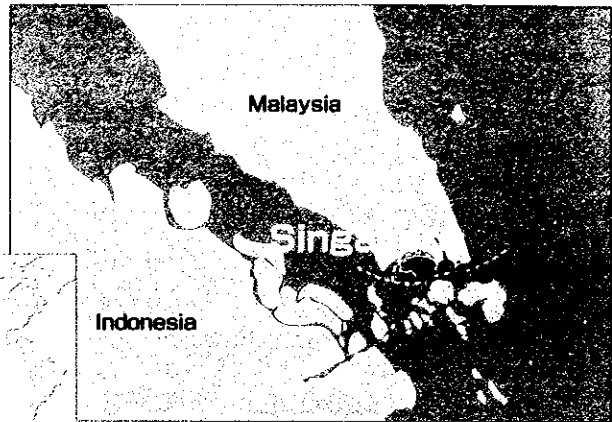


Environmental Management



Project Site Singapore

1. Background of Project

Japan and Singapore agreed on the Japan-Singapore Partnership Program (JSPP) in January 1994, and to extend the technology and knowledge it had accumulated through self-help efforts based on cooperation from Japan to neighboring countries, which were at an earlier stage of development, by means of the collaborative Dispatch of Experts and the holding of training. As a part of JSPP, Third-country Training Program started in Singapore in 1994, funded equally by the Government of Japan and the Government of Singapore.

Singapore had achieved economic growth faster than other ASEAN countries through industrialization, while succeeding to maintain comfortable living conditions and prevent environmental pollution through an effective environmental policy. To expand the Singapore experience to neighboring countries, the Third-country Training Program, "Environmental Management" was newly established in JSPP in 1996.

2. Project Overview

(1) Period of Cooperation

FY1996-FY1999

(2) Type of Cooperation

Third-country Training Program

(3) Partner Country's Implementing Organizations

Ministry of Environment
 Center for Environmental Training
 Technical Cooperation Directorate of Ministry of Foreign Affairs

(4) Narrative Summary

1) Overall Goal

Air and water quality is improved in the Asia-Pacific region.

2) Project Purpose

Trainees enhance their capacity in environmental management (developing and implementing a system) in respective countries.

3) Outputs

- a) Trainees understand the strategies, actions and enforcement procedures of national and local governments to strengthen environmental management.
- b) Trainees understand air and water quality and solid waste management including toxic and hazardous waste.
- c) Trainees understand the importance of public awareness and education.

4) Inputs

Japanese Side

Short-term experts	4
Training expenses	12 million yen

Singaporean Side

Instructors and management staff	
Training facilities, equipment and educational materials	
Training expenses	21 million yen

(5) Participant Countries

Cambodia, Indonesia, Viet Nam, Sri Lanka, Thailand, China, Nepal, Pakistan, Bangladesh, Philippines, Malaysia, Laos, Palestine, Fiji, Papua New Guinea, Mauritius

3. Members of Evaluation Team

JICA Singapore Office
(Commissioned to Applied Research Corporation)

4. Period of Evaluation

13 October 1999-31 March 2000

5. Results of Evaluation

(1) Efficiency

Although it was indicated that some of the short-term experts and trainees lacked proficiency in the English language, the management and curriculum of the training courses were highly evaluated by the trainees. Therefore, it was judged that the training program was managed efficiently as a whole.

(2) Effectiveness

As a total, 64 trainees participated in the courses over four years. Out of the respondents to the questionnaire, 90 percent answered that more than 50 percent of the skills and knowledge attained from the course was or would be applicable to their environmental administration work (environmental assessment, Feasibility Studies and national environmental projects). In conclusion, the purpose of the training had been mostly achieved.

(3) Impact

Most trainees had shared the knowledge they gained with others (colleagues in their offices, staff of NGOs and governments and others in their countries) by means of meetings and workshops after returning home. Accordingly, the courses produced a multiplier effect in the respective countries of trainees, with significant impact overall.

(4) Relevance

According to the country reports submitted by trainees and answers to the questionnaire, environmental management was regarded as one of the key issues for development of their nations. Recently, many nations had responded to environmental concerns by establishing an environmental bureau and environmental laws, demonstrating the priority and commitment of governments in this area. Thus, implementing this training program was quite relevant.

(5) Sustainability

Center for Environmental Training, the implementing

organizations, was able to plan training courses matched to trainee needs and to implement the courses efficiently and smoothly. Sustainability was thus considered to be good.

6. Lessons Learned and Recommendations

(1) Lessons Learned

Course organizers should start the applicant selection process at an earlier stage in order to select participants who are proficient in the English language.

It is hard to promote Japanese aid through Third-country Training Programs since the Japanese contribution is largely invisible. Although the training is based on the skills and knowledge transferred originally by Japanese technical cooperation, the course should include more extensive lectures by Japanese instructors and a greater number of visiting Japanese private companies so that Japan's role is better understood.

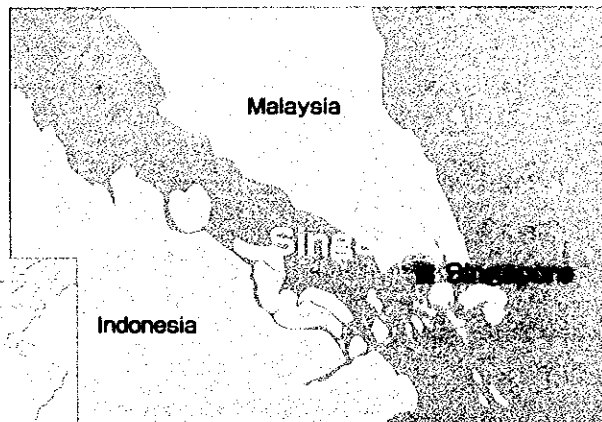
(2) Recommendations

Another training program implemented through Japanese cooperation related to the environment in Singapore was entitled "Urban Environmental Management". The two courses could be combined with an overall emphasis on urban environmental management, which is Singapore's specialty.

7. Follow-up Situation

Based on the above recommendation, the contents of the "Environmental Management" courses were integrated with the "Urban Environmental Management" course from 1999.

Advanced Management Consultancy



Project Site Singapore

1. Background of Project

JICA had implemented Grant Aid (1983-1985) and Project-type Technical Cooperation (June 1983-May 1990) in support of productivity improvement in Singapore. In order to expand the outputs of this cooperation to other ASEAN countries, JICA had implemented the Third-country Training Program "Management Consultancy" for five years since 1990.

In 1991, a more advanced Third-country Training Program, "Advanced Management Consultancy" began. In 1996, it was decided that the program would be extended another four years.

2. Project Overview

(1) Period of Cooperation

FY1991-FY1999

(2) Type of Cooperation

Third-country Training Program

(3) Partner Country's Implementing Organization

Productivity and Standards Board (PSB)
 Technical Cooperation Directorate, Ministry of Foreign Affairs (MFA-TCD)

(4) Narrative Summary

- 1) Overall Goal
 Quality of consulting work related to productivity improvement is improved in the Asia and Pacific region.
- 2) Project Purpose
 Trainees are able to conduct comprehensive and high level consulting work, to manage consulting projects and guide other consultants.

3) Outputs

- a) Trainees acquire more practical and applicable consulting techniques.
- b) Trainees improve their management ability for consulting projects.
- c) Trainees acquire training skills to guide other consultants.

4) Inputs

Japanese Side

Short-term experts	9
Training expenses	56 million yen

Singaporean Side

Instructors and management personnel	36
Training facilities, equipment and educational materials	
Training expenses	29 million yen

(5) Participant Countries

Bangladesh, Brunei, Cambodia, Fiji, Indonesia, Laos, Malaysia, Mongolia, Nepal, Sri Lanka, Thailand, Vietnam, Myanmar, Palestine, Hungary.

3. Members of Evaluation Team

JICA Singapore Office
 (Commissioned to Applied Research Corporation)

4. Period of Evaluation

13 October 1999-31 March 2000

5. Results of Evaluation

(1) Efficiency

The cost and utilization of resources was always within the budget and plans, and utilized effectively. According to the implementing organization, PSB, judging from projects regarding management consultancy implemented in the participating countries, the multiplier effect was attained through the sharing and institutionalizing of knowledge. Therefore, the resources allocation was considered to be very efficient.

(2) Effectiveness

A total of 172 members participated in the courses over the nine years. Out of 48 respondents to the questionnaire, all indicated they had applied the knowledge and skills attained in the courses in their actual work. Their supervisors also recognized the improvement of their skills, in many cases. As a conclusion, the purpose of the training program was almost achieved.

(3) Impact

Almost all of the respondents had shared the knowledge they had gained with others like their colleagues by means of holding workshops and meetings. Moreover, half of respondents institutionalized the procedures and practices taught into an instruction manual or wrote a report of the items taught for the benefit of others. Many trainees had been engaged in the training of staff of governmental organizations and NGOs in the field of productivity improvement. Accordingly, the impact of the courses is seen by the multiplier effect attained in respective countries.

(4) Relevance.

Almost all respondents answered that the contents of the courses were of use and related to their actual work to some extent. However, trainees from countries such as Cambodia and Viet Nam indicated that the skills and knowledge attained in the course could not always be applied to their work due to the lack of budget in their countries. The content of the courses should have been revised to match the technological level of these countries.

(5) Sustainability

PSB was able to implement the courses efficiently and smoothly. Sustainability was ensured.

6. Lessons Learned and Recommendations

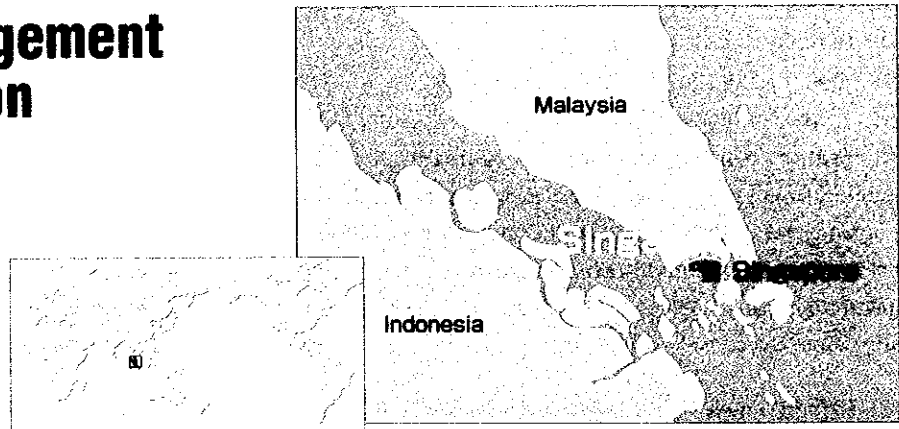
(1) Lessons Learned

It is hard to promote Japanese aid through Third-country Training Programs since the Japanese contribution is largely invisible. Although the training is based on the skills and knowledge transferred originally by Japanese technical cooperation, the course should include more extensive lectures by Japanese instructors and a greater number of visiting Japanese private companies so that Japan's role is better understood.

(2) Recommendations

It was judged that training program achieved its original purpose sufficiently in the approximate ten-year period of cooperation.

Effective Management of Port Operation



Project Site Singapore

1. Background of Project

Having been involved in foreign trade more actively due to rapid industrialization, ASEAN countries confronted the difficulty of maintaining and managing their ports. Since Singapore had well-equipped ports and the Port of Singapore Authority Institute (PSA) had received trainees from overseas, Japan held two training programs namely, "Port Management and Operation" and "Management and Maintenance of Port Equipment" in PSA as a part of urgent action plan of human resources development in ASEAN pacific region, agreed in the ASEAN+3 Foreign Ministers Meeting in July 1985. The government of Singapore, appreciating the results of the course "Port Management and Operation", requested the Government of Japan to organize another Third-country Training Program called "Management of Port Operations", which had been implemented for five years since 1990.

2. Project Overview

(1) Period of Cooperation

FY1995-FY1999

(2) Type of Cooperation

Third-country Training Program

(3) Partner Country's Implementing Organizations

Port of Singapore Authority Institute (PSA)
 Technical Cooperation Directorate, Ministry of Foreign Affairs

(4) Narrative Summary

1) Overall Goal

Management efficiency of port operation is improved in participant countries.

Trainees utilize acquired knowledge to improve port operation system effectively in their country.

2) Project Purpose

Capability of trainees on port management are Strengthened.

3) Outputs

- a) Trainees exchange knowledge and experience regarding management of port operations, and enhance their views.
- b) Trainees understand and acquire skills and knowledge for efficient port operations.

4) Inputs

Japanese Side

Short-term experts	5
Training expenses	22 million yen

Singaporean Side

Instructors and management staff	
Training facilities, equipment and educational materials	
Training expenses	25 million yen

(5) Participant Countries

Bangladesh, Cambodia, China, Fiji, Indonesia, Maldives, Mauritius, Myanmar, Papua New Guinea, Palestine, Samoa, Solomon Islands, Thailand, Viet Nam, India, Tonga, Brunei

3. Members of Evaluation Team

JICA Singapore Office
 (Commissioned to Applied Research Corporation)

4. Period of Evaluation

13 October 1999-31 March 2000

5. Results of Evaluation

(1) Efficiency

The cost and utilization of resources was always within the budget and plans, and utilized effectively. According to an implementing organization, PSA, judging from projects regarding port management implemented in the participating countries, the multiplier effect was attained by sharing the knowledge and institutionalizing it, and therefore, the resource allocation was considered to be efficient.

