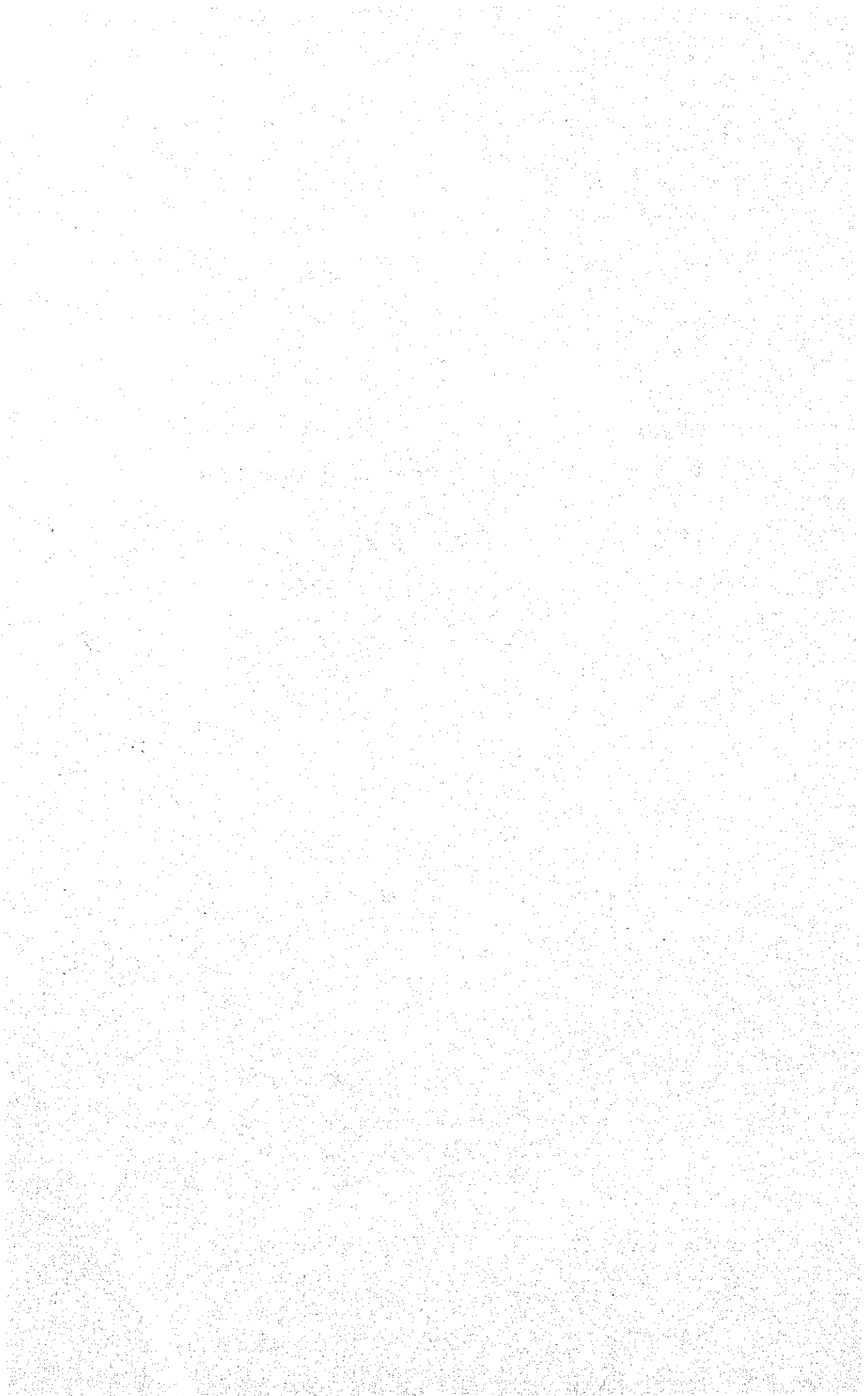


付 属 資 料

付属資料

1. エバリュエーション・チーム現地レポート (Summary Report)



June 22, 1982

To Authorities Concerned

Dear Sir,

Pursuant to Paragraph 12 of the Record of Discussions signed on September 3, 1977, the technical cooperation period for the National Water Management Training Centre Project is due to end on September 2, 1982.

Mainly due to the delay of construction of the proposed facilities, the Project has not fully functioned yet as originally anticipated. In this connection, the Government of Malaysia requested 2-year extension of the Japanese Government's assistance to the Project.

The Government of Japan sent the Evaluation Team of Japan International Cooperation Agency headed by Mr. Minoru Mine to review and evaluate the activities during these four and half years and to make recommendations to the Government of Japan on the possibility of extension of the Project, with a schedule from June 8 to 25, 1982.

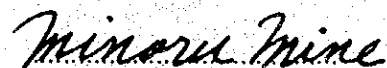
Prior to the visit to Malaysia, the Team collected and studied all the relevant data and informations available in Tokyo and made supplemental study in Malaysia. The Team visited the Training Centre and Pilot Farms and made detail discussions with Japanese Experts assigned to the Project and their counterpart personnel.

Following these observation and discussions, a Joint Meeting is to be held at DID HQ in Kuala Lumpur on June 22, 1982 in attendance of the representatives of the authorities concerned, and a report summarizing the result of evaluation is to be submitted.

The summary report prepared by the Evaluation Team is attached herewith.

The Team would like to express its heartfelt gratitude for the kind cooperation and help given by the officials concerned as well as Japanese Experts, during its stay in Malaysia.

Yours truly,



Mr. Minoru Mine
Team Leader of Japanese
Evaluation Team, JICA

SUMMARY REPORT OF EVALUATION
ON
THE WATER MANAGEMENT TRAINING PROGRAMME IN MALAYSIA

THE JAPANESE EVALUATION TEAM

JUNE 1982

KUALA LUMPUR

SUMMARY REPORT OF EVALUATION
ON
THE WATER MANAGEMENT TRAINING PROGRAMME IN MALAYSIA

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1. INTRODUCTION

The Government of Japan through the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a team to Malaysia to evaluate the technical cooperation on the water management training programme (hereinafter referred to as "the Project") from June 8 to June 25, 1982. The team made the evaluation on the Project activities through the field trip to the Project sites and a series of discussions with Malaysian officials as well as Japanese Experts assigned to the Project. The interviews with farmers in the Pilot Farm No. 1 were also conducted.

The member list of the team and its itinerary in Malaysia are attached in Annex I and II, respectively. The team prepared and submitted the summary report on evaluation before its departure for Tokyo. The report includes the result of findings, evaluation of the Project and some recommendations.

The team sincerely hopes that necessary measures will be taken as prompt as possible by both Governments taking into full consideration the recommendations derived from the evaluation.

2. THE PROJECT

2.1 Background

To increase rice production through the introduction of water management techniques, the Government of Malaysia requested the Government of Japan for a technical cooperation in October, 1975. In response to the request, the Government of Japan dispatched survey teams through JICA at various stages of the Project. As a result of the exchange of views between the Japanese survey team headed by Mr. Michio Nakahara and DID officials headed by Mr. Pang Leong Hoon, both parties signed the Record of Discussions (hereinafter referred to as the R/D) on September 3, 1977. The R/D came into force on that day and remains in force for a period of five years.

According to the framework of the R/D, both Governments have cooperated with each other in implementing the Project since 1977. However, the Project has not yet functioned fully as originally anticipated mainly due to the delay of construction works of the Project facilities. Consequently, the Government of Malaysia requested a 2-year extension of the Japanese Government's assistance in February, 1982.

Accordingly, the Government of Japan decided to dispatch an evaluation team for the Project.

2.2 Objective

According to the R/D, the objective of the Project is to contribute to the promotion of agricultural development in Malaysia through the establishment of water management techniques and its extension. The team considers that the objective of the Project can be realized by the following measures:

- (a) Establishment of basic water management techniques in a training centre;
- (b) Training of water management officials;
- (c) Demonstration and introduction of water management techniques in a demonstration farm and four pilot farms.

2.3 Project Plan

As described in Annex I of the R/D, the Project comprises the following two components.

1) Training Centre

Water management Training Centre (with a Demonstration Farm) will be set up in Kota Bharu, Kelantan, and the following activities will be implemented:

- (a) establishment of basic water management techniques;
- (b) training of water management officers;

- (c) demonstration of improved paddy cultivation system with emphasis on water management techniques;
- (d) management and operation of Pilot Farms;
- (e) investigation, planning, guidance and advice necessary for the activities related to the items mentioned above.

2) Pilot Farms

Training Centre will set up four (4) Pilot Farms each of about 20 ha nearby and will implement the following activities with the cooperation of authorities concerned:

- (a) installation of irrigation, drainage, farm roads, and other facilities in the Pilot Farms;
- (b) introduction of water management techniques and on-the-job training for technical staff;
- (c) guidance and advice to farmers in Pilot Farms for introduction of improved paddy cultivation system with emphasis on water management techniques;
- (d) guidance and advice on the formation of water management organizations.

2.4 Technical Cooperation Programme

According to the R/D, the Government of Malaysia takes the following measures to implement the Project:

- (1) Construction of Facilities including Training Centre, Demonstration Farm and Pilot Farms;
- (2) Appointment of Malaysian Counterpart Officials and other Personnel;
- (3) Procurement of Machinery and Equipment other than those provided by the Government of Japan;
- (4) Allocation of budget necessary for the Implementation of the Project.

While the Government of Japan cooperates with Malaysia in implementing the Project through the following measures:

- (1) Dispatch of Japanese Experts;
- (2) Provision of Machinery and Equipment;
- (3) Training of Malaysian Counterparts in Japan;
- (4) Other necessary measures as requested.

3. IMPLEMENTATION

3.1 Performances made by the Government of Malaysia

Major performances made by the Government of Malaysia and their implementation progress as of June 1982 are summarized in below.

3.1.1 Construction of Project Facilities

(1) Training Centre's Facilities

Construction works for the Training Centre's facilities were commenced in 1978. Layout of the proposed facilities is shown in Fig. 1. All the facilities except the Main Building were completed almost as scheduled by the end of 1981. The actual work progress is shown in Fig. 2 together with the scheduled one.

The Main Building which is the most important structure among others and includes office, lecture rooms, laboratory and exhibition hall could not be completed as scheduled, mainly due to the contractor's incapability in foundation works. The date of completion of the contract was postponed several times and finally the original contract was terminated in June, 1981. The works were retendered in December 1981. The construction works were divided into two contracts, foundation works and superstructure works. The foundation works were awarded to the United Engineers with an amount of \$240,000, approximately. The works were completed on schedule in March 1982.

For the superstructure works, the contract was concluded on April 10, 1982 with Yap See Yee Co., Ltd., which is one of the most reliable contractor in Malaysia who built the KADA's Main Building. The construction cost amounts to \$934,636 and the construction time schedule is 18 months. As of June 1982, the work progress is fairly good and the works are expected to be completed by September 1983.

(2) Demonstration Farm

The Demonstration Farm (D/F) is composed of 12 farm lots of total 3.86 ha in net area and related facilities. The list of main related facilities is shown in below:

- (a) An irrigation pond with water storing capacity of 50,000 m³;
- (b) Concrete lined irrigation canals of 594 meters with a full capacity of 0.0106 m³/sec;
- (c) Drainage canals of 675 meters long in total;
- (d) Farm roads of 1,150 meters long with 4 and 6 meters in effective widths;

- (e) One bi-purpose pump house;
- (f) A tube well with a pump of a diameter 65 mm;
- (g) Two sets of pump for irrigation purpose with a capacity of 0.32 m³/min.

Land levelling and the construction of related facilities to the D/F were completed as scheduled in 1979 under the Japanese financial aid of \$446,600. Paddy cultivation in the D/F was started in November 1979. As of June 1982, the sixth trial paddy cultivation is going on.

(3) Pilot Farms

The following four Pilot Farms (P/F) were originally scheduled to be constructed by 1980.

No. of P/F	Name of Off-take	Gross Irrigable Area (ha)
No. 1	P3T1S6K	18.08
No. 2	P4S3L	13.27
No. 3	P2M	15.20
No. 4	Padang Lindong	18.20

Locations of these P/F are shown in Fig. 3. Three of the P/F are situated in the Kemubu Scheme area and the remaining one is located in the Pasir Mas Scheme area.

The original construction time schedule was too tight to accomplish. The difficulties of land acquisition for canals and roads of P/F caused great delay in construction.

The construction of the P/F No. 1 was commenced on April 15, 1981 with a schedule of 10 months up to February 14, 1982. The date of completion, however, was postponed four months up to June 14, 1982, due to the climate and other miscellaneous causes. As of June 1982, the progress of work is estimated to be about 75%. It will take another one or two months till the construction works are completely accomplished.

The detailed design of the P/F No. 2 was finished in July 1981 and the application for land acquisition was submitted to the State Land Office. As of June 1982, the approval of the Land Office has not been gotten yet.

The land acquisition of the P/F No. 3 is quite difficult due to a strong opposition movements of the farmers. The reason for opposition is considered to be a political one. The Project gave up the construction of P/F No. 3 and found an alternative site which was named as the P/F No. 5. In the newly selected P/F No. 5 site, collections of basic data on soil, water, topography, etc. are under way.

Concerning the construction of the P/F No. 5, the decision of the Ministry of Agriculture was informed to the Team during its stay in Kota Bharu. In the decision, the Ministry requests the early completion of the P/F No. 5 with a schedule of 9 months from January 1983. Every activities will start soon to follow the Ministry's decision.

As for the P/F No. 4, preliminary investigations on existing field channels, topography, etc. are under way. The detailed design is going to be done with an assistance of Japanese short-term expert from July 1982.

