

ANNEX

ANNEX 1 : LIST OF EQUIPMENTS

List of Equipments (LEHRI)

| No. | Item | Unit | Quantity |
|--------|--|------|----------|
| LEHRI | | | |
| L- 1 | Fine Balance - accurate to 0.1mg | pc. | 1 |
| L- 2-1 | Coarse Balance - accurate to 10mg | pc. | 1 |
| L- 2-2 | Coarse Balance - accurate to 100mg | pc. | 1 |
| L- 3 | Refrigerator for Chemicals | pc. | 3 |
| L- 4 | Deep Freezer | pc. | 2 |
| L- 5 | Hot Plate with Magnetic Stirrer | pc. | 3 |
| L- 6 | pH Meter | pc. | 2 |
| L- 7 | Autoclave | pc. | 2 |
| L- 8 | Distillation Apparatus Deionized | pc. | 1 |
| L- 9 | Dry Oven | pc. | 1 |
| L-10-1 | Thermometer | pc. | 5 |
| L-10-2 | Maximum and Minimum Thermometer | pc. | 5 |
| L-11 | Thermobigrograph | pc. | 2 |
| L-12 | Light Meter | pc. | 1 |
| L-13-1 | Syringes 1ml | pc. | 2 |
| L-13-2 | Syringes 10ml | pc. | 3 |
| L-13-3 | Syringes 20ml | pc. | 3 |
| L-14 | Water Bath | pc. | 1 |
| L-15 | Hot-Water Heater | pc. | 1 |
| L-16 | Fine Pipettes 0~250 μ l | pc. | 2 |
| L-17 | Automatic Medium Dispenser Max.10ml | pc. | 3 |
| L-18 | Heat Sterilizing Oven 150l, 250 $^{\circ}$ C | pc. | 1 |
| L-19 | Microwave Oven | pc. | 1 |
| L-20 | Low Speed Centrifuge 5,000rpm | pc. | 2 |
| L-21-1 | Center Table 3600 x 1500 x 800 | pc. | 2 |
| L-21-2 | Side Table 1800 x 750 x 800 | pc. | 3 |
| L-21-3 | Side Table 3000 x 750 x 800 | pc. | 2 |
| L-21-4 | Side Table 1200 x 750 x 800 | pc. | 1 |
| L-22-1 | Cabinet 1800 x 500 x 1800 | pc. | 3 |
| L-22-2 | Cabinet 900 x 500 x 1800 | pc. | 1 |
| L-23-1 | Flasks 100ml 120-pack | Box | 3 |
| L-23-2 | Flasks 300ml 60-pack | Box | 2 |
| L-23-3 | Flasks 500ml | pc. | 20 |
| L-23-4 | Flasks 1000ml | pc. | 10 |
| L-23-5 | Flasks 2000ml | pc. | 10 |

| No. | Item | Unit | Quantity |
|--------|---------------------------------------|-------|----------|
| L-24-1 | Volumetric Flasks 100ml | pc. | 12 |
| L-24-2 | Volumetric Flasks 300ml | pc. | 12 |
| L-24-3 | Volumetric Flasks 500ml | pc. | 6 |
| L-24-4 | Volumetric Flasks 1000ml | pc. | 6 |
| L-25-1 | Measuring Cylinders 10ml | pc. | 6 |
| L-25-2 | Measuring Cylinders 25ml | pc. | 6 |
| L-25-3 | Measuring Cylinders 50ml | pc. | 6 |
| L-25-4 | Measuring Cylinders 100ml | pc. | 6 |
| L-25-5 | Measuring Cylinders 250ml | pc. | 6 |
| L-25-6 | Measuring Cylinders 500ml | pc. | 3 |
| L-25-7 | Measuring Cylinders 1000ml | pc. | 3 |
| L-25-8 | Measuring Cylinders 2000ml | pc. | 3 |
| L-26-1 | Beakers 100ml | pc. | 50 |
| L-26-2 | Beakers 300ml | pc. | 20 |
| L-26-3 | Beakers 500ml | pc. | 20 |
| L-26-4 | Beakers 1000ml | pc. | 20 |
| L-26-5 | Beakers 2000ml | pc. | 10 |
| L-27-1 | Graduated Pipettes 1ml | dozen | 2 |
| L-27-2 | Graduated Pipettes 2ml | dozen | 2 |
| L-27-3 | Graduated Pipettes 5ml | dozen | 2 |
| L-27-4 | Graduated Pipettes 10ml | dozen | 2 |
| L-28 | Culture Vessels : | | |
| | Test Tubes (25 ϕ x 100) 100-pack | Box | 10 |
| | Test Tubes (25 ϕ x 120) 100-pack | Box | 10 |
| | Flasks for Tissue Culture 100ml | pc. | 180 |
| | Flasks for Tissue Culture 200ml | pc. | 120 |
| | Flasks for Tissue Culture 300ml | pc. | 120 |
| | Bottles for Tissue Culture 500ml | pc. | 100 |
| | Petridish (90 x 22mm) 50-pack | Box | 10 |
| | Pipette Aid | set | 1 |
| | Forceps 255mm | pc. | 10 |
| | Filter Holder | set | 1 |
| | Petridish Rack | pc. | 2 |
| | Test Tube Stand for 50 pieces | pc. | 20 |
| | Stainless Tray 230 x 295 x 50 | pc. | 10 |
| | Stainless Tray 170 x 210 x 30 | pc. | 10 |

| No. | Item | Unit | Quantity |
|--------|---|------|----------|
| L-29 | Laboratory Cart | pc. | 4 |
| L-30 | Autoclave Trays | pc. | 2 |
| L-31 | Wash Bottles 500ml | pc. | 10 |
| L-32 | Waste Bins | pc. | 5 |
| L-33 | Vacuum Cleaner | pc. | 2 |
| L-34 | Electric Heater | pc. | 3 |
| L-35 | Pipette Washer | set | 1 |
| L-36 | Clean Bench with Accessories and Consumption | set | 2 |
| L-37-1 | Dissecting Microscope with Light Source | pc. | 2 |
| L-37-2 | Photomicroscope | pc. | 1 |
| L-37-3 | Stereomicroscope | pc. | 1 |
| L-38 | Dissecting Instruments | pc. | |
| L-38-1 | Scalpel (Large and Small with a Range Blade, each 5) | set | 10 |
| L-38-2 | Spatulae | pc. | 10 |
| L-38-3 | Needles | pc. | 10 |
| L-38-4 | Forceps | pc. | 5 |
| L-38-5 | Scissors | pc. | 5 |
| L-38-6 | Razor, Breaker, Holders, Razor Blades | pc. | 3 |
| L-38-7 | Spirit Lamps | pc. | 2 |
| L-38-8 | Clean Wiper 50-pack | pc. | 10 |
| L-38-9 | Work Stand | pc. | 2 |
| L-39 | UV Lamps | pc. | 1 |
| L-40-1 | Incubator | pc. | 3 |
| L-40-1 | Incubator | pc. | 1 |
| L-41 | Shelving with light as necessary | pc. | 5 |
| L-42 | Elisa Reader with Accessory and Computer | set | 1 |
| L-43 | Multi Channel Micro Pipettes | pc. | 2 |
| L-44-1 | Micro Pipettes 10~100 μ l | pc. | 1 |
| L-44-2 | Micro Pipettes 10~1000 μ l | pc. | 1 |
| L-45 | HPLC + Accessory + Standard Chemical | set | 1 |
| L-46 | Draft Chamber 1200 x 750 x 2100 | set | 1 |
| L-47 | Truck for bringing Potato cut to BBI | pc. | 1 |
| L-48 | Hand Sprayer | pc. | 3 |
| L-49 | Hand Tractor + Accessory | set | 1 |
| L-50 | Plastic Box for carrying Stem | pc. | 50 |

List of Equipments (BPSB)

| No. | Item | Unit | Quantity |
|--------|---|------|----------|
| | BPSB | | |
| P- 1 | Clean Benches | pc. | 1 |
| P- 2-1 | Phase Contrast Microscope | pc. | 1 |
| P- 2-2 | Stereomicroscope | pc. | 1 |
| P- 2-3 | Photomicroscope | pc. | 1 |
| P- 3 | Autoclave | pc. | 1 |
| P- 4 | Drying Oven | pc. | 1 |
| P- 5 | Elisa Reader with Printer and Accessories | set | 1 |
| P- 6 | Shaker for Tissue Culture | pc. | 1 |
| P- 7 | Glassware | | |
| | Test Tubes (25 ϕ x 100) 50-pack | Box | 1 |
| | Petridish (60 x 15) 60-pack | Box | 1 |
| | Flasks for Tissue Culture 100ml | pc. | 20 |
| | Flasks for Tissue Culture 200ml | pc. | 20 |
| | Flasks for Tissue Culture 300ml | pc. | 20 |
| | Flasks 100ml 120-pack | Box | 1 |
| | Flasks 300ml 60-pack | Box | 1 |
| | Flasks 500ml | pc. | 20 |
| | Flasks 1000ml | pc. | 10 |
| | Volumetric Flasks 100 ml | pc. | 12 |
| | Volumetric Flasks 300 ml | pc. | 12 |
| | Volumetric Flasks 500 ml | pc. | 6 |
| | Volumetric Flasks 1000 ml | pc. | 6 |
| | Measuring Cylinders 50 ml | pc. | 6 |
| | Measuring Cylinders 100 ml | pc. | 6 |
| | Measuring Cylinders 250 ml | pc. | 6 |
| | Measuring Cylinders 500 ml | pc. | 6 |
| | Measuring Cylinders 1000 ml | pc. | 3 |
| | Measuring Cylinders 2000 ml | pc. | 3 |
| | Beakers 100ml 100-pack | Box | 1 |
| | Beakers 300ml 100-pack | Box | 1 |
| | Beakers 500ml | pc. | 50 |
| | Beakers 1000ml | pc. | 10 |
| | Beakers 2000ml | pc. | 10 |

| No. | Item | Unit | Quantity |
|------|----------------------------------|-------|----------|
| | Graguated Pippetes 1 ml | dozen | 2 |
| | Graguated Pippetes 2 ml | dozen | 2 |
| | Graguated Pippetes 5 ml | dozen | 2 |
| | Graguated Pippetes 10 ml | dozen | 2 |
| P- 8 | Near Ultra Violet Lamp | set | 4 |
| P- 9 | Refrigerator | pc. | 1 |
| P-10 | Centrifuge with Accessories | set | 1 |
| P-11 | Incubator with Attachment | set | 2 |
| P-12 | ph Meter | set | 1 |
| P-13 | Hot Plate with Magnetic Stirrer | pc. | 1 |
| P-14 | Dispenser 0.2 ~ 1ml | set | 1 |
| | Dispenser 0.4 ~ 2ml | set | 1 |
| | Dispenser 1 ~ 5ml | set | 1 |
| | Dispenser 2 ~ 10ml | set | 1 |
| P-15 | Refrigerator for Chemicals | pc. | 1 |
| P-16 | Fine Balance - accurate to 0.1mg | pc. | 2 |
| P-17 | Sink for Laboratory | pc. | 1 |
| P-18 | Center Table | pc. | 2 |
| P-19 | Side Table | pc. | 4 |
| P-20 | Cabinet | pc. | 2 |
| P-21 | Draft Chamber | set | 1 |
| P-22 | Jeep | pc. | 4 |
| P-23 | Motorcycle | pc. | 6 |
| P-24 | Radio Communication | pc. | 1 |

