

Socialist Republic of Viet Nam

Ex-Post Evaluation of Technical Cooperation Project

“The Project for Capacity Development of Participatory Irrigation Management System through Viet Nam Institute for Water Resources Research for Improvement of Agricultural Productivity in Viet Nam”

External Evaluator: Hisae Takahashi, Octavia Japan Co., Ltd

0. Summary

This project was implemented to promote water management with farmer participation by enhancing the capacities of leading farmers and water resource engineers, thereby improving agricultural productivity at three model sites¹ in two provinces (Hai Duong Province and Quang Ninh Province) in northern Viet Nam. The objective of this project is consistent with development policy and needs, which have placed priority on increasing income in rural areas; it is also consistent with Japan’s ODA policy in Viet Nam, where 70% of the total population is involved in the agricultural sector. Therefore, the relevance of this project is high. Through the project, training on Participatory Irrigation Management (hereinafter referred to as “PIM”) was formulated and implemented. This led to the strengthening of functions for promoting PIM activities conducted by the Viet Nam Academy for Water Resources²(hereinafter referred to as “VAWR”), and increased the knowledge and experience on PIM of engineers belonging to Irrigation Management Companies/Enterprises (hereinafter referred to as “IMC/IME”), as well as leading farmers. Accordingly, irrigation water management with farmer participation has been advanced and improvement in agricultural productivity was confirmed. However, activities have not been fully monitored at model sites and northern provinces after completion of the training conducted there, though PIM activities have continued through projects funded by other donors. Thus, details regarding continued activities and their dissemination have not been confirmed. Therefore, the effectiveness and impact of this project are fair, since sufficient information on impact could not be obtained, but the expected effectiveness was basically achieved. The efficiency was judged to be high as the original and actual input of this project was appropriate for generating output and achieving the project purpose. Both the project cost and period stayed within the planned values. Regarding sustainability, while no major concerns were observed in terms of related policy, institutional aspects, and technical aspects, there was an issue on organizational aspects, i.e. a lack of coordination on sharing the information of PIM activities between VAWR and IMC/IME. In terms of financial aspects, the lack of

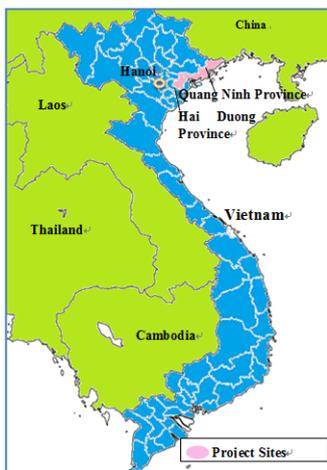
¹ Three model sites (Irrigation area) include Hop Tien and Gia Xuyen (Hai Duong Province), and Yen Dong (Quang Ninh Province).

² Viet Nam Institute for Water Resources Research, which was established in 1959, was reorganized to Viet Nam Academy for Water Resources in 2008.

budget for conducting monitoring activities and PIM promotion/dissemination still remains an issue. Based on these findings, the sustainability of the effect produced in this project is fair.

In the light of the above, this project is evaluated to be satisfactory.

1. Project Description



Project Locations



Hop Tien Model Site (Hai Duong Province)

1.1 Background

In Viet Nam, agricultural sector is a key industry which accounts for 23% of GDP³. On the other hand, due to rapid economic growth led by industrialization, widening income disparity between farmers in the rural area and people who belong to secondary and tertiary sectors in the urban area becomes major issue to be solved in the country. Therefore, the Government of Viet Nam (hereinafter referred to as “GOV”) prioritized improving agricultural productivity by accelerating crop diversification which affects the increase of income for farmers.

It is inevitable for expanding crop diversification to secure irrigation water efficiency in accordance with character of crop. However, existing mechanism for irrigation management which had been mainly led by GOV caused the lack of awareness in irrigation management by farmers and thus caused in efficient management. In order to solve above situation, GOV decided to develop new mechanism and methodology for sustainable and effective irrigation management with participation of farmers and submitted request for technical cooperation to the Japanese government. Under such circumstances, the Japanese government decided to provide technical assistance for five years in order to increase agricultural productivity through the promotion of water

³ Source: First Ex-ante Evaluation Report (2004)

management with the participation of farmers.

1.2 Project Outline

Overall Goal		Agricultural productivity is improved in terms of both yield and cost through improved irrigation management in the area where PIM is promoted.
Project Purpose		PIM is promoted and agricultural productivity is improved in terms of both yield and cost through enhancement of the capacity of leading farmers and water resources engineers in the model sites.
Output(s)	Output 1	The function of promoting PIM is strengthened in VAWR.
	Output 2	Engineers of IMC/IME acquire knowledge, technology and experience on water management.
	Output 3	Water management by farmers' organizations in the model sites is improved and crop diversification is promoted
Total cost (Japanese Side)		512 million yen
Period of Cooperation		June, 2005 – June, 2010
Implementing Agency		Viet Nam Academy for Water Resources (VAWR), Ministry of Agriculture and Rural Development
Other Relevant Agencies / Organizations		N.A.
Supporting Agency/ Organization in Japan		Ministry of Agriculture, Forestry and Fisheries
Related Projects		Technical Assistance Project: “Project for Promotion of PIM for Sustainable Small-Scale Pro Poor Infrastructure Development” (2010-2013) Loan Project: “Small-Scale Pro Poor Infrastructure Development Project”(I)(II)(III)(2002-2013) Grant Aid for Grassroots: “Yen Dong Irrigation Canal Development”(2006) World Bank: “Viet Nam Water Resources Assistance Project” (2004-2012)

1.3 Outline of the Terminal Evaluation

Each activity was implemented as planned without any particular problems; thus, it was judged that the project purpose and each output would be achieved at a satisfactory level.

1.3.1 Achievement Status of Project Purpose at the time of the Terminal Evaluation

PIM was implemented at three sites at the time of terminal evaluation. At each site, crop diversification, increased yield, decreased operating time of pumps, and shortened

working hours were confirmed through the efficient use of irrigation water based on the water management plan. The Practical PIM Guideline was in the process of being finalized. Therefore, though the guideline still must be completed and authorized by VAWR for the rest of the project period, the prospect of achieving the project purpose was evaluated as high.

1.3.2 Achievement Status of Overall Goal at the Time of the Terminal Evaluation

Resources to promote PIM, including PIM trainers, PIM Guideline, and materials for training were developed. As seen at the Yen Dong model site in Quang Ninh Province, the achievements of the project have been applied to other irrigation districts and spread to 25 provinces in the northern area through the PIM caravan⁴. Thus, it was expected the overall goal can be achieved.

1.3.3 Recommendations at the Time of the Terminal Evaluation

The following were recommendations for the remaining period of the project and after the project completion.

Recommendation for the remaining period of the project

- Continuation of project activities to achieve the remaining outputs
- Certify and register PIM trainers, create PIM guideline and training materials, etc. as PIM resources
- Discuss and determine how to manage PIM resources for activities and how to share the responsibilities of PIM resources after project completion
- Identify the issues and considerations in PIM promotion in other provinces, and provide feedback for future activities

Recommendation after project completion

- Dissemination of PIM to in other area
- Monitoring of PIM activities of the model sites and giving advices
- Institutionalization of PIM⁵

⁴ Workshops on PIM deployed by VAWR in 10 northern provinces in 2009 and 2010. In total, 607 engineers and staff members of IMC/IME, as well as members of the District People's Committee (193 in 2009 and 414 in 2010) participated in the workshops.

⁵ For example, budgeting PIM promotion activities, building institutional capacity (assistance and training) as one of the irrigation project components.

2. Outline of the Evaluation Study

2.1 External Evaluator

Hisae Takahashi, Octavia Japan Co., Ltd.

