a)* land conversion to other uses such as agricultural and industrial development projects; *b)* drainage, which is necessary to convert PSF to other uses such as for timber extraction, often resulting in irreversible lowering of groundwater tables and drying-out of peat substrate; *c)* timber extraction, contributing to the loss of biodiversity and soil compaction, leading to severe damage of the habitat, which in turn leaves little chance for regeneration; and *d)* hunting, contributing to the increasing rate of depletion of certain species with some facing an immediate threat of extinction.

2. PROJECT OBJECTIVES AND EXPECTED OUTPUTS

The Project's primary objective was to:

- Develop and implement plans, encourage processes which ensure conservation and sustainable use of PSF; and
- Demonstrate a multi-sectoral approach in planning sustainable PSF management at three selected project sites.

This would contribute to the implementation of both the Biodiversity Action Plan and the National Wetlands Plan by providing demonstrations of conservation and sustainable management of PSFs in Malaysia.

The Project's three immediate objectives and expected outputs are as follows:

i. Demonstrate planning for biodiversity conservation:
   - Output 1: data collection and integrated database system
   - Output 2: formulation of site management plans

ii. Demonstrate the implementation of biodiversity conservation and sustainable resource utilisation strategies:
   - Output 3: conservation and sustainable use demonstrated
   - Output 4: inter-agency network at the state level

iii. Strengthen institutional and human technical capabilities and awareness:
   - Output 5: awareness raising
   - Output 6: strengthened institutions and personnel

The project has demonstrated the steps required in the planning for the conservation and sustainable use of the PSFs and associated wetland ecosystems. The first step included planning of the individual protected areas as well as the integrated planning of areas that remain hydrological inter-connected to the protected areas. Outputs under the first objective focused on information gathering; analysis and targeted research followed by the preparation of site management plans, and incorporating the Danida hydrological inputs. For effective planning, detailed ecological assessments of the sites, monitoring, and appraisal programmes were required to gather the necessary data and information. The collection of demographic and socio-economic data was also crucial to the development of the evaluation indicators. Data

collection by the Project and its partner, Danida, and monitoring information management systems developed were utilised to facilitate decision-making and management.

Having obtained sufficient information and prepared the plans, the project focused on implementation at each project site, necessary for demonstrating that biodiversity is being conserved and resources sustainably used. Therefore, activities under this second objective were aimed towards demonstrating the process of inter-sectoral coordination. Both the state and federal governments would have clear responsibility of ensuring that changes, in relation to land and water use in areas surrounding the PSF required for the conservation and sustainable use of the PSF areas, would take place. This process was supported technically by management experts, who facilitated the design and implement of the conservation and sustainable use plans, and awareness activities under the third objective.

Awareness of the important values of PSFs and associated wetlands is vital to ensuring their conservation. Therefore, effective and carefully targeted public awareness efforts were undertaken, focusing on the project findings. With strengthened awareness and greater appreciation of the importance of conserving these forests among the public and decision-makers, the likelihood of the PSF survival would be greatly enhanced. Management tools such as biodiversity overlays and technical complexities associated with PSF management were also incorporated into the skill base of the local PSF managers. Training activities including short courses, workshops, seminars, and field visits under this objective, focusing in particular on individuals involved with the management of the project sites, were undertaken and the skills acquired transferable to other forest and wetland sites.

3. OBJECTIVES OF THE FINAL EVALUATION

In accordance with the UNDP/GEF M&E policies and procedures, all projects with long-term implementation period (e.g. over 5 or 6 years) must undergo terminal evaluation at the end of the project. The Monitoring and Evaluation (M&E) policy at the project level in UNDP/GEF has four objectives: i) to monitor and evaluate results and impacts, ii) to provide a basis for decision making on necessary amendments and improvement; iii) to promote accountability for resource use; and iv) to document, provide feedback on, and disseminate lessons learned.

