付 属 資 料

１．ミニッツ（合同評価報告書）

２．評価グリッド（和訳）

３．活動実績一覧

４．C/P アンケート調査結果

５．水資源灌漑省質問表回答

MINUTES OF MEETING
ON JOINT STEERING COMMITTEE
BETWEEN THE JAPANESE TERMINAL EVALUATION 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
(FOR EXTENSION PERIOD)

The Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Japanese Terminal Evaluation Team on the Japanese Technical Cooperation Project for the Water Management Improvement Project in the Nile Delta (hereinafter referred to as "the Project") for its extension period, headed by Mr. Yukio YOKOI, to the Arab Republic of Egypt from November 25 to December 13, 2006.

A Joint Evaluation Team (hereinafter referred to as "the Team", which consists of four members from JICA and six members from the Arab Republic of Egypt, was jointly organized for the purpose of conducting the terminal evaluation and preparation of necessary recommendations to the respective Governments.

After intensive study and analysis of the activities and achievements of the Project, the Team prepared the Joint Evaluation Report, which was then presented to the Joint Steering Committee (hereinafter referred to as "the Committee").

As the result of discussions, the Committee agreed to report to their respective Governments the matters referred to in the report attached hereto.

Cairo, December 12, 2006

Mr. Katsuhiko OZAWA
Resident Representative
Egypt Office
Japan International Cooperation Agency

Dr. Mohammed Bahaa El-Din Saad
Undersecretary
Chairman of Irrigation Department
Ministry of Water Resources and Irrigation

THE JOINT EVALUATION REPORT

ON

THE WATER MANAGEMENT IMPROVEMENT RPOJECT

IN THE NILE DELTA

(FOR EXTENSION PERIOD)

Cairo, December 11, 2006

Mr. Yukio YOKOI
Leader
Japanese Terminal Evaluation Team
Japan International Cooperation Agency

Eng. Abd-Alshakour Mohamed Abd-Alah
Leader
Egyptian Evaluation Team
Ministry of Water Resources and Irrigation

Table of contents

Annex

A-9

1. Outline of Evaluation Process

1.1 Objectives of Evaluation

1) To evaluate the degree of achievement of the Project based on the Record of Discussions, the Project Design Matrix (hereinafter referred to as "the PDM") and the Plan of Operations (hereinafter referred to as "the PO").
2) To evaluate the Project in terms of the five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact and Sustainability).
3) To make recommendations and suggestions to the authorities of both governments for the attainment of the Project Purpose in the rest of the project period and better utilization of the project outcomes after the termination of the Project, as well as to draw the lessons learned from the Project for the improvement in planning and implementation of similar technical cooperation projects.

1.2 Methodology of Evaluation

For the purpose of the evaluation study, the Evaluation Team consisting of both the Egyptian side and the Japanese side has conducted the hearing of the presentation made by the counterparts of the Project, field visit to the project site and a series of discussion within the Evaluation Team. An evaluation was made based on the findings from the above activities.

1) The degree of achievement of the Project Plan was assessed, using the Evaluation Grid, which was attached in Annex 12.
2) Analysis was made for the Five Evaluation criteria described below, based on the Evaluation Grid.

a) Relevance

Relevance refers to the validity of the Project Purpose and the Overall Goal in connection with the development policy of the Arab Republic of Egypt as well as the needs of beneficiaries.

b) Effectiveness

Effectiveness refers to the extent to which the expected benefits of the Project have been achieved as planned, and examines if the benefit was brought about as a result of the Project (not as that of external factors).

c) Efficiency

Efficiency refers to the productivity of the implementation process, and examines if the Inputs of the Project were efficiently converted into the Outputs.

d) Impact

Impact refers to direct and indirect, positive and negative impacts caused by implementing the Project, including the extent to which the Overall Goal has been attained.

A-5

e) Sustainability

Sustainability refers to the extent to which the Project can be further developed by recipient countryside, and the benefits generated by the Project can be sustained under the recipient country's policies, technologies, systems and financial state.

1.3 Members of the Joint Evaluation Team

1) The Japanese Team

Table 1: The Japanese Team member

Name	Assignment	Position/ Organization
Mr. Yukio YOKOI	Leader	Group director, Group Ⅱ, Rural Development Department, Japan International Cooperation Agency (JICA)
Mr. Kenichi YOSHIDA	Water Management/ Water Users Association	Deputy Director, Overseas Land Improvement Cooperation Office, Design Division, Rural Development Bureau, Ministry of Agriculture, Forestry and Fisheries
Ms. Masako HISHIDA	Evaluation Management	Project Officer, Field Crop Based Farming Area Team Ⅱ, Group Ⅱ, Rural Development Department, JICA
Mr. Isao DOJUN	Evaluation Analysis	International Project Department, Chuo Kaihatsu Corporation

2) The Egyptian Team

Table 2: The Egyptian Team member

Name	Assignment	Position/ Organization
Eng. Abd-Alshakour Mohamed Abd-Alah	Leader	Undersecretary of Irrigation Central Directorate Kafr El Sheikh Governorate, Ministry of Water Resources and Irrigation (MWRI)
Eng. Mohamed Ezzat El-Shafei	Farmer's Organization	General Director Central Directorate Irrigation Advisory Service (IAS), MWRI
Eng. Ibrahim Mohmoud	Farmer's Organization	Institutional Development Specialist for Integrated Irrigation Improvement Management Project (IIIMP) and water board project, MWRI
Eng. Tarek Awaad Ibrahim	Water Management	Director of Works (Technical Office for Head of Irrigation Sector), MWRI
Dr. Mohsen Elarabawy	Evaluation	Deputy Head, Institutional Reform Unit (IRU), MWRI
Eng. Adel El-Madbouly	Evaluation Management	General Director, Irrigation Improvement Sector, MWRI

2. Outline of the Project

2.1 Background of the Project

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[1] (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 Environment; 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 farmer's participation.

Furthermore, the Egyptian Government made a request to the Japanese Government for a technical cooperation project, the purpose of which is the improvement of the IIP methods through the implementation of the pilot project with farmers' participation and enhancement of the engineers' capability required for the implementation of the improved IIP in the above mentioned feasibility study area (the Upper Bahr Tera Command area).

Upon the above-mentioned proposal, JICA dispatched a Preliminary Study Team, and a 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 of JICA signed the Record of Discussions on the Project on December 1, 1999. WMIP started in March 1, 2000 for five year period. As a result of the terminal evaluation conducted in October, 2004, the project period was extended another 2 years until February 28, 2007.

2.2 Summary of the Project

2.2.1 Basic information

1) Main features of the Project

The objective of the Project is to verify the improved methods in a pilot area "Bahr El Nour" based on the full scale farmers' participation in order to improve implementation of IIP to be more efficient and effective. Main characteristics of the Project are:

- Improvement of water management of tertiary canals (or canals at mesqa levels) through the improvement of irrigation facilities, the establishment and strengthening

[1] fd: abbreviation of feddan (≒0.42 ha)

of Water Users' Associations (WUAs) and a Water Users' Federation (WUF).

- Full scale farmers' participation in all stages from planning and designing to the management after the completion of construction, such as before the commencement of construction works ensuring having farmers' agreement on the facilities design, incorporating farmers' views into the design, supervising on going and completed construction works with farmers, and enhancing the established WUAs' and WUF's capacity for the water use management.

2) Project area: 4,000 fd (1,680 ha) of Bahr El Nour Command Area (beneficiary area from Bahr El Nour Canal)

3) Target group: Farmers in the Bahr El Nour Canal Command Area (number of planters is approximately 1,200)

4) Project period: March 1, 2000 - February 28, 2007 (extension period March 1, 2005 - February 28, 2007)

5) Location of the project area (see Annex 1)

6) Map of the project area (see Annex 2)

7) Outline of the irrigation system in the project area (before and after the Project) (see Annex 3)

8) Implementation structure (see Annex 4)

2.2.2 Objectives of the Project

(1) 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.

(2) Intermediate Goal

Improved methods for the efficient and effective implementation of the IIP raise irrigation efficiency and agricultural productivity in the project area.

(3) Project Purpose

Improved methods for the efficient and effective implementation of the IIP based on the full scale farmers' participation are verified in the project area.

2.2.2 Outputs of the Project (for extension period of the Project)

Field 1. Improvement of irrigation facilities

- Implementation method for improvement of irrigation facilities is improved

Field 2. Farmers' Water Management Organization (WUA & WUF)

- Formulation method for farmers' water management organization is improved

A-5

Field 3. On-farm water management

- Appropriate methods of on-farm water management are introduced

Field 4. General Project Management

- Project activities and results are introduced to governmental staff properly.

(Details: revised versions of PDM in Annex 5)

3. Achievement of the Project

3.1 Inputs (for extended period of the Project)

(Remark: Inputs including inputs of initial 5-year project period are shown Annex 6 to Annex 10.)

3.1.1 Inputs by Japanese side

(1) Dispatch of Japanese Experts

1) Long-term Experts

The following 3 long-term experts have been dispatched for the two year extension period.

Table 3: Dispatch of Japanese long-term experts

Field of assignment	Name	Period of assignment	M/M
Chief Advisor/ Project Management	Mr. Akira HASHIMOTO	Mar. 1, 2005 - Feb. 28, 2007	24.0
Water Management/ Irrigation Facility	Mr. Yasuhisa KAYAMA	Mar. 1, 2005 - Feb. 28, 2007	24.0
Water Users' Association/ Coordinator	Mr. Masahiro OTAKE	Mar. 1, 2005 - Feb. 28, 2007	24.0

2) Short-term Experts

The following 2 short-term experts have been dispatched.

Table 4: Dispatch of Japanese short-term experts

Field of assignment	Name	Period of assignment	M/M
Farmers Training Method	Mr. Masakazu YAMADA	Sep. 1, 2005 - Oct. 1, 2005	1.0
Water Distribution Plan 2	Mr. Toshinobu NAKANO	Jan. 13, 2006 - Feb. 22, 2006	1.3

(2) Provision of Machinery and Equipment

The Japanese side has provided 3 laptop computers. (Details: see Annex 7)

(3) Training of Egyptian Counterpart Personnel in Japan

Four (4) counterparts were trained in Japan. (Details: see Annex 8)

(4) Local Operation Expenses borne by Japanese Side

The operational expenses for the years 2005 and 2006 borne by the Japanese side are as follows. (Details: see Annex 9)

Table 5: Local Operation Expenses borne by Japanese Side

	Unit	JFY2005	JFY2006 (planned)	Total
Expenses	LE	322,051	328,540	650,591
	Yen	6,371	6,743	13,115

JFY: Japanese Fiscal Year (from April to March of the next year)

3.1.2 Inputs by Egyptian side

(1) Assignment of Counterpart Personnel and Administrative Staff

Currently 28 counterparts are assigned (as of December 2006). (Details: see Annex 8)

(2) Provision of Land, Buildings and Facilities

The land, buildings and facilities such as project offices, expert's rooms and other related facilities for the Project have been provided in Cairo, Tanta, Kafr El Sheikh and Biyala.

(3) Allocation of operating expenses for the Project by Egyptian side

Expenses for the operation and maintenance cost, such as those for vehicles, laser land leveling machinery and tractors, salary for the drivers and secretaries have been provided by Egyptian side. Budget on construction works for the irrigation facilities improvement in the project area have been also provided by Egyptian side. (Details: see Annex 10)

The following expenses for "Fuel, equipment, consumable item, temporary employment etc." are total expenses for the Irrigation Improvement Sector in Cairo. The expenses for the Project are included in these expenses. The expenses for "Construction (1st, 2nd and 3rd contract)" are the construction cost in the project area.

Table 6: Allocation of operating expenses for the Project by Egyptian side (Unit: L.E.)

	FY 04/05	FY 05/06	FY 06/07	Total
Fuel, equipment, consumable item, temporary employment etc.	36,416,285	67,129,359	17,110,715	120,656,359
Construction (1st, 2nd and 3rd contract)	19,713,000			

FY: Egyptian Fiscal Year (from July to June of the next year)

A-9

3.2 Outputs

3.2.1 Output 1: Implementation method for improvement of irrigation facilities is improved.

Indicator 1-1: Improvement plan of irrigation facilities is utilized.

At the time of the previous evaluation of the Project (October, 2004), the improvement plans had been made for 55 mesqas out of 60 mesqas (total number of mesqas at that time). Construction works had been completed only in 3 mesqas and were underway in 8 mesqas.

Irrigation facilities of 65 mesqas have been improved based on each improvement plan out of 67 mesqas (Since some mesqas were divided, the total number have increased). As for the remaining 2 mesqas, farmers wanted to keep using the existing facilities with saqia (traditional water lifting facility for irrigation); therefore, the new irrigation facilities were not introduced. Construction works for 65 mesqas have been completed and the all improved irrigation facilities were handed over to the respective Water Users' Associations (WUAs).

Through this process, the counterparts have understood the importance to grasp farmer's needs and opinions on irrigation facilities improvement from the planning stage, especially by conducting certain activities together with farmers such as field survey on water use situation and walk through[2].

According to the results of the questionnaire survey conducted in 2006, 90% of farmers are satisfied with the design procedure such as walk through.

Indicator 1-2: Manual for construction control is utilized.

Before starting the extension period of the Project, the manual for construction control in English was developed. During the extension period, an Arabic version of manual was made.

(1) Preparation of the manual for construction control (Arabic version)

The manual for construction control in English was prepared by February 2005 (before entering the extension period of the Project) and utilized for construction control. After then, the counterparts translated this English manual into Arabic for easy understanding.

(2) Utilization of the manual for construction control

The manual for construction control explains 1) recording methods of finished construction works by using photographs and recording sheets, and 2) usage of equipment for construction management. The counterparts have understood the importance and methods of recording the progress and completion of construction works. They have also instructed the

[2] Walking field survey together with farmers with respect to present condition of existing irrigation facilities, water use before the start of construction works, and the layout planning of new irrigation facilities.

contractors to take proper records of construction works.

By utilizing the manual, the construction works during the extension period of the Project (the 3rd construction contract area) have been recorded almost successfully with appropriate recording sheets. Since the use of photographs was not carried out by contractors at a sufficient level, suggestion was made that the activity to take photographs should be specified in the bill of quantity of the tender documents.

Regarding the use of equipment for construction management such as concrete hammers and tools for slump test, the counterparts have understood the usage and come to be able to utilize the equipment.

(3) Establishment of the construction coordination committees

Many problems arise in the course of the implementation of construction works, which are often the cases where the constructed facilities do not properly work or do not meet the farmers' needs. For preventing or minimizing such problems, establishment of the construction coordination committees have been started as a new idea under the Project.

Before starting construction works at sites, the construction coordination committees have been established in the Water Users' Federation (WUF) and in each WUA. Main function of the construction coordination committee is coordination of farmers' requests on construction works. In the committee, the representatives of farmers (usually leaders of WUAs) have conveyed their members' voices. Also, the committee has the role of problem solving among farmers and the related officials including the counterparts before commencement of construction works. Since the system has worked properly, construction works did not face substantial delay, which are often the cases for the other IIPs.

The construction coordination committee of WUF coordinated the schedule of the construction works of the 3rd contract and the irrigation schedule for summer crops, because continuous irrigation water had to be delivered during the summer crop season. Also, the construction coordination committee of WUF inspected the finished works throughout construction in terms of quality. In the case that some problems have arisen, the issues were discussed for the solution at the committee. Thus, the construction coordination committee made appropriate contribution for quality control.

(4) Farmers' satisfaction on the improved irrigation facilities

According to the results of the questionnaire survey conducted in 2006, 86% of farmers are satisfied with the improved irrigation facilities.

Indicator 1-3: Appropriate water management is carried out by WUAs and the WUF.

Before starting the extension period (February 2005), improved irrigation facilities had

been handed over only in 7 mesqas, where water management by WUAs just started from the winter crop season in 2004/2005.

By the time of the terminal evaluation, in all 65 mesqas, improved irrigation facilities have been handed over and water management is carried out by each WUA.

(1) Water management at mesqa level

A program on calculation of water requirement (an Excel sheet) was developed in order to make mesqa level irrigation schedule. This program calculates the necessary irrigation period of each mesqa's valve, and the results are summarized as valve schedule, based on which farmers operate the facilities. Valve schedules for all mesqas were developed, and related trainings such as those on valve schedule and operation of irrigation facilities for mesqa leaders and operators are ongoing.

Regarding the operation and maintenance (O&M) of pump facilities, trainings for pump operators have been conducted with the use of manual, which was developed under the Project. The manual explains O&M method of pump, points to notice and so forth.

Table 7: Trainings conducted for the WUAs as of December, 2006
(figures in parenthesis are as of before the extension period)

	Number of mesqa	Number of mesqa received training	
		Water management (valve schedule)	Pump (O&M of pump)
1st contract	18	17 (2)	18 (2)
2nd contract	26	24 (0)	21 (0)
3rd contract	21	8 (0)	21 (0)
Total	65	49 (2)	60 (2)

Although the construction works are in delay for the 3rd contract area, trainings for water management will be completed for all 65 mesqas by the end of the Project.

According to the questionnaire survey to farmers conducted in 2006, 92% of respondents consider that their WUAs are functioning well in terms of water management at mesqa levels. The main reasons include the WUAs' roles for problem solving, arrangement of irrigation water and fair water distribution. From these results, it seems that WUAs are carrying out appropriate water management at mesqa levels.

(2) Water management at WUF level

Workshops and lectures on water management at delivery canal level (WUF level) have been conducted for irrigation engineers of Irrigation Sector (IS), engineers of Central Directorate- Irrigation Advisory Service (CD-IAS) and staff of cooperatives. Through these activities the concept of water management was clarified. As a result, a plan of activities for water management at WUF level was formulated.

The WUF has decided a water distribution plan which consists of irrigation schedule at mesqa levels, mesqa rotation schedule in case of water shortage or intensive water use and so on. The WUF is also encouraging the farmers who irrigate illegally to cooperate with WUAs for fair water management.

Summarizing the texts on water management at mesqa levels and delivery canal levels, a draft water management plan was formulated. A workshop has been held to review the WUF's activities based on the experiences for the previous summer season.

According to the questionnaire survey, 60% of respondents answered "the WUF is functioning well in terms of water management", 4% for "No" and 36% for "Not sure". It seems that farmers' recognition on WUF is not high yet because farmers have few chances to see the WUF activities. The counterparts recognize the necessity of raising awareness of farmers on the WUF's roles and functions.

3.2.2 Output 2: Formulation method for farmers' water management organization is improved.

Indicator 2-1: WUAs and a WUF are established.

(1) Establishment of WUAs

At the time of the previous evaluation of the Project (October, 2004), 29 WUAs were established out of 60 mesqas and a preparation committee of WUF was established.

As mentioned previously, there are 67 mesqas in total in the project area at present. Irrigation facilities in 65 mesqas were improved. However, the existing irrigation facilities with saqias are still being utilized in the remaining 2 mesqas because farmers in the area want to keep the saqias in use. Therefore, irrigation facilities of the two mesqas were not improved.

66 WUAs were established in each mesqa, and they were registered officially. The project staff has been encouraging the farmers in the remaining mesqa to establish a WUA and join the WUF without success by the time of evaluation. Data on agreements obtained and establishment of WUAs are as follows.

Table 8: Establishment of WUA

	Expected number of mesqa	Registered WUA	Agreement		
			Land owner	Planter[1)]	Over 2/3
1st contract (mainly lower part of the project area)	18	18	308/387 (80%)	276/340 (81%)	18
2nd contract (mainly middle and upper part of the project area)	26	26	414/519 (80%)	407/470 (86%)	26

A-5

3rd contract (mainly middle and upper part of the project area)	23	22	347/449 (73%)	301/388 (78%)	22
Total	67	66	1050/1355 (77.5%)	981/1198 (81.9%)	66

Remark: 1) Planter: number of farmers actually cultivating = cultivating land owners + tenant farmers

More than two-thirds of farmers agreed the improvement plan of irrigation facilities and establishment of WUAs although the project staff had difficulty in getting agreements from the farmers especially in the upstream area of the Bahr El Nour delivery canal. As a whole, the ratios of agreement were 78% from land owners and 82% from planters respectively. The WUAs have been established in accordance with the procedure developed under the Project. One unique point of the procedure is to get agreements about the establishment of WUA and the improvement plan for irrigation facilities at the same time.

(2) Establishment of WUF

The WUF in Bahr El Nour was established in October 3, 2005. The assembly of the WUF invites the representatives of each WUA (total 67 representatives), and representatives of residential units (total 3 representatives), which comes to 70 participants in total. 5 members from each sub-area (upstream area, midstream area, and downstream area) and 3 representatives of residential units were elected as WUF Council members. As a result, the WUF Council has 18 members in total, from which 5 directors of WUF were elected. Moreover, 3 auditors were elected from the representative assembly members. (The structure of WUF: see Annex 11)

After the election of the directors of WUF, registration process of WUF started. In the process of the registration, it is necessary to have approval (decree) from the Minister for MWRI and the Undersecretary of Kafr El Sheikh of MWRI. After the getting the governmental approval, WUF was officially registered.

There are 4 sub-committees such as 1) solving problems, 2) irrigation, drainage and agriculture, 3) laser leveling and 4) environment and gender. WUF is very active in terms of the frequency of meetings and the contents of activities compared with other WUF.

WUF signed a Memorandum of Understanding 1 (MOU1) and a Memorandum of Understanding 2 (MOU2). MOU1 is an agreement between WUF and Irrigation Improvement Sector (IIS) which confirms the intension towards the completion of construction works and establishment of WUAs. MOU2 is also an agreement between WUF and IS which clarifies each role of O&M of irrigation facilities after the completion of construction works. MOU2 has the significant role in assuring sustainability of WUF. MOU2 for the Project was signed on November 25, 2006.

(3) Administrative capacity of WUAs.

According to the preliminary results of the monitoring survey on WUAs conducted in 2006, administrative performance of WUAs is as follows.

Table 9: Administrative performance of WUAs (excerpted from the monitoring survey in 2006)

	Every week	Every month	No meeting
1) Frequency of meeting	2%	98%	0%
	Yes		No
2) Making record of meetings	94%		6%
	Full		Partial
3) Keeping financial record	88%		12%
	Yes		No
4) Inspection of accountant	88%		12%

Judging from the data, it seems that most of the WUAs are functioning well at present in general, while some farmers pointed out that some WUAs are not necessarily functioning well. The counterparts also implied the needs of improvement for some WUAs. To assure the sustainability of WUAs, it is necessary for MWRI to give more trainings for WUA leaders and support their activities as much as possible.

Indicator 2-2: Textbooks for leaders of farmers on rational water use and modernized farming are utilized.

Draft materials for trainings for leaders of WUAs and WUF were developed and utilized for on-site trainings at the time of the previous evaluation of the Project (October, 2004).

Following materials were newly developed during the extension period of the Project.

1) Pump training manual, which are being utilized at the trainings
2) Record of WUA for operation and maintenance
3) Financial management for WUA
4) Internal regulation of WUF
5) Activity plan of WUF

In addition, the manual of on-farm water management was translated into Arabic for easier understanding of farmers. Improvement of training materials on financial management and sample formats for financial document is underway. The internal regulations of the WUF have been developed based on the former Articles of the WUF. The text for the internal regulations will be a part of the WUA & WUF manual, which is under preparation.

The use of the materials for WUF is not necessarily appropriate. For example, the specific procedures in the internal regulations are sometimes not followed strictly. . In order to improve this situation, on-the-job trainings and workshops have been conducted under the

Project, in addition to the lecture type trainings.

Indicator 2-3: Water fee[3] is collected by WUAs.

After improved irrigation facilities at each mesqa were handed over, some WUAs started to use the facilities from winter season of 2004/2005. Therefore, no WUA collected at the time of previous evaluation (October, 2004).

According to the results of the monitoring survey in 2005 conducted in the 1st contract area, it was confirmed that all WUAs paid the irrigation operation fee by cash or in kind. While the collected fees well covered the necessary expenses such as the salary of operators, fuel for pumps and O&M, only a few WUAs collected the expenses for pump replacement. Therefore, the project staff explained the necessity of collecting pump replacement fee to farmers at the trainings on WUA administration and the valve schedule. As a result, WUAs started to collect the pump replacement fee from this year.

The preliminary results of a monitoring survey conducted after the summer season of the year 2006 shows that all surveyed WUAs (64 WUAs) are collecting irrigation operation fee and most of the WUAs can afford to cover the expenditure in this summer operation season. Moreover 67% of WUAs are colleting the pump replacement fee as a part of irrigation operation fee, while some WUAs are still discussing who should pay such fee (whether land owner or planter). Balances of income and expenditure in this summer season are as follows.

Table 10: Balances of income and expenditure of the WUAs
(Summer of 2006, excerpted from monitoring survey)

Balance of income and expenditure	surplus	deficit	Total
(1) Balance of income and expenditure (summer season) (without considering pump replacement fee)	98%	2%	100%
(2) Balance of income and expenditure (summer season) (considering pump replacement fee)	31%	69%	100%

The data indicates almost all the WUAs have the surplus in this summer if not considering the pump replacement. However, with the pump replacement cost included, only 31% of WUAs could balance their income with expenditure. In part, this is because some WUAs have not decided who should pay the pump replacement fee as mentioned above. For their sustainability, the WUAs should enhance awareness of the member farmers for this issue and some capacity building activities may help the situation.

[3] The term of "Water fee" in Indicator 2-3 is understood as irrigation operation fee.

3.2.3 Output 3: Appropriate methods of on-farm water management are introduced.

Since Output 3 was achieved by the end of February in 2005, there was no activity during the extended period of the Project.

3.2.4 Output 4: Project activities and results are introduced to governmental staff properly.

Indicator 4: Governmental staff understand the methods of the Project.

At the time of the previous evaluation of the Project (October, 2004), the number of trainings carried out almost satisfied the indicators set at the beginning of the Project. On the other hand, preparations of training materials, conducting of training, and reviewing of training, which should have been done by the counterparts did not reach the sufficient level, and it was observed difficult to achieve it by self-act efforts. The Joint Steering Committee (JSC) and Joint Site Coordination Committee (JSCC) had been rarely held while internal meetings among the project site manager and the counterparts were held regularly.

The counterparts have come to be capable in presenting the situation of the Project through the meetings, which were held substantially more often in the extended period.

Several executive staff of the MWRI (e.g. Chairman of the Irrigation Department, Head of the Drainage Authority, and Undersecretary of CD-IAS), are the members of JSC of the Project. Therefore, they know the methods and activities of the Project well through the participation in the JSC meeting. Since the project staff is doing the activities in cooperation with the staff of these departments, the Project is well-known among them as a democratic project, allowing full participation of farmers.

Meetings have been held for explaining the outputs of the Project to not only the IIS staff but also the MWRI staff in charge of the World Bank financed project and the water board project (average number of participants is 25-30). Through such occasions, the methods of the Project have been shared among most of the IIS engineers in Cairo, Tanta, and Kafr El Sheikh, and those in charge of the World Bank financed projects and the water board projects, ID engineers. Also they recognized that water management and administration of WUAs and WUF in the project area are substantially better than in the other IIP areas.

Governmental staff, who had opportunity to know about the Project, recognizes the importance of disseminating the methods of the Project, believing that more involvement of other governmental staff would further enhance the outcomes of the Project.

3.3 Project Purpose

Project Purpose: Improved methods for the efficient and effective implementation of the IIP based on the full scale farmers' participation are verified in the project area.

The degree of achievement of the Project Purpose is considered to be at a very satisfactory level.

This is because the farmers in the project area are highly satisfied with the improved methods and results of the Project, and also because the counterparts express the high appreciation for usefulness of the improved methods in general. Details are as follows.

Indicator 1: The farmers in the project area are satisfied with the improved methods.

At the time of the previous evaluation of the Project (October, 2004), 80% of farmers were satisfied with the methods to give necessary information about the Project to the farmers and to obtain farmers' agreement before starting construction work. Some results on farmers' satisfaction on the Project are as follows.

Table 11: Farmers' satisfaction level with the improved methods
(excerpted from questionnaire survey in 2004)

	Satisfied	Not satisfied	Not sure	Number of sample
The methodologies followed to give necessary information about the Project and obtaining sufficient farmers' agreement before starting construction work	80%	11%	9%	120 farmers
The methodology of walking through mesqa to decide on the construction of future irrigation facilities	93%	4%	3%	120 farmers
The improved irrigation facilities	81%	15%	4%	48 farmers
The on-farm water management	88%	2%	10%	48 farmers

According to the questionnaire survey to farmers in the project area conducted after the summer cropping season in 2006, degrees of satisfaction with the improved methods are as follows.

Table 12: Farmers' satisfaction level with the improved methods
(excerpted from questionnaire survey in 2006)

(Number of respondents is 108)

	Item	Satisfaction rate (%)
1	Farmers satisfied with the Project	96%
2	Farmers satisfied with irrigation in this summer in general	99%
3	Farmers satisfied with design procedures (walkthrough with farmers in order to reflect farmers needs and requests)	90%

4	Farmers satisfied with the methodology on farmers' participation in construction management through the Construction Coordination Committee 's activity	100%
5	WUA leaders satisfied with the methodology on providing necessary information about the project to farmers and obtaining sufficient farmers' agreement before starting construction works.	94%
6	Farmers satisfied with the improved irrigation facilities	86%
7	Farmers satisfied with on-farm water management after improvement of mesqa level irrigation facilities.	96%
8	Farmers considering that WUA is functioning well in terms of water management (mesqa level)	92%
9	Farmers considering that WUF is functioning well in terms of water management	60%

The survey results reveal that the farmers in the project area are highly satisfied with the improved methods and current water management, while there is room for improvement in raising farmer's recognition about the function of WUF.

According to the interview with WUF core member and WUA leaders conducted by the terminal evaluation team, major effects of the Project are following aspects.

- Benefit of the continuous flow
- Fair water distribution
- Reduction of O&M cost
- Increase of yield especially in the downstream area
- Good cooperation among farmers, between farmers and the project staff, and between farmers and the district engineer.

Indicator 2: MWRI supports the improved methods.

At the time of the previous evaluation of the Project (October, 2004), it was judged that MWRI supported the improved methods of the Project because the counterparts had recognized the importance of the methods and the approach of farmers' participation started to be considered by the MWRI staff involved in World Bank projects (IIP), which are carried out in other areas.

A questionnaire survey on the Project was conducted to the counterparts and related staff of MWRI in 2006. Regarding the usefulness of the methods and their applicability to other areas, the results are as follows.

Table 13: Usefulness of the improved methods verified by the Project (%)

Item	Improved Method	Very Useful	Useful	Not useful so much	I don't know	No answer
1	Survey of the present condition of the existing irrigation facilities and water use	88	12	0	0	0

2	Awareness raising of ownership of the farmers through WUA establishment and designing of irrigation facilities with farmers participation	83	17	0	0	0
3	Obtain agreements from more than 2/3 of farmers about establishment of WUA and construction plan of facilities	48	44	4	0.0	4
4	Establishment of WUAs and WUF simultaneously before implementation of construction works	84	16	0	0	0
5	Establishment of the construction coordination committee in WUAs and WUF to solve problems rapidly	67	29	4	0	0
6	Implementation of trainings about administration of WUA, mesqa level water management (valve rotation), operation and maintenance of pump	83	13	0	0	4
7	Implementation of workshop about preparation of administrative rules and activities plan of WUF, and OJT training for practicing activities plan	75	21	0	4	0
8	Establishment of the WUF Sub-committees for appropriate water management and O/M of facilities, and implementation of workshop about delivery canal level water management	71	25	0	4	0
9	Strengthening of coordination and linkage among WUF and related organizations	71	25	0	0	4

Table 14: Applicability of the improved methods to other irrigated areas (%)

Item	Improved Method	Very Useful	Useful	Not useful so much	I don't know	No answer
1	Survey of the present condition of the existing irrigation facilities and water use	75	17	0	0	8
2	Awareness raising of ownership of the farmers through WUA establishment and designing of irrigation facilities with farmers participation	46	42	4	0	8
3	Obtain agreements from more than 2/3 of farmers about establishment of WUA and construction plan of facilities	46	25	8	8	13
4	Establishment of WUAs and WUF simultaneously before implementation of construction works	67	25	0	0	8
5	Establishment of the construction coordination committee in WUAs and WUF to solve problems rapidly	38	42	12	0	8
6	Implementation of trainings about administration of WUA, mesqa level water management (valve rotation), operation and maintenance of pump	75	13	4	0	8
7	Implementation of workshop about preparation of administrative rules and activities plan of WUF, and OJT training for practicing activities plan	63	25	0	4	8
8	Establishment of the WUF Sub-committees for appropriate water management and O/M of facilities, and implementation of workshop	29	59	0	4	8

	about delivery canal level water management					
9	Strengthening of coordination and linkage among WUF and related organizations	63	25	4	0	8

Based on the results, the usefulness of the improved methods is considered to be high.

The applicability of the improved methods is considered to be high in general, since the sum of "Very useful" and "Useful" are higher than 80% with the only exception of Item No.3. It should be noted, however, that evaluation points of "very useful" are lower than those of the usefulness. In particular, the points are considerably low for "Awareness raising of ownership of the farmers through WUA establishment and designing of irrigation facilities with farmers participation (Item No. 2)", "Establishment of the construction coordination committee in WUAs and WUF to solve problems rapidly (No.5)", "Establishment of the WUF Sub-committees for appropriate water management and O&M of facilities", and "Implementation of workshop about delivery canal level water management (No.8)".

Based on the above analysis, it is reasonable to say that MWRI supports the improved methods. In order to make the methods more applicable, it is desirable that the specific features of the improved methods should be summarized by the end of the Project.

3.4 Prospect of achievement of the Intermediate Goal

Intermediate Goal: Improved methods for the efficient and effective implementation of the IIP raise irrigation efficiency and agricultural productivity in the project area.

Indicator 1: In five years after the end of the Project, irrigation efficiency increases.

1) Irrigation efficiency

It is reasonably considered that irrigation efficiency increased because of the improvement of irrigation facilities, while it is difficult to measure the actual improvement of irrigation efficiency. Since the substantial increase of the irrigation efficiency mostly takes place when the new facilities are introduced, it is difficult to find rationales to have this indicator for future evaluation.

There is a related concern that the reduction of total water use in whole project area by the improvement of irrigation facilities was not clearly demonstrated. Some measurement for this purpose should be considered.

2) Demonstration of new techniques on sugar beet cultivation

The demonstration of new techniques on sugar beet was conducted for reducing water

A-5

requirement in the winter season of 2005/2006.

The demonstration showed the possibility that water requirement may decrease by changing width of ridge with the yield increase at the same time. Lectures on the successful results of the demonstration were given to the farmers in the project area.

Indicator 2: In five years after the end of the Project, fair water distribution is improved.

According to the questionnaire survey to farmers conducted in 2006, 90% of respondents consider that water distribution at mesqa levels this summer was fairer than before the improvement of irrigation facilities. They also consider that water supply has been improved in terms of quantity (96%), timing (95%) and reliability (95%). As the fair water distribution has been already realized in the project area, it is important to sustain this fair water distribution through further strengthening of capacity of WUAs and WUF, and the periodical monitoring on the situation of water distribution. From the viewpoints of importance of activities of WUAs and WUF, it is better replace current indicator with a new one regarding whether the WUAs and WUF are functioning properly.

Indicator 3: In five years after the end of the Project, indicators of agricultural productivity per unit of land increase.

Based on the above mentioned questionnaire survey, 32% of respondents answered that crop yield this summer increased compared with the yield before the implementation of IIP. Detail data by location is as follow.

Table 15: Crop yield on the summer 2006 in the project area

(Number of total respondents: 108)

Yield	Location of mesqa			Total (%)
	Upstream (%)	Midstream (%)	Downstream (%)	
Became higher	13	53	42	32
Same	73	44	58	60
Lower	15	3	0	7
Total	100	100	100	100

As shown in the table, this Project might have an impact on yield increase especially for the farmers in the midstream and downstream areas.

Another fact is that the farmers interviewed by the terminal evaluation team answered rice yield increased from 3.5 tons/fd to 4.0 tons/fd. In order to measure the increase of yield, periodical sampling survey in the project area would be necessary, which may be difficult after the completion of the Project. However, the questionnaire survey to the farmers can be a good instrument for future evaluation.

Proposal for a new set of indicators for the Intermediate Goal

Based on the consideration above, it is recommended to have a new set of indicators as follows:

Indicators: 1) Farmers' satisfaction level with the roles and functions of WUAs and WUF increases.

2) Agricultural productivity such as crop yield increases.

3.5 Prospect of achievement of the Overall Goal

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.

Indicator 1: By the year 2017 in a certain districts of Bahr Tera, new approaches of the IIP are disseminated.

Farmers living in the surrounding area of the Project are expecting MWRI to implement IIPs with new approaches. As there is no plan to implement IIP in Bahr Tera area at present, it is difficult to prospect that the new approaches of the IIP will be disseminated in a certain area of Bahr Tera by the year 2017.

On the other hand, MWRI has an idea to apply the methods to the World Bank financed project (IIIMP, started this year) because MWRI understands the usefulness of them. For example, application of the following methods is considered.

1) Establishment of WUA and WUF at early stage
2) Conduction of field survey with farmers before designing of irrigation facilities
3) Explanation of facility design to farmers before commencement of construction works

Therefore, there is an expectation of disseminating several methods in IIIMP area in the Nile Delta. While it should be noted that the irrigation improvement is only a part of the IIIMP, which takes more integrated approach including drainage and residential issues, the outcomes of the Project may contribute to the IIIMP with proper, on-farm irrigation, sub-surface water consideration of those issues.

Indicator 2: By the year 2017 in a certain districts of Bahr Tera, indicators of agricultural productivity.

It is expected that keeping appropriate water management and fair water distribution

A-5

will bring the yield increase. In order to evaluate the degree of yield increase precisely, periodical sampling survey of yield should be conducted in the area where the improved methods are disseminated.

As for agricultural productivity, not only the increase of yield, but also reduction of irrigation time and labor time should be taken into consideration.

Indicator 3: By the year 2017 in a certain districts of Bahr Tera, improvement of the farmers' living condition.

This indicator is not defined well, and it is difficult to evaluate at the present time. It may be better to change this indicator. For example, increase of farmer's net income from agriculture may be a new indicator. Anyway, periodical survey on an new indicator has to be considered. It is also difficult to find rationales to keep the indicator for improvement of living condition, considering that the Overall Goal only includes "increase of agricultural productivity and the farmers' net income".

As mentioned above, because there is no plan to implement IIP in Bahr Tera area at present, it is difficult to prospect that the new approaches of the IIP will be disseminated in that area and contribute increase of agricultural productivity and improvement of the farmers' living condition.

Proposal for a new set of indicators to evaluate the Overall Goal

Since the Overall Goal does not specify where the improved methods should be disseminated, it is better to delete the reference of "Bahr El Nour" in the Indicator 1. Then, the proposed indicators will read as follows:

Indicators:
1) By the year 2017 in certain districts in the Nile Delta, new approaches of the IIP are disseminated.
2) By the year 2017 in certain districts in the Nile Delta, indicators of agricultural productivity increase.
3) By the year 2017 in certain districts in the Nile Delta, the farmers' net income increases.

4. Results of the Evaluation with Five Criteria

4.1 Relevance

Relevance of the Project is high.

According to the questionnaire survey, the farmers in the project area are satisfied very

well with the improved irrigation facilities, irrigation water management, continuous flow, fair water distribution and the activities of WUAs. Therefore, the Project is well relevant to the needs of the farmers in the project area.

One of the important policies for agriculture and irrigation sector in the Fifth Five-Year Plan for Socio-Economic Development (2002-2007) is improvement of water resources by rationalizing current water use and applying new irrigation systems[4]. The MWRI made the National Water Resources Plan (NWRP) in January 2005. The plan describes both public and private actions in the future for ensuring optimal development and management of water resources. It specifies the policy to continue the irrigation improvement projects and strengthen the water users associations. The time horizon of the plan is the year 2017.

One of the priority issues of Japanese ODA (official development assistance) to Egypt is improvement of agricultural productivity and improvement of efficiency of water use. Therefore, the Project is in conformity with the policy of the Egyptian government and the ODA policy of Japan.

As Japan has substantial experiences of the farmer's participation on irrigation management, its experiences in this field can be transferred to other countries with proper modifications to meet various situations. In case of this Project, the improved methods were developed jointly by the Egyptian staff and Japanese experts through adjusting Japanese experiences and technologies in accordance with Egyptian experiences and situations. Considering the achievements of the Project and flexibility above mentioned, it seems that the approach that the Project has taken is appropriate.

4.2 Effectiveness

Effectiveness of the Project is high.

As mentioned as a pilot project in the previous sections, the achievement of the Project Purpose is at a very satisfactory level and also the achievement of the Outputs in 1) field 1 "Improvement of irrigation facilities", 2) field 2 "Farmers' Water Management Organization (WUA & WUF)", and 3) field 4 "General Project Management" is at a satisfactory level.

