INTERNATIONAL TROPICAL TIMBER ORGANIZATION

ITTO

PROJECT DOCUMENT

TITLE	TECHNOLOGICAL DEVELOPMENT FOR THE PRODUCTION OF PLANTING MATERIALS TO SUPPORT SUSTAINABLE PLANTATION OF BALI INDIGENOUS SPECIES THROUGH COMMUNITY PARTICIPATION
SERIAL NUMBER	PD 386/05 Rev.1 (F)
COMMITTEE	REFORESTATION AND FOREST MANAGEMENT
SUBMITTED BY	GOVERNMENT OF INDONESIA
ORIGINAL LANGUAGE	ENGLISH

SUMMARY

The development objective of the proposed project is to support the tree planting program of the Provincial Government of Bali as a way of empowering local economy and improving the environmental conditions of Bali. The proposed project is directed towards developing appropriate technology for production of planting materials, **and establish plantation of 2500 ha using Bali indigenous species with community participation**. The expected outputs of the proposed project would be: 1) development of suitable propagation technology for selected species; 2) maintenance of seed orchard; 3) develop and disseminate technical guidelines; 4) updating forest land use; 5) produce and distribute planting materials; 6) technical assistance for establishing and maintenance of 2500 ha plantation; 7) introduce agroforestry model; 8) develop and applied monitoring system. The main characteristic of the project is targeting community participation through their involvement in production of planting materials, training, and developing appropriate agroforestry model.

EXECUTING AGENCY	Bali Provincial Forestry Service in collaboration with Directorate General of Land Rehabilitation and Social Forestry , Ministry of Forestry
COOPERATING GOVERNMENTS	
DURATION	36 MONTHS
APPROXIMATE STARTING DATE	TO BE DETERMINED

BUDGET AND PROPOSED SOURCES OF FINANCE

Source	Contribution in US$	Local Currency Equivalent
ITTO	**597, 512**	
Gov't of Indoensia	1,076,662	
TOTAL	**1,674,174**	

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PART I: CONTEXT

1. Origin

The origin of the proposed project stemmed from an ITTO project PD 137/02 Rev.2 (F) "Demonstration Plantation of *Zantoxylum rhetsa, Manilkara kauki, Alstonia scholaris,* and *Wrightia pubescens* to Promote Sustainable Bali Natural Forest". The Project development objective was to promote plantations of indigenous trees for the establishment of sustainable plantation forests.

The above projects have demonstrated the feasibility for the establishment of plantation of indigenous species. Some 150 ha of 4 species tested have been established along with 20 ha of progeny and provenance test plots to select superior trees. Nursery facilities for production of seedlings have also been established. Vegetative propagation technique using tissue culture method has been tested and further development is still required for mass production. Vegetative propagation of the four species by means of macropropagation (cuttings) and micropropagation (tissue culture) were examined. Some species like *A. scholaris* is easily propagated by cuttings, while the rest are moderately difficult. In contrast *W. pubescen* and *M. kauki* are successfully propagated by tissue culture (Map of location Project PD 137/2 Rev.2 (F), see Annex D).

In genetic improvement aspect, foundations for the breeding program of the species have been laid down through the establishment of progeny trials and provenance trials. Periodical measurement and data analysis are in progress.

The sustainability of the project outcomes is achieved through the direct involvement of local farmers in the nursery and in plantation. Aspects of social forestry have been examined with the view that the end products of the timber would be used primarily to support local handicraft industry. Cooperative mechanism among farmers have also been developed and adopted.

Outputs of the project can be summarized as follows:

- Technical aspects of seed collection, vegetative propagation, production of planting materials, establishment of genetic trials have been examined
- Community participation and agroforestry model have been initiated.

The implementation of the previous project however was not without constraints. Some of the important constraints that have been identified are: 1) vegetative propagation of some species are still difficult and need further study; 2) model of community participation and cooperative mechanism study requires further refinement.

The Provincial Government of Bali recognized the significant importance of the outputs of the project and has decided to adopt the techniques for rehabilitation of degraded land of Bali. However, the government also realized that such an undertaking would require sufficient technical support. The experience and knowledge acquired in the previous projects would be most appropriate for the successful implementation of the program. The proposed project will specifically address this issue and will provide the required technical support to farmer groups.

2. Sectoral Policies

Ministry of Forestry has long been committed to put Indonesia's tropical forest back to their functions as a life supporting systems and provide tangible and intangible forest product and services. In order to achieve its long-term commitment, the Ministry of Forestry has determined five priority issues for immediate action, namely:

1. Combating illegal logging
2. Rehabilitation and conservation of forest resources
3. Restructuring of forestry sector

4. Community empowerments
5. Enforcement of forest function and boundary

Forest resources play a critical role in improving Indonesia's economy and in stimulating sustainable development. The deterioration of natural forest has had significant impact on the economy as well as immediate environmental impact. Government policies have been adopted to reverse the deteriorating trend of natural forest of Indonesia. As signatory to the Convention of Biological Diversity (CBD), the government policy is also taking into account the importance of ecological and biological value of forest resources. In view of this government policy, the proposed project is very much relevance to the priority 2 Rehabilitation and Conservation of Forest Resources and priority 4 Community empowerments.

In the field of reforestation ITTO is concerned with the management and conservation of the resource base for tropical timber (ITTO Yokohama Action Plan 2002 – 2006, Goal 2. Promote sustainable management of tropical forest resources). Clearly the proposed project will complement the government policy for establishment of commercial plantation and the relevance ITTO policy.

3. Program and Operational Activities

The government policy on forestry sector as set out in the five priorities program has been translated into a range of programs and activities. In the issue of rehabilitation and conservation of forest resources, recently a national movement on forest and land rehabilitation has been launched. The program is targeting to rehabilitate for the next 5 years a total of 1,5 million ha. In the first year, this program was targeting to rehabilitate 300,000 ha of degraded land and forest area.

In more recent years signs of overexploitation have become more serious by the incident of extensive forest fire, severe drought and land dispute. The impact of logging on plant genetic resources are considered as one the most critical as it will affect future regeneration of the forest. Several measures have been taken to reduce the impact on the ecosystems, such as implementing criteria and indicators for sustainable forest management, employing reduce impact logging, establishing *ex situ* and *in situ* conservation sites etc., and these efforts should be continued.

The national program on rehabilitation of degraded forest and land which was initiated in 2002 is among the top priority program of the government. Across the country millions of trees have been planted. Wide range of species has been selected to cater for various uses as well as local needs, including indigenous species.

PART II: THE PROJECT

1. Project Objectives

Elsewhere in major tropical forest areas the sustainability of timber supplies from natural forest is under severe threats due to unsustainable practices of utilization of forest resources. Indonesia is amongst those countries where timber production from natural forest is declining due to diminishing forest resources. The Government is determined to reverse that trend and has examined various options to implement a major rehabilitation programs. Among those options is the rehabilitation of degraded land and forest or commonly known as GERHAN ("Gerakan Nasional Rehabilitasi Hutan dan Lahan").

As stated in the ITTO Objective 2000, ITTO is fully committed to achieving exports of tropical timber and timber products from sustainable managed sources. In line with the government policy and the ITTO Objective 2000, the proposed project focuses on promoting the

establishment of plantations of indigenous trees. Such a plantation would be greatly benefiting the local craftsman, as the end use of the indigenous timber would be for handicraft.

The philosophy of sustainable management of plantation to support local demand underpins the Development Objective of this proposed project. Since many of the degraded land are in private land, community involvement in the project is also vitally important.

1.1 Development objective

To support the tree planting program of the Provincial Government of Bali as a way of empowering local economy and improving the environmental conditions of Bali.

The Provincial Government of Bali since 2003 has set out to embark on rehabilitation of degraded forest popularly known as Bali Greening Program. Experience in the past has demonstrated that part of the failure in having a successful plantation was the inability of the local organization to provide good quality planting materials. The proposed project focuses on providing technical support for establishing plantation of indigenous trees and maintaining the genetic tests so that genetically improved materials of the selected species would be available for productive plantation. Technical support would focus on production of planting materials at reasonable cost, upgrading of nursery facilities, training for farmers. Works toward producing genetically improved materials would stem from the on-going genetic test established by the previous project.

1.2 Specific objective

1.2.1 To identify **and implement** suitable technology for production of high quality planting materials **and plantation establishment using Bali indigenous species with community participation.**

Propagation techniques developed by previous ITTO projects (PD 137/02) will be further developed and applied. Genetic improvement trials established by the previous ITTO project (PD 137/02) is still in progress. Data collection and analysis will be continued before improved genetic materials can be made available. Genetic improvement of other species will be initiated to cater for future demand. The goal of this work would be to have seed sources of genetically improved materials.

Concurrently, seeds from identified seed sources will be collected and used to produce planting materials sufficient to plant 2500 ha plantations. These planting materials will be distributed to farmers and local community for planting in private or community land. The involvement of local community will be facilitated by agroforestry system suitable to local custom. Nursery facilities and infrastructure would be improved to cope with the demand to produce 1.1 millions plants.

Administrative capacity of the provincial government is also critical for the successful reforestation and rehabilitation program. This will be strengthened by improving the land use map and monitoring system. An international expert will be invited to assist in developing effective monitoring system.

2. Justification

Deforestation of all kinds is increasingly becoming a major problem in Indonesia. Plantation forest is considered one of the most viable ways of fulfilling many of the productive and protective roles of the natural forest that were lost due to deforestation. The Government of

Indonesia has also adopted the policy to make plantation establishment an attractive economic venture.

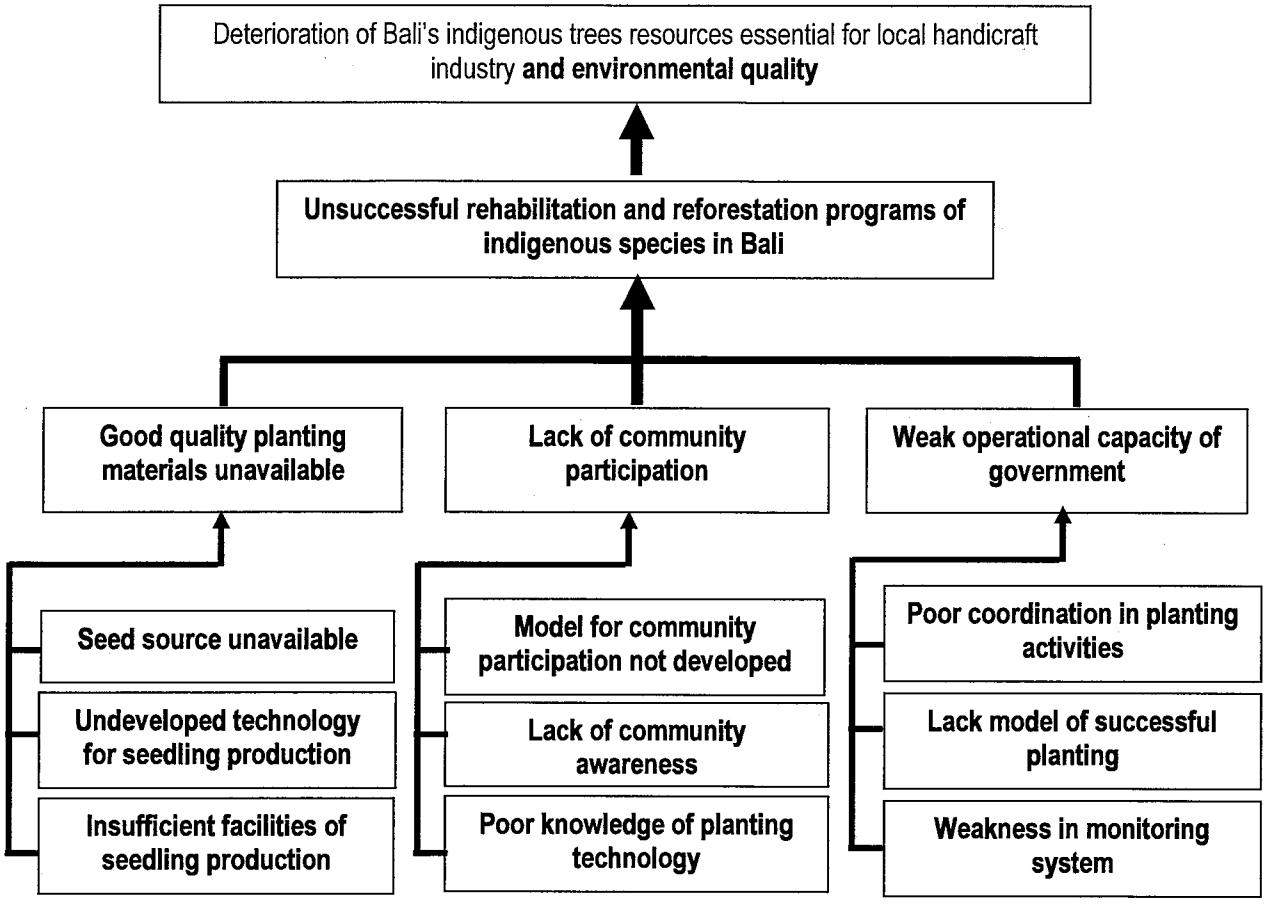
Under so-called National Movement on Rehabilitation of Forest and Land, the government plan to improve the environmental conditions, provide raw materials and eventually improve the economy of rural people. Over the next 5 years, starting from 2003, some 3 millions ha of plantation would be established. The program of plantation establishment when successful would be a major breakthrough in the attempts to recover the loss of timber supply from deteriorating forests. Appropriate techniques and good quality planting materials are identified as the important contributing factor for the successful implementation of this program. The experience and technical knowledge acquired in the previous project would be most suitable to support this program.

In Bali the deterioration of natural resources especially those providing raw materials of handicraft industry could have serious implications. The proposed project complements the reforestation and plantation establishment of the Government of Indonesia. This program is expected to set example for farmers to plant trees in their land. From the view point of conservation of forest genetic resources, this project will also stimulate the national program to enhance capabilities for conservation and genetic improvement of indigenous species.

2.1 Problems to be addressed

Wood-based local handicraft industry is an integral part of the tourism industry of Bali. Export value of handicraft products rose from USD 73 million in 2000 to USD 81 million in 2004. Wood-based handicraft industry also takes up around 35% (48,000 m^3) of wood consumption in Bali. More than 10,000 small and medium scale industries are currently operating in Bali providing direct employment for over 39,000 jobs. Despite the economic importance of this handicraft industry, concern is growing over the sustainability of the industry due to the deterioration of the resources. Replanting program has been carried out by the various organizations but successful plantations are scarce due to lack of technical inputs, and community participation.

The proposed project would provide the much-needed technical supervision for the production of planting materials, suitable site selection, plantation establishment and maintenance of the plantation. In addition, work on genetic improvement would still have to be continued to complete the process of selecting genetically superior trees.



2.2 Intended situation after Project completion

Deforestation at much smaller scale is also taking place in the island of Bali. This is reflected by the increase of degraded forest and land. Over 280,000 ha of land are classified as degraded and critical. Rehabilitation of this land therefore is urgently needed. The production of good quality planting materials and the involvement of local farmers will help ensure the successful establishment of the plantation.

When completed up to 2500 ha of new plantation of indigenous species would be established in Bali. This would provide significant volume of timber resources for the local demand, providing approximately 1.1 million trees or equivalent to 47,120 m^3. Although harvesting may not take place in the next 10 years, the successful establishment of the plantation would no doubt encourage people to establish similar plantations. As it is in the culture of Balinese that planting and tending trees is part of their daily routine. Modernization due to tourism development has somehow shifted the cultural value to something of immediate needs. The plantation would hopefully restore the traditional value of planting trees.

Aside from improving the shortage of raw materials for local industry, the plantation would also eventually improve the quality of the environment. Deforestation has brought about severe drought and floods in many part of Indonesia. This could also take place in Bali if reforestation of degraded land fails

2.3 Project strategy

Degradation of tree resources of indigenous species of Bali and the dependency of local community to the timber resources are some of the major issues facing forestry development in Bali. Therefore, to address the issue of land degradation participation of local community is

an important part of the program. The overall strategy to meet the objectives set out in the proposed project is to improve the capacity of local government and local community to carry out successful reforestation and rehabilitation programs of degraded forest land.

The various activities are determined to ensure that outputs will be delivered in effective and efficient manner. The issue of unavailability of good planting materials will be addressed by providing information on the available seed sources in Bali, maintaining the seed orchards established during the previous project, developing propagation techniques of some difficult-to propagate species, and improving the production facilities.

Since most of the plantation area in Bali where indigenous species occur are in private or community land, it is most important that the community is directly involved in the program. The participation of local community will ensure the successful implementation of the project as well as the sustainability of the plantation program. In order to improve community awareness the proposed project will attempt to develop suitable agroforestry model, conduct workshop and training to improve skill.

The local government play an important role in reforestation and rehabilitation program. The lack of success on reforestation in Bali is partly due to the weak operational capacity of the government to plan and carry out such program. To improve the operational capacity the project will attempt to update forest land use map so that planning can be carried out more effectively, develop suitable monitoring and evaluation system and provide a model of successful plantation.

