

付 属 資 料

- 1．ミニッツ
- 2．プロジェクト基本計画
- 3．プロジェクト組織図
- 4．調査打合せメモ
- 5．調査関連新聞記事
- 6．プロジェクト・ロゴ案
- 7．機材リスト


**MINUTES OF MEETING
BETWEEN THE JAPANESE MANAGEMENT CONSULTATION TEAM
AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT
OF THE ARAB REPUBLIC OF EGYPT
ON JAPANESE TECHNICAL COOPERATION
FOR THE WATER MANAGEMENT IMPROVEMENT PROJECT
IN THE NILE DELTA**

The Japanese Management Consultation Team (hereinafter referred to as "the Team"), organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Ryoichi HATTORI, visited the Arab Republic of Egypt from September 4, 2000 to September 15, 2000 for the purpose of formulating the Project Design Matrix (PDM), the detailed Tentative Schedule of Implementation (dTSl), the Plan of Operations (PO) and the Monitoring and Evaluation Plan for the Water Management Improvement Project in the Nile Delta.

During its stay in the Arab Republic of Egypt, the Team exchanged views and had a series of discussions with the authorities concerned of the Government of the Arab Republic of Egypt in respect of various issues for sharing common understanding on the Project.

Understanding between the Team and the authorities concerned of the Government of the Arab Republic of Egypt is recorded as shown in the document attached hereto.

Cairo, September 13, 2000



Ryoichi HATTORI
Leader
Management Consultation Team
Japan International Cooperation Agency
Japan



Ali Morsi Bat
First Undersecretary
Head of Irrigation Department
Ministry of Water Resources and Irrigation
The Arab Republic of Egypt

ATTACHED DOCUMENT

1. Background

Ministry of Water Resources and Irrigation (hereinafter referred to as "MWRI") has conducted the Irrigation Improvement Project (hereinafter referred to as "the IIP") for the purpose of efficient water resources usage and increasing of agricultural productivity in accordance with the Fourth Five-Year Plan of Economic and Social Development (1997/98 - 2001/02) and the Irrigation System Improvement Plan by MWRI.

In response to the request of the Egyptian Government, JICA has cooperated to formulate a master plan for the study area of about 800,000 fd (336,000 ha), and to conduct a feasibility study for the Upper Bahr Tera Command area of about 62,000 fd (26,000 ha) called "the Development Study for the Improvement of Irrigation Water Management and Environmental Conservation in the North-East Region of the Central Nile Delta (March, 1998 - March, 1999)". Upon examining the results of the above mentioned development study, it was proposed to the Egyptian Government an improvement plan targeting some main facilities, delivery canal facilities, mesqas, and an improved water management system with farmers' participation.

Furthermore, the Egyptian Government made a request to the Japanese Government for a technical cooperation program with the purpose of the verification of the improved water management system with farmers' participation and advancement of the engineers' capability required for the implementation of the improved the IIP in the above mentioned feasibility study area (the Upper Bahr Tera Command area).

Upon the above-mentioned proposal, JICA dispatched Preliminary Study Team, and Supplementary Study Team to confirm the need for assistance and to discuss the details of the Water Management Improvement Project in the Nile Delta (hereinafter referred to as "the Project") with the Egyptian side. The Implementation Study Team signed the Record of Discussions on the Project on December 1, 1999. The Project started in March 2000 will continue for five-year period until February 2005.

2. Input of the technical cooperation program

2-1. Japanese input

2-1-1. Long-term experts

Five (5) long-term experts have been dispatched, which include a Chief Advisor, a Coordinator and experts in the fields of Water Management / Irrigation Facilities, Water Users' Association, and Agronomy.



2-1-2. Short-term experts

The short-term experts have not been dispatched. Six (6) short-term experts will be dispatched in the fields of Farmers' Household Research, Water Management System, Water Users' Association, Irrigation Facilities and On-Farm Water Management in this fiscal year.

2-1-3. Acceptance of Egyptian counterpart personnel for training in Japan

One (1) counterpart personnel will be trained in Japan in the field of Water Management in this year.

2-1-4. Provision of equipment, machinery and materials

These are provided such as vehicles, water pressure loggers, copy machines and computers etc. for the first year.

2-2. Egyptian input

2-2-1. Assignment of counterpart personnel and administrative staff

The Project Director, the Project Manager, the Deputy Project Manager and the Project Site Manager have been assigned. Counterparts have been assigned to work with Japanese experts in the fields of Water Management / Irrigation Facilities, Water Users' Association, and Agronomy in Cairo.

All counterparts were not full-time in Tanta. However, three (3) full-time counterparts are available from September.

Assignment is shown in Annex I.

2-2-2. Provision of land, buildings and facilities

Four rooms for Japanese experts have been prepared in Tanta. But office facilities (air-conditioners etc.) have not fully been prepared.

One temporary room has been prepared in Irrigation Improvement Sector (hereinafter referred to as "IIS"), MWRI.

2-2-3. Obligation of Egyptian side

Personnel expenses of counterpart personnel etc. have been allocated.

The expense issues have been faced to mutual misunderstandings in term of budget allocation between Egyptian side and Japanese side.

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3. Progress of project activities

3-1. Water Management / Irrigation Facilities

As the inception phase, it is important to conduct the survey of existent water management condition and the O&M condition of irrigation facilities in the project area. The survey of ten mesqas has just been finished. The other ten mesqas and three branch canals should be continued the survey in the Bahr El Nour.

As regards survey steps, the following items also should be started soon.

- 1) Making the project site maps at the scale of 1/2,500 as digital maps for the GIS

- 2) Measurement of water quantity

Although, the above activities have been behind schedule, it is expected to start soon.

3-2. Water Users' Association

Three mesqas have been selected as pilot mesqa at first. But they are located in the middle stream in delivery canal. It is difficult to piece out the situation of the present farmers' water use only three pilot mesqas. So, two other mesqas have been added to locate in the upper stream and the down stream.

The exploration has done two mesqas in pilot mesqas (El Bora, Matbek). The data of the pilot three mesqas (holder's name, area) are collected.

The first meeting with eighteen (18) farmers have been held at the site in August.

It is expected that the full-time counterpart assignment in September will make the activities in the field of Water Users' Association smooth in the near future.

3-3. Agronomy

General output of agronomy is to formulate appropriate farmland use and on-farm irrigation management. During the past six months, the following activities were identified.

- 1) Determination of cropping systems and profitable less water consumption crops to the farmers.

- 2) Improvement of irrigation management, including irrigation calendar, irrigation methods and analysis of water application efficiency at the marwa and field level.

Four phases are considered as survey phase, analysis phase, formulation phase, and evaluation phase. Survey program has been managed to start with regards to cropping systems at the inception phase.

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4. Detailed Tentative Schedule of Implementation (dTSl)

The Team, Japanese Experts and the Egyptian side revised and confirmed the detailed Tentative Schedule of Implementation (hereinafter referred to as "the dTSl") shown in Annex II. This schedule shows detailed project activities based on the Tentative Schedule of Implementation signed in Cairo on December 1, 1999.

5. Project Design Matrix (PDM)

The Team, Japanese Experts and the Egyptian side modified the Project Design Matrix (hereinafter referred to as "the PDM") shown in Annex III.

6. Plan of Operations (PO)

The Team, Japanese Experts and the Egyptian side verified the Plan of Operations (hereinafter referred to as "the PO") for the five-year project period based on the dTSl mentioned above. The PO is shown in Annex IV.

7. Monitoring and Evaluation Plan

The Team, Japanese Experts and the Egyptian side developed the "Monitoring and Evaluation Plan" as shown in Annex V. Monitoring will be implemented by the counterparts and the long-term experts every six months starting from March 2001 as indicated in the Plan, and it will be reported to the Joint Steering Committee.

8. Other discussions

8-1. Priority of the project

MWRI appreciated highly the Japanese technology with great hopes for transferring technology through the execution of the Project. Therefore, MWRI gave this Project top priority.

8-2. Assignment of counterparts and cooperators

The Team and Egyptian side agreed that the three (3) counterparts currently in Tanta are considered to work full-time. Other two engineers will be newly assigned from among the staff of the branch of Training Center and Water Management Research Institute in Kafr El Sheikh to cooperate in the project activities.

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Japanese side requested to assign one more full-time counterpart engineer to the field of Agronomy. Egyptian side agreed to the assignment in future.

8-3. Collaboration with agencies concerned

The Team and Egyptian side agreed that for the smooth implementation of the Project activities, it is necessary to collaborate with the following authorities;

- 1) Biyala Agricultural District Office, MALR;
 - To obtain information related to present condition of farm land use and cropping pattern.
- 2) Kafr El Sheikh Agricultural Extension Department, MALR;
 - To obtain information on agricultural policy and agriculture development plan on the prefectural level
- 3) Sakha Research Station in Kafr El Sheikh, MALR;
 - To conduct soil analysis and crop yield investigation
- 4) Sakha Water Management Research Station, MWRI;
 - To obtain information on evapotranspiration of crops and meteorological data
 - To study simplified computation methods of water requirement for crops and irrigation methods for upland crops
 - To obtain data concerning experiments on land leveling
- 5) MWRI Training Center in Kafr El Sheikh;
 - To obtain training space
 - To obtain necessary information for making training plans

8-4. Formulation of water users' organizations

The Team and Egyptian side confirmed that it is necessary to formulate water users' organizations through the following method for transferring Japanese technology.

- 1) To make plans (Water Management Plan, Farm Plan etc.) with full-scale farmers' participation (making plans using participatory planning methodology)
- 2) To establish water users' organizations steps from Water Users' Group (WUG → WUA → WUF)
- 3) To start establishment of water users' organization and construction of irrigation facilities after confirmation of farmers agreement

8-5. The IIP contract for Bahr El Nour Command Area

It is expected to execute the IIP starting from the third year after the beginning of cooperation between the two sides as for Bahr El Nour Command Area. It is observed that the targeted sphere of each construction work was so wide that execution management was

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not necessarily carried out sufficiently since so far in implementing the IIP.

Therefore, the Team and Egyptian side agreed that construction contract in Bahr El Nour Command Area should be separated into three contracts namely, delivery canal, mesqas and pumps.

8-6. Support for water users' association

The Egyptian side has certain systems for giving support to water users' association. It is also possible to implement such systems in Bahr El Nour Command Area as well.

8-7. Obligation of Egyptian side

1) Office space for Japanese experts

The Team and Egyptian side agreed that promised two (2) rooms should be prepared newly in IIS by the end of September 2000.

2) Digital mapping

The Team and Egyptian side agreed that the Egyptian side would request the Survey Authority to take measures for digital maps of the project area, and will allocate all necessary expenses.

3) Assignment of secretaries and drivers

The Team confirmed that the Egyptian side has already taken necessary measures for assigning one (1) secretary and three (3) drivers as administrative staff.

4) Other expenses necessary for implementation of the Project

The Team and Egyptian side confirmed that the Egyptian side would take measures for necessary expenses such as digital maps, consignment for soil analysis, explanatory meeting for farmers without payment, set up of water pressure loggers and so on. In this case, the Team agreed that Japanese side requests the necessary expenses with letters.

8-8. Arrangement of training facilities and equipment

The Team confirmed that it would be appropriate to exploit the Biyala Irrigation District in order to implement the explanatory meeting for farmers and workshops, and the MWRI Training Center in Kafr El Sheikh in order to implement the training for governmental staff and farmers' leader. Besides, it is identified that it is necessary to provide the required training materials. Moreover, it is necessary to repair training rooms

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and preparation rooms.

9. Recommendations

9-1. The Team recommends that both Egyptian and Japanese sides should take utmost efforts in order to carry out what are mentioned.

9-2. The Team recommends that both Egyptian and Japanese sides should take more efforts in order to achieve the delayed activities in this stage of the Project according to the PO.

9-3. The Team recommends that the Project Site Manager and/or counterparts should get close contact between Tanta and IIS in Cairo in order to implement the project activities smoothly.

9-4. The Team recommends that both Egyptian and Japanese sides would held regular meetings on monthly bases to record and clarify the progress and solve any issues for the success of the Project.

