

TECHNICAL COOPERATION FOR
THE TRIAL PLANTATION PROJECT
IN BENARAT, SOUTH SUMATRA
(ATA: 186)

APRIL, 1979 - MARCH, 1988



March, 1988

JAPAN INTERNATIONAL COOPERATION AGENCY

(JICA)

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JAPAN INTERNATIONAL COOPERATION AGENCY

(J I C A)

国際協力事業団

21355

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* C o n c l u s i o n

Preface

The Trial Plantation Project (Proyek Percobaan Tanaman Hutan) (A T A - 1 8 6) ,

The Technical Cooperation for The Trial Plantation Project in Benakat, South Sumatera (ATA-186) has been proceeded since 1979, aiming at establishing afforestation techniques so as to contribute to the successful plantation on alang-alang grassland as a foregoing stage of an industrial scale afforestation.

It is said that there are critical lands of fourteen million HA which should be rehabilitated in Indonesia.

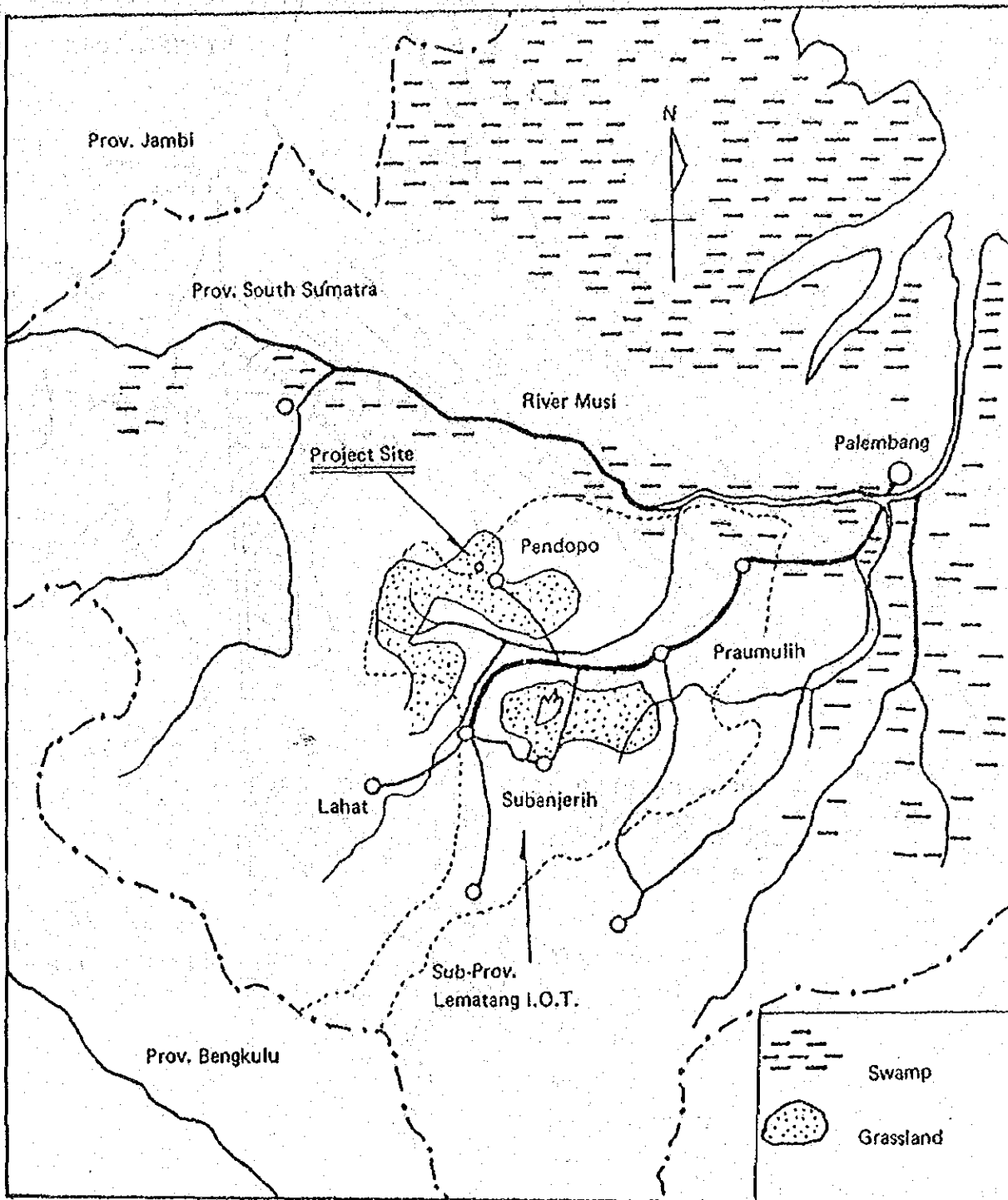
"In many developing countries, the supply of food, water and fuel to rapidly increasing population is becoming more and more difficult. Forest are quickly disappearing in unplanned agriculture and over-exploitation of forests particularly for fuel wood, and desertification is threatening many areas. The deterioration in land productivity endangers the survival of the people." (The YOKOHAMA FOREST DECLARATION, October 14, 1985) Commemorative Symposium for the International Year of the Forests).

From the view-point of sustainment and enrichment of forest resources, soil conservation and water management, it should be greatly appraised that the government of Indonesia recognized the significance and the urgency of restoring forests on those unproductive grasslands as one of the top priority policies of the national development programme.

The Project activities have been successfully implemented during the initial five years, the two year extended and the two year follow-up, owing to the good cooperation efforts of Indonesian counterparts, Japanese experts and both countries' authorities concerned.

The Project is ended on 31 March, 1988, with the great results.

1. LOCATION OF THE PROJECT SITE

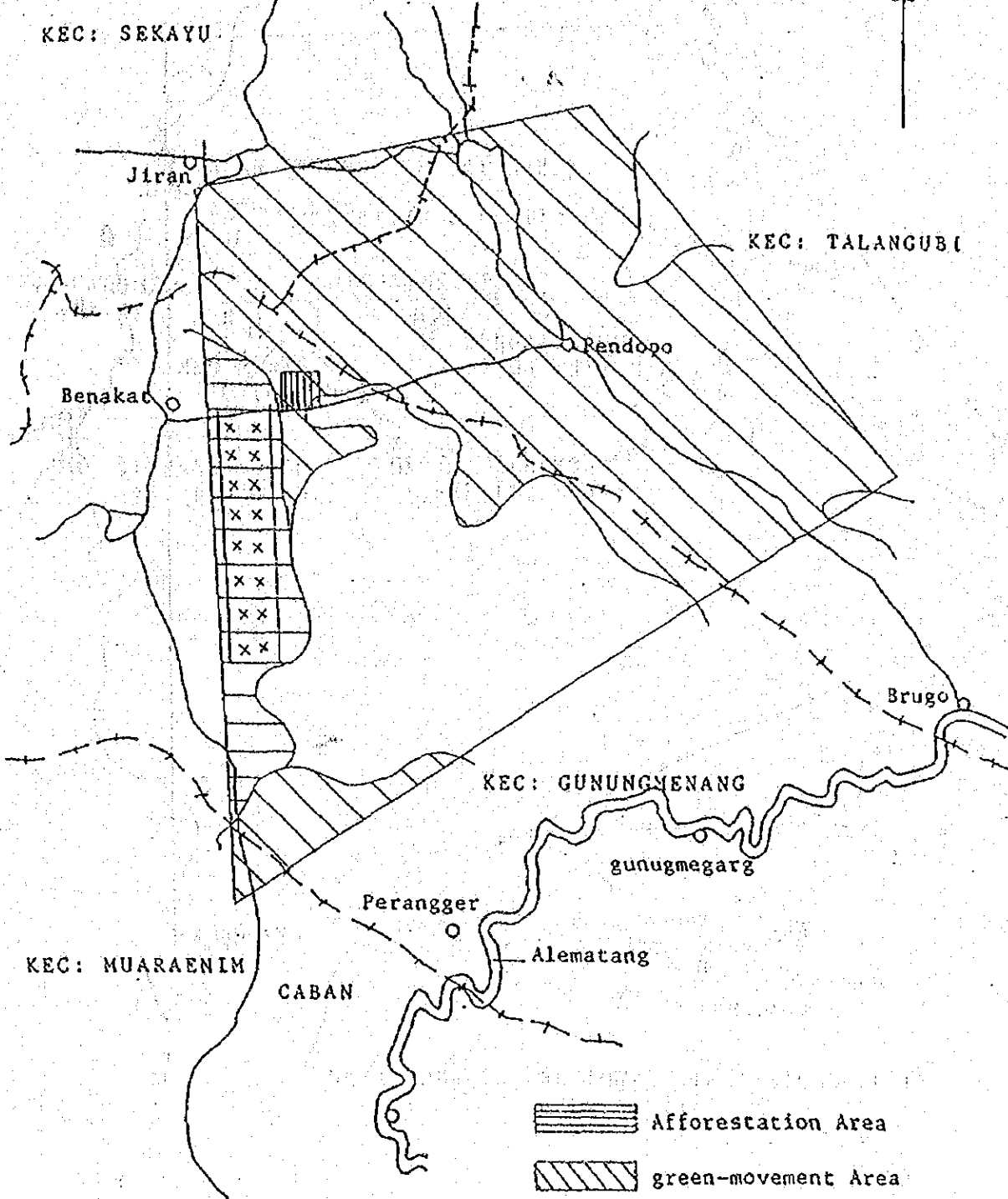
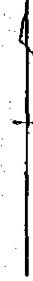


Location Map of Trial Plantation Project Area

Location situated at 3° 02' - 4° 25' S. Lat.
 103° 07' - 104° 14' E. Long. Approx. 180 km
 Southwest of Palembang, South Sumatra

KEC: SEKAYU

N



KEC: MUARAENIM

CABAN

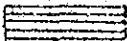

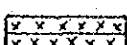

KEC: GUNUNGMEANG

gunugmegarg

Perangger

Aلماتang

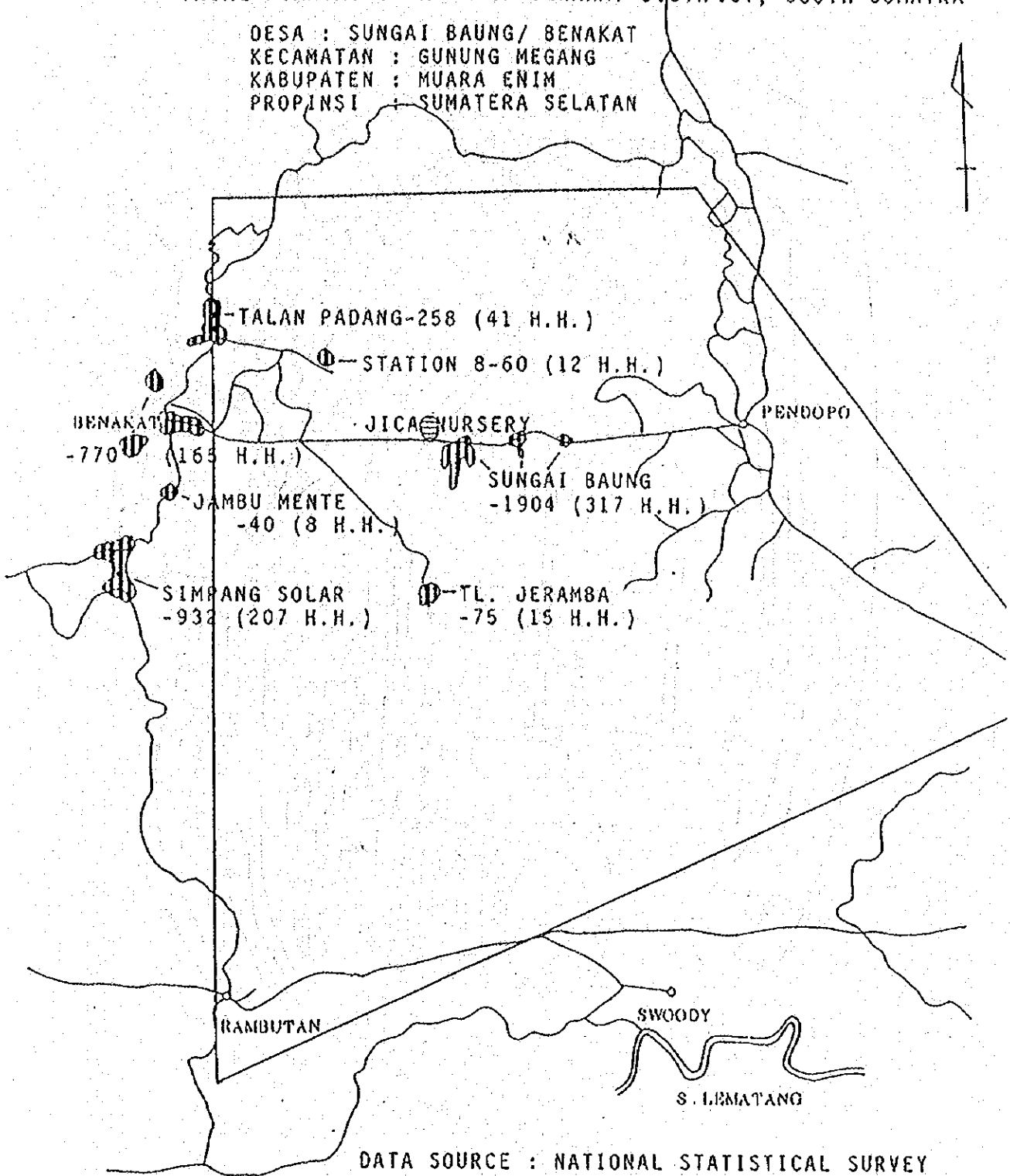
Brugo

-  Afforestation Area
-  green-movement Area
-  Trial Plantation Area
-  Nursery Area

SKALA 1 : 250,000

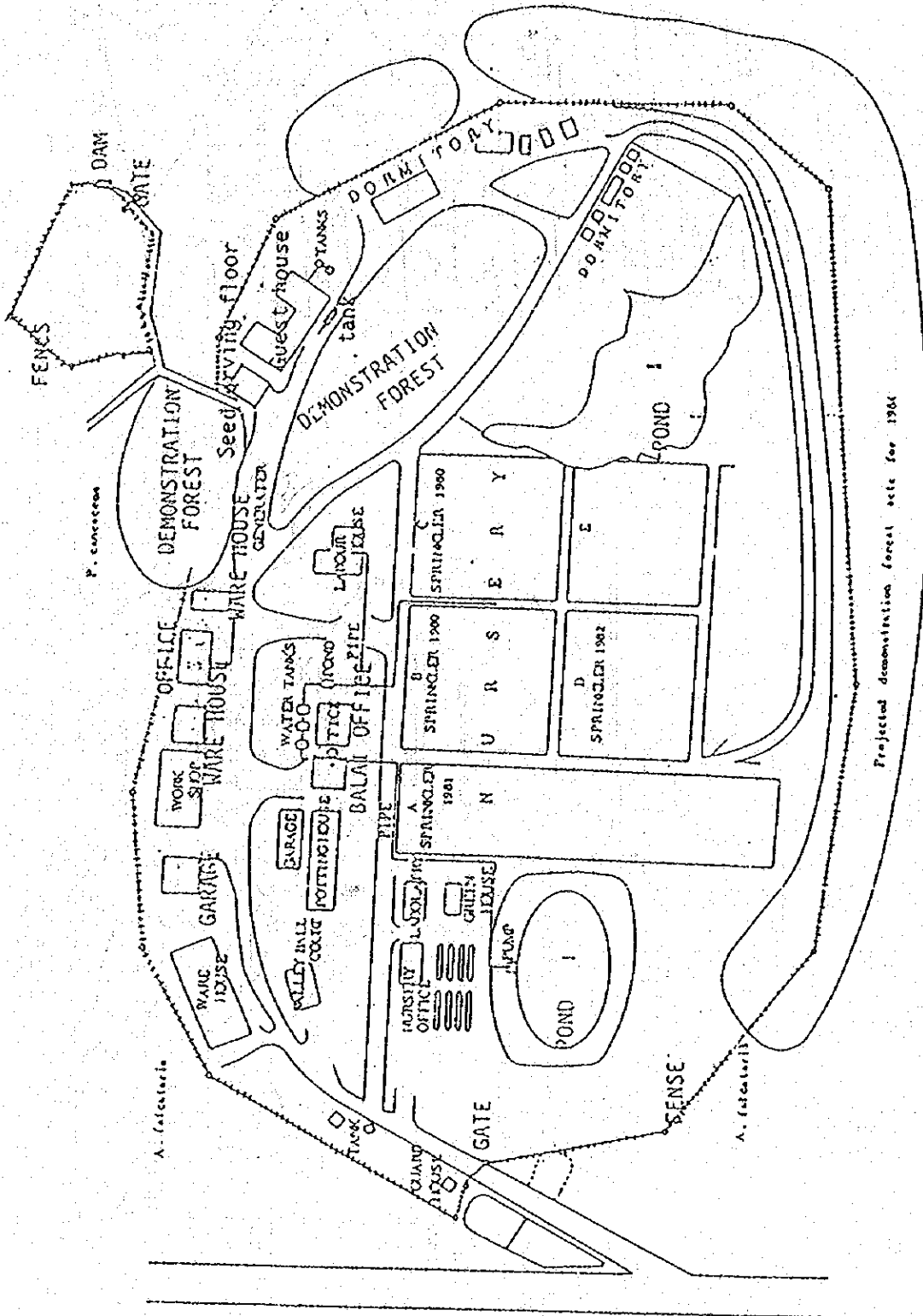
DEMOGRAPHICAL DISTRIBUTION AROUND
TRIAL PLANTATION AREA IN BENAKAT DISTRICT, SOUTH SUMATRA

DESA : SUNGAI BAUNG/ BENAKAT
KECAMATAN : GUNUNG MEGANG
KABUPATEN : MUARA ENIM
PROPINSI : SUMATERA SELATAN



DATA SOURCE : NATIONAL STATISTICAL SURVEY
JULY, 1984

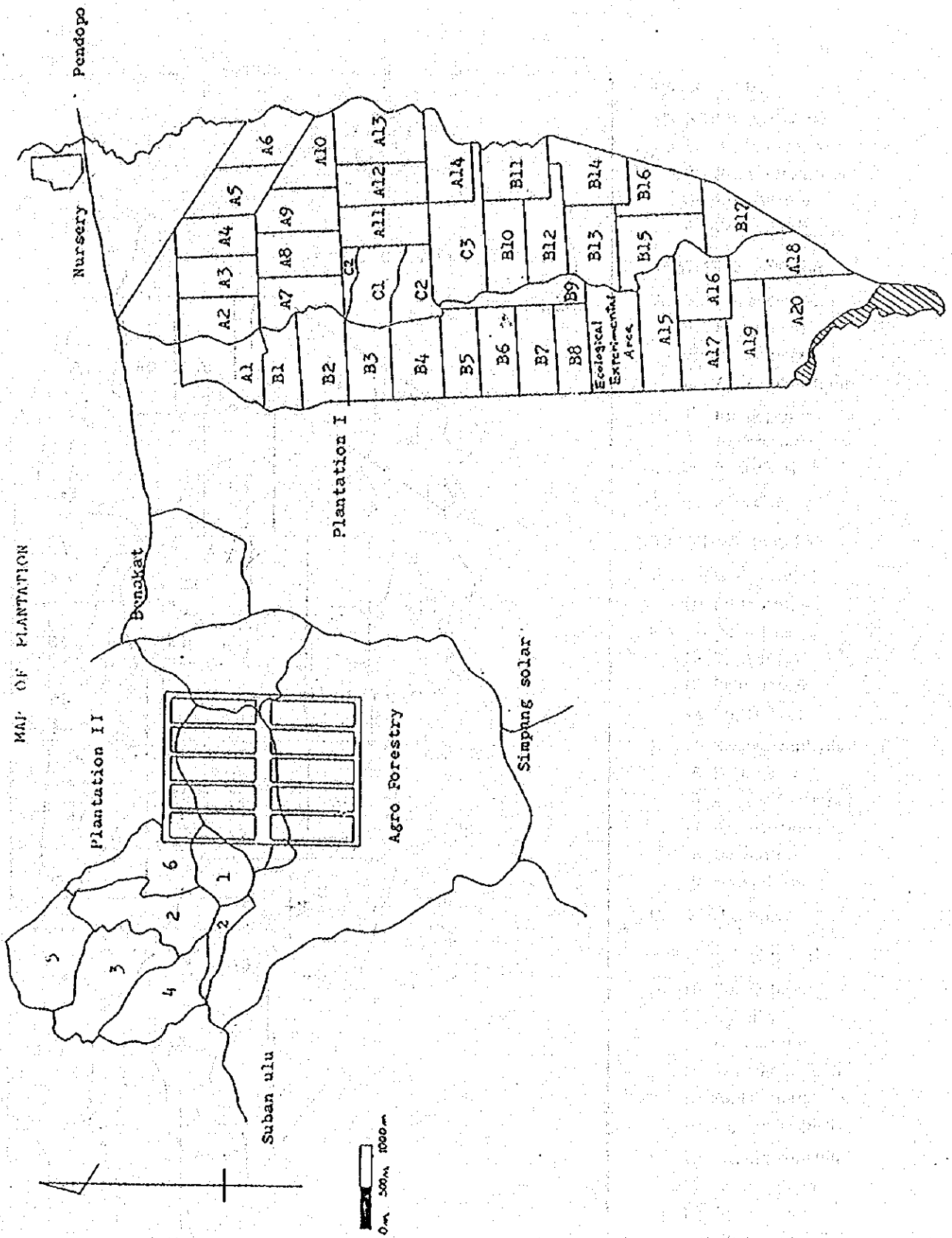
* H.H. : House-Holds

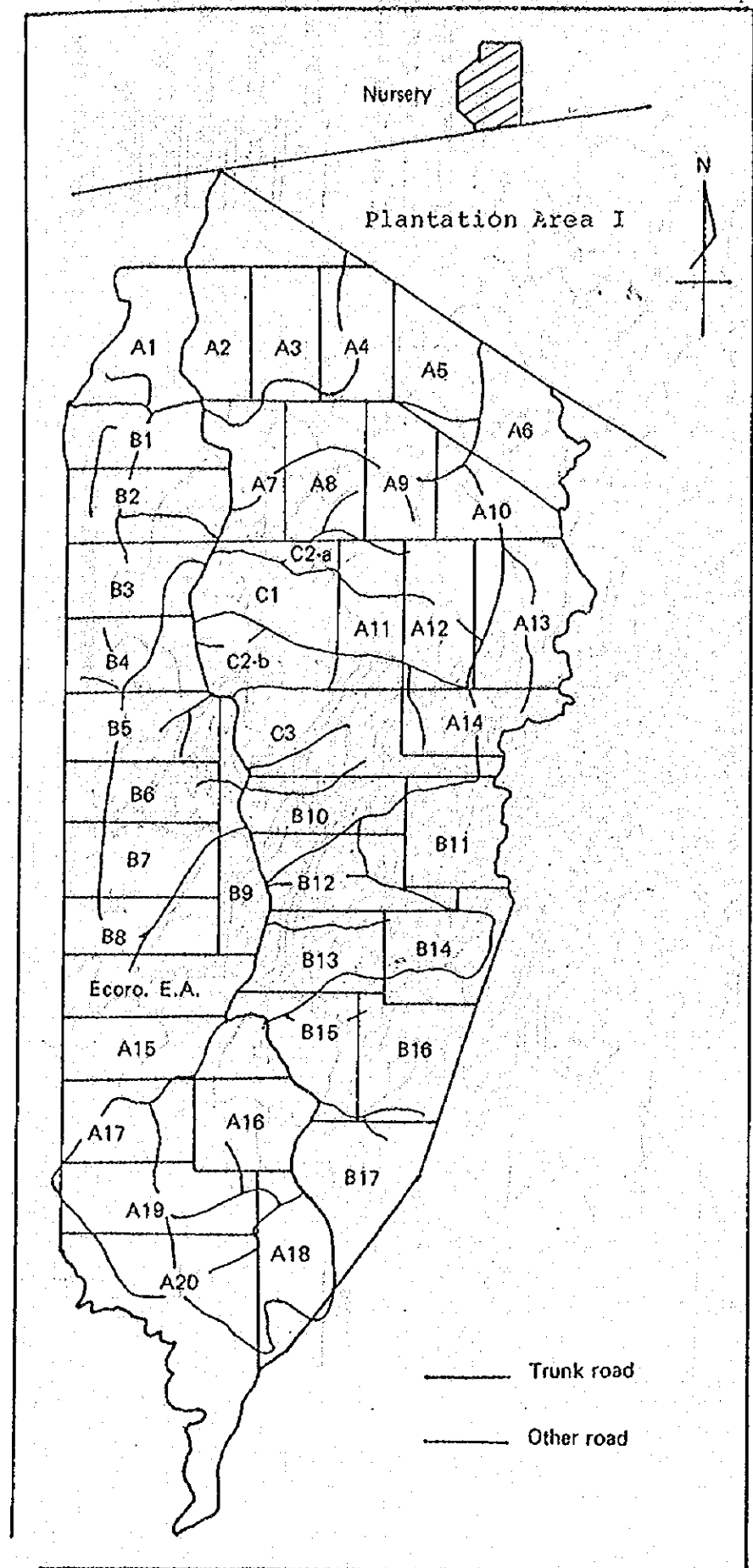


Projected demonstration forest site for 1964

Facilities location in Nursery

MAP OF PLANTATION





Working Map

1980/1981 (200 Ha)

