付　属　資　料

付属資料

1．協議議事録（Minutes of the Meeting）

MINUTES OF THE MEETING
BETWEEN
THE JAPANESE PRELIMINARY STUDY TEAM
AND
THE AUTHORITIES CONCERNED
OF
THE GOVERNMENT OF THE REPUBLIC OF INDONESIA
ON
JAPANESE TECHICAL COOPERATION
FOR
THE FOREST TREE IMPROVEMENT PROJECT PHASE II

The Japanese Preliminary Study Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Dr. Masahiro Tajima, Director of Breeding Division, Breeding Bureau, National Forest Tree Breeding Center, visited the Indonesia to study on justification of the Forest Tree Improvement Project Phase II (hereinafter referred to as "the Project") and to work out details of the technical cooperation program of the Project.

During the visit, the Team had a series of discussions with the Forestry Research and Development Agency (hereinafter referred to as "FORDA") in respect to the desirable measures to be taken by both Governments for the successful implementation of the Project.

As a result of the discussions both the Team and FORDA agreed to recommend to their respective Governments the matters referred to in the Attached Documents.

Jakarta, 30・06・1997

Dr. Masahiro Tajima Leader Japanese Preliminary Study Team Japan International Cooperation Agency	Dr. Ir. Toga Silitonga, MSc Director General Forestry Research and Development Agency Ministry of Forestry

THE ATTACHED DOCUMENTS

I. Background of the Project

The Forest Tree Improvement Project (hereinafter referred to as "the Phase I of the Project") under JICA technical cooperation was conducted for five years from June 1, 1992 to May 31, 1997. The Phase I of the Project achieved its original project purpose through developing the basic capacity of the Forest Tree Improvement Research and Development Institute (FTIRDI) in providing improved stock seeds and technical support for seed sources development in major fast growing tree species for HTI (industrial plantation) program.

The development of genetic improvement and information technology on forest tree breeding by FTIRDI are the main issues for the post-project period to obtain successful results in the HTI program. Therefore, FTIRDI is expected to further strengthen its research and development capacity of forest tree improvement of both fast growing and indigenous species as well as management and provision systems of seed sources and their information.

II. Tentative Framework of the Technical Cooperation Project

1. Draft of Master Plan (See Annex 1)
2. Draft of Tentative Schedule of Implementation (See Annex 2)
   The activities related to indigenous species are subject to change based on results of a supplementary study scheduled after this preliminary study.
3. Term of Cooperation
   Five (5) years from December 1, 1997 to November 30, 2002
4. Japanese Contribution
   (1) Experts
      1) Chief Advisor
      2) Coordinator
      3) Experts in Information Management, Quantitative Genetics, and Tree Breeding of Indigenous Species
      4) Short term experts in related fields will be dispatched as necessary for smooth implementation of the Project.
      Note : Chief Advisor and Coordinator may serve concurrently as one these experts.

(2) Indonesian counterparts personnel's training in Japan

(3) Machinery and equipment

1) Machinery, equipment, tools, spare parts and materials for the Project

2) Other materials necessary for the implementation of the Project
Note : First Draft of the list of machinery and equipment requested by the Indonesian side will be submitted to JICA by July 8, 1997.

5. Indonesian Contribution
(1) Counterpart personnel including research management (See Annex 3)
(2) Running expenses and other necessary local costs
(3) Provision of facilities

6. Joint Steering Committee (See Annex 4)

III. Steps to be Further Taken to Formalize the Project

1. After the Team reports the results of this study to the authorities concerned in Japan, JICA will dispatch two (2) specialists for a supplementary study in the field of Cooperation Planning and Tree Breeding of Indigenous Species from July 8 to August 5 in order to prepare details of the Project.

2. Formalities for the Project will be completed by the signing of the Record of Discussions by the Director General, Forestry Research and Development Agency, Ministry of Forestry, and the Resident Representative of the JICA Indonesia Office.

3. The Indonesian side will submit formal request forms for Japanese experts (A1 form), and machinery and equipment (A4 form), valid for the total cooperation period of five (5) years, to JICA within one month after the signing of the Record of Discussions mentioned above.

IV. Other Matters

1. The Team and FORDA recognize the need to implement the Project as scheduled. FORDA ensures that budget and personnels would be made available in time for scheduled activities of the Project.

2. Both sides recognize that the assessment of wood properties and study on pest and disease resistance have been covered by activity of Selection Procedures SSO, however the latter activity might be cooperated only through a training in Japan.

3. Both sides recognize the importance of preservation and *ex-situ* gene conservation of seed sources collected by the Phase I of the Project. Therefore, FTIRDI is required to establish a clone bank and Provenance Resource Stands for its further contribution to HTI programs.

Annex 1.

Master Plan of the Forest Tree Improvement Project Phase II (Draft)

Overall Goal

The industrial plantation (HTI) program is able to make use of seed sources, their information and tree improvement technology provided by the Forest Tree Improvement Research and Development Institute.

Project Purpose

The function of the Forest Tree Improvement Research and Development Institute is strengthened in terms of providing seed sources, their information and technology of tree improvement to the HTI program.

Output of the Project

1. Tree improvement techniques to move on to an advanced generation of fast growing species are provided.

2. Managing and providing systems of seed sources and their information for the production of genetically improved stock are provided.

3. Basic breeding techniques for indigenous species are provided.

Activities of the Project

1. To develop tree improvement techniques to move on to an advanced generation in order to improve the population of the fast growing species established in the Phase I of the Project.

2. To develop managing and providing systems of seed sources and their information for the production of genetically improved stock for the fast growing species established in the Phase I of the Project.

3. To collect information and to research and develop basic techniques in order to initiate tree improvement for indigenous species.

Annex 2. Tentative Schedule of Implementation for the Tree Improvement Project Phase II (Draft)

Activities	1998	1999	2000	2001	2002
1. To develop tree improvement techniques to move on to an advanced generation to improve the populations of fast growing species established in the Phase I of the Project.					
1.1. Selection procedures and development for an advanced generation population					
1.1.1. Selection procedures in seedling seed orchards	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx	
1.1.2. Deployment strategy for an advanced generation population	xxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx
1.1.3. Evaluation of genetic variation by DNA markers after selection	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx	
1.2. Study on mating system in seedling seed orchards					
1.2.1. Flowering and seed production	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx	
1.2.2. Analysis of mating system by DNA markers		xxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx
1.3. *Propagation technique*					
1.3.1. Vegetative propagation	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx
1.3.2. Controlled pollination		xxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx
2. To develop a dissemination system for seed sources and their information for HTI holders to produce improved stock from the population of fast growing species established in the Phase I of the Project.					
2.1. Establishment and management of a local area network within the Institute	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx
2.2. Database management					
2.2.1. Database system on family performance	xxxxxxxx	xxxxxxxx			
2.2.2. Database system on plus trees		xxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx
2.3. *Material management*					
2.3.1. Dissemination system of seed sources	xxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx
2.3.2. Family and individual identification by DNA markers	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx
3. To collect information and to develop and research basic techniques for the tree improvement of indigenous species.					
3.1. Survey and analysis on model trial site(s) of indigenous species					
3.1.1. Survey of model trial site(s)	xxxxxxxx	xxxxxxxx			
3.1.2. Study on genetic diversity of natural populations		xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx
3.1.3. Study flowering phenology	xxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx
3.2. Vegetative propagation techniques	xxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx

Annex 3. List of Indonesian Counterpart Personnel for the Tree Improvement Project Phase II

Activities	Name of Indonesian Staff in Charge (BS, MS, PhD)
Project Manager	DR. Hendi Suhaendi (PM)
Coordinator	A. Agus Munawar BS (PM)
Research Management	1. Dr. Hendi Suhaendi (PM & G) 5. Rina Laksmi H. BS (R) 2. Slamet Utomo BS (PM) 6. Togu Siagian BS (V) 3. Priyatna Wiradinata BS (PM) 7. M. Charomaini BS (G) 4. DR. Anto Rimbawanto (M)
1. To develop tree improvement techniques to move on to an advanced generation to improve the populations of fast growing species established in the Phase I of the Project.	Leader : Chief of Genetic Improvement Research Group
1.1. Selection procedures and development for an advanced generation population	1. Arif Nirsatmanto BS (G) 3. Mudji Susanto BS (G) 2. Sigit Sarjuningtyas MS (G) 4. Siti Susilowati MS (G)
1.2. Study on mating system in seedling seed orchards	1. Rina Laksmi H. BS (R) 3. Arif Nirsatmanto BS (G) 2. M. Charomaini BS (G) 4. Dr. Anto Rimbawanto
1.3. Propagation technique	1. Sugeng Pudjiono BS (V) 3. M. Usmansyah BS (G) 2. Parlindungan Tambunan BS (R)
2. To develop a dissemination system for seed sources and their information for HTI holders to produce improved stock from the population of fast growing species established in the Phase I of the Project.	Leader : Chief of Technical Services Section (PM)
2.1. Establishment and management of a local area network within the Institute	1. A.Agus Munawar BS (PM) 3. Didik Purwito MS (G) 2. DR. Anto Rimbawanto (M) 4. Arif Nirsatmanto (G)
2.2. Database management	1. Sutarman Arsyad MS (G) 3. Slamet Utomo, BS (PM) 2. Kharisma MS (G)
2.3. Material management	1. Slamet Utomo BS (PM) 2. Kharisma MS (G)
3. To collect information and to develop and research basic techniques for the tree improvement of indigenous species.	Leader : Chief of Genetic Improvement Research Group
3.1. Survey and analysis on model trial site(s) of indigenous species	1. Mudji Susanto BS (G) 2. Sri Sunarti BS (R)
3.2. Vegetative propagation techniques	1. Togu Siagian BS (V) 2. Toni Herawan BS (V)

Note : The number 1, bold and underline persons : The responsible persons
- PM : Personnel Managerial
- G : Genetic Improvement Research Group
- M : Moleculer Genetic Research Group
- R : Reproductive Biology Research Group
- V : Vegetative Propagation Research Group

Remarks: FORDA will assign a new counterpart for replacement in the case of a counterpart is moved for an official shifting.

Annex 4. The Joint Steering Committee

1. Functions

The Joint Steering Committee will meet at least once a year and whenever necessity arises, and work :

(1) To approve the Annual Plan of Operation to be formulated by the Project in accordance with the Record of Discussions;

(2) To review the overall progress of the technical cooperation programme and activities carried out under the above-mentioned Annual Plan of Operation in particular; and

(3) To review and exchange views on major issues arising from or in connection with the technical cooperation programme.

2. Composition

(1) Chairman : Director General of Forestry Research and Development Agency (FORDA), Ministry of Forestry, as the Project Director

(2) Indonesian side :
1) Director of Forest Tree Improvement Research and Development Institute (FTIRDI), FORDA, Ministry of Forestry, as the Project Manager
2) Director of Reforestation, Directorate General of Reforestation and Land Rehabilitation, Ministry of Forestry
3) Director of Forest Utilization Preparation, Directorate General of Forest Utilization, Ministry of Forestry
4) Director of Nature Conservation and Forest Research and Development Center (NCFRDC), FORDA, Ministry of Forestry
5) Director of Planning Bureau, Secretariat General, Ministry of Forestry
6) Director of Foreign Cooperation and Investment, Secretariat General, Ministry of Forestry
7) Representative of the National Planning and Development Board (BAPPENAS)
8) Representative of Gadjah Mada University (UGM)
9) Representative of Bogor Agricultural University (IPB)
10) Representative of Asosiasi Pengusahaan Hutan Indonesia (APHI)
11) The other persons appointed by the Chairman

(3) Japanese side :
1) Chief Advisor
2) Coordinator
3) Experts appointed by the Chief Advisor
4) Resident Representative of the Indonesia Office, JICA
5) Personnel concerned to be dispatched by JICA, if necessary

Note : Official(s) of the Embassy of Japan may attend the Joint Steering Committee as observer(s).

付属資料

2．要請書（A Project Proposal）

MINISTRY OF FORESTRY
FORESTRY RESEARCH AND DEVELOPMENT AGENCY

INDONESIA - JAPAN
FOREST TREE IMPROVEMENT PROJECT
PHASE II

A PROJECT PROPOSAL

Table of Contents

INDONESIA-JAPAN FOREST TREE IMPROVEMENT PROJECT

A Proposal for Phase II

BACKGROUND AND JUSTIFICATION OF THE PROPOSED PROJECT

Forest Resources

Indonesia's natural forests are a source of genetic resources of plant species and wildlifes which play a vital role in maintaining the balance of nature. Its impact to the global environment is very significant.

Indonesia's natural forest with 109 million ha is the world's most biologically diverse and represent 10% of the world's dwindling tropical rainforest. It has been vital for Indonesia's economic development providing most of the domestic wood demands and some US$ 3.0 billions in exports earning. Despite the importance of these forests for maintaining global biodiversity as well as economic development for Indonesia, natural forests have been under pressure for many years. According to FAO estimates average annual deforestation in Indonesia during the period 1982 - 1990 amounted to 1.315 million ha.

As demand for wood both domestically as well as internationally continues to grow, the Government of Indonesia has embarked on a massive afforestation and reforestation program aiming at preserving the natural forests while maintaining the supply of woods. The program which began in 1980's comprising of industrial plantations with the prime objective of providing wood for forest-based industry, reforestation of reserves and catchment areas, and social/community forestry.

The targets for the current 5-year plan (Pelita VI) encompass the establishment of 1.25 million ha of industrial plantations (HTI), 1.0 million ha of reforestation and rehabilitation, 0.5 milion ha of community/social forest, and 3.6 million ha of reforestation of natural forests (including rehabilitation of degraded forests). These afforestation and reforestation programs require a concerted efforts to address some of the key elements for the program to be a success.

Government Policy

The Government of Indonesia has taken a number of actions to address the problems of deforestation and forest degradation including the formulation of an Indonesia Forestry Action Programme (IFAP). The policy set up in the IFAP was driven by three policy imperatives: i). to protect ecosystems, soil and water; ii). to sustain multiple goods and services provided by forests and to benefit present and future generations; and iii). to ensure the proper consideration of the views and expertise of all people affected and involved in forest-related activities.

Within these policy imperatives, some of the specific goals of Indonesia's forest resources management programme are to:

1. develop outer islands and relieve population pressure on Java and Bali.

2. sustainably utilize the mixed tropical hardwood forests and the man-made forests for national development.

3. develop more productive man-made forests and convert degraded and unproductive lands into productive areas in order to produce more wood for industrial purpose as well as to reinstate their environmental integrity.

