Report of Ex-post Evaluation

PD 394/06 Rev.1 (F)

Restoring the Ecosystem Functions of the Lake Toba Catchment Area Through Community Development and Local Capacity Building for Forest and Land Rehabilitation

Prepared by

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List of Acronyms

ANFRI	Aek Nauli Forest Research Institute
CFNCRD	Center for Forest and Nature Conservation Research and Development (a Directorate of FORDA)
FLR	Forest and Land Rehabilitation
FORDA	Forestry Research and Development Agency
GoI	Government of Indonesia
ITTA	International Tropical Timber Agreement
ITTO	International Tropical Timber Organization
LTCA	Lake Toba Catchment Area
MOU	Memorandum of Understanding
NGO	Non-Government Organisation
PSC	Project Steering Committee
ToR	Terms of Reference

Contents

Executive summary

This ex-post evaluation is one of three being carried out as part of a thematic assessment of ITTO supported projects in Papua New Guinea and Indonesia with various degrees of community participation. The primary purpose of all three evaluations is: "*...to provide a concise diagnosis...to point out the successful and unsuccessful outcomes, the reasons for successes and failures, and the contribution of the projects towards the achievement of ITTO's Objective 2000, and to draw lessons that can be used to improve similar projects in the future*." The in-country component of the evaluation occurred between 2nd and 18th July 2012, and the basic information about the Project is shown in the following table.

Project name	Restoring the ecosystem functions of the Lake Toba catchment area through community development and local capacity building for forest and land rehabilitation
Project number	PD 394/06 Rev. 1 (F)
Executing agency	Center for Forest and Nature Conservation Research and Development (a Directorate of FORDA), The Ministry of Forestry
Starting date and duration	1st September 2007; duration 37 months.
Budget (US$)	US$ 686,784 (ITTO: US$ 549,974 and GOI: in-kind contribution of US$ 136,810)
Country	Indonesia

Context and background
Unlike in West Java, the culture of the Batak and other local communities does not place a high value on integrating trees into the local farming systems in the Lake Toba Catchment Area (LTCA). Consequently, many of the project's activities were focused on (i) socialising the idea that tree planting and adoption of agroforestry systems on private land are good for the environment as well as good for improving the income of farmers, and (ii) demonstrating approaches to tree planting on private land that can be integrated into the contemporary farming systems.

Major achievements
In summary, the Project has been successful in achieving most of its planned Outputs and its Specific Objectives and in contributing to its Development Objective (its impact). Among the reasons for this achievement are:

- The Project addressed a real need in the Lake Toba Catchment Area.
- There was good support at all levels of government and among the targeted rural populations.
- The implementation of the Project was efficient and effective.

Lessons learned
A number of lessons have emerged from the Project's implementation, and these include:

1. The lack of a culture among farmers in the LTCA of integrating trees into the farming systems will take a long time to overcome. There have to be real and obvious benefits to farmers before they will commit resources to modify their existing farming practices.
2. Well trained extension officers can contribute to changing the mindset of the farmers by focusing on working collaboratively rather than issuing directives.
3. Visionary and innovative farmers can play an important catalytic role in encouraging their neighbours to become involved in adopting agroforestry systems.
4. Attempts at increasing tree cover on clan lands are more difficult than on lands with clear private tenure rights.
5. Increasing tree cover on clan lands should be approached along the lines identified in the land tenure study by interfacing with the customary institutional systems and facilitating a social process leading to a partnership between clan members and an intermediary organisation such as a NGO.
6. A three year project cannot be expected to overcome entrenched social/institutional issues associated with tenure uncertainties and conflicts in clan lands. It can do little more than identify the issues and chart a possible way ahead.
7. Iterative approaches to implementation, such as action research, can be usefully employed in situations such as those faced by the project where there is a high degree of social and institutional uncertainty in the operational context.

8. Community empowerment is a social process that needs careful nurturing and support—participation in training courses is not sufficient to empower farmers and farmers' groups to be independent decision makers.

Conclusions

The results of the project's activities provide some guidance for the future. In particular, the demonstration of tree planting systems on private land; spreading the ideas (socialising the process) and providing information for regional planning are valuable contributions. Future emphasis on further strengthening the nascent farmers' groups (which remain weak) and encouraging the integration of tree crops into farming systems by improving the regulatory incentives are worth pursuing. This will contribute to the re-treeing of private and clan lands. Rehabilitating degraded government forest lands (which is where the majority of the degraded lands occur) is a complex issue and will require radical changes to government policy and practice.

The project has made a useful contribution to the achievement of ITTO's strategic objectives.