2.4 Target beneficiaries

Major beneficiary of the proposed project would be:

a. The Government of **Bali**. The proposed project would **support** the establishment of plantations as part of the national movement on rehabilitation of land and forest. **Although the area of plantation is very small compare to the degraded land of 280,000 ha, the plantation could be used as a demonstration model of successful plantation. This, in turn would hopefully stimulate local community to replant their unproductive and degraded land. Successful plantation would also increase the confidence of the local forestry officers in implementing reforestation program.**

b. Local wood-based handicraft industry in Bali. Tourism in Bali, despite security concern worldwide, will continue to prosper and bring about positive economic benefit to supporting industries such as wood-based handicraft. **In the long-term, the continuous supply of timber for handicraft industry would benefit the local industry.**

c. Research institutions. **Researchers from University of Udayana Bali, University of Gadjah Mada Yogyakarta and R&D Centre for Forest Plantation of FORDA are involved in implementing project activities.** Experience and technology developed under the proposed project will improve the research capability **of the respective researchers.**

d. Community. **The project would carry out works in 6 Districts across Bali and local community and local government would directly and indirectly involve in the project.** In the long-term, improved condition of degraded forest will be beneficial for local community both for spiritual attachment and for income sources. **Skill and knowledge acquired by the community would be useful to carry out their own replanting program.**

2.5 Technical and scientific aspects

The genetic improvement tests initiated in the previous project are an important step to address the issue of good quality planting materials which had been indicated as one of the factors attributed to the failure of many plantation programs. The establishment of progeny trials of *Zantoxylum rhetsa, Manilkara kauki, Alstonia scholaris,* and *Wrightia pubescen* is expected to yield outstanding trees and eventually genetically improved seeds. **Mother trees of the species have been collected from a wide range of locations in Bali and outside Bali. Wide genetic base is critical for genetic test. Therefore, whenever possible a large number of mother trees were identified and seeds collected. The numbers of mother trees of each species used for the progeny test are *X. rhetsa* 74 trees, *M. kauki* 100 trees, *W. pubescens* 113 trees and *A. scholaris* 129 trees.**

The progeny test is a way of selecting individuals or families of superior growth and determines if the performance is affected more by genetic rather than environmental factor. Periodical measurement has been carried out since they were established in 2003. Normally final assessment of the progeny trials is carried out when the growth trend has stabilized (conventionally it is one-third of the rotation age). Therefore, maintenance of the stand, measurement and analysis of data collected has to be continued.

In the previous project, vegetative propagation of the four species by means of macropropagation (cuttings) and micro propagation (tissue culture) were examined. Some species like *A. scholaris* is easily propagated by cuttings, while the rest are moderately difficult. In contrast *W. pubescen* and *M. kauki* are successfully propagated by tissue culture. Further works need to be carried out to test the applicability of the techniques for mass production.

The Bali Greening Program of the Provincial Government of Bali provides a good opportunity to test the knowledge and experience gained in the previous project. The government recognizes its shortcoming in ensuring the successful establishment of the plantation due limited resources and had hoped that the ITTO project could assist the implementation of the program.

In the previous project, some 150 ha of demonstration plantations of the four species have been planted and growth performance has been impressive. **Four farmers groups have participated in the program.** The Provincial Forestry Service of Bali is confidence that the planting of indigenous species under the Bali Greening program will be successful provided that good quality planting materials are used, proper site preparation and maintenance are carried out. Local farmers that had been trained and staff of the Forestry Service of Bali and the Regional Forest Seed Centre would provide the much-needed technical assistance.

2.6 Economic aspects

Bali's handicraft has been one of the many attractions of the tourism industry of the island. The handicraft which is mainly run by home industry serves both local and export market generating significant income for the people involved. **The economic scale of the handicraft industry can be best demonstrated by the volume of wood demand in 2003, where handicraft takes up around 30% of the province annual demand of 167,000 m^3.** Since many of the handicrafts are dependant on sufficient supply of raw materials in particular wood, the shortage of raw materials would seriously affect the industry. The proposed technical assistance and planting materials to establish plantation of 2500 ha would serve as a trigger for the revival of replanting in Bali.

The project has additional multiplier benefits associated with increased production of handicrafts and improved product quality. These benefits are expected to generate local income and jobs that in turn will improve the standard of living of many rural Balinese.

Although the economic benefit of the plantation would not be maximum until they are harvested, in the short-term the plantation of 2500 ha would provide employment for local people of up to 4800 persons over the three-year period.

2.7 Environment aspects

The impact of the proposed project on environment can only be positive as its objectives are to establish plantation of indigenous species and to produce genetically improved plant materials. As a result of the increasing demand for raw materials to support the wood-based handicraft industry in Bali, stands of those local species that mostly resides on private land are disappearing.

It is intended that the planting materials provided by this project will be used for planting program of the degraded land in Bali. Positive rather than negative environmental impacts are anticipated from this project, as the new plantations will, in short time, completely occupy sites that are presently only partially covered with vegetation and susceptible to erosion.

2.8 Social aspects

The overall objective of the proposed project is to empower community to enable them to manage natural resources on sustainable basis. In many parts of Bali wood-based handicraft is an important part of the local economy. Deterioration of the timber resources for the handicraft industry could seriously affect the local economy. The proposed activity to support the establishment of 2500 ha plantation of indigenous species therefore is very important. The plantation will be established across 6 districts ("kabupaten") in Bali. **Plantation establishment and its associated activities would provide the much needed employment of the local people.**

The community would be working together towards achieving common goals namely successfully establish plantation. Such a goal could strengthen the community and be more united thus minimizing potential social conflicts.

Education and training for farmers are an important part of the project. The training and study tour for farmers are meant to demonstrate the planting techniques and maintenance of each species. Existing farmers group, 3 groups in each district, will be involved in the planning and implementation of the planting program. At least 3 people from each group will take part in the training program.

Government policy on incentives for reforestation with community participation is non-existence at the present time. The project may contribute on ideas for incentives such as profit sharing or may produce alternatives formulation for policy on incentives.

2.9 Risks

The project is designed to complement the national program on reforestation and rehabilitation of degraded land. As this program received full commitment from the government and each district has received funding to implement the program the risk of lack of funding support is low.

Fire hazard is always a potential risk in any plantation in Indonesia. However, various ways have been developed to minimize the risk as key problems of the fire hazard have been identified. In most cases fire is deliberately lit by people for various reasons, including land clearing and deliberate intention to destroy plantation due to ill feeling. However, it has been shown that when the community see the benefit of having plantation in their area they willingly participate to protect the plantation from any disturbance. Since the project would emphasize on community participation the risk of fire hazard could be minimize. As a preventive measure, fire break may be planted around the plantation area. The risk of pest and diseases is almost minimal as no pest and diseases have been found.

There is a risk that farmers may be reluctant to participate in the project as the need and acceptance of the local people to plant the species selected for this project may vary. Therefore it is important that a survey need to be conducted prior to the decision to plant certain species for certain areas to determine the preference of local people. This would minimize the risk of rejection from farmers.

3. Outputs

3.1 Specific Objective

To identify **and implement** suitable technology for production of high quality planting materials **and plantation establishment using Bali indigenous species with community participation**

Output **1.** Suitable technology of selected species developed
Output **2.** Seed orchard maintained
Output **3.** Technical guidelines developed and disseminated
Output **4.** Forest land use updated
Output **5.** Quality planting materials produced and distributed
Output **6.** Plantation of 2500 ha established and maintained
Output **7.** Developed agroforestry model disseminated **and applied**
Output **8.** Monitoring system developed and applied

4. Activities

Output 1. Suitable technology of selected species developed

No.	Activities	Inputs
1.1	Identification seed sources and seed collection for 6 selected indigenous species (*Zantoxylum rhetsa, Manilkara kauki, Alstonia scholaris, Wrightia pubescens, Planchonia* sp, *Dysoxylum* sp)	**ITTO**: 2 MM national **consultant**, 13,50 MM technicians, **175** duty travel, **515** labours. **GOI**: **4** technicians
1.2	Further development of propagation techniques for the selected species	**ITTO**: 7 MM national expert, 27 MM technicians, 25 duty travel, 330 labours, **1 unit propagation facility.** **GOI**: **2 MM technicians, 1 unit seed laboratory,** 100 m2 land for acclimatization, **25 m2 land for propagation, 36 months electricity.**
1.3	Comparative study on propagation techniques to Queensland, Australia	**ITTO**: 3 persons international travel **GOI**: -
1.4	Field trial of genetic material and site manipulation, 6 ha	**ITTO**: **2.5** MM national expert, **12** MM technicians, **102** duty travels, 2 sub contracts **GOI**: **24** MM technicians

Output **2.** Seed orchard maintained

2.1.	Establishment of seed orchard for 3 species (*Alstonia scholaris, Planchonia* sp and *Dysoxylum* sp); 6 ha	**ITTO**: **1** MM national expert, 4 MM technicians, **36** duty travels, **1 sub contract,** **GOI**: 14 MM technicians
2.2	Maintenance and assessment of existing seed orchard for 6 species (*Zantoxylum rhetsa, Manilkara kauki, Alstonia scholaris,*	**ITTO**: **1** MM national expert, **8** MM technicians, **36** duty travels, **1 sub-contract,**

	Wrightia pubescens, Planchonia sp, *Dysoxylum* sp); 26 ha	**GOI**:. **26** MM technicians.
2.3	Upgrading access to the seed orchard	**ITTO**: **1 sub-contract** for 0.3 km road **GOI**: -

Output **3.** Technical guidelines developed and disseminated

No.	Activities	Inputs
3.1	Preparation, reproduction and dissemination of 12 technical guidelines on seed handling and planting for the species	**ITTO**: 3 MM national expert, 6 MM technicians, **1 sub-contract,**
3.2	Organize 1 regional workshop on propagation technologies	**ITTO**: 0.5 MM national expert, **25 duty travel,** **GOI**: 1 MM technician

Output 4. Forest land use updated

No.	Activities	Inputs
4.1	Data collection and analysis of social economic and biophysics	**ITTO**: 7 MM national expert, **192** duty travel **GOI**: 12 technicians
4.2	Updating the land use plan	**ITTO**: 2 MM national expert, **48** duty travels, **2 sub- contracts,** **GOI**: 4 MM technicians, **1 package of meeting room.**

Output 5. Quality planting materials produced and distributed

No.	Activities	Inputs
5.1	Improved nursery capacity to produce and distribute planting materials	**ITTO**: **5 sub-contracts for** 1.2 km road, 200 m2 shaded areal, **600** m2 open areas, 25 m2 media processing, 36 m2 nursery office. **GOI**: -
5.2	Distribution of planting materials to participating communities	**ITTO**: **18** MM technicians, **7150** man-days labours, 3 packages planting media treatment, **76** duty travels, **2 sub-contracts.** **GOI**: **27** MM technicians,
5.3	Administration and documentation of planting materials developed	**ITTO**: 2 MM technicians. **GOI**: -

Output 6. Plantation of 2500 ha established and maintained

No	Activities	Inputs
6.1	Technical assistance for establishing 2500 ha plantation	**ITTO**: 6 MM technicians, **18** duty travels **GOI**: **Planting cost for 2500 hectares.**
6.2	Establishment and measurement of permanent sample plots	**ITTO**: 1 MM national expert, 4 MM technicians, **30** duty travels **GOI**: 4 MM technicians
6.3	Establishment of demonstration plot for 2 species (*Planchonia* sp and *Dysoxylum* sp); 20 ha	**ITTO**: 5 MM technicians, **60** duty travels, **1700** labours. **GOI**: 9 MM technicians

6.4	Maintenance of demonstration plots for 4 species (*Zantoxylum rhetsa, Manilkara kauki, Alstonia scholaris, Wrightia pubescens);* 150 ha.	**ITTO**: **1 sub-contract**, 60 duty travels. **GOI**: 21 MM technicians.

Output 7. Developed agroforestry model disseminated and implemented

No.	Activities	Inputs
7.1	To adopt the existing model to farmer groups and forestry officers in 6 district.	**ITTO**: 3 MM national expert, 60 duty travel for technicians. **GOI**: 2 MM technicians
7.2	To review and refine the agroforestry model	**ITTO**: **2** MM national expert, **2** MM technicians, 15 duty travel. **GOI:-**
7.3	To socialize the agroforestry models	**ITTO**: **2,5** MM national expert, **4 sub contracts**, 4 MM technicians, **1 community consultation.** **GOI**: 1 MM workshop organizer, 8 packages meeting room.
7.4	Farmer leaders trained	
	7.4.1. Provision of training facilities	**ITTO**: 1 set multimedia projector, 1 set digital camera, 1 set note book, **GOI**: 1 set multimedia projector, 1 set digital camera, 1 set note book
	7.4.2. Preparation of training materials	**ITTO**: 0.5 MM national expert, 150 copies material training
	7.4.3. Consultation with local communities	**ITTO**: 102 duty travel for technicians, **240 duty travel for participants.** **GOI**: 14 packages Meeting room, 4 MM technicians
	7.4.4. Organize training for farmer leaders and in-country study tour	**ITTO**: 1 MM national expert, **1 sub-contract**, 120 packages training kits. **GOI: 5,5 MM technicians.**

Output 8. Monitoring system developed and applied

No.	Activities	Inputs
8.1	Formulation of monitoring and evaluation systems	**ITTO**: 1 MM international expert, 1 MM technicians, 1 person international air ticket, 50 duty travels for technicians, **5 duty travel for the expert.** **GOI: -**
8.2	Documentation and reporting	**ITTO**: 1 MM national expert, 1 sub-contact,. **GOI:-**

5. Logical Framework Worksheets

PROJECT ELEMENTS	INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
DEVELOPMENT OBJECTIVE To support the tree planting program of the Provincial Government of Bali as a way of empowering local economy and improving the environmental conditions of Bali.	• Planting program of the Provincial Government of Bali successfully **implemented**. • **Local community is actively involved in the program**	• **Annual Report of the Provincial Forestry Service of Bali** • **Forestry statistic of Bali**	• Government policy on plantation establishment and reforestation unchanged
SPECIFIC OBJECTIVE To identify **and implement** suitable technology for production of high quality planting materials **and plantation establishment using Bali indigenous species with community participation**	• Genetically improved seed sources **for six species** available and technology for production of planting materials identified • **Plantation of 2500 ha successfully established** • **Local community in 6 districts is actively participate in replanting program**	• Reports • Established plantation	• Scientific consultant and technician available
Output 1 Suitable technology of selected species developed	• **Seed sources of six species identified** • **Propagation techniques by seed cuttings and tissue culture for six species developed** • **Six ha of field trial of seedlings, cuttings, and tissue culture propagule established**	• **Reports on seed source identification** • **Seed source database** • **Technical guideline on propagation techniques** • **Established field trial**	• Scientific consultant and technician available
Output 2 Seed orchard maintained	• **6 existing seed orchards are well maintained and data collected and**	• **Reports on seed orchard maintenance**	• No severe environmental condition

PROJECT ELEMENTS	INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
	analyzed	• **Scientific reports**	
Output 3 Technical guidelines developed and disseminated	• **12 technical guidelines for 6 species produced and distributed to 6 districts** • **Workshop on propagation technique organized**	• **Technical guidelines on seed handling and planting for six species** • **Reports**	• Data and information available
Output 4 Forest land use updated	• **Updated forest land use maps approved, published and disseminated (250 copies)** • **Workshop organized**	• **Forest land use maps** • **Reports**	• Data and information available
Output 5 Quality planting materials produced and distributed	• **Nursery facilities upgraded** • **1.1 millions planting materials produced and distributed to communities in six district**	• **Reports on production and distribution of planting materials**	• Genetic materials for testing available
Output 6 Plantation of 2500 ha established and maintained	• **Plantation of 2500 ha successfully established**	• **Reports on plantation establishment**	• Local communities fully supported the program
Output 7 Developed agroforestry model disseminated **and applied**	• **Workshop on agroforestry model organized** • **Agroforestry model adopted in 6 districts** • **Increased community awareness and participation in tree planting program**	• Reports • **Proceeding** • **Leaflets**	• **National** consultant available
Output 8 Monitoring system developed and applied	• **Improved monitoring capacity of the government of Bali** • **Monitoring guidelines produced**	• **Report of recruited international consultant** • **Government report on monitoring system**	• **International consultant available**

6. Work plan

	Outputs/Activities	Resp. parties	Year 1												Year 2												Year 3											
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1.	Suitable technology of selected species developed																																					
1.1.	Identification seed sources and seed collection for six selected indigenous species)	RTSC																																				
1.1.1	Seed source identification of 6 species	RTSC																																				
1.1.2	Training on seed collection, 2 days	RTSC																																				
1.1.3	Collection of genetic materials throughout the seed sources	RTSC																																				
	-Z. rhetsa																																					
	-M. kauki																																					
	-A. scholaris																																					
	-W. pubescens																																					
	-Planconia sp.																																					
	-Dysoxylum sp.																																					
1.1.4	Reporting																																					
1.2.	Further development of propagation techniques for the selected species	RTSC																																				
1.2.1	Seed quality testing for 3 species	RTSC																																				
	-Z. rhetsa																																					
	-Planchonia sp.																																					
	-Dysoxylum sp.																																					
1.2.2	Development of cutting propagation for 6 species	RTSC																																				
1.2.3	Development of	FORDA																																				

	Outputs/Activities	Resp. parties	Year 1												Year 2												Year 3											
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
	tissue culture techniques of 6 species																																					
	1.2.4 Reporting																																					
1.3	Comparative study on propagation techniques to Queensland, Australia	RTSC																																				
	1.3.1 Implementing the comparative study																																					
1.4.	Field trial of the genetic materials and site manipulation, 6 ha	RTSC/ BPFS																																				
	1.4.1 Establishment	RTSC/ BPFS																																				
	1.4.2 Assessment and maintenance, 2 years	RTSC																																				
	1.4.3 Reporting	RTSC																																				
2.	Seed orchard maintained																																					
2.1.	Establishment of seed orchard for 3 species (*A. scholaris, Planchonia sp., Dysoxylum sp.*), 6 Ha	RTSC/ BPFS																																				
	2.1.1 Establishment	RTSC/ BPFS																																				
	2.1.2 Reporting	RTSC																																				
2.2.	Maintenance and assessment of existing seed orchard for 4 species (*Z. rhetsa, M. kauki, A. scholaris, W pubescens*), 26 ha																																					
	2.2.1 Assessment and maintenance for 4 species (*Z. rhetsa, M. kauki, A. scholaris, W, pubescens*), 20 ha, 3 years	RTSC																																				
	2.2.2 Assessment and maintenance for 3 species (*A. scholaris,*	RTSC																																				