4.3 Efficiency

Efficiency of the Project is at a satisfactory level.

Inputs of the Egyptian and Japanese sides were appropriate in terms of quantity, quality and timing, etc., and have been utilized well for the project activities. Some counterparts consider that more occasions for the training in Japan would have made substantially more progress.

[4] The draft of the Sixth Five Year Plan for Socio-Economic Development (2008-2012) is under consideration, which is basically expected to maintain the issue of "improvement of water resources" as a high priority.

The factors that facilitated the efficiency are: 1) appropriate assignment of counterparts in terms of number and capability, 2) good relation and cooperation among counterparts and Japanese experts, 3) cooperative attitude of farmers and members of WUF, and, 4) counterpart training in Japan for decision makers in order to have proper recognition and knowledge on water management in Japan and confirm the importance of the Project.

The Joint Steering Committee meetings have been held 3 times during the extension period. (8 times in the whole project period of 7 years). The Joint Site Coordinating Committee meetings have been held 4 times (5 times in the whole project period). These meetings have functioning appropriately for information sharing, problem solving and decision making. The frequent informal meetings with project site manager and counterparts have been also functioning appropriately.

Certain pieces of equipment are not in use due to the lack of people capable to operate them. Some actions should be taken to improve the situation, such as holding training courses with internal resources or with training from outside.

4.4 Impact

Many effects and impacts of the Project have been observed.

(1) Incorporation of the improved methods of the Project into other projects

Because of the recognized usefulness some of the methods verified in the Project are incorporated into the irrigation improvement projects financed by the World Bank (IIIMP, started this year). Examples of incorporated methods are as follows:

1) Establishment of WUA and WUF in early stage
2) Field survey with farmers' participation before designing of irrigation facilities
3) Explanation of facility design to farmers before commencement of construction works

Also IIS decided to incorporate the concept about acquisition of farmer's agreement before implementation of the construction works into IIP2 (KfW assisted project, started in December, 2005 with the project area of 44,000 fed).

(2) Other effects and impacts

There are many positive effects because of the improvement of irrigation facilities, establishment and strengthening the WUAs and the WUF in terms of water management, and provision of continuous flow to the delivery canal of the project areas, as follows:

1) Fairer water distribution at mesqa levels (between beginning point and end point of mesqa canal) and also among upstream, midstream and downstream of the delivery canal,
2) Good on-farm water management in terms of quantity, timing and reliability,

3) Functions of WUAs and WUF not only for good water management but also for problem solving,
4) Less irrigation time at field,
5) Less irrigation cost, and,
6) Increase of yield in some part of the project area, especially midstream and downstream of the delivery canal.

There are also other positive impacts, as follows:

1) Reduction of conflicts among farmers and their complaints because of the fair irrigation water distribution and coordination by WUAs and WUF,
2) Good cooperation among the farmers, between the farmers and the project staff, and also between farmers and the district engineer,
3) Efficient land use, where old mesqa canal was located, filled up and used as field path, making transportation of materials and products easier,
4) Emerging good relationship with the cooperative in the course of implementation of the Project (Further assistance can be expected on agricultural techniques from the cooperative to farmers), and,
5) Awareness raising activities, including those conducted by the sub-committee of Environment and Gender[5] of WUF.

These impacts contribute to achieving the Overall Goal and the Intermediate Goal in terms of new indicators proposed in the previous sections 3.4 and 3.5.

4.5 Sustainability

(1) Political aspect

As mentioned in the section 4.1, one of the important policies of the MWRI is better use of existing water resources by improving the efficiency of water management systems, and a new integrated irrigation improvement project (IIIMP) has just started for the period from 2006 to 2014. Thus, it is evident that the importance of irrigation improvement will continue.

In addition, the Egyptian government put together its thoughts as a draft of "Vision and Strategy for MWRI Institutional Reform" with German Technical Cooperation (GTZ) and Royal Netherlands Embassy in May, 2005. The draft specifies the several strategies such as participation, decentralization and cost recovery for the purpose of more sustainable, equitable and efficient use of water resources. To realize the strategy, a new legal arrangement and a new financial framework are proposed for future consideration.

IIS of the MWRI recognizes good achievements and usefulness of the improved methods

[5] This committee is trying to conduct collection of solid waste in irrigation canals and drainage canal with women in the project area.

A. S

of the Project. IIS prepared 2 years Action Plan to follow up activities at the project area for securing sustainability of the Project through strengthening the WUAs and the WUF. This Action Plan includes outline of activities, schedule of the plan and staff assignment, in which certain number of counterparts who have been engaged in the Project are assigned for the implementation. While it may be necessary to re-examine this Action Plan for further improvement, the plan itself clearly shows the will of the relevant governmental agencies.

(2) Financial aspect

Egyptian government has provided budget not only for expenses related to operation and maintenance of the Project and also expenses for construction works in the project area.

Main follow-up activities including those specified in the Action Plan are training for WUAs and WUF, which meet the farmers' needs and draw the particular attention of MWRI; therefore, necessary budget will be secured by MWRI.

(3) Institutional aspect

All the WUAs are collecting expenses from farmers necessary for operation and maintenance of mesqa irrigation facilities. Regarding the fund collection for future pump replacement, 67% of WUAs are collecting the fee, and others are discussing who should pay such fund (land owner or planter). It is expected that the WUAs can continue collecting necessary expenses for water management through implementation of the Action Plan.

In case of the WUF, the collection of irrigation operation fee is not possible due to the lack of necessary legal arrangement (a law is under examination by the Egyptian government). Therefore, certain measures are necessary to secure activities of the WUF until approval of the law.

(4) Technical aspect

1) Counterparts

The counterparts of the Project have good capacity in implementing construction works with farmer's participation, establishing WUA and WUF, and conducting trainings on water management, administration, and O&M of irrigation facilities for leaders of WUAs and WUF.

While it is very important to disseminate the improved methods to other wider areas in order to improve water use efficiency, as the counterparts pointed out, the number of staff who is capable of disseminating the methods is very limited because the capacity will be built only by practical experiences. It may be difficult to simply apply the improved methods to other areas due to the nature as being a small scale pilot project.

Also, in order to improve water use efficiency, the recent projects including the IIIMP, which the MWRI is strongly prompting, deal with various issue such as drainage, subsurface water, and environmental issues besides irrigation. This means that the methods should be merged with other tasks to address new issues mentioned above in an integrated way.

A-5

Another point to be taken into consideration is enhancement of water use efficiency not only at the mesqa levels but also at the higher levels, i.e. branch and main canal is crucial for more efficient water use.

Therefore, both further capacity building of the MWRI staff to cope with new issues and establishment of an organizational system for dissemination are essential.

2) WUAs and WUF

Several trainings have been conducted under the Project for capacity enhancement of the WUAs and the WUF on water management, administration, and O&M of irrigation facilities. It seems that the WUAs are functioning well, judged from the results of the monitoring survey. However, according to some counterparts, it may be necessary to conduct further trainings in order to strengthen the capacity of the WUAs and the WUF.

5. Conclusions

In summary, it is observed that:

1) the Project is in conformity with the needs of farmers in the project area, the development policy of Egypt and the ODA policy in Japan,
2) techniques transferred by Japanese side and the project approach were appropriate,
3) the project purpose will be achieved very satisfactorily by verifying the various improved methods for irrigation improvement project within the planned period,
4) efficiency of the Project is also observed as being at a satisfactory level,
5) in view of achieving the overall goal and intermediate goal, various good effects and impacts are observed, but further substantial efforts are needed,
6) by implementing the drafted Action Plan, good water management by WUAs and WUF within the project area will be secured in a sustainable way, while a strategy of wider scope for efficient water use is needed,
7) regarding the dissemination of the improved methods to other areas in the Nile Delta region, several methods have been recognized useful and appropriate by the people involved in the other irrigation related projects, and,
8) in disseminating the outcomes of the Project, it is essential to make maximal use of the people involved in the Project, who have had good experiences and capacity in terms of technicality as well as good understanding of the concept of participatory approaches.

From the results of the evaluation using the Five Evaluation Criteria as reviewed and examined in the previous sections of this report, neither the plan nor the implementation process show any serious problems, and it is highly probable that the project purpose will be achieved by the end of the extended project period. Also, most of the points raised in the

previous terminal evaluation (October, 2004) have been Properly addressed during the two-year extension period. Therefore, it is concluded that the project can be completed on February 28, 2007 as agreed in the Minutes of Meeting dated as of February 8, 2005.

Regarding the indicators to evaluate Overall Goal and Intermediate Goal, some modifications for the indicators are recommended, with the consideration of the relevance, adequacy and practicality.

6. Recommendations

Based on the findings in the previous sections, recommendations for the activities within remaining project period and for the activities after the completion of the project have been made. The recommendations consist of the three components as follows:

i) follow-up activities for the water management in the Bahr El Nour area,
ii) dissemination of the outcomes of the project to wider areas in Nile Delta, and,
iii) further consideration for the drafted action plan
iv) revision of the indicators for the Intermediate Goal and the Overall Goal

(1) Follow-up activities for the water management in the Bahr El Nour area

1) within the remaining project period

- IIS and other related governmental agencies ensure that sufficient resources (e.g. human resources and financial resources) will be allocated for maintaining and enhancing the activities in the Bahr El Nour area. Specific actions may include confirmation of budget and human resources, and establishment of a follow-up local committee. The roles of such committee is to have regular meetings (at least once every half a year) to report and share the situations, and discuss the arising problems for solutions, among related people including those at regional and capital levels and of JICA Egypt office, as necessary. This committee may want to seek advice from the existing Regional Management Committee (RMC).
- IIS promotes organizing internal regulations of WUAs in writing as already planned, which are currently understood without any documents. This can help for clear recognition of the WUA's importance in the concerned areas and also help the efforts of forming associations in other regions.
- IIS makes maximal efforts to realize more direct and intensive involvement of the other ministries and governmental agencies (e.g. Ministry of Agriculture and Land Reclamation, in particular, Agricultural Research Center, Extension Services and Agricultural Cooperatives) for improving the livelihood of the farmers in the area. Specific actions may include lectures on crop selection for water saving, cultivation and marketing tips for such crops, formal requests for loans for initial investment.

Developing a draft strategy for water saving may also help for further consideration among the related people. In addition, the outcomes of the demonstration conducted in the winter season of 2005/06 regarding sugar beet irrigation could be further pursued to this end.

- IIS takes necessary actions to enhance the use of certain pieces of equipment, which are currently not in use due to the lack of people capable to operate them. The actions may be to hold training courses with internal resources or with trainers from outside.

2) after the completion of the project

- IIS and other related governmental agencies maintain the proper allocation of resources for the Bahr El Nour area. Irrigation Department (ID), in particular CD-IAS, takes important roles because the organization is in charge of supervising the activities of the established WUF and WUAs including their management of constructed facilities. The good experiences and capacities built in the people involved in the Project should be properly considered for this purpose.
- The WUF in the Bahr El Nour and its sub-committees maintain and enhance their activities with a good support of relevant organizations.

(2) Dissemination of the outcomes of the Project to wider areas in Nile Delta

1) within the remaining project period

- IIS specifies a list of specific outcomes of the Project and a list of possible roles of WUF and WUAs.
- IIS formulates a strategy for developing appropriate approaches for the future related improvement projects in a more efficient manner, in a shorter period and on a larger scale, based on the outcomes of the Project. The strategy may address the issue of poverty alleviation described in the IIIMP appraisal report.
- IIS holds a seminar to share the list of specific outcomes of the Project, the list of possible roles of WUF and WUAs, and the development strategy of appropriate approaches for future projects, as examined above, among the people concerned including relevant ministries and governmental agencies. The seminar should be a good occasion to seek a network for daily informal view-exchange to share the core concept of the Project (such as full participation of farmers) among the relevant people, including those who are involved in other related irrigation projects in the Nile Delta. Special attention should be paid to the integration approach that recent projects are taking, in which drainage, subsurface water, on-farm (marwa) irrigation and residential issues are addressed together with irrigation improvement.

2) after the completion of the project

- IIS and other related governmental agencies take identified actions based on the

A-5

discussion in the seminar above.

- IIS, in proper cooperation with other related governmental agencies, considers how to address the need to replicate, upscale and disseminate the considerable experiences gained through the Project.
- To support IIIMP areas and make the outcome of the Project applicable, further development activities on participatory water management could be considered in a district within the IIIMP areas promoting integration approach.

(3) Further consideration for the action plan

1) within the remaining project period

- IIS, in proper cooperation with other related governmental agencies, re-examines the drafted action plan taking into account the recommendations from this evaluation. Since the current action plan mostly consists of the follow-up actions within the Bahr El Nour, an additional strategy paper could be formulated to focus on dissemination, further involvement of relevant agencies, and activities at capital levels. Also, even a rough idea could be developed for the activities in 2009 and later. A key agency responsible for the action plan should be clearly identified to ensure the implementation and monitoring of the plan.

2) after the completion of the project

- The related agencies, under the supervision of the identified key agency, implement and monitor the activities under the action plan and strategy paper.

(4) Revision of the indicators for the Intermediate Goal and the Overall Goal

As explained in the sections 3.5 and 3.6, it is recommended to modify the indicators for the Intermediate Goal and the Overall Goal as follows.

1) The indicators for the Intermediate Goal

Current indicators	Proposed indicators
In five years after the end of the Project,	In five years after the end of the Project,
i) irrigation efficiency increases	i) farmers' satisfaction level with the roles and functions of WUAs and WUF increases
ii) fair water distribution is improved	ii) agricultural productivity such as crop yield increases
iii) indicators of agricultural productivity per unit of land increase	

2) The indicators for the Overall Goal

Current indicators	Proposed indicators
By the year 2017 in a certain districts of	By the year 2017 in certain districts in the Nile

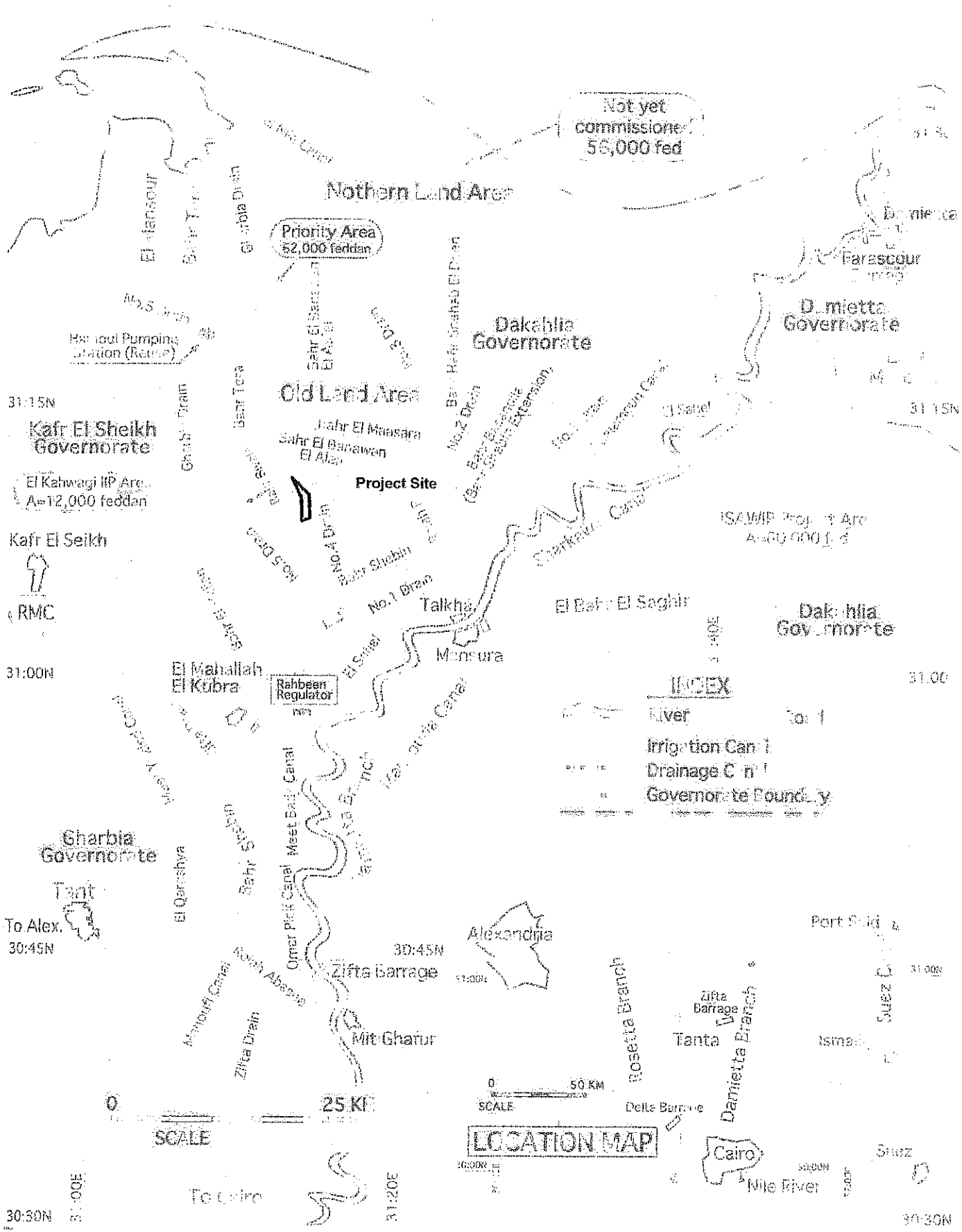
Bahr Tera,	Delta,
i) new approaches of the IIP are disseminated	i) new approaches of the IIP are disseminated
ii) indicators of agricultural productivity	ii) indicators of agricultural productivity increases
iii) improvement of the farmers' living condition	iii) the farmers' net income increases

7. Lessons Learned

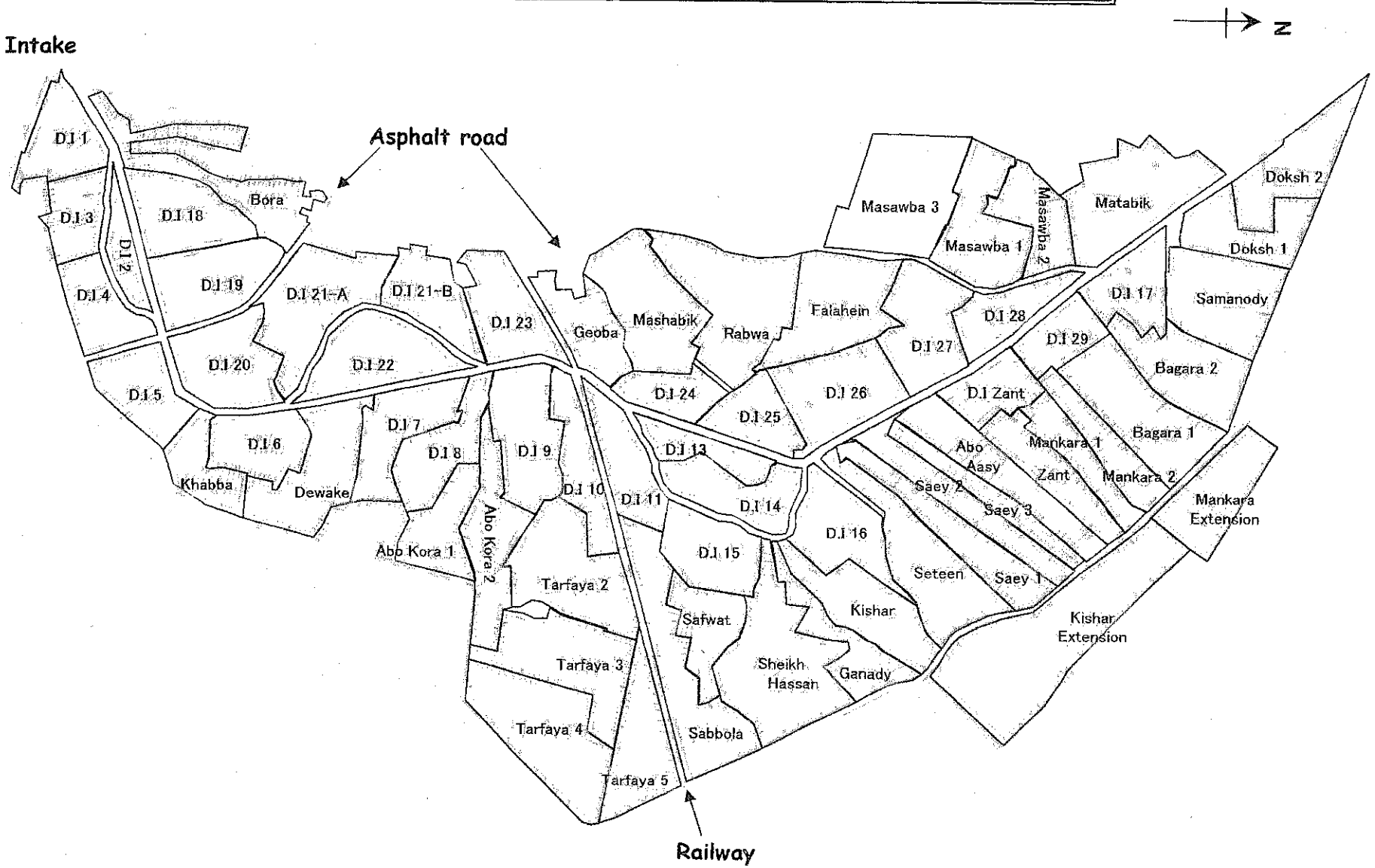
- While promotion of establishment of farmers' association is in general not easy task, the Project has achieved substantial progress in this regard. The Project has especially cared for fostering the consciousness of the staff in the relevant governmental agencies in terms of the importance of participatory approach and attitudes towards farmers, spending considerable time period in the early stages for this purpose. In the stage of planning, designing and construction of the irrigation facilities as well as of promoting the establishment of WUAs, the Project has been keen to obtain and maintain farmers' confidence for the project activities, for example by addressing in a timely and appropriate manner the specific problems that the farmers face. These points could be taken for proper consideration of the other relevant projects such as those for agricultural extension or those with participatory approach.
- Poverty reduction of farmers, which is one of the priority issues in the country and in the recent projects such as IIIMP, could have been considered in earlier stages for the Project and may be appropriate for future consideration in developing strategies for water resource management.
- In the different stages of the implementation of the Project, the project targets and related activities (including Overall Goal, Intermediate Goal and Project Purpose as well as project period) have been modified by the then evaluation teams. Having observed the outcomes of the Project, this is a good example in which such evaluation process effectively influenced and guided the project implementation, and the project staff adequately followed the received guidance with their best efforts. Especially, it was appropriate to guide the Project to focus on certain activities based on the actual progress.

A-5

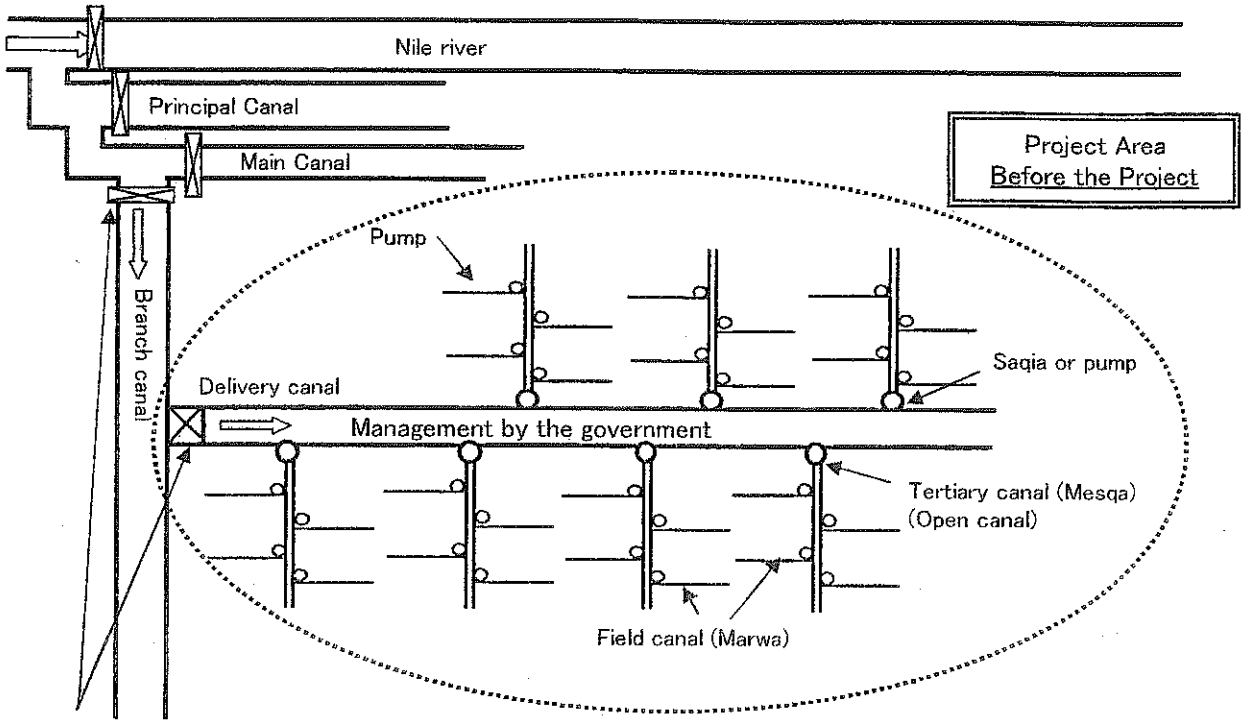
Annex 1 Location of the project area



Annex 2 Map of the project area

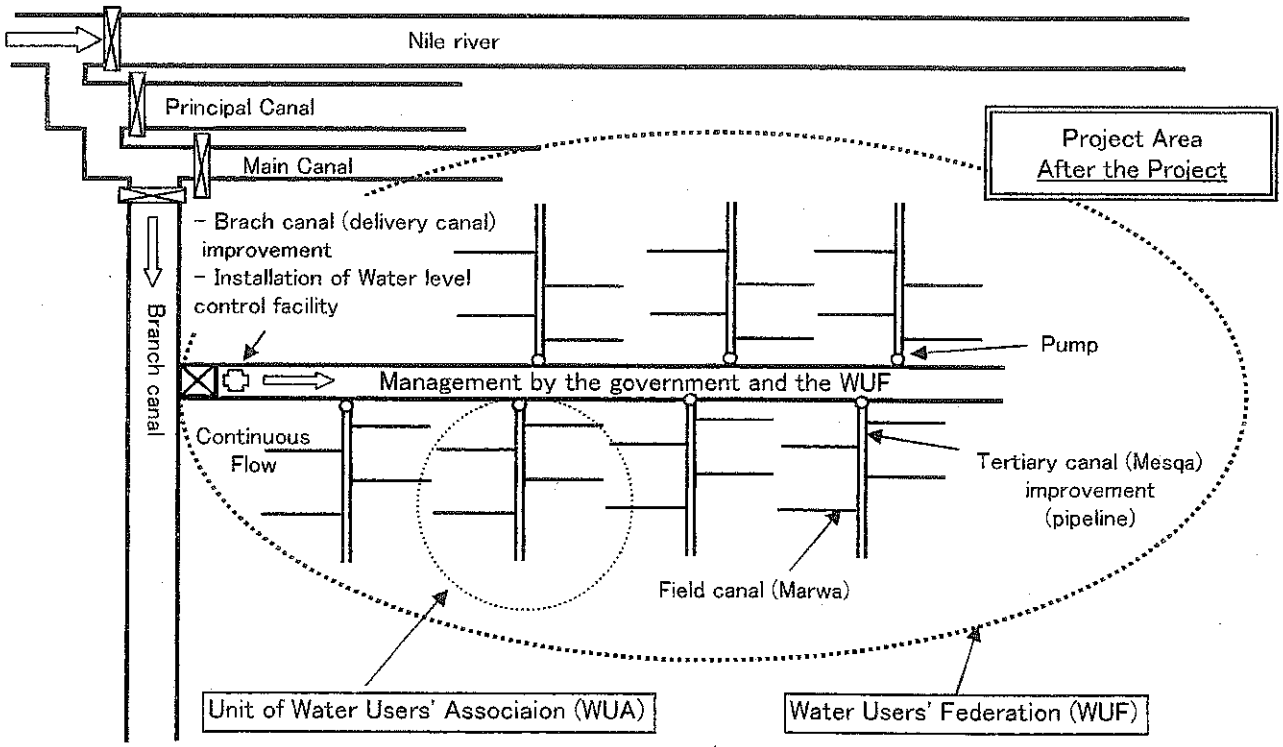


Annex 3 Outline of the irrigation system in the project area (before and after the Project)

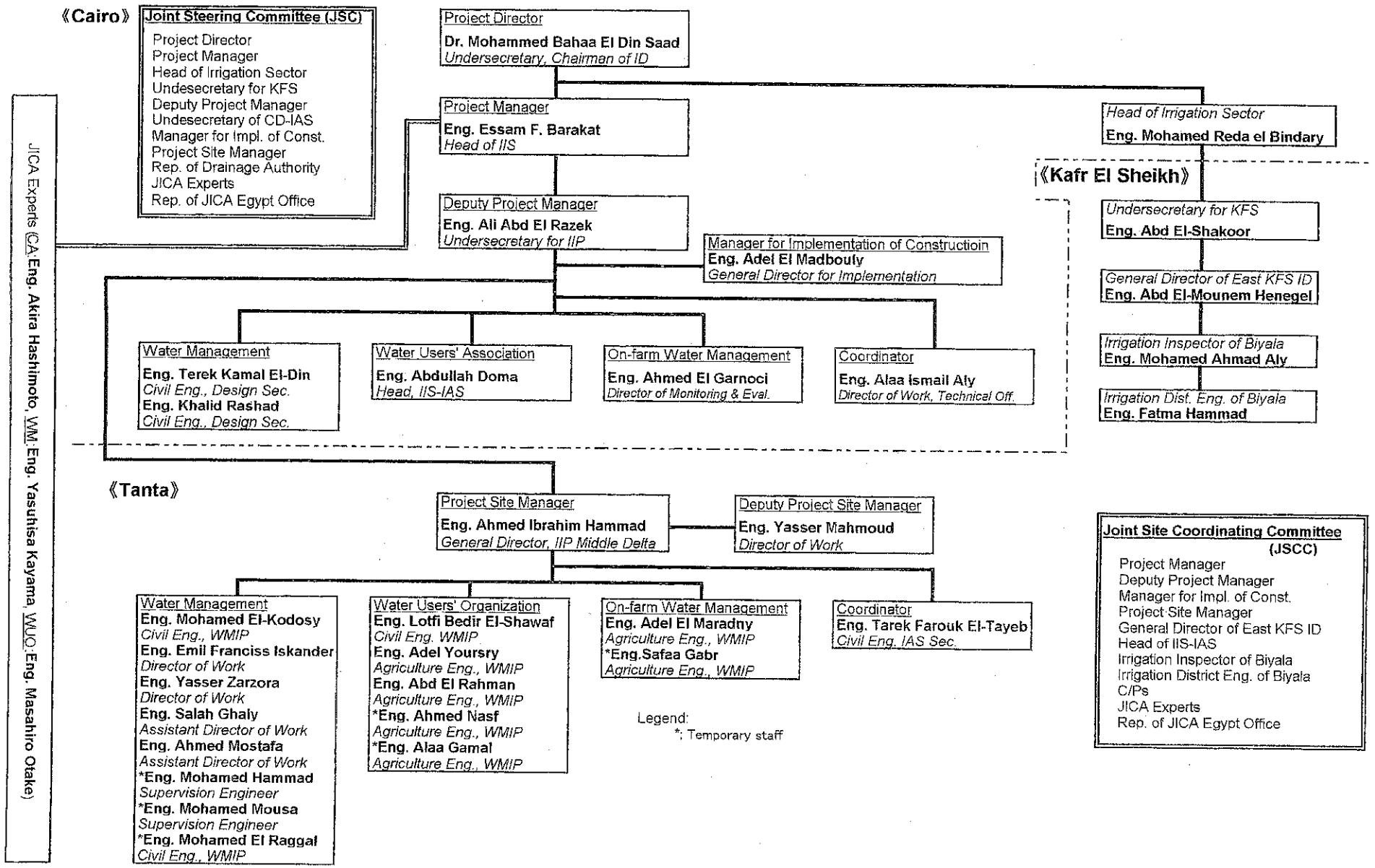


Intake Gate after Branch Canal: Management by the government, water distribution by rotation
(4day with water and 6days without water in summer crop season. 4days with water and 8 days without water

Main current futures of the project area
Area: 1,680ha
Farmers (number of planters): 1,196
Legth of the delivery canal: 7km (approximate)



Annex 4 Implementation structure



Annex 5 PDM (Original)

Project Name: The Water Management Improvement Project in the Nile Delta
Project area: 4,000 FD (1,680 ha) of Bahr El Nour Command Area
Target group: Farmers

Duration: March 1, 2000 - February 28, 2005
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 MARI 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 increase 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 (Kafr El Sheikh) 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
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 Plan for Irrigation facilities is formulated. 4. Farmers' water management organizations are established in three 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' Associations, 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 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. Documentation of the regulation (record of the Project) 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.

A-5

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

A·5

Annex 5 PDM (PDM-2)

Project Name: The Water Management Improvement Project in the Nile Delta
Project area: 4,000 FD (1,680 ha) of Bahr El Nour Command Area
Target group: Farmers

Duration: March 1, 2000 - February 28, 2005

Modified on: December 17, 2002

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.	By the year 2017 in a certain districts of Bahr Tera, 1. New approaches of the IIP are disseminated. 2. Indicators of agricultural productivity. 3. Improvement of the farmers' living condition.	1. Survey conducted by MWRI 2. Statistics of MARI 3. Survey conducted by MWRI	
Intermediate Goal Improved methods for the efficient and effective implementation of the IIP raise irrigation efficiency and agricultural productivity in the project area.	In five years after the end of the Project, 1. Irrigation efficiency increases. 2. Fair water distribution is improved. 3. Indicators of agricultural productivity per unit of land increase.	1. Survey conducted by MWRI 2. Survey conducted by MWRI 3. Statistics of MARI and survey conducted by MWRI	1. 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 in the project area.	By the end of the project period, 1. More than 2/3 of farmers in the project area are satisfied with the IIP implementation. 2. MWRI supports the improved methods.	1. Questionnaire survey during the fainal evaluation 2. Questionnaire survey during the fainal evaluation	1. MWRI applies the improved methods. 2. Situation of distribution, storage, prices and market of crops does not deteriorate.
Output Field 1. Improvement of irrigation facilities - Implementation method for improvement of irrigation facilities is improved	By the end of the project period, 1-1. Improvement plan of irrigation facilities is formulated. 1-2. Manual for construction control is formulated.	1-1., 1-2. Record of the Project	1. Enough Egyptian counterpart personnel remain in the sector related to water management or agriculture. 2. Irrigation facilities are constructed on schedule in the project area by the Egyptian side.
Field 2. Farmers' Water Management Organization (WUA* & WUF*) - Formulation method for farmers' water management organization is improved	2-1. All WUAs and a WUF are established in accordance with more than 2/3 of agreements. 2-2. Textbooks for leaders of farmers on rational water use and modernized farming are formulated.	2-1., 2-2. Record of the Project	
Field 3. On-farm water management - Appropriate methods of on-farm water management are introduced	3. Manual for field water management is formulated.	3. Record of the Project	
Field 4. General Project Management - Project activities and results are introduced to governmental staff properly.	4. Training for governmental staff, particularly of IIS, are conducted at least two times a year.	4. Record of the Project	
* Note: WUA: Water Users' Association WUF: Federation of WUAs			

Activities	Input		
	Japanese side	**Egyptian Side**	Equipment supplied from Japan for technical guidance and other activities is cleared at custom smoothly.
Field 1. Improvement of irrigation facilities 1-1. Survey of present condition 1-2. Formulation of monitoring system of water quantity and quality 1-3. Planning and Designing of irrigation facilities 1-4. Construction control of irrigation facilities Field 2. Farmers' water management organization (WUA & WUF) 2-1. Survey of present condition 2-2. Promotion for farmers' participation in planning and designing 2-3. Establishment of WUAs and WUF 2-4. Promotion of farmers' participation in supervision of construction 2-5. Training of leaders of WUA & WUF 2-6. Monitoring and evaluation of WUA & WUF Field 3. On-farm water management 3-1. Study of present farming condition 3-2. Formulation of a model farm plan 3-3. Improvement of water application efficiency 3-4. Formulation of the methods of on-farm water Field 4. General project management 4-1. Completing project management organization and formulating annual work plan of the Project 4-2. Conducting monitoring and evaluation of the Project activities and result regularly 4-3. Composing Data Base System required for the 4-4. Conducting training to enhance practical abilities of governmental staff	1. Dispatch of Japanese Experts 1-1. Long-Term Experts - Chief Adviser - Coordinator - Water Management / Irrigation Facilities - Water Users' Association - On-farm Water Management 1-2. Short-Term Experts - If necessary 2. Provision of machinery and Equipment 3. Training of Egyptian counterpart personnel in Japan	1. Assignment of counterpart personnel and administrative staff - Project Director - Project Manager - Deputy Project Manager - Project Site Manager - Counterpart personnel in the field of; Water Management / Irrigation Facilities; Water Users' Association; On-farm Water Management and Training - Administration staff including secretaries, drivers and others - Accountants - Other necessary supporting staff 2. Provision of land, buildings and facilities such as project offices and related facilities, expert's room and so on. 3. The supply or replacement of equipment, machinery, vehicles, instruments, tools, spare parts and any other materials other than that provided through JICA. 4. Allocation of operating expenses for the Project 1) Construction, operation and maintenance of irrigation facilities in the project area 2) Personnel expenses of counterpart personnel and administration staff of the Project (including their official travel expenses) 3) Operating expenses necessary for the implementation of the Project such as utilities	**Preconditions** 1. Farmers are cooperative to the Project. 2. Necessary support is given to the Project from both governments.

Annex 5 PDM (PDM-3 for Extension Period)

Project Name: The Water Management Improvement Project in the Nile Delta
Project area: 4,000 FD (1,680 ha) of Bahr El Nour Command Area
Target group: Farmers

Duration: March 1, 2000 - February 28, 2007
Modified on: December 16, 2004

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.	By the year 2017 in a certain districts of Bahr Tera, 1. New approaches of the IIP are disseminated. 2. Indicators of agricultural productivity. 3. Improvement of the farmers' living condition.	1. Survey conducted by MARI 2. Statistics of MALR 3. Survey conducted by MWRI	
Intermediate Goal Improved methods for the efficient and effective implementation of the IIP raise irrigation efficiency and agricultural productivity in the project area.	In five years after the end of the Project, 1. Irrigation efficiency increases. 2. Fair water distribution is improved. 3. Indicators of agricultural productivity per unit of land increase.	1. Survey conducted by MWRI 2. Survey conducted by MWRI 3. Statistics of MARI and survey conducted by MWRI	1. 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 in the project area.	By the end of the project period, 1. The farmers in the project area are satisfied with the improved methods. 2. MWRI supports the improved methods.	1. Questionnaire survey 2. Questionnaire survey	1. MWRI applies the improved methods. 2. Situation of distribution, storage, prices and market of crops does not deteriorate.
Output Field 1. Improvement of irrigation facilities - Implementation method for improvement of irrigation facilities is improved	By the end of the project period, 1-1. Improvement plan of irrigation facilities is utilized. 1-2. Manual for construction control is utilized. 1-3. Appropriate water management is carried out by WUAs and the WUF.	1-1 Record of the Project 1-2 Record of the Project 1-3 Record of the WUAs' activities	1. Enough Egyptian counterpart personnel remain in the sector related to water management or agriculture.
Field 2. Farmers' Water Management Organization (WUA* & WUF*) - Formulation method for farmers' water management organization is improved	2-1 WUAs and a WUF are established. 2-2 Textbooks for leaders of farmers on rational water use and modernized farming are utilized. 2-3 Water fee is collected by WUAs.	2-1 Record of the Project 2-2 Record of the Project 2-3 Record of the WUAs' activities	2. Irrigation facilities are constructed on schedule in the project area by the Egyptian side.
Field 3. On-farm water management *- Appropriate methods of on-farm water management are introduced*	*3-1 Manual for field water management is formulated.*	3. Record of the Project	
Field 4. General Project Management - Project activities and results are introduced to governmental staff properly.	4. Governmental staff understand the methods of the Project.	4. Record of training	

Activities	Input		Equipment supplied from Japan for technical guidance and other activities is cleared at custom smoothly.
	Japanese Side	Egyptian Side	
Field 1. Improvement of irrigation facilities *1-1. Survey of present condition* *1-2. Formulation of monitoring system of water quantity and quality* *1-3. Planning and Designing of irrigation facilities* 1-4. Construction control of irrigation facilities 1-5. Water management at delivery canal and mesqa levels. Field 2. Farmers' water management organization (WUA & WUF) *2-1. Survey of present condition* *2-2. Promotion for farmers' participation in planning and designing* 2-3. Establishment and management of WUAs and WUF *2-4. Promotion of farmers' participation in supervision of construction* 2-5. Training of leaders of WUA & WUF 2-6. Monitoring and evaluation of WUA & WUF *Field 3. On-farm water management* *3-1. Study of present farming condition* *3-2. Formulation of a model farm plan* *3-3. Improvement of water application efficiency* *3-4. Formulation of the methods of on-farm water management* Field 4. General project management *4-1. Completing project management organization and formulating annual work plan of the Project* *4-2. Conducting monitoring and evaluation of the Project activities and result regularly* *4-3. Composing Data Base System required for the Project* 4-4. Conducting training to enhance practical abilities of governmental staff	1. Dispatch of Japanese Experts 1-1. Long-Term Experts - Chief Adviser / Project Management - Water Management - Water Users' Organizations / Coordinator 1-2. Short-Term Experts - If necessary 2. Provision of machinery and Equipment 3. Training of Egyptian counterpart personnel in Japan	1. Assignment of counterpart personnel and administrative staff - Project Director - Project Manager - Deputy Project Manager - Project Site Manager - Counterpart personnel in the field of; Water Management; Water Users' Organization and Project Management - Administration staff including secretaries, drivers and others - Accountants - Other necessary supporting staff 2. Provision of land, buildings and facilities such as project offices and related facilities, expert's room and so on. 3. The supply or replacement of equipment, machinery, vehicles, instruments, tools, spare parts and any other materials other than that provided through JICA. 4. Allocation of operating expenses for the Project 1) Construction, operation and maintenance of irrigation facilities in the project area 2) Personnel expenses of counterpart personnel and administration staff of the Project (including their official travel expenses) 3) Operating expenses necessary for the implementation of the Project such as utilities	**Preconditions** 1. Farmers are cooperative to the Project. 2. Necessary support is given to the Project from both governments.

