



MINISTRY OF FORESTRY AND ESTATE CROPS in Indonesia  
DIRECTORATE GENERAL OF  
LAND REHABILITATION and SOCIAL FORESTRY  
and  
JAPAN INTERNATIONAL COOPERATION AGENCY

THE DEVELOPMENT OF SUSTAINABLE MANGROVE MANAGEMENT PROJECT

The Final Report of  
Project Administration  
The Development of Sustainable  
Mangrove Management Project,  
Bali and Lombok, Republic of Indonesia

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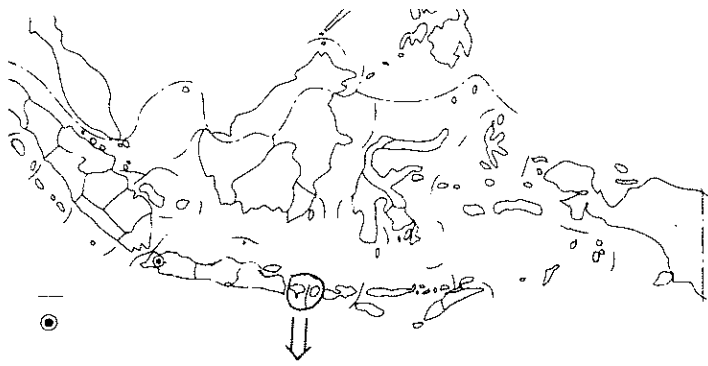
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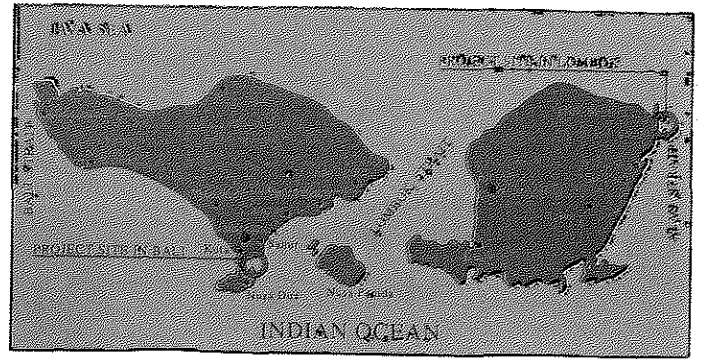




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Project Site



Project sites



Former shrimp ponds (Ex-Tambak)



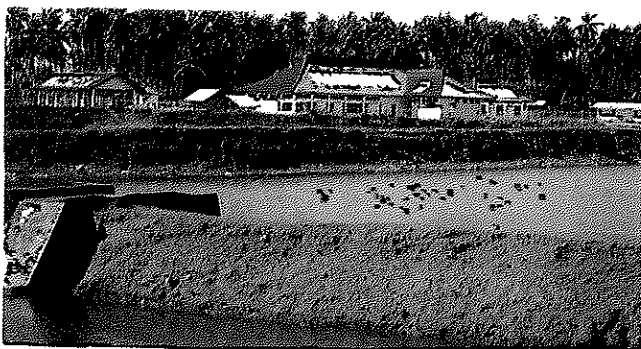
Clear-cut area at Petagan



Footpath for observation of natural forest



Nursery



The Mangrove Center, December 1993

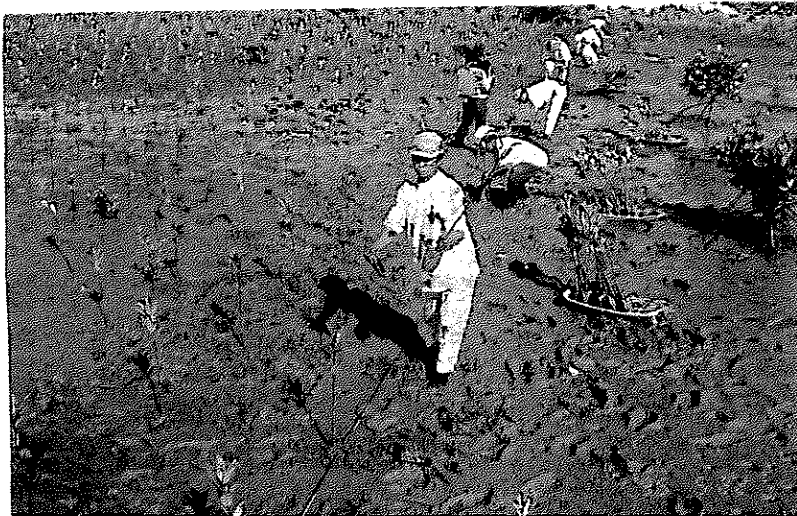


The Mangrove Center, June 1998



Selecting seeds based on the Standard which has formulated by the Project

Sowing seeds (*R. mucronata*) in the pots at the Nusery



Planting pot seedlings in the Ex-tambak in the Project site in Bali Island

Trial for prevention of scale insect damage

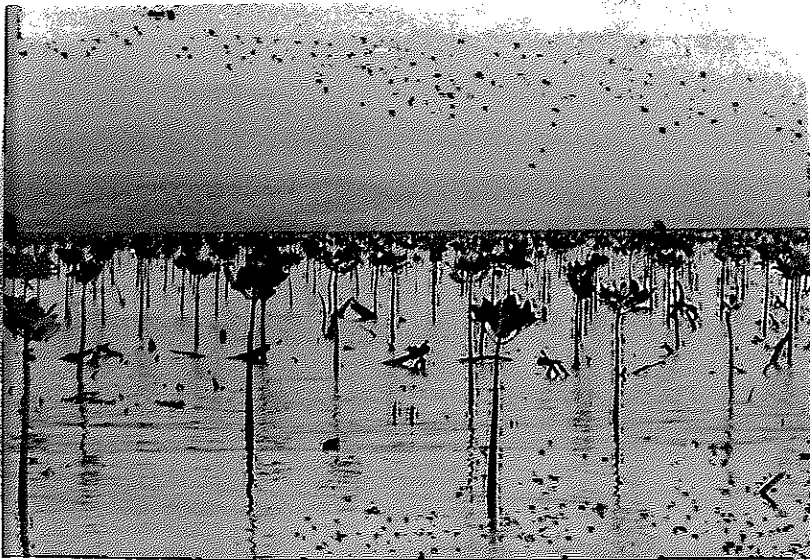




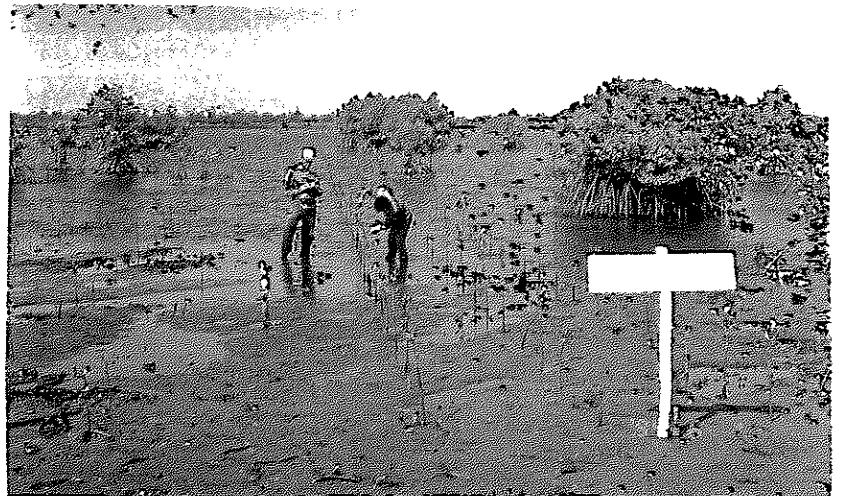
Terrace Test, this photo taken in June, 1994



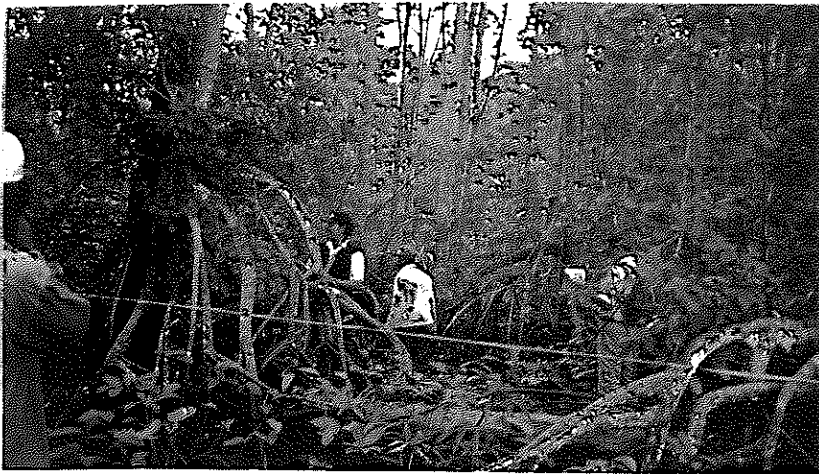
Terrace Test, the photo taken in June, 1996  
Survival rate and growth of Seedlings  
affected by ground height level



Plantation at Gili Petagan in Lombok Island



The expert and counterpart measured tree height  
and survival rate at the plantation of Gili Petagan.



Plot survey for growth rate of *R. apiculata*  
Natural forest in Riau Province

Measuring collected samples for forming  
stem volume table.  
(Photo by Ir. Fairus Mulia)

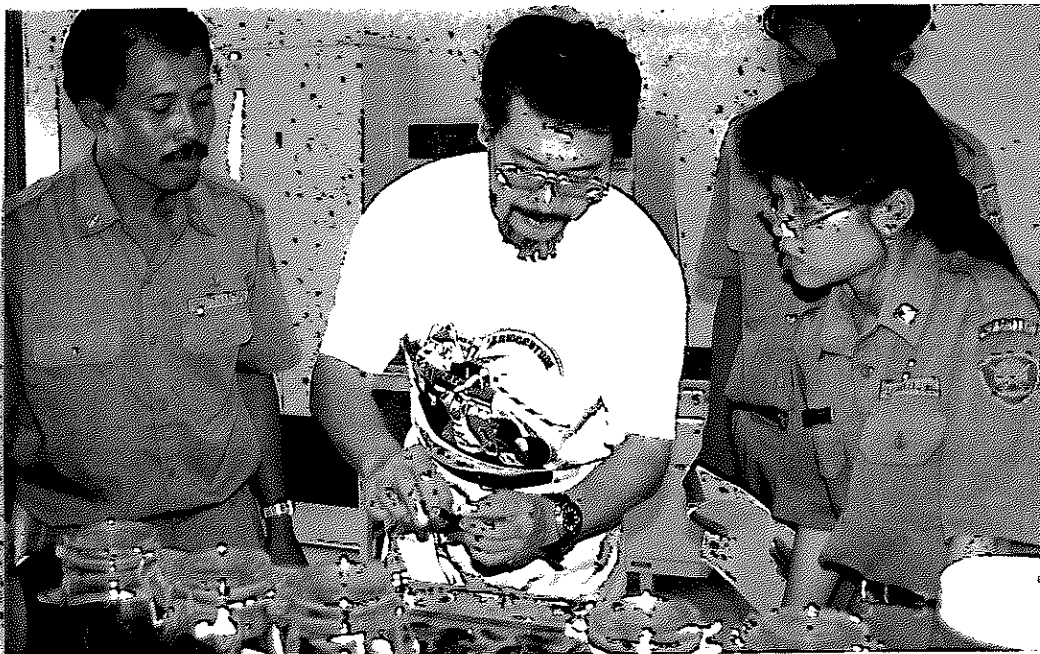


Interviews to local people for social and  
economic aspects.  
Curah Sawo village in East Java

Japanese type charcoal kiln



Collecting marine crustacean samples  
at Gili Petagan plantation



The short-term expert is  
showing how to treat  
marine crustacean samples.

Footpaths and litter traps for mangrove  
ecosystem at Gili Sulat in Lombok Island



## PREFACE

The Development of Sustainable Mangrove Management Project, as one of the development cooperation between Directorate General of Reforestation and land Rehabilitation (DGRLR presently know as DGLRSF) of Ministry of Forestry (presently known as Ministry of Forestry and Estate Crops) in Indonesia and Japan International Cooperation Agency (JICA), was commenced since December 1992, and originally scheduled for completion in November 1997.

The objective of the Project were to collect essential data for establishing the rehabilitation technique for sustainable mangrove forest management system, which is described in details in the Record of Discussion (R/D) in 1992, Appendix 1.

The Project has been well run in Bali and West Nusa Tenggara (NTB) since its inception. The Government of Indonesia has expressed its appreciation of the activities of the Project, and requested its extension to JICA. The Evaluation Team dispatched by JICA, agreed the Minutes for a 2 years Follow-up Scheme with DGRLR, Ministry of Forestry, and, in September 1997, The Resident Representative of JICA Indonesia Office and the Director General of DGRLR, Ministry of Forestry signed the Record of Discussion for the Follow-up. The Project was accordingly to be extended until the end of November 1999 in the form of a Follow-up scheme.

The Final Evaluation Team by JICA and Indonesian Team jointly evaluated the progress of the Project in July 1999. Both sides have agreed the termination of the Project. The Project has accomplished its tasks and is terminated as scheduled.

We have highly appreciated the extensive cooperation and supports. The Project have received from all Indonesian associates, namely:

- **Ir. Harsono**, Director General of LRSF
  - Ir. Hendarsun**, former Director General of RLR
  - Ir. Sumahadi, MBA**, former Director General of RLR
  - Ir. Armana Darsidi**, former Director General of RLR
- **Ir. Sjahrir**, Director of Forest Tree Seed, DGRLSF. Former Director of Reforestation, DGRLR.
  - Ir. Soedjadi Martodiwirjo**, former Director of Reforestation, LRL
- **Ir. Hoesodo Soedarusan**, former Director of Planning, DGRLR
  - Ir. Harsono**, former Director of Planning, DGRLR
- **Ir. Asikin Sunarya**, former Head of Regional Office Forestry Department in Bali
  - Ir. Kristanto**, former Head of Regional Office Forestry Department in Bali
  - I Gde Arya Latihan, MED, BcHK, AIFC** former Head of Regional Office Forestry Department in Bali
  - Drs. Effendi A. Sumardja, Msc**, former Head of Regional Office Forestry Department in Bali
- **Ir. Suherdie**, Head of Regional Forestry Office in NTB
  - Ir. Hermani Apipudin**, former Head of Forestry Office in NTB
  - Drs. Mursidin**, former Head of Regional Forestry Office in NTB
- **Dr. Ir. Nyoman Yuliarsana**, Head of Forestry Service Bali
  - Ir. Kristanto**, former Head of Forestry Service Bali
- **Ir. Suherdi**, former Head of Forestry Service NTB



- **Ir. Harijoko SP, MM**, Head of the 7<sup>th</sup> Regional Reforestation and Land Rehabilitation (Presently known as Forest Tree Seed Office)
- **Ir. Nasori Djajalaksana**, former Head of the 7<sup>th</sup> Regional Reforestation and Land Rehabilitation
- **Ir. Bambang Soepijanto**, former Head of Bali Sub Regional Reforestation and Land Rehabilitation
- **Ir. Suhartadi**, former Head of Sub Regional Reforestation and Land Rehabilitation NTB
- All counterparts and assistant counterparts.
- All staff of the Mangrove Center.
- All others who have been involved with the Project.

We are all anticipating that the outputs of the Project will contribute to sustainable management and conservation of mangrove forests, and Ministry of Forestry and Estate Crops will utilize existing facilities and outputs and make further progress. These could lead to the consolidation of the bilateral friendship in the future.

Finally, we also highly appreciate the efforts by the experts attached the Project and the cooperation and support of JICA, Ministry of Foreign Affairs, Ministry of Agriculture, Forestry and Fisheries, and the Advisory Committee.

November, 1999

Atsuo IDA  
Team Leader

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## 1. Background

According to “Forest Resources Assessment 1990 in Tropical Countries (1993)” by FAO, deforestation/degradation of tropical forests amounted 15.40 million ha annually for the 10 years period from 1981 to 1990.

The reasons for deforestation/degradation vary considerably being related to regional conditions. The major causes are listed in below;

- conversion to farmland,
- non-traditional shifting cultivation (slash and burns),
- overgrazing,
- excessive cutting for fuelwood and charcoal,
- inappropriate commercial logging, and,
- large-scaled exploitation

Various social/economic factors such as rapid population increase and poverty in developing countries, expansion of economic activities, lack of necessary resources or technology, underline these causes of deforestation/degradation of tropical forests. At the same time, temperate and boreal forest degradation due to acid rain caused by air pollution is occurring.

The global forest problem is one of global environmental issues, such as climate change caused by emission of carbon dioxide etc., loss of biodiversity caused by an increase in the rate of species extinction, and prolongation of desertification, which should be tackled urgently and internationally.

In these circumstances, the United Nations Conference on Environment and Development (UNCED) was held in Rio de Janeiro of Brazil in June 1992.

The “Rio Declaration” adopted by the participants of UNCED, was based on the concept of “Sustainable Development” to conserve the global environment as well as to promote economic and social development.

“Agenda 21”, an action programme toward the 21<sup>st</sup> century and a “Non-legally binding authoritative statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests (Forest Principles)” were also adopted. The progress of the “United Nations Convention to Combat Desertification” was addressed in Agenda 21.

At the same time, list of signatories for the “United Nations Framework Convention on Climate Change (FCCC)” and “Convention on Biological Diversity (CBD)” was opened.

After UNCED, various vigorous responses to global forest issues have been carried out in various parts of the world. However, the situation has not significantly improved.

Mangrove forests have particularly suffered from unremitting process of deforestation, some 200 thousand ha a year, of this unique tropical forest being lost. There currently remain some 16 million ha (ISME; 1995). This situation has come about because of the generally close proximity of mangrove forests to human habitation and activities. The main causes of mangrove deforestation/degradation are:

- conversion to breeding pond for shrimps and fish,

- logging for fuelwood and charcoal,
  - exploitation for harbours,
- and so on, in short, human economic activities.

The Project for the rehabilitation of mangrove forests deforested/degraded by human activities, is of a great significance, seeking a solution as it does, to a global environment issue. The outcomes of the Project could contribute to the rehabilitation and sustainable development of mangrove forests not only in Indonesia but also elsewhere.

## 2. Objective

### 2-1. Technical Cooperation by JICA

Japan's Official Development Assistance (ODA) consists of three major components :

- (1) Bilateral grants (grant aid and technical cooperation),
- (2) Bilateral loans (generally called yen-loans),
- (3) Contributions and subscriptions to multi-lateral organizations.

Major portions of bilateral grant aid are undertaken by the Japan International Cooperaton Agency (JICA), while the Overseas Economic Cooperation Fund (OECF) is in charge of bilateral loan implementation.

JICA was established as a government subsidiary organization in August 1974. JICA is carrying out its activities in the field of technical cooperation around the world, under its slogan "nation building, human development, and heart-to-heart communications". The basic objective of its activities is to develop human resources to lead the nation-building endeavours in developing countries. With this view, it accepts trainees from developing countries and also allocates experts and volunteers of Japan Overseas Cooperation Volunteers.

JICA also provides equipment and materials for technological enhancement, dispatches expert missions to undertake various development surveys, and administrates grant aid programmes for provision of necessary articles and constructing facilities such as hospitals, schools and research institutes.

The activities of JICA can be summarised as follows:

- (1) Technical cooperation
  - Acceptance of trainees.
  - Dispatch of experts.
  - Grant of equipment
  - Project-type technical cooperation.
  - Development study.
- (2) Dispatch of Japan Overseas Cooperation Volunteers.
- (3) Training and recruitment of qualified personnel for technical cooperation.
- (4) Surveys and administration of grant aid programmes.

- (5) Development cooperation through investment and financing.
- (6) Emigrant services.
- (7) Disaster emergency relief services.

The Development of Sustainable Mangrove Management Project is similar to project-type technical cooperation. However, its basic idea and schemes are oriented more towards economic development cooperations. In other words, the Project aims to support lower economic activities of private sectors through financing, necessary surveys and providing technical guidances. The objective of the field demonstration survey is to identify feasibility and to facilitate an investment by means of collecting data and conducting data analysis from the viewpoint of the management, in light of the fact that the investment embodies technical immaturity or certain complexities.

## **2-2. Progress of the Project**

The Government of Indonesia submitted the request for a development study on a feasibility of a mangrove rehabilitation program to the Government of Japan in 1990.

JICA dispatched the First Preliminary Survey Team in January 1992, for the purpose of ascertaining the possibility of a field demonstration survey for mangrove forest development and collecting basic data about the mangrove forest in Indonesia. In April, JICA dispatched the Second Preliminary Survey Team to study and discuss the appropriateness of the project site proposed by Indonesia. Following this, in June, JICA dispatched the Implementation Survey Team that discussed the draft of the Record of Discussion (R/D) and the Tentative Schedule of Implementation (TSI), and other related matters.

Finally, the Implementation Survey Team and Directorate General of Reforestation and Land Rehabilitation, Ministry of Forestry, reached agreement and signed the R/D and TSI on November 4, 1992. The Development of Sustainable Mangrove Management Project, planned to run for 5 years, was commenced in December 1992.

The Project was scheduled to terminate in November 1997. In the meanwhile, a two (2) year Follow-up scheme was agreed according to the result of evaluation and the request of Indonesian side. The signatory of the R/D for the Follow-up were done by the Director General of Reforestation and Land Rehabilitation and the Resident Representative of JICA Indonesia Office. The Project was accordingly to be extended until the end of November 1999.

The Final Evaluation Team by JICA and Indonesian Team jointly evaluated the progress of the Follow-up in July 1999. Both sides have agreed the termination of the Project. The Project has accomplished its tasks and is terminated as scheduled.

## **2-3. Objective**

Deforestation/degradation of world forests is one of the most important global environmental issues. Tropical forests in particular have been severely

deforested/degraded and conservation and sustainable management of tropical forests is urgently called for.

Mangrove forests, distributed on tidal coasts in the tropical and subtropical zones, consist of unique and important ecosystems. They can also play a significant part in the conservation of coastal areas. However, as their locating places close to fields of human activities, recent widespread economic development and over-exploitation of coastal resources are leading to the degradation and destruction of mangrove ecosystem.

The major causes of deforestation/degradation of mangrove forests are;

- conversion to fish and shrimp ponds, rice fields and industrial sites,
- exploitation for harbours,
- inappropriate commercial logging, and,
- excessive cutting for fuelwood.

At the same time, a lot of shrimps produced in converted ponds and charcoal from mangrove forests have been exported to Japan.

It is doubtful whether natural mangrove forests can sustain sustainable commercial logging production for charcoal and chip. It has also become apparent that mangrove forests should be re-established on former fish and shrimp ponds (TAMBAK) sites.

The objectives of the Project were the establishment of a management system for sustainable wood production, and the development of technology for rehabilitation of mangrove forests in a deforested/degraded condition. Therefore, it was necessary to collect basic data, and to develop and establish fundamental technology, which would explore the possibility of an investment to support reforestation activities and sustainable management of mangrove forests.

There was a lack of basic data of mangrove forests, because they are situated in tidal coast areas and are made up of rich and complicated ecosystems of both fauna and flora. It was therefore very difficult to make an investment in mangrove forest development and rehabilitation on business scales.

The Project collected basic data about mangrove forests, and developed and established fundamental technology needed to rehabilitate mangrove forests in former fish and shrimp ponds (TAMBAK) and in degraded logged-over areas. The results of the Project show the way to enable sustainable mangrove forest management. At the same time, the Project has contributed to enhancement of environment conservation providing coastal protection against tidal bores and high winds whilst not ignoring local inhabitants' requirements from mangrove forests.

### **3. Activities and Inputs**

#### **3-1. The Record of Discussion (R/D) and Tentative Schedule of Implementation (TSI) in 1992 and 1997**

The specific objectives of the Project was to collect useful data, establish technology for mangrove forest rehabilitation, and to set up technical and managerial

measures for a sustainable mangrove forest management system, as described in the Master Plan of the R/D. The activities of the Project break down into 10 areas, namely;

- (1) Selection of tree species for mangrove plantation.
- (2) Development of silviculture techniques.
- (3) Cost estimation for mangrove plantation.
- (4) Study on effects of mangrove forest on surrounding environment.
- (5) Study on conservation management of flora and fauna in the mangrove ecosystem in the Project site.
- (6) Pests and disease control techniques.
- (7) Study on the social and economic benefits for forestry and fisheries in the mangrove forests and surrounding areas.
- (8) Preparation of a mangrove forest management model.
- (9) Development of utilization techniques for mangrove forest products.
- (10) Other activities:
  - (a) construction of roads;
  - (b) establishment of nursery;
  - (c) construction of office and storehouse
  - (d) publication of outcomes etc.

In response to the R/D and TSI in 1992 and 1997, the necessary Japanese Inputs have been carried out, including dispatch of Japanese experts, training of counterparts in Japan, budget allocation, and provision of machinery and equipment. The necessary Indonesian Inputs have also been implemented including assignment of the Project Director, Coordinator, counterparts and administrative personnel, provision of land, buildings and facilities, and budget allocation. However, securing lands for the Project activities such as reforestation has been a difficult issue. Because, there are several development plans to exploit mangrove forest areas near the Project site in Bali on a large scale.

(1) Dispatch of Japanese experts

According to the R/D and TSI in 1992, six (6) experts were scheduled to be placed in the specialisation of Team Leader, Liaison Officer, Nursery, Silviculture, Ecosystem and Forest Management. During the cooperation period, eleven (11) experts in total were placed in the field as detailed in Annex 1.

Four (4) experts, Team Leader, Liaison Officer, Silviculture and Forest Management have been allocated for the Follow-up Schemes based on the R/D in 1997.

Short-term experts were scheduled to be placed in response to needs of the Project. During the cooperation period from 1992 to 1999, a total of thirty (30) short-term experts were allocated, as recorded in Annex 1.

(2) Training of counterparts in Japan.

During the cooperation period from 1992 to 1999, a total of twenty-seven (27) Indonesian personnel associated with the Project were sent for training in Japan, as recorded in Annex 2. After completing the training in

Japan, all participants returned to their respective positions and disseminated the information and knowledge obtained.

(3) Provision of lands, buildings and facilities

The land for nursery, two study sites (approximately two hundred (200) ha) and the project office were provided for the Project, as recorded in Annex 4.

(4) Assignment of counterparts and other personnel

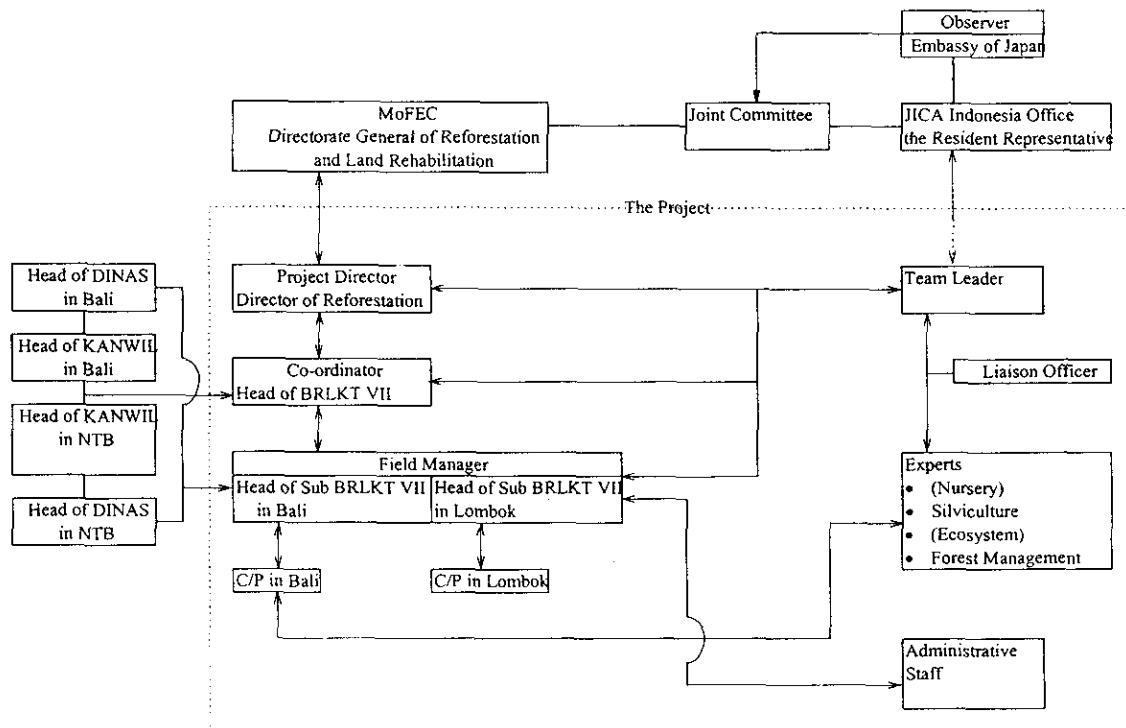
A total of fifteen (15) counterparts in the specialisation of Project Director, Coordinator, Field Manager, Nursery, Silviculture, Ecosystem and Forest Management were appointed by the Indonesian side as recorded in Annex 3. It is noted that the number of full time counterparts from 1992 to 1997 was insufficient, but during the Follow-up there has been no problem on counterparts.

### 3-2. Management Structure

The management structure of the Project appears as Fig. 1.

Fig. 1

The Management Structure Chart



- Note : 1. Nursery and Ecosystem was not assigned during the Follow-up.  
 2. Ministry of Forestry and Estate Crops changed the structure of its organs in July 1999. However, the Management Structure of the Project was determined to be almost as it was.



This structure worked effectively. The problems on insufficient counterparts occurred in the beginning stage of the Project, but during the Follow-up Scheme could be solved. It should be noted that the position of the Mangrove Center has not been clearly defined, which has sometimes caused serious problems, such as insufficient understanding of the Project importance. Therefore, the status of the Mangrove Center in Bali is now under serious assessment and consideration of the Ministry of Forestry and Estate Crops, because the Ministry is really recognizing the importance of mangroves for conservation and protection of living environment and coastal resources.

### **3-3. Budget**

The planned and applied budget for seven (7) years of the Project is recorded in Annex 1.

The Project is classified by JICA as a "development cooperation project", which has a different budget structure from a "project-type technical cooperation project". The objective of a "development cooperation project" is not only technical transfer but also a practical feasibility study. Therefore, the Japanese side was often able to support the budget for the equipment maintenance costs, some business travel expenses for Indonesian government staff, and office running costs, which could not be borne through the scheme of the "project-type technical cooperation project". JICA authorized necessary funds to fulfil the Project purpose more quickly whenever the Project activities required and the funds from the Indonesian side could not be released in time.

The Japanese side has provided the flexibility for each expense within the scope of the budget. However, it was sometimes difficult for the Indonesian side to use the Project budget flexibly, because it was necessary that each payment should meet the purpose of the Project activities and the upper limit of unit prices and quantities was also strictly defined and restricted from 1996 onwards. Therefore, the Indonesian side was not often able to use all of the budget by the end of the fiscal year. Before Economic Crisis, the Indonesian side provided a certain share for expenses of the Project. However, during Follow-up, the burden by Indonesian side became gradually limited because of Economic Crisis in 1997, although the Government of Indonesia had made its efforts to pay its responsibility on providing counter-budged. Even though, the Project was relatively smoothly implemented on account of the flexibility budget system by the Japanese side.