	Outputs/Activities	Resp. parties	Year 1												Year 2												Year 3											
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
	Planchonia sp., Dysoxylum sp), 6 ha, 2 years																																					
	2.2.3 Reporting	RTSC																																				
2.3.	Upgrading access to the seed orchard																																					
	2.3.1 Road rehabilitation																																					
3.	Technical guidelines developed and disseminated																																					
3.1.	Preparation, reproduction and dissemination of 12 technical guidelines on seed handling and planting for the species																																					
	3.1.1 Preparation, reproduction and dissemination of the guidelines	RTSC/ BPFS																																				
3.2.	Organize 1 regional workshop on propagation technologies																																					
	3.2.1 Organize the workshop	RTSC																																				
4	Forest land use updated																																					
4.1.	Data collection and analysis of social economic and biophysics																																					
	4.1.1 Physical survey	BPFS																																				
	4.1.2 Social-economic survey	BPFS																																				
	4.1.3 Reporting	BPFS																																				
4.2.	Updating the land use plan																																					
	4.2.1 Field survey	BPFS																																				
	4.2.2 Data analysis	BPFS																																				
	4.2.3 Adoption workshop	BPFS																																				
	4.2.4 Production and	BPFS																																				

	Outputs/Activities	Resp. parties	Year 1												Year 2												Year 3											
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
	dissemination of land use plan maps																																					
5	Quality planting materials produced and distributed	RTSC/ BPFS																																				
5.1.	Improve capacity to produce and distribute planting materials	BPFS																																				
	5.1.1 Upgrading road access to the nursery	BPFS																																				
	5.1.2 Upgrading nursery capacities	BPFS																																				
5.2	Distribution of planting materials to participating communities	BPFS																																				
	5.2.1 Provision planting materials, 1.100.000 within 3 year (~ 350.000 per year)	BPFS/ **RTSC**																																				
	5.2.2 Distribution of the planting materials	BPFS																																				
	5.2.3 Reporting	BPFS																																				
5.3.	**Administration and documentation of planting materials developed**																																					
	5.3.1 Implementing the administration and documentation	RTSC/ BPFS																																				
6	Plantation of 2500 ha established and maintained																																					
6.1	Technical assistance for establishing 2500 ha plantation	BPFS																																				
	6.1.1 Implementing	BPFS																																				

	Outputs/Activities	Resp. parties	Year 1												Year 2												Year 3											
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
	the technical assistance																																					
6.2.	Establishment and measurement of permanent sample plots	BPFS																																				
	6.2.1 Preparation	BPFS																																				
	6.2.2 Establishment and measurement	BPFS																																				
	6.2.3 Reporting	BPFS																																				
6.3.	Establishment of demonstration plot of 2 species (*Planchonia sp.* and *Dysoxylum sp.*), 20 Ha	BPFS																																				
	6.3.1 Establishment	BPFS																																				
	6.3.2 Maintenance	BPFS																																				
	6.3.3 Reporting	BPFS																																				
6.4.	Maintenance of demonstration plots of 6 species; 150 Ha	BPFS																																				
	6.4.1 Maintenance	BPFS																																				
	6.4.2 Reporting	BPFS																																				
7	Developed agroforestry model socialized and applied	BPFS																																				
7.1.	To adopt the existing model to farmer groups and forestry officers in 6 districts	ICRAF/ BPFS																																				
	7.1.1 To adopt the model	ICRAF/ BPFS																																				
7.2	To review and refine the agroforestry model	ICRAF/ BPFS																																				
	7.2.1 To review and refine the agroforestry model	ICRAF																																				
7.3	To socialize the agroforestry model	BPFS/ RTSC																																				
	7.3.1 To organize regional	BPFS																																				

	Outputs/Activities	Resp. parties	Year 1												Year 2												Year 3											
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
	workshop																																					
	7.3.2 To facilitate local meeting	BPFS																																				
	7.3.3 To prepare, reproduce and disseminate publications of the agrofrestry model	ICRAF BPFS/ RTSC																																				
7.4	Farmer leaders trained																																					
7.4.1 ·	Provision of training facilities	BPFS																																				
	7.4.1.1 Provision of the facilities	BPFS																																				
7.4.2 ·	Preparation of training materials																																					
	7.4.2.1 Preparation of the materials	BPFS																																				
7.4.3 ·	Consultation with local communities	BPFS																																				
	7.4.3.1 Identify participants, 6 districts in Bali	BPFS																																				
	7.4.3.2 Local meeting	BPFS																																				
	7.4.3.3 Organize farmer groups	BPFS																																				
	7.4.3.4 Reporting	BPFS																																				
7.4.4 ·	Organize training for farmer leader sand in-country study tour	BPFS																																				
	7.4.4.1 Preparation	BPFS																																				
	7.4.4.2 Implementation the training and study tour	BPFS																																				
	7.4.4.3 Reporting	BPFS																																				
8	Monitoring system developed and applied	BPFS																																				
8.1.	Formulation of monitoring and evaluation systems	BPFS/ RTSC																																				
	8.1.1 Formulation the system	BPFS/ RTSC																																				
	8.1.2 Monitoring and evaluation	BPFS/ RTSC																																				

	Outputs/Activities	Resp. parties	Year 1												Year 2												Year 3										
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
8.2.	Documentation and reporting	BPFS/ RTSC																																				
	8.2.1 Documentation and reporting implemented	BPFS/ RTSC																																				

7. Budget

7.1. Overall Project Budget by Activity

OUTPUTS/ACTIVITIES+ Non Activity Based Expenses	10. Project Personnel	20. Sub-Contracts	30. Duty Travel	40. Capital Items	50. Consumable Items	60. Miscellaneous	Quarter Year	GRAND TOTAL
Output **1.** Suitable technology of selected species developed								
Activity **1.1.** Identification seed source and seed collection for six selected indigenous species (*Z. rhetsa, M. kauki, A. scholaris, W. pubescens, Planconia sp., Dysoxylum sp.)*	6200	**5500**	**6545**	6120	**788**	**810**	**Q1-Q3, Y1, Y2, Y3**	**25963**
Activity **1.2.** Further development of propagation techniques for the selected species	11550	11625	**1895**	51355	**3065**	**1879**	**Q2-Q3, Y1**	**81369**
Activity **1.3.** Comparative study on propagation techniques to Queensland, Australia	0	0	8835	0	0	**750**	**Q3, Y1**	**9585**
Activity **1.4.** Field trial of the genetic materials and site manipulation, 6 ha	6100	3370	**3185**	**2500**	**825**	**350**	**Q2-Q3,Y1;Q4,Y2; Q1,Q3,Y3**	**16330**
Subtotal 1	23850	**20495**	**20460**	**59975**	**4678**	**3789**	-	**133247**
Output **2.** Seed orchard maintained								
Activity **2.1.** Establishment of seed orchard for 3 species (A. scholaris, Planchonia sp., Dysoxylum sp.), 6 ha	2800	1815	**1205**	0	**400**	**130**	**Q2-Q3,Y1; Q1,Y2**	**6350**
Activity **2.2.** Maintenance and assessment of existing seed orchard for 6 species (*Z. rhetsa, M. kauki, A. scholaris, W, pubescens, Planchonia sp., Dysoxylum sp*), 26 ha	10500	3975	**2610**	4400	**975**	**490**	**Q2-Q2,Y1,Y2,Y3**	**22950**
Activity **2.3.** Upgrading access to the seed orchard	0	**4200**	0	0	0	0	**Q2,Y1**	**4200**
Subtotal 2	13300	**9990**	**3815**	**4400**	**1375**	**620**		33500
Output **3.** Technical guidelines developed and disseminated								
Activity **3.1.** Preparation, reproduction and dissemination of 12 technical guidelines on seed handling and planting for the species	3600	12000	0	0	0	**150**	**Q2-Q3,Y1**	**15750**
Activity **3.2.** Organize 1 regional workshop on propagation technologies	**500**	0	**1325**	0	**34**	75	**Q1,Y2**	**1934**
Subtotal 3	**4100**	12000	**1325**	0	**34**	**225**		**17684**
Output **4.** Forest land use updated								
Activity **4.1.** Data collection and analysis of social economic and biophysics	8200	0	**6060**	0	**1000**	250	**Q2-Q3,Y1**	**15510**

OUTPUTS/ACTIVITIES+ Non Activity Based Expenses	10. Project Personnel	20. Sub-Contracts	30. Duty Travel	40. Capital Items	50. Consumable Items	60. Miscellaneous	Quarter Year	GRAND TOTAL
Activity **4.2.** Updating the land use plan	**2500**	**6450**	**1440**	0	100	**1900**	Q2-Q3,Y1;Q1,Y2	**12390**
Subtotal 4	**10700**	**6450**	**7500**	0	**1100**	**2150**		**27900**
Output **5.** Quality planting materials produced and distributed								
Activity **5.1.** Improve nursery capacity to produce and distribute planting materials	0	**34550**	0	0	0	0	Q2-Q3,Y1	**34550**
Activity **5.2** Distribution of planting materials to participating communities	**40250**	**53700**	**2280**	**3750**	**47490**	**250**	Q3,Y1;Q1,Q2,Y2; Q1,Q3,Y3	**147720**
Activity **5.3.** Administration and documentation of planting materials developed	200	0	0	0	0	**450**	Q1,Y1	**650**
Subtotal 5	**40450**	**88250**	**2280**	**3750**	**47490**	**700**		**182920**
Output **6.** Plantation of 2500 ha established and maintained								
Activity **6.1.** Technical assistance for establishing 2500 ha plantation	600	775000	**630**	0	**540**	2165	Q1-Q3;Y2,Y3	**778935**
Activity **6.2** Establishment and measurement of permanent sample plots	1800	0	**900**	0	**168**	**650**	Q1-Q3;Y1,Y2,Y3	**3518**
Activity **6.3.** Establishment of demonstration plot for 2 species (*Planchonia sp. and Dysoxylum sp.*), 20 Ha	**9900**	0	**1800**	0	**1079**	**660**	Q1-Q3;Y1,Y2,Y3	**13439**
Activity **6.4.** Maintenance of demonstration plots for 4 species (*Z. rhetsa, M. kauki, A. scholaris, W. pubescens*); 150 Ha	2100	3000	**1350**	0	**750**	**885**	Q1-Q3;Y1,Y2,Y3	**8085**
Subtotal 6	**14400**	778000	**4680**	0	**2537**	**4360**		**803977**
Output **7.** Developed agroforestry model socialized **and implemented**								
Activity **7.1.** To adopt the existing model to farmer groups and forestry officers in 6 districts	3200	0	**2365**	0	**168**	**270**	Q1,Y1	**6003**
Activity **7.2.** To review and refine the agroforestry model	2200	0	**585**	0	0	55	Q3,Y1	**2840**
Activity **7.3.** To socialize the agroforestry model	3000	**7200**	0	0	0	**3465**	Q1-Q3,Y2	**13665**
Activity 7.4. Farmer leaders trained	**2450**	**15000**	**3420**	**10300**	**300**	**5910**	Q1-Q2,Y1	**37380**
Subtotal 7	**10850**	**22200**	**6370**	**10300**	**468**	**9700**		**59888**
Output **8.** Monitoring system developed and applied								
Activity **8.1.** Formulation of monitoring and evaluation	8100	0	**6617**	0	0	**300**	Q1,Y1	**15017**

OUTPUTS/ACTIVITIES+ Non Activity Based Expenses	10. Project Personnel	20. Sub-Contracts	30. Duty Travel	40. Capital Items	50. Consumable Items	60. Miscellaneous	Quarter Year	GRAND TOTAL
systems								
Activity **8.2.** Documentation and reporting	1000	1200	0	0	0	**2100**	**Q2-Q3,Y1,Y2,Y3**	**4300**
Sub total 8	9100	1200	**6617**	0	0	**2400**		**19317**
NON-ACTIVITY BASED EXPENSES								
Auditing	0	0	0	0	0	2400	Q3,Y1,Y2,Y3	2400
Project management team	**91800**	0	0	0	0	0	Q1-Q3,Y1,Y2,Y3	**91800**
Vehicle, 4-wheel	0	0	0	22000	0	0	Q1,Y1	22000
Desktop Computer	0	0	0	5000	0	0	Q2,Y1	5000
Office maintenance	0	0	0	0	0	5400	Q1-Q3,Y1,Y2,Y3	5400
Sub total 9	**91800**	0	0	27000	0	7800		**126600**
Sub total (ITTO)	**179000**	**163585**	**53047**	**47465**	**53479**	**23676**		**520252**
Subtotal (E. Agency)	**39650**	775000	**0**	57960	**4203**	**8069**		**884882**
TOTAL	**218650**	**938585**	**53047**	**105425**	**57682**	**31745**		**1405134**

7.2. Yearly Budget by Source

YEARLY PROJECT BUDGET BY SOURCE-ITTO

Budget Component \ Annual Disbursement		Total	2006	2007	2008
10	Project Personal	**179.000**	**79.050**	**48.450**	**51.500**
20	Sub contract	**163.585**	**81.729**	**54.153**	**27.703**
30	Duty Travel	**53.047**	**33.862**	**10.400**	**8.785**
40	Capital Items	**47.465**	**40.395**	**6.370**	**700**
50	Consumable Items	**53.479**	**20.745**	**16.904**	**15.830**
60	Miscellaneous	**23.676**	**8.900**	**7.360**	**7.416**
	Subtotal 1	**520.252**	**264.681**	**143.637**	**111.934**
80	ITTO Monitor, Evaluate, and Administration Cost Monitoring and Review Costs (effective				
81	estimation)	18.000	6.000	6.000	6.000
82	Evaluation Cost (effective estimation)	15.000	5.000	5.000	5.000
	Subtotal 2	33.000	11.000	11.000	11.000
83	Programme Support Cost (8% of subtotal 2)	**44.260**	**14.754**	**14.753**	**14.753**
90	Refund of Pre-Project Costs	0	0	0	0
	ITTO TOTAL	**597.512**	**290.435**	**169.390**	**137.687**

YEARLY PROJECT BUDGET by SOURCE-GOI

Budget Component \ Annual Disbursement		Total	2006	2007	2008
10	Project Personal	**39.650**	**16.250**	**11.900**	**11.500**
20	Sub contract	775.000	258.000	258.000	259.000
30	Duty Travel	0	0	0	0
40	Capital Items	57.960	57.565	395	0
50	Consumable Items	**4.203**	**1.403**	**1.400**	**1.400**
60	Miscellaneous	**8.069**	**3.200**	**3.200**	**1.669**
70	Executing Agency Management Cost (15% of total of overall budget by activities)	**191.780**	**64.000**	**64.000**	**63.780**
	EXECUTING AGENCY/HOST GOVT. TOTAL	**1.076.662**	**400.418**	**338.895**	**337.349**

7.3. Consolidated Yearly Project Budget

Budget components		TOTAL		YEAR I		YEAR II		YEAR III	
		ITTO	GOI	ITTO	GOI	ITTO	GOI	ITTO	GOI
10	Project personnel								
	11.National expert	39.500	0	25.000	0	4.500	0	10.000	0
	12.Labours	**48.450**	0	**16.150**	0	**16.150**	0	**16.150**	0
	13.Technician	**12.850**	**18.050**	6.500	9.050	4.400	4.700	1.950	4.300
	14.International expert	8.000	0	8.000	0	0	0	0	0
	15.Project management team								
	15.1 Project Manager	**36.000**	0	12.000	0	12.000	0	12.000	0
	15.2 Secretary	10.800	0	3.600	0	3.600	0	3.600	0
	15.3 **Field** Coordinator	**15.000**	0	5.000	0	5.000	0	5.000	0
	15.4 Extension Specialist	**8.400**	0	2.800	0	2.800	0	2.800	0
	15.5 Administration Staff	0	21.600	0	7.200	0	7.200	0	7.200
	19.Component total	**179.000**	39.650	**79.050**	**16.250**	**48.450**	**11.900**	**51.500**	**11.500**
20	Sub-contract								
	21. Upgrading road access	**21.000**	0	21.000	0	0	0	0	0
	22. Upgrading Nursery capacities	**23.375**	0	23.375	0	0	0	0	0
	23. Material Tissue Culture Propagation	6.000	0	6.000	0	0	0	0	0
	24. Planting Media Treatment	**35.700**	0	11.900	0	11.900	0	11.900	0
	25. Seedling Transportation	**18.000**	0	6.000	0	6.000	0	6.000	0
	26.Planting Establishment and Maintenance (app. 2.500 Ha)	12.160	775.000	4.054	258.000	4.053	258.000	4.053	259.000
	27. Printing	**21.900**	0	4.500	0	15.000	0	2.400	0
	28. Sub Training (Workshop)	**25.450**	0	4.900	0	17.200	0	3.350	
	29.Component total	**163.585**	775.000	**81.729**	**258.000**	**54.153**	**258.000**	**27.703**	**259.000**
30	Duty travel								
	31.Daily Subsistence Allowance	**36.835**	0	17.650	0	10.400	0	8.785	0
	32. International travel	**11.835**	0	11.835	0	0	0	0	0
	33.Transport Cost	**4.377**	0	4.377	0	0	0	0	0
	39.Component Total	**53.047**	0	**33.862**	**0**	**10.400**	**0**	**8.785**	**0**
40	Capital Items								
	41.Premises	0	0	0	0	0	0	0	0
	42.Land	0	40.625	0	40.625	0	0	0	0
	43.Vehicles (4 wd, motor cycles)	**26.000**	0	22.000	0	4.000	0	0	0
	44.Capital Equipment								
	44.1. Office Equipment	9.800	7.900	9.800	7.900	0	0	0	0
	44.2. Seed Collecting Equipment	6.285	1.935	4.595	1.540	990	395	700	0
	44.3. Laboratory Equipment	300	7.500	300	7.500	0	0	0	0
	44.4. Planting and maintenance Equipment	**5.080**	0	3.700	0	1.380	0	0	0
	49.Component Total	**47.465**	57.960	**40.395**	**57.565**	**6.370**	**395**	**700**	**0**

