

**BASIC DESIGN STUDY REPORT  
ON  
THE PROJECT FOR THE ESTABLISHMENT  
OF TRAINING FACILITY FOR INTEGRATED  
IMPROVEMENT OF POST HARVEST  
TECHNOLOGY AND QUALITY OF RICE  
IN  
THE REPUBLIC OF INDONESIA**

**SEPTEMBER, 1988**

**JAPAN INTERNATIONAL COOPERATION AGENCY**

**GRF**

**88-97**



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## PREFACE

In response to the request of the Government of the Republic of Indonesia, the Government of Japan has decided to conduct a basic design study on the Project for Establishment of Technical Training Facility for Integrated Improvement of Post Harvest Technology and Quality of Rice and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Indonesia a study team headed by Mr. Tomonari Ohsumi, Deputy Director, Okayama Local Food Agency, Food Agency, Ministry of Agriculture, Forestry and Fisheries, from May 24 to June 12, 1988.

The team had discussions on the Project with the officials concerned of the Government Indonesia and conducted a field survey in the Project area. After the team returned to Japan, further studies were made, a draft report was prepared and a mission to explain and discuss it was dispatched to Indonesia from August 9 to August 18, 1988. As a result, the present report has been prepared.

I hope that this report will serve for the development of the Project and contribute to the promotion of friendly relations between our two countries.

I wish to express my deep appreciation to the officials concerned of the Government of the Republic of Indonesia for their close cooperation extended to the team.

September, 1988

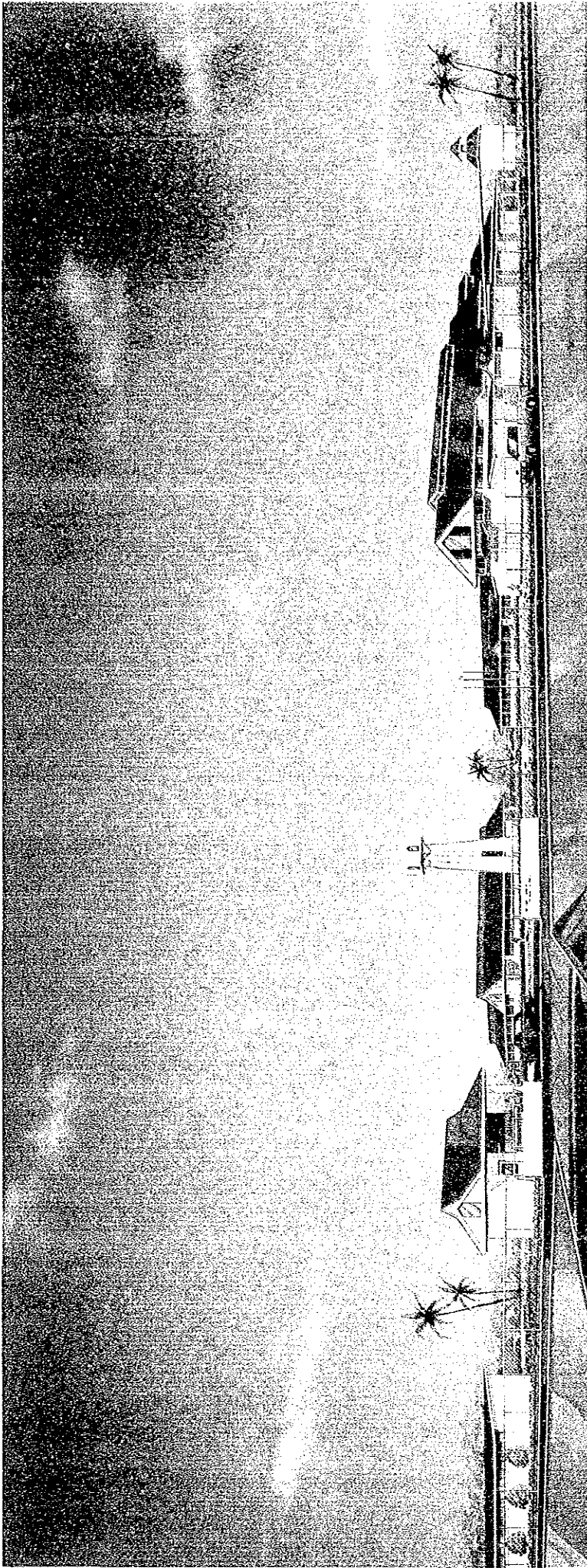
A handwritten signature in dark ink, reading 'Kensuke Yanagiya' in a cursive style.

Kensuke Yanagiya

President

Japan International Cooperation Agency



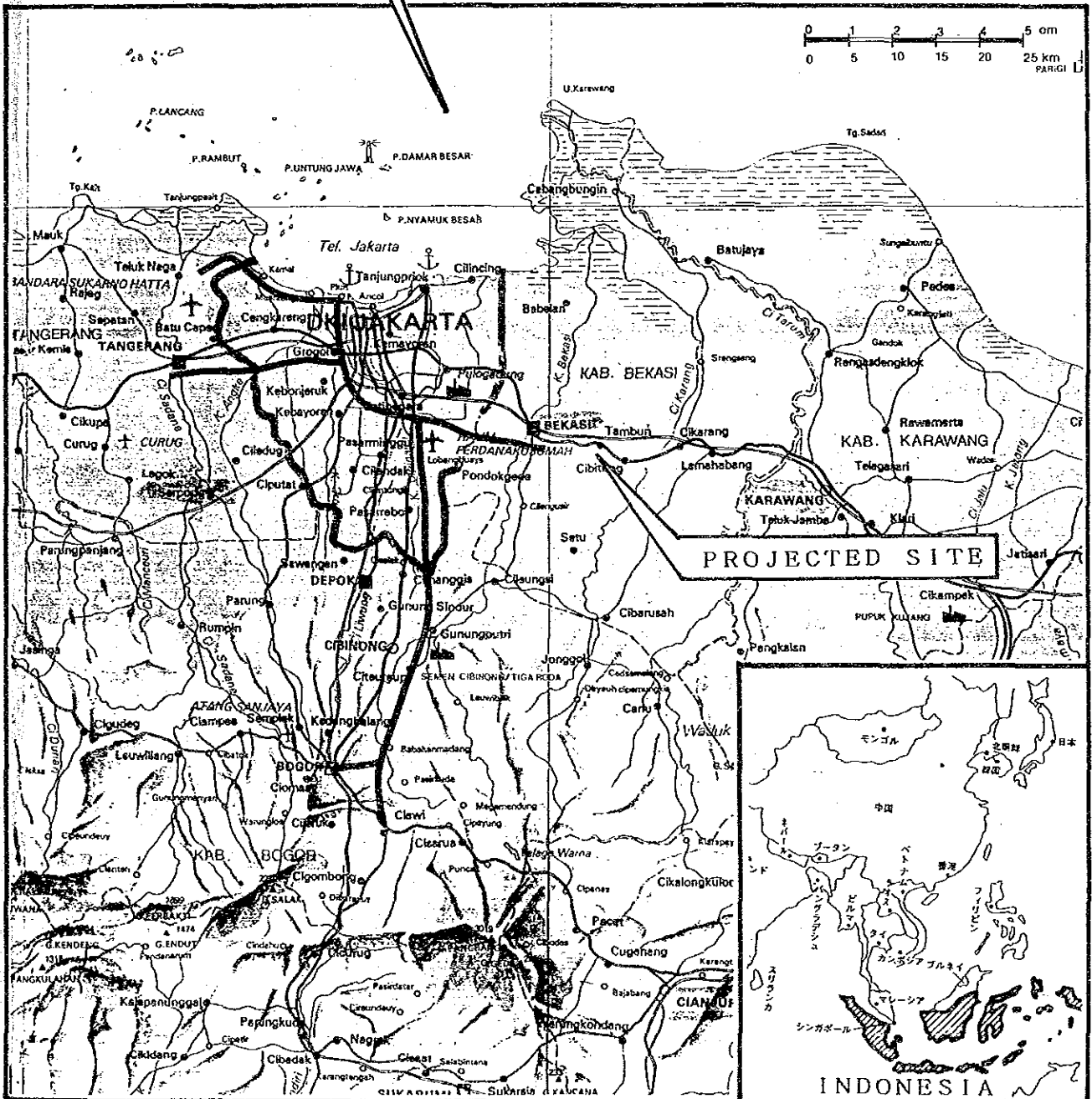
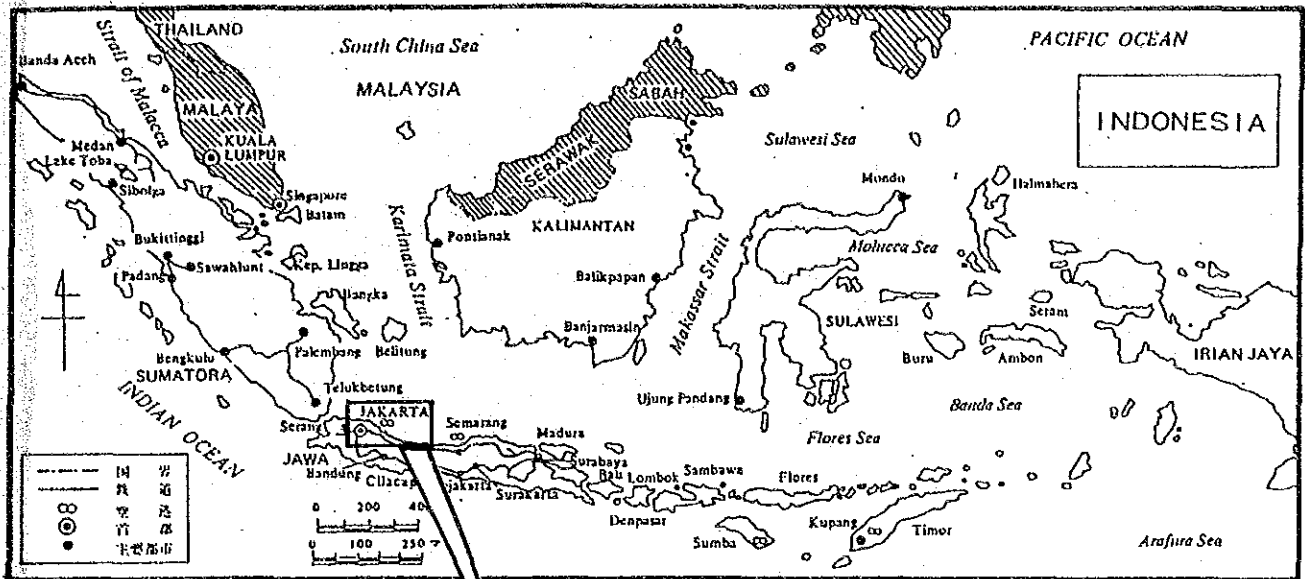


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IMPROVEMENT  
OF POST HARVEST TECHNOLOGY AND QUALITY OF RICE

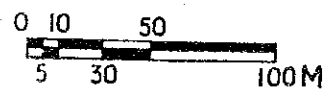
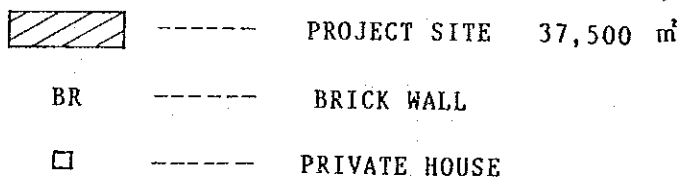
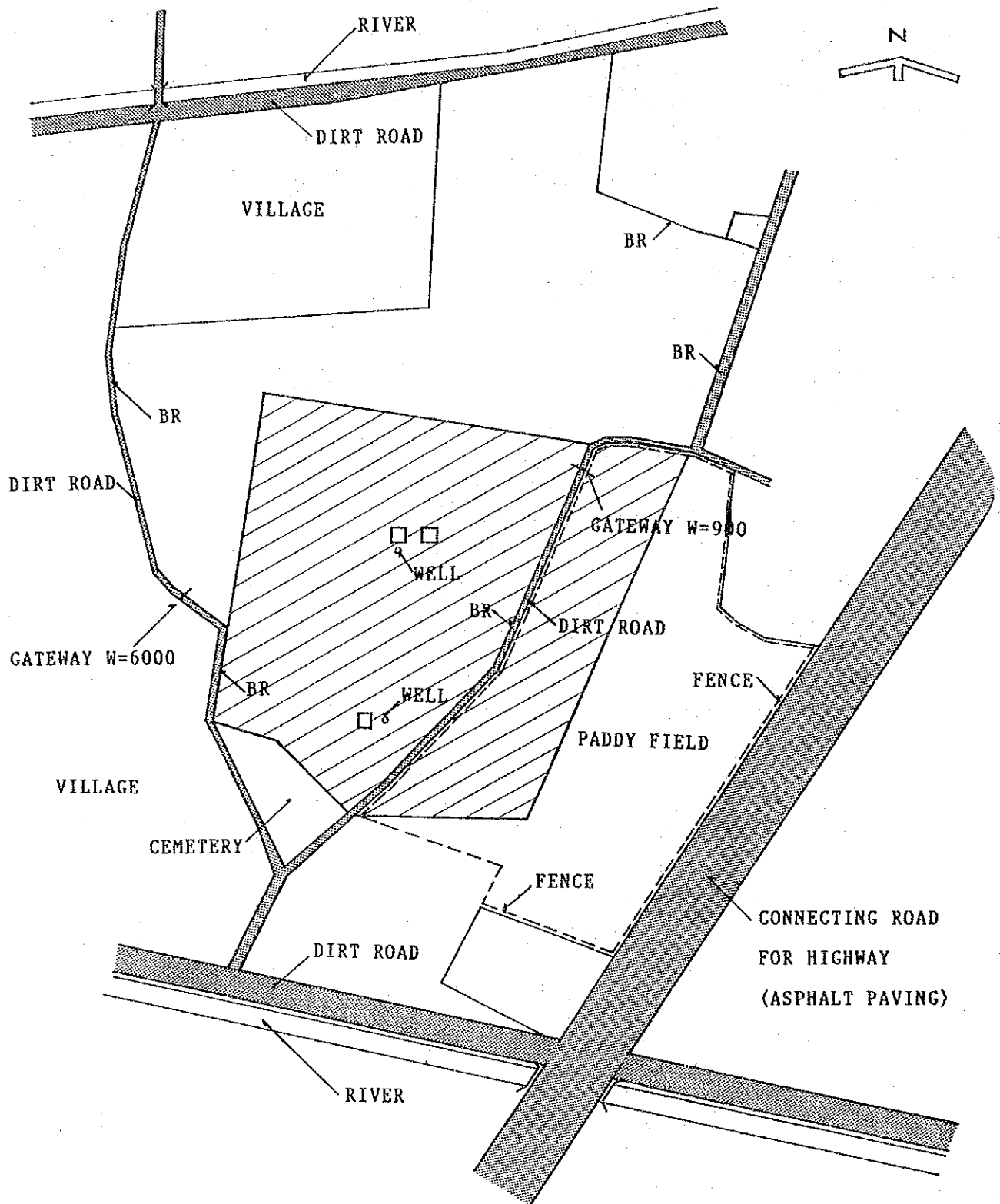