(2) Effectiveness

A total of 77 members participated in the courses over five years. All 24 respondents to the questionnaire indicated that they had applied the knowledge and skills attained in the courses in their actual work. All answered that they applied the knowledge to many projects related to the management of port operations. Their supervisors also recognized the improvement in their skills, in many cases. As a result, the purpose of the training program was considered to be mainly achieved.

(3) Impact

Almost all respondents had shared the knowledge they had gained with others, such as their colleagues by means of workshops and meetings. Moreover, 58 percent institutionalized the procedures and practices taught into an instruction manual or wrote a report on the subjects taught for the benefit of others. Some trainees started projects for institutional reform to manage port operations effectively in their countries. Especially, in Palestine a department for organizing training programs related to port operations was newly established. Accordingly, the impact of the course is considered high, as seen by the multiplier effect achieved in respective countries.

(4) Relevance

The majority of respondents (79%) answered that more than half of the skills and knowledge attained from the courses would be applicable to their work. However, trainees from Fiji, Cambodia, and Viet Nam answered that less than half of the knowledge could be utilized because their countries did not have modern port systems and equipment. Therefore, the selection of participating countries and the contents of training should have been more carefully considered.

(5) Sustainability

PSA was able to implement the courses efficiently and smoothly. Sustainability was ensured.

6. Lessons Learned and Recommendations

(1) Lessons Learned

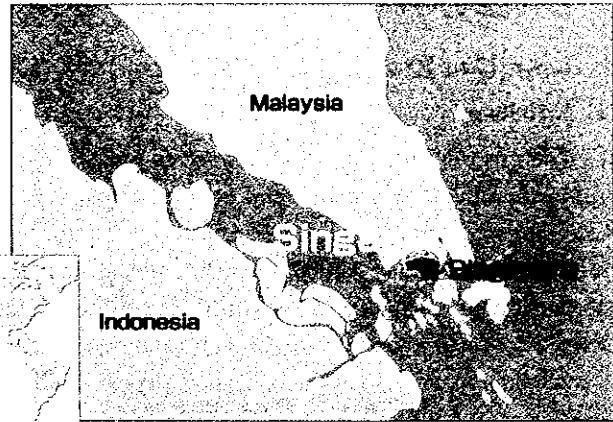
It is hard to promote Japanese aid through Third-country Training Programs since the Japanese contribution is largely invisible. Although the training is based on the skills and knowledge transferred originally by Japanese technical cooperation, the course should include more extensive lectures by Japanese instructors and a greater number of visiting Japanese private companies so that Japan's role is better understood.

(2) Recommendations

The training course should include lectures on Environmental Impact Assessment for expanding ports, from environmental viewpoints.

Trainees from countries where modern ports were not yet established requested information on the latest skills related to the construction and management of ports, and lectures on the use of computer-assisted management in ports operations. Because the skills transferred in the course were possibly too advanced and not appropriate for many participating countries, the course should provide cost effective skills that match the circumstances of participating countries, while also including some sessions on advanced technology.

Mechatronics System Technology



Project Site Singapore

1. Background of Project

JICA had implemented Project-type Technical Cooperation for the establishment and management of the Japan-Singapore Training Center for five years from June 1978, in order to support Singapore in the training of middle-class engineers, an urgent necessity following its rapid industrialization. The center was later transformed into the Japan-Singapore Technical Institute. JICA then supported the institute for another five years through Project-type Technical Cooperation, to give higher level training matching the advanced industrial structure in Singapore. Once more, the institute changed its name, this time to the "Japan-Singapore Institute". JICA dispatched a long-term expert in 1994 to raise the academy to a university level institute and establish the field of mechatronics engineering.

The Government of Singapore requested the government of Japan to implement Third-country Training program aiming to expand transferred skills in the above cooperation to other Asian and Pacific neighbor countries.

2. Project Overview

(1) Period of Cooperation

FY1995-FY2001

(2) Type of Cooperation

Third-country Training Program

(3) Partner Country's Implementing Organizations

Technical Cooperation Directorate of Ministry of Foreign Affairs

Nanyang Polytechnic (Former Japan-Singapore Institute)

(4) Narrative Summary

1) Overall Goal

Knowledge and skills attained in the courses are utilized to promote the manufacturing industry in

the Asia-Pacific region.

2) Project Purpose

Participants obtain knowledge and skills in various mechatronic technologies.

3) Outputs

- a) Trainees understand the application of robotics and assembly technology in an automated environment.
- b) Trainees comprehend the machine system elements and peripherals for automation.
- c) Trainees understand CAD/ CAM applications, related hardware and peripherals, system capabilities and operating requirements.
- d) Trainees comprehend machine vision technology and its applications in image processing and simulation.

4) Inputs

Japanese Side

Short-term experts	5
Training expenses	13 million yen

Singaporean Side

Instructors and management staff	21
Training facilities, equipment and educational materials	
Training expenses	14.5 million yen

(5) Participant Countries

Cambodia, China, Fiji, India, Laos, Malaysia, Nepal, Philippines, Sri Lanka, Thailand, Viet Nam, Mauritius, Papua New Guinea.

3. Members of Evaluation Team

JICA Singapore Office

(Commissioned to Applied Research Corporation)

4. Period of Evaluation

13 October 1999-31 March 2000

5. Results of Evaluation

(1) Efficiency

The cost and utilization of resources had always been executed as planned, and utilized effectively. According to the Japan-Singapore Institute, considering the mechatronics related projects implemented in the participating countries, the degree of sharing the knowledge between ex-trainee and their colleague, the efficiency of this course could be concluded high.

(2) Effectiveness

A total of 95 members participated in the courses over five years. The trainees' knowledge of and skills in mechatronics were enhanced: 28 out of 32 respondents to the questionnaire answered that they had applied the attained knowledge in their work after they returned their countries. Their supervisors also recognized an improvement in their skills, in many cases. As a conclusion, the purpose of the training program was almost achieved.

(3) Impact

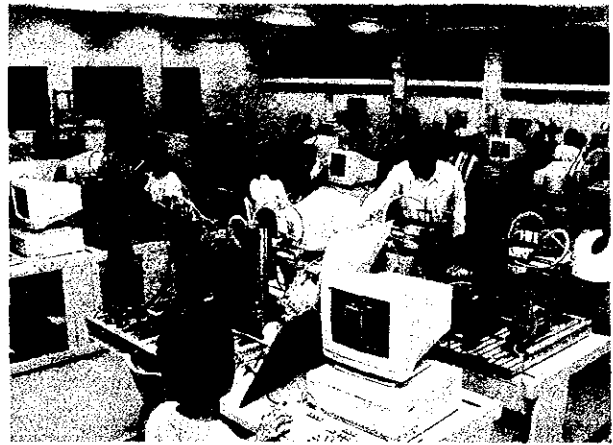
According to the results of the questionnaire, nearly all respondents had shared the knowledge they had gained with others, such as their colleagues by means of workshops and meetings. Moreover, many also institutionalized the procedures and practices taught into an instruction manual or wrote a report of the subjects taught for the benefit of others. Many had initiated small projects related to mechatronics, in the Ministry of Industry in their country. Accordingly, the impact of the courses is seen by the multiplier effect it has attained.

(4) Relevance

As to the relevance of the skills and knowledge transferred in the courses, trainees from some countries, such as Cambodia, Nepal, Papua New Guinea, indicated the difficulty in applying the knowledge gained as mechatronics was still at the infancy stage in their respective countries. Therefore, the training plan should be examined carefully in terms of selecting participating countries and considering the contents of the training course.

(5) Sustainability.

The Japan-Singapore Institute and Nanyang Polytechnic were able to implement the course efficiently and smoothly. Sustainability was ensured.



Exercise in a computer classroom

6. Lessons Learned and Recommendations

(1) Lessons Learned

The course organizers need to start the selection process of participants earlier in order to identify participants who are proficient in the English language.

It is hard to promote Japanese aid through Third-country Training Programs since the Japanese contribution is largely invisible. Although the training is based on the skills and knowledge transferred originally by Japanese technical cooperation, the course should include more extensive lectures by Japanese instructors and a greater number of visiting Japanese private companies so that Japan's role is better understood.

(2) Recommendations

For some participant countries the topic of the course was still far too advanced and inappropriate. It is recommended that the course be limited only to participants from countries which have reached an appropriate level of development to ensure that they benefit from the advanced course. Alternatively, courses at different technical levels should be organized for different groups of countries at the appropriate level of development.

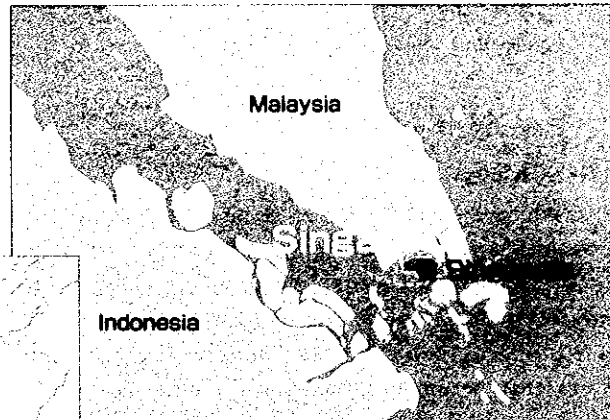
Skills and techniques learned in the course were costly to apply in some participant countries where technologies and infrastructure was not sufficiently developed. The training should include instruction on cost-efficient techniques that match the circumstances of participating countries.

7. Follow-up Situation

Based on the above recommendation, Nanyang Polytechnic is planning to organize courses at different technical levels for different groups of countries.

1) As for partnership program, refer to page 260

Productivity Management (Targeting African Countries)



Project Site Singapore

1. Background of Project

JICA dispatched a study team to four countries of SADC (Southern African Development Community), namely, Tanzania, Zambia, Botswana, and South Africa, for project formulation in May 1997, aiming to carry out research on the situation of industrial development, industrial policies and need for industrialization in SADC countries. The research found that SADC countries were now promoting industrial development more than before, and to this aim needed assistance with productivity management and promoting investment and small-scale enterprises, supported by industrially developed countries.

Meanwhile, Japan had transferred skills in the area of productivity improvement targeting the National Productivity Boards (NPB) from 1983 to 1990. In order to expand the above achievements to Africa and other Asian countries, NPB had conducted the Third-country Training courses, "Management Consultancy" and "Advanced Management Consultancy" for five years from 1990.

In addition to the above, Singapore was also keen to provide technical cooperation for southern African countries. Thus, the training program, "Productivity Management" started with collaboration between Japan and Singapore, targeting SADC countries, as a part of the Japan-Singapore Partnership Program (JSPP).¹⁾

2. Project Overview

(1) Period of Cooperation

FY1997-FY2001

(This evaluation covers activities from 1997 to 1999)

(2) Type of Cooperation

Third-country Training Program

(3) Partner Country's Implementing Organizations

Singapore Productivity and Standards Board (SPSB)

Technical Cooperation Directorate of Ministry of Foreign Affairs

(4) Narrative Summary

1) Overall Goal

Productivity of industries in the southern African countries is increased.

2) Project Purpose

Trainees understand the link between productivity and quality control, including the comprehensive approach for quality control.

3) Outputs

- Trainees understand productivity concepts and impacts of productivity management on organizations, industries/ sectors and the national economy.
- Trainees understand how productivity is measured at the national, industry/sectoral and organizational levels.
- Trainees develop productivity improvement programs for use at the organizational level.
- Trainees set goals and draw up plans for quality improvement activities.

4) Inputs (in 1997 and 1998)

Japanese Side

Short-term experts	5
Training expenses	13 million yen

Singaporean Side

Instructors	6
Training facilities, equipment and educational materials	
Training expenses	13 million yen

(5) Participant Countries

Botswana, Lesotho, Malawi, Mauritius, Namibia, Congo, South Africa, Tanzania, Zimbabwe, Seychelles, Swaziland, Mozambique, Egypt, Ghana,

East Timor

3. Members of Evaluation Team

JICA Singapore Office
(Commissioned to Applied Research Corporation)

4. Period of Evaluation

13 October 1999-31 March 2000

5. Results of Evaluation

(1) Efficiency

Training expenses covered by the fixed budget and other inputs were utilized according to the original plan. The officers from SPSB evaluated the training courses as highly efficient, and judging from similar projects implemented in the participating countries, the multiplier effect was attained by sharing the knowledge and institutionalizing it. Many trainees requested further opportunities for site visits. Due to the restricted schedule, the alternative of using visual aids such as videos would have enhanced the efficiency of the training course.

(2) Effectiveness

Most trainees who responded to the questionnaire indicated that they enhanced their ability to examine, assess and measure productivity performance, and that they drew up plans in quality improvement activities. Eight out of nine respondents answered that they had applied the knowledge attained in the courses in their work after returning home. In many cases, supervisors also recognized the improvement in skills. As a conclusion, the purpose of the training program was almost achieved.

(3) Impact

Nearly all respondents had shared the knowledge they had gained with others, such as staff in ministries, NGOs and governmental agencies. Trainees had also institutionalized the procedures and practices taught through developing an instruction manual or writing a report on the courses for the benefit of others. Some trainees had initiated a number of projects related to productivity management after returning home. Many trainees were engaged in the training of staff of NGOs and governmental agencies that worked in the field of productivity management. Accordingly, the impact of the training program was dramatic, as shown by the multiplier effect it produced.

