資料編

資料編リスト

資料-1. 調査団構成

氏　　名	業務分担	所　　属
狩野　良昭	総　　括	JICA農業開発協力部 農業技術協力課課長
佐藤　和之	種子生産計画	農林水産省農産園芸局畑作振興課
中村　　明	計画管理	JICA無償資金協力調査部 基本設計調査第一課
犬塚　昌良	技術協力	JICA農業開発協力部 農業技術協力課
柿沢　英司	業務主任/施設計画	株式会社　創造社
馬場　保也	施設計画	株式会社　創造社
松野　　正	圃場計画	株式会社　創造社
清瀬　洋平	機材計画	海外貨物検査株式会社

資料-2. 調査日程

A. 調査期間

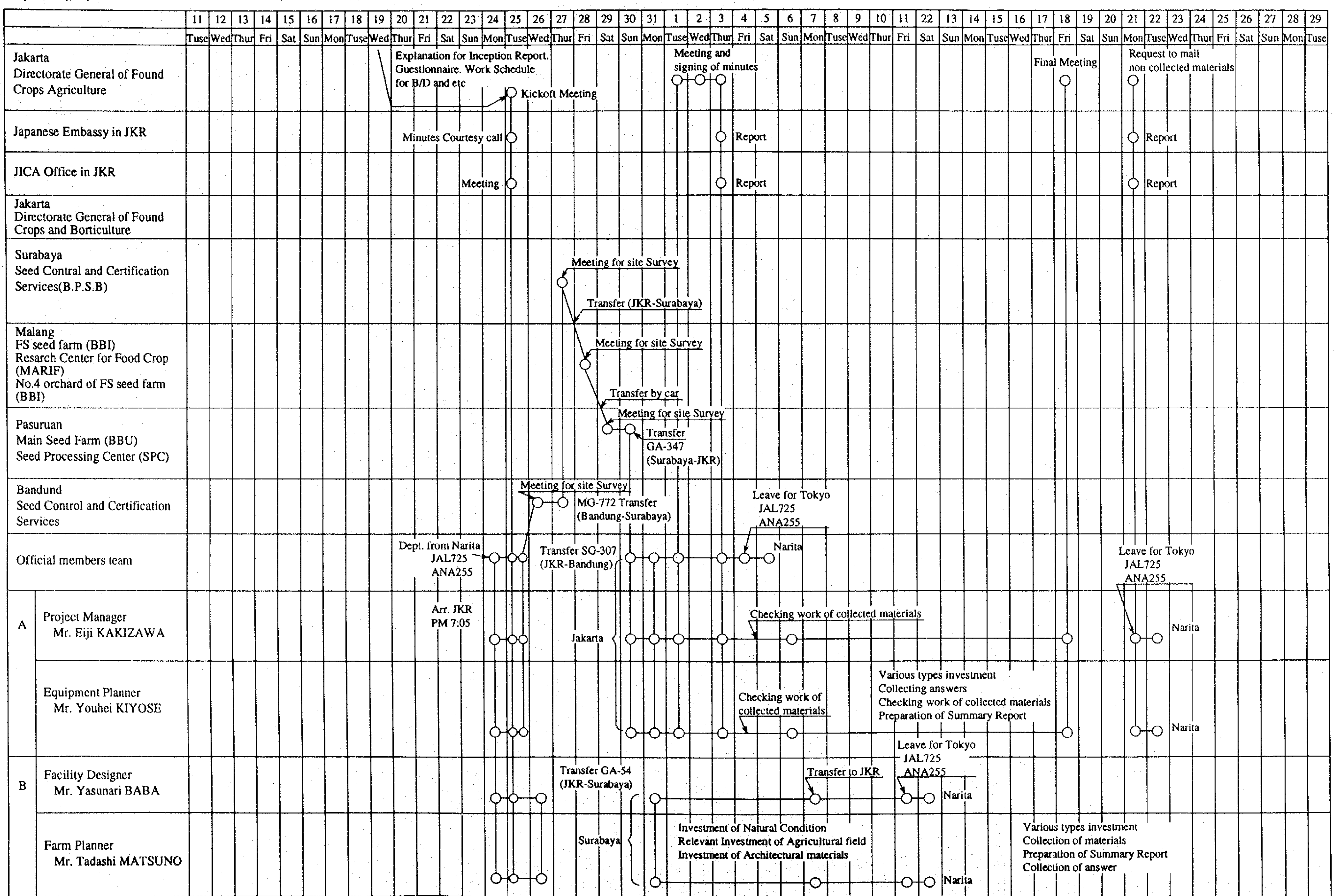
1994. 10. 24～1994. 11. 22(30日間)

B. 調査日程

次項に添付

The project for the construction of
Multiplication and Distribution of
High Quality Soybean Seed

WORK SCHEDULE OF BASIC DESIGN STUDY



Period : October 25, 1994 to November 22, 1994

資料-3. 相手国側及び在インドネシア日本国側関係者リスト

1.インドネシア国側面談者

氏　　名	所　　属	役　　職
ジャカルタ		
Mr.H.Amrin Kahar	農業省食用作物園芸総局	総局長
Mr.Soemitro Arintadisastra	農業省食用作物園芸総局計画局	局　長
Mr.Achmad Fuadi	農業省食用作物園芸総局計画局	班　長
Mr.Muhamad Sidik	農業省種苗局	局　長
Mr.Tarkin Sujitno	農業省稲・二次作物課	課　長
Mr.Muchlizar Murkan	農業省稲・二次作物課	担当班長
Miss.Sefti	農業省稲・二次作物課	課　員
Miss.Elfiah	農業省稲・二次作物課	課　員
Mr.Suharyo Husen	農業大臣官房海外協力局	局　長
Mr.Andi Novianto	国家開発企画庁(BAPPENAS)	食用作物・園芸 担当課長
バンガレンガン		
Mr.Nana Sumarna G.	西ジャワ州農業部中央種子農場	所　長
Mr.Miss.Mia	西ジャワ州農業部中央種子農場	ラボ室長
Mr.Harry Zuhary	西ジャワ州農業部中央種子農場	所　長
レンバン		
Mr.Dr,Aziz A Asandhi	レンバン園芸研究所	所　長
Miss.Asih Kartasih Karjadhi	レンバン園芸研究所	組織培養研究員
スラバヤ		
Mr.Soekardi	東ジャワ州農業部種子生産課	課　長
Mr.Irita Rahayu A.	東ジャワ州農業部種子生産課	課　員
Mr.H.Masdra M.Jasin	州開発企画部(BAPPEDA)	長　官
Miss.Sri Susila Diauhari	農業省第3種子検査所(BPSB Ⅲ)	ラボ検査室長
Miss.Hidayat M.	農業省第3種子検査所(BPSB Ⅲ)	所　員
マラン		
Mr.Masruchin	ブダリ中央種子農場(BBI Bedali)	所　長
パスルアン		
Mr.Tasrip	クジャン主要種子農場(BBU)	所　長
Mr.Misni Afandi	バクサリ主要種子農場予定地	所　長
Mr.Agos Soleh	サンヤンスリ種子処理センター	総務課
Mr.Uja Suharja	サンヤンスリ種子処理センター	スタッフ
Dr.Z.S.Mawuntu	サンヤンスリ本社	生産部長

2.日本国側面談者

氏　　名	所　　属	役　　職
ジャカルタ		
杉井　裕	農業省・個別派遣専門家	種子計画
及川　章	農業省・個別派遣専門家	主要作物増産計画
大友　哲也	農業省・個別派遣専門家	食用作物生産開発政策
バンガレンガン		
鍋田　剛	中央種子農場(BBI)	JICAプロ技協専門家
永石　忠義	中央種子農場(BBI)	JICAプロ技協専門家
レンバン		
牧野　正人	レンバン園芸研究所	JICAプロ技協専門家
マラン		
山崎　忍	ブダリ中央種子農場(BBI) 個別派遣専門家	大豆優良種子増殖配布

資料-4.

討議・議事録

MINUTES OF DISCUSSION
BASIC DESIGN STUDY
ON THE PROJECT FOR MULTIPLICATION AND DISTRIBUTION
OF HIGH QUALITY SOYBEAN SEED
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 Multiplication and Distribution of High Quality Soybean Seed (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Indonesia a study team, headed by Mr. Yoshiaki Kano, Agricultural Technical Cooperation Division, Agricultural Development Cooperation Department, JICA, October 24 to November 21, 1994.

The team held discussions with the officials concerned of the Government of Indonesia and conducted a field survey at the study area.

In the course of discussions and field survey, both parties have confirmed the main items on the attached sheets. The team will proceed to further works and prepare the Basic Design Study Report.

Jakarta, November 3, 1994

Yoshiaki Kano
Leader
Basic Design Study Team
JICA

Amrin Kahar
Director General
Food Crops and Horticulture
Ministry of Agriculture

1

ATTACHMENT

1. The Objective of the Project

The objective of the Project is to develop appropriate technology and system for multiplication and distribution of high quality soybean seeds through improvement of related facilities and provision of equipment.

2. The Project Site

The Project area is located in East Java. (See ANNEX I.)

3. Executing Agencies

Director General of Food Crops and Horticulture, Ministry of Agriculture is responsible for the administration and execution of the Project. (See ANNEX II.)

4. Items requested by the Government of Indonesia

After discussions with the Basic Design Study Team, the following items were finally requested by the Indonesian side.

Improvement of facilities and provision of equipment for the following items:
(See ANNEX III for detail of equipment.)

1) East Java Central Seed Farm (Bedali-Malang)
Seed Production
- Equipment
- Building and Facility
  office building(meeting room, seed production laboratory, etc.)
  werk lood
  seed storage house
  cool storage
  net house
  garage
  warehouse(agricultural machinery)
  warehouse(agricultural tool, fertilizer)
  warehouse(agricultural chemicals)
  warehouse(fuel)
  drying floor
- Irrigation facilities
  deep well with pump

reservoir

Training
- Equipment
- Building(lecture room, display room, auditorium, lecturer's room, dinning room, etc.)