List of Equipments (BBI Unit)

| No. | Item | Unit | Quantity |
|----------|--|-------|----------|
| BBI UNIT | | | |
| B- 1-1 | Fine Balance 0.1mg 200 g | pc. | 1 |
| B- 1-2 | Coarse Balance 100mg 50.0 kg | pc. | 2 |
| B- 2 | Refrigerator for Chemicals | pc. | 1 |
| B- 3-1 | Microscope with Photomicrographic and Video Equipments | pc. | 1 |
| B- 3-2 | Stereomicroscope | pc. | 1 |
| B- 4 | Autoclave | pc. | 1 |
| B- 5 | Refrigerator | pc. | 1 |
| B- 6 | pH Meter | pc. | 1 |
| B- 7 | Maximum and Minimum Thermometer | pc. | 6 |
| B- 8 | Thermohigrograph | pc. | 1 |
| B- 9 | Glassware | | |
| | Flasks 100ml | Box | 1 |
| | Flasks 300ml | Box | 1 |
| | Flasks 500ml | pc. | 12 |
| | Flasks 1000ml | pc. | 6 |
| | Beakers 100ml | pc. | 20 |
| | Beakers 250ml | pc. | 10 |
| | Beakers 500ml | pc. | 10 |
| | Beakers 1000ml | pc. | 3 |
| | Graguated Pippetes 1 ml | dozen | 1 |
| | Graguated Pippetes 2 ml | dozen | 1 |
| | Graguated Pippetes 5 ml | dozen | 1 |
| | Graguated Pippetes 10 ml | dozen | 1 |
| | Erlenmeyer Flasks 100 ml | pc. | 20 |
| | Erlenmeyer Flasks 300 ml | pc. | 20 |
| | Erlenmeyer Flasks 500 ml | pc. | 10 |
| | Erlenmeyer Flasks 1000 ml | pc. | 6 |
| | Measuring Cylinders 10 ml | pc. | 2 |
| | Measuring Cylinders 25 ml | pc. | 2 |
| | Measuring Cylinders 50 ml | pc. | 2 |
| | Measuring Cylinders 100 ml | pc. | 2 |
| | Measuring Cylinders 250 ml | pc. | 2 |
| | Measuring Cylinders 500 ml | pc. | 2 |
| | Measuring Cylinders 1000 ml | pc. | 2 |

ANNEX 2 : MEMBERS OF THE STUDY TEAM

Members of the study team are shown below:

| Charge | Name | Belonging to |
|--|------------------|--|
| Team leader | Hidehiro Horio | Deputy Director, Yatsugatake Station of National Center for Seeds and Seedling, Ministry of Agriculture, Forestry and Fisheries (MAFF) |
| Multiplication of Seed Potato | Kunio Tokunaga | Chief, Upland Crop Division, Agricultural Production Bureau, MAFF |
| Coordination | Takeshi Naruse | First Basic Design Study Division, Grant Aid Planning & Survey Department, Japan International Cooperation Agency (JICA) |
| Multiplication & Distribution of Seed Potato | Shinji Suzuki | Pacific Consultants International (PCI) |
| Facility Plan | Tadaharu Akesaka | PCI |
| Equipment Plan | Ichiro Makuta | PCI |
| Land Reclamation | Yujiro Itakura | PCI |
| Cost Estimation (Home Office Work) | Atsushi Kishi | PCI |

ANNEX 3 : SCHEDULE OF THE SURVEY

(1) Schedule of The Field Survey

| | Boarding Place |
|---|----------------|
| 22 Aug. (Tue) Tokyo → Jakarta (GA 873) | Jakarta |
| 23 Aug. (Wed) Courtesy Call | |
| 8:30 JICA office | Jakarta |
| 9:30 Embassy of Japan | |
| 12:00 Ir. Abdurrahman (Secretary of DGPCA) | |
| 14:00 Meeting with Directorate Horticulture | |
| 24 Aug. (Thu) Courtesy Call | |
| 9:00 SETKAB | Jakarta |
| 9:30 BAPENAS | |
| 13:00 Ir. Rini (Director Horticulture) | |
| 14:00 Dr. Faisal Kasryno (Director, Bureau of Planning-MOA) | |
| - Jakarta → Bandung | |
| 25 Aug. (Fri) 8:00 Courtesy call on Dinas Pertanian F.C. | Bandung |
| 9:00 Courtesy call on Vice Governor (with BAPPEDA and Mr. Harry) | |
| - Market Survey | |
| 26 Aug. (Sat) 8:00 Seed Control and Certification Service (BPSB) | Bandung |
| 13:00 Site Survey in Pangalengan | |
| 27 Aug. (Sun) Data compilation at Hotel | Bandung |
| 28 Aug. (Mon) 8:00 Lembang Horticulture Research Institute (LEHRI) | |
| 10:00 Meeting with Dinas and BPSB at LEHRI | |
| - Bandung → Jakarta | |
| 29 Aug. (Tue) 9:00 Meeting in JICA office | Jakarta |
| 11:00 Meeting with Directorate of Horticulture | |
| - Topo-Survey | Bandung |

| | | |
|---------------|---|---------|
| 30 Aug. (Wed) | - Meeting with Directorate of Horticulture | Jakarta |
| | - Topo-Survey | Bandung |
| 31 Aug. (Thu) | - Signing of Minutes | Jakarta |
| | - Topo-Survey | Bandung |
| 1 Sep. (Fri) | - Report to Embassy of Japan and JICA office | |
| | Mr. Horio, Mr. Tokunaga and Mr. Naruse left for Tokyo (JAL 772) | |
| | Consulting team Jakarta → Bandung | |
| | - Topo-Survey | Bandung |
| 2 Sep. (Sat) | 7:30 Start to LEHRI | |
| | 8:00 Investigation on LEHRI | |
| | 13:00 Preliminary Layout for LEHRI | |
| | - Topo-Survey | Bandung |
| 3 Sep. (Sun) | 9:00 Arrangement of Data and Informations | |
| | Preliminary layout of Foundation Seed Farm, | |
| | Stock Seed Farm, LEHRI and BPSB | |
| | - Topo-Survey | Bandung |
| 4 Sep. (Mon) | 8:00 Meeting with LEHRI and Check the Point | |
| | required for design of Facilities in LEHRI | |
| | 16:00 Back to Bandung | |
| | - Topo-Survey | Bandung |
| 5 Sep. (Tue) | 6:30 Start to Pangalengan | |
| | 8:30 Field Survey and Check the Point required | |
| | for design of Foundation Seed Farm | |
| | 16:00 Preliminary Design of Foundation Seed Farm | |
| | - Topo-Survey | Bandung |
| 6 Sep. (Wed) | 8:30 Field Survey and Check the Point required | |
| | for design of Foundation Seed Farm and | |
| | Stock Seed Farm | |
| | 16:00 Back to Bandung | Bandung |
| 7 Sep. (Thu) | 8:30 Meeting with DINAS on Confirmation of Data | Bandung |
| | and Informations Collected | |
| | Changing the Opinion on the draft of Field Note | |
| | 14:00 Bandung → Jakarta | |

| | | |
|---------------|---|---------|
| 8 Sep. (Fri) | 8:00 Meeting with Directorate Horticulture on Field Note of Study Team | Jakarta |
| 9 Sep. (Sat) | 8:00 Meeting with Directorate Horticulture on Field Note of Study Team | Jakarta |
| 10 Sep. (Sun) | 9:00 Revise the Field Note based on the Meeting | Jakarta |
| 11 Sep. (Mon) | 6:00 Back to Japan via Ga872 | |

(2) Schedule of Explanation of The Draft Final Report

| | | |
|---------------|--|---------|
| 26 Nov. (Sun) | Tokyo → Jakarta (GA 873) | Jakarta |
| 27 Nov. (Mon) | Courtesy Call : Embassy of Japan, Jakarta JICA Office, Directorate of Horticulture, Ministry of Agriculture and SETKAB | Jakarta |
| 28 Nov. (Tue) | A.M. : Meeting with Directorate General of Food and Crops Agriculture, Ministry of Agriculture. P.M. : Jakarta → Bandung | Bandung |
| 29 Nov. (Wed) | A.M. : Meeting with DINAS P.M. : Site Survey | Bandung |
| 30 Nov. (Thu) | A.M. : Site Survey P.M. : Bandung → Jakarta | Jakarta |
| 1 Dec. (Fri) | Signing of Minutes | Jakarta |
| 2 Dec. (Sat) | Report to Embassy of Japan and JICA Office Courtesy Call at BAPENAS Jakarta → Tokyo | |
| 3 Dec. (Sun) | Arriving at Tokyo | |

ANNEX 4 : LIST OF PERSONAL MET WITH
THE STUDY TEAM

(1) Ministry of Agriculture

| | |
|------------------------------|---|
| Dr. A. Muin Pabinru | Director General of Food Crops Agriculture Ministry of Agriculture(MOA) |
| Dr. Faisial Kasryno | Director of Planning, MOA |
| Ir. Abdurrachman Daud Rusydi | Secretary for Directorate General of Food Crops Agriculture MOA |
| Ir. Abu Hearah | Director of Food Crops Programming DGFA |
| Ir. Rini Soerojo | Director of Directorate of Horticulture DGFA |
| Ir. Hardjanto | Head, sub-directorate of Food Crops Programming and Project Aid, MOA |
| Ir. Lily Waliyah | Deputy Director, Seed Production, Directorate of Horticulture |
| Dr. Murasa Sarkaniputra | Senior of officer of Bureau of Planning MOA |
| MSc. I Wayan Sidhya | Head, Sub-Division of Foreign Cooperation MOA |
| Dr. Rukyath Wiratmadja | Director of Foreign Cooperation MOA |
| Ir. Suharyo Husen | Head Division of Bilateral Cooperation Bureau of Foreign Cooperation MOA |
| Dr. Soebijanto | Head, Center for Horticulture Research and Development Agency for Agricultural Research and Ministry of Agriculture |

(2) Government of West Java

Drs. Karna Suwanda Vice Governor

Drs. Gandana ASSDA 2

Drs. Endang R. KA BIRO SARANA PRODUKSI

Ir. Kusnsdi KA KANWIL

Ir. Sobar KANWIL

(3) SECRETARIATE CABINET

Ir. Moch. Widodo Gondowardojo SH. Head, Bureau for Technical
Cooperation Secretariate cabinet

Ir. Moersalin Parindury BBA. Head, General Affairs Div., Technical
Cooperation Bureau Secretariate Cabinet

Ir. Didin Burhanuddin Head, Sub-Division of Colombo Plan
Bureau for Technical Cooperation
Secretariate Cabinet

(4) BAPPENAS

Mr. Rusnadi Ridwan Bureau of Agriculture & Irrigation
BAPPENAS

Drs. Qomarozzaman Sulhani Bureau of Foreign Economic
Cooperation BAPPENAS

(5) EMBASSY OF JAPAN

Mr. Goichiro Yukawa First Secretary Embassy of Japan
in Indonesia

(6) J I C A JAKARTA

Mr. Yasuo Kitano Director JICA Jakarta

Mr. Kazuhisa Matsuoka Deputy Director JICA Jakarta

| | |
|---|---|
| Mr. Toru Taguchi | Deputy Director JICA Jakarta |
| Dr. Makoto Inaba | Assistant Representative JICA Jakarta |
| (7) J I C A EXPERT/MOA | |
| Mr. Masahito Sato | JICA Expert for Major Crops Production Programme Ministry of Agriculture |
| Mr. Kiyoshi Sawada | JICA Expert for Major Crops Production Programme Ministry of Agriculture |
| Mr. Akira Nagata | JICA Expert for Major Crops Production Programme Ministry of Agriculture |
| (8) Regional Service (Dinas) in West Java | |
| Ir. Aan Suhandi | Chief of Sub-dinas Horticulture |
| Ir. Ida Noordijati | Chief of Vegetable Section |
| (9) BAPPEDA | |
| Ir. Halimah | TK-I |
| (10) LEHRI | |
| Ir. Sujoko Sahar | Breeder for Potato |
| Ir. Asih K. Karjadi | Tissue Cultureist |
| (11) BPSB | |
| Ir. Tutin Sukartini | Chief of BPSB |
| Ir. Firman | Chief of Seed Laboratory |
| Ir. Maman | Chief of Seed Certification |
| (12) P.D. MAMIN | |
| Ir. Harry Zuhary Sabirin | Directur Utama |

ANNEX 5 : MINUTES OF DISCUSSION

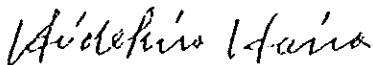
MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY
ON
THE PROJECT FOR THE MULTIPLICATION AND
DISTRIBUTION OF HIGH QUALITY SEED POTATO
IN
THE REPUBLIC OF INDONESIA

In response to the request of the Government of the Republic of Indonesia, the Government of Japan decided to conduct a basic design study on The Project for the Multiplication and Distribution of High Quality Seed Potato (hereinafter referred to as "The Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA"). JICA sent a study team headed by Dr. Hidehiro Horio, Deputy Director of Yatsugatake Station, National Center for Seeds and Seedlings of Ministry of Agriculture, Forestry and Fisheries (MAFF) to the Republic of Indonesia from 22nd August to 11 September, 1989.