4. generate livelihood opportunities for forest communities and the rural population through the multiple-use management of forests.

Indonesia Forestry Action Programme is divided into 9 sub-programmes, namely:

1. Institution and Human Resources Development
2. Forest Resources Inventory and Land-use Planning
3. Improvement of Forest Lands Productivity and Establishment of Industrial Timber Plantation.
4. Improvement of the Efficiency of Forest-based Industry
5. Conservation of Living Natural Resources and their Ecosystems
6. Improvement of Natural Production Forest
7. Promotion of People's Participation
8. Soil and Water Conservation
9. Forest Protection

With the view of ensuring the success of the implementation of sub-programme 3, Ministry of Forestry has identified the supply of genetically improved plant materials as a top priority. Production of genetically superior seeds can only be obtained through implementation of a comprehensive genetic and breeding plan. The importance of the availability of genetically improved seeds is evidence from the establishment of an institution specifically dealing with tree breeding and genetic improvement. Forest Tree Improvement Research and Development Institute in Jogjakarta is the only research institution in the field of tree breeding and genetic improvement in the country. The Institute is expected to play a vital role in producing genetically superior trees and in promoting tree improvement works through out Indonesia.

Indonesia-Japan Forest Tree Improvement Project

Recognizing the limited resources to undertake a long term activity such as tree breeding and genetic improvement, the Government of Indonesia has requested the Government of Japan for assistance. This project is called Indonesia-Japan Forest Tree Improvement Project.

Initially, implementation of the Project was carried out by Directorate General of Reforestation and Land Rehabilitation. A new institution under the Forestry Research and Development Agency, Forest Tree Improvement Research and Development Institute was then founded in 1994 to carry out tree breeding and genetic improvement programme. Consequently, the implementation of the Project was transferred to this Institute.

The objective of the Indonesia-Japan Forest Tree Improvement Project is to support on-going afforestation programmes (HTI) in Indonesia through the development of techniques of tree improvement and to enhance seed sources establishment by the HTI companies. The core activities of the Project are:

i). to establish of seed sources and subsequent evaluation

ii). to develop a dissemination system of materials and information of genetically superior resources

iii). advice to promote tree improvement activities

END-OF-PROJECT ACHIEVEMENT OF THE INDONESIA-JAPAN FOREST TREE IMPROVEMENT PROJECT

During the five year term of the technical cooperation (1992-1997) both the Indonesian counterpart and the Japanese experts have put a dedicated work to ensure that the Indonesia-Japan Forest Tree Improvement Project is successfull in implementing its prorammes.

The highlights of the Indonesia-Japan Forest Tree Improvement Project at the end of the project term are:

The availability of selected families of improved genetic established in a seed orchard/progeny test: a total of 33 orchards have been established in 6 Provinces i.e. Riau, South Sumatra, Central Java, South Kalimantan, West Kalimantan, East Kalimantan, comprising of the following species: i). *Acacia mangium*, ii). *Acacia auriculiformis*, iii). *Acacia crassicarpa*, iv). *Eucalyptus pellita*, v). *Eucalyptus urophylla*, vi). *Paraserianthes falcataria*.

It is expected that by 1998 first generation of genetically improved plant materials (seeds and vegetative materials) of *A. mangium*, *E. pellita*, and *E. urophylla* will be available for operational use.

A model of working arangement with HTI companies in implementing the breeding and genetic improvement programme: In this arrangement, seed orchard progeny trials were established in their concession areas. The Project is responsible for providing genetic materials for the trials, field design, assistance in nursery, planting, and measurement. Whilst, the HTI companies are looking after the cost of seedling production, site preparation, planting, tending, and measurement. In return, the company will have access to the data collected as well as plant materials from the trials

A total of 4 HTI companies have been actively participating in the programme as a model of collaborative work between research and field application in breeding and genetic improvement.

The provision of equipments necessary to conduct research and development of tree improvement: Laboratory facilities for seed testing, tissue culture propagation, reproductive biology, wood characteristics and molecular genetics works are modern by any standard and directly applicable for achieving the goal of producing genetically superior seeds.

A prominent feature of this facility is the laboratory used for evaluation of genetic resources by means of molecular markers (DNA and isoenzymes markers). This laboratory is equipped with modern equipments to carry out research in genetic study using DNA techniques. The role of this advance biotechnology techniques to tree breeding and genetic improvement is to significantly increase the effectiveness and efficiency of the breeding programme thus increasing genetic gains.

The research facility provided by JICA has strengthen the Institute's capability to conduct research and development to support breeding and genetic improvement programme in Indonesia.

THE NEED FOR AN ADVANCE PROJECT

It is evident that the Project has provided an excellent foundation for achieving the goal of establishing highly productive plantations through the use of genetically superior plant materials. The strategy, technology, methodology, and approaches that have been developed during the term of the Indonesia-Japan Forest Tree Improvement Project are relevant to the issues of plantation establishment as well as reforestation programme in general. However, as a long term activity consisting of many breeding cycles, the Project has achieved only a fraction of the potential genetic gains available. Therefore, development of the breeding and genetic improvement programme into an advance breeding plan with further assistance from the Government of Japan is a neccessity.

Despite all the successfull achievement of the Indonesia-Japan Forest Tree Improvement Project, there remains some urgent matters which require further assistance from the Government of Japan. Such assistance is necessary in order to take the full benefit of the achievement of the Project for the successful implementation of forestry development programme. There are four major reasons for an advance project, namely:

1. Further development of breeding systems.

During the term of the Indonesia-Japan Forest Tree Improvement Project genetic improvement of six major species of HTI namely: *Acacia mangium, Acacia crassicarpa, Eucalyptus urophylla, E. pellita,* and *Paraserianthes falcataria* have been carried out. The genetic resources in the form of provenance/progeny testings are an extremely valuable assets which should be properly managed. This would require a continuation of the breeding, selection and testing cycle into an advance breeding plan. Significant increase in genetic gains is expected in every cycle. As those species remain the dominance species of the HTI plantations, the impact of highly productive plantations will be very significant in achieving the goal of the HTI programme in particular and the reforestation programme in general.

2. Breeding and genetic improvement for other priority species.

In addition to the six species dealt with in the Indonesia-Japan Forest Tree Improvement Project there are still a number of species both local and exotic which has the potential for industrial purposes as well as non-industrial use/agroforestry. The need for selecting a range of species is a logical consequences of the diversity of environmental and growing conditions. Inappropriate selection of species not only results in failure of the plantations but more importantly may cause environmental damage.

3. Extension of tree improvement work.

Nationally, there are more than 126 HTI companies (24 HTI for pulp and 102 HTI for timber) who are actively implementing plantations programme. During phase I of the Indonesia-Japan Forest Tree Improvement Project, 4 HTI pulp companies have had a working agreement with the Project to participate in tree improvement programme. This working arrangement has proved itself to be a very effective way of introducing genetically improved seeds into operational plantation. Therefore, it deserves to be extended to more HTI companies.

4. Strengthening research capability.

The Forest Tree Improvement Research and Development Institute is structured into 6 research groups. These grouping is designed to achieve a comprehensive research and development in tree improvement. As a newly established research institution, the academic capability of the scientists and research management skills of the staffs are in need of improvement.

THE PROPOSED PROJECT

Development Objectives

The industrial plantation (HTI) programme is the only feasible alternative to relieve the pressure on the declining natural rain-forests. The programme also provides the many benefits of forest plantations for industry, soil and water conservation, land rehabilitation, to meet the needs of local communities in forest products, employment, and services.

As more than 70% of the population are living in rural areas, forestry sector is expected to play a major role in the improvement of their welfare. This may be achieved by providing them with good quality seeds of multipurpose species.

The Forest Tree Improvement Research and Development Institute is relatively a new organisation. Despite its strategic role, the academic capability of their research workers are in need for improvement.

The Project will be instrumental in achieving the goal of establishing a productive industrial plantation as stated in the sub-programme 3 of the Indonesia Forestry Action Programme through its contribution to the following:

i). ensuring the availability of genetically improved seeds of HTI species to increase productivity of plantations.

ii). ensuring the availability of improved seeds of multipurpose species to increase the welfare of rural people.

iii). increase awareness and understanding of the importance of using genetically improved seeds.

iv). strengthening of skills and research capabilities of Indonesian research workers, and improvement of institutional capabilities through transfer of skills and knowledge.

Project Purposes

i). increase the production and provision of genetically superior plant materials of both indigenous and exotic species of high priority for industrial plantation as well as agroforestry.

ii). compilation of data base for establishing a national network in order to extend tree improvement work nation-wide.

iii). strengthening of research capability of Indonesian research workers.

Project Activities

To achieve the purposes mentioned above, the proposed project activities are build upon the achievement of the Phase I and summarized in the following table

Achievement of phase I (1992-1997)	Follow-up Actions
1. Breeding strategy of five major species developed. 2. Breeding populations of six major species established. 3. Working arrangement with 4 HTI companies established.	1. Develop second generation breeding strategy for the six major species. 2. Build the network of tree improvement involving more HTI companies, and promote practical use of tree imrpovement.
4. Improvement of research facilities , research and development capability.	3. Develop breeding strategies for other species. 4. Further improvement of research capability.

Breeding and Genetic Improvement

Objectives of this activity are:

i). to provide wide genetic base of high value tree species as a basis for breeding works as well as to meet the immediate demand of improved seeds for reforestation and agroforestry.

ii). to establish broad-based genetic resources for *ex-situ* conservation of selected species.

iii). to continue the selection, breeding and testing process of the five major species adopted in phase I of the Indonesia-Japan Forest Tree Improvement Project in order to further increase genetic gains.

iv). to carry out control pollination of superior families which were selected during phase I.

v). to apply vegetative prropagation techniques to increase genetic gains.

vi). to develop molecular markers (DNA techniques) to assist the selection of superior families.

vii). to transfer skills and knowledge of advance biotechnology techniques to Indonesian research workers.

Extension Programme

Objectives of this activity are:

i). to transfer skills and knowledge on the implementation of tree improvement programme to HTI companies to convince them that the benefit of using genetically improved seeds is very significant.

ii). to develop a network of tree improvement programme among government and private sectors in order to avoid unnecessary duplication of activities.

Institutional Framework

The recipient organization is the Ministry of Forestry. The Project will be implemented by the Forestry Research and Development Agency. The executing organization of the Project is Forest Tree Improvement Research and Development Institute in Jogjakarta.

Major Inputs

Expected Assistance from the Government of Japan

Major contribution for the Project is expected from the Government of Japan in the form of:

A. Experts

The following long term/short term experts are envisaged:

Long term

@ Team Leader/Tree Breeding Expert
@ Quantitative Genetics Expert
@ Information System Expert
@ Coordinator

Short term

@ Molecular Genetics Expert
@ Reproductive Biology Expert

B. Counterpart training

C. Equipments

Provision of equipment is not a major component of the Project. It will supplement the existing facilities procurred during Phase I. Nevertheless, the following provision of equipment is anticipated:

a. Information system

Computer hardwares and softwares for data analysis
Office equipment and furniture
Audio and video facilitites

b. Laboratory equipment

Molecular Genetics
Reproductive Biology
Germplasm collection equipment

Expected Contribution from the Government of Indonesia

The Government of Indonesia is expected to provide the facilities available at the Forest Tree Improvement Research and Development Institute in Jogjakarta for the Project. All staffs of the Institute will be actively participating in the Project.

Costs associated with trials establishment, measurement/evaluation, and general office use are to be provided by the Government of Indonesia.

Major Outcomes

Major outcomes of the Project will be:

i). populations of trees with high genetic quality will be available; they can be used both as sources for mass production of high quality seeds and for further breeding and genetic improvement.

ii). technological package in genetic improvement, reproductive biology, molecular genetics, data base management, and information system will be available.

iii). genetic informations resulting from DNA analysis, such as gene diversity, linkage mapping, Quantitative Trait Loci/QTL will be used to implement Marker-Assisted Selection/MAS.

iv). increased knowledge of Indonesian research workers in breeding and genetic improvement of valuable tree species, thus greater capability to carry out such a programme using their own resources.

v). well equipped and established facilities will be available to continue the breeding and genetic improvement programme into the next breeding cycles.

vi). strengthening of institutional capability to plan and implement research and development in tree breeding and genetic improvement.

Time Frame

The implementation period of the Project is expected to be five years. The Project is expected to start in the beginning of 1997 to take full advantage of the momentum left by Phase I of the Indonesia-Japan Forest Tree Improvement Project.

Budget

The Project is expected to spend a total of US$ 5.0 million over 5 year period or US$ 1 million annualy, consisting of:

a. Foreign exchange cost	USD	4,000,000
b. Local cost	USD	1,000,000

ENVIRONMENTAL AND SOCIAL IMPACTS OF THE PROJECT

The immediate impacts of the Project are: i). a significant increase in wood production per unit area; ii). as plantation is becoming a more profitable investment due to high productivity more marginal land will be converted to plantations; iii). conservation of genetic resources works will be more active; iv). through transfer of skills and knowledge the intelectual ability of Indonesian researchers will be further improved thus strengthening research capability.

Plantations establishment in general has a number of positive environmental impacts; particularly in cases when degraded lands are rehabilitated. These include:

i). abundant supply of wood from plantation will relieve utilization pressure on the depleting tropical rain-forests.

ii). improved soil and water conservation, better regulation of water run-off thus protecting agricultural croplands.

iii). Multipurpose and HTI species such as *Acacia mangium* , *Acacia auriculformis* increase soil fertility as they fix nitrogen.

The Project will indirectly contribute to those positive environmental impacts. Industrial plantations programme is expected to maintain the economic importance of forestry resources to the Indonesian economy by taking over the role of tropical rain forest as the major sources of timber.

Plantations for industrial purposes such as HTI can also have negative environmental impacts, especially in cases when:

i). natural forest (primary or secondary forests) is cleared and converted to plantations.

ii). inappropriate species are planted as it will cause environmental and ecnomical loss.

The Project outcomes will, among other things, prevent the use of inappropriate species.

There has been concerns over possible risks of having monoculture plantations. The Project will provide valuable genetic resources and information to ensure that monoculture plantations pose no threat to the environment. This is achieved through producing a wide genetic base of selected species thus maintaining genetic diversity.
Significant contribution of the Project to the successful implementation of the industrial plantation programme (HTI) would have a significant indirect contribution to the creation of badly needed employment and thus increase income in rural areas.