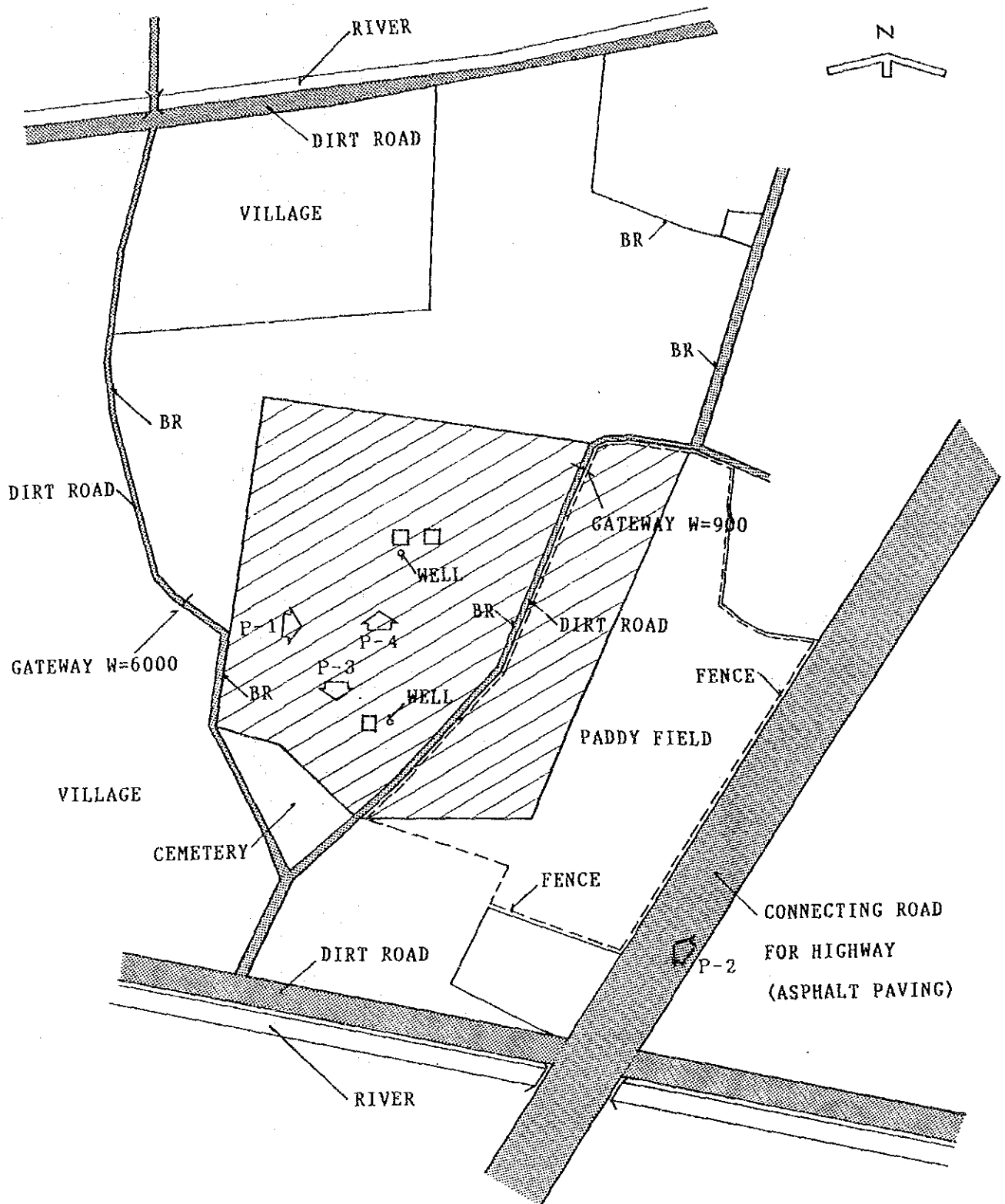
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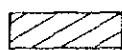




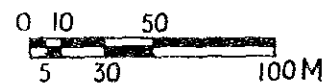
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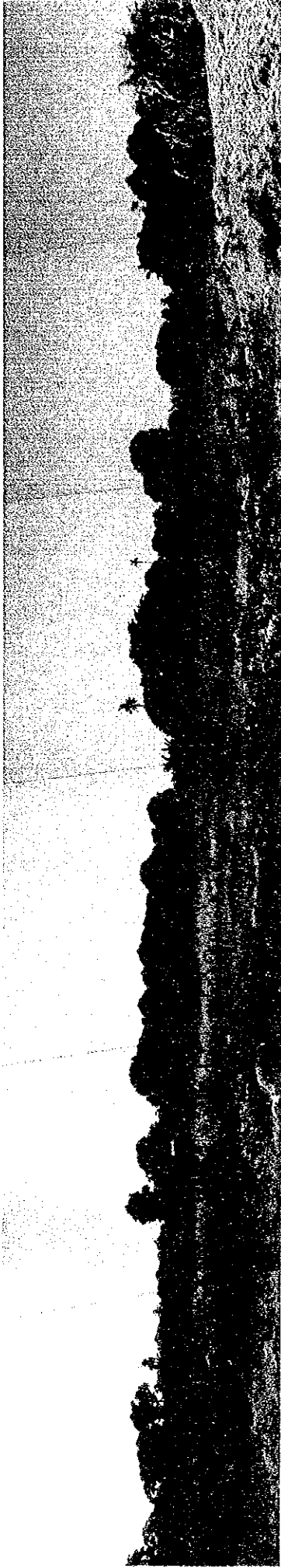
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	-----	PROJECT SITE	37,500 m <sup>2</sup>
BR	-----	BRICK WALL	
	-----	PRIVATE HOUSE	
	-----	DIRECTION OF PHOTOGRAPH	







PHOTO—1



PHOTO—2





PHOTO — 3



PHOTO — 4





## SUMMARY



## SUMMARY

The Republic of Indonesia has been giving top priority to the agricultural development in the series of REPELITA I to IV in consideration of the importance of agriculture for the national economy. The basic policies of the agricultural development are to attain self-sufficiency in agricultural products, to improve farm income through the increased production and to realize equal distribution of wealth. In 1985, it succeeded in attaining self-sufficiency of rice which has long been desired.

The Republic of Indonesia has also placed great emphasis on strengthening KUDs (Koperasi Unit Desa)\* and the realization of active commercial activities of KUDs, which have their foundation in rural villages, with the aim of fulfilling the national objectives that income of farmers who occupy the majority of the population should be enlarged. The rice processing and marketing operations made by KUDs, in particular, have been considered to be a propellant for promoting KUDs' activities in general. The replenishment of KUDs' rice milling facilities has been sought for in order to increase the profits of KUDs through the efficient production of high quality white rice.

As the Republic of Indonesia has attained self-sufficiency of rice, it is clear that the demand for higher quality rice will increase in the market, and therefore replenishment and/or improvement of KUDs' rice mills are of urgent nature.

Of 7,400 KUDs in the nation, some 3,000 are considered to have rice mills and be making rice processing. Most of them are of small capacity and are chiefly engaged in custom milling in small scale.

The Government of Indonesia has been trying to introduce rice mills to KUDs, receiving assistance from Japan, the World Bank, etc., so as to promote commercial milling at KUDs with the aim to establish it as one of KUD's business activities and to improve the quality of white rice produced by KUDs. From Japan, 441 rice milling units have been introduced through the Aid for Increased Food Production (KR 2) during 1979 - 1985 and another 479 units are to be shortly introduced through OECF credit.

However, it is reported that some KUDs are not necessarily running milling operations smoothly due to insufficient managerial capability and low technical level in spite of their efforts.

In order to overcome such problems, the Government of Indonesia planned to establish Post Harvest Technology Training Center (hereinafter referred to as "the Center") which had such objectives as technical training on operation and maintenance of milling machinery, establishment of managerial technique for preservation of grain quality after harvest, and stipulation and diffusion of quality standards of white rice, as an aid for that purpose, and requested grant aid from the Government of Japan for the execution of the plan.

In response to the request, the Government of Japan decided to dispatch a preliminary study team through Japan International Cooperation Agency (hereinafter referred to as JICA) from November 20 to December 7, 1987. The preliminary study team confirmed the details of the request and background of the Project and planned the basic policy of Japanese cooperation.

Based upon the findings by the team, JICA dispatched a basic design study team from May 14 to June 12, 1988.

The basic design study team made a site survey, had discussions with the concerned parties of Indonesia, confirmed the details of the request and the background of the Project, evaluated appropriateness of the Project and exchanged views on the scale of the required facilities, the basic principle of the Project and the details of the facilities. Upon reviewing the findings and analyzing the information and data, the basic design study team recognized the need of establishing Post harvest Technology Training Center, which executes training for KUDs' staff and managers on improvement of rice post harvest processing technology and designed the following facilities and equipment.

The Project site:	at Desa Ganda Sari, Kecamatan Cibitung, Kabupaten West Java
Training to be conducted:	Training for KUDs' staff on management and operation of KUDs' commercial milling and technology for operation and maintenance of

the milling machinery.

Three training courses, i.e. an operator course (two weeks), a manager course (two weeks) and an instructor course (three months) are offered and these courses will train 240, 240 and 14 trainees respectively every year.

The required facilities and equipment for the Project are as follows:

(1) Buildings

1) Main building (Reinforced concrete, 1 story)	960 m <sup>2</sup>
Office, Director room, Deputy Directors room, Instructors room, Training Affairs room, Library, Laboratory, Preparation room, Meeting room, Classroom, Printing/Typing room, Odd Job room, Storage, etc.	
2) Practical training building	2,067 m <sup>2</sup>
(Steel structure, 1 story)	
Rice mill training room, Practical training room, Workshop, Lecture room, Generator room, Pump room, Control room, etc.	
3) Dormitory (Reinforced concrete, 1 story)	661 m <sup>2</sup>
Lounge, Cafeteria, Kitchen, Bed room(for 4 persons)	
4) Guardhouse (Reinforced concrete, 1 story)	20 m <sup>2</sup>
5) Husk store ( ditto )	22 m <sup>2</sup>
6) Outdoor lavatory ( ditto )	18 m <sup>2</sup>
7) Garage (Steel structure, 1 story)	126 m <sup>2</sup>
8) Passage corridor (Wooden structure, 1 story)	28 m <sup>2</sup>
9) Elevated water tank (Reinforced concrete)	one lot

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Total	3,902 m <sup>2</sup>
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(2) Building facilities and outdoor works

- 1) Electrical installations
- 2) Plumbing installations
  - a) Deep well
  - b) Septic tank
  - c) Ditch, drainage

3) Air conditioning and ventilation installations

4) Outdoor works

a) Premises road

b) Paddy drying yard (concrete paned)

(3) Equipment

1) Rice milling facilities:

a paddy supply system (40 tons), rice milling Units  
(one 4 tons/hr unit, one 1 tons/hr unit), Unit-body rice milling  
units (three 0.5 tons/hr units)

2) Paddy dryers:

a flat-bed dryer (2 weight tons),  
a circulating dryer (3 weight tons)

3) Component machinery of rice mills:

four paddy huskers and paddy separators (1 tons/hr), four  
friction type rice whiteners (1 tons/hr), four abrasion type  
rice whiteners (1 tons/hr), two diesel engines (30-40 h.p.),  
four diesel engines (12-15 h.p.), assembly & disassembly tools

4) Workshop tools:

wood working and metal working tools and gauges

5) Laboratory implements:

a grain sample dryer, testing huskers, testing whiteners,  
testing graders, grain moisture meters, various balances, etc.

6) Equipment for making training materials and for information  
processing:

personal computer sets, a plotter, a digitizer, software,  
electronic typewriters, a plain paper copier, printing  
machinery, a camera, a slide maker, a video camera

7) Audio-visual equipment:

a slide projector, an overhead projector, screens, a video  
deck/monitor, a hand microphone

8) Vehicles:

a bus, a truck, a fork-lift, an agricultural tractor

The executing agency of the Project is the Directorate General of  
Business Promotion for Cooperatives, the Ministry for Cooperatives. It  
undertakes operation, maintenance and management of the training center,  
after it is completed, in cooperation with the Directorate General of

Institution Promotion for Cooperatives of the same Ministry. For the execution of the Project through Japan's grant aid, 15 months are required after the Exchange of Notes, of which 10 months are spent for construction works.

The project cost to be borne by the Government of Indonesia necessary for implementation including electricity and telephone wiring up to the site, outdoor structure construction, landscaping work, and procurement of furniture, etc. are estimated to be about Rp.532.50 million.

The estimated cost for the yearly maintenance of the Center is Rp.69,974,000 and for the yearly training operation Rp.270,355,000.

In the case that the training for KUDs' staff and operators is expanded and their managerial and technical capability is improved through the execution and operation of the Project, the Center will play a significant role for the improvement of rice milling operations by KUDs. Further, if KUDs' activities in general are activated by them and the resultant profits are distributed equally to members of KUDs, it will contribute for improving welfare of farmers which is one objective of the national development plan. Since such benefit can be expected through the Project, it is considered to be appropriate to execute it through the grant aid from Japan.

However, for the improvement of KUDs' rice processing activities, there are many difficulties concerning KUDs' operations, other than technical matters related to rice processing. To be effective, it is desired that the Ministry for Cooperatives to take comprehensive measures for the improvement of KUDs' operations in the following points, viz:

- to rationalize and make effective the operations of KUDs,
- to upgrade the morale of KUDs staff,
- to grow the farmers' confidence in KUDs and
- to procure paddy of high quality with reasonable price.

An expert on post harvest technology is stationed in the Directorate General, dispatched from JICA. It is expected that pertinent advice and guidance be made by him further, just as having been done from the planning stage of the Project.

Another dispatch of several more experts to the Center will make the training system more efficient.

\* KUD = Koperasi Unit Desa :

Village unit cooperative.

One KUD is organized on few Desa (villages). Members of KUDs are voluntary by contributing a membership fee. One of the important functions of KUDs is to collect paddy from farmers at a guaranteed price



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## APPENDICES

## ABBREVIATIONS

ADB	: Asian Development Bank
AKOP	: Cooperative Academy
ASEAN	: Association of Southeast Asian Nations
BALATKOP	: Provincial Cooperative Training Center
BIMAS	: Mass Guidance Program of the Government
BULOG	: National Logistic Agency
DEKOPIN	: Indonesian Cooperative Council
DEKOPINDA	: Indonesian Cooperative Council at district/municipality level
DEKOPINWIL	: Indonesian Cooperative Council at provincial level
DOLOG	: Provincial Organization of BULOG
FTRTC	: Food Technology Reserch and Training Center
GKD	: dried paddy at farm level
GKG	: dried paddy at village level
GKL	: dried paddy at stores
GKP	: dried paddy at mill gates
IKOPIN	: Institute of Cooperative Management
ILO	: International Labor Organization
INKUD	: National Federation of KUDs
INSUS	: Intensified Intensification Program
KAWILKOP	: Head of the Provincial Cooperative Office
KUD	: Village Unit Cooperative
OECF	: The Overseas Economic Cooperation Fund
PIU	: Project Implementation Unit
PLN	: State-owned Electric Supply Enterprise
PUSDIKLAT	: National Center for Training of Government Cooperative Personnel
PUSDIKOP	: Center for Cooperative Education
PUSKUD	: Provincial Federation of KUDs
PUSLATPENKOP	: National Center for Cooperative Training & Development
REPELITA	: Five Year Development Plan
SSB	: single side band



## CHAPTER I INTRODUCTION





## CHAPTER 1. INTRODUCTION

The Government of Indonesia planned to establish a Post Harvest Technology Training Center at Kecamatan Bekasi, with the aims of increasing the managerial and technical capability of KUDs' staff on operation and maintenance of rice milling facilities, preservation of the quality of rice, etc., and requested a grant aid from the Government of Japan on building construction and equipment supply required for the Project.