Taking into the above conditions into account, the Project made a revised construction time schedule as shown in Fig. 4. In the schedule, the period for land acquisition is taken six months which is the minimum requirement for the approval of the Land Office. Assuming all the proposed works are carried out on schedule, though it is so tight, the construction of the four P/F will be completed in December 1983.

3.1.2 Staff in the Training Centre

Though the posts allocated to the training centre were limited at the initial stage, both the post and staff in the centre have been progressively increased.

The numbers of post and assigned staff are chronically listed in below and the organization chart of the Project as of 1982 is shown in Fig. 5.

Year	Number of Post	Number of Assigned Staff
1979	8	8
1980	20	16
1981	29	23
1982	38	25
1983	40 (estimated)	—
1984	42 (")	—
1985	45 (")	—

In 1982, a total of 38 posts is prepared and staff are allocated in 25 posts. As of the middle of June 1982, there are 13 vacant posts; out of which 6 posts including one tractor operator, one watchman and four labourers are going to be filled by the end of June 1982. In case the above 6 posts are filled up as scheduled, the centre is to keep the minimum required staff.

3.1.3 Expenditure

The expenditure of the Project is broadly divided into two categories. One is the expenditure for the Project development and the other is the expenditure for the Project operation. The expenditure for development includes the cost for construction of facilities such as training centre's facilities and demonstration farm. The expenditure for operation includes the salary for the staff and costs for materials, maintenance and repairs.

The expenditure for development had been estimated to be \$4,700,000 in total. During the Third Malaysia Plan (1976 to 1980), a total amount of \$2,267,624 was spent for various construction works. In the present Fourth Malaysia Plan (1981 to 1985), an amount of \$2,500,000 is allocated for the Project as shown in Table 1. The deficit is estimated to be about \$300,000. Therefore, a shortage of budget for the Project development will occur for the year 1983. The Project is to require additional budget to the Government on the occasion of Mid-Term Review, which will be made in the middle of 1983.

As of the end of 1981, the total expenditure for the Project development amounted to \$3,206,924. The total cost to complete the remaining construction works is estimated to \$1,560,700 as shown in Table 2. Therefore, the expenditure for the Project development is estimated to \$4,767,624.

With the increase in the number of staff and the expansion of Project's activities, the annual expenditure for the Project operation has also increased over the years. Especially in 1981 and 1982, the annual budget was increased 96% and 80%, respectively compared with the previous year. The actual expenditure by 1981 and the budget after 1982 are shown in Table 1. In the table, the record of expenditure spent before 1978 can not be collected, because the expenditure was made through DID Headquarters.

As for the operation cost, it is considered that enough money has been allocated for the Project.

3.2 Performances made by the Government of Japan

The following measures have been taken by the Government of Japan. The total amount disbursed by the Government as of March 1982 is Yen 479,395,000 as shown in Table 3.

3.2.1 Assignment of Experts

Long term experts have been dispatched in accordance with the list described in the R/D. The experts were dispatched since February 1978 almost as scheduled though some vacancies occurred at the time of the alternations as shown in Fig. 6. Short-term experts, seven in total were dispatched according to the request from the Project. The total man-months of long-term and short-term experts amount to 238.5 m/m and 27.5 m/m, respectively as of March 1982. List of expert and its assignment period to the Project are mentioned in Table 4.

3.2.2 Provision of Machinery & Equipment

Total expenses for provision of machinery and equipment amounted to Yen 210,972,000 as of March 1982. Main machinery and equipment are listed as below:

- (a) Equipment for soil mechanics
- (b) Drawing equipment
- (c) Survey and measurement equipment

- (d) Meteorological equipment
- (e) Audio-visual materials
- (f) Agricultural machinery
- (g) Pump and other material for the D/F
- (h) Vehicles
- (i) Miscellaneous equipment

Most of these equipment are properly used and maintained under good conditions. However, a few machines such as paddy dryers are unusable due to lack of proper electric supply.

3.2.3 Training of Malaysian Counterparts in Japan

Malaysian counterparts, total 11 in number participated in the training courses carried out in Japan, as of March 1982. Four participants out of 11 are the centre's staff and the remainder are staff of other authorities like KADA and State DID. Name, post, training course and its duration are listed in detail in Table 5.

3.2.4 Contribution to Local Cost

The following facilities were constructed by using the financial aid from the Government of Japan.

Items	Period	Budget (thousand Yen)
Flood Protection Bund	July 1978—March 1979	4,000
Tube Well	July 1978—October 1978	} 39,000
Demonstration Farm	February 1979—March 1979	
Irrigation Pond and Bi-Purpose Pump Station	March 1979—March 1980	
Warehouse	November 1980—December 1980	750
Repairing of Flood Protection Bund	March 1982	4,664

4. EVALUATION

The evaluation of the Project is made following the items of the Project Plan mentioned in Section 2.3 of this report.

4.1 Training Centre

(a) Establishment of basic water management techniques;

In evaluating this item, there will be necessary to define "the water management". The Team considers that the water management means to use the limited water as effective as possible for a crop cultivation under the improved farming practice. The limited water is to be distributed equally into each field. Thus, the equitable distribution of water will be one of the main purpose of the water management.

The water management is to be carried out under the improved farming practice, which aims high crop production. In case of paddy cultivation, the water depth in the field is to be controlled within the suitable water depth in order to get high yield. Thus the other main aims of the water management will be to keep the water in the field to the most suitable depth in each paddy growing stage.

Based upon the above considerations, "the water management" will be defined as to distribute the limited water equally to each field and to control the water depth in the field as a paddy requires. For the suitable water management, the on-farm development will be prerequisite.

As for the on-farm development, four pilot farms are scheduled to be constructed in the R/D. Through the design and construction of the P/F, the technical know-how in designing and constructing the on-farm facilities is to be transferred to the Malaysian engineers. As noted in Section 3.1.1, however, the construction of the P/F No. 1 is under way, of which progress is estimated to be about 75% as of June 1982. In this context the transfer of know-how on design and construction of the on-farm development is still under way.

In order to know the suitable field water depth to achieve high yield, various trials have been done in the Demonstration Farm (D/F) from 1979. As noted in item "c" below, the water management techniques under continuous flood conditions have been almost established. Various investigations on water requirements by paddy have been carried out to know the amount of water to be distributed to the field, which include the followings.

- (1) Collection of meteorological data such as temperature (maximum and minimum), humidity, precipitation, pan and field evaporations and sun shine hours;
- (2) Investigations on water requirements by paddy by means of N-type lyccemeter, Evapotranspiration Box (ET Box) with and without bottom;
- (3) Measurement of water amount for pre-saturation.

The collection of meteorological data has been started from the off season of 1981. All the instrument and equipment for the observation were donated by Japan. The method of observation and the way of record keeping were transferred to the counterparts in charge.

Water requirements by paddy consist of consumptive use of water or evapotranspiration (ET) and percolation (P). Measurement by ET Box without bottom shows the value ET + P, and one with bottom explains the value ET. Thus, both of value, ET and P can be known.

The measurement by means of ET Box has been conducted from the off season in 1981. The data collected during the off season in 1981 was temporarily analysed and the result of analysis was summarized in a report, "Water Consumption for Rice Cultivation".

The investigations on water requirements by paddy will be essential to establish the basic water management. The observation should be carried out continuously.

Pre-saturation water requirement including puddling water was measured at the offset of the off-season cultivation in 1981 and 1982. The result shows about 200 mm. The observation shall be continued.

The techniques of distributing the required amount of water equally to each field are to be established through the practical water supply operation in P/F. Because the P/F are still at design and construction stages, any operation has not been done in the P/F to evaluate.

(b) Training of water management of officers:

Due to the delay of the Main Building construction, the proposed training course can not be realized fully. However, short term training courses

of about two weeks were started almost on the original schedule in 1981, with a great effort of the Project staff. Finally five short term courses were conducted in 1981.

As the lecture room for these courses, the meeting rooms in State DID and KADA were used temporarily and the trainees had to stay in the hotels in Kota Bharu. With the completion of the Hostel Block in December 1981, a dining room in the Block became usable as a lecture room and the Normal Course has been commenced in May 1982 with a schedule of five months.

The training courses conducted by 1982 and the schedule up to 1984 are shown in Fig. 7. It is scheduled by 1984 that 54 Irrigation Inspectors and 20 Technical Assistants are to finish the Normal Course of 5-month period and Crash Course of 2-month period, respectively.

In order to give the lectures to trainees, the Project prepared the curriculums, detailed plan of training, visual materials, lecture note, reference books and others. Out of which the lecture note of the Normal Course is still under preparation so as to meet the progress of the Course. The curriculum of the Normal Course is composed of the following five subjects.

- 1) General Engineering (including Mathematics, Survey, Construction and Hydraulics)
- 2) Rice Cultivation
- 3) Irrigation & Drainage
- 4) Water Management
- 5) Other Subjects (including Agriculture in Malaysia, Hydrology, Soil Mechanics, General Agriculture)

As for the five short term courses conducted in 1981, the Project sent out a questionnaire with 15 items to the trainees. The result of the questionnaire shows that the curriculum was evaluated high. In general the trainees graded the courses good.

The curriculums and the training materials including lecture note, visual materials and others can be used for ever by updating with new technology if once prepared. In this sense, the progress achieved in this item is highly appreciated.

- (c) Demonstration of improved paddy cultivation system with emphasis on water management techniques:

Trial cultivations of paddy in the D/F have been commenced from the main season in 1979. As of June 1982, the sixth trial cultivation is under way in all the 12 plots of the D/F. In order to improve the soil conditions of the D/F, such measures as incorporation of straws and an application of calcium silicate have been carried out.

For the demonstration purpose, various transplanting methods have been conducted in the D/F, which are hand transplanting, one by machinery and direct sowing.

As for the water management in the field level, the measures for establishing the basic water management are divided into following three steps,

- 1st step: Management under continuous flood condition
- 2nd step: Introduction of intermittent irrigation
- 3rd step: Application of sub-drainage

For the water management under continuous flood condition, the water depth in the field was controlled in each paddy growing stage as follows. For the trial, MR 7 was used, which is the improved variety popularly cultivated in the near-by area.

Growing Stage	Day after transplantation	Applied Water Depth
Establishment	0-10	5-10 cm
Effective tillering	11-30	10
Non effective tillering	31-40	0-5
Panicle formation	41-55	5
Reduction division and flowering	56-70	5-10
Ripening	71-90	25
Dough ripen	91-harvest	drainage

Trials on the water management under continuous flood conditions have been conducted from the first trial cultivation. Various data are collected through the past five trials. The findings and the techniques on the water management under continuous flood will be summarized into "the Manual" after the harvest of the off-season trial in 1982.

As the second step, an intermittent irrigation has been introduced from the main season cultivation in 1981. By applying the intermittent irrigation after the effective tillering stage, it is planned to control the growth of paddy as required by means of restraining the reduction of soil and enhancing the root activities. The trial cultivations by this measure will be further continued setting a target of yield 4.5-5 ton/ha after two years in 1984. As the third step, the water management with sub-drainage have been conducted since 1981. The previous result of trials shows that it will be difficult to establish this measure under the tropical clayey soil conditions. The trials, however, will be further continued.

In the D/F, double croppings by means of mechanical transplanting have been conducted from the first trial cultivation. The demonstration of paddy cultivation by using machines under the fully modernized field conditions coincides with the Malaysian intentions and influences strong impression to the near-by farmers.

The yields in the D/F is rather low than anticipated due to the prematured field conditions as well as damages by insects and birds. It is supposed, however, that the yield will be gradually increased as the field is matured. At the beginning stage of the trial cultivations, incorporation of straws to soils was tried in order to improve the soil conditions. This is a first trial in this region which shows a good results. Further study on this material will be required.

The water management techniques under the first step is now almost established. Trial cultivation is further continued to improve the techniques, by taking into consideration the findings and results obtained under the conditions of step 2 and 3.

(d) **Management and operation of Pilot Farms:**

For the successful operation and maintenance of the completed P/F, a preliminary meeting was held on June 6, 1982 to establish Pilot Farm Management Committee and to discuss the draft regulations of the Committee prepared by the Japanese experts.

In this meeting, it was concluded that the Committee is composed of three groups, namely KADA officials, NWMTC officials and Japanese Experts for a time being. Other activities on this matter than the above have not been done yet, because the P/F is still under construction. First meeting of the Committee is to be opened on June 27, 1982. In this context, no evaluation can be done on this item.

As noted in 4.1a, the water management in the P/F shall be done putting emphasis on the equitable water distribution to each field and the control of water depth in each growing stage of paddy. In order to attain the above purposes, the rotational or other irrigation methods will be introduced in operating the P/F. Then, the most applicable water management techniques will be established.

In order to judge the applicability of the proposed several irrigation methods, water measurement is quite essential. In this meaning, it is strongly recommended to introduce a monitoring system on water application to the P/F.

Even in case the Japanese cooperation to the Project is extended two years more, the final goal in establishing the basic water management techniques may be difficult to achieve because the trial paddy cultivation in the P/F No. 1 will be limited 4 times only. Therefore, it is kecnly required to prepare the draft report on "Operation and Maintenance Manual on Pilot Farms" (the O & M manual) based upon the findings and the result of investigations obtained through the monitoring.

The O & M Manual shall include the followings at the least:

- (1) Organization and Staffing
- (2) Operation including irrigation scheduling

- (3) Maintenance
- (4) Collection of relevant data

The prepared draft O & M manual will have a nature to be improved. Minor improvement shall be done year by year based upon the relevant data collected through the continuous paddy cultivation in the P/F.

- (e) Investigation, planning, guidance and advice necessary for the activities related to the items mentioned above.