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|-----------|---|
| ANNEX I | Assignment of Egyptian Counterpart Personnel |
| ANNEX II | Detailed Tentative Schedule of Implementation |
| ANNEX III | Project Design Matrix |
| ANNEX IV | Plan of Operations |
| ANNEX V | Monitoring and Evaluation Plan |

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ANNEX I Assignment of Egyptian Counterpart Personnel

1. Headquarter counterpart in Cairo

| Field | name | Remarks |
|-------------------------------|--------------------|-----------|
| Project Director | Ali Morsi Bat | Part-time |
| Project Manager | Ramsis Bakhoun | Part-time |
| Deputy Project Manager | Adel Hashem Saleh | Part-time |
| Coordinator | Alaa Ismail | Part-time |
| Water management / Irrigation | Khaled Rashad | Part-time |
| Facilities | Tarek Kamal El-Din | Part-time |
| Water Users' Association | Tarek El-Tayeb | Part-time |
| Agronomy | El-Shenawy | Part-time |

2. Site counterpart in Tanta and Kafr El Sheikh

| Field | name | Remarks |
|---|--|-----------|
| Project Site Manager (Acting Project Site Manager) | General Director of the Central Delta Directorate for Irrigation Improvement in Tanta (Ied Nasr Behary) | Part-time |
| Coordinator | Mohamed Saad El-Fetiany | Part-time |
| Water management / Irrigation Facilities | Mohamed Samir El-Kodosy | Full-time |
| Water Users' Association | Gamal Mostafa Shahin | Full-time |
| Agronomy | Adel Ibrahim El-Maradny | Full-time |

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ANNEX II Detailed Tentative Schedule of Implementation

(1/3)

| Activities | Japanese Fiscal Year | 2000 | 2001 | 2002 | 2003 | 2004 |
|---|----------------------|------|------|------|------|------|
| 1) Formulation of a Water Management Plan | | | | | | |
| 1-1) Study of existing water management (including water quality) in the project area | | | | | | |
| 1-1-1) Survey of existing irrigation and drainage networks | | | | | | |
| 1-1-2) Survey of existing water management condition | | | | | | |
| 1-1-3) Formulation of monitoring system of water quantity and quality | | | | | | |
| 1-2) Formulation of a Water Management Plan | | | | | | |
| 1-2-1) To formulate an irrigation plan | | | | | | |
| 1-2-2) To formulate a tentative Water Management Plan | | | | | | |
| 1-2-3) To modify Water Management Plan, making the use of improved irrigation facilities and farmers' opinion | | | | | | |
| 1-3) Training of governmental staff and farmers on the Water Management Plan | | | | | | |
| 1-3-1) Training of governmental staff | | | | | | |
| 1-3-2) Training of farmers | | | | | | |
| 2) Formulation of a Farm Plan | | | | | | |
| 2-1) Study of present condition of farm land use | | | | | | |
| 2-1-1) To conduct survey of present agricultural land use | | | | | | |
| 2-1-2) To conduct survey of demands on farm land use | | | | | | |
| 2-1-3) To conduct investigate agricultural policy of the government | | | | | | |
| 2-1-4) To carry out marketing system and household survey | | | | | | |
| 2-1-5) To conduct soil survey and its analysis | | | | | | |
| 2-2) Formulation of a Farm Plan | | | | | | |
| 2-2-1) To analyze each collected data | | | | | | |
| 2-2-2) To formulate farm plan | | | | | | |
| 2-3) Training of governmental staff and farmers on the farm plan | | | | | | |
| 2-3-1) Preparation for training | | | | | | |
| 2-3-2) Implementation of training | | | | | | |
| 3) Formulation of an O&M Plan for irrigation facilities | | | | | | |
| 3-1) Study of existing O&M for irrigation facilities | | | | | | |
| 3-1-1) Survey of irrigation facilities (delivery canal, mesqas, marwas) | | | | | | |
| 3-1-2) To grasp farmers' opinion about the present condition and problems | | | | | | |
| 3-2) Formulation of an O&M Plan | | | | | | |
| 3-2-1) To formulate a tentative O&M plan | | | | | | |
| 3-2-2) To modify O&M plan, making use of improved irrigation facilities | | | | | | |
| 3-2-3) To disseminate O&M plan in the project area | | | | | | |
| 3-3) Training of governmental staff and farmers on the O&M Plan | | | | | | |
| 3-3-1) Training of governmental staff | | | | | | |
| 3-3-2) Training of farmers | | | | | | |

| Activities | Japanese Fiscal Year | 2000 | 2001 | 2002 | 2003 | 2004 |
|--|----------------------|------|------|------|------|------|
| 4) Farmers' Water Management organization | | | | | | |
| 4-1) Study on social background of the project area through Participatory Planning methodology | | | | | | |
| 4-1-1) To collect material and information | | | | | | |
| 4-1-2) To make the benefited area maps by mesqa (at a piece of land level) | | | | | | |
| 4-1-3) To make the list of holder (determination of the beneficiaries by mesqa) | | | | | | |
| 4-1-4) To grasp the problem of farmers | | | | | | |
| 4-1-5) To execute PCM methodology | | | | | | |
| 4-1-6) Problem analyze of farmers with PP methodology | | | | | | |
| 4-2) Promotion for farmers' acceptance of detailed plan, implementation, and O&M of IIP | | | | | | |
| 4-2-1) To discuss the purpose and content of project with the elect interim leaders of farmers and the relevant government officials | | | | | | |
| 4-2-2) To submit request of improvement of irrigation facilities from farmers in project area with the agreement of more than 2/3 farmers | | | | | | |
| 4-2-3) To plan design in detail and implement construction work of the IIP under mutual negotiation between the farmers and the government | | | | | | |
| 4-3) Establishment of several WUAs and preparation for establishment of WUF in the project area | | | | | | |
| 4-3-1) To hold a meeting of WUA and WUF | | | | | | |
| 4-3-2) To establish a formal WUF and several WUAs as legal organization in the project area | | | | | | |
| 4-4) Training of governmental staff and farmers on farmers' water management organizations | | | | | | |
| 4-4-1) To train for governmental staff | | | | | | |
| 4-4-2) To train for water users' association | | | | | | |
| 5) Improvement of irrigation facilities | | | | | | |
| 5-1) Examination of existing irrigation facilities | | | | | | |
| 5-1-1) Survey of irrigation facilities (delivery canal, mesqas, marwas) | | | | | | |
| 5-1-2) To grasp farmers' opinion about the present condition and problems | | | | | | |
| 5-1-3) To grasp the procedure from the design to ending of the construction and deliver facilities to the WUF | | | | | | |
| 5-2) Formulation of an Improvement Plan on irrigation facilities | | | | | | |
| 5-2-1) To formulate the improvement plan on delivery canal | | | | | | |
| 5-2-2) To formulate the improvement plan on mesqas and marwas | | | | | | |
| 5-3) Formulation of Design and Construction Guidelines for the improvement of facilities | | | | | | |
| 5-3-1) To formulate design and construction guidelines for the improvement of irrigation facilities | | | | | | |
| 5-3-2) Training of governmental staff on design and construction of facilities | | | | | | |
| 6) Appropriate water use at the on-farm level | | | | | | |
| 6-1) Formulation of the methods of on-farm water management | | | | | | |
| 6-1-1) To study on the amount of water consumption of each upland crops | | | | | | |
| 6-1-2) Investigation of crop yield | | | | | | |
| 6-1-3) To make irrigation calendar in marwa level | | | | | | |
| 6-1-4) Improvement for water application efficiency by land leveling | | | | | | |
| 6-1-5) To draw up the manual of field water management | | | | | | |

| Activities | Japanese Fiscal Year | 2000 | 2001 | 2002 | 2003 | 2004 |
|--|----------------------|------|------|------|------|------|
| 6-2) Training of governmental staff and farmers on water use at the on-farm level | | | | | | |
| 6-2-1) Preparation for training | | | | | | |
| 6-2-2) Implementation of training | | | | | | |
| 7) Farmers' participation in water management system at mesqa and the delivery canal levels | | | | | | |
| 7-1) Training of governmental staff and farmers on farmers' participation in the water management system | | | | | | |
| 7-1-1) Training of governmental staff | | | | | | |
| 7-1-2) Training of farmers' leader | | | | | | |
| 7-2) Study of the method to support sound management of WUF and WUAs | | | | | | |
| 7-2-1) To make rule of management WUF and WUA | | | | | | |
| 7-2-2) To bring up WUF and WUA by continuous supporting system | | | | | | |
| 7-2-2-1) Training of general management for WUF and WUA | | | | | | |
| 7-2-2-2) Study on subsidy for O&M etc | | | | | | |
| 8) General project management | | | | | | |
| 8-1) To complete project organization and to formulate Annual Work Plan of the Project | | | | | | |
| 8-1-1) To hold the Joint Steering Committee meeting | | | | | | |
| 8-1-2) To hold the Joint Site Coordinating Committee meeting | | | | | | |
| 8-1-3) To complete the Project organization | | | | | | |
| 8-1-4) To formulate Annual Work Plan | | | | | | |
| 8-1-5) To control implementation schedules | | | | | | |
| 8-2) To conduct monitoring and evaluation of the Project activities and result regularly | | | | | | |
| 8-2-1) To formulate Monitoring and Evaluation Plan | | | | | | |
| 8-2-2) To hold regular monitoring meeting and to submit Monitoring Report | | | | | | |
| 8-2-3) To hold joint evaluation meeting and to submit Evaluation Report | | | | | | |
| 8-3) To compose Data Base System required for the Project | | | | | | |
| 8-3-1) To prepare Data Base System | | | | | | |
| 8-3-2) To store data and information (data entry) | | | | | | |
| 8-3-3) To prepare sub system for WUF | | | | | | |
| 8-4) To conduct training courses required for the Project | | | | | | |
| 8-4-1) To formulate Training Plan | | | | | | |
| 8-4-2) To prepare training materials for each training courses | | | | | | |
| 8-4-3) To conduct each training courses | | | | | | |
| 8-4-4) To hold evaluation meeting and to submit Training Report | | | | | | |

ANNEX III Project Design Matrix

Project name : The Water Management Improvement Project in the Nile Delta

Duration : March 1, 2000~February 28, 2005

Project area : 4,000 FD of Bahr El Nour Command Area

Target group : Farmers

Date : September 13, 2000

| Narrative Summary | Objectively Verifiable Indicators | Means of Verification | Important Assumptions |
|--|--|--|--|
| Overall Goal Improved methods for the efficient and effective implementation of the IIP are disseminated in the Nile Delta, accompanied by an increase of agricultural productivity and the farmers' net income. | In several years after the end of the Project (a certain year will be specified later) in a certain districts of Bahr Tera, 1. New approaches of the IIP are disseminated. 2. Indicators of agricultural productivity increase. 3. Improvement of the farmers' living condition | 1. Survey conducted by MWRI 2. Statistics of MALR 3. Survey conducted by MWRI | General economic conditions in Egypt do not deteriorate. |
| Project Purpose Improved methods for the efficient and effective implementation of the IIP based on the full scale farmers' participation are verified by the success of the Project, which alleviates the shortage of water at tail ends and leads to the increase of crop productivity in Bahr El Nour. | By the end of the project period, 1. Irrigation efficiency increases substantially in Bahr El Nour. 2. Fair water distribution between upper and lower reach of the delivery canal is realized. 3. Appropriate manuals and guidelines of the improved methods of IIP are formulated as follows. - Manual describing the field water management - Design and construction guideline for the improvement of irrigation facilities - Textbooks of rational water use and modernized farming for leaders of farmers 4. Crop yield per unit of water of (e.g., ton/M3) increases substantially in Bahr El Nour. 5. Crop yield per unit of land of (e.g., ton/FD) increases substantially in Bahr El Nour. | 1. Statistics on irrigation efficiency of MWRI or survey conducted by the Project 2-1. Daily record of water levels at the District Engineering Office 2-2. Less complaint record held by Local Irrigation Department (Kafir El Seikh) 3. Manuals, guidelines and textbooks 4. Statistics of MALR or survey conducted by the Project 5. Statistics of MALR or survey conducted by the Project | 1. MWRI supports the dissemination of new approaches. 2. Situation of distribution, storage, prices and market of crops does not deteriorate. |
| Output 1. A Water Management Plan is formulated with farmers' participation. 2. A Farm Plan is formulated with farmers' participation. 3. An Operation and Maintenance (O&M) Plan for irrigation facilities is formulated. 4. Farmers' water management organizations are established in three levels.* 5. Irrigation facilities are improved. 6. Appropriate water use at the on-farm level is realized. 7. Water management within the delivery canal is achieved by farmers' water management. *Note: Levels of i)Federation of Water Users' Association, ii) Water Users' Association and iii) Water Users' Group | By the end of the project period, 1. Appropriate Water Management Plan is formulated. 2. Appropriate Farm Plan is formulated. 3. Appropriate O&M Plan is formulated. 4. Several WUAs and the Federation of WUAs are established. 5. Conveyance efficiency is increased after the improvement. 6. Measured application efficiency increased. 7-1. Financial management is properly undertaken at the WUAs. 7-2. Conferences within WUAs and of the WUF are held regularly. 7-3. Water management is properly undertaken in terms of irrigation scheduling and execution. | 1. Water Management Plan (record of the Project) 2. Farm Plan (record of the Project) 3. O&M Plan (record of the Project) 4. Documents of the regulation (for WUA at moment) 5. Record of the Project 6. Record of the Project 7-1. Financial record of the WUAs 7-2. Activity records of WUAs and WUF 7-3. Survey conducted by the Project | Egyptian counterpart personnel remain in the sector related to water management or agriculture. |