The team held a series of discussions on the Project with the officials concerned of the Government of the Republic of Indonesia headed by Dr. A. Muin Pabinru, Director General of Food Crop Agriculture, Ministry of Agriculture and conducted a field survey in West Java Province.

As a result of the study, both parties agreed to recommend to their respective Governments that the major points of understanding between them, attached herewith, should be examined towards the realization of the Project.

Jakarta, 31st. August, 1989



Dr. Hidehiro Horio
Team Leader,
Basic Design Study Team, JICA



Dr. A. Muin Pabinru
Director General of Food Crop
Agriculture,
Ministry of Agriculture

ATTACHMENT

1. Objectives of the Project

The objectives of the Project are;

- To introduce and select the new varieties which are suitable for the agro-conditions of each potato producing area and market needs.
- To constantly produce and supply pathogen free good quality Stock Seed by the application of the rapid multiplication method in seed farm.
- To promote the stable supply of pathogen free Extension Seed Potatoes.
- To strengthen the BPSB's inspection activities.

2. Responsible and Implementation Agency for the Project

Directorate of Horticulture, Directorate General of Food Crop Agriculture (DGFA), Ministry of Agriculture is responsible for the administration and execution of the Project.

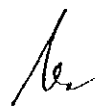
3. Project Sites

The sites of the Project is located in Bandung, Lembang and Pengalengan of West Java Province (See Fig. 1).

4. Request

The Project components requested by the Indonesian side are shown in ANNEX I.

5. The Indonesian side has understood the contents of the Inception Report.



LAIA.

6. The Indonesian side has understood the Japan's grant aid programme explained by the team which includes the use of a Japanese consulting firm and Japanese general contractors for the implementation of the Project.
7. The Government of the Republic of Indonesia will take necessary measures as listed in ANNEX II on condition that the grant aid by the Government of Japan would be extended to the Project.
8. The Government of the Republic of Indonesia has agreed to provide the necessary budget and personnel for operation and maintenance of the facilities after completion of the Project.
(administrative organization chart, and function chart of project activities; LEHRI, BPSB, BBI and P.D. MAMIN [Stock Seed Farm] are indicated on attached Fig. 4 and 5)
9. Draft Final Report will be submitted to the Indonesian Government at the end of November, 1989.
10. Japan's project type technical cooperation concerned with this Project is requested by Indonesian side, and the team will convey the significance of the technical cooperation to the Japanese Government.

ANNEX I

The scope of cooperation for the Project will be decided upon the completion of technical and financial studies for the basic design.

The requested facilities, equipments and implementation by the Government of the Republic of Indonesia are as follows:

1. The following sites are requested by the Government of Indonesia to provide with facilities, equipments and machinery

- LEHRI (Lembang Horticulture Research Institute) in Lembang
- BPSB (Seed Control and Certification Service) in Bandung
- BBI (Central Seed Farm) in Pengalengan (See Fig. 2)
- Stock Seed Farm in Pengalengan (See Fig. 3)

2. The following items are requested by the Government of Indonesia for grant aid assistance:

- Construction of facilities; screen house, glass house, net house and others with necessary equipments for basic studies on the biotechnology at LEHRI.
- Establishment BBI and Stock Seed Farm in Pengalengan with necessary facilities and equipments; office, laboratory, staff house, screen house, storage and others, transportation vehicles and farm machinery including irrigation and pest control equipments.
- Construction of Laboratory building with necessary equipments and provision of transportation vehicles to BPSB for strengthening the inspection activities.

ANNEX II

The Government of the Republic of Indonesia will take the following measures in due time in accordance with the attached "TENTATIVE IMPLEMENTATION SCHEDULE" (See Fig. 6).

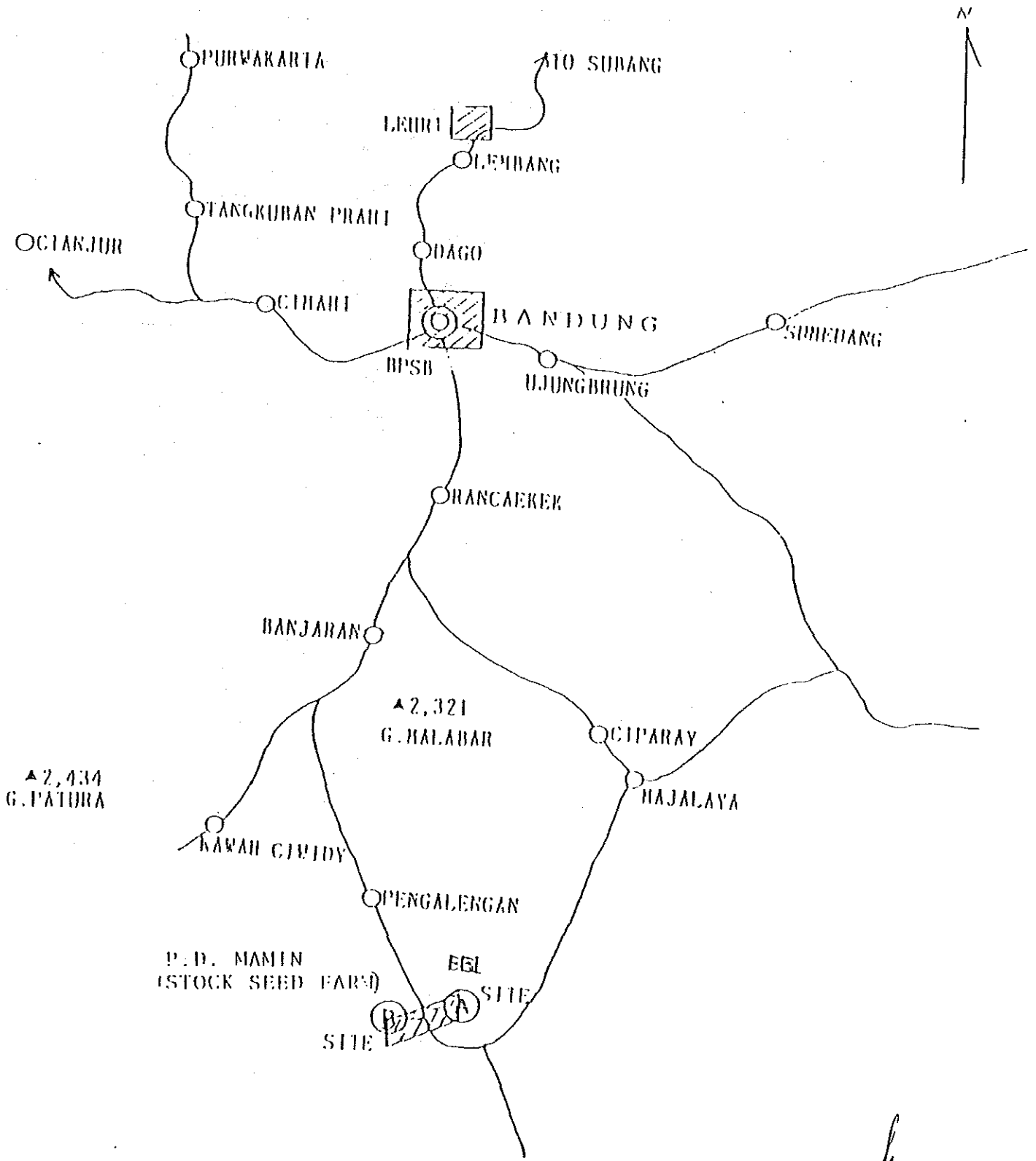
1. To acquire the land required for the facilities and Stock Seed Farm.
2. To ensure the land necessary for construction of the temporary roads from existing rural roads to the proposed sites.
3. To ensure speedy unloading, tax exemption, customs clearance at the port of disembarkment of the procured equipments and material under the grant aid.
4. To allow transportation of vehicles, machinery and construction equipments on the existing national and rural roads.
5. To exempt from import duties and incidental expenses and to take necessary measures for customs clearance of the materials, equipments and spare parts brought into Indonesia for the implementation of the Project.
6. To assume the following commissions of the Japanese foreign exchange bank for banking services based on the banking arrangement;
 - (a) Advising commission of authorization to pay;
 - (b) Payment commission
7. To accord Japanese nationals, whose services may be required in connection with the supply of goods and services under the verified contract such facilities as may be necessary for their entry into the Republic of Indonesia and stay therein for the performance of their work.

8. The Japanese involved in the project will not be subject to any customs duties, internal taxes, and other fiscal levies which may be imposed in Indonesia with respect to the supply of goods and service under the verified contract.
9. To maintain and use properly and effectively the facilities constructed and equipments procured under the grant.
10. To provide necessary data and informations for detailed designs.
11. To take necessary action to expedite the approval for the execution of this project, by the Government of the Republic of Indonesia.
12. To provide the project site with the utility facilities such as electricity and domestic water.
13. To bear all the expenses, other than those to be borne by the grant, necessary for construction of the facilities as well as for the transportation and installation of the equipments.



V.A.A.