付属資料

3. Indonesia Forestry Action Programme (IFAP)

RESTRICTED FOR OFFICIAL-USE ONLY

MINISTRY OF FORESTRY
REPUBLIC OF INDONESIA

COUNTRY BRIEF

INDONESIA FORESTRY ACTION PROGRAMME (IFAP)

JAKARTA, NOVEMBER 1995

INTRODUCTION

GENERAL

1.1. The Eighth World Forestry Congress, held in Jakarta in 1978, carried the banner "Forest for People", signalling a major forest policy change at the global level. The Congress recognized and unanimously agreed that forest management and utilization must benefit local people, particularly the rural poor, who had not been given priority in the past. The Congress also stressed the importance of forests and the contribution they make to the national economy in many developing countries. However, the Congress further declared that unless forestry meets the needs of local people, the forest resource base and its biological resources will be eroded.

1.2. As one of the signatories of the UNCED outcomes, particularly the Agenda 21 and the Principle on Forests, Indonesia has been intensifying actions in hormonizing law enforcement, fine-tuning field oriented actions, strengthening institutional and capacity, promoting people involvement and raising awareness.

1.3. In 1985, the year declared by the Food and Agriculture Organization of the United Nations (FAO) as the International Year of the Forest, the Tropical Forestry Action Plan, now known as the Tropical Forests Action Programme (TFAP), was jointly prepared by, among others, FAO, the United Nations Development Programme (UNDP), the World Bank (WB) and the World Resources Institute (WRI). The TFAP was an attempt to align all forestry activities, public and private, within a mutual agreed-upon framework to conserve tropical forests. It was presented to the Ninth World Forestry Congress held in Mexico City in 1985 and was unanimously accepted as the global consensus for action.

1.4. Subsequently, issues were raised concerning how to encourage the participation of local people, how to arrive at a national consensus, how to reflect TFAP in national planning and, eventually, how to bring about action in the field. The TFAP Operation Principles specify the stages of planning and implementation of the national forestry action programme. The preparatory phase of the TFAP process generally involves three stages :

First Stage	To assembe all interested national partners to obtion national-wide participation for formulating objectives and identifying problems. This is called Round Table Type I.
Second Stage	To express the political will of the Government involving all concerned parties and to define the necessary follow-up actions through a Round Table Type II.
Third Stage	To discuss the programmes and projects identified after Round Table Type II among government departments and interested cooperative/donor agencies as regards funding and starting up. This is Round Table Type III, leading TFAP into its implementation phase.

The TFAP in Indonesia - The Indonesia Forestry Action Programme (IFAP)

1.5. The sustainable development of its forest resources is of primary interest and concern to the Government of Indonesia (GOI). Reflecting this, a number of government procedures and regulations have been set up, such as the Indonesian Selective Cutting and Planting System (TPTI) and the Conservation of Living Resources and Their Ecosystems Act. In addition, various studies have been conducted to set out policy options for future. Forestry Act, 1967, is currently underreview to be more accomodating to the most recent economical, ecological, and social functions of forest resources.

1.6. The Ministry of Forestry decided to evaluate the impact of forestry development activities carried out during the last 20 years in order to identify and correct the mistakes committed in the process of achieving production growth, and to improve their performance in the areas of weakeness. One of the evalution was conducted through the Forestry Studies Project, funded by the World Bank and assisted by FAO. The Forestry Studies Project carried out a comprehensive review of the sector, covering all its major aspects. The Project analyzed the situation of, and outlook for, the forestry sector from the point of view of ensuring sustainable development. Projections were made of the availability of forest land, the supply possibilities and consumtion estimates for forest products under alternative scenarios to the year 2030.

1.7. The Forestry Studies Project carried out gathering, analysis, field case studies and consultation supported by a large number of technical documents. Based on these materials, a discussion document was prepared in the form of a draft Country Brief and it was presented at the IFAP Round Table Type II held in Jakarta on 29-30 May 1990. The Round Table was attended by 154 persons, representing international agencies (31), embassies of donor countries (13), universities (12), national experts/resource person (10), MOF (42) other Ministries (14), state enterprises (4), NGOs (22) and media (6). Based on the comments received, both written and oral, at the meeting and subsequantly, the Country Brief was revised by a team of MOF officials and FAO consultants. The revised draft Country Brief was circulated widely and detailed comments were received from several international agencies, bilateral donor agencies and NGOs. These comments have been considered whilst finalizing this document.

1.8. During July-August 1990, a group of eight international consultants, seven Indonesian consultants and seven officials of the MOF reviewed the specific proposals contained in the reports of the Forestry Studies Project. The group was divided into seven teams, such that all the provinces could be visited by forestry development in the respective provinces. They reviewed the ongoing and pipeline projects in the sector to identify main gaps and areas of priority. Based on the information gathered, the group produced 103 project profiles.
These IFAP project profiles *were then substantially* revised by a multi-departmental GOI team. The team, using the First Long Term National Development Plan and the Repelita V as guidelines, created an action plan based on 9 sub programmes (instead of twelve in the original project profiles document). Project Profile for the specific activities within the assistance from external donors - either as grants or loans.

1.9. The 9 IFAP sub programmes *of the 1991 edition* are :

- ⇨ institutional and human resources development
- ⇨ forest resources inventory and land-use
- ⇨ the improvement of forest land productivity and the establishment of industrial timber plantation
- ⇨ the improvement of the efficiency of forest based industry
- ⇨ the conservation of living natural resources and their ecosystems
- ⇨ the improvement of natural production forest management
- ⇨ soil and water conservation; and
- ⇨ forest production.

This format is an amended form of previous versions of the Country Brief and reflects the new global TFAP approach whereby countries can determine their own forestry development planning agenda for their National TFAPs, and are not contrained by the original 5 TFAP "action areas".

1.10. Since its completion at the end 1991, IFAP documents have been referred to by the Ministry of Forestry and donor countries and donor agencies in the process of establishment of foreign cooperation projects. At present there are 21 loan aid projects and 40 grant aid projects. The projects are usually related to more than one sub-program, with the following distribution :

No.	IFAP Sub-Programme	No. of project/ Sub-project
1)	Forest Resource inventory land-use planning	18
2)	Improvement of forest land productivity and establishment of industrial	12
3)	Improvement of the efficiency of forest based industry	7
4)	Improvement of natural production forest management	17
5)	Conservation of living natural resource and their ecosystem	24
6)	Soil and water conservation	18
7)	Forest protection	29
8)	Promotion of people's participation	33
9)	Institutional and human resource development	39

1.11. As a follow-up to the IFAP Round Table Type III, the Ministry of Forestry established a forum called the Consultative Group on Indonesian Forestry (CGIF) in May 1993, which was formalized by Minister of Forestry decree No. 475/Kpts-II/94. The purpose of CGIF is to strengthen the communication, coordination, and cooperation of all parties involved or to be involved in the planning, implementation, and evaluation of forestry development activities thereby to contribute to increase effectiveness, efficiency and sustainability of forestry development in Indonesia. It is envisaged to cover all forestry development (public, private, NGO's, and foreign assisted projects) but foreign cooperation projects are regarded to be of the highest priority.

1.12. CGIF-meetings have been organized in two ways; (a) Regular meetings participated by the managers of foreign cooperation projects, officials of Indonesian agencies, and representatives of donor countries/agencies (b) Subject matter related or technical working group meetings, participated by experts (domestic and foreign) involved in the forestry development projects and interested parties.

There are four technical working groups :

1. Sustainable forest management
2. Social forestry and people's participation
3. Conservation
4. Policy and institution

1.13. It should be noted here that the IFAP has been specifically designed to be compatible with the forestry five-year development plan (REPELITA) of Indonesia, the intention being to focus on and strengthen important Repelita areas of action. The 9 sub programmes proposed for the IFAP are of a symmetrical nature to those of forthcoming five-year plan programmes. Because of their similarities, some degree of overlap among the programmes is inevitable , but this is desirable. It is hoped that the interplay between them will produce synergistic results for forestry development in Indonesia. It is intended that neither programme will constraint the other.

1.14. From 1 April 1994, Indonesia has come to the second long term development phase, which starts with the sixth Five Year Development Phase (REPELITA VI). The Forestry Repelita VI has 8 main forestry/environment programmes and 3 supporting/related programmes. The 8 main programmes are :

- ⇨ Forest land consolidation and promotion of productivity of natural forest
- ⇨ Extention of new forest plantation
- ⇨ Community forestry development
- ⇨ Development of processing of forest products
- ⇨ Inventory and evaluation of natural resources and the ecosystems
- ⇨ Forest, land and water safeguarding
- ⇨ Rehabilitation of critical lands
- ⇨ Development of coastal areas.

The supporting and associated programmes include programmes on research and development, education, training and extension, infra-suctures, system development, environmental management, spatial planning, land-use planning, small and medium scales of forestry business, transmigration, tourism, youngsters and women.

1.15. In conjunction with new policies and development taking place both in the country and in the world, the IFAP Country Brief has been revised to be in line with the national and international commitments of Indonesian forestry. The revision process involved intensive consultation with domestic and international experts. The Sub-programmes of the revised IFAP consist of :

- ⇨ Forest resource inventory and land-use planning
- ⇨ Management of natural production forest
- ⇨ Management of forest plantations
- ⇨ Forest based industries and marketing of forest products

- ⇨ Biodiversity Conservation and ecotourism
- ⇨ Social forestry and people's participation
- ⇨ Management of nature reserve, protection forests, wetlands and coastal areas
- ⇨ Institutional strengthening

1.16. The Documents prepared for the IFAP consists of an Executing Summary, this Country Brief, and the Project Profiles.

Including this introductory chapter, this Country Brief consists of nine chapters :

Chapter	2	Background, providing an account of geographical, socio-economic and policy issue background.
Chapter	3	Forest Resource Inventory and Land-Use Planning
Chapter	4	Management of Natural Production Forest
Chapter	5	Management of Forest Plantation
Chapter	6	Forest Based Industries and Marketing of Forest Products
Chapter	7	Social Forestry and People's Participation
Chapter	8	Biodiversity Conservation and Ecotourism
Chapter	9	Management of Watershed, Protection Forest, Wetland and Coastal Area
Chapter	10	Institutional Development.

CHAPTER V
MANAGEMENT OF FOREST PLANTATIONS

OVERVIEW

Seeds and Seedlings Centres

5.1. An Integrated Tree Seed Programme consists of three elements, namely seed procurement, tree improvement, and gene-resource conservation.

5.2. The activities of seed centers are directed to support the implementation of reforestation and regreening as well as establishment of industrial forest plantations;

5.3. The control and distribution of high quality seed (legislation) is organized by Regional Forest Offices/The Center for Seed Production and Testing (BPPB).

5.4. To fulfill the requirements of high quality seeds with sufficient quantity, the government has stipulated some forest enterprises as producer and distributor of forest tree seed.

5.5. It is estimated that the needs of high quality seed from time to time will be increased in line with the increasing of National Planting Program.

5.6. To fulfill high quality/quantity seedlings, the government also involve the forestry enterprises (forest concessions, forest plantation holders, etc.) to participate in providing seedling through central nurseries (permanent nurseries)

Pre-condition of New Forest Establishment

5.7. The assurance of forest area in terms of legal aspect is being established. The measurement of boundary and its demarcation have been given a high priority.

5.8. Referring to Government Regulation No. 7/1990 it is clearly stated that the establishment of industrial plantation forests is carried out on non-productive production forest areas. Thus, an inventory of non-productive production forests acquired from aerial photography and or landsat image(s) need to be undertaken and completed soon. To date, the implementation of aerial photography and vegetation interpretation which have been undertaken by the Association of Indonesian Forest Concession Holders (APHI) are as follows :

⇨ Aerial photography is 95 %, contour map is 65 % and vegetation map is 48 % in progress.

5.9. In the implementation of industrial plantation forests programme, there is a lot of conflict of interests on land between the investors and the local community, especially those related to customary rights. In order to anticipate such conflicts, social engineering survey need to be carried out during pre-establishment activities.

5.10. To date, the establishment of industrial forest plantations is prioritized on the production of raw material for pulp industry.

The Establishment of New Forest Plantations

5.11. The establishment of Industrial Forest Plantations (or known as HTI) was implemented on permanent production forest area, either inside or outside forest concession area, and is particularly implemented on unproductive forest area. During the Fifth five-year Development Plan (Repelita V), the target of forest plantation establishment was 1.5 million hectares whereby the achievement of the plantation establishment was 872,000 hectares. The forest plantation is undertaken by the private sectors, state-owned forestry companies, joint ventures between the state-owned companies and private sectors. As well as by involving the Village-level Cooperatives.

5.12. The establishment of forest plantations is designed as a commercial business unit which is economically viable, to produce raw material for wood-based industries.

5.13. A number of approaches have been undertaken by the government to encourage the implementation of the industrial plantation forest, viz. integration of industrial forest plantations system with transmigration programme. This system is aimed at accelerating the implementation of both industrial plantation forest, and the community resettlement programme particularly for those who practice shifting cultivation.

ANALYSIS

The Establishment of Seed and Seedling Centres

5.14. Seed supply is a prerequisite for any planting programme. Selecting the right seed source within a species may increase the yield up to 20 %, and by selecting the right individual trees as seed source the increase may add up to 50 %.

5.15. The elements of seed centre include well-trained staffs, a building with sufficient spaces for cleaning, registration, laboratory testing, storage and distribution of seed. A seed centre will need an adequate number of transportation means and network to ensure the effective identification, collection, and distribution of seeds.

5.16. The role of high quality seed is a determinant factor on the success to enhance wood production in the industrial forest plantations;

5.17. The control of high quality seed distribution in order to support the development of industrial forest plantations needs to be intensified;

5.18. The requirements for forest tree seed and seedlings for the establishment of industrial forest plantations are immense. Considering that the government is not able to fully support it, then the active role of private sectors are highly required on this matter ;

The Pre-condition for New Forest Establishment

5.19. The Forest Land Use by Consensus (known as TGHK) is not always in a harmony with the policy on respective Provincial Spatial Plan. The conflict of land use with other interests such as estates, transmigration, mine, settlements are notable

5.20. Non-productive areas are the primary target for establishing forest plantation. However, the distribution of non-productive forest area which scattered through out the production forest area are not clearly known

5.21. The government recognizes the existence of customary rights as it may create the conflict of interests on land use in the field

5.22. The information emanated from research on soil site matching and silvicultural system of exotic tree species for HTI pulp development need to be mastered by the HTI concessioners

The Establishment of Forest Plantations

5.23. The production capability of natural forest tends to decrease over time due to various disturbances and indiscriminate utilization. On the other hand, forest products industry especially wood processing industry has been growing very fast since the issuance of log bans in 1984. As a result, the existence of gaps between the needs for raw material and the capacity of forest to supply logs is a serious challenge.

