Summary of Evaluation

1. Outline of the Project		
Country: Thailand		**Project Name:** The Modernization of Water Management System Project in Thailand (MWMS)
Sector: Agriculture		**Type of Cooperation:** Technical Cooperation Project
Sector in Charge: Department of Rural Development		**Total Cost:** 574 million yen (estimation as of end of FY 2003)
Period of Cooperation	1 Apr. 1999 – 31 Mar. 2004 (5 years) Follow-up Cooperation: 1 Apr. 2004 – 30 Sep. 2005 (1.5years)	**Partner Country's Related Organizations:** Royal Irrigation Department (RID) and Department of Agricultural Extension (DOAE), Ministry of Agriculture and Agricultural Cooperatives **Supporting Organization in Japan:** Ministry of Agriculture, Forestry, Fisheries
Related Cooperation: -		

1-1 Background of the Project

Agriculture in Thailand largely depends on the water resource of the Chao Phraya River. Although the potential in the Chao Phraya Delta for high-value integrated cropping system is high, water recourse use is still inefficient due to the problems, such as lack of irrigation water in the dry-season and unplanned water use at the on-farm level. The Government of Japan implemented technical cooperation projects of "Irrigation Technology Center Project (Phase 1&II)" during 1985-1997 in cooperation with Royal Irrigation Department (RID) to develop appropriate technology for planning, designing, and construction of irrigation scheme and drainage facilities, and to establish water management technology. However, development of practical technical capacity on efficient water resource use was considered insufficient at the end of the projects. Therefore, the Government of Thailand requested the Government of Japan to implement a technical cooperation project on the improvement of practical on-farm level water management technique based on irrigation facilities developed by the previous technical cooperation projects.

In response to the request, JICA conducted two preliminary studies and confirmed that the Government of Thailand aimed not only securing water resource in the dry season, but also promoting crop diversification and expansion of the planting area. Accordingly, "The Modernization of Water Management System Project in Thailand (MWMS)" was implemented from April 1999 for the project period of five years. After the completion of the project, a follow-up cooperation project was implemented for the period of 1.5 years to enhance the project effect.

1-2 Overview of the Project

(1) Overall Goal

1) Farmers' income through sustainable farming is increased (10-20 years after the completion of the project).
2) In the Upper East Bank of the Chao Phraya Delta, the planted acreage of dry-season's field crops that presupposes effective irrigation water utilization is expanded, and crop diversification is also promoted (3-5 years after the completion of the project).

(2) Project Purpose

In dry-season's irrigation period, through effective irrigation water utilization, the planted acreage of dry-season's field crops in the Model Area (18R canal area) is expanded, and crop diversification is also promoted.

(3) Outputs

1) Rehabilitation of on-farm level irrigation/ drainage facilities for cultivating both rainy-season's rice and dry-season's field crops at the Model Area and lateral level irrigation facilities, and expansion of related guidelines.

2) Development of water management method by utilizing tele-metering system for the Chao Phraya River Basin and decision support system to enable RID officers and farmers compare the planned and actual data of water allocation.
3) Establishment, training, and strengthening of water users' groups, and operation/ maintenance of irrigation/ drainage facilities under lateral canal level by the water users' group.
4) Selection of field crops and their cultivation methods for dry-season, and acceleration of farming activities through establishment and strengthening of the farmers' groups and supporting system.
5) Training of RID, DOAE and selected farmers' group leaders through scheduled training courses and seminars by counterparts.

(4) Inputs

Japanese Side:

Long-term Experts 10 persons Provision of Equipment Appr. 63 million yen
Short-term Experts 30 persons Local cost Appr. 35 million yen (Total up to FY 2002)
Training in Japan 25 persons

Thai Side:

Assignment of counterparts 56 persons
Project Cost Appr. 49.5 million baht (Total up to FY2002)
Land, Building, and facilities
Others: Necessary equipment other than provided by JICA, Repair cost of 18R canal, tele-metering pilot project cost, etc

2. Evaluation Team

Evaluator	Takehiro Iwaki, IC Net Asia Co., Ltd	
Field Study Period	9 February 2009 – 30 June 2009	**Type of Evaluation:** Ex-Post Evaluation

3. Achievement after the Completion of the Project

3-1 Achievement of Project Purpose

Indicator 1: By the end of March 2004, non-paddy field crops are cultivated more than 35 hector during the dry season in the model area
Indicator 2: Weekly water allocation plan at the lateral irrigation canal level is made for the Chainat-Pasak canal area and implemented

As can be seen in the table below, cultivation of the non-paddy field crop during the dry-season has been shrunk. Therefore, it can be said that the project purpose has not been achieved nor sustained. On the other hand, development and implementation of the weekly water allocation plan at the lateral irrigation canal level has been maintained. The amount of actual allocation of the irrigation water compared to the planned amount has been within the target set by the follow-up cooperation.