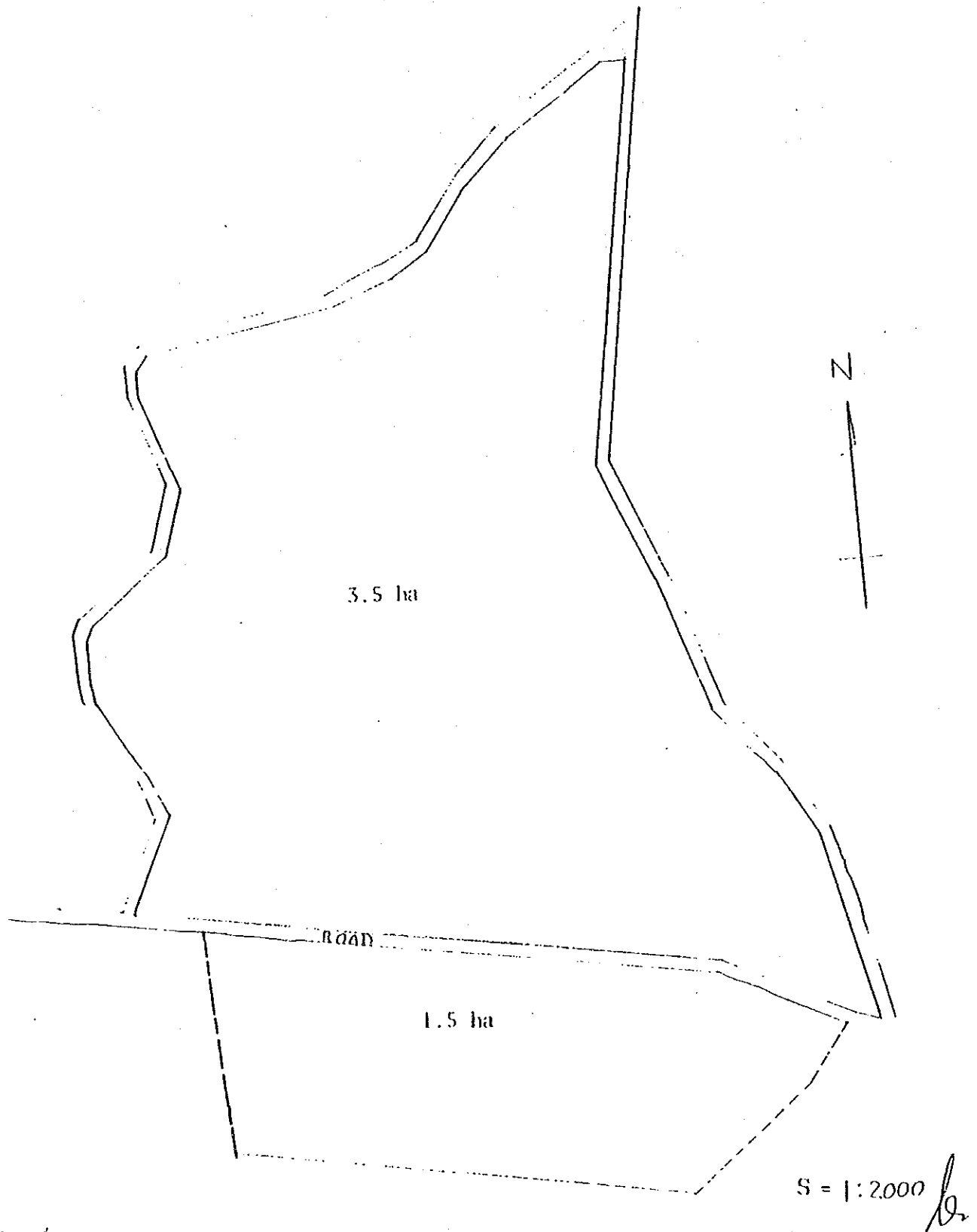
FIG. 1 PROJECT LOCATION MAP



W.A.

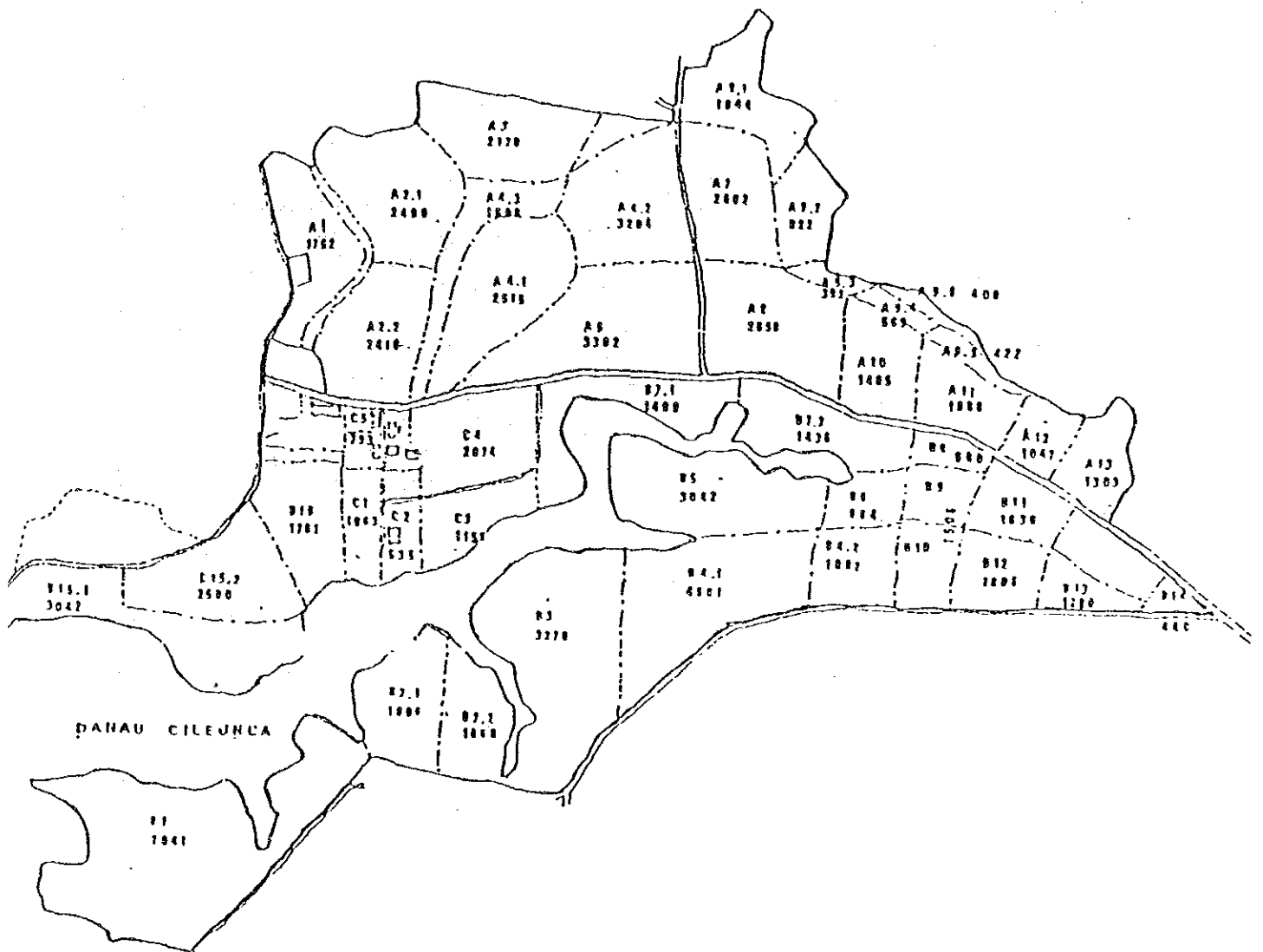
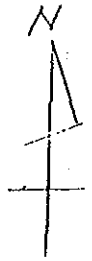
su

Fig. 2 SITE OF BBI



A.H.

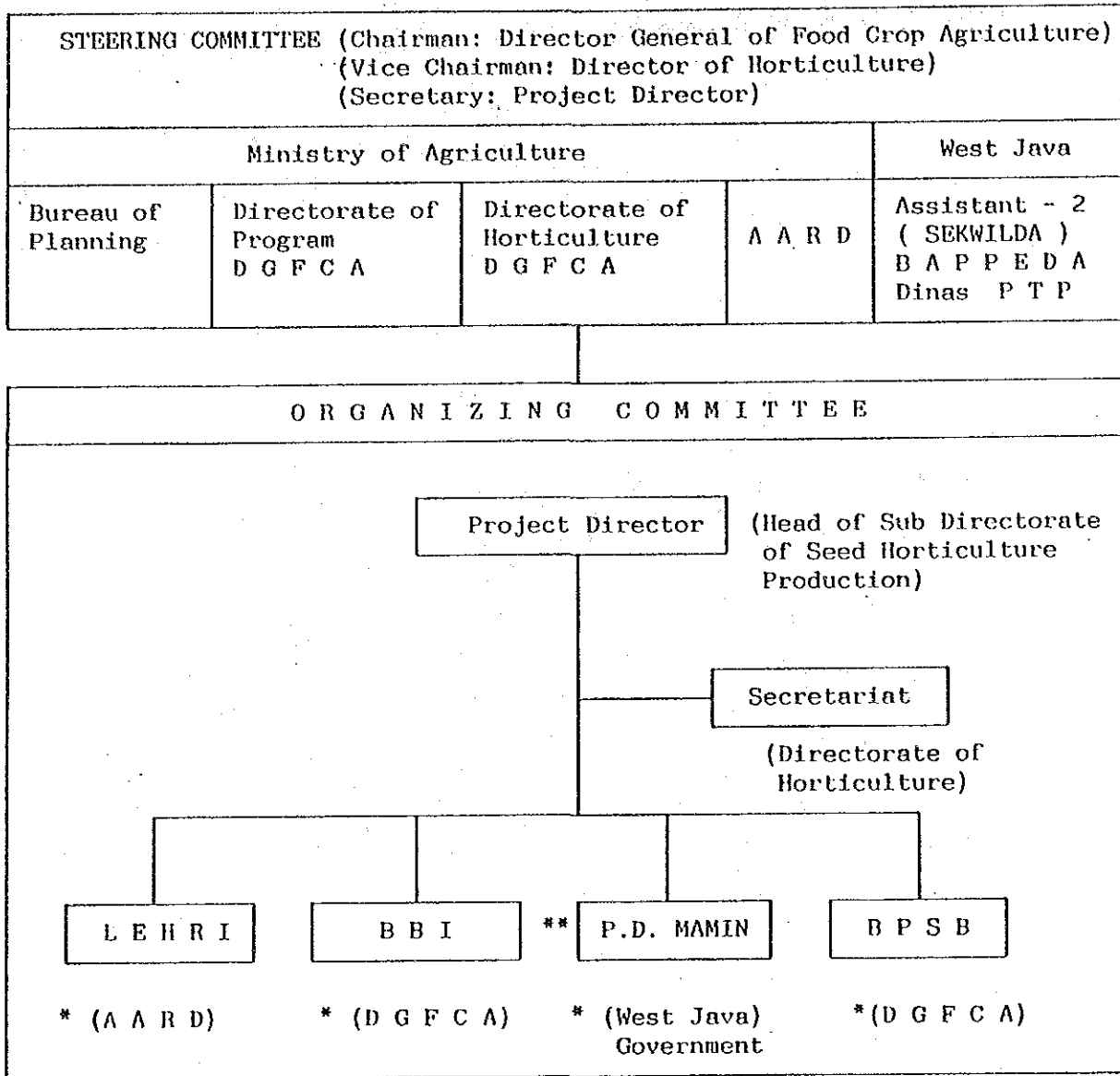
Fig. 3 SITE OF STOCK SEED FARM (Red Colored Area)



A.W.

br

Fig. 4 ORGANIZATION CHART OF THE PROJECT

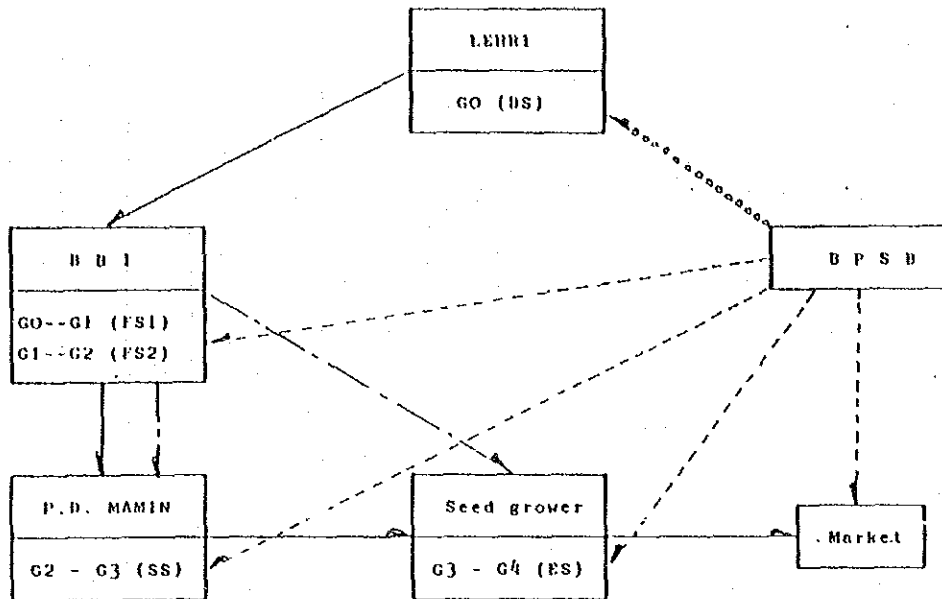


* Means the source of administration and budget
 ** P.D MAMIN; Stock Seed Farm

1A.1A.