| Activities | Input | | |
|--|--|---|---|
| Field 1. Formulation of a Water Management Plan | Japanese Side | Egyptian Side | Equipment supplied from Japan for technical guidance and other activities is cleared at custom smoothly |
| 1-1. Study of existing water management (including water quality) in the project area | 1. Dispatch of Japanese Experts | 1. Assignment of counterpart personnel and administrative staff | |
| 1-2. Formulation of a Water Management Plan | 1-1. Long-Term Experts | - Chief Adviser | |
| 1-3. Training of governmental staff and farmers on the Water Management Plan | - Coordinator | - Project Director | |
| Field 2. Formulation of a Farm Plan | - Water Management / Irrigation Facilities | - Project Manager | |
| 2-1. Study of present condition of farm land use | - Water Users' Association | - Deputy Project Manager | |
| 2-2. Formulation of a Farm Plan | - Agronomy | - Project Site Manager | |
| 2-3. Training of governmental staff and farmers on the Farm Plan | 1-2. Short-Term Experts | - Counterpart personnel in the field of ; | |
| Field 3. Formulation of an Operation and maintenance (O&M) Plan for irrigation facilities | - If necessary | Water Management / Irrigation Facilities ; | |
| 3-1. Study of existing O&M condition for irrigation facilities | 2. Provision of machinery and Equipment | Water Users' Association ; and | |
| 3-2. Formulation of an O&M Plan | 3. Training of Egyptian counterpart personnel in Japan | Agronomy Training | |
| 3-3. Training of governmental staff and farmers on the O&M Plan | | -Administrative staff including secretaries, drivers and others | Preconditions |
| Field 4. Farmers' water management organization | | - Accountants | 1. Farmers are cooperative to the Project. |
| 4-1. Study on social background of the project area through participatory planning methodology | | - Other necessary supporting staff | 2. Necessary support is given to the Project from both governments. |
| 4-2. Promotion for farmer's acceptance of the detailed plan, implementation and O&M of IIP | | 2. Provision of land, buildings and facilities such as project offices and related facilities, expert's room and so on. | |
| 4-3. Establishment of several WUAs and preparation for establishment of WUF in the project area | | 3. The supply or replacement of equipment, machinery, vehicles, instruments, tools, spare parts and any other materials other than that provided through JICA | |
| 4-4. Training of governmental staff and farmers on farmers' water management organization | | 4. Allocation of operating expenses for the Project | |
| Field 5. Improvement of irrigation facilities | | 1) Construction, operation and maintenance of irrigation facilities in the project area | |
| 5-1. Examination of existing irrigation facilities | | 2) Personnel expenses of counterpart personnel and administrative staff of the Project (including their official travel expenses) | |
| 5-2. Formulation of an improvement plan on irrigation facilities | | 3) Operating expenses necessary for the implementation of the Project such as utilities | |
| 5-3. Formulation of Design and Construction Guidelines for the improvement of Irrigation facilities | | | |
| Field 6. Appropriate water use at the on-farm level | | | |
| 6-1. Formulation of the methods of on-farm water management | | | |
| 6-2. To train governmental staff and farmers on water use at the on-farm level | | | |
| Field 7. Farmers' participation in water management system at mesqa and the delivery canal levels | | | |
| 7-1. Training of governmental staff and farmers on farmers' participation in the water management system | | | |
| 7-2. Study of the method to support sound management of WUF and WUAs | | | |
| Field 8. General Project Management | | | |
| 8-1. To complete project organization and to formulate annual work plan of the Project | | | |
| 8-2. To conduct monitoring and evaluation of the Project activities and result regularly | | | |
| 8-3. To compose Data Base System required for the Project | | | |
| 8-4. To conduct training courses required for the Project | | | |

ANNEX IV. Plan of Operations :

- 1) Formulation of a Water Management Plan
- 2) Formulation of a Farm Plan
- 3) Formulation of an O&M Plan for irrigation facilities
- 4) Farmers' Water Management organization
- 5) Improvement of irrigation facilities
- 6) Appropriate water use at the on-farm level
- 7) Farmers' participation in water management system at mesqa and the delivery canal levels
- 8) General project management

Abbreviation :

| | | | |
|--------|---|--------|---|
| PD: | Project Director | EX-CA: | Chief Advisor |
| PM: | Project Manager | EX-CO: | Coordinator |
| DPM | Deputy Project Manager | EX-WM: | Expert (Water Management/Irrigation Facilities) |
| PSM: | Project Site Manager | EX-WU: | Expert (Water Users' Association) |
| CP: | Counterpart | EX-AG: | Expert (Agronomy) |
| CP-CA: | CP for Chief Advisor | WUF: | Federation of WUAs |
| CP-CO: | CP for Coordinator | WUA: | Water Users' Association |
| CP-WM: | CP (Water Management/Irrigation Facilities) | WUG: | Water Users' Group |
| CP-WU: | CP (Water Users' Association) | Mac: | Marwa Advisory Committee |
| CP-AG: | CP (Agronomy) | Wac: | Woman Advisory Committee |

Water Management Improvement Project in the Nile Delta

Plan of Operation [Formulation of a Water Management Plan]

| Activities | Outputs | Schedule (Japanese Fiscal Year) | | | | | | | | | | | | | | | | Person in charge | *Inputs | Remarks | | | | | |
|--|--|---------------------------------|----|-----|----|------|----|-----|----|------|----|-----|----|------|----|-----|----|------------------|---------|---------|------|--------------------|---|---|--|
| | | 2000 | | | | 2001 | | | | 2002 | | | | 2003 | | | | | | | 2004 | | | | |
| | | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | | | | I | II | III | IV | |
| 1. Formulation of a Water Management Plan | The Water Management Plan is formulated with farmers' participation. | | | | | | | | | | | | | | | | | | | | | supported by EX-WM | Dispatch of expert. Assignment of C/P and other staffs. | | |
| | | | | | | | | | | | | | | | | | | | | | | | | Land, Building and facilities, Local cost, Acceptance of C/Ps for training in Japan | |
| 1-1) Study of existing water management system (including water quality) in the project area | The existing water management system and its problems emerge. | | | | | | | | | | | | | | | | | | | | | CP-WM | | | |
| 1-1-1) Survey of existing irrigation and drainage networks | The existing irrigation and drainage network maps are made. | | | | | | | | | | | | | | | | | | | | | CP-WM | survey equipment and projectsite maps, vehicle, motorbike, binocular, | survey equipment : for example total station, GPS, staff, pole, measuring tape, hand level, and so on | |
| 1-1-1-1) To make the existing irrigation network maps (scale 1 : 2,500) | The irrigation network maps are made. | | | | | | | | | | | | | | | | | | | | | CP-WM | supporting staffs for survey, transceiver, computer, software, printer, plotter, agency contract expense. | | |
| 1-1-1-2) To make the existing drainage network maps (scale 1 : 2,500) | The drainage network maps are made. | | | | | | | | | | | | | | | | | | | | | CP-WM | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1-1-2) Survey of existing water management condition | The existing water management problems are developed. | | | | | | | | | | | | | | | | | | | | | CP-WM | survey equipment and projectsite maps, vehicle, motorbike, binocular, | | |
| 1-1-2-1) Survey of water management facilities | Contents of the existing problem | | | | | | | | | | | | | | | | | | | | | CP-WM | supporting staffs for survey, transceiver, computer, software, printer, recorder, office facilities, necessary equipment and materials | | |
| 1-1-2-2) To grasp existing water distribution rule (state) and its procedure | Contents of the existing problem | | | | | | | | | | | | | | | | | | | | | CP-WM | | | |
| 1-1-2-3) To grasp farmers' opinion about the present condition and problems | Contents of the existing problem | | | | | | | | | | | | | | | | | | | | | CP-WM | | | |
| 1-1-2-4) Survey of damage area owing to lack of water | Contents of the existing problem | | | | | | | | | | | | | | | | | | | | | CP-WM | | | |
| 1-1-2-5) Survey of reuse of irrigation water | Contents of the existing problem | | | | | | | | | | | | | | | | | | | | | CP-WM | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1-1-3) Formulation of monitoring system of | The monitoring system of water quantity and quality is fixed. | | | | | | | | | | | | | | | | | | | | | CP-WM | survey equipment and projectsite maps, vehicle, motorbike, binocular, | | |
| 1-1-3-1) Selection and installation of measurement facilities (water gauge) | Measurement facilities are installed. | | | | | | | | | | | | | | | | | | | | | CP-WM | supporting staffs for installation and its expense, computer, software, printer, | | |
| 1-1-3-2) To measure water quantity at Bahr el Nour and each mesqa | Contents of result of monitoring | | | | | | | | | | | | | | | | | | | | | CP-WM | current meter, water level gauge, flowmeter, water measurement facilities, water quality measurement facilities, short-term expert, necessary equipment and materials | electromagnetic flow meter | |
| 1-1-3-3) Survey of irrigation efficiency (conveyance efficiency) | Measurement of irrigation efficiency | | | | | | | | | | | | | | | | | | | | | CP-WM | | parshall measuring flume | |
| 1-1-3-4) To measure water quality at Bahr el Nour and each mesqa | Contents of result of monitoring | | | | | | | | | | | | | | | | | | | | | CP-WM | | water quality checker, rapid water analyzer | |
| 1-1-3-5) Formulation of monitoring system | The monitoring system of water quantity and quality is fixed. | | | | | | | | | | | | | | | | | | | | | CP-WM | | | |

*person, equipment and other input necessary for implementing the activities

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Plan of Operation [Formulation of a Water Management Plan]

| Activities | Outputs | Schedule (Japanese Fiscal Year) | | | | | | | | | | | | | | | | | | | | Person in charge | *Inputs | Remarks | | |
|---|--|---------------------------------|----|-----|----|------|----|-----|----|------|----|-----|----|------|----|-----|----|------|----|-----|----|------------------|---|---------|--|--|
| | | 2000 | | | | 2001 | | | | 2002 | | | | 2003 | | | | 2004 | | | | | | | | |
| | | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | | | | | |
| 1. Formulation of a Water Management Plan | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1-2) Formulation of a Water Management Plan | The water management plan is formulated. | | | | | | | | | | | | | | | | | | | | | CP-WM | | | | |
| 1-2-1) To formulate an Irrigation plan | The irrigation plan is formulated. | | | | | | | | | | | | | | | | | | | | | CP-WM | present information and data, site maps, computer, software, printer, reference materials for irrigation plan, short-term expert, farmers' opinion, office facilities | | | |
| 1-2-1-1) Decision of parameters for irrigation plan | Contents of irrigation plan | | | | | | | | | | | | | | | | | | | | | CP-WM | | | | |
| 1-2-1-2) To make a water balance program | Contents of irrigation plan | | | | | | | | | | | | | | | | | | | | | CP-WM | | | | |
| 1-2-1-3) To formulate the irrigation plan | Contents of irrigation plan | | | | | | | | | | | | | | | | | | | | | CP-WM | | | | |
| 1-2-1-4) Decision of designed water requirements | Contents of irrigation plan | | | | | | | | | | | | | | | | | | | | | CP-WM | | | | |
| 1-2-2) To formulate a tentative Water Management Plan | The tentative water management plan is formulated. | | | | | | | | | | | | | | | | | | | | | CP-WM | present information and data, site maps, computer, software, printer, reference materials for making the plan, short-term expert, farmers' opinion, office facilities | | | |
| 1-2-2-1) To formulate the water management plan on delivery canal | Contents of water management plan | | | | | | | | | | | | | | | | | | | | | CP-WM | | | | |
| 1-2-2-1-1) To make a tentative plan | Contents of water management plan | | | | | | | | | | | | | | | | | | | | | CP-WM | | | | |
| 1-2-2-1-2) To explain the farmers | Contents of water management plan | | | | | | | | | | | | | | | | | | | | | CP-WM | | | | |
| 1-2-2-2) To formulate the water management plan on 3 mesqas | Contents of water management plan | | | | | | | | | | | | | | | | | | | | | CP-WM | | | | |
| 1-2-2-2-1) To make a tentative plan | Contents of water management plan | | | | | | | | | | | | | | | | | | | | | CP-WM | | | | |
| 1-2-2-2-2) To explain the farmers | Contents of water management plan | | | | | | | | | | | | | | | | | | | | | CP-WM | | | | |
| 1-2-3) To modify Water Management Plan, making the use of Improved irrigation facilities and farmers' opinion | The water management plan is improved. | | | | | | | | | | | | | | | | | | | | | CP-WM | necessary equipment and materials | | | |
| 1-3) Training of governmental staff and farmers on the Water Management Plan | The staffs who disseminate the water management are trained. | | | | | | | | | | | | | | | | | | | | | CP-WM | | | | |
| 1-3-1) Training of governmental staff | Contents of training | | | | | | | | | | | | | | | | | | | | | CP-WM | publishing equipment, audiovisual equipment, training expense, seminar expense, necessary equipment and materials | | | |
| 1-3-2) Training of farmers | Contents of training | | | | | | | | | | | | | | | | | | | | | CP-WM, CP-WU | | | | |