Terminal Evaluations (TE) are intended to provide an objective and independent assessment of project implementation and impact, including achievement of global environmental benefits and lessons learned to guide future conservation efforts including the design and implementation of other UNDP and GEF projects. Specifically, the TE will assess the extent to which planned project outcomes and outputs have been achieved, as well assess the relevance, effectiveness and efficiency of the project as defined in the GEF Evaluation Office guidelines for Terminal Evaluations. The evaluation will also evaluate the strengths and weaknesses of project design, implementation, monitoring and adaptive management and sustainability of project outcomes, including the project exit strategy. The evaluation covers the entire project including non-GEF financed components.

4. SCOPE OF THE FINAL EVALUATION

The Evaluation will involve evaluation, both qualitative and quantitative assessments, at two levels—*a)* the site level, and *b)* the overall project level.

The following shall be observed at the site level:

i. Evaluation of the project implementation in LBNP (Sarawak), the Klias Peninsula (Sabah), and the SEPPSF (Pahang);
ii. Assessments of initial and potential impacts of the project implementation in the respective sites; and
iii. Observation on the integration process and inputs received from the relevant co-projects supported by other donors in particular Danida (Sabah and Pahang).

At the overall project level, the following shall be observed:

i. Assessments of planned activities against achievement of outputs, work in progress, as well as the processes involved in the implementation with reference to the Project Document, Project Inception Report, and the budget;
ii. Assessments of the effectiveness of communication and coordination among the different project sites and the Project Support Unit, as well as the project and the implementing agencies at the national- and state-levels to ensure cross-site interactions, and sharing of information, relevant issues, lessons learnt, best practices and outputs;
iii. Assessments of the measures taken by the Project in response to the Mid-term Review report;
iv. Assessments of preliminary and potential impacts generated by the project;
v. Adequacy of the project design, i.e., whether it allows flexibility in responding to internal and external changes of the project environment;
vi. Assessment of implementation difficulties, i.e. whether unexpected constraints and obstacles identified were adequately dealt with, the approaches taken and solutions considered; and
vii. Strengths and weaknesses of the existing project organisational structure and management arrangements.

5. DETAILS OF THE EVALUATION ASSIGNMENT

The Evaluation will be conducted in line with the UNDP/GEF Monitoring and Evaluation policies and procedures aiming to monitor and evaluate results and impacts, to promote accountability in resource use, as well as to document, provide feedback and disseminate lessons learnt.

The Evaluation Mission will cover in full the following areas:

a. Project Formulation

- *Relevance:* The relevance of the Project Objectives and strategies in promoting/demonstrating the conservation of biodiversity in Malaysia, within the context of the sustainable development concept adopted by the country;
    - Conceptualisation: This should assess the approach used in design and the appropriateness of problem conceptualisation and whether the selected intervention strategy addresses the root causes and principal threats in the project area. It should also include an assessment of the logical framework and whether the different project components and activities proposed to achieve the objective were appropriate, viable and responded to contextual institutional, economic, legal and regulatory settings of the project. Were the capacities of FRIM, State Forestry Departments and other counterparts properly considered when the project was designed? Were the partnership arrangements properly identified and the roles and responsibilities negotiated prior to project approval? Were counterpart resources (funding, staff, and facilities), enabling legislation and adequate project management arrangements in place at project startup?

- Country-ownership: Assess the extent to which the project idea/conceptualisation had its origin within national, sectoral and development plans and focuses on national environment and development interests of Malaysia.
- Stakeholder involvement: Assess information dissemination, consultation and "stakeholder" participation in design stages.
- Replication approach: Determine the ways in which lessons and experiences coming out of the project are to be replicated or scaled up in the design and implementation of other projects.
- Other aspects: The evaluators should assess what UNDP comparative advantages as a GEF Agency for this project were; the consideration of linkages between projects and other interventions within the sector; and the definition of clear and appropriate management arrangements at the design stage.

b. Project Implementation, Accomplishments, Effectiveness and Efficiency

- Implementation approach: This should include assessment of the following aspects:
- The use of the logical framework as a management tool during implementation and any changes made to this as a response to changing conditions;
- Initiative and elements that indicate adaptive management such as comprehensive and realistic work plans routinely developed and updated;
- The general operational relationships between the institutions involved and others and how these relationships have contributed to effective implementation and achievement of project objectives;
- Adequacy of management arrangements as well as monitoring and backstopping support given to the project by all parties concerned.