br

Fig. 5 FUNCTION CHART



Note: ————— Flow of Seed Potato
 - - - - - Inspection & Certification (Labeling)
 - - - - - Technical Guidance
 oooooooooo Identification & Evaluation

Activity of ICBRI

1. To introduce & select new varieties
2. To produce pathogen free planting materials to BUI
3. To dispatch lecturer for training in BUI
4. To monitor & evaluate the planting material which sent to BUI

Activity of BUI

1. To produce G1 & G2
2. To conduct training for BUI staff, BPSB staff, P.D. MAMIN staff, seed grower etc.
3. To give technical guidance to P.D. MAMIN & seed grower
4. To distribute G2 to P.D. MAMIN (stock seed farm)

Activity of P.D. MAMIN (Stock Seed Farm)

1. To produce G3 from G2
2. To distribute G3 to seed grower (contract farmer)
3. If necessary, to provide the agricultural input (fertilizer, pest-icide, tool, sprayer etc.)
4. If necessary, to buy the seed from contract farmers

Activity of Seed Grower

1. To produce G4 from G3 under technical guidance of BUI & BPSB
2. To sale the seed to farmer through market

Activity of BPSB

1. Seed inspection
2. Seed certification
3. Identification & evaluation of varieties

W. G. G.

le

MINUTES OF DISCUSSIONS
ON
THE DRAFT FINAL REPORT OF THE BASIC DESIGN STUDY
ON
THE PROJECT FOR THE MULTIPLICATION AND
DISTRIBUTION OF HIGH QUALITY SEED POTATO
IN
THE REPUBLIC OF INDONESIA

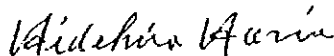
In response to the request made by the Government of the Republic of Indonesia, the Government of Japan decided to conduct a basic design study on The Project for The Multiplication and Distribution of High Quality Seed Potato (hereinafter referred to as The Project) and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as JICA). JICA sent a study team to the Republic of Indonesia from 22nd August to 11th September, 1989.

As a result of the study, JICA prepared a draft final report and dispatched a mission headed by Dr. Hidehiro Horio, Deputy Director of Yatsugatake Station, National Center for Seeds and Seedlings of Ministry of Agriculture, Forestry and Fisheries (MAFF), to explain and discuss it from 26th November to 2nd December, 1989.

The team held a series of discussions on the Project with the officials concerned of the Government of the Republic of Indonesia headed by Dr. A. Muin Pabinru, Director General of Food Crops Agriculture, Ministry of Agriculture and conducted a field survey in West Java Province.

As a result of the discussions, both parties agreed to recommend to their respective Governments that the major points of understanding between them, attached herewith, should be examined towards the realization of the Project.

Jakarta, 1st December, 1989



Dr. Hidehiro Horio
Team Leader,
Basic Design Study Team, JICA



Dr. A. Muin Pabinru
Director General of Food Crops
Agriculture,
Ministry of Agriculture



ATTACHMENT

The major points of understanding are as follows:

1. The Indonesian side agreed in principle on the basic design proposed in the Draft Final Report.
2. The subjects, agreed upon in the MINUTES OF DISCUSSIONS dated 31st August, 1989 enclosed herewith (in which the site maps of BBI and Stock Seed Farm only have been changed as shown in Figures 2 and 3), were confirmed by both the parties.
3. Japan's project-type technical cooperation concerned with this Project was strongly re-requested by the Indonesian side and the team agreed to convey the significance of this technical cooperation to the Japanese Government.
4. The Final Report on the Project will be submitted to the Indonesian Government in the middle of February, 1990.

V.A.H.



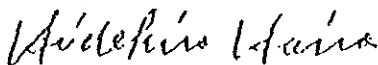
MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY
ON
THE PROJECT FOR THE MULTIPLICATION AND
DISTRIBUTION OF HIGH QUALITY SEED POTATO
IN
THE REPUBLIC OF INDONESIA

In response to the request of the Government of the Republic of Indonesia, the Government of Japan decided to conduct a basic design study on The Project for the Multiplication and Distribution of High Quality Seed Potato (hereinafter referred to as "The Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA"). JICA sent a study team headed by Dr. Hidehiro Horio, Deputy Director of Yatsugatake Station, National Center for Seeds and Seedlings of Ministry of Agriculture, Forestry and Fisheries (MAFF) to the Republic of Indonesia from 22nd August to 11 September, 1989.

The team held a series of discussions on the Project with the officials concerned of the Government of the Republic of Indonesia headed by Dr. A. Muin Pabjuru, Director General of Food Crop Agriculture, Ministry of Agriculture and conducted a field survey in West Java Province.

As a result of the study, both parties agreed to recommend to their respective Governments that the major points of understanding between them, attached herewith, should be examined towards the realization of the Project.

Jakarta, 31st. August, 1989



Dr. Hidehiro Horio
Team Leader,
Basic Design Study Team, JICA



Dr. A. Muin Pabjuru
Director General of Food Crop
Agriculture,
Ministry of Agriculture

ATTACHMENT

1. Objectives of the Project

The objectives of the Project are:

- To introduce and select the new varieties which are suitable for the agro-conditions of each potato producing area and market needs.
- To constantly produce and supply pathogen free good quality Stock Seed by the application of the rapid multiplication method in seed farm.
- To promote the stable supply of pathogen free Extension Seed Potatoes.
- To strengthen the BPSB's inspection activities.

2. Responsible and Implementation Agency for the Project

Directorate of Horticulture, Directorate General of Food Crop Agriculture (DOFCA), Ministry of Agriculture is responsible for the administration and execution of the Project.

3. Project Sites

The sites of the Project is located in Bandung, Lembang and Pengalengan of West Java Province (See Fig. 1).

4. Request

The Project components requested by the Indonesian side are shown in ANNEX I.

5. The Indonesian side has understood the contents of the Inception Report.



LAIA.

6. The Indonesian side has understood the Japan's grant aid programme explained by the team which includes the use of a Japanese consulting firm and Japanese general contractors for the implementation of the Project.
7. The Government of the Republic of Indonesia will take necessary measures as listed in ANNEX II on condition that the grant aid by the Government of Japan would be extended to the Project.
8. The Government of the Republic of Indonesia has agreed to provide the necessary budget and personnel for operation and maintenance of the facilities after completion of the Project.
(administrative organization chart, and function chart of project activities; LEHRU, BPSB, DBI and P.D. MANIN [Stock Seed Farm] are indicated on attached Fig. 4 and 5)
9. Draft Final Report will be submitted to the Indonesian Government at the end of November, 1989.
10. Japan's project type technical cooperation concerned with this Project is requested by Indonesian side, and the team will convey the significance of the technical cooperation to the Japanese Government.

ANNEX I

The scope of cooperation for the Project will be decided upon the completion of technical and financial studies for the basic design.

The requested facilities, equipments and implementation by the Government of the Republic of Indonesia are as follows:

1. The following sites are requested by the Government of Indonesia to provide with facilities, equipments and machinery

- LEHRI (Lembang Horticulture Research Institute) in Lembang
- BPSB (Seed Control and Certification Service) in Bandung
- BBI (Central Seed Farm) in Pengalengan (See Fig. 2)
- Stock Seed Farm in Pengalengan (See Fig. 3)

2. The following items are requested by the Government of Indonesia for grant aid assistance:

- Construction of facilities; screen house, glass house, net house and others with necessary equipments for basic studies on the biotechnology at LEHRI.
- Establishment BBI and Stock Seed Farm in Pengalengan with necessary facilities and equipments; office, laboratory, staff house, screen house, storage and others, transportation vehicles and farm machinery including irrigation and pest control equipments.
- Construction of laboratory building with necessary equipments and provision of transportation vehicles to BPSB for strengthening the inspection activities.

ANNEX II

The Government of the Republic of Indonesia will take the following measures in due time in accordance with the attached "TENTATIVE IMPLEMENTATION SCHEDULE" (See Fig. 6).

1. To acquire the land required for the facilities and Stock Seed Farm.
2. To ensure the land necessary for construction of the temporary roads from existing rural roads to the proposed sites.
3. To ensure speedy unloading, tax exemption, customs clearance at the port of disembarkment of the procured equipments and material under the grant aid.
4. To allow transportation of vehicles, machinery and construction equipments on the existing national and rural roads.
5. To exempt from import duties and incidental expenses and to take necessary measures for customs clearance of the materials, equipments and spare parts brought into Indonesia for the implementation of the Project.
6. To assume the following commissions of the Japanese foreign exchange bank for banking services based on the banking arrangement;
 - (a) Advising commission of authorization to pay;
 - (b) Payment commission
7. To accord Japanese nationals, whose services may be required in connection with the supply of goods and services under the verified contract such facilities as may be necessary for their entry into the Republic of Indonesia and stay therein for the performance of their work.

8. The Japanese involved in the project will not be subject to any customs duties, internal taxes, and other fiscal levies which may be imposed in Indonesia with respect to the supply of goods and service under the verified contract.
9. To maintain and use properly and effectively the facilities constructed and equipments procured under the grant.
10. To provide necessary data and informations for detailed designs.
11. To take necessary action to expedite the approval for the execution of this project, by the Government of the Republic of Indonesia.
12. To provide the project site with the utility facilities such as electricity and domestic water.
13. To bear all the expenses, other than those to be borne by the grant, necessary for construction of the facilities as well as for the transportation and installation of the equipments.

A.H.