In response to the request, the Government of Japan decided to make a preliminary study regarding the execution of the grant aid. Japan International Cooperation Agency (hereinafter referred to as JICA), organized a preliminary study team headed by Mr. Tomonari Ohsumi, Deputy Director, Okayama Food Office, Food Agency, Ministry of Agriculture, Forestry and Fisheries, and dispatched them to Indonesia. The team discussed and confirmed the background of the Project, the contents of the Project, details of the request for the grant aid, responsibility of the Government of Indonesia, etc.. Based upon the findings in the preliminary study, JICA dispatched a basic design study team headed also by Mr. Tomonari Ohsumi, from May 24 to June 12, 1988 and made them discuss with the Indonesian parties concerned, make a survey and collect materials on the following subjects :

- 1) Discussion and confirmation on the background, objectives and necessity of the Post Harvest Technology Training Center,
- 2) Discussion and confirmation on training programs and details of the requested buildings and equipment,
- 3) Survey of the planned site and the surrounding area,
- 4) Discussion and confirmation on a construction program and an execution schedule,
- 5) Survey on unit prices of materials and equipment required for the cost estimate of the Project, and
- 6) Collection of data required for the evaluation of the Project.

Basically confirmed points between Indonesian side and the team regarding the Project were mentioned in the Minutes of Discussions, and Mr. Ohsumi, the team leader, and Drs. Subiako, Director-General

of Business Promotion for Cooperatives, the Ministry for Cooperatives, signed the minutes (refer to Appendix 1-4).

This Basic Design Study Report was prepared based on the results of examination on significance and appropriateness of the Project and the planned optimum basic design after discussions with the concerned parties of Indonesia and the field surveys made in Indonesia.

## **CHAPTER 2 THE BACKGROUND OF THE PROJECT**



## CHAPTER 2. THE BACKGROUND OF THE PROJECT

### 2-1. The National Development Plan

#### 2-1-1. The Five Year Plan

The national development plan of Indonesia stands upon REPELITA (Five Years' Development Plan). REPELITAS have already been executed three times and REPELITA IV is currently being enforced.

REPELITA I : 1969/70 - 1973/74

REPELITA II : 1974/75 - 1978/79

REPELITA III: 1979/80 - 1983/84

REPELITA IV : 1984/85 - 1988/89

REPELITA V : 1989/90 - 1993/94

Table 2-1 The Targeted Growth Rates in the Different Industrial Sectors in REPELITA IV ( expressed in annual actual growth rate per-cent) and the Specific Weight of Each Industrial Sector

Unit: %

Industries	Targeted Growth Rate	Specific Weight	
		1983/84	1988/89
Agriculture	3.0	29.2	26.4
Mining	2.4	7.4	6.6
Manufacturing	9.5	15.8	19.4
Construction	5.0	6.3	6.3
Transport & Communication	5.2	6.0	6.0
Others	5.0	35.3	35.3
Total	100.0	100.0	100.0

Source : REPELITA IV

The objectives of REPELITA IV, which is currently being executed, may be summarized into the following two points. The targeted growth rate in the respective industrial sector has been determined as shown in Table 2-1 :

- (1) To maintain sufficient economic growth rate that will improve per-capita income of the nation and will assure equal distribution of income among the people.
- (2) To construct a firm foundation for the future development.

## 2-1-2. Agriculture Development Program

In consideration of the importance of agriculture in the national economy ( see Table 2-1), the first priority in the REPELITA has been given for the development of agriculture.

The targets of agricultural development in REPELITA IV are as follows:

- (1) To attain self-sufficiency of food and to supply it to the nationals with cheap price,
- (2) To supply raw materials to the local industries and to produce agricultural products further required,
- (3) To promote agriculture so as to expand employment,
- (4) To give farmers, fishermen, workers in estate etc. and dairy workers fair job opportunities, to expand technical training and to increase supply of production materials, financing and market informations, and
- (5) To organize services from large farming enterprises to rural farmers in the fields such as technical extension, supply of improved seeds, assistance in marketing, etc..

The following targets of development are mentioned in REPELITA V which will be started from the next year :

- (1) To attain and maintain self-sufficiency of carbohydrates, vegetable proteins, vitamins and minerals,
- (2) To reduce import and to promote export of food crops (maize, cassava, vegetables, fruits, etc.),
- (3) To pursue equal distribution of the fruits of the development plan through increased farm income and creation of new job opportunities, and
- (4) To push forward regional development in consideration of preservation of natural resources and environment.

In above two REPELITAS, the basic strategy for the agricultural development is common, i.e. it can be summarized into two : (1) to assure self-sufficiency of agricultural products and to improve the national dietary conditions in quality, and (2) to increase farm income and pursue equal distribution of wealth through increased farm production.

### 2-1-3. The Development Programs for Cooperatives

REPELITAS place a great emphasis on strengthening of cooperative activities in order to exploit the capabilities of the economically weak social strata and to make them self-supporting during the course of the national development. Among them, independence of Koperasi Unit Desa or KUDs, which have the foundation in the rural villages where majority of the population dwell, is regarded to have the highest priority.

In order to develop cooperatives, including KUDs, the Government of Indonesia aims at formulating cooperatives into strong enterprises. From this point of view, the following policies have been adopted in REPELITA IV :

- (1) For the Institutional Development of Cooperatives;
  - to culture the cooperative spirit among the members and to furnish them with technique for cooperative management and knowledge for upgrading the functions
- (2) For the Development of Cooperative Activities;
  - to prepare the improved financial conditions of the cooperatives by the hand of the Government and to secure the capitals and to improve the performance of cadres
- (3) For Assisting Cooperatives Development;
  - 1) Education of the cooperative leaders and organizers
  - 2) Improvement and effectuation of policies concerned with cooperatives
  - 3) Basic study on the problems concerned with cooperatives
  - 4) Improvement of the facilities in the Ministry for Cooperatives

For the development of cooperatives, it is considered to be essential to cultivate the personnel for the cooperative operations. In line with this view, above policies place emphasis on education and training.

The Indonesian paper "Obserber", dated Aug. 18, 1988, mentioned as follows:

<<--- president Soeharto, in discussing the nations REPELITA V in his speech on the occasion of the 43rd Independence Day at Parliament, said that "we must continue to promote cooperatives as the people's economic movement so that they truly become a national economic force". He added that "cooperatives must become the people's self-supporting economic institution and must grow with strong roots in society". The President further pledged to promote the growth of cooperatives by emphasising on management, training and skilled workers' education.--->>

## 2-2. Policies for the Increased Rice Production

Throughout the fifteen years during the terms of REPELITA I to REPELITA III (1969 to 1983), the biggest target of agricultural development was attaining self-sufficiency of rice through the increased production, together with the increased farm income and creation of new job opportunities. As the means for the increased rice production, BIMAS/INMAS Programs, i.e. extension of intensive farming methods by introducing new technology package (improved seeds, chemical fertilizer and farm chemicals), have been adopted, in parallel with the betterment of irrigation facilities and extension of rice cultivation acreage.

Table 2-2 Rice Production Targets and the Actual Achievement

REPELITA and Years		Target				Actual		
		Total Planted Area (1,000ha)	Intensive Area (1,000ha)	Yield (W/Rice t/ha)	Total Prod'n (1,000ha)	Total Planted Area (1,000ha)	Yield (W/Rice t/ha)	Total Prod'n (1,000ha)
I	1969	7,600	2,590	1.38	10,520	8,014	1.53	12,249
	1970	7,960	2,900	1.43	11,430	8,135	1.62	13,140
	1971	8,320	3,150	1.51	12,520	8,324	1.65	13,724
	1972	8,760	3,480	1.58	13,810	7,898	1.75	13,183
	1973	9,300	4,000	1.66	15,420	8,404	1.74	14,607
II	1974	8,464	4,326	1.83	15,032	8,508	1.80	15,276
	1975	8,530	4,666	1.89	15,633	8,495	1.79	15,185
	1976	8,599	4,095	1.96	16,383	8,369	1.89	15,845
	1977	8,736	5,544	2.03	17,235	8,359	1.90	15,876
	1978	8,982	6,082	2.09	18,183	8,929	1.96	17,525
III	1979	8,885	5,223	2.02	17,904	8,803	2.03	17,872
	1980	9,065	5,541	2.03	18,442	9,005	2.24	20,163
	1981	9,265	5,961	2.04	18,995	9,381	2.37	22,286
	1982	9,600	6,184	2.05	19,688	8,988	2.54	22,837
	1983	9,925	7,220	2.07	20,574	9,102	2.63	24,006

Source : REPELITA I,II,III Statistical Information on Indonesia  
Agriculture 1968-1980  
Statistical Yearbook of Indonesia 1984



During the term from 1969 to 1983, rice production in Indonesia has made rapid development both externally and internally, realizing production increase from 12.25 million tons in 1969 to 24 million tons in 1983. During this time, the cultivated acreage increased by 1.3 times whereas per-hectare yield increased by 1.5 times as the result of increased intensively-cultivated area from 34.1% to 72.1%. It is known that the contribution of the latter is more prominent than the former.

Throughout the term of REPELITA IV, rice production has been targeted to increase by 4.1% annually. However, the agricultural development program has been modified on the excessive weight on rice production which had been existing, and it is recommend to grow palawija (crops other than rice) in those area where not suited for rice production. As for the opening of agrarian land, the emphasis has shifted from Java, where land is exploited almost to limit, to the outer islands, where there can still be the room for opening.

Self-sufficiency of rice has long been the earnest wish for the country. After it was achieved in 1984/85, the priority of the agricultural development program has been focused on improvement of self-sustaining rates of food crops such as maize, soybeans, peanuts, other than maintaining self-sufficiency of rice. At the same time, policies for improving rice quality and supplying rice with stable price are considered, in contrast with those policies hitherto adopted which placed much emphasis on quantitative increase of rice.

Table 2-3 Target of Rice production and Actual Result

	Item	Unit	1984	1985	1986	1987	1988
Target	Intensive Farming	1000ha	7,747	8,073	8,402	8,855	9,240
	INSUS	1000ha	4,402	5,022	5,832	6,521	7,221
	INMUM	1000ha	3,345	3,051	2,570	2,344	2,029
	Non-intensive	1000ha	1,432	1,287	1,146	772	486
	Total Planted Area	1000ha	9,179	9,360	9,548	9,637	9,726
Actual	Unit Yield	W/Rice t/ha	2.69	2.75	2.81	2.88	2.94
	Total Production	W/Rice t/ha	24,701	25,781	26,867		
	Intensive Farming	1000ha	8,632	8,821	9,130		
	INSUS	1000ha	4,399	4,659	4,922		
	INMUM	1000ha	4,332	4,162	4,209		
	Non-intensive	1000ha	1,132	1,081	741		
	Total Planted Area	1000ha	9,764	9,902	9,871		
	Unit Yield	W/Rice t/ha	2.67	2.68	2.71		
	Total Production	W/Rice t/ha	25,993	26,542	26,707		

Source:Kebijaksanaan dan Langkah-Langkah Operasional Rembangnan  
Pertanian Tanaman Pangan REPELITA IV

Evalusai PELITA IV Tahun Ketiga(1986/1987)

### 2-3. Outline of Rice Processing and Rice Marketing Activities by KUD

About 7,400 KUDs exist in the nation, most of which located in the rice-growing rural villages. They are supposed to buy paddy from farmers with the floor price, mill it, and sell to DOLOGs which are the branch offices of BULOG (refer to the table of abbreviations). KUDs may be able to sell paddy or rice to the market but, in reality, the proportion is low and about 90% are sold to DOLOG.

Rice production in Indonesia is about 27 million tons in term of white rice as of 1985, two third of which are estimated to be consumed on farm and the rest marketed. The quantity collected by BULOG is 1.2 to 2.5 million tons annually, out of which 80 to 90% are assumed to be collected via KUDs.

Since KUDs buy paddy from farmers with the floor price, farmers are supposed to be protected from the middlemen who will beat down the paddy price, and even if the prevailing paddy market price may be low, they can receive the floor price at least. Thus, the interest of farmers is assumed to be protected by KUDs.

There have been sales of both paddy and rice to DOLOGs by KUDs. In other words, BULOG used to buy both paddy and rice. The fact was interpreted as the shortage of milling capacity in KUDs, and the international assistances have been organized to increase the KUD rice mill capacity, with the anticipation that it will change all the sales to DOLOGs into white rice realizing the expansion of KUDs activity and increase of the profit. KUDs' sale to DOLOGs have almost all became white rice after 1987 when BULOG adopted the policy to buy only white rice.



KUDs actually buy both paddy and rice. As understood from the Table 2-4, about a half of KUDs' buying in the recent years is white rice and paddy purchase occupies only a half. White rice is assumed to be bought from merchants as ordinary farmers do not have rice milling facilities. As for paddy, percentage of direct buying from farmers is not known.

As observed in the Table 2-4, the differences of the amount of rice selling and the amount of rice buying by KUDs are 300 to 400 thousand tons in these few years (figure in 1985 is not known due to an apparent mistake in the statistics). These figures may be understood to be the quantity which transformed from paddy into white rice at KUDs and therefore they may be considered to be the quantity milled by KUDs. But such assumption cannot always be correct.

Other than commercial milling, custom milling is also undertaken by KUDs as a part of milling activities made by KUDs. It is reported that custom milling has higher proportion and it is the actual KUDs' milling activity at present(see FOOT NOTE).

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<FOOT NOTE> Commercial milling and custom milling are basically different in their technology and the management. The latter is a custom work to mill small lots of paddy. For this purpose, it is impossible to employ large milling units. It does not require planning for the operation, and can be managed easily with some operation technique of machinery. Contrary to this, the former require large facility and big operation fund, because, in commercial milling, it is necessary to purchase paddy, to mill and to sell it. For the operation of commercial milling, long spanned careful planning and skillful marketing activities with positive entrepreneurship are required, other than wide technical expertise, experience and managerial capabilities.

#### 2-4. KUDs' Rice Milling in the Rice Milling Industry in Indonesia

According to the statistics made by the Ministry of Agriculture (Table 2-5), the total number of rice mills in Indonesia is about 63 thousand and the annual milling capacity is 28 million tons of white rice on 1,400 hours operations, as of 1985. Such a milling capacity is almost identical with the quantity of rice produced in 1985. However, actual number and capacity of rice mills are estimated to be far greater than these figures. It will be easily assumed from these facts that technical development in the field of rice processing should be remarkable in recent years due to the competition among rice mills. The quality of marketed white rice has also been improved to a large extent in these years.

KUDs' rice mills are about 5% of all, either in number or milling capacity, assuming that above statistics are correct (see Table 2-5). However, since the annual operation hours of KUDs' rice mills are considered to be generally shorter than average and the national total number and capacity of rice mills are much greater than above, weight of KUDs rice mills to all is much lower than 5%.

Paddy purchased by KUDs can be milled by private (non-cooperative) mills also on custom basis. Especially when middlemen, rice millers, etc. are in the position of KUD management staff at the same time, this can easily happen. Therefore, selling of white rice by KUDs by use of paddy procured by KUDs does not necessarily mean existence of KUDs' milling activities.

Custom milling are regarded to play much important role in KUDs' rice milling activity than commercial milling. But the actual quantity of such processing is not known.

Looking to the Table 2-5, it will be understood that KUDs mills are much biased to commercial milling in their facilities compared with those of all of Indonesia. In other words, KUDs mills have higher proportion of large mills than those of all Indonesia. Large mills occupy only by 1% in number and 4 to 5% in the capacity in all the Indonesian mills. Compared to this, in KUDs mills, large mills occupy about 10% in number and about 20% in capacity. Whereas all KUD mills occupy only 5% of milling capacity in all Indonesia, capacity of large mills of KUDs is 20% of all Indonesian large mills.