- A. 1. *Al. falcataria*
- 2. *Sw. macrophylla*
- 3. *Eu. deglupta*
- 4. *Pi. merkusii*

1981/1982 (400 Ha)

- A. 5. *An. cadamba*
- 5. *Sc. bancana*
- 7. *Pe. canescens*
- 8. *Ac. auriculiformis*
- B. 1. *Eu. deglupta*
- 2. *Al. falcataria*
- 3. *P. merkusii*

C. 4. 9 species.

1982/1983 (630 Ha)

- A. 9. *Da. latifolia*
- 10. *Pt. indicus*
- 11. *Ac. mangium*
- 12. *Sa. saman*
- 13. *Pi. merkusii*
- 14. *Eu. deglupta*
- B. 4. *Sw. macrophylla*
- 5. *Sc. bancana*
- 6. *Ac. auriculiformis*
- 7. *Ac. mangium*
- 8. *Da. latifolia*
- 9. *Pi. merkusii*

C. 2. 11 species.

1983/1984 (770 Ha)

- A. 15. *Eu. deglupta*
- 16. *Eu. alba*
- 17. *Ac. mangium*
- 18. *Sw. macrophylla*
- 19. *Al. falcataria*
- 20. *Le. leucocephala*
- B. 10. *Sw. macrophylla*
- 11. *Ac. mangium*
- 12. *Ac. mangium*
- 13. *Sw. macrophylla*
- 14. *Eu. deglupta*
- 18. *Pe. canescens*
- Al. falcataria*
- 17. *Ac. bancana*

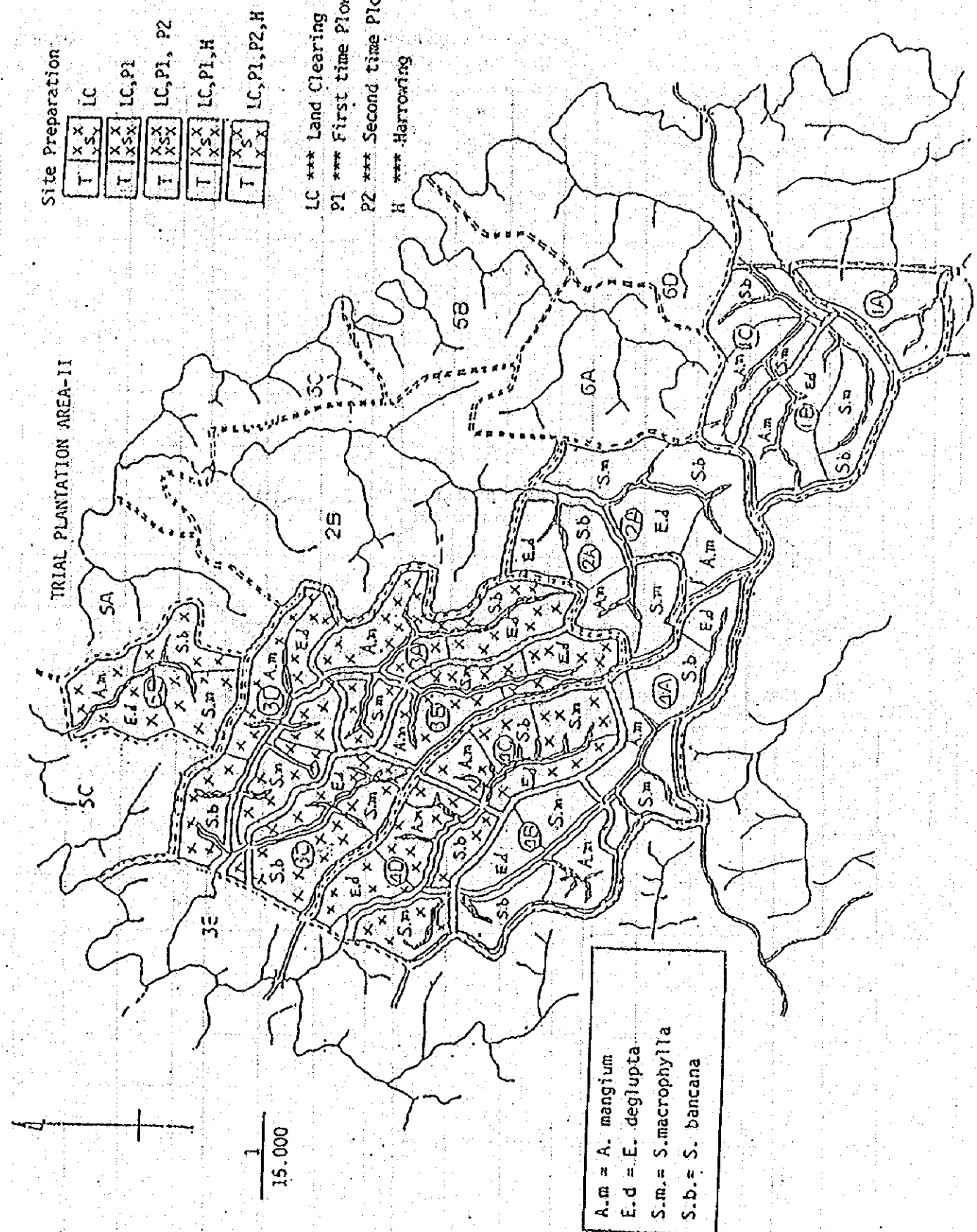
C. 3. 10 species.

Site Preparation

| | | |
|---|-----|---------------|
| T | X X | LC |
| T | X X | LC, P1 |
| T | X X | LC, P1, P2 |
| T | X X | LC, P1, H |
| T | X X | LC, P1, P2, H |

LC *** Land Clearing
 P1 *** First time Plowing
 P2 *** Second time Plowing
 H *** Harrowing

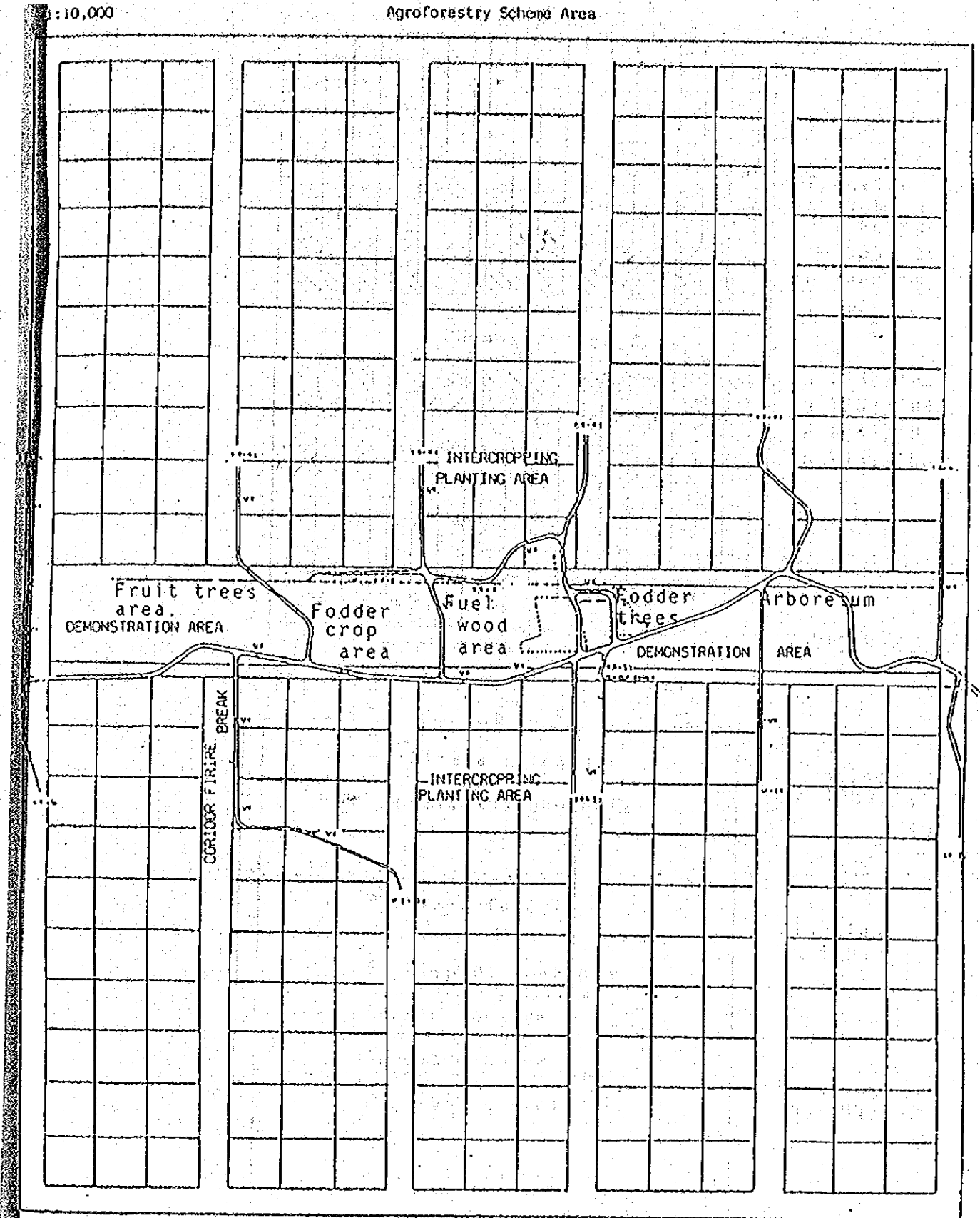
TRIAL PLANTATION AREA-II



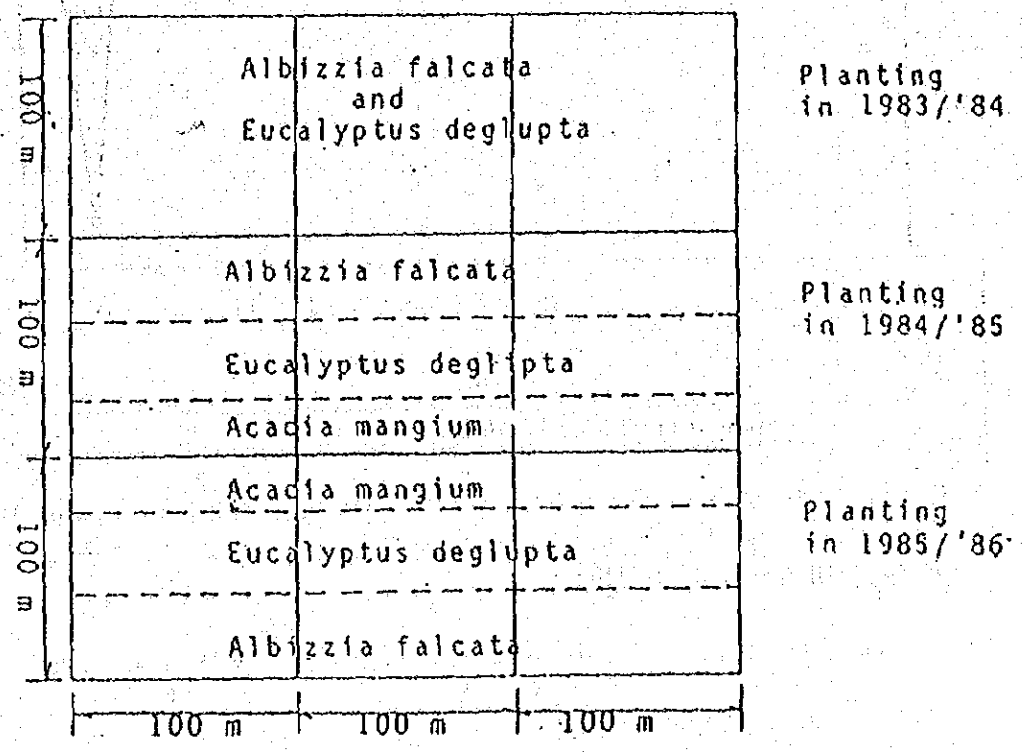
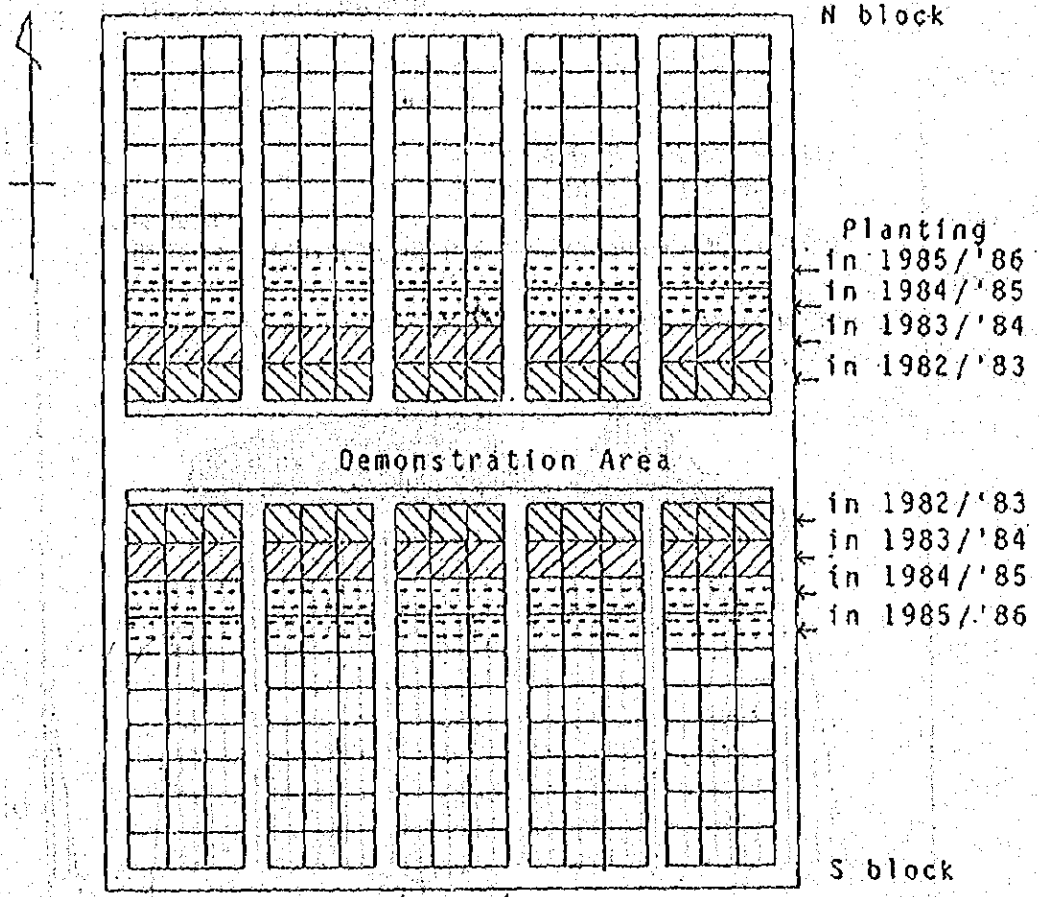
A.m = *A. mangium*
 E.d = *E. deglupta*
 S.m. = *S. macrophylla*
 S.b. = *S. bancana*

1:10,000

Agroforestry Scheme Area



Layout of Agroforestry site.



Layout of planting.

3. CLIMATIC DIAGRAM

(WALTER'S KLIMADIAGRAM)

TEMPERATURE
(° C)

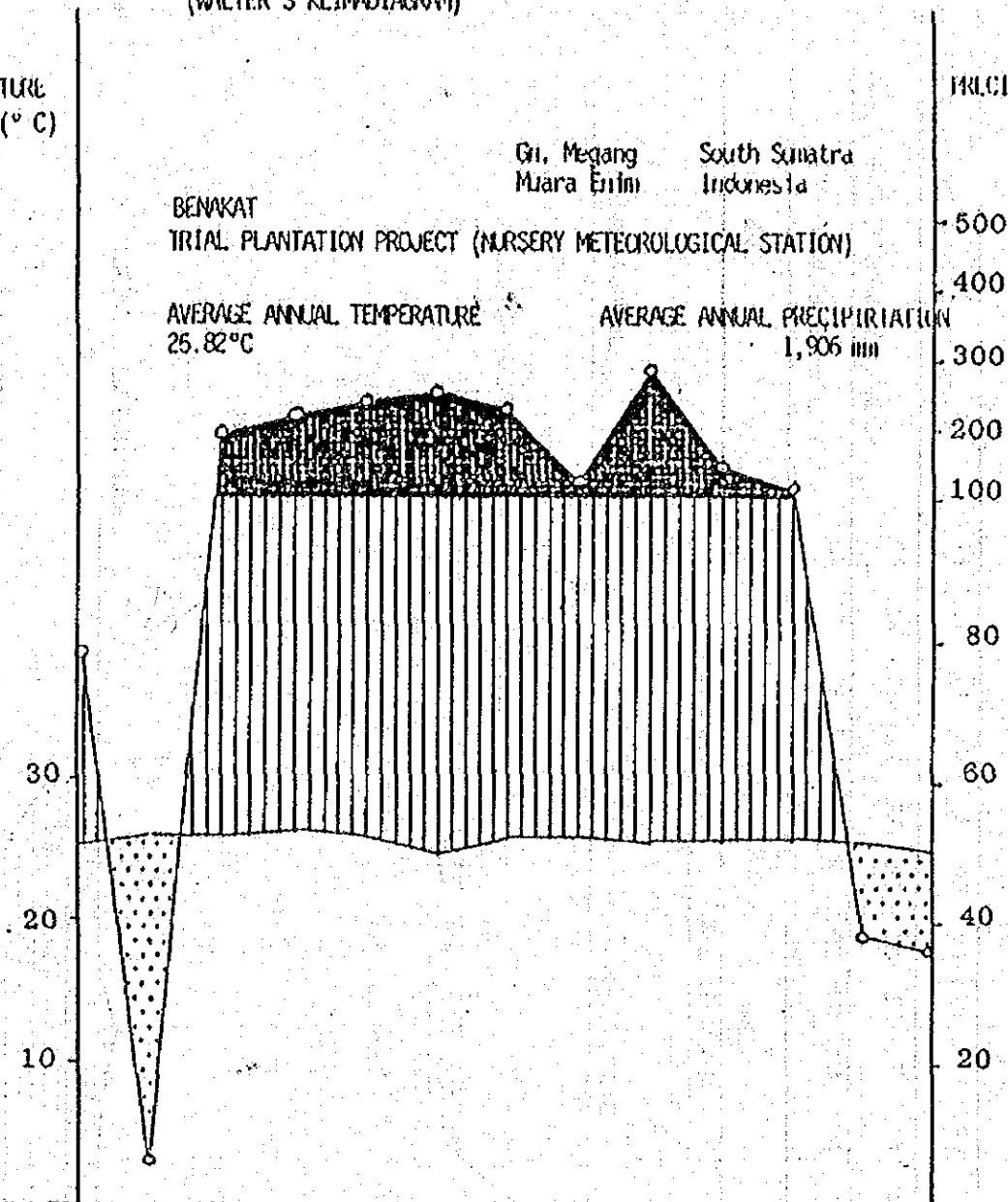
PRECIPITATION
(mm)

Gri, Megang
Muara Enim South Sumatra
Indonesia

BENAKAT
TRIAL PLANTATION PROJECT (NURSERY METEOROLOGICAL STATION)

AVERAGE ANNUAL TEMPERATURE
25.82°C

AVERAGE ANNUAL PRECIPITATION
1,906 mm



| 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|--------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| 1984 | | | | | | 1985 | | | | | | | |
| MONTHLY PRECIPITATION (mm) | | | | | | | | | | | | | |
| 78.0 | 6.0 | 190.5 | 218.0 | 237.0 | 251.0 | 226.5 | 122.0 | 283.5 | 143.0 | 112.0 | 37.5 | 36.0 | 13.5 |
| 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| MONTHLY MEAN TEMPERATURE (° C) | | | | | | | | | | | | | |
| 25.4 | 26.0 | 26.0 | 26.4 | 25.9 | 24.9 | 26.0 | 26.0 | 25.7 | 25.8 | 26.0 | 25.7 | 25.0 | 25.5 |
| 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| MONTHLY RAINFALL DAYS | | | | | | | | | | | | | |
| 11 | 5 | 15 | 19 | 21 | 20 | 23 | 15 | 15 | 11 | 9 | 6 | 5 | 3 |

5. Nursing Period And Number of Days After Seeding

To Pricking out

| Species | *Number of days after seeding to pricking out | Nursing period month | Seedling height Cm |
|---|---|-------------------------|-----------------------|
| <u>Acacia auriculiformis</u> | 10 - 14 | 3 | 40 - 50 |
| <u>Acacia mangium</u> | 7 - 10 | 3 | 50 - 70 |
| <u>Acacia siluans pera</u> | 7 - 10 | 3 | 50 - 60 |
| <u>Albizzia falcataria</u> | 5 - 8 | 3 | 50 - 100 |
| <u>Aleurites moluccana</u> | 12 - 20 | 4 | 30 - 45 |
| <u>Alstonia scholaris</u> | 7 - 10 | 3 | 40 - 50 |
| <u>Anthocephalus chinensis</u> (syn. A. Cadamba) | 20 - 25 | 3 | 40 - 50 |
| <u>Casuarina equisetifolia</u> | 7 - 9 | 4 c=3 | 50 - 80 |
| <u>Calliandra carathyrus</u> | 6 - 10 | 3 | 40 - 70 |
| <u>Dalbergia latifolia</u> | 7 - 11 | 3 | 40 - 60 |
| <u>Enterolobium cyclocarpum</u> | 5 - 10 | 3 | 60 - 80 |
| <u>Eucalyptus alba</u> | 6 - 9 | 3 | 40 - 60 |
| <u>Eucalyptus deglupta</u> | 25 - 30 | 3 | 40 - 60 |
| <u>Eucalyptus urophylla</u> | 10 - 15 | 3 | 40 - 60 |
| <u>Gmelina arborea</u> | 10 - 14 | 3 c=3 | 70 - 100 |
| <u>Koompassia malacensis</u> | 6 - 8 | 8 | 30 - 50 |
| <u>Leucaena glauca</u> | 5 - 8 | 3 | 40 - 70 |
| <u>Leucaena leucocephala</u> | 5 - 8 | 3 | 40 - 70 |
| <u>Melaleuca leucadendron</u> | 9 - 14 | 3 | 50 - 80 |
| <u>Peronema canescens</u> | 10 - 20 | 4 c=3 | |
| <u>Pinus merkusii</u> | 7 - 14 | 8 | 25 - 30 |
| <u>Pinus caribaea</u> | 10 - 20 | 8 c=4 | 30 - 50 c=20-30 |
| <u>Pterocarpus indicus</u> | 9 - 14 | 3 | 40 - 60 |
| <u>Samanea samaan</u> | 5 - 8 | 3 | 40 - 60 |
| <u>Schima wallichii var bancana</u> | 6 - 18 | 3-4 c=3 | 30 - 50 |
| <u>Sesbania grandiflora</u> | 8 - 10 | 3 | 30 - 50 |
| <u>Shorea leprosula</u> | 4 - 6 | 8 | 30 - 50 |
| <u>Shorea singkawang</u> | 6 - 7 | 8 | 30 - 50 |
| <u>Swietenia macrophylla</u> | 12 - 14 | 3-4 | 30 - 60 |