FIG. 1 PROJECT LOCATION MAP

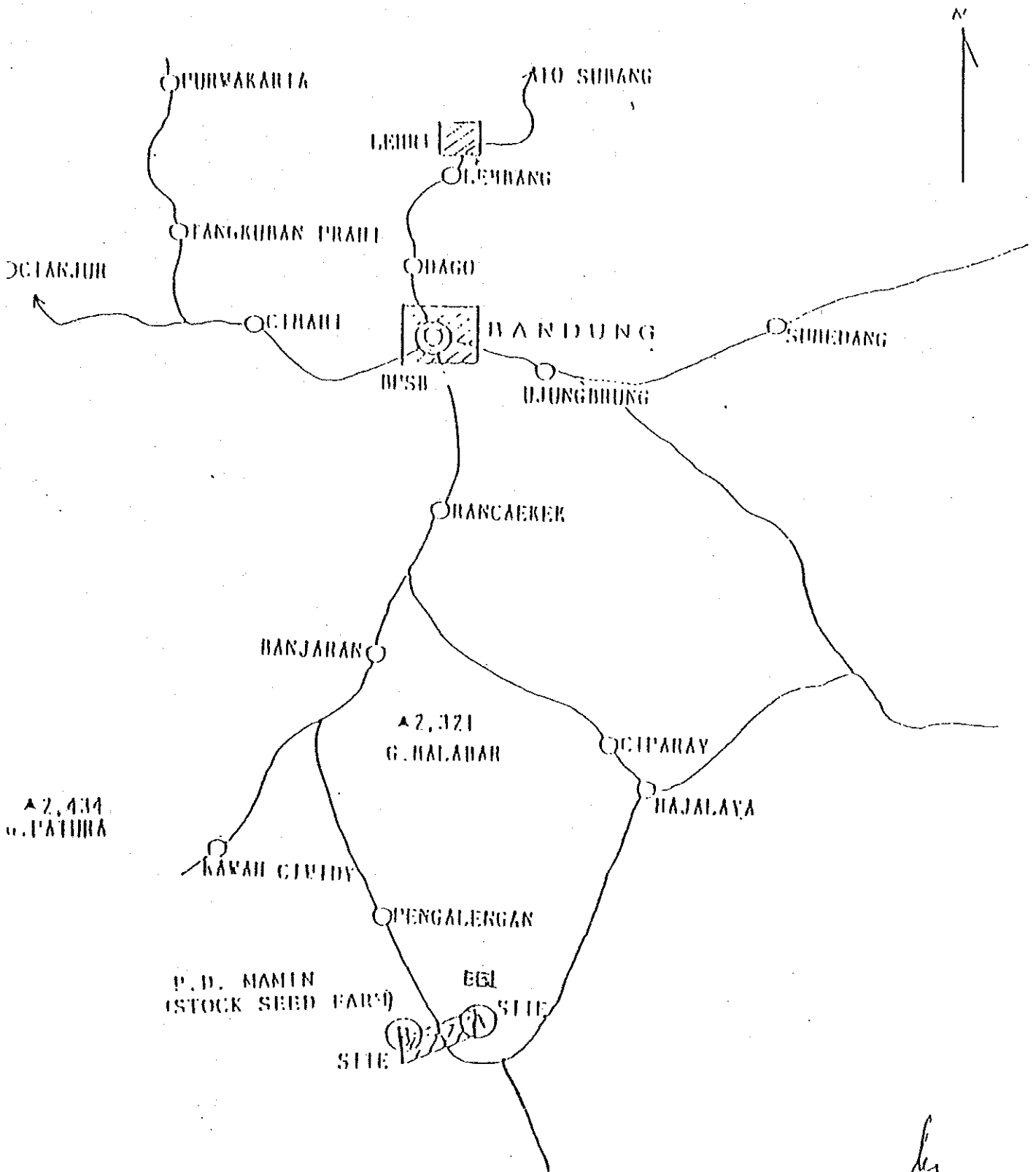
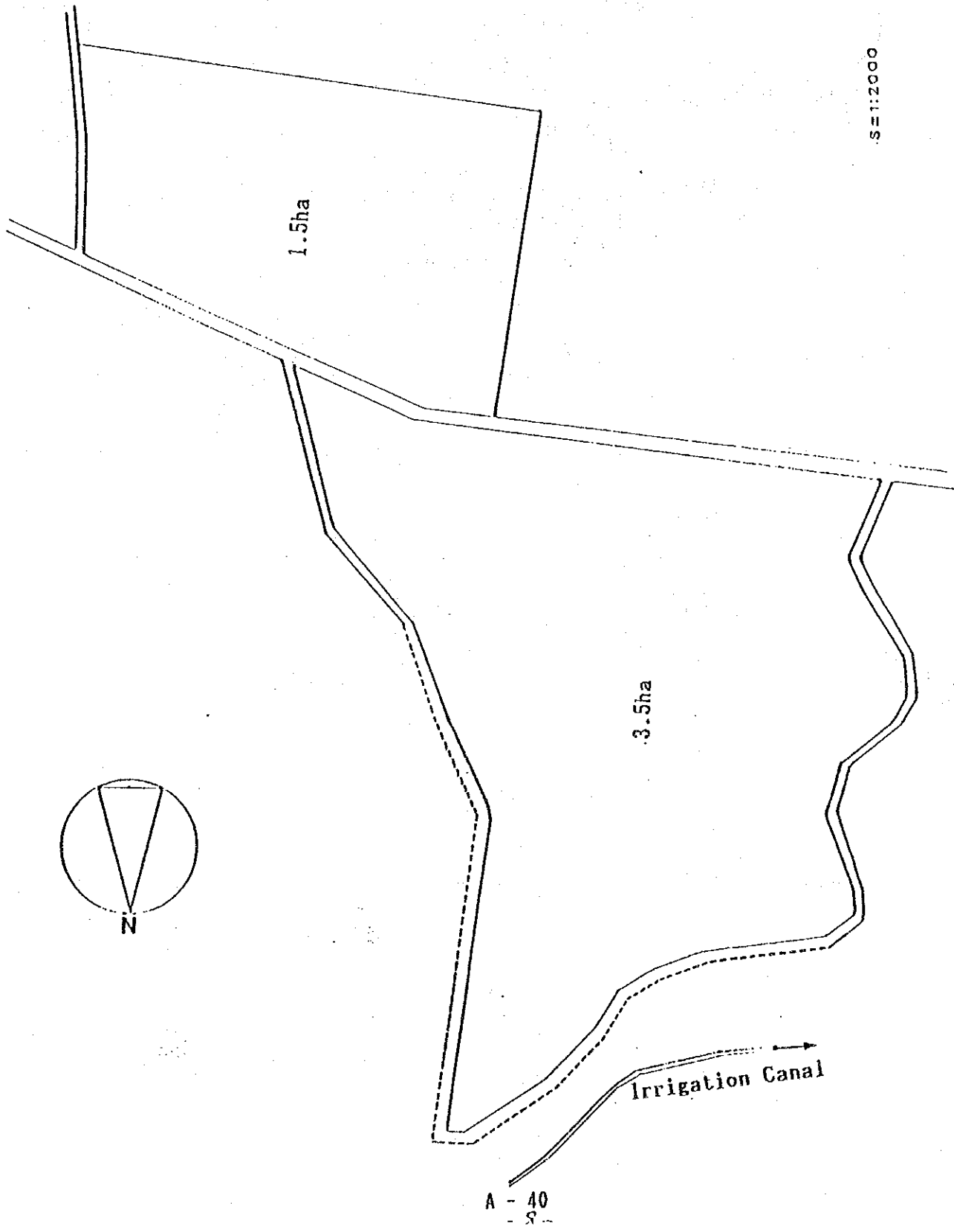


Fig.2 SITE OF BBI



A - 40
- 8 -

Fig.3 SITE OF STOCK SEED FARM

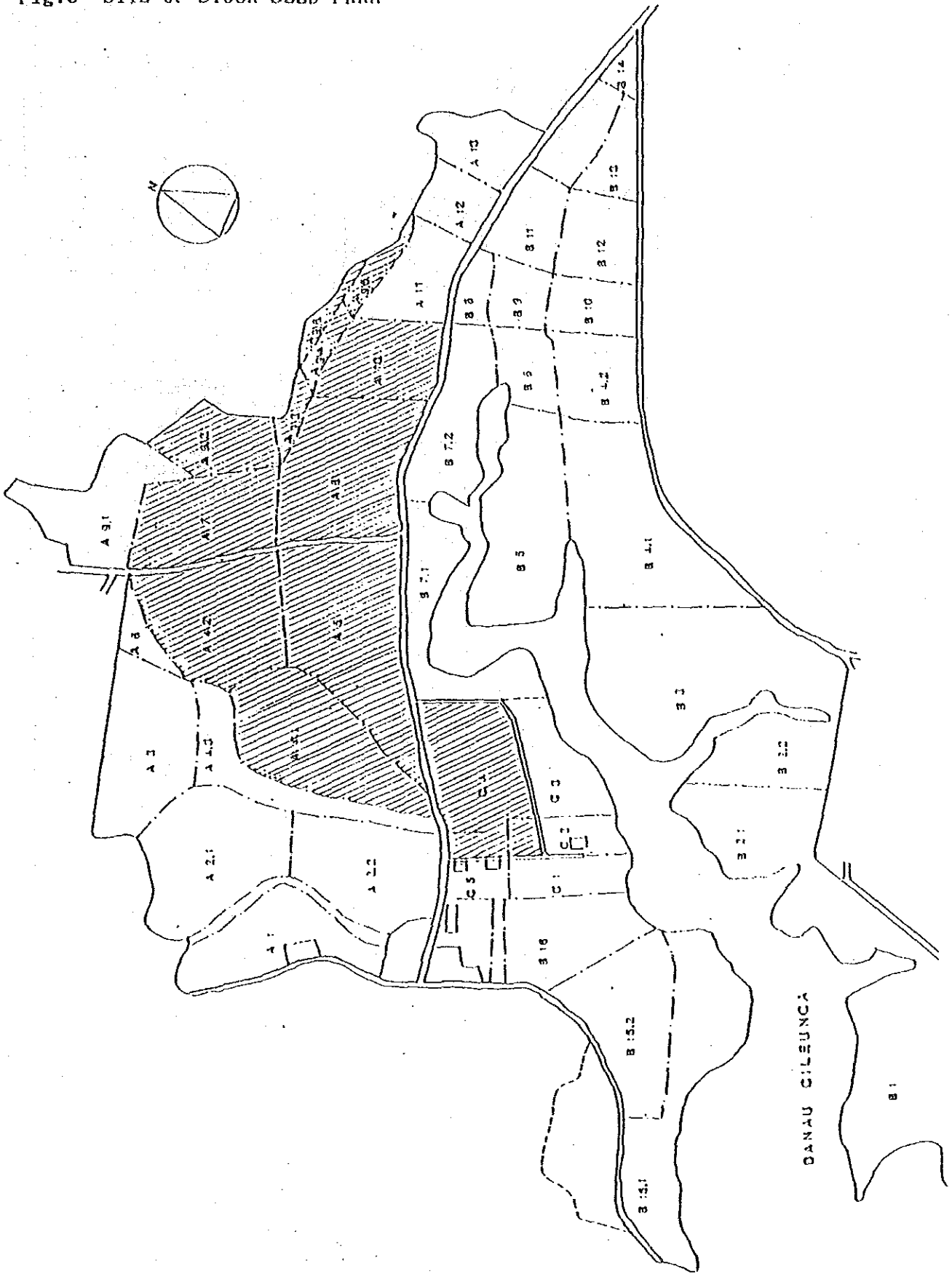
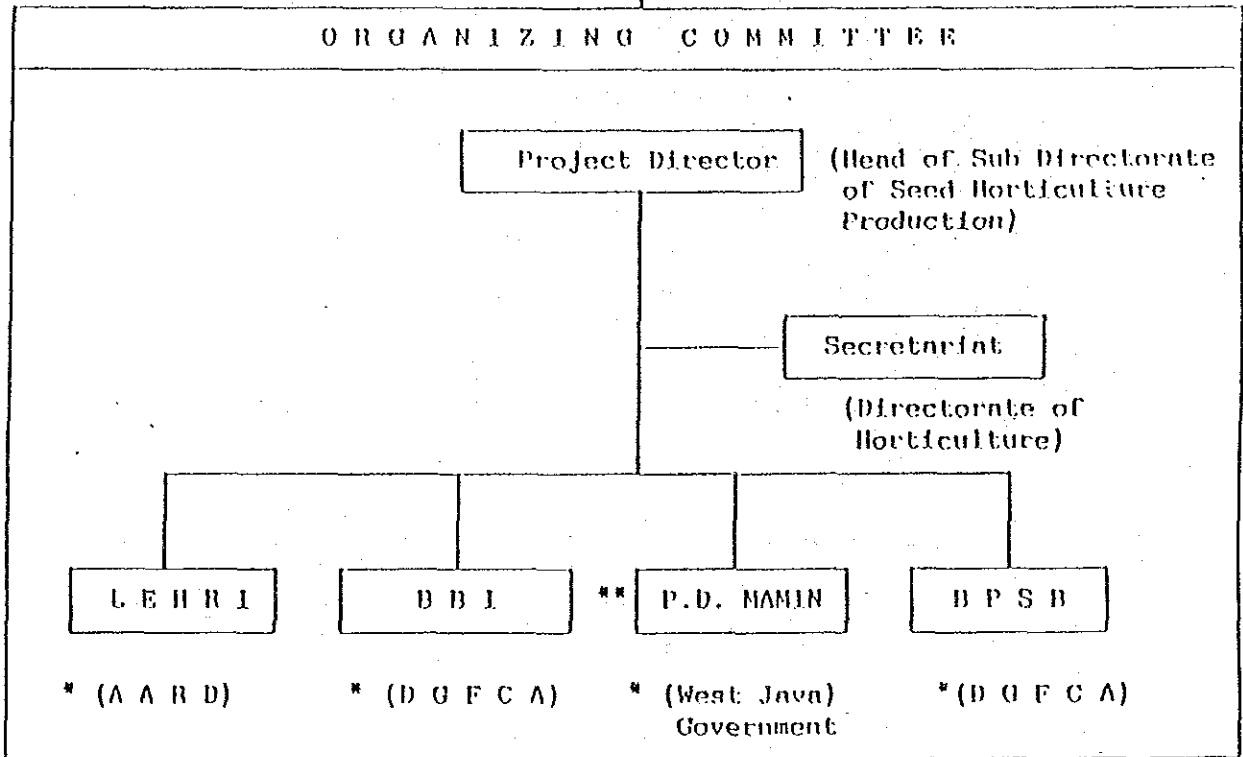