*person, equipment and other input necessary for implementing the activities

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Plan of Operation [Formulation of a Farm Plan]

| Activities | Outputs | Schedule(Japanese Fiscal Year) | | | | | | | | | | | | | | | | Person in charge | *Inputs | Remarks | | | | |
|--|---|--------------------------------|----|-----|----|------|----|-----|----|------|----|-----|----|------|----|-----|----|------------------|---------|---------|------|--------------------|-----|----|
| | | 2000 | | | | 2001 | | | | 2002 | | | | 2003 | | | | | | | 2004 | | | |
| | | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | | | | I | II | III | IV |
| 2) Formulation of a Farm Plan | Appropriate Farm Plan is Formulated. | | | | | | | | | | | | | | | | | | | | | Supported by EX-AG | | |
| 2-1) Study of present condition of farm land use | | | | | | | | | | | | | | | | | | | | | | CP- AG | | |
| 2-1-1. To conduct survey of present agricultural land use. | Present condition of farmland use is clarified. | | | | | | | | | | | | | | | | | | | | | | | |
| 2-1-1-1. Survey of present farming system. | Data collection of present farming system. | | | | | | | | | | | | | | | | | | | | | | | |
| 2-1-1-2. Survey of present cultivation methods for each crop. | Data collection of present cultivation method for each crop. | | | | | | | | | | | | | | | | | | | | | | | |
| 2-1-2. To conduct survey of demands on farm land use. | Demands of farmers on land use are clarified. | | | | | | | | | | | | | | | | | | | | | CP- AG | | |
| 2-1-2-1. Survey of farming systems. | Data collection of desirous farming system. | | | | | | | | | | | | | | | | | | | | | | | |
| 2-1-2-2. Survey of desirous crops and cropping pattern. | Data collection of desirous crops and cropping pattern. | | | | | | | | | | | | | | | | | | | | | | | |
| 2-1-3. To investigate agricultural policy of the government. | Governmental agricultural policy is clarified. | | | | | | | | | | | | | | | | | | | | | CP- AG | | |
| | Investigation of the agricultural policy and plan of the government. | | | | | | | | | | | | | | | | | | | | | | | |
| 2-1-4. To carry out marketing system and household survey. | Actual condition of farmers are clarified. | | | | | | | | | | | | | | | | | | | | | CP- AG | | |
| 2-1-4-1. Investigation into present farm management. | Data collection and analysis of actual farmer's condition. | | | | | | | | | | | | | | | | | | | | | | | |
| | (Farming area, Labor forces, family structure,etc.) | | | | | | | | | | | | | | | | | | | | | | | |
| 2-1-4-2. Conduct survey of market and distribution system of agricultural products. | Data collection and analysis of marketing and crop distribution system. | | | | | | | | | | | | | | | | | | | | | | | |
| 2-1-5. To conduct soil survey and its analysis. | Soil characteristics in command area is verified. | | | | | | | | | | | | | | | | | | | | | CP- AG | | |
| 2-1-5-1. Soil survey and analysis of physical characteristics. | Data collection and analysis. | | | | | | | | | | | | | | | | | | | | | | | |
| 2-1-5-2. Soil survey and analysis of chemical characteristics. | Data collection and analysis. | | | | | | | | | | | | | | | | | | | | | | | |
| 2-2) Formulation of a Farm Plan | | | | | | | | | | | | | | | | | | | | | | CP- AG | | |
| 2-2-1. To analyse each collected data. | Less water consumption and profitable cropping system are clarified. | | | | | | | | | | | | | | | | | | | | | | | |
| | Analysis of farming system. | | | | | | | | | | | | | | | | | | | | | | | |
| 2-2-1-1. To analyse farming system. | Study and recommendation of profitable less water consumption crops. | | | | | | | | | | | | | | | | | | | | | | | |
| 2-2-1-2. To recommend the less water consumption and profitable crops in command area. | | | | | | | | | | | | | | | | | | | | | | | | |
| 2-2-2. To formulate farm plan. (land use plan) | Farmland plan is formulated. | | | | | | | | | | | | | | | | | | | | | CP- AG | | |
| 2-2-2-1. Formulation of tentative farm plan. | Making a tentative farm plan. | | | | | | | | | | | | | | | | | | | | | | | |
| 2-2-2-2. Verification of farm plan. | Making a farm plan | | | | | | | | | | | | | | | | | | | | | | | |
| 2-3) Training of governmental staff and farmers on the farm plan | Farmland plan is formulated by farmers. | | | | | | | | | | | | | | | | | | | | | CP- AG | | |
| 2-3-1. Preparation for training | Plan of training and preparation of facilities,etc | | | | | | | | | | | | | | | | | | | | | | | |
| 2-3-2. Implementation of training | Making textbook and reference. | | | | | | | | | | | | | | | | | | | | | | | |
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*person,equipment and other input necessary for implementing the activities

HL

RLY

Plan of Operation [Formulation of an Operation and Maintenance Plan for irrigation facilities]

| Activities | Outputs | Schedule (Japanese Fiscal Year) | | | | | | | | | | | | | | | | Person in charge | *Inputs | Remarks | | | | |
|---|--|---------------------------------|----|-----|----|------|----|-----|----|------|----|-----|----|------|----|-----|----|------------------|---------|---------|------|--------------------|---|----|
| | | 2000 | | | | 2001 | | | | 2002 | | | | 2003 | | | | | | | 2004 | | | |
| | | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | | | | I | II | III | IV |
| 3. Formulation of an Operation and Maintenance (O&M) Plan for irrigation facilities | The O&M plan for irrigation facilities is formulated with farmers' participation | | | | | | | | | | | | | | | | | | | | | supported by EX-WM | Dispatch of expert, Assignment of C/P and other staffs, | |
| 3-1) Study of existing O&M condition for irrigation facilities | The existing O&M condition and its problems emerge. | | | | | | | | | | | | | | | | | | | | | CP-WM | Land, Building and facilities, Local cost, Acceptance of C/Ps for training in Japan | |
| 3-1-1) Survey of irrigation facilities (delivery canal, mesqas, marwas) | The existing O&M condition and its problems emerge. | | | | | | | | | | | | | | | | | | | | | CP-WM | survey equipment and projectsite maps, vehicle, | |
| 3-1-1-1) Delivery canal | Contents of survey | | | | | | | | | | | | | | | | | | | | | CP-WM | motorbike, binocular, | |
| 3-1-1-2) 3 Mesqas | Contents of survey | | | | | | | | | | | | | | | | | | | | | CP-WM | supporting staffs for survey, transceiver, | |
| 3-1-1-3) Marwas related to 3 mesqas | Contents of survey | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 3-1-1-4) Pumps and Gates | Contents of survey | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 3-1-2) To grasp farmers' opinion about the present condition and problems | The existing O&M condition and its problems emerge. | | | | | | | | | | | | | | | | | | | | | CP-WM | computer, software, printer, recorder, office facilities, | |
| 3-1-2-1) El Mashabik mesqa | Contents of the existing problem | | | | | | | | | | | | | | | | | | | | | CP-WM | necessary equipment and materials | |
| 3-1-2-2) El Rabwa mesqa | Contents of the existing problem | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 3-1-2-3) El Faraheen mesqa | Contents of the existing problem | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 3-1-2-4) Delivery canal and the other mesqas | Contents of the existing problem | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 3-2) Formulation of an O&M plan | The O&M plan is formulated. | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 3-2-1) To formulate a tentative O&M plan | The tentative O&M plan is formulated. | | | | | | | | | | | | | | | | | | | | | CP-WM | present information and data, vehicle, motorbike, | |
| 3-2-1-1) To formulate tentative O&M plan | Contents of tentative O&M plan | | | | | | | | | | | | | | | | | | | | | CP-WM | supporting staffs, | |
| 3-2-1-2) To explain the farmers | Contents of tentative O&M plan | | | | | | | | | | | | | | | | | | | | | CP-WM | computer, software, | |
| 3-2-1-3) Operation of the tentative plan | Contents of tentative O&M plan | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 3-2-2) To modify O&M plan, making use of improved irrigation facilities | The O&M plan is improved. | | | | | | | | | | | | | | | | | | | | | CP-WM | printer, office facilities, | |
| 3-2-3) To disseminate O&M plan in the project area | The O&M plan is disseminated in the project area. | | | | | | | | | | | | | | | | | | | | | CP-WM | necessary equipment and materials | |
| 3-3) Training of governmental staff and farmers on the O&M plan | The staffs who disseminate the O&M plan are trained. | | | | | | | | | | | | | | | | | | | | | CP-WM | publishing equipment, audiovisual equipment, training expence, seminar expence, | |
| 3-3-1) Training of governmental staff | Contents of training | | | | | | | | | | | | | | | | | | | | | CP-WM | necessary equipment and materials | |
| 3-3-2) Training of farmers | Contents of training | | | | | | | | | | | | | | | | | | | | | CP-WM | | |

*person, equipment and other input necessary for implementing the activities

Plan of Operation [Farmers' water management organization]

| Activities | Outputs | Schedule(Japanese Fiscal Year) | | | | | | | | | | | | | | | | | | | | Person in charge | Inputs | Remarks | |
|--|--|--------------------------------|----|-----|----|------|----|-----|----|------|----|-----|----|------|----|-----|----|------|----|-----|----|------------------|--------------------|--|--|
| | | 2000 | | | | 2001 | | | | 2002 | | | | 2003 | | | | 2004 | | | | | | | |
| | | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | | | | |
| 4 Farmers' water management organization | The water users association are established by the subject of farmers' | | | | | | | | | | | | | | | | | | | | | | Supported by EX-WU | | |
| 4-1 Study on social background of the project area through PP methodology | | | | | | | | | | | | | | | | | | | | | | | CP-WM.WU | short-term expert off-road car . digital camera | |
| 4-1-1To collect material and information | Understand about project area | | | | | | | | | | | | | | | | | | | | | | CP-WM.WU | motorbike white board OHP megaphone etc | |
| 4-1-2To make the benefited area maps by mesqa (at a piece of land level) | Contents of result of survey Get a correct area | | | | | | | | | | | | | | | | | | | | | | CP-WM.WU | | |
| 4-1-3To make the list of holder (determination of the beneficiaries by mesqa) | Contents of result of survey Get a correct area | | | | | | | | | | | | | | | | | | | | | | CP-WM.WU | | |
| 4-1-4To grasp the problem of farmers | Dig up the problems | | | | | | | | | | | | | | | | | | | | | | CP-WU | | |
| 4-1-5To execute PCM methodology | Give a definition of a problem | | | | | | | | | | | | | | | | | | | | | | CP-WU | | |
| 4-1-6Problem analyze of farmers with PP methodology | Understand about project area | | | | | | | | | | | | | | | | | | | | | | CP-WU | short-term expert | |
| 4-2Promotion for farmers' acceptance of the detailed plan, implementation, and O&M of IIP | | | | | | | | | | | | | | | | | | | | | | | CP-WM.WU | white board OHP megaphone etc | |
| 4-2-1To discuss the purpose and content of project with the elect interim leaders of farmers and the relevant government officials. | Understand about project | | | | | | | | | | | | | | | | | | | | | | CP-WM.WU | | |
| 4-2-1-1To hold a workshop of marwa and mesqa | Collect farmers' opinion and problem | | | | | | | | | | | | | | | | | | | | | | CP-WM.WU | minibus | |
| 4-2-1-2 The election of lenders at farmers' workshop | Inform all of farmers | | | | | | | | | | | | | | | | | | | | | | CP-WU | | |
| 4-2-1-3To establish the Joint committee between the farmers' leader and the government | Strong of relation | | | | | | | | | | | | | | | | | | | | | | CP-WU | | |
| 4-2-1-4Formulation of WUG (Mac&Wac) | | | | | | | | | | | | | | | | | | | | | | | CP-WU | | |
| 4-2-2To submit request of improvement of irrigation facilities from farmers in project area with the agreement of more than 2/3 farmers. | File an application to government | | | | | | | | | | | | | | | | | | | | | | CP-WU | | |
| 4-2-2-1To collect the signature of farmers | File an application to government | | | | | | | | | | | | | | | | | | | | | | CP-WU | | |
| 4-2-3 To plan design in detail and implement construction work of IIP under mutual negotiation between the farmers and the government | Discuss the plan with both | | | | | | | | | | | | | | | | | | | | | | CP-WU.WM | | |
| 4-2-3-1To hold a workshop of merwa and mesqa | Collect farmers' opinion and problem | | | | | | | | | | | | | | | | | | | | | | CP-WU.WM | | |
| 4-3 Establishment of several WUAs and preparation for establishment of WUF in the project area | | | | | | | | | | | | | | | | | | | | | | | CP-WU | | |
| 4-3-1 To establish a formal WUF and several WUAs as legal organization in the project area | The government permits the establishment of WUA and WUF | | | | | | | | | | | | | | | | | | | | | | CP-WU | | |
| 4-3-2To hold a meeting of WUA and WUAs | The formalities for establishment of the WUA and WUF | | | | | | | | | | | | | | | | | | | | | | CP-WU | | |
| 4-4 Training of governmental staff and farmers on farmer's water management organizations | They can teach farmers the importance of water management organization | | | | | | | | | | | | | | | | | | | | | | CP-WU | | |
| 4-4-1 To train for governmental staff | WUA and WUF run themselves | | | | | | | | | | | | | | | | | | | | | | CP-WU | short-term expert | |
| 4-4-2 To train for water user's association | WUA and WUF run themselves | | | | | | | | | | | | | | | | | | | | | | CP-WU | short-term expert | |