2.2 Duration of Evaluation Study

Duration of the Study: August, 2014 - December, 2015

Duration of the Field Study: May 24 - June 7 and August 6 - August 12, 2015

2.3 Constraints during the Evaluation Study

Monitoring the situation of PIM activities including their continuation and dissemination at the model sites and northern areas where this project promoted PIM activities has not been conducted after project completion. Accordingly, sufficient information on the situation of continued activities and dissemination of PIM promotion in each northern province except the model sites was not obtained at the time of ex-post evaluation. Therefore, the impacts gained from the project were analyzed based on statistical data as well as interviews with VAWR, which did not fully cover information on all ten northern provinces⁶.

3. Results of the Evaluation (Overall Rating: B⁷)

3.1 Relevance (Rating: ③⁸)

3.1.1 Relevance to the Development Plan of Viet Nam

At the time of project planning, the core national development plans the “10-year Socio-economic Strategy 2001-2010”, the “7th Five Year Socio-economic Strategy 2001-2005”, and “Comprehensive Poverty Reduction and Growth Strategy 2002-2005” aimed for sustainable development of the agricultural sector, in which the majority of the poor are engaged. These plans also stipulated the “modernization of irrigation systems and water management through farmer participation” as a priority measure. Under this measure, the GOV improved legal systems for water usage groups, water charges, and the delegation of operation and maintenance of irrigation facilities to farmers. The GOV also advanced the development of agricultural infrastructure, as well as improved and strengthened the functions of existing irrigation facilities.

The “10-year Socio-economic Strategy 2001-2010” in effect during the project planning period was still valid at the time of project completion. The “8th Socio-economic

⁶ 10 provinces include Ninh Binh Province, Thanh Hoa Province, Nam Dinh Province, Bac Giang Province, Thai Binh Province, Hai Phong Province, Ha Noi Province, Ha Nam Province, Hung Yen Province, Hoa Binh Province.

⁷ A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

⁸ ③: High, ② Fair, ① Low

Five Year Plan 2006-2010” also placed the agricultural sector as a priority area. The GOV issued a legal decree in 2007 for “encouraging farmer participation and establishing/strengthening farmer organizations and water usage groups”⁹. In 2007 and 2008, other decrees were issued for “water charge exemptions to expand investment for agriculture production and to promote an active role by farmers in the maintenance of irrigation facilities”¹⁰.

As described above, this project, which aimed to strengthen the system for the promotion of water management through farmer participation, is consistent with development policy of Viet Nam.

3.1.2 Relevance to the Development Needs of Viet Nam

As the income disparity between in rural and urban areas increased, diversifying the production of cash crops other than rice was the main strategy for increasing income for farmers. However, at the time of planning, proper water management essential for producing cash crops was not conducted in Viet Nam. The mechanism of irrigation water management, led by the GOV, faced issues in that it did not fully meet the needs of farmers. The lack of technical capacity at IMC/ IME was also a problem, as they were in charge of allocating water resources and managing major irrigation facilities. The particularly rural parts of the northern area have relatively narrow cultivation areas,¹¹ requiring lifting irrigation by pumping. Thus, the high running cost of operating the pump system was also a serious issue¹². Therefore, development needs to systematize the knowhow on farming and water distribution in a manner that satisfies the needs of farmers existed. Additionally, there are strong needs for establishing a system of disseminating this knowhow in the northern area of the country, where support for water management was the most necessary.

At the time of project completion, income disparity between rural and urban areas was still large, especially in the northern area, where cultivation land is limited and the majority of farmers focus on subsistence farming. Thus, diversifying crops and improving agricultural productivity were urgent issues. Under these circumstances, the GOV promoted PIM to ensure sufficient irrigation water and efficient water management, which are two elements necessary for diversifying crops. However, detailed action plans were not disseminated and local authorities lacked the knowledge and experience needed for introducing PIM. Moreover, improvement or maintenance using a participatory

⁹ 151/2007/ND-CP (Dated as 10th October , 2007)

¹⁰ 154/2007/ND-CP (Dated as 15th October , 2007), 115/2008/ND-CP (Dated as 14th November, 2008)

¹¹ While cultivation area for farmers in the southern area was 1.1ha/farmer, in the northern area it was 0.38ha/farmer. (Source: Summary of the Ex-ante Evaluation Report)

¹² Source: Summary of the Ex-ante Evaluation Report

approach became popular as a more efficient approach, since many of the irrigation facilities were severely dilapidated. Therefore, there was a need at the time of project completion to develop a training system for PIM and a model to introduce PIM, as well as to improve management and maintenance of irrigation systems with participatory approach.

3.1.3 Relevance to Japan's ODA Policy

At the time of planning, the Country Assistance Program to Viet Nam (2004) specified "Agriculture and rural development/regional development" as a priority area in the "improvement of life and social aspects," which was one of the priority areas for assistance. More specifically, support was raised for 1) the development and management of infrastructure for agricultural production including farm irrigation; 2) the improvement/expansion of agriculture, forestry and fisheries technology (e.g. strengthening the functions of the hub research institute); and 3) the establishment and operation of farmers' organizations. Therefore, the relevance to Japan's ODA policy can be said to have been high.

This project was highly relevant to the Vietnamese development plan and development needs both at the time of planning and completion, as well as Japan's ODA policy at the time of planning. Therefore, its relevance is high.

3.2 Effectiveness and Impact¹³ (Rating: ②)

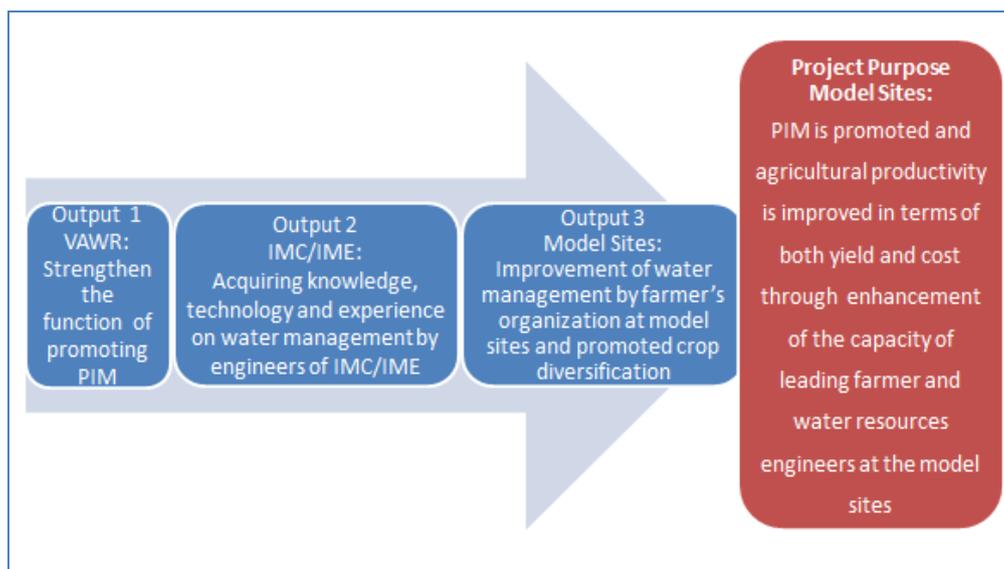
3.2.1 Effectiveness

This project conducted training for the staff of VAWR and engineers of IMC/IME as trainers, as well as On the Job Training (hereinafter referred to as "OJT") for leading farmers and the Commune People's Committee¹⁴ (hereinafter referred to as "CPC") at model sites with the aim of improving agricultural productivity through the promotion of PIM. This was comprised of three outputs: strengthening the function of promoting PIM in VAWR (Output 1); enhancing the knowledge, technology, and experience on water management for engineers of IMC/IME (Output 2); and improving water management by farmers' organizations and promoting crop diversification at model sites (Output 3). This was done through various types of activities as shown in Figure 1. Based on this project structure, effectiveness was evaluated by comprehensively examining the achievement level of the indicators for each output and project purpose at the time of project completion. Since detailed indicators to measure effectiveness were not set in the Project

¹³ Sub-rating for Effectiveness is to be put with consideration of Impact.