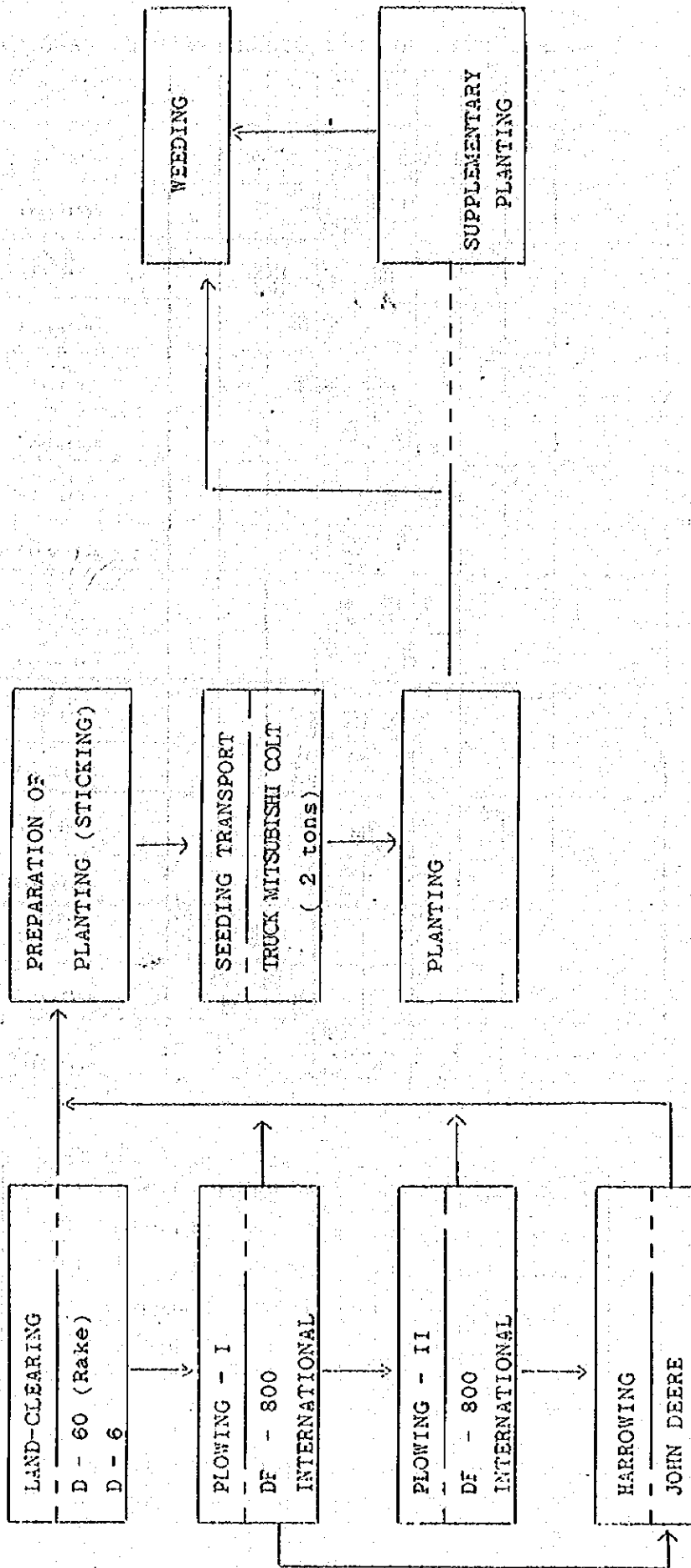
c means cuttings

cited from H. Yamate: operational Report 1984

* Retno Sekarsari (Nursery counterpart)

6. CURRENT SYSTEM OF TRIAL PLANTATION

CURRENT SYSTEM OF TRIAL PLANTATION



7. OPERATIONAL PLAN AND EXECUTION FOR SITE PREPARATION AND

CULTIVATION

| Month Camp | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 |
|-----------------|---|------|------|------|-----|-----|---------|---------|
| 4 B (40.63) | | | U-60 | U-60 | H | J | 5.07ha | 12.37ha |
| Execution | | | CAT | I.N | I.N | | | |
| 5 A (23.36) | | | O-50 | D F | I.N | | 23.36ha | |
| Execution | | | O-50 | | | | | |
| 5 C (24.29) | | | U-50 | D F | | | 24.29ha | |
| Execution | | | O-60 | O F | I.N | | | |
| 6 A (20.88) | | | | O-60 | I.N | I.N | 9.33ha | 11.55ha |
| Execution | | | | CAT | I.N | | | |
| 6 B (14.55) | | | | U-60 | U F | O F | | 14.55ha |
| Execution | | | | I.N | I.N | | | |
| 6 C (8.77) | | | | O-60 | I.N | I.N | | 8.77ha |
| Execution | | | | CAT | D F | O F | | |
| 6 D (17.96) | | | | O-50 | | | | 17.96ha |
| Execution | | | | O-60 | D F | | | |
| Agro (30.00) | | O-60 | I.N | I.N | I.N | | 30.00ha | |
| Execution | | | | | | | | |
| 7 C (17.96) | | | | CAT | I.N | I.N | | |
| Execution | | | | | I.N | I.N | | |

Remarks :

| | | |
|---------------------|--|------------------------------|
| L.C - Land Clearing | | U-60 - Komatsu O-60-A |
| P 1 - Plowing 1 | | U-50 - Komatsu O-50-A |
| P 2 - Plowing 2 | | O F - Komatsu Of-800-1 |
| H - Narrowing | | I.N - Komatsu Inter National |
| — - Planting | | J - John Deere |
| | | CAT - Caterpillar O-6-0 |

Operational Plan and Execution for site preparation and cultivation in 1985/1986

8. ANNUAL PLANTING AREA OF SPECIES (1980--1988)

PLANTING AREA OF SPECIES

| SPECIES | 1980/81 | | 1981/82 | | 1982/83 | | 1983/84 | | 1984/85 | | 1985/86 | | 1986/87 | | 1987/88 | | TOTAL | | |
|--|------------------------------|-----|------------------------------|------|------------------------------|------|------------------------------|------|------------------------------|------|------------------------------|------|------------------------------|------|------------------------------|-------|------------------------------|-------|-------|
| | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | |
| | Manual (A) Mechanical (B) | | Manual (A) Mechanical (B) | | Manual (A) Mechanical (B) | | Manual (A) Mechanical (B) | | Manual (A) Mechanical (B) | | Manual (A) Mechanical (B) | | Manual (A) Mechanical (B) | | Manual (A) Mechanical (B) | | Manual (A) Mechanical (B) | | TOTAL |
| <i>Albizia falcataria</i> | 50 | | 50 | 25 | | | | | | | | | | | | | 150 | 25 | 175 |
| <i>Sinetenia macrophylla</i> | 50 | | 50 | 100 | | | | | 41 | | 36 | | | | | | 100 | 260 | 360 |
| <i>Eucalyptus deglupta</i> | 50 | | 50 | 50 | | | | | 43 | | 37 | | 106 | | | | 150 | 323 | 473 |
| <i>Pinus merkusii</i> | 50 | | 50 | 50 | | | | | | | | | | | | | 100 | 100 | 200 |
| <i>Anthocephalus cadamba</i> | | 50 | | | | | | | | | | | | | | | 50 | | 50 |
| <i>Schinus molle</i> var. <i>bancana</i> | | 50 | | | 50 | | | | 44 | | 32 | | | | | | 50 | 162 | 212 |
| <i>Persea canescens</i> | | 50 | | | 50 | | 50 | | | | | | | | | | 50 | 50 | 100 |
| <i>Acacia auriculiformis</i> | | 50 | | | 50 | | 50 | | | | | | | | | | 50 | 50 | 100 |
| <i>Balbergia latifolia</i> | | 50 | | | 50 | | 50 | | | | | | | | | | 50 | 50 | 100 |
| <i>Pterocarpus indicus</i> | | 50 | | | 50 | | 50 | | | | | | | | | | 50 | 50 | 100 |
| <i>Acacia mangium</i> | | 50 | | | 50 | | 50 | | 38 | | 45 | | 9 | | 12 | | 50 | 342 | 392 |
| <i>Samanea saman</i> | | 50 | | | 50 | | 50 | | | | | | 55 | | 33 | | 100 | 25 | 125 |
| <i>Eucalyptus alba</i> | | 50 | | | 50 | | 50 | | | | | | | | | | 50 | | 50 |
| <i>Leucaena leucocephala</i> | | 50 | | | 50 | | 50 | | | | | | | | | | 50 | | 50 |
| (Agroforestry) | | | | | (30) | | (30) | | (30) | | (30) | | (30) | | (30) | | (180) | | (180) |
| Others | | | | | | | | | 4 | | 24 | | | | | | | 28 | 28 |
| Species Introduction | | | 50 | | 30 | | 70 | | 30 | | 30 | | | | 19 | | | 229 | 229 |
| Total | 200 | 200 | 200 | 300 | 330 | 300 | 470 | 300 | 200 | 200 | 200 | 300 | 170 | 170 | 170 | 1000 | 1000 | 1694 | 2694 |
| | | | | (30) | (30) | (30) | (30) | (30) | (30) | (30) | (30) | (30) | (30) | (30) | (30) | (180) | (180) | (180) | (180) |

Sum Total 2874

Note: * Firebreak Belt
() Not Included

ANNUAL PLANTING AREA OF SPECIES ON MANUAL AND MECHANICAL BLOCK

8-(1) ANNUAL PLANTING AREA OF SPECIES Plantation area I

| Species | 1980 | | 81 | | 82 | | 83 | | 84 | | Total | | Remarks |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|---------|
| | A | B | A | B | A | B | A | B | A | B | A | B | |
| Albizia falcata | (50) | | (50) | | (50) | | (50) | | (50) | | (150) | (150) | (300) |
| | 50 | | 50 | | 50 | | 50 | | 25 | | 100 | 75 | 175 |
| Swietenia macrophylla | (50) | | | | | | (50) | | (50) | | (150) | (100) | (250) |
| | 50 | | | | | | 50 | | 100 | | 100 | 150 | 250 |
| Eucalyptus deglupta | (50) | | (50) | | (50) | | (50) | | (50) | | (150) | (150) | (300) |
| | 50 | | 50 | | 50 | | 50 | | 50 | | 150 | 100 | 250 |
| Pinus merkuii | (50) | | (50) | | (50) | | (50) | | (50) | | (150) | (150) | (300) |
| | 50 | | 50 | | 50 | | 50 | | | | 100 | 100 | 200 |
| Anthocephalus chinensis(syn.A.cadamba) | | | (50) | | (50) | | | | (50) | | (150) | (50) | (200) |
| | | | 50 | | 50 | | | | | | 50 | | 50 |
| schima wallichii | | | (50) | | (50) | | (50) | | (50) | | (150) | (100) | (250) |
| var bancana | | | 50 | | 50 | | 50 | | | | 50 | 50 | 100 |
| Peonema canescens | | | (50) | | (50) | | | | (50) | | (50) | (50) | (100) |
| | | | 50 | | 50 | | | | 50 | | 50 | 50 | 100 |
| Acacia auriculiformis | | | (50) | | | | (50) | | | | (50) | (100) | (150) |
| | | | 50 | | | | 50 | | | | 50 | 50 | 100 |
| Dalbergia latifolia | | | | | 50 | | | | | | 50 | 50 | 100 |
| Pterocarpus indicus | | | | | | | | | | | 50 | | 50 |
| Acacia mangium | | | | | 50 | | | | | | 100 | 150 | 250 |
| Samanea mangium | | | | | 50 | | | | | | 50 | 50 | 100 |
| Samanea saman | | | | | | | | | 50 | | 50 | 25 | 75 |
| Eucalyptus alba | | | | | | | | | | | | | 50 |
| Sub Total | (200) | (200) | (150) | (150) | (300) | (300) | (300) | (300) | (400) | (400) | (1000) | (850) | (1850) |
| | 200 | 200 | 150 | 150 | 300 | 300 | 300 | 300 | 400 | 400 | 1000 | 850 | 1850 |

ANNUAL PLANTING AREA OF SPECIES ON MANUAL AND MECHANICAL BLOCK

| Species | 82/83 | | 83/84 | | 84/85 | | 85/86 | | Total | | Remarks |
|---------------------|-------|------|-------|------|-------|------|-------|------|-------|------|---------|
| | plan | done | plan | done | plan | done | plan | done | plan | done | |
| Albizia falcata | (15) | 15 | (15) | 15 | (12) | 12 | (12) | 12 | (54) | 54 | |
| Eucalyptus deglupta | (15) | 15 | (15) | 15 | (12) | 12 | (12) | 12 | (54) | 54 | |
| Acacia mangium | | | | | (6) | 6 | (6) | 6 | (12) | 12 | |
| Others | (40) | 40 | | | | | | | (40) | 40 | |
| Total | (70) | 70 | (30) | 30 | (30) | 30 | (30) | 30 | (160) | 160 | |

SPECIES INTRODUCTION:

| | |
|---|------------------------------|
| Acacia mangium | Pterocarpus indicus |
| Anthocephalus chinensis (Syn. A. Cadamba) | Schima wallichii var bancana |
| Dalbergia latifolia | Swietenia macrophylla |
| Enterolobium cyclocarpum | |
| Eucalyptus deglupta | Calliandro calothyrsus |
| Gmelia arborea | Leuvaena leucephala |
| Koompassia malaccensis | Casuarina equisetifolia |
| Melaleuca leucadendron | Gmelina arborea |
| Peronema canescens | Glerecidae sp. |
| Pinus caribaea | Sesbania gradifolia |
| Pinus merkusii | |

Annual Planting Area of Species on Manual and Mechanical Block

Plantation II

| Species | 84/85 | 85/86 | *86/87 | *87/88 | Total | Remarks |
|------------------|------------|-------|--------|--------|-------|------------|
| Acacia | plan (40) | (41) | | | | |
| mangium | done 38 | 45 | 64 | 45 | 192 | *Follow-up |
| Eucalyptus | plan (40) | (37) | | | | |
| deglupya | done 43 | 37 | 106 | 37 | 223 | |
| Swietenia | plan (40) | (36) | | | | |
| Macrophylla | done 41 | 36 | | 33 | 110 | |
| Schima wallichii | plan (40) | (36) | | | | |
| var bancana | done 44 | 32 | | 36 | 112 | |
| Others | plan (10) | (20) | | | | |
| | done 4 | 20 | | 19 | 43 | |
| Total | plan (170) | (170) | | | | |
| | done 170 | 170 | 170 | 170 | 680 | |

Species Introduction

84/85

Shorea sp
Samanea saman
eucalyptus urophylla

85/86

Tectona grandis
Terminalia catapa
Schima spp
Cryptomeria japonica
Camacyparis obtusa
Peronema canescens
Swietenia mahogany
Gmelina arborea
Lagerstromia species
Eucalyptus deglupta

86/87

Pinus occarpa

9. SOIL CHARACTERISTICS

SOIL CHARACTERISTICS, SURVEYED AROUND TRIAL PLANTATION PROJECT

| | (A) Top of rolling terrain | (B) Slope of rolling terrain | (C) Foot Slope of rolling terrain | (D) Plain of valley |
|--------------------------|--|--|---|--|
| A-horizon | blackish color thin, distinct foundary, reductive color silt loam in texture | blackish thin distinct foundary silt loam in texture | blackish thin distinct foundary silt loam in texture | Silty loam |
| Upper B-horizon | Very compact low permeate mottle color of of high chroma | compact many vertical fissures | compact many vertical fissures some what low permeate | Gleic horizon Silty loam Concretion of Fe. Mg. |
| Lower B-horizon | Increase in clay material | increase in clay material clay skin | increase in clay material clay skin | Gleic horizon |
| Layer iron stone gravel | thick appear mostly shallow place | thin | thin appear mostly deep place | lack of this layer |
| transi-tion to C-horizon | Mottles of low chroma | | Mottles of low chroma | |
| Product-ivity | Comparatively low | some what low | Comparatively high | most low |

Data Source : Report of Development Planning Survey for
Afforestation Project in Benakat District,
South Sumatera, The Republic of Indonesia, June, 1979

SOIL CLASSIFICATION AND PERMIABILITY BY DIFFERENT VEGETATION TYPES

| CLASSIFICATION | SURFACE LAYER | PERMIABILITY (PERCOLATION RATE)* CC (5 MINUTES) | CHARACTERISTICS |
|--------------------------------|--|---|---|
| A. Alang-alang grass-land soil | A-layer is more or less 10 cm Color tone with organic matters is deep | HORIZON DEPTH (CM) PERCOLATION RATE* | Soil is compact Permiability is <u>not good</u> |
| | | (ALANG ² SUBTYPE) : PURE ALANG ² GRASSLAND VEGETATION | |
| | | (ALANG ² + EUPATORIUM SUBTYPE) | |
| B. Secondary forest soil | Organic content in surface layer is lesser than Alang ² grassland soil | (ALANG ² + MELASTOMA SUBTYPE) | Soil structure develops more than Alang ² grassland soil. Permiability is <u>good</u> |
| | | (ALANG ² + MELASTOMA SUBTYPE) | |
| | | (ALANG ² + MELASTOMA SUBTYPE) | |
| C. Natural forest soil | Crumbed structure develops in surf. layer Color tone with organic matters most scarce | (ALANG ² + MELASTOMA SUBTYPE) | Distribution of root system is deep and vigorous Permiability is better than secondary forest soil |
| | | (ALANG ² + MELASTOMA SUBTYPE) | |
| | | (ALANG ² + MELASTOMA SUBTYPE) | |

CONTROL. Mechanized site-prepared soil
(Land clearing + Plowing)

+ 10 cm depth 79.0
+ 20 cm depth 93.5
+ 40 cm depth 23.0

Trial Plantation Site

Forest Ecology Working Programme 1982/1983

10. COST ANALYSIS

10-(1) SEEDLING

COST ACCOUNTING OF SEEDLING PRODUCTION PER UNIT.

| Species Item | 1 Unit=1.000 seedlings | | | | | | | Remarks |
|--|------------------------|--------------------|-----------------|---------------------|----------------|-----------------------|----------|---------|
| | Acacia mangium | Albizia falcataria | Eucaryptus alba | Eucaryptus deglupta | Schima bancana | Swietenia macrophylla | Rp./unit | |
| (Accounts for Cost Accounting | Rp./unit | Rp./unit | Rp./unit | Rp./unit | Rp./unit | Rp./unit | Rp./unit | |
| Cost Accounting of Expendable: | 13,927 | 12,819 | 12,849 | 13,110 | 12,854 | 12,370 | | |
| Cost Accounting of Labour Charges | 17,999 | 20,092 | 17,007 | 12,829 | 18,722 | 24,167 | | |
| Total Variable Cost | 31,926 | 32,911 | 29,856 | 25,939 | 31,576 | 36,537 | | |
| Cost Accounting of Machinery | 20,678 | 20,678 | 20,678 | 20,678 | 20,678 | 20,678 | | |
| Cost Accounting of office, Warehouse & Building etc. | 8,620 | 8,620 | 8,620 | 8,620 | 8,620 | 8,620 | | |
| Total Fixed Cost | 29,298 | 29,298 | 29,298 | 29,298 | 29,298 | 29,298 | | |
| Seedling Production Cost per unit | 61,224 | 62,209 | 59,154 | 55,237 | 60,874 | 65,835 | | |

10-(3). MACHINERY

Cost Accounting of Machinery per ha.

| Working Process | Land Clearing | Land Clearing | Land Clearing | Plowing-1 | Harrowing | Plowing-2 | Harrowing | Plowing-1 | Harrowing | Seeding | Repair Forest Road |
|--|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------------------|----------------------|
| Machinery | Caterpillar D-6 | Komatsu D-60A | Komatsu Inter. | Komatsu Inter. | Komatsu Inter. | Komatsu Inter. | Komatsu Inter. | Komatsu 810 | Komatsu 800 | Mitsubishi Colt FE-114 | Komatsu Motor Grader |
| Working Equipment | Dozer Blade | Rake Blade | Disk Plow | Disk Plow | Disk Harrow | Disk Plow | Disk Harrow | Disk Harrow | Disk Harrow | Truck | |
| 1. Price Purchased | Rp. 53,435,000.- | Rp. 66,667,000.- | Rp. 19,598,000.- | Rp. 19,598,000.- | Rp. 19,598,000.- | Rp. 19,598,000.- | Rp. 19,598,000.- | Rp. 21,241,000.- | Rp. 21,241,000.- | Rp. 8,800,000.- | Rp. 64,400,000.- |
| 2. Annual Fixed Charge (Annual Depreciation percentage X) | 12,610,000.- | 15,733,000.- | 4,625,000.- | 4,625,000.- | 4,625,000.- | 4,625,000.- | 4,625,000.- | 5,013,000.- | 5,013,000.- | 2,648,000.- | 15,398,000.- |
| 3. Annual Utilization (hours) | 23.6x 600 hours | 23.6x 600 hours | 23.6x 500 hours | 23.6x 500 hours | 23.6x 500 hours | 23.6x 500 hours | 23.6x 500 hours | 23.6x 600 hours | 23.6x 600 hours | 30.0x 1,200 hours | 23.6x 600 hours |
| 4. Price Purchased | - | 2,283,000.- | 3,954,000.- | 3,954,000.- | 2,333,000.- | 3,954,000.- | 2,333,000.- | 3,954,000.- | 2,333,000.- | - | - |
| 5. Annual Fixed Charge (Annual Depreciation Percentage X) | - | 658,000.- | 1,139,000.- | 1,139,000.- | 672,000.- | 1,139,000.- | 672,000.- | 1,139,000.- | 672,000.- | - | - |
| 6. Working Efficiency (hour per ha) | 2.42 hr/ha | 2.20 hr/ha | 28.8x 3.03 hr/ha | 28.8x 3.03 hr/ha | 28.8x 1.81 hr/ha | 28.8x 2.17 hr/ha | 28.8x 1.81 hr/ha | 28.8x 3.83 hr/ha | 28.8x 1.45 hr/ha | - | - |
| 7. Variable Cost of Machinery (Chassis/Attached Equipment) | 21,017.- | 27,318.- | 11,528.- | 11,528.- | 10,594.- | 11,528.- | 10,594.- | 10,253.- | 9,475.- | 2,200.- | 25,330.- |
| 8. Fuel Cost (per hr.) | 6,930.- | 7,320.- | 2,634.- | 2,634.- | 1,926.- | 2,406.- | 1,926.- | 3,123.- | 2,100.- | 1,500.- | 7,330.- |
| 9. Oil Cost (per hr.) | 2,079.- | 2,196.- | 790.- | 790.- | 578.- | 722.- | 578.- | 937.- | 630.- | 450.- | 2,196.- |
| 10. Operator's Cost (per hr.) | 6,427.- | 7,047.- | 3,529.- | 3,529.- | 3,544.- | 3,916.- | 3,544.- | 2,840.- | 4,367.- | 211.- | 229.- |
| 11. Helper's Cost (per hour) | 179.- | 179.- | 179.- | 179.- | 179.- | 179.- | 179.- | 179.- | 179.- | - | 179.- |
| 12. Sub Total Variable Cost per hour (/hr) | Rp. 36,632.- | Rp. 44,060.- | Rp. 18,660.- | Rp. 18,660.- | Rp. 16,821.- | Rp. 18,751.- | Rp. 16,821.- | Rp. 17,332.- | Rp. 16,751.- | Rp. 4,361.- | Rp. 35,254.- |
| 13. Cost accounting per ha. (12.X 6) | Rp. 88,649.- | Rp. 96,972.- | Rp. 56,540.- | Rp. 56,540.- | Rp. 30,446.- | Rp. 40,630.- | Rp. 30,446.- | Rp. 66,382.- | Rp. 24,289.- | - | - |

