

Simplified Ex-Post Evaluation for a Technical Cooperation Project

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Project Name	The Project on the Industrial Water Technology Institute (Phase II)	November, 2011 - April, 2012

I Project Outline

Country Name	The Kingdom of Thailand		
Project Period	June, 2000 – May, 2005		
Executing Agency	Department of Industrial Works, Ministry of Industry (DIW)		
Cooperation Agency in Japan	Industrial Facilities Division (Ministry of Economy, Trade and Industry), Water Reuse Promotion Center		
Total Cost	609 million yen		
Related Projects (if any)	New Energy and Industrial Technology Development Organization (NEDO) “The Cooperative Research Project on the Development of Environmentally Friendly Industrial Wastewater Reuse Technology” (2001 – 2005)		
Overall Goal	Thai industries are able to get more efficient water use and also more effective wastewater treatment and reuse.		
Project Objective (s)	The Industrial Water Technology Institute (IWTI) is able to continuously provide Thai industries with appropriate technical guidance on industrial water supply, the effective use of water and wastewater treatment and reuse.		
Output(s)	<ol style="list-style-type: none"> 0. The organization of IWTI is strengthened and operated efficiently. 1. Equipment for technical guidance to Thai industries is properly installed and operated. 2. A training service on industrial water and wastewater technology is provided to Thai industries by IWTI. 3. A consulting service on industrial water and wastewater technology is provided to Thai industries by IWTI. 4. An information service on industrial water and wastewater technology is provided to Thai industries by IWTI. 		
	Inputs (Japanese Side)	Inputs (Thai side)	
Experts	5 for long term, 14 for short term	Staff Allocated	10
Equipment	107.8 million yen	Equipment	Purchased (value unknown)
Local Cost	13.7 million yen	Local Cost	16.4 million Thai Baht
Trainees Received	7	Land etc., provided	Project office and others
Miscellaneous	Project consultation study surveys	Miscellaneous	-

II Result of the Evaluation

Summary of the evaluation
<p>This project was conducted to systematically strengthen the Industrial Water Technology Institute (IWTI, presently the Industrial Water Technology Division: IWTD, in the Bureau of Industrial Water Technology & Pollution Management). This body was established to resolve problems due to the rapid industrialization of Thailand, including subsidence caused by the excess pumping of groundwater and water pollution, and to enable technical guidance to be provided to Thai industries on a continual basis. In terms of relevance, the project was consistent with the Thai development policy cited as a development strategy to conserve natural resources and the environment, the development needs of Thailand relating to the transfer of skills for effective water usage, wastewater treatment and reuse to cut costs as required by Thai industries, and also reflecting Japan’s assistance policy, at the time of planning and completion.</p> <p>This project, including the development of training materials and seminars, counterpart acquisition of analysis skills for the consulting service, and the construction of databases, improved IWTD’s ability in training, consulting and information services related to industrial water and wastewater management skills provided to Thai industries. This project also enhanced user satisfaction. As a result, efficient water use, water reuse in factories, and the treatment of industrial wastewater were deemed to have improved.</p> <p>From an efficiency perspective, it was impossible to compare the estimated and actual cooperation cost because the estimated amount was not available. However, the period of cooperation was within the planned period, and the inputs were invested appropriately into the output of results, hence the project efficiency was assessed as high.</p> <p>In terms of sustainability, the project is consistent with the ongoing development policy of Thailand adopting the ‘Sustainable control of natural resources and the environment.’ Some problems were identified in terms of institutional aspects due to changes in the position and role of the counterpart, following structural changes in the executing agency. Staff turnover and transfers were frequent. However, despite the IWTD budget being insufficient to develop staff abilities, the sustainability of technical aspects was ensured by maintaining the technical level of IWTD through technical transfer between staff. At the same time, there were no particular concerns regarding financial aspects, as a sufficient budget was provided for IWTD’s activities. Furthermore, IWTD will continue to provide training courses and information to industrial communities. IWTD oversees the performance of the external consulting company after the consulting services have been outsourced to the latter. Therefore, it is reasonable to say that IWTD is continuing to provide technical guidance to Thai industries in the area of industrial water and wastewater management skills.</p> <p>In light of the above, this project is evaluated as highly satisfactory.</p> <p><Recommendations to the executing agency> DIW remains subject to further internal structural changes in future. Even after the structural change, the personnel involved with this project</p>

should preferably be assigned to related departments to continue their operations.

<Limitations of the evaluation study>

Because this study was conducted as a desk survey based on questionnaire responses from the executing agency and other written material, the study excludes an assessment of the facts ascertained directly by the evaluator. Therefore, there are some points in the evaluation of 'Sustainability', which lean on the responses from the executing agency without the detailed facts being visually confirmed.