*person,equipment and other input necessary for implementing the activities

Signature

Plan of Operation [Improvement of irrigation facilities]

| Activities | Outputs | Schedule (Japanese Fiscal Year) | | | | | | | | | | | | | | | | Person in charge | *Inputs | Remarks | | | | |
|--|--|---------------------------------|----|-----|----|------|----|-----|----|------|----|-----|----|------|----|-----|----|------------------|---------|---------|------|--------------------|---|----|
| | | 2000 | | | | 2001 | | | | 2002 | | | | 2003 | | | | | | | 2004 | | | |
| | | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | | | | I | II | III | IV |
| 5)Improvement of irrigation facilities | Irrigation facilities are improved with farmers' participation | | | | | | | | | | | | | | | | | | | | | supported by EX-WM | Dispatch of expert, Assignment of C/P and other staffs, | |
| | | | | | | | | | | | | | | | | | | | | | | | Land, Building and facilities, Local cost, Acceptance of C/Ps for training in Japan | |
| 5-1)Examination of existing irrigation facilities | The existing condition and its problems emerge. | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 5-1-1)Survey of irrigation facilities (delivery canal, mesqas, marwas) | The existing condition and its problems emerge. | | | | | | | | | | | | | | | | | | | | | CP-WM | survey equipment and projectsite maps, vehicle, | |
| 5-1-1-1)Delivery canal | Contents of survey | | | | | | | | | | | | | | | | | | | | | CP-WM | motorbike, binocular, | |
| 5-1-1-2)3 Mesqas | Contents of survey | | | | | | | | | | | | | | | | | | | | | CP-WM | supporting staffs for survey, transceiver, | |
| 5-1-1-3)Marwas related to 3 mesqas | Contents of survey | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 5-1-1-4)Pumps and Gates | Contents of survey | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 5-1-2)To grasp farmers' opinion about the present condition and problems | The existing condition and its problems emerge. | | | | | | | | | | | | | | | | | | | | | CP-WM | computer, software, printer, recorder, office facilities, | |
| 5-1-2-1)El Mashabik mesqa | Contents of the existing problem | | | | | | | | | | | | | | | | | | | | | CP-WM | necessary equipment and materials | |
| 5-1-2-2)El Rabwa mesqa | Contents of the existing problem | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 5-1-2-3)El Faraheen mesqa | Contents of the existing problem | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 5-1-2-4)The others | Contents of the existing problem | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 5-1-3)To grasp the procedure from the design to ending of the construction and deliver facilities to the WUF | The existing IIP procedure and its problems emerge. | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 5-2)Formulation of an improvement plan on irrigation facilities | The improvement plan is formulated. | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 5-2-1)To formulate the improvement plan on delivery canal | The improvement plan is formulated. | | | | | | | | | | | | | | | | | | | | | CP-WM | present information and data, vehicle, motorbike, | |
| 5-2-1-1)Design | Contents of improvement plan | | | | | | | | | | | | | | | | | | | | | CP-WM | supporting staffs, | |
| 5-2-1-2)To explain the farmers | Contents of improvement plan | | | | | | | | | | | | | | | | | | | | | CP-WM | computer, software, | |
| 5-2-1-3)To modify the design | Contents of improvement plan | | | | | | | | | | | | | | | | | | | | | CP-WM | printer, | |
| 5-2-1-4)Cost estimates | | | | | | | | | | | | | | | | | | | | | | supervised by CPWM | office facilities, | |
| 5-2-1-5)contract | | | | | | | | | | | | | | | | | | | | | | supervised by CPWM | | |
| 5-2-1-6)construction | | | | | | | | | | | | | | | | | | | | | | supervised by CPWM | | |
| 5-2-2)To formulate the improvement Plans on mesqas and marwas | The improvement plan is formulated. | | | | | | | | | | | | | | | | | | | | | CP-WM | necessary equipment and materials | |
| 5-2-2-1)To design 3 mesqas and marwas | Contents of improvement plan | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 5-2-2-2)To explain the farmers | Contents of improvement plan | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 5-2-2-3)To modify the designs | Contents of improvement plan | | | | | | | | | | | | | | | | | | | | | CP-WM | | |
| 5-2-2-4)Cost estimates | | | | | | | | | | | | | | | | | | | | | | supervised by CPWM | | |
| 5-2-2-5)contract | | | | | | | | | | | | | | | | | | | | | | supervised by CPWM | | |
| 5-2-2-6)construction | | | | | | | | | | | | | | | | | | | | | | supervised by CPWM | | |

*person, equipment and other input necessary for implementing the activities

Plan of Operation [Improvement of irrigation facilities]

| Activities | Outputs | Schedule (Japanese Fiscal Year) | | | | | | | | | | | | | | | | Person in charge | *Inputs | Remarks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | 2000 | | | | 2001 | | | | 2002 | | | | 2003 | | | | | | | 2004 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | | | | I | II | III | IV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5)Improvement of irrigation facilities | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

*person, equipment and other input necessary for implementing the activities

Handwritten signature and initials.

Plan of Operation [Appropriate Water Use at the On-farm Level]

| Activities | Outputs | Schedule(Japanese Fiscal Year) | | | | | | | | | | | | | | | | | | | | Person in charge | *Inputs | Remarks | |
|---|---|--------------------------------|----|-----|----|------|----|-----|----|------|----|-----|----|------|----|-----|----|------|----|-----|----|------------------|--------------------|--------------------------------|--|
| | | 2000 | | | | 2001 | | | | 2002 | | | | 2003 | | | | 2004 | | | | | | | |
| | | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | | | | |
| 6) Appropriate Water Use at the On-farm Level | Appropriate water use at the on-farm level is realized. | | | | | | | | | | | | | | | | | | | | | | Supported by EX-AG | | |
| 6-1) Formulation of the methods of on-farm water management | | | | | | | | | | | | | | | | | | | | | | | CP-AG CP-WM | | |
| 6-1-1. To study on the amount of water consumption of each upland crops. | The amount of water consumption is examined in particular, for irrigation efficiency. | | | | | | | | | | | | | | | | | | | | | | | Short-term expert | |
| 6-1-1-1. Determination of evapo-transpiration for each crop. | Data collection of evapo-transpiration for each crop. | | | | | | | | | | | | | | | | | | | | | | | Lux meter | |
| 6-1-1-2. Determination of actual field water use. | Data collection and clarification of water consumption. | | | | | | | | | | | | | | | | | | | | | | | Self-record thermo-hygro meter | |
| 6-1-1-3. Analysis of water application efficiency. | Clarification of water application efficiency. | | | | | | | | | | | | | | | | | | | | | | | | |
| 6-1-2. Investigation of crop yield. | Yield data collection. | | | | | | | | | | | | | | | | | | | | | | CP-AG CP-WM | | |
| 6-1-2-1. To investigate crop yield per unit area. | Data collection for each crop yield per unit area. | | | | | | | | | | | | | | | | | | | | | | | | |
| 6-1-2-2. To investigate crop yield per unit of water. | Data collection for each crop yield per unit of water. | | | | | | | | | | | | | | | | | | | | | | | | |
| 6-1-3. To make irrigation calendar in marwa level. | Formulation of irrigation calendar for on-farm level. | | | | | | | | | | | | | | | | | | | | | | CP-AG CP-WM | Digital soil-moisture meter | |
| 6-1-3-1. To formulate appropriate crop water management.. | Determination of appropriate irrigation time for each crop. (On-farm watermanagement technique) | | | | | | | | | | | | | | | | | | | | | | | | |
| 6-1-3-2. To formulate appropriate crop cultivation method. | Determination of appropriate cultivation methods for each crop. | | | | | | | | | | | | | | | | | | | | | | | | |
| 6-1-3-3. To make crop irrigation schedule for each crop. | Drawing out of crop irrigation calendar. | | | | | | | | | | | | | | | | | | | | | | | | |
| 6-1-4. Improvement for water application efficiency by land leveling. | Verification of water application efficiency by land leveling. | | | | | | | | | | | | | | | | | | | | | | CP-AG CP-WM | Tractor Land-leveler | |
| 6-1-4-1. Collection of land leveling information. | Data collection and analysis of land leveling. | | | | | | | | | | | | | | | | | | | | | | | | |
| 6-1-4-2. Making experiment on land leveling. | Data collection and its analysis. | | | | | | | | | | | | | | | | | | | | | | | | |
| 6-1-4-3. Implementation of land leveling in the pilot field.. | Implementation of land leveling. | | | | | | | | | | | | | | | | | | | | | | | | |
| 6-1-5. To draw up the manual of field water management. | Drawing manual of field water management. | | | | | | | | | | | | | | | | | | | | | | CP-AG CP-WM | | |
| 6-2) Training of governmental staff and farmers on water use at the on-farm level | On-farm level water management is formulated by farmers. | | | | | | | | | | | | | | | | | | | | | | CP-AG CP-WM | | |
| 6-2-1. Preparation for training. | Plan of training and preparation of facilities,etc. | | | | | | | | | | | | | | | | | | | | | | | | |
| 6-2-2. Imprermentation of training. | Making textbook and reference. | | | | | | | | | | | | | | | | | | | | | | | | |

*person,equipment and other input necessary for implementing the activities

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Plan of Operation [Farmers' participation in water management system at mesqa and the delivery canal levels]

| Plan of Operation [Farmers' participation in water management system at mesqa and the delivery canal levels] | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--------------------------------|----|-----|----|------|----|-----|----|------|----|-----|----|------|----|-----|----|------|----|-----|----|------------------|--------------------|---|--|
| Activities | Outputs | Schedule(Japanese Fiscal Year) | | | | | | | | | | | | | | | | | | | | Person in charge | Inputs | Remarks | |
| | | 2000 | | | | 2001 | | | | 2002 | | | | 2003 | | | | 2004 | | | | | | | |
| | | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | | | | |
| 7 Farmers' participation in water management system at mesqa and the delivery canal levels | The water of delivery canal is managed by the water users' association | | | | | | | | | | | | | | | | | | | | | | Supported by EX-WU | | |
| 7-1 Training of governmental staff and farmers on farmers' participation in the water management system | Understanding of water management system | | | | | | | | | | | | | | | | | | | | | | CP-WU | | |
| 7-1-1 Training of governmental staff | Understanding of water management system | | | | | | | | | | | | | | | | | | | | | | CP-WU | | |
| 7-1-2 Training of farmers' leader | Understanding of water management system | | | | | | | | | | | | | | | | | | | | | | CP-WU | short-term expert | |
| 7-2 Study of the method to support sound management of WUF and WUAs | To able to manage of WUF's and WUA's staff | | | | | | | | | | | | | | | | | | | | | | CP-WU | | |
| 7-2-1 To make rule of management WUF and WUA | Rule of management | | | | | | | | | | | | | | | | | | | | | | CP-WU | | |
| 7-2-2 To bring up WUF and WUA by continuous supporting system | To able to manage of WUF's and WUA's staff | | | | | | | | | | | | | | | | | | | | | | CP-WU | short-term expert computer copy. Computersoft | |
| 7-2-2-1 Training of general management for WUF and WUA | To able to manage of WUF's and WUA's staff | | | | | | | | | | | | | | | | | | | | | | CP-WU | | |
| 7-2-2-2 Study on subsidy for O&M etc | To able to manage of WUF's and WUA's staff | | | | | | | | | | | | | | | | | | | | | | CP-WU | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |

*person, equipment and other input necessary for implementing the activities

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aly

Plan of Operation [General Project Management]

| Activities | Outputs | Schedule (Japanese Fiscal Year) | | | | | | | | | | | | | | | | | | | | Person in charge | *Inputs | Remarks | |
|---|--|---------------------------------|----|-----|----|------|----|-----|----|------|----|-----|----|------|----|-----|----|------|----|-----|----|------------------|--------------------|-----------------------------------|--|
| | | 2000 | | | | 2001 | | | | 2002 | | | | 2003 | | | | 2004 | | | | | | | |
| | | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | | | | |
| 8. General Project Management | The Project is implemented successfully with efficient management actions. | | | | | | | | | | | | | | | | | | | | | | Supported by EX-CA | | |
| 8-1 To complete project organization and to formulate Annual Work Plan of the Project | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8-1-1 To hold the Joint Steering Committee meeting | The JSC meeting is held at least once a year | | | | | | | | | | | | | | | | | | | | | | PD | | |
| 8-1-2 To hold the Joint Site Coordinating Committee meeting | The JSCC meeting is held at least once every three months | | | | | | | | | | | | | | | | | | | | | | DPM | | |
| 8-1-3 To complete the Project organization | The Project organization is strengthened and maintained | | | | | | | | | | | | | | | | | | | | | | PD | | |
| 8-1-4 To formulate Annual Work Plan | The Work Plan is formulated every year | | | | | | | | | | | | | | | | | | | | | | PM | | |
| 8-1-5 To control implementation schedules | Schedule of the Work Plan is controlled logically | | | | | | | | | | | | | | | | | | | | | | PSM | (Using Primavera Project Planner) | |
| 8-2 To conduct monitoring and evaluation of the Project activities and result regularly | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8-2-1 To formulate Monitoring and Evaluation Plan | The M&E Plan is formulated | | | | | | | | | | | | | | | | | | | | | | PD | | |
| 8-2-2 To hold regular monitoring meeting and to submit Monitoring Report | Monitoring Reports are submitted (6 times) | | | | | | | | | | | | | | | | | | | | | | PM | | |
| 8-2-3 To hold joint evaluation meeting and to submit Evaluation Report | Evaluation Reports are submitted (2 times) | | | | | | | | | | | | | | | | | | | | | | PD | | |
| 8-3 To compose Data Base System required for the Project | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8-3-1 To prepare Data Base System | The Data Base System for the Project is prepared | | | | | | | | | | | | | | | | | | | | | | CP | GIS software | |
| 8-3-2 To store data and information (data entry) | Required data and information are stored | | | | | | | | | | | | | | | | | | | | | | CP | | |
| 8-3-3 To prepare sub system for WUF | The Data Base System for WUF is prepared | | | | | | | | | | | | | | | | | | | | | | CP | GIS software | |
| 8-4 To conduct training courses required for the Project | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8-4-1 To formulate Training Plan | The Training Plan is formulated | | | | | | | | | | | | | | | | | | | | | | CP | | |
| 8-4-2 To prepare training materials for each training courses | Training materials for each courses are prepared | | | | | | | | | | | | | | | | | | | | | | CP | | |
| 8-4-3 To conduct each training courses | Training courses are conducted | | | | | | | | | | | | | | | | | | | | | | CP | | |
| 8-4-4 To hold evaluation meeting and to submit Training Report | Training Reports are submitted annually | | | | | | | | | | | | | | | | | | | | | | CP | Copy machine, video, stationery | |

*person, equipment and other input necessary for implementing the activities

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ANNEX V

Monitoring and Evaluation Plan of the Water Management Improvement Project in the Nile Delta in the Arab Republic of EGYPT (2000.3.1~2005.2.28)

I. Project structure and activities

1. Project Design Matrix (PDM)

The PDM is attached as Annex III. The PDM will be modified according to the results of evaluation as necessary.

2. Plan of Operations (PO)

The PO is attached as Annex IV. The PO will be modified according to the results of monitoring as necessary.

II. Monitoring and Evaluation activities

1. Monitoring System

In accordance with the monitoring schedule, the Project holds regular monitoring meetings chaired by the project manager to monitor the progress of activities.

Responsible person should provide sufficient data on activities for each activity for the regular monitoring meetings. Results should be made into the "Project Achievement Chart".

2. Evaluation System

In accordance with the evaluation schedule, an evaluation team will be dispatched by JICA. The team and Egyptian experts of outside the Project will form a joint evaluation team. The joint evaluation team will evaluate the Project and prepare an evaluation report, which should be signed by both sides.

III. Schedule of Monitoring and Evaluation (provisional)

| Time | Type of monitoring and evaluation | Conducted by | Record by |
|-----------|-----------------------------------|--------------------------------|-------------------------|
| Dec. 1999 | Agreement on cooperation | | R/D and TSI |
| Mar. 2000 | Commencement of cooperation | | |
| Sep. 2000 | Monitoring and evaluation plan | Management Consultation team | Minutes |
| Mar. 2001 | 1 st monitoring | Counterpart & Japanese experts | Monitoring report |
| Sep. 2001 | 2 nd monitoring | Counterpart & Japanese experts | Monitoring report |
| Mar. 2002 | 3 rd monitoring | Counterpart & Japanese experts | Monitoring report |
| Sep. 2002 | Intermediate evaluation | Joint evaluation team | Joint evaluation report |

| | | | |
|-----------|----------------------------|--------------------------------|-------------------------|
| Mar. 2003 | 4 th monitoring | Counterpart & Japanese experts | Monitoring report |
| Sep. 2003 | 5 th monitoring | Counterpart & Japanese experts | Monitoring report |
| Mar. 2004 | 6 th monitoring | Counterpart & Japanese experts | Monitoring report |
| Sep. 2004 | Final evaluation | Joint evaluation team | Joint evaluation report |
| Feb. 2005 | Completion of the program | | |

* The Results of monitoring will be reported to the Joint Steering Committee.

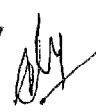
IV. Criteria and items for Monitoring and Evaluation (Technical and/or Administrative)

1. Criteria and items for Monitoring

Monitoring will be conducted in accordance with the PDM and the PO.

2. Criteria and items of Evaluation

Evaluation will be conducted in accordance with the five evaluation items, namely efficiency, effectiveness, impact, relevance and sustainability.




付属資料2. プロジェクト基本計画

プロジェクト基本計画

1 プロジェクト名称

エジプト・ナイルデルタ水管理改善計画

2 実施機関

灌漑水資源省灌漑改善局、中央デルタ灌漑改善局

3 プロジェクトサイト

カフル・エル・シェイク県ビヤラ地区（バハル・ヌール水路受益地）

4 協力期間

2000年3月1日～2005年2月28日（5年間）

5 基本計画

（1）上位目標

効率的かつ効果的に IIP 事業を実施するための改善手法がナイルデルタで普及され、それにともなって農業生産性や農家の実質所得が向上する。

（2）プロジェクト目標

水路の末端の水不足を緩和し作物の生産性向上をもたらす、バハル・エル・ヌールでの当該プロジェクトの成功により、効率的かつ効果的に IIP 事業を実施するための改善手法が実証される。

（3）期待される成果

- 1) 農民参加により水管理計画が作成される。
- 2) 農民参加により土地利用計画が作成される。
- 3) 灌漑施設の維持管理計画が作成される。
- 4) 農民水利組織が3段階*で結成される。
- 5) 灌漑施設が改善される。
- 6) 圃場レベルでの適正な水管理が実現される。
- 7) 農民水利組織によりがデリバリーキャナル内で水管理がなされる。

* 註： 1) Federation of Water Users' Association, 2) Water Users' Association, 3) Water Users' Group（Associationの規模が大きすぎる時に結成されるもの）の3レベル

(4) 活動

1) 水管理計画の作成

- 1-1) プロジェクトエリア内の水管理システム（水質も含む）の現況調査を行う。
- 1-2) 水管理計画を作成する。
- 1-3) 政府職員や農民に対して水管理計画についての研修を行う。

2) 土地利用計画の作成

- 2-1) 土地利用の現況を調査する。
- 2-2) 土地利用計画を作成する。
- 2-3) 政府職員や農民に対して土地利用計画についての研修を行う。

3) 灌漑施設維持管理計画の作成

- 3-1) 灌漑施設の現況を調査する。
- 3-2) 維持管理計画を作成する。
- 3-3) 政府職員や農民に対して維持管理計画についての研修を行う。

4) 水管理のための農民組織

- 4-1) 参加型計画手法を用いてプロジェクトエリアの社会状況を調査する。
- 4-2) 灌漑改善事業（IIP）の詳細計画、建設計画、維持管理計画について、農民の同意を得る。
- 4-3) プロジェクトエリアで WUF と WUA（複数）を法人として設立する。
- 4-4) 政府職員や農民に対して水管理組織についての研修を行う。

5) 灌漑施設の改善

- 5-1) 灌漑施設の現況調査を行う。
- 5-2) 灌漑施設の改善計画を作成する。
- 5-3) 施設の改善のための設計・建設ガイドラインを作成する。

6) 圃場レベルでの適切な水利用

- 6-1) 圃場の水管理方法を作成する。
- 6-2) 政府職員や農民に対して圃場での水管理についての研修を行う。

7) メスカとデリバリーチャネルレベルの農民の水管理への参加

- 7-1) 政府職員や農民に対して、農民参加による水管理についての研修を行う。
- 7-2) WUF と WUAs の健全な運営管理のための支援方法を調査（検討）する。

6 日本政府のとりべき措置

6-1 専門家の派遣

(1) 長期専門家

- 1) チーフアドバイザー
- 2) 業務調整
- 3) 水管理／灌漑施設
- 4) 水利組織
- 5) 営農

(2) 短期専門家

本プロジェクトの円滑な実施のため、必要に応じて派遣する。

6-2 カウンターパート研修員受入

毎年数人のカウンターパートの日本での研修受入を実施する。

6-3 機材供与

プロジェクトの技術移転に必要な機械、機器及びその他の資材を供与する。

7 エジプト国政府のとりべき措置

7-1 カウンターパート、事務職員及び関連職員の配置

(1) プロジェクト・ダイレクター

灌漑水資源省灌漑総局長

(2) プロジェクト・マネージャー

灌漑水資源省灌漑改善局長

(3) 副プロジェクト・マネージャー

灌漑水資源省灌漑改善局次長（デルタ地域担当）

(4) プロジェクト・サイト・マネージャー

中央デルタ灌漑改善局長

(5) カウンターパート

1) サイトカウンターパート

- ・水管理／灌漑施設
- ・水利組織
- ・営農

2) 本部カウンターパート

- ・水管理／灌漑施設
- ・水利組織

・ 営農

(6) 事務職員及び補助要員

7-2 土地、建物及び関連施設

(1) 事務所及び専門家執務室

(2) 政府職員及び農民の研修室

(3) プロジェクトの実施に必要なその他の土地、建物、施設等

7-3 予算措置

(1) 灌漑施設の建設費及び維持管理費

(2) カウンターパート等の人件費（旅費を含む）

(3) プロジェクトの実施に必要な経費

8 合同調整委員会

効果的で達成度の高いプロジェクトの技術協力実施のために、合同運営委員会及び事業調整委員会を設置する。

(1) 合同運営委員会

合同運営委員会は少なくとも年1回、また必要に応じて開催する。

1) 機能

- ・ R/D及びT S Iに基づいて年間活動計画を作成する。
- ・ 年間活動計画の達成状況及び技術協力計画の全体的な進捗状況を検討する。
- ・ プロジェクトに関する重要な問題の検討と意見交換を行う。

2) 構成

議長：灌漑水資源省灌漑総局長

委員：灌漑水資源省灌漑改善局長

灌漑水資源省灌漑局長

灌漑水資源省灌漑改善局次長

灌漑水資源省灌漑改善局灌漑指導部長

中央デルタ灌漑改善局長

灌漑水資源省排水事業庁代表

国家水研究所

その他の関係省庁の代表

チーフアドバイザー

業務調整員

日本人専門家

JICA エジプト事務所代表

(2) 事業調整委員会

事業調整委員会は少なくとも3ヶ月に1回、また必要に応じて開催する。

1) 機能

- ・年間活動計画に基づいて詳細活動計画を作成する。
- ・プロジェクト活動の達成状況及び技術協力計画の全体的な進捗状況を検討する。
- ・プロジェクト活動に関する重要な問題の検討と意見交換を行う。