Note: Italic parts mean the activities until February 28, 2005.

Annex 5 PDM (PDM-4 for revision)

Project Name: The Water Management Improvement Project in the Nile Delta
Project area: 4,000 FD (1,680 ha) of Bahr El Nour Command Area
Target group: Farmers

Duration: March 1, 2000 - February 28, 2007
Proposed on: December 11, 2006

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.	By the year 2017 in certain districts in **the Nile Delta**, 1. New approaches of the IIP are disseminated. 2. Indicators of agricultural productivity. **3. Improvement of the farmers' net income.**	1. Survey conducted by MARI 2. Statistics of MALR 3. Survey conducted by MWRI	
Intermediate Goal Improved methods for the efficient and effective implementation of the IIP raise irrigation efficiency and agricultural productivity in the project area.	In five years after the end of the Project, **1. Increase of farmers' satisfaction level with the roles and functions of WUAs and WUF** **2. Increase of agricultural productivity such as crop yield**	1. Survey conducted by MWRI 2. Survey conducted by MWRI	1. 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 in the project area.	By the end of the project period, 1. The farmers in the project area are satisfied with the improved methods. 2. MWRI supports the improved methods.	1 Questionnaire survey 2. Questionnaire survey	1. MWRI applies the improved methods. 2. Situation of distribution, storage, prices and market of crops does not deteriorate.
Output Field 1. Improvement of irrigation facilities - Implementation method for improvement of irrigation facilities is improved	By the end of the project period, 1-1. Improvement plan of irrigation facilities is utilized. 1-2. Manual for construction control is utilized. 1-3. Appropriate water management is carried out by WUAs and the WUF.	1-1 Record of the Project 1-2 Record of the Project 1-3 Record of the WUAs' activities	1. Enough Egyptian counterpart personnel remain in the sector related to water management or agriculture.
Field 2. Farmers' Water Management Organization (WUA* & WUF*) - Formulation method for farmers' water management organization is improved	2-1 WUAs and a WUF are established. 2-2 Textbooks for leaders of farmers on rational water use and modernized farming are utilized. 2-3 Water fee is collected by WUAs.	2-1 Record of the Project 2-2 Record of the Project 2-3 Record of the WUAs' activities	2. Irrigation facilities are constructed on schedule in the project area by the Egyptian side.
Field 3. On-farm water management *- Appropriate methods of on-farm water management are introduced*	*3-1 Manual for field water management is formulated.*	3. Record of the Project	
Field 4. General Project Management - Project activities and results are introduced to governmental staff properly.	4. Governmental staff understand the methods of the Project.	4. Record of training	

94

A-5

Activities	Input		
	Japanese Side	Egyptian Side	Equipment supplied from Japan for technical guidance and other activities is cleared at custom smoothly.
Field 1. Improvement of irrigation facilities *1-1. Survey of present condition* *1-2. Formulation of monitoring system of water quantity and quality* *1-3. Planning and Designing of irrigation facilities* 1-4. Construction control of irrigation facilities 1-5. Water management at delivery canal and mesqa levels. Field 2. Farmers' water management organization (WUA & WUF) *2-1. Survey of present condition* *2-2. Promotion for farmers' participation in planning and designing* 2-3. Establishment and management of WUAs and WUF *2-4. Promotion of farmers' participation in supervision of construction* 2-5. Training of leaders of WUA & WUF 2-6. Monitoring and evaluation of WUA & WUF *Field 3. On-farm water management* *3-1. Study of present farming condition* *3-2. Formulation of a model farm plan* *3-3. Improvement of water application efficiency* *3-4. Formulation of the methods of on-farm water management* Field 4. General project management *4-1. Completing project management organization and formulating annual work plan of the Project* *4-2. Conducting monitoring and evaluation of the Project activities and result regularly* *4-3. Composing Data Base System required for the Project* 4-4. Conducting training to enhance practical abilities of governmental staff	1. Dispatch of Japanese Experts 1-1. Long-Term Experts - Chief Adviser / Project Management - Water Management - Water Users' Organizations / Coordinator 1-2. Short-Term Experts - If necessary 2. Provision of machinery and Equipment 3. Training of Egyptian counterpart personnel in Japan	1. Assignment of counterpart personnel and administrative staff - Project Director - Project Manager - Deputy Project Manager - Project Site Manager - Counterpart personnel in the field of; Water Management; Water Users' Organization and Project Management - Administration staff including secretaries, drivers and others - Accountants - Other necessary supporting staff 2. Provision of land, buildings and facilities such as project offices and related facilities, expert's room and so on. 3. The supply or replacement of equipment, machinery, vehicles, instruments, tools, spare parts and any other materials other than that provided through JICA. 4. Allocation of operating expenses for the Project 1) Construction, operation and maintenance of irrigation facilities in the project area 2) Personnel expenses of counterpart personnel and administration staff of the Project (including their official travel expenses) 3) Operating expenses necessary for the implementation of the Project such as utilities	**Preconditions** 1. Farmers are cooperative to the Project. 2. Necessary support is given to the Project from both governments.

Note: Italic parts mean the activities until February 28, 2005.

Annex 6 Dispatch of Japanese Experts

1. Long-term Experts

No.	Name	Field	Period
1	KAJIWARA Thikanobu	Chief Adviser	01 Mar. 00 - 31 May 03
2	HONMA Hajime	Coordinator	01 Mar. 00 - 30 Apr. 02
3	KIYONO Norio	Water Management/Irrigation Facility	01 Mar. 00 - 31 May 03
4	TAKAHASHI Atsushi	Water Users' Association	01 Mar. 00 - 28 Feb. 02
5	URAYAMA Hisashi	Agronomy	01 Mar. 00 - 31 Mar. 03
6	KUDO Jun	Water Users' Association	15 Feb. 02 - 28 Feb. 05
7	NAKAGAWA Takashi	Coordinator	17 Apr. 02 -16 Apr. 04
8	HASHIMOTO Akira	Chief Adviser	25 May 03 - 28 Feb. 07
9	KAYAMA Yasuhisa	Water Management/Irrigation Facility	22 May 03 - 28 Feb. 07
10	YOSHII Ken'ichiro	Farm Level Water Management	22 May 03 - 28 Feb. 05
11	OTAKE Masahiro	Coordinator	28 Feb 04 - 28 Feb. 07

2. Short-term Experts

No.	Name	Field	Period
1	MIYATAKE Kyouichi	Household Research	23 Oct. 00 - 06 Dec. 00
2	OOGATA Izumi	Water Users' Association	07 Nov. 00 - 08 Dec. 00
3	HASHIGUCHI Yukimasa	Water Management System	19 Dec. 00 - 08 Jan. 01
4	MASE Toru	Water Users' Association	23 Mar. 01 - 03 Apr. 01
5	MIKI Satoru	Irrigation Facility (Pump)	05 Apr. 01 - 04 May 01
6	SATO Katsumasa	On Farm Water Management	09 Apr. 01 - 07 May 01
7	TAKAHASHI Akio	Analysis of Farm Area	12 May 01 - 13 Jun 01
8	SATO Masayoshi	Water Users' Association	22 Dec. 01 - 06 Jan. 02
9	YOSHIMUTA Mataji	Irrigation Facility (Gate)	08 Jan. 02 - 07 Feb. 02
10	WATANABE Haruo	Soil Analysis	11 Feb. 02 - 11 Mar. 02
11	OGURO Osamu	Construction Control Planning	10 Mar 02 - 28 Mar. 02
12	NAGASAKI Sukehide	Water Users' Association	04 Apr. 02 - 26 Apr. 02
13	GOMI Yoshitaka	System Development	05 Aug. 02 - 11 Aug. 02
14	NARUOKA Michio	On Farm Level Water Management	10 Sep. 02 - 31 Oct. 02
15	OZAWA Yoshio	Laser Farm Machinery	27 Sep. 02 - 12 Oct. 02
16	ITO Yotsugu	Construction Control	05 Jan. 03 - 10 Feb. 03
17	FURUKAWA Yoshishige	Market & Distribution System of Agricultural Products	01 Mar. 03 - 29 Mar. 03
18	SATO Masayoshi	Water Users' Association (Administration of Organization)	26 Mar. 03 - 04 Apr. 03
19	GOMI Yoshitaka	Geographic Information System	31 Jul. 03 - 30 Aug. 03
20	SAKAMOTA Nobuyoshi	Water Users' Association	18 Oct. 03 - 18 Nov. 03
21	SATO Masayoshi	Water Users' Association (Administration of Organization)	04 Mar. 04 - 15 Mar. 04
22	OKUMURA Nobuhiro	Construction Control	20 May 04 - 19 Jun. 04
23	NAKANO Toshinobu	Pipeline System	20 May 04 - 28 Jun. 04
24	SAKAKI Michihiko	On Farm Water Distribution Plan	23 Jul. 04 - 03 Sep. 04
25	OUE Yasusada	Water User's Association	26 Aug. 04 - 25 Sep. 04
26	TARUYA Hiroyuki	Irrigation Facility	03 Dec. 04 - 23 Dec. 04
27	YAMADA Masakazu	Farmers Training Method	01 Sep. 05 - 01 Oct. 05
28	NAKANO Toshinobu	Water Distribution Plan 2	13 Jan. 06 - 22 Feb. 06

Annex 7 List of Machinery and Equipment Provided by Japanese Side

(1) Equipment provided during the extension period of the Project (from March 2005 to December 2006)

(Items which cost are more than 100,000 Yen)

Frequency of Use: A: Daily B: Weekly, Monthly C: Use in Specific Period D: Nil

Condition : A: Good Condition B: Fair Condition C: Condition for Repair D: Unable to Use

No.		Date (Received)	Name of Item	Specification	Price	Currency	Frequency of use	Condition	Inventory Location	Remarks	Equip code
A	166	38550	Laptop Computer	IBM Thinkpad R50e (512KB RAM)	6,700	LE	A	A	IC		Local17001
A	167	38550	Laptop Computer	IBM Thinkpad R50e (512KB RAM)	6,700	LE	A	A	IC		Local17002
A	168	38550	Laptop Computer	IBM Thinkpad R50e (512KB RAM)	6,700	LE	A	A	IC		Local17002

Annex 7 List of Machinery and Equipment Provided by Japanese Side

(2) Equipment provided during the original period of the Project (from March 2000 to February 2006)

2) Equipment ≧100,000 Yen

Data on the refequency of use and condition etc. shows situations at the previous terminal evaluation (October 2004)

Frequency of Use: A: Daily B: Weekly, Monthly C: Use in Specific Period D: Nil

Condition : A: Good Condition B: Fair Condition C: Condition for Repair D: Unable to Use

No.		Date (Received)	Name of Item	Specification	Price	Currency	frequency of use	Condition	Inventory Location	Remarks	Equip code
A	11	2001/1/24	Water Pressure Logger	Hope Hydrology	2,500	$	B	A	IT		1712004
A	12	2001/1/24	Water Pressure Logger	Hope Hydrology	2,500	$	B	A	IT		1712003
A	13	2001/1/24	Water Pressure Logger	Hope Hydrology	2,500	$	B	A	IT		1712002
A	14	2001/1/24	Water Pressure Logger	Hope Hydrology	2,500	$	B	A	IT		1712001
A	15	2001/1/25	Copy Machine	CANON GP225	42,845	LE	A	A	IC		1201001
A	16	2001/1/25	Copy Machine	CANON GP225	42,845	LE	A	A	IT		1201002
A	17	2001/3/29	PC Software	DV500 (Video Editing Software)	5,020	LE	D	A	IC		1128001
A	18	2001/3/29	Open Channel Flowmeter	Polisonics	23,500	LE	A	A	B		1721001
A	19	2001/3/29	Solar Panel for Flowmeter	Solalix Delta-Steca	17,900	LE	A	A	B		1722001
A	20	2001/3/29	PRINTER (LASER)	HP LaserJet 5000N	9,300	LE	A	A	IT		1131006
A	21	2001/3/29	PRINTER (LASER)	HP LaserJet 5000N	9,300	LE	B	A	IC		1131007
A	22	2001/3/29	PC Desktop Computer	COMPAQ EXD/P866	6,370	LE	A	A	IT		1100102
A	23	2001/3/29	PC Desktop Computer	COMPAQ EXD/P866	6,370	LE	A	A	IT		1100103
A	24	2001/3/29	PC Monitor	ADI Micro Scan G1000 21'	4,900	LE	A	A	IT		1100202
A	25	2001/3/29	PC Monitor	ADI Micro Scan G1000 21'	4,900	LE	A	A	IT		1100203
A	26	2001/3/29	PC Software	MS-Office Premium (E)	3,100	LE	A	A	IT		1121006
A	27	2001/3/29	PC Software	MS-Office Premium (E)	3,100	LE	A	A	IT		1121007
A	28	2001/3/29	PC Software	ArcView 3.2a	9840	LE	B	A	IT		1125201
A	29	2001/3/29	PC Software	Adobe Illustrator 9.0	3480	LE	C	A	IT		1126101
A	30	2001/3/29	PC Software	Adobe Photoshop 6.0	5400	LE	C	A	IT		1126201
A	31	2001/3/29	PC Software	Adobe PageMaker 5.5 ME Plus	4680	LE	C	A	IT		1126301
A	32	2001/3/29	PC Software	MS-Office Premium (E)	3,100	LE	A	A	IT		1121007
A	33	2001/3/29	PC Software	MS-Office Premium (E)	3,100	LE	A	A	IT		1121006
A	34	2001/9/23	Current Meter (Electro-Magnetic)	KENEK LP1300	990,000	YEN	B	A	IT		1711102
A	35	2001/9/23	MultiMedia Projector	SONY VPL-CX10	780,000	YEN	C	A	IT		3011001
A	36	2001/9/23	PC Software	FORTRAN LF95 Prof. Ver. 5.6	276,000	YEN	C	B	IT		1127001
A	37	2001/9/23	Screen (with tripod stand)	VPS-120	243,000	YEN	C	A	IT		3041001
A	38	2001/9/23	Soil Moisture Meter	FUJIWARA SPAD PF-33	172,000	YEN	C	A	IT		1812003
A	39	2001/9/23	Soil Moisture Meter	FUJIWARA SPAD PF-33	172,000	YEN	C	A	IT		1812002
A	40	2001/9/23	Portable Electric Generator	HONDA EU10i	166,000	YEN	C	A	IT		3081002
A	41	2001/9/23	Portable Electric Generator	HONDA EU10i	166,000	YEN	C	A	IT		3081001
A	42	2001/9/23	Planimeter main unit	X-Plan 380F	166,000	YEN	C	A	IT		2021002

Annex 7 List of Machinery and Equipment Provided by Japanese Side

(2) Equipment provided during the original period of the Project (from March 2000 to February 2006)

2) Equipment ≧100,000 Yen

Data on the refequency of use and condition etc. shows situations at the previous terminal evaluation (October 2004)

Frequency of Use: A: Daily B: Weekly, Monthly C: Use in Specific Period D: Nil

Condition : A: Good Condition B: Fair Condition C: Condition for Repair D: Unable to Use

No.		Date (Received)	Name of Item	Specification	Price	Currency	frequency of use	Condition	Inventory Location	Remarks	Equip code
A	43	2001/9/23	Planimeter main unit	X-Plan 380F	166,000	YEN	C	A	IT		2021001
A	44	2001/9/23	Soil Electric Conductivity Meter	FUJIWARA SPAD PK-33	161,000	YEN	C	A	IT		1831003
A	45	2001/9/23	Soil Electric Conductivity Meter	FUJIWARA SPAD PK-33	161,000	YEN	C	A	IT		1831002
A	46	2001/9/23	Soil Electric Conductivity Meter	FUJIWARA SPAD PK-33	161,000	YEN	C	A	IT		1831001
A	47	2001/9/23	Amplifier System main unit	JVC PE-W91 (with Transformer)	155,000	YEN	B	A	IT		3051002
A	48	2001/9/23	Amplifier System main unit	JVC PE-W91 (with Transformer)	155,000	YEN	B	A	IT		3051001
A	49	2001/9/23	Auto Level main unit	TOPCON AT-G1	138,000	YEN	C	A	IT		2011001
A	50	2001/9/23	Auto Level main unit	TOPCON AT-G1	138,000	YEN	C	A	IT		2011002
A	51	2001/9/23	Digital Camera	SONY DSC-S70	133,000	YEN	A	A	IT		1301005
A	52	2001/9/23	Digital Camera	SONY DSC-S70	133,000	YEN	A	A	IT		1301004
A	53	2001/9/23	OHP Projector main unit	HP-2850P	133,000	YEN	D	A	IT		3021001
A	54	2001/9/23	OHP Projector main unit	HP-2850P	133,000	YEN	D	A	IT		3021002
A	55	2001/9/23	Soil pH Meter	FUJIWARA SPAD PHS-120	122,000	YEN	C	B	IT		1841002
A	56	2001/9/23	Soil pH Meter	FUJIWARA SPAD PHS-120	122,000	YEN	C	B	IT		1841001
A	57	2001/9/23	Soil pH Meter	FUJIWARA SPAD PHS-120	122,000	YEN	C	B	IT		1841003
A	58	2001/9/23	Screen (with tripod stand)	VPS-80	111,000	YEN	C	B	IT		3041003
A	59	2001/9/23	Screen (with tripod stand)	VPS-80	111,000	YEN	C	B	IT		3041002
A	60	2001/9/23	Screen (with tripod stand)	VPS-80	111,000	YEN	C	A	IT		3041002
A	61	2001/9/23	Screen (with tripod stand)	VPS-80	111,000	YEN	C	A	IT		3041003
A	62	2002/2/12	Television	TOSHIBA CityFACE 34D9DXM	9,610	LE	C	A	IT		1317002
A	63	2002/2/12	Television	TOSHIBA CityFACE 34D9DXM	9,610	LE	D	A	IT		1317003
A	64	2002/2/19	Water-level gauge (Float type)		1,055	$		A	IT	Not Found	1714003
A	65	2002/2/19	Water-level gauge (Float type)		1,055	$		A	IT	Not Found	1714002
A	66	2002/2/19	Water-level gauge (Float type)		1,055	$		A	IT	Not Found	1714004
A	67	2002/2/19	Water-level gauge (Float type)		1,055	$		A	IT	Not Found	1714001
A	68	2002/2/20	Dirt Bike	KAWASAKI 100cc	1,757	$	A	A	IT		4003004
A	69	2002/2/20	Dirt Bike	KAWASAKI 100cc	1,757	$	A	A	IT		4003005
A	70	2002/2/20	Dirt Bike	KAWASAKI 100cc	1,757	$	A	A	IT		4003001
A	71	2002/2/20	Dirt Bike	KAWASAKI 100cc	1,757	$	A	A	IT		4003002
A	72	2002/2/20	Dirt Bike	KAWASAKI 100cc	1,757	$	A	A	IT		4003003
A	73	2002/3/10	PC Software	MS-Office XP Professinal(E)	3,000	LE	B	B	IT		1121011
A	74	2002/3/10	PC Software	MS-Office XP Professinal(E)	3,000	LE	B	B	IT		1121010

Annex 7 List of Machinery and Equipment Provided by Japanese Side

(2) Equipment provided during the original period of the Project (from March 2000 to February 2006)

2) Equipment ≧100,000 Yen

Data on the refequency of use and condition etc. shows situations at the previous terminal evaluation (October 2004)

Frequency of Use: A: Daily B: Weekly, Monthly C: Use in Specific Period D: Nil

Condition : A: Good Condition B: Fair Condition C: Condition for Repair D: Unable to Use

No.		Date (Received)	Name of Item	Specification	Price	Currency	frequency of use	Condition	Inventory Location	Remarks	Equip code
A	75	2002/3/10	PC Software	MS-Office XP Professinal(E)	3,000	LE	B	B	IT		1121014
A	76	2002/3/10	PC Software	MS-Office XP Professinal(E)	3,000	LE	B	B	IT		1121013
A	77	2002/3/10	PC Software	MS-Office XP Professinal(E)	3,000	LE	B	B	IT		1121012
A	78	2002/3/10	PC Desktop Computer	Super power (Egyptian assembly)	4,350	LE	B	B	IK		1100108
A	79	2002/3/10	PC Desktop Computer	Super power (Egyptian assembly)	4,350	LE	B	B	IK		1100107
A	80	2002/3/10	PC Desktop Computer	Super power (Egyptian assembly)	4,350	LE	B	B	IT		1100106
A	81	2002/3/10	PC Desktop Computer	Super power (Egyptian assembly)	4,350	LE	B	B	IT		1100105
A	82	2002/3/10	PC Desktop Computer	Super power (Egyptian assembly)	4,350	LE	B	B	IT		1100104
A	83	2002/3/10	PC Software	ArcView 3.2a	11,500	LE	B	B	IT		1125202
A	84	2002/3/10	PC Software	AutoCAD 2000	11,000	LE	B	A	IT		1125101
A	85	2002/3/10	PC Software	AutoCAD 2000	11,000	LE	B	A	IT		1125102
A	86	2002/3/10	PC Software	Premavera Project Planner	15,000	LE	D	A	IT		1128101
A	87	2002/3/10	PC Software	Premavera Project Planner	15,000	LE	D	A	IT		1128102
A	88	2002/3/10	PC Notebook Computer	COMPAQ Presario 1714EA	10,500	LE	A	A	IT		1101006
A	89	2002/3/10	PC Software	MS-Office XP Professinal(E)	3,000	LE	A	A	IT		1121010
A	90	2002/3/10	PC Software	MS-Office XP Professinal(E)	3,000	LE	A	A	IT		1121011
A	91	2002/3/10	PC Software	MS-Office XP Professinal(E)	3,000	LE	A	A	IT		1121012
A	92	2002/3/10	PC Software	MS-Office XP Professinal(E)	3,000	LE	A	A	IT		1121013
A	93	2002/3/10	PC Software	MS-Office XP Professinal(E)	3,000	LE	A	A	IT		1121014
A	94	2002/3/11	Dirt Bike	KAWASAKI 100cc	1,757	$	D	B	IT		4003008
A	95	2002/3/11	Dirt Bike	KAWASAKI 100cc	1,757	$	D	B	IT		4003006
A	96	2002/3/11	Dirt Bike	KAWASAKI 100cc	1,757	$	D	B	IT		4003007
A	97	2002/3/23	PC Software	Visual BASIC developers edition	5,000	LE	C	A	IC		1127501
A	98	2002/3/23	PC Software	MS-Office XP Professinal(E)	3,500	LE	A	A	IT		1121008
A	99	2002/3/23	PC Software	MS-Office XP Professinal(E)	3,500	LE	A	A	IT		1121009
A	100	2002/4/17	Water Pressure Logger	Tirtaharapan (Hope Hydrogy Co.)	2,100	$	D	A	IT		1712008
A	101	2002/4/17	Water Pressure Logger	Tirtaharapan (Hope Hydrogy Co.)	2,100	$	D	A	IT		1712005
A	102	2002/4/17	Water Pressure Logger	Tirtaharapan (Hope Hydrogy Co.)	2,100	$	D	A	IT		1712014
A	103	2002/4/17	Water Pressure Logger	Tirtaharapan (Hope Hydrogy Co.)	2,100	$	D	A	IT		1712020
A	104	2002/4/17	Water Pressure Logger	Tirtaharapan (Hope Hydrogy Co.)	2,100	$	D	A	IT		1712011
A	105	2002/4/17	Water Pressure Logger	Tirtaharapan (Hope Hydrogy Co.)	2,100	$	D	A	IT		1712019
A	106	2002/4/17	Water Pressure Logger	Tirtaharapan (Hope Hydrogy Co.)	2,100	$	D	A	IT		1712007

Annex 7 List of Machinery and Equipment Provided by Japanese Side

(2) Equipment provided during the original period of the Project (from March 2000 to February 2006)

2) Equipment ≧100,000 Yen

Data on the refequency of use and condition etc. shows situations at the previous terminal evaluation (October 2004)

Frequency of Use: A: Daily B: Weekly, Monthly C: Use in Specific Period D: Nil

Condition : A: Good Condition B: Fair Condition C: Condition for Repair D: Unable to Use

No.		Date (Received)	Name of Item	Specification	Price	Currency	frequency of use	Condition	Inventory Location	Remarks	Equip code
A	107	2002/4/17	Water Pressure Logger	Tirtaharapan (Hope Hydrogy Co.)	2,100	$	D	A	IT		1712009
A	108	2002/4/17	Water Pressure Logger	Tirtaharapan (Hope Hydrogy Co.)	2,100	$	D	A	IT		1712010
A	109	2002/4/17	Water Pressure Logger	Tirtaharapan (Hope Hydrogy Co.)	2,100	$	D	A	IT		1712006
A	110	2002/4/17	Water Pressure Logger	Tirtaharapan (Hope Hydrogy Co.)	2,100	$	D	A	IT		1712012
A	111	2002/4/17	Water Pressure Logger	Tirtaharapan (Hope Hydrogy Co.)	2,100	$	D	A	IT		1712013
A	112	2002/4/17	Water Pressure Logger	Tirtaharapan (Hope Hydrogy Co.)	2,100	$	D	A	IT		1712015
A	113	2002/4/17	Water Pressure Logger	Tirtaharapan (Hope Hydrogy Co.)	2,100	$	D	A	IT		1712016
A	114	2002/4/17	Water Pressure Logger	Tirtaharapan (Hope Hydrogy Co.)	2,100	$	D	A	IT		1712017
A	115	2002/4/17	Water Pressure Logger	Tirtaharapan (Hope Hydrogy Co.)	2,100	$	D	A	IT		1712018
A	116	2002/8/13	Stable Cultivator	SC9B	775,200	YEN	C	A	IT		4701001
A	117	2002/8/13	Laser Control Set Laser Radiator	MMMM	648,050	YEN	C	A	IT		4801101
A	118	2002/8/13	Laser Control Set Laser Receiver	R2S-S	523,640	YEN	C	A	IT		4801201
A	119	2002/8/13	Laser Control Set Display	MD2J	242,370	YEN	C	A	IT		4801501
A	120	2002/8/13	Laser Control Set Elevating Base	408700-04	136,350	YEN	C	A	IT		4801301
A	121	2002/8/13	Laser Control Set Cable		109,310	YEN	C	A	IT		4801801
A	122	2002/8/13	Moisture Point Exclusive data Logger Set	(with data reading software)	400,000	YEN	B	A	IT		1812131
A	123	2002/8/13	Moisture Point Tool set		160,000	YEN	B	A	IT		1812161
A	124	2002/8/13	Digital Video Camera	SONY DCR-TRV30E	200,000	YEN	C	A	IT		1311002
A	125	2002/8/13	Spectrophotometer Set	DREL/2010-22 type	803,000	YEN	D	A	IT		1921001
A	126	2003/2/17	Concrete Test Hammer Type P		191,300	YEN	B	A	IT		1776301
A	127	2003/2/17	Concrete Test Hammer Type P		191,300	YEN	B	A	IT		1776302
A	128	2003/2/17	Concrete Test Hammer Anvil	(for Type P)	297,800	YEN	B	A	IT		1776401
A	129	2003/2/17	Concrete Test Hammer Anvil	(for Type P)	297,800	YEN	B	A	IT		1776402
A	130	2003/2/17	Color Plotter main unit	HP Design Jet 500PS	424,000	YEN	D	A	IT		1161002
A	131	2003/2/17	Cone Penetrometer	LS-422	152,000	YEN	D	A	IT		1773101
A	132	2003/2/17	Cone Penetrometer	LS-422	152,000	YEN	D	A	IT		1773102
A	133	2003/2/17	GPS Receiver	ProMARK X CM	719,000	YEN	C	A	IT		2042001
A	134	2003/2/17	GPS Receiver	ProMARK X CM	719,000	YEN	C	A	IT		2042002
A	135	2003/2/17	GPS Beacon Receiver	ABX-3	204,300	YEN	C	A	IT		2042101
A	136	2003/2/17	GPS Beacon Receiver	ABX-3	204,300	YEN	C	A	IT		2042102
A	137	2003/2/17	Monitoring prove (Water Level & Temp)	MiniTROLL Professional	285,700	YEN	D	A	IT		1781201
A	138	2003/2/17	Monitoring prove (Water Level & Temp)	MiniTROLL Professional	285,700	YEN	D	A	IT		1781202

Annex 7 List of Machinery and Equipment Provided by Japanese Side

(2) Equipment provided during the original period of the Project (from March 2000 to February 2006)

2) Equipment ≧100,000 Yen

Data on the refequency of use and condition etc. shows situations at the previous terminal evaluation (October 2004)

Frequency of Use: A: Daily B: Weekly, Monthly C: Use in Specific Period D: Nil

Condition . A: Good Condition B: Fair Condition C: Condition for Repair D: Unable to Use

No.		Date (Received)	Name of Item	Specification	Price	Currency	frequency of use	Condition	Inventory Location	Remarks	Equip code
A	139	2003/2/17	Monitoring prove (Water Level & Temp)	MiniTROLL Professional	285,700	YEN	D	A	IT		1781203
A	140	2003/2/17	Monitoring prove (Water Level & Temp)	MiniTROLL Professional	285,700	YEN	D	A	IT		1781204
A	141	2003/2/17	Monitoring prove (Water Level & Temp)	MiniTROLL Professional	285,700	YEN	D	A	IT		1781205
A	142	2003/2/17	Monitoring prove (Water Level & Temp)	MiniTROLL Professional	285,700	YEN	D	A	IT		1781206
A	143	2003/2/17	Monitoring prove Data Collector	COMPAQ Pocket PC	151,700	YEN	D	A	IT		1782301
A	144	2003/2/17	Monitoring prove Data Collector	COMPAQ Pocket PC	151,700	YEN	D	A	IT		1782302
A	145	2003/2/17	Monitoring prove Data Collector	COMPAQ Pocket PC	151,700	YEN	D	A	IT		1782303
A	146	2003/2/17	Soil Augar Set	SS-S-201B	106,700	YEN	D	A	IT		1774101
A	147	2003/2/17	Soil Augar Set	SS-S-201B	106,700	YEN	D	A	IT		1774102
A	148	2003/2/17	Water Leak Detector	HG-10A II	437,400	YEN	D	A	IT		1716001
A	149	2003/2/17	PRINTER (COLOR LASER)	CANON LBP-2050	189,400	YEN	A	A	IT		1131013
A	150	2003/2/17	Reinforcing Bar Detector	RP-1	159,200	YEN	D	A	IT		供与14020
A	151	2003/3/20	Desk Top Computer/Display	Samusung, ATX P4/551V	1,400	$	A	A	IT		Local14001
A	152	2003/3/20	Desk Top Computer/Display	Samusung, ATX P4/551V	1,400	$	A	A	IT		Local14002
A	153	2003/3/20	Computer Software	AutoCAD 2000	2,575	$	D	A	IT		Local14005
A	154	2003/3/20	Computer Software	AutoCAD 2000	2,575	$	D	A	IT		Local14006
A	155	2003/3/20	Computer Software	ArcView 3.2a	2,600	$	D	A	IT		Local14007
A	156	2003/3/20	Computer Software	ArcView 3.2a	2,600	$	D	A	IT		Local14008
A	157	2003/12/30	Tool Set (High Mechanic Set)	SK90AX	168,000	YEN	D	A	IT		供与15001
A	158	2003/12/30	Tool Set (High Mechanic Set)	SK90AX	168,000	YEN	D	A	IT		供与15002
A	159	2003/12/30	Personal Computer	DELL Optiplex GX270	250,000	YEN	A	A	IT		供与15003
A	160	2003/12/30	Personal Computer	DELL Optiplex GX270	250,000	YEN	A	A	IT		供与15004
A	161	2003/12/30	Personal Computer	DELL Optiplex GX270	250,000	YEN	A	A	IT		供与15005
A	162	2003/12/30	Projector + Document Camera	MP-700E	909,500	YEN	C	A	IT		供与15009
A	163	2003/12/30	Projector + Document Camera	MP-700E	909,500	YEN	C	A	IT		供与15010
A	164	2004/3/15	Sensor	Polisonic PX20	2,500	$	A	A	IT	Under Preparation	Local15002
A	165	2004/3/29	Trailer		1,975	$	C	A	IT		Local15004

Annex 7 List of Machinery and Equipment Provided by Japanese Side

(2) Equipment provided during the original period of the Project (from March 2000 to February 2006)

3) Equipment ≧20,000 Yen

Data on the refequency of use and condition etc. shows situations at the previous terminal evaluation (October 2004)

Frequency of Use: A: Daily B: Weekly, Monthly C: Use in Specific Period D: Nil

Condition A: Good Condition B: Fair Condition C: Condition for Repair D: Unable to Use

No.		Date (Received)	Name of Item	Specification	Price	Currency	frequency of use	Condition	Inventory Location	Remarks	Equip code
B	1	2000/5/4	Current Meter	San-ei PW type-1 & type-2	434,000	YEN	C	B	IT		1711001
B	2	2000/5/4	PC Notebook Computer	IBM TP600X 2645-4GJ	369,000	YEN	A	A	IT	Pentium III, 500MHz	1101003
B	3	2000/5/4	PC Notebook Computer	IBM TP600X 2645-4GJ	369,000	YEN	A	A	IT	Pentium III, 500MHz	1101005
B	4	2000/5/4	PC Software	MS-Office Premium (J)	68,700	YEN	A	A	IT		1121003
B	5	2000/5/4	PC Software	MS-Office Premium (J)	68,700	YEN	A	A	IT		1121005
B	6	2000/5/4	PC Software	MS-Project 98 (J)	62,400	YEN	C	B	IT		1123001
B	7	2000/5/4	Digital Camera	CANON Power Shot S10	67,500	YEN			IT	Not Found	1301003
B	8	2000/5/4	PRINTER	CANON BJ F-850	42,700	YEN	A	A	IT		1131003
B	9	2000/5/4	IC Recorder	SONY ICD-R200	24,000	YEN	A	A	IT		1641001
B	10	2000/5/4	PC Option Ultraslim Battery	IBM 02K6504	22,900	YEN	A	A	IT		1104001
B	11	2000/5/4	PC Option Ultraslim Battery	IBM 02K6504	22,900	YEN	A	A	IT		1104002
B	12	2000/5/4	Hydro-Thermograph	Fuso S-300	64,800	YEN	C	B	IT		1801001
B	13	2000/5/18	PC Notebook Computer	IBM TP600X 2645-4GJ	424,000	YEN	A	A	IT	Pentium III, 500MHz	1101004
B	14	2000/5/18	Digital Camera	SONY MVC-FD88K	99,500	YEN	B	A	IT		1301002
B	15	2000/5/18	SCANNER	EPSON ES-2000	83,000	YEN	C	B	IT		1171002
B	16	2000/5/18	PC Software	MS-Office Premium (J)	68,000	YEN	A	A	IT		1121004
B	17	2000/5/18	PRINTER	BROTHER MP-21C	51,000	YEN	C	C	IC		1131002
B	18	2000/5/18	Automatic Voltage Regulator	Matsunaga SVC-1500NDII	40,000	YEN	A	A	IT		1401005
B	19	2000/5/18	PC Option Ultraslim Battery	IBM 02K6504	26,000	YEN	A	A	IT		1104004
B	20	2000/5/18	PC Option Extension Memory	IBM 20L0254	22,000	YEN	A	A	IT		1105003
B	21	2000/6/11	PC Notebook Computer	IBM TP600X 2645-4GJ	389,000	YEN	A	A	IC	Pentium III, 500MHz	1101002
B	22	2000/6/11	SCANNER	EPSON ES-2000	89,800	YEN	C	B	IC		1171001
B	23	2000/6/11	Electric Blackboard	Panasonic mini UB-900	84,700	YEN	C	B	IT		1601001
B	24	2000/6/11	Digital Camera	Kodak DC280J Zoom	76,400	YEN			IT	2001/09 Stolen	1301001
B	25	2000/6/11	PC Software	MS-Office Premium (J)	68,500	YEN	A	A	IC		1121002
B	26	2000/6/11	PRINTER	CANON BJ F-6100	59,300	YEN	A	A	IC		1131001
B	27	2000/6/11	Automatic Voltage Regulator	Matsunaga SVC-1000NDII	29,000	YEN	A	A	IC		1401004
B	28	2000/6/11	PC Option Ultraslim Battery	IBM 02K6504	22,100	YEN	A	A	IC		1104003

Annex 7 List of Machinery and Equipment Provided by Japanese Side

(2) Equipment provided during the original period of the Project (from March 2000 to February 2006)

3) Equipment ≧20,000 Yen

Data on the refequency of use and condition etc. shows situations at the previous terminal evaluation (October 2004)

Frequency of Use: A: Daily B: Weekly, Monthly C: Use in Specific Period D: Nil

Condition A: Good Condition B: Fair Condition C: Condition for Repair D: Unable to Use

No.		Date (Received)	Name of Item	Specification	Price	Currency	frequency of use	Condition	Inventory Location	Remarks	Equip code
B	29	2000/6/11	PC Option Extension Memory	IBM 20L0254	21,800	YEN	A	A	IC		1105001
B	30	2000/7/19	PC Notebook Computer	IBM TP600X 2645-4GJ	383,400	YEN	A	A	IC	Pentium III, 500MHz	1101001
B	31	2000/7/19	PC Software	MS-Office Premium (J)	66,900	YEN	A	A	IC		1121001
B	32	2000/7/19	PC Option Portable CD-R/RW	Panasonic KXL-RW10AN	65,900	YEN	C	B	IT		1107002
B	33	2000/7/19	PC Option Ultraslim HDD (6GB)	IBM 05K9199	44,900	YEN	A	A	IT		1103001
B	34	2000/7/19	LAN Dial-up Router	Net Genesis Dual	26,900	YEN	A	A	IC		1502001
B	35	2000/7/19	LAN Dial-up Router	Net Genesis Dual	26,900	YEN	A	A	IT		1502002
B	36	2000/7/19	LAN Print Server for BJF-6100	JetLAN3100	26,300	YEN	A	A	IC		1505002
B	37	2000/7/19	LAN Print Server for BJF-850	JetLAN3100	26,300	YEN	A	A	IT		1505001
B	38	2000/7/19	Automatic Voltage Regulator	Matsunaga SVC-1000NDII	24,000	YEN	A	A	IT		1401003
B	39	2000/7/19	Automatic Voltage Regulator	Matsunaga SVC- 600NDII	21,800	YEN	A	A	IC		1401001
B	40	2000/7/19	Automatic Voltage Regulator	Matsunaga SVC- 600NDII	21,800	YEN	A	A	IC		1401002
B	41	2000/8/2	Water Quality Checker	HORIBA U-10	322,000	YEN	C	B	IT		1931001
B	42	2000/12/16	Soil Moisture Meter	FUJIWARA SPAD PF-33	195,000	YEN	C	B	IT		1812001
B	43	2000/12/16	Digital Video Camera	Panasonic NV-C7	178,600	YEN			IT	2001/09 Stolen	1311001
B	44	2000/12/16	PRINTER (LASER)	CANON LBP-910N(JC)	135,000	YEN	A	B	IC		1131004
B	45	2000/12/16	PRINTER (LASER)	CANON LBP-910N(JC)	135,000	YEN	A	A	IT		1131005
B	46	2000/12/16	PRT Paper Feeder for LBP-910N	CANON PF-64K	44,000	YEN	A	A	IT		1132002
B	47	2000/12/16	PRT Paper Feeder for LBP-910N	CANON PF-64K	44,000	YEN	A	A	IC		1132003
B	48	2000/12/16	Compact Camera	OLYMPUS Myuu Zoom 140VF	33,000	YEN	C	B	IC		1702002
B	49	2000/12/16	Compact Camera	OLYMPUS Myuu Zoom 140VF	33,000	YEN	C	B	IT		1702001
B	50	2000/12/16	Automatic Voltage Regulator	Matsunaga SVC-1000NDII	24,000	YEN	A	A	IT		1401006
B	51	2000/12/24	Current Meter (Electro-Magnetic)	KENEK LP1300	1,102,000	YEN	B	A	IT		1711101
B	52	2001/12/11	Monitoring prove	MiniTROLL standard T 2.5m cable	204,500	YEN	C	B	IT		1781101
B	53	2001/12/11	Monitoring prove	MiniTROLL standard T 2m cable	203,500	YEN	C	B	IT		1781001
B	54	2001/12/11	Monitoring prove	MiniTROLL standard T 2m cable	203,500	YEN	C	B	IT		1781003
B	55	2001/12/11	Monitoring prove	MiniTROLL standard T 2m cable	203,500	YEN	C	B	IT		1781002
B	56	2001/12/11	pH meter	HORIBA D-24SE	96,000	YEN	C	B	IT		1932001