### **3-4. Facilities and Equipment**

#### **3-4-1. Facilities**

(1) The first construction

The details of construction works are as follows:

- A 700m access road including bridges,
- a 5000m<sup>2</sup> nursery bed,

- a preparatory work for main building areas,
- a 120m footpath for natural forest observation,
- a 420m footpath for studies,
- a well with a water tank and pumping system,
- a hut for nursery activities.

These were all finished by the end of September 1993 as planned.

(2) The second construction

The construction of building components such as a project office and research facilities began in July 1993, was managed appropriately, and finished on December 20, 1993 within the expected schedule.

(3) Additional construction

Additional infrastructure construction/renovation works were carried out when required, namely:

- Renovation of working road and footpath in March 1994.
- A garage for 6 cars in March 1995.
- A hut for a boat and grass cutting machines was built, beside the garage, in March 1996.
- Renovation of working roads and access roads in July 1997.
- Renovation of working roads in July 1998.
- Installing telephone lines in May 1999.
- Renovation of working roads and footpath in May 1999.

### 3-4-2. Equipment

The inventory list of equipment procured through grand aid budget, budget for carrying equipment, and managerial budget is shown in Annex 6.

The cars were the most expensive grand aid items of required equipment, except for a set of balloon apparatus for aerial-photograph, because this Project did not need large or expensive equipment such as a bulldozer, power shovel, or expensive laboratory equipment.

Most of equipment was procured in Indonesia as much as possible, because maintenance for equipment was easier to be done. While as for personal computers, first selection of their types was not so appropriate. Therefore, during the Follow-Up, personal computers of IBM compatible were replaced from Macintosh.

### 3-5. Meetings

Meetings, survey teams, and business trips to exchange technical views, are listed in Annex 7. Their purposes and abstracts are summarised as follows:

(1) Joint Committee

The Joint Committee was held in order to discuss and approve the execution of activities and their outcomes in the previous fiscal year and the practical plan for activities in the coming fiscal year and consisted of representatives of relevant

Indonesian Government Agencies such as BAPPENAS, SETKAB, and the Japanese side including experts, JICA Office and Embassy of Japan. The Committee that was chaired by Director General of DGRLR was prescribed as the highest level meeting for managing and coordinating the Project in the R/D. If there were any problems or important changes of the Project and its activities, the Committee had to be called. If there were not any particular issues, the Committee was held almost once a year. During the Project time, it was held seven (7) times.

#### (2) Survey Team

JICA dispatched a survey team almost once a year in order to monitor and assess the progress of the Project. In 1994, 1995, 1998 and 1999, survey teams also participated in the Joint Committee as observers.

JICA dispatched the Final Evaluation Team in July 1997 so as to review and assess the performance of the Project. The Team recognised remaining five (5) elements of Silviculture and Forest Management. Therefore, Japanese side and Indonesian side agreed the necessity of the extension as two year Follow-up Scheme, and exchanged the Minutes for their understanding.

JICA also dispatched the Final Evaluation Team for assessing the progress of the Follow-up Scheme in July 1999. The Team and Indonesian side agreed the termination of the Project, because the Project has almost accomplished its tasks.

#### (3) Technical Meeting, Seminars and so on.

Several kinds of meetings for the discussion of the Project outputs or activities were held, which were not classified clearly. However, a Panel Discussion or Seminar was roughly categorized as a large and open-ended meeting for interested people. While a Technical Meeting or Workshop was roughly categorized as an internal meeting for staff from Ministry of Forestry and Estate Crops, JICA experts, counterparts, assistant counterparts and so on.

#### (4) Monthly Meetings

Monthly Meetings were the periodical meetings with the Indonesian and Japanese sides on the Project site in Bali. These meetings were held in the end or beginning of the month in order to discuss results of the month and the schedule for the coming month. The meetings consisted of the Head of Regional Forestry Office, the Head of Provincial Forestry Service, the Head of the 7<sup>th</sup> Soil Rehabilitation and Land Conservation Center, counterparts, assistant counterpart, supporting staff, assistant supporting staff, and JICA experts.

#### (5) Business trips to exchange technical views and to participate in the Project related forums

The business trip to the Multi-storied Forest Management Project in Malaysia was undertaken so as to discuss the Project activities and exchange views of

mangrove forest management in 1993. Also one of experts and his two counterparts visited Thailand to attend the academic meeting 'FORTROP '96' and presented the results of one study item namely, the phenological studies of mangrove forests in Bali and Lombok.

In 1998, the business trip to Fiji was undertaken in order to exchange views of mangrove forest management and cross-sectors activities.

In 1999, the General Assembly and Scientific Symposium by ISME (International Society for Mangrove Ecosystem) were held in Bali. JICA experts and counterparts participated in the Symposium and presented the outputs of the Project. These trips were funded through JICA budget.

(6). Others

Leaders' Meeting, Coordinators' (Liaison Officers') Meeting, Advisory Committee and so on by JICA were regularly held for the purpose of smooth implementation and exchanging views.

Major meetings were as follows in order of date:

- Sept. 1993 Visit to the Multi-storied Forest Management Project (Malaysia, for exchange of technical views)
- Aug. 1994 Participation in the 5<sup>th</sup> Mangrove Ecosystem Seminar (East Java)
- Oct. 1994 Panel discussion on mangrove forest management (Bali)
- Sept. 1995 Presentation to the Tropical Ecosystem Academic Society (Japan)  
Effective seed collections for the genus *Sonneratia* in Sonneratiaceae - Fruiting season of *Sonneratia alba* in Bali of Indonesia and its fruit maturation treatment with banana: -  
Shozo KITAMURA, Hideki HACHINOHE, Shigeyuki BABA, Shinji HAYASI, Raka SUDANA
- Feb. 1996 Workshop on the development of sustainable mangrove forest management (Bali)  
Participants: Staff of the Project, ADB project, nominated heads of regional forest offices and land rehabilitation centers, leaders of local NGO leading social figures.  
The experts and counterparts reported the current status of the Project and the interim report of forestry approach results yielded by studies. Participants were then divided into 3 groups and discussed 3 themes, namely:
  1. Detailed report and discussion of the Project results in the field of nursery and silviculture.
  2. Detailed report and discussion of the Project results in the field of ecosystem and forest management.
  3. Report on the current situation of the project funded by ADB, and the well-known initiative in South Sulawesi through social forestry approaches by a local NGO leader.

The report by the local NGO leader was especially interesting and attracting participants' attention because of the different approach description.

■ June 1996 Technical Meeting (Bali)

The experts explained the current status of the Project and study elements in the field of nursery and silviculture. In the meeting, the participants discussed the interim report from the practical and technical point of view. After discussing each interim report on study elements, the JICA experts proposed a review of the study elements. It was agreed to call off those elements, which were not able to yield results in 5 years and to set up some experimental plots. Study elements N-06 in nursery, S-10 and S-11 in silviculture, and F-03 in ecosystem were called off. For study elements S-05 and S-07 it was agreed to only set up experimental plots, and to change the S-8 title from "Study on criteria of supplementary planting" to "Study on survival rate to determine number of seedlings for supplementary planting"

■ Oct. 1996 Technical Meeting (Lombok)

The experts explained the current status of the Project and study elements in the field of ecosystem and forest management, which had not been reported in the previous Technical Meeting. The participants went to observe the Project site, which is the plantation at Gili Petagan in Lombok.

■ Oct. 1996 Submission of the paper to Mangrove Academic Meeting (Tokyo University of Agriculture.

'Flowering and fruiting intervals of *Rhizophora apiculata* in Bali of Indonesia'

Shigeyuki BABA, Shozo KITAMURA, Hideki HACHINOHE

'Ground levels influences upon survival rate and initial growth of five mangrove species seedlings'.

Keisuke TANIGUCHI, Shuichiro HAMADA, Mitsuo INOSE,  
Shigeyuki BABA

■ Nov. 1996 Participation in the symposium 'FORTROP'96' (Thailand)

"Phenological studies on mangrove in Indonesia (1)"

S. KITAMURA, S. HAYASHI, H. HACHINOHE, S. BABA

"Ecological approach for species sustainability"

Chairil Anwar, S. KITAMURA, Amalyos Chaniago

■ Sept. 1997 Seminar (Jakarta)

The experts explained the current status of the Project and study elements of each component. They reported that Nursery and Ecosystem completed study elements, but Silviculture and Forest Management had remained five study elements. Participants were informed that the Project was to be extended for two years at Follow-up Scheme.

■ July 1998 Workshop (Bali)

Same as Technical Meeting in August

- August 1998 Technical Meeting (Bali)  
The experts and counterparts explained and presented the outline and concept of Silviculture Manual and Sustainable Management Models. Participants discussed them and gave technical guidance and suggestions.
- September 1998 Participation in the 6<sup>th</sup> Mangrove Ecosystem Seminar (Riau)
- April 1999, Workshop (Bali)  
Same as Technical Meeting in May
- May 1999, Technical Meeting (Jakarta)  
The experts and counterparts explained and presented the draft of Silviculture Manual and Sustainable Management Models. Participants examined and discussed them. Participants agreed the direction of compiling Silviculture Manual and Sustainable Management Models.
- Sept. 1999 Seminar (Jakarta)  
The Seminar on the Development of Sustainable Mangrove Management was held as an open-ended one for broader participation. Two(2) keynote address were delivered. The experts explained the progress of the Project, Silviculture Manual, Sustainable Management Models. Outputs by the Project were circulated to participants.

### 3-6. Visitors to the Mangrove Center

All visitors to the Mangrove Center since its establishment are listed in Appendix 3.

The Project received a lot of overseas and Indonesian visitors. Bali being one of the most famous resorts in the world, is connected with many international flights, and is an important transport for East Indonesia. VIPs who visited the Project are as follows, in order of date.

- Dec. 1993 Observation by Minister of Forestry in Indonesia.
- Jan. 1994 Interview by Japanese and Indonesian journalists in Surabaya as promotion activity of the Japanese ODA, hosted by the Consulate General of Japan in Surabaya.
- Feb. 1994 Visit by the Governor-General of Taiwan led by Prof. Dr. Ing. B.J. Habibie, the Indonesian Minister of Research and Technology.
- Oct. 1994 A training workshop for staff in charge of mangrove forests and reforestation in Indonesia.
- Oct. 1994 Observation by the Vice-President of Indonesia.
- May 1995 ODA survey by an intelligent person (Nihon Keizai Shinbun), conducted by Ministry of Foreign Affairs in Japan.
- Jan. 1996 Interview by Forestry Journalists in Japan.
- Feb. 1996 Observation by the Royal Forestry Department in Thailand.
- Mar. 1996 Observation by Ministry of Forestry in Vietnam.
- May 1996 Observation by the Vietnamese Vice-Minister of Forestry.
- May 1996 Interview by Nippon Hoso Kyokai (NHK), which was broadcasted in August 1996.

- Aug. 1996 Observation by the Executive Supervisor of the Board of Agriculture, Forestry and Fisheries Technology, Ministry of Agriculture, Forestry and Fishery in Japan.
- Dec. 1996 Observation by Minister of Forestry in Indonesia.
- Feb. 1997 Interview by an ODA promotional video team conducted by Ministry of Foreign Affairs in Japan.
- Mar. 1997 Observation by the Director General of the Coastal Zone Research Institute in Colombia.
- May 1997 Observation by Philippine Community Forestry Project supported by USAID.
- July 1997 Observation by the Executive Director of the International Tropical Timber Organisation(ITTO).
- Nov. 1997 Observation by Japanese Ambassador.
- Dec. 1997 Observation by Director of Fisheries Department in United Arab Emirates.
- Sep. 1998 Observation by Minister of Forestry and Estate Crops in Indonesia
- Sep. 1999 Observation by participants of ISME General Assembly.

#### 4. Activities and Results

As a whole, the Project has made wonderful progress in its activities. 253 ha plantations have been established and experimental and study elements were to be completed before its termination.

Species for reforestation and demonstration which have been selected, are as follows:

*Rhizophora mucronata* (Bali, Lombok), *Bruguiera gymnorrhiza* (Bali, Lombok)  
*Rhizophora apiculata* (Bali, Lombok), *Sonneratia alba* (Bali), *Avicenia marina* (Bali),  
*Rhizophora stylosa* (Lombok), *Ceriops tagal* (Bali), *Xylocarpus granatum* (Bali).

However, main species for reforestation selected in Bali is '*Rhizophora mucronata*' on account of lower ground height level.

Table-1. The plan and results of establishing plantation

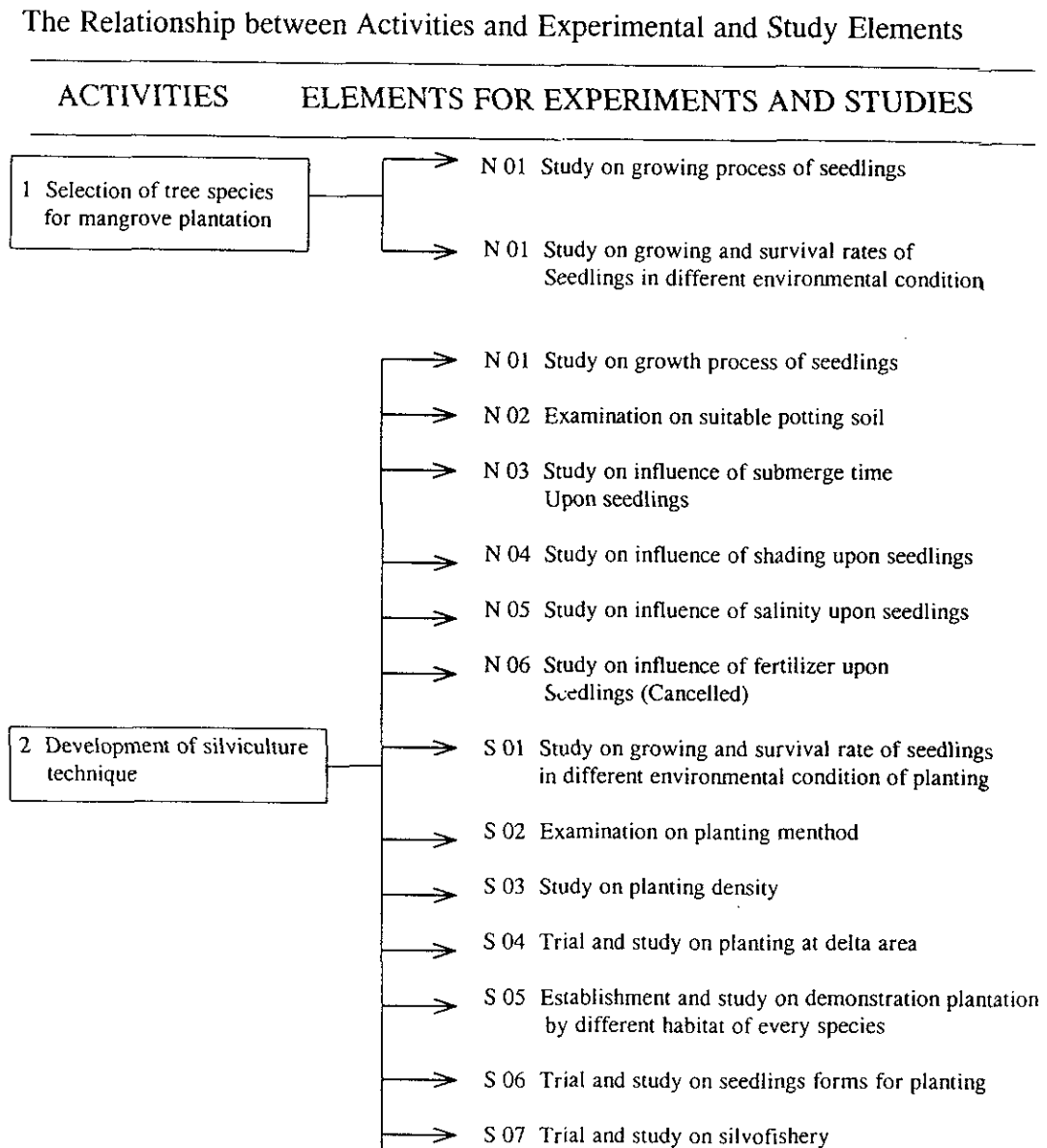
|       |           | 93/94 |        | 94/95 |        | 95/96 |        | 96/97 |        | 97/98 |        | 98/99  | 99/00  | Total |        |
|-------|-----------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|--------|--------|-------|--------|
|       |           | Plan  | Result | Plan  | Result | Plan  | Result | Plan  | Result | Plan  | Result | Result | Result | Plan  | Result |
| BALI  | Tambak    | 30    | 23     | 40    | 58     | 30    | 37     | 20    | 21     | 0     | 15     | 21     | 7      | 120   | 182    |
|       | Delta     | 0     | 0      | 10    | 1      | 10    | 6      | 10    | 0      | 0     | 0      | -      | -      | 30    | 7      |
|       | Sub-total | 30    | 23     | 50    | 59     | 40    | 43     | 30    | 21     | 0     | 15     | 21     | 7      | 150   | 189    |
| LMBOK | Delta     | 0     | 7      | 10    | 11     | 20    | 20     | 20    | 20     | 0     | 3      | 3      | -      | 50    | 64     |
| TOTAL |           | 30    | 30     | 60    | 70     | 60    | 63     | 50    | 41     | 0     | 18     | 24     | 7      | 200   | 253    |

#### 4-1. Activities

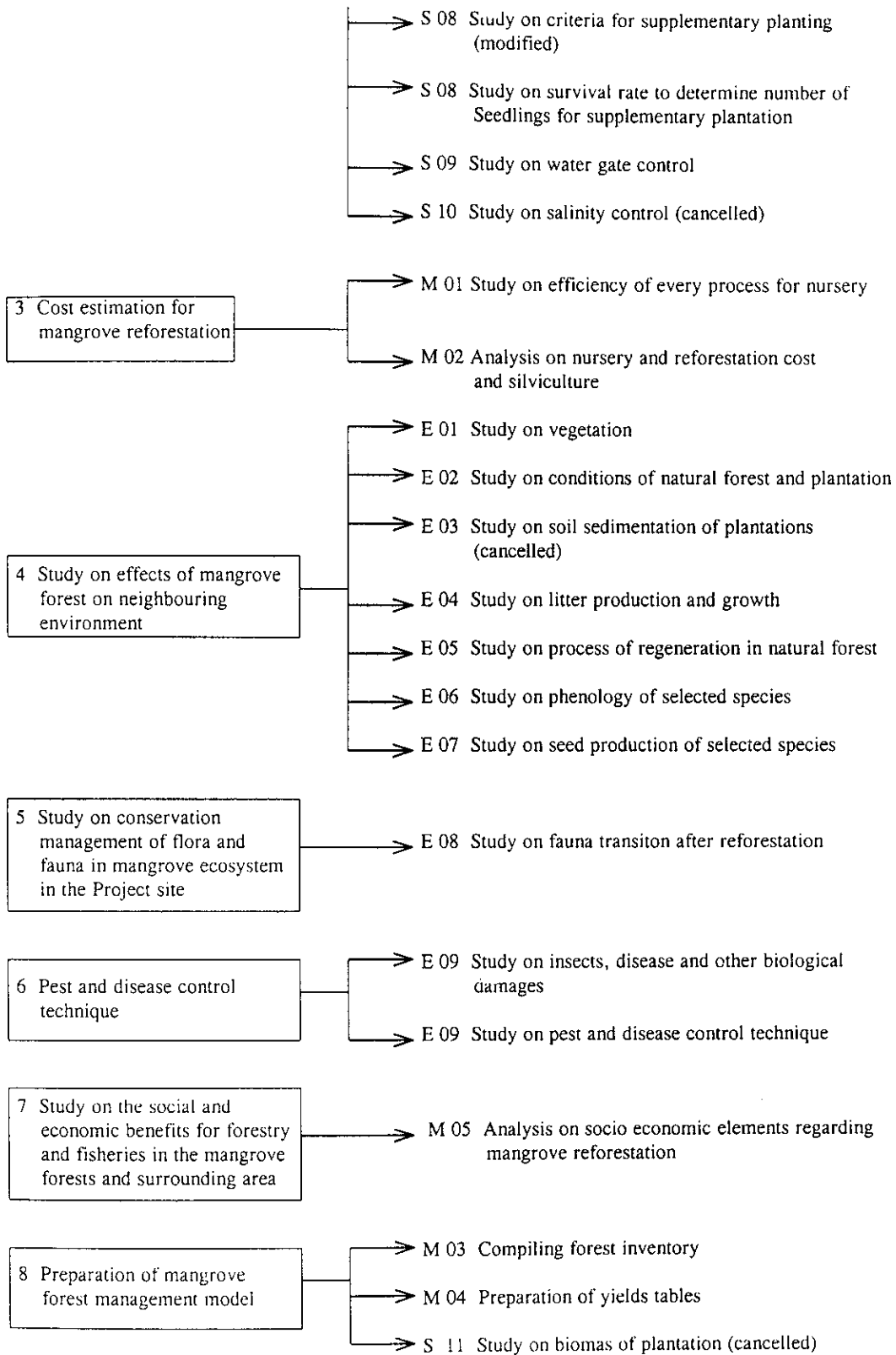
It was bilaterally agreed that the 10 activities described in the R/D and TSI would be divided into 32 experimental and study elements. The elements had been identified through research and observation of natural mangrove forests, implementation and observation of nursery works, and establishment and observation of mangrove plantation.

The relationship between activities and experimental and study elements is shown below in Fig. 2.

Fig. 2.







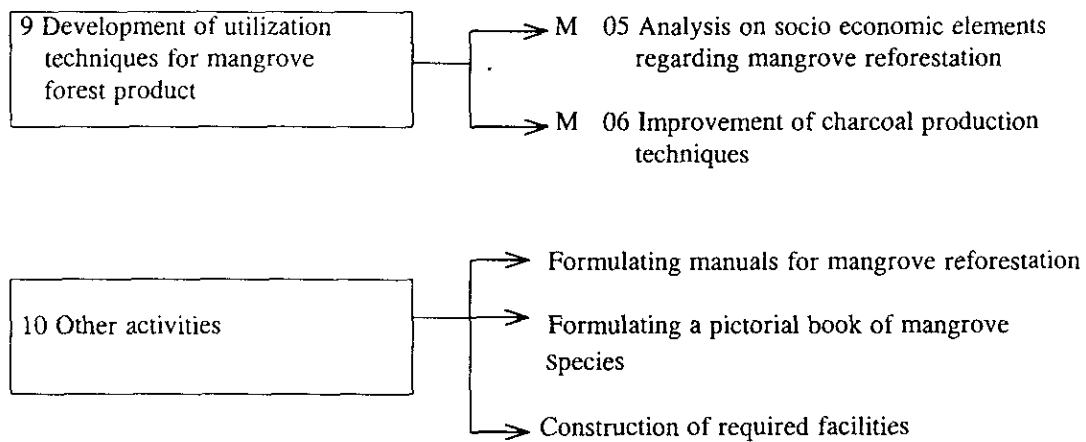


Fig. 2. The Relationship between Activities and Experimental and Study Elements

The classification of the 32 elements into specific fields is shown in Fig. 2 and their distribution is:

- 6 elements in nursery.
- 11 elements in silviculture.
- 9 elements in ecosystem.
- 6 elements in forest management

In 1995, when the midterm report was to be prepared, 32 experimental and study elements were being carried out and examined. The Survey Team for monitoring the Project activities, assessed 32 elements and offered the Project some guidance for adjustments based on degrees of importance and urgency. The proposed adjustments in the Survey Team's report were discussed and accepted by the Advisory Committee in Japan.

The JICA experts presented the above mentioned guidance at the Technical Meetings in Bali and Lombok, and the Joint Committee in 1996. The Japanese and Indonesian sides discussed and agreed upon the cancellation and modification of some of elements. The agreed adjustments are as follows.

- "S-08 Study on criteria of supplementary planting" was modified to "S-08 Study on survival rates to determine number of seedlings for supplementary planting".
- "N-06 Study on influence of fertilizer upon seedlings", "S-10 Study on salinity control", "E-03 Study on soil sedimentation", and "S-11 Study on biomas of plantation" were cancelled.
- "S-05 Establishment of demonstration plantation to study habitats of attendant species" and "S-07 Trial and study on silvo-fishery" were decided to set up experimental plots only.

Therefore, there remained 26 experimental and study elements to be conducted by the Project. 21 of these elements had been completed before its original duration,

but 5 elements still remained unresolved. They were continued during the period of the Follow-up Scheme. The detailed results of the 26 elements are described in the each expert's report. An outline of those results is given hereinafter.

#### **4-2. Nursery**

##### **N-01 : Study on the growing process of seedlings**

Completed; the maturity of seeds for selected species, the standard size of seedlings for out-planting and required term for nursing activities have been identified, and are reported in the Midterm Report and reflected in the Nursery Manual.

##### **N-02 : Examination on suitable potting soil**

Completed; the results have revealed that *S. alba* essentially needs potting soils mixed with cow dung, and that other species don't need special treatment for potting soil.

##### **N-03 : Study on influence of the submerge time on seedlings**

Completed; the results have shown the influence of initial growth by watering such as required frequency of watering, and that *A. marina* and *X. granatum* are better to select terrestrial nursery beds to avoid flowing away, are reported in the Midterm Report, and reflected in the Nursery Manual.

##### **N-04 : Study on influence of shading on seedlings**

Completed; the results have exhibited the influence of initial growth by shading and required degrees and measures of shading, and are reported in the Midterm Report and reflected in the Nursery Manual. It is necessary to utilise local materials for shading nets in order to decrease the cost of nursery work.

##### **N-05 : Study on influence of salinity on seedlings**

Completed; the results have revealed necessary salinity conditions for initial growth and required condition of establishing nursery, and are reported in the Midterm Report and reflected in the Nursery Manual.

#### **4-3. Silviculture**

##### **S-01 : Study on growth and survival rates of seedlings in different environmental conditions.**

Completed; the examination was carried out by establishing 16 terraces at the former shrimp pond (Block II-32). Each terrace is 2m wide, and its ground height levels are set in descending gradation of 10 cm from the highest spring tide level of the Benoa Port. The ground height level has most influenced on the survival rate and growth of five (5) planted tree species, *A. marina*, *S. alba*, *B. gymnorhiza*, *R. apiculata* and *R. mucronata*. It has been demonstrated that each species has its own most suitable ground height levels, which is reported in the expert's report and reflected in the Silviculture Manual.

##### **S-02 : Examination on planting methods.**

Completed; *R. mucronata*, *R. apiculata* and *B. gymnorhiza* each gave different results according to the planting depth (3-50 cm). It has been established that the

best depth for planting is approximately one third of seedling's height, this being reflected in the Silviculture Manual.

**S-03 : Study on planting density**

Completed; the results have shown the importance of drawing up clear management purpose, and that almost any planting density is able to be implemented if there are sufficient capacity of seeds supply. This is reported in the expert's report and reflected in the Silviculture Manual.

**S-04 : Trial and Study on Planting in delta areas**

Completed; the trial planting in delta areas failed outward of Block II and IV because of a lack of sufficient knowledge about the most suitable ground height levels for each species. Therefore, the five (5) main species have been replanted along the road leading to Benoa Harbour, with apparently good results.

**S-05 : Establishment of demonstration plantation to study habitats of attendant species**

Completed; 21 ha demonstration plantation has already been established, which is utilised for observation, study tours and comparative studies by many visitors.

**S-06 : Trial and study on seedling forms for planting**

Completed; three (3) species were involved, because *B. gymnorrhiza*, *R. apiculata* and *R. mucronata* produce viviparous seeds. The trial and study were carried out on the comparison between direct planting and pot planting in which seedlings were nursed in the pot for a certain periods. Both direct planting and pot planting have shown similarly high survival rates. Directly planting trees are usually higher than pot planting ones, because the first knot of directly planting trees have more growth. Even so, it is impossible to say that directly planting trees grow faster than those planted in pots. Direct Planting is cheaper than pot planting on account of nursery practices lacking. Considering these aspects, it has been concluded that direct planting is more feasible than pot planting. This is reflected in the Silviculture Manual.

**S-07 : Trial and study on silvo fishery**

Completed; the experimental plots have been set up, and are utilised for observation by visitors. It is almost impossible to secure reliable results owing to the limited duration of the experiment.

**S-08 : Study on criteria of supplementary planting**

Completed; at the Technical Meeting in 1995, the title of the study was changed to "Study on survival rates to determine number of seedlings required for supplementary planting'. The results have shown that it is essential to grasp excluded areas where are not appropriate for growing by strong currents or high waves. Therefore, the evaluation of survival rate has to be carried out considering number of surviving planted trees as well as excluded areas. It is also very important to execute supplementary planting after realising excluded areas. This is reported in the expert's report and reflected in the Silviculture Manual.

**S-09 : Study on water gate control**

Completed; it has been identified that planted trees are able to survive and grow in the condition of water gate closure and restricted water flow, though some species have some difficulty in sustaining normal growth.

#### 4-4. Ecosystem

##### **E-01 : Study on vegetation**

Completed; mangrove areas at eleven (11) locations in Bali and thirty (30) locations in Lombok had been surveyed. Locations of mangrove forests, distribution of mangrove species on the island of Bali and Lombok, and forests for seed collection had been researched and the results had been presented and compiled. The data from field surveys show that 28 true mangrove species (17 major components and 11 minor components) and 35 mangrove associates (including coastal plants) exist in Bali and Lombok. Vegetation maps of Benoa Bay and the West Bali National Park have been drawn. The detailed results have been compiled as the report of "Distribution of Mangrove Species and Availability of Seed Collecting Forests on the Island of Bali and Lombok".

The technique for making up herbaria had been transferred to counterparts and compiled in the manual. Specimens are kept in the Mangrove Center.

##### **E-02 : Study on environmental conditions of natural forests and plantations**

Completed; it has been identified through field surveys that distribution of mangrove species is fixed by the ground height levels, meaning that each species under natural conditions has a quite different biomass and height depending on the ground height levels. For example, Rhizophoraceae e.g. *R. mucronata* can adapt to a wide range of the ground height levels, but has its most favourable ground height levels for optimal growth. These results should be utilised for determining the most appropriate planting species, as indicated in the Silviculture Manual.

##### **E-03 : Study on litter production and stand growth**

Completed; it has been identified that the total litter production of selected species, *S. alba*, *R. apiculata*, *R. mucronata*, *B. gymnorrhiza* is in the range of 10 ~ 16 ton/ha/year. The seasonal changes of litter production of selected species have been measured.

##### **E-04 : Study on process of regeneration in natural forest**

Completed; natural seedlings are likely to go into and to germinate in the rainy seasons. Their growth is depended on relative brightness of natural forests.

##### **E-05 : Study on phenology of selected species**

Completed; the precise phenology, such as flowering, maturation and lifespan of seven (7) main species, *A. marina*, *B. gymnorrhiza*, *C. tagal*, *R. apiculata*, *R. mucronata*, *S. alba* and *X. granatum*, has been revealed through the continuous survey of natural forests in Bali and Lombok. This has indicated the most appropriate period and season for seed collection and direct planting, and facilitated the establishment of effective operational plan for nursery practice and reforestation, all of which is reflected in the Nursery Manual and the Silviculture Manual and the Handbook of Mangrove Species.

##### **E-06 : Study on seed production of selected species**

Completed; it has been identified that each species has its own and different productive cycle. This helps effective nursery operation and direct planting, which

is reflected in the Nursery Manual and the Silviculture Manual and the Handbook of Mangrove Species.

**E-07 : Study on fauna transition after reforestation**

Completed; the results have revealed that the numbers of birds and other animals such as crab, shrimps and fish have been increasing through changing better environmental conditions.