Recommendations

For the Executing Agency (Center for Forest and Nature Conservation Research and Development - FORDA)

1. Encourage the Aek Nauli Forest Research Center to monitor the demonstration plots established by the project and to collect data on growth rates of the different species and assess species-site matching.
2. Clarify and describe the essential elements of an approach (a model) to engage clan members in meaningful dialogue leading to the introduction of more tree and agroforestry systems in clan land. This will require explicit attention to facilitating a process of active participation and local decision making leading to empowerment.
3. Consider adopting an action research implementation modality (rather than a linear modality) for future projects of this nature where there are considerable uncertainties and unknowns particularly of a social and institutional nature.

For ITTO

4. Improve the assessment of logical frameworks during project design so that both specific and development objectives are realistic and that specific objectives are achievable within the timeframe of the project.

1. Introduction

The ITTO Manual for project monitoring, review, reporting and evaluation (ITTO 2009) notes that: "*The purpose of an evaluation is to guide or advice* (sic) *on the further implementation of the evaluated Project and/or on the formulation and implementation of future Projects*" and that: "*evaluation looks beyond the constituent elements of the Project, to the validity of its design and to its impact*." (p. 44.)

This evaluation is an ex-post evaluation and is one of three being carried out as part of a thematic assessment of ITTO supported projects in Papua New Guinea and Indonesia with various degrees of community participation. The primary purpose of all three evaluations, as stated in the ToR (see Annex 1) is "...*to provide a concise diagnosis of two projects related to Forest Rehabilitation [PD 271/04 Rev.3 (F) and PD 394/06 Rev.1 (F)] and one project related to Community Participation in SFM [PD 324/04 Rev.3 (F)] so as to point out the successful and unsuccessful outcomes, the reasons for successes and failures, and the contribution of the projects towards the achievement of ITTO's Objective 2000, and to draw lessons that can be used to improve similar projects in the future*."

The following table shows the basic statistics on the Project being evaluated.

Table 1. Basic information about the Project

Project name	Restoring the ecosystem functions of the Lake Toba catchment area through community development and local capacity building for forest and land rehabilitation
Project number	PD 394/06 Rev. 1 (F)
Executing agency	Forestry Research and Development Agency (FORDA), The Ministry of Forestry.
Starting date and duration	September 2007; planned: 36 months; actual: 37 months.
Budget (US$)	US$ 686,784 (ITTO: US$ 549,974 and GOI: in-kind contribution of US$ 136,810)
Country	Indonesia
Location	Seven Districts in the Lake Toba Catchment Area, Northern Sumatra, Indonesia

The Project Document describes how the Project fits into ITTO's strategic context in several ways. It complies with the ITTA 1994 objectives by: contributing to sustainable development; promoting research and development leading to improved forest management and encouraging members to develop forest policies aimed at sustainable utilisation and conservation of timber producing forests. It is also consistent with the ITTO Yokohama Action Plan in the field of reforestation and forest management by: supporting activities to secure the forest resource base through the implementation of forest policy, legislation and associated strategies; encouraging sustainable forestry through the involvement of non-government stakeholders in activities; promoting the conservation, rehabilitation and sustainable management of threatened forest ecosystems; promoting development of non- timber forest products and forest services; establishing and managing forests for multiple uses in close cooperation with local forest owners and communities living in forest areas in accordance with ITTO guidelines.

2. Evaluation scope, focus and approach

The purpose of the evaluation was outlined in the previous section, and its focus was guided by the evaluative framework described in ITTO (2009) and the detailed "Scope of Work" contained in the ToR (Annex 1).

No mid-term evaluation was carried out on the project during its implementation, although regular progress reports were produced. This ex-post evaluation was carried out by Dr Don Gilmour, an Australian forester and Dr Baharuddin Ghazali, a Malaysian forester. The approach taken in conducting the evaluation included: desk review of documents prior to the mission (although some of the key technical reports were not made available prior to the commencement of the mission); meetings and interviews with key groups and individuals in Jakarta, Bogor, the Districts in the Lake

Toba catchment area during a mission to Indonesia between 2nd and 18th July, 2012; review of key project products (including progress reports, minutes of PSC meetings and technical reports). Discussion also took place with relevant District officials, farmers and other stakeholders during the field visits. Annex 2 shows the schedule followed and people met during the evaluation.

At the end of the field mission a de-briefing presentation was made in Jakarta to representatives of the Ministry of Forestry to present the key finding of the evaluation and to obtain feedback. The powerpoint presentation used at the de-briefing is included as Annex 3.