Fig. 4 ORGANIZATION CHART OF THE PROJECT

| | | | | |
|--|-------------------------------------|--|---------|---|
| STEERING COMMITTEE (Chairman: Director General of Food Crop Agriculture) (Vice Chairman: Director of Horticulture) (Secretary: Project Director) | | | | |
| Ministry of Agriculture | | | | West Java |
| Bureau of Planning | Directorate of Program D G F C A | Directorate of Horticulture D G F C A | A A R D | Assistant - 2 (SERWILDA) BAPPEDA Dinas PTP |



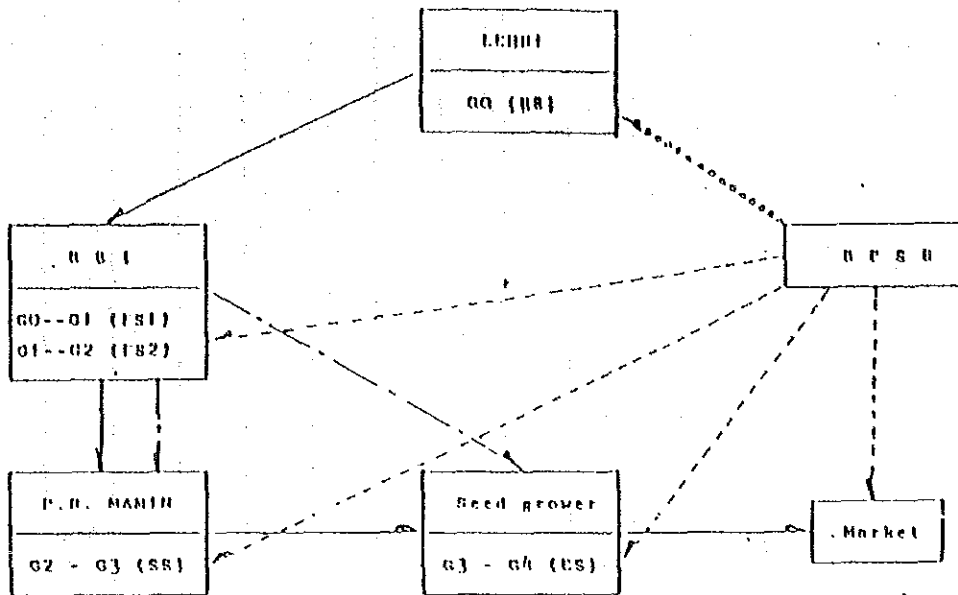
* Means the source of administration and budget

** P.D MANIN; Stock Seed Farm

IA.A.

Lo

Fig. 5 FUNCTION CHART



Note: ————— Flow of Seed Points
 - - - - - Inspection & Certification (Labeling)
 ———— Technical Guidance
 Identification & Evaluation

Activity of ICRRI

1. To introduce & select new varieties
2. To produce pathogen free planting materials to DDI
3. To dispatch lecturer for training in DDI
4. To monitor & evaluate the planting material which sent to DDI

Activity of DDI

1. To produce G1 & G2
2. To conduct training for DDI staff, HPSU staff, P.D. MANIH staff, seed grower etc.
3. To give technical guidance to P.D. MANIH & seed grower
4. To distribute G2 to P.D. MANIH (stock seed farm)

Activity of P.D. MANIH (Stock Seed Farm)

1. To produce G3 from G2
2. To distribute G3 to seed grower (contract farmer)
3. If necessary, to provide the agricultural input (fertilizer, pesticide, tool, sprayer etc.)
4. If necessary, to buy the seed from contract farmers

Activity of Seed Grower

1. To produce G4 from G3 under technical guidance of DDI & HPSU
2. To sale the seed to farmer through market

Activity of HPSU

1. Seed inspection
2. Seed certification
3. Identification & evaluation of varieties

W.L.D.

la

ANNEX 6 : LIST OF INFORMATIONS
COLLECTED

1. INFORMATIONS CONCERNED WITH LEHRI

- | | | |
|---|--|--|
| 1-1 BALAI PENELITIAN HORTIKULTURA LEMBANG | Summary of activities of LEHRI | History and general activities of LEHRI |
| 1-2 Organization chart of LEFRI | | |
| 1-3 Mid-Elevation Potato Seminer January 1987 | | The study of potato cultivation at where under 1,000m of altitude |
| 1-4 Five years SAPPRAD in Indonesia | Five years development plan of potato research in south Asia | The development of potato research in Indonesia |
| 1-5 FINAL REPORT OF COOPERATION PROJECT 1988 | Potato tissue culture project by USAID | Summary and evaluation of transformation of tissue culture technique by USAID |
| 1-6 BALAI PENELITIAN HORRIKULTURA LEMBANG 1986/1987 | LEHRI Annual Report | |
| 1-7 List of Equipments of LEHRI | | |

2. INFORMATIONS CONCERNED WITH FOUNDATION SEED FARM (BBI) AND STOCK SEED FARM

- | | | |
|------------------------------------|--------------------|--|
| 2-1 Annual Report of BBI (1988) | | |
| 2-2 KERTA SARI MAMIN | Pamphlet P.D.MAMIN | |

3. INFORMATIONS CONCERNED WITH SEED CONTROL AND CERTIFICATION SERVICES (BPSB)

| | | |
|--|---|---|
| 3-1 QUALITY CONTROL AND POTATO-CERTIFICATION IN THE FRAMEWORK OF THE POTATO-SEED MULTIPLICATION AND DISTRIBUTION | Plan of strengthen the activities of BPSB | Basic concepts and equipment required for the seed potato section of BPSB |
|--|---|---|

| | | |
|------------------------|------------------|--------------------|
| 3-2 SCCS. I Infomation | Pamphlet of BPSB | Activities of BPSB |
|------------------------|------------------|--------------------|

| | | |
|---|--|--|
| 3-3 ACTIVITIES ON THE POTATO-SEED CERTIFICATION | System of certification of seed potato | |
|---|--|--|

| | | |
|---------------------------------|--|--|
| 3-4 List of Potato Seed Growers | | |
|---------------------------------|--|--|

4. GENERAL INFORMATIONS

| | | |
|------------------------------|--------------------------------------|--|
| 4-1 Statistik Indonesia 1988 | Annual statistic report in Indonesia | |
|------------------------------|--------------------------------------|--|

| | | |
|---|--|--|
| 4-2 SEED POTATO IMPROVEMENT PROJECT NOV. 1987 | | |
|---|--|--|

| | | |
|------------------------------|--------------------------------------|--|
| 4-3 PENDUDUK JAWA-BARAT 1987 | Annual statistic report in West Java | |
|------------------------------|--------------------------------------|--|

| | | |
|---|---|---|
| 4-4 BALAI LATIHAN PEGAWAI PERTANIAN KAYUAMBON | Summary of the agricultural training center | Activities and curriculum of agricultural training center |
|---|---|---|

| | | |
|---|--|--|
| 4-5 DAFTAR HARGA SATUAN PEKERJAAN [UNIT PRICE] DI INDONESIA KWARTAL III 1988/1989 | List of construction unit price in Indonesia | |
|---|--|--|

| | | |
|--|--|--|
| 4-6 DAFTAR HARGA SATUAN BOHON BONGUNON DKI-JAKARTA | List of unit price of equipments and material in Jakarta | |
|--|--|--|

ANNEX 7 : GENERAL INFORMATIONS

Table A - 1 Meteorological Condition

| Average Temperature °C | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Average |
|------------------------|---------|------|------|------|------|------|------|------|------|------|------|------|---------|
| | Station | | | | | | | | | | | | |
| Jakarta | 26.7 | 26.9 | 28.4 | 28.8 | 29.3 | 29.1 | 29.3 | 29.1 | 28.6 | 29.0 | 28.7 | 27.7 | 28.4 |
| Bandung | 23.1 | 23.2 | 23.6 | 23.7 | 23.7 | 23.3 | 23.0 | 22.9 | 24.0 | 24.2 | 23.9 | 23.3 | 23.5 |
| Lembang | 20.1 | 20.1 | 20.2 | 20.2 | 20.4 | 20.4 | 19.9 | 19.1 | 20.1 | 20.0 | 19.9 | 20.2 | 20.0 |
| Pengalengan | 17.5 | 18.6 | 18.0 | 18.8 | 19.5 | 19.1 | 18.6 | 18.2 | 18.2 | 18.1 | 18.0 | 17.8 | 18.4 |

| Average Relative Humidity % | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Average |
|-----------------------------|---------|------|------|------|------|------|------|------|------|------|------|------|---------|
| | Station | | | | | | | | | | | | |
| Jakarta | 84.0 | 83.0 | 78.0 | 78.0 | 73.0 | 72.0 | 70.0 | 68.0 | 71.0 | 73.0 | 77.0 | 82.0 | 75.8 |
| Bandung | 82.0 | 83.0 | 83.0 | 83.0 | 78.0 | 78.0 | 73.0 | 67.0 | 67.0 | 70.0 | 81.0 | 83.0 | 77.3 |
| Lembang | 87.0 | 86.0 | 96.0 | 97.0 | 97.0 | 97.0 | 94.0 | 93.0 | 94.0 | 95.0 | 93.0 | 86.0 | 92.9 |
| Pengalengan | 84.3 | 84.1 | 85.3 | 84.4 | 84.3 | 81.9 | 82.1 | 80.7 | 80.3 | 81.3 | 84.3 | 84.8 | 83.1 |

| Rainfall mm | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Average |
|-------------|---------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|---------|
| | Station | | | | | | | | | | | | |
| Jakarta | 297.0 | 280.0 | 104.0 | 105.0 | 89.0 | 53.0 | 0.0 | 6.0 | 54.0 | 25.0 | 186.0 | 197.0 | 1396.0 |
| Bandung | 108.0 | 136.0 | 358.0 | 380.0 | 148.0 | 146.0 | 9.0 | 9.0 | 30.0 | 84.0 | 333.0 | 233.0 | 1974.0 |
| Lembang | 185.0 | 132.0 | 83.0 | 153.0 | 70.0 | 54.0 | 56.0 | 27.0 | 95.0 | 127.0 | 124.0 | 179.0 | 1385.0 |
| Pengalengan | 352.7 | 227.3 | 292.8 | 272.2 | 175.9 | 94.6 | 79.1 | 58.1 | 106.7 | 213.7 | 289.8 | 346.5 | 2509.4 |