(4) Relevance

In some participating countries, productivity centers were newly established with the function of making and revising policies regarding productivity management.

As to how relevant the training courses were compared with the needs of trainees, almost all of the respondents indicated that the knowledge they attained in the courses could be utilized in their work. Many trainees required the training courses for productivity management in the public sector as well as the private sector.

(5) Sustainability

SPSB was able to plan the training courses matched to trainee needs and to implement the course efficiently and smoothly. Sustainability was, therefore, considered to be sufficient.

6. Lessons Learned and Recommendations

(1) Lessons Learned

It is hard to promote Japanese aid through Third-country Training Programs since the Japanese contribution is largely invisible. Although the training is based on the skills and knowledge transferred originally by Japanese technical cooperation, the course should include more extensive lectures by Japanese instructors and a greater number of visiting Japanese private companies so that Japan's role is better understood.

(2) Recommendations

Four courses related to productivity management, including this course, were implemented in 1999. To avoid the duplication of contents in training courses, it is important to revise the contents when the annual course curriculum is planned.

The training course should devote more time to lectures on productivity management in the public sector since most of the trainees are from governmental organizations.

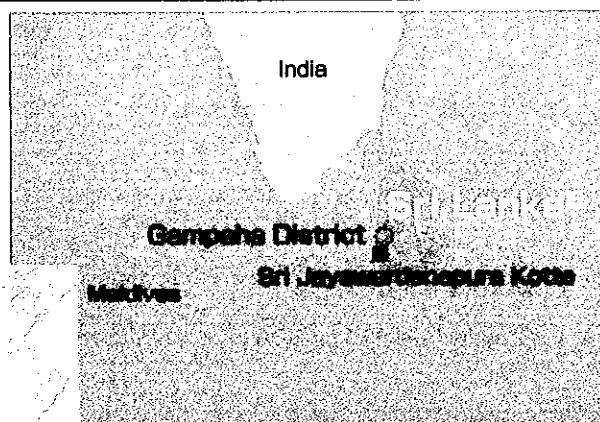
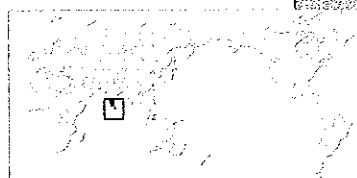
To make the course more effective and efficient, the training should give trainees opportunities for site visits and lessons by visual means such as video, so that trainees can understand a variety of situations.

7. Follow-up Situation

Based on the above recommendation, since 2001, the training course has utilized equipment for presentations such as videos and OHP and multimedia presentations.

¹⁾ as for partnership program, refer to page 260

The Agricultural Extension Improvement Project in Gampaha



Project Site Gampaha District

1. Background of Project

The Gampaha District, adjacent to the north of Colombo, is the most commercialized district in Sri Lanka. However, 57 percent of the total land in the district remains as agricultural land. Although the area is dependent on the production of paddy and coconuts, which have traditionally been the major cash crops, the productivity of these crops is low, and few other agricultural products are produced in the district. Following this situation, the Japanese Government established the Ambepussa model farm and other facilities under the Grant Aid program of the Integrated Rural Development Plan (IRDP) in the Gampaha District during two program periods since 1989.

The Government of Sri Lanka further requested Project-type Technical Cooperation from the Japanese Government aiming to increase agricultural productivity and farmers' income through diversification of crops as part of the IRDP that the Sri Lankan Government promoted.

2. Project Overview

(1) Period of Cooperation

1 July 1994-30 June 1999

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organization

The Regional Development Division, Ministry of Plan Implementation and Parliamentary Affairs The Department of Agriculture, Western Provincial Council

(4) Narrative Summary

1) Overall Goal

Agricultural productivity and farming income are increased through agricultural diversification.

2) Project Purpose

Effective use of farmland and crop diversification are achieved in the coconut fields of the Gampaha

District.

3) Outputs

- Crop production technology of intercropping in coconut fields is improved.
- Agricultural extension methods are improved by organizing production groups and setting up demonstration plots in the model areas.
- Training materials on extension methods and crop production technology for extension staff are developed.
- Technical level of extension staff is improved through training.

4) Inputs

Japanese Side

Long-term experts	12
Short-term experts	12
Trainees received	22
Equipment	approx. 73 million yen
Local cost	approx. 29.19 million rupee (approx. 41 million yen)

Sri Lankan Side

Counterparts	15
Land and facilities	
Local cost	275 billion rupee (approx. 39 million yen)

3. Members of Evaluation Team

Team Leader:

Masamichi SHINADA, Managing Director, Japan Agriculture, Forestry and Fisheries Promotion Association

Agriculture Extension and Training Management:

Hiroshi TOTTORI, International Exchange Programs, Extension and Education Division, Agricultural Production Bureau, Ministry of Agriculture, Forestry and Fisheries

Cultivation (Water Management):

Atsuya TANAKA, Educational Advisor, National Farmers Academy, Ministry of Agriculture, Forestry

and Fisheries

Evaluation Analysis:

Shigeru KOBAYASHI, System Science Consultants INC.

Cooperation Evaluation:

Yutaka ISHIBA, Senior Technical Officer, Technical Cooperation Division, Economic Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries

Planning Evaluation:

Naoko OKA, Agricultural Technical Cooperation Division, Agricultural Development Cooperation Department, JICA

4. Period of Evaluation

19 April 1999-29 April 1999

5. Results of Evaluation

(1) Efficiency

In general, Japanese inputs were carried out efficiently and on schedule. On the other hand, inputs from the Sri Lankan side had some problems. Some project activities were hindered because more than half of the assigned Counterparts, particularly at senior level, were part-time staff. Also, the initiation of project activities was delayed due to the lack of consensus by the Sri Lankan Counterparts regarding bottom-up extension methods.

(2) Effectiveness

Thirteen production groups of 126 farmers were organized through the project activities, and some inter-crops were introduced, such as banana and pineapple, which generated farm income. For example, the introduction of banana cultivation in trial farms raised income by approximately ten thousand rupee per quarter acre. Therefore, the project purpose was considered highly achieved.

(3) Impact

As a result of improved incomes through the project, an increasing number of farmers gained interest in introducing inter-crops and in organizing production groups. Farmers who normally prefer to work individually came to recognize the profitability of group activities, such as joint shipment of farm products, joint purchase of materials, and management of a group fund. In addition, women's production groups were organized thereby promoting their own income generation.

(4) Relevance

The Government of Sri Lanka prepared the Investment Program 1997-2001, which set the major development policies in the agricultural sector, such as the improvement of agricultural productivity, the increase of



A model farm

farm incomes and continuing the supply of food at affordable prices. The Government also started the Rural Economic Advancement Program aiming at raising employment opportunities, income and production in agriculture. The relevance of the project was high since its purpose matched these national policies.

(5) Sustainability

Counterparts acquired various techniques which were transferred through project activities. The budget of approximately 1.14 million rupees (approx. 1.61 million yen) for the half-year term beginning July 1999 was allocated by the Department of Agriculture of the Western Province, under which the program is managed, after the completion of the cooperation. It was assumed that the project activities would continue without any problems.

6. Lessons Learned and Recommendations

(1) Lessons Learned

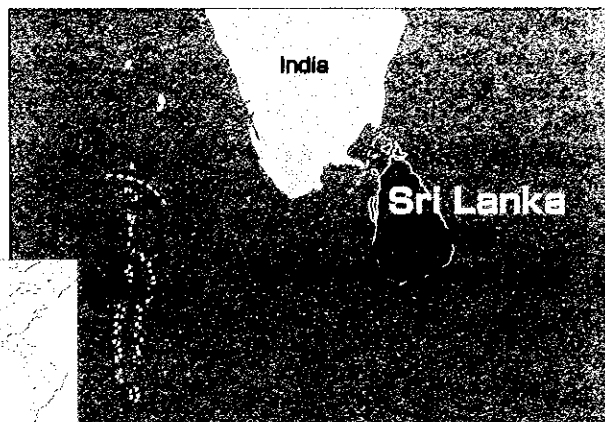
Some factors hindered project implementation, such as relocation of counterparts and unfamiliarity of the farmers to the group production method. Conditions such as these should be identified and addressed during the initial research for project formation.

The formation of production groups, including the management of group funds, which were organized through the project, was extremely successful. The introduction of a similar group production system should be considered for other projects under the Project-type Technical Cooperation program in Sri Lanka.

(2) Recommendations

Although Follow-up cooperation and project extension were not considered necessary, regular monitoring activities by Japanese personnel were thought to be required. In particular, appropriate guidance, including financial support for the production groups, is necessary for the management of the group funds.

The Project for Improvement of the Faculty of Dental Sciences in University of Peradeniya



Project Site Kandy

1. Background of Project

Many people in Sri Lanka had serious dental problems, with 80 percent of the adult population (twice as many compared with developed countries) requiring medical treatment. However, the scarceness of proper treatment facilities was an obstacle to maintaining good health. As a result, the Government of Sri Lanka set the prevention of odontopathy and improvement of treatment as emergency issues. But having stated these concerns, it was difficult for the faculty of dental sciences of the University of Peradeniya, the only dental training institution in Sri Lanka, to practice appropriate dental education due to outdated educational facilities and a lack of instruments. Therefore, it was concluded that Sri Lanka could not respond adequately to the needs of dentists and patients within the country.

Under these circumstances, the Government of Sri Lanka formulated a plan and requested Grant Aid from Japan in order to construct new buildings for the faculty of dental sciences and purchase the necessary medical education equipment.

2. Project Overview

(1) Period of Cooperation

FY1995-FY1997

(2) Type of Cooperation

Grant Aid

(3) Partner Country's Implementing Organization

Ministry of Education and Higher Education,
University of Peradeniya

(4) Narrative Summary

1) Overall Goal

Dental personnel are developed sufficiently in terms of both quality and quantity in the faculty of dental sciences of the University of Peradeniya, and the services for the prevention and treatment of oral diseases are improved.

2) Project Purpose

A sound teaching environment for training and developing personnel of the faculty of medical sciences in the university is established.

3) Outputs

- a) Main buildings of the faculty of dental sciences are established (including the buildings for education and clinical course, an outpatient clinic, and a cafeteria.)
- b) Educational equipment (clinical dental chairs, desktop sterilizer, dental instruments, and microscope) is provided.

4) Inputs

Japanese Side

Grant	Total 2.36 billion yen (E/N amount)
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Sri Lankan Side

Land	
Local cost	21 million rupee (approx. 13 million yen)

3. Members of Evaluation Team

Operation and Maintenance Study:

Hiroshi TAKANOHASHI, First Budget Division,
Finance and Accounting Department, JICA

Procurement Study:

Toru TAKAGI, Japan International Cooperation
System

4. Period of Evaluation

20 February 2000-26 February 2000

5. Results of Evaluation

(1) Efficiency

What is worthy of mentioning regarding this project is that the project was formulated based on the assumption of future technical cooperation from the planning stage. As a result, most facilities and equipment provided by this project were also used in the Project-type Technical Cooperation under the theme "Dental Education Project at University of Peradeniya," which was launched in February 1998. As such, the project was generally carried out efficiently.

(2) Effectiveness

A total of six kinds of education and research facilities related to dentistry were established, and more than 13 types of educational and training instruments for seven courses and 14 subjects including courses for basic medicine and dental radiology were also provided. However, although construction work was completed on schedule, inadequate fixing of the lighting equipment in the waiting room in the University Hospital caused the lighting equipment to fall after the completion of the construction. Partial damage was also found in some other facilities; therefore, strict enforcement of maintenance activities for the provided facilities and equipment was considered necessary.

(3) Impact

It became possible for the faculty of dental sciences to independently conduct basic medical education which had previously depended on the faculty of medicine, and this strengthened the training system for medical personnel. The number of dentists per 100 thousand persons increased from 3.6 in 1995 to 5.82 in 1999 in Sri Lanka. This project had contributed to the significant increase in medical personnel and also produced large impacts on the improvement of the services of dental health and oral hygiene as a whole.

(4) Relevance

The faculty of dental sciences of the University of Peradeniya had taken a socially significant role as the only institution for the development of dentists in Sri Lanka. As demand in the field of dentistry in Sri Lanka has steadily grown after implementation of the project, it was recognized that this project had relevance.

(5) Sustainability

The faculty of dental sciences of the University of Peradeniya was financially restricted since their activities had been funded under the budget of the Ministry of Health. However, it was expected that financial sustainability could be achieved due to the following reasons: 1) The dental section of the Peradeniya Teaching Hospital was scheduled to be separated and become the Dental Hospital of Peradeniya from January 2001; therefore, an independent budget would be allocated. 2) Operation expenses were going to be partially covered by patients through fees for services; formerly, these service had been free. 3) The Dental Hospital would be able to receive assistance from the Ministry of Health and the Ministry of Higher Education until its own budgetary system was established.

In addition, it was considered that this project had high sustainability in terms of the operational capability of university personnel since the project utilized the skills of the Sri Lankan side from the stage of project formulation and was planned and implemented based on the opinions of the Sri Lankan side in cooperation with the project team.