Cultivation of the dry-season field crop in the model area	2004/5	05/6	06/7	07/8
Area of cultivation (hector)	20	3	3	2
Number of farms	25	3	2	1
Number of commodities	12	7	7	7

3-2. Achievement of Overall Goal

Indicator 1: Farmers' agricultural income through sustainable farming system (10-20 years after the completion of the project)
Indicator 2: By the end of 2009, dry-season field crop is practiced at more than 200 hector in the East Bank of the Chao Phraya Delta (3-5 years after the completion of the project)

As presented in the table below, cultivation area of the dry-season field crop in the in the East Bank of the Chao Phraya Delta has been drastically decreased since the time of the commencement of the project. Regarding increase in the farmers' income from agriculture, there was no appropriate statistic data available during the evaluation study.

However, many persons contacted during the study reported that the expansion of the paddy cultivation area and increase in the productivity due to the development of irrigation facilities and improvement in the water management have been contributing to the increase in the agricultural income of farmers .

Dry-season cultivation area in the East Bank of the Chao Phraya Delta	99/00	04/05	07/08
Cultivation area (,000 hector)	117.4	134.4	175.8
Dry-season paddy	114.6	133.3	175.4
Dry-season non-paddy field crops	2.8	1.2	0.4

3-3 Measures Taken Regarding to the Recommendations of the Terminal Evaluation

The extension of the project to have additional achievements based on the outputs gained was recommended by the terminal evaluation. Based on the recommendation, 1.5-year follow-up cooperation was implemented.

4. Result of Evaluation

4-1 Summary of the Evaluation Results

(1) Confirmation of Relevance

Although relevance of the project was considered high in terms of policy and needs for improvement in the water management system. However, overall relevance of the project is considered low because of the following reasons. Soil condition at the project model area was not suitable for the field crop cultivation, and needs of farmers on dry-season field crop was considered low. It is questionable whether there was sufficient consideration on the problems and countermeasures for the promotion of dry-season field crops. The framework of the project was considered logical, however, as the scope of the project was broadened, detail measures to solve the constraints on promoting dry-season field crop in the model area were not designed comprehensively.

Regarding the decision on the follow-up cooperation, careful examination of the constraints on dry-season field crop cultivation and feasibility of extension to the target farmers should have been done and proper countermeasures, including possibility of change in the project design, should have been carefully decided. It is questionable whether the pursuance of the achievement of the project purpose by the follow-up cooperation without any change in the original plan was a realistic decision.

(2) Confirmation of Effectiveness

As the project activities did not result in the achievement of the project purpose, effectiveness of the project is evaluated as low. There were not many farmers who cultivated dry-season field crop due to reasons such as unsuitability of the soil, relative low economic incentive on cultivating dry-season field crops, and higher risk for cultivating field crops.

(3) Confirmation of Efficiency

As discussed in the terminal evaluation, it can be said that the project was implemented efficiently in terms of dispatch of the Japanese experts, allocation of counterpart personnel, provision of equipment, and project management. However, as also pointed out in the terminal evaluation report, absence of long-term experts in the field of agronomy and delay in the dispatch of experts in the field of soil management seriously affected the project negatively.

(4) Impact

Overall goal of the project has been unlikely achieved. On the other hand, some positive impacts of the project were recognized in the field of on-farm facility and water management system as below. Negative impact of the project was not identified during the ex-post evaluation study.

- Contribution to the promotion of Participatory Irrigation Management (PIM) by the clarification of the role and of management methods of the water users' group.
- Extension of the U-shaped ditch, which is easier to construct, using less land, and more durable compared to the ordinal ditch.

- Contribution to the increase in dry-season rice cultivation areas and in the productivity through effective water management by the development of water allocation plans at river basin level and the water users' group.

(5) Sustainability

As the project purpose has not been achieved, there was no rationale for examining the sustainability of the project as a whole. Hence, in this ex-post evaluation study, sustainability of the project effect in the water management sector and dry-season field crop sector was examined respectively.

Sustainability of project effect in the field of water management sector is considered high. Policy to improve the water management system has been sustained. The government has put more importance on the water users' group in its water management policy. At the Upper-East Bank of the Chao Phraya Delta, concerned organizations of the project have been maintaining coordinated work for the development and implementation of the water allocation plan and other works. However, sharing of information between the organizations in the field and RID headquarters is appeared insufficient. It is also recognized that the effort to disseminate the products and lessons gained from the project have been insufficient.