Table 2-5 Indonesia Rice Mills and KUD Rice Mills

	Year	Large Mills			Small Mills			Total			
		No.	%	Capacity	%	No.	Capacity	%	No.	Capacity	%
Indonesia	1983	755	1	1,023	5	58,831	99	20,540	95	59,586	100
	1985	871	1	1,205	4	61,659	99	26,295	96	62,530	100
KUDs'	1984	193	9	248	19	2,022	91	1,059	81	2,215	100
% of KUD mills		26 - 22	-	24 - 21	-	3 - 3	-	5 - 4	-	4 - 4	-
										6 - 5	-

Source : Indonesia; Ministry of agriculture  
KUDs' ; Ministry for Cooperatives

Note: 1. Definition of Large Mills:

Indonesia; white rice 0.7ton/h or more  
KUDs ; paddy 1.0ton/h or more

Definition of Small Mills: Those smaller than above respectively

2. The capacity is expressed in white rice produced when operated 1,400 hours per year.  
Unit is 1,000 ton.

Original data for KUDs was mentioned in paddy ton per hours.

Such figures were multiplied with 0.65 x 1,400

3. Figures for (% of KUD mills) are percentage of KUDs in 1984 against Indonesia in 1983 and 1985.

Table 2-6 Increase of Rice Production and Milling Capacity in Indonesia

Unit: million tons of white rice

Year	Rice Production	Annual Milling Capacity
1968	11.7	2.4
1970	13.1	3.9
1972	13.2	9.8
1976	15.3	13.5
1972	15.8	14.2
1968	23.9	22.5
1970	25.8	27.5

Source : Ministry of Agriculture

Notes : Annual milling capacity differs to a large extent according to the kind of statistics and the figures should be regarded only as a reference. However, actual figures are estimated to be much greater than these.



The number of KUD large mills in 1984 was 193. However, this figure is much smaller than the number of rice mills exceeding one ton per hour (tph) which has been supplied through KR 2 by 1981, which counts 310. It means that when all the supplied mills were installed, the total number of KUD large mills will increase still further.

As mentioned above, commercial mills require larger investment, bigger operation capital, higher technology, better managerial capability, and more annual operation hours than for custom mills. Existing KUDs do not necessarily satisfy such conditions.

## 2-5. Paddy and Rice Marketing Activities Made by KUDs

### 2-5-1. Purchase of Paddy and Rice

Basically, KUDs are assumed to purchase paddy with the floor price directly from farmers. But, in reality, the half of the purchase is in form of white rice (see Table 2-4).

Paddy purchase, which is the remaining half of KUDs' purchase, also is said to be often not directly from farmers but from various other sources.

The grades of paddy reported to be purchased by KUDs are quite often not "dried paddy at mill" (GKG), for which the floor price is stipulated, but "dried paddy at store" (GKL) or lower than that or not even dried yet (see Table 2-7). Therefore, shortage of paddy drying yards at KUDs are often discussed.

Table 2-7 The Floors Prices to be Paid by KUDs  
According to the Grades

Item (max %)		GKP	GKD	GKL	GKG
moisture		26	19	16	14
foreign/empty		10	8	6	3
immature/chalky		15	10	9	5
yellow/damaged		3	3	3	3
red		3	3	3	3
Floor Price (Rp/kg)	1986	105	135	150	175
	1987	115	146	164	190
	1988	135	160	175	210

Source : Ministry for Cooperatives

Note : This table is notified by the joint signature of  
Ministry for Cooperatives and Ministry of  
Agriculture.

GKP=gabah kering panen =dried paddy at farm level  
GKD=gabah kering desa =dried paddy at village level  
GKL=gabah kering lumbung=dried paddy at store  
GKG=gabah kering giling=dried paddy at mill

## 2-5-2. Marketing of Paddy and White Rice

Sales of paddy and white rice to DOLOGs occupy 95 to 99% of KUDs sales (see Table 2-4). Since the remaining 1 to 5% include sales to PUSK-UDs, KUDs' sales to the common market is very small. When KUDs sell paddy or rice to DOLOGs the selling prices are higher than from other sources. KUDs are in more advantageous position than others (Table 2-8). KUDs and the Ministry for Cooperatives have been trying to reduce KUDs' dependence to DOLOGs for their sales and to penetrate into the common market since before. But the result so far remains as this.

BULOG decide the quantity of collection according to their own programs of activities, i.e. national stock, transport to the deficit areas, distribution to the public servants, etc.. But what they can actually collect would be more or less of the targeted quantity. Because, when the market prices are lower than the floor price, more quantity of paddy and white rice would be concentrated to KUDs and DOLOGs and when the market prices are higher than the floor price, less would be collected.

This may be proved from the fact that when the floor price was higher than the market price few years ago, BULOG's stock increased to a large quantity. At the time, the storage loss and the cost of storage by BULOG were seriously discussed and complaints of public servants who received expensive and poor quality rice were filed in the national diet. It happened often that paddy and white rice brought by KUDs to DOLOGs was rejected on the ground that the quality was poorer than stipulated (see Table 2-9). Such phenomena seemed to compose one of the important causes to trigger the campaign for improving rice quality at KUDs.

Recently it is reported that there can be possibility of rice shortage again. If it comes to reality and the market price is elevated beyond the floor price, then collection of paddy and rice by KUDs would become difficult, and BULOG would also be difficult to collect the targeted quantity through KUDs only.

Judging from such situations, the political objective of "improving the quality of rice milled by KUDs" would imply to reduce KUDs' total dependence to BULOG's marketing policy on their milling and marketing activities, by eliminating the possibility of DOLOGs' rejection (on the

ground that the quality is inferior) and increasing possibility of penetrating into the common market.

In order to succeed selling to the market, various technical and managerial improvement would be required other than for rice quality improvement. However, the former (no rejection by DOLOGs) is difficult to achieve simply by the quality improvement on the part of sellers as the phenomena are associated with the price support system of agricultural products in general. As for the latter (penetration into the common market), it is also not assured simply by the quality improvement so long as the reasons for the past failure were not clarified.

Table 2-8 KUDs' paddy buying price (the floor price)  
and DOLOGs' paddy and white rice buying price  
(1969/70-1983/84)

Unit:Rp/Kg

Year	Paddy			White Rice		Code of Instruc tion	Date Applied	Period
	Floor Price	Bying Price		Bying Price				
		KUD	Non - KUD	KUD	Non - KUD			
1969/1970	20.90	-	-	37.00	37.80	-	-	1/2-1969 31/3-1973
1970/1971	20.90	-	-	37.00	37.00	-	-	
1971/1972	20.90	-	-	37.00	37.00	-	-	
1972/1973	20.90	-	-	37.00	37.00	-	-	
1973/1974 I	25.55	-	-	45.00	45.00	2/1973	14 Mat 1973	
II	30.40	-	-	52.50	52.00	-	-	1/4-1973 23/5-1973 24/5-1973 31/1-1974
1974/1975	41.80	41.80	41.80	68.50	68.00	1/1974	Peb 1974	1/2-1974 31/1-1975
1975	58.50	59.50	59.00	97.00	96.50	17/1974	Nop 1974	1/2-1975 31/1-1976
1976/1977	68.50	69.50	69.50	108.00	108.00	16/1975	28 Okt 1975	1/2-1976 31/1-1977
1977/1978	71.00	72.00	72.00	110.00	110.00	16/1976	18 Des 1976	1/2-1977 31/1-1978
1978/1979	75.00	77.50	77.50	119.50	119.50	11/1977	16 Des 1977	1/2-1978 2/5-1979
1979/1980 I	85.00	88.00	88.00	140.00	139.00	-	-	1/2-1979 31/1-1979
II	95.00	100.00	98.00	158.00	156.00	-	-	3/5-1979 31/1-1980
1980/1981	105.00	111.00	108.00	175.00	172.00	-	-	1/2-1980 31/1-1981
1981/1982	120.00	128.00	123.50	195.00	191.00	-	-	1/2-1981 31/12-1981
1982/1983	135.00	146.00	139.50	214.00	210.00	-	-	1/1-1982 31/12-1982
1983/1984	145.00	156.00	152.00	238.00	233.00	-	-	1/2-1983 31/1-1984
1984/1985	165.00	177.70	172.70	270.00	264.00			
1985/1986	175.00	187.70	182.70	B.285 A.318	279.00	12/1984	-	1/2-1985 31/1-1986
1986/1987	175.00	187.70	182.70	285.00	279.00	11/1985	13 Des 1985	1/2-1986 31/1-1987
1987/1988	190.00	202.70	197.70	313.00	307.00	-	-	1/2-1987 31/1-1988
1988/1989	210.00	222.70	217.70	344.00	338.00	-	-	1/2-1988 31/1-1989

Source : BULOG

Table 2-9 Quality Standard Specifications of Paddy and White Rice (1987)

Paddy (1987)

Item	Max (%)
Moisture	14
Foreign/Empty	3
Yellow/Damaged	3
Chalky/Immature	5
Red Grains	3

Source: 323/BUK/XII/1986  
I.H.K.0601141  
KEP-624/KA/12/1986  
Appendix I

White Rice (1987)

Item	Grade	
	A	B
Moisture (Max %)	14	14
Milling degree (Max %)	100	90
Brokens (Max %)	10	35
Small Brokens (Max %)	1	2
Chalky/Immature (Max %)	1	3
Damaged/Yellow (Max %)	0.05	3
Red Grains (Max %)	0	3
Foreign Matters (Max %)	0.01	0.05
Paddy Grains (Max No./100g)	0	2

Source: ditto Appendix II

## 2-6. Training Activities for Cooperatives

### 2-6-1. Training Organizations of the Ministry for Cooperatives

There are two national level training organizations in the ministry for cooperatives at present, i.e. PUSLATPENKOP (Pusat Latihan dan Penataran Perkoperasian : National Center for Cooperative Training & Development) and PUSDIKLAT (Pusat Pendidikan dan Latihan Pegawai : National Center for Training of Government Cooperative Personnel).

PUSLATPENKOP belongs to Directorate General of Institutional Development for Cooperatives (Direktrat Jenderal Bina Lembaga Koperasi). It undertakes training for the staff and members of KUDs and for the staff of the Ministry etc. on management and operation of cooperatives. PUSDIKLAT belongs to Secretariat General (Sekretariat Jenderal). It undertakes training for the staff of the Ministry (for freshmen training and promotion training).

As the provincial level training organizations, the Ministry has BALATKOP (Balai Latihan Perkoperasian: Provincial Cooperative Training Center) at its provincial offices. BALATKOPs undertake training for cooperative activities of provincial level, under the guidance of PUSLATPENKOP.

The organizational relations of PUSLATPENKOP, PUSDIKLAT and BALATKOP in the Ministry are indicated in the Figure 2-1.

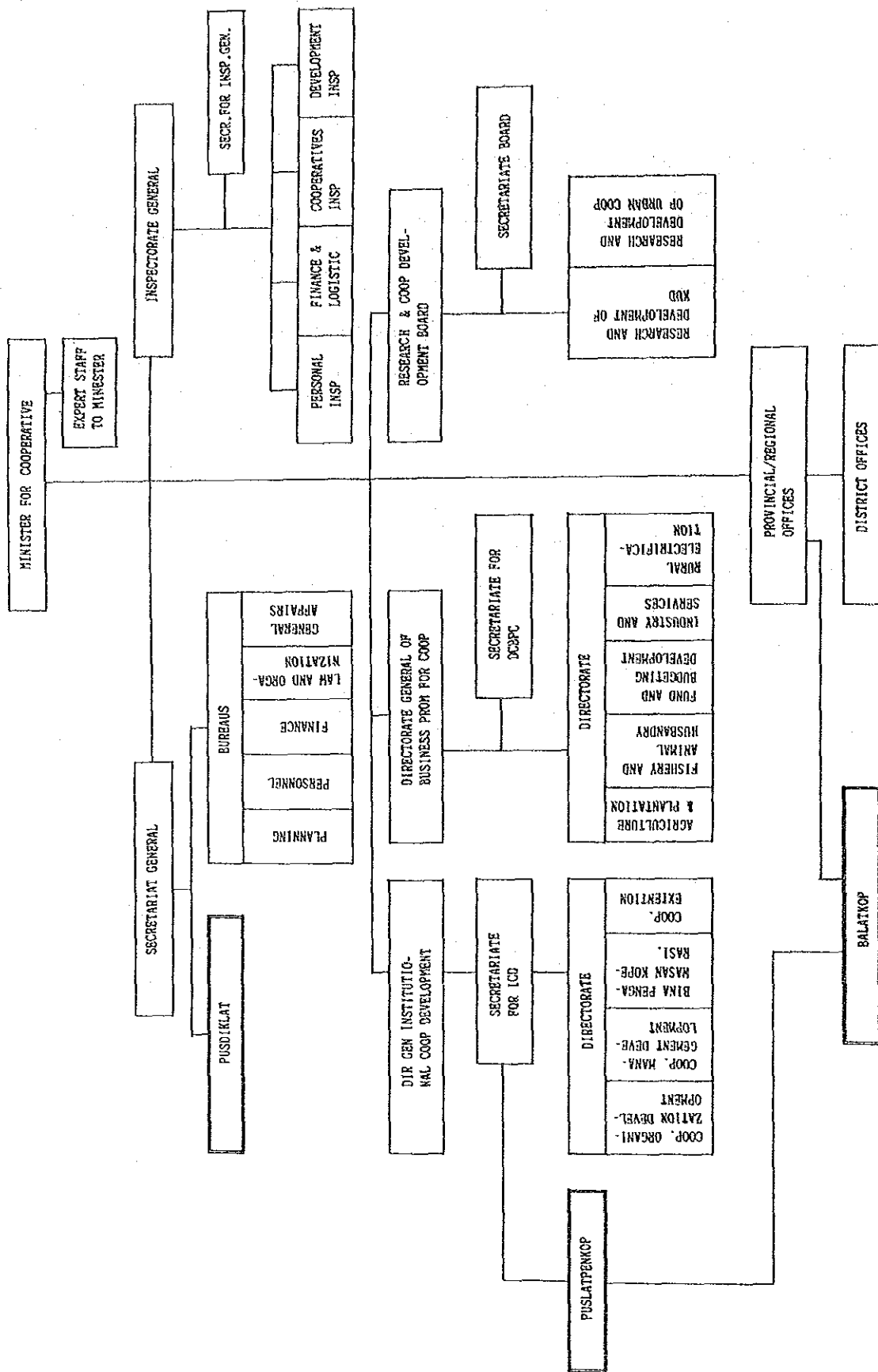


Figure 2-1 The organizational relations of PUSLATPENKOP, PUSDIKLAT and BALATKOP in the ministry



Table 2-10 Training Organizations in the Ministry  
for Cooperatives

Training Organization	Belong to:	Subjects of Training	Trainee
PUSLATPENKOP	BLK	Strengthen coop. activities	KUD staff & member Ministry staff concerned people
BALATKOP	KANWIL	ditto	ditto
PUSDIKLAT	SEKJEN	freshmen promotion	Ministry staff

Note: BLK = D.G.of Institutional Development  
KANWIL = Provincial Office of the Ministry  
SEKJEN = Secretariat General

(1) PUSLATPENKOP  
(National Center for Cooperative Training & Development)

1) History

PUSLATPENKOP was originally PUSDIKOP (Pusat Pendidikan Koperasi : Center for Cooperative Education), which had been established in 1969 as a training facility for cooperatives, when the existing Ministry for Cooperatives was still a part of the Ministry of Trade and Cooperatives.

During the terms of REPELITA I and II, twenty five PUSDIKOPs were established throughout the country. The one in Jakarta became PUSLATPENKOP as the national level center, and the rest which were located in the provinces became BALATKOP in 1980.