Achievements and progress: This include the following:

- The project achievements and progress being made in each of the expected main outputs and their contribution towards the Project Objectives and intended situation defined in the Project Document;
- Key challenges that have emerged in the course of implementation in meeting the Project Objectives and its implications to the delivery of particular outputs;
- The overall institutional arrangements and organisational structure for the project implementation and the effectiveness of the project management in coordinating project work and exchanging information among the key stakeholders and similar initiatives in the country/region;
- The ability of the Project as a whole to achieve its goals and in this view to recommend changes if necessary for future implementation;
- The adequacy of the project monitoring and evaluation indicators retro-fitted by the Project and the effectiveness of this approach as a tool in project monitoring;
- UNDP's efforts in supporting the project implementation;
- The execution arrangements and the appropriateness of the funding administration by UNDP, and implementing bodies including FRIM, relevant state agencies, local authorities and the Danida Component in contributing to the effectiveness of project implementation; and

An assessments of:

- The actual project cost: total and by outcomes, outputs, activities;

DRAFT

- Financial management (including due diligence in the management of funds through Audit Negara);
- Co-financing (if there was a difference in the level of expected co-financing and actual co-financing. Did the extent of materialisation of co-financing affect the project's outcomes and/or sustainability, and whether it did affect outcomes and sustainability).
- Stakeholder participation: This should include assessments of the mechanisms for information dissemination in the project implementation and the extent of stakeholder participation in management, emphasising the following:
- The production and dissemination of information generated by the project;
- Stakeholders' participation in project implementation and decision-making and in the process of delivering the major project outputs;
- The establishment of partnerships and collaborative relationships developed by the project with local, national and/or international entities and the effects they have had on project implementation; cooperation with similar projects in the region; and
- Involvement of governmental institutions in project implementation, the extent of governmental support of the project.
- To suggest means of improving the effectiveness of the working relationships and cooperation between and among key government stakeholders.

c. Project Impacts:

- To assess the initial and potential impacts thus far, enumerating positive influences resulted from the project implementation in terms of awareness of biodiversity conservation, inter-sectoral coordination, resources planning, decision-making process and attempts to reduce threats to the PSF and associated wetland ecosystems; and
- To determine the long-term project impacts on the sustainable forest management and wise use of biodiversity resources as well as the new initiatives undertaken by other parties referring to the project contributions.

d. Project Sustainability: This should include evaluation of the extent to which the benefits (at the level of outcomes) of the project will continue, within or outside the project domain, after it has come to an end; the commitment of the government to support the initiative beyond the project period, including:

- To assess the project ownership, attempts made to address this and recommend changes required to improve this;
- To asses the sustainability of the policies or strategies adopted by the Project;
- To assess whether the local institutional structures and enhanced capacity could be sustained the beyond the project lifespan; and
- To comment on the project's contribution to the country's sustainable development and its implementation of the Ramsar Convention and Convention on Biological Diversity.

Ratings of Key Review Criteria

In accordance with GEF Guidelines for Terminal Evaluations, the evaluators will provide ratings for the following as indicated broadly below, and further elaborated in the Guidelines, which must be carefully referred to.

1. Rate the relevance, efficiency and effectiveness of different Project Outcomes as:

HS = Highly Satisfactory

S = Satisfactory

MS = Moderately Satisfactory

Moderately Unsatisfactory (MU)

US = Unsatisfactory

HS = Highly Unsatisfactory

2. Rate the sustainability of project outcomes along 4 key dimensions, Financial Resources, Socio-political, Institutional framework & governance and Environmental using the following scale:

Likely (L)

Modearately Likely (ML)

Moderately Unlikely (MU)

Unlikely (U)

3. Rate the Project's M&E system as follows:

HS = Highly Satisfactory

S = Satisfactory

MS = Moderately Satisfactory

Moderately Unsatisfactory (MU)

US = Unsatisfactory

HS = Highly Unsatisfactory

6. EVALUATION METHODOLOGY

The evaluation will start with a desk Evaluation of project documentation including but not limited to the Project Document, Project Inception Report, Minutes of all Steering Committee meetings including other relevant meetings, Project Implementation Report (PIR/APR), Project Status Reports, Quarterly Operational Reports, and other internal documents such as the consultant and financial reports, as well as, all the project publications.