Budget components		TOTAL		YEAR I		YEAR II		YEAR III	
		ITTO	GOI	ITTO	GOI	ITTO	GOI	ITTO	GOI
50	Consumable Items								
	51.Raw Materials								
	51.1. Laboratory material	**3.055**	0	3.055	0	0	0	0	0
	51.2. Nursery material (fertilizer, pesticide, fungicide, etc)	**45.750**	0	15.250	0	15.250	0	15.250	0
	51.3. Planting and maintenance material	1.120	0	560	0	560	0	0	0
	52.Spares	0	0	0	0	0	0	0	0
	53.Fuel and Utilities	**1.740**	**4.203**	580	1.403	580	1.400	580	1.400
	54.Office Supplies	**1.814**	0	1.300	0	514	0	0	0
	59.Component Total	**53.479**	4.203	**20.745**	**1.403**	**16.904**	**1.400**	**15.830**	**1.400**
60	Miscellaneous								
	61.Sundry	**14.226**	**8.069**	6.000	3.200	4.625	3.200	3.601	1.669
	62.Auditing	2.400	0	800	0	800	0	800	0
	63.Community Consultation	7.050	0	2.100	0	1.935	0	3.015	0
	69.Component Total	**23.676**	**8.069**	**8.900**	**3.200**	**7.360**	**3.200**	**7.416**	**1.669**
70	Executing agency management cost								
	71.Management cost	0	**191.780**	0	**64.000**	0	**64.000**	0	**63.780**
	79.Component Total	0	**191.780**	0	**64.000**	0	**64.000**	0	**63.780**
	SUB TOTAL	**520.252**	**1.076.662**	**264.681**	**400.418**	**143.637**	**338.895**	**111.934**	**337.349**
	81.Monitoring and Review Costs	18.000	0	6.000	0	6.000	0	6.000	0
	82.Evaluation Costs	15.000	0	5.000	0	5.000	0	5.000	0
	83.Programme Support Costs	44.260	0	14.754	0	14.753	0	14.753	0
	89.Component Total	77.260	0	25.754	0	25.753	0	25.753	0
100	**GRAND TOTAL**	**597.512**	**1.076.662**	**290.435**	**400.418**	**169.390**	**338.895**	**137.687**	**337.349**

PART III: OPERATIONAL MANAGEMENT

1. Management Structure

Implementation of the Project activities will be carried out by the Bali Provincial Forestry Service (BPFS) and the Regional Tree Seed Centre (RTSC) of Bali and Nusa Tenggara. The RTSC will be responsible for the implementaion of activities relating to technological development, seed sources establishment and genetic trials. The rest of the activities will be coordinated by the BPFS.

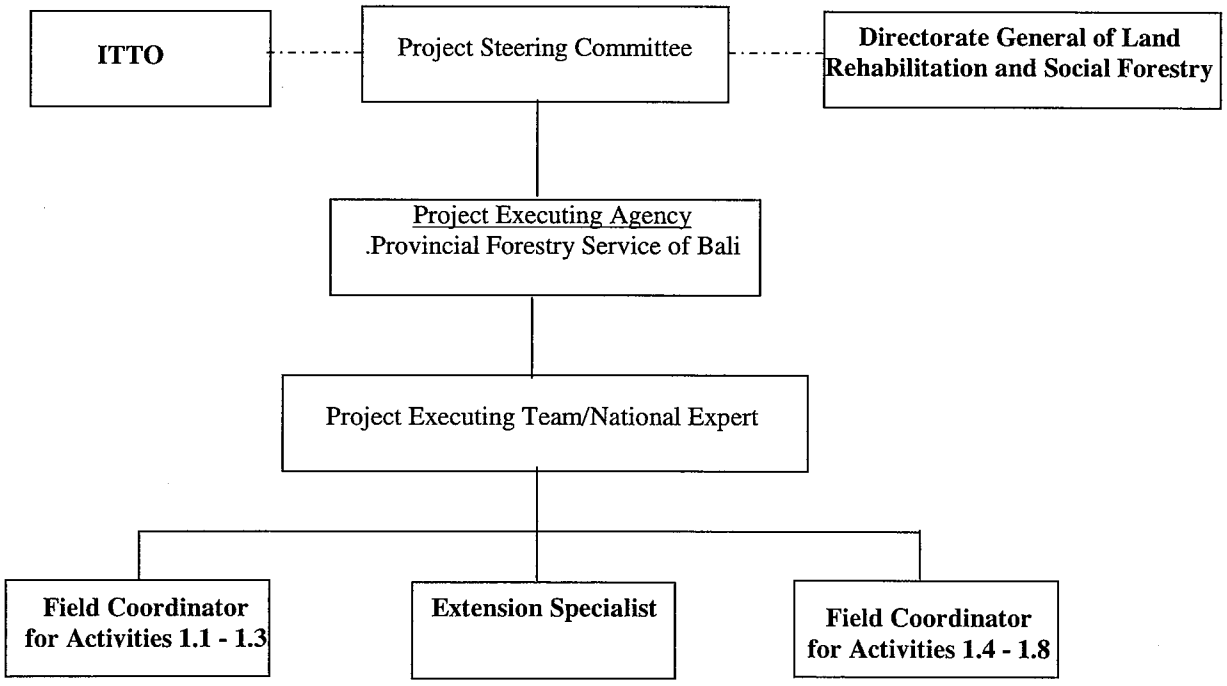
The project management consist of a Project Steering Committee, a Project Executing Agency, and Project Executing Team. The Project Steering Committee (PSC) consist of policy makers and scientists appointed by the Minister of Forestry (MOF), the Government of Indonesia. The Director General of Reforestation and Social Forestry will be involved in the project since this is in line with the role of this agency in seedling production and reforestation. The duties of the PSC are: (a) approve program and budgets of the various sub-projects within the framework of the project as approved by ITTO; (2) conduct annual reviews and evaluations of the project implementation; (3) approve Progress reports before submission to ITTO and GOI. The PSC will be chaired by the Directorate General of Reforestation and Social Forestry of the Ministry of Forestry/**Director of Forestry Tree Seed**, GOI.

The Provincial Forestry Service of Bali will be appointed as the Project Executing Agency (PEA). **The Chairman of the PEA, as the leader, has the power to manage with full support from the PEA members in accordance with his job descriptions, to achieve the stated responsibilities with respect to the time schedule.**

The PEA will coordinate the implementation of the Project activities carried out by the Project Executing Team (PET). The PET consists of representatives of the BPFS and the RTSC of Bali and Nusa Tenggara, and **national experts** and chaired by **Project** Manager. **The Project Manager has the responsibility to manage and coordinate field coordinator for activities 1.1-1.3 and 1.4-1.8, and extension specialist.**

During the project implementation, adequate coordination and monitoring shall be carried out.

The management structure of the Project is presented in the following diagram.



2. **Monitoring, Reporting and Evaluation**

Project Monitoring, Review and Evaluation will be in accordance with the *Second Edition of the ITTO Manual for Project Monitoring, Review and Evaluation.*

2.1. Arrangements for reporting

a. **Progress Reports – The Executing Agency will submit to ITTO a bi-annual Project Progress Report no later than 10 weeks before Council Sessions of each calendar year for the duration of the project implementation. Such progress report shall contain all the information relevant to the financing and implementation of the project as set out in the *ITTO Manual for Project Monitoring, Review and Evaluation.***

b. **Technical Reports – This shall be provided as appropriate during the project duration.**

c. **Completion Reports – The Executing Agency will submit to ITTO the Project Completion Report, conforming to the model and content of the ITTO Manual for Project Monitoring, Review and Evaluation within three (3) months from Project Completion.**

2.2. Monitoring, Review **and Steering Committee's Visit**

The project will be subjected to monitoring by the representative of ITTO **according to the ITTO's guidelines. As may be necessary, the project will be subjected to a Monitoring/Review mission by ITTO together with PSC members.** Monitoring of the Project will also be conducted by the PSC through its biannual meeting.

2.3. Evaluation

Project evaluation will follow ITTO's directions. Mid-term Evaluation and Ex-post Evaluation will be conducted as directed by ITTO.

3. **Future Operation and Maintenance**

The assets resulting from this Project will become the property of the Government of Indonesia and will be managed by the Provincial Forestry Service of Bali.

4. **Key staff of the Project Executing Team**

a. Project Manager
b. Secretary
c. **Field Coordinator**
d. Extension Specialist
e. Support Staff
f. National/International Experts

5. **Project Steering Committee**

1. (PSC Chairperson)
2. (Member)
3. (Member)
4. (Member)
5. (Member)
6. (Member)
7. (Member)

PART IV: TROPICAL TIMBER FRAMEWORK

1. Compliance with ITTA 1994 Objectives

The proposed project complies with the ITTA Objectives laid out in Article 1 of the 1994 International Timber Trade Agreement (ITTA) and will contribute to the advancement of the Agreement of the following objectives:

c. To contribute to the process of sustainable development. Tropical rain forests play such an important role in the Indonesian economic development and the globally ecosystem. At the current rate of deforestation the sustainability of these resources is under serious threat.

The proposed project will have significant contribution on the sustainability of tropical rain forest through enhancing the establishment of plantation of potential indigenous species, and conserving the remaining plant genetic resources and utilized these resources to develop genetic improvement program to support reforestation of degraded forest.

d. To enhance the capacity of members to implement a strategy for achieving exports of tropical timber products from sustainable managed sources by the year 2000. The Indonesian Government has set a program of rehabilitation of degraded forest and land. The success of this program will depend on a number of factors and notable among those are the availability of sufficient quantity of good genetic materials, community participation and technical skills. The proposed project will provide the materials for implementing the policy and strategy of sustainable management of tropical forest.

j. To encourage members to support and develop industrial tropical timber reforestation and forest management activities as well as rehabilitation of degraded forest land, with due regard for the interest of local communities dependent on forest resources. The reform movement that swept the country in the last three years has awakened the local communities of their rights to the forest. Over the past years utilization of tropical forest paid little attention to the right of the indigenous people towards the forests. Such a treatment recently has sparked a wide spread claims of forest land and utilization of its resources. The proposed project which will attempt to restore the natural resources through plantation establishment should attract local communities to participate. This could be used as model for developing a policy and strategy for participation of local communities in forestry project.

2. Compliance with ITTO Action Plan

The proposed project complies with ITTO Action Plan particularly with the Committee on Reforestation and Forest Management.

Goal 1: Support activities to secure the tropical timber resource base

Action 4. Promote the conservation, rehabilitation and sustainable management of the threatened forest ecosystem, *inter alia* mangrove, in collaboration with relevant organization.

The proposed project activities will include genetic conservation and breeding of selected indigenous species and supervised establishment of sustainable plantation.

Action 7. Encourage members and assist them, where appropriate, to assess the current and potential productivity of major tropical forest types, taking into account the need to promote future growth and effective regeneration.

The proposed project will implement appropriate technology and provide good quality planting stock on plantation establishment, and thus promoting productivity of tropical forest.

Goal 2: Promote sustainable management of tropical forest resources

Action 10. Encourage members and assist them, where appropriate, to improve the productive capacity of natural forest, where appropriate, through intensified silvicultural practice, better utilization of lesser-used species, the promotion of non timber forest product, guided natural regeneration, enrichment planting and reforestation.

The proposed project will promote planting program of various indigenous tropical tree species including lesser-used species for plantation establishment. In addition, training for farmers on appropriate silviculture practice will also be provided by the proposed project.

ANNEX A: PROFILE OF THE EXECUTING AGENCY

The implementation of the proposed project will be jointly carried out by two organizations namely the Bali Provincial Forestry Service and the Regional Tree Seed Centre of Bali and Nusa Tenggara

1. The expertise of the Executing Agency

   The Bali Provincial Forest Service is responsible for setting up policy, regulations, monitoring the supply and demand of timber, implementing rehabilitation program, and promoting social forestry in Bali in line with the policy, regulations and developmental programs of the Ministry of Forestry and the Provincial Government of Bali. The Regional Tree Seed Centre of Bali and Nusa Tenggara is a technical unit of the Directorate General of Reforestation and Social Forestry of the Ministry of Forestry. Its main function is to manage the availability, distribution, testing and quality control of seeds in the region.

2. Infrastructure of the Executing Agency

   The Bali Provincial Forest Service has 5 Sub Divisions: Administration, Planning, Land Rehabilitation, Forest Protection and Forest Products. It also has forest district offices across Bali. To support the replanting program, with the support of ITTO, it has established a permanent nursery in western Bali (10 Ha).

   The Regional Tree Seed Centre of Bali and Nusa Tenggara has 4 sections: Administration, Seed Source, Seed Distribution, and Information. Their facilities includes seed testing laboratory, seed handling, green house, and nursery

3. Budget

   The budget of Bali Provincial Forest Service from 2003 – 2005 is as follows:

Activities	Year (US $)		
	2003	2004	2005
Personnel	14,920	16,670	8,870
Duty travel	86,770	89,160	95,870
Capital	402,030	19,900	14,050
Consumable items	129,400	229,670	220,200
Miscellaneous	3,840	5,450	49,900

4. Personnel

   Staff members of the Bali Provincial Forest Service consist of 280 personnel, with university degrees in various fields (59 persons), high school graduate and others (221 persons). While the Regional Tree Seed Centre of Bali and Nusa Tenggara has 46 staff member comprising of 8 university graduate and 38 high school graduate.

ANNEX B: CURRICULUM VITAE 0F THE KEY STAFF

Name	Place and date of birth	Male/female
Ir. I Made Gunaja MSc	Tabanan, 20 June 1964	Male

Education

School/University	City/Country	Year of graduation	Degree	Field of Study
Gadjah Mada	Yogyakarta, Indonesia	1989	Ir	Forestry
Universitas Padjadjaran	Bandung, Indonesia	2004	MSc	Economic

Experiences

No.	Year	Position
1	1993-1995	Section Head for Forestry Monitoring of Irian Jaya Provincial Forestry Service. Jayapura.
2	1995-2000	Section Head for Forestry Programme of Irian Jaya Provincial Forestry Service. Jayapura.
3	2000-2001	Section Head for Forest Product Utilization of Bali Provincial Forestry Service. Denpasar.
4	2001-Present	Section Head for Development Plan of Bali Provincial Forestry Service. Denpasar.

Name	Place and date of birth	Male/female
Ir. Suratman, MSc	Pacitan, 10 March 1959	Male

Education

School/University	City/Country	Year of graduation	Degree	Field of Study
Universitas Ngurah Rai	Denpasar, Indonesia	1988	Ir	Civil Technique
Universitas Udayana	Denpasar, Indonesia	2002	MSc	Dry Land Agriculture

Experiences

No.	Year	Position
1	1994-1997	Section Head for Programme of Center of Land Rehabilitation and Soil Conservation. Denpasar.
2	1997-2001	Section Head for Data Analysis of Bali Forestry Regional Office. Denpasar.
3	2001-Present	Section Head for Land Rehabilitation and Reclamation of Bali Provincial Forestry Service. Denpasar.

Name	Place and date of birth	Male/female
Ir. Djoko Iriantono MSc.	Malang, 8 October 1962	Male

Education

School/University	City/Country	Year of graduation	Degree	Field of Study
Institut Pertanian Bogor	Bogor, Indonesia	1986	Ir	Forestry
University of Maine	Orono, USA	1995	MSc	Forest Tree Improvement

Experiences

No.	Year	Position
1	1997-1999	Group Leader of vegetative propagation researchers. Seed Technology Centre. Bogor.
2	2003-2004	Junior Researcher. Seed Technology Centre. Bogor.
3	2000-2003	Counterpart for Technical Unit of Indonesia Forest Seed Project. Bandung.
4	2003-2004	Project manager of Indonesia Forest Seed Project. Bandung.
5	2004-Present	Section Head for Seed Source Unit of Regional Tree Seed Center for Bali and Nusa Tenggara. Denpasar.

Recent Publications

1. A Guide to Seed Quality. Indonesia Forest Seed Project. 2004.
2. A Guide to Organize an Attachment. Indonesia Forest Seed Project. 2004.
3. A Field Guide to Make a Demoplot Sign Board. Indonesia Forest Seed Project. 2004.
4. Laboratory Manuals for Basic Studies of Forest Tree Seed. Indonesia Forest Seed Project. 2004.
5. Technical Guidelines for Establishment and Management of Seed Sources. Indonesia Forest Seed Project. 2004.
6. Tree Improvement Dictionary. Indonesia Forest Seed Project. 2004.
7. Seed Biology Dictionary. Indonesia Forest Seed Project. 2004.
8. Technical Guidelines for Seed Testing. Indonesia Forest Seed Project. 2003.