2) Activities

The activities and the function of PUSLATPENKOP are defined clearly in the Ministry Decision No.122/M/KPTS/VIII/84 (refer Appendix 1-6) as follows:

- a. To arrange and coordinate the planning and program arrangement of training and upgrading as well as promoting the cooperative teaching;
- b. To carry out cooperative training and upgrading in national level;
- c. To carry out the method improvement and the material of cooperative training and upgrading;

- d. To carry out the promotion and development of curriculum and the method of cooperative training and upgrading;
- e. To carry out the evaluation and report of the execution of cooperative training and upgrading, as well as monitoring the implementation of cooperative teaching;
- f. Training, upgrading and consultation as well as holding a discussion and field study on cooperatives;
- g. To collaborate with cooperative movement, educational institutes and other institutions at home and abroad on behalf of carrying out the cooperative training and upgrading;
- h. To evaluate the national implementation of training in connection with further training development for cooperative training;
- i. To organize a library and cooperative library as the follow-up of cooperatives' idea;
- j. To carry out the administration of cooperative training and upgrading;

### 3) Organization and Staff

PUSLATPENKOP is composed of 87 staff including the principal at present. The organizational setup is as indicated in the Figure 2-2.

Lecturers of PUSLATPENKOP are not exclusively engaged in training but undertake some managerial works as the staff in the office. When required, they work as lecturers. Among the staff of PUSLATPENKOP, those who can work as the lecturers are about ten.

In PUSLATPENKOP, primary and advanced instructor training courses exist, both lasting for six months. The trainees are selected from the staff of the Ministry. These courses aim at training of instructors. By now about 250 ministry staff, both from the central and the provincial, have been trained here, in either one or both of the courses. Some of them are working as instructors for PUSLATPENKOP or BALATKOPs.

PUSLATPENKOP invites lecturers from outside also positively.

#### 4) Facilities

The outlines of PUSLATPENKOP are as follows :

a. Site area : 34,000 m<sup>2</sup>

b. Floor space : 10,350 m<sup>2</sup>

c. Facilities :

Office	20 rooms	for 121 persons
Reception room	1 rooms	8 persons
Principal	1 "	1 "
Class room	5 "	150 "
Instructors room	1 "	6 "
Meeting room	2 "	32 "
Library	1 "	10 "
Seminar hall	2 "	200 "
Printing room	1 "	6 "
Canteen	2 "	140 "
Mosque	1 "	100 "
Kitchen	2 "	10 "
Store	5 "	5 "
Bathroom	54 "	54 "
W.C.	34 "	34 "
Guardman	1 "	3 "
Dormitory	77 "	144 "

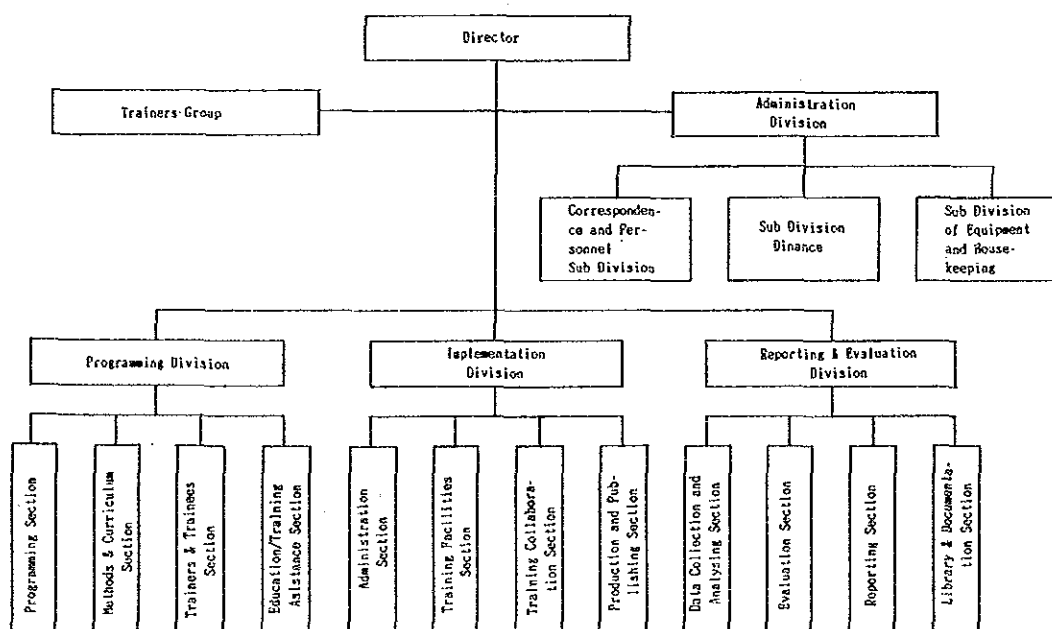


Figure 2-2 Organizational Setup of PUSLATPENKOP

#### 5) Training Courses and the Record of Training

There are 22 training courses in PUSLATPENKOP at present.  
For the details, please refer Appendix 2-1.

Record of training in PUSLATPENKOP during 1981/82 - 1985/86  
is as shown in the following Table 2-11:

Table 2-11 Record of Training in PUSLATPENKOP  
(1981/82-1985/86)

Year	1981/82	1982/83	1983/84	1984/85	1985/86	Total
No. of trainees	1,204	1,506	1,376	1,583	1,338	7,007

Source : STATISTIK LATIHAN PERKOPERASIAN, 1981/82-1985/86

It is known that PUSLATPENKOP has received 1,300 to 1,500 trainees annually, though there have been some fluctuations year by year. However, the number of trainees reduced suddenly in last year (1987/88) (see Table 2-12).

Table 2-12 Record of Training in PUSLATPENKOP  
(1987/88)

Courses	Terms	Days	Trainees	
			Planned	Actual
1. Development of coop. organization and management				
—— I	7/16 - 7/29	14	27	27
—— II	7/27 - 8/4	14	20	20
—— III	9/29 - 10/12	14	20	20
2. Management of coop. operations				
—— I	6/22 - 7/13	21	27	27
—— II	6/22 - 7/13	21	20	18
—— III	9/22 - 10/12	21	20	18
—— IV	10/27 - 11/16	21	20	16
—— V	1/8 - 1/25	21	38	35
3. Guidance of coop. management I				
—— I	12/2 - 12/22	21	20	19
—— II	1/27 - 2/16	21	20	20
4. Extension of coop.				
—— I	8/19 - 9/8	21	27	27
—— II	10/29 - 11/18	21	20	20
—— III	1/27 - 2/16	21	20	20
5. Provincial Coop. Council (DEKOPINWIL)	3/17 - 3/23	7	20	18
6. Guidance of coop. management II				
—— I	1/25 - 2/11	16	35	31
—— II	2/15 - 3/3	16	35	30
—— III	3/7 - 3/26	16	28	28
Total			417	394

Source : LAPORAN BIDANG PENYELENGGARRAN  
TAHUN KALENDER 1987/1988

The cause would be due to the large reduction of training budget in the recent years. PUSLATPENKOP's budget in the last five years was as follows :

Table 2-13 Annual Budget of PUSLATPENKOP

Unit:Rp.1,000

Budget Year	Routine Budget	Development Budget	Total
1983/84	108,792	967,225	1,076,017
1984/85	136,375	1,359,066	1,495,441
1985/86	237,918	1,553,000	1,790,918
1986/87	246,248	445,654	701,902
1987/88	245,115	292,657	537,772

Source : PUSLATPENKOP

(2) BALATKOP(Provincial Cooperative Training Center)

BALATKOPs belong to each of the Provincial Offices of the Ministry and are controlled by the latter on their operations. However, the matters relating to the training activities are under the guidance of PUSLATPENKOP.

BALATKOPs are provincial level organizations in the national training system for cooperatives, the apex of which being PUSLATPENKOP. Their activities are as follows :

- 1) Preparation of training for strengthening cooperatives, the evaluation and accumulation of training experience,
- 2) Execution of training and the supervision,
- 3) Cooperation for the training made by each cooperative, and
- 4) Management of facilities.

Above are stipulated in the Ministry Decision No.122/M/KPTS/VIII/84.

BALATKOPs are classified into A and B. The classification is made according to the number of KUDs in the charged Province. There is no difference in the basic functions and activities between A and B.

Appendix 2-2 shows the outlines of each BALATKOP.

Record of training made by BALATKOPs during 1981/82 - 1985/86 and in 1987/88 is shown in the following Table 2-14.

Table 2-14      Record of Training Made by  
BALATKOPs in the 27 Provinces  
(1981/82-1985/86, 1987/88)

Year	1981/82	1982/83	1983/84	1984/85	1985/86	1987/88
No. of Trainees	15,582	23,665	23,199	44,329	29,607	2,155
Development Budget (RP.1,000)	1,918,250	4,081,338	3,608,004	4,132,348	4,255,049	448,492

Source : PUSLATPENKOP

As in the case of PUSLATPENKOP, it is known from this Table 2-14 that the reduction of budget has restricted the training activities.

(3) PUSDIKLAT  
(National Center for Training of Government Cooperative Personnel)

PUSDIKLAT was separated from PUSLATPENKOP and became independent on 1983, when the Ministry for Cooperatives was established. Since then, training for the ministry staff (training for freshmen, training for promotion, etc.) has been undertaken by PUSDIKLAT and the functions are distinctly shared with PUSLATPENKOP and BALATKOPs both of which undertake training for cooperative staff.

PUSDIKLAT has its offices in Jakarta, Bandung (West Java) and Ujungpandang (South Sulawesi). Jakarta Office is for Western Area (Sumatra, Kalimantan and D.I.Jakarta), Bandung is for all of Java except for D.I.Jakarta and Bali, and Ujungpandang is for Eastern Area (other areas than above).

PUSDIKLAT undertakes the following six different kinds of training. Each of these are further classified according to the backgrounds of staff to be trained, such as educational history, positions in the office, their title, etc.

- 1) Freshmen training,
- 2) Promotion training,
- 3) Expert training,
- 4) Orientation,
- 5) Ethical training, and
- 6) Overseas training.

Table 2-15 Planned and Actual Training at PUSDIKLAT  
(1983/84 - 1987/88)

Unit: person

Course	Planned	Actual					Difference with Target
		1983/84	1984/85	1985/86	1986/87	1987/88	Total
Freshmen	9,188	5,434	931	585	1,706	532	9,188
Promotion	6,394	58	122	154	395	161	890
Expert	5,767	161	745	905	737	545	3,093
Orientation	45	-	-	45	-	-	45
Ethical	645	-	79	244	271	-	594
Overseas	-	62	27	48	-	-	137
Total	22,039	5,715	1,904	1,981	3,109	1,238	13,947
							- 8,092

Source : PUSDIKLAT



Planned training activities and the actual results during 1983/84 - 1987/88 are as shown in the following Table 2-15:

The targeted number of trainees at PUSDIKLAT in 1988/89 are 910 persons. Here also the decreasing tendency of training is observed.

It is worth noting that PUSDIKLATs do not have any training facilities. Therefore PUSDIKLAT in Jakarta uses training facilities of PUSLATPENKOP for executing its own training. Other two PUSDIKLATs also use those of BALATKOPs.

Table 2-16 shows training executed by PUSDIKLAT in Jakarta in 1987/88. It indicates that the training facilities of PUSLATPENKOP has been utilized by PUSDIKLAT to a considerable extent.

Under such a circumstances, PUSDIKLAT is planning to have its own training facilities. It is reported that PUSDIKLAT has secured the budget this year for making classrooms for 30 persons and the dormitory by modifying the existing buildings of the Ministry.

However, such facilities are still too small for the scale of training made by PUSDIKLAT at present and there is no concrete expansion program in the succeeding years. Therefore, PUSDIKLAT need to continue to borrow the training facilities of PUSLATPENKOP.

Table 2-16 Training Made by PUSDIKLAT in Jakarta  
(1987/88)

Course	Terms	Days	No. of Trainees
1. Freshmen Training			
- Graduates of junior high school	2/1 - 2/15	15	15
- Graduate of high school/college	2/1 - 2/15	15	41
- Graduate of university	2/1 - 2/15	15	2
2. Promotion Training			
- SEPADA	11/9 - 12/20	42	30
3. Expert Training			
- Research & Development	2/8 - 2/21	14	32
- Coop. Management	10/5 - 11/3	30	35
- Administration	6/15 - 7/29	45	30
- Administration	2/1 - 3/16	45	30
- Finance	9/23 - 12/9	78	41
- Equipment Management	9/1 - 9/12	12	30
4. Ethical Training			
- Thought	8/19 - 9/3	16	70
5. Others			
- Project Manager	7/17 - 7/28	12	50
	Total		406

Source : PUSDIKLAT

2-6-2. Training Facilities Other Than under the Ministry  
for Cooperatives

As the national organization of cooperatives in Indonesia, there is DEKOPIN (Dewan Koperasi Indonesia : Indonesian Cooperative Council).

DEKOPIN has its own education facilities named IKOPIN (Institute of Cooperative Management) located in Bandung and six AKOPs (Cooperative Academy), the branch organization of IKOPIN.

Table 2-17 Locations of AKOPs

Locations	Province
Padang	West Sumatra
Palembang	South Sumatra
Semarang	Central Java
Kediri	East Java
Yogyakarta	Yogyakarta
Ujungpandang	South Sulawesi

IKOPIN and AKOPs are schools rather than training facilities. These educate people who will be cooperative staff in future. On graduating these, title and qualification concerning to cooperative management are given.

Activities of IKOPIN and AKOPs are carried out under close contact with PUSLATPENKOP and BALATKOP. In order to coordinate with them, National Council for Cooperative Education and Training was established in 1983.

The members of the Council are composed of DEKOPIN as a representative of cooperatives, PUSLATPENKOP as a representative of the Ministry, and other concerned parties. They work for the planning and adjustment of policies regarding to the education and training for cooperatives.

## 2-7. Training on Rice Post Harvest Technology

Administrative organizations in Indonesia concerned to rice post harvest processing are the Ministry of Agriculture, BULOG and the Ministry for Cooperatives.

The Ministry of Agriculture is chiefly concerned to post harvest processing of farm level, BULOG for white rice marketing including import and export and the Ministry for Cooperatives for paddy and rice marketing and rice milling of KUD level. Thus three parties share the functions and each of them carries out training in its own territory. Rice mills other than those of KUD are reportedly under the control of the Ministry of Agriculture.

### 2-7-1. Post Harvest Processing Technology Laboratory in Karawang (a branch of Sukamandi Crop Research Institute for Food Crops), the Ministry of Agriculture

This carries out survey and research for the improvement of farm level post harvest processing, not only for rice but for other major crops.

There are 48 staff at present and the following facilities exist in the site of three hectare.

- (1) Chemical laboratory
- (2) Quality control laboratory
- (3) Farm machinery laboratory
- (4) Rice mill, paddy dryer, parboiling facility
- (5) Paddy store
- (6) Paddy drying yard
- (7) Library
- (8) Classroom

Achievements of surveys and researches are conveyed to farmers through farm extension agents. Training and seminar are made for the Ministry staff and extension agents four to six times a year.

Major functions of this Laboratory are for research and study and training is regarded as of secondary.

Under the Ministry of Agriculture, other than this laboratory, there is The Middle Level Agricultural Technician Training Center in Cihea, which is a training facility for extension agents, etc. It is reported that training on post harvest technology is carried out there.

#### 2-7-2. Food Technology Research and Training Center (FTRTC), BULOG

This center was established as a research institute for upgrading milling technology by BULOG at Tambun, suburb of Jakarta, in 1968. Since then, the facilities and the functions have been enlarged.

The activities of FTRTC are defined as follows :

- (1) Research and development of new technology on rice processing and storage and evaluation and improvement of existing technology,
- (2) Training on rice processing and storage technology. The trainees are not only BULOG staff but officials of other ministries also, including those from ASEAN countries.
- (3) Information center on post harvest technology.