2) 構成

議長：灌漑水資源省灌漑改善局次長

副議長：中央デルタ灌漑改善局長

委員：カフル・シェイク灌漑局長

ビヤラ監督区所長

ビヤラ灌漑区所長

カウンターパート

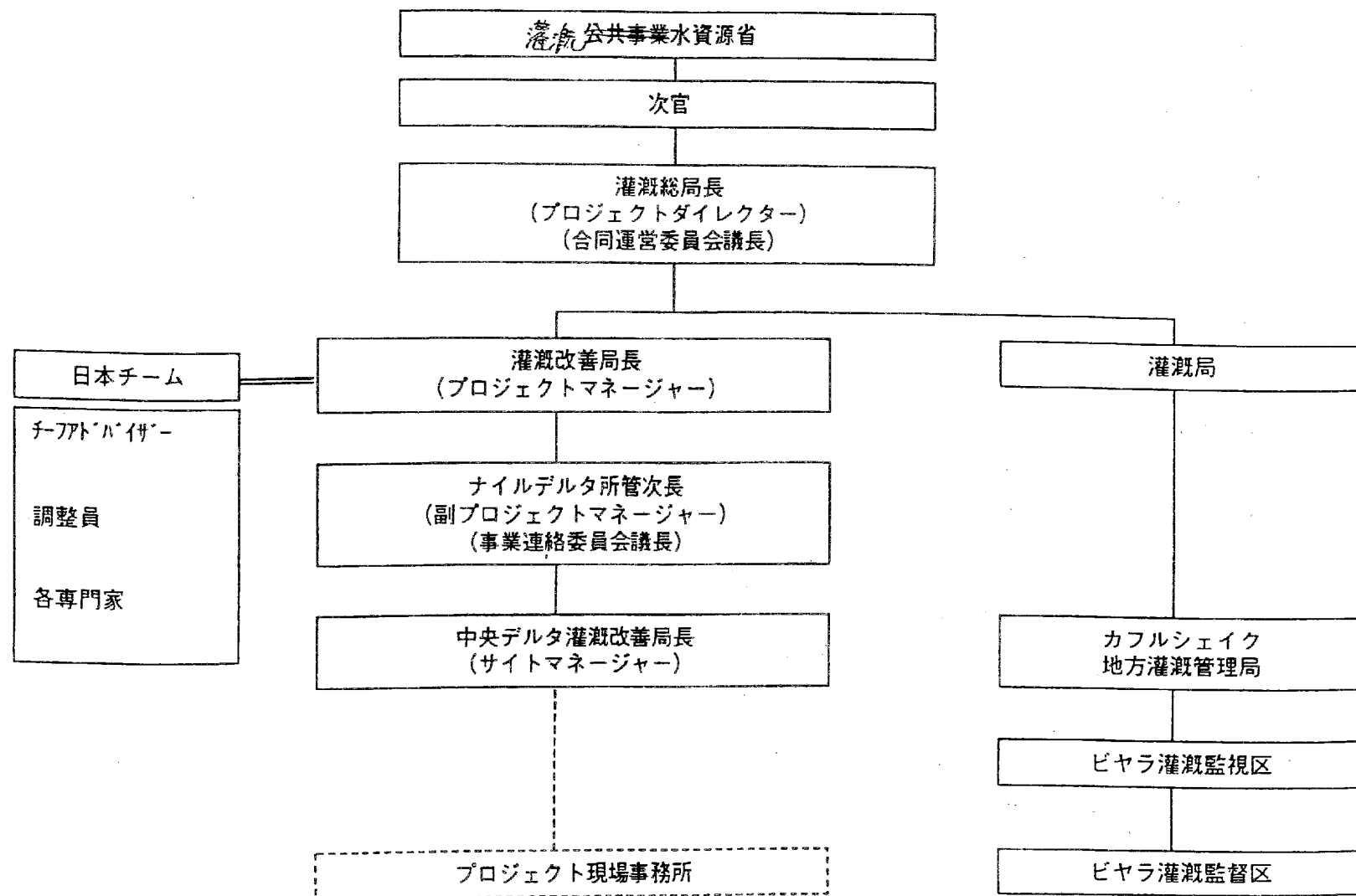
チーフアドバイザー

業務調整員

日本人専門家

JICA エジプト事務所代表

プロジェクト組織図



付属資料 4. 調査打合せメモ

ナイルデルタ水管理改善計画 運営指導調査団 打合せメモ (Final)

9 月 5 日

島崎 作成

1. JICA エジプト事務所 表敬

時 間：9 月 5 日 9:00～10:00

出席者：JICA 事務所：中村所長、坂田次長、花立所員

調査団：服部団長、島崎団員、福田団員、藤山団員

プロ技：梶原リーダー、本間調整員、清野専門家、高橋専門家、浦山専門家

灌漑水資源省：前田専門家

(内容)

エジプトの状況 (中村所長より)

- ・ 水質が問題となってきた
- ・ 日本の期待通り動いてくれない

例：水道プロジェクトの式典の日程が直前で何度も変わり、最終的に取りやめとなった。

同様に環境プロジェクトでも日程の変更が多い。

- ・ 日本側ばかりカリカリしてもだめであり、(イスラム社会の影響や) 社会主義を脱しきれていない感じがあり、素直にありがたいといってくれない状況が見うけられる。
- ・ 日本のやり方を主張するとともに、できないことはできないときちつと言う必要がある。また、物事は前倒しで行っていく必要がある (期限を守らない)。
- ・ 機材の通関手続きのように、他省がらみのものは、原局ががんばっても困難なものがある (原局は知らないとの回答) が、原局の上部を通じ対応を図ってもらう必要がある。
- ・ エジプトでは、あまりプロジェクトが知られていない (一般は元より、マスコミ担当者等も) ため、広報に力を入れていきたい。
- ・ エジプトの一般情勢として経済が悪くなってきており、政府は財政難から、不況と公表とせざるを得ない状況になっている。
- ・ 就職難、識字率が低く地方の女性で 40%、男性で平均 63%となっている。
- ・ また、エジプトは経済の内輸出の占める割合は 0.007% と非常に低くバングラデシュやスリランカと同じレベルであり、国内でほとんど生産されていない状況といえる (観光、スエズ運河通行料、石油、出稼ぎに依存している)。

(その他)

- ・ デリバリーチャネル部分は、R/D ではエジプト側実施となっているが、施工管理が問題となっており、計画に基づいた成果品 (工事) が得られない可能性があり、プロジェクトの成果に影響が出るのが危惧されている。
- ・ プロ技チームの根気よい努力の成果として、秘書 1 人、ドライバー 3 人をエジプト側で手当 (基本賃金負担) することができた。これは、これまでのエジプトでのプロ技の実状やエジプトのやり方において大きな成果といえる。

2. 在エジプト日本大使館 表敬

日 時：9 月 5 日 10:30～12:00

出席者：日本大使館 山村一等書記官、(経済班長へは調査団団長が代表し挨拶のみ)

調査団：服部団長、島崎団員、福田団員、藤山団員

プロ技：梶原リーダー

JICA 事務所 花立所員

(内容)

- ・ 灌漑水資源省大臣への表敬時にはプロジェクトの PR を行う必要がある。
- ・ 計画局長への表敬時には、何が問題となっているかを伝えておく必要がある。
- ・ メスカ等の改良工事の実施については、エジプト側は WB の実施事例において、施工管理が適切になされていないため多くの農民から苦情が寄せられており、対応を図る必要がある。しかし、R/D では、エジプト側対応となっていることから、無償で実施する場合には、これとの整合性が必要である。
- ・ 水管理研究所の室長レベルを集めたときの議論では、④IIP 事業実施後の評価を行っていないこと、農民の意見を聞いていないことが問題として出されている。
- ・ MAC はカナダの援助を受けてマルワレベルの水管理を行う Maruwa Advisory Committee であったが、その後、女性の組織も必要となり、WAC (Women Advisory Committee) と MAC (Men Advisory Committee) となった。カナダの援助計画はレンガを用いマルワの改良を農民組織が行い、実施後、レンガなどの資材費を農家から徴収するものであるが、計画どおり徴収が進まなかったことから中止となっている。なお、実施省庁は農業省であり、IIP 実施地区では、IIP 事業に対する農家の苦情が多いことから、マルワの改良事業を IIP 事業実施前に行いたいとの意向であるが、IIS との調整は特に行っていない。現在、USAID で実施したカワハギ地区で農業省独自に実施されている。

3. 灌漑水資源省 打合せ

日 時：9 月 5 日 12:30～14:00

場 所：MWRI (灌漑水資源省) 灌漑総局長室 (18F)

出席者：エジプト側 Eng. Ali Morsi 灌漑総局長、Eng. Ramsis 灌漑改善局長、

Eng. Adel Hashem、前田専門家

調査団：服部団長、島崎団員、福田団員、藤山団員

プロ技：梶原リーダー、本間調整員

JICA 事務所 花立所員、Alfred (ローカルスタッフ)

(内容)

別添資料に基づき、プロジェクト概要、現在の課題、要請事項を説明。

エジプト側より、以下の回答

(1) タンタでのカウンターパートについて

提案のあった通り、現在の 3 人のカウンターパートは full-time とし、残る 2 人は水管理研究所及び研究センターから確保するよう手配する。また、Agronomy の supervise

としてエンジニア 1 人を要請の通り確保するが、個人的な指名は公平性から困難であり、専門家側で示す条件に適合した人材を割当てることとしたい。なお、他省庁からの確保は灌漑水資源省の所管外であり困難である。

(2) カイロの専門家の執務室について

今月末までに IIS の 5F に 2 部屋用意する（この他、6F の個別専門家の執務室はそのまま確保）。また、この他、会議室としてもう 1 部屋を専属的に確保することは困難であるが、会議室として 1F 等の既存の会議室を他の組織と共同で利用することは問題ない。

(3) デジタル地図の作成について

Survey Authority のカフルエルシェイク事務所では 15LE/fed で実施可能とのことであるが、9 月 11 日 10:00～直接 Survey Authority の Chairman に調査団が会って実施の可能性について確認することとなった。

(4) 水利組織への維持管理費助成措置について

助成については、ビヤラで実施している地区があるので、助成率、費用の資料を後で提示する。なお、助成は個々の農家へはできないが組織に対しては可能である。

(5) 当プロジェクトのエジプト内でのプライオリティが低いのではないかとの意見について

財政年度が 6 月末で終わり、7 月から新たな年度となり対応が遅れたことを深くわびるとともに、要請については全て対応するとの回答等から、再三に亘り、プライオリティは低くないとの回答が行われた。

なお、最後に、プロジェクト専門家に対し、多くの JICA 研修 OB が公私ともに積極的に協力してくれていることにお礼を述べるとともに、専門家側が農家等とのコミュニケーションのためにアラビア語の学習を行っているなど日本側がプロジェクトの成功に向けて最大限の努力を行っていることを述べた。

（会議終了後、JICA 事務所に明日の大臣表敬においては、以上の問題は全て解答したので問題としてあげないで欲しいとの連絡が来た）

ナイルデルタ水管理改善計画 運営指導調査団 打合せメモ (Final)

9月6日

島崎 作成

1. 灌漑水資源省計画局長 表敬

日 時：9月6日 13:00～13:15

場 所：計画局長執務室

出席者：灌漑水資源省 Dr. Bayoumi Atta 計画局長、前田専門家

調査団 服部団長、島崎団員、福田団員、藤山団員

プロ技 梶原リーダー、本間調整員

JICA 事務所 坂田次長、Alfred (ローカルスタッフ)

(内容)

調査団の目的等を説明し、今回の調査結果が今後のプロジェクト運営に重要であることを述べた。

2. 灌漑水資源省大臣 表敬

日 時：9月6日 13:20～13:50

場 所：灌漑水資源省大臣会議室

出席者：灌漑水資源省 Dr. Mahmoud Abu Zeid 大臣、Eng. Ali Morsi 灌漑総局長、

Eng. Ramsis 灌漑改善局長、Eng. Adel Hashem

Mr. Husien El-Atfy (First Under Secretary, Minister Office) ,

前田専門家

調査団 服部団長、島崎団員、福田団員、藤山団員

プロ技 梶原リーダー、本間調整員

JICA 事務所 坂田次長、Alfred (ローカルスタッフ)

(内容)

服部団長より、調査団の目的及び前日(9月5日)の灌漑水資源省灌漑局との議論内容(カウンターパートの確保、カイロの専門家の執務室の確保等)及び合意事項について報告した。

(大臣より)

- ・このプロジェクトはトッププライオリティであり、国家プロジェクトである。
- ・USAIDは概略(outline)を決めようと努力した。
- ・伝統的な特質、経済的な観点から日本の技術を取入れた新方式の異なったアプローチを求めている。
- ・調査団からの5つの要求については結論に達し、プロジェクトの障害は取り除かれたと認識している。
- ・カウンターパートとして研修センターや水管理研究所の活用は有益である。
- ・取組みの過程が本質的な部分であると考えている。
- ・良い勧告と積極的な実施のための建設的な議論と調査結果を期待している。
- ・なお、カフエルシェイクの州知事は農業分野の技術者である。

(JICA 事務所坂田次長より)

JICA 事務所を代表して、協力に対するお礼とカウンターパートの貢献に対する評価を述べた。

ナイルデルタ水管理改善計画 運営指導調査団 打合せメモ

9月9日（カフル・エル・シェイク県知事表敬）

島崎 作成

カフル・エル・シェイク県知事 表敬

日 時：9月9日 13:00～13:30

場 所：カフル・エル・シェイク県知事会議室

出席者：カフル・エル・シェイク県 知事、他数名

調査団 服部団長、島崎団員、福田団員、藤山団員

プロ技 梶原リーダー、本間調整員、清野専門家、高橋専門家、浦山専門家

JICA 事務所 花立所員、Alfred（ローカルスタッフ）

灌漑水資源省 Eng. Adel Hashem、カフル・エル・シェイク灌漑局長 他

農業土地開拓省 カフル・エル・シェイク農業普及局長

（内容）

- ・県知事より歓迎の挨拶
- ・灌漑水資源省 Eng. Adel Hashem 氏より県知事に対してプロ技の概要説明。
- ・調査団 服部団長より調査団の目的及びスケジュールを説明。
- ・知事より、プロ技の活動については市民的に認知し、また、公的な支援を行うことを表明。
- ・梶原団長からの普及所、研修センター等の協力要請に対して、県知事よりプロジェクト側からの協力要請は、遠慮なく申し出て欲しい旨を表明。

なお、当日の会見模様は現地の TV で当日の夕方報道されるとのことであった。

（しかし、打合せを行っていたため現地で確認はできなかった）

El Akhbar newspaper. (Local news)

Sep 8th 2000

**7 Billion Egyptian Pounds for Improving Irrigation in 3.5
Million Feddan up to 2017**

**Japan International Cooperation Agency and the Consultant Offices study
the contribution in these projects.**

Ms. Karima El Serogi wrote

Dr. Mahmoud ABOU ZEID; Minister of Water Resources and Irrigation declared that MWRI is executing a number of programs for rationalizing and greatening the current usage of water. The National program for improvement of irrigation in old lands (Nile Valley and Delta) is one of the main axes (pillars) of the programs aiming at improving and raising the efficiency of water distribution in 3.5 million Feddan as a first stage up to the year 2017 at a total cost of L.E 7 billion. These projects will save 10~ 15 percent of water. Additionally, these projects are aided by grants and soft loans from some foreign organizations such as WB, German Government. This statement came after H.E Minister received a high level Japanese mission representing Ministry of Agriculture and JICA where he reviewed the tasks and activities of the Ministry concerning water preservation and management.