1 & 4 : Price Purchased to be additionally included with 10x of Transportation Cost

2 & 5 : Annual Depreciation Percentage to be shown in Table 2-1

3 : Annual Utilization (hours) to be shown in Table 2-2

6 : Working Efficiency (hr./ha) to be shown in table 2-3

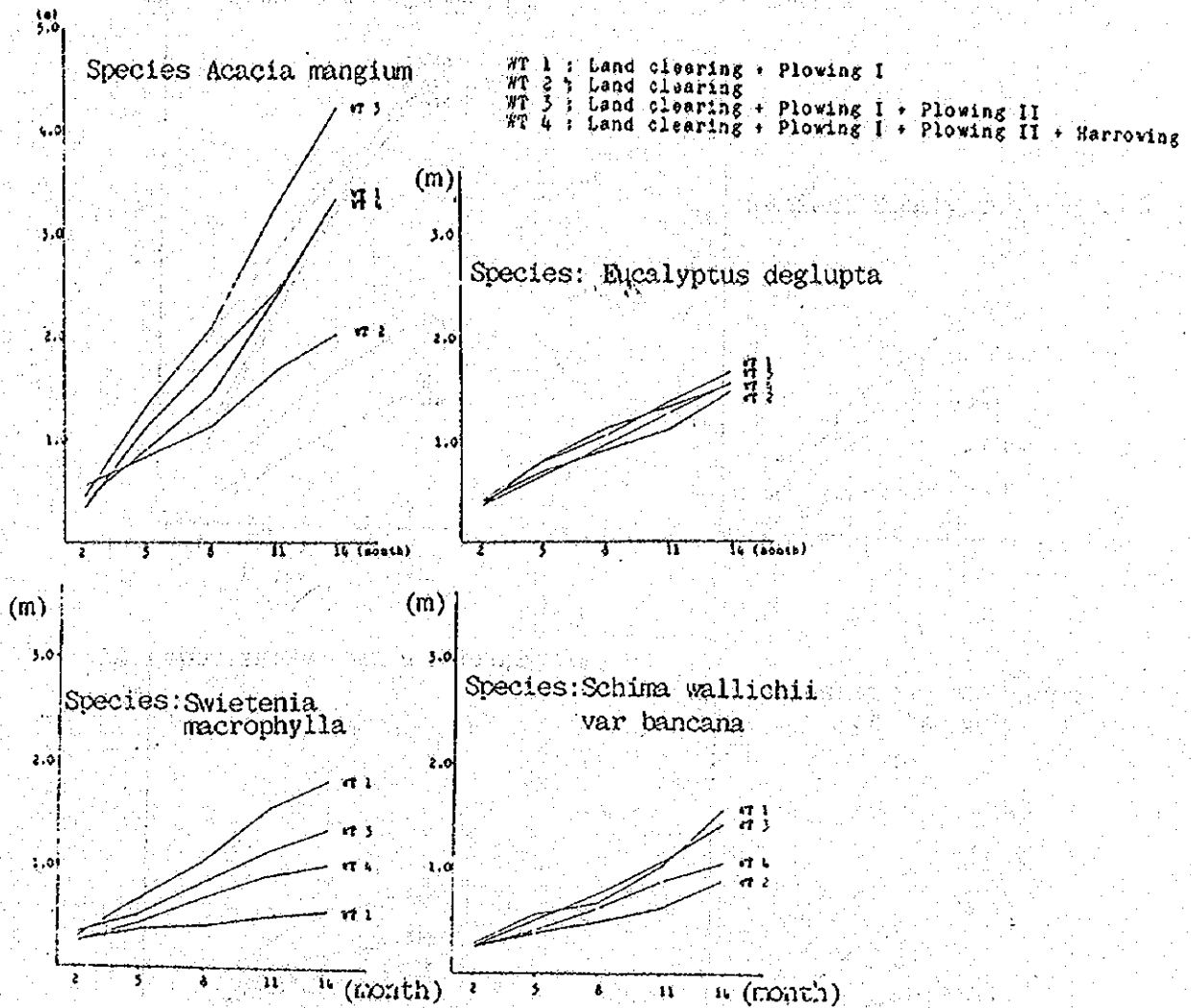
7 : Variable Cost of machinery (Chassis/Attached Equipment) per hour. Method of Calculation = $\frac{2 \times 5}{3}$

9 : Oil Cost = 8 x 30x

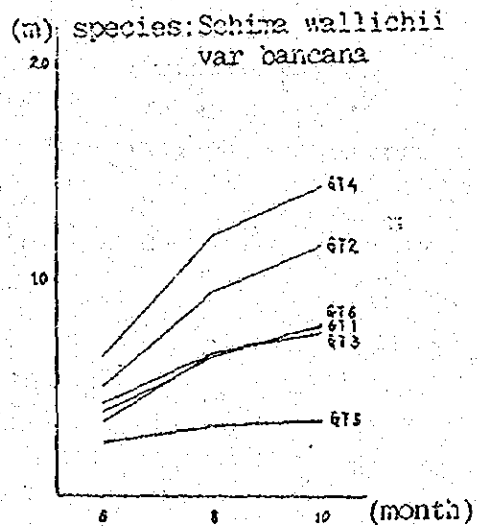
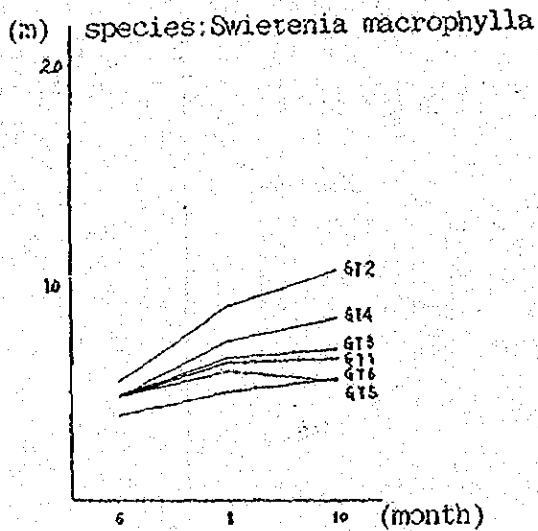
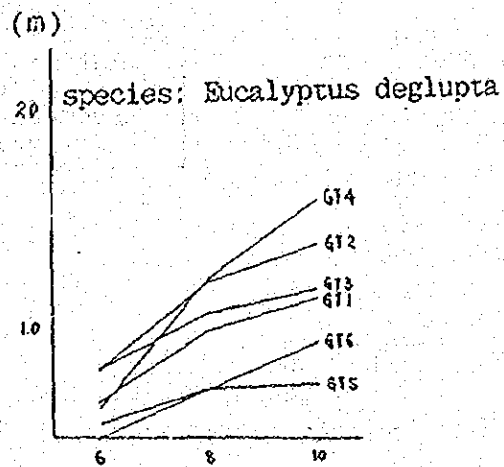
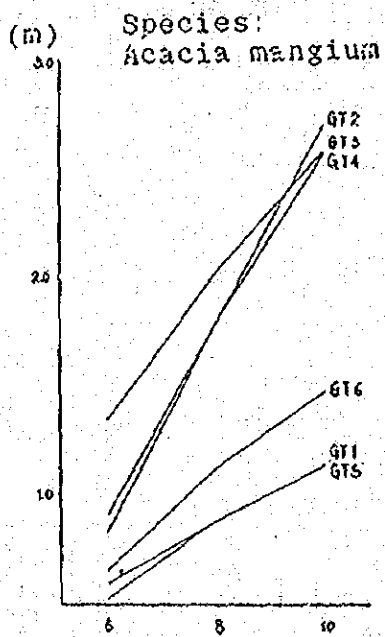
8 & 9 : Fuel Cost/Oil Cost (per hour) to be shown in Table 2-4

10 & 11: Operator/helper Cost (per hr) to be shown in Table 2-5

11. GROWTH CURVES IN THE DIFFERENT CULTIVATIONS



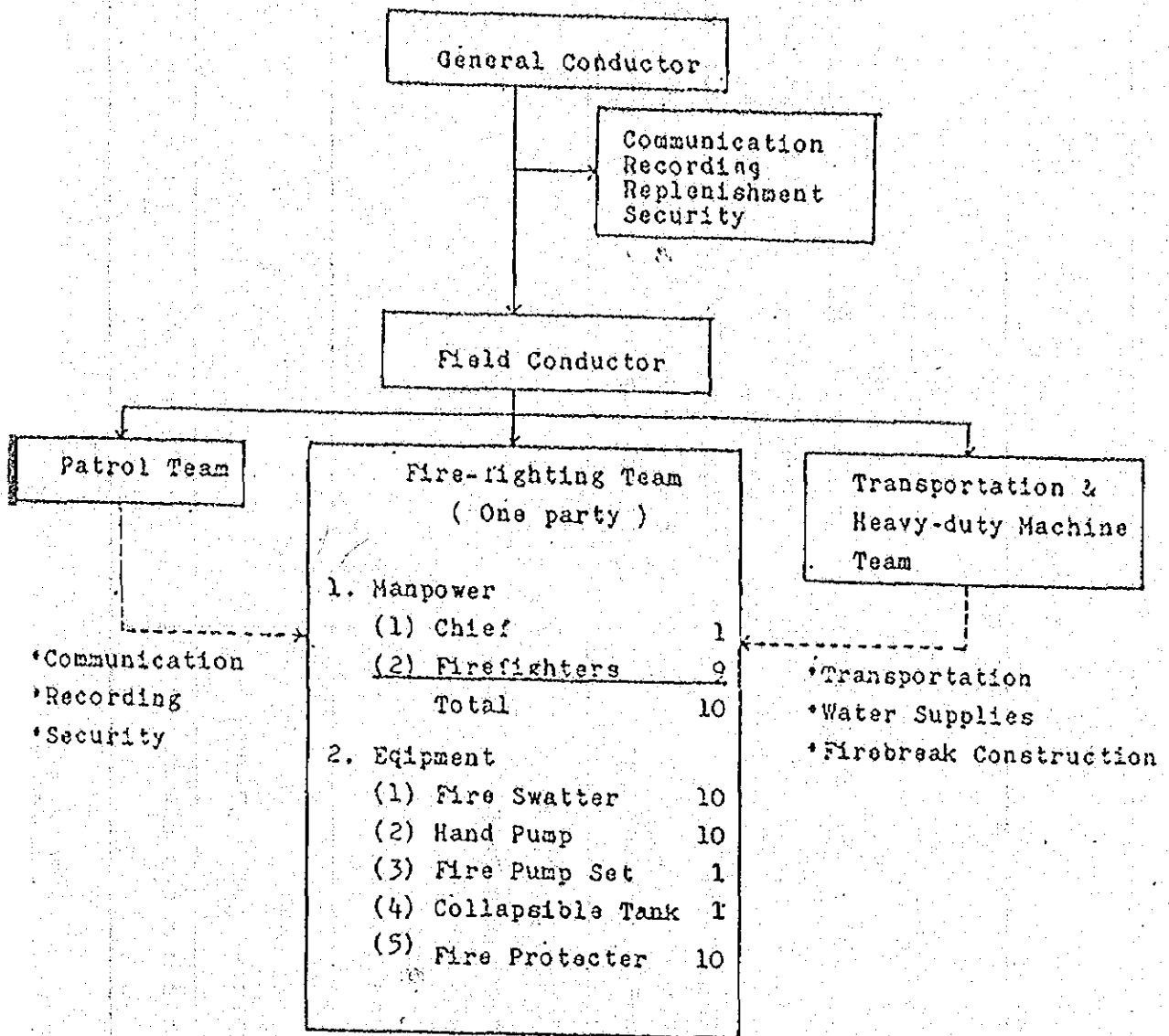
Growth curves on four species in the different Cultivations



Growth curves on four species in different cultivation

- * GT-1: Land Clearing + Plowing I
 - GT-2: Land Clearing + Plowing I + Plowing II
 - GT-3: Land Clearing + Plowing I + Harrowing
 - GT-4: Land Clearing + Plowing I + Plowing II+ Harrowing
 - GT-5: Land Clearing I + Land Clearing II
 - GT-6: Land Clearing + Plowing I
- Strip cultivation is only GT-6

12. FIRE CONTROL



———— Line of Authority
 - - - - - Liaison

Fire Control Organization

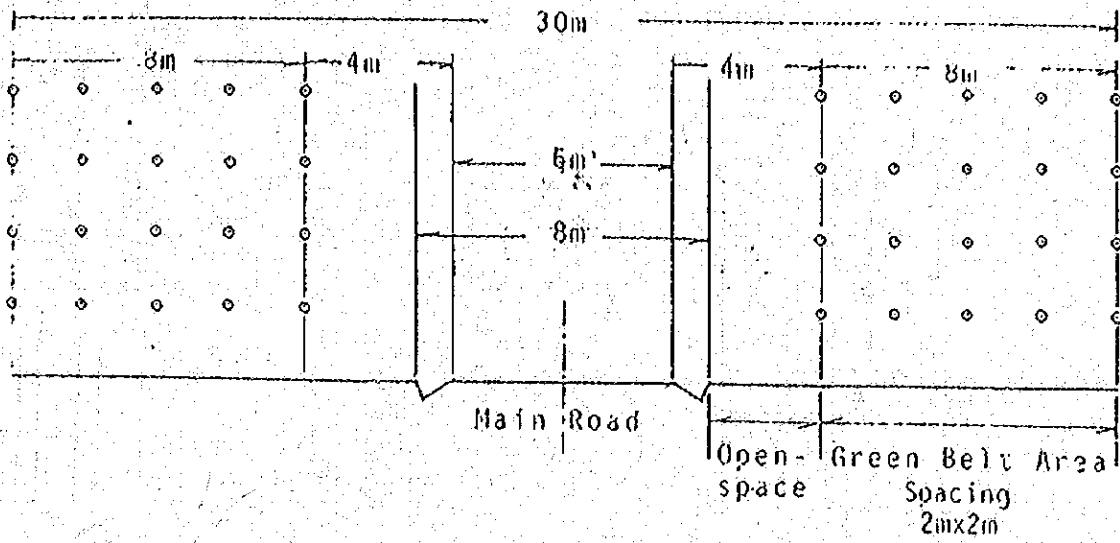
Machinery and Equipment for Fire Protection

| | M a c h i n e r y | E q u i p m e n t |
|----------------|--|---|
| Transportation | <ol style="list-style-type: none"> 1. Vehicles (with CB-Radio) 2. Motorcycle | |
| Water Supplies | <ol style="list-style-type: none"> 1. Water pump 2. Fire pump 3. Water tank 4. Collapsible Tank 5. Tank Truck | |
| Fire fighting | <ol style="list-style-type: none"> 1. Heavy - duty machine 2. Chain saw 3. Bush Cleaner | <ol style="list-style-type: none"> 1. Safety helmet 2. Safety shoes 3. Fire fighting wear 4. Binocular 5. Megaphone 6. Fire extinguisher 7. Gas mask set 8. Fire Swatter 9. Rake 10. Hatchet 11. Weeding Hook 12. Fire hook 13. Hoe 14. Portable shovel 15. Portable hoe 16. Sickle |
| Communications | | <ol style="list-style-type: none"> 1. Handy talkie 2. CB-radio |

FIREBREAK BELT AND FIRELINE

| Type | Contents |
|--------------------|--|
| 1. Firebreak Belt | |
| (1) Green Belt | an artificial tree-covered break with a relatively high density alongside a forest road |
| (2) Covercrop Belt | A covercrop break to suppress along-along grasses alongside a forest road |
| (3) Yellow Belt | an open space cleared free of vegetations alongside a forest road |
| (4) Natural Belt | an existing natural break such as a river, a creek or a swamp including natural tree stands alongside it |
| 2. Fireline | a working road or a feeder road without any firebreak along its roadside |

1. Green Belt along Main Road



2. Green Belt along Working Road

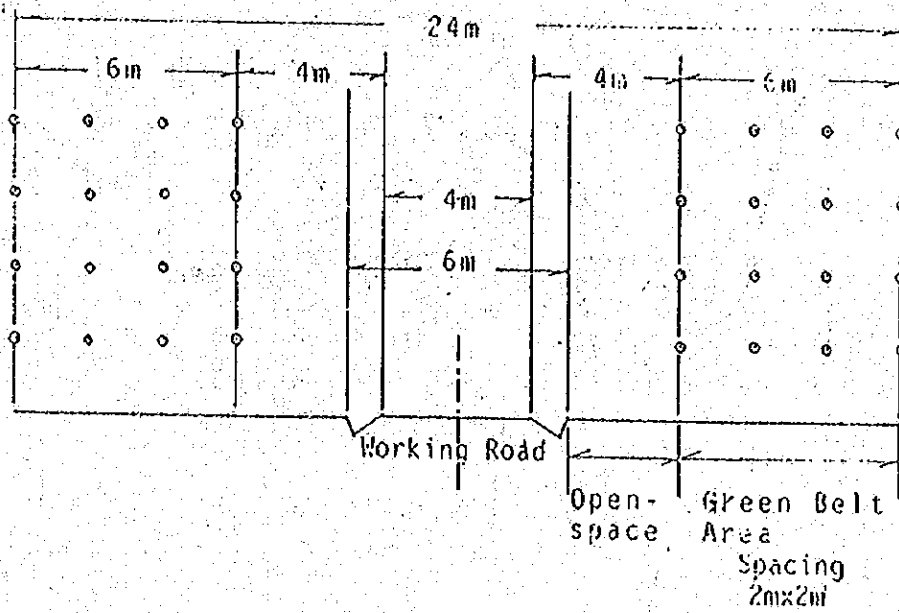


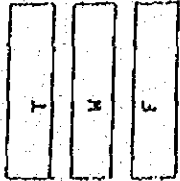
Fig. 2 Green Belt Diagram

PLAN OF ROAD CONSTRUCTION AND FIRE BREAK LINE

(width 8m, Fire break belt
R-3m, L-3m)

(width 6m, Fire Break Belt
R-3 m, L-3 m)

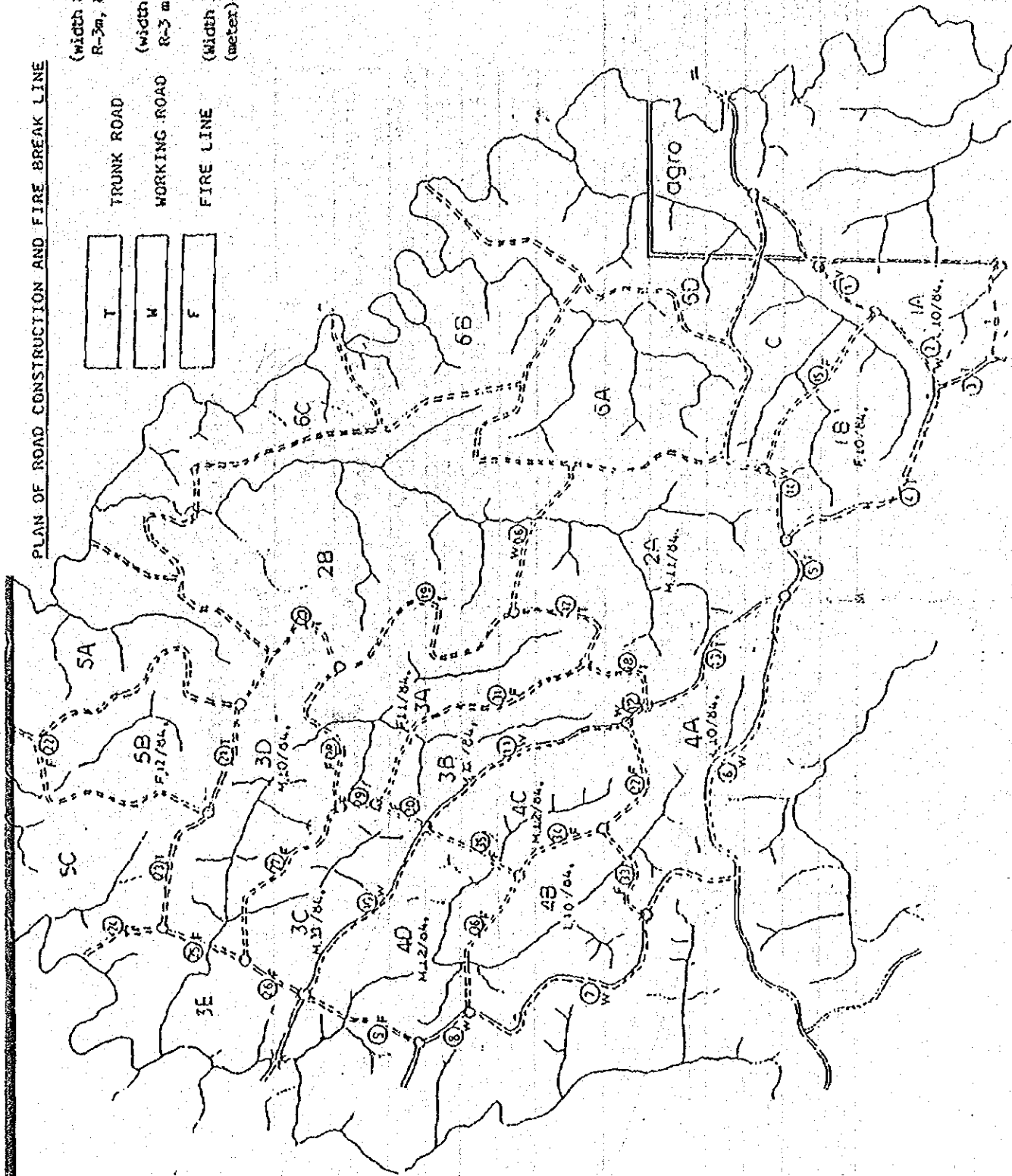
(width 12 m, Fire Break width
(meter))



TRUNK ROAD

WORKING ROAD

FIRE LINE



1
15.000

13. FOREST ROAD

Forest road in fiscal year.