The exercise will include field visits to the project sites or interviews (by phone if necessary) with key individuals both within the project, the federal and state government offices, donor representatives, other key stakeholders, as well as implementing agency personnel including the National Project Director, and the remaining project personnel. The Evaluation Mission is also expected to view the on-going situation, meet local leaders, and local government officials.

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The evaluation methodology should be clearly documented in the final evaluation report including comprehensive review of the following:

-Documents reviewed

-Interviews conducted

-Consultations held with all key stakeholders

-Project sites visited

-Techniques and approaches used for data gathering, verification and analysis

7. EVALUATION TEAM

The Evaluation team will consist of an independent international consultant specialising in natural resources management, and two national experts in biodiversity conservation and social/socio-economy. The international consultant will be designated as the team leader who will have the overall responsibility of organising and completing the Evaluation, and submitting the final evaluation report. The national consultants will provide supportive roles both in terms of professional back up, translation, and facilitating local meetings. Under the guidance and close consultations with Ministry of Natural Resources and Environment, Forest Research Institute of Malaysia, and UNDP Malaysia, all consultants will evaluate the relevant documents for a few days at their respective stations before carrying out field visits and meeting the stakeholders.

***a. Qualifications of the Natural Resources Management Specialist (Team Leader)*:**

- International/regional consultant with academic and/or professional background in natural resources management and extensive experience in sustainable forest management. A minimum of 18 years' relevant experience is required.
- Significant experience in evaluating similar technical assistance projects, preferably those involving UNDP/GEF or other United Nations development agencies and major donors.
- Excellent English writing and communication skills. Demonstrated ability to assess complex situations in order to succinctly and clearly distill critical issues and draw forward-looking conclusions.
- An ability to assess the institutional capacity and incentives required.
- Understanding of political, economic and institutional issues associated with sustainable forestry management, as well as good environmental governance within tropical countries particularly in the context of Malaysia's development.
- Experience in leading multi-disciplinary and multi-national teams to deliver quality products in high stress and short deadline situations.
- Excellent in human relations, coordination, planning and team work.
- Knowledge of tropical rain forest ecosystems.
- Prior experience working in the region/country would be an asset.

b. Qualifications of the Biodiversity Conservation Specialist:

- National consultant with academic and professional background in protected areas and forest management, and extensive experience in biodiversity conservation and an understanding of the landscape ecology approach.
- A minimum of 15 years' relevant working experience is required.
- Experience in implementation of technical assistance projects.

- Knowledge and experience in terrestrial ecosystem planning in particular in tropical rain forests.
- Experience in biological diversity monitoring and information systems.
- Excellent English writing and communication skills.
- Excellent in human relations, coordination, planning and team work.

c. ***Qualifications of the Social/Socio-economic Specialist:***

- National consultant with academic and professional background in social science or socio-economic studies, and extensive experience in dealing with issues of the livelihoods of local communities.
- Experience in implementation of technical assistance projects.
- A minimum of 15 years' relevant working experience is required.
- Skills in social survey techniques.
- Knowledge and experience in forestry and local community development.
- Excellent English writing and communication skills.
- Excellent in human relations, coordination, planning and team work

8. PROPOSED SCHEDULE

The Evaluation will take place in October 2008 and it requires a four-day desk Evaluation, 10-day field visit to the three project sites and the Project Support Unit; and another three-day consultations with various stakeholders. The draft Final Report should be submitted to UNDP/GEF for circulation to relevant agencies within two (2) weeks after the completion of the Evaluation. The Evaluation Team Leader will finalise the report within two weeks upon receiving comments and feedbacks from stakeholders compiled by UNDP/GEF. Detailed schedule will be prepared in due time by UNDP/GEF in consultation with the Executing and Implementing Agencies.