**E-08 : Study on insects, diseases and biological damages**

**E-08 : Study on pest and disease control techniques**

Completed; significant damage to planted trees has been caused by amber ants, small soldier bugs, a kind of small beetle, scale insects and four kinds of crabs. However it is apparent that such damage, except for that caused by scale insects is not so serious for plantation growth. The species of scale insect which infest and inflict various kind of damages on *R. mucronata* plantations is identified as *Aulacaspis marina*. Its reproductive cycle is between 36- and 42 days over for generations, suggesting that this species produces 9-10 generations a year in Bali. Affected seedlings, which have been mainly planted in the study site, would die on average 127,5 (range 2-159) days after infestation. Three mangrove species (*R. mucronata*, *R. apiculata*, *B. gymnorhiza* and *X. granatum*) are almost equally susceptible to *Aulacaspis* sp. The mechanisms of infestation and counter measures for scale insect damage have been identified. It has been established that a counter measure to control scale insect is just to observe planted trees regularly until their height would exceed 3 high and to sprinkle sea water to leaves with a local vaporiser in once a week for eight (8) weeks when infestation detected.

#### 4-5. Forest Management

**M-01 : Study on efficiency of nursery and silviculture processes**

Completed; necessary tasks for every stage of nursery and silviculture procedures have been examined and analyzed. The operational standards and necessary labour force per unit area have been estimated. This is reflected in the Sustainable Management Models.

**M-02 : Analysis on nursery and reforestation cost**

Completed; necessary cost for nursery and reforestation activities has been analyzed. The cost per seedling under the standard operation has been estimated. This is reflected in the Sustainable Management Models.

**M-03 : Making a forest inventory**

Completed; the forest inventory has been formed which is including collected necessary data such as site location, conditions, records of reforestation activities and growing processes. Cards on which the forest inventory particulars are recorded. Summary tables and related maps have been also formulated. The cards should be revised, in response to new data every year or certain regular intervals.

**M-04 : Preparation of yield tables**

Completed; necessary data were collected and analysed for preparation of yield tables and yield prediction tables not only from man-made forests but also from

natural forests. Yield tables and yield prediction tables have been formulated for *R. apiculata* and *R. mucronata* through a series of field survey and analysis. As for *R. apiculata*, it is identified that yield prediction table is needed to divided into High Growth Sites and Low Growth Sites. The surveys were conducted in not only Bali and Lombok but also Java, Kalimantan, Riau, Irian Jaya, Sulawesi and others.

**M-05 : Analysis on socio economic elements regarding mangrove reforestation**

Completed; the results have shown that the situation of utilizing mangrove forests is greatly different by population density which means number of local inhabitants surrounding, that products from mangrove forest are indispensable for local people, and that local fishermen and others fully understand the importance and beneficial roles played by mangrove forests. This is reflected in the Sustainable Management Models.

**M-06 : Improvement of charcoal production technique**

Completed; since all mangrove forests have been designated as reserved forests in Bali and Lombok, charcoal from mangrove forests has not been produced due to suspension of supply of raw materials. However, the survey of practical charcoal production in Indonesia revealed that reasonably good production and distribution methods have been already developed and established.

**4-6. Others**

**4-6-1. Formulating Manuals for mangrove reforestation**

The “Nursery Manual” and “Silviculture Manual” in English and Indonesian have been formulated and published. They were circulated to people interested in mangrove rehabilitation.

**4-6-2. Formulating a pictorial book of mangrove species**

“The Mangrove Species for Planting in Bali and Lombok”, “Petunjuk Teknis Pembuatan Herbarium (Manual for making up herbaria)” and “Distribution of Mangrove Species and Availability of Seed Collecting Forest on the Island of Bali and Lombok” have been already published. The “Handbook of Mangroves in Indonesia - Bali and Lombok” have been formulated, published and circulated.

**4-6-3. Construction of required facilities**

Required facilities and equipment such as building, working roads, footpath nursery, cars, boats, personal computers and others were provided for smooth implementation of the Project activities.

## 5. Conclusion

The Project has completed its task of the establishment of a management system for sustainable wood production and the development of technology for rehabilitation of mangrove forests in a deforested/degraded condition. They are reflected in main final outputs of the Project, which are as follows:

- Nursery Manual for Mangrove Species
- Silviculture Manual for Mangroves
- Handbook of Mangroves
- Sustainable Management Models for Mangrove Forests.

Therefore, the Project is terminated in the end of November 1999 as scheduled. On the other hand, they have been formulated in English and Indonesian and are the first step for promoting sustainable mangrove management and coastal conservation. For that reason, it is urgently required that the Government of Indonesia, and interested and relevant stakeholders should utilise and improve the outputs of the Project. Furthermore, they need to be upgraded continuously on account of better understanding of mangrove and coastal ecosystem and enhancing rehabilitation activities of degraded coastal zones.



## List of long-term experts and short-term experts

|                     | 1992(H4)<br>4 | 10 | 1993(H5)<br>4  | 10 | 1994(H6)<br>4 | 10   | 1995(H7)<br>4 | 10 | 1996(H8)<br>4   | 10 | 1997(H9)<br>4 | 10 |  |
|---------------------|---------------|----|--|----|---------------|--|---------------|----|---|----|---------------|----|--|
| Expert<br>Assistant |               |    | Shoshi TANAKA (Leader)<br>92/12/2 ~ 95/3/1                 |    |               | Osamu SASAKI (Leader)<br>95/5/13 ~   |               |    | det<br>97/9/30  |    |               |    |  |
|                     |               |    | Seisshi MIURA (Nursery)<br>92/12/2 ~ 94/12/1               |    |               | Hideki HACHINOHE (Nursery)<br>94/12/2 ~ 97/12/1                              |               |    | ery)  |    |               |    |  |
|                     |               |    | Ryuichi TERUI (Management)<br>92/12/2 ~ 95/12/1            |    |               |  |               |    | nt)   |    |               |    |  |
|                     |               |    | Syuichiro HAMADA (Silviculture)<br>92/12/2 ~ 94/12/1       |    |               |  |               |    | culture)  |    |               |    |  |
|                     |               |    | Sinji HAYASHI (Ecosystem)<br>92/12/2 ~ 94/12/1             |    |               |  |               |    | tem)  |    |               |    |  |
|                     |               |    | Hideki HACHINOHE (Coordinator)<br>92/12/2 ~ 95/3/29        |    |               |  |               |    | (Coordinator)   |    |               |    |  |
| Expert<br>Assistant |               |    | Tatehisa NAKAMURA (Vegetation)<br>93/5/16-5/23             |    |               | Shozo NAKAMURA (Silviculture)<br>94/5/16-5/23                                |               |    | Sukeharu TSURU (Forest Management)<br>96/8/6-9/3                    |    |               |    |  |
|                     |               |    | Katsuhiko OTA (Sociology)<br>93/5/16-5/26                  |    |               | Shigeoyuki BABA (Botanical taxonomy)<br>94/7/30-8/27                         |               |    | Kazuhiko OGINO (Data Analysis)<br>96/12/22-97/1/11                  |    |               |    |  |
|                     |               |    | Hajime NARIOKA (Environmental engineering)<br>93/5/16-5/23 |    |               | Seiichi WATANABE (Seashore Zoology)<br>94/12/12-95/1/9                       |               |    | Ryuichi TABUCHI (Ecosystem)<br>96/12/22-97/1/19                     |    |               |    |  |
|                     |               |    | Machiko MIHARA (Soil)<br>93/8/1-8/16                       |    |               |  |               |    | Kenichi OZAKI (Pest Control)<br>97/1/8-97/2/1                       |    |               |    |  |
|                     |               |    | Fumio ASAKA (Design of nursery)<br>1992/12/21-1993/2/3     |    |               | Syozo KAWAI (Entomology/Countermeasure against scale insect)<br>95/2/20-2/27 |               |    | Syozo NAKAMURA (Silviculture/Natural replacement)<br>97/3/4-97/3/29 |    |               |    |  |
|                     |               |    | Fumio ASAKA (Management of execution)<br>1993/2/24-3/22    |    |               | Seigo TACHIKAWA (Entomology)<br>95/2/20-2/27                                 |               |    | Hironitsu NIKAIDO (Forest Management)<br>97/3/2-5/30                |    |               |    |  |

**List of Long-term experts and Short-term experts**

|                    | 1997 (H9)   | 1998 (H10)   | 1999 (H11) |
|--------------------|---|--|------------|
|                    | 4   | 4  | 4          |
|                    | 10  | 10   | 10         |
|                    | ←   | Aisuo IDA (Leader)   | →          |
|                    | ←   | 97/9/23 - 99/11/30   | →          |
| Long-term experts  | ←   | Shinji TAKASHIMA (Silviculture)  | →          |
|                    | ←   | 97/11/10 - 99/11/30  | →          |
|                    | ←   | Yasuko INOUE (Forest Management)                                       | →          |
|                    | ←   | 97/11/10 - 99/11/30  | →          |
|                    | ←   | Kazuyuki YATSUDA (Liaison Officer)                                     | →          |
|                    | ←   | 97/10/8 - 99/11/30   | →          |
|                    | Hiroshi SUZUKI<br>(Marine Crustacean-Crabs)<br>98/3/8 - 98/3/27 | Hiromitsu NIKADO<br>(Forest Management Analysis)<br>98/9/20 - 98/10/10 |            |
|                    | Kenichi Ozaki<br>(Scale Insect)<br>98/3/11 - 98/3/26            | Takashi SUZUKI<br>(Aquaculture Management)<br>98/9/20 - 98/10/10       |            |
| Short-term experts |   | Shigeru IWASAKI<br>(Social Economic Study)<br>98/9/20 - 98/10/10       |            |
|                    |   | Shinichi MORI<br>(Integrated Management Plan)<br>98/11/8 - 98/11/25    |            |
|                    |   | Kenichi OZAKI<br>(Scale Insect)<br>99/2/14 - 99/3/13                   |            |



### Acceptance of Trainees

| Fiscal Year  | 1997  |   | 1998 |  | 1999 |   |
|--------------|-------|---|------|--|------|---|
|              | Month | 4   | 10   | 4  | 10   | 10  |
| c/p Training |       | Hermani Apipudin<br>97/7/12 - 97/7/26<br>(Observation)      |      | Soedarto K.<br>98/10/17 - 98/10/31<br>(Observation)    |      | Harsono<br>99/7/24 - 99/7/31<br>(Observation)           |
|              |       | Bambang Mardiono<br>97/7/12 - 97/7/26<br>(Observation)      |      | Asikin Sunarya<br>98/10/17 - 98/10/31<br>(Observation) |      | Sjahrir<br>99/8/21 - 99/8/31<br>(Observation)           |
|              |       | Suhartadi<br>97/7/12 - 97/7/26<br>(Observation)             |      | Deddi Ruchjadi<br>98/10/17 - 98/10/31<br>(Observation) |      | Nyoman Yuliarsana<br>99/8/21 - 99/8/31<br>(Observation) |
|              |       | Oliva Suko<br>97/11/5 - 97/12/20<br>(Nursery)               |      |  |      | Suherdie<br>99/8/21 - 99/8/31<br>(Observation)          |
|              |       | Oki Hadiyahati<br>97/11/5 - 97/12/20<br>(Forest Management) |      |  |      |   |





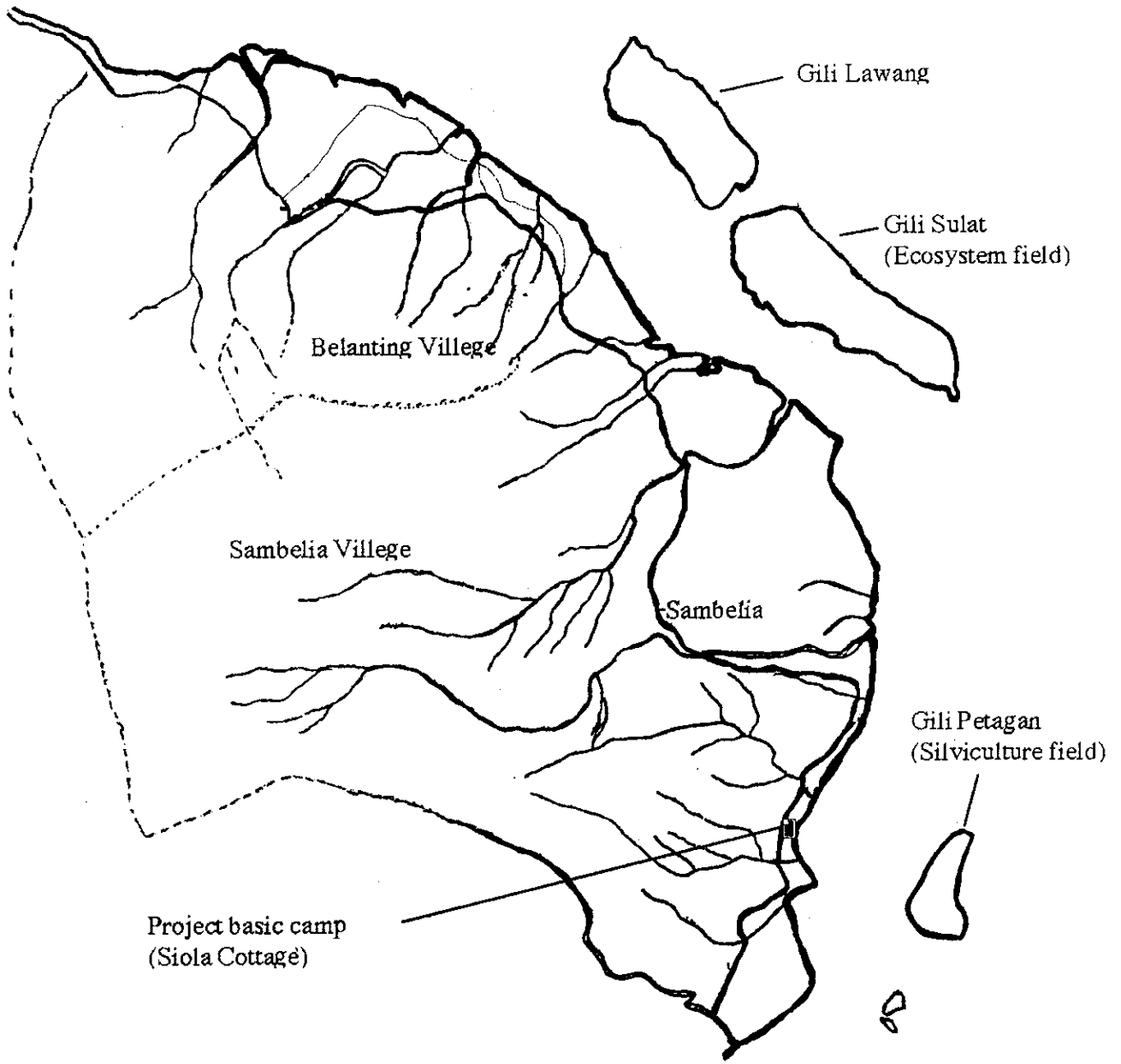
Chart of assigned Counterparts - 1 (JK : Jakarta B : Bali L : Lombok)

| Field           | Name of c/p        | 1997 |    | 1998 |    | 1999 |                           | Remarks                |
|-----------------|--------------------|------|----|------|----|------|---------------------------|------------------------|
|                 |                    | 4    | 10 | 4    | 10 | 4    | 10                        |                        |
| Leader          | JK : Syahrir       |      |    |      |    |      |                           | Director Reforestation |
|                 | B : Harijoko SP    |      |    |      |    |      |                           | Head of BRLKT VII      |
| Liaison Officer | B : Esti Wening S. |      |    |      |    |      |                           | Project Manager        |
|                 | B : Sumardjo       |      |    |      |    |      |                           | Project Manager        |
|                 | B : N. Westra      |      |    |      |    |      |                           | Project Manager        |
| Others          | B : Bambang S.     |      |    |      |    |      |                           | Field Manager          |
|                 | B : Achmad W.      |      |    |      |    |      |                           | Field Manager          |
|                 | L : Suhartadi      |      |    |      |    |      |                           | Field Manager          |
|                 | B : Kristanto      |      |    |      |    |      |                           | Bali-Head of Kanwil    |
|                 | B : Asikin S.      |      |    |      |    |      |                           | Bali-Head of Kanwil    |
|                 | L : Hermani A.     |      |    |      |    |      |                           | NTB-Head of Kanwil     |
|                 | L : D. Ruchjadi P. |      |    |      |    |      |                           | NTB-Head of Kanwil     |
|                 | JK : Hoesodo S.    |      |    |      |    |      |                           | Programming Div.       |
| JK : Asep S.    |                    |      |    |      |    |      | Programming Div.          |                        |
| JK : Nani R.    |                    |      |    |      |    |      | Directorate Reforestation |                        |

Chart of assigned counterparts - 2

| Field             | Name of c/p        | 1997 |    | 1998 |    | 1999 |    | Remarks |
|-------------------|--------------------|------|----|------|----|------|----|---------|
|                   |                    | 4    | 10 | 4    | 10 | 4    | 10 |         |
| Silviculture      | B : Oliva Suko     |      |    |      |    |      |    |         |
|                   |                    |      |    |      |    |      |    |         |
|                   |                    |      |    |      |    |      |    |         |
|                   |                    |      |    |      |    |      |    |         |
|                   |                    |      |    |      |    |      |    |         |
|                   |                    |      |    |      |    |      |    |         |
| Forest Management | B : Oki Hadiyahati |      |    |      |    |      |    |         |
|                   |                    |      |    |      |    |      |    |         |
|                   |                    |      |    |      |    |      |    |         |
|                   |                    |      |    |      |    |      |    |         |
|                   |                    |      |    |      |    |      |    |         |
|                   |                    |      |    |      |    |      |    |         |
|                   | L : A. Affendi     |      |    |      |    |      |    |         |
|                   |                    |      |    |      |    |      |    |         |
|                   |                    |      |    |      |    |      |    |         |
|                   |                    |      |    |      |    |      |    |         |
|                   |                    |      |    |      |    |      |    |         |
|                   |                    |      |    |      |    |      |    |         |





Lombok project side





Budget result

Annex 5

| Fiscal year  | Indonesia        |                |   | Japan            |                |         | Amount           |                |         | Unit : 1,000Rupiah |                |             | Bali and Lombok  |                  |                |                         |                |
|--|------------------|----------------|---|------------------|----------------|---------|------------------|----------------|---------|--------------------|----------------|-------------|------------------|------------------|----------------|-------------------------|----------------|
|  | Budget Available | Result Applied | 0 | Budget Available | Result Applied | 98,104  | Budget Available | Result Applied | 98,104  | Budget Available   | Result Applied | Indonesia % | JICA rate Rp/Yen | Budget Available | Result Applied | Lombok Budget Available | Result Applied |
|  |                  |                |   |                  |                |         |                  |                |         |                    |                |             |                  |                  |                |                         |                |
| 1992   | 0                | 0              | 0 | 98,104           | 98,104         | 98,104  | 98,104           | 98,104         | 98,104  | 98,104             | 0.0            | 16.7        | 0                | 0                | 0              | 0                       | 0              |
| 1993   | 102,000          | 95,849         |   | 333,699          | 333,699        | 333,699 | 435,699          | 429,548        | 429,548 | 429,548            | 22.3           | 19.6        | 57,338           | -                | -              | -                       | -              |
| 1994   | 255,413          | 246,463        |   | 538,608          | 538,608        | 538,608 | 794,021          | 785,071        | 785,071 | 785,071            | 31.4           | 22.3        | 187,988          | -                | -              | 67,425                  | -              |
| 1995   | 223,865          | 175,739        |   | 432,386          | 428,929        | 428,929 | 656,251          | 604,668        | 604,668 | 604,668            | 29.1           | 23.2        | 155,205          | 119,789          | 68,660         | 68,660                  | 37,090         |
| 1996   | 213,962          | 167,267        |   | 485,293          | 415,393        | 415,393 | 699,255          | 582,660        | 582,660 | 582,660            | 28.7           | 20.5        | 144,599          | 107,050          | 69,363         | 69,363                  | 60,217         |
| 1997   | 143,569          | 0              |   | 310,068          |                |         | 453,637          | 0              | 0       | 0                  |                |             | 149,927          |                  | 65,427         |                         |                |
| Remark 1 ) As for Indonesian budget, we refer to PO(Project Operation) and especially as for 1993, we refer to interim report. |                  |                |   |                  |                |         |                  |                |         |                    |                |             |                  |                  |                |                         |                |
| Remark 2 ) We estimate budget for 1997 according to ratio of project period.   |                  |                |   |                  |                |         |                  |                |         |                    |                |             |                  |                  |                |                         |                |
| Rp.215,354 x 8months/12months = Rp.143,569-  |                  |                |   |                  |                |         |                  |                |         |                    |                |             |                  |                  |                |                         |                |

### Budgeted Result

| Fiscal year | Indonesia          |                | Japan              |                | Amount             |                | Indonesia % | Bali               |                | Lombok             |                |
|-------------|--------------------|----------------|--------------------|----------------|--------------------|----------------|-------------|--------------------|----------------|--------------------|----------------|
|             | Budgeted Available | Result Applied | Budgeted Available | Result Applied | Budgeted Available | Result Applied |             | Budgeted Available | Result Applied | Budgeted Available | Result Applied |
|             |                    |                |                    |                |                    |                |             |                    |                |                    |                |
| 97 - 98     | 215,354            | 173,012        | 561,603            | 559,913        | 776,957            | 732,925        | 23,6        | 149,927            | 118,082        | 65,427             | 54,930         |
| 98 - 99     | 249,681            | 224,409        | 1,072,158          | 1,059,793      | 1,321,839          | 1,284,202      | 17,5        | 198,024            | 177,982        | 51,651             | 46,427         |
| 99 - 20 *   | 184,370            | 28,945         | 343,956            | 211,787        | 528,326            | 240,732        | 12,0        | 131,430            | 27,199         | 52,940             | 1,746          |

\* ) June 1999

Unit : 1.000 Rupiah

Equipment List 97

Annex 6 - 1

| List for equipment (more than 1,000 thousand yen)  |     | Equipment (Maker • Model) |   | Q'ty   | Unit  | Amount    | Amount   | Stock Place | Utili-       | Mein- | Procured | Buy  | Dis- | Now  | Reason for |             |
|--|-----|---------------------------|---|--|-------|-----------|----------|-------------|--------------|-------|----------|------|------|------|------------|-------------|
| Year   | Old | New                       |   |  |       | (1000yen) | (1000Rp) |             | zatr         | tain  | Classify | Q'ty | pose | Q'ty | Disposal   |             |
|  |     |                           |   | No. : No. of equipment list in the interim report , New No. : No. for this list) |       |           |          |             |              |       |          |      |      |      |            |             |
|  |     |                           |   |  |       |           |          |             |              |       |          |      |      |      |            | 1997/10/31  |
| (Classification : GRT:Grant, HND:Hand carried, MNG:Project Local Budget/IND:Domestic Procurement, JPN:Japan Procurement) |     |                           |   |  |       |           |          |             |              |       |          |      |      |      |            |             |
| (Old No. : No. of equipment list in the interim report , New No. : No. for this list)                                    |     |                           |   |  |       |           |          |             |              |       |          |      |      |      |            |             |
| 92   | 1   | 1                         | Station Wagon(DAIHATSU TAFT HILINE)     | 1  | 2,703 | 2,703     | 45,140   | Bali        | BRLKT        | A     | GRT      | IND  | 1    | 0    | 1          |             |
| 92   | 2   | 1                         | Truck ( TOYOTA KIJANG PICK UP)          | 1  | 1,317 | 1,317     | 21,994   | Bali        | Garage       | A     | GRT      | IND  | 1    | 1    | 0          | Replacement |
| 92   | 3   | 1                         | Wagon Mini Bus ( TOYOTA KIJANG )        | 1  | 1,887 | 1,887     | 31,513   | Bali        | Garage       | A     | GRT      | IND  | 1    | 0    | 1          |             |
| 92   | 21  | 1                         | Wagon mini bus (TOYOTA KIJANG)          | 1  | 1,887 | 1,887     | 31,513   | Bali        | Garage       | A     | GRT      | IND  | 1    | 0    | 1          |             |
| 93   | 24  | 1                         | Wagon mini bus (TOYOTA KIJANG)          | 1  | 1,739 | 1,739     | 33,389   | Lom         | Sub-BRLKT    | A     | GRT      | IND  | 1    | 0    | 1          |             |
| 93   | 51  | 1                         | Remoted self-record water gauge (WSL-3) | 1  | 2,400 | 2,400     | 46,080   | Bali        | Lab.         | E     | D        | GRT  | IND  | 1    | 0          | 1           |
| 93   | 55  | 2                         | Weather survey apparatus                | 2  | 3,648 | 7,296     | 140,083  | B/L         | Office/Siola | E     | D        | GRT  | IND  | 2    | 0          | 2           |
| 94   | 121 | 1                         | Wagon mini bus ( MITSUBISHI L300)       | 1  | 1,280 | 1,280     | 27,904   | Bali        | Garage       | A     | GRT      | IND  | 1    | 0    | 1          |             |
| 94   | 123 | 1                         | Truck (TOYOTA KIJANG PICK UP)           | 1  | 1,217 | 1,217     | 26,531   | Bali        | Garage       | A     | GRT      | IND  | 1    | 0    | 1          |             |
| 97   | 200 | 1                         | Mobil pick up                           | 1  | 1,490 | 1,490     | 29,800   | Bali        | Office(Draw) | A     | A        | GRD  | IND  | 1    | 0          | 1           |
| 97   | 201 | 1                         | Photocopy machine Able 3321             | 1  | 1,030 | 1,030     | 27,810   | Bali        | Office       | A     | A        | GRD  | IND  | 1    | 0          | 1           |

Equipment List 97

Annex 6 - 2

| List for equipment ( less than 1,000 thousand yen and more than 20thousand yen) |         | (Classification : GRT:Grant, HND:Hand carried, MNG:Project Local Budget/IND:Domestic Procurement, JPN:Japan Procurement) |      | Reason for Disposal |                 |                        |             |          |                   |         |               |         |                     |
|---|---------|--|------|---------------------|-----------------|------------------------|-------------|----------|-------------------|---------|---------------|---------|---------------------|
| Year/Old No.  | New No. | Equipment (Maker • Model)  | Q'ty | Unit (1000yen)      | Amount (1000Rp) | Stock Place            | Utilization | Meintain | Procured Classify | Buy Qty | Dis- pose Qty | Now Qty | Reason for Disposal |
|   |         | (Old No. : No. of equipment list in the interim report , New No. : No. for this list)                                    |      |                     |                 |                        |             |          |                   |         |               |         | 1997/10/31          |
| 92  | 4       | 4 Motor Cycle (YAMAHA ALFA AIR)  | 3    | 197                 | 590             | (Raka,Endro,Agun) Bali | A           | A        | GRT IND           | 3       | 0             | 3       |                     |
| 92  | 5       | 5 Photocopy machine ( FUJI XEROX 3985)   | 1    | 528                 | 528             | Office Bali            | A           | A        | GRT IND           | 1       | 0             | 1       |                     |
| 92  | 6       | 6 Salinometer (SINNER SN-2P)   | 1    | 186                 | 186             | Office Bali            | A           | A        | GRT IND           | 1       | 0             | 1       |                     |
| 92  | 7       | 7 Oxygen meter ( TOA-DO-11P)   | 1    | 264                 | 264             | Office Bali            | C           | A        | GRT IND           | 1       | 0             | 1       |                     |
| 92  | 8       | 8 Oxidation-deoxidation potentiometer  | 1    | 37                  | 37              | Office Bali            | C           | A        | GRT IND           | 1       | 0             | 1       |                     |
| 92  | 9       | 9  Water pump (5HP HONDA)  | 1    | 43                  | 43              | Office Bali            | C           | A        | GRT IND           | 1       | 0             | 1       |                     |
| 92  | 10      | 10 Electronic balance (SHIMAZU EB-3200)  | 1    | 261                 | 261             | Lab. Bali              | A           | -        | GRT IND           | 1       | 1             | 0       | Stolen              |
| 92  | 11      | 11 Electronic balance ( SHIMAZU EL-600)  | 1    | 130                 | 130             | Lab. Bali              | A           | -        | GRT IND           | 1       | 1             | 0       | Stolen              |
| 92  | 12      | 12 Electronic balance ( SHIMAZU EL-6000)   | 1    | 130                 | 130             | Lab Bali               | A           | -        | GRT IND           | 1       | 1             | 0       | Stolen              |
| 92  | 13      | 13 Spring balance ( NATIONALS-100)   | 1    | 87                  | 87              | Office Bali            | C           | A        | GRT IND           | 1       | 0             | 1       |                     |
| 92  | 16      | 16 Lux meter (Tokyo-denko ANA999)  | 5    | 110                 | 551             | Office Bali            | C           | A        | GRT IND           | 5       | 0             | 5       |                     |
| 92  | 17      | 17 Magnetic stirrer  | 1    | 87                  | 87              | Lab. Bali              | -           | -        | GRT IND           | 1       | 1             | 0       | Stolen              |
| 92  | 18      | 18 A set of repairing tool ( FACOM 2050 M110)  | 1    | 232                 | 232             | Office Bali            | A           | B        | GRT IND           | 1       | 0             | 1       |                     |
| 92  | 19      | 19 Measure for forester 50m  | 2    | 29                  | 58              | Office Bali            | B           | A        | GRT IND           | 2       | 0             | 2       |                     |
| 92  | 20      | 20 Measure for forester 100m   | 2    | 41                  | 82              | Office Bali            | B           | A        | GRT IND           | 2       | 0             | 2       |                     |
| 92  | 65      | 65 Camera ( CANON EOS1)  | 1    | 150                 | 150             | Sub-BRKT Lom           | C           | C        | GRT IND           | 1       | 0             | 1       | Fallen into sea     |
| 92  | 22      | 22 Speed boat (Glass fiber+Yamaha25HPx2)   | 1    | 959                 | 959             | Siola Lom              | A           | B        | GRT IND           | 1       | 0             | 1       |                     |
| 92  | 23      | 23 Speed boat (Glass fiber+Yamaha25HPx1)   | 1    | 566                 | 566             | Office Bali            | B           | B        | GRT IND           | 1       | 0             | 1       |                     |
| 92  | 70      | 70 pH meter ( D-12 HORIBA)   | 1    | 82                  | 82              | Office Bali            | B           | A        | HND JPN           | 1       | 0             | 1       |                     |
| 92  | 71      | 71 Walkie-talkie (SONY TCB-U500)   | 4    | 27                  | 108             | Office Bali            | -           | -        | HND JPN           | 4       | 4             | 0       | Stolen              |
| 92  | 72      | 72 Aluminium ladder (14M D-TYPE)   | 1    | 57                  | 57              | Office Bali            | B           | A        | HND JPN           | 1       | 0             | 1       |                     |
| 92  | 73      | 73 Lux meter (FLX-1330)  | 1    | 24                  | 24              | Office Bali            | C           | A        | HND JPN           | 1       | 0             | 1       |                     |
| 92  | 74      | 74 Personal computer (NEC PC9801 NS/T80)   | 1    | 404                 | 404             | Office(okai) Bali      | A           | A        | HND JPN           | 1       | 0             | 1       |                     |
| 92  | 75      | 75 Word processor (TOSHIBA JW-98UP)  | 1    | 223                 | 223             | Office Bali            | A           | A        | HND JPN           | 1       | 1             | 0       | Broken              |
| 92  | 76      | 76 Voltage stabilizer( 350w)   | 1    | 55                  | 55              | Office Bali            | A           | A        | HND JPN           | 1       | 0             | 1       |                     |
| 92  | 77      | 77 A set of repairing tools( K-50)   | 1    | 44                  | 44              | Office Bali            | A           | A        | HND JPN           | 1       | 0             | 1       |                     |
| 92  | 78      | 78 Chain saw (Kyoritu cs-3000)   | 1    | 62                  | 62              | Office Bali            | C           | A        | HND JPN           | 1       | 0             | 1       |                     |
| 92  | 79      | 79 Auto level (TOPCON AT-G3)   | 1    | 169                 | 169             | Office Bali            | C           | A        | HND JPN           | 1       | 0             | 1       |                     |
| 92  | 80      | 80 Level compass ( USHIKATA LS-25)   | 1    | 79                  | 79              | Office Bali            | C           | A        | HND JPN           | 1       | 0             | 1       |                     |