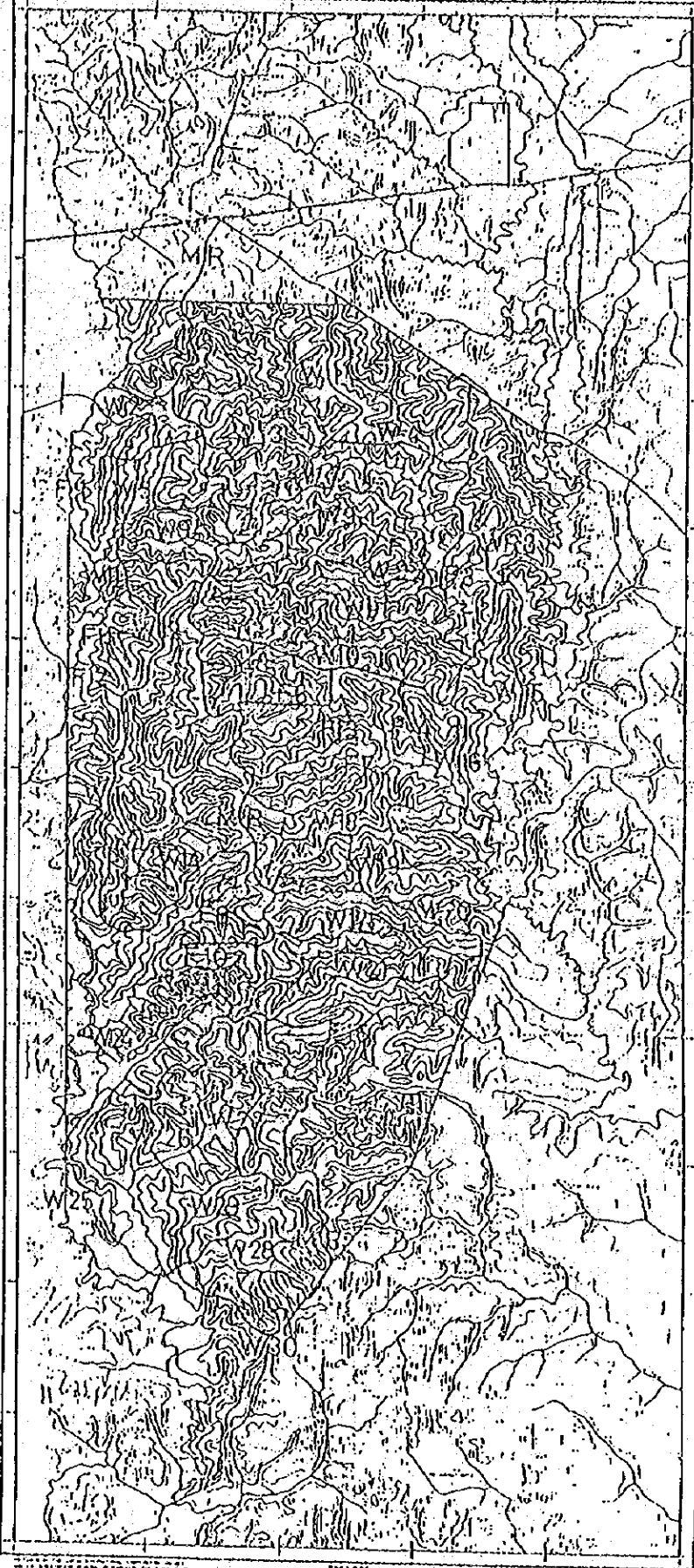
(Plantation : I)

| Fiscal year's Classification | Total width | 1979/1980 | | 1980/1981 | | 1981/1982 | |
|---------------------------------|----------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|
| | | Proposal | Construc- tion | Proposal | Construc- tion | Proposal | Construc- tion |
| Main road | 6 | 700 m | 723 m | 2300 m | 1313 m | 2600 m | 1970 m |
| Working road | 5 | ----- | ----- | 7800 m | 6026 m | 9200 m | 11205 m |
| Total | | 700 m | 723 m | 10100 m | 7339 m | 11800 m | 13715 m |
| Forest road density | | | | | | | |

| Fiscal year's Classification | Total width | 1982/1983 | | 1983/1984 | | 1984/1985 | | Grand total |
|---------------------------------|----------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-------------|
| | | Proposal | Construc- tion | Proposal | Construc- tion | Proposal | Construc- tion | |
| Main road | 6 | 3800 m | 4301 m | 3400 m | 2972 m | ----- | ----- | 11279 m |
| Working road | 5 | 16000 m | 10717 m | 15700 m | 16331 m | 1900 m | ----- | 44279 m |
| Total | | 19800 m | 15018 m | 19100 m | 19303 m | 1900 m | ----- | 55558m |
| Forest road density | | | | | | | | 28 (m/ha) |

Forest road in fiscal year.
(Plantation II)

| Fiscal year's Classification | Total width | 1984/1985 | | 1985/1986 | | Grand total | |
|---------------------------------|----------------|-----------|--------------|-----------|--------------|-------------|-----------|
| | | Proposal | Construction | Proposal | Construction | | |
| Main road | 8 | 4900 m | 4565 m | ----- | ----- | 4565 m | |
| Working road | 6 | 5200 m | 6000 m | 2900 m | 3120 m | 9120 m | |
| Total | | 10100 m | 10565 m | 2900 m | 3120 m | 13685 m | |
| Forest road density | | | | | | | 40 (m/ha) |
| Fire line | 6 | 6000 m | 3643 m | 5800 m | 5104 m | 8747 m | |



N
↑
S

0 1000m

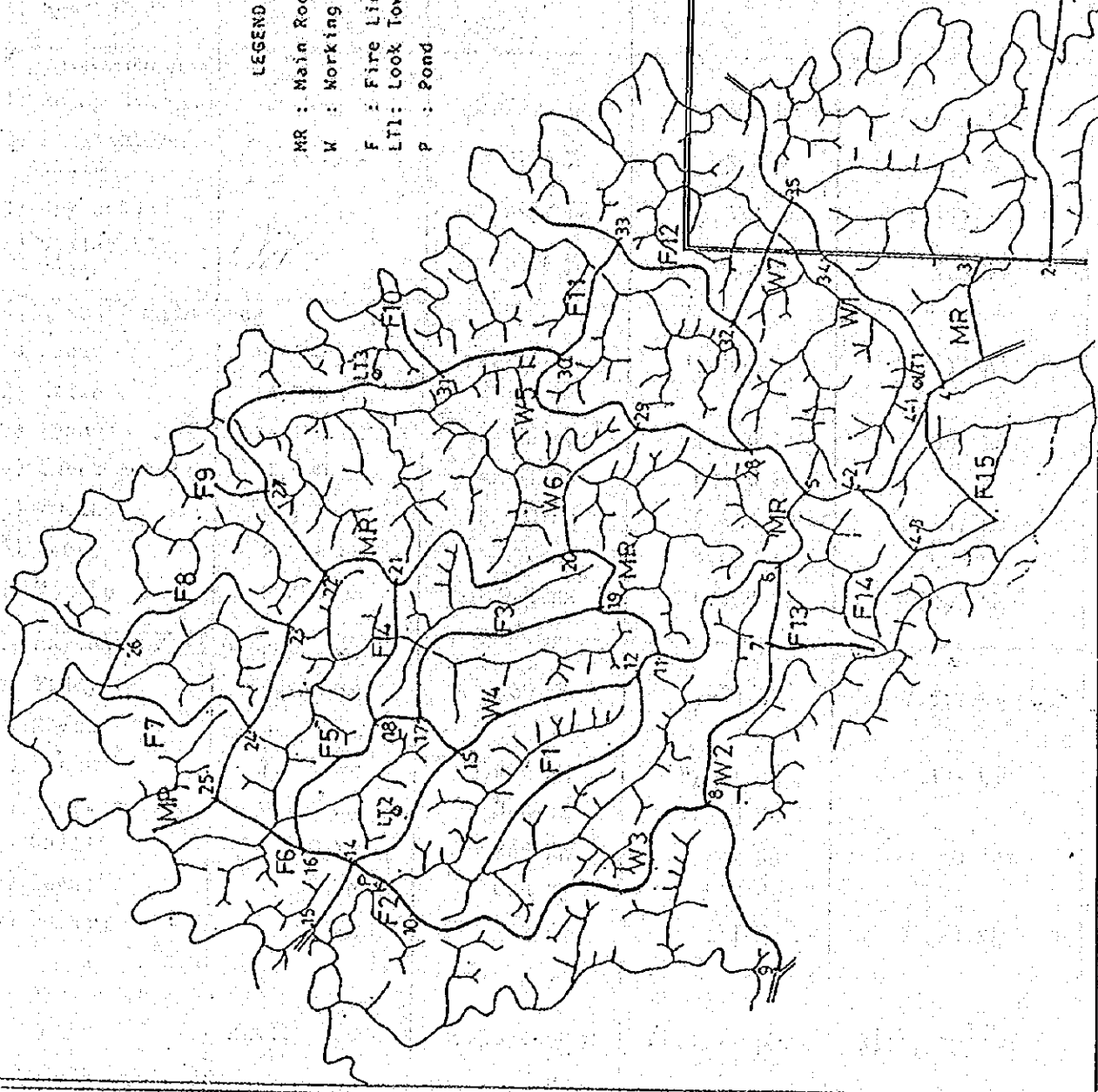
HR : Main Road
W : Working Road
F : Feeder Road



LEGEND

- MR : Main Rod
- W : Working Rod
- F : Fire Line
- LT1: Look Tower
- P : Pond

Agro. area



14. ACTIVITY OF AGROFORESTRY

Annual Change of Agriculture Activities

in the Intercropping Area, 1982/1983-1985/1986

| Year Item | 1982 - 1983 | 1983 - 1984 | 1984 - 1985 | 1985 - 1986 |
|-------------------------|---------------|---------------|---------------|---------------|
| 1. Participant | 30 | 30 | 29 | 24 |
| 2. Dropout | 6 | 12 | 9 | 5 |
| 3. New participant | | 6 | 11 | 4 |
| 4. Non-use lot | | | 1 | 6 |
| 5. Cultivation Area | | | | |
| 1) Rainy season | 29,479 ha | 28,393 ha | 24,598 ha | 21,348 ha |
| 2) Utilization ratio | 98.3 % | 94.6 % | 82.2 % | 71.2 % |
| 3) Dry season | | 3,187 ha | 5,532 ha | 1,357 ha |
| 4) Utilization Ratio | | 10.6 % | 18.4 % | 4.5 % |
| 6. Area of main crop | | | | |
| 1) Paddy | 16,903 ha | 26,137 ha | 19,568 ha | 17,237 ha |
| 2) Maize | 12,540 ha | | | |
| 3) Peanut | 11,170 ha | 4,123 ha | 8,678 ha | 4,501 ha |
| 4) Sweet potato | 4,800 ha | 0,358 ha | 0,476 ha | |
| 5) Chilli | 0,477 ha | 0,340 ha | 0,264 ha | 0,137 ha |
| 6) Beans | 2,989 ha | 0,632 ha | 1,027 ha | 0,526 ha |
| 7) Tomato | 0,450 ha | 0,095 ha | 0,108 ha | 0,097 ha |
| 7. Harvest of main crop | | | | |
| 1) Paddy | 9,446 Kg | 20,469 Kg | 6,984 Kg | 7,512 Kg |
| 2) Maize | 0 Kg | | | |
| 3) Peanut | 7,498 Kg | 5,604 Kg | 9,111 Kg | 2,392 Kg |
| 4) Sweet potato | 9,798 Kg | 840 Kg | 1,348 Kg | |
| 5) Chilli | 210 Kg | 265 Kg | 127 Kg | 50 Kg |
| 6) Beans | 225 Kg | 026 Kg | 40 Kg | |
| 7) Tomato | 261 Kg | 145 Kg | 73 Kg | 43 Kg |
| 8. Amount of produced | | | | |
| 1) Paddy | Rp. 1,594,000 | Rp. 3,743,000 | Rp. 1,435,000 | Rp. 1,502,000 |
| 2) Maize | | | | |
| 3) Peanut | Rp. 1,249,000 | Rp. 934,000 | Rp. 1,861,000 | Rp. 578,000 |
| 4) Sweet potato | Rp. 657,000 | Rp. 52,000 | Rp. 70,000 | |
| 5) Chilli | Rp. 96,000 | Rp. 305,000 | Rp. 178,000 | Rp. 75,000 |
| 6) Beans | Rp. 56,000 | Rp. 34,000 | Rp. 42,000 | |
| 7) Potato | Rp. 110,000 | Rp. 52,000 | Rp. 24,000 | Rp. 42,000 |

Annual Change of Agriculture Activities
in the Intercropping Area

| Year | 1982 - 1985 | 1983 - 1984 | 1984 - 1985 | 1985 - 1986 |
|---|--------------------|--------------------|--------------------|--------------------|
| 9. Total amount of produced | Rp. 3,874,000.- | Rp. 5,120,000.- | Rp. 3,643,000.- | Rp. 2,265,000.- |
| 10. Mean harvest of main crops (Six participants) | | | | |
| 1) Paddy | 617 kg/ha | 1,106kg/ha | 540 kg/ha | 524 kg/ha |
| 2) Peanut | 239 kg/ha | 1,799kg/ha | 1,312 kg/ha | 903 kg/ha |
| 3) Sweet Potato | 2,041 kg/ha | 2,346kg/ha | 2,832 kg/ha | |
| 4) Chili | 440 kg/ha | 779kg/ha | 481 kg/ha | 283 kg/ha |
| 5) Tomato | 587 kg/ha | 1,526kg/ha | 676 kg/ha | 1,474 kg/ha |
| 11. Mean working hours per ha. (Six participants) | 1,535 hours | 2,360 hours | 1,819 hours | 1,641 hours |
| 12. Annual mean income of six participants | Rp. 432,000 (100) | Rp. 542,000 (100) | Rp. 782,000 (100) | Rp. 760,000 (100) |
| 1) Income from agriculture | Rp. 223,000 (51.6) | Rp. 277,000 (51.1) | Rp. 325,000 (41.6) | Rp. 284,000 (37.4) |
| 2) Income from employment | Rp. 209,000 (48.4) | Rp. 265,000 (48.9) | Rp. 457,000 (58.4) | Rp. 476,000 (62.6) |
| 13. Number of Cattle | | | | |
| 1) Cow | 23 | 23 | 19 | 26 |
| 2) Poultry | 651 | | | 264 |

15. MACHINERY AND EQUIPMENT SUPPLIED BY THE JAPANESE GOVERNMENT

| Use for | 1979 / 1980 | 1980 / 1981 | 1981 / 1982 | 1982 / 1983 | 1983 / 1984 | 1984 / 1985 | 1985 / 1986 | 1986 / 1987 | 1987 / 1988 |
|----------------------------|-------------|--------------|-------------|-------------|----------------|-----------------|------------------|-------------|-------------|
| Industry | 45,782,260 | 20,510,000.1 | 19,641,000 | 5,461,000 | 1,367,000 | 416,000 | - | - | - |
| Planning | 11,855,000 | 32,144,000 | 26,311,900 | 39,217,000 | 5,010,000 | 5,727,600 | 34,200,000 | - | - |
| New construction | 17,859,000 | 19,054,000 | 16,510,500 | 7,634,000 | 8,525,000 | - | - | - | - |
| Forest protection | 1,782,000 | 4,001,500 | 4,284,800 | 7,314,300 | 5,477,000 | 3,542,000 | 744,000 | - | - |
| Forest ecology | - | 1,105,450 | 9,224,600 | - | - | - | - | - | - |
| Reforestation | - | 2,109,500 | 9,795,000 | 595,000 | 10,976,200 | 27,400 | 9,512,000 | 15,000,000 | 15,000,000 |
| Experiment | 1,219,900 | 850,500 | - | 3,311,000 | - | - | - | - | - |
| Surveying | 814,800 | - | - | - | 1,714,000 | - | - | - | - |
| Metereological observation | 1,004,000 | 1,216,050 | - | - | - | - | 3,120,000 | - | - |
| Agriculture | - | - | - | - | 2,109,000 | 494,000 | - | - | - |
| General Use | 6,785,040 | 4,016,000 | 5,519,400 | 3,300,000 | 351,800 | 67,000 | 4,467,000 | - | - |
| Freight and insurance | 16,735,125 | 19,822,427 | 15,619,488 | 11,028,003 | 9,198,229 | 3,797,206 | - | - | - |
| Total | 104,867,125 | 103,829,407 | 106,905,688 | 77,886,303 | 45,328,229 | 14,101,206 | 52,043,000 | 15,000,000 | 15,000,000 |
| | | | | | (Rp 5,990,000) | (Rp 39,978,800) | (Rp 164,464,324) | | |

** () means the amount purchased in Indonesia

Total: 534,960,958 yen + Rp. 170,444,323

16. Budget allocation (Local Cost) Unit: 1,000 Rupiah

| Description | Extension | | | | | | | | | | Follow-up | | Total |
|---|-----------|-----------|-----------|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------------|-------|
| | 1979/1980 | 1980/1981 | 1981/1982 | 1982/1983 | 1983/1984 | 1984/1985 | 1985/1986 | 1986/1987 | 1987/1988 | 1988/1989 | | | |
| 1. Nursery | 8,850 | 10,432 | 10,100 | 16,117 | 13,758 | 11,053 | 6,484 | 6,895 | 7,100 | | | | |
| 2. Plantation | | 28,450 | 63,926 | 84,841 | 96,378 | 104,496 | 100,287 | 40,812 | 48,000 | | | | |
| 3. Forest road construction | | 7,200 | 15,780 | 33,708 | 46,896 | 33,492 | 35,604 | | 28,000 | | | | |
| 4. Forest protection | | | | Investigation Evaluation | | | | | | | | | |
| | | | | 5,100 | 3,600 | | | | | | | | |
| 5. Forest Ecology Planning | | | | 2,250 | 2,500 | 2,130 | 1,587 | | | | | | |
| | | | | | | | | | | | | *Tending 23,934 | |
| 6. Agroforestry | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| 7. Road maintenance | | | | 7,905 | 6,750 | 4,524 | 3,890 | 4,700 | 2,113 | | | | |
| 8. Development of Technology and Experiment | 7,350 | 45,220 | 51,875 | 38,690 | 21,890 | 127,123 | 112,950 | 78,850 | 218,113 | | | | |
| 9. Administration | 33,396 | 48,672 | 127,625 | 178,527 | 160,751 | 61,340 | 75,102 | 154,604 | | | | | |
| Total: | 57,456 | 139,974 | 269,306 | 367,138 | 352,523 | 344,168 | 335,904 | 285,861 | 327,260 | | | 2,177,550 | |
| (1).D I P | | | | 242,997 | 195,941 | 195,127 | | 167,543 | 70,000 | | | | |
| (2).D J R | | | | | | | | | 185,000 | | | | |
| (3).J H H | | | | 124,141 | 183,728 | 115,549 | | 118,218 | 24,835 | | | | |
| (4).INPRES | | | | (367,138) | (379,669) | 310,676 | | 285,861 | (326,760) | | | | |

DIP(Daftar Isian Proyek)
DJR(Dana Jaminan Reboisasi)
JHH(Jurusan Hasil Hutan)
INPRES(Instruksi Presiden)

17. Diary for the Project 17

| Year | Date | Meeting/Event | Expert | Counterpart | Mission/Guest |
|------|------------------------|---|--------|-------------|---------------|
| 1972 | 1 2 | 3 | 4 | 5 | 6 |
| 1974 | 1975 Jun 1 - Jun 20 | 1st Survey Team surveyed in North and South Sumatera to find out the most suitable area for the afforestation project and decided it to be the project area. | | | |
| | | <u>Survey Team</u> 1. Mr. Jiro NAYORA (Leader) 2. Mr. Kazuo OKA (Forest Ecologist) 3. Mr. Kazuto ARIMATSU (Forest Management) 4. Mr. Yoshihiro MIYAI (Coordinator) 5. Mr. Yoshio HIRONOKA (Observer) | | | |

| Year | Date | Meeting/Event | Expert | Counterpart | Mission/Guest |
|------|-------------------|---|--|-------------|--|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1975 | Nov 26 -Dec 21 | Land Survey Team negotiated with the Indonesian Government about the planning of the afforestation project in grasslands of Benakat and Subanjerji, South Sumatera. | | | <u>Survey Team</u> 1. Mr. Kishio OHFUKU (Leader) 2. Mr. Jiro NAMURA (Planning) 3. Mr. Kazuto ARIMITSU (Forest Soil) 4. Mr. Kiyoto FUNATO (Afforestation) 5. Mr. Tadao OHARA (Aerophotogrammetry) 6. Mr. Takashi UESUGI (Coordinator) |
| 1976 | Aug 8 - Aug 14 | | Based on 2nd survey, the planning Team was dispatched to Indonesia | | <u>Planning Team</u> 1. Mr. Jiro NAMURA (Leader) 2. Mr. Ryoji HAYASHI (Planning) 3. Mr. OHNOKI (Forest Managerment) 4. Mr. NAGATSUKA (Coordinator) |
| 1977 | Apr | The afforestation development cooperation project was listed in BAPPENAS list as ATA-186, and was officially requested to the Japanese Government. | | | |
| | Aug 17 - Sep 2 | The Scope of work (S/W) for this project was concluded | | | <u>Team</u> 1. Mr. Akira KURANARI 2. Mr. Susumu SUZUKI 3. Mr. Kazuto ARIMITSU 4. Mr. Haroei CHIKARASHI 5. Mr. Manabu TOSHIOKA 6. Mr. Shun'ichi MIZUOCHI |

| Year | Date | Meeting/Event | Expert | Counterpart | Mission/Guest |
|------|-----------------|--|--------|-------------|---|
| 1977 | Sep | Based on S/W, aerial photography covering 50,000 ha in Benakat was commenced | 4 | 5 | 6 |
| | | | | | <u>Team</u> 1. Mr. Toshio HAYASHI (aerophoto) Nov 29 - Dec 8 2. Mr. IISUO ARISAWA (Controlling) 1978 Mar 15 - Mar 21 3. Mr. Norimitsu MIYAZAKI (Coordinator) or) 1978 Mar 15 - Mar 21 |
| 1978 | May | Tropical charts commenced to be made | | | <u>Team</u> 1. Mr. Tadayoshi BANNO 1978 6.8-8.16 2. Mr. Takeshi KISHIKAWA ditto 3. Mr. Fumio YOKOTA ditto 4. Mr. Takeshi SETOJJI ditto 5. Mr. Teiji YOSHIITANI ditto 6. Mr. Yosuke TANAKA 1978 5.20-6.8 7. Mr. Norimitsu MIYAZAKI 1978 3.15-3.21 |
| 1978 | Jun 20 - Jul 29 | The soil survey and afforestation plannings were performed in accordance with the afforestation development cooperation project. | | | <u>Survey Team</u> 1. Mr. Katsumi SAKAGUCHI (Leader) 2. Mr. Shozo YONEKURA (Afforestation) 3. Mr. Taichi WATANABE (ditto) 4. Mr. Toshitaru FURUYAMA (ditto) 5. Mr. Yoryo HASHIMOTO (Forest Soil) 6. Mr. Tadao OHARA (ditto) 7. Mr. Teruaki SUGITA (ditto) |

| Year | Date | Meeting/Event | Expert | Counterpart | Mission/Guest |
|--------------|--------------------|--|--------|--|--|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1978 1979 | Nov 14 - Jan 12 | Survey Team for the analization of Forest resources in South Sumatera | | | <u>Team</u> 1. Mr. Tadayoshi IMAI 2. Mr. Tadao OHARA 3. Mr. Kiyishi MOCHIZUKI 4. Mr. Hiroaki MASUI 5. Mr. Hiroshi ITO 6. Mr. Shiro MORISHITA 7. Mr. Toru TAGUCHI |
| 1979 | Apr 1 | | | Ir. M. Wazir Nenekman was appointed as Field Manager (to 1980 April) | |
| | Apr 12 | The record of Discussion (R/D) was signed between Mr. Mochi Harris Soerangadjiwa, Director of Forestry Planning, Dirjen Kehutanan, and Mr. Kenji HORI, Head of the Japanese Implementation Survey Team. The Trial Piantation Project (Proyek Percobaan Tanaman Hutan) (ATA-186) has been started. | | | <u>Team (1979 Apr 2 - Apr 17)</u> 1. Mr. Kenji HIRO (Leader) 2. Mr. Masakiyo KAWAGUCHI (Planning) 3. Mr. Stoichi FUJINO (Forest Soil) 4. Mr. Ryosuke KATO (Afforestation) 5. Mr. Tadashi NAKAMICHI (Coordinator) |
| | Sep 11 - Oct 14 | The Japanese Implementation Survey Team was dispatched to Benakat | | | <u>Survey Team</u> 1. Mr. Ryosuke KATO (Leader) 2. Mr. Katsuyuki OHMI (Afforestation) 3. Mr. Hirota YAMATE (Nursery) 4. Mr. Tsuyoshi TAKASHIMA (Forest Road) 5. Mr. Tadao OHARA (Afforestation) 6. Mr. Eiji FUTADORI (Nursery) 7. Mr. Yoshifumi YASUMI (Forest Road) 8. Mr. Tomomitsu UCHIDA (Coordinator) |