2) Main Seed Farm (Lebaksari)
- Equipment
- Building and Facility
  office building
  seed storage house
  warehouse(agricultural machinery)
  werk lood
  drying floor

3) East Java Seed Control and Certification Services (Surabaya and Bedali-Malang)
Surabaya
- Equipment
Bedali-Malang
- Equipment
- Building and Facility
  office building
  inspection laboratory
  net house (germination & indicator plant test)

Note) "Werk lood" indicates a seed processing house.

However, the final components of the Project will be decided after further studies.

5. Japan's Grant Aid System

1) The Government of Indonesia has understood the system of Japanese Grant Aid Program explained by the Team.
2) The Government of Indonesia will take the necessary measures described in ANNEX IV for smooth implementation of the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

6. Schedule of the Study

1) The consultants will proceed to further studies in Indonesia until November 21, 1994.
2) JICA will prepare a draft final report on the Project in English and dispatch a mission to Indonesia in order to explain the contents of the report in and around February, 1995.
3) In case that the contents of the report are accepted in principal by the Government of Indonesia, JICA will compile the final report on the Project and send it to the Government of Indonesia by the end of March, 1995.

7. Summary of Discussions

1)The Project will be designed considering the linkage of the scope of the project-type technical cooperation.

2)The Project will be designed considering the availability of the budgetary allocation, personnel assignment and operation and maintenance cost.

3) Concerning the newly established main seed farm (Lebaksari), the Indonesian side will secure the legal status of the organization, personnel assignment, budget for maintenance and operation and the distribution line of the electricity.

4) The land consolidation at the main seed farm (Lebaksari) will be made by the Indonesian side when the necessity arises.

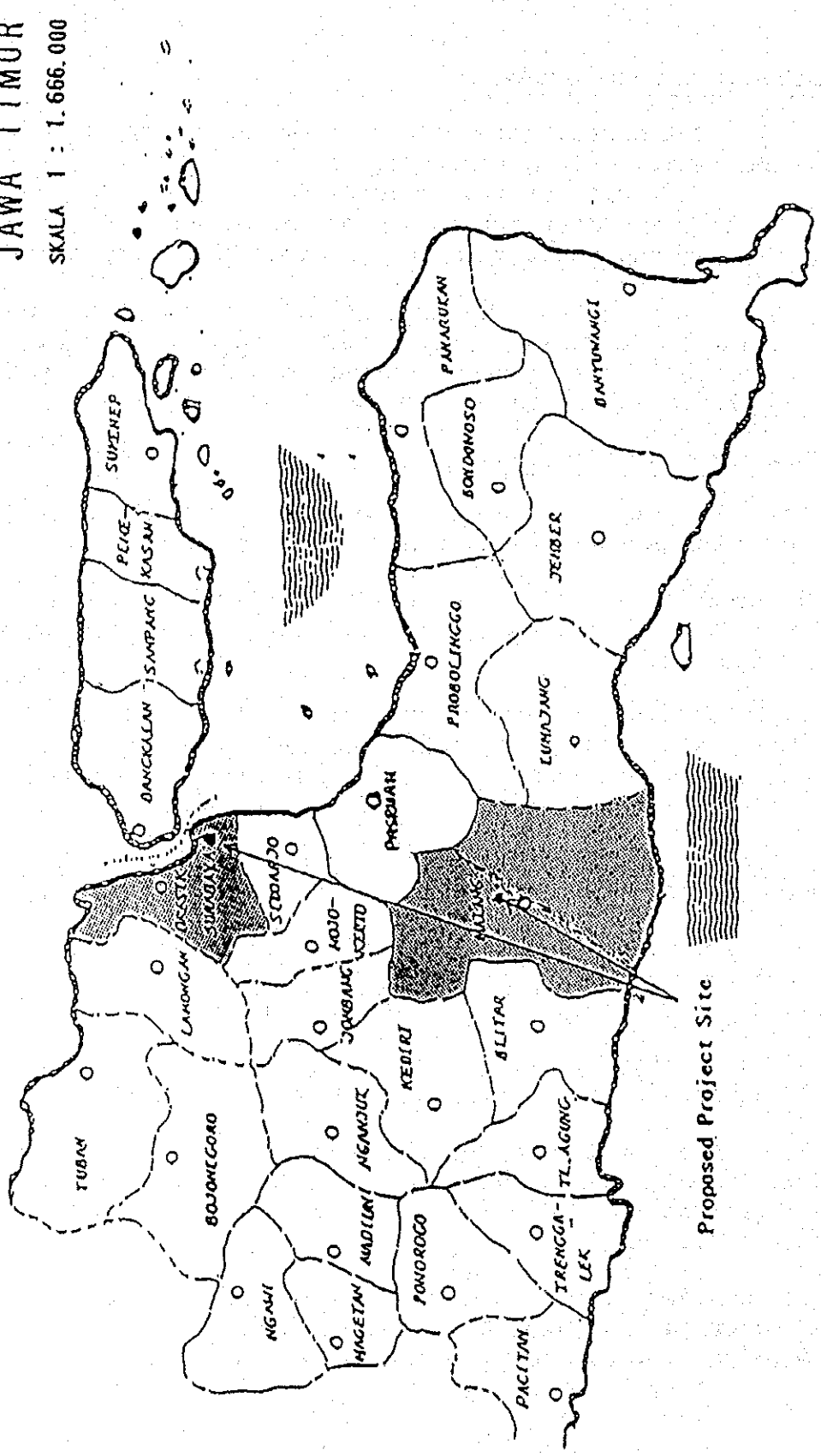
5) The cool storage with air-conditioner at central seed farm (Bedali-Malang) will be considered based on the result of the estimation of the operation and maintenance cost.

6) The irrigation facility at central seed farm (Bedali-Malang) will be designed based on the result of the boring test.

7) Concerning the seed control and certification service at Bedali-Malang, the Indonesian side will secure the legal status of the organization in order to supplement some part of function of Surabaya office.

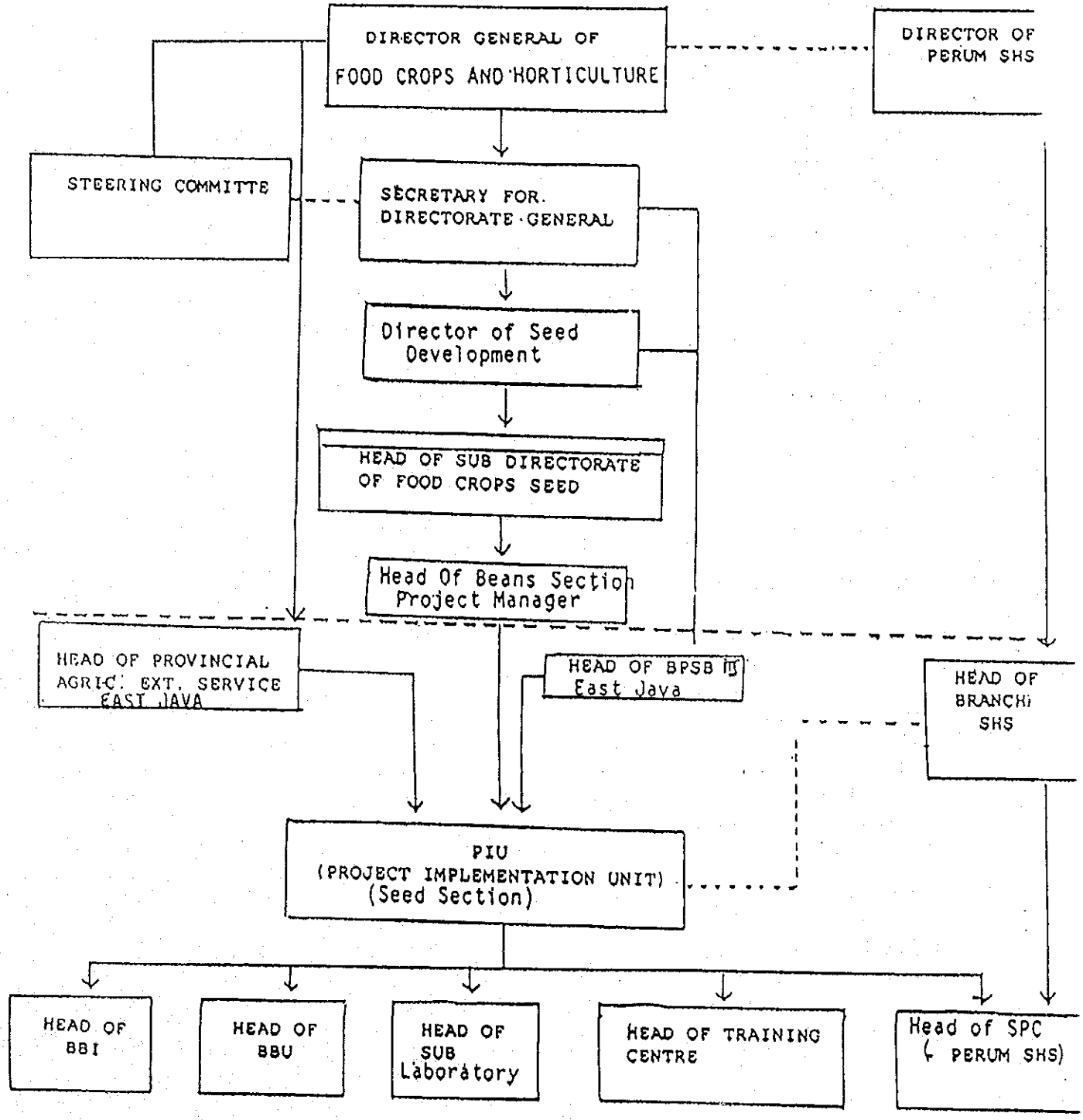
8) In order to fully utilize the existing buildings to support the project activities, it is proposed to renovate the buildings with Indonesian finance and to utilize the building as dormitory.