¹⁴ Equivalent to local government.

Design Matrix¹⁵ at the time of planning, numerous verifiable indicators were specified by the Project Coordinating Committee,¹⁶ which was convened one year after project commencement. During the mid-term review (2007), the outputs expected to be achieved as a result of each activity were re-organized and modified. However, these modifications were made to clarify each indicator and/or its wording, and would not have affected the evaluation.



Source: Prepared based on the document provided by JICA

Figure 1 Outputs and Project Purpose

3.2.1.1 Project Output

The achievement level of each output is as follows.

Table 1 Achievement Level of each Output

Output	Indicator	Actual Performance
Output 1: The function of promoting PIM is strengthened in VAWR	Indicator 1-1: Training Programs and materials for training PIM trainers in the VAWR for PIM are developed.	“PIM Trainer Training Program” for VAWR’s staff was developed and training materials consisting 55 documents were prepared and revised.
	Indicator 1-2: More than 15 PIM trainers who received training courses are certified.	39 staffs of VAWR attended the “PIM Trainer Training Program” and, 19 staffs were certified as PIM trainers.
	Indicator 1-3: More than 15 PIM trainers acquire	19 PIM trainers acquired necessary skills of PIM through OJT conducted

¹⁵ Called PDM, the Project Design Matrix is a summarized form of the project that includes basic elements such as the project plan, necessary inputs, activities, purpose, indicators, external conditions, etc., and shows their rationale.

¹⁶ A place to discuss the progress and future plan of the project, called the Joint Coordinating Committee (JCC).

	necessary skills of PIM through experiencing actual irrigation management activity in the model sites.	the model sites for at least one year.
Output 2: Engineers of IMC/IME acquire knowledge, technology and experience on water management.	Indicator 2-1 Programs and materials for training engineers of IMC/IME and other relevant agencies for PIM are developed.	For staff of IMC/IME and Department of Agriculture and Rural Development (hereinafter referred to as “DARD”), “PIM training Program for IMC/IME engineers and staffs” was developed. Relevant textbooks were also prepared.
	Indicator 2-2 More than 150 engineers and staff of IMC/IME and other relevant agencies in Hai Duong and Quang Ninh Provinces will receive training courses, acquire necessary knowledge and at least 60 % will be certified.	In Hai Duong and Quang Ninh Province, 167 engineers and staff of IMC/IME and DARD received the “PIM training Program for IMC/IME engineers and staff.” Through questionnaires given after the training, it was confirmed that trainees indicated their understanding of PIM and the maintenance of irrigation facilities at a level of 85%.
	Indicator 2-3 More than 250 engineers and staff of IMC/IME and other relevant agencies in 10 northern provinces receive training course on water management.	250 engineers and staff of IMC/IME in 10 northern provinces received the training courses on PIM.
	Indicator 2-4 More than 100 engineers and staff of IMC/IME in 26 provinces attend workshops and seminars and understand the experience and activities of the project.	In addition to Hai Duong and Quang Ninh Provinces, 607 engineers and staff of IMC/IME and the District People’s Committee ¹⁷ (hereinafter referred to as “DPC”) in 23 northern provinces attended workshops and seminars, and had a better understanding of PIM and activities of the project.
Output 3: Water management by farmers’ organizations in the model sites is improved and crop diversification is promoted.	Indicator 3-1 More than 90 of leading farmers and Agricultural Production Cooperative (hereinafter referred to as “APC”) members in the model sites receive trainings which are provided by VAWR and relevant IMC/IME.	92 (total of 184) leading farmers, staff members of APC, and irrigators participated in training courses on PIM and maintenance of irrigation facilities.
	Indicator 3-2 Irrigation management plan is developed with the participation of farmers and conducted as planned.	Regular monthly meetings were held with farmer participation at each model site. Water management plans prepared during the meeting were practiced.
	Indicator 3-3 Manuals of operation and maintenance	By project completion, manuals for operation and maintenance for

¹⁷ It is equivalent with prefectural government in Japan.

	for existing irrigation facilities are developed and conducted properly.	pumping stations and irrigation facilities were developed and applied.
	Indicator 3-4 The council among stakeholders such as IMC/IME and, local governments, APC and farmers is established and regularly held in order to discuss matters such as improvement of irrigation management and land utilization including crop diversification.	At each model site, monthly meetings were held with stakeholder participation. In meetings, issues faced by and measures to be taken for water management plans, cultivation plans, and the maintenance of irrigation facilities were discussed.

1) Output 1: The function of promoting PIM is strengthened in VAWR

Indicator 1-1: Training Programs and materials for training PIM trainers in the VAWR for PIM are developed.

Indicator 1-2: More than 15 PIM trainers who received training courses are certified.

Indicator 1-3: More than 15 PIM trainers acquire necessary skills of PIM through experiencing actual irrigation management activity in the model sites.

The “PIM Trainer Training Program,” which consisted of the four courses¹⁸, was developed after the project started. Training materials for the courses of the program were prepared, incorporating the opinion of project experts, thereby covering the basic knowledge and skills necessary for PIM trainers. During the project, 39 staff members of VAWR and DPC participated in the “PIM Trainer Training Program” and 19 were certified as PIM trainers. To be certified as trainers, they were required to experience PIM activities on-site. Therefore, all 19 trainers took part in PIM activities at model sites for at least one year. They were subsequently certified as trainers after increasing their understanding, practical experience, and knowledge on PIM based on their on-site experience. This program was officially approved as a VAWR program; thus, the basic structure for promoting PIM activities in VAWR was put in place.

As mentioned above, through the development and approval of the “PIM Trainer Training Program” and the training and certified PIM trainers, the VAWR’s functions to promote PIM were strengthened. Therefore, Output 1 is considered to have been achieved.

2) Output 2: Engineers of IMC/IME acquire knowledge, technology and experience on water management.

Indicator 2-1: Programs and materials for training engineers of IMC/IME and other

¹⁸ Four courses included 1) Basic TOT course, 2) PIM course, 3) Institution & organization course and 4) Irrigation techniques and management course.

relevant agencies for PIM are developed.

Indicator 2-2: More than 150 engineers and staff of IMC/IME and other relevant agencies in Hai Duong and Quang Ninh Provinces will receive training courses, acquire necessary knowledge and at least 60% will be certified.

Indicator 2-3: More than 250 engineers of IMC/IME and other relevant agencies in 10 northern provinces receive training course on water management.

Indicator 2-4: More than 100 engineers and staff of IMC/IME in 26 provinces attend workshops and seminars and understand the experience and activities of the Project.

At the time of project planning, a lack of knowledge and experience by local authorities in promoting the introduction of PIM was shown. Due to this situation, this project developed the “PIM Training Program for IMC/IME engineers and staff,” which consisted of two courses: 1) a PIM and water management training course; and 2) a water management and irrigation technical course. 167 engineers and staff members of IMC/IME attended the training programs in two provinces where model sites were located¹⁹. In addition to the concept of PIM, essential technical and practical training was incorporated. This included measuring flow volume, developing drainage plans, and conducting maintenance on irrigation facilities. Questionnaire surveys conducted after the training courses revealed that participants acquired necessary knowledge on PIM and the maintenance of irrigation facilities as expected (85%)²⁰. VAWR staff who were certified as PIM trainers acted as the trainers, which even furthered their understanding on PIM. This training program was also approved and signed as an official program between VAWR, JICA experts, and DARD at model sites in 2009. Later, training on PIM was conducted for engineers and staff of IMC/IME in ten targeted northern provinces. In addition to this training, VAWR initiated the “PIM Caravan” to disseminate knowledge on PIM and project activities in the northern area. With this, 607 engineers and staff of IMC/IME, and DPC in 23 northern provinces²¹ deepened their knowledge and understanding of PIM by participating in “PIM Caravan” seminars or workshops.