Equipment List 97

Annex 6 - 3

|    |     |    |   |   |     |     |        |      |                      |   |   |     |     |   |   |          |
|----|-----|----|---|---|-----|-----|--------|------|----------------------|---|---|-----|-----|---|---|----------|
| 92 | 81  | 36 | Software                                  | 1 | 97  | 97  | 1,620  | Bali | Office               | C | A | HND | JPN | 1 | 0 | 1        |
| 92 | 82  | 37 | Self recording thermometer (ISUZU)        | 1 | 46  | 46  | 768    | Bali | Office               | B | A | HND | JPN | 1 | 0 | 1        |
| 92 | 115 | 38 | Air conditioner (DAIKIN DAICOOK 2HP)      | 2 | 111 | 222 | 3,707  | Bali | Office               | A | A | MNG | IND | 2 | 0 | 2        |
| 92 | 116 | 39 | Electronic typewriter (CANON MX-350)      | 1 | 105 | 105 | 1,754  | Bali | Office               | C | B | MNG | IND | 1 | 0 | 1        |
| 92 | 117 | 40 | Facsimile (FUJIXEROX TC-7002)             | 1 | 174 | 174 | 2,906  | Bali | Office (Coordinator) | A | A | MNG | IND | 1 | 0 | 1        |
| 92 | 118 | 41 | Steel locker (ELITE 436)                  | 1 | 30  | 30  | 501    | Bali | Office               | A | A | MNG | IND | 1 | 0 | 1        |
| 92 | 119 | 42 | Desk (ELITE421)                           | 6 | 40  | 239 | 3,998  | Bali | Office               | A | A | MNG | IND | 6 | 0 | 6        |
| 92 | 120 | 43 | Desk (ELITE420)                           | 1 | 30  | 30  | 501    | Bali | Office               | A | A | MNG | IND | 1 | 0 | 1        |
| 92 | 121 | 44 | Type writer's desk                        | 1 | 22  | 22  | 367    | Bali | Office               | A | A | MNG | IND | 1 | 0 | 1        |
| 92 | 122 | 45 | Chairs (PAGODA CT-25)                     | 7 | 28  | 193 | 3,226  | Bali | Office               | A | A | MNG | IND | 7 | 0 | 7        |
| 92 | 123 | 46 | Steel cabinet (ELITE)                     | 2 | 27  | 54  | 902    | Bali | Office               | A | A | MNG | IND | 2 | 0 | 2        |
| 92 | 124 | 47 | White board                               | 2 | 24  | 47  | 785    | Bali | Office               | A | A | MNG | IND | 2 | 0 | 2        |
| 92 | 125 | 48 | Meeting table                             | 4 | 38  | 152 | 2,538  | Bali | Office               | A | A | MNG | IND | 4 | 0 | 4        |
| 92 | 126 | 49 | Water pump ( HONDA 5HP)                   | 1 | 32  | 32  | 534    | Bali | Office               | - | - | MNG | IND | 1 | 1 | 0 Stolen |
| 92 | 127 | 50 | Refrigerator (SHARP SJ-32V)               | 1 | 161 | 161 | 2,689  | Bali | Lab.                 | A | A | MNG | IND | 1 | 0 | 1        |
| 92 | 128 | 51 | Slide projector (KODAK SAV2050)           | 1 | 156 | 156 | 2,605  | Bali | Office               | - | - | MNG | IND | 1 | 1 | 0 Stolen |
| 92 | 129 | 52 | Screen (DALITE)                           | 1 | 36  | 36  | 601    | Bali | Office               | B | A | MNG | IND | 1 | 0 | 1        |
| 92 | 130 | 53 | Canadian canoe                            | 2 | 54  | 108 | 1,804  | Bali | Office (Outside)     | C | A | MNG | IND | 2 | 0 | 2        |
| 92 | 131 | 54 | Microscope (OLYMPUS BH-2)                 | 1 | 597 | 597 | 9,970  | Bali | Office               | C | A | MNG | IND | 1 | 0 | 1        |
| 92 | 132 | 55 | Salinometer (S-10 SINNER)                 | 2 | 57  | 114 | 1,904  | Bali | Office               | A | A | MNG | IND | 2 | 0 | 2        |
| 92 | 133 | 56 | Land survey pole                          | 1 | 87  | 87  | 1,453  | Bali | Office               | C | A | MNG | IND | 1 | 0 | 1        |
| 93 | 25  | 58 | Personal computer (Hitech, HP Printer)    | 1 | 473 | 473 | 9,082  | Bali | Office               | A | A | GRT | IND | 1 | 0 | 1        |
| 93 | 26  | 59 | Overhead Projector ( PLUS DP-15)          | 1 | 280 | 280 | 5,376  | Bali | Office               | A | A | GRT | IND | 1 | 0 | 1        |
| 93 | 27  | 60 | Slide Projector ( KODAK EKTAPRO 3000)     | 1 | 156 | 156 | 2,995  | Bali | Office               | A | A | GRT | IND | 1 | 0 | 1        |
| 93 | 28  | 61 | Telephone switching board (PANASONIC308)  | 1 | 184 | 184 | 3,533  | Bali | Office               | A | A | GRT | IND | 1 | 0 | 1        |
| 93 | 29  | 62 | Fire extinguisher (ECONOMY EDP-75)        | 1 | 208 | 208 | 3,994  | Bali | Office               | A | A | GRT | IND | 1 | 0 | 1        |
| 93 | 30  | 63 | Fire extinguisher ( ECONOMY EDP-6)        | 1 | 62  | 62  | 1,190  | Bali | Office               | A | A | GRT | IND | 1 | 0 | 1        |
| 93 | 32  | 65 | Wooden bookshelves ( 100X180X49)          | 2 | 20  | 40  | 768    | Bali | Office               | A | A | GRT | IND | 2 | 0 | 2        |
| 93 | 33  | 66 | Wooden bookshelf( 180 X 180 X 40)         | 1 | 34  | 34  | 653    | Bali | Office               | A | A | GRT | IND | 1 | 0 | 1        |
| 93 | 34  | 67 | Wooden cabinet(350 X 94 X 50)             | 1 | 36  | 36  | 691    | Bali | Office               | A | A | GRT | IND | 1 | 0 | 1        |
| 93 | 36  | 69 | Wooden cabinet (250 X 66 X 50 )           | 1 | 20  | 20  | 384    | Bali | Office               | A | A | GRT | IND | 1 | 0 | 1        |
| 93 | 37  | 70 | Wooden locker ( 90 X 180 X 60 )           | 6 | 22  | 133 | 2,557  | Bali | Office               | A | A | GRT | IND | 6 | 0 | 6        |
| 93 | 38  | 71 | Wooden bookshelves for papers(150X160X40) | 2 | 299 | 598 | 11,482 | Bali | Office               | A | A | GRT | IND | 2 | 0 | 2        |
| 93 | 39  | 72 | Sample shelves ( 180 X 180 X 60 )         | 4 | 40  | 158 | 3,034  | Bali | Office               | A | A | GRT | IND | 4 | 0 | 4        |



## Equipment List 97

|    |    |     |   |   |     |     |        |      |                |   |   |     |     |   |   |            |
|----|----|-----|---|---|-----|-----|--------|------|----------------|---|---|-----|-----|---|---|------------|
| 93 | 40 | 73  | Boots locker ( 150 X 140 X 40 )           | 2 | 25  | 49  | 941    | Bali | Office         | A | A | GRT | IND | 2 | 0 | 2          |
| 93 | 41 | 74  | Transit compass (USHIKATA LS-25S)         | 2 | 120 | 239 | 4,589  | Bali | Office         | C | A | GRT | IND | 2 | 0 | 2          |
| 93 | 43 | 76  | Drawing board                             | 1 | 208 | 208 | 3,994  | Bali | Lab.           | D | A | GRT | IND | 1 | 0 | 1          |
| 93 | 44 | 77  | Ultrasonic range finder (SONJIN, usa)     | 2 | 41  | 81  | 1,555  | Bali | Office         | C | A | GRT | IND | 2 | 0 | 2          |
| 93 | 45 | 78  | Siever set                                | 1 | 189 | 189 | 3,629  | Bali | Lab.           | C | A | GRT | IND | 1 | 0 | 1          |
| 93 | 47 | 80  | Electric siever shaker                    | 1 | 256 | 256 | 4,915  | Bali | Lab.           | D | A | GRT | IND | 1 | 0 | 1          |
| 93 | 48 | 81  | Soil nutriment analyzer                   | 1 | 73  | 73  | 1,402  | Bali | Office         | C | A | GRT | IND | 1 | 0 | 1          |
| 93 | 49 | 82  | Drying oven ( MENMERT 500)                | 1 | 255 | 255 | 4,896  | Bali | Lab.           | A | A | GRT | IND | 1 | 0 | 1          |
| 93 | 50 | 83  | Pure water maker ( KOTOBUKI I-40)         | 1 | 195 | 195 | 3,744  | Bali | Lab.           | E | A | GRT | IND | 1 | 0 | 1          |
| 93 | 52 | 85  | Water gauge (OHTA NO.49)                  | 1 | 125 | 125 | 2,400  | Bali | Garage         | A | A | GRT | IND | 1 | 0 | 1          |
| 93 | 53 | 86  | Experimental table                        | 1 | 262 | 262 | 5,030  | Bali | Lab.           | B | A | GRT | IND | 1 | 0 | 1          |
| 93 | 54 | 87  | Chain saw (STIHL)                         | 1 | 126 | 126 | 2,419  | Bali | Lab.           | B | A | GRT | IND | 1 | 0 | 1          |
| 93 | 56 | 89  | 8mm video camera (CANON UC-1 HI)          | 1 | 201 | 201 | 3,859  | Bali | BRLKT          | C | C | GRT | IND | 1 | 0 | 1 Broken   |
| 93 | 57 | 90  | TV/video ( MITSUBISHI CT-25,JVC HR-D92MS) | 1 | 181 | 181 | 3,475  | Bali | Office         | B | A | GRT | IND | 1 | 0 | 1          |
| 93 | 58 | 91  | Camp set                                  | 1 | 125 | 125 | 2,400  | Bali | Office         | D | A | GRT | IND | 1 | 0 | 1          |
| 93 | 59 | 92  | Soil hardness tester (YAMANAKA)           | 1 | 90  | 90  | 1,728  | Bali | Office         | C | A | GRT | IND | 1 | 0 | 1          |
| 93 | 60 | 93  | Speech amplifier (TOA WA-641C)            | 1 | 138 | 138 | 2,650  | Bali | Office         | C | A | GRT | IND | 1 | 0 | 1          |
| 93 | 61 | 94  | Generator ( YAMAHA 750W)                  | 1 | 57  | 57  | 1,094  | Bali | Office         | C | A | GRT | IND | 1 | 0 | 1          |
| 93 | 62 | 95  | Binocular telescope ( NIKON 10X50)        | 2 | 34  | 68  | 1,306  | Bali | Office         | B | A | GRT | IND | 2 | 1 | 1 Stolen   |
| 93 | 63 | 96  | Refrigerator ( GENERAL ER-10)             | 1 | 133 | 133 | 2,554  | Bali | Office         | A | A | GRT | IND | 1 | 0 | 1          |
| 93 | 64 | 97  | Alarm set ( SCANRTONIC AV9000)            | 1 | 272 | 272 | 5,222  | Bali | Office         | A | A | GRT | IND | 1 | 0 | 1          |
| 93 | 65 | 98  | Camera ( CANON EOS 5)                     | 4 | 125 | 502 | 9,631  | Bali | Office(Expert) | A | A | GRT | IND | 4 | 0 | 4          |
| 93 | 66 | 99  | Water proof camera ( NIKON NIKONOS SS101) | 1 | 229 | 229 | 4,397  | Bali | Office (Eco.)  | E | A | HND | JPN | 1 | 0 | 1          |
| 93 | 67 | 100 | Pocket camera (OLYMPUS)                   | 3 | 30  | 90  | 1,728  | Bali | (dayu,?)       | A | A | HND | JPN | 3 | 2 | 1 2 Stolen |
| 93 | 68 | 101 | Lens, Stroboscope, tripod                 | 1 | 592 | 592 | 11,366 | Bali | Office         | A | A | HND | JPN | 1 | 0 | 1          |
| 93 | 69 | 102 | Grass cutter ( STIHL)                     | 1 | 48  | 48  | 922    | Bali | Office         | A | A | HND | JPN | 1 | 1 | 0          |
| 93 | 83 | 103 | Soil sampler (DAIKI KOGYO DK1640)         | 1 | 69  | 69  | 1,325  | Bali | Office         | C | A | HND | JPN | 1 | 0 | 1          |
| 93 | 84 | 104 | Soil sampler (DAIKI KOGYO DK1641)         | 1 | 87  | 87  | 1,670  | Bali | Office         | C | A | HND | JPN | 1 | 0 | 1          |
| 93 | 85 | 105 | Hypsometer (Blumelice)                    | 1 | 110 | 110 | 2,112  | Bali | Office         | C | A | HND | JPN | 1 | 0 | 1          |
| 93 | 86 | 106 | pH meter (ACTD-14)                        | 1 | 108 | 108 | 2,074  | Bali | Office         | B | A | HND | JPN | 1 | 0 | 1          |
| 93 | 87 | 107 | EC meter ( ACT EX-14 )                    | 1 | 97  | 97  | 1,862  | Bali | Office         | C | A | HND | JPN | 1 | 0 | 1          |
| 93 | 88 | 108 | Salinometer ( Sinner NS -- 3 P)           | 2 | 48  | 96  | 1,843  | Bali | Office         | A | A | HND | JPN | 2 | 0 | 2          |
| 93 | 89 | 109 | Balloon aerophoto set                     | 1 | 690 | 690 | 13,248 | Bali | Office         | E | A | HND | JPN | 1 | 0 | 1          |
| 93 | 90 | 110 | Soil sampler (DAIKI KOGYO DK1700)         | 1 | 120 | 120 | 2,304  | Bali | Office         | C | A | HND | JPN | 1 | 0 | 1          |

Equipment List 97

|    |     |   |  |     |       |        |       |                 |               |   |         |         |   |          |          |
|----|-----|---|--|-----|-------|--------|-------|-----------------|---------------|---|---------|---------|---|----------|----------|
| 93 | 91  | 111   | Electric drill (MAKITA 6010DW)           | 1   | 29    | 29     | 557   | Bali            | Office        | A | A       | HND JPN | 1 | 0        | 1        |
| 93 | 92  | 112   | Transit compass (USIKATA LS-25)          | 1   | 76    | 76     | 1,459 | Bali            | Office        | C | A       | HND JPN | 1 | 0        | 1        |
| 93 | 93  | 113   | GSP Receiver (ICOM KX-G5500)             | 1   | 151   | 151    | 2,899 | Bali            | Office        | D | A       | HND JPN | 1 | 0        | 1        |
| 93 | 94  | 114   | pH meter (HPH-110)                       | 1   | 84    | 84     | 1,613 | Bali            | Office        | B | A       | HND JPN | 1 | 0        | 1        |
| 93 | 95  | 115   | Oxidation deoxidization conductive meter | 1   | 118   | 118    | 2,266 | Bali            | Office        | C | A       | HND JPN | 1 | 0        | 1        |
| 93 | 97  | 117   | Handy shovel                             | 2   | 21    | 42     | 806   | Bali            | Office        | C | A       | HND JPN | 2 | 0        | 2        |
| 93 | 98  | 118   | Word processor (TOSHIBA JW-98V)          | 2   | 253   | 506    | 9,715 | Bali            | Office        | A | A       | HND JPN | 2 | 1        | 1 Broken |
| 93 | 99  | 119   | Printer (CANON BJ10v-select)             | 1   | 142   | 142    | 2,726 | Bali            | Office(endro) | A | -       | HND JPN | 1 | 1        | 0 Broken |
| 93 | 134 | 120   | Boat trailer                             | 1   | 46    | 46     | 883   | Bali            | Garage        | B | A       | MNG IND | 1 | 0        | 1        |
| 94 | 122 | Motor cycle (YAMAHA ALFA IIR)                 | 2  | 170 | 340   | 7,412  | Bali  | (Esti/Oliva)    | A             | A | GRT IND | 2       | 0 | 2        |          |
| 94 | 124 | Personal computer (HI TECH 286 D3/HP Printer) | 1  | 287 | 287   | 6,250  | Lom   | Sub-BRLKT       | C             | A | GRT IND | 1       | 0 | 1        |          |
| 94 | 125 | Drying oven (MEMMERT 500)                     | 1  | 264 | 264   | 5,750  | Bali  | Lab.            | A             | A | GRT IND | 1       | 0 | 1        |          |
| 94 | 126 | Grass cutter                                  | 1  | 44  | 44    | 959    | Bali  | Office          | A             | A | GRT IND | 1       | 0 | 1        |          |
| 94 | 127 | Compact generator                             | 1  | 58  | 58    | 1,264  | Bali  | Office          | B             | A | GRT IND | 1       | 0 | 1        |          |
| 94 | 128 | Wooden glass shelves                          | 4  | 28  | 112   | 2,442  | Bali  | Office          | A             | A | GRT IND | 4       | 0 | 4        |          |
| 94 | 129 | Handy anemo-scope-meter (A-011,with tripod)   | 2  | 183 | 366   | 7,979  | Bali  | Office          | C             | A | GRT JPN | 2       | 0 | 2        |          |
| 94 | 130 | Tachometer ( UC-2 )                           | 1  | 482 | 482   | 10,508 | Bali  | Office          | C             | A | GRT JPN | 1       | 0 | 1        |          |
| 94 | 131 | Self recording water gauge                    | 2  | 118 | 236   | 5,145  | Bali  | Office          | C             | A | GRT JPN | 2       | 0 | 2        |          |
| 94 | 132 | Word processor (TOSHIBA JW-98W)               | 4  | 283 | 1,132 | 24,678 | Bali  | Office (Each)   | A             | A | GRT JPN | 4       | 0 | 4        |          |
| 94 | 133 | Personal computer (NECPC9801NS+PrinterBU330)  | 1  | 548 | 548   | 11,946 | Bali  | Office (endoro) | B             | A | GRT JPN | 1       | 0 | 1        |          |
| 94 | 135 | Digital thermometer (DELTA SK2000MC)          | 1  | 52  | 52    | 1,134  | Bali  | Office          | A             | A | GRT JPN | 1       | 0 | 1        |          |
| 94 | 136 | Hydro-thermometer (ISUZU)                     | 1  | 65  | 65    | 1,417  | Bali  | Office          | A             | A | GRT JPN | 1       | 0 | 1        |          |
| 94 | 137 | Tree height measure                           | 3  | 38  | 114   | 2,485  | Bali  | Office          | A             | A | GRT JPN | 3       | 0 | 3        |          |
| 94 | 138 | Wooden canoe with outrigger (8m roofing)      | 1  | 104 | 104   | 2,250  | Lom   | Lombok          | A             | A | MNG IND | 1       | 0 | 1        |          |
| 94 | 139 | Winch (Manual 2000kg)                         | 1  | 571 | 571   | 12,339 | Lom   | Lombok          | C             | A | MNG IND | 1       | 0 | 1        |          |
| 94 | 140 | Photocopy machine ( Xerox vivace 300)         | 1  | 713 | 713   | 15,400 | Bali  | Office          | A             | A | MNG IND | 1       | 1 | 0 Broken |          |
| 94 | 141 | Facsimile (Brother fax620)                    | 1  | 61  | 61    | 1,325  | Bali  | Office          | A             | A | MNG IND | 1       | 0 | 1        |          |
| 94 | 142 | Lens (Macro for F90X)                         | 1  | 74  | 74    | 1,600  | Bali  | Office (Eco.)   | A             | A | MNG IND | 1       | 0 | 1        |          |
| 94 | 143 | Filing system for drawing                     | 1  | 132 | 132   | 2,850  | Bali  | Lab.            | C             | A | MNG IND | 1       | 0 | 1        |          |
| 94 | 100 | Software (ASKA)                               | 1  | 27  | 27    | 586    | Bali  | Office          | C             | A | HND JPN | 1       | 0 | 1        |          |
| 94 | 101 | Software (ICHITARO)                           | 1  | 50  | 50    | 1,085  | Bali  | Office (Nurs.)  | C             | A | HND JPN | 1       | 0 | 1        |          |
| 94 | 102 | Software (Lotus1-2-3)                         | 1  | 43  | 43    | 933    | Bali  | Office (Nurs.)  | C             | A | HND JPN | 1       | 0 | 1        |          |
| 94 | 103 | Software (TOKEI LIBRARY)                      | 1  | 54  | 54    | 1,172  | Bali  | Office (Nurs.)  | C             | A | HND JPN | 1       | 0 | 1        |          |
| 94 | 104 | Slide processor                               | 1  | 40  | 40    | 868    | Bali  | Office (Nurs.)  | D             | A | HND JPN | 1       | 0 | 1        |          |

## Equipment List 97

|    |     |     |  |   |     |     |        |      |                      |   |   |         |   |   |          |
|----|-----|-----|--|---|-----|-----|--------|------|----------------------|---|---|---------|---|---|----------|
| 94 | 105 | 149 | Photo vision (FUJIFILM)                        | 1 | 57  | 57  | 1,237  | Bali | Office (Nurs.)       | C | A | HND JPN | 1 | 0 | 1        |
| 94 | 106 | 150 | Word processor TOSHIBA JW-98W                  | 1 | 189 | 189 | 4,101  | Bali | Office (Nurs.)       | A | - | HND JPN | 1 | 1 | 0 Broken |
| 94 | 107 | 151 | Electronic measure                             | 2 | 46  | 91  | 1,975  | Bali | Office (Eco.)        | C | A | HND JPN | 2 | 0 | 2        |
| 94 | 108 | 152 | Blumelice Compass (BL-6)                       | 1 | 105 | 105 | 2,279  | Bali | Office (MNG)         | C | A | HND JPN | 1 | 0 | 1        |
| 94 | 109 | 153 | pH meter B212                                  | 1 | 26  | 26  | 564    | Bali | Office (Eco.)        | B | A | HND JPN | 1 | 0 | 1        |
| 94 | 110 | 154 | Salinometer C121                               | 1 | 28  | 28  | 608    | Bali | Office (Siv.)        | A | A | HND JPN | 1 | 0 | 1        |
| 94 | 111 | 155 | Ion meter C141                                 | 1 | 30  | 30  | 651    | Bali | Office               | C | A | HND JPN | 1 | 0 | 1        |
| 94 | 112 | 156 | Thermo meter HI9060                            | 1 | 31  | 31  | 673    | Bali | Office (Nurs.)       | B | A | HND JPN | 1 | 0 | 1        |
| 94 | 113 | 157 | Electronic range finder                        | 1 | 51  | 51  | 1,107  | Bali | Office (Nurs.)       | C | A | HND JPN | 1 | 0 | 1        |
| 94 | 114 | 158 | Richard tidal gauge                            | 2 | 72  | 144 | 3,125  | Bali | Office (Nurs.)       | C | A | HND JPN | 2 | 0 | 2        |
| 94 | 115 | 159 | Printer (CANON BJC600S)                        | 1 | 83  | 83  | 1,809  | Bali | Office (Eco.)        | A | A | HND JPN | 1 | 0 | 1        |
| 94 | 116 | 160 | Image scanner (CANON IX-4015)                  | 1 | 83  | 83  | 1,809  | Bali | Office (Eco.)        | A | A | HND JPN | 1 | 0 | 1        |
| 94 | 117 | 161 | Software (Claris V2.0)                         | 1 | 23  | 23  | 501    | Bali | Office (Eco.)        | A | A | HND JPN | 1 | 0 | 1        |
| 94 | 118 | 162 | Software (J-SCAN)                              | 1 | 59  | 59  | 1,286  | Bali | Office (Eco.)        | A | A | HND JPN | 1 | 0 | 1        |
| 94 | 119 | 163 | Software (PC TRANSFER)                         | 1 | 328 | 328 | 7,150  | Bali | Office (Eco.)        | A | A | HND JPN | 1 | 0 | 1        |
| 94 | 120 | 164 | Camera (NIKON F90X)                            | 1 | 134 | 134 | 2,921  | Bali | Office (Eco.)        | A | - | HND JPN | 1 | 1 | 0 Stolen |
| 94 | 121 | 165 | Stroboscope (NIKON SB-21)                      | 1 | 44  | 44  | 959    | Bali | Office (Eco.)        | A | A | HND JPN | 1 | 0 | 1        |
| 94 | 122 | 166 | Personal computer (Macintosh520C)              | 1 | 528 | 528 | 11,510 | Bali | Office (MNG)         | A | A | HND JPN | 1 | 0 | 1        |
| 94 | 123 | 167 | Printer (CANON BJ15Pro)                        | 1 | 51  | 51  | 1,112  | Bali | Office (MNG)         | A | A | HND JPN | 1 | 0 | 1        |
| 94 | 124 | 169 | Software (Excel V5.0)                          | 1 | 46  | 46  | 1,003  | Bali | Office (MNG)         | A | A | HND JPN | 1 | 0 | 1        |
| 94 | 125 | 170 | Zoom lens 35mm-105mm (NIKON F90X)              | 1 | 42  | 42  | 916    | Bali | Office (Eco.)        | A | A | HND JPN | 1 | 0 | 1        |
| 94 | 126 | 171 | Multi control back (NIKON F90X)                | 1 | 26  | 26  | 567    | Bali | Office (Eco.)        | A | - | HND JPN | 1 | 1 | 0 Stolen |
| 94 | 127 | 172 | Close-up bellows (NIKON F90X)                  | 1 | 42  | 42  | 916    | Bali | Office (Eco.)        | A | A | HND JPN | 1 | 0 | 1        |
| 94 | 128 | 173 | Stroboscope (NIKON SB-26)                      | 1 | 40  | 40  | 872    | Bali | Office (Eco.)        | A | A | HND JPN | 1 | 0 | 1        |
| 95 | 129 | 174 | Electronic balance (SHIMAZU EB-330H-A)         | 2 | 225 | 450 | 9,810  | B/L  | Lab. (Eco., Nurs.)   | A | A | GRT IND | 2 | 0 | 2        |
| 95 | 130 | 175 | Electronic balance (SHIMAZU EB-3200H-A)        | 2 | 210 | 420 | 9,156  | B/L  | Lab. (Eco., Nurs.)   | A | A | GRT IND | 2 | 0 | 2        |
| 95 | 131 | 176 | Water pump( Yammer TF-85R(8.5HP)/Ebara pump)   | 1 | 240 | 240 | 5,232  | Bali | Office (Nurs.)       | C | A | GRT IND | 1 | 0 | 1        |
| 95 | 132 | 177 | Remoted thermograph (ISUZU)                    | 3 | 115 | 345 | 7,521  | B/L  | Office (Nurs.)       | A | A | GRT JPN | 3 | 0 | 3        |
| 95 | 133 | 178 | Personal computer (MacintoshLC630)             | 1 | 248 | 248 | 5,406  | Bali | Office (Eco.)        | A | A | HND JPN | 1 | 0 | 1        |
| 95 | 134 | 179 | Salinometer (SINNER NS-3P)                     | 1 | 50  | 50  | 1,090  | Bali | Office (Nurs.)       | A | A | HND JPN | 1 | 0 | 1        |
| 95 | 135 | 180 | Personal computer(Macintosh5200)               | 1 | 334 | 334 | 7,281  | Bali | Office (MNG)         | A | A | HND JPN | 1 | 0 | 1        |
| 95 | 136 | 181 | Power card 601 for Mac LC630                   | 1 | 111 | 111 | 2,420  | Bali | Office (Eco.)        | A | A | HND JPN | 1 | 0 | 1        |
| 95 | 137 | 182 | Stereomicroscope (CARTON)                      | 2 | 192 | 384 | 8,371  | Bali | Office (Eco., Nurs.) | B | A | HND JPN | 2 | 0 | 2        |
| 95 | 138 | 183 | MO Driver (MITSUBISHI 230MO Turbo for Mac5200) | 1 | 54  | 54  | 1,177  | Bali | Office (MNG)         | A | A | HND JPN | 1 | 0 | 1        |

Equipment List 97

Annex 6 - 7

|    |     |   |   |     |     |        |      |                       |   |   |        |   |   |   |                    |
|----|-----|---|---|-----|-----|--------|------|-----------------------|---|---|--------|---|---|---|--------------------|
| 95 | 184 | Compact camera (Minolta) endoro/chairil | 2 | 40  | 80  | 1,744  | Bali | Office/chairil/endoro | A | A | MNGIND | 2 | 1 | 1 | Chairil not return |
| 95 | 185 | Camera (NIKON F90X)                     | 1 | 115 | 115 | 2,415  | Bali | Office (Eco.)         | A | A | MNGIND | 1 | 0 | 1 |                    |
| 95 | 186 | Lens (NIKON Macro for F90X)             | 1 | 55  | 55  | 1,155  | Bali | Office (Eco.)         | A | A | MNGIND | 1 | 0 | 1 |                    |
| 96 | 187 | Outboard motor (YAMAHA 25HP)            | 1 | 262 | 262 | 5,109  | Lom  | Stola                 | A | A | GRTIND | 1 | 0 | 1 |                    |
| 96 | 188 | Personal computer (HP Vectra 500)       | 1 | 297 | 297 | 5,792  | Bali | Office                | A | A | GRTIND | 1 | 0 | 1 |                    |
| 96 | 189 | Movable charcoal making machine         | 1 | 691 | 691 | 13,475 | Bali | Office (Mng)          | E | A | GRTJPN | 1 | 0 | 1 | Different approach |
| 96 | 190 | Nikon Lenz 20mm F2.8D                   | 1 | 49  | 49  | 956    | Bali | Office (Eco)          | A | A | HNDJPN | 1 | 0 | 1 |                    |
| 96 | 191 | Software MS Office PRO 95               | 1 | 38  | 38  | 741    | Bali | Office (Mng)          | A | A | HNDJPN | 1 | 0 | 1 |                    |
| 96 | 192 | Personal computer Mac 7200/120          | 1 | 239 | 239 | 4,661  | Bali | Office (Eco)          | A | A | HNDJPN | 1 | 0 | 1 |                    |
| 96 | 193 | Software Claris Draw 1.0 for Mac        | 1 | 45  | 45  | 878    | Bali | Office (Eco)          | A | A | HNDJPN | 1 | 0 | 1 |                    |
| 96 | 194 | Digital planimeter Planix-7             | 1 | 65  | 65  | 1,268  | Bali | Office (Nur)          | A | A | HNDJPN | 1 | 0 | 1 |                    |
| 96 | 196 | Compass glass HB-3L                     | 1 | 20  | 20  | 390    | Bali | Office (Nur)          | B | A | HNDJPN | 1 | 0 | 1 |                    |
|    |     |   |   |     |     |        |      |                       |   |   |        |   |   |   |                    |
|    |     |   |   |     |     |        |      |                       |   |   |        |   |   |   |                    |
|    |     |   |   |     |     |        |      |                       |   |   |        |   |   |   |                    |
|    |     |   |   |     |     |        |      |                       |   |   |        |   |   |   |                    |