ANNEX C: LETTER OF INTENT ISSUED BY DIRECTORATE GENERAL OF LAND REHABILITATION AND SOCIAL FORESTRY

DEPARTEMEN KEHUTANAN
DIREKTORAT JENDERAL REHABILITASI LAHAN DAN PERHUTANAN SOSIAL
GEDUNG PUSAT KEHUTANAN "MANGGALA WANABHAKTI" LANTAI XII, XIII, & XIV
JALAN GATOT SUBROTO - SENAYAN - JAKARTA PUSAT
Telp : 5730206, 5730136
Kotak Pos No. 11 - Alamat Kawat : Ditjen RLPS

LETTER OF INTENT

This letter serves to indicate the intention of The Directorate General of Land Rehabilitation and Social Forestry, Ministry of Forestry, hereby agrees to provide support to the project and will do necessary effort to establish "Technological Development for the Production of Planting Materials to Support Sustainable Plantation of Bali Indigenous Species through Community Participation" This project will be executed in cooperation between Bali Provincial Forestry Services with Tree Seed Centre for Bali and Nusa Tenggara.

The project as continuation of "Demonstration Plantation of *Xantoxylum rhetsa, manilkara kauki, Alstonia solaris and Wrightia pubescens* to promote Sustainable Bali Natural Forest (PD 137/02) is expected to enhance the mutual cooperation between DG of Land Rehabilitation and Social Forestry with the Regional Government of the promoting sustainable forest management, especially in the supporting of Bali indigenous species through community participation.

Jakarta, May 2005

Ir. SUHARISNO, MM
Secretary of Directorate General

ANNEX D: BASIC TERMS OF REFERENCE FOR CONSULTANTS

TERMS OF REFERENCE FOR NATIONAL EXPERT ON IDENTIFICATION OF SEED SOURCE AND SEED COLLECTION

OUTPUTS

ITTO Project PD xxxx Technological Development for the Production of Planting Materials to Support Sustainable Plantation of Bali Indigenous Species through Community Participation intends to obtain scientific consulting services to facilitate the successful implementation of the project, particularly for the identification of seed source and seed collection.

Expected outputs from completion of the work would be:

1. The species of *Planconia sp* and *Dysoxylum sp* determined
2. Seed sources of 6 species identified
3. Collection of seeds to produce 1.2 million seedlings

PROCESS

The National Expert is responsible to carry out the following activities:

1. Identify the existence of seed sources of the 6 species
2. Transfer knowledge and techniques of seed collection through training
3. Provide technical supervision on seed collection and seed handling

INPUTS

In order to carry those responsibilities, the National Expert shall meet the following qualification:

a. Experience in seed collection and seed handling with a minimum of 5 years of experience in the field
b. Holding minimum of BSc. at least 5 years

The National Expert shall work for a period of 1 month per year for 2 years. His consultancy fee shall not exceed USD 750 per assignment upon completion of the work.

TERMS OF REFERENCE FOR NATIONAL EXPERT ON DEVELOPMENT OF TISSUE CULTURE TECHNIQUES

OUTPUTS

ITTO Project PD xxxx Technological Development for the Production of Planting Materials to Support Sustainable Plantation of Bali Indigenous Species through Community Participation intends to obtain scientific consulting services to facilitate the successful implementation of the project, particularly for the development of tissue culture techniques.

Expected outputs from completion of the work would be:

1. Tissue culture techniques of 6 species tested and developed
2. Assess the suitability and applicability of tissue culture techniques for mass propagation

PROCESS

The National Expert is responsible to carry out the following activities:

1. Conduct various test of tissue culture methods
2. Further develop suitable tissue culture techniques suitable for mass propagation
3. Prepare technical report and guidelines on tissue culture propagation of the species

INPUTS

In order to carry out those responsibilities, the National Expert shall meet the following qualification:

a. Experience in tissue culture research with a minimum of 5 years experience in the field
b. holding a PhD in forest biotechnology

The National Expert shall work for a period of 7 month. His consultancy fee shall not exceed USD 1000 per month upon completion of the work.

TERMS OF REFERENCE FOR NATIONAL EXPERT ON FIELD TRIAL OF GENETIC MATERIAL AND SITE MANIPULATION

OUTPUTS

ITTO Project PD xxxx Technological Development for the Production of Planting Materials to Support Sustainable Plantation of Bali Indigenous Species through Community Participation intends to obtain scientific consulting services to facilitate the successful implementation of the project, particularly for the establishment of field trial of genetic material and site manipulation.

Expected outputs from completion of the work would be:

1. Field trial of genetic material and site manipulation established
2. Data collected and analysed

PROCESS

The National Expert is responsible to carry out the following activities:

1. Prepare field design and establish field trials
2. Data collection and assessment of the trials

INPUTS

In order to carry out those responsibilities, the National Expert shall meet the following qualification:

a. Experience in statistical design and analysis with a minimum of 5 years experience in the field

b. holding a minimum of MSc

The National Expert shall work for a period of 7 weeks. His consultancy fee shall not exceed USD 1750 upon completion of the work.

TERMS OF REFERENCE FOR NATIONAL EXPERT ON ESTABLISHMENT, MAINTENANCE AND ASSESSMENT OF SEED ORCHARD

OUTPUTS

ITTO Project PD xxxx Technological Development for the Production of Planting Materials to Support Sustainable Plantation of Bali Indigenous Species through Community Participation intends to obtain scientific consulting services to facilitate the successful implementation of the project, particularly for the establishment, maintenance and assessment of seed orchard.

Expected outputs from completion of the work would be:

1. Seed orchard of *A. scholaris, Planchonia sp* and *Dysoxylum sp* established
2. Seed orchard of *Zantoxylum rhetsa, Manilkara kauki, Alstonia scholaris, Wrightia pubescens, Planchonia* sp and *Dysoxylum* sp maintained
3. Data collected and analysed

PROCESS

The National Expert is responsible to carry out the following activities:

1. Prepare field design and establish seed orchard
2. Data collection and assessment of the seed orchard

INPUTS

In order to carry out those responsibilities, the National Expert shall meet the following qualification:

a. Experience in genetic trial with a minimum of 5 years experience in the field

b. Holding a minimum of MSc

The National Expert shall work for a period of 15 weeks. His consultancy fee shall not exceed USD 3750 upon completion of the work.

TERMS OF REFERENCE FOR NATIONAL EXPERT ON PREPARATION AND DISSEMINATION OF TECHNICAL GUIDELINES

OUTPUTS

ITTO Project PD xxxx Technological Development for the Production of Planting Materials to Support Sustainable Plantation of Bali Indigenous Species through Community Participation intends to obtain scientific consulting services to facilitate the successful implementation of the project, particularly for the preparation and dissemination of technical guidelines.

Expected outputs from completion of the work would be:

1. Technical guidelines on seed handling and planting techniques of 6 species prepared and disseminated through workshop

PROCESS

The National Expert is responsible to carry out the following activities:

1. Collect data and information on seed handling and planting techniques
2. Prepare technical guidelines on seed handling and planting techniques
3. Prepare workshop programs and materials
4. Acting as resources person during the workshop

INPUTS

In order to carry out those responsibilities, the National Expert shall meet the following qualification:

a. Experience in seed handling and planting operation with a minimum of 5 years experience in the field

b. holding a minimum of BSc

The National Expert shall work for a period of 3.5 months. His consultancy fee shall not exceed USD 3500 upon completion of the work.

TERMS OF REFERENCE FOR NATIONAL EXPERT ON PHYSICAL SURVEY FOR FOREST LAND USE UPDATE

OUTPUTS

ITTO Project PD xxxx Technological Development for the Production of Planting Materials to Support Sustainable Plantation of Bali Indigenous Species through Community Participation intends to obtain scientific consulting services to facilitate the successful implementation of the project, particularly for the physical survey for forest land use update.

Expected outputs from completion of the work would be:

1. Data and information of the physical conditions of the forest land including soil type, microclimate, and topographic conditions.
2. Maps

PROCESS

The National Expert is responsible to carry out the following activities:

1. Collect data and information of the target area (6 locations) for the survey
2. Analyze soil conditions including physical and chemical properties of the soil
3. Compiling data and information for the forest land use update.

INPUTS

In order to carry out those responsibilities, the National Expert shall meet the following qualification:

a. Experience in soil science with a minimum of 5 years experience in the field
b. Holding a minimum of MSc

The National Expert shall work for a period of 3 months. His consultancy fee shall not exceed USD 3000 upon completion of the work.

TERMS OF REFERENCE FOR NATIONAL EXPERT ON SOCIAL-ECONOMIC SURVEY FOR FOREST LAND USE UPDATE

OUTPUTS

ITTO Project PD xxxx Technological Development for the Production of Planting Materials to Support Sustainable Plantation of Bali Indigenous Species through Community Participation intends to obtain scientific consulting services to facilitate the successful implementation of the project, particularly for the physical survey for forest land use update.

Expected outputs from completion of the work would be:

1. Data and information of the social and economic conditions of the survey area
2. Maps

PROCESS

The National Expert is responsible to carry out the following activities:

1. Collect data and information of the target area (6 locations) for the survey
2. Compiling data and information for the forest land use update.

INPUTS

In order to carry out those responsibilities, the National Expert shall meet the following qualification:

a. Experience in economy with a minimum of 5 years experience in the field
b. Holding a minimum of MA

The National Expert shall work for a period of 4 months. His consultancy fee shall not exceed USD 4000 upon completion of the work.

TERMS OF REFERENCE FOR NATIONAL EXPERT ON FOREST LAND USE UPDATE

OUTPUTS

ITTO Project PD xxxx Technological Development for the Production of Planting Materials to Support Sustainable Plantation of Bali Indigenous Species through Community Participation intends to obtain scientific consulting services to facilitate the successful implementation of the project, particularly for the update of forest land use.

Expected outputs from completion of the work would be:

1. Forest land use updated
2. Maps of updated forest land use
3. Workshop to adopt the updated forest land use

PROCESS

The National Expert is responsible to carry out the following activities:

1. Field survey to verify field conditions against the satellite image
2. Compiling data and information for the forest land use update.
3. Participate in the workshop

INPUTS

In order to carry out those responsibilities, the National Expert shall meet the following qualification:

a. Experience in geographic mapping and GPS with a minimum of 5 years experience in the field

b. Holding a minimum of MSc

The National Expert shall work for a period of 2 months. His consultancy fee shall not exceed USD 2000 upon completion of the work.

TERMS OF REFERENCE FOR NATIONAL EXPERT ON FOREST LAND USE UPDATE

OUTPUTS

ITTO Project PD xxxx Technological Development for the Production of Planting Materials to Support Sustainable Plantation of Bali Indigenous Species through Community Participation intends to obtain scientific consulting services to facilitate the successful implementation of the project, particularly for the update of forest land use.

Expected outputs from completion of the work would be:

1. Forest land use updated
2. Maps of updated forest land use
3. Workshop to adopt the updated forest land use

PROCESS

The National Expert is responsible to carry out the following activities:

1. Field survey to verify field conditions against the satellite image
2. Compiling data and information for the forest land use update.
3. Participate in the workshop

INPUTS

In order to carry out those responsibilities, the National Expert shall meet the following qualification:

a. Experience in geographic mapping and GPS with a minimum of 5 years experience in the field

b. Holding a minimum of MSc

The National Expert shall work for a period of 2 months. His consultancy fee shall not exceed USD 2000 upon completion of the work.

TERMS OF REFERENCE FOR NATIONAL EXPERT ON TRAINING OF FARMER LEADERS

OUTPUTS

ITTO Project PD xxxx Technological Development for the Production of Planting Materials to Support Sustainable Plantation of Bali Indigenous Species through Community Participation intends to obtain scientific consulting services to facilitate the successful implementation of the project, particularly for the update of forest land use.

Expected outputs from completion of the work would be:

1. Materials for training prepared and produced
2. Training conducted

PROCESS

The National Expert is responsible to carry out the following activities:

1. Preparation of training materials
2. Conduct training for farmer leaders 4 times during the 3 years period; up to 30 participants will take part in the one-week training.

INPUTS

In order to carry out those responsibilities, the National Expert shall meet the following qualification:

a. Experience in silviculure techniques with a minimum of 5 years experience in the field

b. Holding a minimum of BSc

The National Expert shall work for a period of 6 weeks. His consultancy fee shall not exceed USD 1500 upon completion of the work.

TERMS OF REFERENCE FOR NATIONAL EXPERT ON ESTABLISHMENT AND MEASUREMENT OF SAMPLE PLOTS

OUTPUTS

ITTO Project PD xxxx Technological Development for the Production of Planting Materials to Support Sustainable Plantation of Bali Indigenous Species through Community Participation intends to obtain scientific consulting services to facilitate the successful implementation of the project, particularly for the establishment and measurement of permanent sample plots.

Expected outputs from completion of the work would be:

1. Permanent sample plots of 6 species in 6 locations established and measured
2. Guidelines for measurement of permanent sample plots
3. Analysis and evaluation of permanent sample plots

PROCESS

The National Expert is responsible to carry out the following activities:

1. Establish permanent sample plots of 6 species in 6 locations
2. Technical guideline for measurement of permanent sample plots
3. Data analysis

INPUTS

In order to carry out those responsibilities, the National Expert shall meet the following qualification:

a. Experience in silviculure techniques with a minimum of 5 years experience in the field

b. Holding a minimum of BSc

The National Expert shall work for a period of 4 weeks. His consultancy fee shall not exceed USD 1000 upon completion of the work.

TERMS OF REFERENCE FOR NATIONAL EXPERT ON ADOPTION OF AGROFORESTRY MODEL

OUTPUTS

ITTO Project PD xxxx Technological Development for the Production of Planting Materials to Support Sustainable Plantation of Bali Indigenous Species through Community Participation intends to obtain scientific consulting services to facilitate the successful implementation of the project, particularly for the adoption of agroforestry model.

Expected outputs from completion of the work would be:

1. Adoption of agroforestry model in 6 districts
2. Review the existing model based on data and information obtained from the comparative study
3. Present the revision of the agroforestry model in a workshop
4. Refine the agroforestry model

PROCESS

The National Expert is responsible to carry out the following activities:

1. Adopt the agroforestry model in 6 districts
2. Collect data and information of the implementation of the agroforestry model
3. Participate in the workshop on refinement of agroforestry model
4. Adopt the comments and inputs from the workshop to refine the agroforestry model

INPUTS

In order to carry out those responsibilities, the National Expert shall meet the following qualification:

a. Experience in silviculure techniques with a minimum of 5 years experience in the field
b. Holding a minimum of BSc

The National Expert shall work for a period of 6 months. His consultancy fee shall not exceed USD 6000 upon completion of the work.

TERMS OF REFERENCE FOR INTERNATIONAL EXPERT ON FORMULATION OF MONITORING AND EVALUATION SYSTEM

OUTPUTS

ITTO Project PD xxxx Technological Development for the Production of Planting Materials to Support Sustainable Plantation of Bali Indigenous Species through Community Participation intends to obtain scientific consulting services to facilitate the successful implementation of the project, particularly for the formulation of monitoring and evaluation system.

Expected outputs from completion of the work would be:

1. Monitoring and evaluation system formulated
2. Documentation and reporting system formulated

PROCESS

The International Expert is responsible to carry out the following activities:

1. Study the existing monitoring and evaluation, documentation and reporting system
2. Improvement of the existing systems

INPUTS

In order to carry out those responsibilities, the International Expert shall meet the following qualification:

a. Experience in monitoring and evaluation system with a minimum of 5 years experience in the field
b. Holding a minimum of Master degree

The International Expert shall work for a period of 1 month. His consultancy fee shall not exceed USD 8000 upon completion of the work.

GENERAL TERMS OF REFERENCE FOR ROAD CONSRUCTION

OUTPUTS

ITTO Project PD xxxx Technological Development for the Production of Planting Materials to Support Sustainable Plantation of Bali Indigenous Species through Community Empowerment intends to obtain construction services to facilitate the successful implementation of the project.

Expected outputs from completion of the work would be:

1. Road with graveled surface of 1.5 km length and 5 m wide with drainage on both sides from the nursery to the major road access.
2. Good accessibility from the nursery to major road.

PROCESS

The road contractor is responsible to carry out the following activities:

1. Survey the location
2. Prepare maps of the location (1:25,000), details map (1:2,500) and cross section map (1:100)
3. Road works consisting of prepare road base, fill out of gravel (diam. 20-25 cm), compaction of the road surface.

INPUTS

In order to carry out those responsibilities, the contractor shall meet the following qualification:

a. A registered construction company

b. Meet all government regulations regarding contract work.

The total budget for this work would be equivalent to USD 21,750.