Necessary advice and assistance to the activities for the above items have been continuously conducted by the Japanese experts to their counterpart personnel, of which main items are:

- i) Establishment of regulations on observation and record keeping of meteorological data and water requirement investigations;
- ii) Preparation of curriculums, lecture note and others;
- iii) Paddy cultivation in the D/F;
- iv) Investigation, planning and design of the P/F.

It is considered that the advice and assistance have been conducted under the cooperative atmosphere, especially for these two to three years from 1980 with an increase of number of counterpart personnel.

4.2 Pilot Farms

- (a) Installation of irrigation, drainage, farm roads and other facilities in the Pilot Farms;

Because of delay in construction of the P/F, the evaluation is possible only for the P/F No. 1.

The existing water measurement device equipped in the off-take P3T1S6K is not suitable for the precise water measurement. For a purpose of monitoring on the water application to the P/F No. 1 as mentioned 4.1 d above, a correct water measurement is essential. Therefore, it is recommendable to install more suitable device in the off-take, additionally.

In the P/F No. 1, each field off-take covers about 3 hectares. In 3 hectares of this area, no irrigation canals are constructed. For the more effective use of water, a possibility of construction of on-farm ditches by means of "Gotong Royong" maybe organized by the Committee shall be taken into consideration.

In general, the construction plan of the P/F submitted by the Project is so tight that DID's effort is strongly required to complete the works as scheduled.

- (b) Introduction of water management techniques and on-the-job training for technical staff:

As the P/F is not yet at the operation stage, nothing has been made to evaluate the activities.

After the completion of the P/F, several water management techniques proposed in 4.1.d above shall be tested through the practical operation of the P/F, and the most applicable one will be selected. The test will be done putting an emphasis mainly on the equitable distribution of water to each field, together with Japanese experts and their counterpart personnel.

In case suitable techniques are established, the techniques shall be divided into several subjects including water discharge measurement, gate operation, method of rotational irrigation, etc. These subjects shall be included in curriculums of the Normal Course.

- (c) Guidance and advice to farmers in Pilot Farms for introduction of improved paddy cultivation system with emphasis on water management techniques:

With the completion of construction of the P/F, the activities mentioned above will be started. The results of survey and investigations in the D/F shall be duly transferred to the farmers in the P/F. For this purpose the followings will be the main activities.

- 1) Control of water depth in the field in each growing stage;
- 2) Application of scheduled irrigation;
- 3) Demonstration of mechanical farming, if required;
- 4) Solution of happened problems in operating P/F.

- (d) Guidance and advice on the formation of water management organizations.

No activities have been made to this item.

As mentioned in Section 4.1.d, the Pilot Farms Management Committee is going to be organized. With the effort of the Committee the water user's association will be organized in P/F. The rule and regulations of the association shall be prepared for successful operation of P/F. The draft ones shall be prepared prior to the commencement of operation in P/F No. 1. The draft will include:

- 1) Objective of the association;
- 2) Duties and obligations of associated farmers, if any;
- 3) Plan of irrigation scheduling;
- 4) Others.

5. RECOMMENDATIONS

1) Extension of the Technical Cooperation Period

Mainly due to the delay of construction of the proposed facilities, the Project has not yet fully functioned as originally anticipated. It will take another two years to attain the objectives of the Project. It is, therefore recommended that the technical cooperation period should be extended for two years as requested by the Government of Malaysia.

2) Early Completion of Pilot Farms

The construction schedule of Pilot Farms submitted by the Project is considered to be tight. It is recommended that the DID takes necessary measures for the early completion of the Pilot Farms in cooperation with other authorities concerned.

3) Project Staff

The Project staff has been progressively increased. By the end of July 1982, however, 7 posts out of 38 will still remain vacant. It is recommendable to fill the vacant posts early.

4) Budget for Construction of Project Facilities

The budget allocated for the construction of Project facilities will be short from the year 1983. The Government of Malaysia is required to take necessary actions to compensate the shortage.

5) Preparation of Operation and Maintenance Manual

Basic water management techniques will be established within a period of the extension. However, the techniques will have a nature to be improved. It is, therefore recommended that "Operation & Maintenance Manual on the P/F" is prepared and improved based upon the finding and results of trial cultivation in the D/F and the monitoring in the P/F.

6) Minor Improvement of Training Centre's Facilities

Through the actual operation in the Centre, it has been found that some minor buildings such as workshop and others are located unsuitably. Therefore, it is required to relocate or to improve such facilities.

7) **Programming of Training Course**

List of trainees to be attended to the training course are now under preparation. Training programme shall be established based upon the list and the course shall be carried out so as to follow the programme.

8) **Joint Committee**

The Joint Committee has not been held yet, though it is stipulated in Paragraph 10 of the Record of Discussions. It is recommended that the Joint Committee will meet timely to discuss the matters which have to be decided by other authorities concerned than DID.

Table - 1 ANNUAL PROJECT COST

(UNIT: MALAYSIAN DOLLAR)

YEAR	EXPENDITURE FOR DEVELOPMENT	EXPENDITURE FOR OPERATION	REMARKS
1976	—	—	THIRD
1977	460,000	—	
1978	215,000	—	MALAYSIAN
1979	600,000	67,743	
1980	992,624	136,636	PLAN
Sub Total	2,267,624	204,379	
1981	939,300	267,253	FOURTH
1982	650,000	480,547	
1983	400,000	512,874	MALAYSIAN
1984	160,700	550,000	
1985	—	550,000	PLAN
Sub Total	2,150,000	2,360,674	
TOTAL	4,417,624	2,565,053	

Table - 2 ESTIMATED CONSTRUCTION COSTS, 1982-1984

(UNIT: MALAYSIAN DOLLAR)

ITEMS	1982	1983	1984	TOTAL
PILING OF MAIN BUILDING	250,000	—	—	250,000
CONSTRUCTION OF MAIN BUILDING	325,000	560,000	50,000	935,000
PAVEMENT OF ROAD	—	—	200,000	200,000
GARDENING	—	—	10,700	10,700
MISCELLANEOUS	75,000	—	90,000	165,000
TOTAL	650,000	560,000	350,700	1,560,700

Table-3 CONTRIBUTIONS BY THE GOVERNMENT OF JAPAN

(UNIT: THOUSAND YEN)

ITEMS	1975	1976	1977	1978	1979	1980	1981	TOTAL
1. SURVEY TEAM	(*1) 3,370	(*2) 8,834	(*3) 17,283	(*4) 3,580	(*5) 2,352	(*6) 2,755	(*7) 2,523	40,697
2. EXPERT MAN-MONTHS	—	3,501	10,893	48,964	38,605	36,621	27,515	166,099
LONG-TERM	—	—	5m/m	60m/m	59m/m	54.5m/m	60m/m	238.5m/m
SHORT-TERM	—	—	10m/m	13.5m/m		2m/m	2m/m	27.5m/m
3. EQUIPMENT	—	1,350	293	133,927	34,328	11,870	29,204	210,972
4. LOCAL COST FINANCE	—	185	327	30,772	18,443	4,046	7,854	61,627
TOTAL	3,370	13,870	28,796	217,243	93,728	55,292	67,096	479,395

Note: 1. Year in the above means Japanese fiscal year, which is from April to March.

2. Cost for training of counterparts in Japan is not included in this table.

3. Survey teams were dispatched as follows.

*1. Preliminary Survey	1976. 3.23— 4.12
*2. Implementation Survey	1977. 1.25— 2.21
*3. Detailed Design	1977. 6.21— 7.26 & 1977. 8.24— 9.6
*4. Project Consultation & Technical Guidance	1978. 6.18— 6.29 , 1978.10.24—11.3 & 1979. 2. 7— 2.16
*5. Technical Guidance	1979.10.18—10.25
*6. Technical Guidance	1980.10.23—11. 1
*7. Project Consultation	1982. 3. 3— 3.16

Table-4 LIST OF JAPANESE EXPERTS

(As of June, 1982)

1. LONG TERM EXPERTS

(1) Team Leader	Dr. Katsumi DEGUCHI Mr. Takehiko YANO	1978. 2.16-1980. 8. 8 1980.10.19-
(2) Irrigation	Mr. Shintaro HAYASHI Mr. Mutsuo MIMOTO Mr. Yusuke MURAMATSU	1978. 3. 2-1980. 2.29 1980. 2.18-1982. 4.17 1982. 4. 5-
(3) Water Management	Mr. Genichi SHIMOMURA Mr. Shin IMAI	1978. 4. 4-1980. 4. 3 1980. 5.27-
(4) Agronomy	Dr. Katsuo SUGIMOTO Mr. Teruo SHIMADA	1978. 2.16-1980. 2.15 1980. 4. 8-
(5) Coordinator	Mr. Yoshikatsu NAKAMURA Mr. Masahiro YONEYAMA	1978. 3.11-1980. 6.10 1980. 8. 5-

2. SHORT TERM EXPERTS

(1) Reconnaissance	Dr. Katsumi DEGUCHI	1977. 4. 1-1977. 8.31
(2) Reconnaissance	Dr. Katsuo SUGIMOTO	1977. 4. 1-1977. 8.31
(3) Supervising construction supervision of the Demonstration Farm	Mr. Masafumi WATANABE	1978.10.10-1979. 7.31
(4) Pump installation	Mr. Kiyoshi HIGAMI	1979. 3.27-1979. 7.31
(5) Design of underground drainage system	Mr. Masao CHIBA	1981. 3.26-1981. 4.15
(6) Supervision of under- ground drainage construction works	Mr. Yukinobu NAKAYAMA	1981. 3.26-1981. 4.15
(7) Farm Machinery	Mr. Tetsuji HAGITA	1982. 2.10-1982. 4. 9

Table-5 LIST OF PARTICIPANTS

No.	Name	Department	Training Course	Duration
1.	A. Kulasingam	Kelantan State D.I.D., Kota Bharu	Study Tour	2 weeks, March, 1978
2.	Tg. Mohamad Raja Daud	Kelantan State D.I.D., Kota Bharu	Agricultural Land and Water Resources Development	2 months, June, 1978
3.	A. Lyander	Western Johore Project	Study Tour	2 weeks, September, 1978
4.	Khoo Soo Hock	D.I.D. Headquarters, Kuala Lumpur	Study Tour	2 weeks, September, 1978
5.	Wan Alias Wan Daud	KADA, Kota Bharu	Agricultural Land and Water Resources Development	2 months, June, 1979
6.	Lim Thye Lian	KADA, Kota Bharu	Study Tour	2 weeks, November, 1979
7.	Nik Yusoff	KADA, Kota Bharu	Study Tour	2 weeks, November, 1979
8.	Chan Choong Cheong	Water Management Training Centre, Kota Bharu	Study Tour	2 weeks, September, 1980
9.	Nik Ariff Sulaiman	Water Management Training Centre, Kota Bharu	Study Tour	3 weeks, December, 1980
10.	Mansor Adabi Ahmad	Water Management Training Centre	Irrigation and Drainage	8 months, March, 1981
11.	Abdul Malek bin Dollah	Water Management Training Centre	Study Tour	1 month, February, 1982