For the dry-season field crop sector, the sustainability of the project effect cannot be considered as the cultivation of the dry-season field crop has been rarely practiced in the project model area. Farmers may practice dry-season field crop with the use of knowledge and skill learned from the project in the future when external factors turns advantageous to the cultivation of the dry-season field crop. However, the possibility to see this situation in the near future is considered low.

4-2. Promoting Factors

It is considered that the promotion of Participatory Irrigation Management (PIM) in Thailand has contributed to the strengthening and expansion of the water users' group. Increasing awareness on environment and natural resource management is also recognized as another external factor which contributed to sustain the project effect. It can be said that direct benefits for the formers from project activities, such as increase in the water allocation and improvement of on-farm facilities, were important factors for the strengthening and expansion of the water users' group.

The project made effort to organize activities through various systems, such as water management decision making supporting system, water allocation coordination system by water allocation management committee, and participatory irrigation management system. This systematic and comprehensive implementation of the activities was considered effective for the continuation of the activities after the completion of the project.

4.3 Disturbing Factors

It seems that real needs and constraints of farmers on practicing dry-season field crop were not well considered and reflected during the project planning. This is considered as a major factor to inhibit the generation of the project effect.

Unsuitability of the soil at the project model area for field crop cultivation and constrains for dry-season field crop cultivation were recognized by the concerned persons at the field level during the designing stage of the project. However, this recognition was not much considered in the project design. Therefore, it can be said that the achievement of project purpose was not highly realistic from the beginning of the project.

Relatively high price of rice is considered as a constraint for the emergence of the project effect. Although it was not possible for the project to control the rice price, monitoring of important external factor, such as rice price, and consideration of countermeasures, including the modification of the project design, is considered as an important part of the project management.

4-4. Conclusion

The project purpose that promoting the dry-season field crop cultivation and crop diversification in the project model area has not been achieved at the time of this ex-post evaluation. Problems in the project design, such as selection of the model area where soil condition is not appropriate for the field crop cultivation and less attention to the needs and constraints on dry-season field crop cultivation, are considered as major constraints to

achieve the project purpose.

On the other hand, project activities in the field of water management, such as strengthening of the water users' group, have been widely accepted by the concerned people, including farmers in the model area, and continued to contribute to the expansion of cultivation area of dry-season rice crop and increase in the productivity. It is expected that these project effects accumulated in the model area is shared and introduced in the other area by the initiative of RID.

Regarding the dry-season field crop cultivation, farmers in the project model area may have an option to cultivate the field crop in the dry-season when economic incentive changed advantageously to the field crop, such as shortage of sufficient water for rice cultivation in the dry-season and decline in the rice price. However, the possibility that it would happen is considered low.

4-5. Recommendations

(1) Sharing of project achievement in the field of water management system with other regional irrigation offices

Extended use of the project achievement in the field of water management system, such as U-shaped ditch and water users' group, was already observed during the ex-post evaluation study. The mechanism to share these project achievements should be established with the initiative of RID.

(2) Review of the project achievement by RID

To promote the first recommendation mentioned above, it is considered important for RID headquarters to conduct a thorough review of the project. It can include field visit to the project site and implementation of a short study.

(3) Survey on the water users' group and integrated water users' group

It is recommended to systematically understand the development and current situation of the water users' group and integrated water users' group in Thailand. The success factors, challenges and contribution of this project should be clarified. It is expected that this kind of study contribute to the further strengthening and expansion of the water users' group.

(4) Improvement of the water management decision making supporting system

The water management decision making supporting system developed with the support of the project has been well used. Data regarding water resource and management are entered at each irrigation operation and management office, and shared through the website. However, RID also maintains its own database based on the same data sent from irrigation operation and management offices by FAX. Therefore, it is recommended for RID to consider the improvement of the system for more efficient operation of this system.

4-6. Lessons learnt

(1) Lessons learnt regarding the project design

From the experience of the project, the importance of setting realistic project purpose by comprehensively analyzing various internal and external factors can be withdrawn as a lesson leant. It is also important to carefully reflect the information and ideas of the stakeholders, particularly at the field level, to formulate a realistic project. The flexible project management including timely modification of the project design is also raised as an important lesson learnt from the project.

(2) Importance of follow-up mechanism to expand and sustain the project effect

In this project, there were no concrete plans to expand and sustain the project effects after the completion of the follow-up cooperation. Eventually, the continuation and dissemination of the project related activities depended fully on the intention of the counterparts and the beneficiaries. It is important for a "model development project," like this project, to set a concrete follow-up plan with relevant stakeholders before the completion of the project.