## EQUIPMENT LIST

List for Equipment (over 100 thousand yen)  
 Classification : GRT : Grant. MNG : Project Local Budget IND : Domestic Procurement

| Year | Equipment (Maker-Model)           | Qty | Unit<br>(1,000 yen) | Amount<br>(1,000 Rp) | Amount<br>(1,000 yen) | Stock  | Place   | Utilization | Maintain | Procured<br>Classify | Remarks |
|------|-----------------------------------|-----|---------------------|----------------------|-----------------------|--------|---------|-------------|----------|----------------------|---------|
| 98   | Work Station Pentium 200 Mhz      | 5   | 285                 | 1.425                | 89.000                | Bali   | Office  | A           | A        | GRT                  | IND     |
| 98   | Work Station Pentium 200 Mhz      | 1   | 285                 | 285                  | 17.800                | Bali   | Kanwil  | A           | A        | GRT                  | IND     |
| 98   | Work Station Pentium 200 Mhz      | 1   | 285                 | 285                  | 17.800                | Bali   | BRLKT   | A           | A        | GRT                  | IND     |
| 98   | Work Station Pentium 200 Mhz      | 1   | 285                 | 285                  | 17.800                | Lombok | S-BRLKT | A           | A        | GRT                  | IND     |
| 98   | Camera (Nikon F 70 D)             | 1   | 106                 | 106                  | 6.575                 | Bali   | Office  | A           | A        | MNG                  | IND     |
| 99   | Printer (HP Laser Jet 4500 Color) | 1   | 291                 | 291                  | 18.154                | Bali   | Office  | A           | A        | MNG                  | IND     |

## Meetings

|  | 1992  | 1993   | 1994  | 1995                                     | 1996  | 1997                                     |
|--|---|--|---|--|---|--|
| Joint Committee Meeting                  | 12  | 4<br>1st / Ministry of Forestry<br>10/21   | 4<br>2nd / Bali, Grand Mirage<br>7/27-28  | 4<br>3rd / Ministry of Forestry<br>8/8   | 4<br>4th / Jakarta, Sahid Jaya<br>8/7                   | 4<br>5th / Bali, Grand Bali Beach<br>8/8 |
| Survey team                              |   | Mission for activities<br>formulation<br>5/16-5/27<br>Advisory team<br>1/13-1/22 | Advisory team<br>7/25-8/3   | Advisory team<br>7/31-8/10               | Advisory team<br>1/7-1/15                               | Final evaluation team<br>6/22-7/4        |
| Technical meeting/Seminar                |   |  | Panel Discussion<br>(Bali)<br>10/26-28  | Work shop<br>(Bali)<br>2/13-14           | Technical Meeting<br>(Bali) (NTB)<br>6/6-7 10/21-23     | Seminar<br>(Jakarta)<br>9/9              |
| Technical exchange trip/academic meeting |   |  | No. 5 Mangrove<br>Ecosystem seminar<br>(East Java)<br>August<br>Technical exchange<br>(Malaysia)<br>March |  | Technical exchange<br>Fortrop '96<br>(Thailand)<br>Nov. |  |
| Leader's Meeting                         | Shoshi<br>TANAKA<br>2/15-20<br>Kuala Lumpur | Shoshi TANAKA<br>2/4-2/8<br>Tokyo  | Shoshi TANAKA<br>2/13-17<br>Bangkok   | Osamu SASAKI<br>1/25-2/3<br>Tokyo        | Osamu SASAKI<br>1/26-2/1<br>Jakarta                     |  |
| Coordinator's Meeting                    |   | Hideoki HACHINOHE<br>10/4-10/8<br>Kuala Lumpur                                   |   | Minoru MIYASAKA<br>10/22-10/28<br>Manila |   |  |
| Advisor's meeting in Japan               |   |  |   | May, August, March                       | May, October, February                                  | May                                      |

## MEETING

|  | 1997   | 1998   | 1999   |
|--|--|--|--|
|  | 4<br>10  | 4<br>10  | 4<br>10  |
| Joint Committee Meeting                  | 5th / Bali, Grand Bali Beach<br>8/8<br>6th / Lombok,<br>Lombok Raya 2/25 |  | 7th / Bali, Patra Jasa<br>7/8  |
| Survey Team                              | Final Evaluation Team<br>6/22 - 7/4<br>Advisory Team<br>2/18 - 2/27      |  | Final Evaluation Team<br>6/30 - 7/10   |
| Technical Meeting / Seminar              | Seminar (Jakarta)<br>9/9   | Technical Meeting 8/14 (Bali)<br>Workshop 7/28 - 29 (Bali) | Technical Meeting<br>5/6 (Jakarta)<br>Workshop Seminar<br>4/20 (Bali) 9/29 (Jakarta) |
| Technical Exchange /<br>Academic Meeting |  | Technical Exchange (Fiji)<br>8/29 - 9/5                    | ISME General Assembly<br>9/6 - 9/9 (Bali)  |
| Leader's Meeting                         | Atsuo IDA<br>1/29 - 2/6<br>Tokyo   | Atsuo IDA<br>1/30 - 2/10<br>Tokyo                          |  |
| Coordinator's Meeting                    |  |  |  |
| Advisor's Meeting in Japan               | May  | Feb  | July   |

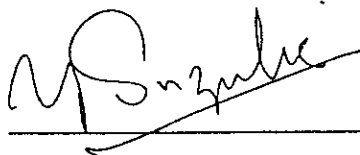
THE RECORD OF DISCUSSIONS  
BETWEEN  
THE JAPANESE IMPLEMENTATION SURVEY TEAM  
AND  
THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE REPUBLIC OF INDONESIA  
ON  
THE DEVELOPMENT OF SUSTAINABLE MANGROVE MANAGEMENT PROJECT  
IN THE REPUBLIC OF INDONESIA

The Japanese Implementation Survey Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Yasuyuki Suzuki, Deputy Director, Japan Forest Development Corporation, visited the Republic of Indonesia from October 26 to November 6, 1992 for the purpose of working out the details of the Development of Sustainable Mangrove Management Project in the Republic of Indonesia.

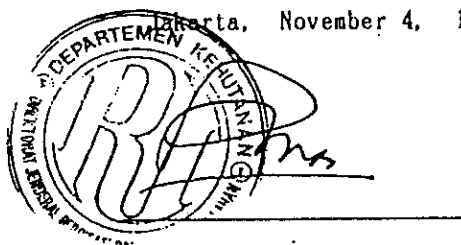
During its stay in the Republic of Indonesia, the Team exchanged views and had a series of discussions with the Indonesian authorities concerned in respect of the appropriate measures to be taken by both Governments for the successful implementation of the above-mentioned Project.

As a result of the discussions, both parties agreed to recommend to their respective Governments the matters referred to in the document attached hereto.

Jakarta, November 4, 1992



Yasuyuki Suzuki  
Leader,  
Implementation Survey Team,  
Japan International  
Cooperation Agency, Japan



Armana Darsidi  
Director General of Reforestation  
and Land Rehabilitation,  
Ministry of Forestry,  
The Republic of Indonesia



## ATTACHED DOCUMENT

### I. COOPERATION BETWEEN BOTH GOVERNMENTS

1. The Government of Japan and the Government of the Republic of Indonesia will cooperate with each other in implementing the Development of Sustainable Mangrove Management Project in the Republic of Indonesia (hereinafter referred to as "the Project") for the purpose of collecting useful data, establishing technology to recover mangrove forests, and setting up of technical and managerial methods for the Sustainable Mangrove Management System in the recovered areas, which will contribute to the promotion of re-afforestation and the sustainable development of the forests in the tropics, by the surrounding communities and the private sector.
2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

### II. DISPATCH OF JAPANESE EXPERTS

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take the necessary measures through JICA to provide at its own expense services of the Japanese experts as listed in Annex II through the normal procedures under the Colombo Plan Technical Cooperation Scheme.
2. The Japanese experts referred to in paragraph 1 above and their families will be granted in Indonesia, privileges, exemptions and benefits no less favorable than those accorded to experts of third countries working in the Republic of Indonesia under the Colombo Plan Technical Cooperation Scheme. The privileges, exemptions and benefits will include the following:
  - (1) Exemption from income tax and charges of any kind imposed on or in connection with the living allowances remitted from abroad in relation to the implementation of the Project;
  - (2) Exemption from import and export duties and any other charges imposed on personal and household effects which may be brought in from abroad or taken out of the Republic of Indonesia;
  - (3) Exemption from import taxes, import sales taxes, sales taxes and other

- taxes and charges of any kind imposed on or in connection with the purchase in Indonesia by the Japanese experts of one motor vehicle per expert;
- (4) Free local medical services and facilities for the Japanese experts and their families.

### III. PROVISION OF MACHINERY AND EQUIPMENT

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take the necessary measures through JICA to provide at its own expense such machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Project as listed in Annex III through the normal procedures under the Colombo Plan Technical Cooperation Scheme.
2. The Equipment will become the property of the Government of the Republic of Indonesia upon being delivered C.I.F. to the Indonesian authorities concerned at the ports and/or airports of disembarkation, and will be utilized exclusively in the implementation of the Project in consultation with the Japanese experts referred to in Annex II.

### IV. SPECIAL MEASURES

In accordance with the laws and regulations in force in Japan, the Government of Japan, through JICA, will take the necessary measures to provide at its own expense a portion of local costs which are to be mutually agreed upon.

### V. TRAINING OF INDONESIAN PERSONNEL IN JAPAN

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take the necessary measures through JICA to receive at its own expense the Indonesian personnel related to the Project for technical training in Japan through the normal procedures under the Colombo Plan Technical Cooperation scheme.
2. The Government of the Republic of Indonesia will take the necessary measures to ensure that the knowledge and experience acquired by the Indonesian personnel who have received technical training in Japan will be utilized effectively in the

implementation of the Project.

**VI. SERVICES OF INDONESIAN COUNTERPART AND ADMINISTRATIVE PERSONNEL**

1. In accordance with the laws and regulations in force in the Republic of Indonesia, the Government of the Republic of Indonesia will take the necessary measures through the Ministry of Forestry to secure at its own expense the necessary services of Indonesian counterpart and administrative personnel as listed in Annex IV.
2. The Government of the Republic of Indonesia will allocate the necessary number of qualified personnel corresponding to each Japanese expert dispatched by the Government of Japan as specified in Annex I] for the effective and successful transfer of technology under the Project.

**VII. MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE REPUBLIC OF INDONESIA**

1. In accordance with the laws and regulations in force in the Republic of Indonesia, the Government of the Republic of Indonesia will take the following necessary measures to provide at its own expense:
  - (1) Land, buildings and facilities as listed in Annex V;
  - (2) The supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials which are available locally and necessary for the implementation of the Project other than those provided through JICA under Clause III;
  - (3) Transportation facilities and travel allowances for the official travel of the Japanese experts within the Republic of Indonesia;
  - (4) Appropriately furnished accommodation for the Japanese experts and their families.
2. In accordance with the laws and regulations in force in the Republic of Indonesia, the Government of the Republic of Indonesia will take the necessary measures to meet:
  - (1) Expenses necessary for the transportation of the Equipment within Indonesia and for installation, operation and maintenance thereof;

- (2) Customs duties, internal taxes and any other charges imposed on the Equipment in the Republic of Indonesia;
- (3) Running costs necessary for implementation of the Project.

#### VIII. ADMINISTRATION OF THE PROJECT

1. The Director General of Reforestation and Land Rehabilitation of the Ministry of Forestry of the Government of the Republic of Indonesia will take full responsibility for the implementation of the Project.
2. As Project Director, the Director of Reforestation and Regreening will be responsible for administrative and managerial matters of the Project.
3. The Japanese Team Leader shall recommend and advise the Project Director on technical and administrative matters when it is necessary for the effective implementation of the Project.
4. The Japanese experts shall provide the necessary technical guidance and advice to the Indonesian counterpart personnel on matters pertaining to the implementation of the Project.
5. For the effective and successful implementation of the Project, a Joint Committee will be established. The function and composition of which is referred to in Annex VI.

#### IX. CLAIMS AGAINST JAPANESE EXPERTS

The Government of the Republic of Indonesia undertakes to bear claims, if any arise, against the Japanese experts engaged in the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official duties in the Republic of Indonesia except for those arising from willful misconduct or gross negligence on the part of the Japanese experts.

#### X. MUTUAL CONSULTATION

There will be mutual consultation between the two Governments on any major

issues arising from, or in connection with this Attached Document.

#### XI. TERMS OF COOPERATION

The duration of the Project under this Attached document will be five (5) years from December 1, 1992.

## MASTER PLAN

## 1. Objectives of the Project

The Project will be carried out in Bali and Lombok Islands, Indonesia, for the purpose of collecting useful data, establishing technology to recover mangrove forests, and setting up of technical and managerial methods for the Sustainable Mangrove Management System in the recovered areas, which will contribute to the promotion of re-forestation and the sustainable development of the forests in the tropics; by the surrounding communities and the private sector.

## 2. Activities of the Project

To attain the above-mentioned objectives, the following cooperation activities will be implemented:

- (1) Selection of tree species for mangrove plantation
- (2) Development of silviculture technique
- (3) Cost estimation for mangrove plantation
- (4) Study on effects of mangrove forest on surrounding environment
- (5) Study on conservation management of flora and fauna in the mangrove ecosystem in the Project sites.
- (6) Pests and disease control techniques
- (7) Study on the social and economic benefits for forestry and fisheries in the mangrove forests and surrounding areas
- (8) Preparation of a mangrove forest management model
- (9) Development of utilization techniques for mangrove forest products
- (10) Other activities:
  - (a) construction of roads;
  - (b) establishment of nursery; and
  - (c) construction of office, storehouse and others

JAPANESE EXPERTS

1. Team Leader
2. Liaison Officer
3. Experts in the fields of:
  - (1) nursery;
  - (2) silviculture;
  - (3) ecosystem; and
  - (4) forest management.

- Note:
1. The Team Leader may serve concurrently as an expert in one of the fields mentioned above.
  2. One expert may cover another field mentioned above.
  3. Short-term experts will be dispatched when they are necessary for the smooth implementation of the Project.

LIST OF EQUIPMENT

1. Equipment, machinery and their spare parts for:
  - (1) nursery;
  - (2) silviculture;
  - (3) pests & disease control;
  - (4) other experiments & investigation.
2. Vehicles, boats, and their spare parts.
3. Other necessary equipment, machinery, materials and their spare parts mutually agreed upon.



LIST OF INDONESIAN COUNTERPART AND ADMINISTRATIVE PERSONNEL.

1. Project Director : the Director of Reforestation and Regreening
2. Coordinator : Head of Soil Conservation and Land Rehabilitation Centre in  
Region VII Denpasar
3. Field Managers : 1. Head of Soil Conservation and Land Rehabilitation Sub Centre  
in Bali  
2. Head of Soil Conservation and Land Rehabilitation Sub Centre  
in Dodokan Moyosari West Nusa Tenggara
4. Counterpart personnel in the fields of:
  - (1) nursery;
  - (2) silviculture;
  - (3) ecosystem; and
  - (4) forest management.
5. Administrative personnel:
  - (1) clerical and service employees;
  - (2) drivers and laborers; and
  - (3) other necessary supporting staff.

## LIST OF LAND, BUILDINGS AND FACILITIES

1. Land for;
  - (1) nursery;
  - (2) trial plantation and demonstration forest;
  - (3) project office and related facilities; and
  - (4) roads
2. Building and facilities:
  - (1) project office;
  - (2) laboratories;
  - (3) sheds for machinery and equipment;
  - (4) storehouse for forestry materials;
  - (5) workshop and garage;
  - (6) accommodation for the Japanese experts and Indonesian counterparts; and
  - (7) others.
3. Natural mangrove forests

## THE JOINT COMMITTEE

## 1. Functions

The Joint Committee will meet at least once a year and whenever it is required, and work:

- (1) to formulate the Annual Work Plan of the Project in line with the Tentative Schedule of Implementation formulated under the framework of this Record of Discussions;
- (2) to review the overall progress of the Project as well as the achievements of the above-mentioned Annual Work Plan; and
- (3) to review and exchange views on major issues arising from or in connection with the Project.

## 2. Composition

(1) Chairman: Director General of Reforestation and Land Rehabilitation (RLR), Ministry of Forestry, the Government of the Republic of Indonesia.

(2) Members:

(a) Indonesian Side:

- 1) Secretary of Directorate General of RLR.
- 2) Director of Reforestation and Regreening.
- 3) Director of Soil Conservation.
- 4) Director of Planning Bureau.
- 5) Director of Foreign Cooperation and Investment Bureau.
- 6) Director of Forestry Research and Development.
- 7) Representative of BAPPENAS.
- 8) Representative of SEKKAB
- 9) Head of Regional Forestry Office Bali Province.
- 10) Head of Regional Forestry Office NTB Province.

(b) Japanese Side:

- 1) Team Leader;
- 2) Liaison Officer;
- 3) Expert(s) appointed by the Team Leader;
- 4) Resident Representative of Indonesia office, JICA; and
- 5) Personnel concerned to be dispatched by JICA, if necessary.

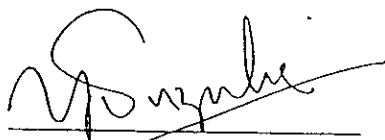
Note: Official(s) of the Embassy of Japan and the Individual Japanese Expert(s) assigned to Ministry of Forestry as adviser(s) may attend the Joint Committee as observer(s).

TENTATIVE SCHEDULE OF IMPLEMENTATION  
OF  
THE DEVELOPMENT OF SUSTAINABLE MANGROVE MANAGEMENT PROJECT  
IN  
THE REPUBLIC OF INDONESIA

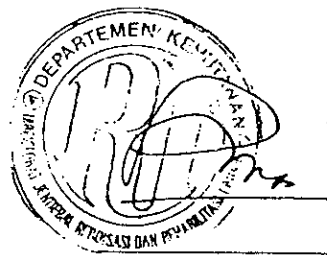
The Japanese Implementation Survey Team and the Indonesian authorities concerned have jointly formulated the Tentative Schedule of Implementation of the Project as attached hereto.

These have been formulated in connection with the Attached Document of the Record of Discussions signed between the Japanese Implementation Survey Team and the Indonesian authorities concerned with the Project on the condition that the necessary budget will be allocated for implementation of the Project by both sides, and that the schedule is subject to change within the framework of the Record of Discussions when the necessity arises in the course of the Project's implementation.

Jakarta, November 4, 1992



Yasuyuki Suzuki  
Leader,  
Implementation Survey Team,  
Japan International  
Cooperation Agency, Japan



Armana Darsidi  
Director General of Reforestation  
and Land Rehabilitation,  
Ministry of Forestry,  
The Republic of Indonesia

TENTATIVE SCHEDULE OF IMPLEMENTATION OF THE  
DEVELOPMENT OF SUSTAINABLE MANGROVE MANAGEMENT PROJECT

| ITEMS   | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |
|---|------|------|------|------|------|------|
| I. PROJECT ACTIVITIES   |      |      |      |      |      |      |
| 1. Selection of tree species for mangrove plantation  |      |      |      |      |      |      |
| 2. Development of silviculture technique  |      |      |      |      |      |      |
| 3. Cost estimation for mangrove plantation  |      |      |      |      |      |      |
| 4. Study on effects of mangrove forest on surrounding environment   |      |      |      |      |      |      |
| 5. Study on conservation management of flora and fauna in the mangrove ecosystem in the Project sites                 |      |      |      |      |      |      |
| 6. Pest and disease control techniques  |      |      |      |      |      |      |
| 7. Study on the social and economic benefits for forestry and fisheries in the mangrove forests and surrounding areas |      |      |      |      |      |      |
| 8. Preparation of a mangrove forest management model  |      |      |      |      |      |      |
| 9. Development of utilization techniques for mangrove forest product  |      |      |      |      |      |      |
| 10. Other activities constructions, etc.  |      |      |      |      |      |      |

TENTATIVE SCHEDULE OF IMPLEMENTATION OF THE  
DEVELOPMENT OF SUSTAINABLE MANGROVE MANAGEMENT PROJECT

| ITEMS  | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |
|--|------|------|------|------|------|------|
| II. JAPANESE CONTRIBUTION  |      |      |      |      |      |      |
| 1. Dispatch of Japanese Experts:   |      |      |      |      |      |      |
| (1) Long term experts  |      |      |      |      |      |      |
| a. Team Leader   |      |      |      |      |      |      |
| b. Liaison Officer   |      |      |      |      |      |      |
| c. Nursery   |      |      |      |      |      |      |
| d. Silviculture  |      |      |      |      |      |      |
| e. Ecosystem   |      |      |      |      |      |      |
| f. Forest management   |      |      |      |      |      |      |
| (2) Short term Experts:  |      |      |      |      |      |      |
| -They will be dispatched when necessary for the smooth implementation of the Project |      |      |      |      |      |      |
| 2. Training of Counterparts in Japan   |      |      |      |      |      |      |
| 3. Provision of Machinery and Equipment  |      |      |      |      |      |      |

TENTATIVE SCHEDULE OF IMPLEMENTATION OF THE  
DEVELOPMENT OF SUSTAINABLE MANGROVE MANAGEMENT PROJECT

| ITEMS                               | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |
|-------------------------------------|------|------|------|------|------|------|
| <b>III. INDONESIAN CONTRIBUTION</b> |      |      |      |      |      |      |
| 1. Project director                 |      |      |      |      |      |      |
| 2. Coordinator                      |      |      |      |      |      |      |
| 3. Field Managers                   |      |      |      |      |      |      |
| 4. Couterpart personnel :           |      |      |      |      |      |      |
| a. Nursery                          |      |      |      |      |      |      |
| b. Silviculture                     |      |      |      |      |      |      |
| c. Ecosystem                        |      |      |      |      |      |      |
| d. Forest management                |      |      |      |      |      |      |
| 5. Administrative personnel         |      |      |      |      |      |      |
| 6. Land , buildings and facilities  |      |      |      |      |      |      |

**THE MINUTES OF DISCUSSION  
BETWEEN  
THE JAPANESE EVALUATION TEAM  
AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF  
THE REPUBLIC OF INDONESIA  
ON THE DEVELOPMENT OF SUSTAINABLE MANGROVE MANAGEMENT  
PROJECT  
IN  
THE REPUBLIC OF INDONESIA**


The Japanese Evaluation Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA"), headed by Mr. Yoshimitsu NISHITANI, Management Inspector, Office of International Forestry Cooperation, Forestry Agency Ministry of Agriculture, Forestry and Fisheries, visited Indonesia from June 22 to July 4, 1997, for the purpose of reviewing and evaluating the performance of the Development of Sustainable Mangrove Management Project (hereinafter referred to as "the Project").

During its stay in Indonesia, the Team has carried out a field survey and held a series of discussions with the Indonesian authorities concerned.

As a result of the survey and discussion, the Team and the Indonesian authorities agreed to forward to their respective Governments a summary of the evaluation and recommendation which is referred to in the document attached hereto.

Jakarta, July 1, 1997.

  
\_\_\_\_\_  
Mr. Yoshimitsu NISHITANI  
Leader,  
Evaluation Team,  
Japan International Cooperation Agency

  
\_\_\_\_\_  
Ir. Hendarsun Suryanusiputra  
Director General of Reforestation and  
Land Rehabilitation,  
Ministry of Forestry



## 1. INTRODUCTION

- 1.1. Based upon the Record of Discussion (hereinafter referred to as "the R/D") signed on November 4, 1992, the Government of Japan and the Government of Republic of Indonesia have been implementing the Project since December 1, 1992. The project was scheduled to be implemented for five (5) years, and is to terminate on November 30, 1997. The activities of the project have been conducted based on the Tentative Schedule of Implementation (hereinafter referred to as "the TSI") signed on the same date of the R/D.
- 1.2. The project aims at collecting useful data establishing technology to recover mangrove forests, and setting up of technical and managerial methods for the Sustainable Mangrove Management System in the recovered areas, which will contribute to the promotion of re-afforestation and the sustainable development of the forest in the tropics, by the surrounding communities and the private sector.
- 1.3. The activities of the Project are outlined as follows:
  - (1) Selection of tree species for mangrove plantation
  - (2) Development of silviculture technique
  - (3) Cost estimation for mangrove plantation
  - (4) Study on effects of Mangrove forest on surrounding environment
  - (5) Study on conservation management of flora and fauna in mangrove ecosystem in the Project sites.
  - (6) Pest & disease Control techniques.
  - (7) Study on the social and economic benefits for forestry & fisheries in Mangrove Forests and surrounding areas.
  - (8) Preparation of mangrove Forest Management Project.
  - (9) Development of Utilization Techniques for Mangrove Forest Product.
  - (10) Other activities.

## **2. OBJECTIVE OF THE EVALUATION**

- 2.1. To execute a comprehensive evaluation of the part progress in contrast with the original master plan described in the R/D and the TSI.
- 2.2. To make recommendations and suggestions to the authorities of the two Governments concerned after the termination of the cooperation period of the Project.

## **3. ITEMS OF EVALUATION**

The evaluation items are as follows :

### **3.1. Input Related Items.**

- (1) Cooperation by the Government of Japan
  - (a) Dispatch of Experts
  - (b) Provision of Machinery and Equipment
  - (c) Training of Indonesian Personnel in Japan
  - (d) Other expenditures
- (2) Measures taken by the Government of Republic of Indonesia
  - (a) Provision of Land, Buildings and Facilities
  - (b) Appoinment of Counterparts and other Personnel
  - (c) Allocation of Budget

### **3.2. Activities Related Items**

- (1) Selection of tree species for mangrove plantation
- (2) Development of silviculture technique
- (3) Cost estimation for mangrove plantation
- (4) Study on effects of mangrove forest to surrounding environment
- (5) Study on conservation management of flora and fauna in mangrove ecosystem in the Project sites



- (6) Pest & disease Control techniques
- (7) Study on the social and economic benefits for forestry & fisheries in the Mangrove Forests and surrounding sites.
- (8) Preparation of mangrove Forest Management Model
- (9) Development of Utilization Techniques for Mangrove Forest Product
- (10) Other activities.

## SUMMARY OF EVALUATION

### 4.1. Accomplishments in Terms of the Inputs.

#### 4.1.1. Cooperation by the Government of Japan.

##### (1) Dispatch of Experts

###### (a) Long-term Expert.

In the R/D, six (6) experts were scheduled to be dispatched in the field of Team Leader, Liaison Officer, Nursery, Silviculture, Ecosystem and Forest Management. During the cooperation period, eleven (11) experts in total (as of June 1997) were dispatched as planned as appears in Annex I

###### (b) Short-term Expert

According to the R/D, Short-term experts were scheduled to be dispatched. During the cooperation period, a total of twenty three (23) short-term experts (as of June 1997) were dispatched as appears in Annex II

##### (2) Provision of Machinery and Equipment.

The machinery and equipment valued as 62 million Japanese Yen in total (as of June 1997) were provided. The machinery and equipment were well utilized, managed and maintained by the Project Team.

##### (3) Training of Indonesian Personnel in Japan.

During the cooperation period, a total of eighteen (18) Indonesian personnel (as of June 1997) related to the Project were trained in Japan

as appears in Annex III. After completing the training in Japan, all participants returned to their respective positions and disseminated the information and knowledge gained.

(4) Other expenditure.

For effective and smooth implementation of the Project, measures have been taken to provide part of local cost expenditures in accordance with the R/D. These measures include the construction of a forest road, a nursery and the other facilities such as an office building. In addition, expenditures for silviculture works and survey had been provided.

4.1.2. Measures taken by the Government of Republic of Indonesia.

(1) Provision of Land, Buildings and Facilities.

The land for the nursery, two study sites and (approximately 200 ha) and the project office have been provided for the Project.

(2) Appointment of Counterparts and Other Personnel.

Fifteen (15) counterparts in total in the field of Project Manager, Coordinator, Nursery, Silviculture, Ecosystem and Forest Management and were appointed by the Indonesian sides appears in Annex IV. It is noted that the number of full time counterpart were insufficient.

(3) Allocation of Budget.

Rp.1,815 million were spent (as of March 1997) on workers wages, forestry road maintenance and other running cost for the Project.

4.2. Accomplishment in Terms of the Activities.

Observation on the sites was made and evaluation was implemented on ten project activities in the TSI. The output of evaluation was shown in Annex V. As a whole, the project has made good progress in the activities. 205 ha of plantation was accomplished and most of experiments and study matters were admitted "complete". However, some matters have been left "not enough" or "to be continued". The Follow-Up measures on the matters need to be conducted for further development.

## 5. THE DRAFT PLAN OF FOLLOW-UP COOPERATION

By reflecting the output of the evaluation and through discussion between the both sides, the necessity of the following plan was identified.

### 5.1. Duration:

From December 1, 1997 to November 30, 1999.

### 5.2. Dispatch of Experts:

Four (4) Long-term experts will be dispatched in the field of Team Leader, Liaison Officer, Silviculture and Forest Management. Short-term experts will be dispatched when they are needed for the smooth implementation of the Project.

### 5.3. Pending issues to be resolved:

- (1) Development of silviculture techniques
  - (a) Study on spacing density
  - (b) Study on survival rate
  - (c) Prevention of Scale-insect damage
- (2) Preparation of mangrove forest management model
  - (a) Further consideration of mangrove forest management model.
  - (b) Study on components of mangrove forest management

### 5.4. Necessary measures to be taken by the government of Indonesia:

- (1) To secure the area required for the Project program from the development plans in the neighbouring area.
- (2) To clarify the status of "the Mangrove Center"
- (3) To allocate appropriate number of counterparts.

## 6. FUTURE OF PROJECT

The Indonesian authorities requested further cooperation in training and extension for mangrove forest conservation and management.

The team explained that the requested matter may meet the technical cooperation scheme and advised that the request on this matter should be officially submitted to the Government of Japan.

## 7. OTHERS

The output of the projects will be produced in the forms as shown in Annex VI as proposed by the Project.