In order to perform above functions, following long- and short-term courses are opened and 36 staff are located in the four division (laboratory, processing, storage and administration) of FTRTC.

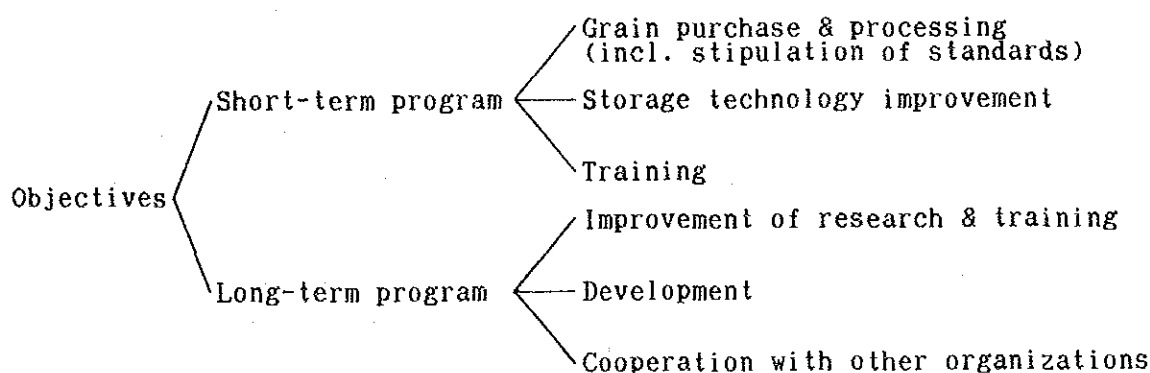


Figure 2-3 Programs of FTRTC

Outlines of facilities of FTRTC are as follows :

(1) Main building

- office, director's room
- class room (for 50 personnel)
- library (2,000 books)
- Guest researchers' room

(2) Laboratory building

- Quality inspection laboratory
- Biochemistry laboratory
- Microbe laboratory
- Insect laboratory
- Sugar laboratory
- 2 Class rooms (each for 50 personnel), Meeting room
- Printing room, Dark room
- Clinic

(3) Dormitory (for 50 persons), Guest house

(4) 4 Stores

(5) 10 Silos

(6) Workshop

(7) Various threshers, cleaners, paddy dryers

(8) Various rice mills, rice milling units,

Training is one of the major activities of FTRTC. From 1979 through 1985, 1,076 persons have been trained with 32 times training (see Appendix 2-3).

As mentioned above, trainees were not only BULOG staff but also those of the Ministry of Agriculture and the Ministry for Cooperatives. There have been cooperation with ASEAN countries too. FTRTC is expected to play a dominant role for research and training of post harvest technology in Indonesia.

#### 2-7-3. PUSLATPENKOP

Among 22 training courses carried out by PUSLATPENKOP, there is post harvest training course (though executing agency of such training is mentioned to be BALATKOP), details of which are shown in Appendix

2-4. The course is opened occasionally and not held regularly every year.

Since PUSLATPENKOP does not have training facilities for carrying out the practical training of post harvest course, PUSLATPENKOP makes cooperation with FTRTC of BULOG and the Middle Level Agricultural Technician Training Center of the Ministry of Agriculture. The cooperation with FTRTC is specifically important for the course. Almost all of the practical training of the post harvest course are performed by use of the facilities of FTRTC. Out of the practical training made at FTRTC mentioned in the Appendix 2-3, in those cases with participants from the Ministry for Cooperatives, most of the participants were from PUSLATPENKOP.

In order to cope with the increasing demand for the training on post harvest technology in the Ministry for Cooperatives, installation of such facilities within the Ministry is requested.

## 2-8. Existing Situations of International Cooperation

With the aim of strengthening KUD activities, various international assistance have been made through the Ministry for Cooperatives either on bilateral basis or from the international organizations such as the World Bank and Asian Development Bank. The outlines of such assistance are mentioned in the Appendix 2-5.

As may be seen in the Appendix 2-5, aids from Japan to KUD are made through KR2 and OECF Yen credit. The equipment supplied for the improvement of post harvest processing through KR2 during 1979 - 1985 are as mentioned into the Table 2-18 :

Table 2-18 Equipment supplied to the Ministry for Cooperatives for the improvement of post harvest processing through KR2

Unit:piece

Item	Years						Total
	'79	'80	'81	'83	'84	'85	
Thresher				18			18
Rice mill 6t/h						1	1
" 3t/h			75				75
" 2t/h						50	50
Rice whitener 1t/h	19	216					235
" 0.5t/h				49	31		80
Rice conditioner			2				2
Rice grader						12	12
Seed processing facility			2				2
Paddy dryer				10			10
Silo drying unit					2		2
Cleaner				23			23
Spare parts				5			5
Electric motor	25						25
Truck	30						30
Jeep	12						12
Testing equipment			4				4
Digital hygrometer			235				235
Precision hygrometer			7	21			28

Note : Absent in 1982

Source : the Ministry for Cooperatives



The equipment supplied through OECF Yen credit (1984 - 1989) are to be installed from now on. Following equipment are scheduled to be installed in KUDs of each province of Java, Bali, NTB and South Sulawesi, all of which are major rice growing area. (see Table 2-19)

Table 2-19 Equipment supplied through OECF credit

Unit:piece

Province	Thresher	Paddy dryer	Rice mill	
			paddy 1t/h	paddy 2t/h
West Java	34	44	83	77
Central Java	11	-	118	-
Jogjakarta	-	-	25	1
East Java	9	10	33	52
Bali	-	-	7	-
NTB	-	-	19	-
South Sulawesi	29	38	57	7
Total	83	92	342	137

Source : the Ministry for Cooperatives

Other than above, threshers, paddy dryers, rice mills (paddy 1 tph), audio-visual equipment and a traveling service car are supplied to each BALATKOP of above province and video-film making instruments are supplied to PUSLATPENKOP (threshers and paddy dryers are supplied only to BALATKOPs whose provinces receive them).

PUSLATPENKOP are receiving international assistance from ILO (International Labor Organization) and the government of Swiss on training program, training policies, training curricula, planning of teaching methods, etc.. So far in the following subjects assistance have been received :

1. Technique of cooperative training management,
2. Training on cooperative operation management,
3. Education of cooperative members,
4. Compiling cooperative training materials, and
5. Books and documents compilation.

## 2-9. Background and Contents of the Request from Indonesian Government

### 2-9-1. The Background of the Request

As the result of the policies for increasing rice production through a series of REPELITA from I to IV, Indonesia has attained self-sufficiency of rice by 1985 and such an achievement is highly appreciated internationally.

Even though the self-sufficiency of rice has been realized, however, it is recognized that the other big national development targets, i.e. equity in distribution of wealth among the nationals and increase of income of farmers who occupy majority of the population, are not necessarily realized yet.

In view of such situations, the Government of Indonesia expects that strengthening of cooperatives, especially KUDs which are based upon rural areas, would contribute for the development of the national economy to a large extent.

The Government of Indonesia considered the replenishment and improvement of KUDs' rice milling facilities as propellants for expansion of KUD activities, since these will facilitate efficient production of high quality rice and improve KUDs' profits.

As domestic supply of rice became sufficient in quantity, it is clear that, from now on, more demand would arise for rice of improved quality in the market. In order to cope with such demand also, above are in urgent need.

Out of 7,400 KUDs in the country, about 3,000 KUDs operate rice milling. This is considered as the major function of KUDs.

The Government of Indonesia have been trying to introduce rice milling facilities to KUDs in cooperation with the Government of Japan, the World Bank, etc.. Between 1979 and 1985, 441 rice milling units have been introduced from Japan, whose milling capacity range from 0.5 ton paddy per hour (0.5 tph) to 6 ton paddy per hour, by use of Food Production Aid (KR 2). Beside these, 342 rice milling units of 1 tph and 137 units of 2 tph are going to be introduced by use of OECF credit.

It is said, however, that often such problems are observed in some KUDs that quality deterioration of rice, quantitative loss (lowered milling recovery, production of broken grains, existence of admixture, etc.) and troubles of machinery. These happen on account of low technical levels on mill facility management and on operational skill, or much time spent for simple maintenance jobs due to poor maintenance/management skill.

Based upon such observations, the Government of Indonesia have planned establishment of a training center for KUDs' staff on rice mill operation/maintenance technique and quality preservation technology of rice after harvest and requested to the Government of Japan for the Grant Aid.

## 2-9-2. The Contents of the Request

The contents of the request made from the Government of Indonesia on the Project are as follows :

### (1) The Objectives of the Project

#### Short Term

- 1) Training of KUDs' staff and operators on rice mill management and operation,
- 2) Establishment of desired managerial and operational methods for the production of uniform and high grade white rice by use of existing facilities,
- 3) Establishment of white rice grading standards applicable to the existing circumstances,
- 4) Demonstration and training of improved methods for paddy collection, drying, storage, milling and marketing,
- 5) Demonstration of production methods of white rice in conformity with international grading standards,
- 6) Establishment of economical operational methods (both in management and operational technique) of modern rice milling facility, and
- 7) Activation of KUDs activities.

### Long Term

- 1) Improvement of operational methods (both in management and operational technique) of existing rice mills under KUDs and BULOG,
- 2) Familiarizing of improved technical concepts among concerned parties,
- 3) Promotion for the establishment of the national white rice grading standards,
- 4) Researches for the improvement of rice post harvest processing system in Indonesia, and
- 5) Opening the possibility of rice export.

### (2) The Site

In either East Java or West Java

### (3) The Executing Agency

Directorate General of Business Promotion for Cooperatives, the Ministry for Cooperatives (Direktrat Jenderal Bina Usaha Koperasi, Departmen Koperasi)

### (4) The Facilities and Equipment

#### 1) Buildings

* Rice mill building	1,000 m <sup>2</sup>
* Dryers building	800
* Store	500
* Silo foundation	400
* Main building (office, class rooms, laboratories)	1,800
* Workshop	300
* Dormitory	900
Total	5,700 m <sup>2</sup>

## 2) Equipment

* Rice mills (4 tph, 3 tph, 1 tph, 0.5 tph)	one lot
* Paddy dryers and related facilities	one set
* Paddy steel silo, 1000ton incl. conveyors & sensors	one lot
* Experimental equipment	one lot
* Workshop equipment	one lot
* Training equipment	one lot
* Office equipment, data processing equipment, printer	one lot
* Fork-lift	3
* Truck	10
* Jeep	3

## (5) Technical Cooperation

The request on the technical cooperation has already been submitted separately from the Government of Indonesia. Seven experts on six subjects as follows are requested there ;

1) Team leader	60 man/months
2) 2 Post harvest processing experts	120
3) Training and education expert	60
4) Quality control expert	60
5) Marketing economy expert	60
6) Coordinator	60



## **CHAPTER 3 THE OUTLINE OF THE PROJECT**





## CHAPTER 3. THE OUTLINE OF THE PROJECT

### 3-1. The Objectives

Through the establishment of a training center chiefly for KUDs' staff and managers on improvement of rice post harvest processing technology, such objectives as follow are to be achieved :

- to promote effective utilization of the existing rice milling facilities owned by KUDs,
- to increase the profit of KUDs by increasing the quantity and improving the quality of white rice produced by them and
- to contribute as the result for increase of farm income.

### 3-2. Review of the Contents of the Request

#### 3-2-1. Review on the "Justification" of the Request

Original request made by the Government of Indonesia (refer to Appendix 1-5) mentioned as follows as the "Justification of the Project":

1. Indonesia has succeeded in increasing rice production through REPELITA I to IV and achieved in self-sufficiency of rice.
2. Adding to this, more than 1,000 modern rice mills suited for production of white rice in the local market are to be installed in near future through credits from Japan and ADB.
3. Then, following need arose, i.e. training of KUDs' staff; production of high quality white rice; establishment of white rice grading standards; replenishment of paddy and rice storage; installation of rice mills suitable for production of white rice of international grades ("new standard rice mills").
4. In order to satisfy above needs, following problems should be solved : insufficiency of KUDs' activity in general; difficulties in procuring high quality paddy; poor paddy drying and storing methods; low technical level of rice mill

operation; absence of white rice grading standards and the means to enforce them; shortage of grade-wise packing and marketing facilities; insufficiency in management of handling, processing and marketing; shortage of training facilities for KUDs rice mill operators ; absence of training facilities for operators of new standard rice mills.

5. As a means to solve these problems, the Project can contribute on following points:

- On-the-job-training of KUDs' staff for the effective operation of existing rice mills,
- Learning of the newest rice milling technology through demonstration, and
- Opening the prospects for stipulation of white rice grading standards.

Regarding to this description above, a review was made as follows:

There is confusion between the activities of KUDs and those of other sectors on rice processing and marketing. Above that, there are some misconception on several facts.

In Indonesia, almost all of rice processing and marketing are made by the hands of private parties other than KUDs and the specific weight of rice milling activities by KUDs is less than 5% of all at most (refer to Table 2-4 & Table 2-5). Therefore, it is impossible to represent the situation of Indonesia by the activities of KUDs on rice processing and marketing. Contrary to the fact, the request made by Indonesian side described the problems faced by KUDs as if it is the general situation of the country on rice post harvest technology and the marketing.

Though the problems faced by KUDs should be solved, it should not be confused with the general problems of Indonesia as a whole, in order to be realistic.

Further, as a matter of fact, there are white rice grading standards in Indonesia already enforced by the joint signatures of the Ministry of Agriculture, the Ministry for Cooperatives and BULOG. If these are unrealistic or insufficient in definitions or contains any problems, these should be solved as they are.

It is reported that KUDs' rice milling activities in reality are chiefly for the custom milling on small lots and those for commercial milling are much limited. In spite of that, the request made by Indonesian side mentioned as if all the KUDs' milling activities are for commercial milling. However, the custom milling and commercial milling are completely different in their nature (refer to CHAPTER 2, 2-3 Footnote).

For realization of active commercial milling activity of KUDs, it is necessary to rationalize all the operation of KUDs such as paddy collection, handling, processing, turnover of the capital, management in general, etc., thus saving the operational cost and producing cheap and high quality rice competitive enough against other private parties. For executing these, very entrepreneurship and commercial capability are strongly required other than improvement of milling technology.

It would be effective to install a training center for rice milling technology in this Project, where the KUDs staff and managers are trained on milling technology and management skill, for pushing forward the policies for strengthening activities of KUDs.

However, as pointed out in the request from Indonesian side, this Project is nothing but one of the means to help solving various problems now faced. Other comprehensive measures by the ministry for cooperatives are desired for the improvement of KUDs' operations in order that the Project could be really effective.

### 3-2-2. Review of the Activities of the Proposed Center Mentioned in the Request

According to the request made by the Government of Indonesia, the functions of the proposed training center (hereinafter called "the Center") include not only the training on rice post harvest technology chiefly on milling, but also such activities as introduction and development of new technology, stipulation of white rice grading standards, etc.

However, research and development of rice post harvest technology on farm level are supposed to be made by the Ministry of Agriculture and

those of marketing and processing are by BULOG. Stipulation of white rice grading standards is so far made by BULOG.

Since the subjects concerned to the Ministry for Cooperatives in the field of rice post harvest processing are confined to paddy procurement, rice processing and sales of white rice all made by KUDs, the covered area of the activity of the Center should be limited to training on improvement of post harvest technology done by KUDs.

### 3-2-3. Review of the Training Activity of the Center Mentioned in the Request

In the request made by the Government of Indonesia, there is no description on detail of the training, though there are description on the activities and the objectives of the Center.

In order to operate rice mills of KUDs effectively, it is considered to be essential that both operators who operate machinery and managers who are responsible for the management of the facilities understand post harvest technology and cooperate each other. Therefore, Operator Training Course and Manager Training Course are considered to be required in the Center.