ANNEX I: Location Map of Project Sites



ANNEX II: Organization Chart of the Project

ORGANIZATIONAL STRUCTURE OF
MULTIPLICATION AND DISTRIBUTION OF HIGH QUALITY
SOYBEAN SEED PROJECT



Note : ------ Coordination
_____ Commando

ANNEX III Equipment List

1. East Java Central Seed Farm (Bedali-Malang)

1-1. Production Equipment

Tractor (40HP) with attachment	1
Hand Tractor (12HP)	5
Soybean Harvester	1
Power Sprayer	2
Hand Sprayer	5
Weed Cutter	3

1-2. Processing Equipment

Cleaner (Winnower)	2
Thresher	2
Gravity Separator (1 ton/day)	1
Scale	1 unit
Seed Treatment Equipment	1
Dryer (box type)	2
Plastic Bag Sealer	1
Packager	1
Bag Closer	1
Vacuum Cleaner	2

1-3. Laboratory Equipment

Sampling Device (Trier)	10
Moisture Meter	3
Germination Test Equipment	1 set
Sample Divider	2
Balance	2
Thermohygrometer	1
Refrigerator (storing BS)	1
Climatologic Instrument	1 set
pH Meter	2

1-4. Office Equipment

Photocopy Machine	1
Facsimile	1
Personal Computer	2 set
Typewriter (manual)	4

1-5. Vehicle

Jeep	1
Pick-up Truck	1
Motor Cycle	5
Air Compressor	1
Tool Kit	1 set

1-6. Training Equipment

White Board	1
Table (with Chair)	100 set
Slide Projector	1
Overhead Projector	1
Sound System	1 unit
Micro Bus (25 person)	1

2. Main Seed Farm (Lebaksari)

2-1. Production Equipment

Tractor (40HP) with attachment	2
Hand Tractor (12HP)	4
Power Sprayer	4
Hand Sprayer	6
Weed Cutter	2
Soybean Harvester	2

2-2. Processing/Laboratory Equipment

Thresher	3
Dryer (box type)	4
Cleaner (Winnower)	3
Gravity Separator	2 unit
Plastic Bag Sealer	2
Packager	1
Bag Closer	1
Scale	2 unit
Moisture Meter	2

2-3. Vehicle

Pick-up Truck	1
Motor Cycle	3

3. East Java Seed Control and Certification Services
(Surabaya)

3-1. Laboratory Equipment

Phase Contrast Microscope	2
Stereo Microscope	2
Autoclave	1
Shaker	1
Refrigerator	1
pH Meter	2
Analytical Balance	1
Laboratory Table	1
Personal Computer	1 set

3-2. Vehicle

Jeep	1
Motor Cycle	6

(Bedali-Malang)

3-3. Laboratory Equipment

Sample Divider (electrical)	1
Soil Divider	4
Balance	2
Analytical Balance	3
Oven	1
Moisture Meter	2
Test Mill	2
Magnifier with light	5
Thermohygrometer	2
Incubator	1
Autoclave	1
Refrigerator (store seed)	2
Stereo Microscope	6
Compound Microscope	6
Photo Microscope	1
Compound Microscope with monitor	1
NUV Lump	1
Centrifuge	1
Shaker	1
Water Bath	1

Colony Counter	1
Test Mill	2
pH Meter	2
Hot Plate with magnetic stirrer	2
Fume Hood (drafter)	1
Center Table	1
Sink for laboratory	1
Side Table	1 unit
Chemical Cabinet	2
Distilled Water Apparatus	1
Label Printer	1
Personal Computer	1 set

ANNEX IV: Necessary measures to be taken by the Government of Indonesia in case Japan's Grant Aid is executed

1. To secure the site for the Project

2. To clear, level and reclaim the site before commencement of construction

3. To provide the land for a temporary site office, warehouse and stock yard during implementation of the Project

4. To provide necessary facilities for the Project such as electricity, water supply, drainage and other incidental facilities

5. To bare commissions to the Japanese foreign exchange bank for the banking services based upon the Banking Arrangement

6. To exempt taxes and to take necessary measures for customs clearance of the materials and equipment brought for the Project at the port of disembarkation

7. To accord Japanese Nationals whose services may be required in connection with the supply of products and services under the verified contract such facilities as may be necessary for their entry into Indonesia and stay therein for the performance of their work

8. To maintain and use properly and effectively the facilities constructed and equipment purchased under the Grant

9. To bare all expenses other than those to be borne by the Grant, necessary for the construction of the facilities as well as for the transportation and the installation of the equipment

ANNEX V

JAPAN'S GRANT AID SYSTEM

1 Japan's Grant Aid Procedures

The Japan's Grant Aid program is extended in the following procedures.

At the 1st step, Application , a request made by the Government of the recipient country, is examined by the Government of Japan (the Ministry of Foreign Affairs), whether or not it is suitable for Grant Aid. If the request is confirmed that it has the high priority as the Project for Grant Aid, the Government of Japan instructs JICA to conduct the Study.

At the 2nd step, Study , the Basic Design Study is conducted by JICA under contracts with Japanese consulting firm(s) to carry out.

At the 3rd step, Appraisal &Approval , the Project is appraised whether or not it is suitable for Japan's Grant Aid system based on the Basic Design Study report , prepared by JICA , and is then submitted for approval by the Cabinet to the Government of Japan.

At the 4th step, Determination of Implementation the Project approved by the Cabinet is officially determined to implement by signing the Exchange of Notes (E/N) between both Governments.

In the course of implementation of the Project, JICA will take charge of expediting the execution by assisting the recipient country in terms of the procedures of tender, contract and others.

2. Contents of the Study

1) Contents of the Study

The purpose of the Study (the Basic Design Study), conducted by JICA, is to provide basic document necessary for the appraisal by the Government of Japan whether or not the project is viable for Japan's Grant Aid system. The contents of the Study are as follows:

a) to confirm the background of the request, objectives, effects of the Project and maintenance ability of the recipient country necessary for the implementation,

b) to evaluate the appropriateness of the Project from the technological, social and economical points of views,

c) to confirm the basic concept of the plan mutually agreed upon through discussion between both sides,

d) to prepare a basic design of the Project,

e) to estimate the rough cost of the Project.

The contents of the original request are not necessarily approved as the contents of the Grant Aid as it is. The Basic Design of the Project is confirmed considering the Japan's Grant Aid

scheme.

In the implementation of the Project, the Government of Japan requests the Government of the recipient country to take necessary measures in order to promote it's self-reliance. Those undertakings must be guaranteed even if the recipient implementing entity does not have jurisdiction. Therefore the implementation of the Project is confirmed by all relevant organizations in the recipient country in the Minutes of Discussions.

2) Selection of Consultants

For the smooth implementation of the study, JICA selects a consultant among those consultants who registered to JICA by evaluating proposals submitted by those consultants. The selected consultant carries out the Basic Design Study and prepares a report based upon the terms ofreference made by JICA.

At the stage of implementation after the Exchange of Notes, for concluding the contract regarding the Detailed Design and Construction Supervision of the Project between a consultant and the recipient country, JICA recommends the same consultant which participated in the Basic Design Study to the recipient country in order to maintain the technical consistency between the Basic Design Study and the Detailed Design as well as to avoid undue delay caused by the selection of a new consultant.

3. Japan's Grant Aid Scheme

1) What is Grant Aid?

The Grant Aid Project provides the recipient country with non-reimbursable funds needed to procure facilities, equipment and services (labor or transportation, etc.) for economic and social development in the country under the following principles in accordance with the relevant laws and regulations of Japan. The Grant Aid is not extended in a form of donation in kind to the recipient country.

2) Exchange of Notes (E/N)

The Japan's Grant Aid is extended in accordance with the Exchange of Notes (E/N) between both Governments, in which the Objectives of the Project, Period, Conditions and Amount of the Grant etc. are confirmed.

3) "The period of the Grant Aid" is within the Japanese fiscal year in which the Cabinet approved the Project. Within the fiscal year, all procedure such as Exchange of Notes, concluding contracts by the recipient country with the consultant and contractor and the final payment to them must be completed.

However in case of the delay of delivery, installation or construction due to events such as weather, the period of the Grant Aid can be further extended for one fiscal year at most by mutual agreement between both Governments.

4) .The Grant Aid is used properly and exclusively for the purchase of the products, in principle, of Japan or the recipient country and the services of the Japanese or the recipient country's

nationals. The term "Japanese nationals" means Japanese physical persons or Japanese juridical persons controlled by Japanese physical persons.

When both Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of the third country (other than Japan or the recipient country).

However in terms of the principle of the Grant Aid, the Prime contractors, that is the Consultant, Contractor and Procurement firm, necessary for the implementation of the Grant Aid are limited to "Japanese nationals".

5) Necessity of the "Verification"

The Government of recipient country or its designated authority will conclude the contracts in Japanese yen with Japanese nationals, Those contracts shall be verified by the Government of Japan. The "Verification" is necessary because the source of the Grant Aid is the taxes of Japanese nationals.

6) Undertakings required to the Government of recipient country

In the implementation of the Grant Aid, the recipient country is required to undertake the necessary measures.

7) "Proper Use"

The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign the necessary staff for operation and maintenance of them as well as to bear all the expenses other than those to be borne by the Grant Aid.

8) "Re-export"

The products purchased under the Grant Aid shall not be re-exported from the recipient country.

9) Banking Arrangement (B/A)

a) The Government of the recipient country or its designated authority shall open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by Government of the recipient country or its designated authority under the contracts verified.

b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay issued by the Government of the recipient country or its designated authority.

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

(CONSULTATION ON DRAFT REPORT)

In October 1994, the Japan International Cooperation Agency (JICA) dispatched a Basic Design Study team on the Project for Multiplication and Distribution of High Quality Soybean Seed (hereinafter referred to as "the Project") to the Republic of Indonesia, and through discussions, field survey, and technical examination of the results in Japan, has prepared the draft final report of the study.