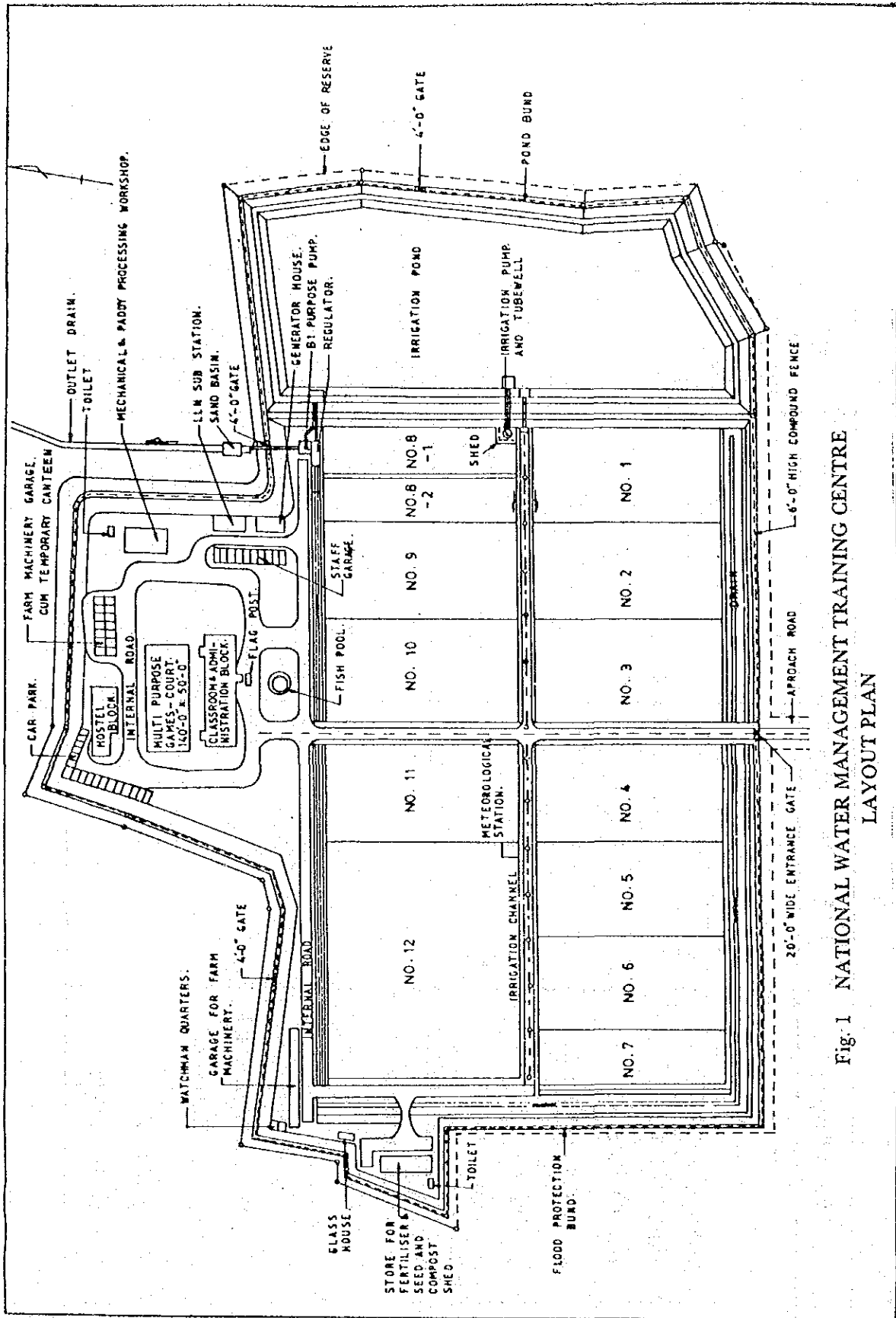


Fig. 1 NATIONAL WATER MANAGEMENT TRAINING CENTRE
LAYOUT PLAN

Fig. 2 CONSTRUCTION PLAN OF TRAINING CENTRE & DEMONSTRATION FARM

DESCRIPTION	1977	1978	1979	1980	1981	1982	1983
1 LAND ACQUISITION	-----						
2 EARTH WORKS	-----	-----					
3 STRUCTURES							
a. MAIN BUILDING		-----	-----	-----	-----	-----	-----
b. HOSTEL		-----	-----	-----	-----	-----	-----
c. WORK SHOP			-----	-----	-----	-----	-----
d. OTHER BUILDINGS		-----	-----	-----	-----	-----	-----
e. PUMP HOUSE & BORE WELL		-----	-----	-----	-----	-----	-----
f. IRRIGATION DITCH		-----	-----	-----	-----	-----	-----
g. DRAINAGE DITCH		-----	-----	-----	-----	-----	-----
h. UNDER DRAINAGE			-----	-----	-----	-----	-----
4 WATER SUPPLY			-----	-----	-----	-----	-----
5 ELECTRICAL SUPPLY			-----	-----	-----	-----	-----

----- Scheduled
 ----- Actual

Fig. 3 LOCATION OF PILOT FARMS

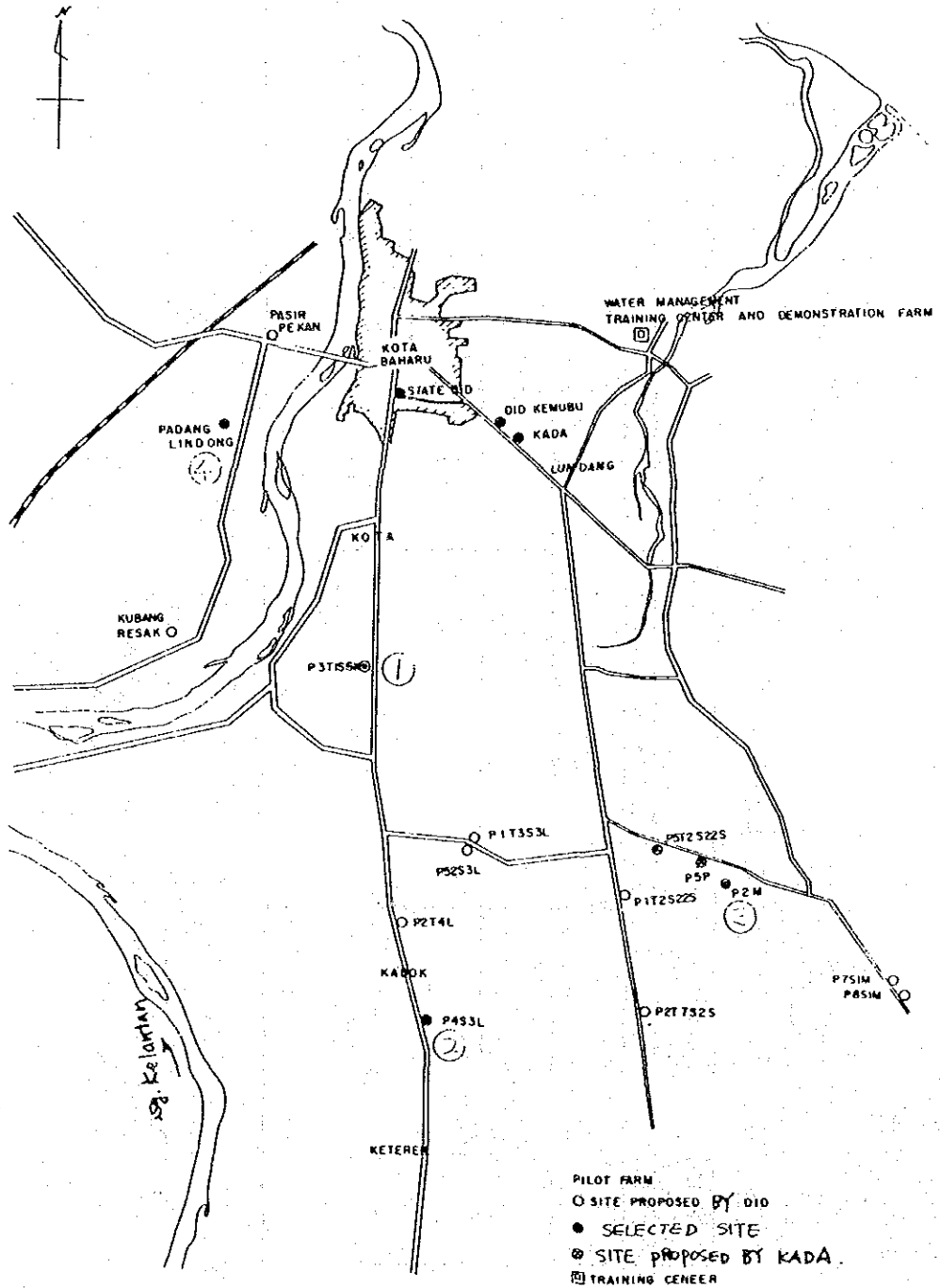


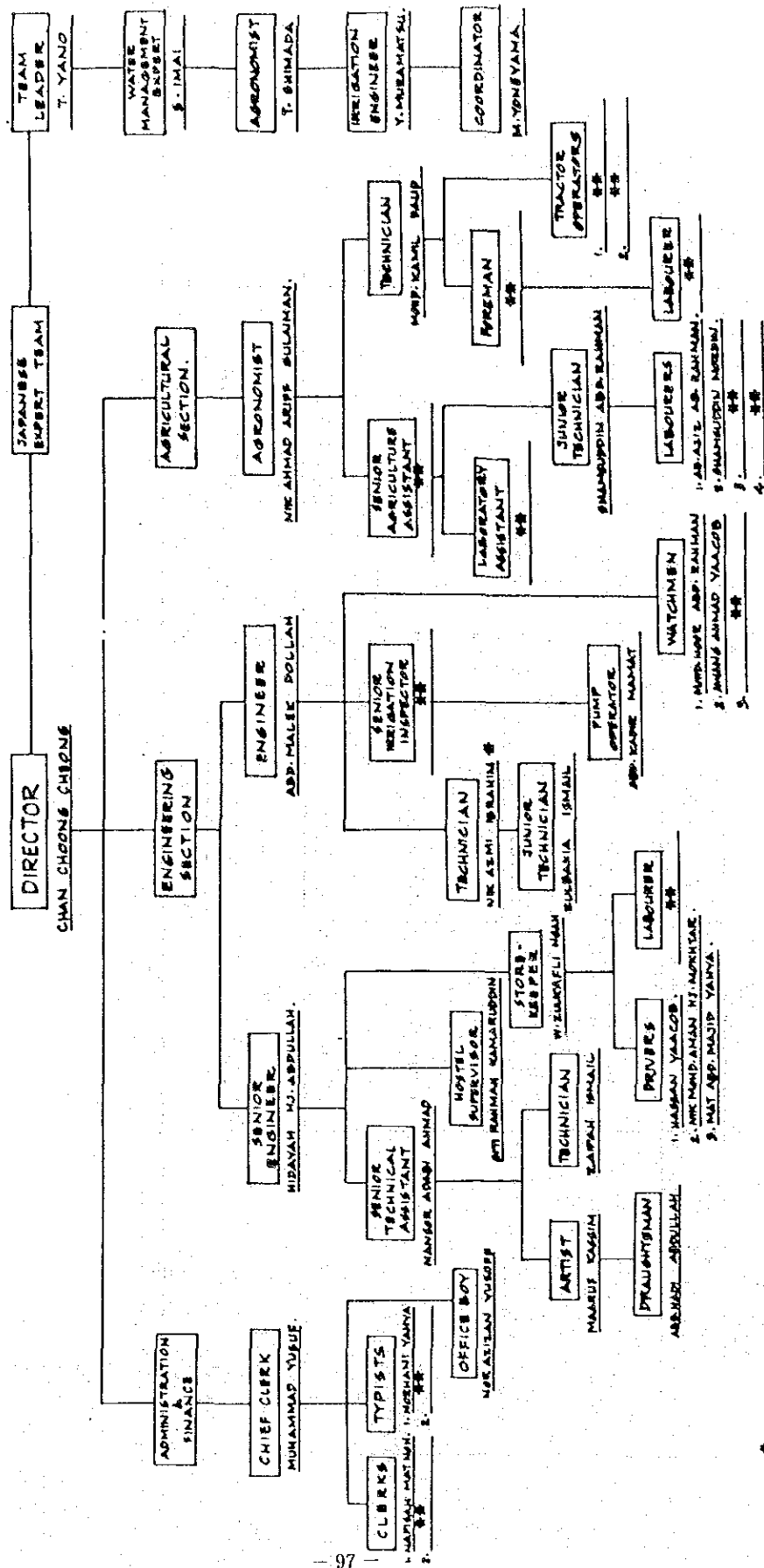
Fig. 4. PILOT FARM CONSTRUCTION SCHEDULE

YEAR	1980	1981	1982	1983
MONTH	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D	J F M A M J J A S O N D
P/F NO. 1	L	C		
P/F NO. 2		D	L	C
P/F NO. 4			D	L C
P/F NO. 5			D	C

LEGEND:

- D : DESIGN
- L : LAND ACQUISITION
- C : CONSTRUCTION

Fig. 5 ORGANIZATION CHART OF TRAINING CENTRE AS OF JUNE 1982



* Pegawai dipinjamkan
** Jawatan-jawatan kosong

Fig. 6 ASSIGNMENT OF LONG-TERM EXPERTS

EXPERTS	1978	1979	1980	1981	1982
Leader	2/Feb. K. DEGUCHI		8/Aug. 19/Oct.	T. YANO	
Irrigation & Drainage	2/Mar. S. HAYASHI		29/Feb. M. MIMOTO		Y. 17/Apr. MURAMATSU
Water Management	4/Apr. G. SHIMOMURA		18/Feb. 3/Apr. S. IMAI		5/Apr.
Agronomy	16/Feb. K. SUGIMOTO		27/May 15/Feb. T. SHIMADA		
Coordinator	11/Mar. Y. NAKAMURA		8/Apr. 10/Jun. M. YONEYAMA		
			5/Aug.		

Fig. 7 PLAN OF TRAINING COURSE

TRAINING COURSE	1981	1982	1983	1984	Estimated number of participants by 1984
NORMAL COURSE I.I.	(15) (14)	(14)	(20)	(20)	29 -- Short Term 54 -- Long Term (5 months)
CRUSH COURSE T.A.	(14) (9)	(19)	(20) (20)	(20) (20)	102 -- Short Term 20 -- Long Term (2 months)
SPECIAL COURSE A ENGINEER	(18)	(20)	(20)	(20) (20)	98

Remarks: - Figures in parentheses show a number of participants
 - Farmer's course of 1 day training is not included in this Table;