Based on the above, the “PIM Training Program for IMC/IME engineers and staff” was approved by relevant agencies and training was conducted at model sites and in the

¹⁹ Training courses were held 12 times from December 2007 to December 2008; 167 engineers and staff of IMC/IME participated in these courses.

²⁰ Based on documents provided by JICA and questionnaires given to the Implementing Agency.

²¹ Indicator 2-4 of Output 2 was that more than 100 engineers and staff of IMC/IME in 26 provinces of the northern area deepened their understanding of project activities through participating in seminars on PIM. As stated, the PIM Caravan was conducted in 23 provinces of the northern area. In addition to those 23 provinces, seminars and training on PIM were conducted in two project target Provinces (Hai Duong Province and Quang Ninh Province). Thus, engineers and staff in a total of 25 provinces of the northern area were covered.

northern area. This provided the knowledge, skills, and practical experience on PIM, as well as irrigation facility maintenance based on PIM to engineers of IMC/IME. An adequate number of trainees participated in the workshops conducted in the northern area, acquiring PIM knowledge and participating in project activities. Thus, Output 2 was largely achieved.

3) Output 3: Water management by farmers' organizations in the model sites is improved and crop diversification is promoted.

Indicator 3-1 : More than 90 of leading farmers and APC members in the model sites receive trainings which are provided by VAWR and relevant IMC/IME.

Indicator 3-2 : Irrigation management plan is developed with the participation of farmers and conducted as planned.

Indicator 3-3 : Manuals of operation and maintenance for existing irrigation facilities are developed and conducted properly.

Indicator 3-4 : The council among stakeholders such as IMC/IME and, local governments, APC and farmers is established and regularly held in order to discuss matters such as improvement of irrigation management and land utilization including crop diversification

In three model sites, PIM trainers and engineers of IMC/IME played the role of trainers and conducted PIM training for leading farmers, irrigators²², and APC members, with 92 (total of 184) attending the training²³.

After the training, committees were organized by communes at each model site and included farmers, irrigators, APC members, representatives of IMC/IME, and CPC members. These committees held regular monthly meetings. During the course of implementing the project, farmer participation was promoted through discussions on a series of plans and issues at meetings where all the stakeholders on irrigation management gathered. Before the project, the distribution plan of irrigation water did not reflect the stance of the farmers, with IMC/IME

Topics discussed in regular meetings

- Issues on water distribution and irrigation facilities.
- Measures for issues mentioned above.
- Problems that occurred in water distribution plans in the previous month and other difficulties.
- Formulation of water distribution plan based on the problems that occurred in the previous month.
- Maintenance plan for irrigation facilities.
- Cultivation plan for crops.

(Based on interviews with farmers at model sites.)

executing distribution plans without understanding the conditions in the field. According to APC staff, members of CPC, and farmers, these regular meetings became essential in conducting PIM. Farmers were allowed to state their opinion on water distribution plans, and they could know the schedule of water distribution plan. Moreover, these meeting made it possible to confirm whether water was actually distributed as planned. The implementation of plans prepared to reflect farmers' opinions contributed to efficient and fair water use, which thus reduced the number of complaints from farmers at downstream sites regarding lack of water²⁴. Manuals and regulations for the operation and maintenance of pumping stations and irrigation facilities were developed and utilized in some of the training for engineers of IMC/IME and PIM training conducted at model sites.

Based on the above, Output 3 was achieved, since water management with farmer participation was promoted at three model sites by the time of project completion and farmers were able to have a place to exchange information on diversifying crop cultivation.

3.2.1.2 Achievement of Project Purpose

Project Purpose: PIM is promoted and agricultural productivity is improved in terms of both yield and cost through enhancement of the capacity of leading farmers and water

²² Irrigators refer to persons who operate the irrigation gate of each irrigation area.

²³ During the project, training was conducted six times, and 92 (total 184) people participated. Training covered the farmers' basic role in PIM in addition to other PIM information.

²⁴ Based on the interviews with IMC/IME and APCs

resources engineers in the model site.

As described above, the programs conducted under the project such as the PIM Trainer Training Program and the PIM and technical training program for IMC/IME engineers and staff have contributed to strengthening the function and capacity of VAWR and IMC/IME in promoting PIM. The achievement level of indicators for the project purpose confirmed at model sites are as shown in Table 2.

Table 2: Achievement of Project Purpose

Target	Indicator	Actual Performance
Project purpose	Indicator 1: A practical guideline for PIM is developed based on experience of the Project.	Indicator 1: Achieved “Practical guideline for PIM” was drafted during the project and finalized through a series of revisions based on practical experience at model sites. The guideline was finalized and approved by VAWR in 2010.
	Indicator 2: Irrigation is conducted in accordance with irrigation management plan which was developed with participation of farmers and more than 80 % of farmers in the model sites are satisfied with irrigation services and recognize improvement of irrigation management.	Indicator 2: Achieved At three model sites, water management plan were formulated with participation from farmers, irrigators, APC members, IMC/IME staff, etc. Water distribution was then conducted in accordance with the plan. Results of a questionnaire survey conducted during the terminal evaluation showed that more than 80% of farmers were satisfied with their activities.
	Indicator 3: Acreage and yields of products in the model sites are increased. -Increase of cropping intensity and yields of paddy crops -Yield per unit of crops increases at least 5% -Cropping intensity of non-paddy increases at least 5 points. -Reduction in irrigation/production cost -Operation period of irrigation pumps reduces 5 %. -Labor day per ha reduces 5%.	Indicator 3: Generally achieved <u>Cropping intensity</u> ^{Note 1} Hop Tien : 128ha(2005)→245ha(2009) Gia Xuyen : Increased in dry season Yen Dong : Increased (Winter dry field crops) <u>Yield of rice and field crops</u> ^{Note2} Hop Tien : Increased more than 9 % compared to 2005 Gia Xuyen :Increased more than 6.7% compared to 2005 Yen Dong : Increased more than 8% compared to 2005 <u>Operation period of irrigation pumps</u> Hop Tien : Decreased about 20% Gia Xuyen : Decreased about 20% Yen Dong : Not relevant (They use gravity pumps.) <u>Labor hours</u> Hop Tien : Decreased 12% Gia Xuyen :Decreased the time for water management to one-fourth Yen Dong :Largely decreased (For irrigators, wait time for gate control was eliminated. For farmers, wait time for distributing water from early mornings was eliminated.)

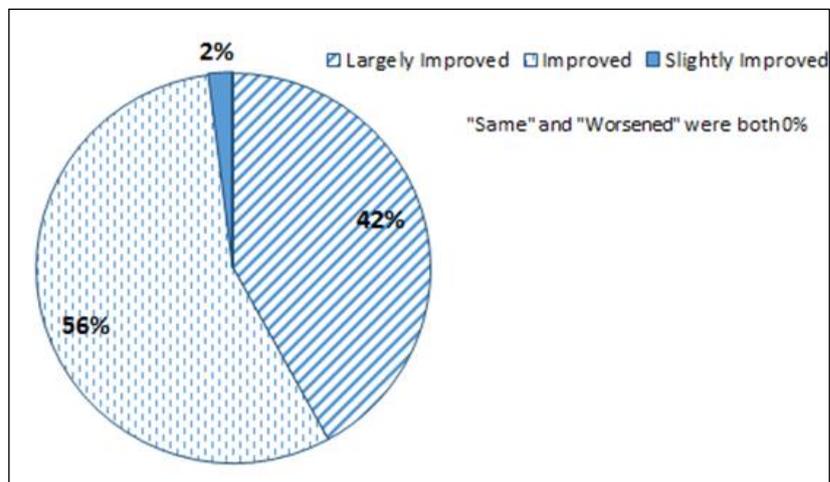
Source: Prepared based on the Terminal Evaluation Report and results of interview surveys at each model

site.