Annex 7 List of Machinery and Equipment Provided by Japanese Side

(2) Equipment provided during the original period of the Project (from March 2000 to February 2006)

3) Equipment ≧20,000 Yen

Data on the refequency of use and condition etc. shows situations at the previous terminal evaluation (October 2004)

Frequency of Use: A: Daily B: Weekly, Monthly C: Use in Specific Period D: Nil

Condition : A: Good Condition B: Fair Condition C: Condition for Repair D: Unable to Use

No.		Date (Received)	Name of Item	Specification	Price	Currency	frequency of use	Condition	Inventory Location	Remarks	Equip code
B	57	2001/12/11	SCANNER Transparency unit	EPSON ESA4FLU	41,200	YEN	B	B	IT		1174001
B	58	2001/12/11	Rain Gauge		37,800	YEN	D	B	IT		1891002
B	59	2001/12/11	Rain Gauge		37,800	YEN	D	B	IT		1891001
B	60	2002/3/2	PRINTER	CANON BJ-M40	50,800	YEN	C	A	IT		1131008
B	61	2002/3/2	Bookbinding Machine	SEKI-GTS1500	26,200	YEN	C	A	IC		1331001
B	62	2002/3/2	Paper Reinforcement Machine	TZ-4090	31,500	YEN	C	A	IT		1341001
B	63	2002/3/2	PC Software	Adobe Acrobat 5.0	33,500	YEN	B	B	IT		1126401
B	64	2002/3/11	PC Option Internal HDD(30GB)	CERES Action Disk VA300	113,000	YEN	C	B	IT		1103002
B	65	2002/3/12	Memorymeter (temp x 2channel)	SATO SK-L200T	20,460	YEN	A	A	IT		1791005
B	66	2002/3/12	Memorymeter (temp x 2channel)	SATO SK-L200T	20,460	YEN	A	A	IT		1791001
B	67	2002/3/12	Memorymeter (temp x 2channel)	SATO SK-L200T	20,460	YEN	A	A	IT		1791002
B	68	2002/3/12	Memorymeter (temp x 2channel)	SATO SK-L200T	20,460	YEN	A	A	IT		1791004
B	69	2002/3/12	Memorymeter (temp x 2channel)	SATO SK-L200T	20,460	YEN	A	A	IT		1791006
B	70	2002/3/12	Memorymeter (temp x 2channel)	SATO SK-L200T	20,460	YEN	A	A	IT		1791003
B	71	2002/3/12	Memorymeter (temp & hygro)	SATO SK-L200TH	24,600	YEN	A	A	IT		1792001
B	72	2002/3/12	Memorymeter (temp & hygro)	SATO SK-L200TH	24,600	YEN	A	A	IT		1792002
B	73	2002/3/12	Memorymeter (temp & hygro)	SATO SK-L200TH	24,600	YEN	A	A	IT		1792003
B	74	2002/3/12	Memorymeter (temp & hygro)	SATO SK-L200TH	24,600	YEN	A	A	IT		1792004
B	75	2002/3/12	Memorymeter (temp & hygro)	SATO SK-L200TH	24,600	YEN	A	A	IT		1792005
B	76	2002/3/12	Memorymeter (temp & hygro)	SATO SK-L200TH	24,600	YEN	A	A	IT		1792006
B	77	2002/3/12	Thermometer	SATO SK-1250MCII	23,000	YEN	C	B	IT		1794101
B	78	2002/5/29	PC Option Portable CD-R/RW	Panasonic KXL-RW32AN	29,200	YEN	A	A	IC		1107003
B	79	2002/8/17	ESLON Reel Case 30m	120E2 50M	54,200	YEN	A	A	IT		2032291
B	80	2002/8/17	ESLON Reel Case 30m	120E2 50M	54,200	YEN	A	A	IT		2032292
B	81	2002/8/17	Water Level Measure	RWL-50M	43,000	YEN	D	A	IT		1713001
B	82	2002/8/17	Water Level Measure	RWL-50M	43,000	YEN	D	A	IT		1713002
B	83	2002/8/17	Super Plate (Spray set for survey)	122941	40,900	YEN			IT	Not Found	2033102
B	84	2002/8/17	Super Plate (Spray set for survey)	122941	40,900	YEN			IT	Not Found	2033101

Annex 7 List of Machinery and Equipment Provided by Japanese Side

(2) Equipment provided during the original period of the Project (from March 2000 to February 2006)

3) Equipment ≧20,000 Yen

Data on the refequency of use and condition etc. shows situations at the previous terminal evaluation (October 2004)

Frequency of Use: A: Daily B: Weekly, Monthly C: Use in Specific Period D: Nil

Condition : A: Good Condition B: Fair Condition C: Condition for Repair D: Unable to Use

No.		Date (Received)	Name of Item	Specification	Price	Currency	frequency of use	Condition	Inventory Location	Remarks	Equip code
B	85	2002/8/17	Level	Smart Tool 610	29,000	YEN	D	A	IT		2032342
B	86	2002/8/17	Level	Smart Tool 610	29,000	YEN	D	A	IT		2032341
B	87	2002/8/17	SHIRAI Water Channel Weir		37,200	YEN	D	A	IT		8011202
B	88	2002/8/17	SHIRAI Water Channel Weir		37,200	YEN	D	A	IT		8011201
B	89	2002/8/17	SHIRAI Plug		36,900	YEN	D	A	IT		8011701
B	90	2002/8/17	SHIRAI Water Regulator	Type-B VU250	34,000	YEN	D	A	IT		8001101
B	91	2002/8/17	SHIRAI Water Regulator	Type-B VU250	34,000	YEN	D	A	IT		8011102
B	92	2002/8/18	Soil Moisture Meter	DIK-311A	379,000	YEN	C	A	IT		4901101
B	93	2002/8/18	Testing Sieve 5pcs set	DIK-2400SN	106,500	YEN	C	A	IT		4901201
B	94	2002/8/18	Push-cone Soil Hardness Meter	DIK-5553	43,500	YEN	C	A	IT		4901301
B	95	2003/3/29	Hard Disk Drive	IOData,HAD-I160G/Lan	60,500	YEN	A	A	IT		Sato 4001
B	96	2003/3/29	Hard Disk Drive	IO Data,HAD-I160G/Lan	60,500	YEN	A	A	IT		Sato 4002
B	97	2003/3/29	Memory Card	EXDP-256M	20,500	YEN	A	A	IT		Sato 14003
B	98	2003/3/29	Memory Card	EXDP-256M	20,500	YEN	A	A	IT		Sato 14004
B	99	2004/6/16	Digital Camere	Rico CaplioG4 Wide	26,180	YEN	A	A	IT		Okumura 16001

Annex 7 List of Machinery and Equipment Provided by Japanese Side

(2) Equipment provided during the original period of the Project (from March 2000 to February 2006)

4) Equipment Purchased by Local Cost) ≧20,000 Yen

Data on the refequency of use and condition etc. shows situations at the previous terminal evaluation (October 2004)

Frequency of Use: A: Daily B: Weekly, Monthly C: Use in Specific Period D: Nil

Condition : A: Good Condition B: Fair Condition C: Condition for Repair D: Unable to Use

No.		Date (Received)	Name of Item	Specification	Price	Currency	frequency of use	Condition	Inventory Location	Remarks	Equip code
C	1	2000/3/23	Mobile Phone	NOKIA 6150 EN	1,899	LE	A	C	EX		1001101
C	2	2000/3/23	Mobile Phone	NOKIA 6150 EN	1,899	LE	A	C	EX		1001102
C	3	2000/3/23	Mobile Phone	NOKIA 6150 EN	1,899	LE	A	C	EX		1001103
C	4	2000/3/23	Mobile Phone	NOKIA 6150 EN	1,899	LE	A	C	EX		1001104
C	5	2000/3/23	Mobile Phone	NOKIA 6150 EN	1,899	LE	A	C	EX		1001105
C	6	2000/4/1	PC Desktop Computer	Pentium II with HITACHI Monitor	7,855	LE	A	A	IC		1100101
C	7	2001/8/27	Television	Panasonic TC-20 A1	1,650	LE	C	A	IT		1317001
C	8	2001/8/27	VHS Video Deck	Panasonic	1,650	LE	C	A	IT		1318001
C	9	2004/5/19	Mobile Connect Caed	Vodafone	1,700	LE	A	A	IT		

A.5

Annex 8 Assignment of Counterparts Personnel and Training in Japan

No	Name	Specific Field	Position	Remarks	Period of Assignment		Training in Japan		
					From	To	Year	Name of Training Course	Duration
1	Dr.Mohamed BahaaEl Din	Project Director	First Undersecretary, Chairman of Irrigation Department		2004/8/1	Present	2006	Farmers' Participatory Irrigation Project	**01 Aug. 06 - 10 Aug. 0**
2	Eng. Abd El Karder	Project Manager	First Undersecretary, Head of IIS	Retired	2004/8/1	2006/8/15	2005	Project Management	**22 May 05 - 02 Jun 05**
3	Eng. Assan Barakat	Project Manager	First Undersecretary, Head of IIS		2006/8/16	Present			
4	Eng. Aly Mohamed Abd El Razik	Deputy Project Manager	Undersecretary for IIP		2003/12/4	Present	2004	Joint Training Program in the field of Irrigation and Drainage	19 Jul. 04 - 03 Aug. 04
5	Eng. Adel El-Madbouly	Project Site Manager	General Director, IIS Central Delta Directorate	Promoted	2000/10/1	2005/5/31	2002	Project Management	14 Jul. 02 - 27 Jul. 02
6	Eng. Ahamed Hamaad	Project Site Manager	General Director, IIS Middle Delta		2005/6/1	Present	2006	Management of Water Users' Organization (Joint training program for counterpart personnel on Irrigation and drainage)	**12 Aug. 06 - 03 Sep. 0**
7	Eng. Adel El-Madbouly	General Director for Implemantation	General Director for Implementation of IIP		2005/6/1	Present			
8	Eng. Abdulla Doma	(Cairo) WUA	Head of IIS-IAS		2005/3/1	Present			
9	Eng. Alaa Ismail Aly	(Cairo) Coordinator	Director of Works, Technical Office		2000/3/1	Present			
10	Eng. Khaled Mohamed Rashad	(Cairo) Water Management	Civil Eng., Design Section		2000/3/1	Present			
11	Eng. Tarek Kamal EL-Din Mahmoud Aly	(Cairo) Water Management	Civil Eng., Design Section		2000/3/8	Present	2000	Water Management	06 Nov. 00 - 02 Dec. 00
12	Eng. Tarek Farouk El-Tayeb	(Cairo) WUA Coordinator	Civil Eng., IAS Section	Coordinator from 2006/10/16~	2000/3/1	Present	2002	Farmer's Water Management Organization	18 Jun. 02 - 09 Aug. 02
13	Eng. Ahmed El Garnoci	(Cairo) Agronomy	Director of Monitoring & Evaluation		2002/6/10	Present			
14	Eng. Yasser Salah	(Tanta) Deputy Project Site Manager	Diretor of Works, IIS		2005/1/1	Present			
15	Eng. Mohamed El-Fetrany	(Tanta) Coordinator	Civil Eng., Technical Office	Transferred to Planning Sector	2000/3/1	2006/10/15			
16	Eng. Mohamed Samir Hassan El-Koddosy	(Tanta) Water Management	Civil Eng., (Full-time C/P)	Agronomy: 2000/3/1 - 2002/7/14	2000/3/1	Present	2001 2003	Water Management & Improvement of Irrigation Facilities World Water Forum3	09 Jul. 01 - 14 Aug. 01 15 Mar. 03 - 24 Mar. 04
17	Eng. Mohamed El Raggal	(Tanta) Water Management	Civil Eng., (Full-time C/P)		2002/7/14	Present			
18	Eng.El Mohamed Yasser	(Tanta) Water Management	Director of Works, Construction (1st and contract)	Leave of absence	2003/10/1	2005/9/15	2004	Integrated Agriculture and Rural Development through the Participation of Local Farmers_II	21 Jun. 04 - 15 Aug. 04
19	Eng. Imir Franciss Iskander	(Tanta) Water Management	Director of Works, Construction (1st and 2nd Contract)		2005/9/16	Present			
20	Eng. Yasser Zarzora	(Tanta) Water Management	Director of Works, Construction (3rd Contract)		2006/1/1	Present			
21	Eng. Salah Ghaly	(Tanta) Water Management	Construction (1st and 2nd contract)		2004/5/1	Present	2005	Construction Control	**15 Oct. 05 - 02 Dec. 05**
22	Eng. Ahmed Mostafa	(Tanta) Water Management	Construction (3rd contract)		2006/1/1	Present			
23	Eng.Mohamed Hammed	(Tanta) Water Management	Supervision Engineer, Counstruction (1st and 2nd contruct)		2004/5/1	Present			
24	Eng. Mohamed Mousa	(Tanta) Water Management	Supervision Engineer, Counstruction (3rd contruct)		2006/1/1	Present			
25	Eng. Lotfy Bedir El Shawaf	(Tanta) WUA	Civil Eng., (Full-time C/P)	Agronomy: 2001/10/1 - 2002/7/13	2001/10/1	Present	2003	World Water Forum3	15 Mar 03 - 24 Mar 03
26	Eng. Adel Yousry	(Tanta) WUA	Agriculture Eng., (Full-time C/P)	Agronomy: 2002/6/1-2002/7/14	2002/6/1	Present			
27	Eng. Mohamed Orwa	(Tanta) WUA	Agriculture Eng., (Full-time C/P)	Tranferred due to disease	2002/10/1	2005/12/31			
28	Eng.Abd El-Rhman Mohamed Slam	(Tanta) WUA	Agriculture Eng., (Full-time C/P)		2004/5/22	Present			
29	Eng. Hisham Ali Sherif	(Tanta) WUA	Agriculture Eng., (Full-time C/P)	Tranferred	2005/4/25	2005/8/31			
30	Eng. Ahmed Nasf	(Tanta) WUA	Agriculture Eng., (Full-time C/P)		2005/11/1	Present			
31	Eng. Alia Gamal	(Tanta) WUA	Agriculture Eng., (Full-time C/P)		2006/1/1	Present			
32	Eng. Adel Ibrahim El-Maradny	(Tanta) Agronomy	Agriculture Eng., (Full-time C/P)		2000/5/23	Present	2002	Irrigation, Drainage and Rural Development	11 Feb. 02 - 09 Aug. 02
33	Eng. Safaa Gabar	(Tanta) Agronomy	Agriculture Eng., (Full-time C/P)	WUA: 2001/10/1 - 2002/7/13	2001/10/1	Present			

Annex 9 Local Operation Expenses borne by Japanese Side

No.	Description	FY.1999		FY.2000		FY.2001		FY.2002		FY.2003		FY.2004		FY.2005		FY.2006(Plan)		Total	
		1,000Yen	LE	1,000Yen	LE	1,000Yen	LE	1,000Yen	LE	1,000Yen	LE	1,000Yen	LE	1,000Yen	LE	1,000Yen	LE	1,000Yen	LE
1	General Local Cost	959	31,942	7,025	232,672	6,401	218,743	66,480	237,827	3,578	211,206	5,109	255,479	6,371	322,051	6,743	328,540	102,667	1,838,40
2	Field Applicable Cost	0	0	2,088	69,600	0	0	0	0	0	0	0	0	0	0	0	0	2,088	69,60
	Total Expenditure	959	31,942	9,113	302,272	6,401	218,743	66,480	237,827	3,578	211,206	5,109	255,479	6,371	322,051	6,743	328,540	104,755	1,908,00

FY: Japanese Fiscal Year (from April to March of next year)

Annex 10 Allocation of operating expenses for the Project by Egyptian side

Remark: The following expenses is total expenses for the Irrigation Improvement Sector in Cairo. The expenses for the Project are included in these expenses.

Unit : L.E

No.	Description	FY.99/2000	FY.00/01	FY.01/02	FY.02/03	FY03/04	FY.04/05	FY.05/06	FY.06/07 (from July to November)	Total
1	Temporary Employment	160,205	185,465	202,655	232,150	245,027	260,737	296,069	115,598	1,697,906
2	Utilities (Electricity, Water, Telephone)	31,200	38,650	48,163	37,545	51,513	51,649	60,197	7,645	326,562
3	Others (Fuel, Equipment, Consumable Item etc.)	252,000	271,180	273,511	304,552	353,525	474,899	311,093	88,472	2,329,232
4	Duty and Tax (equipment from Japan)	26,000	1,010	2,000	12,669	-	-	-	-	41,679
5	Construction	16,675	15,092	5,118	16,045	32,022	35,629	66,462	16,889,000	17,076,043
	Total Expenditure	486,080	511,397	531,447	602,961	682,087	822,914	733,821	17,100,715	21,471,422

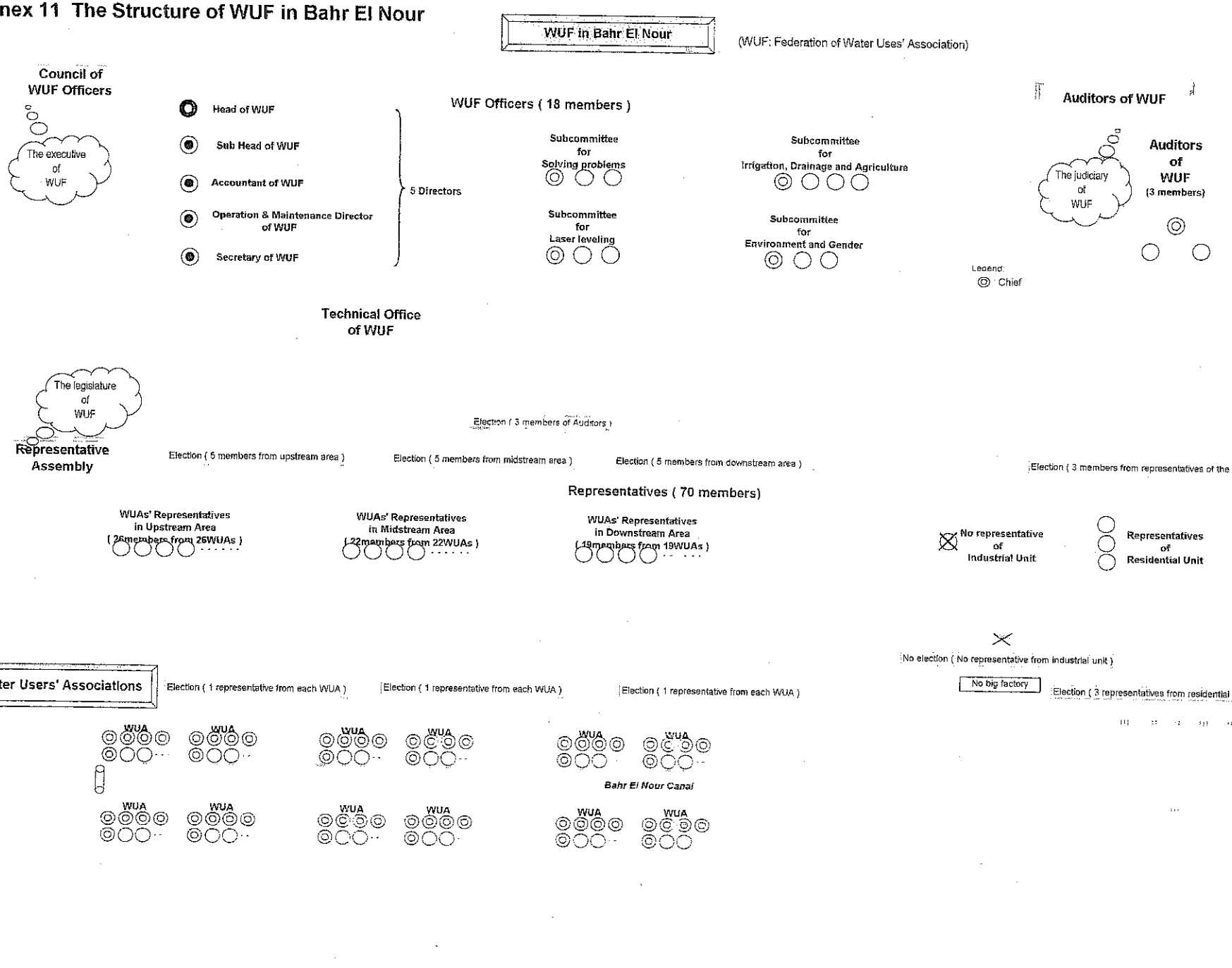
Remark: Fiscal year of Egypt is from July to June of the next yeat

Construction cost for Bahr El Nour

Construction (1st contract)	4,675,000
Construction (2nd contract)	6,800,000
Construction (3rd contract)	8,238,000
Construction (Total)	19,713,000

Grand Total	**41,184,422**

Annex 11 The Structure of WUF in Bahr El Nour



Annex 12 Evaluation Grid

Evaluation criterion	Evaluation Question		Information/ data required	Information source	Results
	Main Question	Sub Question			
Relevance	Are the Project Purpose and Intermediate Goal relevant to the needs of target group?	Needs of farmers in Bahr El Nour Command Area	・Needs of needs	・Farmers	According to the questionnaire survey, the farmers in the project area are satisfied very well with the improved irrigation facilities, irrigation water management, continuous flow, fair water distribution and the activities of WUAs. Therefore, the Project is well relevant to the needs of the farmers in the project area. Their current needs on agriculture are 1) control of subsurface drainage system during rice cultivation period, 2) introduction of more profitable crops and update of agricultural techniques, 3) marketing, 4) guarantee of continuous flow, 5) lining of field canals, and 6) construction of maintenance center (for assuring irrigation facilities such as pumps and pipelines.
		Needs of farmers in the Nile Delta area	・Opinions of persons concerned	・C/Ps	Needs of farmers in the Nile Delta area in agriculture are as follows. 1) Water management planning and farmers participation 2) Introduction of new agricultural techniques 3) Introduction of new crops which are more profitable and require less irrigation water 4) Marketing
	Are the aims of the Project relevant to the National Development Plan of Egypt etc?	Importance of irrigation improvement sector within the National Development Plan of Egypt etc.	・Political status or importance ・Opinions of persons concerned	・Fifth Five Year Plan for Socio-Economic Development (2002-2007)	One of the important policies for agriculture and irrigation sector in the Fifth Five-Year Plan for Socio-Economic Development (2002-2007) is improvement of water resources by rationalizing current water use and applying new irrigation systems. (The draft of the Sixth Five Year Plan for Socio-Economic Development (2008-2012) is under consideration, which is basically expected to maintain the issue of "improvement of water resources" as a high priority.). The MWRI made the National Water Resources Plan (NWRP) in January 2005. The plan describes both public and private actions in the future for ensuring optimal development and management of water resources. It specifies the policy to continue the irrigation improvement projects and strengthen the water users associations. The time horizon of the plan is the year 2017. Therefore, the aims of the Project are relevant to the National Development Plan of Egypt and the NWRP.
	Conformity to ODA policy of Japan.	Conformity of priority assistance subjects of Japanese Government.	・Priority assistance subjects of Japanese Government to Egypt	・Assistance policy of Japan (Ministry of Foreign Affairs) ・JICA country-wise implementation plan	The country assistance policy to Egypt is under revision at the Ministry of Foreign Affairs of Japan. According to the second draft of the policy, there are 3 priority areas, such as 1) sustainable growth and creation of employment opportunity, 2) poverty alleviation and improvement of quality of life, and 3) promotion of regional stability. One of the important aspects for the poverty alleviation and improvement of quality of life is expanding agricultural production including promotion of effective use of water resources. Also one of the priority issues in the JICA country-wise implementation plan is improvement of agricultural productivity and improvement of efficiency of water use. The Project aims improvement of agricultural productivity through introduction of efficient and effective irrigation improvement methods that are verified under the Project. Therefore, the Project is in conformity with ODA policy of Japan.

	Superiority of Japanese technologies in this field.		・ Japanese experience on water management field ・Comparison of other projects implemented by Egyptian government and donors	・ Japanese experts ・ C/Ps and Japanese Experts	As Japan has substantial experiences of the farmer's participation on irrigation management, its experiences in this field can be transferred to other countries with proper modifications to meet various situations. In case of this Project, the improved methods were developed jointly by the Egyptian staff and Japanese experts through adjusting Japanese experiences and technologies in accordance with Egyptian experiences and situations. Considering the achievements of the Project and flexibility above mentioned, it seems that the approach that the Project has taken is appropriate.
	Appropriateness of the project approach.	Appropriateness of approach	・ Needs of farmers ・ Opinions of persons concerned	・Farmers ・ C/Ps and Japanese Experts	Considering the achievements of the Project and flexibility above mentioned, it seems that the approach that the Project has taken is appropriate.
		Were there any other approaches which are more adequate as project approach?	・ Opinions of persons concerned	・ C/Ps and Japanese Experts	It might better if more emphasis was put on the aspects directly benefit farmers such as agricultural techniques. For example, a demonstration of different water use in sugar beet cultivation was carried out. This demonstration showed good results on water saving and increase of yield. Utilization of this results or extension of this technique is a subject to be considered.

Evaluation criterion	Evaluation Question		Information/ data required	Information source	Results
	Main Question	Sub Question			
Effective-ness	Achievement of Outputs		(Table of achievement)	・(Table of achievement)	(see the table of achievement attached)
	Is The Project Purpose Achieved? (Improved methods for the efficient and effective implementation of the IIP based on the full scale farmers' participation are verified in the project area.)	1) The farmers in the project area are satisfied with the improved methods.		・Questionnaire survey to farmers	(see the table of achievement attached)
		2) MWRI (Ministry of Water Resources and Irrigation) supports the improved methods.		・Questionnaire survey to MWRI	(see the table of achievement attached)

	Contribution of Outputs to achieve Project Purpose.	Were the Outputs enough to achieve the Project Purpose? Were its no wonder in the logic that "the Project Purpose would be achieved if all the Outputs were achieved?"	・Opinions of persons concerned	・C/Ps and Japanese Experts	It seems that when outputs are achieved its targets, the Project Purpose is achieved logically.
		Are there any other factors influenced to the effectiveness of the Project?	・Opinions of persons concerned ・Information on project implementation process	・Project progress reports ・C/Ps and Japanese Experts	It is not observed other factors influenced to the effectiveness of the Project.
	Factors hampered to achieve the Project Purpose.	Degree of influence by personnel change or resignation of C/Ps	・Number of persons changed or resigned, and its reasons	・Project data ・C/Ps and Japanese Experts	There were personnel changes of C/Ps during the extension period, but those were not affected so much for achieving the Project Purpose.
		Other factors influenced.	・Opinions of persons concerned	・Project progress reports ・C/Ps and Japanese Experts	Delay of the construction works caused delay of conduction of the trainings to leaders of WUAs and WUF. Because of the delay of the trainings, management capacity of them are not enhance well enough yet.

Evaluation criterion	Evaluation Question		Information/ data required	Information source	Results
	Main Question	Sub Question			
Efficiency	Were quality, quantity and timing of Inputs to the Project appropriate compared to outputs achieved by the Project?	Appropriateness about number, specialty, period, timing of dispatch of Japanese Experts.	・Record of dispatch of Japanese Experts ・Opinions of persons concerned	・Data of the Project ・C/Ps and Japanese Experts	Three long-term experts (total 72 M/M) and 2 short-term experts (total 2.3 M/M) have been dispatched during the extended period of the Project (from March 2005 up to now). These dispatches of experts are appropriate.
		Appropriateness about kind, quantity and timing of installation of equipment.	・Record of procurement of equipment, Situation of use of equipment ・Opinions of persons concerned	・Data of the Project ・C/Ps and Japanese Experts	Because necessary equipment for the Project has been provided mostly before March 2005, requirement of equipment was a little. Only 3 units of laptop computer were procured. Provision of equipment is appropriate.

<table>
<tr><td></td><td></td><td>Appropriateness about number, training contents, training period and timing of counterpart training in Japan.</td><td>・Record of counterpart training in Japan
・Opinions of persons concerned</td><td>・Record of C/P training in Japan
・C/Ps and Japanese Experts</td><td>Four (4) persons participated in the counterpart training in Japan. Contents of training were appropriate to enhance capability of counterparts and for more active engagement to the project activities. Some counterparts consider that more occasions for the training in Japan would have made substantially more progress.</td></tr>
<tr><td></td><td></td><td>Appropriateness about local expenditure by Japanese side</td><td>・Local operation expenses borne by the Japanese Side
・Opinions of persons concerned</td><td>・Data of local operation expenses
・C/Ps and Japanese Experts</td><td>Expenses of Japanese side by year are as follow.
<table><tr><td></td><td>FY2005</td><td>FY2006 (Planned)</td><td>Total</td></tr><tr><td>Expenses in LE</td><td>322,051</td><td>328,540</td><td>650,591</td></tr><tr><td>(converted into 1,000 Yen)</td><td>6,371</td><td>6,743</td><td>13,115</td></tr></table>Expenses of Japanese side has been utilized appropriately for traveling expenses including fuel, maintenance of equipment, salary for JICA employed staff etc.</td></tr>
<tr><td></td><td></td><td>Appropriateness about number, timing of assignment and capability C/P.</td><td>・Record of assignment of C/Ps
・Opinions of persons concerned</td><td>・List of C/P assigned
・C/Ps and Japanese Experts</td><td>Counterparts were assigned appropriately in terms of number and capability. At present, 28 counterparts were assigned (among them, 10 persons are full-time counterpart). The number of counterparts was increased in the extended period from 22 to 28. (6 persons were increased.) 5 counterparts changed their position or retired. In such case, successors were assigned timely.</td></tr>
<tr><td></td><td></td><td>Appropriateness about quality, size and usefulness of building and facilities utilizing for the Project.</td><td>・Situation of building and facilities utilizing by the Project.
・Opinions of persons concerned</td><td>・Situation of facilities and equipment
・C/Ps and Japanese Experts</td><td>The land, buildings and facilities such as project offices, expert's rooms and other related facilities for the Project have been provided in Cairo, Tanta, Kafr El Sheikh and Biyala. These facilities are appropriately utilizing for the Project.</td></tr>
<tr><td></td><td></td><td>Appropriateness about budget expenditure by Egyptian side</td><td>・Budget expenditure by Egyptian side to the Project
・Opinions of persons concerned</td><td>・Data of budget allocation
・C/Ps and Japanese Experts</td><td>Expenses for the operation and maintenance cost, such as those for vehicles, laser land leveling machinery and tractors, salary for the drivers and secretaries have been provided by Egyptian side. Budget on construction works for the irrigation facilities improvement in the project area have been also provided by Egyptian side.
The following expenses for "Fuel, equipment, consumable item, temporary employment etc." are total expenses for the Irrigation Improvement Sector in Cairo. The expenses for the Project are included in these expenses. (1) Expenses (operational budget) of Egyptian side by year are as follow.
(Unit LE)
<table><tr><td></td><td>FY04/05</td><td>FY05/06</td><td>FY06/07 (from July to November)</td><td>Total</td></tr><tr><td>Expenses in LE</td><td>36,416,285</td><td>67,129,359</td><td>17,110,715</td><td>120,656,359</td></tr></table>Remarks: Fiscal Year of Egypt is from July to June.

The expenses for "Construction (1st, 2nd and 3rd contract)" are the construction cost in the project area.</td></tr>
</table>

					Construction cost for irrigation facility (Unit LE) Construction (1st contract) 4,675,000 Construction (2nd contract) 6,800,000 Construction (3rd contract) 8,238,000 Total 19,713,000
	Appropriateness of project management	Did the Joint Steering Committee and Joint Site Coordinating Committee function appropriately?	・Opinions of persons concerned	・Project progress reports、etc. ・C/Ps and Japanese Experts	The Joint Steering Committee meetings have been held 3 times during the extension period. (8 times in the whole project period of 7 years). The Joint Site Coordinating Committee meetings have been held 4 times (5 times in the whole project period). These meetings have functioning appropriately for information sharing, problem solving and decision making.
		Did periodical meeting function appropriately?	・Opinions of persons concerned	・C/Ps and Japanese Experts	The frequent informal meetings with project site manager and counterparts have been also functioning appropriately.
		Ownership of Egyptian side	・Opinions of persons concerned	・C/Ps and Japanese Experts	As effect of conduction of training and meetings for the governmental staff, the project activities and the improved methods are recognized in the IIS and the irrigation sector etc. in MWRI.
	Factors promoted efficiency of the Project.		・Opinions of persons concerned	・C/Ps and Japanese Experts	The factors that facilitated the efficiency are: 1) appropriate assignment of counterparts in terms of number and capability, 2) good relation and cooperation among counterparts and Japanese experts, 3) cooperative attitude of farmers and members of WUF, and, 4) counterpart training in Japan for decision makers in order to have proper recognition and knowledge on water management in Japan and confirm the importance of the Project.
	Factors hampered that influenced on efficiency of the Project.	Stability of C/Ps engaged in the Project	・Compare planned assignment of C/Ps and present assignment of C/Ps	・Project progress reports、etc.	5 counterparts changed their position or retired. In such case, successors were assigned timely. Therefore, influence due to change of C/Ps is limited.
		Other factors influenced.	・Opinions of persons concerned	・C/Ps and Japanese Experts	• Delay of implementation of construction works • Objection of some farmers to the Project • Inappropriate maintenance of pumps

A-5

Evaluation criterion	Evaluation Question		Information/ data required	Information source	Results
	Main Question	Sub Question			
Impact	Is there expectation of achievement of 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."	By the year 2017 in a certain districts of Bahr Tera, (1) New approaches of the IMP are disseminated.		・Survey conducted by MARI	(see the table of achievement attached)
		(2) Indicators of agricultural productivity.		・Statistics of MALR	(see the table of achievement attached)
		(3) Improvement of the farmers' living condition.		・Survey conducted by MWRI	(see the table of achievement attached)
	Is there expectation of achievement of Intermediate Goal "Improved methods for the efficient and effective implementation of the IIP raise irrigation efficiency and agricultural productivity in the project area."	In five years after the end of the Project, (1) Irrigation efficiency increases.		・Survey conducted by MWRI	(see the table of achievement attached)
		(2) Fair water distribution is improved.		・Survey conducted by MWRI	(see the table of achievement attached)
		(3) Indicators of agricultural productivity per unit of land increase.		・Statistics of MARI and survey conducted by MWRI	(see the table of achievement attached)
	Are there cases that the improved methods have been applied or will be utilized in other project or future plan?		・Opinions of persons concerned	・C/Ps and Japanese Experts, persons concerned at the Ministry of Water Resources and Irrigation	Because of the recognized usefulness some of the methods verified in the Project are incorporated into the integrated irrigation improvement management projects financed by the World Bank (IIIMP, started this year). Examples of incorporated methods are as follows: 1) Establishment of WUA and WUF in early stage 2) Field survey with farmers' participation before designing of irrigation facilities 3) Explanation of facility design to farmers before commencement of construction works Also IIS decided to incorporate the concept about acquisition of farmer's agreement before implementation of the construction works into IIP2 (KfW assisted project, started in December, 2005 with the project area of 44,000 fed).

	Other positive and negative impacts of the Project.	Other positive/ negative effects/ impact	・Opinions of persons concerned	・C/Ps and Japanese Experts	There are many positive effects because of the improvement of irrigation facilities, establishment and strengthening the WUAs and the WUF in terms of water management, and provision of continuous flow to the delivery canal of the project areas, as follows: 1) Fairer water distribution at mesqa levels (between beginning point and end point of mesqa canal) and also among upstream, midstream and downstream of the delivery canal, 2) Good on-farm water management in terms of quantity, timing and reliability, 3) Functions of WUAs and WUF not only for good water management but also for problem solving, 4) Less irrigation time at field, 5) Less irrigation cost, and, 6) Increase of yield in some part of the project area, especially midstream and downstream of the delivery canal. There are also other positive impacts, as follows: 1) Reduction of conflicts among farmers and their complaints because of the fair irrigation water distribution and coordination by WUAs and WUF, 2) Good cooperation among the farmers, between the farmers and the project staff, and also between farmers and the district engineer, 3) Efficient land use, where old mesqa canal was located, filled up and used as field path, making transportation of materials and products easier, 4) Emerging good relationship with the cooperative in the course of implementation of the Project (Further assistance can be expected on agricultural techniques from the cooperative to farmers), and, 5) Awareness raising activities, including those conducted by the sub-committee of Environment and Gender of WUF. These impacts contribute to achieving the Overall Goal and the Intermediate Goal

Evaluation criterion	Evaluation Question		Information/ data required	Information source	Results
	Main Question	Sub Question			
Sustain-ability	Importance of irrigation improvement in National Development Plan and other related policies.		・National Development Plan and other related policies	・National Development Plan and other related policies etc.	As mentioned already, one of the important policies of the MWRI is better use of existing water resources by improving the efficiency of water management systems, and a new integrated irrigation improvement management project (IIIMP) has just started for the period from 2006 to 2014. Thus, it is evident that the importance of irrigation improvement will continue. In addition, the Egyptian government put together its thoughts as a draft of "Vision and Strategy for MWRI Institutional Reform" with German Technical Cooperation (GTZ) and Royal Netherlands Embassy in May, 2005. The draft specifies the several strategies such as participation, decentralization and cost recovery for the purpose of more sustainable, equitable and efficient use of water resources. To realize the strategy, a new legal arrangement and a new financial framework are proposed for future consideration.
	Importance and recognition of the Project at the Ministry of Water Resources and Irrigation. Is there policy clearly mentioned that the improved methods verified by the Project will be utilized for other irrigation projects in other areas?		・Opinions of persons concerned	・Executive staff of the Ministry of Water Resources and Irrigation	IIS of the MWRI recognizes good achievements and usefulness of the improved methods of the Project. IIS prepared 2 years Action Plan to follow up activities at the project area for securing sustainability of the Project through strengthening the WUAs and the WUF. This Action Plan includes outline of activities, schedule of the plan and staff assignment, in which certain number of counterparts who have been engaged in the Project are assigned for the implementation. While it may be necessary to re-examine this Action Plan for further improvement, the plan itself clearly shows the will of the relevant governmental agencies.
	Does the Ministry of Water Resources and Irrigation have capability to continue and manage the Project activities?	Capability of the Ministry of Water Resources and Irrigation on operation and management of the activities in the project area after completion of JICA cooperation: (Will necessary number of staff with appropriate technical knowledge and skills will be assigned even after the completion of the Project?)	・Staff assignment and continuity ・Opinions of persons concerned	・Persons concerned of the Ministry of Water Resources and Irrigation	As mentioned already, IIS prepared 2 years Action Plan after the termination of the project. This Action Plan includes follow up activities to WUAs and WUF, schedule and staff assignment. Certain number of C/Ps who worked in the filed under the Project is going to be assigned. Those C/Ps have very good capacity and experience. Still it may be necessary to finalize this Action Plan, but by implementing the Action Plan, it will be very possible to strengthen capability of WUAs and WUF and ensure sustainability of water management of the project area.
		Is there mechanism (staff assignment, roles and activities of staff, preparation of related law etc.) for extending the improved methods (improved methods for irrigation improvement project (IIP) verified by the Project (WMIP)) and being established in the project area?	・Opinions of persons concerned	・C/Ps and Japanese Experts	Already mentioned above.