In order to explain and to consult the Indonesian side on the components of the draft report, JICA sent to Indonesia a study team headed by Mr. Hideo Miyamoto, Deputy Director, First Basic Design Study Division, Grant Aid Study & Design Department, JICA from February 22 to March 1, 1995.

As a result of discussions, both parties have confirmed the main items described on the attached sheets.

Jakarta, March 1, 1995

Hideo Miyamoto
Leader
Basic Design Study Team
JICA

Amrin Kahar
Director General
Food Crops and Horticulture
Ministry of Agriculture

ATTACHMENT

1. Components of Draft Report

The Government of Indonesia has agreed and accepted in principle the components of the draft final report proposed by the team.

2. Japan's Grant Aid System

1) The Government of Indonesia has understood the system of Japanese Grant Aid Programme explained by the Team (Annex II).

2) The Government of Indonesia will take the necessary measures described in Annex I for smooth implementation of the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

3. Further Schedule

JICA will make the final report in accordance with the confirmed items and send it to the Government of Indonesia in and around April, 1995.

4. Summary of Discussions

1) Indonesian side strongly requested again to construct roofing structure for the drying floor to protect harvested soybean from rain damage.

2) The study team acknowledged the importance of constructing roofing structure and will convey the request to the Government of Japan.

Annex I : Necessary measures to be taken by the Government of Indonesia in case Japan's Grant Aid is exetended

1. To secure the site for the Project.

2. To clear, level and reclaim the site before commencement of construction.

3. To provide the land for a temporary site office, warehouse and stock yard during implementation of the project

4. To provide necessary facilities for the Project such as electricity, water supply, drainage, and other incidental facilities.

5. To bear commissions to the Japanese foreign exchange bank for the banking services based upon the Banking Arrangement.

6. To exempt taxes and to take necessary measures for customs clearance of the materials and equipment brought for the project at the port of disembarkation.

7. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the verified contract.

8. To accord Japanese Nationals whose services may be required in connection with the supply of products and the services under the verified contract such facilities as may be necessary for their entry into Indonesia and stay therein for the performance of their work.

9. To maintain and use properly and effectively the facilities constructed and equipment purchased under the Grant.

10. To bear all expenses other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and the installation of the equipment.

Annex II

Japan's Grant Aid Scheme

1. Grant Aid Procedures

1) Japan's Grant Aid Program is executed through the following procedures.

Application	(Request made by a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)

2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Japanese Government. The contents of the Study are as follows:

a) Confirmation of the background, objectives, and benefits of the requested project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.
b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.
d) Preparation of a basic design of the Project
e) Estimation of costs of the Project

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA selects (a) firms(s) based on proposals submitted by interested firms. The firm(s) selected carry (ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.

The consulting firm(s) used for the Study is(are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency and also to avoid any undue delay in implementation should the selection process be repeated.

3. Japan's Grant Aid Scheme

1) What is Grant Aid ?

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

3) "The period of the Grant Aid" means the one fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed.

However in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However the prime contractors, namely, consulting, contracting and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

5) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

6) Undertakings required of the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as the following:

(1) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.
(2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.
(3) To secure buildings prior to the procurement in case the installation of the equipment.
(4) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.
(5) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.
(6) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

7) "Proper Use"

The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

8) "Re-export"

The products purchased under the Grant Aid should not be re-exported from the recipient country.

9) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an authorization to pay issued by the Government of the recipient country or its designated authority.

資料-5. 当該国の社会・経済事情

一般指標				
国名	インドネシア共和国	面積	1,919.0千㎢	
政体	共和制	人口	197,232千人	(1993年)
元首	President Gen. SOEHARTO	首都	ジャカルタ	
独立年月日	1949年12月27日	主要都市名	スラバヤ、メダン、バンドン	
人種(部族)構成	ジャヴァニーズ(45%)	経済活動可能人口	67,000千人	(1985年)
	サンダニーズ(14%)	義務教育年数	4	(1992年)
言語・公用語	インドネシア語	初等教育就学率	98.0%	(1990年)
宗教	回教87%	識字率	77.0%	(1990年)
国連加盟	1950年09月	人口密度	100.0人／㎢	(1992年)
世銀・IMF加盟	1954年04月	人口増加率	1.61	(1993年)
		平均寿命	平均60.26 男58.3 女62.3	
		5歳児未満死亡率	69.6/1000	(1993年)
		カロリー供給率	2,610.0cal／日／人	(1990年)

経済指標				
通貨単位	ルピア	貿易量		(1992年)
為替レートIUS$	1US$=2,160.0 (1994年)	輸出	33,861.0百万ドル	
会計年度	4月 ~ 3月	輸入	27,311.0百万ドル	
国家予算	— (1991年度)	輸入カバー率	3.4%	(1992年)
歳入	21,748.00百万	主要輸出品目	石油、天然ガス、木材	
歳出	21,186.00百万	主要輸入品	機械、石油製品、工業製品	
国際収支	2,069.00百万ドル (1992年)	日本への輸出	12,244.0百万ドル	(1992年)
ODA受取額	2,080.00百万ドル (1992年)	日本からの輸出	5,576.0百万ドル	(1992年)
国内総生産(GDP)	125,143.00百万ドル (1992年)			
一人当たりGDP	610.0ドル (1991年)	外貨準備総額	11,088.0百万ドル	(1994年)
GDPの産業別構成	産業 19.0%	対外債務残高	84,385.0百万ドル	(1992年)
	鉱工業 42.0%	対外債務返済率	32.1%	(1992年)
	サービス業 39.0%	インフレ率	6.2%	(1992年)
産業別雇用	農業 56.0%			
	鉱工業 14.0%			
	サービス業 30.0%	国家開発計画	第5次開発5カ年計画 89/90~93/94	
経済成長率	6.3% (1992年)			

気象(1899年~1979年平均)	場所:Jakaruta (標高8m)												
月	1	2	3	4	5	6	7	8	9	10	11	12	平均/計
最高気温	29.0	29.0	30.0	31.0	31.0	31.0	31.0	31.0	31.0	31.0	30.0	29.0	30.3 ℃
最低気温	23.0	23.0	23.0	24.0	24.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.1 ℃
平均気温	26.0	26.0	26.5	27.5	27.5	27.0	27.0	27.0	27.0	27.0	26.0	26.0	26.7 ℃
降水量	300.0	300.0	211.0	147.0	114.0	97.0	64.0	43.0	66.0	112.0	142.0	203.0	1799.0 mm
雨期/乾期	雨										雨		

我が国におけるODAの実績				(資金協力は約束額ベース、単位：億円)
年度 / 項目	1989	1990	1991	1992
無償資金協力	2,043.46	2,382.47	2,515.30	2,699.97
技術協力	2,146.74	1,989.63	2,050.70	2,194.95
有償資金協力	5,161.42	5,676.39	7,364.47	5,852.05
総額	9,351.62	10,048.49	11,930.47	10,746.97

当該国に対する我が国ODAの実績				(支出純額、単位：億円)
年度 / 項目	1989	1990	1991	1992
無償資金協力	101.82	108.68	133.07	141.69
技術協力	44.66	58.38	79.73	85.73
有償資金協力	998.78	700.72	852.71	1,129.26
総額	1,145.26	867.78	1,065.51	1,356.68

ODA諸国の経済協力実績						(支出純額、単位：百万ドル)
	贈与 (1)		有償資金協力	政府開発援助 (ODA)	その他政府資金及び民間資金(4)	経済協力総額
		技術協力	(2)	(1)+(2)=(3)		(3)+(4)
二国間援助	640.90	385.10	1,330.50	2,356.50	422.80	2,779.30
(主要供与国)						
1.日本	227.50	141.40	1,129.30	1,498.20	0.00	1,498.20
2.オーストラリア	77.00	36.00	154.00	267.00	107.50	374.50
3.アメリカ	71.00	47.00	72.00	46.00	90.00	136.00
4.ドイツ	64.30	50.30	52.00	166.60	153.20	319.80
多国間援助	88.10	51.80	32.30	172.20	782.00	954.20
(主要援助機関)						
	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00
その他	195.20	127.80	184.80	507.80	181.70	689.50
合計	924.20	564.70	1,547.60	3,036.50	1,386.50	4,423.00

援助受入窓口機関	
技術	関係各省庁機関→対外経済関係省
無償	関係各省庁機関→対外経済関係省
協力隊	関係各省庁機関→対外経済関係省

資料-6. 実行国家歳入・歳出

項　目	第5次	第6次	第7次	第8次	第9次	第10次
総GDP成長率(%)	6.4	6.2	6.6	7.1	7.8	8.7
・農業GDP成長率(%)	2.1	3.4	3.5	3.5	3.5	3.5
・工業GDP成長率(%)	10.0	9.2	9.4	9.4	9.1	8.7
・他産業GDP成長率(%)	6.9	6.0	6.3	6.8	8.0	9.5
人口(百万人)	189.1	204.4	219.4	233.6	246.5	258.2
人口増加率(年率%)	1.7	1.6	1.4	1.3	1.1	0.9
一人当たりGDP(百万ﾙﾋﾟ7、1989年固定価格)	1.18	1.47	1.89	2.50	3.45	4.99
一人当たりGDP(US$、1989年固定価格)	685	776	984	1,303	1,797	2,603
労働可能人口(百万人)	145.5	161.3	176.0	190.4	204.2	217.1
労働参加率(%)	55.9	57.7	57.9	59.5	61.1	62.1
失業率(%)	3.0	2.5	2.5	2.3	2.2	2.0
労働人口(百万人)	78.8	90.7	103.2	115.9	128.1	139.9
労働人口の分野別割合(%)						
・農　業	48.2	44.0	39.9	35.9	32.0	28.5
・工　業	12.6	14.3	15.9	17.4	19.0	20.7
・建設業	4.6	5.5	6.4	7.1	7.8	8.6
・その他	34.6	36.2	37.8	39.6	41.2	42.2