Note¹: As of the terminal evaluation, comparable data for other sites was not available.

Note²: Site-specific data was not organized at the model site in Hai Duong Province. Thus, the information for Hop Tien is as of the terminal evaluation. Yen Dong is as of project completion. For comparison, as of the terminal evaluation, Yen Dong showed a 6% increase over 2005.

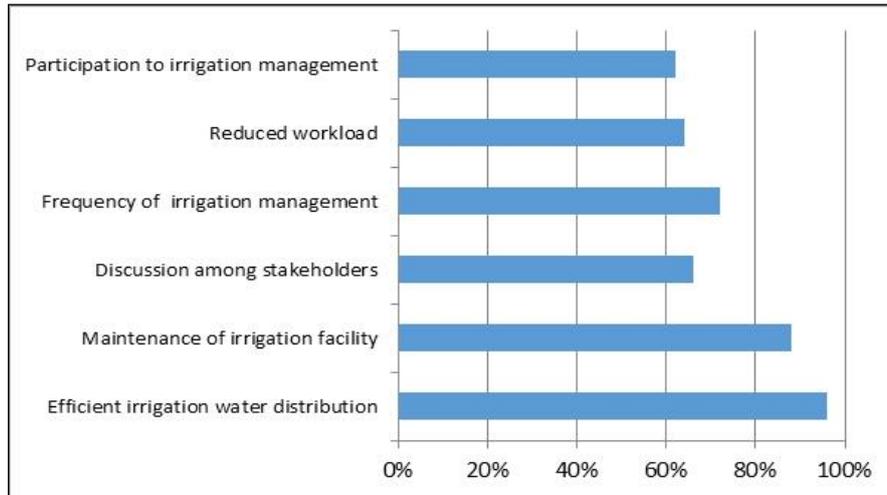
As mentioned in Table 2, all indicators have been generally achieved. At the time of project completion, irrigation water management plans were formulated with the involvement of farmers through monthly meetings. By subsequently executing these plans, efficient water use has achieved at model sites. This effect, namely, the improvement of water usage by farmers, was confirmed in the beneficiary survey²⁵ conducted during the ex-post evaluation (See Figure 2 and Figure 3). 98% of the responding farmers answered that water management plans improved after project implementation. The major reason given for this was that water was used more efficiently.



Source: Beneficiary survey

Figure 2 Water Management Plan After the Project

²⁵ The beneficiary survey was conducted from May to June in 2015 via interview survey using questionnaires at three model sites in two target provinces. The number of respondents was 100 in total: 50 farmers (16 in Hop Tien, 17 in Gia Xuyen, 17 in Yen Dong) and 50 engineers or staff of IMC/IME (36 in Hai Duong Province and 14 in Quang Ninh Province). Respondents were extracted with a nonrandom selection method through APC and IMC/IME, 60% of responding farmers were male and 40% were female.



Source: Beneficiary survey

Figure 3 Reasons for Answers for Improving the Water Management Plan

In the beneficiary survey, agricultural production and cropping intensity of non-paddy fields after project completion were ascertained as a supplement to the information shown in Table 2. According to the survey results, all respondents answered that both agricultural production and non-paddy cropping intensity had increased (see Table 3 and Table 4). The reasons for this were given as efficient water use, which made water distribution to non-paddy crops possible, and discussions at regular meetings that encouraged farmers to produce fruit and vegetables²⁶. As described above, the implementation status of the water management plan of previous month (whether the water was distributed as planned), the plan for the following month, and the cultivation plan were reviewed and discussed in such meetings. The implementation of water management plans that were based on the opinions of irrigation water users enabled them to know the exact water distribution time. Accordingly, both water and time have been used efficiently and workloads have been reduced.

Table 3 Changes in Agricultural Production After the Project Implementation

Largely increased	Increased	Slightly increased	Same	Decreased	No Answer
56%	32%	12%	0%	0%	0%

Source: Beneficiary survey

²⁶ Based on interviews with farmers conducted at model sites during a site survey.

Table 4 Changes in Cropping Intensity of Non-paddy Fields After the Project Implementation

Largely increased	Increased	Slightly increased	Same	Decreased	No Answer
56%	40%	4%	0%	0%	0%

Source: Beneficiary survey

In the light of the above, the three outputs of the project are deemed to have been generally achieved. Achievement of the outputs allowed achievement of the project purpose of improving agricultural productivity through farmer participation. Therefore, the effectiveness of this project at the time of project completion is judged to be high.

3.2.2 Impact

3.2.2.1 Achievement of Overall Goal

Overall Goal : Agricultural productivity is improved in terms of both yield and cost through improved irrigation management in the area where PIM is promoted

The achievement level of the Overall Goal at the time of ex-post evaluation was confirmed as follows.

Table 5 Achievement of Overall Goal

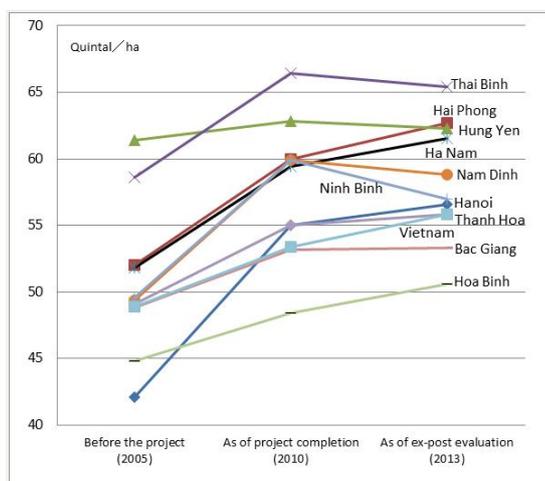
Overall Goal	Indicator	Actual
Overall Goal	10 sites which were selected as targeted distribution area among northern provinces materialize participatory irrigation management in line with the approach of the Project	<ul style="list-style-type: none"> • PIM training was implemented and promoted in 10 northern provinces by the end of the project completion. • VAWR formulated the Guideline of PIM Procedure. The guideline was approved by Ministry of Agricultural Rural Development (hereinafter referred to as “MARD”)²⁷, and will be distributed to the northern area in 2015 and then to the whole country. • Because monitoring activities have not been conducted, the situation of activities and dissemination after the project completion were not confirmed.

Source: Prepared based on the interviews with VAWR and response to the questionnaire.

For the overall goal, PIM was to be introduced and implemented not only at model sites, but also in the ten northern provinces where PIM training was implemented under this project. Through interviews with VAWR, it was confirmed that PIM was achieved in line with the approach of the project in these areas after training was conducted under the project. Data to show the effects of the project in terms of cost, such as changes in

²⁷ MARD is the ministry responsible for irrigation water management in Viet Nam.

workloads and irrigation pump operating hours could not be obtained. However, statistical data shows an increase in rice production at the time of ex-post evaluation when compared to conditions before the project was implemented (see Figure 4). Since an increase in the production of crops depends on various factors, it is not realistic for a direct causal relationship or contributions by the project to be seen. However, since rice production in the ten target provinces exceeded the national average of Viet Nam²⁸, it can be said that the improvement of water management through PIM promotion has contributed to increased agricultural productivity in terms of quantity, within a certain degree.



Source: Statistical Yearbook of Agriculture and Rural Development, MARD, (2011), (2013)
 Note: “Quintal” is a unit to scale mass; 1 quintal is equivalent to 100kg.

Figure 4 Rice Production in Ten Northern Provinces and the National Average of Viet Nam

Furthermore, the Guideline of PIM Procedure²⁹ prepared by VAWR in 2013 will be distributed to all provinces in the northern area in 2015 (see details in section 3.4.3 Technical Aspects of the Implementing Agency for the Sustainability of Project Effects). Though the target areas differ, projects supported by the Asian Development Bank (ADB), French Development Agency (AFD) and World Bank (WB)³⁰ have utilized the training materials prepared by this project under their own project PIM components, and have also contributed to the promotion and dissemination of PIM³¹.