Though the details of the two courses cannot be same, in the both courses, mill operation management technique, starting from procurement of paddy from farmers up to milling and marketing of rice, should be trained each from the view points of operators and managers, other than training on operation and maintenance of mill machinery.

Since the estimated number of KUDs which posses rice mills are about 3,000, the total number of operators and managers concerned to the operation of mills would be 5,000 to 10,000 respectively. It is difficult to train all of such people within short span of time in the Center alone. Then, Instructor Training Course can be conceived, other than above two courses, so as to cultivate instructors, who can perform training on post harvest technology in various parts of the nation afterwards, by recruiting possible candidates.

As the Ministry for Cooperatives has training centers named BALATKOPs at each provincial office of the ministry to perform the training of KUDs' staff and members at the provincial levels, there are possibilities that similar training as done in the Center can be undertaken in future at each of them in nation-wide scale by locating the graduates of Instructor Course at BALATKOPs.

The training for the Instructor Course should be such that sufficiently deep knowledge and technique required both for Operator Course and Manager Course are gained and a period of intern should be taken for the trainees.

#### 3-2-4. Review of the Site Proposed in the Request

Three candidates for the Sites offered initially were judged not to be adequate for the Project by the preliminary study team. Another candidate newly offered from Indonesian side is located at Desa Gandasari, Kecamatan Cibitung, Kabupaten Bekasi, Province West Java, acreage being about 4 ha.

The area can be reached within an hour by use of highway from Jakarta and is considered to be suitable for the Site of the Center.

#### 3-2-5. Review of the Executing Agency Proposed

According to the report made by the preliminary study team, it was assumed that the Center was to be installed by the Directorate General of Business Promotion for Cooperatives, the Ministry for Cooperatives and the operation after the installation by INKUD (National Federation of KUDs) with staff to be newly recruited. However, after that, it was notified from Indonesian side in writing that both installation and operation of the Center will be made by the Directorate General and that the required staff for the operation will be fulfilled by transferring the existing staff of the ministry.

As mentioned above, the Ministry Decision No.122/M/KPTS/VIII/84 (refer to Appendix 1-6) stipulates that training of KUDs' staff and the future expansion, etc. are to be undertaken by PUSLATPENKOP under the

Directorate General of Institution Promotion for Cooperatives. PUSLATPENKOP has training facilities in Jakarta with provision of office, class rooms, theatre, dormitory, etc. and is carrying out training for considerable number of KUDs' staff every year by use of considerable amount of budget and training staff (see Table 2-11). Further, it has executed training occasionally on improvement of rice post harvest processing in cooperation with BULOG.

Based upon these facts, the study team proposed that the Project had better be executed by the Directorate General for Institution Promotion for Cooperatives rather than by the Directorate General for Business Promotion for Cooperatives and that the Center should be unified with PUSLATPENKOP or be closely joined with it for the smooth operation.

The explanation from Indonesian side on this point was that it was natural that the Center should cooperate with PUSLATPENKOP but the Project could not be executed by the Directorate General for Institution Promotion for Cooperatives nor the Center joined with PUSLATPENKOP since the Project had been brought up solely by the Directorate General for Business Promotion for Cooperatives and the works hitherto had been undertaken by them.

After all, it was mentioned from Indonesian side that coordination would be made in the Ministry for Cooperatives under the premise of the Directorate General for Business Promotion for Cooperatives to be the executing agency of the Project, that a new Ministry Decision would be issued regarding to the organizational position, the functions and the operations of the Center and that the contents of such Decision would be notified in writing to the JICA office in Jakarta by the beginning of July, 1988. The study team agreed the Directorate General for Business Promotion for Cooperatives to become the executing agency of the Project subject to the conditions that above were executed.

For the operation of the Center, the Directorate General for Business Promotion for Cooperatives had prepared the Project Implementation Unit (PIU).

The study team considered that the Center required close coordination and adjustment with PUSLATPENKOP for the operation and that the director of the Center needed to have an equal status and authority

with the principal of PUSLATPENKOP. From this view point, the team considered that the director of the Center should preferably be a person with Eselon IIB (equivalent status with the principal of PUSLATPENKOP), since the representative of existing PIU did not satisfy such conditions. The Directorate General for Business Promotion for Cooperatives expressed their view that the team's such view would be positively considered. It was assumed that Indonesian views including personnel disposition would be mentioned in the above document to be forwarded to JICA office.

### 3-2-6. Review on the Facilities and Equipment Requested

#### (1) Buildings

On determination of the scale and facilities of the Center, the team considered joint use of the facilities of PUSLATPENKOP as much as possible.

After study, it was revealed that the facilities of PUSLATPENKOP have already be jointly used by PUSDIKLAT.

According to the record of 1987/88 (refer to Appendix 2-6), maximum 221 trainees were trained at the same time jointly from PUSLATPENKOP and PUSDIKLAT. This number exceeds rated capacity of the facilities of PUSLATPENKOP. In these two or three years, the activities of PUSLATPENKOP and PUSDIKLAT have shrunk than before due to financial difficulties. It is imagined easily that the utilization rate of the facilities of PUSLATPENKOP should have been higher before that.

Under such circumstances, PUSDIKLAT is trying to have its own training facilities since the possibility of using the facilities of PUSLATPENKOP is limited. In this fiscal year, it plans to modify the existing buildings of the ministry and to convert them into class rooms and dormitory for 30 trainees. However, the possibility of expanding them in the following years are not clear and PUSDIKLAT would require to continue to rely upon the facilities of PUSLATPENKOP for the time being.

This fact suggests that there might be possibility of using occasionally some of the facilities of PUSLATPENKOP such as theater, etc., but most of the training activities of the Center should be done by

use of its own buildings. Therefore, it was considered that the Center should have minimum required independent training facilities in the Site.

## (2) Equipment

As the activities of the Center was confined to training on improvement of rice post harvest technology which are concerned to KUDs, review was made on items of equipment which were proposed originally from Indonesian side. The major conclusions are as follows :

- 1) Rice mills to be three kinds, i.e. 4 tph unit, 1 tph unit and 0.5 tph units. Four tph unit is used for training of multipass whitening, 1 tph for that on machinery introduced by Japanese aid, etc. in large number and 0.5 tph for that on most widely-used machines in KUDs.
- 2) Though paddy dryers are not used at KUDs extensively at present, it is essential for securing stable supply of paddy needed for training. Majority of paddy collected would be dried by the sun and the dryers are used auxiliary for the purpose and for training.
- 3) Steel silos for storing paddy is not included since these are not practical under present paddy marketing system and the natural condition of Indonesia. Paddy to be used for practice is stored in bag piled in godown as practiced by KUDs.
- 4) Component machinery of rice mills and the prime mover for them are introduced for the practice of maintenance, assembly and disassembly.
- 5) Equipment in the workshop are confined to woodwork / metalwork tools and gauges required for training of rice mill maintenance and do not include those for development of new machinery.
- 6) Equipment in laboratory are chiefly for training on visual inspection of paddy and rice. Those for chemical analysis are omitted.
- 7) Vehicles supplied are a bus (for observation, etc.), a truck (for transport of paddy, etc.), a tractor (for mixing and collection of paddy) and a fork-lift (for transport of paddy and machinery). Jeep is not included.



### 3-2-7. Review on the Prospect of Operation Budget

Annual budget of the Directorate General for Business Promotion for Cooperatives, the Ministry for Cooperatives, which is the executing agency of the Project, in 1987/88 was as follows :

(unit: Rp.1,000)

Routine budget	529,650
Development budget(central Gov't)	1,214,205
Subtotal	1,743,855
Development budget(Provinces)	2,213,496
Total	3,957,351

Required annual operation budget for the Center is not clear until all the details of facilities and equipment, etc. are fixed. In order to get an idea on this figure, annual budget of PUSLATPENKOP, which makes similar scale of operations as planned in the Center, was referred to at the time of field study :

Table 3-6 Comparison of the Scale of Training

	No. of Courses	Total Training man/days
PUSLATPENKOP	17	7,108
The Center (plan)	21	6,580

Annual budget for PUSLATPENKOP in 1987/88 was as follows :

(unit : Rp.1,000)

Routine budget	245,115 (Salary is about 40% of this)
Development budget	292,657
Total	537,772 (439,726 excluding salary)

If it is assumed that the required budget for the Center is equal to that of PUSLATPENKOP, then, as the Center do not require salary for the staff who would be transferred among the staff of the Ministry, the amount would be Rp 439,726,000. This figure is about a quarter of the budget of the Directorate General for Business Promotion for Cooperatives for the central Government. However, since the Center is supposed to make much of practical training, the required operation budget of the Center would be much greater than

training budget of PUSLATPENKOP, which belongs to the same Ministry as the Center, is reduced year after year due to financial difficulties of the national budget. In view of this fact, much anxiety is felt on securing the operation budget of the Center.

When this point was asked, there was an answer from Mr. Mamiet, Deputy Director-General, the Directorate General for Business Promotion for Cooperatives, that it was possible to secure such an amount through the increased allocation of development budget when new project was started, in view of past experiences.

Initially, there was an explanation from Indonesian side that KUDs' savings could be used as the operation budget of the Center, other than annual budget of the Directorate General for Business Promotion for Cooperatives. But the total amount of such savings, authority for the use, etc. were not clarified ultimately by the Ministry for Cooperatives and it was concluded by both parties that the use of such fund for the purpose of operation of the Center was not possible.

The savings referred here was KUDs' saving collected on their sales of paddy and rice to DOLOG in a rate of Rp1 per kg of paddy or rice. It was explained that this fund was supposed to be used for refunding of losses made by KUDs, capital investment for KUDs' activity, education and training for KUDs, etc.

Other than this, there is a system of KUDs' saving for the Cooperative Education Fund, which was stipulated in Decree of the Director General of Cooperatives No.61/DK/KPTS/A/VIII/79 in 1979 when the Ministry for Cooperatives was still the Directorate General for Cooperatives.

Such Education Fund is formed through saving of 5% of the profit made by KUDs, 75% of which may be used by KUDs themselves for the purpose of training and education and 25% of which by DEKOPINDAs, kabupaten level KUD leagues. The fund collected at DEKOPINDAs in this way is partly forwarded to DEKOPINWILs, provincial level KUD leagues, and DEKOPIN, central level KUD league in the same manner.

Finally-reached fund to DEKOPIN is used for education and training activities of DEKOPIN such as operation of IKOPIN/AKOPs, etc.. However, as the number of KUDs which realize profit are small and the amount of the profit is not much, it is reported that such savings are always in short.

### 3-3. Details of the Plan

#### 3-3-1. The Executing Agency and the Organization of the Center

The executing agency of the Project is the Directorate General for Business Promotion for Cooperatives, the Ministry for Cooperatives. The Center installed by the Project is operated as one of the organizations under the the Directorate General. The Center is to be operated under close cooperation with PUSLATPENKOP. A joint committee to make coordination of the both centers is expected to be formulated, detailed operation of which is supposed to be mentioned in the newly issued Ministry Decision mentioned above.

##### (1) Organizational Setup of the Center

The organizational setup of the Center is as shown in the following diagram (Figure 3-1).

Under the director, management division and training division belong. Management division has general affairs section and accounting section. Training division has three sections, i.e. planning and evaluation, training execution and of lecturers.

The functions of each section of training division are as follows:

##### 1) Planning and evaluation section

It prepares training curricula, plans annual training programs, allocates lecturers and recruits trainees. After training courses are over, it evaluates them and feeds back to the succeeding courses.

It also undertakes public relations (to make the Center's activities known to the people) and negotiation with other parties.

##### 2) Training execution section

It compiles and edits training materials in accordance with training program and training curriculum. Maintenance and preparation of equipment used for practice are also made. Such activities are performed in cooperation with lecturers section.

### 3) Lecturers section

Four lecturers and an assistant to each lecturer belong to this section. Subjects to be covered by respective lecturer are as follows ;

- paddy drying and storage,
- rice processing,
- machinery and prime movers, and
- rice quality control.

The chief of the section is at the same time the chief of the lecturers and he is in charge of rice marketing.

When required, lecturers will be invited from outside.

This section will cooperate with other two sections for planning of training curricula, compilation of training materials, preparation of practice, etc..

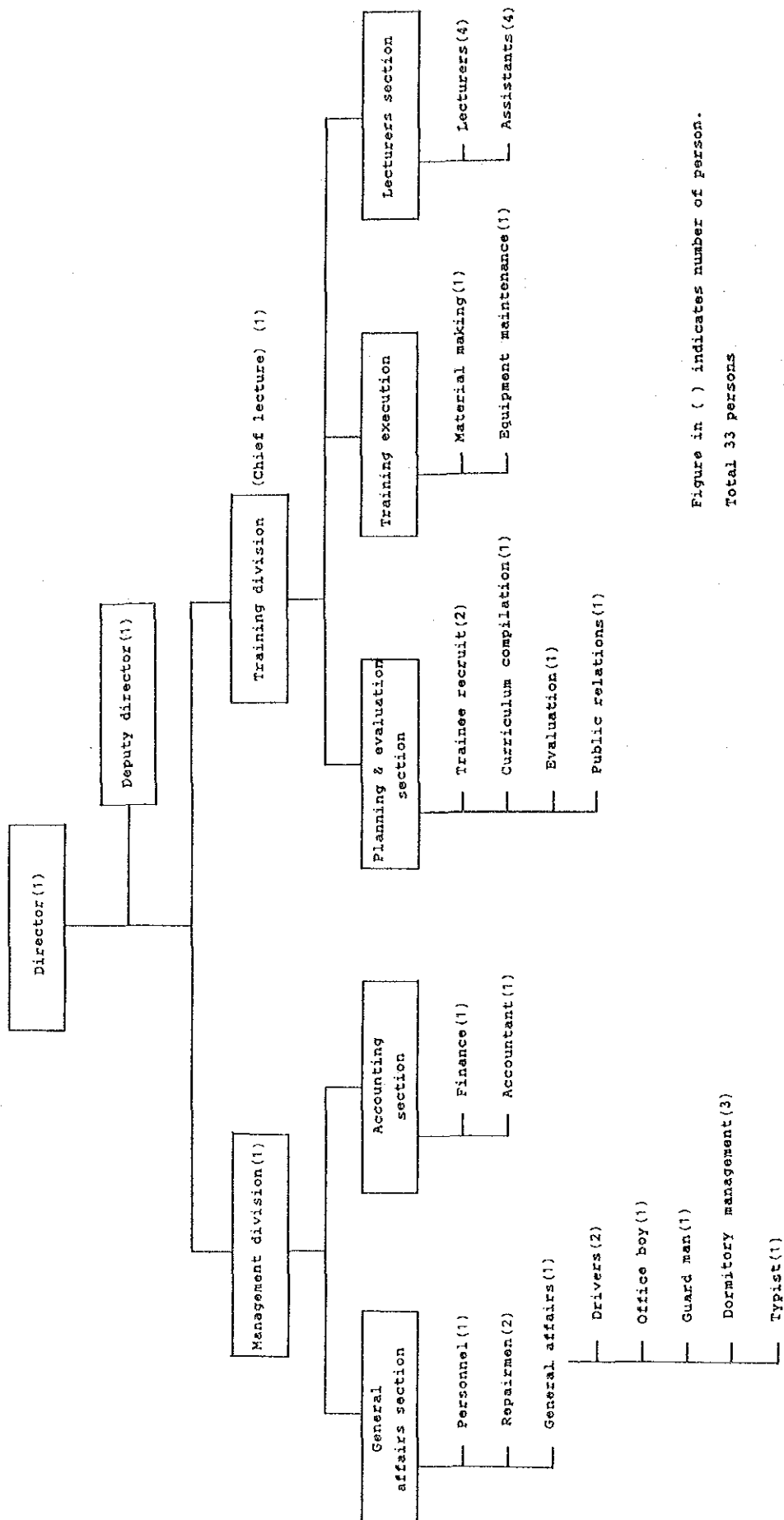


Figure in ( ) indicates number of person.  
Total 33 persons

Figure 3-1 Organizational Setup of the Center

## (2) Staff Disposition Program

Total number of the staff of the Center is assumed to be 33 (refer to Figure 3-1).