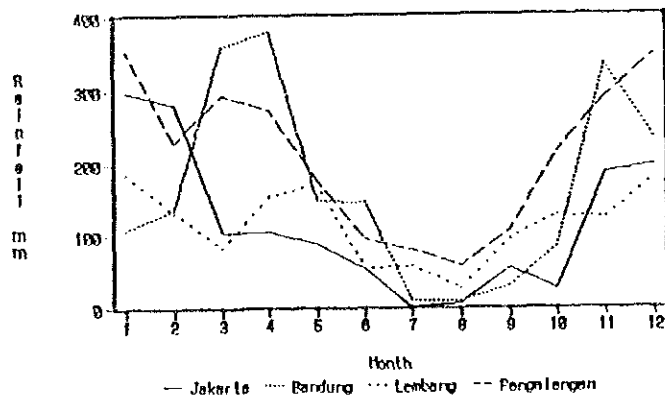
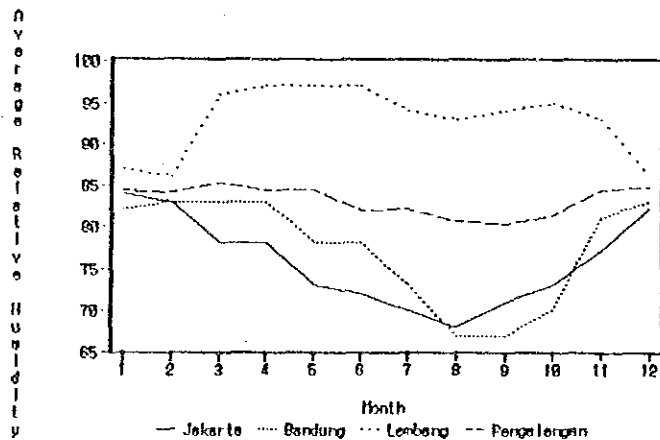
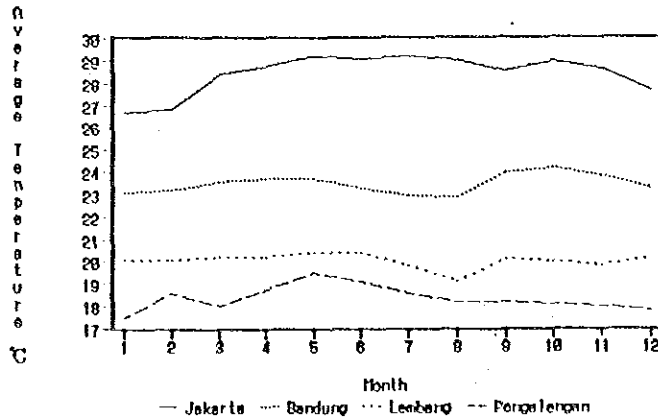


Table A - 2 Number of Population and Household by Province
1980, 1985 (000)

| Province | Population | | Household | | Average Household Size | |
|-------------------|--------------------|--------------------|-------------------|-------------------|------------------------|----------|
| | 1980 | 1985 | 1980 | 1985 | 1980 | 1985 |
| Jawa Barat (%) | 27,454 (18.6) | 30,830 (18.8) | 6,100 (20.2) | 7,564 (21.1) | 4.5 — | 4.1 — |
| INDONESIA | 147,490 (100.0) | 164,047 (100.0) | 30,263 (100.0) | 35,889 (100.0) | 4.9 — | 4.6 — |

Source: Statistik Indonesia: 1988

Table A - 3 Percentage of Employed Persons by Main Industry
(Population aged 10 and over, during 1985-1987)

| Main Industry | 1985 | | | 1987 | |
|---------------|------------|---------|---|------------|---------|
| | Population | (%) | | Population | (%) |
| Agriculture | 34,141,809 | (54.7) | < | 38,722,089 | (55.0) |
| Manufacturing | 5,795,919 | (9.3) | | 5,818,454 | (8.3) |
| Trade | 9,345,210 | (15.0) | | 10,461,189 | (14.9) |
| Service | 8,317,285 | (13.3) | < | 11,199,777 | (15.9) |
| Others | 4,797,973 | (7.7) | > | 4,198,083 | (5.9) |
| Not Stated | 58,942 | (0.1) | | 2,851 | (0.0) |
| Total | 62,457,138 | (100.0) | | 70,402,443 | (100.0) |

Source: Statistik Indonesia, 1988

Table A - 4 Population aged 10 and over by Employment Status in Agriculture (1987)

| Employment Status | Population | (%) |
|--------------------------------------|------------|---------|
| Self employed | 4,924,781 | (12.7) |
| Temporary worker by family member | 12,825,540 | (33.1) |
| Employer | 100,031 | (0.3) |
| Employee | 3,988,367 | (10.3) |
| Family worker | 16,883,370 | (43.6) |
| Total | 38,722,089 | (100.0) |

Source: Statistik Indonesia, 1988

Table A - 5 Land Utilization in Indonesia (1985-1987)

| Items | Year | | 1 9 8 5 | | 1 9 8 7 | |
|----------------------|------------|----------|---------|------------|----------|---|
| | ha | % | ha | % | ha | % |
| House Compound | 4,751,689 | (7.12) | < | 4,894,649 | (7.16) | |
| Land with Grown Wood | 20,340,031 | (30.50) | > | 19,989,764 | (29.26) | |
| Wet Land (Paddy) | 7,505,339 | (11.25) | < | 8,024,579 | (11.75) | |
| Shifting Cultivation | 11,872,555 | (17.80) | < | 12,841,484 | (18.80) | |
| Estates | 9,141,923 | (13.78) | < | 9,473,899 | (13.87) | |
| Others | 13,035,596 | (19.55) | | 13,087,360 | (19.16) | |
| Total | 66,647,133 | (100.00) | < | 68,311,735 | (100.00) | |

Source: Statistik Indonesia, 1988

Table A - 6 Harvested area and Yields rate of Food crops (1984-1988)

| Items | Year | 1984 | 1986 | 1988* |
|----------------|--------|----------------|----------------|-------|
| | | (%) | (%) | |
| Paddy | 000ha | 9,764 (61.4) | 9,989 (60.7) | 8,251 |
| | ton/ha | 3.906 | 3.977 | 4.354 |
| Cassava | 000ha | 1,350 (8.5) | 1,170 (7.1) | 809 |
| | ton/ha | 11.5 | 11.4 | 12.1 |
| Maize | 000ha | 3,086 (19.4) | 3,143 (19.1) | 2,675 |
| | ton/ha | 1.713 | 1.884 | 2.049 |
| Sweet potatoes | 000ha | 264 (1.7) | 253 (1.5) | 144 |
| | ton/ha | 8.2 | 8.3 | 9.2 |
| Soybeans | 000ha | 859 (5.4) | 1,254 (7.6) | 811 |
| | ton/ha | 0.896 | 0.978 | 1.114 |
| Peanuts | 000ha | 538 (3.4) | 601 (3.7) | 447 |
| | ton/ha | 0.995 | 1.068 | 0.990 |
| Potatoes | 000ha | 32 (0.2) | 37 (0.2) | - |
| | ton/ha | 10.304 | 12.008 | - |
| Total | 000ha | 15,893 (100.0) | 16,447 (100.0) | - |
| | ton/ha | - | - | - |

Source: Statistik Indonesia, 1988

Note: * --- January up to August

Table A - 7 Production of Food crops in Indonesia (1984-1988)

| Items | Year | 1984 | 1986 | 1988* |
|----------------|------|----------------|----------------|--------|
| | | 000ton (%) | 000ton (%) | 000ton |
| Paddy | | 38,136 (62.1) | 39,727 (62.7) | 35,921 |
| Cassava | | 14,167 (23.1) | 13,312 (21.0) | 9,811 |
| Maize | | 5,289 (8.6) | 5,920 (9.3) | 5,480 |
| Sweet potatoes | | 2,157 (3.5) | 2,091 (3.3) | 1,320 |
| Soybeans | | 769 (1.3) | 1,227 (1.9) | 903 |
| Peanuts | | 535 (0.9) | 642 (1.0) | 443 |
| Potatoes | | 326 (0.5) | 446 (0.7) | - |
| Total | | 61,379 (100.0) | 63,365 (100.0) | - |

Source: Statistik Indonesia, 1988

Note: * --- January up to August

Table A - 8 Area harvested, Production and Yield rate of Vegetables by Kind and Province (1986)

| Items | Crop Province | Beans | Shallot | Cabbage | Potatoes | Mustard Green | Onion Spring | Carrot | Radish |
|----------------------|------------------------------|----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|----------------------------|
| | | Area (ha) | Jawa Barat % INDONESIA | 22,679 (31.8) 71,281 | 12,256 (17.6) 69,579 | 11,231 (25.3) 44,342 | 12,380 (33.3) 37,165 | 7,969 (30.8) 25,876 | 9,635 (38.7) 24,882 |
| Production (ton) | Jawa Barat % INDONESIA | 45,700 (59.2) 77,139 | 76,858 (20.1) 382,117 | 271,322 (33.1) 820,357 | 188,482 (42.2) 446,295 | 88,421 (41.6) 212,435 | 73,579 (48.8) 150,675 | 63,032 (58.1) 108,408 | 15,924 (60.6) 26,267 |
| Yield rate (00kg/ha) | Jawa Barat % INDONESIA | 20.15 (186.2) 10.82 | 62.71 (114.2) 54.92 | 241.58 (130.6) 185.01 | 152.25 (126.8) 120.08 | 110.96 (135.2) 82.10 | 76.37 (126.1) 60.56 | 143.78 (123.9) 116.03 | 75.72 (94.5) 80.13 |

Source: Statistik Indonesia, 1988

Note: % --- Jawa Barat/INDONESIA %

Table A - 9 Area harvested, Production and Yield rate of Potatoes by Main Province (1986)

| Province | Items | Area harvested | | Production | | Yield rate |
|------------------|-------|----------------|---------|------------|---------|------------|
| | | ha | (%) | ton | (%) | 000kg/ha |
| Sumatera Utara | | 2,521 | (6.9) | 33,442 | (7.5) | 13.265 |
| Sumatera Barat | | 1,682 | (4.5) | 24,468 | (5.5) | 14.347 |
| Jambi | | 1,841 | (5.0) | 9,667 | (2.2) | 5.251 |
| Jawa Barat * | | 12,380 | (33.3) | 188,482 | (42.2) | 15.225 |
| Jawa Tengah | | 6,319 | (17.0) | 89,492 | (20.1) | 14.162 |
| Jawa Timur | | 5,879 | (15.8) | 60,893 | (13.6) | 10.358 |
| Sulawesi Selatan | | 1,595 | (4.3) | 11,309 | (2.5) | 7.090 |
| INDONESIA | | 37,165 | (100.0) | 446,295 | (100.0) | 12.008 |

Note: * Study Site

Source: Statistik Indonesia, 1988

Table A - 10 Livestock Poppulation by Main Kind and Province (000 head, 1984--1986)

| Kind Province | Milk cow | | Cow + Buffalo | | G o a t | |
|------------------|--------------|--------------|---------------|--------------|-------------|--------------|
| | 1984 | 1986 | 1984 | 1986 | 1984 | 1986 |
| | % | % | % | % | % | % |
| Jawa Barat | 50.0 (27.3) | 86.4 (38.9) | 598 (5.0) | 830 (6.4) | 1073 (11.7) | 1785 (16.6) |
| Jawa Tengah | 35.7 (19.5) | 45.6 (20.5) | 1354 (11.4) | 1445 (11.1) | 2280 (24.8) | 2572 (24.0) |
| Jawa Timur | 79.9 (43.6) | 67.0 (30.1) | 2940 (24.8) | 3045 (23.4) | 1962 (21.3) | 2022 (18.8) |
| Sub-total | 165.6 (90.3) | 199.0 (89.5) | 4890 (41.2) | 5320 (40.9) | 5315 (57.7) | 6379 (59.4) |
| INDONESIA | 183.3(100.0) | 222.3(100.0) | 11864(100.0) | 13010(100.0) | 9205(100.0) | 10738(100.0) |

Source: Statistik Indonesia, 1988

JICA