9. DELIVERABLES

The expected output of the present evaluation is a comprehensive analytical report that adheres to the following proposed basic structure:

1. Executive summary
2. Introduction
3. The project and its development context
4. Findings and conclusions
   4.1 Project formulation
   4.2 Implementation
   4.3 Results
5. Recommendations
6. Lessons learned
7. Annexes

The expected length of the report is around 25 pages in total (excluding annexes). The first draft of the report is expected to be submitted to UNDP Malaysia within two week of the completion of the evaluation for subsequent circulation to the key project stakeholders for comments. After incorporation of comments, the Evaluation Report will be finalised and any discrepancies between the interpretations and findings of the evaluation team and the key project stakeholders will be explained in an annex to the final report.

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Kindly send application and forward any communication to:
Hari Ramalu Ragavan
Programme Manager (Environment and Energy)
UNDP Malaysia

Email: hariramalu.ragavan@undp.org
Direct Line: +603 2091 5178
Fax +603 2095 2870

Deadline of application: 10 September 2008. Detailed work plan and format of the report will be finalized once the person is confirmed. UNDP Malaysia has the right to change any of the above if necessary.

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ANNEX 2. DOCUMENTS REVIEWED

Title, year of publication, authors

Inception report 2002. Conservation & sustainable use of tropical PSF & associated wetland ecosystems MAL/99/G31 UNDP/GEF. Project Support Unit, UNDP/GEF Funded Project, Forest Research Institute Malaysia.

Mid-Term Review Revised Draft 2005. Conservation & sustainable use of tropical PSF & associated wetland ecosystems MAL/99/G31 UNDP/GEF. Wim Giesen, Mohd. Nordin Bin Hasan & Denison Jayasooria.

Project Terminal Report. 2008. Final Report. Conservation & sustainable use of tropical PSF & associated wetland ecosystems MAL/99/G31 UNDP/GEF. Project Support Unit, UNDP/GEF Funded Project, Forest Research Institute Malaysia.

Klias Forest Reserve Conservation Plan, Beaufort District, Sabah. PSF Technical Series No. 8. 2008. Published by Sabah Government and Peat Swamp Forest Project, UNDP/GEF Funded (MAL/99/G31), in collaboration with Sabah Forestry Department. 101 pp.

Integrated Management Plan of South-East Pahang Peat Swamp Forest. 2008. PSF Technical Series No. 9. Published by Peat Swamp Forest Project, UNDP/GEF Funded (MAL/99/G31) in collaboration with Pahang Forestry Department. 232 pp.

Loagan Bunut National Park Management Plan. PSF Technical Series No. 10. 2007. Published by Sarawak State Government and Peat Swamp Forest Project, UNDP/GEF Funded, in collaboration with Forest Department Sarawak and Sarawak Forestry Corporation. 122 pp.

Annual Performance Report (APR)/Project Implementation Review (PIR) 2004-2008

Black Water Jewel—South-East Pahang Peat Swamp Forest. 2004. Developed and published by FRIM-UNDP Peat Swamp Forest Project and the Pahang Forestry Department, in collaboration with Wetlands International–Malaysia. 58 pp.

Scientific Journey Through Borneo: Loagan Bunut—A Scientific Expedition on the Physical, Chemical, Biological and Sociological Aspects. 2006. PSF Technical Series No. 5. A.A. Tuen, A.K. Sayok, Toh A.N. & G.T. Noweg (Eds.). Published by the Peat Swamp Forest Project, UNDP/GEF Funded, Sarawak Forests Department and Universiti Malaysia Sarawak. 239 pp.

A Handbook on the Peat Swamp Flora of Peninsular Malaysia. PSF Technical Series No. 3. 2005. Co-authored by I. Faridah Hanum, Shamsul Khamis and Khali Aziz Hamzah. Published by the Peat Swamp Forest Project, UNDP/GEF Funded, and the Pahang Forestry Department. 251 pp.