		Is there plan or mechanism for extending the improved methods (improved methods for irrigation improvement project (IIP) verified by the Project (WMIP)) in other irrigation improvement project (IIP) areas in Nile Delta?	· Opinions of persons concerned	· C/Ps and Japanese Experts	Already mentioned above.
		Financial situation and future budgetary plan of the Ministry of Water Resources and Irrigation	· Data of financial situation of MWRI · Opinions of persons concerned	· Data on budget and future budgetary plan · C/Ps and Japanese Experts	Egyptian government has provided budget not only for expenses related to operation and maintenance of the Project and also expenses for construction works in the project area. Main follow-up activities including those specified in the Action Plan are training for WUAs and WUF, which meet the farmers' needs and draw the particular attention of MWRI; therefore, necessary budget will be secured by MWRI.
	WUF and WUA's capacity on operation and management	Can WUF and WUAs secure necessary budget for water management in future? (Collection of irrigation operation fee)	· Actual situation and future prospect on water collection by WUF and WUAs	· Actual situation on water collection by WUF and WUAs · Persons concerned of WUF and WUAs	All the WUAs are collecting expenses from farmers necessary for operation and maintenance of mesqa irrigation facilities. Regarding the fund collection for future pump replacement, 67% of WUAs are collecting the fee, and others are discussing who should pay such fund (land owner or planter). It is expected that the WUAs can continue collecting necessary expenses for water management through implementation of the Action Plan. In case of the WUF, the collection of irrigation operation fee is not possible due to the lack of necessary legal arrangement (a law is under examination by the Egyptian government). Therefore, certain measures are necessary to secure activities of the WUF until approval of the law.
		Do WUF and WUAs have appropriate capacity on water management in sustainable way?	· Opinions of persons concerned	· Farmers, C/Ps and Japanese Experts	Several trainings have been conducted under the Project for capacity enhancement of the WUAs and the WUF on water management, administration, and O&M of irrigation facilities. It seems that the WUAs are functioning well, judged from the results of the monitoring survey. However, according to some counterparts, it may be necessary to conduct further trainings in order to strengthen the capacity of the WUAs and the WUF.
	Will techniques transferred by the Project become	Is there any discrepancy (gap) between the improved methods verified under the Project and needs?	· Opinions of persons concerned	· Farmers · C/Ps and Japanese Experts	Not observed

	established?	Is capacity of C/Ps on utilization of the manual for the construction control appropriate? Have C/Ps appropriate capacity on teaching contents of the manual to other engineers etc?	・Opinions of persons concerned	・C/Ps and Japanese Experts	C/Ps in charge have good capacity on utilization of the manual for the construction control. Because of their capacity and the Arabic version of the manual, they can teach contents of the manual to other engineers etc.
		Do C/Ps have appropriate capacity to conduct training on the delivery canal and the mesqa level water management to representatives of WUF and WUAs?	・Opinions of persons concerned	・C/Ps and Japanese Experts	The counterparts of the Project have good capacity in implementing construction works with farmer's participation, establishing WUA and WUF, and conducting trainings on water management, administration, and O&M of irrigation facilities for leaders of WUAs and WUF. While it is very important to disseminate the improved methods to other wider areas in order to improve water use efficiency, as the counterparts pointed out, the number of staff who is capable of disseminating the methods is very limited because the capacity will be built only by practical experiences. It may be difficult to simply apply the improved methods to other areas due to the nature as being a small scale pilot project. Also, in order to improve water use efficiency, the recent projects including the IIIMP, which the MWRI is strongly prompting, deal with various issue such as drainage, subsurface water, and environmental issues besides irrigation. This means that the methods should be merged with other tasks to address new issues mentioned above in an integrated way. Another point to be taken into consideration is enhancement of water use efficiency not only at the mesqa levels but also at the higher levels, i.e. branch and main canal is crucial for more efficient water use. Therefore, both further capacity building of the MWRI staff to cope with new issues and establishment of an organizational system for dissemination are essential.
		Do C/Ps have necessary capacity to utilize and extend the improved methods?	・Opinions of persons concerned	・C/Ps and Japanese Experts	
		Will equipment procured by the Project be maintained well?	・Opinions of persons concerned	・C/Ps and Japanese Experts	Equipment is maintained well in general and will be maintained well in future also. Certain pieces of equipment are not in use due to the lack of people capable to operate them. Some actions should be taken to improve the situation, such as holding training courses with internal resources or with training from outside.
	What are major factors that facilitated or hampered the sustainability, or could facilitate or hamper in future?		・Opinions of persons concerned	・C/Ps and Japanese Experts	Although the counterparts have good capacity on their field in charge (water management, farmers' organization, and agronomy, it is necessary to work as a group or team in order to disseminate the improved methods to other wider areas for the dissemination.

Implementation Process

Evaluation Question		Information source	Data collection method
Main Question	**Sub Question**		
Implementation compared between the planned and the actual	Is the any problem on progress of implementation? If available, what kinds of problems.	・Project progress report ・C/Ps and Japanese Experts	The progress of the activities was delayed in general because much more time for obtaining two-third of agreements in the upstream area was necessary. This delay and modification of the design of irrigation facilities caused start of construction works.
Appropriateness of methodology of technical transfer	Is the any problem on methodology of technical transfer? If available, what kinds of problems. Is there any solution?	・Project progress report ・C/Ps and Japanese Experts	It seems that methodology of technical transfer is appropriate. The project staff have acquired good experiences especially through on-the-job training.
Appropriateness of project management	Appropriateness of monitoring system	・C/Ps and Japanese Experts	As mentioned, the Joint Steering Committee meeting and the Joint Site Coordinating Committee meeting has been held periodically and these meetings has been functioned appropriately for information sharing, problem solution and decision making
	Appropriateness of communication in the Project	・C/Ps and Japanese Experts	There is good communication between counterparts and Japanese experts, and also good coordination on the project activities between IIS (Irrigation Improvement Sector) and other concerned sections of the Ministry (Ministry of Water Resources and Irrigation).
	Relationship among the Project, JICA headquarters and JICA Egypt office	・Japanese experts	JICA experts visit the JICA Egypt office every week to talk with JICA staff in charge. Relationship among them is good. JICA experts are keeping communication with JICA headquarters by E-mail.
Appropriateness of assignment of counterpart staff		・C/Ps and Japanese Experts	As mentioned, 28 counterparts were assigned (among them, 10 persons are full-time counterpart). The number of counterparts was increased in the extended period from 22 to 28. (6 persons were increased.) 5 counterparts changed their position or retired. In such case, successors were assigned timely. Therefore, assignment of counterparts is appropriate.
Recognition on the Project by the implementing agency		・Executive staff of the Ministry of Water and Irrigation ・C/Ps and Japanese Experts	The executive staff of MWRI recognizes that the Project is producing good results in the project area and the improved methods are very useful.
Recognition on the Project and participation to the Project by the target group and related organizations		・Farmers Organizations, related organizations, C/Ps and Japanese Experts	66 WUAs have been established with more the two-thirds of farmers agreed the improvement irrigation facilities and establishment of WUA. As a whole, the ratios of agreement were 78% from land owners and 82% from planters respectively.
Problems and constraining factors in the project implementation process		・C/Ps and Japanese Experts	The project staff had difficulty in getting agreements from the farmers especially in the upstream area of the Bahr El Nour delivery canal.

Table of achievement (Achievement of the Overall Goal, Project Purpose and Outputs at the time of evaluation)

	Items		Information/ data required (Indicators)	Information source	Achievement
	Main items	Sub items			
Achieve-ment	Prospect of achievement of the 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.)		By the year 2017 in a certain districts of Bahr Tera, 1) New approaches of the IIP are disseminated.	Survey conducted by MARI	Farmers living in the surrounding area of the Project are expecting MWRI to implement IIPs with new approaches. As there is no plan to implement IIP in Bahr Tera area at present, it is difficult to prospect that the new approaches of the IIP will be disseminated in a certain area of Bahr Tera by the year 2017. On the other hand, MWRI has an idea to apply the methods to the World Bank financed project (IIIMP, started this year) because MWRI understands the usefulness of them. For example, application of the following methods is considered. 1) Establishment of WUA and WUF at early stage 2) Conduction of field survey with farmers before designing of irrigation facilities 3) Explanation of facility design to farmers before commencement of construction works Therefore, there is an expectation of disseminating several methods in IIIMP area in the Nile Delta. While it should be noted that the irrigation improvement is only a part of the IIIMP, which takes more integrated approach including drainage and residential issues, the outcomes of the Project may contribute to the IIIMP with proper, on-farm irrigation, sub-surface water consideration of those issues.
			2) Indicators of agricultural productivity.	Statistics of MALR	It is expected that keeping appropriate water management and fair water distribution will bring the yield increase. In order to evaluate the degree of yield increase precisely, periodical sampling survey of yield should be conducted in the area where the improved methods are disseminated. As for agricultural productivity, not only the increase of yield, but also reduction of irrigation time and labor time should be taken into consideration.
			3) Improvement of the farmers' living condition.	Survey conducted by MWRI	This indicator is not defined well, and it is difficult to evaluate at the present time. It may be better to change this indicator. For example, increase of farmer's net income from agriculture may be a new indicator. Anyway, periodical survey on an new indicator has to be considered. It is also difficult to find rationales to keep the indicator for improvement of living condition, considering that the Overall Goal only includes "increase of agricultural productivity and the farmers' net income". As mentioned above, because there is no plan to implement IIP in Bahr Tera area at present, it is difficult to prospect that the new approaches of the IIP will be disseminated in that area and contribute increase of agricultural productivity and improvement of the farmers' living condition. Proposal for a new set of indicators to evaluate the Overall Goal Since the Overall Goal does not specify where the improved methods should be disseminated, it is better to delete the reference of "Bahr El Nour" in the Indicator 1. Then, the proposed indicators will read as follows: Indicators: 1) By the year 2017 in certain districts in the Nile Delta, new approaches of the IIP are disseminated. 2) By the year 2017 in certain districts in the Nile Delta, indicators of agricultural productivity increase. 3) By the year 2017 in certain districts in the Nile Delta, the farmers' net income increases.

<table>
<tr><th colspan="2">Items</th><th>Information/ data required (Indicators)</th><th>Information source</th><th>Achievement</th></tr>
<tr><th>Main items</th><th>Sub items</th><th></th><th></th><th></th></tr>
<tr><td colspan="2" rowspan="3">Prospect of achievement of the Intermediate Goal
(Improved methods for the efficient and effective implementation of the IIP raise irrigation efficiency and agricultural productivity in the project area.)</td><td>In five years after the end of the Project,
1) Irrigation efficiency increases.</td><td>Survey conducted by MWRI</td><td>1) Irrigation efficiency
It is reasonably considered that irrigation efficiency increased because of the improvement of irrigation facilities, while it is difficult to measure the actual improvement of irrigation efficiency. Since the substantial increase of the irrigation efficiency mostly takes place when the new facilities are introduced, it is difficult to find rationales to have this indicator for future evaluation.
There is a related concern that the reduction of total water use in whole project area by the improvement of irrigation facilities was not clearly demonstrated. Some measurement for this purpose should be considered.

2) Demonstration of new techniques on sugar beet cultivation
The demonstration of new techniques on sugar beet was conducted for reducing water requirement in the winter season of 2005/2006.
The demonstration showed the possibility that water requirement may decrease by changing width of ridge with the yield increase at the same time. Lectures on the successful results of the demonstration were given to the farmers in the project area.</td></tr>
<tr><td>2) Fair water distribution is improved.</td><td>Survey conducted by MWRI</td><td>According to the questionnaire survey to farmers conducted in 2006, 90% of respondents consider that water distribution at mesqa levels this summer was fairer than before the improvement of irrigation facilities. They also consider that water supply has been improved in terms of quantity (96%), timing (95%) and reliability (95%). As the fair water distribution has been already realized in the project area, it is important to sustain this fair water distribution through further strengthening of capacity of WUAs and WUF, and the periodical monitoring on the situation of water distribution. From the viewpoints of importance of activities of WUAs and WUF, it is better replace current indicator with a new one regarding whether the WUAs and WUF are functioning properly.</td></tr>
<tr><td>3) Indicators of agricultural productivity per unit of land increase.</td><td>Statistics of MARI and survey conducted by MWRI</td><td>Based on the above mentioned questionnaire survey, 32% of respondents answered that crop yield this summer increased compared with the yield before the implementation of IIP. Detail data by location is as follow.
(Number of total respondents: 108)
<table><tr><th rowspan="2">Yield</th><th colspan="3">Location of mesqa</th><th rowspan="2">Total (%)</th></tr><tr><th>Upstream (%)</th><th>Midstream (%)</th><th>Downstream (%)</th></tr><tr><td>Became higher</td><td>13</td><td>53</td><td>42</td><td>32</td></tr><tr><td>Same</td><td>73</td><td>44</td><td>58</td><td>60</td></tr><tr><td>Lower</td><td>15</td><td>3</td><td>0</td><td>7</td></tr><tr><td>Total</td><td>100</td><td>100</td><td>100</td><td>100</td></tr></table></td></tr>
</table>

	Items		Information/ data required (Indicators)	Information source	Achievement
	Main items	Sub items			
					As shown in the table, this Project might have an impact on yield increase especially for the farmers in the midstream and downstream areas. Another fact is that the farmers interviewed by the terminal evaluation team answered rice yield increased from 3.5 tons/fd to 4.0 tons/fd. In order to measure the increase of yield, periodical sampling survey in the project area would be necessary, which may be difficult after the completion of the Project. However, the questionnaire survey to the farmers can be a good instrument for future evaluation. Proposal for a new set of indicators for the Intermediate Goal Based on the consideration above, it is recommended to have a new set of indicators as follows: Indicators: 1) Farmers' satisfaction level with the roles and functions of WUAs and WUF increases. 2) Agricultural productivity such as crop yield increases.

Items		Information/ data required (Indicators)	Information source	Achievement
Main items	Sub items			
Achievement of the Project Purpose (Improved methods for the efficient and effective implementation of the IIP based on the full scale farmers' participation are verified in the project area.)		By the end of the project period, 1) The farmers in the project area are satisfied with the improved methods.	Questionnaire survey	At the time of the previous evaluation of the Project (October, 2004), 80% of farmers were satisfied with the methods to give necessary information about the Project to the farmers and to obtain farmers' agreement before starting construction work. Some results on farmers' satisfaction on the Project are as follows. Farmers' satisfaction level with the improved methods (excerpted from questionnaire survey in 2004) According to the questionnaire survey to farmers in the project area conducted after the summer cropping season in 2006, degrees of satisfaction with the improved methods are as follows. Farmers' satisfaction level with the improved methods (excerpted from questionnaire survey in 2006) (Number of respondents is 108)

	Satisfied	Not satisfied	Not sure	Number of sample
The methodologies followed to give necessary information about the Project and obtaining sufficient farmers' agreement before starting construction work	80%	11%	9%	120 farmers
The methodology of walking through mesqa to decide on the construction of future irrigation facilities	93%	4%	3%	120 farmers
The improved irrigation facilities	81%	15%	4%	48 farmers
The on-farm water management	88%	2%	10%	48 farmers

	Item	Satisfaction rate (%)
1	Farmers satisfied with the Project	96%
2	Farmers satisfied with irrigation in this summer in general	99%
3	Farmers satisfied with design procedures (walkthrough with farmers in order to reflect farmers needs and requests)	90%
4	Farmers satisfied with the methodology on farmers' participation in construction management through the Construction Coordination Committee 's activity	100%
5	WUA leaders satisfied with the methodology on providing necessary information about the project to farmers and obtaining sufficient farmers' agreement before starting construction works.	94%
6	Farmers satisfied with the improved irrigation facilities	86%
7	Farmers satisfied with on-farm water management after improvement of mesqa level irrigation facilities.	96%
8	Farmers considering that WUA is functioning well in term of water management (mesqa level)	92%
9	Farmers considering that WUF is functioning well in term of water management	60%

	Items		Information/ data required (Indicators)	Information source	Achievement
	Main items	Sub items			
					The survey results reveal that the farmers in the project area are highly satisfied with the improved methods and current water management, while there is room for improvement in raising farmer's recognition about the function of WUF. According to the interview with WUF core member and WUA leaders conducted by the terminal evaluation team, major effects of the Project are following aspects. - Benefit of the continuous flow - Fair water distribution - Reduction of O&M cost - Increase of yield especially in the downstream area - Good cooperation among farmers, between farmers and the project staff, and between farmers and the district engineer.

	Items		Information/ data required (Indicators)	Information source	Achievement
	Main items	Sub items			
			2) MWRI supports the improved methods.	Questionnaire survey	At the time of the previous evaluation of the Project (October, 2004), it was judged that MWRI supported the improved methods of the Project because the counterparts had recognized the importance of the methods and the approach of farmers' participation started to be considered by the MWRI staff involved in World Bank projects (IIP), which are carried out in other areas. A questionnaire survey on the Project was conducted to the counterparts and related staff of MWRI in 2006. Regarding the usefulness of the methods and their applicability to other areas, the results are as follows.

Usefulness of the improved methods verified by the Project (%)

Item	Improved Method	Very Useful	Useful	Not useful so much	I don't know	No answer
1	Survey of the present condition of the existing irrigation facilities and water use	88	12	0	0	0
2	Awareness raising of ownership of the farmers through WUA establishment and designing of irrigation facilities with farmers participation	83	17	0	0	0
3	Obtain agreements from more than 2/3 of farmers about establishment of WUA and construction plan of facilities	48	44	4	0.0	4
4	Establishment of WUAs and WUF simultaneously before implementation of construction works	84	16	0	0	0
5	Establishment of the construction coordination committee in WUAs and WUF to solve problems rapidly	67	29	4	0	0
6	Implementation of trainings about administration of WUA, mesqa level water management (valve rotation), operation and maintenance of pump	83	13	0	0	4
7	Implementation of workshop about preparation of administrative rules and activities plan of WUF, and OJT training for practicing activities plan	75	21	0	4	0
8	Establishment of the WUF Sub-committees for appropriate water management and O/M of facilities, and implementation of workshop about delivery canal level water management	71	25	0	4	0
9	Strengthening of coordination and linkage among WUF and related organizations	71	25	0	0	4

	Items		Information/ data required (Indicators)	Information source	Achievement
	Main items	Sub items			

Applicability of the improved methods to other irrigated areas (%)

Item	Improved Method	Very Useful	Useful	Not useful so much	I don't know	No answer
1	Survey of the present condition of the existing irrigation facilities and water use	75	17	0	0	8
2	Awareness raising of ownership of the farmers through WUA establishment and designing of irrigation facilities with farmers participation	46	42	4	0	8
3	Obtain agreements from more than 2/3 of farmers about establishment of WUA and construction plan of facilities	46	25	8	8	13
4	Establishment of WUAs and WUF simultaneously before implementation of construction works	67	25	0	0	8
5	Establishment of the construction coordination committee in WUAs and WUF to solve problems rapidly	38	42	12	0	8
6	Implementation of trainings about administration of WUA, mesqa level water management (valve rotation), operation and maintenance of pump	75	13	4	0	8
7	Implementation of workshop about preparation of administrative rules and activities plan of WUF, and OJT training for practicing activities plan	63	25	0	4	8
8	Establishment of the WUF Sub-committees for appropriate water management and O/M of facilities, and implementation of workshop about delivery canal level water management	29	59	0	4	8
9	Strengthening of coordination and linkage among WUF and related organizations	63	25	4	0	8

Based on the results, the usefulness of the improved methods is considered to be high.

	Items		Information/ data required (Indicators)	Information source	Achievement
	Main items	Sub items			
					The applicability of the improved methods is considered to be high in general, since the sum of "Very useful" and "Useful" are higher than 80% with the only exception of Item No.3. It should be noted, however, that evaluation points of "very useful" are lower than those of the usefulness. In particular, the points are considerably low for "Awareness raising of ownership of the farmers through WUA establishment and designing of irrigation facilities with farmers participation (Item No. 2)", "Establishment of the construction coordination committee in WUAs and WUF to solve problems rapidly (No.5)", "Establishment of the WUF Sub-committees for appropriate water management and O&M of facilities", and "Implementation of workshop about delivery canal level water management (No.8)". Based on the above analysis, it is reasonable to say that MWRI supports the improved methods. In order to make the methods more applicable, it is desirable that the specific features of the improved methods should be summarized by the end of the Project.
	Are Outputs producing as planned?	Field 1. Improvement of irrigation facilities - Implementation method for improvement of irrigation facilities is improved	By the end of the project period, 1) Improvement plan of irrigation facilities is utilized.	Record of the Project	At the time of the previous evaluation of the Project (October, 2004), the improvement plans had been made for 55 mesqas out of 60 mesqas (total number of mesqas at that time). Construction works had been completed only in 3 mesqas and were underway in 8 mesqas. Irrigation facilities of 65 mesqas have been improved based on each improvement plan out of 67 mesqas (Since some mesqas were divided, the total number have increased). As for the remaining 2 mesqas, farmers wanted to keep using the existing facilities with saqia (traditional water lifting facility for irrigation); therefore, the new irrigation facilities were not introduced. Construction works for 65 mesqas have been completed and the all improved irrigation facilities were handed over to the respective Water Users' Associations (WUAs). Through this process, the counterparts have understood the importance to grasp farmer's needs and opinions on irrigation facilities improvement from the planning stage, especially by conducting certain activities together with farmers such as field survey on water use situation and walk through . According to the results of the questionnaire survey conducted in 2006, 90% of farmers are satisfied with the design procedure such as walk through.

	Items		Information/ data required (Indicators)	Information source	Achievement
	Main items	Sub items			
			2) Manual for construction control is utilized.	Record of the Project	Before starting the extension period of the Project, the manual for construction control in English was developed. During the extension period, an Arabic version of manual was made. (1) Preparation of the manual for construction control (Arabic version) The manual for construction control in English was prepared by February 2005 (before entering the extension period of the Project) and utilized for construction control. After then, the counterparts translated this English manual into Arabic for easy understanding. (2) Utilization of the manual for construction control The manual for construction control explains 1) recording methods of finished construction works by using photographs and recording sheets, and 2) usage of equipment for construction management. The counterparts have understood the importance and methods of recording the progress and completion of construction works. They have also instructed the contractors to take proper records of construction works. By utilizing the manual, the construction works during the extension period of the Project (the 3rd construction contract area) have been recorded almost successfully with appropriate recording sheets. Since the use of photographs was not carried out by contractors at a sufficient level, suggestion was made that the activity to take photographs should be specified in the bill of quantity of the tender documents. Regarding the use of equipment for construction management such as concrete hammers and tools for slump test, the counterparts have understood the usage and come to be able to utilize the equipment. (3) Establishment of the construction coordination committees Many problems arise in the course of the implementation of construction works, which are often the cases where the constructed facilities do not properly work or do not meet the farmers' needs. For preventing or minimizing such problems, establishment of the construction coordination committees have been started as a new idea under the Project. Before starting construction works at sites, the construction coordination committees have been established in the Water Users' Federation (WUF) and in each WUA. Main function of the construction coordination committee is coordination of farmers' requests on construction works. In the committee, the representatives of farmers (usually leaders of WUAs) have conveyed their members' voices. Also, the committee has the role of problem solving among farmers and the related officials including the counterparts before commencement of construction works. Since the system has worked properly, construction works did not face substantial delay, which are often the cases for the other IIPs.

<table>
<tr><th></th><th colspan="2">Items</th><th>Information/ data required (Indicators)</th><th>Information source</th><th>Achievement</th></tr>
<tr><th></th><th>Main items</th><th>Sub items</th><th></th><th></th><th></th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td>The construction coordination committee of WUF coordinated the schedule of the construction works of the 3rd contract and the irrigation schedule for summer crops, because continuous irrigation water had to be delivered during the summer crop season. Also, the construction coordination committee of WUF inspected the finished works throughout construction in terms of quality. In the case that some problems have arisen, the issues were discussed for the solution at the committee. Thus, the construction coordination committee made appropriate contribution for quality control.

(4) Farmers' satisfaction on the improved irrigation facilities
According to the results of the questionnaire survey conducted in 2006, 86% of farmers are satisfied with the improved irrigation facilities.</td></tr>
<tr><td></td><td></td><td></td><td>3) Appropriate water management is carried out by WUAs and the WUF.</td><td>Record of the WUAs' activities</td><td>Before starting the extension period (February 2005), improved irrigation facilities had been handed over only in 7 mesqas, where water management by WUAs just started from the winter crop season in 2004/2005.
By the time of the terminal evaluation, in all 65 mesqas, improved irrigation facilities have been handed over and water management is carried out by each WUA.

(1) Water management at mesqa level
A program on calculation of water requirement (an Excel sheet) was developed in order to make mesqa level irrigation schedule. This program calculates the necessary irrigation period of each mesqa's valve, and the results are summarized as valve schedule, based on which farmers operate the facilities. Valve schedules for all mesqas were developed, and related trainings such as those on valve schedule and operation of irrigation facilities for mesqa leaders and operators are ongoing.
Regarding the operation and maintenance (O&M) of pump facilities, trainings for pump operators have been conducted with the use of manual, which was developed under the Project. The manual explains O&M method of pump, points to notice and so forth.
Trainings conducted for the WUAs as of December, 2006
(figures in parenthesis are as of before the extension period)
<table>
<tr><th></th><th>Number of mesqa</th><th colspan="2">Number of mesqa received training</th></tr>
<tr><th></th><th></th><th>Water management (valve schedule)</th><th>Pump (O&M of pump)</th></tr>
<tr><td>1st contract</td><td>18</td><td>17 (2)</td><td>18 (2)</td></tr>
<tr><td>2nd contract</td><td>26</td><td>24 (0)</td><td>21 (0)</td></tr>
<tr><td>3rd contract</td><td>21</td><td>8 (0)</td><td>21 (0)</td></tr>
<tr><td>Total</td><td>65</td><td>49 (2)</td><td>60 (2)</td></tr>
</table></td></tr>
</table>

	Items		Information/ data required (Indicators)	Information source	Achievement
	Main items	Sub items			
					Although the construction works are in delay for the 3rd contract area, trainings for water management will be completed for all 65 mesqas by the end of the Project. According to the questionnaire survey to farmers conducted in 2006, 92% of respondents consider that their WUAs are functioning well in terms of water management at mesqa levels. The main reasons include the WUAs' roles for problem solving, arrangement of irrigation water and fair water distribution. From these results, it seems that WUAs are carrying out appropriate water management at mesqa levels.
					(2) Water management at WUF level Workshops and lectures on water management at delivery canal level (WUF level) have been conducted for irrigation engineers of Irrigation Sector (IS), engineers of Central Directorate- Irrigation Advisory Service (CD-IAS) and staff of cooperatives. Through these activities the concept of water management was clarified. As a result, a plan of activities for water management at WUF level was formulated. The WUF has decided a water distribution plan which consists of irrigation schedule at mesqa levels, mesqa rotation schedule in case of water shortage or intensive water use and so on. The WUF is also encouraging the farmers who irrigate illegally to cooperate with WUAs for fair water management. Summarizing the texts on water management at mesqa levels and delivery canal levels, a draft water management plan was formulated. A workshop has been held to review the WUF's activities based on the experiences for the previous summer season. According to the questionnaire survey, 60% of respondents answered "the WUF is functioning well in terms of water management", 4% for "No" and 36% for "Not sure". It seems that farmers' recognition on WUF is not high yet because farmers have few chances to see the WUF activities. The counterparts recognize the necessity of raising awareness of farmers on the WUF's roles and functions.
		Field 2. Farmers' Water Management Organization (WUA* & WUF*) - Formulation method for farmers' water management organization is improved	1) WUAs and a WUF are established.	Record of the Project	(1) Establishment of WUAs At the time of the previous evaluation of the Project (October, 2004), 29 WUAs were established out of 60 mesqas and a preparation committee of WUF was established. As mentioned previously, there are 67 mesqas in total in the project area at present. Irrigation facilities in 65 mesqas were improved. However, the existing irrigation facilities with saqias are still being utilized in the remaining 2 mesqas because farmers in the area want to keep the saqias in use. Therefore, irrigation facilities of the two mesqas were not improved. 66 WUAs were established in each mesqa, and they were registered officially. The project staff has been encouraging the farmers in the remaining mesqa to establish a WUA and join the WUF without success by the time of evaluation. Data on agreements obtained and establishment of WUAs are as follows.

	Items		Information/ data required (Indicators)	Information source	Achievement
	Main items	Sub items			

Establishment of WUA

	Number of WUA	Registered	Agreement		
			Land owner	Planter[1)]	Over 2/3
1st contract (mainly lower part of the project area)	18	18	308/387 (80%)	276/340 (81%)	18
2nd contract (mainly middle and upper part of the project area)	26	26	414/519 (80%)	407/470 (86%)	26
3rd contract (mainly middle and upper part of the project area)	23	22	347/449 (73%)	301/388 (78%)	22
Total	67	66	1050/1355 (77.5%)	981/1198 (81.9%)	66

Remark: 1) Planter: number of farmers actually cultivating = cultivating land owners + tenant farmers

More than two-thirds of farmers agreed the improvement plan of irrigation facilities and establishment of WUAs although the project staff had difficulty in getting agreements from the farmers especially in the upstream area of the Bahr El Nour delivery canal. As a whole, the ratios of agreement were 78% from land owners and 82% from planters respectively. The WUAs have been established in accordance with the procedure developed under the Project. One unique point of the procedure is to get agreements about the establishment of WUA and the improvement plan for irrigation facilities at the same time.

The WUF in Bahr El Nour was established in October 3, 2005. The assembly of the WUF invites the representatives of each WUA (total 67 representatives), and representatives of residential units (total 3 representatives), which comes to 70 participants in total. 5 members from each sub-area (upstream area, midstream area, and downstream area) and 3 representatives of residential units were elected as WUF Council members. As a result, the WUF Council has 18 members in total, from which 5 directors of WUF were elected. Moreover, 3 auditors were elected from the representative assembly members. (The structure of WUF: see Annex 11)

After the election of the directors of WUF, registration process of WUF started. In the process of the registration, it is necessary to have approval (decree) from the Minister for MWRI and the Undersecretary of Kafr El Sheikh of MWRI. After the getting the governmental approval, WUF was officially registered.

There are 4 sub-committees such as 1) solving problems, 2) irrigation, drainage and agriculture, 3) laser leveling and 4) environment and gender. WUF is very active in terms of the frequency of meetings and the contents of activities compared with other WUF.

	Items		Information/ data required (Indicators)	Information source	Achievement
	Main items	Sub items			

WUF signed a Memorandum of Understanding 1 (MOU1) and a Memorandum of Understanding 2 (MOU2). MOU1 is an agreement between WUF and Irrigation Improvement Sector (IIS) which confirms the intension towards the completion of construction works and establishment of WUAs. MOU2 is also an agreement between WUF and IS which clarifies each role of O&M of irrigation facilities after the completion of construction works. MOU2 has the significant role in assuring sustainability of WUF. MOU2 for the Project was signed on November 25, 2006.

(3) Administrative capacity of WUAs.

According to the preliminary results of the monitoring survey on WUAs conducted in 2006, administrative performance of WUAs is as follows.

Administrative performance of WUAs (excerpted from the monitoring survey in 2006)

	Every week	Every month	No meeting
1) Frequency of meeting	2%	98%	0%
	Yes		No
2) Making record of meetings	94%		6%
	Full		Partial
3) Keeping financial record	88%		12%
	Yes		No
4) Inspection of accountant	88%		12%

Judging from the data, it seems that most of the WUAs are functioning well at present in general, while some farmers pointed out that some WUAs are not necessarily functioning well. The counterparts also implied the needs of improvement for some WUAs. To assure the sustainability of WUAs, it is necessary for MWRI to give more trainings for WUA leaders and support their activities as much as possible.

	Items		Information/ data required (Indicators)	Information source	Achievement
	Main items	Sub items			
			2) Textbooks for leaders of farmers on rational water use and modernized farming are utilized.	Record of the Project	Draft materials for trainings for leaders of WUAs and WUF were developed and utilized for on-site trainings at the time of the previous evaluation of the Project (October, 2004). Following materials were newly developed during the extension period of the Project. 1) Pump training manual, which are being utilized at the trainings 2) Record of WUA for operation and maintenance 3) Financial management for WUA 4) Internal regulation of WUF 5) Activity plan of WUF In addition, the manual of on-farm water management was translated into Arabic for easier understanding of farmers. Improvement of training materials on financial management and sample formats for financial document is underway. The internal regulations of the WUF have been developed based on the former Articles of the WUF. The text for the internal regulations will be a part of the WUA & WUF manual, which is under preparation. The use of the materials for WUF is not necessarily appropriate. For example, the specific procedures in the internal regulations are sometimes not followed strictly. . In order to improve this situation, on-the-job trainings and workshops have been conducted under the Project, in addition to the lecture type trainings.
			3) Water fee is collected by WUAs.	Record of the WUAs' activities	After improved irrigation facilities at each mesqa were handed over, some WUAs started to use the facilities from winter season of 2004/2005. Therefore, no WUA collected at the time of previous evaluation (October, 2004). According to the results of the monitoring survey in 2005 conducted in the 1st contract area, it was confirmed that all WUAs paid the irrigation operation fee by cash or in kind. While the collected fees well covered the necessary expenses such as the salary of operators, fuel for pumps and O&M, only a few WUAs collected the expenses for pump replacement. Therefore, the project staff explained the necessity of collecting pump replacement fee to farmers at the trainings on WUA administration and the valve schedule. As a result, WUAs started to collect the pump replacement fee from this year. The preliminary results of a monitoring survey conducted after the summer season of the year 2006 shows that all surveyed WUAs (64 WUAs) are collecting irrigation operation fee and most of the WUAs can afford to cover the expenditure in this summer operation season. Moreover 67% of WUAs are colleting the pump replacement fee as a part of irrigation operation fee, while some WUAs are still discussing who should pay such fee (whether land owner or planter). Balances of income and expenditure in this summer season are as follows.

<table>
<tr><th></th><th colspan="2">Items</th><th>Information/ data required (Indicators)</th><th>Information source</th><th>Achievement</th></tr>
<tr><th></th><th>Main items</th><th>Sub items</th><th></th><th></th><th></th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td>Balances of income and expenditure of the WUAs
(Summer of 2006, excerpted from monitoring survey)
<table>
<tr><th>Balance of income and expenditure</th><th>surplus</th><th>deficit</th><th>Total</th></tr>
<tr><td>(1) Balance of income and expenditure (summer season) (without considering pump replacement fee)</td><td>98%</td><td>2%</td><td>100%</td></tr>
<tr><td>(2) Balance of income and expenditure (summer season) (considering pump replacement fee)</td><td>31%</td><td>69%</td><td>100%</td></tr>
</table>
The data indicates almost all the WUAs have the surplus in this summer if not considering the pump replacement. However, with the pump replacement cost included, only 31% of WUAs could balance their income with expenditure. In part, this is because some WUAs have not decided who should pay the pump replacement fee as mentioned above. For their sustainability, the WUAs should enhance awareness of the member farmers for this issue and some capacity building activities may help the situation.</td></tr>
<tr><td></td><td></td><td>(Field 3. On-farm water management

- Appropriate methods of on-farm water management are introduced)</td><td>(Manual for field water management is formulated.)

(This Output already achieved by February 2005)</td><td>(not applicable)</td><td>(This Output already achieved by February 2005, therefore it is not necessary to evaluate this output.)</td></tr>
<tr><td></td><td></td><td>Field 4. General Project Management
- Project activities and results are introduced to governmental staff properly.</td><td>1) Governmental staff understand the methods of the Project.</td><td>Record of training</td><td>At the time of the previous evaluation of the Project (October, 2004), the number of trainings carried out almost satisfied the indicators set at the beginning of the Project. On the other hand, preparations of training materials, conducting of training, and reviewing of training, which should have been done by the counterparts did not reach the sufficient level, and it was observed difficult to achieve it by self-act efforts. The Joint Steering Committee (JSC) and Joint Site Coordination Committee (JSCC) had been rarely held while internal meetings among the project site manager and the counterparts were held regularly.
The counterparts have come to be capable in presenting the situation of the Project through the meetings, which were held substantially more often in the extended period.</td></tr>
</table>

	Items		Information/ data required (Indicators)	Information source	Achievement
	Main items	Sub items			
					Several executive staff of the MWRI (e.g. Chairman of the Irrigation Department, Head of the Drainage Authority, and Undersecretary of CD-IAS), are the members of JSC of the Project. Therefore, they know the methods and activities of the Project well through the participation in the JSC meeting. Since the project staff is doing the activities in cooperation with the staff of these departments, the Project is well-known among them as a democratic project, allowing full participation of farmers. Meetings have been held for explaining the outputs of the Project to not only the IIS staff but also the MWRI staff in charge of the World Bank financed project and the water board project (average number of participants is 25-30). Through such occasions, the methods of the Project have been shared among most of the IIS engineers in Cairo, Tanta, and Kafr El Sheikh, and those in charge of the World Bank financed projects and the water board projects, ID engineers. Also they recognized that water management and administration of WUAs and WUF in the project area are substantially better than in the other IIP areas. Governmental staff, who had opportunity to know about the Project, recognizes the importance of disseminating the methods of the Project, believing that more involvement of other governmental staff would further enhance the outcomes of the Project.