On the other hand, a budget to promote PIM activities and to conduct monitoring activities has not been allocated to VAWR, as described in section 3.4.4 Financial Aspects of the Implementing Agency for the Sustainability of Project Effects. Therefore, detailed

²⁸ The increase in rice production as of the project completion compared to 2005 was 9% for the national average and 15% in the 10 northern provinces. Figures as of the ex-post evaluation compared to 2005 were 14% for the national average and 16% in the 10 northern provinces.

²⁹ Guideline of PIM Procedure (Ver.1) (2013), Viet Nam Academy for Water Resources

³⁰ ADB/AFD: The Strengthening Water Management and Irrigation Systems Rehabilitation (2012-2016), WB: Irrigated Agriculture Improvement (2014-2020)

³¹ Based on the responses of questionnaire to VAWR

information on PIM and dissemination activities in the time between project completion and ex-post evaluation in the northern area has not been ascertained. In turn, nor has an accurate assessment on any impact which arose from the project been confirmed.

3.2.2.2 Other Impacts

(1) Impact on the Natural Environment

This project did not conduct facility construction or large scale rehabilitation. Therefore, there was no negative impact that occurred due to project implementation; this was confirmed with the implementing agency at the time of ex-post evaluation.

(2) Resettlement and Land Acquisition

Interviews conducted with the implementing agency during the ex-post evaluation confirmed there was no resettlement or land acquisition due to the implementation of this project.

(3) Other Indirect Impact

- Enhancement of Project Management Capacity of VAWR

This project was the first technical assistance project for VAWR. Many project counterparts considered the effects of this project to be capacity improvement, not only in terms of PIM technical knowledge and skills, but also for project management. Moreover, it was noted that the skills and experience in project management acquired through this project have become a base for VAWR, allowing them to successfully bid on projects supported by WB and ADB as a consultant³². This can be regarded as an indirect impact of this project³³.

- Improvement of Gender Balance

During project implementation, consistent efforts toward gender balance were made in PIM activities by encouraging the participation of women. For example, by clarifying the role of each woman participating in the regular meetings, participation by women was promoted in the process of the participatory approach. According to the members of CPC and APC at model sites, it was rare for women to attend meetings for on agriculture and irrigation. However, the beneficiary survey conducted during the ex-post evaluation revealed that 40% of respondents were women, indicating that participation by women was promoted and a gender balance was kept.

Through the project, tools such as the “PIM trainer’s training program” and the

³² Based on interviews with the VAWR director and staff members

³³ VAWR staff undertake the consultancy assignments from ADB, WB, AFD, etc. in addition to their regular work, which includes research commissioned by MARD.

“Training Program for IMC/IME” were developed. VAWR counterparts were certified as PIM trainers, and IMC/IME staff acquired knowledge and experience in PIM and irrigation facilities. This indicates function of promoting PIM with farmer participation has been strengthened. Moreover, water management with farmer participation at model sites has contributed to the improvement of agricultural productivity in terms of yield and cost. Although it was subsequently confirmed that PIM activities were continued at model sites, sufficient information has not been obtained due to the lack of continued monitoring activities in northern areas.

Since this project has, to some extent, achieved the project purpose, the effectiveness and impact of the project are fair. For the project purpose, the function for promoting PIM has been strengthened and water management through farmer participation has been introduced/performed at model sites. Achievement of the overall goal could not be fully confirmed because PIM activities were not monitored after project completion and the continuity and dissemination of activities were not appropriately assessed.

3.3 Efficiency (Rating: ③)

3.3.1 Inputs

The inputs of this project for implementing activities to generate outputs were made as planned for both the Japanese and Vietnamese sides (see Table 6).

Table 6 Inputs into the Project

Inputs	Plan	Actual ³⁴
(1) Experts	<ul style="list-style-type: none"> ● 4 Long-Term Experts (No information on MM³⁵) ● Short-Term as required (6 MM) 	<ul style="list-style-type: none"> ● Total 8 Long-Term (216 MM) ● Total 12 Short-Term (17.4 MM)
(2) Trainees received	<ul style="list-style-type: none"> ● Training in Japan ● Training in third country Contents: PIM, Institutional management, operation and maintenance of facilities 	<ul style="list-style-type: none"> ● 51 trainees for training in Japan ● 2 trainees for training in a third country (Malaysia) Contents: PIM, operation and management, sustainable agricultural development from the perspective of watershed management
(3) Equipment	Equipment for making training materials, Laboratory equipment, Audio-visual equipment, Books, Vehicles,	Equipment: Equipment for training (video cameras, audio equipment), Equipment for common use (PC, projector, etc.), Equipment for

³⁴ Based on information from the Terminal Evaluation Report

³⁵ MM stands for “man-month.”

	Equipment for model site activities (meteorological and hydrological observations, survey, analysis, etc.)	laboratory at model sites, Vehicles, Facilities at model sites (Facilities improvement, Speaker system, Meteorological and hydrological equipment)
(4) Project operation cost and local cost	Approximately 50 million yen Survey conducted by local consultant, cost of training	68 million yen Other (general expenses, travel expenses, personnel expenses, miscellaneous expenses)
Japanese side Total Project Cost	600 million yen	512 million yen
Vietnamese side Operational Expenses	N.A.	34 million yen ³⁶

3.3.1.1 Elements of Inputs

The appropriateness of each input is as follows.

1) Input from Japanese side

Dispatch of experts

Eight long-term experts and 12 short-term experts in total were dispatched. The specialty areas of the dispatched long-term experts were chief advisor, irrigation and drainage, water management and organization, as well as training and coordination. The specialty areas of short-term experts focused on practical activities at model sites such as the management of water usage groups, marketing, cultivation of diversified crops, facility management of pumping stations, water management technology, compilation of teaching materials, drainage planning, water management for up-land crops, and development and management of on-farm-level facilities. According to interviews with VAWR, IMC/IME, and leading farmers, it was noted that the quality, expertise, and timing of dispatched experts were adequate for generating outputs and achieving project purposes.

Training in Japan and training in a third country

Training in Japan (country-specific training) and training in a third country (Malaysia) on PIM and etc.³⁷ were conducted. A total of 51 trainees from VAWR, MARD, IMC/IME, CPC, and APC participated. The results of interviews given to VAWR staff who participated in the training in Japan and the questionnaire given after the training

³⁶ Approximately US\$ 313,054 (exchange rate: US\$1 = 108.84 yen as the average rate between June 2005 and December 2009).

³⁷ Training was provided in PIM, basin management for sustainable development, and land reform in Japan as examples of PIM, in addition to the PIM courses.

showed that the training period, course content, and timing of implementation were appropriate. On the other hand, during interviews held with CPC and APC members during site surveys at model sites, some participants commented that the experience and knowledge obtained in Japan were more modern compared to the situation in Viet Nam, and thereby not fully utilized in the field. Thus, it can be said that it was necessary to reconfirm the meaning of the training received in Japan, and to pay more attention to the formulation of the training programs.

Provision of equipment

As shown in the Table 6, equipment for implementing training was provided to VAWR and IMC/IME, and equipment for water management at model sites was provided to APC. The variety, quantity, and quality of the equipment were appropriate; it was confirmed that they were being utilized during the field survey at the time of ex-post evaluation.

2) Input from Vietnamese side

Planned input: assignment of counterparts, office space and utilities, cost of training, operation cost, allowance for counterparts. These items were covered by the Vietnamese side as planned.

3.3.1.2 Project Cost

The actual project cost was 512 million yen, lower than planned project cost of approximately 600 million yen (85% of the original plan). Upon asking VAWR for confirmation, it was explained that this reduction was caused by emphasizing on-site training at model sites instead of classroom training, which lowered activity costs. Therefore, this reduced project cost had no particular effect for generating outputs.