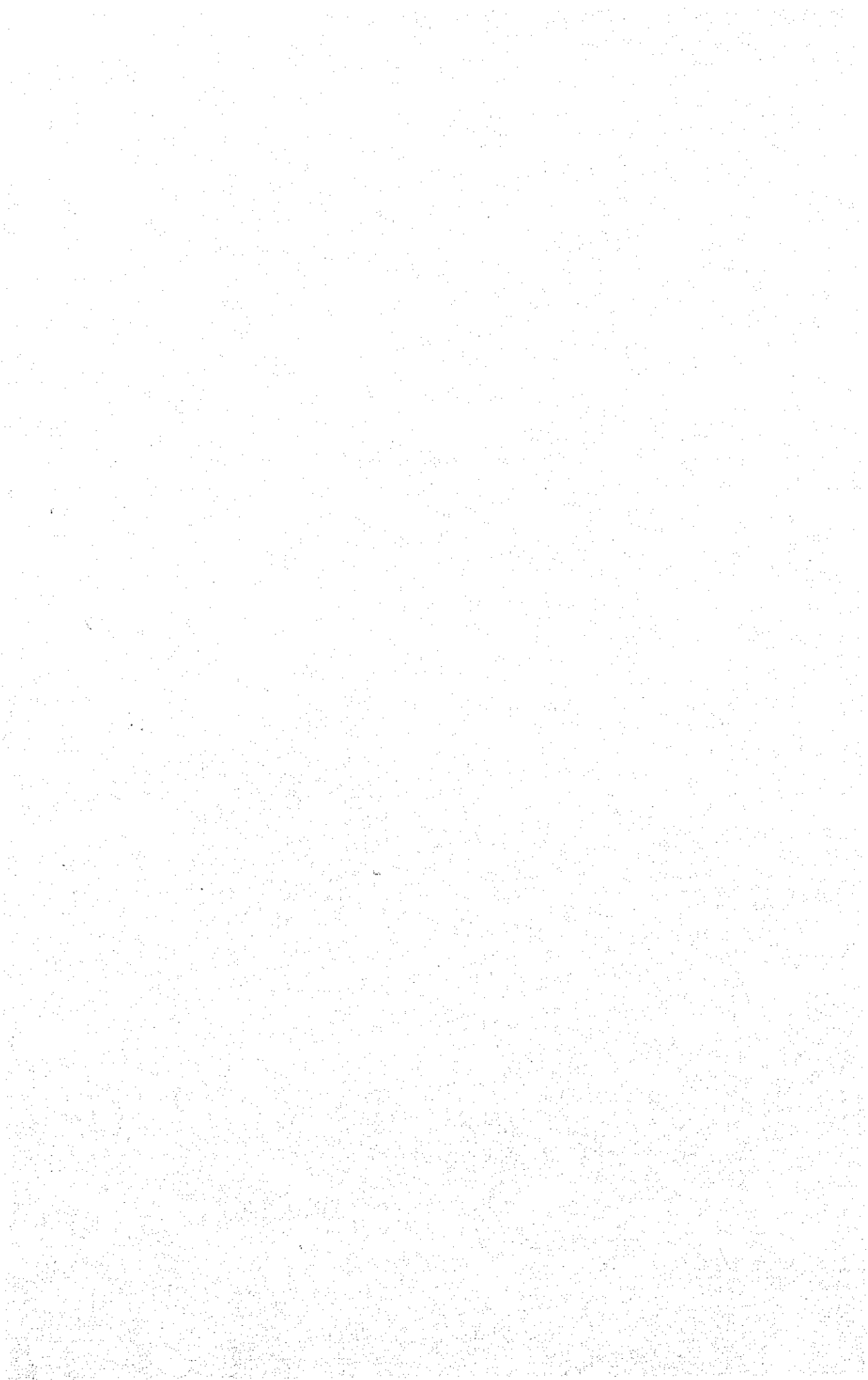
ANNEX—II

ITINERARY OF THE JAPANESE EVALUATION TEAM

June 8 (Tuesday)	Arrived in Kuala Lumpur.
June 9 (Wednesday)	Courtesy call to Embassy of Japan and JICA.
June 10 (Thursday)	Courtesy call to DID Headquarters
June 11 (Friday)	Left Kuala Lumpur for Kota Bharu; Discussion with Japanese Experts.
June 12 (Saturday)	Briefing by Director, NWMTC; Observation of Demonstration Farm; Discussion with Japanese Experts.
June 13 (Sunday)	Observation of Pilot Farms; Joint meeting with NWMTC Officials & Japanese Experts
June 14 (Monday)	Courtesy call to KADA & DOA; Observation of Farmers Development Centre, Kemubu Pumping Station, etc.
June 15 (Tuesday)	Courtesy call to State DID; Discussion with Japanese Experts.
June 16 (Wednesday)	Preparation of Report; Joint Meeting with MWMTC Officials & Japanese Experts
June 17 (Thursday)	Preparation of Report
June 18 (Friday)	Preparation of Report
June 19 (Saturday)	Left Kota Bharu for Alor Setar; Observation of MADA project.
June 20 (Sunday)	Left Alor Setar for Penang.
June 21 (Monday)	Left Penang for Kuala Lumpur; Report to Embassy of Japan and JICA
June 22 (Tuesday)	Joint Meeting with DID Officials.
June 23 (Wednesday)	Finalization of Report.
June 24 (Thursday)	Final report to Embassy of Japan and JICA.
June 25 (Friday)	Left Kuala Lumpur for Tokyo.

付属資料

2. センター所長の説明資料



Briefing Notes to The Japanese Evaluation
Team for the Water Management Training
Programme in Malaysia on 12.6.82

A. Implementation Progress:

1) Training Centre's Facilities

Construction works for the Training Centre's facilities started in 1978. Up to now, the following facilities have been completed:-

- a) The Hostel Block, now it is used as the temporary office and classroom.
- b) Mechanical and Padi Processing Workshops.
- c) Power Sub-station.
- d) Generator House.
- e) Farm Machinery and Vehicle Garages.
- f) Fertiliser Store and Compost Shed.
- g) Watchmen's Quarters.
- h) Glass-House.
- i) Infrastructural Works such as:-
 - 1) Flood Protection Bund.
 - 2) Outlet Drain.
 - 3) Compound Fencing.
 - 4) Street Lighting.
 - 5) Road Culverts, etc.

However, construction of the main office and classroom building was delayed due to contract problems. New contracts have been awarded for the foundation piling works and the superstructure. The piling works have been completed and the construction works for the four storey building have commenced in April. It is expected to be completed in August, 1983.

ii) Demonstration Farm:

The demonstration farm, about 4 ha. in area, was constructed in 1979 by Japanese funds of \$446,600/=. The facilities of the demonstration farm consist of:-

- a) An Irrigation Pond capable of storing 50,000 m³ of water.
- b) Irrigation and Drainage Facilities.
- c) 12 Farmlots totalling 4 ha in area.
- d) Farm Roads.
- e) Bi-purpose Pumphouse.
- f) A Tube Well.
- g) Irrigation Pumps.
- h) Underground drainage facilities to 2 farmlots

Improvement and additional works had been carried out with Malaysian funds of about \$60,000/= on the Demonstration Farm.

iii) Pilot Farms

The centre will have four pilot farms for demonstration and training purpose. Three of the pilot farms are situated in the Kemubu Project whereas the other is located in the Pasir Mas Project.

Pilot Farm No. 1 is now under construction and the progress is about 75% completed. It is expected to be completed by end of June this year.

Pilot Farm No. 2 - awaiting clearance of land acquisition from Land Office. Construction plans are in preparation and expected to complete soon.

Pilot Farm No. 3 - cannot be implemented because of political and social problems.

Pilot Farm No. 4 - survey and investigation are in progress. A short-term Japanese expert is expected to arrive in early July to carry out the design.

B. Padi Cultivation in Demonstration Farm

Since its completion in 1979, the Demonstration Farm has been planted two crops of padi annually so as to homogenise the soils. Various varieties had been successfully tried out in the twelve farm lots. For the cultivation, chemicals such as insecticides, weedcides and fertilisers and various kinds of farm machineries (transplanters, tractors and combine-harvesters) donated by the Japanese Government have been used. During the last few years, the Centre's staff gained valuable experience in the padi cultivation works and the use of farm machineries. Last year, the cultivation works were also demonstrated to farmers and trainees of water management courses. During this season, the farmlots are used regularly for practical works for the trainees of the Normal Course. The demonstration farm will be used to develop cultivation and water management techniques and to run other cultivation trials.

C. Training Courses

In 1981, a number of training courses on water management was completed by the centre. These included training courses for the departmental staff such as irrigation inspectors, technical assistants and engineers. Four one day courses were also conducted for the farmers. All the courses were conducted with the assistance of the Japanese Experts and some guest lecturers

In 1982, short training courses will be conducted for technical assistants and engineers. On the programme, there is also one normal course 4 months duration for irrigation inspectors, which is now in progress. A number of training courses will also be held for farmers.

During 1981 and 1982, the Japanese Experts and the Malaysian Counterparts are spending a lot of time on the preparation of training curriculum and materials. At the meantime, the Centre has gathered many reference books from the various international and local organisations connected with agricultural development.

D. Staff

Over the past few years, the number of staff at the centre has progressively increased. In 1981, the centre had a total of 29 posts. However, six posts were vacant throughout the year. These included the posts of senior agriculture assistant, store-keeper, foreman and tractor operator.

This year, the centre has a total of 38 posts. Until now, only 25 posts have been filled and there are 13 vacant posts. The centre hopes to fill up all these vacant posts as soon as possible.

E. Expenditures

The total cost of the project is now estimated as \$4,700,000/=. Until the end of 1981, about \$3,200,000/= has been spent for the various construction works. The balance of \$1,500,000/= will be used for the construction of the main office and classroom building.

With the increase in the number of staff and the expansion of centre's activities, the annual operating budget has also increased over the years. The operating expenditures amounted to \$267,000/= in 1981 and the budget for this year is \$480,000/= The budget for 1983 is estimated as \$512,000/=.

F. Extension of Cooperation Period

Due to the delay in the construction of the main building and implementation of 3 of the pilot farms, the centre will not be in full operation at the end of the cooperation period in September this year. Thus, there is a need to extend the cooperation period between the two Governments on this training project for another two years, at least. A formal request has been made by the EPU to the Japanese Embassy in Kuala Lumpur.

I hope, during the stay of the Evaluation Team in Malaysia, this request on project extension will be favourably looked into.

Thank you.

Questions Raised by The Japanese Evaluation Team After the Briefing By Centre's Director

1. Question: The Team inquired about the original and present contracts for the construction of the main building.

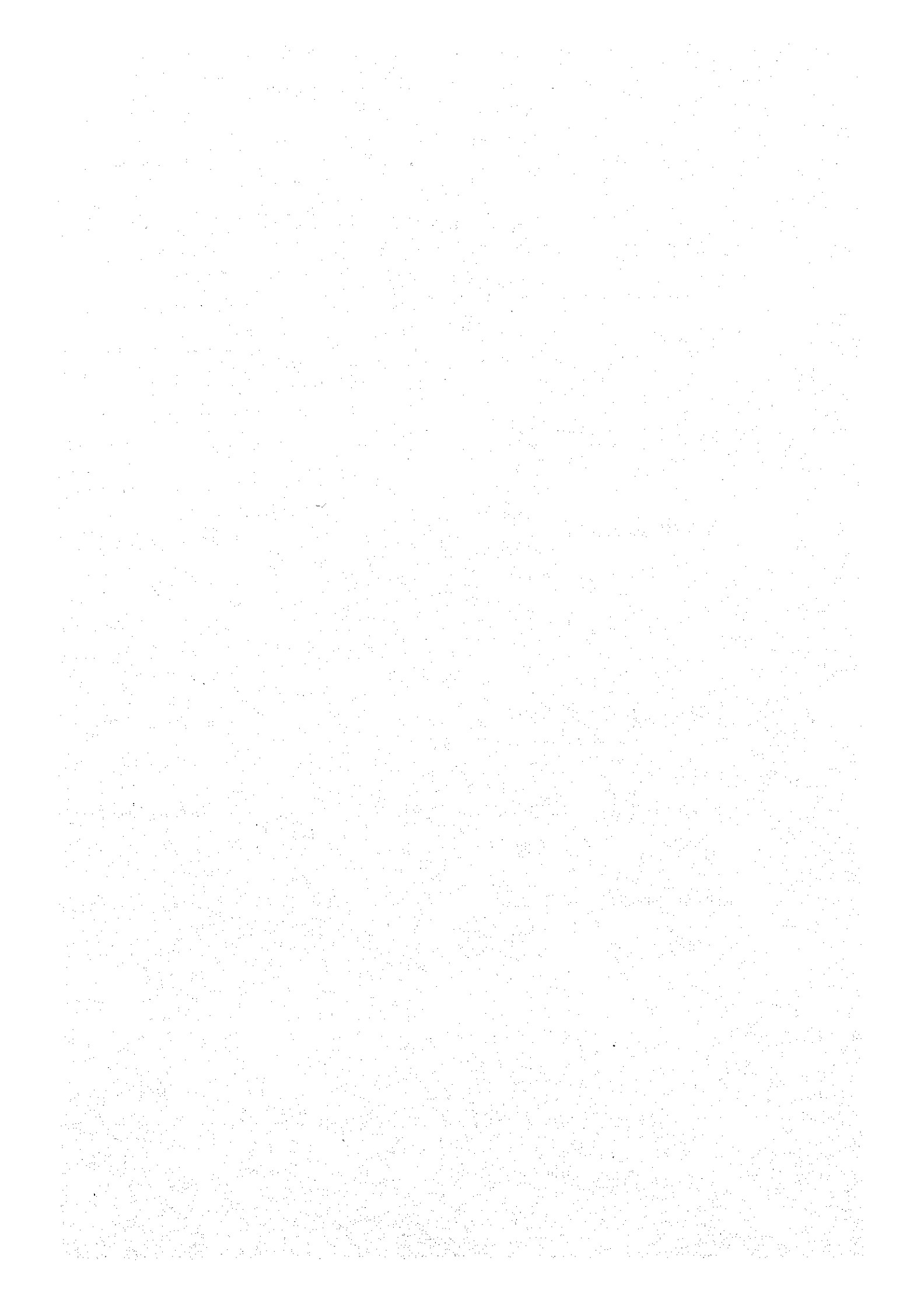
Answer: The Centre informed that the original contract for the construction of main building was terminated in June, 1981. Contract for the piling works of the foundation was awarded in December 1981, and the works have been completed on 2.3.82 at a cost of about \$240,000/=. Contract, for the superstructure was awarded in April 1982 and its value is \$934,000/=.

2. Question: The Team wanted to know the densities of canals and drains and also the padi yields obtained in the Demonstration Farm.

Answer: The Centre replied that the canals and drains densities in the Demonstration Farm would be given later. On the yields obtained, the centre pointed out that the primary purpose of the Demonstration Farm was for the demonstration^x practical works on water management and rice cultivation techniques to the trainees. The Centre would first develop the farmlots and the right water management techniques for rice cultivation. The Team was informed that the highest yield obtained in one of the farmlots during the last few seasons cultivation was 4 ton/ha.

付属資料

3. センターにおける合同会議議事録



Minutes of First Meeting held
between Officers of NWMTC and
Japanese Evaluation Team on
13.6.82 at NWMTC, Kota Bharu.

Time : 2.00 pm.