出展:BAPPENAS

資料-7. 第6次開発5ヵ年計画における経済開発目標値

項　目	第5次計画	第6次計画				
	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99
人口(百万人)	189.1	192.2	195.3	198.3	201.4	204.4
人口増加率(%)	1.7	1.6	1.6	1.6	1.5	1.5
経済成長率(%)	6.0	6.0	6.0	6.2	6.4	6.6
・農業(%)	3.0	3.3	3.4	3.5	3.5	3.5
・鉱業(%)	3.9	3.3	3.4	3.5	3.5	3.5
・製造業(%)	9.1	9.3	9.1	8.9	9.2	9.4
内石油/ガス部門を除く	10.0	10.0	10.1	10.3	10.5	10.7
・建設業(%)	7.5	8.0	8.0	8.3	8.5	8.7
・貿易・小売(%)	6.8	6.8	6.8	7.0	7.0	7.0
・運輸・通信(%)	7.0	7.4	7.4	7.8	8.0	8.6
・その他(%)	4.8	5.0	5.3	5.5	5.6	5.8
GDP(百万US$、1989年固定価格)	129	135	140	146	152	159
一人あたりGDP(US$、1989年固定価格)	685	700	716	734	754	776
分野別GDP割合(1989年固定価格、%)						
・農業(%)	20.1	19.6	19.1	18.6	18.1	17.6
・製造業(%)	21.2	21.9	22.5	23.1	23.7	24.4
・その他(%)	58.7	58.5	58.4	58.3	58.2	58.0

出展:BAPPENAS

資料-8. 第6次開発5ヵ年計画期間における労働条件予測値

項　目	第5次計画	第6次計画				
	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99
労働可能人口(百万人)	145.5	148.9	152.3	155.4	158.4	161.3
潜在就労率(%)	55.9	56.1	56.4	56.7	57.2	57.7
失業率(%)	3.0	3.0	2.9	2.6	2.6	2.5
就労人口(百万人)	78.8	81.1	83.5	85.9	88.3	90.7
就労人口の各分野別割合						
・農業(百万人)	38.0	38.4	38.7	39.2	39.6	39.9
(%)	48.2	47.3	46.4	45.6	44.8	44.0
・工業(百万人)	9.9	10.5	11.1	11.7	12.3	13.0
(%)	12.6	12.9	13.3	13.6	13.9	14.3
・建設業(百万人)	3.6	3.9	4.2	4.4	4.7	5.0
(%)	4.6	4.8	5.0	5.1	5.3	5.5
・その他(百万人)	27.3	28.4	29.5	30.7	31.7	32.8
(%)	34.6	35.0	35.3	35.7	35.9	36.2

出展:BAPPENAS

資料-9. 第5次開発5ヵ年計画に於ける東ジャワ州の開発計画

Policy	Basically to continue and improve the previous program during REPELITA Ⅳ.
Strategy	To conduct the Integrated Development Program
Problems and Constraint	·The population growth rate is still high. ·Low skill manpower surplus.
Development Target	·Regional GRDP improvement ·The public life welfare improvement
GRDP Growth Rate	Target REPELITA Ⅴ: 5.6%/year* Actual REPELITA Ⅳ: 5.4%/year* (as of 1983-1986)
Priority Sector	·Industrial sector ·Agricultural sector
Land Development Target/Area Harvested (Ha) ##	Mean annual growth rate (1988-1993): 0.2%
Irrigation Dev. Target/Yield rate (Qt/Ha)	Mean annual growth rate (1988-1993): 1.7%
Crop production (rice)/annual growth rate	REPELITA Ⅴ: 1.9 (REPELITA Ⅳ: 1.5)
Unemployment rate	1.6% or 219,000 (as of 1985) REPELITA Ⅴ: 1.5% or 16,100,000 persons (labor force age)

資料-10. 将来の開発計画

東ジャワ

昨今の経済動向は農業部門のシェアーが減少し、他部門のシェアーが延びている。しかしながら農業生産量をみると国全体に対する寄与率は延びている。州政府としてこの国家の穀倉としての役割を将来も維持する。西暦2000年には国の目標値一人当り$2,000の収入を越える$2,500の収入を得る様にしたい。州開発計画案を下表に示した。

No.	Zone Name	Prospective Sector	Key City/Town
1	Gerbang-Kertasusilo area	Industry Agriculture Tourism	Surabaya Pasuruan
2	Tuban Area	Industry Agriculture	Tuban
3	Kediri, Malang, Tulung Agung and Blitar area	Industry Agriculture	Malang Tulung Agung
4	Proboliggo-Lumajang zone area	Agriculture Industry	Probolinggo
5	South coast at eastern area	Agriculture	Situbondo Jember Banyuwangi

資料-11. 農業関連雇用機会目標

1994-1998年度

項　目	93年度実績見込み	第6次5ヵ年計画						
		94年度(千人)	95年度(千人)	96年度(千人)	97年度(千人)	98年度(千人)	年平均伸び率(%)	生産性向上率(年率%)
1.農産物	26,598	26,726	26,820	26,864	26,908	26,929	0.2	2.3
2.園芸	5,329	5,470	5,634	5,819	6,013	6,201	3.1	1.1
3.養殖	2,145	2,187	2,235	2,289	2,339	2,381	2.1	3.1
4.畜産	2,406	2,487	2,573	2,679	2,780	2,862	3.5	2.9
合　計	36,478	36,870	37,262	37,651	38,040	38,373	1.0	2.4

資料-12. PROPOSED BUDGETS FOR DEVELOPMENT IN AGRICULTURE

Fiscal year 1994/95 and sixth Five-year Plan (1994/95 1998/99)

(in million RP)

Sector/Sub-sector/Program	1994/95	1994/95-1988/99
AGRICULTURE AND FORESTRY	928,420.0	5,965,150.0
Agriculture sub-sector	928,420.0	5,965,150.0
· Integrated Smallholder Farm Development Program	465,786.0	2,929,100.0
· Agro-business Development Program	191,160.0	1,254,800.0
· Development of Agricultural Resources and Facilities	271,474.0	1,781,250.0

資料-13. 大豆収穫面積及び生産量の推移

年次	収穫面積 (1,000ha)	単収 (kg/ha)	生産量 (1,000t)	参考	
				需要量(1,000t)	輸入量(1,000t)
1983	640	848	580		
1984	859	896	769		
1985	336	970	870		
1986	1,245	988	1,227		
1987	1,101	1,055	1,161		
1988		1,079			
1989	1,198	1,098	1,315	1,765	563
1990	1,334	1,115	1,487	1,923	535
1991	1,368	1,137	1,555	2,212	631
1992	1,506	1,119	1,685	2,413	562
1993	(1,691)	(1,190)	(2,017)		

注)1993年度は第5次5ヵ年計画の目標値

資料-14. 州別大豆栽培面積

番号	州名	1990年		1991年	
		面積(ha)	(%)	面積(ha)	(%)
1	東ジャワ	390,418	29	393,508	29
2	中部ジャワ	199,595	15	166,496	12
3	西ジャワ	82,508	6	98,494	7
4	ランポン	121,287	9	89,128	7
5	西ヌサ・テンガラ	106,080	8	112,983	8
6	ジョグジャカルタ	55,138	4	52,169	4
7	南スラウェシ	39,576	3	64,409	5
8	アチュ	170,269	13	183,260	13
9	北スラウェシ	28,968	2	36,317	3
10	北スマトラ	29,264	2	37,135	3
11	バリ	25,693	2	22,818	2
12	西スマトラ	18,071	1	16,310	1
	計	1,266,867	95	1,273,027	93
	その他の州	67,233	5	95,172	7
	インドネシア計	1,344,100	100	1,368,199	100

資料-15. 種子生産量及び種子需要量

年	種子需要量(t)	種子生産量(t)	割　合(%)
1984	10,428	218	2.1
1985	12,324	2,382	19.3
1986	14,052	614	4.4
1987	16,068	461	2.3
1988	16,896	757	4.5
1989	66,100	357	0.5
1990	66,800	573	0.8
1991	67,400	11,409	16.9
1992	67,313	13,719	20.4

資料-16. 東ジャワ州における普及種子生産実績

年　次	採種圃面積(ha)	生産量(t)	単　収(kg/ha)
1988/89	845	341	404
1989/90	2,140	437	204
1990/91	5,025	3,667	728
1991/92	1,990	1,291	649
1992/93	346	131	379

資料-17. 東ジャワ州における大豆の期別播種・収穫面積・生産量(1992年)

期別	月	播種面積		収穫面積		作期別面積・収穫量		
		面積(ha)	比率(%)	面積(ha)	比率(%)	収穫面積(ha)	単収(t/ha)	収穫量(t)
雨	1	25,362	6	1,692	-			
	2	29,862	7	14,056	4	62,339	1,226	78,547
期	3	61,321	15	27,300	7			
移	4	97,287	24	19,291	5			
行	5	23,890	6	36,579	9	207,444	1,202	252,252
期	6	16,350	4	86,371	22			
乾	7	83,404	21	76,976	20			
	8	21,991	5	13,521	3			
期	9	4,450	1	35,356	9	123,725	1,223	150,202
移	10	274	-	77,511	20			
行	11	29,617	7	9,041	2			
期	12	8,141	2	1,814	-			
計		401,949	100	393,508	100	293,508	1,222	481,001

資料-18. AREA PLANTING AND SEED REQUIREMENT OF SOYBEAN ON "REPELITA VI"
(The 6th National Development Plan)

No.	Year	Area Planting(ha)	Seed requirement(ton)
1.	1994	1,520,000	60,800
2.	1995	1,550,000	62,000
3.	1996	1,581,000	63,240
4.	1997	1,613,000	64,520
5.	1998	1,645,000	65,800

資料-19. East Java Provincial Food Crops Agricultural Service

Soybean Intensification Program in East Java

No.	Year	Harvesting Area(Ha)	Productivity (Ton/Ha)	Production (Ton)
1.	1990	390,418	1.20	471,495
2.	1991	393,508	1.22	481,001
3.	1992	448,250	1.21	543,010
4.	1993	389,903	1.19	466,102