An Annotated Bibliography on Tropical Peat Swamp in Southeast Asia. PSF Technical Series No. 1. 2005. Developed and published by FRIM-UNDP Peat Swamp Forest Project in

collaboration with Danida. 99 pp.

Looking at Loagan—A Journey Into Loagan Bunut National Park, Sarawak. 2006. Published by Peat Swamp Forest Project, UNDP/GEF Funded, in collaboration with Sarawak Forest Department and Sarawak Forestry Corporation. 75 pp.

Birds and Bats of Loagan Bunut National Park, Sarawak, Malaysia. PSF Technical Series 11. 2008. Co-authored by Melvin Gumal, Jason Hon and Daniel Kong. Published by the Peat Swamp Forest Project, UNDP/GEF Funded (MAL/99/G31) with Sarawak Forest Department. 105 pp.

ANNEX 3. PERSONS MET

Name	Position
Dr. Hari Ramalu Ragavan	Programme Manager UNDP
Dr. Abdul Rahim Nik	National Project Director PSF
	Pahang
Tuan Haji Mohd Faiz Kamaruzaman	Pahang FD
Mr. Mohd Khairy	Pahang FD
Mr. Griffin Akeng	Pahang FD
Mr. Ismail	DFO Pekan
Mr. Shah	DOE
Mr. Mohd Ikhwan	Wildlife
Mr. Tg. Mohd. Faiz	
Mr. Nordin	Land Office
Mr. Aliman	JHEOA
Mr. Wan Hafizul	JPBD
Mr. Norhisham	DOA
	Klias
Rashid Abdul Samad	Klias Research Coord / Nat Expert Sabah
George Angampun	District officer FD
Alexander Geivasius	Field Centre Manager Klias
Raup Ahmad	Ranger FD
Jafar Jelani	Local Headman Kampong Bukau
Zul Jeffry	Coord Village nursery
Jammy Gabriel	Env Prot Dept (EPD)
Robert Stidi	Ass Dist Off
Miklin Ationg	DID
Freddie Kou	JTU (Land & Surveys)
Christopher Matunjau	SFD HQ
	Loagan Bunut / Kuching
Wilfred Landong	SFC Gen Manager
Tuan Haji Adana Hj	Min Planning and Resources Management
Ms. Edna Mathew Ruji	DID
Peter Sawal	NREB

Alexander Sayok	National Expert Sarawak
Andrew Tukau	SS
Suliman Jamahari	SFD project monitoring
Abang Arabi	SFC Reg man Miri
Zaidi Mawek	Park Warden LBNP
Abdullah Ahmad	SFD
Norzaliza Johan	SFC Com monitoring (community)
Sherley Nanthan	SFC manager monitoring (biod & ecol)
Anthonius Sindang - MAIS	MAIS
Tuai Rumah Hillary Jungang Libi	Iban Headman, Rumah Jungang, Long Ajoi
Kamis Libi	Project leader, Rumah Jungang

Workshop FRIM on 28 Nov 2009

Ms. Siti Ainul Basyirah binti Ab Ghani	Ministry of Natural Resources and Environment
Mr. George Angampun	Sabah Forestry Department
Mr. Christopher A. Matunjau	Sabah Forestry Department
Mr. Suliman b. Jamahari	Forest Department Sarawak
Mr. I.S. Shanmugaraj	Malaysian Nature Society
Mr. Muhammad Firdaus Hassim	Malaysian Nature Society
Dr. Hari Ramalu Ragavan	UNDP
Dr. Peter van der Meer	Final Evaluation Team leader
Dr. Juli Edo	Final Evaluation Team
Dr. Ismail Parlan	Senior Director FRIM
Dr. Abdul Rahim Nik	National Project Director PSF
Mr. Rashid Abdul Samad	Peat Swamp Forest
Ms. Toh An Nee	Peat Swamp Forest