3. Project facts

The Project needs to be seen in the context of the changing dynamics of forest management in Indonesia. The country has been going through a radical process of reformation, including decentralisation, for some years, and this has impacted on the way in which forest management is carried out. Decentralisation has not been a smooth process, and this is particularly relevant in the LTCA where there are multiple organisations often with unclear and/or overlapping authority to exercise their mandates.

The Project Document noted that: "*(i)integrated approaches on water catchment areas management, involving community participation become an essential step toward the achievement of the sustainable forest management...* "(ITTO 2007, p. 3). This alludes to two of the key aspects that are reflected in the design of the project, *viz*, the active participation of local individuals and groups in activities, and effective integration between agencies.

The total area of idle bare land in the Lake Toba Catchment Area (LTCA) was estimated in the Project Document as more than 24,000 ha and the LTCA has been listed by the Government of Indonesia as one of 12 priority catchment areas in the country to be rehabilitated, because of the severe degradation of its ecosystem functions. The Ministry of Forestry launched the National Movement of Forest and Land Rehabilitation, known as Gerakan Nasional Rehabilitasi Hutan dan Lahan (GERHAN) in 2003, with a target of 1.5 million hectares of forest land to be rehabilitated within a period of five years. The government of North Sumatra set a target of around 25,000 ha of degraded forest land to be rehabilitated in the Province by 2009. The strategic importance of rehabilitation of the LTCA is clear at all levels of government. However, the Project Document noted that past rehabilitation efforts had had little success due to a number of reasons that included:

- Rehabilitation programs often considered the local community as "objects" rather than "subjects" and this resulted in very low participation in activities by local communities and a lack of any sense of ownership of the outcomes.
- Regular fires burn the rehabilitated areas and destroy previously planted seedlings.
- Unclear land tenure and tenure conflicts constrain rehabilitation efforts in many areas.
- Ineffective coordination among local stakeholders limits optimal outcomes.

While some technical issues were also identified in the Project Document as constraining past rehabilitation efforts, it was clear that the major issues to be addressed were social and institutional in nature, and in particular, those associated with (i) unclear land tenure and tenure conflicts, and (ii) ineffective local participation and lack of community empowerment to undertake and sustain rehabilitation activities. This analysis provided the rationale for the project's design and its implementation. This emphasis is consistent with national strategies where participatory approaches had been emphasised for rehabilitation programmes since the late 1990s (ITTO 2007).

The Project Document stated that, by the end of the project, various models integrating agroforestry and reforestation into farming systems "...*will be available and can be adopted for wider use in forest and land rehabilitation*" (ITTO 2007, p. 8).

It was agreed at the first PSC meeting held in August 2007 that the main purpose of the project was to demonstrate how to manage critical lands to benefit both local people and the environment, and an expectation was expressed that these approaches would be taken up by the local people at the conclusion of the project.

The Project Document detailed a thorough analysis of the situation surrounding the unsustainable management of the area's forest lands, including a threat analysis and the construction of a problem tree that identified the underlying, or root, causes of the forest loss and degradation in the Lake Toba Catchment Area.

Following the analysis outlined above, a Development Objective for the Project was formulated as:

To contribute to the improvement and sustainability of ecosystem function of Lake Toba Catchments Area (LTCA).

Two Specific Objectives were formulated as:

1. To reduce the rate of forest clearing and conversion to agricultural land.

2. To promote forest and land rehabilitation surrounding Lake Toba Catchments Area.

It was proposed that these objectives be achieved through nine outputs, two linked to Specific Objective 1, and seven linked to Specific Objective 2. A logical framework was constructed with activities identified under each of the outputs and this provided the basis of the Project's implementation and reporting.

The Project was executed by the Center for Forest and Nature Conservation Research and Development (CFNCRD), a Directorate of the Forestry Research and Development Agency (FORDA), Ministry of Forestry. It was initially planned to run for 36 months, but continued for one additional month to a total of 37 months (from September 2007 to September 2010). A Project office was initially established in Parapat, but in Year 2 it was relocated to the premises of the Aek Nauli Forest Research Institute so that there was better integration between project activities and the Aek Nauli researchers.

4. Findings, lessons learned

4.1 Findings

4.1.1 Project achievements

Project context

Before discussing the achievements of the Project it is important to locate the project in the context of land use in the Lake Toba area and in particular the land use changes that have been taking place during the past several decades.

Data in the Project Completion Report (ITTO 2010) indicated that in the 12 years between 1985 and 1997 about 16,000 ha of forest were lost, either degraded or converted to agriculture. This is a rate of about 1,300 ha per year. It is presumed that most of this loss occurred on government forest land of various categories and it was suggested that substantial loss of forest is still occurring.