資料-20. Central Seed Farm (BBI) for Secondary Crops Bedali, Malang

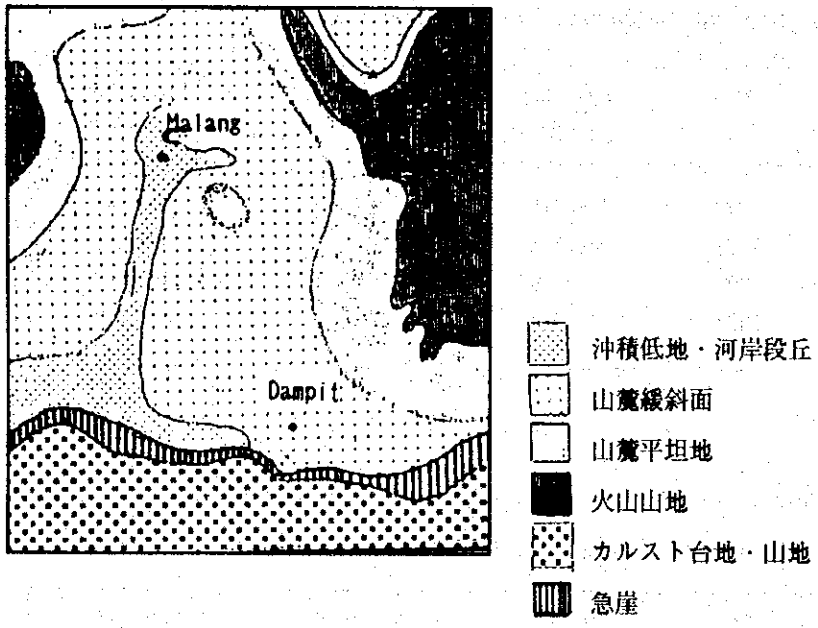
(Seed Production for Foundation Seed/FS)

No.	Year	Target (Ha)	Realization Harvest Area(Ha)	Production (kg)
1.	1990	20	20	6,150
2.	1991	25	25	9,158
3.	1992	20	20	8,069
4.	1993	16	16	7,776

資料-21. 東ジャワ州農業局大豆増産計画予算(1995/1996)

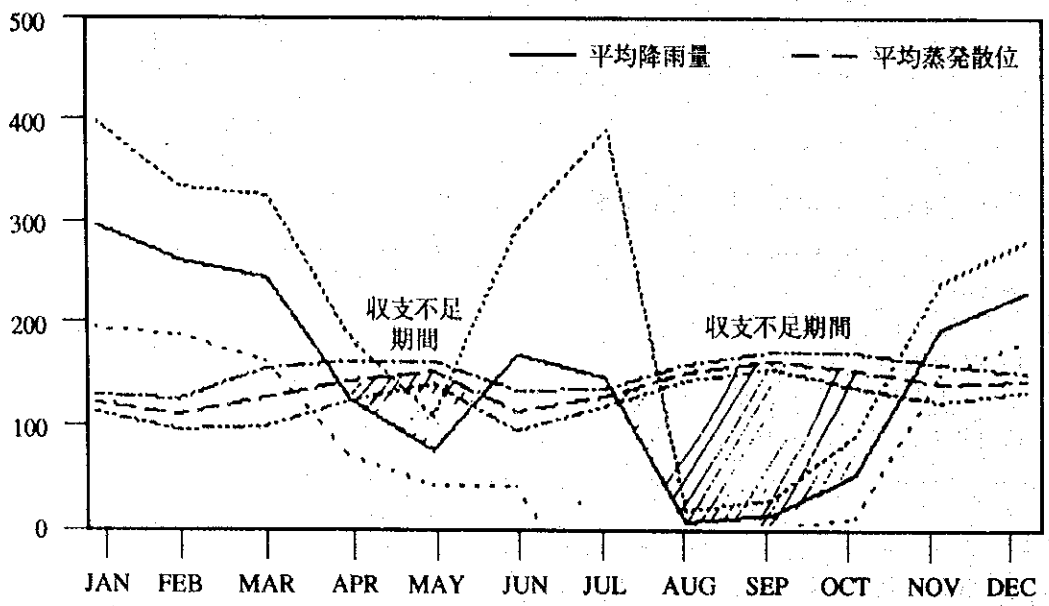
	Rp
1. 食糧園芸作物増産に対する指導費	
a) 大豆増産計画費(8県分)	343,480,000
b) 大豆集約栽培費(20県分)	15,000,000
c) 稲、畑作物収穫後処理指導費	13,460,000
d) 収穫方法及び技術指導費	36,500,000
	408,450,000
2. 食用園芸作物に対する生産資材等の補助費	
a) 大豆栽培農家に対する保管指導費	9,700,000
b) 大豆種子増産費(80ha)	117,860,000
	127,560,000
総合計 408,450,000+127,560,000	=536,010,000

資料-22. 地形分類図



（資料：図２、春山１９９２等より分類作成）

資料-23. 年間の水収支状況



（三野　徹　水収支ならびに灌漑から見たブカランガン、インドネシアの基本的土地利用の生産性向上と協同組合の展開に関する総合的研究、ＰＰ５１～５３、文部省科研室報告書）

資料-24. 土壌分析結果

試料	位置番号	水分含量 %	抽出 1.25Oven pH		dry sample at 105 C 石有機物粉含量			オルセン法	置換性塩基					置換容量	塩基飽和度
			H2O	HC1	C %	N %	CN	P2O5 ppm	Ca	Mg	K	Na	全塩基合量		
									me/100g						
Malang															
1-1	I-1	31.60	6.5	5.6	1.53	0.11	14	82.9	14.69	6.95	0.66	0.37	22.67	25.87	87
1-2	I-2	11.20	6.8	5.6	1.20	0.10	12	67.7	15.63	7.04	0.49	0.32	23.48	27.59	85
1-3	I-3	21.60	6.9	5.4	1.00	0.08	13	38.2	16.86	6.95	0.49	0.53	24.83	31.86	78
1-4	I-4	27.20	7.0	5.5	0.92	0.07	13	28.9	13.44	5.56	0.84	0.73	20.57	23.69	79
Malang															
2-1	II-1	7.90	6.0	5.0	1.30	0.10	13	53.5	11.56	3.06	0.76	0.09	15.47	20.13	77
2-2	II-2	12.50	6.3	4.9	1.32	0.09	15	34.9	11.56	3.06	0.49	0.20	15.31	24.82	62
2-3	II-3	28.50	6.5	5.0	1.12	0.08	14	39.3	11.56	3.89	0.66	0.44	16.55	25.10	50
2-4	II-4	29.70	6.5	4.9	0.80	0.06	13	39.3	12.50	3.81	0.99	0.61	17.91	32.39	55

Profile Description

Profile No.1	1, Nov, 1994
Location	Malang BBI Field
Elevation	round 491mm son level
Topography	plate
Parent Material	Old Basic Volcanic ash deposits.
Land Use	Crops cultivation (paddy)

Soil Profile Description

A PL Horizon 0～11cm	Black Brown 5YR, Clayey silt
	Garamlar stracture, wealely sticky plow Horizon
	Hardness 4kg/cm^2.
B Horizon 11～27cm	Black Brown 5YR 3/2, Clayey silt
	Blooky stsueture, very compact Handness 80kg/cm^2.
	Rootzon 16cm little.
C_1 Horizon 27～50cm	Pank Roddish Brown 5YR 3/4, Clayey silt
	Developed suangular structure weakly soft, sticky,
	weakly developed Fe, M, Mottle, Hardness 18kg/cm^2.
C_2 Horizon＞50mm	Dark Roddish Brown 5YR 2/4, Clayey silt
	Developed subangular structure. Meding soft,
	sticky, hardness 8kg/cm^2.

C_1, C_2 Horizon Draimage good

Profile No.2	1, Nov, 1994
Location	Malang BBI Field
Elevation	round 491mm son level
Topography	plate
Parent Material	Old Basic Volcanic Ash Peposits.
Land Use	Creps Cultivation (paddy)

Soil Profile Description

A PL Horizon 0～11cm	Oreng 5YR 6/6 Clayey silt, gramlar structure weakly sticky plow Horizon Hardness 32kg/㎠.
B Horizon 10～30cm	Dark Roddish Brown 5YR 3/3, Very compact, Hardness 120kg/㎠. Root zone 12 ～14cm.
C_1 Horizon 10～52cm	Very Pank Roddish Brown 5YR 2/3, Developed Subangular Stracture, medium soft, sticky weakly developed Fe, M, Mottle, Hardness 20kg/㎠.
C_2 Horizon ＞50mm	Very Dark Roddish Brown 5YR 2/2. Developed subangular structure. Medium soft, sticky, hardness 24kg/㎠.