List of Japanese long-term experts

Annex-I

| Expert<br>Assessment<br>Term | 1992(H4) |                   | 1993(H5)                       |    | 1994(H6) |           | 1995(H7)                         |    | 1996(H8) |    | 1997(H9) |    |
|------------------------------|----------|-------------------|--------------------------------|----|----------|-----------|----------------------------------|----|----------|----|----------|----|
|                              | 4        | 10                | 4                              | 10 | 4        | 10        | 4                                | 10 | 4        | 10 | 4        | 10 |
| Long<br>Term                 |          |                   | Shoshi TANAKA (Leader)         |    |          |           | Oasamu SASAKI (Leader)           |    |          |    |          |    |
|                              |          |                   | 92/12/2 ~ 96/3/1               |    |          |           | 95/5/13 ~                        |    |          |    |          |    |
|                              |          |                   | Seishi MIURA (Nursery)         |    |          |           | Hideki HACHINOHE (Nursery)       |    |          |    |          |    |
|                              |          |                   | 92/12/2 ~ 94/12/1              |    |          |           | 94/12/2 ~ 97/12/1                |    |          |    |          |    |
|                              |          |                   | Ryuichi TERUI (Management)     |    |          |           |                                  |    |          |    |          |    |
|                              |          |                   | 92/12/2 ~ 96/12/1              |    |          |           |                                  |    |          |    |          |    |
| Assessment                   |          |                   | Syuehiro HAMADA (Silviculture) |    |          |           | Keisuke TANIGUCHI (Silviculture) |    |          |    |          |    |
|                              |          |                   | 92/12/2 ~ 94/12/1              |    |          |           | 94/11/2 ~ 97/12/1                |    |          |    |          |    |
|                              |          |                   | Sinji HAYASHI (Ecosystem)      |    |          |           | Shozo KITAMURA (Ecosystem)       |    |          |    |          |    |
| Expert                       |          |                   | 92/12/2 ~ 94/12/1              |    |          |           | 96/1/10 ~ 97/12/1                |    |          |    |          |    |
|                              |          |                   | Hideki HACHINOHE (Coordinator) |    |          |           | Mihoru MIYASAKA (Coordinator)    |    |          |    |          |    |
|                              |          | 92/12/2 ~ 95/3/29 |                                |    |          | 95/3/30 ~ |                                  |    |          |    |          |    |
|                              |          |                   |                                |    |          |           |                                  |    |          |    |          |    |

## List of Japanese short-term experts

|            | 1992(H4)  | 1993(H5)  | 1994(H6)   | 1995(H7)   | 1996(H8)   | 1997(H9)  |  |
|------------|---|---|--|--|--|---|--|
| Assessment | 4 10  | 4 10  | 4 10   | 4 10   | 4 10   | 4 10  |  |
| Short Term | Fumio ASAKA (Design of nursery)<br>1992/12/21-1993/2/3<br>---<br>Fumio ASAKA (Management of execution)<br>1993/2/24-3/22<br>--- | Takehisa NAKAMURA (Vegetation)<br>93/5/16-5/23<br>---<br>Katsuhiko OTA (Sociology)<br>93/5/16-5/26<br>---<br>Hajime NARIOKA (Environmental engineering)<br>93/5/16-5/23<br>---<br>Machiko MIHARA (Soil)<br>93/8/1-8/16<br>--- | Shozo NAKAMURA (Silviculture)<br>94/5/16-5/23<br>---<br>Shigeyuki BABA (Botanical taxonomy)<br>94/7/30-8/27<br>--- | Syozo KAWAI (Entomology/<br>Countermeasure against scale insect)<br>95/2/20-2/27<br>---<br>Siege TACHIKAWA (Entomology)<br>95/2/20-2/27<br>--- | Akihito TAKETANI (Entomology)<br>95/11/28-12/14<br>---<br>Shigezuki BABA (Botanical Taxonomy)<br>96/1/31-2/21<br>--- | Sukeharu TSURU (Forest Management)<br>96/8/6-9/3<br>---<br>Kazuhiko OGINO (Data Analysis)<br>96/12/22-97/1/11<br>---<br>Ryujichi TABUCHI (Ecosystem)<br>96/12/22-97/1/19<br>---<br>Kenichi OZAKI (Pest Control)<br>97/1/8-97/2/1<br>--- | Hiromitsu NIKAIIDO (Forest Management)<br>97/3/2-5/30<br>--- |
| Expert     | ---   | ---   | ---  | ---  | ---  | ---   |  |
| Assessment | 4 10  | 4 10  | 4 10   | 4 10   | 4 10   | 4 10  |  |



## List of trainee of Indonesian personnel

Annex-III

(Unit Rp. (thousand))

| Fiscal year/<br>Month | 1992(H4年度)<br>12                                       | 1993(H5年度)<br>4 10   | 1994(H6年度)<br>4 10  | 1995(H7年度)<br>4 10  | 1996(H8年度)<br>4 10   | 1997(H9年度)<br>4 12                                   |
|-----------------------|--|--|---|---|--|--|
| C/P<br>Training       | Nasori<br>S.Djalalaksa<br>3/8-4/3<br>(Semi high class) | Esti W. Saraswati<br>6/24-8/15 (Nursery)                         | I Gde Arya Lathan<br>6/26-7/10 (Semi High<br>class, )       | H. Mursidin<br>9/6-9/21 (Semi High<br>Class/Policy of forestry) | Soedjadi Martodiwirjo<br>96/6/22-7/6 (Semi high<br>class)  | Hermani Apipudin<br>96/7/ -7/ (Semi high<br>class)   |
|                       | I Gusli Made Widatra<br>3/8-4/3 (Silviculture)         | Abdul Razak<br>6/24-8/15 (Silviculture)                          | Bambang Soepjanto<br>6/26-8/13 (Policy of<br>forestry)      | Amalyos Chalago<br>9/6-11/4 )                                   | Kristanto<br>96/6/22-7/6 (Semi high<br>class)              | Bambang Mardiono<br>96/7/ -7/ (Semi high<br>class)   |
|                       | .....  | .....  | .....   | Adi Triswanto<br>9/6-11/4 (Silviculture)                        | Harjoko Siswo Prasetyo<br>96/6/22-7/6 (Semi high<br>class) | Suhartadi<br>96/7/ -7/ (Semi high<br>class)          |
|                       | .....  | Suhardi W.<br>Wangsadidjaja<br>6/24-8/15 (Policy of<br>Forestry) | M. Atwan Attendi Baso<br>6/26-8/13 (Forestry<br>management) | Yusuf Komar<br>9/6-11/4 (Nursery)                               | Endro Sublandono<br>96/9/12-11/26<br>(Silviculture)        | Oliva Suko<br>97/11/ -12/ (Nursery)                  |
|                       | .....  | .....  | Topi Sunauto<br>6/26-8/13 (Nursery)                         | Nani Rukminih<br>9/6-11/4 (Policy of<br>forestry)               | .....  | OKI Hadiyati<br>97/11/ -12/<br>(Forestry management) |

| File Id | Fiscal year             | Period of assignment (=Training period) |      |      |      |      |      |      |      |      |      |      |      | Training Acceptor | Remarks   |
|---------|-------------------------|---|------|------|------|------|------|------|------|------|------|------|------|-------------------|-----------|
|         |                         | 1992                                    | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |                   |           |
|         | Name of C/P             | 12                                      | 4    | 10   | 4    | 10   | 4    | 10   | 4    | 10   | 4    | 10   |      |                   |           |
|         | B:Esti W. Saraswati(Ms) | Dec                                     | June |      |      |      |      |      |      |      |      |      |      | 93                | ISME/TUA* |
|         | B:Yusuf Komar           |   | June |      |      |      |      |      |      |      |      |      |      | 95                | ISME/TUA  |
|         | B:Oliva Sukd(Ms.)       |   |      |      |      |      |      |      |      |      |      |      |      | 97                | ISME/TUA  |
|         | L:Toni Sunaito          | Dec                                     |      |      |      |      |      |      |      |      |      |      |      | 94                | ISME/TUA  |
|         | B:Abdul Razak           | Dec                                     |      |      |      |      |      |      |      |      |      |      |      | 93                | ISME/TUA  |
|         | B:Endro Sublandono      |   |      |      |      |      |      |      |      |      |      |      |      | 96                | ISME/TUA  |
|         | L: Gusti Widatra        | Dec                                     |      |      |      |      |      |      |      |      |      |      |      | 92                | ISME/TUA  |
|         | L:Adi Triwanto          |   |      |      |      |      |      |      |      |      |      |      |      | 95                | ISME/TUA  |
|         | B:Abdul Mutalib S.      | Dec                                     |      |      |      |      |      |      |      |      |      |      |      | --                |           |
|         | B:Chalril Anwar         |   |      |      |      |      |      |      |      |      |      |      |      | --                |           |
|         | L:Amalyos Chalago       | Dec                                     |      |      |      |      |      |      |      |      |      |      |      | 95                | ISME/TUA  |
|         | B:Heri Subagio          | Dec                                     |      |      |      |      |      |      |      |      |      |      |      | --                |           |
|         | B:Nyoman                | March                                   | June |      |      |      |      |      |      |      |      |      |      | --                |           |
|         | B:I Made G.S.           |   | June |      |      |      |      |      |      |      |      |      |      | --                |           |
|         | B:OKI Hadiyati (Ms.)    |   |      |      |      |      |      |      |      |      |      |      |      | 97                | ISME/TUA  |
|         | L:M. Atwan Attendi      | Dec                                     |      |      |      |      |      |      |      |      |      |      |      | 94                | ISME/TUA  |

Chart of assigned counterpart (Continue)

| File Id                   | Fiscal year  | Period of assignment (=Training period) |      |      |      |          |      |          | Training |    | Remarks                    |               |  |  |
|---------------------------|--|---|------|------|------|----------|------|----------|----------|----|----------------------------|---------------|--|--|
|                           |  | 1992                                    | 1993 | 1994 | 1995 | 1996     | 1997 | Acceptor |          |    |                            |               |  |  |
| JK:Soedjadi Martodilwirjo | Dec-----   | 12                                      | 4    | 10   | 4    | 10       | 4    | 10       | 4        | 10 | 96<br>ISME/Forestry Agency |               |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
| JK:                       |  |   |      |      |      |          |      |          |          |    | 92<br>ISME/TUA             |               |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
| Le ad er                  | B: Nasorl S. Djalaksana<br>B: Harjoko Siswo Prasetyo   | Dec-----                                |      |      |      | Feb----- |      |          |          |    | 96<br>ISME/Forestry Agency |               |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
| Co ord inator             | B: Esti W. Saraswati(Ms<br>L: Stimin   | Dec-----                                |      |      |      |          |      |          |          |    | 93<br>ISME/TUA             |               |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
| Oth ers                   | B: Bambang Soepjanto<br>L: Suhardi W.<br>Wangsadiljaja<br>L: Suhartaedi<br>B: Gde Arya Lailhan<br>B: Kristanto | Dec-----                                |      |      |      |          |      |          |          |    | 94<br>ISME/TUA             | Field manager |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
| Oth ers                   | L: H. Mursidin<br>L: Hermani Applundin<br>JK: Hoesodo Soedarisman<br>JK: Asep Suwara<br>JK: Nani Rukmin(Ms.)   | Dec-----                                |      |      |      | Feb----- |      |          |          |    | 95<br>ISME/Forestry Agency | Field manager |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
| Oth ers                   | L: H. Mursidin<br>L: Hermani Applundin<br>JK: Hoesodo Soedarisman<br>JK: Asep Suwara<br>JK: Nani Rukmin(Ms.)   | Dec-----                                |      |      |      | Feb----- |      |          |          |    | 96<br>ISME/Forestry Agency | Field manager |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
| Oth ers                   | L: H. Mursidin<br>L: Hermani Applundin<br>JK: Hoesodo Soedarisman<br>JK: Asep Suwara<br>JK: Nani Rukmin(Ms.)   | Dec-----                                |      |      |      | Feb----- |      |          |          |    | 97<br>ISME/Forestry Agency | Field manager |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
| Oth ers                   | L: H. Mursidin<br>L: Hermani Applundin<br>JK: Hoesodo Soedarisman<br>JK: Asep Suwara<br>JK: Nani Rukmin(Ms.)   | Dec-----                                |      |      |      | Feb----- |      |          |          |    | 95<br>ISME/TUA             | Field manager |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |
|                           |  |   |      |      |      |          |      |          |          |    |                            |               |  |  |

# Current situation and result estimation of study items

Jul 01, 1997

Annex V

| ACTIVITIES<br>KEGIATAN   | MATTERS FOR EXPERIMENT & STUDY<br>MASALAH - MASALAH YANG DI UJI COBA<br>DAN DIPELAJARI   | PRIORITY<br>PRIORITAS | BALI | NTB | Data Collect-<br>ion<br>(May, 1997) | Data<br>analysis<br>(May, 1997) | Result<br>(Nov, 1997) |  |
|--|--|-----------------------|------|-----|-------------------------------------|---------------------------------|-----------------------|--|
| <p>1. Selection of tree species for mangrove plantation<br/>Pemilihan species tumbuhan untuk penanaman Bakau<br/>マングローブ造林樹種の選定</p> | → N 01 Study on growth process of seedlings<br>Mempelajari proses pertumbuhan bibit<br>苗木の成長比較   | A                     | ☆    | ☆   | Complete                            | Complete                        | Complete              |  |
|  | → S 01 Study on growth & survival rates of seedling in different environmental condition<br>Mempelajari pertumbuhan dan rata-rata kemampuan hidup bibit pada berbagai kondisi lingkungan<br>立地環境別植栽木成長比較 | A                     | ☆    | ☆   | Complete                            | Complete                        | Complete              |  |
|  | → N 01 Study on growth process of seedlings<br>Mempelajari proses pertumbuhan bibit<br>苗木の成長比較   | A                     | ☆    | ☆   | Complete                            | Complete                        | Complete              |  |
|  | → N 02 Examination on suitable potting soil<br>Menguji medium tanah yang cocok<br>適性土の検討   | C                     | ☆    | ☆   | Complete                            | Complete                        | Complete              |  |
|  | → N 03 Study on influence of submerge time to seedling<br>Mempelajari pengaruh lama perendaman pada bibit<br>育苗・植栽木の活着と成長に及ぶ冠水持続時間の影響  | B                     | ☆    | ☆   | Complete                            | Complete                        | Complete              |  |
|  | → N 04 Study on influence of shading<br>Mempelajari pengaruh naungan<br>育苗・植栽木の活着と成長に及ぶ日射量の影響  | A                     | ☆    | ☆   | Complete                            | Complete                        | Complete              |  |
|  | → N 05 Study on influence of salinity<br>Mempelajari pengaruh kadar garam<br>育苗・植栽木の活着と成長に及ぶ塩分濃度の影響  | B                     | ☆    | ☆   | Complete                            | Complete                        | Complete              |  |
|  | → N 06 Cancel  |                       |      |     |                                     |                                 |                       |  |
|  | → S 01 Study on growth & survival rate of seedlings in different environmental condition<br>Mempelajari pertumbuhan dan rata-rata kemampuan hidup bibit pada berbagai kondisi lingkungan<br>立地環境別植栽木成長比較 | A                     | ☆    | ☆   | Complete                            | Complete                        | Complete              |  |
|  | → S 02 Examination on planting method<br>Menguji metode penanaman<br>植栽方法試験  | A                     | ☆    | ☆   | Complete                            | Complete                        | Complete              |  |
|  | → S 03 Study on planting density<br>Mempelajari kerapatan penanaman<br>植栽密度試験  | A                     | ☆    | ☆   | Complete                            | Continue                        | Continue              |  |
|  | → S 04 Trial & study on planting at delta area<br>Uji coba dan mempelajari penanaman pada daerah delta<br>堆砂地・珊瑚地植栽試験  | A                     | ☆    | ☆   | Complete                            | Continue                        | Complete              |  |
|  | <p>2. Development of silviculture techniques<br/>Pengembangan teknik penanaman</p>   |                       |      |     |                                     |                                 |                       |  |

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|      |  |   |   |          |          |          |          |
|------|--|---|---|----------|----------|----------|----------|
| S 05 | Study & demonstration on planting each provenance seed<br>Kempelajari & mempertunjukkan biji dari sumber penanaman<br>產地別展示林   | A | ☆ | —        | —        | —        | —        |
| S 06 | Study and trial on planting of every seedling's form<br>Kempelajari dan menguji coba penanaman setiap bentuk bibit<br>苗木形態別植栽試験  | A | ☆ | Complete | Complete | Complete | Complete |
| S 07 | Trial and study silvo fishery<br>Kujucobakan dan mempelajari silvo fishery<br>シルボフィッシュリー試行   | B | ☆ | —        | —        | —        | —        |
| S 08 | Study on survival rate to determine number of seedling<br>for supplementary plantation<br>Kempelajari tingkat pertumbuhan untuk menentukan<br>jumlah bibit untuk penyulesaian<br>生存率調査 | C | ☆ | ☆        | Continue | Continue | Continue |
| S 09 | Study on water gate control<br>Kempelajari pengendalian pintu air<br>水門管理試験  | B | — | Complete | Complete | Complete | Complete |
| S 10 | Cancel!  |   |   |          |          |          |          |
| M 01 | Study on efficiency of stage nursing & planting work<br>Kempelajari langkah-langkah efisien untuk kegiatan<br>persemaian & penanaman<br>育苗・造林工程別の作業効率調査                                | A | ☆ | ☆        | Complete | Complete | Complete |
| K 02 | Analysis on nursery cost and afforestation<br>kengatalise biaya persemaian dan reboisasi<br>育苗・造林に関するコストの調査分析  | A | ☆ | ☆        | Complete | Complete | Complete |
| E 01 | Study on Vegetation<br>Kempelajari Vegetasi<br>植生調査  | B | ☆ | ☆        | Complete | Complete | Complete |
| E 02 | Study on conditions of natural & man-made forest<br>Kempelajari kondisi hutan alian dan hutan tanaman<br>自然環境条件調査  | B | ☆ | ☆        | Complete | Complete | Complete |
| E 03 | Cancel!  |   |   |          |          |          |          |
| E 04 | Study on litter production & stand growth<br>Kempelajari daun rontok dan pertumbuhannya<br>成長量・リター堆積調査   | B | ☆ | ☆        | Continue | Continue | Complete |
| E 05 | Study on process of regeneration in natural forest<br>Kempelajari proses regenerasi di hutan alami<br>天然林内更新過程調査   | A | ☆ | ☆        | Complete | Complete | Complete |
| E 06 | Study on phenology of selected species<br>Kempelajari fenology species - species pilihan<br>樹種別種子別成熟過程調査   | A | ☆ | ☆        | Complete | Complete | Complete |
| E 07 | Study on seed production<br>Kempelajari Produksi biji<br>樹種別種子別生産量調査   | A | ☆ | ☆        | Complete | Complete | Complete |
| E 08 | Study on effects of mangrove<br>forest on surrounding<br>environment<br>Kempelajari efek-efek hutan<br>bakau terhadap lingkungan<br>di sekitarnya<br>マングローブ林の周辺環境へ及ぶ<br>効果の検討          |   |   |          |          |          |          |

|  |   |   |   |   |          |          |            |
|--|---|---|---|---|----------|----------|------------|
| <p>5. Study on conservation management of flora and fauna in mangrove ecosystem in the Project sites</p> <p>Kepelajari pengelolaan pelestarian flora &amp; fauna pada ecosystem hutan bakau</p> <p>プロジェクトサイトマングローブ生態系の動植物保全管理の検討</p>                                       | <p>→ E 08</p> <p>Study on fauna after reforestation site</p> <p>Kepelajari fauna pada tempat yang telah direboisasi</p> <p>動物相変遷調査</p>  | C | ☆ | ☆ | Continue | Continue | Complete   |
| <p>6. Pest &amp; disease Control techniques</p> <p> Teknik pengendalian hama &amp; penyakit</p> <p>病虫害防除技術の検討</p>  | <p>→ E 09</p> <p>Study on insects, diseases dan biological damages</p> <p>Kepelajari hama, penyakit, dan kerusakan biologis</p> <p>天然林・造林地の病虫害・生物害の調査</p> <p>Study on control of pest and diseases</p> <p>Kepelajari pengendalian hama dan penyakit</p> <p>天然林・造林地の病虫害・生物害の防除技術</p>   | C | ☆ | ☆ | Continue | Continue | Not enough |
| <p>7. Study on the social and economic benefits for forestry &amp; fisheries in the Mangrove Forests and surrounding areas</p> <p>Memelajari manfaat sosial Ekonomi untuk kepentingan kehutanan &amp; perikanan di hutan bakau dan sekitarnya</p> <p>林業・漁業への社会経済的便益の検討</p> | <p>→ M 05</p> <p>Analysis on socio economic elements regarding mangrove afforestation</p> <p>Kenganalisa unsur-unsur sosial ekonomi sehubungan dengan reboisasi hutan bakau</p> <p>マングローブ造林を巡る社会経済要素の分析調査</p>   | B | ☆ | ☆ | Continue | Continue | Not enough |
| <p>8. Preparation of mangrove Forest Management Model</p> <p> Mempersiapkan contoh pengelolaan hutan bakau</p> <p>マングローブ林経営モデルの作成</p>  | <p>→ M 03</p> <p>Making documentation on Forest Condition</p> <p>Membuat dokumentasi tentang kondisi hutan</p> <p>森林調査簿の作成</p> <p>→ M 04</p> <p>Preparation of Yield Tables</p> <p>Mempersiapkan tabel hasil pengamatan</p> <p>収獲予想表の作成</p> <p>→ S 11</p> <p>Cancel!!</p>   | A | ☆ | ☆ | Complete | Complete | Complete   |
| <p>9. Development of utilization Techniques for Mangrove Forest Product</p> <p>Pengembangan pemanfaatan teknis pembuatan hutan bakau</p> <p>マングローブ林生産物の利用技術の開発</p>   | <p>→ M 05</p> <p>Analysis on socio economic elements regarding mangrove afforestation</p> <p>Kenganalisa unsur-unsur sosial ekonomi sehubungan dengan reboisasi hutan bakau</p> <p>マングローブ造林を巡る社会経済要素の分析</p> <p>→ M 06</p> <p>Improvement of charcoal Making Techniques</p> <p>memperbaiki teknik pembuatan arang</p> <p>製炭利用技術の改善</p> <p>→ M 07</p> <p>Making manuals regarding mangrove afforestation</p> <p>Membuat buku pedoman untuk reboisasi hutan bakau</p> <p>マングローブ造林マニュアルの作成</p> <p>→ M 08</p> <p>Making picture book regarding mangrove species</p> <p>Membuat buku bergambar tentang spesies bakau</p> <p>マングローブ植物図鑑の作成</p> | B | ☆ | ☆ | Continue | Continue | Not enough |
| <p>10. Other activities</p> <p>Lain - lain</p> <p>その他</p>  | <p>→ M 05</p> <p>Analysis on socio economic elements regarding mangrove afforestation</p> <p>Kenganalisa unsur-unsur sosial ekonomi sehubungan dengan reboisasi hutan bakau</p> <p>マングローブ造林を巡る社会経済要素の分析</p> <p>→ M 06</p> <p>Improvement of charcoal Making Techniques</p> <p>memperbaiki teknik pembuatan arang</p> <p>製炭利用技術の改善</p> <p>→ M 07</p> <p>Making manuals regarding mangrove afforestation</p> <p>Membuat buku pedoman untuk reboisasi hutan bakau</p> <p>マングローブ造林マニュアルの作成</p> <p>→ M 08</p> <p>Making picture book regarding mangrove species</p> <p>Membuat buku bergambar tentang spesies bakau</p> <p>マングローブ植物図鑑の作成</p> | A | ☆ | ☆ | Complete | Complete | Complete   |

**Output of the Project :**

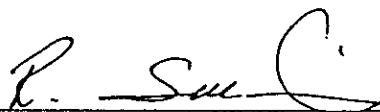
1. Data collection, based on project components :
  - a. Nursery
  - b. Silviculture
  - c. Forest Management
  - d. Ecosystem
  
2. Manual for Reforestation of Mangrove (1 report) consists of :
  - a. Nursery
  - b. Silviculture
  
3. Management Model for Mangrove (1 report)
  
4. Project Accomplishment Report.

**THE RECORD OF DISCUSSIONS**  
**BETWEEN**  
**THE JAPAN INTERNATIONAL COOPERATION AGENCY**  
**AND**  
**THE AUTHORITIES CONCERNED**  
**OF**  
**THE GOVERNMENT OF THE REPUBLIC OF INDONESIA**  
**ON**  
**THE FOLLOW-UP PROGRAMME**  
**FOR THE DEVELOPMENT OF SUSTAINABLE MANGROVE MANAGEMENT**  
**PROJECT**

With regard to the follow-up programme of the Japanese development cooperation for the Development of Sustainable Mangrove Project ( hereinafter referred to as "the Project") which is approved by BAPPENAS the document No. 5072/DVII/8/1997 dated August 29, 1997, Mr. SUWA Ryo, Resident Representative of the Japan International Cooperation Agency (hereinafter referred to as "JICA") in the Republic of Indonesia, held a series of discussions with the Indonesian authorities concerned.

As a result of the discussions, both sides agreed to recommend to their respective Governments, the implementation of the follow-up programme of the Japanese technical cooperation for the Project along the lines described in the document attached hereto.

Jakarta, September 26, 1997



Mr. SUWA Ryo  
Resident Representative  
Indonesia Office  
Japan International Cooperation Agency  
JAPAN



Ir. Hendarsun S. S.  
Director General  
Reforestation & Land Rehabilitation  
Ministry of Forestry  
INDONESIA



## **ATTACHED DOCUMENT**

### **I. PROJECT PURPOSE AND OUTPUT**

#### **1. Project Purpose**

To illustrate sustainable mangrove forest management models for contributing to rehabilitation and development of mangrove forest

#### **2. Activities and Output of the Project**

##### **(1) Development of silviculture techniques**

- a. Study on spacing density
- b. Study on survival rate
- c. Prevention of Scale-insect damage

##### **(2) Preparation of mangrove forest management model**

- a. Further consideration of mangrove forest management model
- b. Study on components of mangrove forest management

### **II. LIST OF JAPANESE EXPERTS**

#### **1. Long Term Experts :**

(1) Team Leader

(2) Liaison Officer

#### **(3) Experts in the Following Fields :**

- a. Silviculture
- b. Forest Management

#### **2. Short Term Experts :**

Short term experts will be dispatched when necessity arises.

### **III. LIST OF MACHINERY AND EQUIPMENT**

#### **1. Machinery, Equipment and Spare Pats for :**

- (1) Development of silviculture techniques
- (2) Preparation of mangrove forest management model

#### **2. Other Necessary Machinery, Equipment and Spare Parts for the Implementation of the Project**

#### **IV. LIST OF INDONESIAN COUNTERPART AND ADMINISTRATIVE PERSONNEL**

1. Project Manager / Coordinator
2. Field Project Manager
3. Full-time Counterparts in the Following Fields :
  - (1) Silviculture
  - (2) Forest Management
4. Administrative Personnel :
  - (1) Clerical and service employees
  - (2) Drivers and labourers
  - (3) Other necessary supporting staff

#### **V. TERM OF COOPERATION**

The term of the follow-up programme will be two (2) years from December 1, 1997 to November 30, 1999.

#### **VI. OTHERS**

All matters other than those mentioned above will be treated in the same manner as prescribed in the articles of the Record of Discussions signed in Jakarta on November 4, 1992.

**The Development of Sustainable Mangrove Management Project  
Tentative Schedule of Implementation During the Follow - up Scheme**

| Items  | 1997 | 1998 | 1999 |
|--|------|------|------|
| <b>1. Project Activities</b>                           |      |      |      |
| (1) Development of silviculture techniques             |      |      |      |
| a. Study on spacing density                            |      |      |      |
| b. Study on survival rate                              |      |      |      |
| c. Prevention of scale insect damage                   |      |      |      |
| (2) Preparation of mangrove forest management model    |      |      |      |
| a. Further consideration of mangrove forest management |      |      |      |
| b. Study on components of mangrove forest management   |      |      |      |
| <b>2. Japanese contribution</b>                        |      |      |      |
| (1) Long - term experts                                |      |      |      |
| a. Team Leader,  |      |      |      |
| b. Liaison Officer,                                    |      |      |      |
| c. Silviculture  |      |      |      |
| d. Forest Management                                   |      |      |      |
| (2) Short - term experts when necessary                |      |      |      |
| (3) Training of Counterparts in Japan                  |      |      |      |
| (4) Maintenance of equipment / facilities              |      |      |      |
| <b>3. Indonesian contribution</b>                      |      |      |      |
| (1) Project Director                                   |      |      |      |
| (2) Co-ordinator                                       |      |      |      |
| (3) Field Managers                                     |      |      |      |
| (4) Counterpart personnel                              |      |      |      |
| a. Silviculture  |      |      |      |
| b. Forest Management                                   |      |      |      |
| (5) Administrative personnel                           |      |      |      |
| (6) Land, buildings and facilities                     |      |      |      |