| Year | Date | Meeting/Event | Expert | Counterpart | Mission/Guest |
|------|----------|---|--|---|---------------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1979 | Sep 19 | | | 1. Ir. Soeharto Soemarno was appointed Project Manager (to 1980 Feb 17) 2. Ir. Arif P Sagala was appointed Assistant Project Co-Manager (to 1983 Jul) | |
| | Nov 16 | | Mr. Katsuyuki OHMI, the Team Leader and Expert for Silviculture, was dispatched as the first, expert (to 1981 Oct) This date was the actual starting point of the project. | | |
| | Dec 17 | | 1. Mr. Ryosuke KATO, the Chief Advisor (to 1982 Feb) 2. Mr. Yoshiichi SAKAMOTO, The Liaison Officer (to 1981 Dec) . were dispatched for the Project. | | |
| | Dec 18 | | The proposal for model infrastructure from Japanese Government was sent by the Japanese Government , to construct a part of the trunk forest road, nursery, nursery road and nursery beds. | | |
| | Sep-Nov | | | 1. Ir. Zulkifli Mulsani (Silviculture) 1979 Sep - 1980 Apr 2. Ir. Hardjono Arisman (Nursery) 1979 Nov - 1983 Jan were appointed c/p for the Project | |
| | Dec 29 | | The Temporary Project Implementation office in Palembang was opened in South Sumatera Forestry Regional Office. | | |
| | Dec 31 | | The Project Office in Bogor was opened at the corner of the office of the Sub-Directorate for Reforestation and Rehabilitation. | | |
| 1980 | Jan 14 | Messrs. K.OHMI and Y. SAKAMOTO'S equipment arrived at Palembang Airport, and were delivered from the Airport on April 26 1980 | | | |
| | Feb 29 | | | | |
| | - Jun 24 | The model infrastructure for the project was constructed 1) Acces road : 1,520 m 2) Land preparation of nursery : 1.5 ha 3) Arrangement of nursery bed : 108 | | | |

| Year | Date | Meeting/ Event | Expert | Counterpart | Mission/ Guest |
|------|--------------------|---|---|---|----------------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1980 | Mar 1 | | | Ir. Syahrir was appointed Project Manager | |
| | Mar 12 | | Mr. Seishi MIURA (Forest Protection) was dispatched for the Project to Mar 11, 1982 | | |
| | Mar 19 - Jun 15 | | Mr. Kiyohiko YAMAZAKI (Forest Civil Engineering) performed the supervision for the model infrastructure of the Project | | |
| | Mar 21 | An item on the provision of special measure by the Japanese Government was added after agreement by both Indonesian and Japanese sides. | | | |
| | | The first equipment supplied by Japan arrived at Palembang port. On July 31, 1980 these equipment arrived in Benakat. | | | |
| | Mar 31 - May 29 | | Mr. Masaji KAWASAKI (Nursery) was dispatched for the Project. | | |
| | Apr 30 | | Mr. Zulkifli Mulsani was appointed Field Manager in place of Ir. M. Wazir. Nengkeran. | | |
| | Jun 3 - Jun 15 | | The Technical Cooperation Planning Survey Team led MR. K. KOHTARI was dispatched to Indonesia, all problems closely connected with the Project activity were discussed and the result of discussion were outlined in the form of minutes. | | |
| | | | <u>Planning Survey Team :</u> Leader : Mr. Katsuhiko KOHTARI (JICA) Mr. Seinosuke KADOYA (Forestry Agency) Dr. Kazuto ARIMITSU (Forestry and Forest Products Research Institute) Miss. Noriko NANBA (JICA) | | |
| | Jun 14 | The First Joint Steering Group Meeting was held in Jakarta, the progress report and operation plan, etc. were placed in the agenda. | | | |
| | Jun 20 | <u>Pinus Mezkusii</u> seeds were sowed as first time sowing at the Project. | | | |

| Year | Date | Meeting/ Event | Expert | Counterpart | Mission/ Guest |
|------|--------------------|---|--------|--|----------------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1980 | Jun | Temporary Project Implementation Center Office in Benakat was opened. | | | |
| | Jul | Temporary facility which was built by Indonesian Government function as warehouse, and temporary dormitory. | | | |
| | Jul 30 | Mr. Koji TASHIRO (Forest Engineering) was dispatched for the Project for April , 1984 | | | |
| | Sep 18 | Manual land preparation was started in trial plantation field. | | | |
| | Sep 22 | Mr. Hirota YAMATE (Nursery) was dispatched for the Project to April , 1984 | | | |
| | Sep 25 | Potting House for the nursery was completed by the Japanese Government. | | | |
| | Sep 17 - Dec 16 | | | Messrs M. Wazir. N. (Senior course, from Sep 17 to Oct 17), Zulkifli Mulsani (Silviculture from Oct 1 to Dec 16) and Hardjono (Nursery from Sep 17 to Dec 16) were accepted as the first trainees by JICA | |
| | Oct 30 | The second Joint Steering Group Meeting was held in Jakarta, annual plan, budget, handling cost for equipment and machinery supplied by Japan etc were placed on the agenda. | | | |
| | Oct 30 Jan 13 | Construction of drinking water facility was done until January 13, 1981. However, the effort to get underground water for drinking water did not succeed because of the difficulty to reach the vein. | | | |
| | Nov | The sprinkler for the nursery was put together under the short term expert's guidance. | | | |
| | Nov 23 | The advisory team led by Mr. T. MATSUDA was dispatched the project in order to give the Project advice and guidance on the technical and administrative viewpoints. | | | |
| | | | | The Advisory Team Mr. Takashi MATSUDA (Forestry Agency) Mr. Katsura WATANABE (JICA) Mr. Osamu TAKADA (Forestry Training Institute) | |
| | Dec 8 | First Trial Planting was done with <u>Albizia falcata</u> seedlings. | | | |
| | Dec 9 | Actual planting activity in the field was started with <u>Albizia falcata</u> seedlings. | | | |

| Year | Date | Meeting/ Event | Expert | Counterpart | Mission/ Guest |
|------|--------------------|--|--|-------------|----------------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1981 | Feb 9 - Feb 18 | The Living Facilities Design Team led by Mr. K. TAKAHASHI visited the Project in order to discuss and arrange the design of the facilities for the living circumstance. The Living Facilities Design Team Chief : Mr. Kurio TAKAHASHI (Ministry of Foreign Affairs) Mr. Masayuki OKAJI (Nippon Koei Co. Ltd) Mr. Akiyoshi MIRAYAMA (ditto) Miss Noriko NANBA (J I C A) | | | |
| | Feb 10 - May 9 | Construction work of the temporary storehouse, in order to cover the shortage of storehouse for equipment and machinery was done. | | | |
| | Mar 3 | Expert to guidance to weeding by the use of bush cutters | | | |
| | Mar 31 | | Mr. Seiichi OHTA (Forest Ecology) was dispatched for the Project to Mar 30, 1984 | | |
| | Apr 17 | | Mr. Syahril was succeeded by Ir. Soedjadi Hartono as Project Manager. | | |
| | | | | | |
| | Apr 17 | The Living Condition Survey Team. Messrs S. SHIRAHAMA and K. KAGAWA visited the Project, aiming to decide whether the special allowance for the remote rural area would be supplied or not for the experts of the Project. | | | |
| | | | | | |
| | Apr 27 | The Project Implementation Center in Berakat was sttled. | | | |
| | Apr 30 - May 31 | Construction work for wiring for electricity outdoor was done in the nurseri site. | | | |
| | Jun 8 | The Third Joint Steering Group Meeting was held in Jakarta, and review the last meeting, progress report of 1981/ 1982, five years plan, etc.were placed on the agenda: | | | |
| | Jun 25 - Jul 10 | The Consultation Mission for the Project led by Mr. M. FURUYA, was dispatched by JICA in order to make the basic plan for the pilot infrastructure scheme activity to test and study the agroforestry. | | | |

| Year | Date | Meeting/ Event | Expert | Counterpart | Mission/ Guest |
|------|--------------------|---|--------|---|--|
| 1 | 2 | 3 | 4 | 5 | 6 |
| | | | | | <u>Consultation Mission</u> Mr. Masato FURUYA (Forestry Training Institute) Mr. Katsuo OKA (Forestry Agency) Mr. Tadashi NAKAMICHI (JICA) |
| | Jun 25 - Jul 30 | Construction work for site preparation of new facilities was done Total area of site preparation was 4,000 m ² | | Leader : Mr. Masato FURUYA (Forestry Training Institute) Mr. Katsuo OKA (Forestry Agency) Mr. Tadashi NAKAMICHI (JICA) | |
| 1982 | Jun 25 - Mar 20 | Construction work for The Trial Plantation Training Center in order to cover the shortage facilities and to improve the living condition of the experts in the field site was done. The construction consisted of dormitory of 580 m ² , Workshop of 220m ² and a laboratory and training room of 92 m ² | | | |
| 1981 | Aug 20 | The ceremony of laying the cornerstone of the Trial Plantation Training Centre was carried out. | | | |
| | Sep 7 - Oct 10 | Construction works for Temporary Improvement of the sprinkler pond and loam bridges were done in order to improve the leakage of water in the sprinkler pond and to recover the two bridges damaged during the rainy season. | | | |
| | Oct 3 - Oct 5 | The Guidance Team for Agriculture and Forestry Technical Cooperation Project led by Mr. R. MATSUYAMA (Executive Director, JICA), visited the Project site in order to observe Project activity and discuss how to develop the Project activity. | | | |
| | Oct 14 | The short term experts for the pilot infrastructure were dispatched, Mr. T. TAKAHASHI as expert on the design of the pilot Infrastructure until December 13, 1981, Dr. M. KIWA ZAKI as the expert on socio economy of the community and Dr. Y. IZUMIYAMA as ten expert on the experimental plan of dry field farming until November 12, 1981. | | | |
| | Oct 14 | Mr. Kuniaki KATOH (Team Leader and Silviculture) was dispatched for the Project to October 13, 1983 | | | |

| Year | Date | Meeting/ Event | Expert | Counterpart | Mission/ Guest | |
|------|-------------------|---|--------|--|--------------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | |
| 1981 | Nov 4 - Nov 30 | The Pilot Infrastructure Implementation Work Guidance Team led by the detailed plan for the pilot infrastructure, teh scheme which Mission served as the basic plan. | | Leader : Mr. Yoshio AOKI (IWAJUI Co. Ltd) Mr. Yoshiro YACHINE (IWAJUI Co Ltd) | Work Guidance Team | MR.K. KOHTARI, was dispatched to make was made by Mr. FURUYA's Consultation |
| 1982 | Jan 5 | The Fourth Joint Steering Group Meeting was held in Jakarta. Review of the last meeting progress report, security problem in nursery, delay of building construction, survival ratio of seedlings in the fields, handling cost for the equipment, etc. Were placed on agenda. | | | | |
| | Feb 1 | | | Mr. S. SUGIMOTO arrived Indonesia as the successor of Mr. R. KATO (Chief Advisor) | | |
| | Feb 16 | | | Mr. R. KATO's assignment finished and he left for Japan. | | |
| | Feb 24 | | | | | |
| | Mar 22 | The Trial Plantation Training Center was started as accomadation use. | | | | Five JICA would be expert trainees visited the Project as part of their training. |
| | Mar | Construction Work for Protection Fence was done in order invasion by cattle, goats and thives ; total length of the fence was 1.475 M | | | | |
| | Mar 30 | | | Mr. Victor. M. Sinaga had been appointed Project Manager in Place of Ir. Soedjadi Hartono. | | |
| | Apr 1 | The budget for implementation of the Project activities had become INPRES except for the General management. | | | | |
| | May 5 - Jan 15 | Construction Work for Pilot Infrastructure was done in order to implement the Agroforestry activity smoothly. This construction work consisted of a road of 7.224 m, bridges of one unit. Look out tower of one unit, pond of one unit, warehouse of one unit, etc. | | | | |
| | Jun 5 | Resident Representative of JICA Jakarta Office made a contract with the director of Pt. Pramantato construct the pilot infarstructure for Agroforestry. | | | | |

| Year | Date | Meeting/ Event | Expert | Counterpart | Mission/ Guest |
|------|--------------------|--|---|-------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1983 | Mar 14 | The Sixth Joint Steering Group Meeting was held at Jakarta, and review of last meeting, progress report and other matters were placed on the agenda. | | | |
| | Mar 17 | The Directorate General of Forestry became the Minister of Forestry. | | | |
| | Mar 27 | Some kinds of trees were planted as sample plantation (Arboretum) in the agroforestry scheme area such as <u>Acacia Mangium</u> , <u>Albizia falcata</u> , <u>Cariandra sp</u> , <u>Eucalyptus euphratica</u> , <u>Pinus merkusii</u> and <u>Swietenia macrophylla</u> etc. | | | |
| | Jun 13 | The Secretary General of Ministry of Forestry sent a letter to Head of Overseas Technical Cooperation Bureau, Cabinet Secretariat of the Republic of Indonesia and Chief of National Planning and Development Agency, the Republic of Indonesia, proposing to the Indonesian Government request to the Japanese Government to extend the Project in order to achieve the anticipated objectives. | | | |
| | Aug | Fire fighting system was established, and during this dry season the system had played an active part in fire fighting. | | | |
| | Mar | | Mr. Motohiro ARIHARA (Forest Ecology) was dispatched for the Project to April 10, 1986 | | |
| | Jul | | Mr. Tadao OHARA (Acting Team Leader and Silviculture) was dispatched for the Project to July , 1984 | | |
| | Aug | Some kinds of simple tools for fire fighting were prepared at the storehouse at the Agroforestry site. | | | |
| | Aug 30 - Sep 14 | The Evaluation Team from Japan led by Mr. Y. NOMURA and the Indonesian Evaluation Team led by Mr. Victor M. Sinaga evaluated the Project activities and held a Joint Evaluation Meeting in Jakarta on September 13, 1983. The Joint Evaluation Team recommended to the respective government to extend the Project activity. | | | |
| | | | | | <u>The Evaluation Team</u> Leader : Mr. Yasushi NOMURA (Forestry Agency) Adjusment : Mr. Minoru KUMAZAKI (Forestry and Forest Products Research Institute) Forest Machinery : Mr. Tetsuro MATSUDO (Forestry Training Institute) Afforestation : Mr. Tadayoshi KONNO (Forestry Agency) Coordination : Mr. Hokojiro KAJIYAMA (Forestry Agency) |

| Year | Date | Meeting/ Event | Expert | Counterpart | Mission/ Guest |
|------|--------------------|----------------|---|--|--|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1983 | Sep 14 | | | The Field Manager was changed from Mr. Zulkifli Muisani to Mr. Triyogo Soekanto, former forest protection counterpart. | |
| | Sep 16 - Sep 30 | | Mr. T. WATANABE, Audio Visual reporter, visited Indonesia in order to make audio Visual. Scenario concerning afforestation activity in alang-alang grassland. | | |
| | Oct 5 | | | | ANZAP (Asean New Zealand Afforestation Project) Work Shop Team visited the Project for an inspection. |
| | Oct 12 | | Mr. K. KATOH, Expert Team Leader, left for Japan, for his assignment had finished. | | |
| | Oct 31 - Nov 2 | | | | JICA would be expert team led by Mr. K. KATSURAI visited the Project to observe the afforestation cooperation Project. |
| | Dec 15 - Jan 18 | | The audio visual Filming Team was dispatched to Indonesia to make an audio visual film for afforestation activities in alang-alang grassland. Mr. Tetsuya WATANABE (Audio visual) Mr. Kuniyasu SAGARA (ditto) Mr. Kazushige FUJISAKI (ditto) | | |
| 1984 | Jan 28 | | | Ir. Victor M. Siraga was succeeded by Ir. Saqtana PH. as Project Manager. | |
| | Jan 30 | | Mr. S. SUGIMOTO, Chief Advisor for the Project, left for Japan for his assignment had finished. | | |
| | Feb 4 | | Mr. T. IKEDA, Team Leader and expert for forest protection arrived in Indonesia. | | |

| Year | Date | Meeting/ Event | Expert | Counterpart | Mission/ Guest |
|------|--------------------|---|--|-------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1984 | Feb 27 | | Mr. H. OKABE, arrived in Indonesia as Chief Advisor for the Project. | | |
| | Mar | Construction work of the nursery road drainage of the nursery road in the rainy season. | | | |
| | Mar 24 | The record of discussion for the extension of the Project activity for two more years was signed by Mr. Wartono Kahri, Director General, DGRUR, and Mr. Hiroshi YAMAMURA, JICA Resident Representative Jakarta Office. | | | |
| | Apr 23 | The Seventh Joint Steering Group Meeting was held in Jakarta. Review the last meeting, recommendation, Indonesia - Japan Joint Evaluation Team's progress report. technical report, two years plan and the annual plan were placed on the agenda. | | | |
| | May 16 - May 29 | | | | The Japanese Project Consultation Team led by Mr. R. KATO, ex Chief Advisor for the Project was dispatched to Indonesia to make consultation concerning the extended two years. |

| Year | Date | Meeting/ Event | Expert | Counterpart | Mission/ Guest |
|------|-------------------|----------------|--------|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1984 | | | | | |
| | May 28 | | | <p>Leader :</p> <p>Afforestation : Forest Production : Agroforestry :</p> <p>Coordination : The Joint Steering Group and the Japanese Project Consultation Team agreed on the "MINUTES OF UNDERSTANDING".</p> | <p>Technical Consultation Team</p> <p>Mr. Ryosuke KANOI (Forestry and Forest Products Research Institute)</p> <p>Mr. Hiroshi KUDOH (Forestry Agency)</p> <p>Mr. Takashi OYAMA (ditto)</p> <p>Dr. Seichi OHYA (Forest and Forest Products Research Institute)</p> <p>Mr. Tooru AOKAWA (JICA)</p> |
| | Jul 17 | | | <p>After discussion at the Joint Meeting at Jakarta. The Joint Steering Group and the Japanese Project Consultation Team agreed on the "MINUTES OF UNDERSTANDING".</p> <p>New Plantation site design was started by measuring the area.</p> | |
| | Aug 7 | | | <p>The fire Protection Model Infrastructure design was started by measuring the field.</p> | |
| | Aug 29 - Sep 1 | | | <p>Mr. H. YAMAMURA, Resident Representative, JICA Jakarta Office, Inspected the Project. On September 1st he paid a courtesy call on the secretary of the Governor of South Sumatera Province, asking for good cooperation with the Project.</p> | |
| | Sep 21 | | | <p>The proposal of fire control Infrastructure Facilities for the Project was sent from the Ministry of Forestry, to Resident Representative JICA Jakarta Office.</p> | |
| | Oct 9 - Oct 15 | | | <p>Mr. T. MISAWA, Director of the Planning Division Private Forest Department, Forestry Agency, visited Indonesia to guide fire control and examine the Project and confer with Indonesian Authorities about future development of technical cooperation.</p> | |
| | Oct | | | <p>Not verbal for the Fire Control Infrastructure Facilities was exchanged by both Governments. In this connection, the amount of the funds allocated by JICA was 26.832.000 Yen.</p> | |

| Year | Date | Meeting/ Event | Expert | Counterpart | Mission/ Guest |
|------|--------------------|--|--------|-------------|--|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1984 | Oct 20 | The reforestation Technology development Center (Balai Teknologi Reboisasi) has been established at Benakat, and the Project has taken the greater part of activities of the center. Ir. Kardi Sabaruddin was appointed Chief of the Center. | | | |
| | Oct 25 - Oct 27 | Ir. Wartono Kadri, Director General, DGRLR, made inspection on the Project, and gave some technical advice. | | | |
| 1985 | Dec 27 - Apr 5 | The contract of the model infrastructure for fire control was signed in Jakarta between Mr. H. YAMAMURA, Resident Representative of JICA and Mr. Arsyad Letet Director of CV. Waringin and between Mr. H. YAMAMURA and Mr. Basuki Sutopo Director, CV. Hidup Sejahtera. And the construction had been implemented. | | | |
| 1985 | Mar | Construction Work of the Concrete Floor for the Work Shop was done in order to keep clean work shop and to make a car wash area. | | | |
| | Mar 6 - Mar 9 | | | | The Technical Guidance Team led by Dr. M. MATSUI inspected and guided in the field. They suggested many technical points. Leader : Dr. Mitsuma MATSUI (JFTA) Silviculture : Dr. Yasushi MORIKAWA (Forestry and Forest Research Institute) Coordination : Mr. Hisaharu HAYASHI (JICA) |
| | Mar 19 | The Eighth Joint Steering Group Meeting was held in Jakarta. Review of the last meeting, progress report placed on the agenda. | | | |
| | Mar 29 - Apr 1 | | | | Mr. U. ANDO, Japanese expert team leader for the Sakaerat Field Station, Mr. Paisal Kewapirat Field Manager, Sakaerat Field Station, and Mr. Aran Som-Ngai, Plantation, Sakaerat Field Station from Thailand, visited the Project for the Technical Exchange Program among the JICA Project Cooperation. |

| Year | Date | Meeting/ Event | Expert | Counterpart | Mission/ Guest |
|------|--------------------|----------------|--------|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1985 | Apr 1 - Apr 7 | | | <p>The research team on the Actual condition of equipment from JICA was dispatched in order to survey the actual condition of the equipment.</p> <p>Mr. Tatsuo FUJIMOTO (JICA) Mr. Hidekatsu SHIRAIISHI (JICA) Mr. Makoto AOKI (JICA)</p> | <p>The research team on the Actual condition of equipment from JICA was dispatched in order to survey the actual condition of the equipment.</p> <p>Mr. Tatsuo FUJIMOTO (JICA) Mr. Hidekatsu SHIRAIISHI (JICA) Mr. Makoto AOKI (JICA)</p> |
| | Apr 30 | | | <p>Mr. Triyono Soekanto, Field Manager of the Project moved to the Ministry, and Mr. M. Kardi Sabaruddin held concurrently the post of Field Manager.</p> | |
| | May 15 | | | <p>First fire fighting exercise was implemented in the field, using some equipment.</p> | |
| | Jul 15 | | | <p>The annual consultation meeting on Technical Cooperation between Japan and Indonesian was held at SEKAB, and follow up of the Project was discussed in the meeting.</p> | |
| | Jul | | | <p>Construction Work of Rain Water Supply System Improvement was done in order to get clean water for the experiment and for drinking.</p> | |
| | Jul 15 - Jul 19 | | | <p>Operators and mechanics training was held at benakat in order to improve their techniques.</p> | |
| | Sep 18 | | | <p>Leader :</p> | <p>Afforestation Survey Team led by Mr. T. FUJIMURA visited the Project. Mr. Takashi FUJIMURA (JOFCA)</p> |
| | Oct 21 - Nov 1 | | | <p>Leader :</p> | <p>Technical Guidance Team led Mr. K. WATANABE was dispatched to Indonesia in order to review the achievement of the Project activities. The joint evaluation team was organized for the review and gave suggestions for future activities.</p> <p>Mr. Katsura WATANABE (JICA) Mr. Masatoshi NUMATA (Forestry Agency) Mr. Tooru AOKAWA (JICA)</p> |