6. Lessons Learned and Recommendations

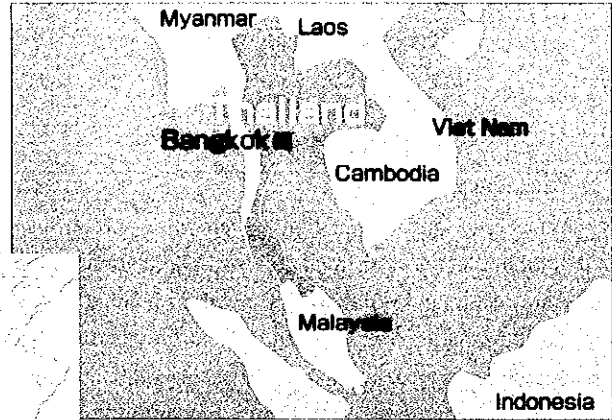
(1) Lessons Learned

The facilities should be designed from the perspective of the users if it is to be appropriately utilized and operated after the completion of construction. As in this project, the partner country should play a primary role from the planning stage, and meetings should be continuously held in order to reflect the opinions of the personnel at the working level who will actually use the facilities and equipment. As such, participatory designing that actively incorporates the voices of partner countries should be emphasized. At the same time, implementation of technical cooperation over several years should be considered following delivery if the capability to operate the facilities proves to be weak.

(2) Recommendations

This project was implemented on schedule and the sustainability of the university side was confirmed.

PFP Industrial Property Rights



Project Site Bangkok

1. Background of the Project

At the Asia Pacific Economic Cooperation (APEC) Conference in 1994, the Government of Japan proposed the Partners for Progress (PFP) plan for economic cooperation. The PFP aims at a more effective promotion of economic and technical cooperation based upon mutual assistance and independence, and thus, it was officially adopted in the APEC high-level meetings and accordingly in the Cabinet Member Conference of the APEC held in Osaka in 1995. At the APEC High Level Meetings held in Manila in February 1996, the Government of Japan proposed training plans for human resources development in the three areas of Industrial Property Rights, Competition Policy, and Standards and Conformity Assessment, as a PFP project to contribute to liberalization and facilitation of trade and investment.

In response to this, joint cooperation with Thailand and Malaysia was proposed, and accordingly JICA's Third-country Training Programs for "Industrial Property Rights and Competition Policy" were planned to be held in Thailand.

2. Project Overview

(1) Period of Cooperation

FY1996-FY2000

(2) Style of Cooperation

Third-country Training Program

(3) Partner Country's Implementing Organization

Ministry of Commerce, Department of Intellectual Property (DIP)

(4) Narrative Summary

1) Overall Goal

Participants play a key role in their home countries in the improvement of patent application business and formality examination, and computerization and efficiency in their work, thereby contributing to the liberalization and facilitation of trade and investment in APEC Member countries.

2) Project Purpose

Participants' capacities of the patent application business and formality examination are enhanced.

3) Outputs

- a) Participants in the training programs gain general knowledge and practice regarding the latest international trends of industrial property rights, economic value, property-related treaties and other related treaties.
- b) Participants gain the knowledge to establish an administrative processing system after their return home.
- c) Mutual understanding on industrial property rights is deepened and networks among APEC Member countries are established.

4) Inputs

Japanese Side

Short-term experts	39 (performance by 1999)
Training expense	approx. 18 million baht (approx. 53 million yen) (performance by 1998)

Thai Side

Lecturers and administrative staff	15
Training/accommodation facilities and equipment	
Training expense	

3. Members of Evaluation Team

Team Leader:

Iwao TATSUMI, Senior Advisor to the Managing Director, Partnership Promotion Department, JICA

Co-operation Policy:

Keiichi YOKOTA, Assistant Director, Technical Co-operation Division, Economic Co-operation Bureau, Ministry of Foreign Affairs

Standard/Conformity Assessment:

Kazuma YOKOTA, Assistant Chief of General Coordination Section, Technical Co-operation Division, International Trade and Industry

Cooperation Planning:

Kazuya OUSUKA, Southeast Asia Division, Regional Department I, JICA

4. Period of Evaluation

16 December 1999-23 December 1999

5. Results of Evaluation

(1) Efficiency

Inputs were adequate in timing, quality and quantity. The DIP, which was the implementing agency for this training course, was involved with other technical cooperation projects such as the Project-type Technical Cooperation "Industrial Property Rights Information Center" (1 July 1995-30 June 2000) and the Dispatch of Individual Experts as "Industrial Property Rights Advisor" (March 23, 1998-June 30, 2000), and the coordination with these projects was effective.

The course subjects were revised each year incorporating the opinions of participants, and the training was conducted and managed efficiently.

(2) Effectiveness

The course had a total of 181 participants (including 59 Thai) by 1998. The occupancy rate of the planned number of participants was 79 percent on average. According to the questionnaires completed by participants in the training program, most responded that they were getting more and more interested in higher education in the area of industrial property rights. In the report by the short-term experts dispatched as the training lecturer, it was said that the eagerness and understanding among the participants were enhanced; thus, the training purpose was highly achieved.

(3) Impact

Many of the participants who returned home continue with their duties of industrial property rights, and attempt to diffuse the knowledge and information that they acquired through seminars and study groups. As a result of participation in the training, many participants responded that they were given further duties and more responsibility.

Also in Thailand, training materials are kept in the DIP library, and a system is established whereby interested people can access them.

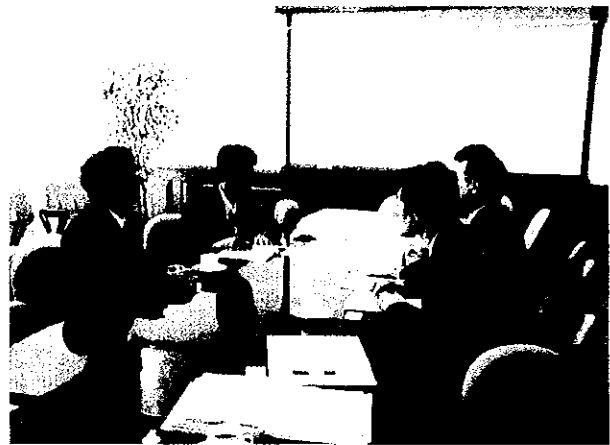
(4) Relevance

The training purpose matches the ultimate goal of APEC activity "All members in APEC achieve liberalized and open trade and investment in the regions by 2020" (Bogor Declaration), so the project had relevancy.

Although the training was launched for the purpose of observing the international regulations in relation to industrial property rights, the fourth training (1999) was held just before the deadline of execution of the WTO/TRIPS agreement¹⁾. Therefore, it was considered that the purpose of developing the legal systems in the member countries was mostly achieved. In the fourth training course, classes for examination and enforcement in relation to the system establishment of industrial property rights law were newly added. Thus, it was evaluated that the training met needs and properly corresponded to the changes that surround industrial property rights in the participants' countries and the region.

(5) Sustainability

DIP held in-country seminars on its own and has a



Interview for counterparts of DIP

strong capacity to implement training, and also the number of Thai lecturers was steadily increased over time. Thus, it was perceived that the Thai side was capable of conducting the Third-country Training Program on its own. However, considering the present condition of policies and system of intellectual property rights in Thailand, the training program will not necessarily match the international trend of intellectual property rights policy and the plan of "World Patent" which the government of Japan proposes, therefore, the Government of Japan should further assist with curriculum development by considering the improvement of the contents and future direction.

6. Lessons Learned and Recommendations

(1) Lessons Learned

In implementing the Third-country Training Program in a rapidly changing area such as industrial property rights, the duration of cooperation should be three rather than five years, and the duration extended as required later.

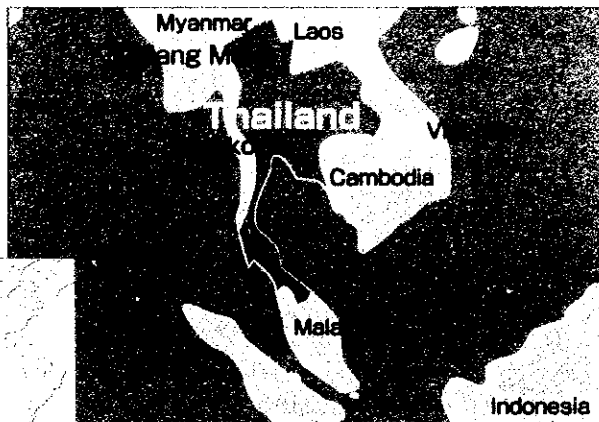
Generally speaking, in the framework of JICA's Third-country Training Program, the developing countries that received technical transfer from Japan will retransfer to other developing countries. On the other hand, in the framework of PFP training which places emphasis on mutual support and independency in the APEC countries and region, it was thought desirable that member countries understand the idea of sharing, and that training be conducted with the participation of participants and lecturers from throughout the APEC countries and region.

(2) Recommendations

As the project purpose of the training was highly achieved, it was agreed with the Thai side that the Third-country Training Program "Industrial Property Rights" in the framework of PFP will be completed in 2000 as initially planned.

¹⁾ Agreement on Trade Related Aspects of Intellectual property rights

Sustainable Highland Agriculture Development



Project Site Chiang Mai

1. Background of Project

In Thailand, broad areas in the highland confronted severe degradation due to excessive deforestation and slash-and-burn farming, which was an obstacle to long-term agricultural development. Therefore, the Highland Agriculture Development Training Center was established in 1992 supported by Grant Aid from Japan, in Chiang Mai University, aiming to establish a system for environmental conservation, and sustainable highland agriculture and farming, and to expand skills.

The Government of Thailand requested the Government of Japan to implement the Third-country Training Program on "Sustainable Highland Agriculture Development", as a part of Japan-Thailand Partnership Program¹⁾, utilizing the function of the center, targeting three Indochinese countries and other neighboring countries.

2. Project Overview

(1) Period of Cooperation

FY1996-FY2000

(2) Type of Cooperation

Third-country Training Program

(3) Partner Country's Implementing Organizations

The Faculty of Agriculture, Chiang Mai University
 Department of Technical and Economic Cooperation
 (DTEC)

(4) Narrative Summary

1) Overall Goal

Sustainable highland agricultural development is promoted in Asian countries.

2) Project Purpose

Trainees obtain knowledge and skills for sustainable highland agriculture development.

3) Outputs

- a) Trainees attain general knowledge of sustainable agricultural farming
- b) Trainees deepen knowledge of sustainable agricultural development in the highland.
- c) Trainees attain knowledge and skills of resources management, farm production and stock raising.
- d) Trainees attain knowledge and skills to transfer the above knowledge to other people.

4) Inputs

Japanese Side

Training expenses	19 million yen
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Thai Side

Instructors and management staff	approx. 200
Training facilities and equipment	
Training experts	2.42million baht (7 million yen)

(5) Participant Countries

Bhutan, Cambodia, China, Laos, Myanmar, Nepal, Viet Nam

3. Members of Evaluation Team

JICA Thailand Office
 (Commissioned to School of Agricultural Extension and Cooperatives, Sukhothai Thammathirat Open University)

4. Period of Evaluation

13 January 2000-31 March 2000

5. Results of Evaluation

(1) Efficiency

Instructors, teaching methods, curriculum, facilities and equipment, provided by both Japan and Thailand for the project, were utilized effectively. Trainees successfully attained knowledge and skills. Therefore, it was judged the training program was implemented efficiently.

(2) Effectiveness

For four years from 1996 to 1999, a total of 72 members participated in the training courses²⁾.

Out of 35 respondents to the questionnaire, 15 members (43%) answered that they attained more than 60 percent of the knowledge and skills they expected and another 15 members answered that they attained more than 80 percent. Moreover, according to the research on the results of the training, conducted by the Chiang Mai University, most of the respondents indicated they could deepen their understanding of sustainable highland development, and attained skills to analyze and transfer the knowledge to others. Thus, the purpose of the project was fully achieved.

(3) Impact

According to the results of the questionnaire, most of the trainees applied their knowledge and skills on highland agricultural development in their actual work. Impacts of the training were therefore identified.

(4) Relevance

When this evaluation was conducted, many other organizations in each country hoped to dispatch participants to the training program. Judging from the needs of those organizations, the project should be considered highly relevant.

(5) Sustainability

The training courses were managed by Chiang Mai University, without the support of Japanese instructors. The university had the capability and skills to implement the training program. Therefore, the training program was judged to be sustainable. However, since the Asian economic crisis in 1997, Chiang Mai University has suffered from a shortage of funds making it difficult for them to implement the training without financial support from Japan.



Field study

6. Lessons Learned and Recommendations

(1) Lessons Learned

Participating countries were required to recommend candidates on an annual basis for Thai Government. However, problems occurred such as delays in the selection procedures and a failure to appoint candidates for some reason. Therefore, more attention must be given to the recommendation process and selection process in order that appropriate participants are selected from among the candidates.

(2) Recommendations

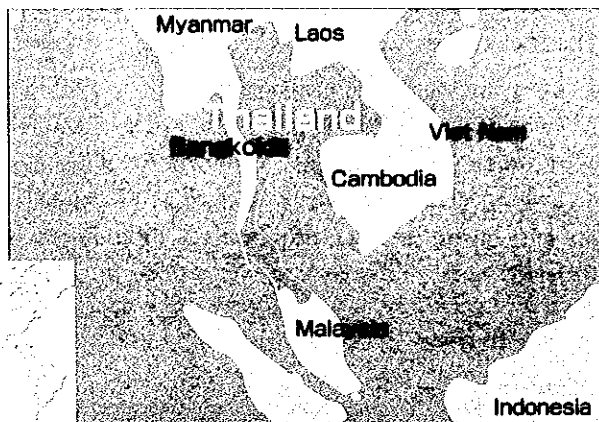
Although the management capability of Chiang Mai University was judged high, the total expenses for the training program still depended on Japan to a large extent. Although it was recommended to continue this training program to respond to needs, the financial capacity of the Thai implementing organizations should be established.