5.24. Annual wood production to meet the raw material for industry is projected to be about 37.67 million cubic meter, whereby another 2.71 million cubic meter will be supplied from the industrial forest plantations.

ISSUES AND CONSTRAINTS

The Establishment of Seed and Seedling Centres

5.25. Until now, no integrated national tree seed programme in Indonesia has been established.

5.26. The national registration for seed sources, either certified or non certified does not exist yet.

5.27. A consistent documentation system, beginning with labeling in the field, and continuing through out the various stages in seed handling until the seed reaches the end user, has not been introduced yet.

5.28. Standard for quality forest tree seed and seedlings has not been defined yet. In addition, there has been a low demand to utilize high quality forest tree seed due to its higher price.

5.29. The institution in charge of forest tree seed at the regional level do not play its roles in monitoring and controlling the production and distribution of forest tree seeds in its respective regions. The uneven distribution of technology information among the actors of plantation on the forest tree seed production is still prevailing

5.30. Not all the permanent nurseries or seed sources are managed professionally by the private sectors. The capability of private sectors in mastering (seed production technology) is still lacking.

The Pre-condition of New Forest Establishment

5.31. The coordination in planning between central- and regional-level concerned institutions are not strengthened yet;

5.32. a. Limitation of funds to acquire necessary goods for planning, especially aerial photography, landsat image(s), GIS and GPS equipment's
b. Limitation of professional and skilled staff in analyzing and interpreting aerial photography and landsat image(s)

5.33. The strong customary rights over production forests are still prevailed ; This problem is not easy to resolve by related inter-institutions in the field;

5.34. It is recognized that the availability of financial source (funds) for research and development of soil site matching trials are rather scarce and insufficient.

The Establishment of New Forest Plantations

5.35. In the last five years, the production of wood from natural forest is decreasing from 36.0 million cubic meter per annum to 31.5 million cubic meter. In the Sixth Repelita it is already projected to be around 22.5 million cubic meter. Thus, it is a real imbalance between the supply of raw material and industrial capacity of 40 million cubic meter. Meanwhile, the wood production from new forest plantations is expected to increase from average 2.71 million cubic meter to 5.37 million cubic meter at the end of Repelita VI.

5.36. The shift from a sustainable production to forest and ecosystem sustainability, means that forest exploitation shall not only emphasizing on production but it has also simultaneously focusing on biodiversity, ecological and social aspects.

5.37. Most of the investment and participation of private sectors are invested on logging operation and industry, only a small portion is invested on the forest resource development efforts

5.38. The needs of local community are not incorporated yet in the development of forest plantation :

- ⇨ social survey is not yet undertaken before land clearing implementation.
- ⇨ the traditional community is not positioned as an equal partner, viz. acting as the subject of development and not merely as the object of development

STRATEGIES AND ACTION PLANS

The Establishment of Seed and Seedling Centres

5.39. An Integrated National Tree Seed Programme should be established.

5.40. A priority species for the major types for afforestation and tree planting programmes should be listed and ranked according to the importance.

5.41. Standardization of species-based seed production need to be issued;

5.42. Pilot projects on forest tree plantation which are derived from seed or seedling (permanent nurseries or seed orchard) need to be established;

5.43. The government seed institution in regional level need to be established through the preparation of skilled staffs, infra-structure and financial resources;

5.44. Extension activities on the utilization of high quality seed/seedling need to be implemented, particularly to increase forest plantations efficiency.

5.45. The roles and responsibilities of the agencies involved should be made clear, to avoid overlap/duplication and/or stagnation in handling activities.

The Pre-condition of New Forest Establishment

5.46. Studies on the assurance of area prepared by related institutions either in regional or national levels to support the planning processes through inter alia forest demarcation and gazettment;

5.47. Inventory of non-productive production forest areas needs to be undertaken through aerial photography and landsat image(s);

5.48. Socio-economic survey on HTI locations and extension on legal aspects need to be implemented;

5.49. Permanent pilot projects distributed evenly on each HTI pulp need to be carried out.

The Establishment of New Forest Plantations

5.50. The establishment of industrial forest plantations is not aimed at clear-cutting and changing good natural forests, but it should be aimed at :

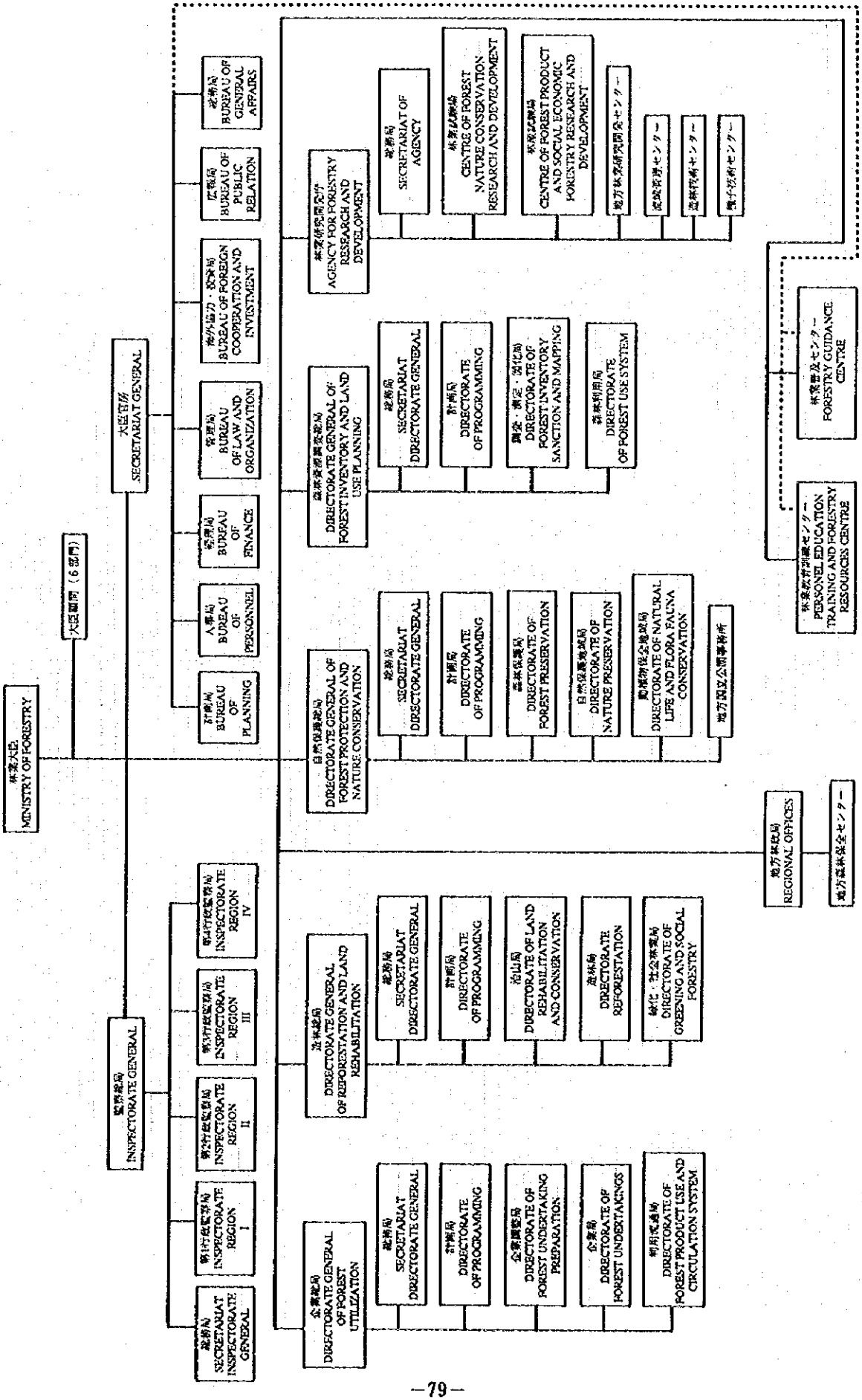
- ⇨ adding up the forest area and increasing its productivity as well as the potential of its forest resource
- ⇨ increasing the job and business opportunities for the community
- ⇨ increasing the community's skills to support the programme of poverty alleviation
- ⇨ guarantee the availability of raw material for wood-based industry in the years to come

5.51. In order to encounter the ecolabelling taking in effect from year 2000, the industrial forest plantations should be thoroughly planned in accordance with the sustainable forest management, inter alia :

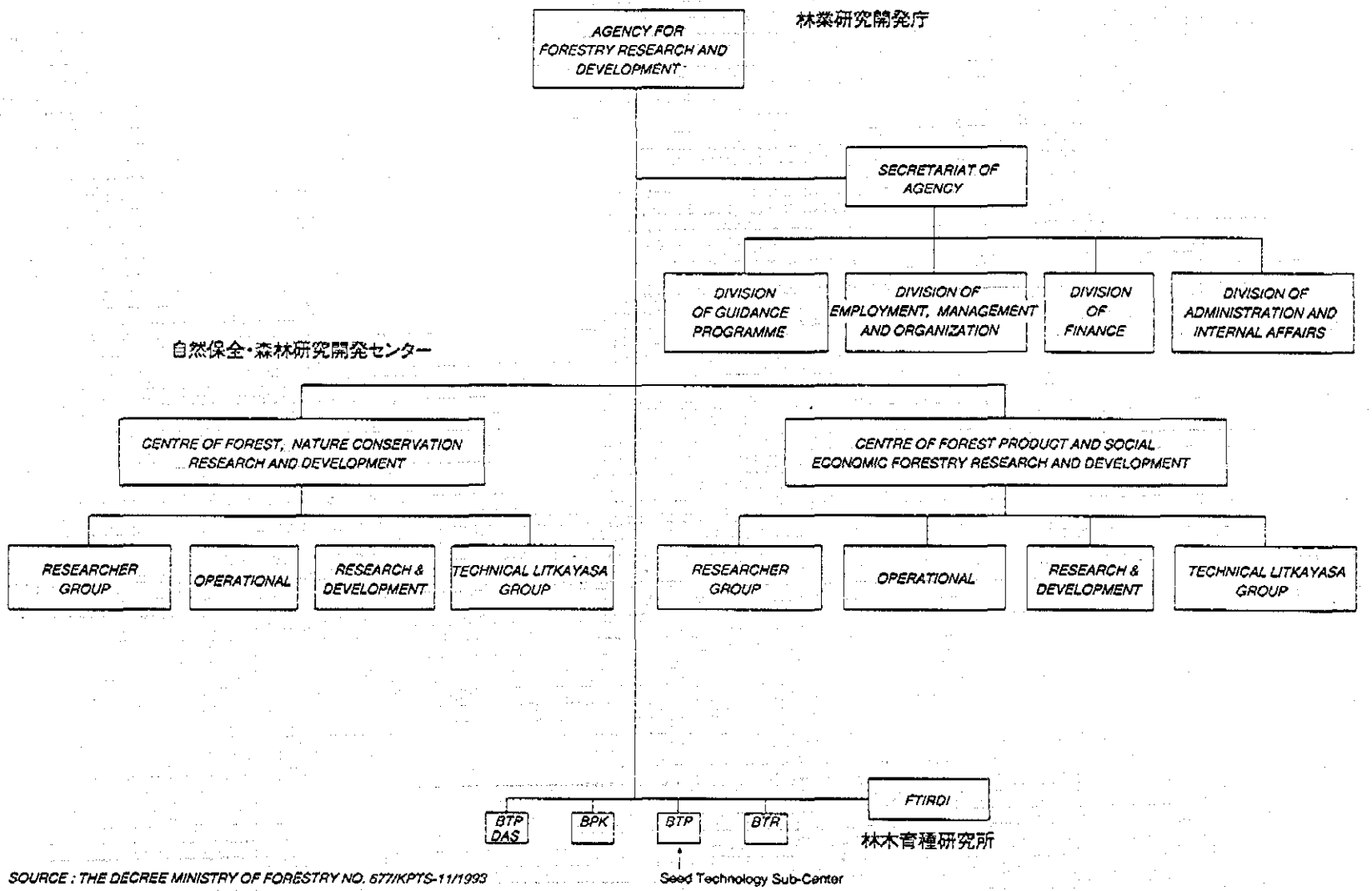
- ⇨ the status of permanent production forest should be clear and its boundary should have been gazette in accordance with the respective Provincial Spatial Plan
- ⇨ biodiversity (flora and fauna), soil and water conservation need to be planned since the beginning, through inter alia a well-designed landscaping
- ⇨ the social aspect needs to be taken into account by carrying out a social survey before the establishment of industrial forest plantations. Hence, the customary rights should be carefully considered as the conflict of interests with the community need to be avoided.

5.52. The establishment of industrial forest plantations covers the following activities such as planting of superior species on bare lands whereby during Repelita VI it is projected to establish 1.25 million hectares of industrial forest plantations comprising 0.5 million ha of pulp and non-pulp, 0.3 million ha of Transmigration-supported HTI , and 0.45 million ha of meranti (Shorea sp) species.