| Year | Date | Meeting/ Event | Expert | Counterpart | Mission/ Guest |
|------|-----------------------|--|--|-------------|----------------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1985 | Oct 28 | Joint Evaluation Team held a Joint Meeting in Jakarta. After the Meeting the Team decided to recommend to their respective governments that the follow-up the Project was necessary. The review report of the Team was presented. | | | |
| | Dec 18 | The second fire fighting exercise was implemented in the field, using all kinds of equipment, with many visitors. | | | |
| 1986 | Mar 11 - Mar 18 | | Messrs. T. IKEDA, O. TANNO, Kardi Sabaruddin and Sutomo visited the Reforestation Research and Training Project in Thailand for the Technical Exchange Program among JICA Project Cooperation. | | |
| | Apr 2 | The record of Discussion on the Follow-up for the Trial Plantation project was signed by Martono Kadri, Director General, DGRLR, and Mr. Hideo ENDO, Resident Representative JICA, Jakarta Office. | | | |
| | Apr 2 | The diplomatic notes on a grant aid for technical assistance Request for The Afforestation Machinery Provision Project was signed and exchanged between the Ambassador of Japan and the Director General of Foreign Economic Relations of the Ministry of Foreign Affairs. | | | |
| | Apr 1 | | Mr. Sato SHIRAHAMA (Silviculture) was dispatched for the Project. | | |
| | Apr 10 | | Five Japanese Experts left for Japan. | | |
| | Apr 11 | | The extended two years based on Record of Discussion signed on March 24, 1984 is expired | | |

| Year | Date | Meeting/Event | Expert | Counterpart | Mission/Guest |
|------|-------------------|---|---|-------------|--|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1986 | Apr 12 | | Mr. Kohji OKABE (Chief Advisor) was extended from 12 April to 30 April) | | |
| | Apr 14 | | Mr. Yasuyuki SUZUKI (New Chief Advisor) arrived April 14, 1986 to April 13, 1988) | | |
| | Apr 17- Apr 22 | | | | Guidance Team Mr. Takashi Fujimura (JOFICA) Dr. Kazuto ARIMITSU (Forest and Forest Products Research Institute) |
| | Apr 29 | The Ninth Joint Steering Group Meeting at Jakarta | | | |
| | Apr 30 | | Mr. Kohji OKABE left for Japan | | |
| | May 19- 23 | | | | Mission for Grant Aid Mr. Yoshitaro WATANABE (JICA) |
| | Jun 29 | | Mr. Kyoji HASHIMOTO was extended from June 1986 to 31 March 1987 as expert for Agroforestry | | |
| | Jul 6 - 12 | | | | Prospective JICA Expert (Course director: Mr. Seibei HATTORI) 1. Mr. Makato OHTSUBO 2. Mr. Toshihiro ISHITANI 3. Mr. Jun KAJIYAKI 4. Mr. Takashi SATO 5. Mr. Matsumari TAKENAKA 6. Mr. Kohji HONGO |

| Year | Date | Meeting/Event | Expert | Counterpart | Mission/Guest |
|------|--------------------|--|--|---|---------------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1986 | Jul 8 - Sep 9 | The Ninth Annual Consultation Meeting on Technical Cooperation between Japan and RI at BAPPENAS, Jakarta | | c/p training in Japan 1. Ir. Soedaryanto at Kanto Free Breeding Institute | |
| | Jul 15 - 18 | | | | |
| | Jul 24 | Ikatan Alumni JICA Indonesia at Hotel President Jakarta | | | |
| | Aug 18 - Nov 27 | | | Forestry Training in Japan (Group Training) 2. Ir. Eko Bambang Sutedjo 3. Ir. Sofan Bustami | |
| | Aug 26 -29 | | Study Tour to Ujung Pandang, South Sulawesi (Mr. SUZUKI, Mr. HASHIMOTO and Mr. SHIRAHAMA) | | |
| | Sep 11 - Dec 15 | | | Training in Japan (Forest Soil) 4. Mr. Setyo Purnomo at Ryukyu University | |
| | Sep 29 - Oct 17 | | Study Tour to Kalimantan 1. Mechanized Nursery and Plantation Project (ATA-267) at Banjarmasin 2. PUSREHUT Project (JTA 9 (A)-137) at Samarinda Mr. KYOJI HASHIMOTO Mr. MASATO SHIRAHAMA Ir. Yaedi Hariyanto Ir. Bustami | | |
| | Oct 7 | Explanation meeting for Grant Aid at Dephut, Jakarta | | | |
| | Oct 13 - Nov 27 | | Mr. Kinihiko HAYASHI (Agroforestry) as Short Term Expert | | |
| | Oct 27 | Bidding for Grant Aid (Imapung, North Sumatera) at Dephut | | | |
| | Nov 4 | Bidding Committee | | | |

| Year | Date | Meeting/ Event | Expc t. | Counterpart | Mission/ C ast |
|------|--------------------|----------------|---------|--|--|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1987 | Jan | | | <ol style="list-style-type: none"> 1. Tata Wiharta BSc F (Silviculture) shifted to BTP Bogor 2. Rismulyadi BSc F (Forest Machinery) shifted to Dit. Reboisasi 3. Ir. Heru (Agroforestry) to Benakat 4. Ir. Engkos Kusnandar (Forest Machinery) to Benakat. | |
| | Jan 13 - Feb 8 | | | | <p>Survey Team for Agroforestry</p> <ol style="list-style-type: none"> 1. Dr. Tokunori MORI 2. Dr. Yoichi TORIGOE 3. Mr. Akira SATO <p>(Jan 17 - Jan 31 in Benakat)</p> |
| | Jan 20 - Jan 25 | | | | <p>Team Technical Exchange between Indonesia and Philippines</p> <ol style="list-style-type: none"> 1. Mr. Tsutomu HANADA (Team Leader JICA Project in Philippines) 2. Mr. Jose L. Leborcito (Chief of Re forestation Division BFD-RP) |
| | Feb 16 - Feb 17 | | | Meeting for F/S HTI in Benakat and Watershed Management Project in South Sulawesi. | |
| | Feb 18 - Feb 25 | | | Meeting for TEAM Leader of JICA (ASEAN) Project in Jakarta. | |
| | Feb 20 - Feb 25 | | | | <p>Guidance Team of Agriculture and Forest Technical Cooperation Project.</p> <ol style="list-style-type: none"> 1. Mr. Eiji YAMAGIWA (Leader) 2. Mr. Takashi SHIMIZU 3. Mr. Yoshikiyo OHKAWA 4. Mr. Akira SUZUKI |
| | Feb 21 - Feb 23 | | | | <p>JICA Team Leader (8)</p> <ol style="list-style-type: none"> 1. Dr. Yasuto CHIEA (China) 2. Prof. Dr. Iwao JINNAI (Indonesia) 3. Dr. Akira YAMAGUCHI (Malaysia) 4. Mr. Hitoshi KATOH (Philippines) |

| Year | Date | Meeting/ Event | Expert | Counterpart | Mission/ Guest |
|------|-----------------------|-------------------------|--|-------------|--|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1987 | Feb 23 - May 15 | | Mr. Koji TASHIRO (Forest Machinery) dispatched as Short Term Expert. | | 5. Mr. Ryooske KATOH (Thailand) 6. Mr. Makato OHTSUBO (Thailand) 7. Mr. Kozo KOSUGI (Brunei) 8. Mr. Yasuyuki SUZUKI (Indonesia) |
| | Mar 2-28 | | Dr. Akira NOBUCHI (Forest Entomology) dispatched as short term expert. | | Guidance Team (5) 1. Mr. Eiji YAMAGIWA (JICA) 2. Mr. Susumu SUZUKI (JICA) 3. Mr. Takashi SHIMIZU (MOAF) 4. Mr. Yoshikiyo OHKAWA (JICA) 5. Mr. Akira SUZUKI (JICA) |
| | Mar 30 | | Mr. Kyoji HASHIMOTO left for Japan | | |
| | May 14-21 | Meeting on ITTO Project | | | Pre-Project Study Team on Treatment of Logged-over Forests sponsored by ITTO 1. Prof. Dr. Taisichiro SATO 2. Mr. Motohiro ARIHARA |
| | May 14 - Jun 15 | | Mr. Yasuyuki SUZUKI (Chief Advisor) home leave | | Survey Team at Watershed Management Project in South-Sulawesi observed on Benakat Project (Jun 21-Jul 11) 1. Mr. Mr. Minoru NAKANO 2. Mr. Yoshiichi SAKAMOTO |
| | Jul 6-8 | | | | Prospective JICA Experts 1. Mr. Seibei HATTORI (Course Director) 2. Dr. Masayuki KONATSU 3. Mr. Osamu FUDAZAWA |
| | Jul 12-18 | | | | |

| Year | Date | Meeting/ Event | Expert | Counterpart | Mission/ Guest |
|------|--------------------|---|--------|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1987 | Jul 13-16 | The 11th Annual Consultation Meeting on Technical Cooperation between Japan and RI at BAPPENAS Jakarta. | | | 4. Mr. Satoshi KITSUZAWA 5. Mr. Hiroyuki HATORI 6. Mr. Toshiko HARADA 7. Mr. Takachika YAMASHITA |
| | Aug 17 - Nov 20 | | | c/p training in Japan Ir. Haryono (Forest Protection) at Forest and Forest Products Research Institute. | |
| | Aug 30 - Sep 9 | Meeting about new project with Pro-Ei Mission | | | Project Finding Mission sponsored by Forestry Agency 1. Dr. Mitsuma Matsui 2. Mr. Seibel HATORI |
| | Sep 16-19 | | | | Observation team from Project kali Kon to (ATA206) and Perum Perhutani. 1. Ir. Rusmanhadi (Proyek) 2. Ir. Edi Rismono (Proyek) 3. Ir. W.J. van Oostveen (Proyek) 4. Ir. Bambang Soeharyanto (KPH Malang) 5. Ir. Supeno (KPH Pasuruan) |
| | Sep 24-26 | Evaluation on Technical Cooperation Project by Embassy of Japan. | | | Evaluation Team 1. Mr. Atsushi IOKI (1st Secretary of the Embassy of Japan) 2. Mr. Manabu AIBA (JICA Jakarta Office) |
| | Sep 24-26 | Forest fire fighting Training | | | Fire Fighting |
| 1988 | Oct 1 - Mar 31 | | | Mr. Masato SHIRAHARA extended as expert of JICA (Silviculture) | |
| | Oct 6 | The Tenth Joint Steering Group Meeting at Kawili Kehutanan, Palembang. | | | |

| Year | Date | Meeting/ Event | Expert | Counterpart | Mission/ Guest |
|------|----------------------------|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1987 | Oct 9 - Nov 10 | | Mr. Masato SHIPAHAMA | Mr. Masato SHIPAHAMA home leave to Japan | |
| | Oct 12 - Nov 11 | Survey team for Agroforestry | | | Survey Team 1. Dr. Y. TORIGOE 2. Dr. T. HAMEZAKI 3. Dr. N. TANAKA |
| | Oct 30 | Ikatan Alumni JICA Indonesia at Hotel President Jakarta | | | |
| | Nov 8-16 | Guidance Evaluation Team from Japan | | | Guidance Evaluation Team 1. Mr. TSUTSUMI 2. Mr. MOTOYAMA 3. Mr. SERIZAWA |
| | Dec. 22 - Feb. 27, 1988 | | Short term expert will be dispatched (Tending tree) Mr. Seishi MIURA | | |
| 1988 | Jan 4 | | | | Ir. Manan Siregar (New Director of Re forestation) |
| | Jan 8 - Mar 31 | | Mr. Kyoji HASHIMOTO | Mr. Kyoji HASHIMOTO (Agroforestry) dispatched as short term expert. | |
| | Feb 2 - Mar 31 | | Mr. Taro NAGATO | Mr. Taro NAGATO (Forestry Machinery) dispatched as short term expert. | |
| | Jan 25 - Mar 16 | | | c/p training in Japan 1. Ir. Bustami (Silviculture) | |
| | (March) | | | (c/p training in Japan 1. Ir. Edi Iswahyudi) | |

| Year | Date | Meeting/ Event | Expert | Counterpart | Mission/ Guest |
|------|---------|--|--|-------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1988 | Mar 18 | Closing Ceremony at Benakat (Mess 3TR) | | | From March 16 to March 26 |
| | 22 | Closing Ceremony at Palembang (Hotel Swarna Dwipa) | | | The Contact Mission for The F/S HTI |
| | 25 | Closing Ceremony at Jakarta (Hotel Sari Pacific) | | | Benakat, South Sumatera stayed in Jakarta |
| | 30 | | Mr. Masato SHIRAHAMA left for Japan. Mr. Kyoji HASHIMOTO left for Japan. Mr. Taro NAGAIO left for Japan. | | Benakat and Palembang. |
| | 31 | The Trial Plantation Project is ended. | | | Leader: Mr. Seisuke SUDO (Forestry Agency Mr. Takashi FUJIWARA (Ditto) Mr. Yoshihiko KAWARADA (Ditto) Mr. Itsuo HONDA (Ditto) Mr. Yuichi SAITO (JICA, Tokyo) |
| | Apr. 12 | | Mr. Yasuyuki SUZUKI left for Japan (Chief Advisor for AIA-186 Project) | | |

(1) LONG TERM EXPERTS

| NO | NAME | SPECIALITY | PERIOD | | PRESENT PLACE OF WORK |
|----|----------------------|---------------|--------------|--------------|---|
| | | | FROM | TO | |
| 1 | Mr. Ryosuke KATOH | Chief Advisor | Dec 17, 1979 | Feb 16, 1982 | Chief Advisor for JICA Project in Thailand |
| 2 | Mr. Sadao SUGIMOTO | ditto | Feb 1, 1982 | Jan 31, 1984 | Division Chief, TOHOKU National Forestry Institute |
| 3 | Mr. Hiroji OKABE | ditto | Feb 27, 1984 | Apr 30, 1986 | Senior Officer, Forestry Agency |
| 4 | Mr. Yasuyuki SUZUKI | ditto | Apr 14, 1986 | Apr 13, 1988 | Chief Advisor for JICA Project in Indonesia (Forestry Agency) |
| 5 | Mr. Katsuyuki OHMI | Team Leader | Nov 16, 1979 | Nov 15, 1981 | Director JICA in TOKYO |
| 6 | Mr. Kuniaki KATOH | ditto | Oct 14, 1981 | Oct 14, 1983 | Division Chief, MAEBASHI Regional Forestry Office |
| 7 | Mr. Tsuyoshi IKEDA | ditto | Feb 4, 1984 | Apr 10, 1986 | Division Chief, TOKYO Regional Forestry Office |
| 8 | Mr. Tadao OHARA | Silviculture | Jul 15, 1983 | Jul 14, 1984 | Division Chief, Japan Forest Technical Association (JFTA) |
| 9 | Mr. Minoru AFAI | ditto | Apr 12, 1984 | Apr 10, 1986 | Expert for JICA Project in Kenya |
| 10 | Mr. Masato SHIRAHAMA | ditto | Apr 1, 1986 | Mar 31, 1988 | Forestry Agency |
| 11 | Mr. Hirota YAMATE | Nursery | Sep 22, 1980 | Apr 11, 1984 | Division Chief, KYUSHUU Tree Breeding Institute |
| 12 | Mr. Osamu TANDOH | ditto | Mar 26, 1984 | Apr 10, 1986 | Senior Research, KANTOH Tree Breeding Institute |

| NO | NAME | SPECIALITY | PERIOD | | PRESENT PLACE OF WORK |
|-----|------------------------|--------------------|--------------|--------------|---|
| | | | FROM | TO | |
| 13. | Mr. Seishi MIURA | Forest Protection | Mar 12, 1980 | Mar 11, 1982 | AMORI Forestry Association |
| 14. | Mr. Masaharu TABATA | ditto | Apr 1, 1982 | Mar 31, 1984 | Deputy Chief of Division TOKYO Regional Forestry Office |
| 15. | Mr. Kohji TASHIRO | Forest Engineering | Jul 30, 1980 | Apr 11, 1984 | Senior Expert, NUMATA National Forest Machinery Development Center |
| 16. | Mr. Hirotsato TAGUCHI | ditto | Mar 26, 1984 | Apr 10, 1986 | Deputy Chief, ATSUTA Wood Marketing Office |
| 17. | Dr. Seichi OHTA | Forest Ecology | Mar 31, 1981 | Mar 30, 1983 | Expert for JICA Project at Samarinda in Indonesia (PUSREHUT) |
| 18. | Mr. Motohira ARIHARA | ditto | Mar 15, 1983 | Apr 10, 1986 | Senior Research, Japan Overseas Forestry Consultant Association (JOFCA) |
| 19. | Mr. Yoshiichi SAKAMOTO | Liaison Officer | Dec 17, 1974 | Des 16, 1981 | Auditor MAEBASHI Regional Forestry Office |
| 20. | Mr. Hideki HACHINOHE | ditto | Nov 18, 1981 | Apr 11, 1984 | Expert for JICA Project at Samarinda in Indonesia (PUSREHUT) |
| 21. | Mr. Kyohji HASHIMOTO | ditto | Jun 15, 1984 | Jun 28, 1986 | Staff JICA in TOKYO |
| 22. | Mr. Kyoji HASHIMOTO | Agroforestry | Jun 29, 1986 | Mar 31, 1987 | ditto |

| NO | NAME | SPECIALITY | PERIOD | | PRESENT PLACE OF WORK |
|-----|------------------------|----------------------|--------------|--------------|--|
| | | | FROM | TO | |
| 1. | Mr. Kiyohiko YAMAZAKI | Model Infra | Mar 19, 1980 | Jun 15, 1980 | Forest Civil Engineering Consultants Foundation |
| 2. | Mr. Masaji KAWASAKI | Nursery | Mar 31, 1980 | May 29, 1989 | Japan Overseas Forestry Consultant Association (JOFCA) |
| 3. | Mr. Haruo HASEGAWA | Forest Mechanization | Oct 20, 1980 | Nov 9, 1980 | Eiwa Sprinkler Co, Ltd |
| 4. | Mr. Taqao YOKOKOHEJI | ditto | ditto | ditto | Forest Engineering Co. Ltd |
| 5. | Mr. Takahiko TAKAHASHI | Pilot Infra | Oct 14, 1981 | Dec 13, 1981 | Division Chief, HOKKAIDO Forest Civil Engineering Consultants Foundation |
| 6. | Dr. Yoichi IZUMIYAMA | Agro-Economy | Oct 14, 1981 | Nov 12, 1981 | (HOKKAIDO National Agricultural Institute) |
| 7. | Dr. Minoru KUMAZAKI | Socio-economy | ditto | ditto | Director, Forest and Forest Products Research Institute |
| 8. | Dr. Isao HOTTA | Soil Analysis | Mar 2, 1981 | Mar 22, 1981 | Division Chief Forestry and Forest Products Research Institute |
| 9. | Mr. Yukio AOKI | Forest Machinery | Nov 19, 1981 | Dec 12, 1981 | IWAFUJI Industry Co, Ltd |
| 10. | Mr. Yoshihiro YACHIUNE | ditto | ditto | ditto | ditto |
| 11. | Dr. Yoshiyuki JINNO | Tree Pathology | ditto | Dec 18, 1981 | Director, TOHOKU National Forestry Research Institute |
| 12. | Mr. Katsumi MITANI | Pilot Infra | Mar 8, 1982 | Oct 10, 1982 | HOKKAIDO Forest Civil Engineering Consultants Foundation |
| 13. | Mr. TAKAHIKO TAKAHASHI | ditto | Nov 22, 1982 | Jan 20, 1983 | ditto |

| NO | NAME | SPECIALITY | PERIOD | | PRESENT PLACE OF WORK |
|-----|-------------------------|--------------------------|---------------|---------------|--|
| | | | FROM | TO | |
| 14. | Dr. Haruyoshi SAHO | Tree Pathology | Jan 25, 1983 | Mar 30, 1983 | Director, Forestry and Forest Products Research Institute |
| 15. | Mr. Hiroshi MAKIHARA | Forest Entomology | ditto | ditto | Senior Researcher, Forestry and Forest Products Research Institute |
| 16. | Mr. Eizo IWAYA | Forest Machinery | Feb 18, 1983 | Apr 16, 1983 | AGORI Regional Forestry Office |
| 17. | Mr. Tadashi NAKATA | Forest Machinery | Apr 8, 1983 | May 7, 1983 | (Nishi Kanto Komatsu Hambai Co. Ltd) |
| 18. | Dr. Takashi KATOH | Agroforestry | Aug 8, 1983 | Sep 4, 1983 | Division Chief, Forestry and Forest Products Research Institute |
| 19. | Mr. Kunihiko KAMIJO | Survey | ditto | ditto | Chief, SAKATA District Forestry Office |
| 20. | Mr. Tetsuya WATANABE | Audio Visual | Sep 16, 1983 | Sep 30, 1983 | Visual Information Service Co. Ltd |
| 21. | Mr. Mamoru YOSHIMUTA | Forest Machinery | Oct 14, 1983 | Nov 2, 1983 | Komatsu Co, Ltd |
| 22. | Mr. Kohya TAKAHASHI | ditto | ditto | ditto | Deputy Chief, MIYTO District Forestry Office |
| 23. | Mr. Tetsuya WATANABE | Audio Visual | Dec 15, 1983 | Jan 18, 1984 | Visual Information Service |
| 24. | Mr. Kuniyasu SAGARA | ditto | ditto | ditto | ditto |
| 25. | Mr. Kazushige FUJISAKI | ditto | ditto | ditto | ditto |
| 26. | Mr. Tominobu YAMAMOTO | Forest Machinery | Feb. 1, 1984 | Mar. 12, 1984 | |
| 27. | Mr. Tadao CHARA | Silviculture | Oct. 26, 1984 | Dec. 25, 1984 | JFTA |
| 28. | Mr. Katsuhiko KOBAYASHI | Forest Civil Engineering | Nov. 19, 1984 | Apr. 11, 1984 | |
| 29. | Dr. Sukeharu ISURU | Socio-Economy | Nov. 28, 1984 | Dec. 19, 1984 | Division Chief, Kyushu National Forestry Research Institute |

| No. | NAME | Speciality | Period | | Presentplace of work |
|-----|-------------------------|-------------------|---------------|---------------|--|
| | | | From | To | |
| 30. | Mr. Kiyoshi FUJI | Fire Protection | Nov. 26, 1984 | Dec. 25, 1984 | Kanto Tree Breeding Institute |
| 31. | Mr. Masahiro TAJIMA | Nursery | Sep. 18, 1985 | Nov. 2, 1985 | |
| 32. | Mr. Katsuyasu YAMAGUCHI | Silviculture | Oct. 1, 1985 | Nov. 29, 1985 | Division Chief, Forestry and Forest Products Research Institute |
| 33. | Dr. Takashi KATOH | Agroforestry | Nov. 15, 1985 | Dec. 14, 1985 | |
| 34. | Mr. Kohji TASHIRO | Forest Machinery | Nov. 28, 1985 | Dec. 29, 1985 | Senior Expert, NUMATA National Forest Machinery Development Center |
| 35. | Mr. Kimihiko HAYASHI | Agroforestry | Oct. 13, 1986 | Nov. 28, 1986 | Senior Researcher, IBARAGI Provincial Forest Research Institute |
| 36. | Mr. Kohji TASHIRO | Forest Machinery | Feb. 23, 1987 | May 15, 1987 | Senior Expert, NUMATA National Forest Machinery Development Center |
| 37. | Dr. Akira NOBUCHI | Forest Entomology | Mar. 2, 1987 | Mar. 28, 1987 | Division Chief, Forestry and Forest Products Research Institute |
| 38. | Mr. Seishi MIURA | Silviculture | Dec. 22, 1987 | Feb. 27, 1988 | AOMORI Forestry Association |
| 39. | Mr. Kyoji HASHIMOTO | Agroforestry | Jan. 8, 1988 | Mar. 31, 1988 | Staff, JICA Tokyo |
| 40. | Mr. Taro NAGATO | Forest Machinery | Feb. 2, 1988 | Mar. 31, 1988 | Chain-saw Consultant |