It was also recommended to consider the Dispatch of Experts for better management of the training in case the Thai side required it.

¹⁾ Japan-Thailand Partnership Program was established in August 1994. The program aimed to collaborate for the development of other countries, especially Indochinese countries, by enhancing the partnership between Japan and Thailand and transferring the skills developed in Thailand.

²⁾ A total of 87 members participated in the training course over 5 years.

Irrigation System Management for Sustainable Development



Project Site Bangkok

1. Background of Project

Thailand was developed on the basis of agriculture, mainly rice growing. However, the expansion of agricultural land in response to population growth had reached the limit. Therefore, it was important to increase agricultural productivity by effective use of water resources with existing irrigation systems. The Government of Japan had supported the Royal Irrigation Department (RID) by Grant Aid to construct the Irrigation Engineering Center (IEC) in 1985. At the same time, Japan had implemented Project-type Technical Cooperation, "Irrigation Engineering Center Project (Phase 1 and 2)", from 1985 to 1997, aiming to establish water management skills programs in institutes related to water resources, irrigation and drainage. Moreover, the Government of Thailand requested the Government of Japan to implement the Third-country Training Program, "Irrigation System Management for Sustainable Development", as a part of the Japan-Thailand Partnership Program¹⁾, in order to expand the outputs of the technical cooperation to other developing countries, especially those in Asia.

2. Project Overview

(1) Period of Cooperation

FY1996-FY2000

(2) Type of Cooperation

Third-country Training Program

(3) Partner Country's Implementing Organization

Royal Irrigation Department (RID), Ministry of Agriculture and Cooperatives

(4) Narrative Summary

1) Overall Goal

Irrigation system management for sustainable

development is improved in Asian countries.

2) Project Purpose

Trainees obtain knowledge and skills of water management.

3) Outputs

- a) Trainees attain knowledge of theories and policies regarding irrigation management.
- b) Trainees attain skills regarding planning of water utilization based on the amount of water resources and estimation of demand for water.
- c) Trainees attain skills for water management at respective levels (rivers, irrigation canals, and experimental fields).
- d) Trainees attain computer skills for efficient water management.

4) Inputs

Japanese Side

Short-term experts	16
Training expenses	20 million yen

Singaporean Side

Instructors and management staff	approx. 100
Training facilities, equipment and educational materials	
Training expenses	2,04 million baht (6 million yen)

(5) Participant Countries

Bangladesh, Bhutan, Cambodia, China, Indonesia, Laos, Malaysia, Philippines, Sri Lanka, Viet Nam, Thailand, Maldives, Nepal, India, Myanmar, Pakistan, Malawi

3. Members of Evaluation Team

JICA Thailand Office
(Commissioned to School of Agricultural Extension and Cooperatives, Sukhothai Thammathirat Open

University)

4. Period of Evaluation

13 January 2000-31 March 2000

5. Results of Evaluation

(1) Efficiency

The duration of training should have been longer to cover the topics more effectively. Meanwhile, equipment, facilities, human and financial resources provided by Japan and Thailand were utilized effectively, as a whole. Trainees could attain knowledge and skills successfully. Thus, it was judged the training program was highly efficient.

(2) Effectiveness

For four years until 1999, 94 members participated in the training as a total. Out of 26 respondents to the questionnaire, 73 percent indicated that they could attain more than 60 percent of the skills and knowledge they expected to be transferred. The evaluation research, conducted by RID, also showed trainees were almost satisfied with the training. The purpose of the training program was achieved successfully.

(3) Impact

According to the results of the questionnaire, many trainees could obtain knowledge and skills directly related to their actual work, and applied them in their daily work. The impact of the project was considered to be high.

(4) Relevance

When this evaluation was conducted, many other organizations in each country hoped to dispatch participants to the training program. Judging from the needs of those organizations, the project was thought to be highly relevant.

(5) Sustainability

Since RID has the ability and skills to implement the training programs, the project was thought to be sustainable.

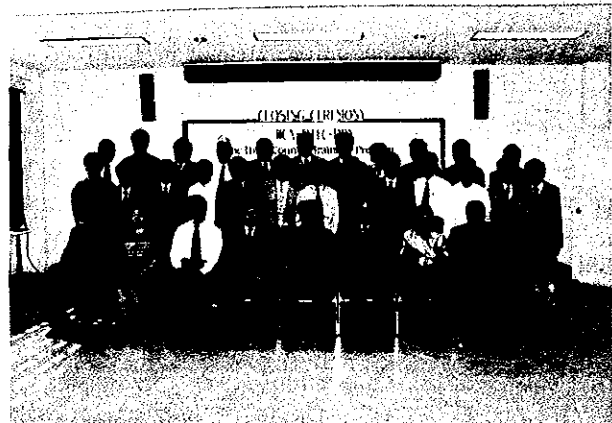
6. Lessons Learned and Recommendations

(1) Lessons Learned

Trainees came from a variety of academic backgrounds and professions. It was recommended to give a simple examination to check the knowledge and skills of trainees before the training starts, so that the training courses could be designed based on needs and



Trainees receiving a lecture on water management of irrigation channels



Closing ceremony of training course

expectations of trainees. Furthermore, giving another examination after the training would show how much trainees gained from the training, and the results could be fed back into the project.

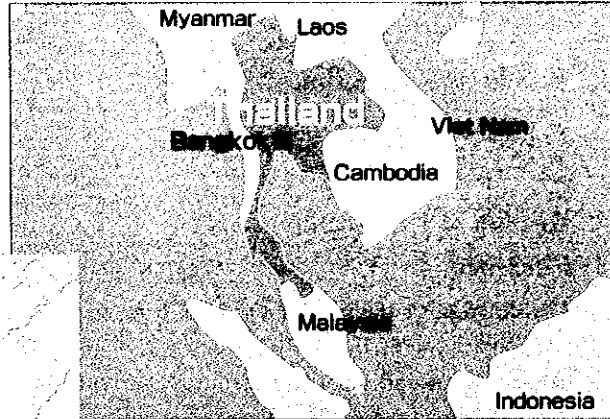
(2) Recommendations

RID had sufficient ability and skills to manage the training, as the implementing organization. In addition, the organization had a network of instructors to draw on both within and outside of RID. However, due to the lack of budget, Thailand continued to request financial support from Japan to implement the training program.

While Thailand should continue with their effort to manage the training independently, Japan should continue its support for this training program because the needs were still high. It was also recommended to improve the content of the training courses, applying the results of the Project-type Technical Cooperation "The Modernization of Water Management System Project", which has been implemented since 1999 and will end in 2004.

¹⁾ Refer to page 276 for "Japan-Thailand Partnership Program".

Wireless Training Center



Project Site Bangkok

1. Background of Project

With the rapid economic growth in Thailand, it became necessary to expand and efficiently utilize telecommunications and to introduce new technologies. To achieve this, the establishment of a modern administration system for communications and training of radio technicians and operators were regarded to be urgent necessities. In order to modernize the outdated telecommunications system, the Thai Government established the Wireless Training Center (WTC) aiming to develop human resources in both the government and private sectors in the field of wireless communications, and then requested technical cooperation from Japan to improve the Center's ability to implement training.

2. Project Overview

(1) Period of Cooperation

1 October 1996-30 September 1999

(2) Type of Cooperation

Expert Team Dispatch Program

(3) Partner Country's Implementing Organization

Post and Telegraph Department (PTD)

(4) Narrative Summary

1) Overall Goal

The radio communications sector in Thailand is developed.

2) Project Purpose

Human resources in the field of radio communications are developed in the Wireless Training Center (WTC)

3) Outputs

- a) WTC is equipped with training equipment.

- b) A training system is established.

- c) The technical level and teaching capabilities of counterparts are improved.

- d) The national qualification examination system for radio communications is improved.

4) Inputs

Japanese Side

Long-term experts	2
Short-term experts	15
Trainees received	6
Equipment	26 million yen

Thai Side

Counterparts	12
Facilities	
Local cost	2 million yen

3. Members of Evaluation Team

JICA Thailand Office

(Commissioned to IC Net Thailand Co., Ltd.)

4. Period of Evaluation

12 March 2000-31 March 2000

5. Results of Evaluation

(1) Efficiency

The operation, management and coordination of the project were duly carried out. The contribution made by the Japanese experts was high, and the technology was successfully transferred to the counterparts. In particular, the long-term experts gave wide support on project management in addition to technical guidance, which played a significant role in the success of the project.

Most of the equipment was provided in line with original plans, with the exception of a few delays, and fully utilized in the training courses.

(2) Effectiveness

Counterparts obtained the skills and knowledge related to modern radio communications through the technology transferred by this project. Further, the counterparts disseminated the skills and knowledge to a great many more people through the training courses at WTC. During the course of the project, five training courses were planned and implemented at WTC; 14,172 people participated in those courses over three years; and 12,512 trainees (88%) passed the qualification examinations.

(3) Impact

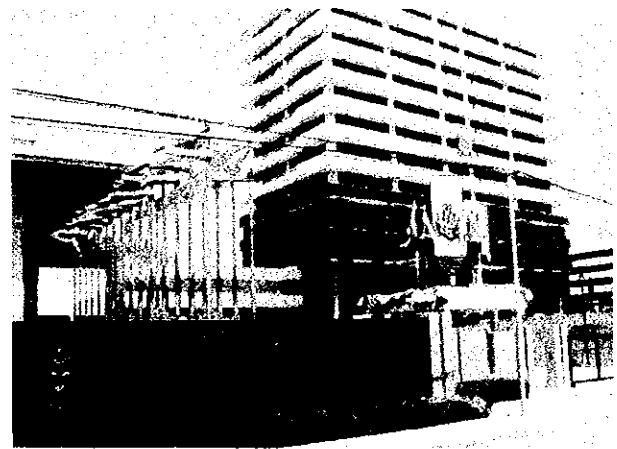
The project brought about a high-level of cooperation among governmental agencies and the private sector, for example, by inviting outside lecturers, and by implementing the training course "Radio-communications for ships" in collaboration with the Harbor Department.

(4) Relevance

According to the New Radio Frequency Act that was enacted in 2000, the role of PTD was subject to be changed from one of to establish and improve the technology and system concerning radio communications to the Secretariat Office of the National Commission of Radio Frequency. This meant that the training related to radio communications technology might be transferred from PTD to the private sector, or PTD might be privatized. As long as the administrative arrangement of PTD is uncertain, it is difficult to evaluate the relevance of the project.

(5) Sustainability

After the completion of the project, the number of PTD training courses and participants had greatly diminished. This was because PTD could not assign staff exclusively for the training due to the government's policy of a freeze on personnel and the reduction of the PTD budget due to the retrenchment policy sparked by the economic crisis. In addition, structural reforms were also underway, as stated above. The sustainability of this project, therefore, was not evaluated as high.



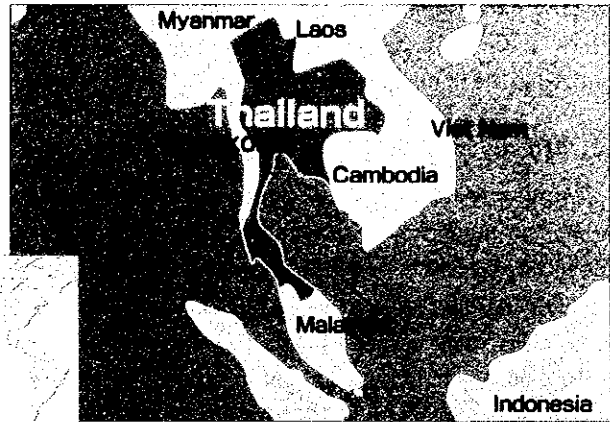
Post and Telegraph Department

6. Lessons Learned and Recommendations

(1) Recommendations

In the future, it was considered necessary for PTD to implement its training programs in collaboration with various organizations, administrative organizations such as the Harbor Department, private enterprises and educational institutes. Such cooperation would support PTD in terms of budget, human resources, technology and training curriculums and maximize the efficiency of its training programs.

The Development of Mechatronics Engineering Course in Pathumwan Technical College



Project Sites Bangkok

1. Background of Project

In Thailand, human-resources development is urgently needed to keep the advances in technology accompanying the country's rapid industrialization. Therefore, the Government of Thailand requested the Government of Japan to provide educational equipment in the Pathumwan Technical College (PTC), formerly a central technical college, under a Grant Aid program in 1990. In addition, Project-type Technical Cooperation, aimed at upgrading teacher capacity as well as training engineers to give them skills relevant to the needs of the industrial sector, was also proposed to the Japanese Government.

The Project was implemented under a five-year technical cooperation scheme, which began in April 1993. After congress passed a law to upgrade the educational standard of PTC in January 1997, the cooperation was extended for two years aiming at further enhancement of the research capabilities of the teaching staff as well as management performance and liaison with the industrial sector.

2. Project Overview

(1) Period of Cooperation

- 1 April 1993-31 March 1998
- 1 April 1998-31 March 2000 (extension)

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organizations

Ministry of Education,
Pathumwan Institute of Technology (PIT)
(former Pathumwan Technical Collage)

(4) Narrative Summary

- 1) Overall Goal
Industrialization is promoted in Thailand.

2) Project Purpose

Qualified engineers with practical skills in mechatronics at the bachelor degree level are provided for Thai industries.