One of the major constraints previously identified as limiting rehabilitation efforts in the LTCA was unclear and conflicting land tenure. However, it became clear during the mission that this was not universal, and indeed varied widely between Districts and, in some cases, within Districts. In Samosir District, a large proportion of the non- government land is still held under clan ownership, although for various reasons some of this has been privatised during the past several decades, a process which is continuing, although slowly. Tenure uncertainties impinged on attempts to introduce tree and agroforestry systems to clan land because of difficulties associated with obtaining agreement from all clan members (many are absentee landowners but still have the right to be part of the decision making process). In Karo District, the process of privatising clan land was completed in about the 1970s and there are now no land use or tenure conflicts. Other Districts are intermediary between these two ends of the spectrum. This is a somewhat simplified characterisation of a complex land tenure situation, but sufficient to indicate that there will not be one single approach that will be suitable

for all situations. Any approach to rehabilitation will need to be tailored to the site-specific conditions, of which land tenure is one.

Unlike in West Java, the culture of the Batak and other local communities does not place a high value on integrating trees into the local farming systems in the LTCA. Consequently, many of the project's activities were focused on (i) socialising the idea that tree planting and adoption of agroforestry systems on private land are good for the environment as well as good for improving the income of farmers, and (ii) demonstrating approaches to tree planting on private land that can be integrated into the contemporary farming systems.

Outputs

The Project Steering Committee (PSC), at its first meeting in August 2007, requested the project team to revise the success indicators in the logical framework to make them clearer and more explicit. This was subsequently done. Activities for each Output were identified in the logical framework in the Project Document and these formed the basis of developing annual workplans and budgets. While activities are important in their own right, they are particularly important in contributing to the higher level Project Outputs and, if the internal logic of the logframe is sound, to the Specific and Development Objectives. The following Box summarises progress in producing the Outputs as judged against the re-formulated success indicators in the logical framework.

Box 1. Summary of achievements in producing Outputs

Output 1.1. Land productivity surrounding the Lake Toba Catchments Area increased.

Success indicators (from revised logframe):
- 20 ha of agroforestry models established at 4 sites by year 2
- 60 local people participated in training on agroforestry technology in year 2.
- A management plan for environmental services at the LTCA developed in year 2.

Achievement:
- A series of forestry and agroforestry plots (totalling 32.5 ha) was established on private farm land to provide practical illustrations of how land productivity could be increased by the integration of tree crops into the farming systems (some of these plantings have been destroyed by fires).

Output 1.2. Options for household sources of income are available.

Success indicators (from revised logframe):
- At least 3 sources of household income identified in Year 1
- 60 people participated in training on home based industry development in year 2

Achievement:
- Additional sources of household income (such as mushroom growing and beekeeping) were identified, although the rationale for this and the connection to forest rehabilitation are neither clear nor explicit.

Output 2.1. Forest and land rehabilitation models with forest fire prevention techniques established.

Success indicators (from revised logframe):
- Five main causes of forest fire at the LTCA identified with community participation
- 50 community leaders participated in workshop on forest fire prevention program
- 20 ha of demonstration plots for fire prevention established in Year 2 and used for training of local communities

Achievement:
- Approaches to fire suppression based on the use of fire breaks was demonstrated. The "model" consists of demonstration plots on private and clan land surrounded by firebreaks.

Output 2.2. Models of land tenure conflict resolution established and accepted by the target groups.

Success indicators (from revised logframe):
- At least 2 agroforestry models for different land tenure systems formulated through community

dialog
- 50 people participated in workshop on collaborative land management system
- 20 ha of demonstration plots for collaborative management established

Achievement:
- The models of "tenure conflict resolution" are implicit and have not been articulated. They refer to the findings of a tenure consultant who carried out an in-depth study on the topic of tenurial systems in Samosir District (Affandi and Harianja, 2008). There is no indication whether these models have been accepted by target groups. However, four clans in Samosir District have indicated interest in planting trees. The Forestry and Estate Crop Service of Samosir District has approved the building of several community nurseries in association with the farmers' groups.
- Planting of trees on land boundaries was cited as an example of a model, as the boundary trees define land ownership.

Output 2.3. Local community awareness on ecosystem functions improved.

Success indicators (from revised logframe):
- A map of social and culture of communities living in the LTCA developed in year 3
- 50 people participated in workshop on motivating local people's awareness of forest ecosystem
- Forest conservation campaign implemented at 5 locations

Achievement:
- A substantial effort was put into socialising various aspects of forest restoration, including ecosystem functioning, through workshops, publications and involvement with school nursery programmes.