| NO | NAME | CATEGARY SPECIALITY | PERIOD | | PRESENT WORK OF PLACE |
|-----|------------------------|-------------------------|--------------|---------------|--|
| | | | FROM | TO | |
| 1. | Ir. Soedjadi Hartono | Project Manager | Mar , 1981 | Sep , 1983 | Staff D.G. Reforestation and Land Rehabilitation Division Chief, Directorate of Reforestation |
| 2. | Ir. Victor Mula Sinaga | ditto | Sep , 1983 | Jan , 1984 | |
| 3. | Ir. Saptana PH. | ditto | Jan , 1984 | Mar 31 , 1988 | |
| 4. | Ir. Soeharto Soemarmo | Project Co-Manager | Sep , 1979 | Feb 17 , 1980 | Died on February 17, 1980 |
| 5. | Ir. Syahrir | ditto | Mar 1 , 1980 | Mar 1 , 1981 | |
| 6. | Ir. Arip P.S. Sagala | Ass. Project Co Manager | Sep , 1979 | Jul , 1983 | |
| 7. | Ir. Wazir. Mengkeman | Field Manager | Apr 30, 1979 | Apr , 1980 | Division Chief South Sumatera Regional Forestry Office Section Chief, Directorate of Reforestation Section Chief, Directorate of Reforestation |
| 8. | Ir. Zulkifli Mulsani | ditto | Apr , 1980 | Sep , 1983 | |
| 9. | Ir. Soeharyanto | ditto | Oct , 1980 | Dec , 1980 | |
| 10. | Ir. Triyogo Soekanto | ditto | Sep , 1983 | Apr , 1985 | Section Chief, Directorate of Reforestation Chief of BTR Sumatera Selatan Section Chief, Directorate of Reforestation Staff, Directorate Of reforestation Staff, BTP BOGOR |
| 11. | Ir. Kardi Sabaruddin | ditto | Apr , 1985 | Mar 31 , 1988 | |
| 12. | Ir. Zulkifli Mulsani | Silviculture | Sep , 1979 | Apr , 1980 | |
| 13. | Ir. Anto Rimbawanto | ditto | May , 1980 | Sep , 1983 | Staff, Directorate Of reforestation Staff, BTP BOGOR |
| 14. | Tata Wiharta BSc F | ditto | Sep , 1980 | Sep , 1983 | |

| NO | NAME | CATAGORY SPECIALITY | PERIOD | | PRESENT WORK PLACE |
|-----|---------------------------|---------------------|------------|--------------|---|
| | | | FROM | TO | |
| 15. | Ir. Sutono | Silviculture | Sep , 1983 | Mar 31, 1986 | Staff, BTR Sumatera Selatan |
| 16. | Tata Wiharta BScF | ditto | Apr , 1985 | Des , 1985 | Staff, BTP Bogor |
| 17. | Ir. Wuyanto | ditto | , 1987 | Mar 31, 1988 | Staff, BTR Sumatera Selatan |
| 18. | Agus BSc F | ditto | , 1987 | Mar 31, 1988 | ditto |
| 19. | Dharmawan BSc F | ditto | , 1987 | Mar 31, 1988 | ditto |
| 20. | Ir. Hardjono Arisman | Nursery | Nov , 1979 | Jan , 1983 | Section Chief, Directorate of Reforest ation |
| 21. | Ir. Ny. Retno Sekarsari | ditto | Nov , 1981 | Mar , 1983 | Section Chief, BTP Bogor |
| 22. | Adam Nur Yahya Putra BScF | ditto | Jan , 1982 | Sep , 1982 | |
| 23. | Ir. Nyoman Yuliarsana | ditto | Apr , 1983 | Sep , 1983 | Section Chief, Directorate of Reforest ation |
| 24. | Ir. Ny. Retno Sekarsari | ditto | Sep , 1983 | Apr , 1985 | Section Chief, BTP Bogor |
| 25. | Ir. Edi Iswahyudi | ditto | Apr , 1985 | Mar , 1988 | Staff, BTR Sumatera Selatan |
| 26. | Rismulyadi BSc F | Forest Engineering | Sep , 1980 | Feb , 1987 | Staff, Directorate of Reforestation |
| 27. | Adam Nur Yahya Putra BScF | ditto | Apr , 1985 | | |
| 28. | Agus Marsudiono | ditto | May , 1985 | | |
| 29. | Ir. Engkos Kusnandar | ditto | Feb , 1987 | Mar 31, 1988 | Staff, BTR Sumatera Selatan |
| 30. | Ir. Nyoman Yuliarsana | Forest Protection | Oct , 1980 | Mar , 1983 | Section Chief, Directorate of Reforest ation |
| 31. | Ir. Triyogo Soekanto | ditto | Apr , 1983 | Sep , 1983 | Section Chief, Directorate of Reforest ation |

| NO | NAME | CATEGORY SPECIALITY | PERIOD | | PRESENT WORK PLACE |
|-----|--------------------------|---------------------|-----------|--------------|---|
| | | | FROM | TO | |
| 32. | Tata Wiharta BSc F | Forest Protection | Oct ,1983 | Apr ,1985 | Staff, BTP Bogor |
| 33. | Ir. Hariyono | ditto | Jan ,1985 | Mar 31,1988 | Staff, BTR Sumatera Selatan |
| 34. | Ir. Heru | ditto | Feb ,1987 | Apr ,1987 | ditto |
| 35. | Ir. Triyogo Soekanto | Forest Ecology | Nov ,1981 | Mar ,1983 | Section Chief, Directorate of Reforest ation |
| 36. | Ir. Ny. Retno Sekarsari | ditto | Apr ,1983 | Sep ,1983 | Section Chief, BTP Bogor |
| 37. | Adam Nur Yahya Putra | ditto | Sep ,1982 | Apr ,1985 | |
| 38. | Ir. Bustami | ditto | Jun ,1985 | Mar 31,1988 | Staff, BTR Sumatera Selatan |
| 39. | Ir. Munawari | Agroforestry | Nov ,1981 | Mar ,1982 | Staff, South Sumatera Provincial Forest Office |
| 40. | Ir. Sumarto Bimo Sentoso | ditto | Nov, 1981 | Mar ,1982 | |
| 41. | Ir. Agung Suko Rahardjo | ditto | Jun, 1982 | Sep, 1982 | |
| 42. | Ir Yadi Hariyanto | ditto | Mar, 1982 | Mar 31,1988 | Staff, BTR Sumatera Selatan |
| 43. | Burhan Ismail BSc F | ditto | Jun, 1985 | Mar 31,1988 | ditto |
| 44. | Ir. Heru | ditto | Apr, 1987 | Mar, 31,1988 | ditto |

| Year | Term | Name | Post | Course | Remarks |
|---------|---------------------|---|---|--|---------|
| 1979/80 | | Ir. Apandi Mangundikoro Ir. Soeharto | A-2,3 form of Colombo plan from the Indonesian side was not prepared. There was some misunderstanding in Indonesian side. Their observation tour was cancelled partly due to Mr. Soeharto's sudden death on February 17, 1980 | | |
| 1980/81 | Sep 17-Oct 17 1980 | Ir. Wazik Nengkenan | Project Manager (Forest Chief of Forest Utilization Division, South Sumatra Regional Forestry Office) Field Manager (Present section Chief of Mechanized Rehabilitation, Directorate of Reforestation.) | General Forestry in Japan | |
| | Oct 1- Dec 17 1980 | Ir. Zulkifli Malsani | c/p for Nursery (Present Section Chief of Seed Distribution, Directorate of Reforestation.) | Reforestation activities and Silviculture techniques | |
| | Sep 17- Dec 17 1980 | Ir. Hardjono Arisman | | Nursery Activities and Techniques | |
| 1981/82 | Agst 6- Nov 5 1981 | Rismulyadi BScF | c/p for Forest Engineer- (Present Staff of Directorate of Reforestation) c/p for Silviculture (Present Staff of Seed Development Center (BTP), B O G O R Project Manager (Present Director of Recreation Forest and National Park) | General Silviculture and Forest engineering | |
| | Agst 6- Nov 5 1981 | Tata Wiharta BScF | | Reforestation activities and Silviculture techniques | |
| | Mar 24-Apr 4 1982 | Ir. Soedjadi Hartono Danoewinoto | | Observation Tour on Forestry activities in Japan | |

| Year | Term | Name | Post | Course | Remarks |
|----------------------------|------|---|--|--|---|
| Mar 25- Jun 24 1982 | | Ir. Nyoman Yuliarsana | c/p for Forest Protection (Present Section Chief of Forest Tending, Directorate of Reforestation) | Forest Protection activities and techniques | From April, 1988 to scholarship at Tsukuba University |
| Mar 25- Jun 24 1982 | | Ir. Anto Rumbawanto | c/p for Silviculture (Present Staff of Directorate of Reforestation) | Treebreeding activities and Techniques | From Oct 1984 to March, 1987 study at Massey University in New Zealand (Master) |
| Sep 6-17 1981 | | Ir. Abdurahim Martawidjaya Ir. R. Soerjono | Director, Forest Product Research Institute Director, Forest Research Institute | | XVII th IUFRO World Congress Under the individual training course |
| | | Ir. Harun Al Rasyid Ir. Syaifii Manan | Staff for Forest Research Institute Lecturer, Faculty of Forestry, Bogor Agriculture | | |
| 1982/1983 Nov 4-17 1982 | | Ir. Victor Mula Sinaga | Director of South Sumatra Provincial Forest Office (Project Manager, Director of Reforestation, Present Staff DRRU) | Observation Tour and General Forestry in Japan | |
| Nov 4- Dec 15 1982 | | Ir. Arip PS. Sagala | Chief of Forest Maintenance (Present Chief of Reforestation Technology Development Center in South Kalimantan (BTR)) | Reforestation and Silviculture Techniques | |
| Mar 2- Jun 1 1983 | | Ir. Triyogo Soekanto | c/p for forest Ecology (Field Manager, Present Section Chief of Directorate of Reforestation c/p for nursery) | Forest conservation Techniques and Management | |
| Mar 2 - Jun 1 1983 | | Ir. Retno Sekarsari | (Section Chief of Research Dissemination, Seed Technology Center (BTP) Bogor) | Nursery Techniques and Management | |

| | | | | |
|--------------------------------------|-------------------------|---|--|--|
| 1983/1984 Agst 25- Nov 24 1983 | Ir. Tonny Hariwidianto | Staff of Directorate Reforestation | Reforestation and nursery activities and techniques | Studied at International Institute for Aerospace Survey and Earth Science (ITC) in Holland |
| Dec 1, 1983- Feb 24 1986 | Ir. Desman Pardede | Staff of Directorate Reforestation (Present) | Forest Protection activities and techniques | |
| March , 1983- Jun , 1984 | Ir. Yadi Hariyanto | c/p for Agroforestry (Present c/p and staff BTR South Sumatera) | Agroforestry activities and techniques | |
| 1984/ 1985 Sep 29- Oct 26 1984 | Ir. Pramono | Chief of Sub Directorate of Forest Rehabilitation (Present Project manager) | Observation tour on General forestry in Japan | |
| Sep 27-Dec 26 1984 | Ir. Saptana PA | Chief of Sub Directorate of Forest Rehabilitation (Present Project Manager) | ditto | |
| Sep 27-Dec 26 1984 | Ir. Sutomo | c/p for silviculture (Present c/p and staff BTR, South Sumatera) | Reforestation activities and Silviculture techniques | |
| Sep 27-Dec 26 1984 | Ir. Endang Setiawan | Staff of Directorate of Reforestation | Reforestation activities and silviculture techniques | |
| Agst 26-Nov 25 1984 | Ir. Lilik Amin Rahardjo | Staff of Directorate of reforestation (Present staff of Timor-Timur Regional Forest Office) | Reforestation Techniques and forest management | Special training course |
| Agst 26-Nov 25 1984 | Ir. Loekito | Staff of Directorate of Programming | ditto | ditto |

| Year | Term | Name | Post | Course | Remarks |
|-----------|----------------------|-------------------------|---|--|---------|
| 1985/1986 | Oct 26-Dec 23 1985 | Ir. Bin Setiyono | Staff of Directorate Reforestation (Present Staff South Sumatera Regional Forestry Office) | Forest Protection activities and techniques | |
| | Jan 19-Feb 7 1986 | Ir. Kardi Sabaruddin | Field Manager of the Project and Chief of Reforestation Technology Development Center (BTR) in South Sumatera | Observation tour on general forestry in Japan | |
| | Mar 25-Jun 24 1986 | Ir. Munawani | Staff of South Sumatera Provincial Forest Office | Reforestation activities and Silviculture techniques | |
| 1986/1987 | Jul 8-Sep 9 1986 | Ir. Soedaryanto | Staff of Directorate of Reforestation | Tree Breeding and Nursery techniques | |
| | Agst 18-Nov 27 1986 | Ir. Eko Bambang Sutedjo | Staff of Directorate of Reforestation (Present Section Chief of Seedlings Transportation, Directorate of Reforestation) | Reforestation techniques and forest management | |
| | Agst. 18-Nov 27 1986 | Ir. Sofan Bustami | Staff of Forest Research Institute | ditto | |
| 1987/1988 | Agst 17-Nov 20 1988 | Ir. Hariyono | c/p for Forest Protection | Forest Protection activities and techniques | |
| | Jan 25-Mar 16 1988 | Ir. Bustami | c/p for Silviculture | Reforestation activities and silviculture techniques | |
| | (Mar) 1988 | Ir. Edi Iswahyudi | c/p for nursery | Nursery activities and techniques | |

21. LIST OF THE MAIN TREE SPECIES IN BENAKAT

| NO | BOTANICAL NAME | INDONESIA NAME | ENGLISH NAME | JAPANESE NAME |
|-----|------------------------|-----------------------|---|-----------------------------|
| 1 | 2 | 3 | 4 | 5 |
| 1. | Acacia mangium | Akasia mangium | Acacia mangium | Mangiumu |
| 2. | Eucalyptus deglupta | Leda | Kamerere (PNG) | Kamerere |
| 3. | Swietenia macrophylla | Mahoni | Mahogany | Ooba-Mahoganyi |
| 4. | Schinus molle | Puspa/ seru | Medang gatal (Malaysia) | Medan-Gataru |
| 5. | Albizia falcataria | Segon laut/ Jeungjing | Sautree, Falcated leaved albizzia, Malacca albizzia | Manakka-nemu |
| 6. | Acacia auriculiformis | Akasia | Papua wattle (PNG) | Kamaba-Akashia |
| 7. | Eucalyptus alba | Ampupu | Paplar gum | Yuukari |
| 8. | Anthocephallus cadamba | Jabon | Kelampayan (Malaysia) | Kubinaga-tanabana-no-ki |
| 9. | Dalbergia latifolia | Sonkeling | Bombay blackwood, Eastern Indian Rosewood | Maruba-shitan |
| 10. | Leucaena leucocephala | Lantoro | Ipil-ipur, Giant ipil-ipur | Gin-nemu |
| 11. | Peronena canenses | Sungkai | | Nurude-modoki |
| 12. | Pinus merkusii | Tusan | Merkusi pine | Meukushi-natsu |
| 13. | Pterocarpus indicus | Angsana | Narra (Philippine) | Indo-shitan, Karim |
| 14. | Samanea saman | Kayu hujan | Rain tree | Amerika nemu, Amehuri-no-ki |
| 15. | Acacia siluars pera | Akasia | | |
| 16. | Aleurites moluccana | Kenduri | Indian walnut | Kukui-no-ki |

| 1 | 2 | 3 | 4 | 5 |
|-----|---------------------------------|-------------------------------|--|------------------------------------|
| 17. | <i>Alstonia scholaris</i> | Pulai biasa | Milky pine | |
| 18. | <i>Casuarina equisetifolia</i> | Cemara laut | Beef wood, Polynesian wood | Tokiwa-gyoxin Taiheyo-tetsuboku |
| 19. | <i>Calliandra carathyzsus</i> | Kaliandra | Calliandra | Kariandora |
| 20. | <i>Enterolobium crylocarpum</i> | | Elephant's ear | Erefanto-iyaa |
| 21. | <i>Eucalyptus urophylla</i> | | | Yurofira-yuukari |
| 22. | <i>Gnelina arborea</i> | Kayu titi | White teak | Kidachi-yooraku |
| 23. | <i>Koompasia malacensis</i> | Kempas Mengeris Lamtoro | | Kenpasu |
| 24. | <i>Lencaena glanca</i> | | Ipil- Giant ipil- Cayuput oil tree | Ipiru- Kayu putih |
| 25. | <i>Melaleuca leucaderon</i> | Kayu putih | | |
| 26. | <i>Pinus caribaeae</i> | | Caribbean pine | Karibia matsu |
| 27. | <i>Sesbania grandiflora</i> | Turi | Vegetable hummingbird Pea Tree | Shiro-gocho |
| 28. | <i>Shorea leprosula</i> | Meranti tembaga | Tembaga | Tembaga |
| 29. | <i>Shorea singkawang</i> | Meranti senkawang merah | Senkawang | Senkawan |
| 30. | <i>Hopea odrata</i> | | Chengal pasir (Malay) | Taki-an |
| 31. | <i>Tectona grandis</i> | Teak | JATI | Chiiku |
| 32. | <i>Pinus oocarpa</i> | | | Ookarpa / pino |

22. Evaluation of Tree Species In Benakat Region *(DRAFT)

| | Seed Procurement | Nursery Operation | Increment | Utilization of Wood | Resistance of diseases and insects |
|------------------------------------|------------------|-------------------|-----------|---------------------|------------------------------------|
| 1. Shorea spp. | C | C | C | A | B |
| 2. Agathis spp. | C | B- | C | A | A |
| 3. Eucalyptus deglupta | A | A | A | B | B- |
| 4. Eucalyptus urophylla | A | A | A | B ⁺ | B |
| 5. Pinus merkusii | A | A | B | B | A |
| 6. Peronera canescens | A | A | C | A | A |
| 7. Acacia mangium | A | A | A | B ⁺ | B ⁺ |
| 8. Tectona grandis | A | A | C | A | A |
| 9. Santalum album | B- | A | C | A | UN |
| 10. Swietenia macrophylla | B | A | C | A | C |
| 11. Araucaria spp. | C | B- | C | UN | UN |
| 12. Acacia auriculiformis | A | A | A | C | A |
| 13. Albizia falcataria | A | A | A | B- | B |
| 14. Dalbergia latifolia | B | A | C | A | A |
| 15. Gonystylus bancanus | UN | UN | UN | A | UN |
| 16. Manilkara kauki | C | A | C | A | UN |
| 17. Diospyros celebica | C | B- | C | A | UN |
| 18. Pometia spp. | UN | UN | C | A | UN |
| (1). Schima wallichii var. bancana | A | A | C | C | UN |
| (2). Pterocarpus indicus | A | A | C | B ⁺ | A |
| (3). Samanea saman | B- | A | B- | C | UN |
| (4). Eucalyptus alba | A | A | C | C | A |
| (5). Antocephalus cadamba | A | A | A | . | A |
| (6). Leucaena leucocephala | A | A | A | B | C |

A: Excellent, Very Easy,

B: Medium

C: Hard

UN: Unknown

B+

B-

23. Suggestion to the Project from JICA expert.

SARAN-SARAN DARI JICA SEBAGAI BERIKUT :

1. Teknik yang ada dari persemaian sampai tanaman cukup memadai.
2. Maksud dari pada proyek adalah untuk mencari teknik reboisasi dan jenis pohon yang paling sesuai dengan daerah alang-alang di Benakat.

Sampai saat ini ada 4 jenis yang telah ditentukan :

1. Acacia mangium
2. Eucalyptus deglupta
3. Swietenia macrophylla
4. Schima wallichii var. bancana

Tetapi kita belum memikirkan jenis ini akan digunakan untuk apa.

3. Cara pengawasan/ tending belum diketahui.

Sebab hutan masih muda, belum pernah ditebang.

4. Yang kurang dari sistem agroforestry/ social forestry adalah :

1. Agronomy ; tanaman apa yang cocok/sesuai untuk petani
2. Peternakan ; sebab petani-petani membawa/ memelihara sapi.

Didalam rangka ini yang paling penting adalah Kehutanan berdiri bersama-sama dengan Pertanian dan Peternakan.

5. Teknik pemeliharaan mesin-mesin, peralatan besar masih ada yang kurang.

Sebab lokasi dan kondisi hutan yang sangat sulit untuk dicapai.

6. Sampai saat ini kita beruntung belum bertemu dengan keadaan yang berat.

Keselamatan kerja paling penting dalam aksi HTI.

7. Sampai saat ini, kita belum pernah mengalami kebakaran hutan.

Pada umumnya, sebab terjadinya kebakaran akibat dari ulah manusia sendiri bukan akibat dari alam.

S E K I A N



JAPAN INTERNATIONAL COOPERATION AGENCY

Japanese Embassy Compound
24, Jalan Thamrin, Jakarta, Indonesia

Tel. 322387, 324247, 326818, 321394
Telex, 44198 JICA IA

Jakarta, 31 Maret 1988

No.

Kepada Yth,
Bapak/ Ibu

Dengan hormat,

Kami atas nama Ekspert JICA dengan ini mengucapkan banyak terimakasih atas kebaikan hati Bapak/ Ibu kepada kami selama Proyek Percobaan Tanaman Hutan di Benakat, Sumatera Selatan berlangsung.

Proyek tersebut dengan nomor ATA-186 telah selesai dengan hasil yang baik sekali pada tanggal 31 Maret 1988.

Proyek tersebut dimulai pada tanggal 12 April 1979. Sampai saat ini sudah berlangsung selama 9 tahun.

Dalam jangka waktu yang ini, kita telah berhasil membangun hutan baru dengan luas ± 3.000 ha di daerah alang-alang di Benakat, Sumatera Selatan.

Hutan tersebut sangat indah sekali, dan kita semua merasa sangat puas.

Dalam aktivitas proyek ini kita telah mendapat banyak pengalaman di daerah alang-alang; mulai dari persediaan, penanaman, membuat jalan hutan, mengawasi hutan, Forest Protection, Forest Machinery, Agroforestry dan lain-lain.

Teknik-teknik dasar yang sesuai dengan daerah alang-alang untuk reboisasi dengan teknis yang sudah ditentukan.

Teknik ini paling penting pada kehutanan di Indonesia.

Kita yakin bahwa dengan teknik dasar kita sudah cukup memadai.

Susunan proyek sudah diresmikan sebagai BTR/ Balai Teknologi Reboisasi, Sumatera Selatan.

BTR ini Pusat Teknologi Reboisasi tidak hanya untuk seluruh Sumatera bahkan untuk seluruh Indonesia.

Para c/p di BTR, bukan bekas para c/p di Proyek, tetapi sudah menjadi Ekspert Reboisasi Indonesia pada saat ini.

Kita yakin bahwa Teknik yang dipergunakan di Benakat dapat disebar luaskan ke seluruh Indonesia.

Nantinya kita dapat banyak membuat Hutan baru yang indah yang sama dengan



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No.

Jakarta,

keadaan di Benakat.

Pada akhirnya,

Semoga sukses aksi Reboisasi di Indonesia dan selamat bertugas BTR Sumatera Selatan.

Selamat berpisah Benakat, Sumatera Selatan, sampai ketemu lagi.

Sekian, terima kasih.

Hormat kami,

Domo, Arigato Gozaimashita.
SAYC NARA.

Yasuyuki SUZUKI

Chief Advisor for ATA-186

Masato SHIRAHAMA

Expert Silviculture

Kyoji HASHIMOTO

Expert Agroforestry

Taro NACATO

Expert Mesin