Venue : Lecture Room, NWMTC

Attendance:

Evaluation Team

- | | |
|----------------------|--------------------|
| 1) Mr. M. Mine | - Team Leader |
| 2) Mr. T. Kon | - Rice Cultivation |
| 3) Mr. T. Tajiri | - Water Management |
| 4) Mr. H. Tomiyama | - Project Effect |
| 5) Mr. K. Shiraiishi | - Coordinator |

NWMTC Officers

A - Japanese Experts:

- | | |
|---------------------|-----------------------|
| 1) Mr. T. Yano | - Expert Team Leader |
| 2) Mr. S. Imai | - Water Management |
| 3) Mr. T. Shimada | - Agronomy |
| 4) Mr. Y. Muramatsu | - Irrigation/Drainage |
| 5) Mr. M. Yoneyama | - Coordinator |

B - NWMTC Staff:

- | | |
|---------------------------|------------------------------|
| 1) Ir. C. C. Chan | - Director (Chairman) |
| 2) Ir. Hidayah Abdullah | - Senior Engineer |
| 3) Nik Ariff Sulaiman | - Agronomist |
| 4) Ir. Abd. Malek Dollah | - Engineer |
| 5) En. Mansor Adabi Ahmad | - Senior Technical Assistant |

Chairman welcomed the Japanese Evaluation Team and the other members. Discussion commenced with the Chairman replying to the questions raised by the Team during the courtesy call to the DID Headquarters on 10.6.82.

1. Development and Operating Budgets of the Centre

Chairman pointed out that the capital project cost approved for the training centre was \$4,700,000/=. Up to the end of 1981, \$3,200,000/= had already been spent for the various construction works and land acquisition. The remaining \$1,500,000/= was not adequate to cover the construction costs of the main building and some basic infrastructures. Chairman added that during the mid-term review for the Fourth Malaysia Plan in 1983, about \$300,000/= more would be requested for completion of all the works.

On the operating budgets, Chairman informed that the O & M expenditures of the centre had progressively increased over the last few years. The expenditures in 1979 was only \$67,000/= and this had increased to \$267,000 in 1981. The allocation approved for this year is \$480,000/= and the budget estimated for 1983 is \$512,000/=.

Chairman also informed that the total number of posts approved for the Centre in 1981 was 29, and that 23 posts were filled during the year. This year the number of posts that has been approved is 38, and up to now, 25 posts have been filled. For 1983, the centre has requested a total of 40 posts. (The budgets and posts of the centre are given in Appendix V).

2. Works Program

a. Main Building

Chairman informed that the construction of the main building would be completed in September 1983 and the centre was expected to be in full operation in 1984.

b. Training Courses

Chairman briefed the members on the training courses to be conducted by the centre during the next two years. In each year, one long course for Irrigation Inspectors and a number of short courses for Technical Assistants and Engineers would be held. Short courses would also be scheduled for farmers.

Question: The Team wanted to know how many trainees would be expected for each course as proposed in the work program. The Team also commented that the training courses should each be given a name.

Answer: Chairman replied that the number of trainees for the Engineers', Technical Assistants' and Irrigation Inspectors' courses would be 20 people for each course, whereas for the farmers' courses, the number would be 25 people per course.

c. Pilot Farms

The schedule of implementation of the centre's pilot farms was given by the Chairman. He pointed out that Pilot Farm No. 1 would be operational for the main season this year, Pilot Farm No. 2 would be completed in middle of 1983, and both Pilot Farms Nos. 4 and 5 would be in operation by early 1984. Chairman also informed that the proposed Pilot Farm No. 5, which would base on land consolidation concepts, has been given the green light to proceed and it is hoped that the construction works would be completed by September 1983. Chairman expressed high hopes that the two years projec. extension would be granted to enable Japanese Experts to advise on the pilot farms construction and operation thereafter.

Question: The Team raised the question that tendering has not been included in the work program for pilot farms. The Team also pointed out that construction of Pilot Farm No. 2 should not commenced during the monsoon season, and they further inquired whether the work program could be followed as scheduled.

Answer: Chairman replied that tendering has been included under the item of construction. On the construction of Pilot Farm No. 2, he explained that during the wet months

the contractor would carry on with the organisation and preparation works. On the question regarding the work program, Chairman commented that implementation was planned and its progress would depend on the actual execution of the works. For this kind of project, normally, land acquisition has been found to hinder the work program. (Work program for training courses and pilot farms is given in Appendix VI).

3. Numbers of Irrigation Inspectors and Overseers.

In an handout (Appendix VII), the Chairman gave the numbers of IIs and IOs in the country in early 1981. The information was supplied by the DID State Offices and KADA. Excluding Sabah and MADA, the total number of IIs was 93 and that of IOs was 189.

Question: The Team would like to know the latest figures for IIs., IOs. and TAs. in the country.

Answer: Chairman informed that questionnaires would be sent to the state and project offices and also the other related agencies shortly to obtain the necessary data and these would be forwarded to JICA Headquarter's soonest possible.

4. Joint Committee Meeting

Chairman explained that the above meeting might not be held before 2nd September due to certain reasons, and the Team was requested to consider the Director-General's comment that the meeting was not to be a pre-condition for the project extension. To this, the Team agreed to reconsider.

5. Pilot Farm Management Committee

Chairman informed that the first meeting of the above committee with KADA would be scheduled on 27.6.82.

6. Project Extension

Chairman briefly gave an account on the reasons given in the working paper submitted to EPU for the request of project extension for two years. The request had been forwarded by EPU to the Embassy of Japan in February this year.

7. Vacant Posts

Question: The Team inquired what action has been taken by the Centre to fill the existing vacant posts.

Answer: Chairman replied that six posts for tractor operator, watchman and labourers would be filled by end of June since interviews were completed in May. The centre would request the DID Headquarters to fill up all the remaining posts by end of the year, hopefully.

8. Training Curriculum

Question: The Team would like to know the training curriculum for the subject on Water Management.

Answer: Chairman requested the Team to refer to the copy of detailed training curriculum for the Normal Course which was given to them earlier.

9. Facilities in Pilot Farms

Question: The Team inquired the density of facilities in Pilot Farm No. 1, and they also liked to know the densities to be adopted in the other pilot farms.

Answer: Chairman replied that the canal density in Pilot Farm No. 1 would be 80m/ha. and that for drains and farm roads would be 90m/ha. The densities of facilities to be adopted for the other pilot farms would depend on the topography, location and other factors.

10. Demonstration Farm and Padi Yields

Question: The Team directed some questions to the centre's Agronomist on the remaining facilities to be established and the considerations to attain the target yield in the Demonstration Farm. They also inquired about the average yield obtainable in Malaysia, and further commented that the target yield of the Demonstration Farm should be higher than the national average.

Answer: The Centre's Agronomist replied that a few more seasons might be required to develop the soil fertility and condition to achieve the yield target of 4.0 ton/ha in the Demonstration Farm. The target yield planned was based on comparison with the national averages in the various irrigation schemes and also with the yields from the surrounding areas. As compared with the existing national average of 3.0 - 3.2 ton/ha, the yield of 4.0 ton/ha would seem to be an achievable target if given the proper on-farm facilities, cultivation techniques and available farm inputs. He added that the yield obtained in MADA area was 3.8 ton/ha.

Meeting ended at 4.15 pm.

Minutes of Second Meeting held
between officers of NWMTC and
Japanese Evaluation Team on
16.6.82 at NWMTC, Kota Bharu.

Time: 2.00 pm.

Venue: Lecture Room, NWMTC.

Attendance:

1. Japanese Evaluation Team
2. Japanese Expert Team with NWMTC
3. National Water Management Training Centre Staff.

Chairman welcomed the members and invited the Evaluation Team to give comments on the performance of the centre during the last few years which the centre's staff were eager to know.

1. Evaluation Report

From the discussions with the Centre's staff and Expert Team, the Team would give comments on the Centre's performance in the form of an evaluation report to be submitted to the Japanese Government. The report would contain the following chapters and contents.

Chapter 1 would consist the summary and conclusions of the evaluation.

Chapter 2 would give the background of the project.

Chapter 3 would touch on the implementation of the project. This would include the performance of Malaysian Counterparts, construction progress and costs of the centre's facilities, staff and training of counterparts in Japan. It would also give an account on the measures taken by the Japanese Government on the provision of experts, machineries, equipment and other facilities.

Chapter 4 would give the evaluation of the project plan of centre and it would base on Annex I of the Record of Discussion. The Team gave the following comments:-

A. Training Centre

- i. **Water Management Techniques:** The Team gave a definition for water management and commented that further investigation and more data would be collected from the Demonstration Farm before the water management techniques would be finalised. Regarding the design and construction of pilot farms, transfer of techniques from experts to counterparts was in progress.
- ii. **Training:** The Team pointed out that due to the delay in completion of main building, short courses in 1981 were held at borrowed facilities in KADA and State D.I.D. With the completion of the hostel in December 1981, the building was now used to conduct the training courses. For the Normal Course presently in progress, teaching materials such as slides and diagrams have been prepared, but the lecture notes was still underway.
- iii. **Rice Cultivation in Demonstration Farm:** The Team commented that cultivation trials were carried out since main season of 1979 to develop the farmlots for water management techniques. A manual for the water management techniques would have to be completed by end of 1982, and the rice cultivation program should be carried out to achieve the target yield of 4.0 ton/ha. The Team also pointed out that the yields obtained in 1981 were low due to immature attacks by insects and birds.
- iv. **Management of Pilot Farms:** The Team commented that preliminary meeting with KADA on the management of pilot farms was held on 6.6.82 to discuss the first meeting of the Pilot Farm Management Committee to be held on 27.6.82. They hoped that the following items would be discussed.
 - a. basic water management techniques
 - b. proposed irrigation method to be adopted.

The Team pointed out that the two years extension would be necessary to achieve the water management techniques and to develop the O & M manuals for the pilot farms. To this, Chairman requested that a short-term expert be despatched to prepare the O & M manuals. However, the Team explained that preparation of the manuals would need local considerations, thus the long-term experts and counterparts were in a better position to prepare them.

B. Pilot Farm No. 1

Since the water from the field offtake for each block would be supplied from lot to lot, the Team recommended that small ditches should be constructed by the farmers themselves to ensure better supply and distribution. They also recommended that suitable measuring devices be installed at the field offtakes. Since the pilot farm was not completed yet, evaluation was not possible on certain aspects of operation and water management practice.

Chapter 5 would indicate the recommendations of the Team for the project extension of two years and the necessary actions to be taken by the Malaysian side.

2. Short-Term Expert

Question: Chairman requested that a short-term expert would be necessary to speed up the design of Pilot Farm No. 5 so that the planned schedule could be attained.,

Answer: The Team commented that the design works should be carried out by the Malaysian counterparts with the Japanese Experts' participation and advise in order to make effective the transfer of knowledge and technology. They hoped that if a short-term expert could not be despatched the work program would not be badly affected.

3. Machinery and Equipment From Japan

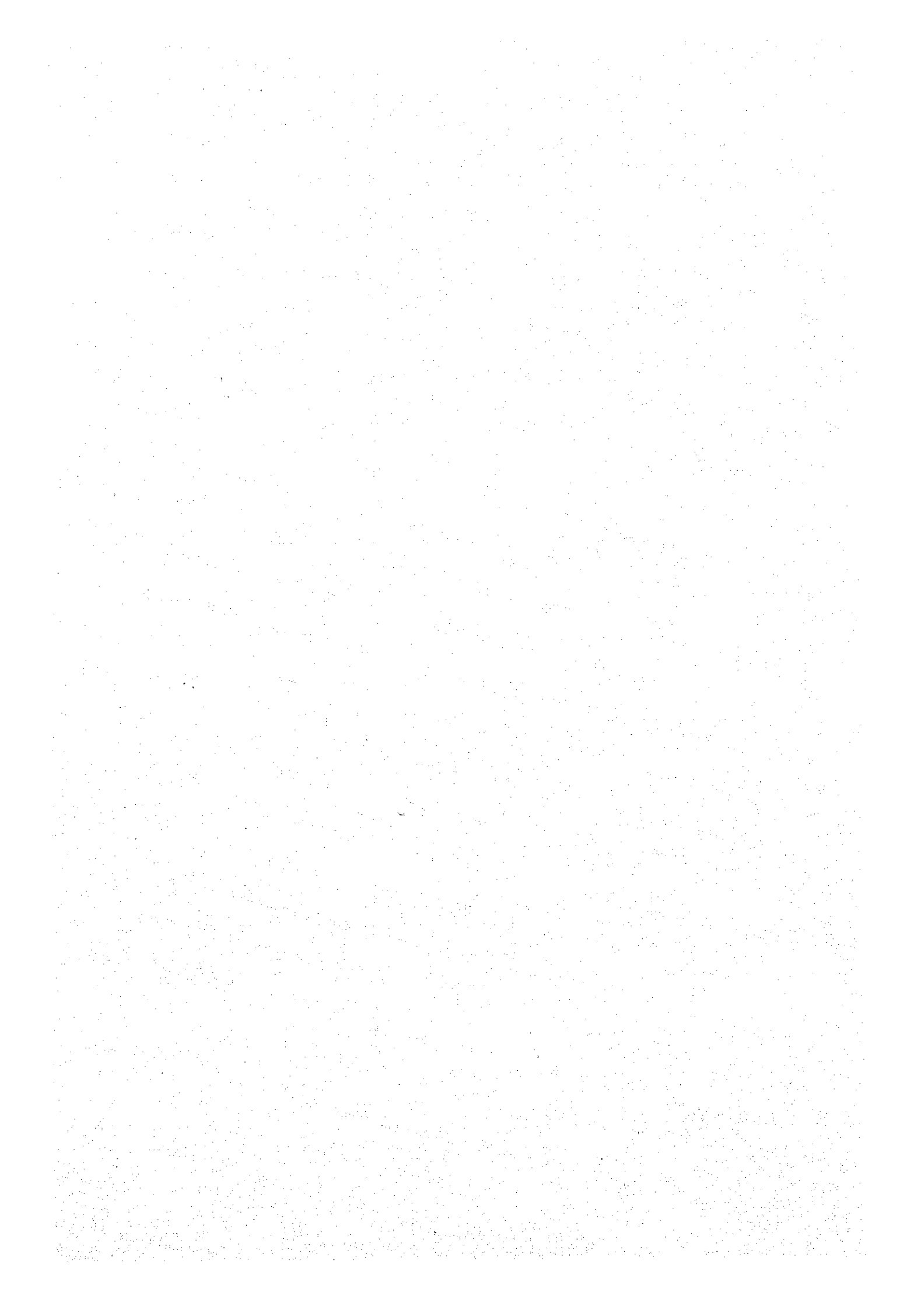
Question: Chairman hoped that the list of machinery and equipment to be submitted to the Japanese Government for the fiscal year 1982 would merit full approval and supply.