ANNEX E: DETAIL OF OVERALL PROJECT BUDGET BY ACTIVITY

OUTPUT/ACTIVITIES+ Non Activity Based Expenses		INPUTS	Budget Source	Unit	No.	Unit Cost (US $)	Quarter Year	Budget Compt	Total Cost (US $)
Output **1.** Suitable technology of selected species developed									
Activity **1.1.** Identification seed source and seed collection for six selected indigenous species (*Z. rhetsa, A. scholaris, M. kauki, W. pubescens, Planconia sp., Dysoxylum sp.*)									
1.1.1	Seed source identification of 6 species (*Z. rhetsa, M. kauki, A. scholaris, W. pubescens, Planconia sp., Dysoxylum sp.);*	Seed collection and handling specialist	ITTO	MM	2,00	1.000	Q1,Y1	11	2.000
		Domestic air ticket (Jkt-Dps-Jkt)	ITTO	persons	1,00	225	Q1,Y1	33	225
		Herbarium specimens	ITTO	packages	1,00	55	Q1,Y1	51.1	55
		Technician of RTSC	GOI	MM	1,00	100	Q1,Y1	13	100
		Technician of RTSC	ITTO	MM	4,00	100	Q1,Y1	13	400
		Laboures	ITTO	man-days	150,00	5	Q1,Y1	12	750
		Domestic air ticket (Mtram-Dpsr-Mtram)	ITTO	persons	4,00	55	Q1,Y1	33	220
		Road transport (car rental in Lombok Island)	ITTO	days	6,00	45	Q1,Y1	33	270
		Daily subsistence allowance	ITTO	man-days	**100,00**	30	Q1,Y1	31	**3.000**
		GPS, Garmin 12 XL	ITTO	set	3,00	275	Q1,Y1	44.2	825
		GPS, Garmin 12 XL	GOI	set	3,00	275	Q1,Y1	44.2	825
		Digital Camera, Canon, P Shoot	ITTO	set	2,00	555	Q1,Y1	44.2	1.110
		Digital Camera, Canon, P Shoot	GOI	set	2,00	555	Q1,Y1	44.2	1.110
		Fuels and utilities (in Bali)	GOI	liter	560,00	0,30	Q1,Y1	53	168
		Stationeries, map, documentation	ITTO	packages	1,00	220	Q1,Y1	54	220
		Photocopy	ITTO	packages	1,00	**50**	Q1,Y1	61	**50**
1.1.2	Training on seed collection, 2 days	Technician of RTSC	ITTO	MM	0,50	100	Q1,Y1	13	50
		Daily subsistence allowance (technician)	ITTO	man-days	3,00	30	Q1,Y1	31	90
		Sub contract training seed collection	ITTO	packages	1,00	**5.500**	Q1,Y1	28	5.500
		Shoot prunners, storage bags	ITTO	set	60,00	15	Q1,Y1	44.2	900
		Stationeries and documentation	ITTO	persons	30,00	2,0	Q1,Y1	54	60
		Photocopy, banners	ITTO	packages	1,00	**100**	Q1,Y1	61	**100**

OUTPUT/ACTIVITIES+ Non Activity Based Expenses		INPUTS	Budget Source	Unit	No.	Unit Cost (US $)	Quarter Year	Budget Compt	Total Cost (US $)
1.1.3	Collection of genetic materials throughout the seed sources	Technician of RTSC	ITTO	MM	9,00	100	Q2-Q3,Y1,Y2,Y3	13	900
		Laboures	ITTO	man-days	360,00	5	Q2-Q3,Y1,Y2,Y3	12	1.800
		Daily subsistence allowance	ITTO	man-days	**72,00**	30	Q2-Q3,Y1,Y2,Y3	31	**2.160**
		Domestic air ticket (Mtram-Dpsr-Mtram)	ITTO	persons	4,00	55	Q2-Q3,Y1,Y2,Y3	33	**220**
		Road transport (car rental in Lombok Island)	ITTO	days	9,00	40	Q2-Q3,Y1,Y2,Y3	33	**360**
		Prunners, pole, storage bag and rack	ITTO	packages	6,00	225	Q2-Q3,Y1,Y2,Y3	44.2	1.350
		Fuels and utilities (in Bali)	GOI	liter	450,00	0,30	Q2-Q3,Y1,Y2,Y3	53	135
		Stationaries, label, documentation	ITTO	packages	1,00	150	Q2-Q3,Y1,Y2,Y3	54	150
		Transport of the seed	ITTO	times	10,00	**50**	Q2-Q3,Y1,Y2,Y3	61	**500**
		Photocopy	ITTO	packages	1,00	**50**	Q2-Q3,Y1,Y2,Y3	61	**50**
1.1.4	Reporting	Technician of RTSC	GOI	MM	2,00	100	Q2-Q3,Y1,Y2,Y3	13	200
		Computer supplies	ITTO	packages	1,00	80	Q2-Q3,Y1,Y2,Y3	61	80
		Photocopy	ITTO	packages	1,00	30	Q2-Q3,Y1,Y2,Y3	61	30
Activity **1.2.** Further development of propagation techniques for the selected species									
1.2.1	Seed quality testing for 3 species (*Z. rhetsa, Planchonia sp., Dysoxylum sp.*)	Technician of RTSC	ITTO	MM	6,00	100	Q2-Q3,Y1,Y2,Y3	13	600
		Laboures	ITTO	man-days	120,00	5	Q2-Q3,Y1,Y2,Y3	12	600
		Seed scarification equipments	ITTO	Unit	1,00	2.100	Q2-Q3,Y1,Y2,Y3	44.2	2.100
		Seed laboratory equipments	GOI	Unit	1,00	7.500	Q2-Q3,Y1,Y2,Y3	44.3	7.500
		Seed laboratory materials	ITTO	packages	1,00	500	Q2-Q3,Y1,Y2,Y3	51.1	500
		Stationeries, label, documentation	ITTO	packages	1,00	150	Q2-Q3,Y1,Y2,Y3	54	150
		Electricity	GOI	months	36,00	17	Q2-Q3,Y1,Y2,Y3	61	612
		Photocopy	ITTO	packages	1,00	**50**	Q2-Q3,Y1,Y2,Y3	61	**50**
	-Z. rhetsa								
	-Planchonia sp.								
	-Dysoxylum sp.								
1.2.2	Development of cutting propagation for 6 species (*Z. rhetsa, M.*	Technician of RTSC	ITTO	MM	9,00	100	Q2-Q3,Y1	13	900
		Laboures	ITTO	man-days	210,00	5	Q2-Q3,Y1	12	1.050
		Propagation **facilities**	ITTO	**Unit**	**1,00**	**5.625**	Q2-Q3,Y1	22	5.625

OUTPUT/ACTIVITIES+ Non Activity Based Expenses		INPUTS	Budget Source	Unit	No.	Unit Cost (US $)	Quarter Year	Budget Compt	Total Cost (US $)
	kauki, A. scholaris, W. pubescens, Planconia sp., Dysoxylum sp.)	Daily subsistence allowance	ITTO	man-days	**15,00**	30	Q2-Q3,Y1	31	**450**
		Land for the propagation house	GOI	m2	25,00	325	Q2-Q3,Y1	42	8.125
		Cutting equipments	ITTO	packages	1,00	300	Q2-Q3,Y1	44.3	300
		Cutting materials, media, growth regulator	ITTO	packages	1,00	1.750	Q2-Q3,Y1	51.1	1.750
		Fuels and utilities	GOI	liters	160,00	0,28	Q2-Q3,Y1	53	45
		Stationeries, label, documentation	ITTO	packages	1,00	150	Q2-Q3,Y1	54	150
		Electricity	GOI	months	36,00	22	Q2-Q3,Y1	61	792
		Photocopy	ITTO	packages	1,00	**50**	Q2-Q3,Y1	61	**50**
1.2.3	Development of tissue culture techniques of 6 species (*Z. rhetsa, M. kauki, A. scholaris, W. pubescens, Planconia sp., Dysoxylum sp.*)	National expert	ITTO	MM	7,00	1.000	Q2-Q3,Y1	11	7.000
		Technician of FORDA	ITTO	MM	7,00	100	Q2-Q3,Y1	13	700
		Technician of RTSC	ITTO	MM	5,00	100	Q2-Q3,Y1	13	500
		Sub-contract, material for the tissue culture propagation	ITTO	packages	1,00	6.000	Q2-Q3,Y1	23	6.000
		Daily subsistence allowance	ITTO	man-days	**10,00**	30	Q2-Q3,Y1	31	**300**
		Domestic air ticket (Dps-Jog-Dps)	ITTO	persons	1,00	125	Q2-Q3,Y1	33	125
		Road transport (car rental Dps-Jog-Dps)	ITTO	days	12,00	85	Q2-Q3,Y1	33	1.020
		Land for acclimatization facilities	GOI	m2	100,00	325	Q2-Q3,Y1	42	32.500
		Acclimatization facilities	ITTO	packages	1,00	830	Q2-Q3,Y1	44.4	830
		Material for the acclimatization	ITTO	packages	1,00	470	Q2-Q3,Y1	51.3	470
		Electricity	GOI	months	8,00	30	Q2-Q3,Y1	61	240
		Photocopy	ITTO	packages	1,00	**55**	Q2-Q3,Y1	61	**55**
1.2.4	Reporting	Technician of RTSC	GOI	MM	2,00	100	Q2,Y1;Q1,Y2	13	200
		Computer supplies	ITTO	packages	1,00	**50**	Q2,Y1;Q1,Y2	61	**50**
		Photocopy	ITTO	packages	1,00	30	Q2,Y1;Q1,Y2	61	30
Activity **1.3.** Comparative study on propagation techniques to Queensland, Australia									
1.3.1	Implementing the comparative study	International travel, 3 person, 1 week	ITTO	persons	3,00	2.945	Q3,Y1	32	8.835
		Other expenses	ITTO	packages	1,00	750	Q3,Y1	61	750
Activity **1.4.** Field trial of the genetic materials and site manipulation, 6 ha									

OUTPUT/ACTIVITIES+ Non Activity Based Expenses		INPUTS	Budget Source	Unit	No.	Unit Cost (US $)	Quarter Year	Budget Compt	Total Cost (US $)
1.4.1	Establishment	National expert	ITTO	MM	1,00	1.000	Q3,Y1	11	1.000
		Technician of BPFS	GOI	MM	10,00	100	Q3,Y1;Q1,Y2	13	1.000
		Technician of RTSC	ITTO	MM	4,00	100	Q3,Y1	13	400
		Sub-contract, planting establishment	ITTO	packages	1,00	1.750	Q2-Q3,Y1,Q1,Y2	26	1.750
		Daily subsistence allowance	ITTO	man-days	**51,00**	30	Q2-Q3,Y1,Q1,Y2	31	**1.530**
		Domestic air ticket (Jog-Dps-Jog)	ITTO	persons	1,00	125	Q2-Q3,Y1,Q1,Y2	33	125
		Planting materials	ITTO	packages	1,00	165	Q2-Q3,Y1,Q1,Y2	51.3	165
		Surveying and planting equipment	ITTO	packages	1,00	**2.500**	Q2-Q3;Y1, Q1,Y2	44.4	**2.500**
		Fuels and utilities	GOI	liter	1000,00	0,3	Q2-Q3,Y1,Q1,Y2	53	300
		Photocopy	ITTO	packages	1,00	30	Q2-Q3,Y1,Q1,Y2	61	30
1.4.2	Assessment and maintenance, 2 years	National expert	ITTO	MM	1,50	1.000	Q4,Y2;Q1,Q3,Y3	11	1.500
		Technician of BPFS	GOI	MM	10,00	100	Q4,Y2;Q1,Q3,Y3	13	1.000
		Technician of RTSC	ITTO	MM	8,00	100	Q4,Y2;Q1,Q3,Y3	13	800
		Sub-contract, planting maintenance	ITTO	packages	1,00	1620,00	Q4,Y2;Q1,Q3,Y3	26	1.620
		Daily subsistence allowance	ITTO	man-days	**51,00**	30	Q4,Y2;Q1,Q3,Y3	31	**1.530**
		Fuels and utilities	GOI	liter	1200,00	0,3	Q4,Y2;Q1,Q3,Y3	53	360
		Photocopy	ITTO	packages	2,00	30	Q4,Y2;Q1,Q3,Y3	61	60
		Data analysis	ITTO	packages	2,00	**50**	Q4,Y2;Q1,Q3,Y3	61	**100**
1.4.3	Reporting	Technician	GOI	MM	4,00	100	Q4,Y2;Q1,Q3,Y3	13	400
		Computer supplies	ITTO	packages	2,00	80	Q4,Y2;Q1,Q3,Y3	61	160
Output **2**. Seed orchard maintained									
Activity **2.1.** Establishment of seed orchard for 3 species (*A. scholaris, Planchonia sp., Dysoxylum sp.*), 6 ha									
2.1.1	Establishment	National expert	ITTO	MM	1,00	1.000	Q3,Y1	11	1.000
		Technician of BPFS	GOI	MM	10,00	100	Q3,Y1;Q1,Y2	13	1.000
		Technician of RTSC	ITTO	MM	4,00	100	Q3,Y1	13	400
		Sub-contract, planting establishment	ITTO	packages	1,00	1.815	Q2-Q3,Y1;Q1,Y2	26	1.815
		Daily subsistence allowance	ITTO	man-days	**36,00**	30	Q3,Y1	31	**1.080**
		Domestic air ticket (Jog-Dps-Jog)	ITTO	persons	1,00	125	Q3,Y1	33	125

OUTPUT/ACTIVITIES+ Non Activity Based Expenses		INPUTS	Budget Source	Unit	No.	Unit Cost (US $)	Quarter Year	Budget Compt	Total Cost (US $)
		Fuels and utilities	GOI	liter	1000,00	0,3	Q3,Y1;Q1,Y2	53	300
		Stationeries, label, documentation	ITTO	packages	1,00	100	Q3,Y1	54	100
		Photocopy	ITTO	packages	1,00	30	Q3,Y1	61	30
2.1.2	Reporting	Technician	GOI	MM	4,00	100	Q3,Y2;Q1,Y3;Q3,Y3	13	400
		Computer supplies	ITTO	packages	2,00	**50**	Q3,Y2	61	**100**
Activity **2.2.** Maintenance and assessment of existing seed orchard for 4 species (*Z. rhetsa, M. kauki, A. scholaris, W, pubescens, Planchonia sp., Dysoxylum sp*), 26 ha									
2.2.1	Assessment and maintenance for 4 species (*Z. rhetsa, M. kauki, A. scholaris, W, pubescens*), 20 ha, 3 years	National expert	ITTO	MM	2,00	1.000	Q1,Y1	11	2.000
		Technician of BPFS	GOI	MM	20,00	100	Q1,Y1;Q2,Y2;Q3,Y3	13	2.000
		Technician of RTSC	ITTO	MM	16,00	100	Q1,Y1;Q2,Y2;Q3,Y3	13	1.600
		Sub-contract, planting maintenance	ITTO	packages	1,00	2.395	Q1,Y1;Q2,Y2;Q3,Y3	26	2.395
		Daily subsistence allowance	ITTO	man-days	**51,00**	30	Q1,Y1;Q2,Y2;Q3,Y3	31	**1.530**
		Motorcycle, Honda, Mega Pro	ITTO	set	1,00	2.000	Q1,Y1	43	2.000
		Notebook computer, Fujitsu 7010	ITTO	set	1,00	2.400	Q1,Y1	44.1	2.400
		Fuels and utilities	GOI	liter	750,00	0,3	Q1-Q3;Y1-Y3	53	225
		Stationeries, label, documentation	ITTO	packages	1,00	150	Q2-Q3;Y1-Y3	54	150
		Data analysis	ITTO	packages	2,00	**120**	Q1,Y2;Q1,Y3	61	**240**
2.2.2	Assessment and maintenance for 3 species (*A. scholaris, Planchonia sp., Dysoxylum sp*), 6 ha, 2 years	National expert	ITTO	MM	1,50	1.000	Q3,Y2	11	1.500
		Technician of BPFS	GOI	MM	20,00	100	Q3,Y2;Q1,Y3;Q3,Y3	13	2.000
		Technician of RTSC	ITTO	MM	8,00	100	Q3,Y2	13	800
		Sub-contract, planting maintenance	ITTO	packages	1,00	1.580	Q1,Y1;Q1,Y2;Q1,Y3	26	1.580
		Daily subsistence allowance	ITTO	man-days	**36,00**	30	Q3,Y2	31	**1.080**
		Fuels and utilities	GOI	liter	1500,00	0,3	Q3,Y2;Q1,Y3;Q3,Y3	53	450
		Stationeries, label, documentation	ITTO	packages	1,00	150	Q3,Y2	54	150
		Data analysis	ITTO	packages	2,00	**50**	Q1,Y3;Q3,Y3	61	**100**
2.2.3	Reporting	Technician	GOI	MM	6,00	100	Q3,Y1;Q3,Y2;Q3,Y3	13	600
		Computer supplies	ITTO	packages	3,00	50	Q2,Y1	61	150
Activity **2.3.** Upgrading access to the seed orchard									
2.3.1	Road rehabilitation	Sub-contract	ITTO	km	0,30	**14.000**	Q2,Y1	21	**4.200**
Output **3.** Technical guidelines developed and disseminated									

OUTPUT/ACTIVITIES+ Non Activity Based Expenses		INPUTS	Budget Source	Unit	No.	Unit Cost (US $)	Quarter Year	Budget Compt	Total Cost (US $)
Activity **3.1.** Preparation, reproduction and dissemination of 12 technical guidelines on seed handling and planting for the species									
3.1.1	Preparation, reproduction and dissemination of the guidelines	National expert	ITTO	MM	3,00	1.000	Q2-Q3,Y1	11	3.000
		Technician of RTSC	ITTO	MM	6,00	100	Q2-Q3,Y1	13	600
		Photocopy and computer supplies	ITTO	packages	3,00	**50**	Q2-Q3,Y1	61	**150**
		Sub-contract: printing guideline	ITTO	Copies	1200,00	10	Q2,Y2	27	12.000
Activity **3.2.** Organize 1 regional workshop on propagation technologies									
3.2.1	Organize the workshop	Resource person	ITTO	MM	0,50	1.000	Q1,Y2	11	500
		Technician of RTSC	GOI	MM	1,00	100	Q1,Y2	13	100
		Daily subsistence allowance (resource person)	ITTO	man-days	**5,00**	40	Q1,Y2	31	**200**
		Daily subsistence allowance (participant)	ITTO	man-days	**20,00**	40	Q1,Y2	31	**800**
		Domestic air ticket (Jog-Dps-Jog)	ITTO	persons	1,00	125	Q1,Y2	33	125
		Road transport (participant)	ITTO	person	20,00	10	Q1,Y2	33	**200**
		Stationeries and documentation	ITTO	persons	20,00	1,7	Q1,Y2	54	**34**
		Photocopy, banners	ITTO	packages	1,00	**75**	Q1,Y2	61	**75**
Output **4.** Forest land use updated									
Activity **4.1.** Data collection and analysis of social economic and biophysics									
4.1.1	Physical survey	National expert	ITTO	MM	3,00	1.000	Q2,Q3,Y1	11	3.000
		Technician of BPFS	GOI	MM	4,00	100	Q2,Y1	13	400
		Daily subsistence allowance (surveyor)	ITTO	man-days	**72,00**	30	Q2,Y1	31	**2.160**
		Road transport (surveyor)	ITTO	location	6,00	50	Q2,Y1	33	300
		Materials for soil analysis	ITTO	packages	1,00	**750**	Q2,Y1	51.1	**750**
		Rent of surveying equipments	ITTO	packages	1,00	100	Q2,Y1	61	100
		Stationeries, photocopy and documentation	ITTO	packages	1,00	**150,0**	Q2,Y1	54	**150**
4.1.2	Social-economic survey	National expert	ITTO	MM	4,00	1.000	Q2,Q3,Y1	11	4.000
		Technician of BPFS	GOI	MM	4,00	100	Q2,Y1	13	400
		Daily subsistence allowance	ITTO	man-days	**120,00**	30	Q2,Y1	31	**3.600**