Output 2.4. Appropriate technology for forest and land rehabilitation in the Lake Toba Catchments Area identified.

Success indicators (from revised logframe):
- Five appropriate strategies for restoring the LTCA identified in year 3
- 50 people participated in training on FLR techniques

Achievement:
- Strategies aimed at rehabilitating degraded land in the LTCA were developed in one of the in-depth studies.
- Some of the agroforestry techniques developed by the project have been incorporated into the training curriculum of the Forestry Training Centre in Siantar for delivery to extension officers and farmers.

Output 2.5. Well trained and highly motivated community groups on forest and land rehabilitation program established.

Success indicators (from revised logframe):
- 50 forestry extension officers trained in FLR techniques
- Comparative study to 2 locations in Java with a successful FLR program undertaken

Achievement:
- 20 government extension officers participated in a training course on the application of rehabilitation techniques.
- Three study tours for farmers and extension officers were undertaken.

Output 2.6. The capacity of local institutions on managing forest and land rehabilitation program are strengthened.

Success indicators (from revised logframe):
- At least 13 related stakeholders of the project sites identified.
- Five primary stakeholders in the restoring of LTCA approached
- 50 local people participated in workshop on capacity building

Achievement:
- Several pre-existing farmers' groups were supported to establish nurseries and produce seedlings for local distribution.

- Three of the seven Forest Services in the LTCA have taken up some of the key aspects of the project's approach to forest land rehabilitation. For example: Karo District has recognised the importance of using firebreaks in areas of high fire incidence, although the maintenance of firebreaks remains unresolved; Samosir District has recognised the value of using demonstration plots to demonstrate the use of agroforestry techniques; Simalungun District has recognised the value of awareness raising for promoting ecosystem functions.

Output 2.7. Participatory Master Plan for Rehabilitation and Conservation of LCTA formulated.

Success indicators (from revised logframe):
- 2 (two) management plan at 3 district samples identified
- 4 series of discussion on master plan for FLR conducted
- Master plan of conservation and rehabilitation formulated and used by 7 districts surrounding the LTCA

Achievement:
- The Lake Toba Master Plan (as prepared by the Lake Toba Ecosystem Management Agency) was reviewed by the project for its consistency with land rehabilitation in the LTCA.
- A series of discussions took place on the topic of ensuring integration of forest land rehabilitation into the Lake Toba Master Plan.

Most of the Outputs were achieved by conducting in-depth studies and following each study with a workshop or consultation to expose the results of the study to a range of stakeholders and debate the implications for future planning and implementation. The in-depth studies covered the topics of: (i) agroforestry technologies; (ii) environmental services; (iii) prospective household income sources; (iv) underlying causes of forest fire; (v) land tenure systems; (vi) socio-cultural aspects of local communities, and (vii) rehabilitation strategies.

Five major workshops were held in different parts of the LTCA, with the topic for each workshop being matched with a relevant location as shown in the following table.

Table 2. Workshops to inform key stakeholders and help to socialise rehabilitation of degraded land in the LTCA

Workshop topic	**Location**
Forest fire	Karo District
Management of clan land	Samosir District
Ecosystem functioning	Simalungun District
Discussion and dissemination of results of in-depth studies	Provincial Forestry Service (Medan)
Dissemination of project's final results	University of Nommensen (Medan)

Outcomes

Project outcomes generally refer to the extent to which the Specific Objectives are achieved and include an assessment of related aspects such as sustainability and capacity development.
The two Specific Objectives defined in the Project Document are:

1. To reduce the rate of forest clearing and conversion to agricultural land.

2. To promote forest and land rehabilitation surrounding Lake Toba Catchments Area.

The success indicators against which to judge achievement (as listed in the revised logframe in the Project Document) are:

- Rate of deforestation in the 3 district samples reduced 5 % by end of the project
- Local community welfare improved through development of 3 income sources by year 2 of the project
- 60 ha of demonstration plots for FLR established in year 3 and used for training of local communities

The approach taken by the project has basically followed three threads. It has: (i) demonstrated how agroforestry can be integrated into private farmland to improve environmental and economic benefits; (ii) collected a great deal of useful material that could be used in future planning and implementation of rehabilitation activities; and (iii) raised awareness among a wide range of stakeholders of the issues associated with improving rehabilitation in the LTCA. This was largely in accordance with the strategy outlined in the Project Document.