Answer: The Team replied that the request would be hopefully fulfilled.

Meeting ended at 4.15 pm.

付属資料

4. センターの活動記録要約



Summary of Activities of National Water Management
Training Centre for 1981, 1982 & 1983

Sub-Activity	1981	1982	1983
i. Providing training for departmental staff on water management techniques for irrigated rice cultivation.	Short courses Completed a number of short intermediate courses for the following staff:- a. Engineers-1 course -1 work-shop b. Technical-2 courses Assistants c. Irrigation-2 courses Inspectors	Conduct short courses for Engineers and Technical Assistants	Conduct short courses for Engineers and Technical Assistants
ii. Training of farmers	Long Courses Completed 4 one-day courses for 78 farmers from the pilot farms areas in Kemubu	Conduct one 4 months course for Irrigation Inspectors Conduct a number of one-day courses for farmers of Kelantan and Trengganu	Conduct one 4 months course for Irrigation Inspectors. Conduct a number of one-day courses for farmers of Kelantan and Trengganu
iii. Development of training curricula and materials	Training Curricula Completed a general set of training curricula for the water management courses	Development of detailed curricula for the long courses as well as for other courses on water management	Continue development of detailed curricula and review/updating of existing curricula

Sub-Activity		1981	1982	1983
IV. Evaluation of courses	Training Materials	Development and collection of training materials such as audio-visual aids and reference books and papers	Continue the development and collection of training materials	Development, review and updating the training materials
V. Departmental examinations	Lecture Notes	Writing of lecture notes and text for the various courses. Evaluated the courses conducted	Continue writing of lecture notes and printing Evaluate the courses conducted	Writing, printing and updating of lecture notes. Evaluate the courses conducted
VI. Development of training facilities	Tender/Contract Preparation	- Preparation of tender/contract documents and plans for utility buildings and infrastructures	Conduct departmental exams. for the new Irrigation Inspectors Preparing tender/contract documents and plans for infrastructures	Conduct departmental exams. for the new Irrigation Inspectors -

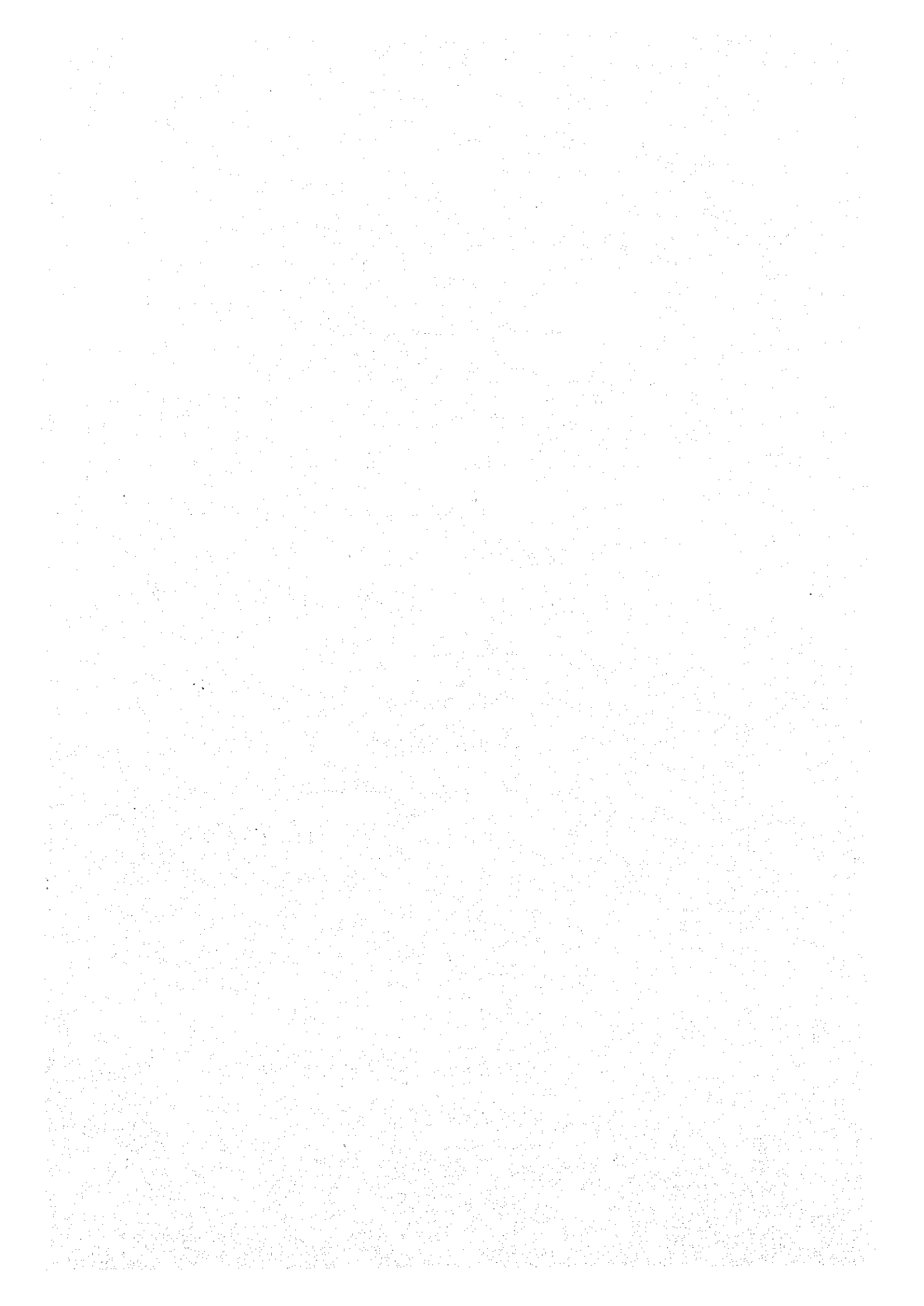
Sub-Activity		1981	1982	1983
Vi. Development and Cultivation of Demonstration Farm	Supervision of construction works	Supervised the construction of utility buildings, infrastructures and improvement works.	Supervise the piling and construction works for the main 4-storey building and infrastructures.	Supervise the construction of main buildings and infrastructures. Establish all facilities in the main building, classroom and hostel.
	Development works	Construction of underground drainage facilities by departmental labour. Realignment and levelling of the farmlots	Additional improvement works on the farmlots and field facilities.	Further improvement works.
	Cultivation works	Cultivation trials and homogenised the soils in farmlots	Continue cultivation trials on varieties, techniques and chemical uses.	Continue on cultivation trials and development of suitable water management techniques.
	Farm Machineries	Testing and using the Japanese donated farm machineries for the cultivation works	- do -	- do -
	Demonstration/Practicals	Using farmlots for course demonstrations and practicals.	- do -	- do -

Sub-Activity	1981	1982	1983
<p>Viii. Pilot Farms</p> <p>Investigation, Survey and Planning.</p> <p>Construction works</p> <p>Operation and Maintenance</p> <p>Demonstration Works</p> <p>Evaluation Works</p>	<p>Completed the contract plans and documents for Pilot Farm No. 1.</p> <p>Completed investigation and planning works for Pilot Farm No. 2.</p> <p>Supervising the construction works for Pilot Farm No. 1</p> <p>-</p> <p>-</p> <p>-</p>	<p>Investigation and survey works for Pilot Farm No. 4 and 5.</p> <p>Prepare tender/contract plans for Pilot Farms No. 2 and 5.</p> <p>Supervise the construction of Pilot Farms No. 1 + 2.</p> <p>Advise KADA on the operation of Pilot Farm No. 1 in the form of a joint committee.</p> <p>Demonstration of water management and cultivation techniques to farmers in Pilot Farm No. 1 and also to the trainees.</p> <p>-</p>	<p>Prepare tender/contract plans for the Pilot Farm No. 4</p> <p>Supervise construction of Pilot Farms No. 4 and No. 5.</p> <p>Advise KADA on the operation of Pilot Farms Nos. 1 + 2.</p> <p>Demonstration of water management and cultivation techniques to farmers and trainees in Pilot Farms Nos. 1 + 2.</p> <p>Evaluate the effectiveness of Pilot Farm No. 1.</p>

Sub-activity	1981	1982	1983
ix. Mechanical and Padi Processing Workshop and Laboratory	-	Establishment of the various facilities in the workshops.	Establishment of the facilities in the laboratory and work-shops.
X. Landscaping works	-	Landscaping works at the centre by departmental labourers.	Landscaping works at the centre by departmental labourers.

付屬資料

5. 討議議事録 (R/D)



THE RECORD OF DISCUSSIONS BETWEEN THE JAPANESE
AGRICULTURAL SURVEY TEAM AND THE DRAINAGE AND
IRRIGATION DIVISION, MINISTRY OF AGRICULTURE
OF THE GOVERNMENT OF MALAYSIA WITH REGARD TO
TECHNICAL COOPERATION PROJECT ON
WATER MANAGEMENT TRAINING PROGRAMME IN MALAYSIA

In pursuance of the detailed design for Water Management Training Programme, the Japanese Agricultural Survey Team, organized by the Japan International Cooperation Agency and headed by Mr. Michio Nakahara, Director, Agricultural Development Cooperation Department, Japan International Cooperation Agency, visited Malaysia from August 24 to September 3, 1977 for the purpose of finalizing concrete plans for the Technical Cooperation Project on Water Management Training Programme which will be carried out in order to contribute to the promotion of agricultural development in Malaysia.

During its stay in Malaysia, the Team exchanged views with the representatives of the Ministry of Agriculture and the Economic Planning Unit of the Government of Malaysia on the necessary measures to be taken by both Governments to successfully implement the above-mentioned Technical Cooperation Project.

As a result of the exchange of views, both parties agreed to recommend to their respective Governments to carry out the various undertakings referred to in the Record of Discussions.

Kuala Lumpur, 3rd September, 1977.

For the Japan International
Cooperation Agency

For the Drainage and Irrigation
Department

Sgd: Michio Nakahara

Sgd: Pang Leong Hoon

Mr. Michio Nakahara,
Head of the Japanese
Agricultural Survey Team.

Mr. Pang Leong Hoon
Director-General,
Drainage and Irrigation Division,
Ministry of Agriculture,
Malaysia.

RECORD OF DISCUSSIONS

1.

- 1.1 Both Governments, in accordance with the laws and regulations in force in the respective countries, will cooperate with each other in implementing the Technical Cooperation Project on Water Management Training Programme (hereinafter referred to as "the Project") for the purpose of contributing to the promotion of agricultural development in Malaysia through the establishment of water management techniques and its extension.
- 1.2 The Project, comprises a Training Centre (with a demonstration farm) and four Pilot Farms, will be implemented in accordance with the Project Plan as stipulated in Annex. I.
- 1.3 The Project will be implemented by the Drainage and Irrigation Division of the Ministry of Agriculture, Malaysia, in accordance with the operational work plan to be formulated annually by the Joint Committee referred to in paragraph 10 of this Record of Discussions.

2.

- 2.1 The Government of Japan will take necessary measures through the Japan International Cooperation Agency to provide at its own expense the services of the Japanese experts as listed in Annex II under the Colombo Plan Technical Cooperation Scheme.
- 2.2 The Japanese experts referred to in paragraph 2.1 above and their families will be granted in Malaysia the privileges, exemptions and benefits in accordance with General Circular No. 1 of 1969 of the Government of Malaysia.

3.

- 3.1 The Government of Japan will take necessary measures through the Japan International Cooperation Agency to provide at its own expense

such equipment, machinery, instruments, vehicles, tools, spare parts and other materials required as listed in Annex III for the implementation of the Project under the Colombo Plan Technical Cooperation Scheme.

- 3.2 The goods referred to in paragraph 3.1 above will become the property of the Government of Malaysia upon being delivered c.i.f. at the ports of disembarkation to the Drainage and Irrigation Division of the Ministry of Agriculture, Malaysia, and will be utilized exclusively for the implementation of the Project in consultation with the Japanese Team Leader referred to in Annex II.

4.

- 4.1 The Government of Japan will take necessary measures through the Japan International Cooperation Agency to sponsor Malaysian personnel engaged in the Project for technical training and/or study tours in Japan under the Colombo Plan Technical Cooperation Scheme.
- 4.2 The Government of Malaysia will take necessary measures to ensure that the knowledge and experience acquired by the Malaysian personnel mentioned in paragraph 4.1 above through technical training and/or study tours in Japan will be utilized effectively for the implementation of the Project.

5.