ANNEX 4. ITINERARY PROJECT SITES VISITED

Date	Itinerary	Notes
19-11 (Wed.)	TL travels from the Netherlands to Malaysia	KL 809
20-11 (Thur.)	Arrive of TL in KL ; meeting other team-members at KLIA; travel to Kuantan; stay in Vistana Hotel	Meet at 20.30 at KLIA with Dr. Hari Ramalu Ragavan, Dr. Juli, and Prof. Nordin..
21-11 (Fri.)	9.00 meeting at FD with core team; Q&A and discussion till 11.30; lunch break. 14.30 Field trip to SEPPSF; brief visit to Orang Asli village Kampung Simpai / Heritage Garden Project; fish-cage project, and Ramin reforestation. Return Kuantan at 20.00 hr.	Briefing on project outcomes by Grippin Akeng (project coord Pahang); Heritage Garden abandoned; fish-cages not operational; planting of Ramin has failed and replaced by *Hopea odorata* (planted Sept 2008) as part of 1200 ha reforestation effort in Mngt zone 2.
22-11 (Sat.)	Am depart for KL; arrive 10.30 -> taxi to FRIM; meeting at UNDP office 14.30 pm depart for KLIAA; travel to KK; arrive 20.00 hr; stay in Tang Dynasty	Meeting at UNDP with Hari, Rashid, and team. Discuss evaluation approach, report, workshop; get relevant documentation (hard and soft-copy)
23-11 (Sun.)	8.30 fieldtrip to KLIAS. Arrive at PSF research station at 11.30. Walk to dam. Return to station an inspect rehabilitation trials. Lunch in Beaufort (14.30); meet with local headman and with community nursery. Return to KK by 20.00 hr	Dam is helping to raise water level to around 1 m; compromise between oil palm and forest reserve. Successful rehabilitation trial with peat swamp species (Pulai, Ramin, Perupok, Geronggang), and Non-PSF species (*Hopea*, Sungai, *Drybalanops*) Villagers have set-up Ramin nursery (collect seeds in FR); visit community nursery.
24-11 (Mon.)	9.00 Meeting at FDoffice with core team KLIAS. 11.30 depart for airport. Wait till 18.45 for delayed flight to Kuching. Arrive Kuching 21.30 hr.	Briefing on project outcomes by Chrisopher. Q&A on various aspects. Demo of EMS did not eventuate because of technical problems.
25-11 (Tue.)	8.30 Meeting at FD HQ Kuching with core team Loagan Bunut. 16.30 depart for Miri. Arrive 17.30; drive by car to Loagan Bunut NP; arrive 20.30 hr; diner	Briefing on project outcomes by Abang Arabi. Q&A on various aspects. Travel by car on. Road condition last 1 hr bad. Heavy rain.
26-11 (Wed.)	8.45 Visit Longhouse Hillary (on upper Baram river, bordering the Park); Return to LBNP at 14.30. By boat to hydrological trail, quick inspection of burial places. Demo of water quality monitoring and fishing techniques. Leave LBNP at 17.00; flight to KL; arrive at midnight at Melia Hotel	Fish-pond, Fruit-garden, trial to river look-out. Long-house being upgraded. Not very busy; many people live par-time. Trail is maintained, no monitoring of wells yet. Signposting planned by SFC. Demonstration of water quality monitoring (chemical only).
27-11 (Thur.)	UNDP office. Work on report & workshop presentation	Juli & Peter

28-11 (Fri.)	8.30 meeting dr. Rahim Nik at FRIM. 9-12.00 workshop at FRIM; Work at UNDP office & get additional info. Leave FRIM at 15.00 hr. Return to Hotel afternoon.	Presentation of main results of evaluation team. Q&A. Get more info & inspection of reports at project office. Work on report in afternoon
29-11 (Sat.)	Meet at 10.00 at UNDP office. Work on report.	Work on report (Juli, Prof. Nordin); settle admin with Hari.
30-11 (Sun.)	Meet at 10.00 at UNDP office. Work on report. Leave at 15.00 hr. Depart TL for NL at 23.30	Get additional information from Rashid. Compile report. (Juli, Rashid, Prof Nordin) KL 810.