A total of about 330 ha of demonstration plots were established. There is some evidence that there has been a take up of tree planting by several farmers apart from those who worked directly with the project, although there is far from a tree planting movement underway. Some of these additional plantings have been destroyed by fire.

One of the key strategies outlined in the Project Document was to: "...*reduce local dependency to forest resources, particularly their demand on forest-originated agricultural land.*" (ITTO 2007, p. 9). This strategy was intended to: *"...lead to the reduction or complete(ly) prevention of forest clearing."* (p.9). Output 1.2 of the project related to providing "*options for household sources of income,*" presumably in an attempt to reduce local dependency on forests. This approach is quite common in projects where there is an attempt to provide alternate sources of livelihood, and thereby to reduce pressure on forests and forest land. The presumption is that if the development needs of the local community can be met from alternate sources, this will lessen their demand to use forest resources. This approach is generally referred to as an "*alternative livelihood approach*" (Gilmour 1995). However, implementing such an approach requires a good deal of sociological enquiry to: (i) identify those people who collect products from the forest or make use of forests for agricultural purposes, and then (ii) determine what products or resources could realistically be substituted for those collected or used. While such an approach is intuitively appealing it is a reductionist view that compresses a complex array of social, economic, political, institutional and resource problems into a simple cause-effect relationship. The approach taken by the project in carrying out the activities leading to Output 1.2 was somewhat simplistic and there is no indication whether or not the people who received training in alternate livelihoods were those who collected material from forests or used forests unsustainably.

The rate of forest clearing in the LTCA is reported in the Project Completion Report (ITTO 2010) to be in excess of 1,000 ha per year, and it is unrealistic to suggest that a project such as this can reduce the deforestation in seven Districts by 5% in three years (as specified in the success indicators). The few hundred hectares of land under demonstration plots and the modest spill over effect make an insignificant dent to the overall problem, but they could point the way for the future. In spite of these caveats, a scrutiny of the information in the previous paragraphs, leads to the situation where it can be stated with some confidence that **the Project has achieved most aspects of its Specific Objectives**.

Capacity development
Substantial effort was put into developing the capacity of key stakeholders to be aware of the issues associated with land rehabilitation in the LTCA, particularly to improve planning procedures, and in gaining experience in establishing agroforestry plots in private land.

Sustainability
There seems little doubt that the enthusiasm shown by a few individual farmers will result in the demonstration plots already established by the project being maintained. However, for several reasons it seems unlikely that there will be widespread uptake of approaches to integrate tree planting into farming systems in the LTCA. These reasons include: (i) the lack of a local culture of tree planting, (ii) the mistrust openly expressed by most local farmers towards the government, and (iii) the general lack of appreciation of the important ecological functions of the forest. Some form of on-going support over a lengthy period of time and the involvement of trusted interlocutors will be needed to resolve this situation.

Impact (Development Objective)

The impact of projects relates to the extent to which they progress towards achieving their development objective. The Development Objective, as stated in the Project Document is:

To contribute to the improvement and sustainability of ecosystem function of Lake Toba Catchments Area (LTCA).

The success indicators against which to judge this Objective (from the revised logframe) are:

- Sustainability of ecosystem function of LTCA improved through promoted forest and land rehabilitation (FLR) at seven districts with the extent around 500 ha two years after project completion.

There are no data available to indicate the area of land that has been planted in the two years since the project concluded, but it is unlikely to be very large. Nonetheless, the project's emphasis on demonstration of agroforestry on private land, spreading the ideas gleaned from the in-depth studies and capacity building have certainly contributed to improving the ecosystem functioning of the LTCA.

Overall, **the Project has made a useful contribution to achieving its long term Development Objective.**

In summary, the Project has been successful in achieving most of its planned Outputs and its Specific Objectives and in contributing to its Development Objective (its impact). Among the reasons for this achievement are:

- The Project addressed a real need in the Lake Toba Catchment Area.
- There was good support at all levels of government and among the targeted rural populations.
- The implementation of the project was efficient and effective.

4.1.2 Project formulation and implementation

Project formulation and design
In hindsight, the project design was a little too ambitious for a three year period, particularly given the social and institutional constraints that were acknowledged at the commencement of the project. The logframe in the Project Document has generally stood the test of time, particularly the formulation of the Outputs and Activities.

Implementation arrangements
Managerial and work efficiency were good as judging from the level of achievement in such a relatively short time frame and the satisfaction of government and local partners. Implementation of field activities was carried out by staff operating from a separate project office. This was located at Parapat during the first year but then shifted to the Aek Nauli Forest Research Institute (ANFRI) in Year 2, to foster better integration with the ANFRI researchers. These arrangements contributed to efficient functioning, particularly during the final two years.