- 5.1 Some of the equipment and machinery referred to in paragraph 3.1 may be rented out at reasonable rates to farmers in Pilot Farms and portions of the consumable items such as fertilizers and agricultural chemicals may be supplied at reasonable prices to the farmers in the above-mentioned areas with the joint approval of the Project Director and the Japanese Team Leader.
- 5.2 The Government of Malaysia will take necessary measures to secure the budget, no less than the amount of the estimated annual proceeds

from the above-mentioned rentals and supplies, for the implementation of the Project.

6. The Government of Malaysia will undertake to bear claims, if any, against the Japanese experts engaged in the Project resulting from, occurring in the course of, or otherwise connected with, the discharge of their official duties in Malaysia, except for those claims arising from wilful misconduct or gross negligence of the Japanese experts.

7. The Government of Malaysia will take necessary measures to provide at its own expense :
 - (i) the services of the Malaysian counterparts and other personnel as listed in Annex IV;
 - (ii) land and buildings as listed in Annex V;
 - (iii) supply or replacement of equipment, machinery, implements, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than those provided by the Government of Japan through the Japan International Cooperation Agency under paragraph 3.1 above.

8. The Government of Malaysia will take necessary measures to meet :
 - (i) expenses necessary for the construction and improvement of buildings, demonstration farms, irrigation facilities, roads, etc. for the implementation of the Project;
 - (ii) customs duties, internal taxes and any other charges imposed in Malaysia in respect of the goods referred to in paragraph 3.1 above;
 - (iii) expenses necessary for transportation within Malaysia of the goods referred to in paragraph 3.1 above as well as for the installation, operation and maintenance thereof;
 - (iv) all running expenses necessary for the implementation of the Project.

9. The Drainage and Irrigation Division of the Ministry of Agriculture of the Government of Malaysia, will be responsible for the administration and implementation of the Project, and the Japanese experts will provide necessary technical guidance and advice for the implementation of the Project.
10. There will be close consultation between the Japanese experts and the officials concerned of the Government of Malaysia for effective implementation of the Project. For this purpose a Joint Committee will be established as specified in Annex VI. The Joint Committee will meet at least once in six (6) months.
11. Both Governments will consult with each other with respect to any major issues that may arise from or in connection with the implementation of this Record of Discussions.
12. The provisions of the various undertakings mentioned in this Record of Discussions will come into force on the date of signature and remain in force for a period of five (5) years, and may be extended by mutual agreement between the two parties for a further specified period. However, either party may, at any time, give notice to the other party of its intention to terminate these provisions in which case the technical cooperation related to the Project will terminate six months after such notice has been given.

ANNEX I - The Project Plan

1. Training Centre

Water Management Training Centre (with a Demonstration Farm) will be set up in Kota Bharu, Kelantan, and the following activities will be implemented :

- (a) establishment of basic water management techniques;
- (b) training of water management officers;
- (c) demonstration of improved paddy cultivation system with emphasis on water management techniques;
- (d) management and operation of Pilot Farms;
- (e) investigation, planning, guidance and advice necessary for the activities related to the items mentioned above.

2. Pilot Farms

Training Centre will set up four (4) Pilot Farms each of about 20 ha. nearby and will implement the following activities with the cooperation of authorities concerned :

- (a) installation of irrigation, drainage, farm roads, and other facilities in the Pilot Farms;
- (b) introduction of water management techniques and on-the-job training for technical staff;
- (c) guidance and advice to farmers in Pilot Farms for introduction of improved paddy cultivation system with emphasis on water management techniques;
- (d) guidance and advice on the formation of water management organizations.

ANNEX II - List of Japanese Experts

Category	Subject Matter
(1) Team leader	
(2) Experts	Irrigation Water management Agronomy
(3) Coordinator	

- Note : (i) At least one expert will be provided for each subject matter.
- (ii) Short-term experts on the above-mentioned or other subject matter may be dispatched when necessary.

ANNEX III - List of the Goods to be provided
by the Government of Japan

1. Construction equipment, machinery and their spare parts.
2. Agricultural machinery, implements and their spare parts.
3. Experimental and research instruments and their spare parts.
4. Teaching materials including audio-visual aids.
5. Fertilizers and agricultural chemicals.
6. Machinery and tools for repair and their spare parts.
7. Vehicles and their spare parts.
8. Other necessary equipment, machinery, tools and materials to be mutually agreed upon.

ANNEX IV - List of Malaysian Counterpart
Officials and other Personnel

Category	Subject Matter
(1) Project director	
(2) Counterpart officials	Irrigation Water management Agronomy
(3) Field staff	Irrigation Agronomy Agricultural machinery
(4) Administrative support staff	
(5) Labourers	

ANNEX V - List of Land and Buildings

1. Training Centre :

- (a) Land about 11 ha.
- (b) Office
- (c) Classrooms
- (d) Laboratory
- (e) Hostel
- (f) Instructor rooms
- (g) Meeting room
- (h) Sheds for agricultural machinery
- (i) Garages and workshop
- (j) Storehouse for farming materials
- (k) Other necessary buildings and facilities

2. Pilot Farms (on farmers' land) :

- (a) Land about 80 ha. (each Pilot Farm about 20 ha. x 4 Pilot Farms)

ANNEX VI - Composition of the Joint Committee

Chairman : Secretary-General of the Ministry of Agriculture, Malaysia,
or his representative

Secretary : Project Director of the Training Centre

Japanese Side :

1. Team Leader
2. Experts
3. Coordinator
4. Representative of the JICA

Malaysian Side :

1. Representative of EPU
2. Representative of the State Government of Kelantan
3. Representative of DID
4. Representative of DOA
5. Representative of KADA
6. Representative of MARDI

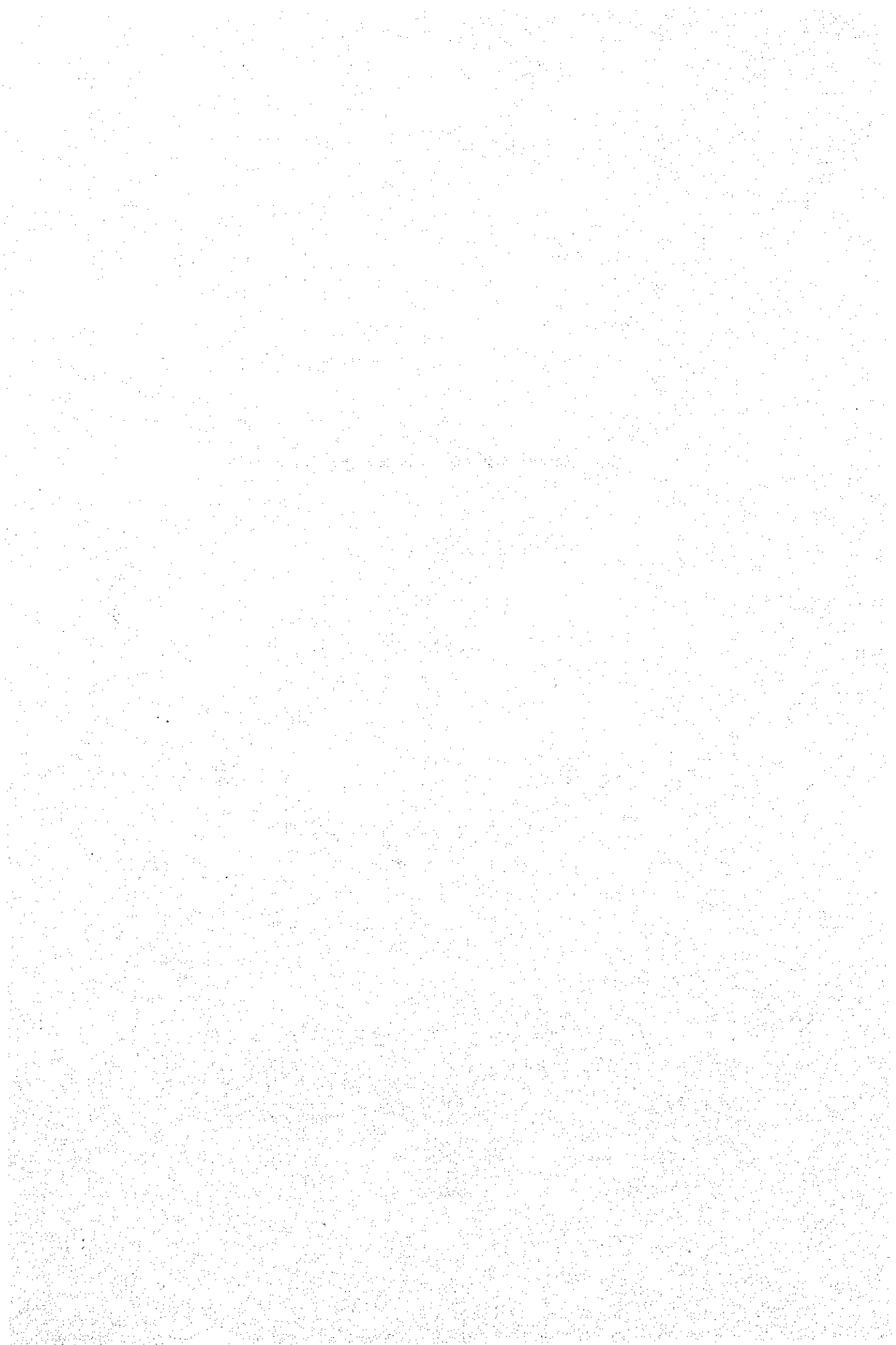
Note : Officials of the Embassy of Japan and person appointed by the Embassy may attend the meeting of the Joint Committee as an observer.

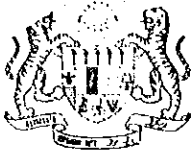
Abbreviations :

- (1) JICA - Japan International Cooperation Agency.
- (2) EPU - Economic Planning Unit of the Prime Minister's Department.
- (3) DID - Drainage and Irrigation Department.
- (4) DOA - Department of Agriculture.
- (5) KADA - Kemubu Agricultural Development Authority
- (6) MARDI - Malaysian Agricultural Research and Development Institute.

付属資料

6. 協力期間延長要請書及び延長討議議事録(R/D)





UNIT PERANCANG EKONOMI
Economic Planning Unit
JABATAN PERDANA MENTERI
Prime Minister's Department
JALAN DATO' ONN
KUALA LUMPUR 11-01
MALAYSIA

Telephone: 200133
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Ruj. Tuan:
Your Ref:

Ruj. Kami: (52)dlm.UPE.801/100/
Our Ref: Vol.III

Tarikh: 12th February, 1982
Date:

URGENT/BY HAND

Mr. T. Aoyagi,
First Secretary (Development Assistance)
Embassy of Japan,
6th Floor, AIA Building,
Jalan Ampang,
Kuala Lumpur.

Dear Mr. Aoyagi,

National Water Management Training Centre, Kota Baru:
Request for Extension of Technical Cooperation Project
Period

As you are fully aware, the technical cooperation period between our two Governments for the National Water Management Training Centre Project in Kota Baru is due to end on 2nd September, 1982. During the 4-year cooperation period, the Japanese Government has despatched short and long-term experts, as well as providing equipment and training places for counterpart officers.

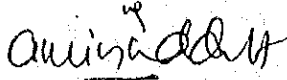
2. Due to unavoidable circumstances, the Centre has yet to function fully as originally anticipated and is only expected to be in full operation in early 1984 - i.e. 2 years behind schedule. In view of these circumstances, it is apparent that, in order to get the full benefit from the cooperation, it would be too premature to end this cooperation as scheduled.

3. In this connection, a 2-year extension of the Japanese Government's assistance to this project is requested so as to ensure the successful completion and subsequent potential operation of the Training Centre. A similar team of experts - comprising a team leader, an irrigation engineer, a water management expert, an agronomist and a coordinator - is required during the extended period.

4. It would be highly appreciated if the Government of Japan could consider this request favourably. I look forward to receiving a positive response from you soon.

Thank you.

Yours sincerely,



(Mohd. Aminuddin Hashim)
for Director General,
Economic Planning Unit.

C.C.

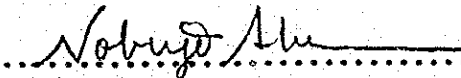
✓ Mr. N. Abe,
Japan International Cooperation Agency (JICA)
23, Jalan Ampang Hilir,
Kuala Lumpur.

THE RECORD OF DISCUSSIONS ON EXTENSION OF
THE TECHNICAL COOPERATION PROJECT ON WATER
MANAGEMENT TRAINING PROGRAMME IN MALAYSIA

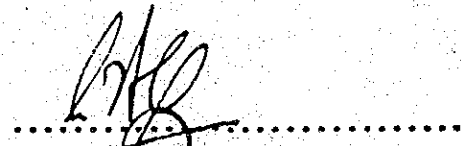
The Japan International Cooperation Agency (hereinafter referred to as 'JICA') with regard to the recommendations made by the Japanese Evaluation Team which conducted the evaluation survey from June 8 to 25, 1982, had a series of discussions through the Resident Representative of Kuala Lumpur Office, Mr. Nobuji Abe, with the authorities concerned of the Government of Malaysia, in view of the extension of the Technical Cooperation Project on Water Management Training Programme in Malaysia (hereinafter referred to as 'the Project') based on the Record of Discussions signed in Kuala Lumpur on September 3, 1977, and which will terminate on September 2, 1982.

As a result of the said discussions, JICA and the authorities concerned of the Government of Malaysia agreed to recommend to their respective governments that the term of the aforementioned technical cooperation on the basis of the Record of Discussions of September 3, 1977 will be extended until September 2, 1984, in order to fulfill the anticipated targets of the Project.

August 26th, 1982.

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NOBUJI ABE
Resident Representative
JICA Kuala Lumpur Office

.....


PANG LEONG MOON
Director General
Drainage and Irrigation Department
Ministry of Agriculture
Malaysia

JICA