3) Outputs

- a) Research capability of the teaching staff is upgraded to the bachelor and master degree levels.
- b) Teaching methods, curriculum, and syllabus are improved.
- c) The school management system is strengthened and the college is upgraded to the university level.
- d) Liaison between the Thai industrial sector and PIT is strengthened.

4) Inputs

Japanese Side

Long-term experts	17
Short-term experts	55
Trainees received	21
Equipment	approx. 207 million yen
Local cost	approx. 7.4 million baht (approx. 22 million yen)

Thai Side

Counterparts	19
Land and facilities	
Local cost	approx. 3.9 million baht (approx. 12 million yen)

3. Members of Evaluation Team

Team Leader:

Masaru HATTORI, President, Nagaoka University of Technology

Mechanical Engineering/Higher Education Planning:

Hiroyuki MATSUMOTO, President, Tokyo National Collage of Technology

Control Engineering/ Higher Education Planning:

Kazuo TSUTSUMI, Vice-President, Toyohashi University of Technology

Educational Evaluation:

Hiroyuki INOUE, Official, Educational and Cultural Exchange Office, Science and International Affairs Bureau, Ministry of Education, Science, Sports and Culture

Project Evaluation:

Takaharu IKEDA, IC Net, Limited

4. Period of Evaluation

16 December 1999-23 December 1999

5. Results of Evaluation

(1) Efficiency

Equipment provided by the project was effectively used. At the initial period of the project, communication was difficult because of the inadequate English capability of both experts and counterparts. However, consistent and detailed technical training was conducted following the efforts of both parties. Discussions between experts and counterparts were held as needs arose. The same experts were dispatched to the training program in Japan and Thailand and a one-on-one training method was used. Even though the experts were in Japan, they continued to communicate with counterparts and supervise the research activities via email.

(2) Effectiveness

Although there still remained room for further improvement of teaching materials and teaching methods, in general, the upgrade of the curriculum was satisfactory. The terminal evaluation of 1997 listed the number of the additional courses that were required for engineers to become qualified, which all became available after PIT's upgrade to a university in 1999. Furthermore, the partnership with the Thai industrial sector was strengthened through the seminars and joint research projects.

All of the first class of fourteen and second class of twenty-six graduates of PIT who were taught under the curriculum developed through the project either found a job or entered into higher education. It was evaluated that the project had prepared the foundation to achieve the project purpose of sending highly qualified engineers with relevant skills to the Thai industrial sector.

(3) Impact

The level of technical knowledge of students at PIT was upgraded through the project. As a result, in 1998 and 1999, PIT won both first and second prizes at the National Robot Competition. This achievement was regarded as a part of the project impact.

(4) Relevance

The promotion of industrialization as stated in the overall goal had been a continuous priority of the Thai Government. It was expected that the needs for mechatronics engineers would further expand in the future. While there was only one mechatronics department in Thailand at the beginning of the cooperation (at PTC), eight technical colleges came to run mechatronics courses by the end of the project. This demonstrated the growing need for development of the field of mechatronics.

The project plan and activities were reconsidered when the extension was decided. This resulted in the successful training of mechatronics graduates to become practical engineers, and most were able to secure employment even during the period of the economic crises in Thailand. Based on these facts, the project was considered highly relevant.

(5) Sustainability

Pathumwan Technical College was officially upgraded and renamed Pathumwan Institute of Technology based on the validation of the "Act of the Pathumwan Institute of Technology" in 1998. Further strengthening of the organizational foundation of PIT by the Thai side was expected. The partnership between the industrial sector and the institute began favorably. In addition, the Department of Vocational Education, Ministry of Education clearly declared that they would continue supporting PIT. Therefore, the government's cooperation was expected to be sustainable.

6. Lessons Learned and Recommendations

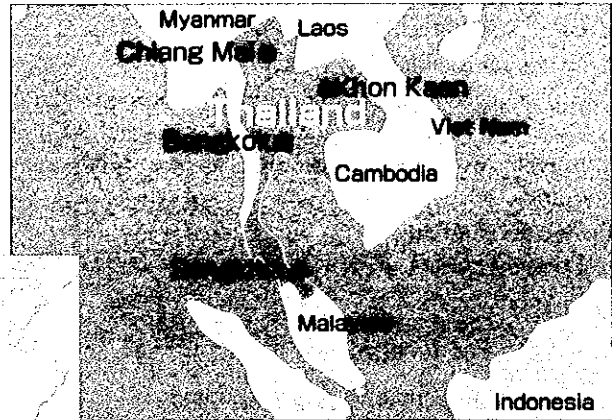
(1) Lessons Learned

In projects aimed at producing engineers relevant to the needs of the industrial sector, the employment rate of graduates was considered an important factor in evaluating the outcome and degree of achievement of the project purpose. It was evaluated that the high employment rate was not only due to the improved skills of the teaching staff and the training curriculum, but also the result of efforts to establish partnerships with private enterprises. The positive results provide important lessons for planning future cooperation in the same area.

(2) Recommendations

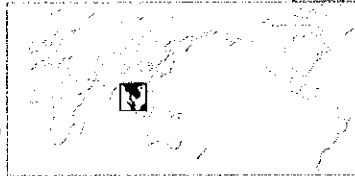
Although PIT was officially upgraded to university level in December 1998, the management system was not completely established. PIT as well as the Ministry of Education were planning organizational reform within a few years; therefore, the possibility of further cooperation would be discussed considering the progress of the reform.

The National Waterworks Technology Training Institute Project (Phase II)



Project Sites

Bangkok, Chiang Mai, Khon Kaen, Songkhla



1. Background of Project

In 1984, the Government of Thailand requested the Government of Japan to establish the National Waterworks Technology Training Institute (NWTTI) with the aims of improvement of waterworks technology and personnel development. In response to this request, the Japanese Government established the Central Training Center (CTC) in Bangkok and two Regional Training Centers (RTC) in Chiang Mai and Khon Kaen under the Grant Aid Program. In addition, a Project-type Technical Cooperation Program named the "The National Waterworks Technology Training Institute Project" was carried out between 1985 and 1991. However, the existing water-treatment system was inadequate considering the rapid increase in the use of tap water resulting from economic growth, and river pollution caused by the public and by industry. In particular, the Southern areas in Thailand needed assistance because the previous project's limited "reach" and the unusual geographical and social conditions characterizing these areas. Against this background, the Government of Thailand requested Phase II of Project-type Technical Cooperation from Japan.

2. Project Overview

(1) Period of Cooperation

1 September 1994-31 August 1999

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organizations

Metropolitan Waterworks Authority (MWA)
 Provincial Waterworks Authority (PWA)
 National Waterworks Technology Training Institute (NWTTI)

(4) Narrative Summary

1) Overall Goal

Technical and managerial staff have the

qualifications to apply advanced and appropriate technology to Thai waterworks.

2) Project Purpose

The capabilities of the NWTTI in the areas of training and education, research and development, and information exchange are strengthened.

3) Outputs

- a) Personnel of CTC and RTCs are capable of conducting training courses on more advanced waterworks technology in which they deal with the newly emerging issues in Thai waterworks.
- b) Personnel of Songkhla RTC are capable of conducting training courses on the technology appropriate for dealing with the characteristics in the southern part of Thailand.
- c) Personnel of CTC and RTCs are capable of carrying out research and development through which the specific problems of Thai waterworks can be solved.
- d) Personnel of CTC and RTCs are capable of exchanging waterworks information with foreign and domestic waterworks training institutes, and disseminating waterworks information in Thailand.
- e) The necessary machinery and equipment for waterworks and technical trainings are secured.

4) Inputs

Japanese Side

Long-term experts	13
Short-term experts	47
Trainees received	22
Equipment	approx. 400 million yen
Local cost	approx. 5.7 million baht (approx. 17 million yen)

Thai Side

Counterparts	
Land and facilities	approx. 46 million baht (approx. 135 million yen) (construction of the Songkhla Training Center)

Local cost

3. Members of Evaluation Team

Team Leader/ Water Supply Planning:

Yasuhiko KOBAYASHI, Executive Managing Director, Japan Environmental Sanitation Center

Water Purification/ Quality Control:

Yasumoto MAGARA, Professor, Department of Environmental Engineering, Hokkaido University

Water Resource Management:

Kenei ISHII, Director, Management and Planning Division, Bureau of Waterworks, Tokyo Metropolitan Government

Evaluation Planning:

Yusuke MURAKAMI, First Technical Cooperation Division, Social Development Cooperation Department, JICA

Evaluation Study:

Ryujiro SASAO, IC Net Limited

4. Period of Evaluation

12 May 1999-21 May 1999

5. Results of Evaluation

(1) Efficiency

Inputs were generally provided as scheduled. However, the Asian economic crisis caused some problems, such as fewer counterparts allocated and delays in the provision of equipment and the construction of the Songkhla RTC. However, the problems were flexibly and appropriately resolved. For example, alternative facilities such as hotels and universities were used for training courses instead of Songkhla RTC, and alternative lecturers were used in lieu of the counterparts. These efforts enabled the project to proceed as planned.

(2) Effectiveness

The project purpose was nearly accomplished in each area and the Thai side acquired a sufficient level of skill to conduct training independently. The period of some training courses (water purification, water management and water-leakage prevention) were shortened to two weeks from the initial plan of three weeks due to the limited allocation term of the counterparts. The total number of days spent on training was 516, significantly less than the 670 initially planned. However, a total of 59 training sessions were actually carried out, one session less than the goal of 60 training sessions. The number of trainees was 1,050, more than the expected number of 955. As such, the actual performance level was satisfactory.

(3) Impact

A new partnership was established between MWA and PWA through the training activities of NWTTI. NWTTI also contributed to the development of waterworks personnel of other countries by conducting Third-country Training Program on water supply technology between 1992 and 2001, and also by receiving site visits and trainees from neighboring countries.

(4) Relevance

In Thailand, the promotion of waterworks was a priority in the Eighth National Socio-Economic Development Plan of 1997-2001. There was also a great need for national personnel in the five technical areas of water resource management, water purification and advanced water treatment, water management and control, non-revenue water-loss management, and improvement of services. As such, this cooperation appropriately matched the needs of Thailand and thus its relevance was evaluated as high.

(5) Sustainability

NWTTI was established as a joint organization of MWA and PWA when the previous Waterworks Technology Training Project (Phase I) was implemented. Therefore, its unstable bureaucratic position was an issue. However, in fact, NWTTI had been sustainable not only institutionally but also financially with the continuous and large-scale support from MWA and PWA. Therefore, it was considered that NWTTI was ready to continue training independently. Furthermore, it was evaluated that most counterparts who received trainings in Japan acquired the skills to conduct quality training independently. Although some issues remained, particularly regarding management of equipment, the sustainability of NWTTI was deemed to be high.

6. Lessons Learned and Recommendations

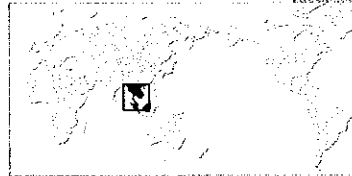
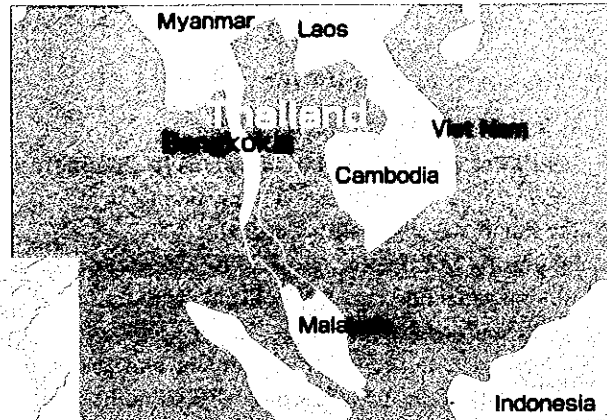
(1) Lessons Learned

It was learned that consideration must be given to the working conditions for counterparts who were not available full-time for the project. For example, the number of working days for busy counterparts might be limited to two or three times a week when there were no trainings and research activities in order for them to be able to manage both ordinary work and the special work for the project.

(2) Recommendations

It was concluded that it was appropriate to terminate the cooperation on 31 August 1999 following the plan, since the project was expected to accomplish its goals in each activity area by the end of the cooperation period.

The Industrial Property Information Center



Project Site **Bangkok**

1. Background of Project

The Government of Thailand laid down the policy for enhancement of industrial property protection in the Seventh Five-Year National Economic and Social Development Plan that commenced in October 1991. In order to execute the policy, the Thai Government requested Project-type Technical Cooperation from the Japanese Government to establish an Industrial Property Information Center (IPIC) in the Department of Intellectual Property (DIP). The center was expected to have a computerized information system that would 1) improve the capacity of the DIP to examine applications of industrial property, and 2) disseminate industrial property information in Thailand.

2. Project Overview

(1) Period of Cooperation

1 July 1995-30 June 2000

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organization

Department of Intellectual Property (DIP)

(4) Narrative Summary

1) Overall Goal

Industrial property administration by DIP is modernized.

2) Project Purpose

Abilities of DIP regarding the utilization of industrial property information are enhanced.

3) Outputs

- a) Project operation unit is enhanced.
- b) Necessary machinery and equipment are provided and well maintained.
- c) Counterparts are trained to be able to construct,

operate and maintain the Industrial Property Information System.