The three-D approach (Diagnosis, Design and Delivery) explicitly adopted to implement the project is well suited to a situation where most of the project's context is well known or able to be determined easily. However, such an approach is less well suited to a situation (as applied in this project) where there are many uncertainties and unknowns, particularly of a social and institutional nature. In the LTCA there is no widespread culture of tree planting (a social/cultural issue); there are land use conflicts in clan lands (a social/cultural/institutional issue) and acknowledged poor integration between key organisations (an institutional issue). Progress depends on addressing all of these issues, plus many more. Iterative approaches, such as action research, which explicitly acknowledge uncertainties as part of the operational context, offer a more appropriate modality for implementation.

Project duration
The Project duration was planned for 36 months, but was extended for an additional month, and all planned activities were completed within this timeframe.

Workplans
Annual Workplans were the major vehicles for planning, monitoring progress and reporting. They were constructed in conformity with the logframe in the Project Document, and proved effective in planning activities and tracking performance.

Reporting
Five Progress Reports were prepared during the life of the Project and submitted to ITTO. These used the logframe as the structure against which progress was reported. They also included a summary of the budget situation, the current annual workplan and comments on problems encountered.

Project steering and technical advice
A Project Steering Committee (PSC) was established with a mandate to have a general overview, supervisory, monitoring and support role for the Project. Four PSC meetings were held and minutes prepared that recorded the result of deliberations. A Project Technical committee was also established and held one meeting in Jakarta in August 2009.

Budget issues
The following table shows the original budget and the expenditure for each source of funds by the end of the project.

Table 3. Original budget and expenditure for each of the major funding sources

Source of funds	Original budget (USD)	Expenditure (USD)
ITTO	491,145*	491,145
GoI (in-kind)	136,810	164,300
TOTAL	**627,955**	**655,445**

*An additional amount of USD 58,829 was retained by ITTO for administration, monitoring and evaluation purposes.

The ITTO components of the project's accounts were subjected to formal audits, all of which were satisfactory. Final audited statements were submitted to ITTO.

4.2 Lessons learned

Several lessons have been learned from the project's implementation and from this evaluation that are worthy of documentation for future work in this area. These include:

1. The lack of a culture among farmers in the LTCA of integrating trees into the farming systems will take a long time to overcome. There have to be real and obvious benefits to farmers before they will commit resources to modify their existing farming practices.
2. Well trained extension officers can contribute to changing the mindset of the farmers by focusing on working collaboratively rather than issuing directives.
3. Visionary and innovative farmers can play an important catalytic role in encouraging their neighbours to become involved in adopting agroforestry systems.
4. Attempts at increasing tree cover on clan lands are more difficult than on lands with clear private tenure rights.
5. Increasing tree cover on clan lands should be approached along the lines identified in the land tenure study (Affandi and Harianja, 2008) by interfacing with the customary institutional systems and facilitating a social process leading to a partnership between clan members and an intermediary organisation such as a NGO.
6. A three year project cannot be expected to overcome entrenched social/institutional issues associated with tenure uncertainties and conflicts in clan lands. It can do little more than identify the issues and chart a possible way ahead.
7. Iterative approaches to implementation, such as action research, can be usefully employed in situations such as those faced by the project where there is a high degree of social and institutional uncertainty in the operational context.
8. Community empowerment is a social process that needs careful nurturing and support—participation in training courses is not sufficient to empower farmers and farmers' groups to be independent decision makers.

5. Conclusions and recommendations

5.1 Conclusions

It is estimated that the area of degraded forest land in the LTCA is around 142,000 ha (ITTO 2010). The distribution of degraded forest between government and private/clan land is not clear, but most is probably on government land of various categories. Tree planting on private and clan lands is not widely practiced and will probably require some sort of a social movement for it to become widespread. A complicating factor is that lack of trust of government by local communities in the LTCA is widespread and vocally expressed. Any solution to this problem will likely depend on building a partnership involving government and private and clan land owners, possibly facilitated by mutually trusted neutral facilitators. Attempts to achieve government policy objectives, such as integrating tree crops into farming systems or rehabilitating degraded government land, can best be approached by developing enabling regulatory frameworks that encourage positive actions, rather than by any form of regulatory enforcement. The project initiated a move to train extension officers for engagement with the communities - a switch of tactics from enforcement to consultation, and this could be continued as a standard procedure.