3.3.1.3 Period of Cooperation

The cooperation period of this project was planned to be for 5 years from June 2005 to June 2010, and the actual period was also 5 years from June 2005 to June 2010 as planned. In order to promote the participatory approach for which this project aimed, capacity enhancement of VAWR, changes in the community's understanding, and changes in water usage behavior were needed. These changes would require a certain period of time to be implemented³⁸, therefore the project period of five years is judged as appropriate to achieve the project purpose.

As a consequence, both the project cost and project period were as planned. Therefore,

³⁸ Based on interviews with VAWR

efficiency of the project is high.

3.4 Sustainability (Rating: ②)

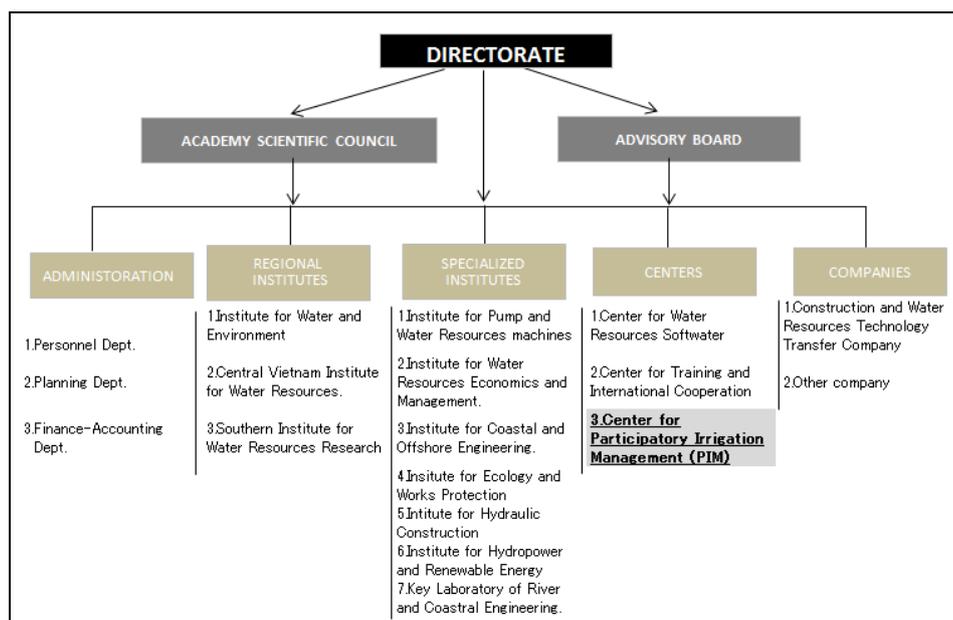
3.4.1 Related Policy and Institutional Aspects for the Sustainability of Project Effects

After project completion, policy and institutional support of the government, as well as disseminating the PIM were of critical importance in continuing the promotion of PIM and sustaining efficient water management in each area. The GOV prioritizes supporting the agricultural sector, which is a critical sector for social development. This is to be done while pursuing the development of an industrial country, as described in the national policy at the time of ex-post evaluation, namely “10-year Socio-economic Strategy 2011-2020” and “Five-Year Socio-economic Strategy 2011-2015”. Moreover, since the GOV places importance on improving social and living standards, as well as narrowing economic disparity, they have prioritized the development of agricultural infrastructure and the contribution of each entity including farmers as strategies for the support of rural and regional development. The Strategy for Water Resource Development formulated in 2009 was also still valid at the time of ex-post evaluation. It aimed for efficient irrigation water usage through the effective utilization of existing irrigation facilities, and promoted active farmer participation in the management, improvement, and protection of existing irrigation facilities. Moreover, MARD has encouraged all projects related to irrigation to include PIM activities as a component. MARD has also issued instructions to distribute the Guideline of PIM Procedure prepared by VAWR to each province, indicating that a system for supporting sustainability can be ascertained.

In this way, PIM activity ensured sustainability from policy and institutional aspects at the time of ex-post evaluation in Viet Nam.

3.4.2 Organizational Aspects of the Implementing Agency for the Sustainability of Project Effects

To sustain the project effects, a structure must be set for implementation, activity for PIM promotion must be continued, and regular meetings with farmer participation must be set up at sites. VAWR, which was counterpart institute of this project, was integrated with Southern VAWR in 2008 to become the institute covering all activities related irrigation water in the country. Within VAWR, the PIM Center is in charge of promoting PIM activities in Viet Nam. (See Figure 5).



Source: Document provided by VAWR

Figure 5 Organization Chart of VAWR

The total number of staff at VAWR is approximately 1,300 as of August 2015, with 36 assigned to the PIM Center. Almost all the counterparts from this project still work at VAWR, with staff members noting that there are no major concerns regarding the number of personnel. On the other hand, regarding coordination between VAWR and IMC/IME or model sites, the model sites have not shared or provided information, nor has VAWR monitored the sites after project completion. However, the necessary communication between VAWR and IMC/IME has been made. At the model sites, a system of having regular meetings necessary for PIM activities once in three months has been developed³⁹, and water distribution plans formulated on the basis of farmer opinions have been implemented.

As stated above, there are no serious concerns regarding organizational aspects at VAWR and model sites for the sustainability. However, future improvements are required on the system to coordinate, monitor, and further share information among stakeholders including IMC/IME and sites.

3.4.3 Technical Aspects of the Implementing Agency for the Sustainability of Project Effects

Promotion of PIM activities

By implementing this project, VAWR staff members (counterparts) acquired skills on

³⁹ Meetings were held every month during the project. However, the frequency was reduced to once in three months in accordance with cultivating seasons because the understanding of farmers had increased as of the ex-post evaluation. (Based on interviews with farmers at model sites)

PIM, experienced PIM activities at model sites, and became certified as PIM trainers. At the time of project completion, VAWR counterparts were able to independently use their experience, skills, and implementation methods on PIM flexibly according to the natural and social conditions at model sites. It was thus expected that technical capacity would be sustained through PIM promotion activities and PIM surveys conducted by these VAWR staff members⁴⁰. After project completion, the subsequent technical assistance project related to loan project entitled “Project for Promotion of PIM for Sustainable Small-Scale Pro Poor Infrastructure Development (hereinafter referred to as “P-PIM”) 2010-2013”⁴¹ was implemented. Counterparts from this project were also assigned to the P-PIM project, which made it possible for them to improve their knowledge and experience on PIM promotion. Thus, it can be said that VAWR resources on PIM and their capacity for implementing PIM training have improved to a certain degree and have been sustained. Furthermore, VAWR staff members have succeeded tendering the component of PIM activities of projects supported by ADB and AFD as consultants at the time of ex-post evaluation. This indicates through their performance that they have kept their technical capacity for sustaining project effects. In the interviews conducted during the site survey, no major concerns was found among IMC/IME engineers and staff, since their knowledge on maintenance of irrigation facilities, as well as their experience and knowledge on PIM activities has been utilized for actual water management.

Usage and maintenance conditions of provided equipment

Equipment for training provided to VAWR and IMC/IME, and equipment such as speaker systems⁴² procured for model sites have been properly utilized in line with the purpose. Since this procured equipment does not need high-level maintenance, there are no major issues in terms of technical aspects.

Utilization of manual and guidelines

The usage of manuals of operation and maintenance for irrigation facilities at IMC/IME sites were not confirmed with the exception of one IMC at a model site. During the site survey, it was explained that manuals were mainly prepared for engineers of IMC/IME. However, these manuals are quite thick, containing technical material with mathematical formulas. Thus, measures are needed to add simple explanations for

⁴⁰ Source: Terminal evaluation report and interviews to staff of VAWR.