付属資料　4. 林業省組織図

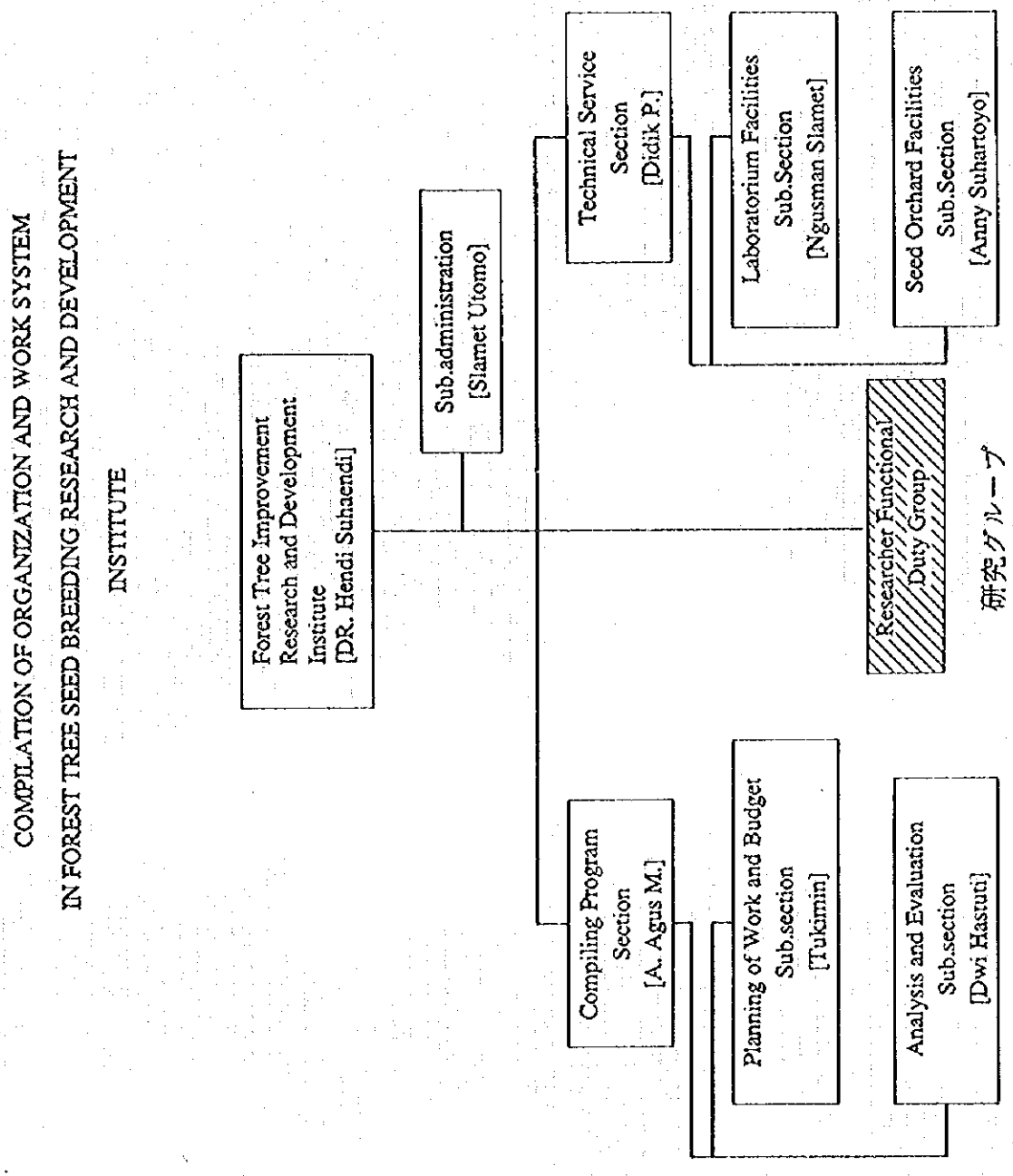


ORGANIZATION CHART OF AGENCY FOR FORESTRY RESEARCH AND DEVELOPMENT (1994/95)



SOURCE : THE DECREE MINISTRY OF FORESTRY NO. 677/KPTS-11/1993

付属資料　6．林木育種研究所組織、所員名簿



A. Permanent Staff(Governmental Official)
Managerial Personels:

No	Name	Degree	Position
1.	Hendi Suhaendi	Dr	Director
2.	Priyatna W.	Bsc.	Head of Sub Division of Administration
3.	Achmad Agus Munawar	Bsc	Head of Section of Program Preparation
4.	Slamet Utomo	Bsc	Head of Section of Technical Service
5.	Tukimin Sanari	Bsc	Head of Sub Section of Work Plan and Budgeting
6.	Bambang Sutedjo	Bsc.	Head of Sub Section of Laboratory Facilities
7.	Anny Suhartoyo T.s.		Head of Sub Section of Seed Orchard Facilities

Research Personnels

No	Name	Degree	Position
8.	Anto Rimbawanto	Dr.	Counterpart of Moleculer Genetics
9.	Yannus Togu Siagian	Bsc	Counterpart of Vegetative Propagation
10.	M. Charomaini	Bsc	Counterpart of Genetics Improvement
11.	Siti Susilawati	Bsc	Counterpart of Genetics Improvement
12.	M. Usmansyah	Bsc	Counterpart of Genetics Improvement
13.	Kharisma	Bsc	Counterpart of Genetics Improvement
14.	Didik Purwito	Bsc	Counterpart of Genetics Improvement
15.	Sutarman Arsyad	Bsc	Counterpart of Genetics Improvement
16.	Tadjudin Edy Komar	Bsc	Counterpart of Reproductive Biology
17.	Rina Laksmi Hendrati	Bsc	Counterpart of Reproductive Biology
18.	Sigit Sarjuning Tiyas	Bsc	Counterpart of Genetics Improvement
19.	AYPBC Widyatmoko	Bsc	Counterpart of Moleculer Genetics
20.	Mudji Susanto	Bsc	Counterpart of Genetics Improvement
21.	Sugeng Pudjiono	Bsc	Counterpart of Vegetative Propagation
22.	Parlindungan Tambunan	Bsc	Counterpart of Reproductive Biology
23.	Arif Nirsatmanto	Bsc	Counterpart of Genetics Improvement
24.	Sri Sunarti	Bsc	Counterpart of Reproductive Biology
25.	Toni Herawan	Bsc	Counterpart of Vegetative Propagation

Technician & Staff

No	Name	Degree	Position
26	W. Sumarmo		Administration Staff
27.	Djoko Sulistyo		Administration Staff
28.	Soejadi		Administration Staff
29.	Mahendra Utama		Administration Staff
30.	Suhartono		Administration Staff
31.	Marlan		Technicion
32.	Sukijan		Technicion
33.	Endang Estiningsih		Administration Staff
34.	Nana Supriatna		Technicion
35.	Mulyanto		Technicion
36.	Yudi Fatwa Hudaya		Technicion
37.	Yenih Husnaeni		Technicion
38.	Sri Sunary Kartiningsih		Administration Staff
39.	Uus Sulaeman		Administration Staff
40.	Susanto		Technicion
41.	Nana Niti Sutisna		Administration Staff
42.	Sutarjo		Technicion
43.	Sudarmi		Administration Staff
44.	Setiawan		Administration Staff
45.	Sudrajat		Technicion
46.	Haerudin		Technicion
47.	Edi Sarwono		Administration Staff
48.	Sutarman		Technicion

B. Temporary Staff

No	Name	Degree	Position
1.	Suharto		Administration Staff
2.	Iluh Nurcahyaningsih		Research Staff
3.	Pramono Budi Pilianto		Administration Staff
4.	Dwi Wahyudi		Administration Staff
5.	Klingsa Mulyana		Administration Staff
6.	Mujiani		Administration Staff
7.	Anis Setiawan		Administration Staff
8.	Suripto		Administration Staff
9.	Hari Purnomo		Administration Staff
10.	Ismijati		Administration Staff
11.	Triyanto		Administration Staff
12.	Kusman Kurdi		Administration Staff
13.	Suseto Ari Wibowo		Administration Staff
14.	Rispriyanto		Administration Staff
15.	Sukaji		Administration Staff
16.	Misran		Administration Staff
17.	Suyanto		Administration Staff

1	2	3	4
18.	Ratijo		Administration Staff
19.	Suratiman		Administration Staff
20.	Tarmuji		Administration Staff
21.	Bawadi		Administration Staff
22.	Tri Hardono		Administration Staff
23.	Pramono		Administration Staff
24.	Margiyanti		Administration Staff
25.	Suryani		Administration Staff
26.	H. Sotoro		Administration Staff
27.	Tri Yahmini		Administration Staff
28.	Kurniyanti		Administration Staff
29.	Sutri Winardi		Administration Staff
30.	Suprihati		Administration Staff
31.	Sugeng Santoso		Administration Staff
32.	Bambang Sugiarto		Administration Staff
33.	Suyanto		Administration Staff
34.	Sumaryono		Administration Staff
35.	Budi Wahyono		Administration Staff
36.	Mulyono		Administration Staff
37.	Untung Suryadi		Administration Staff
38.	Ponimin		Administration Staff
39.	W a l u y o		Administration Staff
40.	Alin Maryati		Administration Staff
41.	Yohanes Triyanta		Administration Staff

付属資料　7. 林業大臣決定

インドネシア共和国林業大臣

林業大臣決定

53/Kpts-II/1994

件　名

林木育種研究開発センター組織と機能

検討　a，造林開発の性能力を向上するために上質の種が必要である。
b，上質の種を得るために林木育種センタは無ければならないものである。
c，林木育種センターの位置付、義務、機能、組織についても決めなければならい。

土台　1、林業についての1967年第５番の憲法
2、省庁の組織についての1974年第44番の憲法
3、省庁の組織についての1984年第15番の大統領決定
4、第VI開発内閣設立についての1993年第96/M番の大統領決定
5、林業省の組織・機能につての第677/Kpts-II/1993番の林業大臣決定
6、州林業省事務所の組織・機能についての第34/Kpts-II/1983番林業大臣決定

注意　1994年１月27日の第8-92/I/94番の役人機能強化国務大臣の承認

決定

決定　林木育種研究開発センターの組織及び機能についてのインドネシア共和国林業大臣の決定

１章

位置、義務、機能

１節

(1)林木育種センターは林業省研究開発庁の下にある林木育種研究開発を実施するセンターである。
(2)林木育種センターには所長が一人いる。

２節

林木育種センタは造林の性能力の向上に物理、生理、遺伝的で上質の林木の種を得られる

ために林木育種研究開発を行う義務を持っている。

3節

上記の第2節の機能を実施するために各センターは次の機能を持っている。

a，林木育種研究開発
b，保証できる上質の種を生産
c，木の改良の要素で種の畑を作成
d，研究開発の結果をひろげる。
e，研究開発の設備を管理
f，行政の管理を行う

二章

組　織

4節

林木育種センターの組織は次の通りである。

a，行政部
b，プログラム作成部
c，技術サービス部
d，研究者部

5節

行政部はセンターの全行政を行う義務を持っている。

6節

第5節の義務を実施するために行政部は次の機能を持っている。

a，人事行政管理
b，財政行政管理
c，交信、設備、施設の行政の管理

7節

プログラム作成部は林木育種のプログラム及び計画を、研究開発の結果の報告を作成する義務を持っている。

8節

第7節の通りの義務を行うためにプログラム課は次の通りの機能を持っている。

a，ルーチンとプロジェクトの計画及びプログラムを作成
b，林木育種研究開発実施結果を分析して、評価を行う
c，定期報告を作成

9節

プログラム作成部の組織は次の通りである。

a，活動、予算計画課

b，分析、評価課

10節

(1)活動、予算計画課はルーチンとプロジェクトの計画とプログラムを作成する義務を持っている。

(2)分析、評価課は林木育種研究開発活動を分析し、評価を行って、報告を作成する義務を持っている。

11節

技術サービス課は林木育種研究開発設備の管理を行う義務を持っている。

12節

第11節の通りの義務を行うために技術サービス課は次のような機能を持っている。

a，研究開発の実験室の設備の管理

b，種畑の設備を管理

c，改良の種の生産、検定、分配を行う

13節

技術サービス部の組織

a，実験室設備課

b，種畑設備課

14節

(1)実験室設備課は実験室の設備を管理する義務を持っている。

(2)種畑設備課は畑の管理、種の準備、改良された種の検定、分配を行う義務を持っている。

15節

研究者部は種改良の研究開発及び改良技術研究を行う義務を持っている。

16節

(1)研究者部はいろいろな分野からの研究者から成り立っている。

(2)各分野の研究者のグループにはグループリーダーが1人いて、リーダーは林業省研究開発庁総局長に決められる。

(3)研究者の人数は必要さによって決められる。

(4)研究者の分野及び職業段階は決まった法律で決められる。

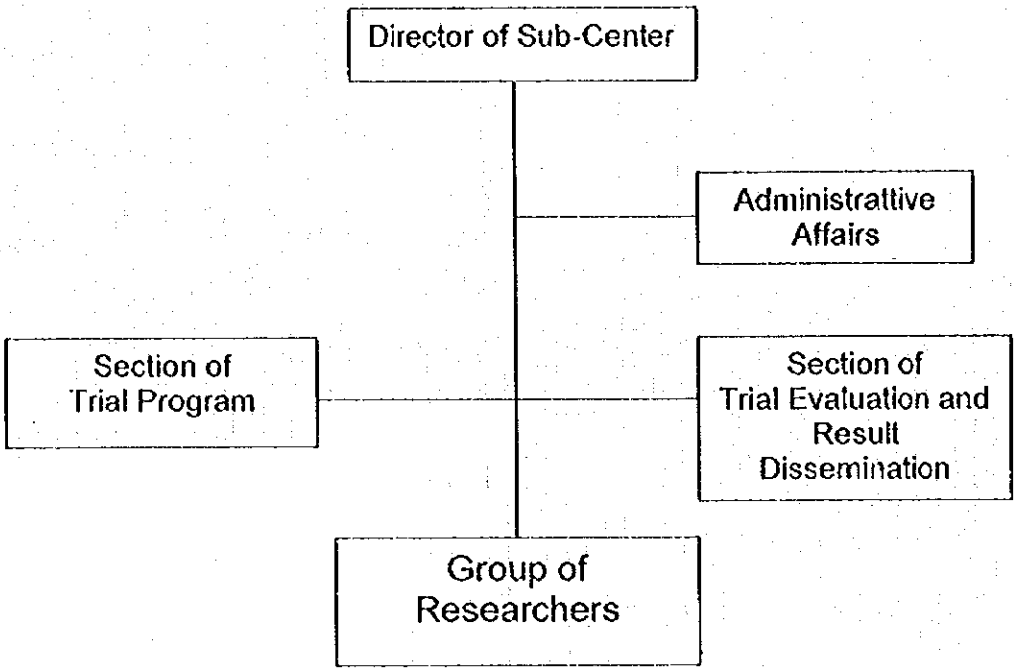
(以下省略)

付属資料　8. 林木種子技術サブセンター組織図

Brief Information of Forest Seed Technology Sub-Center

Main task: to implement programs on testing and assembling of technologies for tree seeds.