Dr. ABOU ZEID clarified that the Japanese mission came to Egypt within the framework of following the technical studies, the achievements of the "Water Management Improvement Project" and establishing the water users associations in the command area of Bahr El Nour in Kafr El Sheikh. The budget of the technical studies of the projects amounts to 80 million Japanese Yen granted from JICA. The two sides studied the most important projects for improving and preserving the water resources and the possibility of offering technical assistance through JICA and the Japanese Consultant offices. Remarkably, JICA has already contributed in many technical studies and also implementation of irrigation facilities. For example, JICA implemented El Lahoun regulator with a cost of L.E 70 million. Also, JICA contributes to the works of "Rehabilitation and Improvement of Mazoura regulator" on Bahr Yousef Canal with a Grant of L. E 70 million for improving irrigation in the area of Middle Egypt and Fayoum. Moreover, JICA conducts the technical and feasibility studies for "North Sinai Integrated Rural Development Project" for reclaiming 400 thousand feddan.

٧ مليارات جنيه لتطوير الري في ٣,٥ مليون فدان حتى عام ٢٠١٧ هيئة المعونة اليابانية والمكاتب الاستشارية تبحث المساهمة في المشروعات

كتبت كريمة السروجي:

اعلن د. محمود ابو زيد وزير الموارد المائية والري ان الوزارة تنفذ عدة برامج قانون لترشيد المياه وتعظيم استخداماتها الحالية ويمثل البرنامج القومي لتطوير الري في الاراضى الزراعية القديمة بالوادي والدلتا احد محاورها الاساسية ويستهدف التطوير رفع كفاءة توزيع المياه في ٣,٥ مليون فدان كمرحلة اولى حتى عام ٢٠١٧ بتكلفة اجمالية ٧ مليارات جنيه وان هذه المشروعات تحقق وفرا مائيا حوالى ١٠٪ الى ١٥٪ من كمية المياه، ويدعم المشروع بعض الهيئات الاجنبية مثل البنك الدولى والحكومة الالمانية عن طريق بعض المنح والقروض الميسرة.

جاء ذلك امس فى تصريحات للوزير عقب استقباله وفدا يابانيا على مستوى عال يمثل وزارة الزراعة وهيئة المعونة



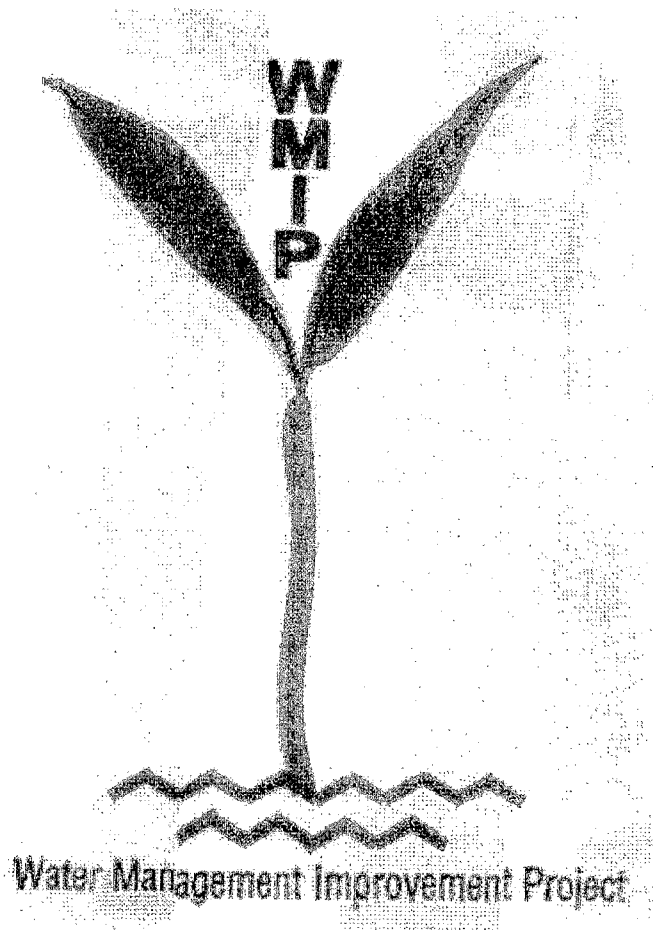
د. محمود ابو زيد

الدولية اليابانية «جايكا» واستعرض فيه الوزير أنشطة ومهام الوزارة فى ادارة الموارد المائية وتنميتها والحفاظ عليها مؤكدا ان الوفد اليابانى جاء الى مصر فى اطار متابعة اعمال الدراسات الفنية وانجازات مشروع ادارة نظم الري وتكوين جماعات مستخدمى المياه

فى منطقة ترعة بحر النور بكفر الشيخ وتبلغ ميزانية الدراسة الفنية للمشروع حوالى ٨٠ مليون ين يابانى من خلال منحه لاترد من «الجايكا» ويبحث الجانبان اهم المشروعات لتنمية الموارد المائية والحفاظ عليها ومدى مساهمة «الجايكا» والمكاتب الاستشارية اليابانية فى تقديم الدعم الفنى والتحويل حيث ساهمت فى العديد من الدراسات الفنية وتنفيذ اعمال العديد من منشآت الري بمنحه لاترد قيمتها ٧٠ مليون جنيه مصرى لانشاء قناطر اللاهون.. كما ساهم الجانب اليابانى فى اعمال احلال وتجديد قناطر مازورة على بحر يوسف بمنحه ٧٠ مليون جنيه لتحسين الري بمنطقة مصر الوسطى والفيوم، وكذلك اعمال الدراسات الفنية والجهوى لمشروع تنمية شمال سيناء لاستصلاح ٤٠٠ الف فدان.

PROJECT LOGO

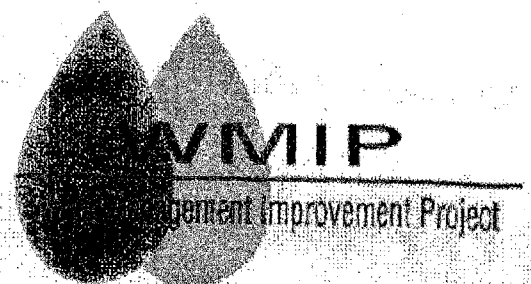
Water Management Improvement Project in the Nile Delta



(第1位)



(第2位)



(第3位)

Necessary Equipment for the field of water management and improvement of irrigation facilities

| Equipment | Number | Specification | Japanese fiscal year(April to March) | | | | | | from JAPAN or Local | Note |
|----------------------------|--------|----------------------|--------------------------------------|------|------|------|------|------|------------------------|----------------|
| | | | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | | |
| Survey equipment | | | | | | | | | | |
| Total station | 2 | Topcon GTS-211D | | 1 | 1 | | | | from JAPAN | with accessory |
| GPS | 2 | | | 1 | 1 | | | | from JAPAN | |
| Staff | 2 | 4-5m | | 1 | 1 | | | | Local market | |
| Pole | 2 | 2m | | 1 | 1 | | | | Local market | |
| Mesuring tape | 2 | 100m,stainless steel | | 1 | 1 | | | | Local market | |
| Hand level | 2 | | | 1 | 1 | | | | from JAPAN | |
| Binocular | 1 | | 1 | | | | | | | Ready |
| Transceiver | 2 | | 2 | | | | | | | Ready |
| Planimeter | 2 | | | 1 | 1 | | | | from JAPAN | |
| Vehicle | 4 | four wheeled | 3 | 1 | | | | | Local market | |
| Motorbike | 4 | off-road | | 4 | | | | | Local market | |
| Computer | | | | | | | | | | |
| Body | 2 | notebook and another | | 1 | 1 | | | | Local market | IBM600X etc. |
| Accessories | 2 | mouse, monitor etc. | | 1 | 1 | | | | Local market | |
| Software | | | | | | | | | | |
| MS office 2000 | 2 | Professional | | 1 | 1 | | | | Local market | |
| Sap 90 | 1 | | | 1 | | | | | Local market | |
| Arc view(or Arc info) | 1 | | | 1 | | | | | Local market | |
| Auto Cad | 1 | | | 1 | | | | | Local market | |
| Page maker | 2 | | | 1 | 1 | | | | Local market | |
| Primavera | 1 | project planner | | 1 | | | | | Local market | |
| Printer | 2 | color and laser | | 1 | 1 | | | | Local market | |
| Plotter | 1 | | | 1 | | | | | Local market | |
| Current meter | 2 | | 1 | 1 | | | | | from JAPAN | |
| Water level gauge | | | | | | | | | | |
| Polysonics | 1 | | 1 | | | | | | | Ready |
| Water pressure logger | 20 | by Holland | 4 | 16 | | | | | Local market | |
| Electromagnetic flow meter | 2 | | 1 | 1 | | | | | from JAPAN | |
| Parshall measuring flume | 10 | | | 10 | | | | | Local market | |
| Water quality checker | 1 | | 1 | | | | | | | Ready |
| Rapid water analyzer | 1 | | | 1 | | | | | from JAPAN | |
| Rubber raft | 1 | | | | 1 | | | | Local market | |

Necessary Equipment for the field of water management and improvement of irrigation facilities

| Equipment | Number | Specification | Japanese fiscal year(April to March) | | | | | | from JAPAN or Local | Note |
|-------------------------|--------|-------------------|--------------------------------------|------|------|------|------|------|------------------------|-------|
| | | | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | | |
| Tractor | 1 | CT-95AU-LAS | | | 1 | | | | from JAPAN | |
| Leveller | 2 | 4m,LL4000 | | | 1 | 1 | | | from JAPAN | |
| Stable cultivator | 2 | SC9A | | | 1 | 1 | | | from JAPAN | |
| Laser equipment | 2 | for land leveling | | | 1 | 1 | | | from JAPAN | |
| Plan shelf | 1 | | | 1 | | | | | Local market | |
| Recorder | 1 | | 1 | | | | | | | Ready |
| Publishing equipment | | | | | | | | | | |
| Copy machine for design | | | | | 1 | | | | Local market | |
| Audiovisual equipment | | | | | | | | | | |
| Dijital camera | 1 | Land master | | 1 | | | | | from JAPAN | |
| Office facilities | | | | | | | | | | |
| Copy machine | 1 | | 1 | | | | | | | |
| Short-term expert | 10 | | | 2 | 2 | 2 | 2 | 2 | | |

Necessary Equipment for the field of Water Users Association

[illegible]

Necessary Equipment for the field Agronomy

| Equipment | Number | Specification | Japanese fiscal year (April to March) | | | | | | from JAPAN or Local | Note |
|---------------------------------|--------|------------------------|---------------------------------------|------|------|------|------|------|------------------------|-------|
| | | | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | | |
| Digital soil-moisture meter | 2 | | | | 2 | 1 | | | from JAPAN | |
| Lux meter | 2 | | | | 2 | 1 | | | from JAPAN | |
| Self-record thermo-hygro meter | 3 | | | | 2 | | 1 | | from JAPAN | |
| Transceiver | 2 | | | | 2 | | | | from JAPAN | |
| Telescope | 1 | | | | 1 | 2 | | | from JAPAN | |
| Soil hardness tester | 2 | | | | 2 | | | | from JAPAN | |
| Soil stick and soil color chart | 2 | | | | 2 | | | | from JAPAN | |
| pH/EC meter | 2 | | | | 2 | | | | from JAPAN | |
| Electronic balance | 2 | | | | 2 | | | | from JAPAN | |
| Tractor | 1 | for cultivation (60hp) | | | | | | | 1 from JAPAN | |
| Rotary for tractor | 1 | for cultivation | | | | | | | 1 from JAPAN | |
| Tractor | 1 | CT-95AU-LAS | | | 1 | | | | from JAPAN | |
| Leveller | 2 | 4m, LL4000 | | | 1 | 1 | | | from JAPAN | |
| Stable cultivator | 2 | SC9A | | | 1 | 1 | | | from JAPAN | |
| Laser equipment | 2 | for land leveling | | | 1 | 1 | | | from JAPAN | |
| Plan shelf | 1 | | | 1 | | | | | Local market | |
| Recorder | 1 | | 1 | | | | | | | Ready |
| Publishing equipment | | | | | | | | | | |
| Copy machine for design | | | | | 1 | | | | Local market | |
| Audiovisual equipment | | | | | | | | | | |
| Dijital camera | 1 | Land master | | 1 | | | | | from JAPAN | |
| Office facilities | | | | | | | | | | |
| Copy machine | 1 | | 1 | | | | | | | |
| Short-term expert | 10 | | | 2 | 2 | 2 | 2 | 2 | | |