- d) Counterparts are trained to be able to conduct "prior art searches"¹⁾ using the Industrial Property Information System.
- e) Counterparts are trained to be able to disseminate industrial property information using the Industrial Property Information System.

4) Inputs

Japanese Side

Long-term experts	9
Short-term experts	22
Trainees received	12
Equipment	approx. 310 million yen
Local cost	1.7 million baht (approx. 5 million yen)

Thai Side

Counterparts	13
Buildings and facilities	
Local cost	64 million baht (approx. 188 million yen)

3. Members of Evaluation Team

Team Leader:

Minori SANO, Special Technical Advisor to the President, JICA

Technical Cooperation Planning:

Yoshiaki MIBU, Deputy Director, International Affairs Division, Japan Patent Office

Evaluation of Industrial Property Information System:

Shizuo SHIBATA, Information Technology Department, Japan Patent Information Organization

Evaluation Management:

Satoshi MURAKAMI, Second Technical Cooperation Division, Mining & Industrial Development Cooperation Department, JICA

Evaluation Analysis:

Shigeru TAKESHITA, Regional Planning International Co., Ltd.

4. Period of Evaluation

10 January 2000-27 January 2000

5. Results of Evaluation**(1) Efficiency**

During the implementation period, the project encountered some unexpected changes of external conditions such as the economic crisis and rapid widespread use of the Internet, which inevitably forced the original plan of the project to be changed. However, the project was flexibly implemented according to the external changes by, for example, introducing Internet network technology into the project. The inputs as a whole were appropriate in quantity, quality and timing.

(2) Effectiveness

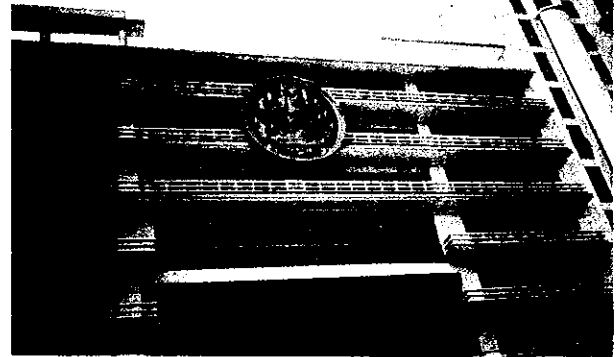
Technologies relating to construction, operation and maintenance of the Industrial Property Information System were adequately transferred, and the counterparts properly maintained the equipment and the system. The counterparts also conducted the "prior art searches" appropriately by using the Industrial Property Information System that was developed through the project. Technology transfer from the counterparts to the other staff of the Patent Office was further promoted. In addition, the DIP actively carried out information dissemination activities through the Internet homepage, the Intellectual Property Library and seminars. Considering the above, the project purpose was considered to be achieved.

(3) Impact

The shift of network infrastructure from Leased Line to Internet brought the establishment of the Industrial Property Information System open to the public. Furthermore, the DIP introduced the technology transferred through the project in the ASEAN-Japan joint seminars; thus, the information was shared with the participating countries.

(4) Relevance

With the recent increase of the number of patent applications in Thailand, the need for information services relating to industrial property such as patent applications, research and development and inventions was growing. The project met the need, and therefore the relevance of the project was judged to be high.



Department of Intellectual Property

(5) Sustainability

Regarding the transferred technology such as prior art search, the staff of the DIP enhanced their competency to the level that they were able to continue learning on their own after the completion of the project. Because the DIP promoted cooperation with external user organizations such as the Intellectual Property Association, it was predicted that the DIP would be able to improve its services and meet the needs of industrial property information users. Furthermore, because the importance of industrial property was becoming widely understood in Thailand, the budget for the DIP continued to increase slightly, even though the overall budget of the government was decreasing after the economic crisis. Financial sustainability was therefore evaluated as secure.

6. Lessons Learned and Recommendations**(1) Lessons Learned**

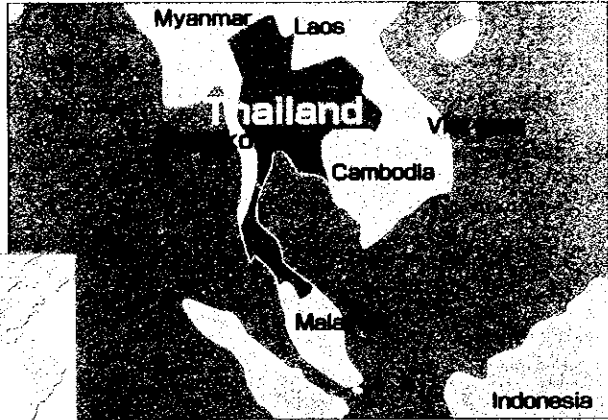
When a project involves the latest technology such as this one, it is important to establish a flexible implementation system in order to respond to rapid changes in technology.

(2) Recommendations

Because the project purpose was predicted to be achieved by the end of the cooperation period, it was recommended to terminate the project by June 2000 as originally planned. In order to properly operate and maintain the Industrial Property Information System established through the project, further enhancement of the management capability of the DIP is expected.

¹⁾ Research to find if technological inventions have already been granted patents

The Training Center for Sewage Works Project



Project Sites Bangkok

1. Background of Project

The pollution of water resources in the Bangkok metropolitan area due to rapid economic development is a serious problem in Thailand. The prompt establishment of a sewage system helped ease the problem since household wastewater is the major polluting source. However, there was a shortage of engineers and management staff for the increasing number of sewage-disposal plants.

Under these circumstances, the Government of Thailand established the Training Center for Sewage Works (TCSW) in the technical training center of the Public Works Department, and requested the Japanese Government to assist with the establishment of the operation system of the Center under Project-type Technical Cooperation.

2. Project Overview

(1) Period of Cooperation

1 August 1995-31 July 2000

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organizations

Public Works Department (PWD)
 Department of Drainage and Sewerage (DDS)
 Bangkok Metropolitan Administration

(4) Narrative Summary

1) Overall Goal

Appropriate sewage works technology is established and sewage works are properly planned, designed, constructed, operated and maintained.

2) Project Purpose

Functions and activities of TCSW are established.

3) Outputs

- a) Management system of TCSW is established.
- b) Training for the engineers and managers are conducted.
- c) Database (with a library function) is developed.
- d) Research and development (R&D) activities are initiated.

4) Inputs

Japanese Side

Long-term experts	10
Short-term experts	50
Trainees received	21
Equipment	approx. 190 million yen
Local cost	approx. 60 million yen

Thai Side

Counterparts	23
Land and facilities	
Purchase of equipment	approx. 2.7 million baht (approx. 8 million yen)
Local cost	

3. Members of Evaluation Team

Team Leader:

Shunsoku KYOSAI, Deputy Director General, Public Works Research Institute, Ministry of Construction

Civil Engineering:

Hideto KURIHARA, Director for Sewage Project Coordination, Sewerage Planning Division, City Bureau, Ministry of Construction

Water Quality Analysis:

Hiroyuki FUJIMOTO, Director, Okayama Regional Office, Japan Sewage Works Agency

Mechanical Engineering:

Nobuyoshi YAMANAKA, Director, Planning Division,

Engineering Research Development Section, Tokyo Metropolitan Government

Evaluation Planning:

Yasuhiro KAWAZOE, First Social Cooperation Division, Social Development Cooperation Department, JICA

Evaluation Study:

Kiwamu ANRAKU, Asahi & Co.

4. Period of Evaluation

23 November 1999-3 December 1999

5. Results of Evaluation

(1) Efficiency

Inputs in the form of textbooks, training instruments and training centers and facilities were appropriate and this contributed to achieving the planned outcomes. Twenty-one out of twenty-three counterparts held double positions, therefore additional counterparts would be assigned in order to promote technology transfer.

(2) Effectiveness

TCSW as an organization became well established during the period of the project. Out of the planned eleven courses, eight training courses (twenty-six classes overall) on "project planning and design" and "construction surveillance" were held and 763 trainees participated. By the end of the project, the remaining three courses were scheduled to be conducted and a total of 1,001 trainees were expected to attend.

Activities related to database formulation and preparation for research and development were also successful. Based on these achievements, the operational system and the activities of TCSW were almost fully established, and the project purpose was expected to be accomplished by the end of the project.

(3) Impact

The project contributed to improving the skill level and number of engineers. In fact, the sewage works were upgraded by the efforts of the newly-trained engineers and managers.

As a result of the activities of TCSW, the importance of sewage works was widely recognized in the general population. Consequently, the collection of sewerage fees was scheduled to begin in the Bangkok Metropolitan area in order to secure the necessary budget for enhancing the sewage works. Furthermore, PWD in collaboration with

MOSTE (Ministry of Science, Technology and Environment) was planning to conduct research and development activities for the improvement of the sewerage technology standard.

(4) Relevance

The necessity for sewage works had been increasing in Bangkok to prevent water pollution and flooding, therefore the overall goal of the project was deemed to be relevant. In addition, the project also contributed to meeting the need for an increased number of technical staff for sewage works that was caused by the recent decentralization policy.

(5) Sustainability

The related organizations, such as PWD, Ministry of Interior, DDS and MOSTE, agreed to cooperate for the sustainability of the project; therefore, the institutional sustainability was expected to be high. In terms of financial sustainability, the training budget of the technical training center located in TCSW was increasing and the budget of the PWD to support TCSW's trainings was also growing. The capability of the trainers of TCSW, and availability of training facilities and equipment were adequate; therefore, the project was evaluated to be technically sustainable.

6. Lessons Learned and Recommendations

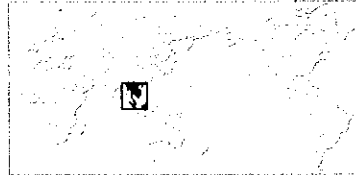
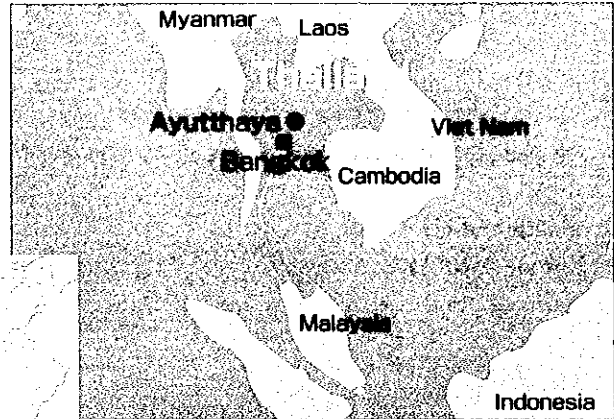
(1) Lessons Learned

In Thailand, the Ministry of Science, Technology and Environment controlled the budget and policy-making, while PWD was in charge of technical aspects of the sewerage work. Although this project focused mainly on the technical side, and there were no particular problems caused by not involving MOSTE as an implementing agency, it was felt that MOSTE should have been included in the original plan of cooperation. Therefore, in future projects of this sort the demarcation of the relevant agencies should be considered.

(2) Recommendations

It was recommended that the project be terminated as initially planned after the five-year cooperation period since the project purpose was achieved. However, it was also recommended that technical standards be established and engineers responsible for management of sewage facilities be further developed in order to manage sewerage projects more effectively and efficiently.

The Automotive Fuel Research Project for Environmental Improvement



Project Site Ayutthaya

1. Background of Project

The automobile market in Thailand expanded rapidly in the late 1980's following the rapid economic development of the country. A quarter of the total number of automobiles are concentrated in Bangkok, and the air pollution caused by exhaust emissions from vehicles was escalating, causing adverse effects on the health of residents. It was, therefore, necessary to take measures to reduce air pollution such as improving automotive fuel.

Since the issue was considered both serious and urgent, the Government of Japan dispatched environment protection technology surveyors to Thailand to conduct a field survey in June 1994 under the "offer-based Project-type Technical Cooperation scheme for environmental pollution protection"¹⁾. Following this short-term assistance, in October, the Thai Government requested Project-type Technical Cooperation from the Japanese Government.

2. Project Overview

(1) Period of Cooperation

1 March 1996-29 February 2000

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organization

Ministry of Industry
Research and Technology Institute (R&T Institute),
Petroleum Authority of Thailand (PTT)

(4) Narrative Summary

1) Super Goal

Environment-friendly and technologically feasible automotive gasoline will be introduced into the Thai market in order to reduce air pollution.

2) Overall Goal

The Government of Thailand formulates specifications of the environment-friendly automotive gasoline on the basis of technical advice and proposals by the R&T Institute of the PTT.

3) Project Purpose

R&T Institute of the PTT has the ability to give technical advice and offer proposals on the properties and compositions of environment-friendly and technologically feasible automotive gasoline.

4) Outputs

- a) The Management and operation system of the project will be established.
- b) Various Measurement and analysis equipment for automotive gasoline and lubricant oil are installed.
- c) Preventive maintenance system for machinery and equipment will be established and effectively utilized.
- d) Various technologies concerning measurement, analysis, evaluation and designing of product properties are acquired by the Thai counterpart
- e) Various Data on analysis, evaluation and formulation concerning automotive gasoline are accumulated and effectively utilized.