評価グリッド：エジプト国ナイルデルタ水管理改善計画　終了時評価調査

5項目 その他	評価設問 大項目	評価設問 小項目	必要なデータ	情報源	調査結果
妥当性	プロジェクト目標は、裨益者（ターゲットグループ）のニーズに沿っているかどうか	バハールヌール水路受益地の農民のニーズ	・農民のニーズ	・農民	アンケートの結果から、農家は改善灌漑施設、水管理、連続通水、公平な水配分及びWUAの活動について満足している。よって、プロジェクトはプロジェクト地区の農民のニーズと合致している。 農業に対する新たなニーズは、稲作期の排水システムのコントロール、高付加価値作物の導入と技術改善、マーケティング、連続通水の保証、水路のライニング、灌漑施設の管理センターの建設等であった。
		ナイルデルタ地域全体の農民のニーズ	・関係者の意見	・C/P	ナイルデルタ地区の農民のニーズは以下の通り。 1）水管理計画と参加型管理 2）新たな農業技術の導入 3）高付加価値かつ節水型の新規農作物の導入 4）マーケティング
	本プロジェクトが目指す効果は、エジプト国の開発政策に一致しているか	国家開発計画における灌漑改善分野の位置付け	・政策面での位置付け ・関係者の意見	・「第5次社会・経済開発五カ年計画」（2002年～2007年） ・国家水資源計画	第5次社会・経済開発五カ年計画における農業と灌漑分野の重要な方針は、適切な水配分と新規灌漑システムによる水資源利用の改善である（第6次社会・経済開発五カ年計画(案)は現在、検討中であるが、水資源利用の改善は引き続き主要課題である）。水資源灌漑省が策定した国家水資源計画には、水資源の適切な開発のための公・民の行動計画が記載されている。また、目標年は2017年であり、灌漑改善や水管理組織の強化に係るプロジェクトが記載されている。よって、プロジェクト目標はエジプト国の開発政策と一致している。
	日本国の援助政策に合致しているか	対エジプト国援助方針との整合性はあるか	・我が国のエジプト国に他する協力重点分野	・対エジプト国別援助計画 ・JICA国別事業実施計画	改定中の対エジプト国別援助計画によると、「持続的な成長と雇用創出の実現」、「貧困削減と生活水準の向上」、「地域安定の促進」が三本柱となっており、貧困削減と生活水準の向上に「農業生産性の向上と水資源利用の効率的利用」が挙げられている。JICA 国別事業実施計画においても、農業生産性と水利用効率の向上は重要な課題の一つに挙げられている。プロジェクトの目的は、パイロットプロジェクトエリアで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ことであり、本プロジェクトは日本国の援助政策に合致している。
	日本国の技術の比較優位性はあるか		・水管理分野における日本国の経験 ・他ドナー、エジプトによるプロジェクトとの比較	・日本人専門家 ・C/P 及び日本人専門家	日本国には参加型水管理の豊かな経験があり、それらの経験は現地に適したものに改善することにより、他の国でも利用可能である。このプロジェクトに関しては、 日本の経験と技術をエジプト国の経験や事情の合わせ、エジプト国側プロジェクトスタッフと日本人専門家が共に改善手法を作り上げた。 プロジェクトのアプローチは柔軟性があり、適切であったと言える。
	プロジェクトのアプローチは手段として妥当か	アプローチの妥当性	・農民の ・関係者の意見	・農民 ・C/P 及び日本人専門家	プロジェクトの達成度と上述の点から、プロジェクトのアプローチは妥当であった。
		より妥当と考えられるアプローチは存在しなかったか	・関係者の意見	・C/P 及び日本人専門家	本プロジェクトで実施した節水型の砂糖大根栽培等の農業技術の様に、農家に直接裨益する要素を取り入れた方が良かった。プロジェクトで展示した手法は、節水可能なことが証明されたが、本結果の普及方法についても考慮すべきである。

5項目 その他	評価設問		必要なデータ	情報源	結果
	大項目	小項目			
有効性	成果の達成度		達成度表の通り	・達成度表	（本グリッドの後に添付した達成度表を参照）
	プロジェクト目標は達成されたか。（最大限の農民参加に基づいたIIP事業の効率的かつ効果的な改善手法がプロジェクトエリア内で実証される）	1）農家が改善手法を支持する		・農民へのアンケート調査	（本グリッドの後に添付した達成度表を参照）
		2）MWRI が改善手法を支持する		・MWRI へのアンケート調査	（本グリッドの後に添付した達成度表を参照）
	プロジェクトのアウトプットはプロジェクト目標の達成に貢献しているか。	アウトプットは、プロジェクト目標を達成するために十分であったかどうか。「アウトプットが全て達成されればプロジェクト目標は達成されるだろう」という論理に無理はなかったか。	・関係者の意見	・C/P 及び日本人専門家	論理的に、成果が達成されることでプロジェクト目標が達成されている。
		プロジェクト以外に貢献した要因はあるか。	・関係者の意見 ・実施プロセスの情報	・プロジェクト報告書 ・C/P 及び日本人専門家	他にプロジェクト目標に影響を与えた要因は無い。
	プロジェクト目標達成を阻害した要因はあるか。	C/P の移動・離職の有無と影響	・離職率、離職理由、C/P の数 ・関係者の意見	・資料レビュー ・C/P 及び日本人専門家	延長期間にC/Pの交替はあったものの、これらはプロジェクト目標達成の阻害にはならなかった。
		その他の影響はあるか。	・関係者の意見	・プロジェクト進捗報告書 ・C/P 及び日本人専門家	灌漑施設建設の遅れが、WUA や WUF のリーダー研修の遅れに繋がった。そのため、管理能力は十分とは言えない状況にある。

5項目 その他	評価設問		必要なデータ	情報源	結果
	大項目	小項目			
効率性	達成されたアウトプットからみて、投入の質・量・タイミングは適切か。	専門家派遣人数。専門分野・能力、派遣時期・期間は適切か。	・派遣実績 ・関係者の意見	・プロジェクト資料 ・C/P 及び日本人専門家	3名の長期専門家と2名の短期専門家がプロジェクト延長期間に派遣された。投入は適切に行われた。
		供与機材の種類、量、設置時期は適切か。	・機材供与実績、利用状況 ・関係者の意見	・プロジェクト資料 ・C/P 及び日本人専門家	2005年3月までに、必要機材はほぼ全て調達されたため、延長期間はパソコン3台を供与したのみであった。供与機材の量は適切であった。
		本邦研修員受け入れ人数、研修内容、研修期間、受入れ時期は適当か。	・研修員受入れ実績 ・関係者の意見	・研修員受入れ実績表 ・C/P 及び日本人専門家	4名の C/P が研修に参加した。研修内容は適切であり、C/P の能力向上、プロジェクトの活動の活性化につながった。何人かの C/P は、研修の機会を増やした方が良かったと答えている。

<table>
<tr><td></td><td>日本国側の現地活動費の配分は適切であったか。</td><td>・現地活動費実績
・関係者の意見</td><td>・現地活動費実績
・C/P 及び日本人専門家</td><td>日本国側の現地活動費実績は、以下の通り
<table><tr><td></td><td>2005 年度</td><td>2006 年度（計画）</td><td>合計</td></tr><tr><td>エジプトポンド</td><td>322,051</td><td>328,540</td><td>650,591</td></tr><tr><td>（千円）</td><td>6,371</td><td>6,743</td><td>13,115</td></tr></table>車の燃料、機材の維持管理費、JICA 雇用職員の給与等、現地活動費は有効的に利用された。</td></tr>
<tr><td></td><td>C/P の人数、配置時期、能力は適切か。</td><td>・C/P 配置状況
・関係者の意見</td><td>・C/P 配置実績表
・C/P 及び日本人専門家</td><td>C/P 数は 28 名（10 名はフルタイム）で、能力共に適切な配置がされた。プロジェクトの途中で C/P 数は 22 名から 28 名に増加した。5 名の C/P は定年のため交替になったが、すぐに代わりの C/P が配置された。</td></tr>
<tr><td></td><td>建物・施設の質、規模、利便性は適切か。</td><td>・建物、施設の現状
・関係者の意見</td><td>・施設・機材配置状況
・C/P 及び日本人専門家</td><td>プロジェクトはカイロ、タンタ、カフルエルシェイク、ビヤラにプロジェクト事務所、専門家執務室やプロジェクト関係施設等の施設を提供された。これらの施設はプロジェクトに適切に利用された。</td></tr>
<tr><td></td><td>エジプト側のプロジェクト予算は適切な規模か。</td><td>・相手側コスト負担実績
・関係者の意見</td><td>・コスト負担実績データ
・C/P 及び日本人専門家</td><td>エジプト国側は、車輌、土地平均化機器、運転手や秘書への給与等の維持管理費の負担を行った。灌漑施設の建設費についてもエジプト国側が負担した。
プロジェクトの燃料、危機、消耗品に係るコスト負担は以下の通り。
（エジプトポンド）
<table><tr><td></td><td>2004 年度</td><td>2005 年度</td><td>2006 年度
（7 月～11 月）</td><td>合計</td></tr><tr><td>エジプトポンド</td><td>36,416,285</td><td>67,129,359</td><td>17,110,715</td><td>120,656,359</td></tr></table>. 注:エジプト国の会計年度（7 月～翌年 6 月）

プロジェクト地区での灌漑施設建設費は、以下の通り。
灌漑施設建設費（エジプトポンド）
<table><tr><td>第一次建設</td><td>4,675,000</td></tr><tr><td>第二次建設</td><td>6,800,000</td></tr><tr><td>第三次建設</td><td>8,238,000</td></tr><tr><td>合計</td><td>19,713,000</td></tr></table></td></tr>
<tr><td>プロジェクトマネージメントは適切であったか。</td><td>JSC とJSCC は、適切に機能したか。</td><td>・関係者の意見</td><td>・プロジェクト進捗報告書、その他の資料
・C/P 及び日本人専門家</td><td>JSC は延長期間で 3 回開催された（7 年間を通じて 8 回開催されている）。JSCC は 4 回開催された（7 年間を通じて 5 回開催されている）。これらの会議は情報共有、問題解決や決定判断する上で適切に機能した。</td></tr>
<tr><td></td><td>その他の定例会議は、適切に機能したか。</td><td>・関係者の意見</td><td>・C/P 及び日本人専門家</td><td>プロジェクト・サイト・マネージャーと C/P 間で非公式ミーティングが度々開かれ、適切に機能した。</td></tr>
<tr><td></td><td>エジプト国側のオーナーシップ（当事者意識）は高いか。</td><td>・関係者の意見</td><td>・C/P 及び日本人専門家</td><td>エジプト国側政府職員等を対象とした研修やミーティングを開催し、改善手法の普及の必要性を認識した。</td></tr>
</table>

	プロジェクトの進捗を促した要因はあるか。		・関係者の意見	・C/P 及び日本人専門家	1) C/P の質・数ともに適していたこと 2) C/P と専門家の良好な関係が築かれていること 3) 農民及び WUF の協力的な態度 4) 日本における水管理研修
	効率性を阻害した要因はあるか。	C/P の定着度は、良好か。	・C/P の当初の配置と現状との比較	・プロジェクト進捗報告書、その他資料	5 名の C/P の変更があった。但し、それほど大きな負の影響はなかった。
		その他の要因はあるか。	・関係者の意見	・C/P 及び日本人専門家	1) 建設事業の遅延 2) 農民のプロジェクトに対する反対運動 3) ポンプの不適切な維持管理

5 項目 その他	評価設問		必要なデータ	情報源	結果
	大項目	小項目			
インパクト	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、それに伴って農業の生産性と農家の実質所得が向上する」が達成される見込みはあるか。	2017 年までにバハルテラのある地区において (1) IIP 事業の新たなアプローチが広がる		・水資源灌漑省（MWRI）による調査の実施	（本グリッドの後に添付した達成度表を参照）
		(2) 農業の生産性に関する指標が向上する		・農業土地開拓省（MALR）の統計	（本グリッドの後に添付した達成度表を参照）
		(3) 農家の生活状態が改善される		・MWRI による調査の実施	（本グリッドの後に添付した達成度表を参照）
	中間目標「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プロジェクトエリアで灌漑効率と農業の生産性を向上させる」が達成される見込みはあるか。	プロジェクト終了後 5 年以内に (1) 灌漑効率が増加する。		・MWRI による調査の実施	（本グリッドの後に添付した達成度表を参照）
		(2) 公平な水配分が改善される。		・MWRI による調査の実施	（本グリッドの後に添付した達成度表を参照）
		(3) 単位面積当たりの農業生産性の指標が増加する。		・MALR の統計と MWRI による調査の実施	（本グリッドの後に添付した達成度表を参照）
	本プロジェクトで実証された改善手法が、他のプロジェクトや計画に取り入れられた事例はあるか。		・関係者からの情報	・C/P 及び日本人専門家、水資源灌漑省関係者	世界銀行の IIIMP 事業に以下の改善要素が取り入られる予定。 1) WUA と WUF を早期に立ち上げる 2) 灌漑施設を設計する前に、現場調査を行う。 3) 建設を始める前に農民に対する説明を行う。 KfW が実施する IIP 事業においても、工事開始前に農民の意見をとるコンセプトが取り入れられる。
	その他の正負のインパクト。	その他の正負の波及効果やインパクト	・関係者からの情報	・プロジェクト資料 ・C/P 及び日本人専家	灌漑施設の改善、WUA と WUF の設立とその強化による水管理改善、デリバリー水路への連続通水の実施により、以下の様ような様々な効果やインパクトが見られる。

					1) メスカレベルでの公平な水配分(メスカ水路の起点部から末端部まで、公平な水分配が実現)とデリバリー水路の上流部、中流部、下流部における公平な水配分が実現されたこと。 2) 特に、適切な水量が得られ、タイミングの良い灌漑が可能となり、水が確実に得られるという信頼性が向上し、良好な圃場水管理が可能となったこと。 3) WUAとWUFの機能については、良好な水管理が行われていることだけでなく、問題解決にも貢していること。 4) 圃場レベルにおいて、灌漑に要する時間が減少したこと。 5) 灌漑に要するコストが減少したこと。 6) プロジェクト地区の一部で収量が増加した。特にデリバリー水路の中流部と下流部において。 この他にも以下の様なインパクトが見られる。 7) 公平な水配分が実現し、またWUAやWUFが調整を行っていることから、農民間の水を巡る争いや不平が減ったこと。 8) 農民間、農民とプロジェクトスタッフ間、農民とディストリクト・エンジニア[1]間の良好な協力関係が形成されたこと。 9) 一部では、旧メスカ水路があった部分の土地を埋め戻した後、その部分を農道として利用することによって農業資材や収穫物の運搬が容易になったこと。 10) プロジェクト実施を通じて農協との良好な協力関係を築いていること(農協から農民への農業技術の移転といった支援が今後期待できる)。 11) 環境・ジェンダーに係る啓蒙活動がWUFのサブ委員会[2]によって実施されたこと。

5項目 その他	評価設問		必要なデータ	情報源	結果
	大項目	小項目			
自立発展性 (見込み)	国家開発計画やその他関連政策における灌漑改善分野の位置付けはどうか。		・国家開発政策、その他関連政策	・国家開発政策、その他関連政策	MWRIの重要な政策の中に水改善システムの改良による既存水資源の効率的な利用が挙げられる。また、水資源の統合的な管理を目的としてIIIMPが2006年より2014年までの予定で開始された。更に、エジプト国政府は「水資源灌漑省の組織改革のための展望と戦略」をドイツ国(GTZ)及びオランダ国の協力の下、策定している。同指針と方針の中には、参加型、地方分権化、効率的な水利用等が記載されている。これらの指針を実現させるために、現在、法制度の整備が行われている。
	エジプト国水資源灌漑省では、本プロジェクトがどの様に認識されているか。改善手法を他の地域への適用を図ろうという方針が明確になっているかどうか。		・関係者の意見	・エジプト国水資源灌漑省幹部	MWRIのIIS局はプロジェクトの改善手法の利点及び便益を理解している。IISはプロジェクト地区のWUA及びWUFの自立発展性を高めるため、2年間のアクションプランを作成した。これらのアクションプランは活動概要、スケジュール、C/P職員の配置が記されている。しかし、アクションプランの内容については更に修正が必要である。但し、本アクションプランの提出は、エジプト国側の意欲を示している。

[1] ディストリクト・エンジニア: 水資源灌漑省の灌漑局の職員で、本プロジェクト地区を含むひとまとまりの灌漑区域の灌漑用水供給を管轄するエンジニア。
[2] このサブ委員会では、プロジェクト地区内の用排水路のゴミ収集を女性の参加によって実施しようと活動している。

事業を継続するだけの能力が本プロジェクトに関わっている水資源灌漑省に備わっているか。	本プロジェクト終了後においも、水資源灌漑省は、プロジェクト地区内での活動を運営管理する能力を持ち続けるかどうか？（プロジェクト終了後も必要な人数、質・技術レベルの人員が配置されるか）。	・スタッフの配置、定着状況 ・関係者の意見	・水資源灌漑省	上述した通り、IIS 局は 2 年間のアクションプランを策定している。これらのアクションプランにはWUA やWUF のフォローアップ活動、スケジュール、職員の配置が記載されている。本プロジェクトで C/P として活動した職員も引き続き本業務を担当する。C/P は高い能力と貴重な経験を有している。アクションプランの内容については、再検討する必要はあるが、アクションプランの実施はWUA やWUF の自立発展性を高める上で必要である。
	本プロジェクトで実証された改善手法が、プロジェクトエリア内で定着させるための方法や仕組み（人員配置、役割・担当業務、法整備等）が明確になっているか。その体制が整っているか。	・関係者の意見	・C/P 及び日本人専門家	上記記載
	本プロジェクトで実証された改善手法が、ナイルデルタの IIP 事業実施地区に普及するための仕組み・メカニズムが、整っているか。	・関係者の意見	・C/P 及び日本人専門家	上記記載
	本プロジェクトに対する予算支出実績とプロジェクト地区に対する予算支出計画（必要な予算が JICA 協力終了後も支出される見込みはあるか）。	・水資源灌漑省の予算支出データ ・関係者の意見	・予算支出データ、今後の予算計画 ・C/P 及び日本人専門家	エジプト国政府は維持管理費のみでなく灌漑施設の建設費についても負担した。アクションプランに示される主なフォローアップ活動はWUA やWUF を対象とする研修活動であり、そのための予算はMWRI が確保する予定である。
WUF 及びWUA の能力	WUF 及び WUA は、今後も水管理に必要な財源を確保する見通しはあるか。	・WUF 及び WUA の水利費徴収状況と今後の見通し	・WUF 及び WUA の水利費徴収実績 ・WUF 及び WUA の関係者の意見	灌漑施設を改善した全てのWUA において、メスカレベルの灌漑施設の運転管理に関する費用を農民から徴収している。ポンプ更新費を徴収している水利組織は全体の 67%である。一方、ポンプ更新費を誰が支払うべきか（土地所有者か耕作者か）未だに整理がされていない。アクションプランの実施により、引き続き WUA がポンプ更新費を徴収することが期待される。WUF については、法制度が整備されておらず、徴集ができない状況にある。このため、WUF が活動費を徴収できる様になる為に、早期の法整備が必要である。
	プロジェクト地区内のWUF 及びWUA は、自立的に水管理を行う能力を有しているか。	・関係者の意見	・農民の意見、C/P 及び日本人専門家	WUA やWUF の水管理の能力向上を目的として、WUA やWUF に対し水管理、組織運営、施設維持管理について研修が実施された。WUA は良く機能しているが、C/P の中には更なる能力強化が必要であると考える者もいた。
移転された技術は定着していくか。	プロジェクトによって実証された改善技術とニーズにギャップは無かったか。	・関係者の意見	・農民 ・C/P 及び日本人専門家	無し
	C/P は、施工管理マニュアルを活用する能力を十分身に付けたか。 また、他の技術者等にマニュアルの内容を指導する能力はあるか。	・関係者の意見	・C/P 及び日本人専門家	C/P は、マニュアルを活用する能力を身に付けている。彼らの能力及びアラビア語のマニュアルを利用し、研修を行うこともできる。

		C/P は、デリバリー水路とメスカ水路での水管理について、WUF 及び WUA 代表者に対して訓練を実施する能力を身に付けたか。	・関係者の意見	・C/P 及び日本人専門家	C/P は農民参加、WUA や WUF の設立、各種訓練の実施に必要な能力を身に付けている。一方で、改善手法を他の地域に普及することが求められるが、C/P が指摘する様に、これらの技術は OJT によって身に付くものであり、現時点で、普及のための人材は限られている。また、本プロジェクト地区は小規模であるため、他の事業に適応することは難しいかもしれない。 また、水利用率改善に係るプロジェクトでは、近年 IIIMP の様に排水、表流水、環境問題等を含む統合的な取り組みが行われている。そのため、改善手法についても、統合的事業で活用可能となる様に工夫していく必要がある。更に、メスカレベルだけでなく支線水路、幹線用水路といったレベルでの水利用効率の向上も考慮する必要がある。今後は、C/P が改善手法を更に改良し、また、普及する能力を身に付けることが必要である。
		C/P は、本プロジェクトが実証した改善手法を、活用・普及する能力を有しているかどうか。	・関係者の意見	・C/P 及び日本人専門家	
		供与機材の維持管理は適切に行われる見通しがあるか。	・関係者の意見	・C/P 及び日本人専門家	供与機材の維持管理は適切に行われており、今後も適切に行うことが可能である。但し、一部の機材については、一部の人間のみが使用方法を理解するに留まっており、外部機関を利用する等して、使用可能人材を増やす必要がある。

実施プロセスの検証

	評価設問		情報源	結果
	大項目	小項目		
実施プロセス	活動は計画通りに実施されたか。	進捗に問題は無いか。ある場合、それは何か。	・プロジェクト進捗報告書 ・C/P 及び日本人専門家	上流部の 2/3 の同意取得が必要であったため、活動の進捗は遅れた。
	技術移転の方法に問題はなかったか。	ある場合、どの分野におけるどの様な技術移転方法に問題があったか。その解決方法はあるか。	・プロジェクト進捗報告書 ・C/P 及び日本人専門家	技術移転方法は適切であった。OJT を通じてプロジェクトスタッフは良い経験を得た。
	プロジェクトのマネジメント体制に問題は無かったか。	モニタリングの仕組みが構築されているか。	・C/P 及び日本人専門家	JSC と JSCC は情報共有、課題検討、意思決定の面で適切に機能した。
		プロジェクト内のコミュニケーションは、円滑に行われているか。	・C/P 及び日本人専門家	日本人専門家と C/P 間でコミュニケーションが十分に取られていた。また、IIS 局の職員や他の局の職員ともコミュニケーションが円滑に行われていた。
		JICA 本部、JICA エジプト事務所との連絡・協力が円滑に実施されたか。	・日本人専門家	日本人専門家は JICA エジプト事務所と毎週打合せを行い、連絡・報告が定期的に行われた。また、日本人専門家は電子メールを通じても、JICA 事務所と連絡を頻繁に取っている。
	適切な C/P が配置されたか。		・C/P 及び日本人専門家	28 名の C/P が配置されている（10 名はフルタイム）。C/P の人数は 22 名から 28 名に増えた。5 名の C/P の交代があったものの、後任者の早期配置が行われた。このため、C/P の配置は適切に行われた。
	実施機関や C/P のプロジェクトに対する認識は高いか。		・水資源灌漑省幹部 ・C/P 及び日本人専門家	副大臣を始めとする MWRI の上層部はプロジェクトに対する認識が高く、改善手法に対する評価も高い。
	ターゲットグループや関係組織のプロジェクトへの参加度合やプロジェクトに対する認識は高いか。		・農民組織、関連組織、C/P 及び日本人専門家	改善施設の建設について 2/3 以上の農民から同意を得て、66 メスカにおいて WUA が設立された。同意の 78%は地主で、82%は耕作者である。
	プロジェクトの実施過程で生じている問題や、効果発現に影響を与えた要因は何か。		・C/P 及び日本人専門家	プロジェクトスタッフは、上流部の農家から同意を得ることが難しかった。

達成度表 （上位目標、プロジェクト目標、アウトプットの達成度）

	項目		必要なデータ（指標）	情報源	活動
	主項目	サブ項目			
達成度	上位目標の達成見込み （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、それに伴って農業の生産性と農家の実質所得が向上する。）		2017年までにバハルテラのある地区において (1) IIP事業の新たなアプローチが広がる	MWRI統計	本プロジェクト地区の周辺部に住む農民は、本プロジェクトの改善手法を用いた灌漑改善事業の実施をMWRIに要望している。（本プロジェクトは、バハルテラ地区内に位置する）。但し、現時点では、エジプト国側にはバハルテラ地区内で灌漑改善事業を実施する計画を持っていない。従って、「2017年までにバハルテラのある地区において、IIP事業の新たなアプローチが広がる」という指標を達成するかどうか見通すことは困難である。一方、MWRIは、本プロジェクトの改善手法の有用性を理解しており、今年始まった世銀融資プロジェクト（IIIMP）に下記の改善手法を適用させる考えを持っている。 1) 早い段階でのWUAとWUFの設立。 2) 灌漑施設設計前に農民と共にフィールド調査を実施すること。 3) 工事開始前に施設の設計について農民に説明すること。 IIIMPは灌漑の改善だけでなく排水、地下水、環境面のコンポーネントも含む総合的な事業であるが、本プロジェクトの成果は、灌漑の改善においては貢献が可能である。
			(2) 農業の生産性に関する指標が向上する	MALR統計	適切な水管理と公平な水配分を継続することによって、作物収量の増加が期待できる。収量増加を正確に測るためには、改善手法の普及が行われた地区において、定期的に収量調査を実施する必要がある。なお、農業の生産性に関しては、収量増加だけでなく、灌漑に要した時間の減少や労働時間の低減も考慮に入れることができる。
			(3) 農家の生活状態が改善される	MWRI調査	この指標の定義は、余り明確ではなく、この指標について評価することは困難である。また、上位目標自体に「農業の生産性と農家の実質所得が向上する」という言葉が入っているので、その点から考えても、この指標を改定したほうが良いであろう。例えば、「農業から得られた農家の実質所得」といった指標が考えられる。この場合、新指標に関する定期的調査を実施する必要がある。また既述の通り、現在エジプト国側にはハバルテラ地区内で灌漑改善事業を実施する計画がないことから、本プロジェクトの改善手法がハバルテラ地区内に普及され、それによる農業の生産性の向上や農家の生活状態が改善される可能性は低い。 <u>上位目標の指標の改訂の提案</u> 上位目標の指標には、「ハバルテラ地区内」という言葉が入っているが、現時点では、ハバルテラ地区内で改善手法が普及することを展望することが困難であることから、「ハバルテラ地区内」という言葉を削除し、以下の様な指標に改訂することを提案する。 1) 2017年までにナイルデルタ地域のある地区において、IIP事業の新たなアプローチが広がる。 2) 2017年までにナイルデルタ地域のある地区において、農業の生産性に関する指標が向上する。 3) 2017年までにナイルデルタ地域のある地区において、農家の実質所得が向上する。

<table>
<tr><th rowspan="2"></th><th colspan="2">項目</th><th>必要なデータ
（指標）</th><th>情報源</th><th>活動</th></tr>
<tr><th>主項目</th><th>サブ項目</th></tr>
<tr><td></td><td colspan="2">中間目標の達成見込み
（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プロジェクトエリアで灌漑効率と農業の生産性を向上させる）</td><td>プロジェクト終了後5年以内に
(1) 灌漑効率が増加する</td><td>MWRI統計</td><td>(1) 灌漑効率
灌漑効率がプロジェクト実施前に比べてどの様に改善したかを実際に計測することは困難ではあるものの、灌漑施設の改善に伴って灌漑効率が改善したと判断することは妥当であろう。新しい灌漑施設の導入によって、灌漑効率の向上を実際にもたらしていると見られるものの、将来、この指標を評価することは、技術的に困難である。
これに関連して指摘できるのは、灌漑施設の改善によって、プロジェクト実施の前後でプロジェクト地区全体の用水総使用量が減ったかどうか明確になっていないことである。エジプト国では、限られた水資源の有効利用を図るという大きな命題があり、そのためには用水総使用量を減少させていくことが求められている。このため、プロジェクト地区全体の用水総水量が減少したかどうか明らかにする必要があり、灌漑用水の総使用量を把握するための対処を行う必要がある。
(2) シュガービート栽培の新技術のデモンストレーション
シュガービート栽培の新技術のデモンストレーションが、灌漑用水量の減少を目的として2005/2006の冬作で実施された。このデモンストレーションでは、畝幅を変えることにより、収量増加と共に、用水量の低減を同時に実現できることの可能性が示された。そして、このデモンストレーションの成果は、プロジェクト地区内の農民が参加した集会で報告された。</td></tr>
<tr><td></td><td colspan="2"></td><td>(2) 公平に水配分が改善される</td><td>MWRI調査</td><td>2006年に実施された農家アンケート調査によると、90%の農民が、この夏のメスカレベルの水配分は、灌漑施設が改善される前と比べて公平になったと感じている。また、農民は、灌漑用水供給の量（96%）、タイミング（95%）、信頼性（95%）においても改善したと感じている。従って、プロジェクト地区内での公平な水分配は既に達成されているものと判断でき、今後は、WUAやWUFの更なる能力強化と定期的に水配分状況をモニタリングすることを通じて、この公平な水配分状況を維持することが求められる。WUAやWUFの活動の重要性を考慮すると、この「公平な水配分」という指標を、「WUAとWUFが適切に機能しているかどうか」という指標に変更することが望ましいと考える。</td></tr>
<tr><td></td><td colspan="2"></td><td>(3) 単位面積当たりの農業生産性の指標が増加する</td><td>MARI統計及びMWRIによる調査</td><td>農家アンケート調査によると、32%の農民が、今年の夏栽培した作物の収量が改善し、事業実施前の収量と比較し増加したと回答している。プロジェクト地区内の場所別のデータは、下表の通り。
プロジェクト地区内の2006年夏作の収量の増減　（回答数:108）
<table><tr><th rowspan="2">収量の増減</th><th colspan="3">メスカの場所</th><th rowspan="2">計（%）</th></tr><tr><th>上流部（%）</th><th>中流部（%）</th><th>下流部（%）</th></tr><tr><td>増加</td><td>13</td><td>53</td><td>42</td><td>32</td></tr><tr><td>同じ</td><td>73</td><td>44</td><td>58</td><td>60</td></tr><tr><td>減少</td><td>15</td><td>3</td><td>0</td><td>7</td></tr><tr><td>計</td><td>100</td><td>100</td><td>100</td><td>100</td></tr></table>
上表に見られる様に、本プロジェクト実施により、中流部及び下流部の農民にとっては、収量が増加するというインパクトがもたらされているものと思われる。
また、評価調査団が農民を対象に行ったインタビューでは、コメの収量が3.5t/フェダン（8.3t/ha）から4.0t/フェダン（9.5t/ha）に増加したとの話があった。今後、収量増加を把握していくために、プロジェクト地区を対象に定期的にサンプリング調査を実施する必要があるが、プロジェクト終了後にそれを期待するのは困難であろう。将来、収量増加につい</td></tr>
</table>

<table>
<tr><th></th><th colspan="2">項目</th><th>必要なデータ
（指標）</th><th>情報源</th><th>活動</th></tr>
<tr><th></th><th>主項目</th><th>サブ項目</th><th></th><th></th><th></th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td>ての評価する際に取ることができる方法は、農民対象のアンケート調査を実施して収量の増減を把握する方法と考える。

中間目標の指標の改訂の提案
上記に示した理由から、中間目標の指標を以下の様に改訂することが望ましいと考える。
指標 1：WUA 及び WUF の役割や機能についての農民の満足度が向上する。
指標 2：農業生産性、例えば作物収量の増加</td></tr>
<tr><td></td><td>プロジェクト目標の達成度
（最大限の農民参加に基づいた IIP 事業の効率的かつ効果的な改善手法がプロジェクトエリア内で実証される）</td><td></td><td>(1) 農家が改善手法を支持する</td><td>農家へのアンケート結果</td><td>前回終了時評価時点（2004 年 10 月）で実施した農民へのアンケートの結果より、「必要な情報を農民に伝えて、工事開始前に十分な同意を得るという本プロジェクトの手法」について、80％の農民が満足していることが明らかとなった。その他の点も含めた、本プロジェクトに対する農民の満足度は下表の通りであった。

本プロジェクトに対する農民の満足度（2004 年実施アンケート調査結果）
<table><tr><th>項目</th><th>満足している</th><th>満足していない</th><th>どちらとも言えない</th><th>標本数</th></tr><tr><td>必要な情報を農民に伝えて工事開始前に農民の十分な同意を得るプロジェクトの手法</td><td>80％</td><td>11％</td><td>9％</td><td>120 農家</td></tr><tr><td>農民と一緒に現場を歩いて施設の設計を確認する手法</td><td>93％</td><td>4％</td><td>3％</td><td>120 農家</td></tr><tr><td>改善された灌漑施設</td><td>81％</td><td>15％</td><td>4％</td><td>48 農家</td></tr><tr><td>プロジェクトで導入された圃場レベルの水管理手法</td><td>88％</td><td>2％</td><td>10％</td><td>48 農家</td></tr></table>
2006 年の夏作後に実施された農家アンケート調査によると、改善手法に関する満足度は下表の通りである。

改善手法に関する農民の満足度（サンプル数は、108）
<table><tr><th></th><th>項目</th><th>満足度（％）</th></tr><tr><td>1</td><td>本プロジェクトに満足している農民</td><td>96％</td></tr><tr><td>2</td><td>今年の夏の灌漑について全般的に満足している農民</td><td>99％</td></tr><tr><td>3</td><td>設計プロセスについて満足している農民（農民のニーズや要望を反映させるため、農民といっしょに行うウォークスルー）</td><td>90％</td></tr><tr><td>4</td><td>建設調整委員会の活動を通じて農民が施工管理に参画する手法について満足している農民</td><td>100％</td></tr><tr><td>5</td><td>工事開始前に、プロジェクトに関する必要な情報を農民に提供し、農民から十分な同意を得るという手法について満足している WUA のリーダー</td><td>94％</td></tr><tr><td>6</td><td>改善された灌漑施設に満足している農民</td><td>86％</td></tr><tr><td>7</td><td>メスカレベルの灌漑施設改善後の圃場レベル水管理に満足している農民</td><td>96％</td></tr><tr><td>8</td><td>メスカレベルの水管理において WUA が良く機能していると思っている農民</td><td>92％</td></tr><tr><td>9</td><td>水管理において WUF が良く機能していると思っている農民</td><td>60％</td></tr></table></td></tr>
</table>

<table>
<tr><th colspan="2">項目</th><th>必要なデータ
（指標）</th><th>情報源</th><th>活動</th></tr>
<tr><th>主項目</th><th>サブ項目</th><th></th><th></th><th></th></tr>
<tr><td></td><td></td><td></td><td></td><td>上記の調査結果から、プロジェクト地区内の農民が、改善手法や現在の水管理に多いに満足していることが明らかとなった。但し、WUF が機能しているどうかについての満足度はまだ高いとは言えないことから、より多くの農民が WUF の存在やその役割について認識する様に、意識向上を図っていく余地がある。
本評価団が行った、WUF の中核メンバーや WUA のリーダーへのインタビューでは、本プロジェクトの主な効果として次の点が挙がった。

◆ 連続通水のメリット
◆ 公平な水分配
◆ 維持管理費の低減
◆ 収量増加、特に地区の下流部において
◆ 農民間、農民とプロジェクトスタッフ間、農民とディストリクト・エンジニア[3]間の良好な協力関係</td></tr>
<tr><td></td><td></td><td>⑵ MWRIが改善手法を支持する</td><td>MWRI へのアンケート調査</td><td>前回終了時評価時点（2004年10月）で、C/P が改善手法を高く評価していること、そして、他地区で実施されている世銀の灌漑改善事業に参画している MWRI スタッフが、農民参加型アプローチを取り入れようとし始めていることから、MWRI が改善手法を支持していると判断していた。
今回（2006 年）の終了時評価では、MWRI の C/P や関係スタッフを対象に、改善手法の有用性と他灌漑地域への適用性についてのアンケート調査を実施した。その結果は下表の通りである。

本プロジェクトの改善手法の有用性（%）
<table><tr><th>No.</th><th>改善手法</th><th>大変有用</th><th>有用</th><th>それほど有用でない</th><th>解らない</th><th>回答無し</th></tr><tr><td>1</td><td>既存の灌漑施設の現況や従前の用水利用状況の現地調査</td><td>88</td><td>12</td><td>0</td><td>0</td><td>0</td></tr><tr><td>2</td><td>農民参加による WUA 設立及び灌漑施設計画策定を通じての農民のオーナーシップ意識の醸成</td><td>83</td><td>17</td><td>0</td><td>0</td><td>0</td></tr><tr><td>3</td><td>WUA 組織化及び事業計画（施設計画）についての、農家の 3 分の 2 以上の合意取り付け</td><td>48</td><td>44</td><td>4</td><td>0</td><td>4</td></tr><tr><td>4</td><td>建設工事前の WUA と WUF の同時設立</td><td>84</td><td>16</td><td>0</td><td>0</td><td>0</td></tr><tr><td>5</td><td>問題を迅速に解決するための WUA 及び WUF 内に工事調整委員会の設立</td><td>67</td><td>29</td><td>4</td><td>0</td><td>0</td></tr><tr><td>6</td><td>WUA に対する組織運営、メスカレベルの水管理（バルブローテーション）、施設運営維持管理（ポンプの運転維持管理）のための研修の実施</td><td>83</td><td>13</td><td>0</td><td>0</td><td>4</td></tr></table></td></tr>
</table>

[3] ディストリクト・エンジニア： 水資源灌漑省の灌漑局の職員で、本プロジェクト地区を含むひとまとまりの灌漑区域の灌漑用水供給を管轄するエンジニア。

項目		必要なデータ（指標）	情報源	活動
主項目	サブ項目			

7	WUF に対する、内規及び活動計画の作成のためのワークショップ開催、活動計画の実践 OJT 研修	75	21	0	4	0
8	適正な水管理と運営維持管理のための WUF 指導部門の設立及びデリバリー水路レベルの水管理に関するワークショップ開催	71	25	0	4	0
9	WUF と関係機関との協力連携強化	71	25	0	0	4

本プロジェクトの改善手法の他灌漑地域への適用性（%）

No.	改善手法	大変有用	有用	それほど有用でない	解らない	回答無し
1	既存の灌漑施設の現況や従前の用水利用状況の現地調査	75	17	0	0	8
2	農民参加による WUA 設立及び灌漑施設計画策定を通じての農民のオーナーシップ意識の醸成	46	42	4	0	8
3	WUA 組織化及び事業計画(施設計画)についての、農家の 3 分の 2 以上の合意取り付け	46	25	8	8	13
4	建設工事前の WUA と WUF の同時設立	67	25	0	0	8
5	問題を迅速に解決するための WUA 及び WUF 内に工事調整委員会の設立	38	42	12	0	8
6	WUA に対する組織運営、メスカレベルの水管理(バルブローテーション)、施設運営維持管理(ポンプの運転維持管理)のための研修の実施	75	13	4	0	8
7	WUFに対する、内規及び活動計画の作成のためのワークショップ開催、活動計画の実践 OJT 研修	63	25	0	4	8
8	適正な水管理と運営維持管理のための WUF 指導部門の設立及びデリバリー水路レベルの水管理に関するワークショップ開催	29	59	0	4	8
9	WUF と関係機関との協力連携強化	63	25	4	0	8

以上の結果からみて、改善手法の有用性は高いと判断される。
改善手法の適用性については、「大変有用」と「有用」とを合わせると No.3（WUA 組織化及び事業計画(施設計画)についての、農家の 3 分の 2 以上の合意取り付け）を除いて 80%以上の数値となるので、その適用性は全般的に高いと評価される。但し、改善手法の有用性について「大変有用」とする比率と比較すると、適用性について「大変有用」としている比率は低くなる。特に、次の改善手法については、「大変有用」とするポイントは低下している。

	項目		必要なデータ（指標）	情報源	活動
	主項目	サブ項目			
					◆「農民参加による WUA 設立及び灌漑施設計画策定を通じての農民のオーナーシップ意識の醸成（No.2）」、 ◆「問題を迅速に解決するための WUA 及び WUF 内に工事調整委員会の設立（No.5）」、 ◆「適正な水管理と運営維持管理のための WUF 指導部門の設立及びデリバリー水路レベルの水管理に関するワークショップ開催（No.8）」 以上の分析結果から、一部の手法について「それほど有用でない」をした C/P もいるが、MWRI が改善手法を支持していると言って差し支えないと思われる。改善手法の適用性・普遍性をより高めるにも、プロジェクト終了時までに各改善手法の特徴を取りまとめることが望まれる。
	アウトプットは計画通りとなっているか。	分野 1　灌漑施設の改善 1. 灌漑施設の改善のための実施手法が改善される。	1）灌漑施設の改善計画が活用される。	・プロジェクトの記録	前回終了時評価時点（2004 年 10 月）では、60 メスカ[4]中（その当時の全メスカ数）55 メスカに関する灌漑施設改善計画が作成されていた。そして、3 つのメスカについての工事が完了し、8 つのメスカでは工事中であった。 本終了時評価時（2006 年 12 月）においては、67 メスカ中 65 メスカの灌漑施設が、改善計画に基づき改善された。（一部のメスカが分割されたため、総メスカ数が以前より増加した。）残りの 2 つのメスカについては、農民が既存の灌漑システム（サキアと呼ばれる伝統的揚水施設）の継続使用を希望したので、灌漑施設改善の対象とはならなかった。65 メスカの灌漑施設建設工事が完了し、全ての灌漑施設は、それぞれメスカ毎に設立された農民水利組織（Water Users' Association: WUA[5]）に引き渡された。 以上のプロセスを通じて C/P は、計画策定時から灌漑施設改善に対する農民のニーズや意見を把握することの重要性を、特に、水利用現況に関する現地調査やウォークスルー[6]と呼ばれる活動を農民と共に実施することの重要性を理解した。 2006 年に実施された農家対象のアンケート調査によれば、90％の農民が、ウォークスルー等を通じて行った設計プロセスに満足している。
			2）建設施工管理マニュアルが活用される。	・プロジェクトの記録	延長期間に入るまでに英文版の建設施工管理マニュアルの策定が完了していた。延長期間には、そのアラビア語版が作成された。 (1) 建設施工管理マニュアル（アラビア語版）の作成について 延長期間の開始前、2005 年 2 月には、英語版の建設施工管理マニュアルが作成され、施工管理に利用されていた。その後、より容易に理解できる様にするため、C/P によってアラビア語への翻訳が行われた。 (2) 建設施工管理マニュアルの活用について 建設施工管理マニュアルに記載されている主な項目は、1) 工事の出来型等を、写真と記録票を用いて記録する方法、2) 施工管理に係る機器の利用方法、である。C/P は建設工事の進捗と完成を記録することの重要性と記録方法を理解した。そして、C/P は、施工業者に対して建設工事の記録を適切に取る様に指導を行ってきた。その結果、延長期間中に実施された工事、特に第 3 工事においては、記録票を用いた記録がほぼ適切に取られた。但し、写真を用いた出来型管理については、施工業者が適切に実施したとは言い難い結果になった。その経験から、入札図

[4] メスカ：第 3 次用水路。
[5] WUA は、当該のメスカを利用する農家がメンバーとなり、その中から 5 人のリーダー（主リーダー、サブリーダー、会計担当、O&M 担当、秘書）が選出される。
[6] ウォークスルー：灌漑施設の現状、工事開始前の水利用状況、新しい灌漑施設の計画概要に関し、現地を農民と共に歩いて調査すること。