C_1, C_2 Horizon good Draimage

資料-25. 各室の面積

室　　名	室の面積	備　　考
【BBI】		
・所長室	28.1㎡	・1名　応接セット
・事務室	56.3㎡	・11名
・会議室	56.3㎡	・30名
・会議室(専門家用)	56.3㎡	・ﾘｰﾀﾞｰ1名、 業務調整員1名、計2名 応接セット
・小会議室(短期専門家用)	28.1㎡	・2名
・研究室(1)	56.3㎡	・16名　実験台を配置
・研究室(2)	56.3㎡	・15名　実験台を配置
・乾燥場	—	
・ネットハウス	32㎡	
・常温種子貯蔵庫	64㎡	・10トン(60kg×180袋)
・乾燥調整室	450㎡	・各種機材、機器の配置
・農業機械室	60㎡	・各種機材、機器の配置
・農業機器室	60㎡	・各種機材、機器の配置
・車庫	90㎡	・各種機材、機器の配置
【BPSB】		
・所長室	28.1㎡	・1名　応接セット
・事務室	56.3㎡	・11名
・会議室	56.3㎡	・30名
・研究室(1)	56.3㎡	・8名　実験台を配置
・研究室(2)	56.3㎡	・8名　実験台を配置
・研究室(3)	56.3㎡	・7名　実験台を配置
・ネットハウス	32㎡	
【研修センター】		
・オーディトリウム	225㎡	・80名収容(大人数のセミナー、70－80名の視察に対応) ・研修教室との兼用及び展示コーナーとしての利用も考慮し、可動間仕切りを設ける。
・研修教室(講義室)	56.3㎡	・20名
・講師控室	28.1㎡	・2～3名
・食堂(研修生控室)	112.6㎡	・40名

室　　名	室の面積	備　　考
【BBU】		
・所長室	28.1㎡	・1名　応接セット
・事務室	56.3㎡	・10名
・会議室	56.3㎡	・30名
・研究室(1)	56.3㎡	・10名
・研究室(2)	56.3㎡	・10名
・小会議室(短期専門家用)	28.1㎡	・2名
・乾燥調整室	720㎡	・各種機材、機器の配置
・常温種子乾燥室	100㎡	・40トン(60×680袋)
・農業機械・機器庫	108㎡	・各種機材、機器の配置
・車庫	72㎡	・各種機材、機器の配置

資料-26. 全体規模

棟	本施設	備　　考
【BBI】		
1.本館	850m²	・試験室×2
2.ネットハウス	64m²	
3.常温種子貯蔵庫	64m²	
4.乾燥調整室	450m²	
5.乾燥場	―	・屋根付
6.農業機械・機器・車庫棟	270m²	
7.燃料庫	12m²	
8.電気・発電機室	60m²	
9.ポンプ室	20m²	
10.受電室	16m²	
小　　計	1,806m²	
【BPSB Ⅲ マラン】		
1.BPSB本館	760m²	・試験室×3
2.ネットハウス	64m²	・2棟
小　　計	824m²	
【研修センター】		
・研修棟	840m²	・オーディトリアム ・講義室 ・食堂
小　　計	840m²	
【BBU】		
1.本館	850m²	・試験室×1
2.常温種子貯蔵庫	100m²	・1棟
3.乾燥調整室	720m²	
4.農業機械・機器・車庫棟	240m²	
5.乾燥場	―	・屋根付
6.燃料庫	12m²	
7.電気・発電機室	50m²	
8.ポンプ室	13m²	
9.受電室	16m²	
小　　計	2,001m²	
合　　計	5,471m²	

資料-27. 主要作物の1ha当たり生産費(1991年)

(単位:千RP、kg)

	米		メイズ		キャッサバ		大豆	
	全国	ジャワ	全国	ジャワ	全国	ジャワ	全国	ジャワ
種子	19.3	21.1	13.1	14.9	15.2	18.6	25.5	47.7
(は種量)	38.7	37.4	37.2	44.9	-		45.6	43.3
農薬	13.1	14.9	1.6	1.3	0.2	0.0	5.9	18.6
化学肥料	70.6	86.3	38.1	49.4	29.4	45.0	29.6	39.0
堆肥	1.5	2.5	4.4	6.2	6.6	9.2	5.2	3.8
労賃	193.8	267.2	67.6	91.2	107.8	148.7	106.3	146.8
その他	82.6	93.2	34.3	32.6	53.1	53.4	52.5	50.0
費用計	380.9	485.3	159.1	195.6	212.1	275.0	224.9	305.9
販売所得	1,427.2	1,451.4	528.0	565.9	1,113.9	1,203.9	1,119.1	1,094.1
(収量)	4,382	5,092	2,175	2,375	12,200	12,269	1,138	1,226
所得	866.3	966.1	368.9	370.4	901.7	929.0	894.1	788.2

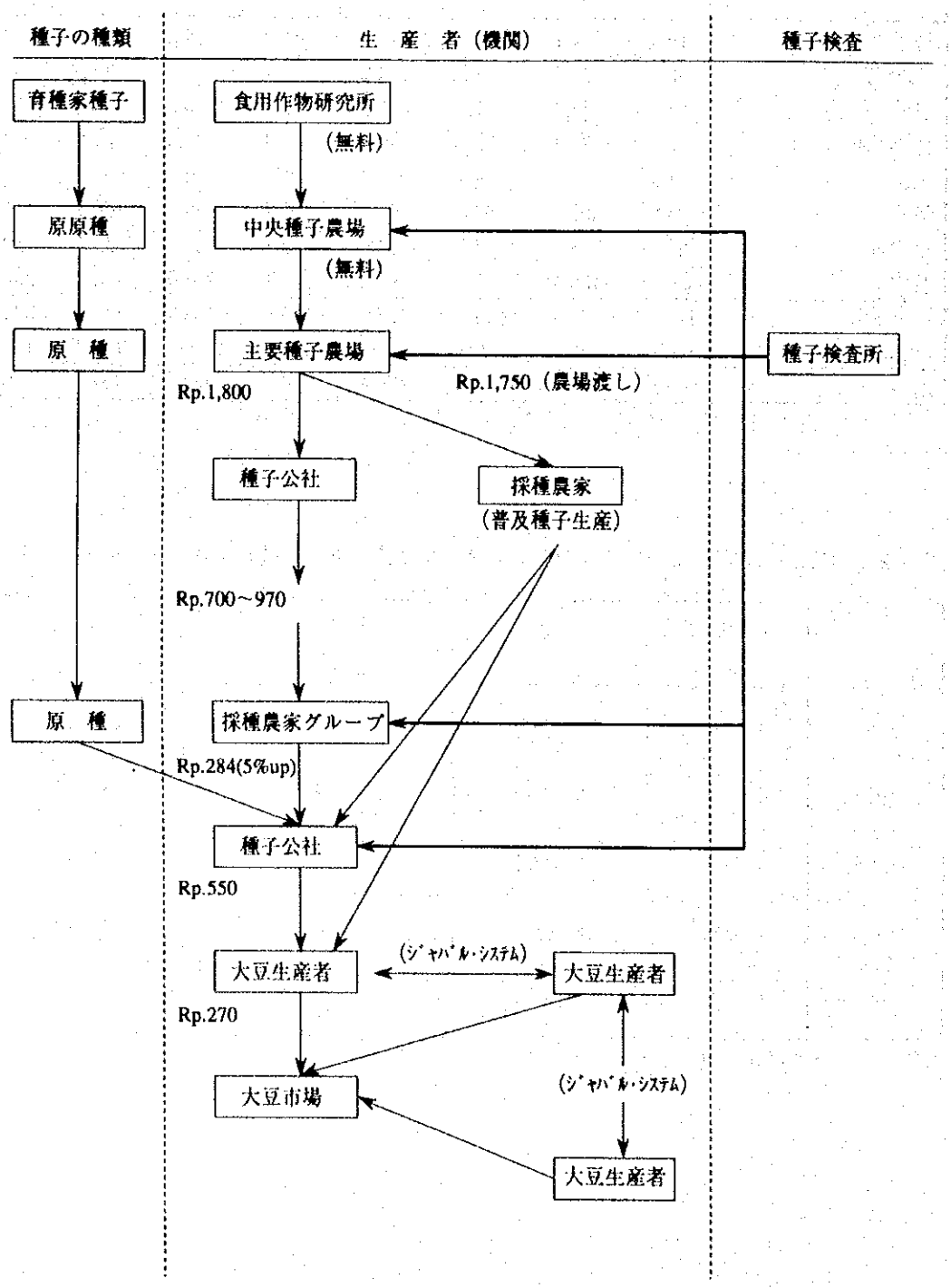
(インドネシア統計年報、所得については販売所得－費用計にて算出)

資料-28. REPELITA VI における大豆栽培面積、生産量、単位面積当たり収量、農業人口吸収

	栽培面積 ha	生産量 t	単位面積当たり収量 t/ha	農業人口吸収 人
1994	445,000	569,000	1.28	3,641,303
1995	461,000	603,000	1.31	3,699,856
1996	480,000	640,000	1.33	3,713,743
1997	489,000	678,000	1.36	3,771,895
1998	517,000	718,000	1.39	3,832,925

(インドネシア統計年報)

資料-29. 東ジャワ州大豆種子流通システム



資料-30. 1990～92年度における、品種別の大豆作付面積

番号	品種名	1990年		1991年		1992年	
		面積(ha)	(%)	面積(ha)	(%)	面積(ha)	(%)
1	Wills	184,765	65.18	136,254	53.26	349,801	55.12
2	Lokal	44,619	15.74	42,769	16.72	74,197	11.68
3	Orba	7,726	2.72	28,336	11.08	38,534	6.07
4	No.29	11,040	3.89	113	0.04	8,788	1.39
5	Lokon	7,198	2.54	12,337	4.82	43,735	6.89
6	Petek	9,255	3.26	4,565	1.78	29,917	4.72
7	Galunggung	1,195	0.42	6,126	2.40	13,050	2.06
8	Kerinci	4,734	1.67	2,957	1.16	2,479	0.39
9	Dempo	50	0.01	—	—	4,483	0.71
10	Davros	139	0.05	1,068	0.42	16,607	2.62
11	Guntur	35	0.01	1,130	0.44	1,541	0.24
12	Raung	2,080	0.73	97	0.04	736	0.12
13	Lmj gbewok	5,489	1.94	12,731	4.97	19,140	3.02
14	G. Slawi	1,208	0.43	—	—	740	0.12
15	Sinyonya	—	—	—	—	1,430	0.23
16	Sumbing	—	—	—	—	5,858	0.92
17	Lain-lain	3,097	1.39	4,619	2.87	19,460	3.70
	計	283,485	100.00	255,824	100.00	634,526	100.00

出展： インドネシア農業省：食品作物総局の資料より作成 Deakripsi. Varietas Palawija (1985～1987)

資料-31. 大豆奨励品種の可能収量

番号	品種名	発表年次	単位収量(t/ha)
1	Wilis	1985	1,600
2	Orba	1974	1,500
3	Lokon	1982	1,750
4	Guntur	1982	1,850
5	Muria	1987	1,600
6	Kerinci	1985	1,700
7	Galunggung	1981	1,500
8	Malabar	1992	1,670
9	Tidar	1987	1,400