Organization::



Number of core staff members (by June 1997)

Ph.D = 1
Master degrees = 3
University graduate (BS levels) = 12

付属資料　9. INHUTANI Ⅲとの協定書（インドネシア語）

NASKAH PERJANJIAN KERJASAMA
ANTARA
BADAN PENELITIAN DAN PENGEMBANGAN KEHUTANAN
DEPARTEMEN KEHUTANAN
DENGAN
PT. INHUTANI III

Nomor : 05/VIII/BP3BTH/P/95

TENTANG
PELAKSANAAN KEGIATAN PENELITIAN UJI COBA JENIS, UJI PROVENANSI,
UJI KETURUNAN DAN KEBUN BENIH
DI WILAYAH KERJA PT. INHUTANI III

（協定日　1995年7月24日）

Pada hari ini Senin tanggal ..24.....bulan ..Juli.....tahun Seribu sembilan ratus sembilan puluh lima, kami yang bertanda tangan dibawah ini :----------

1. Nama : DR. IR. HENDI SUHAENDI ----------

   Jabatan : Kepala Balai Penelitian dan Pengembangan Pemuliaan Benih Tanaman Hutan.----------

   Alamat : Jalan Palagan Tentara Pelajar Km. 15, Purwobinangun Pakem, Sleman, Yogyakarta.----------

   Dalam hal ini bertindak untuk dan atas nama Badan Penelitian dan Pengembangan Kehutanan, Departemen Kehutanan berdasarkan Surat Penugasan tanggal 29 Mei 1995, Nomor 1054/VIII/Lit-1/95 yang selanjutnya disebut sebagai PIHAK PERTAMA. ----------

2. Nama : IR. KADAR SLAMET ----------

   Jabatan : Direktur Utama PT. INHUTANI III.----------

   Alamat : Gedung Manggala Wanabakti Blok VII lantai 14, Jalan Gatot Subroto, Senayan, Jakarta.----------

   Dalam hal ini bertindak untuk dan atas nama PT. INHUTANI III, yang selanjutnya disebut sebagai PIHAK KEDUA. ----------

Dengan ini kedua belah pihak sepakat membuat perjanjian sesuai dengan ketentuan yang diatur dalam pasal-pasal sebagai berikut. ----------

Pasal 1

OBYEK PERJANJIAN (Objectives of Agreement)

Pihak Pertama akan melaksanakan kegiatan/penelitian uji jenis, uji provenansi, uji keturunan dan uji lainnya yang berhubungan dengan pemuliaan pohon dalam rangka pembangunan kebun benih di lahan Pihak Kedua dan selanjutnya Pihak Kedua bersedia dan menyanggupi untuk memberi ijin penggunaan lahan serta bekerjasama dengan Pihak Pertama dalam pembangunan uji jenis, uji provenansi, uji keturunan dan kebun benih yang dimaksud. ----------

Pasal 2

DASAR PELAKSANAAN PERJANJIAN (Base of Implementation)

Dasar Pelaksanaan Perjanjian kerjasama adalah musyawarah mufakat antara konsultan ADB, Badan Penelitian dan Pengembangan Kehutanan - Departemen Kehutanan, Balai Penelitian dan Pengembangan Pemuliaan Benih Tanaman Hutan dan PT. INHUTANI III.----------

Pasal 3

JENIS KEGIATAN DAN LOKASI (Activities and Location)

1. Jenis kegiatan/penelitian uji jenis, uji provenansi, uji keturunan dan uji lainnya yang berhubungan dengan pemuliaan pohon dalam rangka pembangunan kebun dimaksud meliputi species-species : *Acacia mangium*, *Eucalyptus urophylla*, *Eucalyptus pellita* dan species-species lainnya yang ditentukan berdasarkan persetujuan kedua belah pihak secara tertulis.----------

2. Lokasi yang akan dipakai sebagai areal tanam dalam kegiatan tersebut pada pasal 3 butir 1 adalah pada lahan Pihak Kedua yang sebelumnya telah ditunjuk berdasarkan hasil survey yang dilakukan bersama-sama oleh kedua belah pihak.----------

3. Lokasi untuk kegiatan pembibitan menggunakan areal persemaian Pihak Kedua. ----------

4. Status areal kawasan hutan yang digunakan dalam pembangunan kebun benih dimaksud tetap merupakan kawasan hutan yang dikelola oleh Pihak Kedua.----------

Pasal 4

PEDOMAN PELAKSANAAN KEGIATAN (Implementation Guideline)

Dalam melaksanakan setiap kegiatan/penelitian uji jenis, uji provenansi, uji keturunan dan uji lainnya yang berhubungan dengan pemuliaan pohon dalam rangka pembangunan kebun benih dimaksud harus berpedoman pada Kerangka Acuan dan Rencana Kegiatan Tahunan yang telah dibuat oleh Pihak Pertama dengan diketahui/disahkan oleh kedua belah pihak. ----------

Pasal 5

JANGKA WAKTU PELAKSANAAN (Period)

Jangka waktu pelaksanaan kegiatan/penelitian uji jenis, uji provenansi, uji keturunan dan uji lainnya yang berhubungan dengan pemuliaan pohon dalam rangka pembangunan kebun benih dimaksud selama 10 (sepuluh) tahun dimulai tahun 1993/1994 sampai dengan tahun 2002/2003. ----------

Pasal 6

BIAYA PELAKSANAAN KEGIATAN (Responsibility of Budget)

1. Biaya yang timbul untuk melaksanakan kegiatan tersebut pada Pasal 3 butir 1, 2 dan 3, menjadi beban dan tanggungjawab Pihak Kedua.-------

2. Pengecualian dari Pasal 6 butir 1 di atas adalah biaya penyediaan benih dan instruktur yang selanjutnya menjadi beban Pihak Pertama.--

Pasal 7

HAK DAN KEWAJIBAN (Right and Obligation)

Dalam kaitannya dengan pembangunan uji jenis, uji provenansi, uji keturunan dan kebun benih di lahan Pihak Kedua, kedua belah pihak mempunyai hak dan kewajiban yang selanjutnya diatur dalam butir-butir sebagai berikut :----------

1. Pihak Pertama berhak untuk :----------

   a. menentukan sistem dan metode yang dipakai dalam kegiatan/penelitian uji jenis, uji provenansi, uji keturunan dan uji lainnya yang berhubungan dengan pemuliaan pohon dalam rangka pembangunan kebun benih dimaksud.----------

   b. mengadakan penelitian lebih lanjut pada uji jenis, uji provenansi, uji keturunan dan uji lainnya yang behubungan dengan pemuliaan pohon dalam rangka pembangunan kebun benih dimaksud;----------

   c. menggunakan dan memanfaatkan sebagian benih, kayu dan atau hasil ikutan lainnya yang dihasilkan untuk penelitian dan pengembangan lebih lanjut atas kesepakatan Pihak Kedua;----------

2. Pihak Pertama berkewajiban untuk :----------

a. menyediakan benih;----------

b. membuat perencanaan, rancangan dan design;----------

c. menyediakan instruktur;----------

d. melaksanakan pendataan, analisa dan evaluasi;----------

e. memberikan laporan hasil pendataan, analisa dan evaluasi maupun hasil dari penelitian pada lokasi uji jenis, uji provenansi, uji keturunan dan uji lainnya yang berhubungan dengan pemuliaan pohon dalam rangka pembangunan kebun benih dimaksud kepada Piha Kedua.----------

f. melaksanakan monitoring;----------

g. menyediakan kerangka acuan sebagai petunjuk/pedoman pelaksanaan operasional.----------

3. Pihak Kedua berhak untuk :----------

a. menggunakan dan memanfaatkan benih, kayu dan atau hasil ikutan lainnya yang dihasilkan untuk kepentingan dan keperluan Pihak Kedua selama tidak mengganggu/menyimpang dari rencana, rancangan dan design yang telah dibuat Pihak Pertama;----------

b. mengadakan penelitian pada lokasi uji jenis, uji provenansi, uji keturunan dan uji lainnya yang berhubungan dengan pemuliaan pohon dalam rangka pembangunan kebun benih dimaksud atas kesepakatan Pihak Pertama;----------

c. memberikan usulan/koreksi terhadap rencana, rancangan dan design yang dibuat oleh Pihak Pertama, apabila dirasakan terdapat ketidaksesuaian dengan kondisi dan situasi lokasi dimaksud;------

4. Pihak Kedua berkewajiban untuk;----------

a. melaksanakan pengukuran dan pemetaan areal, pembuatan persemaian, persiapan dan pengolahan lahan serta penanaman sesuai dengan rencana, rancangan dan design yang telah dibuat oleh Pihak Pertama;----------

b. melaksanakan pemeliharaan;----------

c. membantu pelaksanaan pendataan yang dilakukan oleh Pihak Pertama;

d. memberikan laporan hasil pengunduhan benih, pengambilan kayu dan atau hasil ikutan lainnya yang telah dilakukan kepada Pihak Pertama;----------

e. memberikan sebagian benih, kayu dan atau hasil ikutan lainnya yang dihasilkan kepada Pihak Pertama untuk penelitian, pengujian dan pengembangan lebih lanjut;----------

Pasal 8

PUBLIKASI (Research Report and Publication)

Segala publikasi yang berkaitan dengan kegiatan penelitian uji jenis, uji provenansi, uji keturunan dan uji lainnya yang berhubungan dengan pemuliaan pohon dalam rangka pembangunan kebun benih dimaksud, baik dari hasil pengembangan maupun hasil penelitian harus menyebutkan/ mencantumkan kedua belah pihak.----------

Pasal 9

LAIN-LAIN (Other Matters)

1. Perjanjian ini berlaku surut sejak tanggal Satu bulan April tahun Seribu sembilan ratus sembilan puluh tiga untuk jangka waktu 10 (sepuluh) tahun dapat diperpanjang atas dasar musyawarah kedua belah pihak.----------

2. Hal-hal yang belum diatur dalam naskah perjanjian kerjasama ini akan diatur kemudian dengan persetujuan kedua belah pihak.----------

PIHAK KEDUA

P.T. INHUTANI III
DIREKSI

(IR. KADAR SLAMET)
Direktur Utama PT. INHUTANI III

PIHAK PERTAMA

DEPARTEMEN KEHUTANAN
BADAN PENELITIAN DAN PENGEMBANGAN KEHUTANAN
BALAI PENELITIAN DAN PENGEMBANGAN PEMULIAAN BENIH TANAMAN HUTAN YOGYAKARTA

(IR. SUHAENDI SUHAENDI)
Kepala Balai Penelitian dan Pengembangan Pemuliaan Benih Tanaman Hutan.

付属資料　10. 先方への質問書及び回答

To　　:Director General, FRDA
From　　:JICA Team Leader
Date　　:June 17, 1997
Regarding:　The project proposal of the Forest Tree Improvement Project Phase II

Please answer the following questions.

1.Page.5 in Project purpose.
"increase the production and provision of genetically superior plant materials of both indigenous and exotic species of high priority for industry and agroforestry."
Describe the tree species for agroforestry in your plan and their breeding targets respectively.

2. Page 7 in Extension Program
" to develop a network of tree improvement program among government and private sector "
Describe your detail and concrete contents of the network with a figure, which explains roles and supports of all related governmental departments and private organizations such as Directorate of Reforestation and Afforestation, Directorate of Industrial Forest Plantation, Gadjah Mada University, APHE, etc.

3. Page 8 in Budget
" The project expected to spend a total of US$ 2.0 million over 5 years period or US$ 400,000 annually. "
Is it your own expenses or including any other contributions (HTI companies , JICA, etc.) ?
Describe detail contents and allocation of the budget.

4. Page 9 in Project Cost
"Foreign Exchange Cost　　USD 4,000,000
Local Cost　　USD 1,000,000"
What are the contents of the cost ?

4. Provide the following materials.

Page 1 "Current 5 years plan (PelitaVI) "
Page 1 "Indonesia Forest Action Plan "
Page 4 List of "126 HTI companies (24 for pulp and 102 for timber) "
Outline of the on-going projects by other donors concerning forest tree improvement. 1) Name of project 2) Period 3) Name of donor 4) Brief content 5) Relation to FTIRDI 6) Any remarks

Additional information regarding the content of the Project Proposal of the Forest Tree Improvement Project Phase II as requested by the JICA Preliminary Study Team

Page 5. Project purpose

The Indonesian side intend to develop tree improvement not only of species for industrial plantations but also for agroforestry. This approach is line with the policy imperatives of the Ministry of Forestry as stated in the Indonesia Forestry Action Plan. It is specifically stated that one of the goals of Indonesia's forest resources management program is to 'generate livelihood opportunities for forest communities and the rural population through the multiple use management of forests'.

Agroforestry species are variable and therefore their breeding objectives are different from one species to another. The underlining goal however is to further increase the productivity of major species in the agroforestry plantation to provide better source of income for rural people.

The tentative species which was originally planned to be included in the proposed project were:

Acacia auriculiformis
A. decurens
Enterolobium cyclocarpum
Gliricidia sp.
Leucaena leucocephala
Melaleuca cajuputi
Bombacacae

Page 7. Extension Program

Tree improvement program is very active in Indonesia. A number of major forestry corporations (HTI companies) are also embarking on tree improvement work in ther respective area. Their works are, naturally, a specific one relating to their own problems. Since resources to do tree improvement is scarce it is only natural to establish link among many organization involve in tree improvement to pull together resources and information available at each participant, and to avoid unnecessary duplication or ;etition.

During phase I JICA sponsored a seminar which dealt with this issue. Although the importance of having a network is recognized, the actual framework, including the role and responsibility of each participant, of having a network is still unclear.

Page 8. Budget

There has been a typographical error. The total amount of budget expected for the proposed Project is US$ 5.0 million over 5 year period. The foreign exchange component of this amount is expected to be provided by JICA.

The local component is expected to be provided from National Budget (APBN) and or Reforestation Fund (DR). Details contents and allocation of the budget is still unavailable pending for the decission on the details activities of the proposed Project.

KEPUTUSAN MENTERI KEHUTANAN
Nomor : 100/Kpts-II/93.