The results of the project's activities provide some guidance for the future. In particular, the demonstration of tree planting systems on private land; spreading the ideas (socialising the process) and providing information for regional planning are valuable contributions. Future emphasis on further strengthening the nascent farmers' groups (which remain weak) and encouraging the integration of tree crops into farming systems by improving the regulatory incentives are worth pursuing. This could contribute to the re-treeing of private and clan lands. Rehabilitating degraded government forest lands (which is where the majority of the degraded lands occur) is a complex issue and will require radical changes to government policy and practice.

Not all of the LTCA is degraded and not all categories of land in the catchment need intensive rehabilitation. It could be worth considering a more strategic approach to future rehabilitation activities by disaggregating the landscape to identify a spectrum of need and likelihood of success. A simplistic start to such an exercise is shown in the following table as an example.

Table 4. Indicative example of a rehabilitation strategy based on a combination of need and likelihood of success

	Land category	**Need for rehabilitation**	**Rehabilitation strategy**	**Likelihood of short term success**
1	Gently sloping, productive agricultural land; private tenure; intensively managed for cash crops (e.g. much of Karo District)	Low	Little/no rehabilitation necessary—don't waste resources	Low (farmers are probably not interested in incorporating trees into their farming system)
2	Steeply undulating deforested land with agricultural crops in valley bottoms; private tenure (e.g. the southern edges of Karo District	Medium	Work with motivated farmers/farmers' groups to establish demonstration plots and encourage expansion	High (farmers interested or could be easily motivated)
3	Steeply undulating deforested land with agriculture in valley bottoms; subsistence/cash cropping clan tenure (e.g. much of Samosir District)	Medium/high	Interface with traditional clan institutions using a trusted intermediary; establish demonstration plots where interest is high	Medium (some individual farmers may be keen, but some may undermine efforts, at least initially
4	Steep government land; substantial loss or	High	Direct government rehabilitation following	Low (because of fire and other problems)

	degradation of forests (e.g. many of the steeper parts of most Districts)		extensive awareness raising campaigns; and/or establishment of trials of some form of CBFM	

Such a matrix could assist in making strategic decisions about the allocation of resources and the focus of rehabilitation efforts.

As well as the local contribution in the LTCA, the Project has made a useful contribution to the achievement of ITTO's strategic objectives, outlined in the ITTA 1994 Objectives and the Yokohama Action Plan, as shown in the following table.

Table 5. Contribution of the Project to ITTO's strategic objectives as outlined in the ITTA 1994 Objectives and the Yokohama Action Plan

ITTO strategic objectives	Project contributions
Contributing to sustainable development	The Project demonstrated approaches to integrating tree crops into the farming systems in the LTCA.
Encouraging members to develop national forest policies aimed at sustainable utilisation and conservation of timber producing forests	The project produced a draft Presidential Decree on land use systems in the LTCA and provided it to the Lake Toba Ecosystem Management Coordinating Agency.
Encouraging the involvement of non-government stakeholders in activities	The project operated directly with individual farmers, farmers' groups and one NGO to increase their ability to establish seedlings and integrate trees into the local farming systems. The project also involved school communities and universities in its activities.
Securing the forest resource base through the implementation of forest policy, legislation and associated strategies	The project supported improvements to the LTCA Master Plan by reviewing the integration of forest rehabilitation into the Master Plan.
Establishing and managing forests for multiple uses in close cooperation with local forest owners and communities living in forest areas	The project supported the development of diverse agroforestry systems in private and clan land by (i) providing access to non-timber as well as timber species in nurseries, (ii) providing access to knowledge and information about agroforestry models, and (iii) encouraging extraction of non-timber products, such as honey and mushrooms, from the surrounding forests to supplement income.

5.2 Recommendations

Recommendations for the Executing Agency (Center for Forest and Nature Conservation Research and Development-FORDA)

1. Encourage the Aek Nauli Forest Research Center to monitor the demonstration plots established by the project and to collect data on growth rates of the different species and assess species-site matching.

2. Clarify and describe the essential elements of an approach (a model) to engage clan members in meaningful dialogue leading to the introduction of more tree and agroforestry systems in clan land. This will require explicit attention to facilitating a process of active participation and local decision making leading to empowerment.

3. Consider adopting an action research implementation modality (rather than a linear modality) for future projects of this nature where there are considerable uncertainties and unknowns particularly of a social and institutional nature.

Recommendations for ITTO

4. Improve the assessment of logical frameworks during project design so that both specific and development objectives are realistic and that specific objectives are achievable within the timeframe of the project.

6. References

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7. Annexes

Annex 1. Terms of reference for evaluation

Annex 2. Schedule of activities and people met during evaluation

Annex 3. Powerpoint presentation used for de-brief