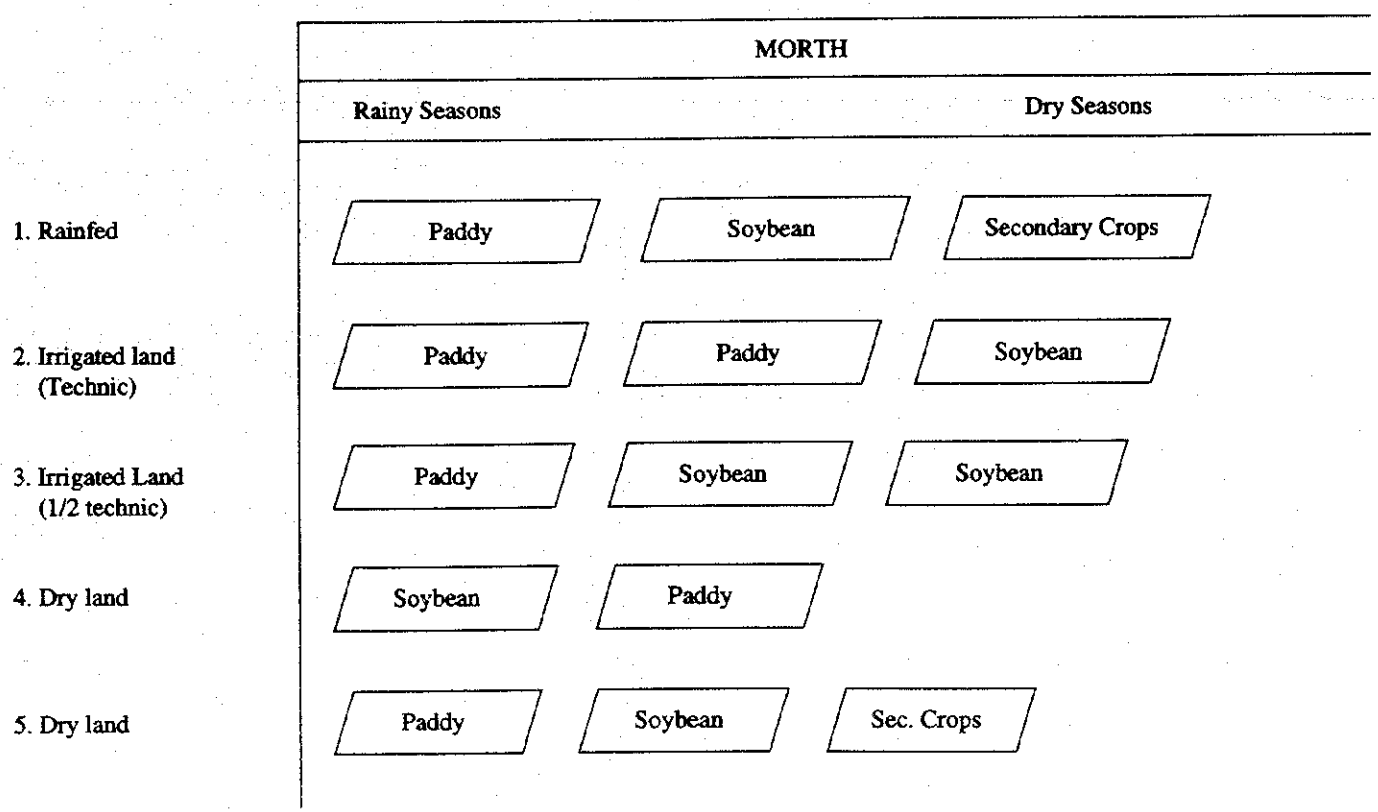
出展： インドネシア農業省：食品作物総局の資料より作成 Deakripsi. Varietas Palawija (1985～1987)

資料-32. 大豆優良品種の品種特性表

品種名	優良品種の主要特性										
	系譜・由来	粒色	茎長(cm)	生育日数(日)	耐倒伏性	1000粒重(g)	蛋白含有率(%)	脂肪含有率(%)	収量(kg-ha)	耐病虫害	年次
1.Taichiung	IRRIから導入	黄		75～80		105	34.3		1,300～1,500		
2.Wakashima(shakti)	台湾から導入、Bogorで選抜	黄		60～85		120～160	41.6	16.1	1,000～1,500	さび病に強	
3.Clark 63	IRRIから導入	黄		80～85		145			1,200～1,500		
4.Ekonomik Garden I	IRRIから導入	黄		90～95		120	36.12		1,300～1,600		
5.No.452(sumbing)	No.27と69との交配	黄		75～80		80			1,000～1,500	さび病に弱	
6.T.K.S	IRRIから導入	黄		80～85		178	34		1,000～1,50		1918
7.Otau	在来種から系統選抜	黄	±65	90～100		70～80	36.7	14.6	1,000～1,200		1918
8.No.27	Otauの選抜	黄	±80	90～110		70～80	40	11.7	1,000～1,200		1919
9.No.29	No.17選抜	黄緑		90～110		70	43	9.3	1,000～1,500		1924
10.No.317(Ringgit)	交配No.27×69	黄		85～90		80	39	10.4	1,000～1,500	さび病に弱	1935
11.Merapi	在来種の系統選抜	緑	±60	±85		80	41	7.5	1,000	さび病に強	1938
12.Lavros	在来種より選抜	黄	50～55	80～85		120	37.13	19.7	1,000～1,500	さび病にやや弱	1965
13.Orba	系統選抜Davros/Shakti	黄	85～90	50～60		120	38.5	18.6	1,500	〃	1974
14.Caluggung	交配Davros/TK.5	黄	55～65	80～90	強	125	44.4	19.9	1,500	〃	1981
15.Lokon	交配GM26/SM14	淡黄	72～76	68～75	やや弱	106		15.8	1,750	〃	1982
16.Guntur	GM26/SM14	黄	73～77	73～79	〃	105	31.3	18.4	1,850	〃	1982
17.Wilis	No.1682×143-1-10	黄	40～50	±88	強	100	37		1,650	強	1983
18.Dimpo	アメリカ系統導入	黄	45～60	90～95	強	125	41	18	1,500	強	1984
19.Korinci	Davros×No.1682交配	黄	45～60	±87	強	93	42.0	14	1,600	強	1985
20.Raung	DavrosとShaktiの交配	黄	50～60	±85	強	130	39	14	1,600	さび病にやや弱	1986
21.Muria	Orbaから系統選抜	黄	40～50	83～88	強	125	35～36	21.5	1,800	強	1987
22.Merbabu	OrbaとSinyonyaの交配	黄	50～80	±85	強	100	45	20	1,600	強	1986

出展: インドネシア農業省:食用作物総局の資料より作成 Deakripsi. Varietas Palawija (1985～1987)

資料-33. CROPPING PATERN IN EAST JAVA



Note : Extenton Seed produced by the Seed Growers atleast 1 (one) season before planting time.

資料-34. インドネシア及び日本の食料消費量

(年間1人当たり、kg)

品　目	インドネシア	日本
米	116.4	69.9
小麦	0.7	31.7
トウモロコシ	5.2	-
キャッサバ	12.8	-
サツマイモ	5.6	-
ジャガイモ、タロイモ	2.8	-
ジャガイモ、サツマイモ	0.0	20.6
鮮魚	12.5	-
缶詰魚	2.6	-
魚介類	-	35.9
牛肉	0.8	6.2
豚肉	0.3	11.5
鶏肉	2.3	10.4
卵	3.3	17.3
牛乳及び乳製品	0.5	84.8
野菜	10.2	105.2
豆類	1.5	9.6
果実	2.6	34.9
食用油	8.1	14
砂糖	9.5	20.9

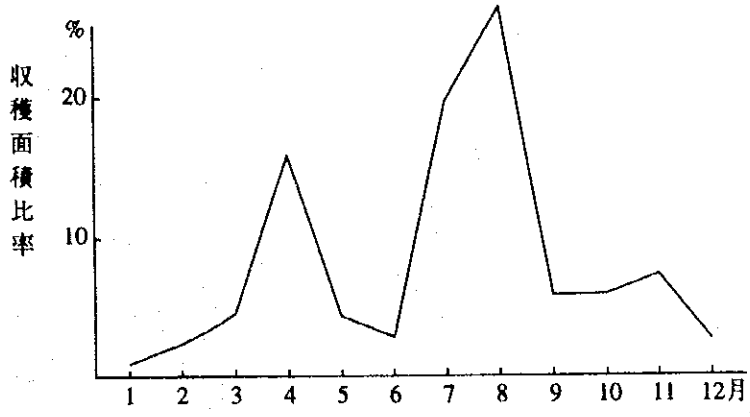
資料: インドネシアはConsumption of Calorie and Protein of Indonesia and Province 1993, 日本は農林水産省「食糧需給表」(1991年) を加工したもの

資料-35. 一人一日当たり食品群別摂取栄養量

食品群	エネルギー		蛋白質	
	インドネシア	日本	インドネシア	日本
穀類	1,210.4	923.2	23.26	19.6
いも類	93.7	49.6	0.81	1.1
魚類	40.14	142.1	7.01	19
肉類	20.91	173.7	1.4	13.6
卵及び乳製品	27.79	158.1	1.67	9.6
野菜	37.75	66.1	2.63	4.7
豆類	51.07	99.2	4.97	7
果実類	37.83	65	0.43	0.7
その他	349.91	384.3	2.87	4.9
外食	195.25	-	4.73	-
合　計	2,064.8	2,061.3	50.03	80.2

資料: インドネシアはConsumption of Calorie and Protein of Indonesia and Province 1993, 日本は厚生省「公民営農の現状」(1991年) を加工したもの

資料-36.　東部ジャワにおける大豆の月別収穫面積の比率



(熱研センター「インドネシアの豆類に関する生産および研究事情調査報告書」から引用、作成)