1 Relevance

(1) Relevance to the Development Plan of Thailand

When this project was planned, the Thai government targeted the 'utilization and conservation of natural resources and the environment' as one of its goals in the Eighth National Economic and Social Development Plan of Thailand (1996-2001) with the 'management of natural resources and the environment' as a development strategy. Similarly, under the Ninth National Economic and Social Development Plan (2001-2006), which was drawn up and implemented during the project period, the 'utilization and conservation of natural resources and the environment' was raised as one of the seven development strategies, and the promotion of efficient management for environmental conservation was suggested. Furthermore, the Thai government was promoting positive environmental policies to tackle problems such as subsidence and water pollution caused by rapid industrial development, and, decided to strengthen wastewater management regulations in a cabinet meeting of March 2003. The same year, the DIW cited the 'promotion of the improvement of private sector productivity and competitive strength, and the implementation of guidance related to the environment and safety' as priority measures. These plans proceeded throughout the implementation period. Therefore this project was assessed as consistent with Thai development policy.

(2) Relevance to the Development Needs of Thailand

During the planning stage of this project, Thai industries required skills in water treatment and efficient water use from the perspective of cost reduction. The preliminary survey revealed that mid-size factories urgently require technical guidance in wastewater treatment and reuse skills, as for industrial water treatment and water-saving skills, and the Federation of Thai Industries expects IWTI to provide technical guidance on wastewater reuse skills. There was a persistent development need for industrial water/wastewater management throughout the implementation period of the project. Therefore, this project was assessed as consistent with Thailand's development needs.

(3) Relevance to Japan's ODA Policy

In Japan's Country Assistance Program for Thailand (drawn up in March 2000), which was effective at the time this project was planned, 'environmental conservation' was regarded as one of the five important areas of assistance, and continuous support, including training of personnel to take the lead in environmental measures, was adopted as an important item. Similarly, JICA's policy concerning the implementation of projects in Thailand designates pollution control measures, upgrading and expansion of environmental management frameworks, promotion of energy saving, and environmental protection on a global scale as important issues. There was no change in the above plan and policy by the time of completion of the project, and they were supported throughout the implementation period. Thus, this project was assessed as consistent with Japan's assistance policy.

This project has been highly relevant to the country's development plan and development needs, as well as to Japan's ODA policy; therefore its relevance is high.

2 Effectiveness/Impact

(1) Achievement of Project Outputs and Project Objective(s)

The achievements of each output of the project are as follows:

For output 0, throughout the project period, the planned number of staff was assigned, and the budget for IWTI was allocated appropriately by DIW. According to the questionnaire response from IWTI, the project planning abilities of IWTI staff had improved as a result of the transfer of skills.

For output 1, the equipment was installed as planned, and skills relating to its procurement and operation were transferred. All the equipment was maintained and stored appropriately, and almost all the equipment, including the activated sludge testing equipment and suspended solid analysis equipment, was used in experiments and measurements in the consulting services provided to factories by IWTI.

For output 2, while counterparts' skills in many technical areas of training exceeded the target levels upon completion of the project, there was room for additional improvement in some topics related to industrial water and wastewater treatment. 13 types of teaching materials were prepared for the training courses. 10 seminar courses, many in-house seminars, and four consulting seminars were held, and the number of participants from factories and other organizations increased. The satisfaction level of the seminar participants was also fairly high. In addition, the counterparts became able to arrange and implement training course plans by themselves.

For output 3, the counterparts reached the target level in almost all of the 27 technical areas regarding consulting services. 13 types of skills transfer textbooks were prepared, 143 factory consultations were conducted, and 31 consulting reports were compiled. The factories which received consulting services were apparently satisfied with IWTI's services. In addition, the counterparts learned how to utilize the transferred skills for the most part.

For output 4, while the counterparts reached the target level in almost all technical areas related to the information services, IWTI outsourced information services concerning industrial water and wastewater treatment to an external consulting company, which provided services directly to the industry. Two database systems and related tools were developed. Data regarding industrial water use from more than 1,500 factories were stored in one of them, in the water clinic survey database. Conversely, IWTI only partially input the data acquired through the consulting service to the factories in the other database. According to the questionnaire responses from IWTI, user satisfaction regarding IWTI's information services related to industrial water and wastewater technology to the factories had improved. Furthermore, IWTI had apparently become able to provide the information service independently upon completion of the project.

Therefore, due to the overall accomplishment of the indexes set for each output, the expected target for the outputs of this project was assessed to have been largely achieved.