OUTPUT/ACTIVITIES+ Non Activity Based Expenses		INPUTS	Budget Source	Unit	No.	Unit Cost (US $)	Quarter Year	Budget Compt	Total Cost (US $)
		Stationeries and documentation	ITTO	packages	1,00	100,0	Q2,Y1	54	100
4.1.3	Reporting	Technician of BPFS	GOI	MM	4,00	100	Q3,Y1	13	400
		Stationeries, photocopy, computer supplies	ITTO	packages	3,00	50	Q2,Y1	61	150
Activity **4.2.** Updating the land use plan									
4.2.1	Field survey	National expert	ITTO	MM	2,00	1.000	Q2,Y1	11	2.000
		Technician of BPFS	GOI	MM	4,00	100	Q2,Y1	13	400
		Daily subsistence allowance	ITTO	man-days	**48,00**	30	Q2,Y1	31	**1.440**
		Stationeries, and documentation	ITTO	packages	1,00	100,0	Q2,Y1	54	100
4.2.2	Data analysis	Map preparation (digitizing, editing, edge matching, analysis, composition)	ITTO	Layer	6,00	250	Q3,Y1	61	1.500
4.2.3	Adoption workshop	Workshop organizers	GOI	MM	1,00	100	Q3,Y1	13	100
		Sub-contract, training	ITTO	packages	1,00	1.450	Q3,Y1	28	1.450
		Meeting room	GOI	packages	1,00	250	Q3,Y1	61	250
4.2.4	Production and dissemination of land use plan maps	Sub-contract (printed maps)	ITTO	Copies	**250,00**	20	Q1,Y2	27	**5.000**
		Postal	ITTO	packages	1,00	**150**	Q1,Y2	61	**150**
Output **5.** Quality planting materials produced and distributed									
Activity **5.1.** Improve capacity to produce and distribute planting materials									
5.1.1	Upgrading road access to the nursery	Sub-contract	ITTO	km	1,20	**14.000**	Q2-Q3,Y1	21	**16.800**
5.1.2	Upgrading nursery capacities	Sub-contract, shaded area	ITTO	m2	200,00	45	Q2-Q3,Y1	22	9.000
		Sub-contract, opened area	ITTO	m2	**600,00**	5	Q2-Q3,Y1	22	**3.000**
		Sub-contract, media processing	ITTO	m2	25,00	**50**	Q2-Q3,Y1	22	**1.250**
		Subcontract, nursery office	ITTO	m2	36,00	**125**	Q2-Q3,Y1	22	**4.500**
Activity **5.2** Distribution of planting materials to participating communities									
5.2.1	**Provision planting materials, 1.100.000**	Laboures	ITTO	man-days	**7150,00**	5	Q2-Q3-Q1,Y1,Y2,Y3	12	**35.750**
		Technician	ITTO	MM	**18,00**	100	Q2-Q3-Q1,Y1,Y2,Y3	13	**1.800**

OUTPUT/ACTIVITIES+ Non Activity Based Expenses		INPUTS	Budget Source	Unit	No.	Unit Cost (US $)	Quarter Year	Budget Compt	Total Cost (US $)
	within 3 year (~ 350.000 per year)	Sub-contract, Preparing potting media	ITTO	packages	3,00	**11.900**	Q2-Q3-Q1,Y1,Y2,Y3	24	**35.700**
		Daily subsistence allowance	ITTO	man-days	**36,00**	30	Q2-Q3-Q1,Y1,Y2,Y3	31	**1.080**
		Motorcycle, Honda, Mega Pro	ITTO	set	**1,00**	2.000	Q2,Y1	43	**2.000**
		Generator set, 25 HP	ITTO	set	1,00	1.750	Q2,Y1	44.4	1.750
		Nursery materials	ITTO	packages	3,00	**15.250**	Q2-Q3-Q1,Y1,Y2,Y3	51.2	**45.750**
		Fuels and utilities	ITTO	liter	5800,00	0,3	Q2-Q3-Q1,Y1,Y2,Y3	53	1.740
5.2.2	Distribution of the planting materials	Technician of BPFS	GOI	MM	23,00	100	Q3,Y1,Q1&Q2,Y2,Q1&Q3,Y3	13	2.300
		Sub-contract, seedling transport	ITTO	trips	**300,00**	60	Q3,Y1,Q1&Q2,Y2,Q1&Q3,Y3	25	**18.000**
		Daily subsistence allowance	ITTO	man-days	**40,00**	30	Q3,Y1,Q1&Q2,Y2,Q1&Q3,Y3	31	**1.200**
5.2.3	Reporting	Technician	GOI	MM	4,00	100	Q3,Y1,Q1&Q2,Y2,Q1&Q3,Y3	13	400
		Stationeries, photocopy, computer supplies	ITTO	packages	**5,00**	50	Q3,Y1	61	**250**
Activity **5.3.** Administration and documentation of planting materials developed									
5.3.1	Implementing the administration and documentation	Technician of RTSC	ITTO	MM	2,00	100	Q1,Y1	13	200
		Stationeries, photocopy and computer supplies	ITTO	packages	3,00	**50**	Q1,Y1	61	**150**
		Reproduction of documentation forms	ITTO	packages	1,00	**300**	Q1,Y1	61	**300**
Output **6.** Plantation of 2500 ha established and maintained									
Activity **6.1.** Technical assistance for establishing 2500 ha plantation									
6.1.1.	Implementing the technical assistance	Technician of BPFS	ITTO	MM	6,00	100	Q1,Y1;Q1&Q3,Y2;Q1&Q3,Y3	13	600
		Daily subsistence allowance	ITTO	man-days	**18,00**	35	Q1,Y1;Q1&Q3,Y2;Q1&Q3,Y3	31	**630**
		Fuels and utilities	GOI	liter	1800,00	0,3	Q1,Y1;Q1&Q3,Y2;Q1&Q3,Y3	53	540
		Photocopy	ITTO	packages	2,00	33	Q1,Y1;Q1&Q3,Y2;Q1&Q3,Y3	61	66
		Meeting to farmer group	ITTO	packages	42,00	50	Q1,Y1;Q1&Q3,Y2;Q1&Q3,Y3	61	2.100
		Planting	GOI	hectares	2500,00	310	Q1,Y1;Q1&Q3,Y2;Q1&Q3,Y3	26	775.000
Activity **6.2** Establishment and measurement of permanent sample plots									

OUTPUT/ACTIVITIES+ Non Activity Based Expenses		INPUTS	Budget Source	Unit	No.	Unit Cost (US $)	Quarter Year	Budget Compt	Total Cost (US $)
6.2.1	Preparation	National expert	ITTO	MM	1,00	1.000	Q1,Y1,Y2;Q1-Q3,Y3	11	1.000
		Technician of RTSC and BPFS	ITTO	MM	2,00	100	Q1,Y1,Y2;Q1-Q3,Y3	13	200
		Daily subsistence allowance	ITTO	man-days	**18,00**	30	Q1,Y1,Y2;Q1-Q3,Y3	31	**540**
		Fuels and utilities	GOI	liter	280,00	0,3	Q1,Y1,Y2;Q1-Q3,Y3	53	84
		Stationeries, photocopy and computer supplies	ITTO	packages	3,00	**50**	Q1,Y1,Y2;Q1-Q3,Y3	61	**150**
6.2.2	Establishment and measurement, 6 ha/6 species/location	Technician of RTSC and BPFS	ITTO	MM	2,00	100	Q2,Y2;Q1&Q3,Y3	13	200
		Daily subsistence allowance	ITTO	man-days	**12,00**	30	Q2,Y2;Q1&Q3,Y3	31	**360**
		Fuels and utilities	GOI	litre	280,00	0,3	Q2,Y2;Q1&Q3,Y3	53	84
		Stationeries, photocopy and computer supplies	ITTO	packages	3,00	**50**	Q2,Y2;Q1&Q3,Y3	61	**150**
6.2.3	Reporting	Technician of RTSC and BPFS	GOI	MM	4,00	100	Q2,Y2;Q1&Q3,Y3	13	400
		Stationeries, photocopy, computer supplies	ITTO	packages	7,00	50	Q2,Y2;Q1&Q3,Y3	61	350
Activity **6.3.** Establishment of demonstration plot of 2 species (*Planchonia sp.* and *Dysoxylum sp.*), 20 Ha									
6.3.1	Establishment	Laboures	ITTO	man-days	**1200,00**	5	Q3,Y1;Q1-Q3,Y2;Q1,Y3	12	**6.000**
		Technician of BPFS	ITTO	MM	5,00	100	Q3,Y1;Q1-Q3,Y2;Q1,Y3	13	500
		Daily subsistence allowance	ITTO	man-days	**24,00**	30	Q3,Y1;Q1-Q3,Y2;Q1,Y3	31	**720**
		Planting materials	ITTO	packages	1,00	485	Q3,Y1;Q1-Q3,Y2;Q1,Y3	51.3	485
		Fuels and utilities	GOI	liter	300,00	0,3	Q3,Y1;Q1-Q3,Y2;Q1,Y3	53	90
6.3.2	Maintenance	Laboures	ITTO	man-days	**500,00**	5	Q2,Y1;Q2-Q3, Y3	12	**2.500**
		Technician of BPFS	GOI	MM	6,00	100	Q2,Y1;Q2-Q3, Y3	13	600
		Daily subsistence allowance	ITTO	man-days	**36,00**	30	Q2,Y1;Q2-Q3, Y3	31	**1.080**
		Fuels and utilities	GOI	liter	1680,00	0,3	Q2,Y1;Q2-Q3, Y3	53	504
		Photocopy	ITTO	packages	2,00	30	Q2,Y1;Q2-Q3, Y3	61	60
		Community consultation	ITTO	packages	6,00	75	Q2,Y1;Q2-Q3, Y3	63	450
6.3.3	Reporting	Technician of BPFS	GOI	MM	3,00	100	Q3,Y1;Q3-Q4, Y3	13	300
		Computer supplies	ITTO	packages	3,00	**50**	Q3,Y1;Q3-Q4, Y3	61	**150**
Activity **6.4.** Maintenance of demonstration plots of 4 species (*Z. rhetsa, M. kauki, A. scholaris, W. pubescens*); 150 Ha									

OUTPUT/ACTIVITIES+ Non Activity Based Expenses		INPUTS	Budget Source	Unit	No.	Unit Cost (US $)	Quarter Year	Budget Compt	Total Cost (US $)
6.4.1	Maintenance	Technician of BPFS	GOI	MM	18,00	100	Q1-Q2,Y1,Y2,Y3	13	1.800
		Sub-contract, planting maintenance	ITTO	packages	4,00	750	Q1-Q2,Y1,Y2,Y3	26	3.000
		Daily subsistence allowance	ITTO	man-days	**45,00**	30	Q1-Q2,Y1,Y2,Y3	31	**1.350**
		Fuels and utilities	GOI	liter	2500,00	0,3	Q1-Q2,Y1,Y2,Y3	53	750
		Photocopy	ITTO	packages	2,00	30	Q1-Q2,Y1,Y2,Y3	61	60
		Community consultation	ITTO	packages	9,00	75	Q1-Q2,Y1,Y2,Y3	63	675
6.4.2	Reporting	Technician of BPFS	GOI	MM	3,00	100	Q3,Y1,Y2,Y3	13	300
		Computer supplies	ITTO	packages	3,00	**50**	Q3,Y1,Y2,Y3	61	**150**
Output **7.** Developed agroforestry model socialized and applied									
Activity **7.1.** To adopt the existing model to farmer groups and forestry officers in 6 districts									
7.1.1	To adopt the model	National expert	ITTO	MM	3,00	1.000	Q1,Y1	11	3.000
		Technician of BPFS	GOI	MM	2,00	100	Q1,Y1	13	200
		Daily subsistence allowance (for the specialist and technicians)	ITTO	man-days	**48,00**	30	Q1,Y1	31	**1.440**
		Daily subsistence allowance (farmer group)	ITTO	man-days	140,00	5	Q1,Y1	31	700
		Domestic air ticket (Jkt-Dps-Jkt)	ITTO	persons	1,00	225	Q1,Y1	33	225
		Fuels and utilities	GOI	liter	560,00	0,3	Q1,Y1	53	168
		Stationeries, photocopy and computer supplies	ITTO	packages	**6,00**	45	Q1,Y1	61	**270**
Activity **7.2.** To review and refine the agroforestry model									
7.2.1	To review and refine the agroforestry model	National expert	ITTO	MM	2,00	1.000	Q3,Y1	11	2.000
		Technician of BPFS	ITTO	MM	2,00	100	Q3,Y1	13	200
		Daily subsistence allowance	ITTO	man-days	**12,00**	30	Q3,Y1	31	**360**
		Domestic air ticket (Jkt-Dps-Jkt)	ITTO	persons	1,00	225	Q3,Y1	33	225
		Stationeries, photocopy and computer supplies	ITTO	packages	1,00	55	Q3,Y1	61	55
Activity **7.3.** To socialize the agroforestry model									

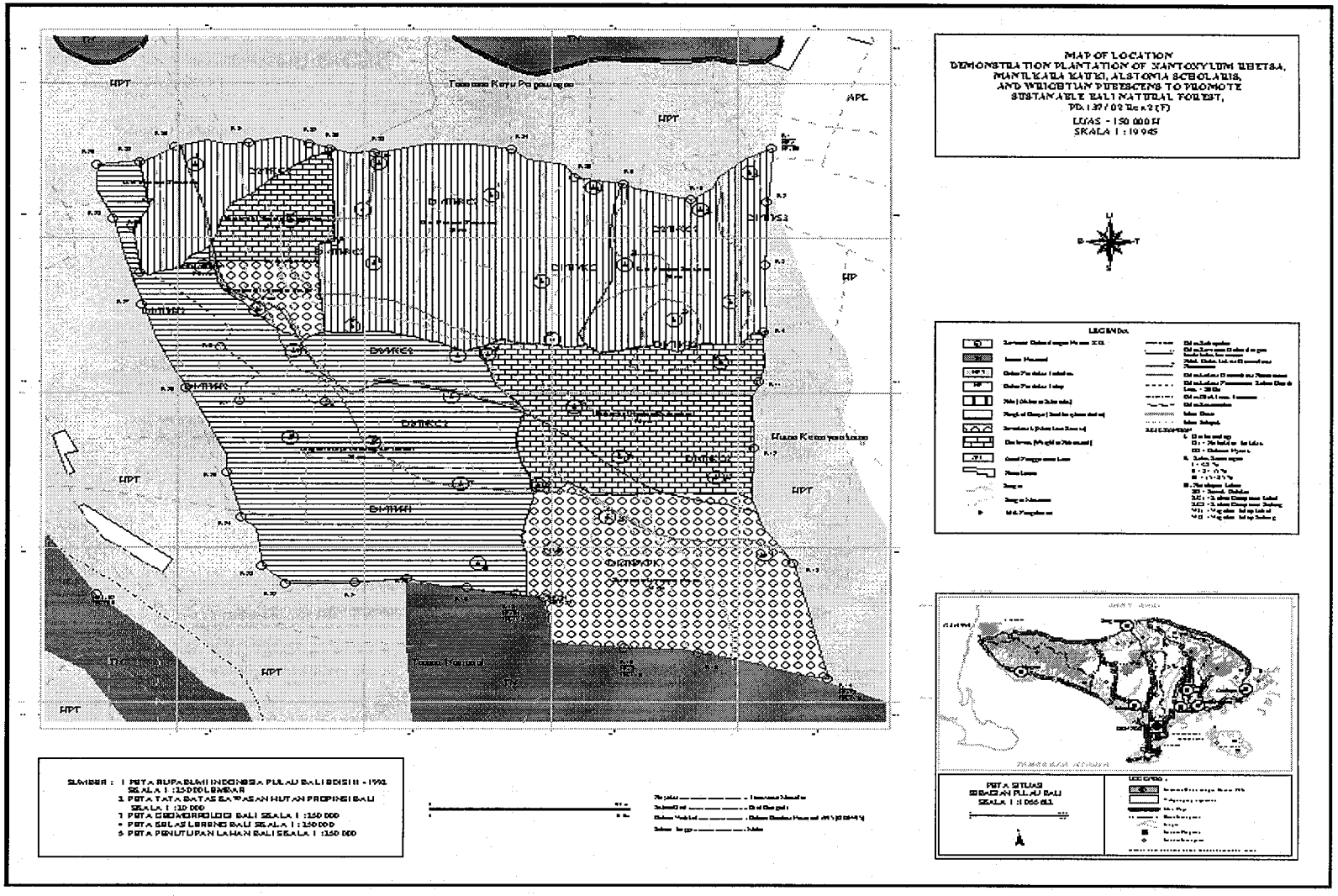
OUTPUT/ACTIVITIES+ Non Activity Based Expenses		INPUTS	Budget Source	Unit	No.	Unit Cost (US $)	Quarter Year	Budget Compt	Total Cost (US $)
7.3.1	To organize regional workshop	Resource person	ITTO	MM	0,50	1.000	Q1,Y2	11	500
		Workshop organizers	GOI	MM	1,00	100	Q1,Y2	13	100
		Sub-contract workshop	ITTO	packages	1,00	**3.500**	Q1,Y2	28	**3.500**
		Meeting room	GOI	packages	1,00	250	Q1,Y2	61	250
7.3.2	To facilitate local meetings	Community consultation	ITTO	packages	6,00	490	Q1,Y2	63	2.940
		Meeting room	GOI	packages	7	25	Q1,Y2	61	175
7.3.3.	To prepare, reproduce and disseminate publications of the agroforestry model	National expert	ITTO	MM	2,00	1.000	Q1&Q3,Y1	11	2.000
		Technician of RTSC	ITTO	MM	4,00	100	Q1&Q3,Y3	13	400
		Photocopy and computer supplies	ITTO	packages	2,00	**50**	Q1&Q3,Y3	61	**100**
		Sub-contract, proceedings	ITTO	Copies	100,00	17	Q1&Q3,Y3	27	1.700
		Sub-contract, posters	ITTO	Copies	100,00	10	Q1&Q3,Y3	27	1.000
		Sub-contract, 2 leaflets	ITTO	Copies	200,00	5	Q1&Q3,Y3	27	1.000
Output **7.4.** Farmer leaders trained									
Sub-Activity **7.4.1.** Provision of training facilities									
7.4.1.1	Provision of the facilities	Multimedia projector	ITTO	set	1,00	2.400	Q1,Y1	44.1	2.400
		Multimedia projector	GOI	set	1,00	2.000	Q1,Y1	44.1	2.000
		Digital camera, Sony Cyber Shoot	ITTO	set	1,00	600	Q1,Y1	44.1	600
		Digital camera, Olympus	GOI	set	1,00	600	Q1,Y1	44.1	600
		Notebook, IBM ThinkPad	ITTO	set	1,00	2.400	Q1,Y1	44.1	2.400
		Notebook, Compaq	GOI	set	1,00	2.300	Q1,Y1	44.1	2.300
		Stationeries	ITTO	set	1,00	200	Q1,Y1	54	200
Sub-Activity **7.4.2** Preparation of training materials									
7.4.2.1	Preparation of the materials	National expert	ITTO	MM	0,50	1.000	Q1-Q2,Y1	11	500
		Reproduction of materials	ITTO	Copies	150,00	2	Q1-Q2,Y1	61	300
Sub-Activity **7.4.3.** Consultation with local communities									
7.4.3.1	Identify participants, 6 districts in Bali	Daily subsistence allowance (BPFS's staff)	ITTO	man-days	**48,00**	30	Q1-Q2,Y1	31	**1.440**