According to the explanation of the Directorate General for Business Promotion for Cooperatives, all of them will be selected from among the staff of the Ministry for Cooperatives and transferred to the Center.

It was explained that there were already some six candidates for lecturers in the ministry staff and their experience and qualification were said to be sufficient.

### 3-3-2. The Ways for Recruiting Trainees

For recruit of trainees of operator course and manager course, the same ways as taken by PUSLATPENKOP are applied. The joint committee will make adjustment so that same person should not be selected as a trainee both for PUSLATPENKOP and the Center at the same time.

For recruit of trainees of instructor course, the Ministry for Cooperatives will select those persons that could be lecturers in BALATKOPs in future.

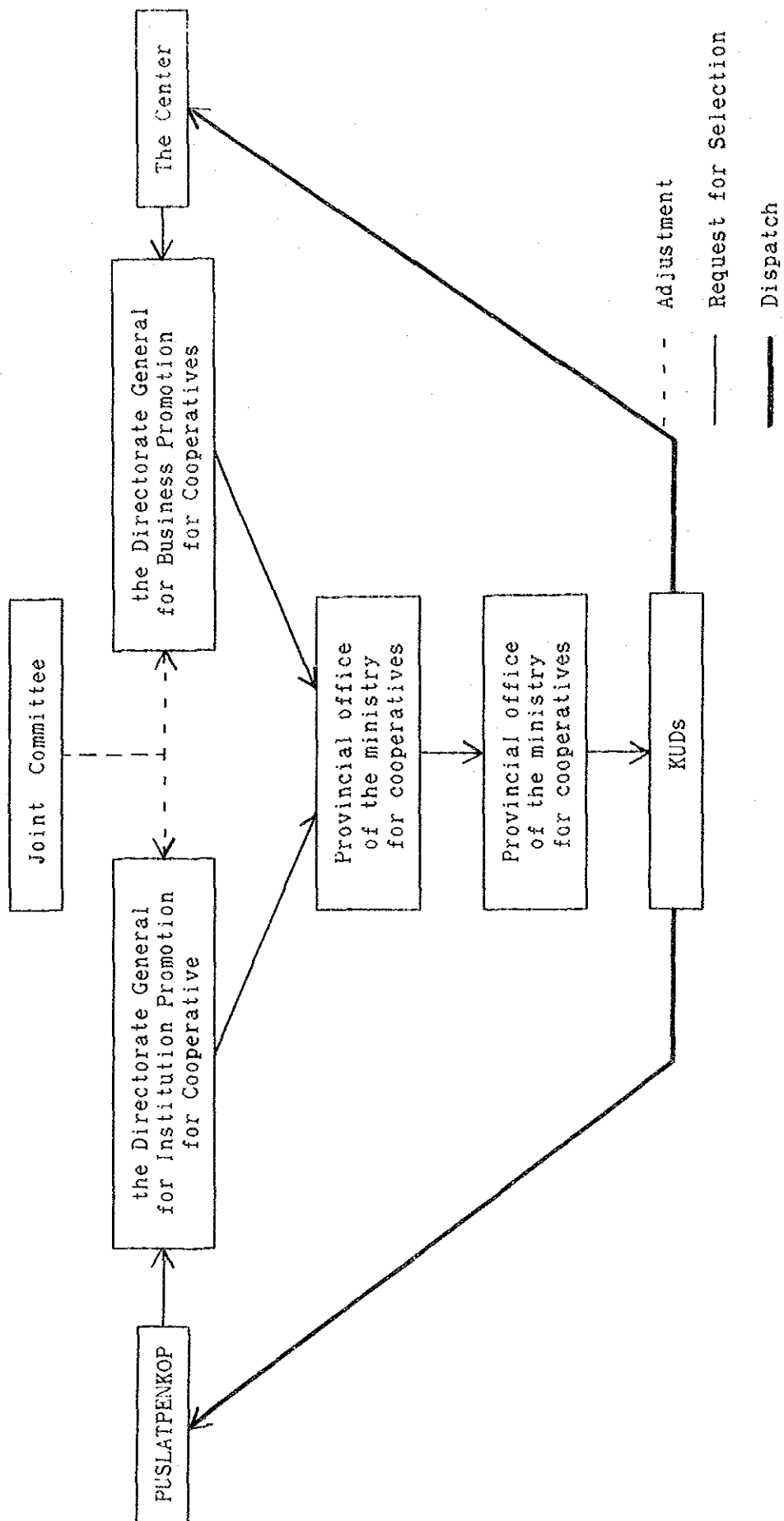


Figure 3-2 Ways of Recruiting Trainees



### 3-3-3. Training Program

#### (1) The Kinds and the Scale of Training Courses

Table 3-2 The Kinds and the Scale of Training Courses

Courses	Duration	Frequency/year	No.of Trainees	No.in Year
Operator course	14 days	12 times	20 persons	240 persons
Manager course	14	12	20	240
Instructor course	90	2	7	14

Duration of each of operator course and manager course is 14 days. Indonesian side had desire to make an intensive on-the-job-training and if this was practiced satisfactory it would take considerably longer time in each course. However, at the same time, it was requested to perform training for large number of trainees every year, considering the number of the concerned people in KUDs in the nation. To compromise these, 14 days was taken as a term of each course.

The number of trainees in each course had better be reduced to ten to 15 persons from the view point of effect of training. However, this was increased to 20 in consideration of the demand for larger numbers as above.

Instructor course aims at culturing future instructors by use of long 90 days' training. There are 14 major rice growing provinces in Indonesia at present. KUDs with rice mills are supposed to be concentrated in these provinces. Yearly one person per such province is trained for instructor.

#### (2) Yearly Training Program

Yearly training program of the Center is as follows :

Operator courses and manager courses are held once every month.  
Instructor courses are held twice a year.

This is summarized as below :

Table 3-3 Yearly Training Program

Courses	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Operator	—	—	—	—	—	—	—	—	—	—	—	—
Manager	—	—	—	—	—	—	—	—	—	—	—	—
Instructor	—	—	—	—	—	—	—	—	—	—	—	—

Indonesian side had an intention to increase the frequency of the courses so that more number of trainees could be trained every year. However, practically, it would be very difficult to execute it, specially at the beginning of the operation of the Center. If this could be attained really, further expansion of training in future can be considered.

### (3) Subjects of Training

In PUSLATPENKOP, training hours in two weeks courses are 56 periods (75 minutes per period). In this Center also, training hours for two weeks courses are assumed to be 56 periods (75 minutes per period) and the subjects of training are as follows. Training is made five periods in week days, three periods on Saturday and no training on Sunday :

1) Operator course

Table 3-4 Subject of Training, Operator Course

Subjects	Contents	No.of Periods(75min)		
		Lecture	Practice	Total
Quality control	Grading standards Quality inspection Inspection instruments	2	2	4
Paddy drying	Sun drying Use of dryers	2	4	6
Operation/ maintenance of mill machines	Paddy cleaner Paddy husker Paddy separator Rice whitener Broken separator Ancillary equipment	10	15	25
Operation/ maintenance of milling unit	Material handling Adjust/balance of machinery Cleaning/light/dust collection By-products disposal Regular check Trouble-shooting	4	8	12
Prime mover	Working principle Operation Repair Maintenance Trouble-shooting	2	5	7
Operation safety	Fire hazard Operator's safety Preventive measures	1	1	2
Total		21	35	56

2) Manager Course

Table 3-5 Subject of Training, Manager Course

Subjects	Contents	No.of Periods(75min)		
		Lecture	Practice	Total
Marketing of paddy/rice	Marketing planning Judgment on transaction Procedures of deal	10	5	15
Characteristics of rice	Botanical, physical chemical	1	-	1
Quality control	Grading standards Quality inspection Inspection instruments	2	4	6
Paddy drying	Sun drying Use of dryers	2	3	5
Storage of paddy/rice	Various methods	2	2	4
Operation/ maintenance of mill machines	Paddy cleaner Paddy husker Paddy separator Rice whitener Broken separator Ancillary equipment	4	4	8
Operation/ maintenance of milling unit	Material handling Adjust/balance of machinery Cleaning/light/dust collection By-products disposal Regular check Trouble-shooting	6	4	10
Prime mover	Working principle Operation Repair Maintenance Trouble-shooting	2	2	4
Operation safety	Fire hazard Operator's safety Preventive measures	2	1	3
Total		31	25	56

### 3) Instructor Course

This is the course to culture future instructors. Trainees in this course will acquire broad knowledge on subjects included in above two courses and further deepen knowledge and experience on specific subjects to which each trainee is supposed to be specialized. For this purpose, trainees will participate in the training together with lecturers as interns after they have completed general training. Since the number of trainees are small, training can be made combined of both practice and lecture.

Major subjects of training in this course are as follows, the detail of which is mentioned in Appendix 2-7 :

- a. Rice post harvest processing technology,
- b. Rice production and marketing in Indonesia,
- c. Designing rice milling facilities,
- d. Management technology for rice mill operation,
- e. Handling of rice milling equipment,
- f. Characteristics of rice grain,
- g. Inspection of paddy and white rice,
- h. Paddy drying,
- i. Storage of paddy and white rice,
- j. Operation and maintenance of rice mill and its equipment,
- k. Operation and maintenance of prime mover,
- l. Safety measures,
- m. By-products utilization.
- n. Practice of operation and management of rice mill,
- o. Training practice (intern training).

#### 3-3-4. Contents of Facilities and Equipment

(1) As a result of analyzing requirement, the minimum contents of room for training center are as follows.

##### 1) Administration building

Office, director room , deputy directors room, instructors room, training affairs room, library, laboratory, preparation room, meeting room, classroom, printing/typing room, clinic, etc.

- 2) Practical training building  
Rice mill training room, practice room, workshop, control room,  
lecture room, generator rooms, etc.
- 3) Dormitory  
Lounge, dining room, kitchen, 4-person use bed rooms, etc.
- 4) Guardhouse
- 5) Outdoor lavatory building
- 6) Husk store
- 7) Garage
- 8) Elevated water tank structure

(2) Contents of Equipment

After review of the request from Indonesian side, equipment to be supplied to the Center was determined as follows :

- 1) Equipment for rice milling training,
- 2) Equipment for drying paddy for the training,
- 3) Component mill machinery and tools for maintenance practice,
- 4) Wood working and metal working tools for practice,
- 5) Paddy and rice quality inspection implements,
- 6) Training material making and information processing equipment,
- 7) Audio-visual equipment for training,
- 8) Vehicles for training and practice.

Details of above equipment are mentioned in the equipment list  
(refer to 4-4-2).

### 3-3-5 Outline of the Site Surroundings

#### (1) The Site

The Republic of Indonesia consists of 13,000 large and small islands and its total area is 1,920,000 km<sup>2</sup> (approximately 5.1 times of that of Japan), which is divided into 27 Province including 3 Special Provinces. The west Java where the Project is being planned is located western part of Java island, which consists of 5 Provinces. They surround Jakarta province where the capital city, except the northern part coast.

The area of West Java Province is 46,300 km<sup>2</sup> (15th largest province in Indonesia) and the population was 30,830,000 in 1985. The capital city is Bandung 2nd largest population in Indonesia. The project site is located in Desa Ganda Sari, Kacamatan Cibitung, Kabupaten Bekasi, West Java, near by the ramp way of Cibitung of Jakarta-Cikampek highway, about 30 km east of Jakarta.

The weather in Indonesia is tropical. At the Project site the maximum temperature is 31 - 33 °C, the minimum is 23 - 25 °C and average relative humidity is about 80%. There are few changes in temperature and humidity throughout the year. Monthly rainfall from November through March (rainy season) is 200 - 300 mm and from April through October (dry season) is less than 100 mm. The rainfall in a year is about 2,000 mm.

#### 1) Site location

The site is located on the west side of a connecting highway 30 m, 7 width asphalt-paved, 300 m north from Cibitung toll gate on the Jakarta Cikampek highway, which has been opened up to Cibitung from Jakarta. (The map is attached). In the east of the Project site, on the opposite side of the road, a pharmaceutical factory is being constructed by the Ministry of Welfare.

#### 2) Land ownership

A part of land owned by BULOG (approx. 33 ha) is transferred to the Ministry for Cooperatives, 3.75 ha of which is used for the Project.

#### 3) Site condition

There is a wall in the center part of the Site from north to south with brick-mortar finish (H=2,300). The west side of the

wallis used for growing cassava after opening shrub, where watchman's hut is exsist. The east side is used as paddy field. After the crop it is used for cattle grazing and as soccer court. The area is 1.5 - 2.0 m lower than the road to the toll gate. Consideration was paid for designing building plan regarding to the existense of a grave yard in the south of the wall. For the Project, site preparation works, such as removal of the wall, filling of paddy field, felling of trees, etc. are required. Fencing on the approach road, making of by-pass, etc. are also required.

4) Transportation

It is about 30 km to Jakarta and takes about 30 minutes to one hour by highway. It is about 10 km to BEKASI City and takes about 20 minutes. The site is very easy of access.

5) Soil condition

The soil is clayish. It seemed there are Sand layer at 4 - 5 m depth and clay silt layers below them, judging from soil profiles nearby.

6) Natural conditions

- Temperature: Maximum Temperature 31 - 33 °C  
Minimum Temperature 23 - 25 °C

Few changes throughout the year.

- Rainfall

November - March (Rainy season): 200 - 300 mm/month

April - October (Dry season) : Less than 100 mm/month

The rainfall in a year: 2,000 mm

It rains during dry season also.

- Relative Humidity: Approx. 80% throughout the year.

- Wind: The average velocity is 1 - 2 m/s.

The maximum velocity is about 7 m/s.

Wind direction is mostly south to north.



## (2) Infra-Structure

### 1) Electricity

Along the water channel at 150 m north of the Project site, there exists 20 kV Pole wiring extended from G.I. Bekasi Substation (primary voltage; 150 kV, with 60 MVA transformer 2 sets). Wiring to the Project site can be extended from the wire along the existing unpaved road at the east side. Low voltage (3 phase, 4 wire, 380/220 V, 50 Hz) may be received the electricity from the east side.

### 2) Telephone

It is necessary to lead wire from a national road 1.2 km north, as there is no telephone cable around the Project site.

A telephone exchange office is located in BEKASI City. It has approximately 2,000 automatic circuits, and they are all occupied at present. Since addition of 1,000 more circuits are being planned in 1988, it is possible to install telephon if these are realized.

It is common in Indonesia that it takes 2 - 3 years to install telephone as there are many applicants. Therefore communication is often made by use of short wave (SSB) at present.

A request for the installation of telephone shall be made to the telephone company by the Ministry for Cooperatives and assurance of telephone installation shall be obtained by the completion of the Project.

### 3) Water supply

Water is not supplied. Existing shallow well (6 m depth) at the Site for the watchman's hut is not enough for supplying water to the Project (33 officers, 47 trainees, total 80 persons). It is necessary to dig a deep well, By digging 100 m, pumping up 100 liters per minutes is considered to be possible.

### 4) Drainage

Surface water drainage will be good. Since northern side is lower, the surface water shall be drained to the channel located in the north of the Site. Drainage from septic tank is made by permeating into soil which is a common practice in Indonesia.

### 5) Fuel

LPG (13 or 45 kg cylinder) or kerosene is generally used.