	項目		必要なデータ（指標）	情報源	活動
	主項目	サブ項目			
					書の数量計算書に写真撮影に関する事項を条件として明記するという改善案が提示された（即ち、写真撮影に係る追加的費用を工事金額の中に含めること）。 C/P は、施工管理に係る機器、即ちコンクリート・ハンマーやスランプ試験器[7]の利用方法を理解し、使用できる様になった。 (3) 建設調整委員会の設立 一般的に、これまで実施されてきた灌漑改善事業では、建設工事期間中に数々の問題が発生し、建設された施設が適切に機能しなかったり、農民のニーズに合致しなかったりする結果を招いている。本プロジェクトでは、その様な問題発生を最小限に抑えるため、新しいアイデアとして、建設調整委員会の設立を行った。工事開始前に、農民水利組織連合（WUF：Water Users' Federation）とメスカ毎に設立された WUA に建設調整委員会が設立された。この委員会の主な役割は、建設工事に関する農民の要望を調整することである。農民の代表（通常は、WUA のリーダー）が、各WUAの農民メンバーの声を委員会に届けた。またこの委員会は、建設工事開始前に、農民とC/Pを含む政府職員との間で、問題点の調整を図るという機能も持っている。他の灌漑改善事業の場合、建設工事の大幅な遅延といった事態が良く見られたが、本プロジェクトの場合、調整機能が適切に働いたことによって、その様な事態にはならなかった。 WUF の建設調整員会は、夏作期間中、連続通水を行うため、第 3 工事の工事スケジュールの調整と夏作期間中の灌漑スケジュールの調整を行った。また、WUF の建設調整委員会は、工事期間中並びに工事完了時に施設の品質検査に参加した。何らかの問題点が見つかった時には、その対応について委員会で協議が行われた。この様に、建設調整委員会は品質管理の面でも活用された。 (4) 改善された灌漑施設に対する農民の満足度 2006 年に実施された農民向けアンケート調査結果によると、農民の 86％が改善された灌漑施設に満足している。
			3) WUA 及び WUF により適切な水管理が行われる。	・水管理組織の活動記録	延長期間に入る前（2005 年 2 月）までに、7 カ所のメスカの灌漑施設が引き渡され、2004/2005 年の冬作から WUA による水管理が開始された。 本終了時評価時（2006 年 12 月）には、改善対象となった全 65 メスカの灌漑施設が各 WUA に引き渡され、WUA によって水管理が行われている。 (1) メスカレベルの水管理 メスカレベルの灌漑スケジュール作成のため、灌漑用水量計算プログラム（エクセルを用いて）が作成された。このプログラムを用いて、バルブ[8]毎に必要な灌漑時間（バルブを開けておく時間）を算出し、その結果は、バルブスケジュールとして取りまとめられた。それに基づいて農民が灌漑施設のオペレーションを行っている。対象全メスカのバルブスケジュールが作成され、そして、各メスカのリーダーやポンプのオペレーターを対象とした、バルブスケジュールや灌漑施設の運転に関する研修が進められている。

[7] スランプ試験器： 固まる前のコンクリートの柔らかさの程度を図るための道具

[8] メスカレベルの灌漑施設では、ポンプで揚水した水が、パイプラインを通じて送水されるが、所々にバルブが取り付けられ、そこから圃場内水路に水を流すシステムとなっている。

	項目		必要なデータ（指標）	情報源	活動
	主項目	サブ項目			
					ポンプ機器の操作管理については、本プロジェクトで作成した「ポンプ研修マニュアル」を使用して、ポンプのオペレーター向け研修が実施されている。このマニュアルは、ポンプの操作管理方法や注意事項等について説明している。

WUA 向けの研修実施状況（2006 年 12 月現在）

	メスカ数	研修受講済みメスカ数	
		水管理（バルブスケジュール）	ポンプ（ポンプの操作管理）
第 1 工事区域	18	17（2）	18（2）
第 2 工事区域	26	24（0）	21（0）
第 3 工事区域	21	8（0）	21（0）
計	65	49（2）	60（2）

（括弧内の数値は、延長期間開始前の状況を示す）

第 3 工事の遅れに伴い、水管理研修未受講のメスカがまだ多くあるものの、第 1 工事及び第 2 工事も含め、プロジェクト終了時までには全 65 メスカに対する研修が終了する予定である。

2006 年に実施された農民アンケート調査によれば、回答者の 92%が、WUA は、メスカレベルの水管理面で良く機能していると回答している。その主な理由として挙げられているのは、問題解決が行われ、適切で公平な灌漑用水の供給が実現していることである。これらの結果から WUA は、メスカレベルの水管理を適切に行っているとみることができる。

⑵ WUF レベルの水管理

デリバリー水路レベルの水管理に関して、WUF 関係者、灌漑局のエンジニア、CD-IAS のエンジニア、農協職員等を対象とするワークショップやレクチャーを行い、これらの活動を通じてデリバリー水路における水管理についての考え方が整理され、最終的には WUF の水管理に関する活動計画が作成された。そして WUF は、水不足になった時あるいは水利用が集中する時に備えて、メスカレベルの灌漑スケジュールやメスカ間のローテーション・スケジュールを含む配水計画を作成した。

また、メスカレベルの水管理に関するテキストやデリバリー水路レベルの水管理に関するテキストを取りまとめて、「水管理計画案」が作成された。その後、2006 年夏作における水管理の経験を踏まえて、WUF の活動を見直すためのワークショップが開催され、WUF 活動計画の修正が施された。

農民対象のアンケート調査結果によると、回答者の 60%が、「WUF は水管理面で良く機能している」としている一方、「NO」と回答したのは 4%で、残りの 36%は「よく分からない」としている。WUF の活動を目で見る機会がまだ少ないことが、WUF の存在がまだ十分には認識されていない結果につながっているように思われる。プロジェクト地区内の農民全般が WUF の役割や機能についてより良く認識する必要性があると思われる。

<table>
<tr><th colspan="2">項目</th><th rowspan="2">必要なデータ
（指標）</th><th rowspan="2">情報源</th><th rowspan="2">活動</th></tr>
<tr><th>主項目</th><th>サブ項目</th></tr>
<tr><td></td><td></td><td></td><td></td><td>以上から、「WUA 及び WUF により適切な水管理が行われる」という本指標は、プロジェクト終了時までにほぼ達成されると判断する。但し、WUA 及び WUF が継続的に良好な水管理を実施していくには、水管理状況のモニタリングと必要に応じた支援が必要とされるであろう。</td></tr>
<tr><td></td><td>分野 2 農民の水管理組織（WUA & WUF）
2. 農民の水管理組織設立のための手法が改善される。</td><td>1) WUA 及び WUF が設立される。</td><td>・プロジェクトの記録</td><td>(1) WUA の設立
前回終了時評価時点（2004 年 10 月）では、その当時の全メスカ数 60 カ所の内、29 カ所のメスカで WUA が設立されていた。そして WUF の設立準備委員会が作られていた。
本終了時評価時点では、既述の通り、全 67 メスカ中、65 カ所のメスカの灌漑施設が改善され、残り 2 カ所のメスカでは農民の希望によりサキアと呼ばれる既存の伝統的灌漑システムを継続使用することになった。この 2 カ所のメスカでの灌漑施設の改善は行われないが、WUA を設立する様に働きかけてきた。
WUA は、メスカ毎に設立され、現時点で、66 の WUA が設立され、正式に登録されている。残り 1 カ所のメスカ（サキアを使用しているメスカ）についても、プロジェクトスタッフは、農民に WUA を設立する様に、また WUF に参画する様に働きかけている。WUA 設立に関する同意取得と登録された WUA の数は下表の通りである。
WUA 設立に関する同意取得状況と登録された WUA の数
注 1：耕作者：実際に耕作している農家数（耕作している地主の数＋小作人の数）
<table><tr><th rowspan="2"></th><th rowspan="2">総メスカ数</th><th rowspan="2">登録済み WUA の数</th><th colspan="3">農民の同意</th></tr><tr><th>土地所有者</th><th>耕作者[注1]</th><th>2/3 以上の同意を取得したメスカ数</th></tr><tr><td>第 1 工事区域
（主として地区の下流部）</td><td>18</td><td>18</td><td>308/387
（80%）</td><td>276/340
（81%）</td><td>18</td></tr><tr><td>第 2 工事区域
（主として地区の中・上部）</td><td>26</td><td>26</td><td>414/519
（80%）</td><td>407/470
（86%）</td><td>26</td></tr><tr><td>第 3 工事区域
（主として地区の中・上部）</td><td>23</td><td>22</td><td>347/449
（73%）</td><td>301/388
（78%）</td><td>22</td></tr><tr><td>Total</td><td>67</td><td>66</td><td>1050/1355
（78%）</td><td>981/1198
（82%）</td><td>66</td></tr></table>
WUA 設立同意取得においては、特に、バハールヌール・デリバリー水路地区上流部の農民から同意を取得することに困難を伴ったが、最終的には上流部も含めて地区全体で 2/3 以上の同意（灌漑施設の改善と WUA 設立に関する同意）を取得することができた。プロジェクト地区全体では、土地所有者からの同意取り付け率が 78%で、耕作者からの同意取り付け率が 82%となった。
本プロジェクトの一つの特徴は、WUA 設立に関する同意と灌漑施設改善計画（灌漑施設の設計内容）に対する同意を同時に取得する点である。</td></tr>
</table>

	項目		必要なデータ（指標）	情報源	活動
	主項目	サブ項目			
					⑵ WUF の設立 バハールヌールWUFの設立日は、2005年10月3日である。WUFの議会メンバーは、各WUAからの代表者（計67 人）と住民部門代表者（計 3 名）との計 70 名の代表者で構成されている。その 70 名の中から更に、上流部、中流部、下流部の各地区から 5 名ずつ選出され、そして住民部門代表者の 3 名を合わせて 18 名が WUF 評議会メンバーとして選出された。この 18 名の評議会メンバーの中から更に WUF の幹部 5 人が選出された。また、18 名の評議会メンバーとは別途に、3 名の監査役が議会メンバーの中から選出された（WUF の組織図は、ミニッツの Annex 11 参照）。WUF の幹部 5 人の選出後、WUF の登録手続きが開始された。エジプト国ではデリバリー水路レベルの農民水利組織について規定した法律が未整備なため（現在、政府が法案を審査中）、登録は個別に行う必要があり、本プロジェクト地区の WUF の登録にあたっては、水資源灌漑省大臣と水資源省カフルシェーク県灌漑担当次官の承認が必要とされた。その承認が得られた後、WUF の正式な登録が行われた。 WUF には、4 つのサブ委員会（1. 問題解決、2. 灌漑・排水・農業、3. レーザー均平化、4. 環境・ジェンダー）が設けられている。なお、他の地区の WUF に比べて、本プロジェクト地区の WUF は、ミーティングの実施頻度や活動内容の点で活発であるとされている。 エジプト国では、WUF 設立後、覚書 1 と覚書 2 を政府機関と結ぶ事になっている。覚書 1 は、WUF と水資源灌漑省灌漑改善局との間の覚書であり、灌漑改善工事の完成と WUA の設立に向けての意思を確認するものである。また、覚書 2 は、WUF と水資源灌漑省灌漑局との間の覚書であり、工事完了後における灌漑施設の維持管理について、双方の役割を明記している。覚書 2 は、WUF の自立発展性を確保する上で重要な文書である。なお、2006 年 11 月 25 日に、覚書 2 に署名が行われた。 ⑶ WUA の運営能力 2006 年に実施された「WUA に関するモニタリング調査」の暫定データによると、WUA の運営能力に関して、次の様なデータが得られている。 WUA の運営能力 1) ミーティング開催頻度：毎週 2%、毎月 98%、無し 0% 2) ミーティングの記録作成：有り 94%、無し 6% 3) 会計記録の作成：全体 88%、一部 12% 4) 会計のチェックの有無：有り 88%、無し 12% 以上のデータから判断すると、大半の WUA が良く機能しているものと思われる。但し、農民へのインタビューからは、必ずしもまだ十分には良く機能していない WUA もあるとの情報が得られ、C/P の意見も同様であった。

<table>
<tr><th colspan="2">項目</th><th rowspan="2">必要なデータ
（指標）</th><th rowspan="2">情報源</th><th rowspan="2">活動</th></tr>
<tr><th>主項目</th><th>サブ項目</th></tr>
<tr><td></td><td></td><td>2) 農民代表者のための合理的水利用と近代農業のテキストが活用される。</td><td>・プロジェクトの記録</td><td>前回終了時評価時点（2004 年 10 月）では、WUA と WUF のリーダー向け研修用のテキスト案が作成され、現場での研修に活用されていた。
延長期間中には、以下のテキストが新規に作成された。

ポンプ研修マニュアル（研修で活用中）
1) WUA 向け操作管理記録
2) WUA 向け会計管理
3) WUF の内部規定
4) WUF 活動計画

この他に、圃場水管理マニュアルの英語版が、容易に理解できる様にするため、アラビア語に翻訳された。また、WUF 向けのテキストとして、会計管理や会計書類の書式集の整備が進められている。WUF の内部規定に関するテキストは、「WUA&WUF マニュアル」の一部分として組み込む予定で、その作業が進められている。
WUF に関するテキストの活用度はまだ十分と言えないところがある。例えば、必ずしもきちんと内部規定に示されている通りの手順に沿って活動を進めていない場合がある。この状況を改善するため本プロジェクトでは、講義形式の指導だけでなく、OJT やワークショップを開催し、内部規定や活動計画の適切な活用を促してきている。</td></tr>
<tr><td></td><td></td><td>3) WUA により水利費が徴収される。</td><td>・WUA の活動記録</td><td>メスカ単位の灌漑施設改善工事が完了した後、メスカ毎に施設の引き渡しが行われている。工事完了時期が早かったいくつかのメスカでは、2004/2005 年の冬作から改善された灌漑施設を利用し始めたが、前回終了時評価時点（2004 年 10 月）で、水利を徴収している WUA はまだ無かった。
2005 年に、第 1 工事地区を対象に実施されたモニタリング調査によると、全ての WUA が水利費を現金あるいは現物で徴収していることが確認された。なお、徴収された水利費は、オペレーターの給料、ポンプの燃料代、ポンプ等の維持管理費をまかなうに必要な金額であったが、ポンプの更新費用を徴収している WUA は少なかった。そこで、プロジェクトスタッフは、WUA を対象とした研修（業務面の研修やバルブ・スケジュール研修）の機会を利用して、ポンプ更新費を徴収することの必要性を説明してきた。その結果、多くの WUA がポンプ更新費を徴収する様になってきている。
2006 年の夏作後に実施された「WUA に関するモニタリング調査」の暫定データによると、調査結果が得られた全ての WUA（64WUA）で水利費が徴収されており、そしてこの夏作に要した水利コストをカバーできていることが分かった。そして、WUA の 67%が水利費の一部としてポンプ更新費を徴収していることも分かった。なお、一部の WUA では、ポンプ更新費を土地所有者が支払うべきかあるいは耕作者が支払うべきかで議論が行われている。
以下に 2006 年夏作の収入・支出の収支に関するデータを示す。

2006 年夏作の WUA の収入・支出の収支バランス
<table><tr><th>収支</th><th>余剰あり</th><th>不足</th><th>計</th></tr><tr><td>(1) 夏作の収支（ポンプ更新費を考慮に入れない場合）</td><td>98%</td><td>2%</td><td>100%</td></tr><tr><td>(2) 夏作の収支（ポンプ更新費を考慮に入れた場合）</td><td>31%</td><td>69%</td><td>100%</td></tr></table></td></tr>
</table>

	項目		必要なデータ（指標）	情報源	活動
	主項目	サブ項目			
					上記のデータが示す様に、ポンプ更新費を考慮に入れない場合には、ほとんどの WUA の収支のバランスが取れている（余剰金が出ている）。しかしながら、ポンプ更新費を考慮に入れた場合、収支バランスがとれているのは、31％のWUAに低下する。この要因の一部は、既述の通り、ポンプ更新費を誰が支払うべきか決まっていないことである。灌漑施設を長期的間、適切に使用していくためには、WUA が、ポンプ更新費積み立ての必要性について農民の意識向上を図っていく必要があり、なんらかの能力強化に係る活動を実施していくことも必要であろう。 以上から「WUA により水利費が徴収される」という本指標は、ほぼ達成されている判断するが、将来必要となるポンプ更新費をあらかじめ積み立てておくことの必要性を考えると、今後も、WUA への指導や農民の意識向上を図っていく必要がある。
		分野 3 圃場レベルの水管理 3. 圃場レベルの適切な水管理が導入される。	3. 圃場水管理のためのマニュアルが作成される。		（このアウトプットは、当初のプロジェクト期間終了時（2005 年 2 月）までに、その目標をしたので、延長期間中における活動は無い。）
		分野 4 プロジェクト管理 4. プロジェクト活動や成果が政府職員に適切に紹介される。	1）政府職員がプロジェクト手法を理解する。	・研修記録	前回終了時評価時点（2004 年 10 月）では、実施された研修の回数は、プロジェクト開始当初に設定された指標をほぼ満たしていると評価された。但し、研修教材作成、研修実施、研修の見直しといった面の C/P の能力については、十分な水準に到達していないと評価された。また、現場レベルでは、日本人専門家とプロジェクト・サイト・マネージャー及び C/P と定期的なミーティングが実施されていたものの、意志決定機関である合同運営委員会（JSC）や合同サイト調整委員会（JSCC）がほとんど開催されていなかったことが指摘された。 延長期間中は、上記に示した各種ミーティングがきちんと開催され、そのことを通じて、C/P はプロジェクトの現状を発表する能力を身に付けるに至った。 水資源灌漑省の幾人かの幹部職員（例えば、灌漑総局長、排水局長、CD-IAS 次官）は、JSC のメンバーであり、JSC ミーティング参加を通じて、本プロジェクトの手法や活動について知っている。プロジェクトスタッフは、これら幹部職員の管轄部署と、協力しつつ活動を進めているので、関連部署の職員の間では、最大限の農民参加が実現している「民主的なプロジェクト」として知られる様になっている。 またこの他に本プロジェクトでは、灌漑改善局（IIS）職員だけでなく、水資源灌漑省内の世銀融資プロジェクトを担当している職員やウォーターボード・プロジェクト担当職員にも、プロジェクト成果の発表・説明会を実施してきた（平均参加者数は、25～30 人）。この様な機会を通じて、カイロ、タンタ、カフルシェークに勤務する IIS の職員、灌漑局エンジニア、世銀融資プロジェクト担当職員、ウォーターボード・プロジェクト担当職員等と本プロジェクトが開発してきた手法についての情報共有を図ってきた。またこれらの職員は、他の灌漑改善事業地区に比べると、プロジェクト地区内の WUA や WUF がより良い水管理と業務管理を行っていることも知っている。 本プロジェクトについて知る機会があった政府職員は、本プロジェクトの手法を普及する重要性を認識しており、他の政府職員の更なる参画を通じて本プロジェクトの成果が活用される必要性を感じている。

Achievement of the Project Activities of the Irrigation Improvement Project in the Nile Delta (Water management)

成果1：灌漑施設改善のための実施手法が改善される

2006年9月1日現在

項目	実施期間（年度） 2005 2006	担当者 エジプト側	担当者 日本側	プロジェクトの活動状況 活動実績	プロジェクトの活動状況 活動成果（A）	最終到達目標（B）	A*/B** (%)
1. 水管理の改善						**適切な水管理が達成される。**	**(90%) 82%**
1-1. 灌漑施設の施工管理		Eng.Yasser, Eng.Salah, Eng.Hamad, Eng.Koddosy	Expert in Water Management			.施工管理を行って、灌漑施設が改良される。	83%
1)メスカ工事の施工管理の実施		Eng.Yasser, Eng.Salah, Eng.Hamad, Eng.Koddosy	Expert in Water Management			メスカ工事における施工管理が適切に行われる。	83%
①建設施工管理マニュアルが活用される		Eng.Yasser, Eng.Salah, Eng.Hamad, Eng.Koddosy	Expert in Water Management	施工管理マニュアルをアラビア語に翻訳した。 全てのメスカ工事が完了した。 メスカ工事に関する施工記録が行われた。	施工管理マニュアルを用いた施工管理が一部実施された。 マニュアル1:「建設施工管理マニュアル（アラビア語）」	施工管理マニュアルを用いた施工管理が適切に実施される	70%
②建設調整委員会をWUFと各メスカで設立する		Eng.Yasser, Eng.Salah, Eng.Hamad, Eng.Koddosy	Expert in Water Management	建設調整委員会をWUFと各メスカで設立した	WUFと各メスカに工事調整委員会が設立された。	WUFと各メスカに工事調整委員会が設立される	100%
③建設調整委員会により工事の調整を行う		Eng.Yasser, Eng.Salah, Eng.Hamad, Eng.Koddosy	Expert in Water Management	建設調整委員会によって完了後の施設のチェックが行われた。 建設調整委員会によって工事スケジュールと連続通水の調整、農家からの要望の調整が行われた。	建設調整委員会によって工事の調整が行われた	工事調整委員会によって工事の調整が行われる	80%
1-2. デリバリーキャナルとメスカにおける水管理		Eng.Koddosy, Eng.Maradny	Expert in Water Management			WUFと各WUAが水管理に必要な技術を理解する	(96%) 81%
1)水管理に関するデータの収集		Eng.Koddosy	Expert in Water Management			水管理に必要なデータが収集される	100%
①灌漑技術者、WUF及びWUAの水管理に関する意見を理解する		Eng.Koddosy	Expert in Water Management	灌漑技術者、WUF等の関係機関と水管理に関するワークショップ、ミーティングを開催した。 WUAのポンプオペレーターにヒヤリングを行った。	水管理に関する灌漑技術者、WUF及びWUAの意見が明らかになった	水管理に関する灌漑技術者、WUF,WUAの意見が明らかになる	100%
②WUAからポンプ操作に関するデータを収集する。		Eng.Koddosy	Expert in Water Management	いくつかのWUAにポンプ操作の記録を依頼した いくつかのWUAからポンプ操作の記録を収集した ポンプのオペレーターにヒヤリングを行った。	農家の実際の水利用が明らかになった。 資料：ポンプ操作記録	農家の実際の水利用が明らかになる	100%

Achievement of the Project Activities of the Irrigation Improvement Project in the Nile Delta (Water management)

成果1：灌漑施設改善のための実施手法が改善される

2006年9月1日現在

項目	実施期間（年度） 2005 2006	担当者 エジプト側	担当者 日本側	プロジェクトの活動状況 活動実績	プロジェクトの活動状況 活動成果（A）	最終到達目標（B）	A*/B** (%)
2)水管理計画を作成する	..... ———	Eng.Koddosy, Eng.Maradny	Expert in Water Management			水管理計画が作成される。	(95%) 70%
①水管理計画（案）を作成する。	..... ———	Eng.Koddosy, Eng.Maradny	Expert in Water Management	新設の灌漑施設の説明、WUFで決定された水利用方法等を基に水管理計画（案）を作成した。	水管理計画（案）が作成された。 資料：水管理計画（案）	水管理計画（案）が作成される	100%
②水管理計画を修正する	..... ———	Eng.Koddosy, Eng.Maradny	Expert in Water Management	WUFによる水管理に関する活動のレビューを行った。	水管理計画修正のためのデータを収集した。	水管理計画が修正される	(90%) 40%
3)WUA及びWUFリーダーへの水管理に関するトレーニング	..... ———	Eng.Koddosy, Eng.Maradny	Expert in Water Management			WUFとWUAリーダーへのトレーニングによって農家が水管理を理解する	(97%) 78%
①デリバリーキャナルの水管理トレーニングを行う。	..... ———	Eng.Koddosy, Eng.Maradny	Expert in Water Management	灌漑技術者、WUF等の関係機関と水管理に関するワークショップを開催し、新設の灌漑施設の説明、水利用方法等について議論し、決定した。	農家がデリバリーキャナルレベルの水管理を理解した。 ワークショップ資料：「水管理計画」に添付	農家がデリバリーキャナルレベルの水管理を理解する	(90%) 80%
②メスカの水管理トレーニングを行う。	..... ———	Eng.Koddosy, Eng.Maradny	Expert in Water Management	いくつかのメスカでバルブ間の灌漑スケジュール、施設利用方法等についてトレーニングを行った	農家がメスカレベルの水管理を理解した。 トレーニング資料：「バルブスケジュール」	農家がメスカレベルの水管理を理解する	(100%) 60%
③灌漑施設の操作・維持管理トレーニングを行う	..... ———	Eng.Koddosy Eng. Maradny	Expert in Water Management	ポンプの操作管理マニュアルを作成した。 いくつかのメスカでポンプの操作管理トレーニングを実施した。	農家がメスカレベルの施設の維持管理方法を理解した。 トレーニング資料：「ポンプトレーニングマニュアル」	農家がメスカレベルの施設の維持管理方法を理解する	(100%) 95%
4)メスカ及びキャナルにおける水管理のモニタリング・エバリュエーションの実施	..... ———	Eng.Koddosy, Eng.Maradny	Expert in Water Management	2005年夏作時の水管理に関するモニタリング・エバリュエーションを実施した。 2006年夏作時の水管理に関するモニタリング・エバリュエーションのデータを収集している。	2005年度の水管理に関するモニタリングとエバリュエーションが実施された。 「プレゼンテーション資料」	水管理に関するモニタリングとエバリュエーションが実施される	(90%) 75%
Prospect of Sustainability							
1-1, 灌漑施設の施工管理	C/Pは写真、記録票による施工管理記録を作成する重要性及び記録方法を建設施工管理マニュアルを通して理解した。施工管理に対する認識がより高まってくると、これらの手法は他地区において利用可能であると思われる。 C/Pは施工管理用の機器（コンクリート機器）の利用方法等について、建設施工管理マニュアルを通して理解した。 工事調整委員会によって工事に関する農家の要望の調整、工事のチェックが行われた。工事調整委員会をWUF、WUAと別に設立するよりも、WUF及びWUAを工事着手前に設立し、工事調整委員会の機能を付与する方が、より一層他地区で適用し易くなると思われる。						
1-2, デリバリーキャナルとメスカにおける水管理	C/Pは、必要要水量の算定方法について理解し、それを基に、メスカにおける灌漑スケジュールを作成できる様になった。現在、他のIIPエリアから、メスカの灌漑スケジュールの作成依頼もあり、C/Pがそれらの地域で灌漑スケジュールの作成指導を行っている。 上記の様な状況から、これらの灌漑スケジュール作成が他地域でも利用可能であると思われる。 C/Pは、ポンプの操作管理に関するトレーニングの重要性について理解し、自らポンプの操作管理マニュアルを作成し、そのマニュアルを活用してポンプのトレーニングを行っている。他地域においてもポンプに関する問題が散見されることから、これらのトレーニングマニュアル、手法は、他地域でも有益なものであると思われる。 C/Pは、キャナルレベルでの農家の水管理活動決定までのプロセス（新設の灌漑施設の役割の説明、政府職員等関係機関との協力）や活動のモニタリング等について十分理解した。						

Notes: Plan ..... **Actual** ———

A* 現時点での成果

B** プロジェクト終了時までに期待される成果

成果 2: 農民水利組織の組織化手法が改善される

活動	実施時期 (年度)	責任者		ﾌﾟﾛｼﾞｪｸﾄの活動状況		最終到達目標 (B)	A/B
	2005 2006	エジプト側	日本側	活動実績	活動成果 (A)		(%)
2. 農民水利組織 (WUA&WUF)の強化					・WUA及びWUFはC/Pと共に活動を重ねることにより経験を積み、結果としてWUA及びWUFの強化につながった。	**WUA及びWUFの自立発展性が増大する。**	(96%) 76%
2-1. WUA及びWUFの運営		Eng. ﾛﾄﾌｨｰ Eng. ｱﾃﾞﾙ ﾖｰｽﾘｰ Eng. ﾓﾊﾒﾄﾞ ｱﾛｱ Eng. ｱﾌﾞﾄﾗﾊﾏｰﾝ	農民水利組織専門家	・WUAとWUFの運営強化のための支援を行った。	・WUA,WUFの活動を行う能力がOJTを通じて強化された。	WUAとWUF が強化される。	(100%) 85%
1)WUA及びWUFに対する運営支援		Eng. ﾛﾄﾌｨｰ Eng. ｱﾃﾞﾙ ﾖｰｽﾘｰ Eng. ﾓﾊﾒﾄﾞ ｱﾛｱ Eng. ｱﾌﾞﾄﾗﾊﾏｰﾝ	農民水利組織専門家	・C/PがWUA及びWUFの運営強化の支援を行った。	・C/Pの 支援により、WUA及びWUFの活動が強化された。	WUA及びWUFの活動が強化される。	(100%) 85%
①WUAに対する運営支援		Eng. ﾛﾄﾌｨｰ Eng. ｱﾃﾞﾙ ﾖｰｽﾘｰ Eng. ﾓﾊﾒﾄﾞ ｱﾛｱ Eng. ｱﾌﾞﾄﾗﾊﾏｰﾝ	農民水利組織専門家	・WUAが問題を解決する支援を行った。 ・工事調整委員会と共にWUAが工事を監督する支援を行った。	・ﾃﾞｻﾞｲﾝ、工事、ﾎﾟﾝﾌﾟ、農家間の 対立といった問題が解決された。	WUAﾏﾆｭｱﾙが修正される。	(100%) 80%
②WUFに対する運営支援		Eng. ﾛﾄﾌｨｰ Eng. ｱﾃﾞﾙ ﾖｰｽﾘｰ Eng. ﾓﾊﾒﾄﾞ ｱﾛｱ Eng. ｱﾌﾞﾄﾗﾊﾏｰﾝ	農民水利組織専門家	・WUFの内規作成を支援した。 ・WUFが活動計画を作成する支援を行った。 ・ WUFが問題を解決する支援を行った。 ・ WUFが定例会議を開催する支援を行った。 ・WUFが覚書を締結する支援を行った。	・WUFの内規の作成、修正が行われた。 ・WUFが活動計画を作成した。 ・工事やﾎﾟﾝﾌﾟといった問題が解決された。 ・WUFが毎月 会議を開催するようになった。 ・覚書がWUFとエジプト国政府との間で交わされた。	WUF ﾏﾆｭｱﾙが修正される。	(100%) 90%
2-2. WUA及びWUFのﾘｰﾀﾞｰに対する研修		Eng. ﾛﾄﾌｨｰ Eng. ｱﾃﾞﾙ ﾖｰｽﾘｰ Eng. ﾓﾊﾒﾄﾞ ｱﾛｱ Eng. ｱﾌﾞﾄﾗﾊﾏｰﾝ	農民水利組織専門家	・研修とOJTを実施した。	・WUA及びWUFのﾘｰﾀﾞｰが役割と活動について理解した。	WUA及びWUFのﾘｰﾀﾞｰが研修を行うことにより組織の役割について理解する。	(100%) 75%
1)WUA及びWUFに対する組織運営の研修		Eng. ﾛﾄﾌｨｰ Eng. ｱﾃﾞﾙ ﾖｰｽﾘｰ Eng. ﾓﾊﾒﾄﾞ ｱﾛｱ Eng. ｱﾌﾞﾄﾗﾊﾏｰﾝ	農民水利組織専門家	・研修とOJTを実施した。	・研修とOJTが実施された。	WUA及びWUFに対し、必要な研修が実施される。	(100%) 75%
①WUA及びWUFのﾘｰﾀﾞｰに対する適切な組織運営に関する研修		Eng. ﾛﾄﾌｨｰ Eng. ｱﾃﾞﾙ ﾖｰｽﾘｰ Eng. ﾓﾊﾒﾄﾞ ｱﾛｱ Eng. ｱﾌﾞﾄﾗﾊﾏｰﾝ	農民水利組織専門家	・WUA及びWUFのﾘｰﾀﾞｰに対し、適切な組織運営に関するﾄﾚｰﾆﾝｸﾞとOJTが実施された。	・研修ﾃｷｽﾄが修正された。 ・WUA及びWUFのﾘｰﾀﾞｰが適切な組織運営について理解した。	研修資材が修正される。 WUA及びWUFのﾘｰﾀﾞｰが適切な組織運営について理解する。	(100%) 75%
②WUA及びWUFのﾘｰﾀﾞｰに対する適切な経理運営に関する研修		Eng. ﾛﾄﾌｨｰ Eng. ｱﾃﾞﾙ ﾖｰｽﾘｰ Eng. ﾓﾊﾒﾄﾞ ｱﾛｱ Eng. ｱﾌﾞﾄﾗﾊﾏｰﾝ	農民水利組織専門家	・WUAのﾘｰﾀﾞｰに対し、適切な経理に関するﾄﾚｰﾆﾝｸﾞが実施された。	・研修ﾃｷｽﾄが修正された。 ・WUA及びWUFのﾘｰﾀﾞｰが適切な経理について理解した。	研修資材が修正される。 WUA及びWUFのﾘｰﾀﾞｰが適切な経理について理解する。	(100%) 50%
③WUA及びWUFのﾘｰﾀﾞｰに対する改良農業技術に関する研修		Eng. ﾛﾄﾌｨｰ Eng. ｱﾃﾞﾙ ﾖｰｽﾘｰ Eng. ﾓﾊﾒﾄﾞ ｱﾛｱ Eng. ｱﾌﾞﾄﾗﾊﾏｰﾝ	農民水利組織専門家	・新しい灌漑手法のﾃﾞﾓﾝｽﾄﾚｰｼｮﾝをを砂糖大根を用いて行った。 ・ﾃﾞﾓﾝｽﾄﾚｰｼｮﾝ圃場で研修を実施した。	・砂糖大根を用いた新しい灌漑手法のﾃﾞﾓﾝｽﾄﾚｰｼｮﾝの結果について研修を実施した。 ・圃場水管理ﾏﾆｭｱﾙがｱﾗﾋﾞｱ語に翻訳された。	研修資材が修正される。 WUA及びWUFのﾘｰﾀﾞｰが改善された農業技術について理解する。	100%

成果 2: 農民水利組織の組織化手法が改善される

活動	実施時期 (年度) 2005 2006	責任者 エジプト側	責任者 日本側	ﾌﾟﾛｼﾞｪｸﾄの活動状況 活動実績	ﾌﾟﾛｼﾞｪｸﾄの活動状況 活動成果 (A)	最終到達目標 (B)	A/B (%)
2-3. WUA及びWUFに対するモニタリング、評価	..... ———	Eng. ロトフィー Eng. アデル ヨースリー Eng. モハメド アロア Eng. アブドラハマーン	農民水利組織専門家	・WUA及びWUFの活動のモニタリング、評価が行われた。	・WUA及びWUFのﾓﾆﾀﾘﾝｸﾞ、評価が質問表やﾜｰｸｼｮｯﾌﾟにより行われた。	WUA及びWUFのﾓﾆﾀﾘﾝｸﾞ、評価が行われる。	(89%) 67%
1)WUA及びWUFに対するモニタリング、評価の実施	..... ———	Eng. ロトフィー Eng. アデル ヨースリー Eng. モハメド アロア Eng. アブドラハマーン	農民水利組織専門家	・WUA及びWUFの活動のﾓﾆﾀﾘﾝｸﾞ、評価が行われた。	・WUAのﾓﾆﾀﾘﾝｸﾞｼｰﾄが作成された。 ・ WUFが実際に行ってきた活動を基に活動計画を再検討した。	WUA及びWUFのﾓﾆﾀﾘﾝｸﾞﾏﾆｭｱﾙが作成される。	(89%) 67%
①WUA及びWUFのモニタリングの実施	..... ———	Eng. ロトフィー Eng. アデル ヨースリー Eng. モハメド アロア Eng. アブドラハマーン	農民水利組織専門家	・第1工事の地域にて、質問表を用いたﾓﾆﾀﾘﾝｸﾞが水管理ｾｸｼｮﾝ、短期専門家の協力の下行われた(2005年)。 ・第1,2工事地域のためのﾓﾆﾀﾘﾝｸﾞｼｰﾄが作成された(2006年)。 ・WUFの活動がWUF、C/P、政府職員と共に再検討し修正された。	・第1工事地区でﾓﾆﾀﾘﾝｸﾞを実施した。 ・WUFがその弱点と長所を確認した。 ・WUFが夏作前に活動計画を作成し、夏作後に実際に行ってきた活動を基に活動計画の見直しを行なった。	WUAとWUFのﾓﾆﾀﾘﾝｸﾞ、評価が行われる。	(89%) 67%
②モニタリングの結果の評価、分析	..... ———	Eng. ロトフィー Eng. アデル ヨースリー Eng. モハメド アロア Eng. アブドラハマーン	農民水利組織専門家	・WUAの活動を評価するために質問表の結果の分析を行った(2005年)。 ・夏作の活動の見直しの後、WUFの活動に必要な対応策の検討と活動計画の修正がなされた。	・WUAの研修ﾃｷｽﾄが修正された。 ・研修に十分な時間を確保するために今まで一緒に行っていたﾊﾟﾙﾌﾟｽｹｼﾞｭｰﾙとｱﾄﾞﾐﾆｽﾄﾚｰｼｮﾝの研修を分けて行うようにした。 ・WUFが活動の見直しを行った後、活動計画を修正した。	WUAとWUFの問題が分析される。	(89%) 67%
③改善のための対応策の実施	..... ———	Eng. ロトフィー Eng. アデル ヨースリー Eng. モハメド アロア Eng. アブドラハマーン	農民水利組織専門家	・WUAの問題点を改善するために必要な活動が検討された(2005年)。 ・修正された活動計画に沿って活動するようWUFを支援した。 ・WUFが今まで行ってきた活動により得られた経験や修正された活動計画を基にWUFの内規を修正した。	・WUAとWUFの活動が改善した。 ・WUFの内規が修正された。	WUAとWUFの活動が改善される。	(89%) 67%
自立発展の見通し							
2-1, WUA及びWUFの運営	C/Pはﾃﾞｻﾞｲﾝ、工事、施設引渡し後といったあらゆる段階で農家が活動に参加することの重要性を理解した。また、WUAやWUFが内規を作成し、問題を解決し、活動を強化していく際にどの様にして支援を行っていけば良いかを、ﾌﾟﾛｼﾞｪｸﾄの活動を通じてC/Pは能力を改善していった。C/Pは、このﾌﾟﾛｼﾞｪ外で得られた成果を他の地域に普及させていくために、どの様にして彼らの経験を生かしていけば良いか考えられる様になった。						
2-2, WUA及びWUFのﾘｰﾀﾞｰに対する研修	C/Pは研修やﾜｰｸｼｮｯﾌﾟをどの様に行っていけば良いかについて、能力を改善させていった。また、講義形式の一方向の研修だけでなく、OJTやﾜｰｸｼｮｯﾌﾟといった双方向性の研修についてもその重要性を理解した。						
2-3, WUA及びWUFに対するモニタリング、評価	C/Pはﾓﾆﾀﾘﾝｸﾞ項目の設定、質問表の作成、ﾓﾆﾀﾘﾝｸﾞの実施、ﾃﾞｰﾀの分析といった活動について経験を積み理解した。また、ﾜｰｸｼｮｯﾌﾟを通じてのﾓﾆﾀﾘﾝｸﾞ、評価についても理解した。C/Pは、これから、このﾓﾆﾀﾘﾝｸﾞ、評価の活動をどの様にして自分達だけで継続していけるかを考えられる様になった。						

Notes: **Plan** ..... **Actual** ———

成果 4: プロジェクト活動や成果が政府職員に適切に紹介される

2006年9月1日現在

項目	実施時期 (年度) 2005 2006	担当者 エジプト側	担当者 日本側	Progress of the Project 活動実績	Progress of the Project 活動成果 (A)	最終到達目標 (B)	A/B (%)
3. 政府職員の能力向上						**改善手法が研修を通じて政府職員に紹介される。**	(92%) 78%
3-1.政府職員に対するセミナー、研修		Project Manager C/Ps	Chief Advisor		プロジェクトの活動と成果が政府職員に紹介された。	プロジェクトの活動と成果が政府職員に紹介される。	(92%) 78%
1)各セミナー、研修のための資料作成		Project Manager C/Ps	Chief Advisor		研修資料が作成された。日本人専門家が英語版の資料をC/Pがアラビア語版の資料を作成した。それらの資料はプレゼンテーションで用いられた。	研修資料が作成される。 プロジェクトによって作成されたマニュアルがセミナー、研修で用いられる。	100%
①セミナー、研修コースの年次計画の作成		Project Manager C/Ps	Chief Advisor	年度の始めにエジプト国側と日本国側とが一緒に検討し、年次研修計画が立てられた。	年次研修計画が作成された。 年次研修計画を基に研修やプレゼンテーションが実施された。	年次研修計画が作成される。	100%
②各セミナー、研修のための英語版又はアラビア語版の資料作成		C/Ps	All Experts	各プレゼンテーションのため、スライドショーの他、英語版又はアラビア語版の資料が作成され、配布された。	研修の資料や技術マニュアルが英語又はアラビア語で作成された。	英語又はアラビア語の研修資料が作成される。	100%
2)実用的な能力向上のためのセミナー、研修の開催		Project Manager C/Ps	Chief Advisor		研修、プレゼンテーションが実施された。 研修資料が配付され、適切に保管された。 しかし、現在までのところ、モニタリングや評価のための会議は開かれていない。	政府職員に改善手法についてのセミナー、研修を実施する。 実施されたセミナーや研修が適切に記録される。 C/Pがセミナー及び研修を絶えずモニタリング、評価する。	(90%) 80%
①C/Pの研修実施		C/Ps	All Experts	専門家が講義やOJT形式でC/Pに研修を行った。 C/Pはプレゼンテーションで講義を行った。	C/Pがプレゼンテーションを行った。	C/Pがセミナーや研修を実施する。	(90%) 85%
②政府職員への研修実施		Project Manager C/Ps	Chief Advisor	政府職員を対象としてプレゼンテーションが4回実施された。参加者は延べ126人であった。 研修資料やマニュアルが配布され、実際に利用してもらうために要請があればファイルも渡された。 しかし、WUF支援の活動が忙しかったことから、中間セミナーを開催することができなかった。来年1月にプロジェクトの成果をまとめるセミナーを開催する予定。	政府職員の実用的な能力が向上した。	政府職員の実用的な能力が向上する。	(90%) 75%
3)評価会の開催と研修レポートの提出		Project Manager C/Ps	Chief Advisor		初年度の年次レポートが作成され、プロジェクトマネージャーに提出された。	年次レポートがプロジェクトマネージャーに提出される。	(85%) 55%
①各セミナー、研修に対する評価		C/Ps	All Experts	研修についての評価会は開催されなかった。それに代わるものとして研修を担当したC/Pと専門家の間で個別打合せが行われた。	プロジェクトマネージャーから、プレゼンテーションをもっと開催し、また、C/Psの国外研修の機会を増やして欲しいという提案があった。	セミナーや研修の改善について提案がなされる。	(70%) 60%
②年次研修評価会の開催と報告書の提出		Project Manager C/Ps	Chief Advisor	初年度の研修報告書が作成され、プロジェクト・サイト・マネージャーとチーフアドバイザーの間で1回、プロジェクトマネージャーとチーフアドバイザーの間で1回、計2回会議が行われた。	初年度の研修レポートが作成され、プロジェクトマネージャーに提出された。 第2年度の研修レポートはプロジェクト終了直前に提出される予定。	年次研修報告が作成される。	(100%) 50%
自立発展の見通し							
3-1.政府職員に対するセミナー、研修	C/Pはプロジェクトの改善手法の有効性について理解している。C/Pは政府職員に対しても講義する経験を十分積んだ。しかし、彼ら自身で研修資料を準備することを習得すべきである。						

Notes: Plan ····· **Actual** ——

カウンターパート向け質問票の回答集計（20 名分）
（回答数を括弧内に記入し、またコメントを記入した。）
Summary of Answer to Questionnaire to Counterpart Personnel
The Water Management Improvement Project in the Nile Delta
Final Evaluation (on Extended Period of the Project)

Questions for Five Evaluation Criteria

1. Relevance

1.1 Were the techniques and methods transferred under the Project appropriate for the water management improvement at the project site in general?