OUTPUT/ACTIVITIES+ Non Activity Based Expenses		INPUTS	Budget Source	Unit	No.	Unit Cost (US $)	Quarter Year	Budget Compt	Total Cost (US $)
		Stationeries, photocopy and documentation	ITTO	packages	**1,00**	50,0	Q1-Q2,Y1	54	**50**
7.4.3.2	Local meeting	Community consultation	ITTO	location	6,00	485	Q1-Q2,Y1	63	2.910
		Meeting room	GOI	packages	7	25	Q1-Q2,Y1	61	175
7.4.3.3	Organize farmer groups	Daily subsistence allowance (BPFS's staff)	ITTO	man-days	**36,00**	30	Q2,Y1	31	**1.080**
		Daily subsistence allowance (participants)	ITTO	man-days	**180,00**	5	Q2,Y1	31	**900**
		Documentation	ITTO	packages	1,00	50,0	Q2,Y1	54	50
		Meeting room	GOI	packages	7	25	Q2,Y1	61	175
7.4.3.4	Reporting	Technician	GOI	MM	4,00	100	Q2,Y1	13	400
		Stationeries, photocopy, computer supplies	ITTO	packages	7,00	50	Q2,Y1	61	350
Sub-Activity **7.4.4** Organize training for farmer leaders and in-country study tour									
7.4.4.1	Preparation	Technician of BPFS	GOI	MM	0,50	100	Q2,Y1	13	50
		Training kits (t-shirts, hats)	ITTO	packages	120,00	10	Q2,Y1	61	1.200
7.4.4.2	Implementation the training and study tour	Resource person	ITTO	MM	1,00	1.000	Q3,Y1;Q3,Y2;Q3,Y3	11	1.000
		Technician of BPFS	GOI	MM	1,00	100	Q3,Y1;Q3,Y2;Q3,Y3	13	100
		Sub-contract training	ITTO	packages	1,00	**15.000**	Q3,Y1;Q3,Y2;Q3,Y3	28	**15.000**
		Photocopy, office supplies, banners	ITTO	packages	3,00	**150**	Q3,Y1;Q3,Y2;Q3,Y3	61	**450**
7.4.4.3	Reporting	Technician of BPFS	GOI	MM	4,00	100	Q3,Y1;Q3,Y2;Q3,Y3	13	400
		Stationeries, photocopy, computer supplies	ITTO	packages	7,00	50	Q3,Y1;Q3,Y2;Q3,Y3	61	350
Output **8.** Monitoring system developed and applied									
Activity **8.1.** Formulation of monitoring and evaluation systems									
8.1.1	Formulation the system	International expert	ITTO	MM	1,00	8.000	Q1,Y1	14	8.000
		Technician of RTSC	ITTO	MM	1,00	100	Q1,Y1	13	100
		Daily subsistence allowance (expert)	ITTO	man-days	10,00	150	Q1,Y1	31	1.500
		Daily subsistence allowance (expert)	ITTO	man-days	5,00	85	Q1,Y1	31	425

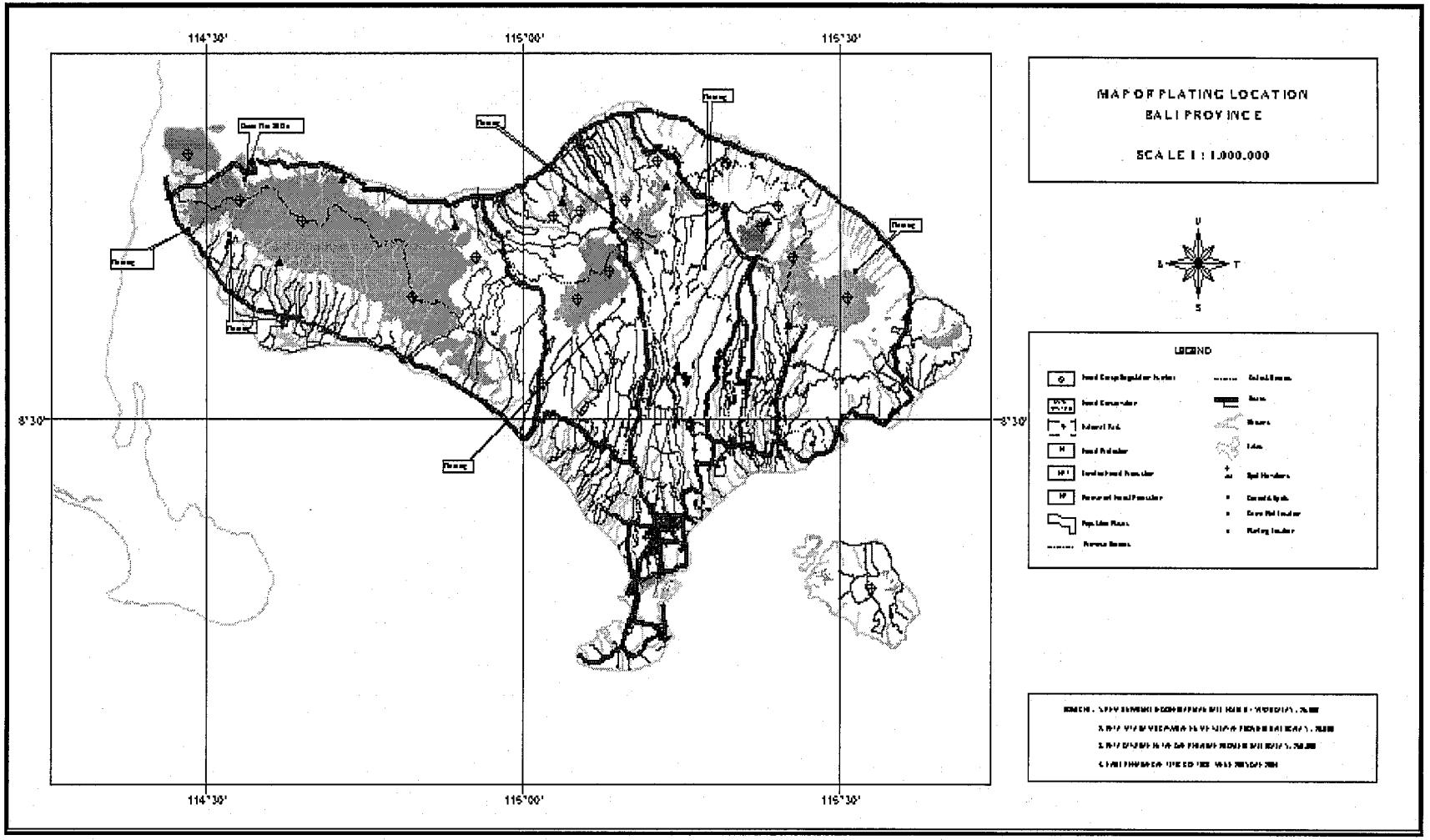
OUTPUT/ACTIVITIES+ Non Activity Based Expenses		INPUTS	Budget Source	Unit	No.	Unit Cost (US $)	Quarter Year	Budget Compt	Total Cost (US $)
		International air ticket	ITTO	person	1,00	3.000	Q1,Y1	32	3.000
		Photocopy and computer supplies	ITTO	packages	3,00	**75**	Q1,Y1	61	**225**
		Community consultation	ITTO	packages	1,00	75	Q1,Y1	63	75
8.1.2	Monitoring and evaluation	Daily subsistence allowance	ITTO	man-days	**36,00**	30	Q2-Q3,Y1,Y2,Y3	31	**1.080**
		Transport cost	ITTO	man-days	36,00	17	Q2-Q3,Y1,Y2,Y3	33	612
		Activity **8.2.** Documentation and reporting							
8.2.1	Documentation and reporting implemented	Sundry (translation service)	ITTO	packages	6,00	**150**	Q2-Q3,Y1,Y2,Y3	61	**900**
		National expert (accomplishment report)	ITTO	MM	1,00	1.000	Q2-Q3,Y1,Y2,Y3	11	1.000
		Progress report year 1,2 and 3	ITTO	packages	150,00	8	Q2-Q3,Y1,Y2,Y3	61	1.200
		Sub Contract, Printing Accomplishment report	ITTO	packages	100,00	12	Q2-Q3,Y1,Y2,Y3	27	1.200
	Sub total activities								**1.278.534**
Auditing			ITTO	times	4,00	600		62	2.400
Project management team									
2.1	Project manager		ITTO	MM	36,00	1.000		15.1	36.000
2.2	Secretary		ITTO	MM	36,00	300		15.2	10.800
2.3	**Field coordinator**		ITTO	MM	**30,00**	500		15.4	**15.000**
2.4	Extension specialist		ITTO	MM	**24,00**	350		15.5	**8.400**
2.5	Administration Staff		GOI	MM	72,00	300		15.6	21.600
Vehicle, 4-wheel			ITTO	unit	1,00	22.000		43	22.000
Desktop Computer			ITTO	set	2,00	1.000		44.1	2.000
Desktop Computer			GOI	set	3,00	1.000		44.1	3.000
Office maintenance			GOI	month	36,00	150		61	5.400
	Sub total non activities								126.600
Executing Agency Management Cost (15% of Total 0f Overall Project Budget by Activities			GOI						**191.780**

OUTPUT/ACTIVITIES+ Non Activity Based Expenses		INPUTS	Budget Source	Unit	No.	Unit Cost (US $)	Quarter Year	Budget Compt	Total Cost (US $)
	Sub total		GOI						**191.780**
ITTO Monitoring, Evaluation and Administration Cost									
81	Monitoring and Review Cost		ITTO						18.000
82	Evaluation cost		ITTO						15.000
	82.1. Annual evaluation								
	82.2. Exposed evaluation								
	Sub total								33.000
Program Support Cost (8%)			ITTO						**44.260**
	GRAND TOTAL								**1.674.174**
	GRAND ITTO TOTAL								**597.512**
	GRAND GOI TOTAL								**1.076.662**

ANNEX F: MAP OF LOCATION DEMONSTRATION PLANTATION (PD 137/02 REV.2 (F)



ANNEX G: MAP OF PLANTING LOCATION



ANNEX H: RESPONSES TO RECOMMENDATIONS OF THE THIRTIETH PANEL

I. RECOMMENDATION OF THE THIRTIETH PANEL

PD 386/05 (F) Technological Development for the Production of Planting Materials to Support Sustainable Plantation of Bali Indigenous Species through Community Participation

Assessment by the Thirtieth Panel

A) Overall assessment

The Panel acknowledged the proposed project concept which aims at supporting the tree planting program of the Provincial Government of Bali as away of empowering the local economy and improving the environmental conditions of Bali. However, the Panel noted that the proposal contained the following weakness: the problem analysis is weak and shallow as causes identified do not convincingly explain the key problem and sub-causes that would have been useful in defining relevant activities are not included; the information that is provided does not show clearly how the outputs of the project will be used by respective beneficiaries both in the short and long-terms; the project strategy is weakly developed and does not match with the objectives; the technical and scientific, economic and social aspects are poorly developed; the logical framework is weak; the management structure is inadequately presented; the monitoring and reporting section does not include adequate provision for the elaboration and use of a monitoring and evaluation system; the proposal does not refer to any policy on incentives for reforestation with community participation, if it does exist. Finally, the Panel noted that the budget is somewhat too large and requires scaling down.

B) Specific Recommendations

The proposal should be revised by taking into account the overall assessment and the following:

1. Improve the problem analysis by showing all relevant causes and sub-causes in the problem tree and redefining the objective, specific objectives, outputs and activities more precisely. DO not overburden the definition of the objectives with the addition of "remarks",
2. Keep only one Specific Objective redefined as "to identify and implement suitable technology for production of high quality planting materials", match with the problem analysis and improve description of the specific objective,
3. Strengthen the logical framework with due attention to measurable indicators and eliminate the activities from the matrix,
4. Provide details on the project beneficiaries and show more clearly what benefits the beneficiaries will get during the duration of the project,
5. Widen the sources of information on the technical and scientific aspect,
6. Provide more information on the economic aspect of the planned plantation,
7. Improve presentation of the social aspect and provide information on policy on incentives for reforestation with community participation; if such policy does not exist, show how the project will contribute to the formulation of such a policy,
8. Improve the project strategy by showing how outputs will be delivered by the various activities in an effective manner,

9. Improve presentation of the management structure and the monitoring and evaluation sections following the ITTO Manual,
10. Improve presentation of the risk section by identifying wider potential risks, including fire outbreaks and prescribing risk mitigating measures,
11. Revise the budget in accordance with the redefined project components by reducing the quantity and unit input prices as appropriate and lowering the personnel cost component.

C) Conclusion

The Panel concluded that, with the incorporation of the amendments noted, the project proposal could be commended to the Committee for the final appraisal.

II. ACTION TAKEN IN THE PROPOSAL TO RESPOND THE RECOMMENDATION

Actions taken to respond the recommendation were written in bold type font style as indicated on pages mentioned in the following table

	Recommendations	Modifications	Refer to page
1.	Improve the problem analysis by showing all relevant causes and sub-causes in the problem tree and redefining the objective, specific objectives, outputs and activities more precisely. Do not overburden the definition of the objectives with the addition of "remarks"	**Problem tree has been revised by redefining the key problem, causes and sub-causes**	5
2.	Keep only one Specific Objective redefined as "to identify and implement suitable technology for production of high quality planting materials", match with the problem analysis and improve description of the specific objective	**There is only one Specific Objective defined as "to identify and implement suitable technology for production of high quality planting materials and plantation establishment using Bali indigenous species with community participation"**	3
3.	Strengthen the logical framework with due attention to measurable indicators and eliminate the activities from the matrix	**Logical framework has been revised**	12
4.	Provide details on the project beneficiaries and show more clearly what benefits the beneficiaries will get during the duration of the project	**Additional description on target beneficiaries has been added**	6
5.	Widen the sources of information on the technical and scientific aspect	**Information on the technical and scientific aspect has been added**	7
6.	Provide more information on the economic aspect of the planned plantation	**Information on the economic aspect of the plantation has been included**	7-8
7.	Improve presentation of the social aspect and provide information on policy on incentives for reforestation with	**Presentation of social aspect has been improved**	8

	Recommendations	Modifications	Refer to page
	community participation; if such policy does not exist, show how the project will contribute to the formulation of such a policy		
8.	Improve the project strategy by showing how outputs will be delivered by the various activities in an effective manner	**The project strategy has been improved**	5-6
9.	Improve presentation of the management structure and the monitoring and evaluation sections following the ITTO Manual	**Management structure has been revised; reporting, monitoring and evaluation section has been improved conforming to ITTO Manual**	27-28
10.	Improve presentation of the risk section by identifying wider potential risks, including fire outbreaks and prescribing risk mitigating measures	**Other potential risks have been identified**	8
11.	Revise the budget in accordance with the redefined project components by reducing the quantity and unit input prices as appropriate and lowering the personnel cost component	**Overall budget has been reduced from USD 699,808 to USD 597,512** **Research coordinator has been deleted from the project key staff**	24