⁴¹ P-PIM was implemented with the aim of strengthening the system for spreading PIM in MARD, VAWR, local authorities, and Nghe An and Hoa Binh provinces. More specifically, PIM training was implemented at pilot sites, guidelines were improved, manuals and training programs were developed, and a strategy for more common use of PIM at VAWR was formulated.

⁴² Speaker systems were procured at each model site as tools for announcing water management plans and PIM activities to farmers.

practical on-site application and to make the manuals more user- friendly.

After P-PIM was completed, VAWR compiled the outputs and lessons learned from this project and P-PIM, and formulated the Guideline of PIM Procedure, which explains the PIM activity procedures in a more comprehensive manner. MARD has already issued the letter to each province to promote the use of this guideline. VAWR is planning distribution of the guideline to all provinces in the northern area in 2015 and then later to other provinces across the country.



Speaker System

(Photo: left) In Hop Tien

(Photo: center) In Gia Xuyen

(Photo: right) Guideline of PIM

Procedure



3.4.4 Financial Aspects of the Implementing Agency for the Sustainability of Project Effects

As stated above, continued activities for PIM promotion and securing budget for monitoring these activities are necessary to sustain the project effects. However, according to the staff of VAWR, they do not have the budget for promoting PIM activities after the project. Therefore, PIM activities up to the time of the ex-post evaluation were continued as a part of project activities assigned to VAWR in their role as consultant for projects by other donors. These activities are listed in Table 7.

Table 7 Projects on PIM Promotion Commissioned to VAWR

Project	Budget VND Million	Financial source	Duration	Target province
Institutional support to improve irrigation efficiency	8,000	AFD	2013 – 2014	Bac Ninh province
Proposed model of socialization management and development on farm canal systems in terms of exemptions from irrigation fee	2,400	MARD	2010 – 2013	Thai Binh and Long An province
Scientific research based on proposed	1,600	MARD	2013 –	Mekong

measures to promote and strengthen Public-Private-Partnership in investment, management and exploitation of irrigation system			2015	river Delta
Consulting on training and establishment of Water User's Associations	70	Canada	2014–2015	Ha Tinh province
On-farm and social support development program for irrigation system	13,700	ADB/AFD	2015–2016	Tay Ninh province

Note: None of the projects have been implemented directly for PIM activities, but contained PIM promotion activities as one of the project components.

Source: Documents provided by VAWR

Furthermore, VAWR has not secured a budget for monitoring. This creates a situation in which it is difficult to collect sufficient information to assess how PIM activities have been continued and disseminated at model sites and the northern areas. It is essential for MARD and VAWR, as the institution responsible for promoting PIM activities in Viet Nam, to further understand the importance of monitoring activities and the continuation of use of PIM in each area. Therefore, VAWR should work not only to promote PIM activities as their consulting tasks, but should also propose on MARD to secure a budget to implement activities and monitor those activities.

At model sites, water fees are collected from farmers by APC, and then from APC to IMC/IME. The collected fees are used to pay the salaries of IMC/IME staff and also as a part of maintenance costs. In interviews with APC and IMC/IME, it was noted that water fee collection is not bad overall since farmers are aware of the importance of water. The GOV introduced a system to provide subsidies for water fees on maintenance of main canal facilities, which caused some farmers to misunderstand and assume they do not need to pay water fees on irrigation canals including farm canals. However, it will be explained by local authorities to make farmers understand that water fees for irrigation water must be covered by farmers⁴³.

In light of the above, some minor problems have been observed in terms of organizational and financial aspect of the implementing agency. Therefore, sustainability of the project effect is fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

This project was implemented to promote water management with farmer participation by enhancing the capacities of leading farmers and water resource engineers,

⁴³ Source: Interviews to VAWR and MARD

thereby improving agricultural productivity at three model sites in two provinces (Hai Duong Province and Quang Ninh Province) in northern Viet Nam. The objective of this project is consistent with development policy and needs, which has placed priority on increasing income in rural areas; it is also consistent with Japan's ODA policy in Viet Nam, where 70% of the total population is involved in the agricultural sector. Therefore, the relevance of this project is high. Through the project, training on PIM was formulated and implemented. This led to the strengthening of functions for promoting PIM activities conducted by the VAWR, and increased the knowledge and experience on PIM for engineers belonging to IMC/IME, as well as leading farmers. Accordingly, irrigation water management with farmer participation has been advanced and improvement in agricultural productivity was confirmed. However, activities have not been fully monitored at model sites and northern provinces after completion of the training conducted there, though PIM activities have continued through projects funded by other donors. Thus, details regarding continued activities and their dissemination have not been confirmed. Therefore, the effectiveness and impact of this project are fair, since sufficient information on impact could not be obtained, but the expected effectiveness was basically achieved. The efficiency was judged to be high as the original and actual input of this project was appropriate for generating output and achieving the project purpose. Both the project cost and period stayed within the planned values. Regarding sustainability, while no major concerns were observed in terms of related policy, institutional aspects, and technical aspects, there was an issue on organizational aspects, i.e. a lack of coordination on sharing the information of PIM activities between VAWR and IMC/IME. In terms of financial aspects, the lack of budget for conducting monitoring activities and PIM promotion/dissemination still remains an issue. Based on these findings, the sustainability of the effect produced in this project is fair.

In the light of the above, this project is evaluated to be satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Implementing Agency

- The implementing and dissemination status of PIM activities at model sites and northern areas where PIM training was conducted have not been monitored from the time of project completion to the ex-post evaluation. Conducting monitoring activity is necessary to confirm sustainability and to learn the good and bad practices at the sites. Even if it is not possible to actually visit the site due to insufficient budget, it is possible to collect information and confirm the situation through telephone calls and E-mail. Therefore, it is recommended that VAWR start monitoring activities and the necessary follow-up procedures immediately.

- After the project completion, VAWR has conducted promoting PIM activities as a part of consulting works for the project funded by other donors while they have not have their own budget for promoting, disseminating and monitoring PIM activities. As a responsible institute for promoting PIM, VAWR is suggested to share the importance of those activities with MARD and work on MARD to ensure the budget for conducting VAWR's PIM promotion and monitoring activities. Furthermore, MARD is recommended to support the activities of VAWR through instructing IMC/IME and DARD regarding the delivering of PIM in irrigation projects, active usage of "Guideline of PIM procedure" and promotion of monitoring activities in addition to allocate the budget.

- When visiting model sites during ex-post evaluation, it was not ascertained if the manuals for operating and maintenance for irrigation facilities (pumping station and irrigation canal) were being fully utilized. Even though water management plans are formulated with farmer participation and water management is implemented in line with these plans, inadequate use of irrigation facilities hinders the efficient usage of irrigation water. Therefore, VAWR must promote further utilization of the manual by re-explaining the purpose of continued use of such manuals to IMC/IME and stakeholders. In addition, manuals examined at IMC/IME seem to contain sections that may be difficult for farmers on-site and at pumping station to understand. Thus, it is also necessary to re-examine the content of manual to determine if it is appropriate for use on-site. The possibility of re-formulating the manuals into a format that is easier for users must also be considered.

4.2.2 Recommendations to JICA

None

4.3 Lessons Learned

- Significance and objectives of training in Japan that allows participants to use acquired knowledge and experience in the field in their home country

For this project, 50 members participated in training on PIM and sustainable agricultural development in Japan. Trainees were highly satisfied with participating in this training in Japan and gaining experience in understanding Japanese irrigation. However, some participants noted they do not know how they can apply the knowledge and skills acquired in Japan to actual farming in Viet Nam, or that they needed opportunities to communicate with Japanese farmers. For this type of training in Japan, meeting all of participants' needs is difficult due to constraints on Japanese resources. However, the person who plans the training must share the purpose of the training with the implementing agency and the participants (candidates). This person must also carefully examine and confirm whether the training program meets the need of

participants, if the country or area where training is held is appropriate, and must plan and implement training that can be useful in the field after participants return to their country.