Tentang

KETENTUAN DAN TATACARA PENYALURAN DANA REBOISASI DALAM RANGKA PENYERTAAN MODAL PEMERINTAH DAN PINJAMAN UNTUK PEMBANGUNAN HUTAN TANAMAN INDUSTRI PADA PERUSAHAAN PATUNGAN

MENTERI KEHUTANAN,

Menimbang : a. bahwa berdasarkan Keputusan Bersama Menteri Kehutanan dan Menteri Keuangan Nomor 421/Kpts-II/1990 dan Nomor 931/KMK. 013/90 telah ditetapkan Ketentuan-Ketentuan Penyertaan Modal Pemerintah Dan Pinjaman Yang Berasal Dari Dana Reboisasi Dalam Pembangunan Hutan Tanaman Industri;

b. bahwa untuk pelaksanaan surat keputusan bersama tersebut diatas, telah ditetapkan Keputusan Menteri Kehutanan Nomor 752/Kpts-II/90 tentang Petunjuk Pelaksanaan Penyaluran Dana Reboisasi Dalam Rangka Penyertaan Modal Pemerintah Dan Pinjaman Untuk Pembangunan Hutan Tanaman Industri;

c. bahwa untuk penjabaran lebih lanjut keputusan Menteri Kehutanan tersebut diatas (butir b), maka perlu menetapkan Keputusan Menteri Kehutanan tentang Ketentuan dan Tatacara Penyaluran Dana Reboisasi Dalam Rangka Penyertaan Modal Pemerintah dan Pinjaman Untuk Pembangunan Hutan Tanaman Industri pada Perusahaan Patungan.

Mengingat : 1. Undang-undang Nomor 5 Tahun 1967;
2. Peraturan Pemerintah nomor 7 Tahun 1990;
3. Keputusan Presiden Nomor 15 Tahun 1984 jo Keputusan Presiden Nomor 25 Tahun 1990;
4. Keputusan Presiden Nomor 64/M Tahun 1988;
5. Keputusan Presiden Nomor. 29 Tahun 1990 jo Keputusan Presiden Nomor 28 Tahun 1991;
6. Keputusan Menteri Kehutanan Nomor 116/Kpts-II/1989 jo Keputusan Menteri Kehutanan Nomor 368/Kpts-II/1990;
7. Surat Keputusan Bersama Menteri Kehutanan dan Menteri Keuangan Nomor 421/Kpts-II/90 dan Nomor 931/KMK.013/1990;
8. Keputusan Menteri Kehutanan Nomor 752/Kpts-II/1990;
9. Keputusan Menteri Kehutanan Nomor 684/Kpts-II/1992.

M E M U T U S K A N :

Menetapkan : KEPUTUSAN MENTERI KEHUTANAN TENTANG KETENTUAN DAN TATA CARA PENYALURAN DANA REBOISASI DALAM RANGKA PENYERTAAN MODAL PEMERINAH DAN PINJAMAN UNTUK PEMBANGUNAN HTI PADA PERUSAHAAN PATUNGAN.

Pasal 1

Dalam Keputusan ini yang dimaksud dengan :

1. BUMN adalah BUMN lingkup Departemen Kehutanan atau BUMN lain yang disetujui Menteri Kehutanan.
2. Perusahaan Patungan adalah perseroan terbatas yang dibentuk dalam rangka kerjasama antara BUMn dengan perusahaan Swasta atau Koperasi dalam pembangunan hutan tanaman industri (HTI).
3. Penyertaan Modal Pemerintah Dana Reboisasi (PMP-DR) adalah Dana Reboisasi yang disalurkan kepada BUMN untuk membiayai pembangunan HTI yang dilaksanakan oleh perusahaan patungan.
4. Equity DR adalah penyertaan modal BUMN yang berasal dari PMP-DR yang dilaksanakan pada perusahaan patungan untuk pembangunan HTI.

5. Konsultan penilai adalah konsultan yang telah terdaftar sebagai rekanan mampu (DRM) yang ditetapkan oleh Direktorat Jenderal RRL atau yang ditunjuk oleh Menteri Kehutanan.
6. RKT HTI adalah rencana kegiatan tahunan HTI yang disusun oleh perusahaan patungan dan dinilai serta disahkan oleh Kepala Kantor Wilayah Departemen Kehutanan setempat.

Pasal 2

Struktur permodalan pembangunan HTI yang dilakukan dalam bentuk kerja sama antara BUMN dengan Perusahaan Swasta atau Koperasi ditetapkan sesuai dengan Keputusan Bersama Menteri Kehutanan dengan Menteri Keuangan Nomor 421/Kpts-II/90 dan Nomor 931/KMK.013/90 sebagai berikut :

a. Penyertaan Modal Pemerinah dan DR sebesar 14%;
b. Penyertaan Modal Swasta atau Koperasi sebesar 21%;
c. Pinjaman dari DR sebesar 32,5%;
d. Pinjaman dari Bank dan atau dari Lembaga Keuangan Lainnya sebesar 32,5%.

Pasal 3

Penyertaan Modal dari Pemerintah dari DR sebagaimana dimaksud dalam Pasal 2 butir a, dapat digunakan sebagai :

a. Equity untuk modal dasar pendirian perusahaan patungan.
b. Equity untuk pembangunan HTI.

Pasal 4

(1) Permohonan Penyertaan Modal Pemerintah sebagai equity untuk modal dasar pendirian perusahaan patungan sebagaimana dimaksud Pasal 3 huruf a, diajukan oleh BUMN kepada Sekretaris Jenderal dengan tembusan Direktur Jenderal RRL yang dilampiri foto copy :

a. Kesepakatan bersama (MOU);
b. Perjanjian kerjasama;
c. Akta Notaris yang telah ditandantangani.

(2) Sekretaris Jenderal dengan memperhatikan lampiran-lampiran yang disampaikan oleh BUMN, menyampaikan saran dan pertimbangan permohonan equity sebagai modal dasar kepada Menteri Kehutanan.

(3) Atas dasar saran dan pertimbangan dari Sekretaris Jenderal, Menteri Kehutanan menetapkan keputusan tentang persetujuannya.

(4) Atas dasar keputusan Menteri Kehutanan sebagaimana dimaksud ayat (3), Sekretaris Jenderal menyalurkan PMP sebagai equity untuk modal dasar pendirian perusahaan patungan.

Pasal 5

(1) Permohonan equity dan pinjaman yang berasal dari DR sebagaimana dimaksud dalam Pasal 2 huruf a dan c diajukan oleh perusahaan patungan kepada Menteri Kehutanan dengan tembusan Direktur Jenderal RRL, Sekretaris Jenderal, BUMN yang bersangkutan dan Bank Penyalur yang ditunjuk, dengan dilampiri :

a. Akta pendirian perusahaan yang telah disahkan Menteri Kehakiman beserta perubahannya.
b. NPWP.
c. SK HPHTI.
d. Study Kelayakan, kecuali untuk HTI Trans.
e. Neraca Perusahaan.
f. RKT tahun berjalan.

(2) Permohonan equity dan pinjaman DR tahun berikutnya diajukan kepada Menteri Kehutanan dengan dilampiri :

a. Neraca perusahaan yang telah diadit oleh Akuntan Publik.
b. RKT tahun berjalan.

Pasal 6

(1) Berdasarkan tembusan permohonan pinjaman DR sebagaimana dimaksud pada Pasal 5 ayat (1), Direktur Jenderal RRL dan Sekretaris Jenderal menyampikan saran dan pertimbangan kepada Menteri Kehutanan.

(2) Dengan memperhatikan saran dan pertimbangan Direktur Jenderal RRL dan Sekretaris Jenderal sebagaimana dimaksud dalam ayat (1), maka Menteri Kehutanan memberikan persetujuan atau penolakan permohonan pinjaman DR.

(3) Dalam hal permohonan pinjaman DR disetujui oleh Menteri Kehutanan, maka Sekretaris Jenderal menyiapkan naskah keputusan pemberian pinjaman DR dan naskah pemberitahuan persetujuan pinjaman DR kepada perusahaan patungan serta bank penyalur yang bersangkutan untuk diajukan kepada Menteri Kehutanan

(4) Menteri Kehutanan menandatangani naskah :

a. Keputusan Pemberian Pinjaman DR;
b. Pemberitahuan persetujuan pinjaman DR kepada Perusahaan patungan dan bank penyalur yang bersangkutan.

(5) Atas dasar keputusan pemberian pinjaman DR sebagaimana dimaksud dalam ayat (4) huruf a, Sekretaris Jenderal memindah bukukan dari rekening Menteri Kehutanan DR ke rekening Menteri Kehutanan karena pinjaman DR untuk perusahaan patungan yang bersangkutan pada bank penyalur.

(6) Atas dasar pemberitahuan persetujuan pinjaman DR sebagaimana dimaksud dalam ayat (4) huruf b, maka perusahaan patungan bersama- sama dengan bank penyalur yang bersangkutan, mengajukan naskah akad kredit untuk mendapatkan persetujuan Menteri Kehutanan.

(7) Berdasarkan persetujuan dan surat kuasa (untuk yang pertama kali) dari Menteri Kehutanan, maka perusahaan patungan dan bank penyalur menandantangani akad kredit yang bersangkutan dan kemudian bank penyalur menyalurkan pinjaman DR kepada perusahaan patungan yang bersangkutan

Pasal 7

(1) Besarnya PMP untuk modal pembangunan HTI dan pinjaman DR dihitung secara proporsional sebagaimana contoh perhitungan terlampir.

(2) PMP untuk modal pembangunan HTI disalurkan dengan memperhitungkan PMP untuk modal dasar yang disetor untuk pendirian perusahaan patungan yang telah disalurkan.

Pasal 8

(1) Penilaian kemajuan dan hasil pembangunan HTI sebagaimana diatur dalam surat keputusan Menteri Kehutanan Nomor 752/Kpts-II/90 dilakukan oleh konsultan penilai.

(2) Ketentuan penilai pembangunan HTI ditetapkan oleh Direktur Jenderal RRL.

(3) Biaya penilaian kemajuan dan hasil pelaksanaan kegiatan pembangunan HTI dibebankan kepada perusahaan patungan.

Pasal 9

(1) Hasil Pembangunan HTI yang telah dilaksanakan oleh perusahaan Swasta sebelum terbentuknya perusahaan patungan diperhitungkan secara proporsional sebagai equity swasta, equity DR dan pinjaman DR kedalam perusahaan patungan sebagaimana contoh perhitungan lampiran 1.

(2) Penilaian keberhasilan pelaksanaan kegiatan pembangunan HTI sebagaimana dimaksud dalam ayat (1) dilakukan oleh konsultan penilai.

(3) Biaya penilaian hasil pelaksanaan kegiatan pembangunan HTI sebagaimana dimaksud ayat (2) dibebankan kepada perusahaan Swasta yang melaksanakan kerjsama patungan dan diperhitungkan sebagai penyertaan modal Swasta yang bersangkutan kepada Perusahaan Patungan.

(4) Perhitungan biaya pembangunan HTI tersebut ayat (1) yang dilaksanakan s/d 1991/1992 ditetapkan sebesar Rp. 2.000.000,-/ha.

(5) Berdasarkan penilaian oleh konsultan penilai sebagaimana dimaksud ayat (2), dan perhitungan biaya yang ditetapkan sebagaimana dimaksud ayat (4), maka Menteri Kehutanan menyampaikan perhitungan besarnya asset kepada Menteri Keuangan.

(6) Penyaluran PMP untuk modal pembangunan HTI dan pinjaman DR sebagaimana dimaksud ayat (1) dilakukan setelah adanya penetapan nilai asset dari Menteri Keuangan.

Pasal 10

(1) Pengembalian pinjaman DR diatur dalam akad kredit antara bank penyalur dengan perusahaan patungan.

(2) Angsuran pinjaman mulai dilakukan pada saat hasil tebangan pertama dan harus berakhir dalam satu daur.

(3) Jumlah angsuran pinjaman disesuaikan dengan luas dan volume hasil tebangan.

(4) Pengembalian pinjaman dilaksanakan setelah kewajiban pembayaran berupa bunga bank dipenuhi.

(5) Pengembalian pinjaman DR dan pinjaman bank berbandung secara proporsional sesuai dengan jumlah masing-masing pinjaman yang telah dilaksanakan.

(6) Apabila masa angsuran pinjaman telah dimulai berjalan dan pada tahun berjalan tidak ada hasil tebangan, angsuran pinjaman diperhitungkan oada hasil tebangan berikutnya.

(7) Setiap perusahaan dari angsuran pinjaman yang telah dituangkan dalam akad kredit, harus diadakan addendum yang disesuaikan dengan pelaksanaan angsuran pinjaman.

Pasal 11

Ketentuan-ketentuan yang sebelumnya telah ditetapkan dan bertentangan dengan keputusan ini dinyatakan tidak berlaku.

Pasal 12

Keputusan ini mulai berlaku sejak tanggal ditetapkan.

Ditetapkan di : J a k a r t a.
Pada tanggal : 20 Pebruari 1993.

MENTERI KEHUTANAN,

ttd.

Ir. HASJRUL HARAHAP.

Salinan Keputusan ini disampaikan kepada Yth. :

1. Sdr. Menteri Keuangan.
2. Sdr. Gubernur Bank Indonesia.
3. Sdr. Sekretaris Jenderal Dep.Kehutanan.
4. Sdr. Inspektur Jenderal Dep.Kehutanan.
5. Sdr. Direktur Jenderal/Kepala Badan lingkup Dep.Kehutanan.
6. Sdr. Direksi BUMN lingkup Dep.Kehutanan.
7. Sdr. Direksi Bank Bumi Daya.
8. Sdr. Direksi Bank Negara Indonesia 1946.
9. Sdr. Direksi Bank Ekspor Impor Indonesia.
10. Sdr. Direksi Bank Rakyat Indonesia.
11. Sdr. Direksi Bank Dagang Negara.
12. Sdr. Direksi Bank Pembangunan Indonesia.
13. Sdr. Kepala Kantor Wilayah Dep.Kehutanan Propinsi di seluruh Indonesia.

KEPUTUSAN MENTERI KEHUTANAN

NOMOR : 267/KPTS-II/1995

TENTANG

PENYALURAN DANA REBOISASI DALAM RANGKA PENYERTAAN MODAL PEMERINTAH DAN PINJAMAN UNTUK PEMBANGUNAN HUTAN TANAMAN INDUSTRI BAGI PERUSAHAAN PATUNGAN/BUMN YANG BELUM MEMILIKI SK HPHTI (TETAP)

MENTERI KEHUTANAN,

Menimbang : a. bahwa berdasarkan evaluasi dan monitoring, ternyata sebagian besar BUMN ataupun perusahaan patungan belum dapat menyerahkan persyaratan secara lengkap sebagai dasar penerbitan SK. HPHTI sebagaimana disebutkan pada Keputusan Menteri Kehutanan Nomor 463/Kpts-II/1994;

b. bahwa untuk kelancaran pembangunan Hutan Tanaman Industri dan penyaluran dana reboisasi, maka dipandang perlu menetapkan kembali Keputusan Menteri Kehutanan tentang Penyaluran Dana Reboisasi Dalam Rangka Penyertaan Modal Pemerintah dan Pinjaman untuk Pembangunan Hutan Tanaman Industri bagi perusahaan patungan/BUMN yang belum memiliki SK. HPHTI (Tetap).