## Visitors list in 1994

| NO | DATE      | NAME  | ORGANIZATION   | MEMBER | NAT.       | OBJECT                               | REMARKS            |
|----|-----------|---|--|--------|------------|--------------------------------------|--------------------|
| 1  | 24-Dec-93 | Mr. Djarnaloeidin<br>Soeryohadikoeseomo             | Minister of Forestry                                 | 1      | Indonesian | Observation                          | Government Officer |
| 2  | 15-Jan-94 | Mr. Sumahadi  | Dir. Gen. of Forestry                                | 1      | Indonesian | Announcement of the project          | Government Officer |
| 3  | 31-Jan-94 | I Ketut Tulis                                       | Bank Desa Winangun                                   | 2      | Indonesian | Appointment to Training              | Personal           |
| 4  | 04-Feb-94 | Ketut Karta   | Jl. Pratama, Nusa Dua                                | 1      | Indonesian | Meet Mr. TANAKA                      | Personal           |
| 5  | 08-Feb-94 | Drs. Ependy MSc                                     | Kanwil Kalimantan                                    | 1      | Indonesian | Leave-taking                         | Government Officer |
| 6  | 11-Feb-94 | Mr. Gede Lathan                                     | New Officer of Kanwil                                | 1      | Indonesian | Introduction                         | Government Officer |
| 7  | 12-Feb-94 | Prof. Dr. BJ. Habibi, Taiwan<br>President and Group | Ministry of Research and Technology                  |        | Indonesian | Official Visiting                    | Government Officer |
| 8  | 20-Apr-94 | I Gst. Ngr. Bgs. Sugianta                           | OISCA  | 1      | Indonesian | Information                          | NGO                |
| 9  | 28-Mar-94 | Ludffe Hamori                                       | Institute Technology National,<br>Planology Dept.    | 1      | Indonesian | Survey                               | Student            |
| 10 | 29-Mar-94 | Nym. Sri Werestiani                                 | Udayana Univ.  | 1      | Indonesian | Survey                               | Student            |
| 11 | 27-Apr-94 | Astawa  | Paradise Bali Indah                                  | 1      | Indonesian | Mangrove Survey                      | Travel Agent       |
| 12 |           | HATAKEYAMA Toshi                                    | SENDAI MIYAGA, JAPAN                                 | 1      | Japanese   | Observation and TV shooting          |                    |
| 13 | 16-May-94 | Tom S. Benjamin                                     | Univ. of California - Barkley                        | 1      | USA        | Research on human use of wetland     | Student            |
| 14 | 30-May-94 | Budi Pitoyo   | Inspectorate General Forestry<br>Department, Jakarta | 3      | Indonesian | Field Observation                    | Government Officer |
| 15 | 04-Jun-94 | Dasminto  | Staff of Ministry of Environment                     | 3      | Indonesian | Observation                          | Government Officer |
| 16 | 12-Jun-94 | Malaysian Minister and group                        | Malaysia   |        | Malaysian  | Visiting                             | Government Officer |
| 17 | 15-Jun-94 | Siti Subekti  | RRL Jakarta  | 1      | Indonesian | Checking on equipment of the project | Government Officer |
| 18 | 16-Jun-94 | I Gusti Putu Arnawa                                 | Bappeda Bali   | 1      | Indonesian | Observation                          | Government Officer |
| 19 | 19-Jun-94 | Mr. Hartoyo   | Secretary General of Libang,<br>Bogor                | 1      | Indonesian | Observation                          | Government Officer |
| 20 | 23-Jun-94 | Ir. Heru Dwi Riyanto                                | Reforestation Technology<br>Agency, Palembang (BTR)  | 1      | Indonesian | Comparative Study                    | Government Officer |

| NO | DATE      | NAME                      | ORGANIZATION                                     | MEMBER | NAT.       | OBJECT                          | REMARKS            |
|----|-----------|---------------------------|--|--------|------------|---------------------------------|--------------------|
| 21 | 27-Jun-94 | R. Suwa                   | JICA Indonesia Office                            | 1      | Japanese   | Observation                     |                    |
| 22 | 30-Jun-94 | Ir. Marolop Sinaga        | Head of Research Agency, Kupang, NTT             | 3      | Indonesian | Observation                     | Government Officer |
| 23 | 13-Jul-94 | Mr. Padmo Wiyoso          | Forest Protection and Nature Conservation (PHPA) | 23     | Indonesian | Field Study                     | Government Officer |
| 24 | 14-Jul-94 | Yohanes Arief Nugroho     |  | 1      | Indonesian | Study on paper work of mangrove | NGO                |
| 25 | 25-Jul-94 | Soegeng Widodo            | Kanwili Kehutanan Sumatera Utara                 | 6      | Indonesian | Study Tour                      | Government Officer |
| 26 | 29-Jul-94 | Pranono DS                | BRLKTI IX, Sulawesi Utara                        | 4      | Indonesian | Study Tour                      | Government Officer |
| 27 | 10-Aug-94 | UENO, Sadatome            | JODC Expert                                      | 2      | Japanese   | Official Trip                   |                    |
| 28 | 21-Aug-94 | MAKATO INOUE              | Univ. Yokyo                                      | 3      | Japanese   | Visiting                        |                    |
| 29 | 22-Aug-94 | Hiroshi Suzuki and family | Kagoshima Univ.                                  |        | Japanese   | Visiting                        |                    |
| 30 | 23-Aug-94 | Shizu Watanabe            |  | 3      | Japanese   | Research of mangrove            |                    |
| 31 | 24-Aug-94 | OIWA TAKAO                | NAGOYA MINATO KOUEI                              | 4      | Japanese   | Research of mangrove            |                    |
| 32 | 29-Aug-94 | Irwan Kusnadi             | Diponegor Univ.                                  | 2      | Indonesian | Survey                          | Student            |
| 33 | 07-Sep-94 | Koji Sakashita            | Miyazaki Junior Chamber                          | 16     | Japanese   | Observation                     |                    |
| 34 | 09-Sep-94 | Ken-ichi Ishida, Ph.D.    | Tokyo Univ.                                      | 1      | Japanese   | Observation                     | Student            |
| 35 | 21-Sep-94 | Koichi Yamasaki           |  | 2      | Japanese   | Visiting                        |                    |
| 36 | 23-Sep-94 | NASHIHARA TSUYOSHI        | Seminar for Intensive Science Information        | 23     | Japanese   | Observation                     |                    |
| 37 | 26-Sep-94 | Prof. H. DEGUCHI          | Hiroshima Univ.                                  | 24     | Japanese   | Observation                     | Student            |
| 38 | 11-Oct-94 | Sidhi Turker              | Sinode Office of Protestan Church in Bali        | 1      | Indonesian | To get Information              |                    |
| 39 | 11-Oct-94 | KITAZAWA                  | Japan Overseas Volunteer Cooperation (JOVCV)     | 4      | Japanese   | Observation                     |                    |
| 40 | 12-Oct-94 | Nakagoshi, Nobukazu       | JICA CHUGOKU BRANCH OFFICE                       | 2      | Japanese   | Observation                     |                    |
| 41 | 20-Oct-94 | Poerwadi                  | Sec. Gen. of PHPA                                | 1      | Indonesian | Observation                     | Government Officer |
| 42 | 06-Nov-94 | N. HAYASHI                | TOKYO Univ.                                      | 2      | Japanese   | Observation                     |                    |
| 43 | 07-Nov-94 | Soenaryo                  | Head of Forestry Service, Jakarta                | 4      | Indonesian | Observation                     |                    |
| 44 | 09-Nov-94 | Takao SAITO               | IWATE RYOKUYUKAI                                 | 23     | Japanese   | Observation                     |                    |
| 45 | 09-Nov-94 | Ferry                     | Brawijaya Univ.                                  | 37     | Indonesian | Observation                     | Students           |

| NO | DATE      | NAME                  | ORGANIZATION                                    | MEMBER | NAT.       | OBJECT            | REMARKS  |
|----|-----------|-----------------------|---|--------|------------|-------------------|----------|
| 46 | 11-Nov-94 | T. Rivanda Ansori     | Agriculture Faculty of Sumatra Utara Univ.      | 2      | Indonesian | Observation       | Students |
| 47 | 16-Nov-94 | Dr. John Bunt & Ellie | Univ. of NSW and Private Consultant on Mangrove | 1      | Australian | Observation       |          |
| 48 | 22-Nov-94 | Dr. Ir. Setyono       | Agriculture Institute, Yogyakarta               | 4      | Indonesian | Study on mangrove | Students |
| 49 | 29-Nov-94 | Ms. Manson Mookpradit | Royal Dev't Project Board of H.M. The King      | 1      | Thailand   | Study Tour        |          |
| 50 | 08-Dec-94 | Prof Dr. D. Post      | Univ. of Gronmijn                               | 1      | Dutch      | Observation       |          |
| 51 | 08-Dec-94 | Dr. Wartana           | Chulalongkar Univ.                              | 5      | Thailand   | Observation       |          |
| 52 | 08-Dec-94 | Dr. Alberto Concha    | Valle univ.                                     | 2      | Colombia   | Observation       |          |
| 53 | 21-Dec-94 | K. Fushimi            | JAFTA   | 3      | Japanese   | Observation       |          |
| 54 | 23-Dec-94 | E. HIROSHIMA          |   | 8      | Japanese   | Observation       |          |
| 55 | 27-Dec-94 | Soedjadi Harlan       | Libang  | 3      | Indonesian | Observation       |          |
| 56 | 29-Dec-94 | MATSUJE               |   | 2      | Japanese   | Observation       |          |

### Visitors list in 1995

| NO | DATE      | NAME                | ORGANIZATION                                    | MEMBER | NAT.       | OBJECT                              | REMARKS            |
|----|-----------|---------------------|---|--------|------------|-------------------------------------|--------------------|
| 1  | 03-Jan-95 | Iwan s.             | AIRD LIFE International and YPAC                | 1      | Indonesian | Observation                         |                    |
| 2  | 04-Jan-95 | Suparman            | BRLKT VI, Surabaya                              | 1      | Indonesian | Survey to prepare on Study Tour     | Government Officer |
| 3  | 06-Jan-95 | Tjok Gde Rai Agung  | Consultant of CV. Narada Karya                  | 2      | Indonesian | Survey of location                  |                    |
| 4  | 09-Jan-95 | R. Husea            | Tokyo Marine Univ.                              | 1      | Japanese   | Survey                              |                    |
| 5  | 09-Jan-95 | Budi Santoso        | National Reseach Council (DRN)                  | 25     | Indonesian | Observation                         |                    |
| 6  | 13-Jan-95 | Iwan YR.            | Kanwil Bali Province                            | 1      | Indonesian | Observation                         |                    |
| 7  | 19-Jan-95 | Undang Darmatin     | PR Forestry Dpartment and Journalists           | 4      | Indonesian | Observation                         |                    |
| 8  | 24-Jan-95 | Noer Yanto          | Forestry and Soil Conservation (PKT), East Java | 14     | Indonesian | Study Tour                          | Government Officer |
| 9  | 27-Jan-95 | Ir. Abdul Muthalib  | Sub BKSDA Bali                                  | 7      | Indonesian | Securing on mangrove forest area    | Government Officer |
| 10 | 02-Feb-95 | Didik Permadi       | RRL, Forestry Department                        | 2      | Indonesian | Coastal Reclamation                 | Government Officer |
| 11 | 04-Feb-95 | Harjanto W. Sukotjo | KSDA Bali                                       | 62     | Indonesian | To assist the training participants | Government Officer |
| 12 | 07-Feb-95 | Mursidin            | Head of Kanwil NTB                              | 2      | Indonesian | Observation                         |                    |
| 13 | 08-Feb-95 | H. Hayashi          |   | 1      | Japanese   |                                     |                    |
| 14 | 25-Mar-95 | Denny Nugroho       | Diponegoro Univ.                                | 46     | Indonesian | Field Practice                      | Students           |
| 15 | 27-Mar-95 | Cristiann Strook    | University Giessen                              | 3      | German     | Observation                         | Students           |
| 16 | 10-Apr-95 | Ir Sudibyo Sudomo   | PKT Pasuruan                                    | 6      | Indonesian | Comparative Study                   | Government Officer |
| 17 | 19-Apr-95 | Ketut Sugama        | Litbang Perikanan                               | 3      | Indonesian | Discussion with head of Balai       | Government Officer |
| 18 | 26-Apr-95 | YAMAMOTO, Yuzo      | JICA Malaysia Office                            | 1      | Japanese   | Visiting                            |                    |
| 19 | 27-Apr-95 | Bontang             | Bontang Intl School                             |        | Indonesian | Observation                         |                    |
| 20 | 15-May-95 | Mr. Sato            | Director of PHPA                                | 3      | Indonesian | Visiting                            | Government Officer |
| 21 | 14-May-95 | Mr. ONO             | Umbrella Project Sudy Team                      | 8      | Japanese   | Visiting                            |                    |

| NO | DATE      | NAME                  | ORGANIZATION  | MEMBER | NAT.                        | OBJECT                                  | REMARKS            |
|----|-----------|-----------------------|---|--------|-----------------------------|---|--------------------|
| 22 | 22-May-95 | Vien Ngor Nam         | Bureau of Intl Cooperation & Investment, MOF        | 5      | Vietnamese                  | Study Tour                              | Government Officer |
| 23 | 24-May-95 | Andre de Sneedt       | FADO<br>(Flemish Organization on Rural Development) | 3      | Vietnamese                  | Study Tour                              |                    |
| 24 | 29-May-95 | Herman                | Sub BRLKT,<br>South Kalimantan                      | 1      | Indonesian                  | Comparative Study                       | Government Officer |
| 25 | 29-May-95 | Y. Fujimura           | Nihon Keizai Shinbun                                | 3      | Japanese                    | Observation                             |                    |
| 26 | 02-Jun-95 | T. NISHI / K          | Nissei green Foundation                             | 3      | Japanese                    | Observation                             |                    |
| 27 | 09-Jun-95 | Kusatome              | Saga Prefectural Government                         | 2      | Japanese                    | Observation                             |                    |
| 28 | 14-Jun-95 | K. HACHIIYA           | JAFIA   | 3      | Japanese                    |   |                    |
| 29 | 15-Jun-95 | Robert Cordover       | Team Leader Marine Resource                         | 33     | New Zealand<br>(Indonesian) | Workshop on sustainable marine resource |                    |
| 30 | 20-Jun-95 | G. SUGIURA            | Japan Charcoal Association                          | 5      | Japanese                    | Observation                             |                    |
| 31 | 23-Jun-95 | Armando A. de la Cruz | HEDS Project, Jakarta                               | 1      | Indonesia                   | Observation                             |                    |
| 32 | 07-Jul-95 | Hasnul Basri          | Perhutani Surabaya                                  | 28     | Indonesia                   | Comparative Study                       | Government Officer |
| 33 | 19-Jul-95 | Kiyoshi Koji          | Kansai Electric Corp.                               | 8      | Japanese                    | Observation                             |                    |
| 34 | 23-Jul-95 | I Gutu Pr. Wijaya     | BRLKT VII Bali                                      |        | Indonesian                  | Preparation for Training                | Government Officer |
| 35 | 04-Aug-95 | Ir. Sundoro, MS       | Agriculture Institute, Yogyakarta                   | 4      | Indonesian                  | Study Tour                              | Instructor         |
| 36 | 07-Aug-95 | Lanris Sitompul       | BRLKT X   | 16     | Indonesian                  | Comparative Study                       | Government Officer |
| 37 | 23-Aug-95 | O. Hartiyadi          | Agriculture Institute, Yogyakarta                   | 16     | Indonesian                  | Study Tour                              | Students           |
| 38 | 28-Aug-95 | Emiko Deki            | NARA Prefectural Government                         | 31     | Japanese                    | Study Tour                              |                    |
| 39 | 08-Sep-95 | AIKO OKAMOTO          | Tokyo Agriculture Univ.                             | 2      | Japanese                    | Observation                             | Students           |
| 40 | 12-Sep-95 | Hendarsun Surya SP    | Dir. Gen. RRL                                       | 2      | Indonesian                  | Observation                             | Government Officer |
| 41 | 13-Sep-95 | Jim Barber            |   | 1      | Japanese                    | Observation                             | Translator         |
| 42 | 14-Sep-95 | Mrs. Sundri           | Bappenas  | 1      | Indonesian                  | Visiting                                | Government Officer |
| 43 | 25-Sep-95 | Ali Alkatiri          | BPPT  | 8      | Indonesian                  | Data Oriented                           | Government Officer |
| 44 | 02-Oct-95 | Toshio SATO           | Hiroshima Univ.                                     | 2      | Japanese                    | Observation                             |                    |
| 45 | 02-Oct-95 | M. KIKUCHI            | AICAF   | 8      | Japanese                    | Study Tour                              |                    |
| 46 | 11-Oct-95 | Kunio Nehira          | Hiroshima Univ.                                     | 2      | Japanese                    | Observation                             |                    |
| 47 | 12-Oct-95 | Yuichi SATO           | Ministry of Forestry                                | 1      | Japanese                    | Official Trip                           | JICA Expert        |
| 48 | 25-Oct-95 | Sri Esti Intari       | Puslitbang Hutan & Konservasi Iam, Bogor            | 2      | Indonesian                  | Research on mangrove insect             | Government Officer |



| NO | DATE      | NAME                | ORGANIZATION  | MEMBER | NAT.       | OBJECT            | REMARKS            |
|----|-----------|---------------------|---|--------|------------|-------------------|--------------------|
| 49 | 14-Nov-95 | Mr. Makoto KAMEKAWA | Vice President of JICA  | 1      | Japanese   | Official Trip     | Advisory Team      |
| 50 | 15-Nov-95 | Supriandi Sabhanam  | IPB, Bogor  | 1      | Indonesian | Observation       | Lecturer           |
| 51 | 15-Nov-95 | Ir. Setiyo Yuarmo   | BRLKT III, Palembang and<br>BRLKT II, Jambi                   | 6      | Indonesian | Comparative Study | Government Officer |
| 52 | 22-Nov-95 | Imam Wibisono       | BRLKT IX, Ujung Pandang                                       | 19     | Indonesian | Comparative Study | Government Officer |
| 53 | 23-Nov-95 | Syed Alwi Nurdin    | Perdana Menteri,<br>Kuala Lumpur                              | 5      | Malaysian  | Official Trip     | Government Officer |
| 54 | 24-Nov-95 | SATUH KAZUHIRO      | Ryukyu Univ.  | 5      | Japanese   | Observation       |                    |
| 55 | 26-Nov-95 | Yoji Kikata         | Nagoya Univ.  |        |            | Observation       |                    |
| 56 | 30-Nov-95 | Kharul Sidig        | Forestry Service, Jakarta                                     | 2      | Japanese   | Comparative Study | Government Officer |
| 57 | 07-Dec-95 | Ochi Arata          | JICA Philippines  | 1      | Philippino | Study Tour        |                    |
| 58 | 08-Dec-95 | Anto Rimbawanto     | Forest Tree Improvement<br>Development Project,<br>Yogyakarta | 1      | Indonesian | Visiting          |                    |
| 59 | 12-Dec-95 | TAKAYA NAMBA        | Institute for International<br>Cooperation, JICA              | 1      | Japanese   | Study Tour        |                    |

## Visitors list in 1996

| NO | DATE      | NAME                   | ORGANIZATION   | MEMBER | NAT.       | OBJECT                            | REMARKS            |
|----|-----------|------------------------|--|--------|------------|-----------------------------------|--------------------|
| 1  | 04-Jan-96 | Enji Yudistira         | Directorate of BKPA - Dir. Gen. PHPA                             | 2      | Indonesian | Study Tour                        | Government Officer |
| 2  | 10-Jan-96 | Haris Mufasi           | Sub BRLKT X, Aceh and Pt. Inbutani IV                            | 5      | Indonesian | Comparative Study                 | Government Officer |
| 3  | 16-Jan-96 | KATO Haruhiko          | MOF  | 3      | Japanese   | Official Trip                     |                    |
| 4  | 18-Jan-96 | KAZUHIRO MATSUSHITA    | APO, MAF and AICAF   | 4      | Japanese   | Observation                       |                    |
| 5  | 18-Jan-96 | Drs. Mursiden          | Forestry Department  | 5      | Indonesian | Observation                       | Government Officer |
| 6  | 19-Jan-96 | Takeshi IWAMORI        | Forestry Agency  | 3      | Japanese   | Official Trip                     |                    |
| 7  | 29-Jan-96 | Tomoyuki Fujii         | FPFRI, Tsukuba Japan   | 1      | Japanese   | Official Visit                    |                    |
| 8  | 26-Feb-96 | Julius Hifipeuw        | ARMAN Foundation   | 2      | Indonesian | Comparative Study                 | NGO                |
| 9  | 27-Feb-96 | Prachab Champarai      | Eco-life   | 23     | Thailand   | Study Tour                        |                    |
| 10 | 02-Mar-96 | Toshio FUKUZAWA        | YAMANASHI Prefecture   | 12     | Japanese   | Observation                       |                    |
| 11 | 07-Mar-96 | Akira MATSUMOTO        | Tokyo Agriculture Univ.  | 8      | Japanese   | Observation                       |                    |
| 12 | 14-Mar-96 | Abdul Rachim           | Bogor Agriculture Univ., 1 expert Vietnam and 1 Counterpart IPPB | 3      | Indonesian | Discussion of mangrove            |                    |
| 13 | 18-Mar-96 | Junichi, HIROTA        | Iwate Univ.  | 10     | Japanese   | Study Tour                        | Students           |
| 14 | 26-Mar-96 | Katsuhiko Fujii        |  | 1      | Japanese   | Observation                       |                    |
| 15 | 02-Apr-96 | Isao Miyashita         |  | 3      | Japanese   |                                   |                    |
| 16 | 06-Apr-96 | Masaki SAKAI           | Ministry of Agriculture, Forestry and Fisheries, Japan           | 2      | Japanese   | Official Trip                     | Government Officer |
| 17 | 11-Apr-96 | Kompyang Rupa and Crew | RRI (Radio BALL)   | 6      | Indonesian | Interview on broadcasting package |                    |
| 18 | 22-Apr-96 | M. Inose               | FPFRI, Hokkaido  | 1      | Japanese   | Short Term Expert                 | 28/3 ~ 22/4        |
| 19 | 23-Apr-96 | Klaus Rielands         | University of Gottingen  | 1      | German     | Study/research Tourism            |                    |
| 20 | 23-May-96 | Yoshihiko Iwasaka      | NHK Japan  | 4      | Japanese   | News Collecting                   |                    |
| 21 | 24-May-96 | N. V. Dang             | Ministry of RFD  | 20     | Vietnamese | Official Trip                     | Vice Minister      |
| 22 | 25-May-96 | Kazuya MIURA           | BPK Kupang   | 1      | Japanese   | JICA Junior Expert                | NGO                |
| 23 | 10-Jun-96 | Siswanto               | OISCA, Bogor   | 3      | Indonesian | Field Survey                      |                    |
| 24 | 02-Jul-96 | S. MEGATA              | Ministry of Foreign Affairs                                      | 9      | Japanese   | Observation and hearing           | Government Officer |
| 25 | 04-Jul-96 | Alfred NAKATSUMA       | US AID   | 2      | American   | Observation                       |                    |
| 26 | 10-Jul-96 | SYAHRIR                | RRIL Jakarta   | 2      | Indonesian | Observation                       |                    |

| NO | DATE      | NAME                | ORGANIZATION   | MEMBER | NAT.       | OBJECT            | REMARKS               |
|----|-----------|---------------------|--|--------|------------|-------------------|-----------------------|
| 27 | 12-Jul-96 | S. Kabemura         | OITA Prefectural Forest<br>Cooperative Association                               | 11     | Japanese   | Study Tour        |                       |
| 28 | 16-Jul-96 | Noboru Yamaguchi    | Kyushu Univ.   | 2      | Japanese   | Observation       |                       |
| 29 | 18-Jun-96 | Sukotjo             | Dr. Gen. of PHPA   | 2      | Indonesian | Observation       |                       |
| 30 | 22-Jul-96 | Yasushi SASAKI      | Saitama Univ.  | 3      | Japanese   | Observation       |                       |
| 31 | 27-Jul-96 | M. Ganeko           | Okinawa Prefectural Government   | 17     | Japanese   | Study Tour        |                       |
| 32 | 30-Jul-96 | DPR Pusat Komisi IV | Indonesian Legislative Assembly  | 1      | Indonesian | Observation       |                       |
| 33 | 05-Aug-96 | T. WADA             | Tokyo Agriculture Univ.  | 2      | Japanese   | Observation       |                       |
| 34 | 06-Aug-96 | Dr. TSURU           | FFPRI, Japan   | 1      | Japanese   | Short-term Expert | 6 Aug. ~ 2 Sept. 1996 |
| 35 | 08-Aug-96 | M. Abdul Madjid     | BRLKT V  | 12     | Indonesian | Comparative Study | Government Officer    |
| 36 | 22-Aug-96 | TOMOKO MINAMI       | Osaka Prefecture Univ.   | 2      | Japanese   | Study Tour        | Student               |
| 37 | 23-Aug-96 | SHOJI KATACHI       | Miyazaki Junior Chamber  | 63     | Japanese   | Study Tour        |                       |
| 38 | 24-Aug-96 | HIROHITO HIGA       | National Federation of Forest<br>Owners Cooperative<br>Association<br>(ZEN MORI) | 1      | Japanese   | Observation       |                       |
| 39 | 31-Aug-96 | Sakue Matsumoto     | MAFF, Japan  | 5      | Japanese   | Official Trip     | Government Officer    |
| 40 | 04-Sep-96 | Haruzo Yamada       | Hyogo Prefecture Foundation  | 29     | Japanese   | Study Trip        |                       |
| 41 | 06-Sep-96 | Asmawan             | LSM  | 20     | Indonesian | Observation       | NGO                   |
| 42 | 22-Sep-96 | Machiko Muraoka     | Teikyo Heisei Univ.  | 3      | Japanese   | Observation       | Student               |
| 43 | 23-Sep-96 | BONNET Christophe   | La Rosandree, France   | 1      | Franchman  | Observation       |                       |
| 44 | 03-Oct-96 | MASAO WATANEBE      | AICAF  | 11     | Japanese   | Study Tour        |                       |
| 45 | 03-Oct-96 | Walter A. Bashanse  | Ministry of Economic Affairs,<br>Holland   | 4      | Dutch      | Observation       |                       |
| 46 | 06-Oct-96 | W. S. Fong          | PT. BTID   | 2      | Indonesian | Observation       |                       |
| 47 | 06-Nov-96 | Kuminobu KITAO      | SHIMANE Univ.  | 1      | Japanese   | Observation       |                       |
| 48 | 07-Nov-96 | Kinya NOGAMI        | Japan Sanfarming Association,<br>Obama Station                                   | 1      | Japanese   | Observation       |                       |
| 49 | 26-Nov-96 | Seizo Ueno          | Pacific Consultant International   | 1      | Japanese   | Observation       |                       |
| 50 | 13-Dec-96 | KAORU YAMANAKA      | International Tourism<br>Development Institute of Japan                          | 3      | Japanese   | Observation       |                       |
| 51 | 14-Dec-96 | Yoshioki HAYASHI    | FFPRI Japan  | 2      | Japanese   | Study Tour        |                       |

| NO | DATE      | NAME             | ORGANIZATION   | MEMBER | NAT.       | OBJECT                                      | REMARKS                        |
|----|-----------|------------------|--|--------|------------|---|--------------------------------|
| 52 | 17-Dec-96 | Slamet R. Gadas  | Balibang Kehutanan<br>Jakarta                                    | 4      | Indonesia  | Discussion with<br>Counterpart<br>Ecosystem | Government Officer             |
| 53 | 18-Dec-96 | Sutandi          | BRLKT IV   | 5      | Indonesian | Comparative Study                           | Government Officer             |
| 54 | 20-Dec-96 | Ir. Buharman     | Puslitbang Hasil Hutan dan<br>Sosial Ekonomi Kehutanan,<br>Bogor | 5      | Indonesian | Official Trip                               | Government Officer             |
| 55 | 22-Dec-96 | Dr. Ogino        | Ehime Univ.  | 2      | Japanese   | Short term Expert                           | 22 Dec. 1996 ~<br>11 Jan. 1997 |
| 56 | 25-Dec-96 | Djarnaloeidin S. | MOF Indonesia  | 20     | Indonesian | Official Visit                              | Minister                       |
| 57 | 26-Dec-96 | Sugito           | Perum Perhutani Unit I   | 40     | Indonesian | Study Tour                                  | Government Officer             |

Visitors list in 1997

| NO | DATE            | NAME             | ORGANIZATION                             | MEMBER | NAT.       | OBJECT  | REMARKS   |
|----|-----------------|------------------|--|--------|------------|---|---|
| 1  | 08-Jan-97       | Ozaki            | FFPRI Hokkaido, Japan                    | 1      | Japanese   | Short-term expert   | 8 Jan. ~ 1 Feb. 1997                                    |
| 2  | 16-Jan-97       | Sadao Ono        | Shizuoka Prefectural Government          | 2      | Japanese   | Study Tour  |   |
| 3  | 17-Jan-97       | Kaneko           | Forestry Agency                          | 4      | Japanese   | JICA Survey Team  | 7 ~ 14 Jan. 1997  |
| 4  | 25-Jan-97       | TAKEKI MANNABE   | JICA HDQ                                 | 3      | Japanese   | Official Trip   | Senior Vice President                                   |
| 5  | 27-Jan-97       | Tomohide AKIYAMA | JIFPRO                                   | 4      | Japanese   | Observation   | NGO   |
| 6  | 30-Jan-97       | Priyanto Putro   | Sub BRLKT Sepuluh, Lampung               | 13     | Indonesian | Comparative Study   | Government Officer                                      |
| 7  | 30-Jan-97       | Saka Wanabakti   | Guddep 339 - 340                         | 50     | Indonesian | Nursery Activity and Planting                             | NGO   |
| 8  | 31-Jan-97       | Shigeki Kida     | MAFF                                     | 4      | Japanese   | Official Trip   |   |
| 9  | 01-Feb-97       | IKENOUE Hiromu   | JICA HDQ                                 | 2      | Japanese   | Official Trip   |   |
| 10 | 02-Feb-97       | Nobusuke OHTA    | JICA HDQ                                 | 1      | Japanese   | Official Trip   | Director General of Agriculture Development Cooperation |
| 11 | 12-15 /Feb/1997 | T. Kawachi       | Intervice Co. & MOFA                     | 6      | Japanese   | Take Video for public relations                           |   |
| 12 | 12-Feb-97       | Hatori           | MOF Indonesia                            | 1      | Japanese   | Observation   | JICA Expert   |
| 13 | 17-Feb-97       | Bambang Mardiono | Foreign Cooperation Bureau, MOF, Jakarta | 1      | Indonesian | Discussing the possibility of the Phase II of the Project |   |
| 14 | 24-Feb-97       | Raja Andi        | BRLKT IX, South Sulawesi                 | 17     | Indonesian | Comparative Study   | Government Officer                                      |
| 15 | 26-Feb-97       | A. Iizuka        | MAFF and JICA Expert                     | 3      | Japanese   | Official Trip   | Government Officer                                      |
| 16 | 28-Feb-97       | Joko Siswadi     | BRLKT VI                                 | 5      | Indonesian | Official Trip   | Government Officer                                      |
| 17 | 28-Feb-97       | Nakano           | MITI, Japan                              | 1      | Japanese   | Official Trip   |   |
| 18 | 02-Mar-97       | Nikaido          | Chuo-Kaihatsu Co.                        | 1      | Japanese   | Short-term expert   | 2 Mar. ~ 27 May   |
| 19 | 03-Mar-97       | Suzuki           | MAFF                                     | 2      | Japanese   | Official Trip   | Consultant  |
| 20 | 04-Mar-97       | M. Yusuf         | Diponegoro Univ.                         | 69     | Indonesian | Study Tour  | Students  |
| 21 | 04-Mar-97       | NAKAMURA Shozo   | TOHOKU Research Center FFPRI             | 1      | Japanese   | Short Term Expert   | 4 Mar ~ 26 Mar.   |

| NO | DATE                   | NAME                        | ORGANIZATION                                 | MEMBER | NAT.       | OBJECT                           | REMARKS            |
|----|------------------------|-----------------------------|--|--------|------------|----------------------------------|--------------------|
| 22 | 06-Mar-97              | Sigit                       | TVRI & Kanwil                                | 4      | Indonesian | TVRI Broadcasting                |                    |
| 23 | 10-Mar-97              | Wulansari                   | Gadjah Mada Univ.                            | 3      | Indonesian | Observation                      | Students           |
| 24 | 13-15<br>/Mar/1997     | Drs. Benny                  | Multi Media U.T.                             | 6      | Indonesian | To take TV                       |                    |
| 25 | 24-Mar-97              | Dodo Santana Bsc. F.        | Sub BRLKT Batanghari Jambi                   | 5      | Indonesian | Comparative Study                | Government Officer |
| 26 | 27-Mar-97              | Francisco A.<br>ARLAI-ISAZA | Institute for marine and coastal<br>research | 7      | Columbian  | Field Observation                |                    |
| 27 | 29-Mar-97              | Hisataro HIORUUCHI          | JIRCAS                                       | 2      | Japanese   | Observation                      |                    |
| 28 | 17-Apr-97              |                             | Bali International School                    | 15     | Foriner    | Extra curricular lesson          | School Children    |
| 29 | 18-Apr-97              | Kazuhiiko Hayasi            | Japan Economic Forest Journal                | 10     | Japanese   | News Collection &<br>Observation | Mass Communication |
| 30 | 22-Apr-97              | Trooner Dang Khoi           | FADO Vietnam                                 | 2      | Vietnamese | Study Tour                       | NGO                |
| 31 | 30-Apr-97              | Katsuyuki Ohmi              | Bunakat Club (Former JICA<br>Expert)         | 10     | Japanese   | Observation                      |                    |
| 32 | 30-May-97<br>~3-May-97 | Dr. Shigeo Kobayashi        | CIFOR  | 1      | Japanese   | Research for Mangrove            | Researcher         |
| 33 | 03-May-97              | Mr. Bambang Soekartiko      | Director of CIFOR                            | 1      | Indonesian | Research for Mangrove            |                    |
| 34 | 09-May-97              | I.G.R. Tantra               | MOF  | 1      | Indonesian | Official Trip                    | Government Officer |
| 35 | 16-May-97              | Dannian Martin Ogburn       | NSW Fisheries (TNC)                          | 8      | Australian | Study Tour                       | NGO                |
| 36 | 09-Jun-97              | Mr. Nengah Wirawan          | Kehati Foundation                            | 7      | Indonesian | Study Tour                       | NGO                |
| 37 | 23-Jun~<br>01-Jul-97   | Mr. N. ISHITANI             | Forest Agency, Japan                         | 4      | Japanese   | JICA Evaluation Team             | Government Officer |
| 38 | 27-Jun-97              | Ir. Bangsa Ginting          | Regional Government, East Java               | 40     | Indonesian | Study Tour                       | Government Officer |
| 39 | 27-Jun-97              | H. Yoshida                  | Iwate Forestry Association                   | 5      | Japanese   | Observation                      |                    |
| 40 | 05-Jul-97              | Dr. Freezailah              | Executive Director of ITTO                   | 2      | Malaysian  | Observation                      | Government Officer |
| 41 | 10-Jul-97              | Mr. A. Ikaru                | ASAHI Shinbun                                | 5      | Japanese   | Observation                      | Government Officer |
| 42 | 10-Jul-97              | Mr. OKIMORI                 | KANSAI Environmental Institute               | 2      | Japanese   | Observation                      | Researcher         |
| 43 | 11-Jul-97              | Ir. Esti Wening S.          | PLP Hutan Bakau (Mangrove<br>Extension)      | 30     | Indonesian | Study Tour                       | Government Officer |
| 44 | 19-Jul-97              | Dr. FUJISAWA                | Forest Tree Breeding Center,<br>Japan        | 2      | Japanese   | Observation                      |                    |