In terms of the level of achievement of the project objective, IWTI was utilizing the skills transferred by the project related to the effective use of industrial water and wastewater treatment and reuse, and was providing technical guidance to Thai industries. The number of participants in IWTI training and of factories which received consulting services from IWTI increased. Additionally, user satisfaction with technical guidance also improved. Therefore, due to the overall accomplishment of the indexes set for the project objective, the expected effect of this project was assessed to have been largely achieved.

(2) Achievement of the Overall Goal, and Intended/Unintended Impacts

Regarding the effective use of water, industrial water use was reduced at 10 factories by a total of 551,914 m³ (12,142 thousand Baht) in 2009, and at 12 factories by a total of 491,892 m³ (12,988 thousand Baht) in 2010 as a result of the IWTI consulting services. Likewise, both water reuse and industrial wastewater treatment in factories had improved according to the responses to the questionnaire from IWTI, even though no relevant numerical data could be obtained. Therefore, it can be said that the overall goals of the project were largely achieved.

As an indirect effect of this project, IWTI was commissioned by the Ministry of Industry to conduct a water clinic survey to formulate a strategy about industrial water use and groundwater as a subsidence countermeasure.

This project largely achieved its objectives, and was therefore highly effective.

3 Efficiency

(1) Outputs

As stated in 'effectiveness and impact' (1), this project generated the expected outputs.

(2) Inputs

Inputs into this project are as stated in the 'Project Outline' above. While there was some delay in the activities, such as the implementation of some training during this project, the PO (plan of operation) and input plan were revised due to the management guidance survey (mid-term evaluation) in October 2002, which proposed a more realistic plan. In the terminal evaluation, the inputs were analyzed as having been converted effectively into outputs in terms of the quality, quantity and timing. It can therefore be said that the effect of the delay on the inputs had been recovered by the time of the terminal evaluation, and there was ultimately no negative impact on the generation of the outputs.

(3) Project Period and Project Cost of Cooperation

Since the actual project period of cooperation was five years, vs. the planned period of five years, the period was as planned (100% of the planned period). In terms of project cost, a comparison between the planned and actual costs was not possible, because the planned value was unclear while the actual project cost was 609 million yen.

The inputs are appropriate for producing the outputs and achieving the project objective, therefore efficiency of the project is high.

4 Sustainability

(1) Related Policy towards the Project

There was no change in the policy of Thailand regarding environmental conservation. The current national development plan, 'the 'Eleventh National Economic and Social Development Plan (2012-2016)' has adopted the 'sustainable management of natural resources and environment' as one of its 6 development strategies.

(2) Institutional and Operational Aspects of the Executing Agency

With the structural change in the Ministry of Industry in March 2005, IWTI became an established department under the Bureau of Industrial Water Technology & Pollution Management (a department within the DIW), namely, the Industrial Water Technology Division (IWTD). At the time of the ex-post evaluation, the former IWTI Director was assigned as the Division Head of IWTD. At present, IWTD outsources all the categories of consulting services under this project to an external consulting company and monitors the quality of the consulting company's services, supervision of implementation and evaluations. Training and information services to Thai industries in relation to the supply and effective use of industrial water, and wastewater treatment and reuse are continually implemented by the IWTD. According to the IWTD, no particular problem is seen in the current organizational structure or framework, although more staff would be preferable.

In addition, as in the short-term experts' report on the management guidance survey and the expert work completion report, further organizational changes in DIW seem to be under consideration.

(3) Technical Aspects of the Executing Agency

According to the questionnaire responses from the IWTD, although there is considerable staff turnover and transfer and the budget to develop staff abilities is insufficient, the skills transferred by this project are appropriately passed on and shared within the departments, since IWTD effectively performs skill transfers between the staff to mitigate the high turnover/transfer rate. However, the details were not clear.

(4) Financial Aspects of the Executing Agency

According to IWTD, the budget allocated to technical guidance is adequately allocated from DIW each year to continue IWTD's activities, and there is almost no problem with securing the budget.

(5) Continuity of Effectiveness and Impact

According to the questionnaire responses, IWTD continues to provide training and information services related to the supply and effective use of industrial water, and wastewater treatment and reuse among the focus areas of this project. The other area of focus, consulting services, was outsourced to an external consulting company while IWTD supervises the quality of consultants' services by utilizing the expertise acquired through this project. IWTD answers that there have been no particular problems in their operations.

In light of the above, some problems have been observed in terms of organizational aspects, and attention shall be paid to maintaining the organizational structure to enable the continuous explanation of skills. The sustainability of the project effects is thus considered fair.