Mengingat : 1. Undang-undang Nomor 5 Tahun 1967;
2. Peraturan Pemerintah Nomor 7 Tahun 1990;
3. Peraturan Pemerintah Nomor 51 Tahun 1993;
4. Keputusan Presiden Nomor 15 Tahun 1984, Jo. Keputusan Presiden Nomor 58 Tahun 1993;
5. Keputusan Presiden Nomor 29 Tahun 1990, Jo. Keputusan Presiden Nomor 28 Tahun 1991, Jo. Keputusan Presiden Nomor 40 Tahun 1993;
6. Keputusan Presiden Nomor 96/M Tahun 1993;
7. Keputusan Bersama Menteri Kehutanan dan Menteri Keuangan Nomor 496/Kpts-II/1994 dan Nomor 533/KMK.017/1994;
8. Keputusan Menteri Kehutanan Nomor 358/Kpts-II/1993;
9. Keputusan Menteri Kehutanan Nomor 218/Kpts-II/1994;
10. Keputusan Menteri Kehutanan Nomor 26/Kpts-II/1995.

M E M U T U S K A N :

Menetapkan : KEPUTUSAN MENTERI KEHUTANAN TENTANG PENYALURAN DANA REBOISASI DALAM RANGKA PENYERTAAN MODAL PEMERINTAH DAN PINJAMAN UNTUK PEMBANGUNAN HUTAN TANAMAN INDUSTRI BAGI PERUSAHAAN PATUNGAN/BUMN YANG BELUM MEMILIKI SK. HPHTI (TETAP).

Pasal 1

(1) Bagi perusahaan patungan atau BUMN yang telah memperoleh Keputusan Menteri Kehutanan tentang Hak Pengusahaan Hutan Tanaman Industri

(Sementara) dapat diberikan PMP dan Pinjaman Dana Reboisasi, dengan ketentuan sebagaimana dimaksud dalam ayat (5).

(2) Permohonan penyaluran PMP atau Pinjaman DR sebagaimana dimaksud dalam ayat (1) diajukan oleh Perusahaan Patungan atau BUMN kepada Menteri Kehutanan disertai Berita Acara Penilaian (BAP) kemajuan pisik pembangunan HTI yang bersangkutan.

(3) BAP BUMN harus diketahui oleh Komisaris Utama sedangkan BAP Perusahaan Patungan harus diketahui oleh Komisaris Utama dan BUMN mitra kerjanya.

(4) Untuk dapat diterbitkan SK HPHTI (tetap) perusahaan patungan atau BUMN wajib menyertakan persyaratan kepada Menteri Kehutanan cq. Direktur Jenderal Pengusahaan Hutan sebagai berikut :

a. Studi kelayakan yang telah disetujui oleh Direktur Jenderal Pengusahaan Hutan dan bukti pelunasan IHPHTI paling lambat tanggal 30 September 1995;

b. ANDAL, RKL dan RPL yang telah disetujui oleh Ketua Komisi Pusat AMDAL Departemen Kehutanan, paling lambat tanggal 31 Januari 1996.

(5) Sebelum diterbitkan SK HPHTI (tetap) sebagaimana dimaksud dalam ayat (4), penyaluran Dana Reboisasi, tetap dapat dilaksanakan, dengan ketentuan sebagai berikut :

a. Apabila setelah tanggal 30 September 1995, persyaratan sebagaimana dimaksud dalam ayat (4) huruf a belum dipenuhi, maka penyaluran Dana Reboisasi dihentikan;

b. Apabila setelah tanggal 31 Januari 1996 persyaratan sebagaimana dimaksud dalam ayat (4) huruf a dan huruf b belum dipenuhi, maka penyaluran Dana Reboisasi dihentikan;

c. Untuk membuktikan telah dipenuhinya persyaratan sebagaimana dimaksud dalam ayat (4), perlu adanya konfirmasi dari Direktur Jenderal Pengusahaan Hutan kepada Sekretaris Jenderal Departemen Kehutanan.

(6) Bagi BUMN atau Perusahaan Patungan yang telah memenuhi persyaratan tersebut ayat (4), maka SK. HPHTI (tetap) diterbitkan selambat-lambatnya enam bulan setelah dipenuhinya syarat tersebut.

(7) Bagi Perusahaan Patungan atau BUMN yang telah memenuhi ketentuan ayat (4) PMP dan Pinjaman Dana Reboisasi tetap dapat disalurkan sampai dengan tanggal 31 Maret 1996.

(8) Terhitung mulai 1 April 1996 PMP dan Pinjaman DR hanya diberikan kepada Perusahaan Patungan atau BUMN yang telah memperoleh SK HPHTI Tetap.

Pasal 2

Pencairan DR untuk Pembangunan Hutan Tanaman Industri dilaksanakan sesuai dengan Keputusan Menteri Kehutanan Nomor 26/Kpts-II/1995 tanggal 13 Januari 1995 tentang Ketentuan dan Tata Cara Penyaluran Dana Reboisasi

Dalam Rangka Penyertaan Modal Negara dan Pinjaman untuk Pembangunan Hutan Tanaman Industri oleh Perusahaan Patungan.

Pasal 3

Dengan ditetapkannya Keputusan ini, maka Keputusan Menteri Kehutanan Nomor 463/Kpts-II/1994 dinyatakan tidak berlaku lagi.

Pasal 4

Keputusan ini mulai berlaku sejak tanggal ditetapkan.

Ditetapkan di Jakarta
Pada tanggal 16 Mei 1995.

MENTERI KEHUTANAN,

ttd

DJAMALUDIN SURYOHADIKUSUMO.

Salinan Keputusan ini
disampaikan kepada Yth. :

1. Sdr. Sekretaris Jenderal Departemen Kehutanan.
2. Sdr. Inspektur Jenderal Departemen Kehutanan.
3. Sdr. Direktur Jenderal/Kepala Badan lingkup Departemen Kehutanan.
4. Sdr. Kepala Kantor Wilayah Departemen Kehutanan Propinsi.

KEPUTUSAN MENTERI KEHUTANAN

Nomor : 33/Kpts-II/94

TENTANG

PENYALURAN DANA REBOISASI DALAM RANGKA PENYERTAAN MODAL PEMERINTAH DAN PINJAMAN UNTUK PEMBANGUNAN HUTAN TANAMAN INDUSTRI UNTUK SELAMA SATU TAHUN

MENTERI KEHUTANAN,

Menimbang : a. bahwa berdasarkan Keputusan Menteri Kehutanan Nomor 527/Kpts-II/93, yang telah beberapa kali diubah ter - akhir dengan Keputusan Menteri Kehutanan Nomor 725/ Kpts-II/93, telah ditetapkan Penyaluran Dana Reboisasi Dalam Rangka Penyertaan Modal Pemerintah dan Pinjaman Untuk Pembangunan Hutan Tanaman Industri Untuk Selama Satu Tahun;

b. bahwa dalam rangka kelancaran penyaluran dana reboisasi dalam rangka penyertaan modal pemerintah dan pinjaman untuk pembangunan Hutan Tanaman Industri untuk selama satu tahun tersebut, maka dipandang perlu menetapkan kembali Keputusan Menteri Kehutanan tentang Penyaluran Dana Reboisasi Dalam Rangka Penyertaan Modal Pemerintah dan Pinjaman Untuk Pembangunan Hutan Tanaman Industri Untuk Selama Satu Tahun.

Mengingat : 1. Undang-undang Nomor 5 Tahun 1967;
2. Peraturan Pemerintah Nomor 7 Tahun 1990;
3. Keputusan Presiden Nomor 15 Tahun 1984 jo Keputusan Presiden Nomor 58 Tahun 1993;
4. Keputusan Presiden Nomor 29 Tahun 1990 jo Keputusan Presiden Nomor 28 Tahun 1991;
5. Keputusan Presiden Nomor 96/M Tahun 1993;
6. Keputusan Bersama Menteri Kehutanan dan Menteri Keuangan Nomor 421/Kpts-II/90 dan Nomor 931/KMK.013/90.

M E M U T U S K A N :

Menetapkan : KEPUTUSAN MENTERI KEHUTANAN TENTANG PENYALURAN DANA REBOISASI DALAM RANGKA PENYERTAAN MODAL PEMERINTAH DAN PINJAMAN UNTUK PEMBANGUNAN HUTAN TANAMAN INDUSTRI UNTUK SELAMA SATU TAHUN.

Pasal 1

(1) Bagi Perusahaan Patungan yang telah memperoleh Keputusan Menteri Kehutanan tentang Hak Pengusahaan Hutan Tanaman Industri (Sementara) atau BUMN yang telah

memperoleh Keputusan Menteri Kehutanan tentang Penunjukan Untuk Pembangunan Hutan Tanaman Industri, diberikan PMP dan Pinjaman DR untuk jangka waktu satu tahun sejak ditetapkannya keputusan ini.

(2) Penyaluran PMP atau Pinjaman DR sebagaimana tersebut ayat (1) disertai Berita Acara Penilaian untuk kegiatan tahun sebelumnya oleh Perusahaan Patungan yang diketahui oleh Komisaris Utama dan Kantor Wilayah Departemen Kehutanan yang bersangkutan.

(3) Perusahaan Patungan atau BUMN dalam jangka waktu satu tahun wajib melengkapi persyaratan untuk dapat diterbitkan SK Hak Pengusahaan Hutan Tanaman Industri (Tetap) yaitu :

a. Melunasi IHPHTI, dengan tarif baru yang segera akan ditetapkan;

b. Rekomendasi Gubernur Kepala Daerah Tingkat I;

c. Menyerahkan Fs;

d. Menyerahkan Rencana Kelola Lingkungan dan Pemantauan Lingkungan;

e. Menyerahkan Potret Udara/Citra Composite Landsat TM Digital Natural Colour skala 1 : 100.000.

(4) Menyerahkan AMDAL atau PIL dalam jangka waktu paling lama 2 (dua) tahun sejak dikeluarkan Keputusan ini.

(5) Apabila dalam jangka waktu satu tahun tidak menyelesaikan persyaratan sebagaimana tersebut ayat (3), maka yang bersangkutan tidak diberikan PMP atau Pinjaman DR sampai persyaratan dipenuhi.

Pasal 2

Pencairan Dana Reboisasi khusus untuk Hutan Tanaman Industri Pulp dibayar sekaligus sesuai dengan Rencana Karya Tahunan (RKT) yang telah disahkan instansi kehutanan.

Pasal 3

Dengan ditetapkannya Keputusan ini maka :

a. Keputusan Menteri Kehutanan Nomor 527/Kpts-II/1993;

b. Keputusan Menteri Kehutanan Nomor 609/Kpts-II/1993;

c. Keputusan Menteri Kehutanan Nomor 725/Kpts-II/1993;

dinyatakan tidak berlaku lagi.

Pasal 4

Keputusan ini mulai berlaku pada tanggal ditetapkan dan berlaku surut sejak tanggal 18 September 1993.

Ditetapkan di : J A K A R T A.
Pada tanggal : 26 Januari 1994.

MENTERI KEHUTANAN,

ttd.

DJAMALUDIN SURYOHADIKUSUMO.

Salinan Keputusan ini
disampaikan kepada Yth. :

1. Sdr. Sekretaris Jenderal.
2. Sdr. Inspektur Jenderal.
3. Sdr. Direktur Jenderal/Kepala Badan lingkup Dep.Kehutanan.
4. Sdr. Kepala Kantor Wialyah Departemen Kehutanan Propinsi.

付属資料　12. INHUTANIⅢの林木種子輸入状況

REALISASI
JENIS BIBIT IMPORT DARI AUSTRALIA

TAHUN	JENIS BIBIT	(計画) RENCANA (Kg)	(実績) REALISASI (Kg)
1993	Acacia Mangium (Oriomo, PNG)	7,0	7,0
1993	Eucalyptus pellita (Bupul, Irian Jaya)	0,5	0,5
1993	Eucalyptus pellita (Kirimo, PNG)	4,9	4,9
1993	Eucalyptus pellita (Keru, PNG)	1,6	1,6
1993	Eucalyptus pellita (Serisa, PNG)	3,5	3,5
1993	Acacia crassicarpa (Dimissi, PNG)	45,0	45,0
1996	Acacia aulacocarpa	25	25
1996	Acacia aulacocarpa	25	25
1996	Acacia auriculiformis	35	35
1996	Acacia auriculiformis	15	15
1996	Acacia crassicarpa	23	23
1996	Acacia crassicarpa	27	27
1996	Acacia Mangium	100	100
1996	Eucalyptus pellita	4	4
1997	Acacia crassicarpa	150	
1997	Acacia Mangium	31	
1997	Acacia Mangium	9	
1997	Acacia Mangium	20	Belum dikirim
1997	Acacia Mangium	20	
1997	Acacia Mangium	170	
1997	Eucalyptus pellita	10	
1997	Eucalyptus pellita	5	

付属資料　13. 1997年3月までに造成された種子源
（出典：橋本専門家総合報告書）

Appendix 2

Seed Sources established as of March 1997

Location	Species	92/93	93/94	94/95	95/96	96/97
East Kalimantan	*Eucalyptus pellita*					
	Group (A), (B), (C), (D)				* * * *	
South Kalimantan	*Acacia mangium*					
	Group (A), (C)		* *			
	Group (B), (D)			* *		
	Eucalyptus pellita		*			
	Eucalyptus urophylla		*			
	Acacia crassicarpa					* *
	Acacia aulacocarpa					*
West Kalimantan	*Acacia mangium*					
	Group (B), (C)			* *		
South Sumatra	*Acacia mangium*					
	Group (A), (B), (C), (D)		* * * *			
	Group (C)				*	
	Acacia crassicarpa					
	Group (A), (B), (C)			* * *		
	Acacia auriculiformis				*	
	Eucalyptus pellita					
	Group (A), (B), (C)			* * *		
	Group (D)				*	
Wonogiri, Java	*Acacia mangium*			*		
	Eucalyptus pellita			*		
	Acacia auriculiformis				*	
	Acacia crassicarpa					*
	Acacia aulacocarpa					*
	Paraserianthes falcataria					*
Candiroto, Java	*Paraserianthes falcataria*				*	
Riau, Sumatra	*Eucalyptus pellita*					
	Group (A), (B), (C), (D)				* * * *	


JICA