(8) a. Very appropriate,
(12) b. Appropriate,
(0) c. Not appropriate so much

→（コメント等）
13 I think this the only way (the techniques and method transferred) to built farmers trust to the government and increase government credibility, for effective and efficient implementation and dissemination of water management projects.

2. Effectiveness

2.1 Project Purpose

(1) How do you evaluate achievement of the Project Purpose in general, i.e. “Improved methods for the efficient and effective implementation of the IIP based on the full scale farmers' participation are verified in the project area.”?

(5) It will be achieved fully by the end of the Project (February 2007).
(12) It will be achieved mostly by the end of the Project.
(3) It will be achieved to some extent by the end of the Project.
(0) It is difficult to be achieved by the end of Project period.

→ （コメント等）
13 Only if full time counterpart assigned all the time up to the end of the project.
17 Only if full time counterpart assigned all the time up to the end of the project.
20 Some extension needed for training monitoring and evaluate WUF, WUA activities to be able to sustainability.

2.2 Has enough Egyptian counterpart personnel engaged in the sector related to water management or agriculture in the project area during the extended project period (from March 2005 up to now)?

(19) Yes, enough number of Egyptian counterpart personnel has engaged.
(1) No, number of Egyptian counterpart personnel was not enough.

→ （コメント等）
20 The number of counterpart enough but some of them needs more experience.

2.3 How the delay of construction of some irrigation facilities in the project area hampered to the achievement of the Project Purpose?

(2) It hampered significantly to the achievement the Project Purpose.
(9) It hampered some extent to the achievement the Project Purpose.
(9) It did not hamper so much.

→ （コメント等）

2 As the delay of construction of some irrigation facilities led to the delay of some activities such as training of farmers and monitoring & evaluation activities

13 Relatively World Bank area there is no sever delay of construction

17 Relatively to World Bank area there is no severe delay of construction.

20 Some activities delay as monitoring and evaluate water management activities along canal and activities of WUA, WUF.

2.4 What are the major factors that facilitated and/or hampered the achievement of the Project Purpose?

(1) Facilitating Factors:

1-1 New approach of establishment of WUA & WUF

1-2 Quality of Construction

1-3 Training process

2-1 Well design and clear definition of the project design matrix

2-2 Good coordination & great cooperation between the Egyptian and the Japanese sides

3-1 Good coordination between the Egyptian staff and Japanese staff

3-2 Hospitality of the decision makers in the MWRI.

5-1 New Tec. Equipment

5-2 Training

6-1 Good planning and design

6-2 Strong WUA

7-1 Good communication between the Egyptian side and Japanese side

7-2 Immediately solving of problems that may occurs.

8-1 Existing strong WUA and WUF

8-2 Quality of construction

9 Quality of construction

10-1 Project staff (both Japanese and Egyptian) keen to apply full-scale farmers' participation.

10-2 Applying continuous flow during construction phase

11-1 Project staff (both Japanese and Egyptian) keen to apply full-scale farmers' participation.

11-2 Applying continuous flow during construction phase

12-1 Strong WUA (beside training for farmers & staff)

12-2 Good quality for construction

13-1 Insisting by project staff (both Japanese and Egyptian) to apply full-scale farmers' participation.

13-2 Applying continuous flow during construction phase.

14-1 Good feasibly study

14-2 Good monitoring for project.

15-1 Good feasibility study

15-2 Good monitoring system

16-1 Collecting 2/3 agreement

16-2 Farmers participation in all stages (design, construction)

17-1 Insisting by project staff (both Japanese and Egyptian) to apply full-scale farmers' participation.

17-2 Applying continuous flow during construction phase.

17-3 Effectively use of equipment (cars and so on)

20-1 Main counterpart understood the project purpose and some supporting from governmental organization.

20-2 Farmers cooperation not all but farmers understood the Project will

20-3 Cooperation between counterparts and Japanese exerts.

(2) Hampering Factors:

1-1 Delay of construction time schedule
1-2 Land leveling not applied everywhere
1-3 Objections from some farmers
2-1 Delay in construction which led to delay of some other activities
2-2 Difficulties in coordination of farmers' requests for the construction works
4 The machine (land leveling machine) wasn't functioning very well.
5-1 Construction delay
5-2 Opposition of farmers
6-1 If there is some problems between farmers
6-2 If there is an objection from farmers on planning
8-1 Weak WUAs
8-2 Delay and bad construction
9 Delay of construction
10-1 Up stream farmers' complain over the project.
10-2 Pump maintenance problems and illegal pumps
11-1 Up stream farmers' complain over the project.
11-2 Pump maintenance problems and illegal pumps
12-1 Delay of construction
12-2 If no cooperation between farmers & WUA
12-3 If no land leveling
13-1 Up stream farmers' objection over the project
13-2 Pump maintenance problems and illegal pumps
16-1 Up stream owners demonstration
16-2 Maintenance problems of pumps
17-1 Up stream farmers' obstructions over the project
17-2 Pump maintenance problems and illegal pumps
20-1 Delay of construction
20-2 Some farmers' obstruction the project.

2.5 Outputs of the Project

(1) What is the achievement of the Output 1? (Output 1: Implementation method for improvement of irrigation facilities is improved.)

(8) It is achieved already.
(6) It will be achieved by the end of the Project period (February 2007).
(5) It will be achieved mostly by the end of the Project period.
(1) It is difficult to be achieved by the end of Project period.

→（コメント等）
2 Appropriate water management is achieved but farmers' training was delayed. Hence、it is recommended to be continued after the end of the project
11 Only if full time counterpart assigned all the time up to the end of the project.
13 Only if full time counterpart assigned all the time up to the end of the project.
17 Only if full time counterpart assigned all the time up to the end of the project.

(2) What is the achievement of the Output 2? (Output 2: Formulation method for farmers' water management organization is improved)

(9) It is achieved already.
(8) It will be achieved by the end of the Project period (February 2007).

(3) It will be achieved mostly by the end of the Project period.
(0) It is difficult to be achieved by the end of Project period.

→（コメント等）
2 As C/Ps understood the importance of farmers' participation in planning, construction. They can assist WUA&WUF management in making regulation and solving problems. They can conduct training for WUA and WUF. They can utilize their experience for another area to disseminate the project outcome.
11 Only if full time counterpart assigned all the time up to the end of the project.
13 Only if full time counterpart assigned all the time up to the end of the project.
17 Only if full time counterpart assigned all the time up to the end of the project.
20 But this method needs more time to follow up and supporting

(3) What is the achievement of the Output 4?
(Output 4: Project activities and results are introduced to governmental staff properly.)

(6) It is achieved already.
(12) It will be achieved by the end of the Project period (February 2007).
(2) It will be achieved mostly by the end of the Project period.
(0) It is difficult to be achieved by the end of Project period.

→ （コメント等）
11 Only if full time counterpart assigned all the time up to the end of the project.
13 Only if full time counterpart assigned all the time up to the end of the project.
17 Only if full time counterpart assigned all the time up to the end of the project.

3. Efficiency

3.1 Inputs

Inputs by Japanese Side

3.1.1 Were Japanese experts dispatched for the Project appropriate for the extended period (from March 2005 up to now)?

a. Long term experts

	Very appropriate	Appropriate	Not appropriate
Number of experts	9	11	0
Field of specialty	6	14	0
Technical capability	14	6	0
Communication ability	8	12	0

→（コメント等）
1 At same times the field was in need to additional number of experts.
13 It was better to keep the agronomist Youshi san these two years.
20 High cooperation

b. Short term experts

	Very appropriate	Appropriate	Not appropriate	No answer
Number of experts	6	12	0	2
Field of specialty	7	11	0	2
Timing of dispatch	5	13	0	2
Period of dispatch	5	12	1	2
Technical capability	12	6	0	2
Communication ability	3	15	0	2

→（コメント等）

13 It was better to increase number of experts.

17 It was better to increase number of experts.

3.1.2 Was provision of machinery and equipment appropriate for the extended period (from March 2005 up to now)?

	Very appropriate	Appropriate	Not appropriate	No answer
Kind of equipment	3	11	0	6
Quantity of equipment	4	10	0	6
Timing of provision	3	11	0	6

→（コメント等）

3 No machine and equipment was provided.

7 We did not receive any machinery or equipment during the period from March 2005 will now.

10 There were not enough equipment delivered from March 2005.

11 There were not enough equipment delivered from March 2005.

3.1.3 Were trainings of counterpart personnel in Japan appropriate for the extended period (from March 2005 up to now)?

	Very appropriate	Appropriate	Not appropriate	No answer
Number of trainee	2	11	6	1
Timing of training	5	11	3	1
Duration of training	6	9	4	1
Contents of training	10	7	2	1

→（コメント等）

10 It was important to increase number of training courses in Japan to enhance CPs capabilities.

11 It was important to increase number of training courses in Japan to enhance CPs capabilities.

13 It was better to increase number of training courses in Japan to enhance their capabilities.

17 It was better to increase number of training courses in Japan to enhance their capabilities.

18 I was not involved in this activity.

19 I was not involved in this activity.

3.1.4 Do you have good communication with your Japanese Expert?

(13) Yes, I have very good communication.

(6) to some extent

(0) not so good

(0) No answer

Inputs by Egyptian side

3.1.5 Were inputs by Egyptian side for the Project appropriate for the extended period (from March 2005 up to now)?

		Very appropriate	Appropriate	Not appropriate	No answer
Land, building and facilities	Quantity, Size	4	16	0	0
	Quality	5	14	0	1
Counterpart personnel	Number	12	7	0	1
	Quality	10	10	0	0
Administrative and supporting staff	Number	8	12	0	0
	Quality	5	13	0	2
Budgetary allocation	Amount	13	7	0	0
	Timing	13	6	0	1

→（コメント等）

1 This part of evaluation depends on 1 visit and all reports contents (from both Japanese and Egyptian sides)

3.1.6 Inputs by Egyptian side and Japanese side above-mentioned (human resources, equipment and financial resources) have been utilized effectively?

(11) Very effective

(9) Effective to some extent

(0) Not so effective

3.2 Is Joint Steering Committee functioning well?				
	Yes, very well.	To some extent.	Not functioning well.	No answer
(1) Problem solution	18	2	0	0
(2) Decision making	17	1	0	2

3.3 Is Joint Site Coordinating Committee functioning well?			
	Yes, very well.	To some extent.	Not functioning well.
(1) Problem solution	14	4	2
(2) Decision making	11	7	2

→（コメント等）

18 I was not involved.

19 I was not involved.

3.4 Are other regular meetings among Egyptian counterparts and Japanese experts functioning well?			
	Yes, very well.	To some extent.	Not functioning well.
(1) Problem solution	16	4	0
(2) Decision making	16	4	0

3.5 How was coordination on the Project activities with other concerned sections/groups of IIS (Irrigation Improvement Sector of the Ministry)?

(18) It was very well.

(2) It was well to some extent.

(0) It was not so well.

3.6 Are there any major factors that facilitated and/or hampered the Efficiency of the Project?

Facilitating Factors:

2-1 Great cooperation & Well coordination between the Japanese & Egyptian parties

2-2 The important role of the Joint Steering Committee in making decisions and solving problems during the implementation of the project

2-3 Provision of appropriate machinery & equipment

2-4 The Japanese experts' experience and technical capabilities

3-1 The transfer of technology between the Japanese side and Egyptian side and more experience for Egyptian staff

4 The land leveling machine wasn't well functioned.

5 Training

6-1 Plan and design

6-2 WUA

7 Transferring technical experiences of the Japanese Experts in the different fields of the Project.

8-1 Quality of construction (irrigation structure and pumps)

8-2 Sustainability of WUF

10-1 Good cooperation with other organizations
10-2 Continuous flow
11-1 Good cooperation with other organizations
11-2 Continuous flow
13-1 Good relation between CPs and Japanese expert
13-2 Continuous flow
16-1 Good communication between C/Ps and expert
16-2 Project staff keen to apply participation concept
17-1 Good communication between CPs and Japanese expert
17-2 Continuous flow
20-1 Some mesqas handover to farmers and work well
20-2 Establishment WUF and join in activities of project

Hampering Factors:

1 Financial systems and WUAs to guarantee O/M process
2-1 Construction problems
2-2 Conflicts among farmers
3-1 Contractor's delay in implementation phase
3-2 Few delay for administrative regulations
3-3 Objection of some farmers
5 Construction delay
6-1 Bad design
6-2 Understanding between WUA
7-1 Delay of some of the contractors in the implementation (construction)
7-2 Objection of some farmers for the Project in the begging of the Project.
8 Quality of construction not well
10-1 Farmers didn't accept pumps quality
10-2 No enough training
11-1 Bad maintenance of the pumps.
11-2 No enough training
13-1 Bad maintenance of the pumps
13-2 No sufficient training to field agents and agriculture engineer.
16-1 US farmers complain
16-2 Illegal pumps
16-3 Bad maintenance of the pump
16-4 No sufficient training to field agent and agriculture engineers
17-1 Bad maintenance of the pumps
17-2 No enough training
18 I have not any so sufficient training to field agents and agriculture engineers.
19 I have not any so sufficient training to field agents and agriculture engineers.
20-1 Pump problems
20-2 Maintenance of pump and irrigation facilities.

4. Impacts

4.1 Overall Goal and Intermediate Goal

(1) Is there expectation to achieve the 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" by the year 2017 in a certain districts of Bahr Tera?

(7) It will be achieved surly, even if JICA cooperation is terminated.
(5) It will be achieved to some extent, even if JICA cooperation is terminated.
(7) It is difficult to be achieved Overall Goal, if JICA cooperation is terminated.
(1) No answer

→ （コメント等）
1. But depending on evaluation results and spreading the methodology of the Project to the others (Gov. & farmers) before achieving the project in the other areas.
2. Questionnaire to the CPs of WMIP
10 We need more techniques to be transferred from Japanese side for dissemination of the project.
11 We need more techniques to be transferred from Japanese side for dissemination of the project.
13 We need more techniques to be transferred from Japanese side for dissemination of the project.
16 Because project concepts transferred only few counterparts and not decision makers
17 We need more techniques to be transferred from Japanese side for dissemination of the project.
19 Because the concept of the project transferred only few counterparts not to decision makers.
20 Our government doesn't have enough budget to disseminate this project in the Nile Delta and for large scale area we need some techniques.

(2) Is there expectation to achieve the Intermediate Goal "Improved methods for the efficient and effective implementation of the IIP raise irrigation efficiency and agricultural productivity in the project area." by the year 2012 (within five years after the end of the Project)?

(12) It will be achieved surly, even if JICA cooperation is terminated.
(6) It will be achieved to some extent, even if JICA cooperation is terminated.
(0) It is difficult to be achieved Overall Goal, if JICA cooperation is terminated.
(2) No answer

→（コメント等）
18 Because the concept of the project transferred only few counterparts not to decision makers.

4.2 Are there any positive or negative impact produced by the Project? If there are, please describe below.

1 For farmers: pump (O/M) cost saving, land saving, reduction of the time of irrigation
For Gov.: Water saving, management transfer
2 There are some positive impacts such as less irrigation time and cost, water availability, fair water distribution among farmers and farmers' satisfaction
3 Positive Impact: (1) Equality of water distribution in the Mesqa, (2) Positive impact in the environmental and water quality
5 Positive impact: (1) The water reach to the end of canal, (2) Enhance the involvement
6 Adequately distribution, save water, and save time
7 Positive impact: (1) Fair water distribution among farmers, (2) Increase the water quality in the canal and increase of the efficiency of water delivery to the end.
12 Positive impact: (1) Reduce cost of irrigation, (2) Reduce time of irrigation, (3) Water saving.
13 Decentralization culture and democratic culture will prevail.
16 Participation will spread and democratic culture.
17 Participation concept will prevail.
19 More activation for participation.
20-1 Positive impact: some farmer from other area request project WMIP
20-2 Negative impact: if we stop the project after the end of 2007.

５． Sustainability

5.1 Does IIS (Irrigation Improvement Sector of the Ministry) have necessary capacity on management and operation for continuing water management improvement activities utilizing outcomes of the Project in the project area and also other irrigation area in Nile Delta?

(7) IIS has very good capacity.
(11) IIS has good capacity.
(1) IIS does not have enough capacity yet.
(1) No answer

→（コメント等）
1 Still need to be well built and trainee
11 Cooperation with CD IAS and with Irrigation Sector is a must.
13 Cooperation with CD IAS and with Irrigation Sector is a must.
16 If action plan already revised by project staff during project period.
17 Cooperation with CD IAS and with Irrigation Sector is a must.

5.2 Is there mechanism (staff assignment, roles and activities of staff, etc.) for extending the improved methods (improved methods for irrigation improvement project (IIP) verified by the Project (WMIP)) and being established in the project area?

(15) Yes, there is a mechanism.
(4) No, there is not clear mechanism.
(1) No answer

→（コメント等）
1 But the good monitoring indicators and following is to the key of the successful mechanism.
11 Action plan already fixed by Egyptian side to follow up the project.
13 Action plan already fixed by Egyptian side to follow up the project.

5.3 Is there plan or mechanism for extending the improved methods (improved methods for irrigation improvement project (IIP) verified by the Project (WMIP)) in other irrigation improvement project (IIP) areas in Nile Delta?

(10) Yes, there is.
(7) No, there is no plan or mechanism yet.
(3) No answer

→（コメント等）
1 Depending on what stated in 4.1 (1).
11 Egyptian government has to use CPs to disseminate the project in other areas.
13 Egyptian government has to use CPs to disseminate the project in other areas.
17 It is not clear to Egyptian side to use CPs to disseminate in other area.

5.4 Do C/Ps have necessary capacity to utilize and extend the improved methods (improved methods for irrigation improvement project (IIP) verified by the Project (WMIP))?

(8) C/Ps have very good capacity.
(8) C/Ps have good capacity.
(3) C/Ps does not have enough capacity yet.
(1) No answer

→（コメント等）

1 But conditioned with special training programs.

5.5 Will equipment procured by the project be maintained appropriately after the completion of the project?

(5) a. Yes, I think so.

(11) b. To some extent.

(3) c. I don't think so.

(1) No answer

→（コメント等）

1 It recommended to give shirt/long-term maintenance solutions for farms of IIS to be used.

5.6 Are there any factors to affect sustainability of the Project? Please identify and describe them.

1 Changing the trained staff, weakness of monitoring to solve problem at time, financial system must be through bank to save money for WUAs to guarantee the sustainability.

2 The allocated budget, training and monitoring &evaluation activities

3 (1) Monitoring and evaluation sustainable, (2) Sustainable of maintenance, (3) Sustainable of WUA and follow up of its effectiveness

5 It will be extend.

7-1 Operation and maintenance has to be in good condition.

7-2 Performance of WUA and BCWUA in an efficient manner.

10-1 Continuous flow

10-2 District engineers understanding of the project and of the MWRI policy

10-3 Dissemination of the project.

10-4 Clear mechanism for following up.

11-1 Continuous flow

11-2 District engineers understanding of the project and of the MWRI policy

11-3 Dissemination of the project.

13-1 Continuous flow

13-2 District engineers understanding of the project and of the MWRI policy

13-3 Dissemination of the project.

13-4 Clear mechanism for following up.

14 Stop of continuous flow.

15 Continuous flow

16-1 District engineer understanding of project concept

16-2 Changing continuous flow to another method.

17-1 Continuous flow

17-2 District engineers understanding of the project and of the MWRI policy

17-3 Dissemination of the project.

17-4 Clear mechanism for following up.

18 If application of continuous flow stop.

19 If application of continuous flow stop.

20 If the project stop activities of WUA, WUF after finish the project period.

6. Please write your comments on the project, including suggestions or recommendations.

1-1 Harmonized project insists on both technical and social aspects.

1-2 Quality of the works is special in that project.

1-3 One day presentation to MWRI staff (Decision makers, IS, IIS, CD=IAS).

1-4 Updating (O/M) manual according to M&E.

1-5 Please accept my highly appreciation and deep consideration for excellent job presented in this special project which will be really mile stone in our plan for Irrigation Improvement and I confirm my appreciation for the successful bilateral cooperation between Egypt and Japan.

2 Continuous monitoring & evaluation program is required to ensure the project sustainability

3 I recommend to continuing this kind of project in the different sectors of the Ministry specially with Irrigation Sector.

5 To apply the lesson learned from the Project.

7 I think that the Japanese team was able to transfer their very high technical experience in this project and to apply a wider management concept that was very successful in Egypt and I recommend that if is possible to keep on transferring this experience in other project.

10-1 It is highly recommended to use main counterparts in next technical cooperation and in dissemination of the project.

10-2 Next technical cooperation is highly recommended to transfer more techniques related to integrated water management and supporting farmers more and more for sustainability of the project and for the dissemination in other areas.

11-1 It is highly recommended to use main counterparts in next technical cooperation and in dissemination of the project.

11-2 Next technical cooperation is highly recommended to transfer more techniques related to integrated water management and supporting farmers more and more for sustainability of the project and for the dissemination in other areas.

13-1 It is highly recommended to use main counterparts in next technical cooperation and in dissemination of the project.

13-2 Next technical cooperation is highly recommended to transfer more techniques related to integrated water management and supporting farmers more and more for sustainability of the project and for the dissemination in other areas.

14 Dissemination of the project is a must.

17-1 It is highly recommended to use main counterparts in next technical cooperation and in dissemination of the project.

17-2 Next technical cooperation is highly recommended to transfer more techniques related to integrated water management and supporting farmers more and more for sustainability of the project and for the dissemination in other areas.

20 Project use new concepts for improved IIP project and this concept meet with farmer opinions. We recommend to disseminating these concepts to other area.

This is the end of questionnaire.

MWRI 職員向け質問票回答集計（24 名分）

（回答数を括弧内に記入し、理由やコメントを表の下に記入した。）

2. Questionnaire to Ministry of Water Resources and Irrigation on the Water Management Improve Project

1．Do you know the improved method of the IIP[1] which was developed by WMIP[2]?

	回答数
a. Yes	22
b. No	0
No answer	2

2．Do you think that the improved methods of the IIP by WMIP obtained the common recognition at the MWRI?

a. Yes	24
b. No	0
c. N.A	0

Reason:

a. Yes	• Through workshops and good communication between different sectors of the MWRI • The same concept of IIP. • To enhance the water management system • As the same in IIP • Because it is mostly the same concept of IIP project. • Improved methods accepted by farmers. • New and good • IIS and ID's satisfaction • Because of regular meeting of Joint Steering Committee. • Because of regular meeting of Joint Steering Committee. • Water management of project area managed by WUA at mesqa level. • Because it covered improving irrigation system and improving system management by introducing PIM. • Because of the high consideration of farmer participation with some workshops of project concept and outputs for government decision makers. • The same applications in IIP projects. • Farmers' satisfy most of farmers participate is activities of the Project.
b. No	
c. N.A	

3．Do you think that the establishment of WUA[3] and WUF[4] is necessary for the efficient water management?

a. Yes	24
b. No	0
c. N.A	0

Reason:

a. Yes	• As they are water users and beneficiaries who must be responsible for water management. This will achieve the decentralization concept and alleviate the great burden lies on the MWRI and lets it play a supervision planning and an administrative role. • They are the end user of this system. • To work with it as one unit

[1] Irrigation Improvement Project2
[2] Water Management Improvement Project
[3] Water Users Association
[4] Water Users Federation

	• It is very necessary. • Because they have to share and take responsibilities • Through WUAs/ WUF the ownership, efficient operation and maintenance will effect an efficient water management. • To organization & careful • To improve water use management though improved irrigation scheduling & other irrigation practices. • WUA at the project area make water distribution plan at mesqa level. • Because they are the target groups for improving the system and they should play their roles in managing the system. • To raise the real water problems and to solve then according to the period and real needs in one package not separate. • The participation of farmers in strategy of MWRI. • Improve water management and fair water distribution at canal level and mesqa level.
b. No	
c. N.A	

4． Do you think that WUA is functioning well at the project site?

4－1 water management

a. Yes	22
b. No	0
c. N.A	2

Reason:

a. Yes	• Farmers in the project area are satisfied with the improved methods. Their complains had reduced due to good water scheduling and fair water distribution • Water Scheduling is going well. • To get good water management • The problems are to be little. • Because no significant problem has been risen and O&M is going on smoothly and water scheduling is perfect. • WUAs function well but they need more experience. • For example, good irrigation scheduling and field practices. • All WUA managed water by themselves at project site. • From reports --- the behaviors of farmers changed and number of water complaints decrees. • The problems and complaints between farmers to be little. • WUA make water distribution plan of mesqa level.
b. No	
c. N.A	• Sort of because still some problem remaining over the water distribution and collecting its fee. • I do not know because I do not have an evaluation of WUA performance.

4－2 administration

a. Yes	22
b. No	1
c. N.A	1

Reason:

a. Yes	• Regular meeting s are held & problems among farmers are solved • Internal regulation solving problems • It is good for the start. • Good skill, high level of expert • Save money • Because meetings take place and some have bank account and they have their own Internal Regulation which is so strong • Because they are now capable to manage their mesqa improvement affairs. • For example, good communication and regular meeting and solve problems. • WUA collecting operation fee and some mesqa have account but they need more training

	and monitoring. • For WUAs (governed by law) • Many farmers save money and some of them keep it in bank. • WUA is collecting operation fee – but some of them need more experience ¥s at administration.
b. No	• For WUFs (will be O.K. after changing of law 12.
c. N.A	• See above (I do not know because I do not have an evaluation of WUA performance.)

4－3 maintenance of O/M (Operation and Management) of irrigation facilities

a. Yes	22
b. No	1
c. N.A	1

Reason:

a. Yes	• But there are still some problems due to misuse of pumps by some farmers • There is no problems and good cooperation • Because they have no other way to irrigate. • To get it for ever • It is the responsibility of farmer. • It is going smoothly with no problems indicated. • We can't say completely Yes or No because they still under test between WUAs/WUF and irrigation Department. • For example, refine, implement & monitor the mesqa maintenance plan. • WUA need more training and support for O&M of irrigation. • The result of participation in mesqa level is obvious for O&M/ • After the farmer receive the mesqa he is responsible to maintain the mesqa.
b. No	• They haven't any experiences for maintenance and they need some supporting from the project after the end of the project period.
c. N.A	• See above (I do not know because I do not have an evaluation of WUA performance.)

5. Do you think that WUF is functioning well at the project site?

5－1 water management

a. Yes	19
b. No	3
c. N.A	2

Reason:

a. Yes	• But they need some more training to improve their performance and achieve the efficient participation in the water management field • Good communications with irrigation director • Is very important • The problems become little and small. • Total contribution with Irrigation Sector in operating the system • Sub-committees support district engineers for remove illegal pump and solve the problems between farmers. • The problem and complains between farmers to be little.
b. No	• The main function for WUF is water distribution which is not exist because the canal still operating under water demand. • It is functioning relatively well because it did not take the authority from ministry to participate in water management. • Not yet (training is still in need + legal framework is needed)
c. N.A	• WUF don't prepare water distribution plan until now, but some committee (irrigation and agriculture) make awareness for farmers to remove the illegal pumps.

5－2 administration

a. Yes	17
b. No	6

c. N.A	1

Reason:

a. Yes	• But they need some more training to improve their performance and achieve the efficient participation in the administration field • This staff who use this organization • Need more training • Good communication & regular & solve problems.
b. No	• Its need institutional support. • Need more capacity building and training. • They need training. • Relatively well because it has recently organized and it did not have enough time for activating their administrative roles. • Not yet (training is still in need + legal framework is needed) • They haven't budget and cannot collect money official according the Egyptian law.
c. N.A	• Need more training to raise their capabilities.

５－３ maintenance of O/M (Operation and Management) of irrigation facilities

a. Yes	13
b. No	7
c. N.A	4

Reason:

a. Yes	• For ever
b. No	• But they need some more trainings to improve their performance and achieve the efficient participation O/M field • Its need institutional support. • We can't notice any activity for them. • Need more capacity building and training. • No budget • Because Ministry officials did not allow the WUF for active participation in O&M of irrigation facilities. • Not yet (training is still in need + legal framework is needed) • They haven't any experiences for maintenance and they need some supporting from the project after the end of the project period.
c. N.A	• Need more training • Need more training to raise their capabilities. • Need more training to raise their capabilities.

５－4 Others

- The federation should contain member from houses effect with quality and if needed other water users according to the real effect of their on the system.

６．Do you feel that the problem of the water distribution in the project site was solved by the improved methods of IIP which were developed by WMIP at the project site?

a. Yes	17
b. No	3
c. N.A	4

Reason:

a. Yes	• Farmers' conflicts and complaints are reduced due to the fair irrigation water distribution among them • On the mesqa level only because there isn't water allocation on canal's level. • Continuous flow. • Continuous flow is applied.
b. No	• Its need more effort in monitoring & evaluation. • Not clear yet. • Off course many problems have been solved but not all.
c. N.A	• Maybe after finish the implementation and farmer receive the mesqa.

	• After finish the implementation of the project. • I do not know since the system needs to be evaluated after IIP compared to the situation before IIP. • After finish the implementation of the project.

7. Do you think that the level of farmers' satisfaction to the irrigation water use was improved by the improved methods of IIP which was developed by WMIP at the project site?

a. Yes	23
b. No	0
c. N.A	0
No answer	1

Reason:

a. Yes	• Farmers' conflicts and complaints are reduced due to the fair irrigation water distribution among them • The equity of water distribution between front and tail. • Because the improved method is easier and cheaper. • Good water management system • Because there is equity distribution between head and tail. • Because water is distributed among head and tail of the mesqa canal. • Equity of water distribution between head and tail. • Farmers cooperate among them to the irrigation water use. • I think so, from the response of farmers in participation approach. • Equality distribution between head and tail. • Continuous flow is a applied them the farmers got water timely and fairly.
b. No	
c. N.A	

8. Do you think that the contents of the training conducted by IIS meet the farmers' satisfaction?

a. Yes	21
b. No	1
c. N.A	1
No answer	1

Reason:

a. Yes	• Farmers' understanding, awareness and satisfaction about the irrigation improvement project has been increased, although there are still some pump problems caused by farmers' pumps misuse • Satisfaction of farmers • A lot of meeting and hard work with them • This training to learn users how to operate and maintain his mesqa. • The farmers are performing well after this training. • Farmers' satisfaction • Contents of the training meet farmers satisfaction but not enough. • This training to learn the farmer how to operate and maintain the system. • But they need more special training course for O&M.
b. No	• I don't think so, since there is still some miss understanding in water management concept and administration activities.
c. N.A	• I do not know the contents of training and the evaluation of these training.

9. Do you satisfy with the improved methods of IIP which was developed by WMIP ?

a. Yes	24
b. No	0
c. N.A	0

Reason:

a. Yes	• They are appropriate, fulfill the farmers' participation & satisfaction with water distribution and led to the increase of the irrigation efficiency • Transfer technology and more experience for IIP staff

	• Most of them the same criteria • It leads to increase the productivity and save water. • Very good technical experience transferred though this project. • Farmers' managed their irrigation facilities by themselves. • Because it met requirement for improving the system. • Yes and satisfaction will increase with best training and improvement of farmer activities with water management, O&M and administrative practice. • Increase the productivity and save water. • WMIP introduced how to solve the water according on-farm water distribution.
b. No	
c. N.A	

１０. Do you want to apply the improved methods of IIP which was developed by WMIP, if you will be in charge of an irrigation improvement project?

Yes	13
No answer	11

- Yes at the moment and this will depend upon the final results at the end of the project
- The correct answer will be after the establishment of M&E report and applying SUMO system to compare advantage and disadvantage of every system.

１１. What is the problem of the dissemination of the improved methods of IIP which was developed by WMIP to out of project site? （複数回答あり）

budget	18
allocation of staff	3
techniques	10
others	1

Reason:

budget	
allocation of staff	• Need more staff • Need more staff
techniques	• To promote to integrated water management.
others	• Awareness of system (for both Government and farmers) (The result of applying M&E for all systems to get the correct decision before apply any specific system)

１２． Usefulness of the improved methods for irrigation improvement project (IIP) verified by the Project

		very useful	useful	Not useful so much	I don't know	No answer	reason
1	Survey of the present condition of the existing irrigation facilities and water use	21	3	0	0	0	• Determine all the problems and solving its. • To get a real condition to make a good decision. • To define what are the problems. • To know farmers problems. • To know the deficiency and drawback of existing system. • (1) To assess the real needs (2) To apply an appropriate water management system. • Define what is the problem.
2	Awareness raising of ownership of the farmers through WUA establishment and designing of irrigation facilities with farmers participation	20	4	0	0	0	• To assure the WUA with the ownership. • Farmers are responsibility for O&M. • To understand & built linkages with the farmers. • Good management and sustainability • Because this is a condition of the success of improved irrigation facilities. • For conservation of the systems and to get score of using the improved facilities by farmers. • Farmers are responsible for O&M.
3	Obtain agreements from more than 2/3 of farmers about establishment of WUA and construction plan of facilities	12	11	1	0	1	• May cause delay in implementation. • To prevent any obstructions in implementation. • To prevent obstruction of the farmers during construction. • But we have to follow Egyptian law. • Because this represents the approval of the majority of farmers and PIM and their approval on the plan for successful improved irrigation facilities. • To be sure of the accept of the system and to get better result according to the harmony between users. • To prevent obstruction of the farers during construction. • But if we cannot get 2/3 agreement of farmers, we must follow Egyptian law.
4	Establishment of WUAs and WUF simultaneously before implementation of construction works	21	4	0	0	0	• They will contribute in all phases of project. • WUAs and WUF are help in plan and design staff. • To help IIP staff in planning and design stages & resolve problems which may arise during construction. • High cooperation avoid any problems • For active involvement of water user organization in different phases of project implementation. • Effective performance and WUAs can be parallel or before WUFs. • To help the staff of ISP in planning and design stages.
5	Establishment of the construction coordination committee in WUAs and WUF to solve problems rapidly	16	7	1	0	0	• Help in solve all the problems immediately. • To prevent any obstructions • To solve problems fast. • Achieve the construction as soon

							• For active and rapid conflict resolution and for strengthening the organizations capability of handling their affairs. • To solve problems rapidly.
6	Implementation of trainings about administration of WUA, mesqa level water management (valve rotation), operation and maintenance of pump	20	3	0	0	1	• Building capacity for the farmers helping in O&M. • To operate the mesqa well • For good (well) mesqa operation. • Good management • For raising the association capability, strengthening and activating their roles in managing their private irrigation system. • And also for engineers (in Irrigation Sector) who dealing day by day with farmer and system. • To operate mesqa well.
7	Implementation of workshop about preparation of administrative rules and activities plan of WUF, and OJT training for practicing activities plan	18	5	0	1	0	• Determine the responsibility. • To recognize the roles of WUF • To define the roles and activities of WUF. • I do not know about this issue. • Even for government staff • To define the roles and activity of WUFs
8	Establishment of the WUF Sub-committees for appropriate water management and O/M of facilities, and implementation of workshop about delivery canal level water management	17	6	0	1	0	• Help in O&M of the branch canal. • To define the sub committees about their roles and activities. • To increase the effectiveness of the delivery canal. • For follow up the federation's activities in these fields since they are same of the major roles of the association. • To define the sub-committee of water management and O&M roles and responsibilities.
9	Strengthening of coordination and linkage among WUF and related organizations	17	6	0	0	1	• Long relationship between WUF and related organizations. • To make a good relation between WUF and related organizations. • For food relationship between WUF and related organization to define and resolving problem. • Because this enhance, increase and activate participatory irrigation management (PIM). • To make good relationship between WUF and related organizations.

184

１３． Applicability of the improved methods above-mentioned to other irrigated areas

		very useful	useful	Not useful so much	I don't know	No answer	reason
1	the survey of the present condition of the existing irrigation facilities and water use	18	4	0	0	2	• To know what is the problem. • To define what are the problems. • To know the deficiency and drawback of existing system.

							• Needs assessment • To define what id the problem.
2	Ripening of ownership of the farmers through WUA establishment and development of irrigation facilities design by farmers participation	11	10	1	0	2	• The farmer • To understand & built linkages with the farmers. • Because this is a condition of the success of improved irrigation facilities. • The user is the farmer.
3	acquisition of more than 2/3 agreement of farmers about WUA organization and plan of facilities	11	6	2	2	3	• To make facility in construction • To prevent obstruction of the farmers during construction. • Because this represents the approval of the majority of farmers and PIM and their approval on the plan for successful improved irrigation facilities. • Facilitate the construction process. • Maybe we cannot get 2/3 agreement of farmers in some area because farmers have different characters.
4	establishment of the WUA and WUF before construction simultaneously	16		0	0	2	• To participate the farmer in plan and design • To help IIP staff in planning and design stages & resolve problems which may arise during construction. • For active involvement of water user organization in different phases of project implementation. • And WUFs can be with or after WUAs • To participate the farmer in planning and design.
5	establishment of the construction coordination committee in the WUAs and WUF to solve problems rapidly	9	10	3	0	2	• To solve the problems • To solve problems fast. • This job can be transferred to WUA & WUF. • For active and rapid conflict resolution and for strengthening the organizations capability of handling their affairs. • To solve problems rapidly.
6	Implementation of the training about administration, water management, operation and maintenance of pump for WUA	18	3	1	0	2	• To operate the mesqa well • For good (well) mesqa operation. • For raising the association capability, strengthening and activating their roles in managing their private irrigation system. • Better understanding and using of the system • To operate the mesqa well.
7	Implementation of the workshop about administrative and making of activity plan and OJT training for WUF	15	6	0	1	2	• To recognize the roles and activities • To define the roles and activities of WUF. • I do not know about this issue. • Better performance • To define the roles and activities of WUF.
8	Establishment of the WUF Sub-committees for appropriate water management and maintenance. implementation of the workshop about water management of the delicacy canal level	7	14	0	1	2	• To recognize the roles and activities • To increase the effectiveness of the delivery canal. • For follow up the federation's activities in these fields since they are same of the major roles of the association. • Define the roles and responsibilities.
9	strengthening of the coordination and relation	15	6	1	0	2	• To support the WUF in their activities

	with WUF						• For food relationship between WUF and related organization to define and resolving problem. • Because this enhance, increase and activate participatory irrigation management (PIM). • Better water management • To support the WUF in their activities.