| NO | DATE                 | NAME                   | ORGANIZATION   | MEMBER | NAT.       | OBJECT                               | REMARKS            |
|----|----------------------|------------------------|--|--------|------------|--------------------------------------|--------------------|
| 45 | 24-Jul-<br>25-Jul-97 | Mr. HATORI             | Expert in MOF  | 2      | Japanese   | Observation                          | JICA Expert        |
| 46 | 26-Jul-97            | Ms. KANZAKI            | Kyushu Forum on Asian Women                              | 3      | Japanese   | Observation                          | NGO                |
| 47 | 07-Aug-97            | Mr. YAMANAKA           | NARA Youth Int. Cooperation                              | 27     | Japanese   | Study Tour                           | NGO                |
| 48 | 07-Aug-97            | Dr. WARDHINI           | BAPPENAS   | 3      | Indonesian | Official Trip                        | Government Officer |
| 49 | 10-Aug-97            | Mr. SYAHRIH            | MOF  | 4      | Indonesian | Official Trip                        | Government Officer |
| 50 | 13-Aug-97            | Mr. NAKAMURA           | Ryukyu Univ.   | 1      | Japanese   | Study Tour                           | Student            |
| 51 | 15-Aug-97            | Dr. Erwin              | Univ. Indonesia  | 4      | Indonesian | Observation                          | Professor          |
| 52 | 15-Aug-97            | Dr. TSURU              | FFPRI KYUSHU, Japan                                      | 3      | Japanese   | Observation                          | Researcher         |
| 53 | 19-Aug-97            | Mr. M. Hoshino         |  | 2      | Japanese   | Observation                          |                    |
| 54 | 22-Aug-97            | Mr. DATE               | SHIZOUKA pref.   | 2      | Japanese   | Observation                          |                    |
| 55 | 22-Aug-97            | Mr. NUKIYAMA           | Jambi Agriculture proj.                                  | 4      | Japanese   | Observation                          | JICA Expert        |
| 56 | 27-Aug-97            | Dr. KITAYAMA           | TOKYO Agri. Ind. Univ.                                   | 1      | Japanese   | Observation                          | Professor          |
| 57 | 04-Sep-97            | Ir. Ayu Dewi Utari     | BRLKT V-Semarang-Central<br>Java                         | 10     | Indonesian | Comparative Study                    | Government Officer |
| 58 | 11-Sep-97            | MAOTANI Sakae          | Asia Univ.   | 2      | Japanese   | Observation                          |                    |
| 59 | 11-Sep-97            | Shigeyuki BABA         | Univ. of THG   | 1      | Japanese   | Observation                          |                    |
| 60 | 24-Sep-97            | H. Kurokura            | Tokyo Univ.  | 2      | Japanese   | Observation                          | JICA Expert        |
| 62 | 26-Sep-97            | T. Deguchi             | Hiroshima Univ.  | 27     | Japanese   | Study Tour                           | Student            |
| 64 | 13-Oct-97            | Toshiaki Kaneda        | ODA Case Study   | 8      | Japanese   | Study Tour                           |                    |
| 66 | 15-Oct-97            | Okto T. Julian         | UGM Jogjakarta   | 2      | Indonesian | Observation for paper<br>arrangement | Student            |
| 68 | 15-Oct-97            | Kazuo MIZUTA           | Saga Prefectural Office                                  | 12     | Japanese   | Observation                          |                    |
| 70 | 17-Oct-97            | Dr. I.G.M. Tantra      | MOF  | 1      | Indonesian | Observation                          |                    |
| 72 | 20-Oct-97            | Mr. Husodo Soedarisman | Director of Planning                                     | 1      | Indonesian | Observation                          |                    |
| 74 | 24-Oct-97            | Prof. S. Watanabe      | Tokyo Fishery University                                 | 3      | Japanese   | Observation                          |                    |
| 76 | 25-Oct-97            |                        | Pembentukan Kader Konservasi<br>dan Pecinta Alam di Bali | 120    | Indonesian | Planting activities                  |                    |
| 78 | 28-Oct-97            | Wataru Kikuzawa        | JOCV   | 2      | Japanese   | Learn about mangrove                 |                    |
| 80 | 10-Nov-97            | Chieri Kubota          | Chiba University   | 1      | Japanese   | Observation                          |                    |
| 82 | 15-Nov-97            | Mr/s.Kawakami          | Japanese Ambassador to<br>Indonesia                      | 4      | Japanese   | Observation                          |                    |

| NO | DATE      | NAME         | ORGANIZATION                                   | MEMBER | NAT.       | OBJECT      | REMARKS |
|----|-----------|--------------|--|--------|------------|-------------|---------|
| 84 | 18-Nov-97 | Kartini      | UGM & Udayana Univ.                            | 2      | Indonesian | Orientation |         |
| 86 | 18-Nov-97 | Tokuta Inoue | TYOTA Motor Corp. (Genesis Research Institute) | 2      | Japanese   | Observation |         |
| 87 | 21-Nov-97 | Hitoshi Muto | Tochigi Pref., Japan                           | 4      | Japanese   | Observation |         |



## Guests list in January - December 1998

| NO | DATE        | NAME                                       | ORGANIZATION   | MEMBER | NAT.                     | OBJECT   | REMARKS                        |
|----|-------------|--|--|--------|--------------------------|--|--------------------------------|
| 1  | 13-Jan-98   | Ni Made Rahmuni<br>Ir. Asep Suwama MSc     | Atmajaya University, Yogyakarta<br>Foreign Cooperation Bureau, DGRLR | 2<br>1 | Indonesian<br>Indonesian | Observation<br>Follow-up Scheme Discuss                | Students<br>Government Officer |
| 2  | 10-Feb-98   |  | Ministry of Forestry, Irian Jaya<br>Nissay Green Foundation          | 3      | Indonesian               | Comparative Study<br>Visiting Project Site (Mt. Batur) | Social figure, NGO             |
| 3  | 11-Feb-98   | Toshiki Nishi<br>Dra. Sulastri Anggorowati | Sudirman University, Purwokerto                                      | 30     | Indonesian               | Field Study  | Students                       |
| 4  | 18-Feb-98   | Ngadiyono                                  | BRLKT IX, Ujung Pandang  | 7      | Indonesian               | Comparative Study                                      | NGO, Farmer                    |
| 5  | 19-Feb-98   | Purnomo                                    | Sub BRLKT Lampung  | Team   | Indonesian               | Comparative Study                                      | NGO, Farmer                    |
| 6  | 20-Feb-98   |  | JICA   |        | Japanese                 | Monitoring   | JICA Advisory Team             |
| 7  | 23-Feb-98   | Ir. Rusdin Talla                           | Sub BRLKT South East Sulawesi  | 6      | Indonesian               | Comparative Study                                      | Government Officer             |
| 8  | 26-Feb-98   | Mr. Hendarsun S.P.                         | DGRLR, Jakarta   | 3      | Indonesian               | Observation  | Government Officer             |
|    |             | Mr. Siahri                                 |  |        |                          |  |                                |
|    |             | Mr. Asep Suwama                            |  |        |                          |  |                                |
| 9  | 27-Feb-98   | Dr. Isuhito Ohnuki                         | FPFRL, Tsukuba   | 1      | Japanese                 | Observation  |                                |
| 10 | 6-Mar-98    | Dr. Toga Silitonga                         | Investigation & Development (LITBANG)                                | 2      | Indonesian               | Observation  | Government Officer             |
| 11 | 9-Mar-98    | Ir. Yusi Wardianto                         | Agriculture Institute, Bogor   | 1      | Indonesian               | Collection Data  | Fisheries Faculty, Instructor  |
| 12 | 9-11 Mar 98 | Hiroyuki Hatori                            | Foreign Cooperation Bureau, Jakarta                                  | 2      | Japanese                 | Short term study on avifauna                           |                                |
| 13 | 10-Mar-98   | Yukimisu Tateishi                          | Peta Ocean Construction Co. Ltd                                      | 3      | Japanese                 | Discussion   | Contractor                     |
| 14 | 12-Mar-98   | Dr. Ir. Ila Widowati                       | Diponegoro University, Semarang                                      | 69     | Indonesian               | Field Study  | Fisheris and Marine Faculty    |
| 15 | 3-Apr-98    |  | Forestry Service, Jakarta  | 5      | Indonesian               | Work Visited   | Government Officer             |
| 16 | 6-Apr-98    | Mr. Terui                                  |  | 2      | Japanese                 | Observation  | Former Expert                  |
| 17 | 8-Apr-98    | Setiya Cahyono                             | Institute Technology of Surabaya                                     | 1      | Indonesian               | Data Collection  | Students                       |
| 18 | 21-Apr-98   | Ir. Joaquin da C. Freitas                  | Komodo National Park, NTT  | 5      | Indonesian               | Observation & Training                                 | NGO                            |
| 19 | 24-Apr-98   | Bambang Hartono                            | Work Training Centre, Kupang   | 1      | Indonesian               | Observation  | Government Officer             |
| 20 | 27-Apr-98   | Dody Arif Sagwono<br>Tsuji Takashi         | JICA<br>Embassy of Japan   | 2      | Japanese                 | Observation  | Professor                      |
|    |             | Mr. Asikin Sunarya                         | Head of Kanwil Bali  | 2      | Indonesian               | Observation  | Government Officer             |
|    |             | Mr. Tantra                                 | Minister Expert Staff  |        |                          |  |                                |
| 21 | 5-May-98    | Risuko Haijwara                            | JICA   | 2      | Japanese                 | Observation  |                                |
| 22 | 12-May-98   | Yasuhiko Nisawa                            | JIFPRO   | 3      | Japanese                 | Observation  |                                |
| 23 | 18-May-98   | John Carrel                                | BAPEDAL II   | 7      | Indonesian               | Comparative Study                                      | Government Officer             |
| 24 | 26-May-98   | Puru Tirta                                 | BPKP Bali  | 3      | Indonesian               | Checking building                                      | Government Officer             |
| 25 | 3-Jun-98    | Sudarmaji                                  | Jember University  | 1      | Indonesian               | Data Collection  | Student                        |
| 26 | 6-Jun-98    | Ir. H.M. Sanusi                            | BRLKT IX, Ujung Pandang  | 7      | Indonesian               | Observation  | Government Officer             |

|    |                |                         |                                   |      |            |                                |                          |
|----|----------------|-------------------------|-----------------------------------|------|------------|--------------------------------|--------------------------|
| 27 | 18-Jun-98      | Mr. Asikin Sumarya      | Head of Kanwil Bali               | 4    | Indonesian | Field Observation              | Government Officer       |
| 28 | 25-Jun-98      | Kartika Ningsih         | SMU 1 Saraswati, Denpasar         | 2    | Indonesian | Data Collection                | Students                 |
| 29 | 26-Jun-98      | Drh. Hiromitsu Moriyama | JICA                              | 1    | Japanese   | Observation                    | Government Officer       |
| 30 | 29-Jun-98      | Ir. Amir Lamaji         | PKT Service                       | 1    | Indonesian | Observation                    | Government Officer       |
|    |                | Santika                 | Boyscout SMU 2 Denpasar           | 10   | Indonesian | Field Visited                  | Students                 |
| 31 | 17-Jul-98      | Aranto                  | PAJ Tour & Travel                 | 1    | Indonesian | Observation                    | Entrepreneur             |
| 32 | 22-Jul-98      | Mitsuhiko Goto          | Sanyu Consultant                  | 5    | Japanese   | Observation                    | Consultant               |
|    |                | Nobuyoshi Nakajima      | JALDA                             |      |            |                                |                          |
|    |                | Yoshisuke Nakano        | Kyushu University                 |      |            |                                |                          |
|    |                | Nobumasa Hachio         | Kinki University                  |      |            |                                |                          |
|    |                | Takamitsu Kajisa        | Mie University                    |      |            |                                |                          |
| 33 | 22 - 25 Jul 98 |                         | Rama Tours & Travel               |      | Indonesian | Inspection and Coaching        | Mangrove Tourism         |
| 34 | 30-Jul-98      | Mr. Katsura             | Rama Tours & Travel               | 4    | Japanese   | Location Inspection            | Mangrove Tourism         |
|    |                |                         |                                   |      |            |                                |                          |
| 35 | 12-Aug-98      | Takashi Suzuki          | Expert on Aquaculture Management  | 1    | Japanese   | Discussion site visit          | Short-term Expert        |
| 36 | 20-Aug-98      | Agos Soekardi           | LITBANG                           | 1    | Indonesian | Data Collection                | Government Officer       |
| 37 | 21-Aug-98      | Y. Akioka               | JICA, Malaysia                    | 1    | Japanese   | Discussion site visit          |                          |
| 38 | 24-Aug-98      | Takashi Suzuki          | Expert on Aquaculture Management  | 1    | Japanese   | Discussion site visit          | Short-term Expert        |
| 39 | 25-Aug-98      | Dr. Toshiaka Nishijima  | Kochi University                  | 2    | Japanese   | Observation                    |                          |
|    |                | Makoto Tsumura          | Gondol Research Station of CIRFI  |      |            |                                |                          |
| 40 | 26-Aug-98      | Yusuf Komar             | Sub BRKKT Bali                    | 30   | Indonesian | Field Study                    | NGO                      |
| 41 | 28-Aug-98      | Gede Djika              |                                   | 30   | Indonesian | Field Study                    | NGO                      |
|    |                |                         |                                   |      |            |                                |                          |
| 42 | 4-Sep-98       | Yukihiko Yamada         | Himeji Dokkyo University          | 1    | Japanese   | Linguistic Research (Ihs Bali) | Researcher               |
| 43 | 10-Sep-98      | Noriyoshi Matsumoto     | Mainichi News Paper               | 2    | Japanese   | Observation                    |                          |
| 44 | 14-Sep-98      | Hideo Ishida            | Forestry Agency                   | 1    | Japanese   | Observation                    | Former Expert            |
| 45 | 16-Sep-98      | Hirohata Kigawa         | Keio University                   | 2    | Japanese   | Observation                    |                          |
| 46 | 17-Sep-98      |                         | Local Government (PEMDA)          | 42   | Indonesian | Field Observation              | NGO                      |
| 47 | 24-Sep-98      | Muslimin Nasution       | Ministry of Forestry, Jakarta     | team | Indonesian | Observation                    | Minister of FOEC         |
|    |                |                         |                                   |      |            |                                |                          |
| 48 | 2-Oct-98       | Endro Subhandono        | Ministry of Forestry, Bogor       | 2    | Indonesian | Observation                    | Government Officer       |
| 49 | 6-Oct-98       | Kitamura Yoko           |                                   | 1    | Japanese   | Observation                    |                          |
| 50 | 13-Oct-98      | Ombo Satjapradja        | Ministry of Forestry, Bogor       | 3    | Indonesian | Observation                    | Government Officer       |
| 51 | 14-Oct-98      |                         | PKT Service, Denpasar             | 30   | Indonesian | Field Observation              | NGO & Government Officer |
| 52 | 16-Oct-98      | Imam Suhudi             | Pernu Perhutani, Madiun           | 10   | Indonesian | Field Orientation              | Government Officer       |
|    |                | Elizabeth Thord Kusel   | Brazilian Embassy                 | 2    | Brazil     | Observation                    | Student                  |
| 53 | 17-Oct-98      | Mr. Razak               | Kanwil Denpasar                   | 30   | Indonesian | Field Orientation              | NGO & Government Officer |
| 54 | 20-Oct-98      | Mr. Suhardiyono         | DGRLR, Jakarta                    | 1    | Indonesian | Site Visit                     | Government Officer       |
| 55 | 21-Oct-98      | Agus Yudianto           | SMU 5 Denpasar                    | 3    | Indonesian | Data Collection                | Student                  |
|    |                |                         |                                   |      |            |                                |                          |
| 56 | 2-Nov-98       | Hiromitsu Moriyama      | JICA                              | 2    | Japanese   | Site Visit                     |                          |
| 57 | 3-Nov-98       | Nugroho Marsocem        | Gajah Mada University, Yogyakarta | 1    | Indonesian | Observation                    | Lecture                  |
|    |                | Yasuhiko Nisawa         | JIFPRO                            | 30   | Japanese   | Observation                    | Japan's NGO              |

|    |           |                    |                             |    |             |                            |                    |
|----|-----------|--------------------|-----------------------------|----|-------------|----------------------------|--------------------|
| 58 | 4-Nov-98  | John Novarly       | Perum Perhutani, Madun      | 25 | Indonesian  | Observation                | Government Officer |
| 59 | 9-Nov-98  | Hening Knipschid   | QIZ                         | 1  | Indonesian  | Survey                     | Short term Expert  |
| 60 | 18-Nov-98 | Shimichi Mori      | IMG                         | 1  | Japanese    | Jica Mission               | Government Officer |
| 61 | 19-Nov-98 | Endro Subiandono   | LITBANG                     | 4  | Indonesian  | Evaluation & Research      | Student            |
| 62 | 30-Nov-98 | Dwi Lestari        | SMU 5 Denpasar              | 1  | Indonesian  | Data Collection            |                    |
| 63 | 1-Dec-98  | Teji Kondo         | Forest Free Breeding Centre | 2  | Japanese    | Mangrove Reforestation     |                    |
| 64 | 4-Dec-98  | Mr. Yudi Sutrisno  | DGRLR, Jakarta              | 1  | Indonesian  | Observation                |                    |
| 65 | 5-Dec-98  | Mr. Shinji Hayashi | Shizuoka Prefecture         | 1  | Japanese    | Observation                |                    |
| 66 | 6-Dec-98  | Rachmat Rani       | BAPEDAL II                  | 4  | Indonesian  | Comparative Study          | Government Officer |
| 67 | 14-Dec-98 | Chua Thia Zan      | IMO                         | 2  | Philippines | Comparative Study          |                    |
| 68 | 28-Dec-98 | Naoki Segi         | Iwanami Production          | 2  | Japanese    | Shooting                   | NHK Crew           |
|    |           | Dr. Wawan Kusatwan | Mataram University          | 1  | Indonesian  | Observation                | Lecture            |
|    |           | Ir. Hansono        | DGRLR, Jakarta              | 3  | Indonesian  | Observation                | Government Officer |
|    |           | Ir. Syahrir        |                             |    |             |                            |                    |
| 66 | 6-Dec-98  | Katsuhito Kozari   | JICA, Tokyo                 | 2  | Japanese    | Site Visit                 | JICA Mission       |
| 67 | 14-Dec-98 | Takahisa Yamada    | JICA, Jakarta               | 2  | Japanese    | Checking Equipment & Acct. |                    |
| 68 | 28-Dec-98 | Tetsuo Chiba       | Tobishima Corporation       | 2  | Japanese    | Observation                |                    |

*Guests list in January - November 1999*

| NO | DATE      | NAME                                | ORGANIZATION                          | MEMBER | NAT.           | OBJECT                     | REMARKS                            |
|----|-----------|-------------------------------------|---------------------------------------|--------|----------------|----------------------------|------------------------------------|
| 1  | 5-Jan-99  | Ir. Choirul A. and A. Zaenal Abidin | Ministry of Forestry Kupang           | 2      | Indonesian     | Observation                | Government officer                 |
| 2  | 7-Jan-99  | Mr. H. Shingaga and Mr. Suwanto     | OISCA                                 | 2      | Ira & Japanese | Observation                |                                    |
| 3  | 8-Jan-99  | Mr. Akira Mochizuki                 |                                       | 1      | Japanese       | Observation                | Landscape expert                   |
| 4  | 9-Jan-99  | Mr. Tetsuo Kato                     | JICA Tokyo                            | 3      | Japanese       | Observation                | JICA mission                       |
|    |           | Mr. Shingo Shibata                  |                                       |        |                |                            |                                    |
|    |           | Mr. Minoru Miyasaka                 |                                       |        |                |                            |                                    |
| 5  | 10-Jan-99 | Y. Ishi                             | Bali International School             | Team   | Japanese       | Planting Mangrove          | Students                           |
|    | 10-Jan-99 | Mr. Soejoso Tjokrosodarmo           | UGM                                   | 1      | Indonesian     | Data collection            | Lecturer                           |
| 6  | 27-Jan-99 | Toshiya Ikeda                       | FPFRI                                 | 1      | Japanese       | Observation                |                                    |
|    | 27-Jan-99 | Dr. Kumagai Shigeru                 | Gondol Research, Singaraja            | 1      | Japanese       | Observation                |                                    |
| 7  | 2-Feb-99  | I Gede Suwitra                      | UNUD                                  | 1      | Indonesian     | Data collection            | Students                           |
| 8  | 8-Feb-99  | Wd. Ipi Astari                      | Jenderal Sudirman University          | 47     | Indonesian     | Comparative study          | Students                           |
| 9  | 13-Feb-99 |                                     | Fisheries University, Jakarta         | 2      | Indonesian     | Survey                     | Students                           |
|    |           | Flomeska Ignasia                    |                                       |        |                |                            |                                    |
| 10 | 17-Feb-99 | Drs. I Wayan Sadra                  | Senior High School                    | 1      | Indonesian     | Data collection            | Students                           |
| 11 | 18-Feb-99 | Mr. Zuzuki Yasuyuki                 | IAFTA                                 | 1      | Japanese       | Observation                | JICA Expert                        |
| 12 | 22-Feb-99 | Kumagai Tomoko                      | Keio University                       | 2      | Japanese       | Observation                | Students                           |
|    |           | Kawaguchi Maya                      |                                       |        |                |                            |                                    |
| 13 | 24-Feb-99 | Basuki b. Muhyoro and team          | LIPJ                                  | 4      | Indonesian     | Observation                |                                    |
|    |           | Yukio Yamada                        | JICA-Biodiversity Observation Project | 2      | Japanese       | Observation                |                                    |
| 14 | 26-Feb-99 | Mr. Isumasa Uraia                   | Japan                                 | 2      | Japanese       | Observation and discussion |                                    |
|    |           | Mr. Sugura Gingi                    |                                       |        |                |                            |                                    |
| 15 | 2-Mar-99  | Mr. Sasaki Takashi                  | MOAFF                                 | 1      | Japanese       | Observation                |                                    |
| 16 | 9-Mar-99  | Mr. Shinji Tachikawa                | Tokyo Agriculture University          | 1      | Japanese       | Observation                | Lecturer                           |
| 17 | 11-Mar-99 | Mr. Nanao Hironori                  | Tokai University                      | 1      | Japanese       | Observation                | Student                            |
|    |           | Hayashi Koji                        | Kinki University                      | 1      | Japanese       | Observation                | Student                            |
|    |           | Ir. I Wayan Restu                   | UNUD                                  | 2      | Indonesian     | Data collection            | Lecturer                           |
|    |           | Ir. A. A. Raka Dalem                |                                       |        |                |                            |                                    |
| 18 | 13-Mar-99 | Mr. Tenu Ichi                       | Kyushu University                     | 1      | Japanese       | Observation                | Former expert on Forest Management |
| 19 | 14-Mar-99 | Mr. Susumu Shiroishi                | Kyushu University                     | 1      | Japanese       | Observation                |                                    |
|    |           | Mr. Osamu Tando                     | Forest Tree Improvement Project       | 1      | Japanese       | Observation                | JICA                               |
| 20 | 15-Mar-99 | Ir. A. A. Raka Dalem                | UNUD                                  | 1      | Indonesian     | Data collection            | Lecturer                           |
| 21 | 16-Mar-99 | Mr. Omiya Naoki                     | JICA Jakarta                          | 1      | Japanese       | Observation                |                                    |
| 22 | 23-Mar-99 | Akmal Gani and teams                | MOFEC                                 | 5      | Indonesian     | Observation                |                                    |
|    |           | Agung Buana                         | Kanwil Dephuhun Bali                  | 1      | Indonesian     | Data collection            | Government officer                 |
| 23 | 25-Mar-99 | Drs. I Wayan Jiwa                   | Boyscout Denpasar                     | 1      | Indonesian     | Observation                |                                    |
| 24 | 1-Apr-99  | Yuzuru Tanaka                       | Kyohku University                     | 1      | Japanese       | Observation                |                                    |

|    |           |   |                                     |      |               |                          |                    |
|----|-----------|---|-------------------------------------|------|---------------|--------------------------|--------------------|
| 25 | 7-Apr-99  | Iffah Zainiyah                                | UNUD                                | 1    | Indonesian    | Data collection          | Students           |
| 26 | 9 Apr 99  | Hasuka Hiro<br>Mizuyo Hasuka<br>Mornoko Fujii | Japan Consulate                     | 3    | Japanese      | Observation              |                    |
| 27 | 12-Apr-99 | Rusman Mediang                                | YTM Ujung Pandang                   | Team | Indonesian    | Observation              | NGO                |
| 28 | 12-Apr-99 | Dr. Subagyo Sumoediharjo                      | Coremap - LIPI                      | 3    | Indonesian    | Discussion about ISME    |                    |
| 29 | 13-Apr-99 | Endang HS                                     | Sub BKSDA                           | 2    | Indonesian    | Observation              | Government Officer |
| 30 | 19-Apr-99 | Okto T. Julian                                | UGM                                 | 1    | Indonesian    | Survey                   | Students           |
| 31 | 22-Apr-99 | Kaneki Kobayashi                              | Consulate General of Japan Surabaya | 1    | Japanese      | Observation              |                    |
| 32 | 28-Apr-99 | A. Pri Handoko                                | UNUD                                | 1    | Indonesian    | Data collection          | Students           |
| 33 | 30-Apr-99 | Janel Riggs                                   | Rama Tours Guesis                   | 2    | Western       | Observation              | Tourism            |
| 34 | 5-May-99  | Reginaldo G. Beniten and teams                | ITTO                                | 10   | Philippines   | Observation              | Study Tours        |
| 35 | 11-May-99 | Imam Suhud                                    | Perum Perhutani                     | 50   | Indonesian    | Observation              | Government officer |
| 36 | 11-May-99 | Drh. Yudha Bantono                            | Bilingual Elementary School, Sanur  | 22   | Japanese, Ina | Field Study              | Students           |
| 37 | 17-Jun-99 | Ismu Nakalake                                 | Miyasaki Junior Chamber             | 7    | Japanese      | Observation              |                    |
| 38 | 25-Jun-99 | Fr. Dabyar D. Msi                             | Forestry Service Takalar            | 3    | Indonesian    | Observation              | Government officer |
| 39 | 27-Jun-99 | Adi Triswanto                                 | Kanwil Dephubbun NTB                | 1    | Indonesian    | Data collection          |                    |
| 40 | 12-Jul-99 | Kitao Mitsutoshi                              | Hokkaido Research Center, FPPRI     | 1    | Japanese      | Observation              |                    |
| 41 | 20-Jul-99 | I Wajan Sukadana                              | PPLP Dhyana Pura                    | 2    | Indonesian    | Observation              | Lecturer           |
| 42 | 3-Aug-99  | Ms. Timi S.<br>Miyu Yamamoto                  | Nusa Dua hotel                      | 3    | Indonesian    | Comparative Study        |                    |
| 43 | 11-Aug-99 | Asami Yamada<br>Ikaho Iida                    | Kyoto University                    | 1    | Japanese      | Observation              |                    |
| 44 | 15-Aug-99 | Nobuaki Hattori<br>Hiroyoshi Hara             | Tokyo Noko University               | 1    | Japanese      | Observation              |                    |
| 45 | 16-Aug-99 | Hisao Tanimoto<br>Ikuo Kuroiwa                | JICA Jakarta                        | 1    | Japanese      | Observation              |                    |
| 46 | 23-Aug-99 | Susuki Takashi and teams                      | OECH Jakarta                        | 1    | Japanese      | Observation              |                    |
| 47 | 24-Aug-99 | Tatsuo Matsuoka<br>Ishida Masato              | Osaka Japan                         | 10   | Japanese      | Observation              |                    |
| 48 | 30-Aug-99 | Fogel Chandra<br>Rama 04 Kyoku                | Kagoshima University                | 15   | Japanese      | Observation              |                    |
| 49 | 30-Aug-99 | Nagaomo Yuuki                                 | Nara - Pref, Japan                  | 1    | Japanese      | Observation              |                    |
| 50 | 1-Sep-99  | Ti Wahyodiyati                                | Osaka - Pref, Japan                 | 1    | Japanese      | Observation              |                    |
| 51 | 8-Sep-99  | Hiroshi Nakata                                | Mojito Toshimoku, Tokyo             | 1    | Japanese      | Observation              |                    |
| 52 | 9-Sep-99  | Wawan k. Haksanugraha                         | Hard Rock Cafe, Kuta                | 2    | Indonesian    | Ask mangrove Seedlings   | Tourism            |
| 53 | 17-Sep-99 | Suminto<br>Hoshino Tatsuya                    | Rama Tours                          | 7    | Japanese      | Observation              |                    |
|    |           |   | MOFEC                               | 2    | Indonesian    | Ask mangrove information |                    |
|    |           |   | Forestry Agency, Japan              | 2    | Japanese      | Observation              | Government officer |
|    |           |   | LAPAN, Jakarta                      | 1    | Indonesian    | Ask mangrove information |                    |
|    |           |   | PAJ Tour & Travel                   | 1    | Indonesian    | Ask mangrove information | Travel Agent       |
|    |           |   | Osaka University                    | 7    | Japanese      | Observation              |                    |

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| 54 | 20-Sep-99 | Perum Perhutani         | MoFEC                               | 20 | Indonesian | Comparative Study | Government officer |
| 55 | 4-Oct-99  | Suendra                 | Rama Tours                          | 5  | Japanese   | Observation       | Tourism            |
| 56 | 6-Oct-99  | Ir. Jogarni             | MoFEC                               | 1  | Indonesian | Observation       | Government officer |
|    | 6-Oct-99  | Takehisa Nakamura       | Tokyo University                    | 4  | Japanese   | Observation       | JICA mission       |
|    | 6-Oct-99  | Manabu Tome             | American University                 | 1  | Japanese   | Observation       |                    |
| 57 | 7-Oct-99  | Tennoji High School     | Japan                               | 47 | Japanese   | Study Tour        | Students           |
| 58 | 15-Oct-99 | Hideyuki Naga           | Japan                               | 1  | Japanese   | Observation       |                    |
| 59 | 18-Oct-99 | Valdefehi Peter         | Columbia                            | 1  | Western    | Observation       |                    |
| 60 | 21-Oct-99 | Dr. Russel Hanberg      | Impressed International Facility    | 1  | Western    | Observation       |                    |
| 61 | 30-Oct-99 | Ir. Nasori Djayalaksana | Kanwil Dephutubun, South Kalimantan | 6  | Indonesian | Observation       |                    |
|    |           |                         |                                     |    |            |                   |                    |
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