5) Inputs

Japanese Side

Long-term experts	8
Short-term experts	18
Trainees received	11
Equipment	370 million yen
Local cost	12 million yen

Thai Side

Counterparts	18
Land and facilities	
Local cost	6 million baht (approx. 176 million yen)

3. Members of Evaluation Team

Team Leader:

Shigemaro AOKI, Development Specialist, JICA

Technical Cooperation Planning:

Atsuko SARUHASHI, Assistant Director, Refining Division, Petroleum Department, Agency of Natural Resources and Energy, Ministry of International Trade and Industry (MITI)

Fuel and Exhaust Evaluation & Analysis:

Kiyohiro TACHIKI, Researcher, International Cooperation Department, Petroleum Energy Center (PEC)

Evaluation Management:

Takaoki HARADA, Second Technical Cooperation Division, Mining and Industrial Development Cooperation Department, JICA

Evaluation Analysis:

Shigeru KOBAYASHI, System Science Consultants Co., Ltd.

4. Period of Evaluation

14 June 1999-1 July 1999

5. Results of Evaluation

(1) Efficiency

Although the construction of the R&T Institute by the Thai side was delayed about one year and a half, most of the activities were carried out successfully through the adjustment of the research plan, such as increasing the number of engine tests from every two weeks to every week. The provided equipment was well utilized and maintained, and it was, consequently, considered that most of the inputs were efficiently converted into outputs. However, because some equipment such as chassis dynamometers required high-level maintenance technology, and there was no agency to provide such maintenance services in Thailand, engineers were invited from Japan each time maintenance was required. This imposed a heavy financial burden on the Thai side.

(2) Effectiveness

The counterparts mastered the skills and knowledge necessary for research and analysis. The skill level of the counterparts reached the international level and some of their research was contributed to the Canadian Society of Automotive Engineers. In May 1999, the R&T Institute joined the "Study on Changes in Specifications for Gasoline and Diesel Fuels for Thailand," which was conducted by the National Energy Policy Office (NEPO), with the role of providing technical information and data for formulating specifications of environment-friendly gasoline. It could be concluded that the project purpose was achieved through these contributions made by the R&T Institute.

(3) Impact

With the improvement of research capability, the R&T Institute started receiving proposals to conduct research on a consignment basis and to contribute to joint research projects from governmental organizations and private companies. It was clear that the Institute would continue to play an important role in the oil and automotive industries in Thailand.

Although the PTT was not in the position of making policy proposals directly to the government, it was expected to contribute to the national measures for air pollution reduction indirectly through the R&T Institute's participation in the above stated "Study on Changes in

Specifications for Gasoline and Diesel Fuels for Thailand Research".

(4) Relevance

As stated in the Eighth National Economic and Social Development Plan (1997-2001), reduction of air pollution was one of the most important objectives in Thailand. Under the Thai Energy Development Plan, NEPO called for the improvement of specifications of gasoline and high-speed diesel in order to reduce air pollution. In view of these, it was concluded that the direction of the project was relevant.

(5) Sustainability

After the project was terminated, the maintenance cost for facilities and equipment and personnel expenses for the R&T Institute would be prepared by the PTT. Regarding the research budget, the R&T Institute would obtain it from governmental organizations and the private sector through its research on a consignment basis. Counterparts had sufficient competency to collect and analyze data, and to maintain equipment without outside support. Thus, the sustainability of the project could be considered to be high.

6. Lessons Learned and Recommendations

(1) Lessons Learned

When a partner country's implementing organization is a public corporation, in order to effectively reflect outcomes of the project in the national policies, the following must be clarified; 1) the authority of the corporation, 2) procedures of policy making and enforcement of national measures, and 3) roles of related agencies and organizations.

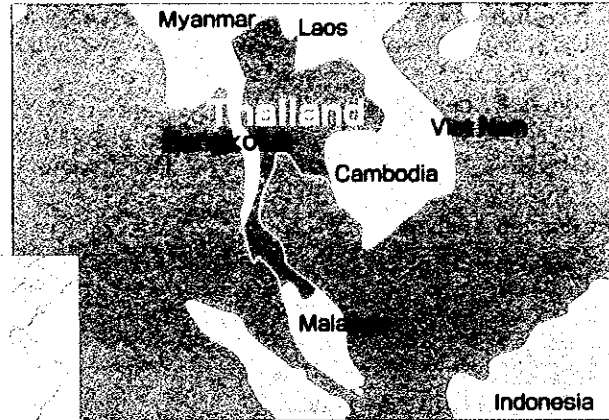
When it is necessary to provide equipment which requires high-level maintenance technology, the equipment must be selected with due consideration of the availability of service and maintenance in the country and the after-sales support system of the supplier.

(2) Recommendations

Because the project purpose was expected to be achieved, it was recommended to terminate the project by February 2000 as originally planned.

¹⁾ Offer-based Project-type Technical Cooperation scheme for environmental pollution protection: One of the technical cooperation schemes started in 1993 aiming at global environmental preservation in developing countries. When it is difficult for a developing country to address an urgent industrial pollution problem by itself, Japan offers immediate Project-type Technical Cooperation with due consideration of the situation of the country.

The Industrial Water Technology Institute



Project Site Bangkok

1. Background of Project

In Thailand, with rapid industrial development, the demand for industrial water was increasing. At the same time, serious environmental problems such as ground subsidence due to over extraction of groundwater and water pollution caused by industrial effluents became urgent issues particularly in and around the capital city of Bangkok.

The Government of Thailand, then, intended to establish a comprehensive water use system and disseminate the plan to Thai industries. In order to realize environment-friendly industries and the effective use of limited water resources, the comprehensive water use system had to incorporate 1) the procurement of industrial water, 2) the treatment and recycling of industrial effluents, and 3) the effective use of industrial water. For these purposes, the Thai Government planned to establish the Industrial Water Technology Institute (IWTI) and requested technical cooperation from the Government of Japan.

Responding to the request, the Japanese Government studied the situation and considered that a step-by-step cooperation plan was preferable. The project then started from a two-year preparatory phase, and it was expected to step up the next phase based on the results of the project. This evaluation covers the preparatory phase project.

2. Project Overview

(1) Period of Cooperation

1 June 1998-31 May 2000

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organization

Department of Industrial Works, Ministry of Industry

(4) Narrative Summary

1) Overall Goal

The IWTI is able to provide Thai industries with technical guidance on industrial water supply, rational use of water and wastewater treatment and re-use.

2) Project Purpose

The IWTI systematically fosters engineers who have basic skills and knowledge relating to industrial water.

3) Outputs

- a) The project is institutionalized and operated efficiently within the IWTI.
- b) Equipment for training on basic measurements and analyses is properly installed and maintained.
- c) The IWTI counterparts acquire skills and knowledge relating to industrial water.
- d) The IWTI counterparts understand the situation of industrial water use in factories.
- e) The IWTI formulates middle and long-term operation plans.

4) Inputs

Japanese Side

Long-term experts	3
Short-term experts	8
Trainees received	4
Equipment	approx. 13 million yen
Local cost	approx. 5.28 million yen

Thai Side

Counterparts	10
Land and facilities	.
Local cost	approx. 8.61 million baht (approx. 25 million yen)

3. Members of Evaluation Team

Team Leader:

Yoshifusa SHIKAMA, Director, Second Technical

Cooperation Division, Mining and Industrial Development Cooperation Department, JICA

Technical Cooperation Planning:

Akio KOBAYASHI, Deputy Director, Industrial Facilities Division, Environmental Protection and Industrial Location Bureau, Ministry of International Trade and Industry (MITI)

Technical Transfer Planning:

Totaro GOTO, Managing Director, Water Re-use Promotion Center Managing

Evaluation Planning:

Yukari SAITO, Second Technical Cooperation Division, Mining and Industrial Development Cooperation Department, JICA

Evaluation Analysis:

Naoya AZEGAMI, IC Net Limited

4. Period of Evaluation

5 January 2000-15 January 2000

5. Results of Evaluation

(1) Efficiency

The timing of procurement and installation of equipment was appropriate, and it was effectively utilized for the technology transfer. The number of Japanese experts and their assignment period was adequate, and ten counterparts were assigned according to the plan. With these inputs, most of the expected outputs of the project were produced. The collaboration with other projects and related organizations further facilitated the efficiency of the project.

(2) Effectiveness

The project produced outputs as follows; 1) appropriate utilization and maintenance of equipment for trainings in factories, 2) understanding of the situation of industrial water usage through the training in five factories, and 3) the approval from the Department of Industrial Works, Ministry of Industry for the IWTI's middle and long-term operation plans (November 1999). The counterparts mastered the basic skills and knowledge and accumulated practical experience through the lectures, training in factories and seminars conducted by the project, and hence the project purpose was considered achieved by the end of the cooperation period.

(3) Impact

The project had only limited impact on the issues of industrial water in Thailand due to it being just the preparatory phase. However, through the seminars and training conducted by the project, Thai industries and related organizations came to recognize the potential of the IWTI.

(4) Relevance

Since over extraction of groundwater and inappropriate treatment of wastewater negatively affected the environment in Thailand, urgent improvement of the situation was required. In addition, factories were in need of efficient use of water due to price increases and the limited quantity of groundwater. Because of these circumstances, the overall goal was regarded to be relevant. Furthermore, because the project was the first step to make the IWTI a public body that provides services relating to the efficient use of water resources for Thai industries, the project concentrated and limited its activities on the basic technologies needed for providing those services. Therefore, the project plan was evaluated as highly relevant.

(5) Sustainability

Although the institute was still new, it established cooperative relationships with other organizations through the activities of the project. Counterparts gained experience and know-how of management of the research institute to some extent. However, in order to extend the services in the future, further efforts would be required to strengthen the institutional capability of the IWTI. Financial support from the DIW could be expected, but there was still little prospect of earning income from providing technical services. Relating to technical sustainability, the counterparts mastered the basic skills and knowledge concerning industrial water. Further external assistance would enable them to learn more advanced technologies, and provide technical services applying the same.

6. Lessons Learned and Recommendations

(1) Lessons Learned

Implementing a preparatory phase project, and monitoring and evaluating it thoroughly, and feeding back the results to the planning of the next phase project, makes it possible to design an appropriate cooperation plan.

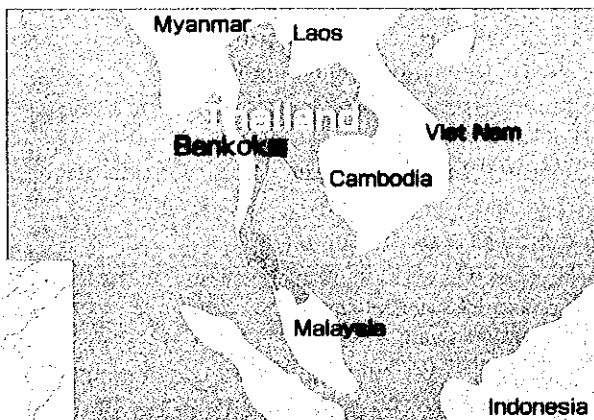
(2) Recommendations

The project purpose was likely to be achieved by the end of the cooperation period. The middle and long-term operation plan of the IWTI was formulated and the staff was allocated for it; the conditions, thus, were well prepared for the next phase. Hence, it was recommended to start the discussion on the second phase of the project.

7. Follow-up Situation

Based on the recommendation stated above, the five-year second phase of the project began in June 2000.

The Project for Strengthening of Food Sanitation Activities



Project Site Bangkok

1. Background of Project

The food industry in Thailand is expanding dramatically in response to increasing market demands and advances in food processing technologies. However, food manufacturers, especially small and medium sized enterprises, often lack knowledge on how to ensure safety and quality and have quality control management personnel in their factories. Consumers, too, have limited knowledge of food safety. With this background, the Government of Thailand requested Japan to provide Project-type Technical Cooperation with the aim of improving public health through improved food sanitation and quality control.

The duration of the project, started in April 1994, was five years. As a result of the terminal evaluation conducted in July 1998, it was judged that project achievements reached the expected level. In response to the needs of the Thai authorities for further improvement of the level of technology in this field through the establishment and strengthening of Good Laboratory Practice (GLP) (international standard for food sanitation) and for future dissemination of the techniques in this field to neighboring countries, the cooperation period was extended for another year.

This study was conducted to evaluate the cooperation during the extended one year.

2. Project Overview

(1) Period of Cooperation

1 April 1999-31 March 2000 (Extended period)

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organizations

Department of Medical Sciences (DMSc) and the Office of Food and Drug Administration (FDA), Ministry of Public Health

(4) Narrative Summary

1) Overall Goal

Health protection programs related to food sanitation for the people of Thailand are promoted.

2) Project Purpose

Food Safety and sanitation in Thailand are assured.

3) Outputs

- a) Quality assurance of food is strengthened by the improvement of laboratory technology with GLP in the services of the DMSc.
- b) Food sanitation and safety control programs are strengthened in the services of the FDA.

4) Inputs

Japanese Side

Long-term experts	3
Short-term experts	10
Trainees received	2
Equipment	approx. 23 million yen
Local cost	approx. 23 million yen

Thai Side

Counterparts	83
Equipment	
Land and facilities	
Local cost	5.4 million baht (approx. 16 million yen)

3. Members of Evaluation Team

Team Leader:

Tsutomu MARUYAMA, Professor, Faculty of Environmental Health Science, Azabu University

Food Sanitation:

Shyunsaku MINAMI, Senior Officer for Imported Food and Inspection, Environmental Health Bureau, Ministry of Health and Welfare

Cooperation Planning:

Fumiko YAMADA, First Medical Cooperation Division, Medical Cooperation Department, JICA

Project Evaluation:

Shigeru KOBAYASHI, System Science Consultants Inc.

4. Period of Evaluation

8 December 1999-18 December 1999

5. Results of Evaluation

(1) Efficiency

Inputs that were implemented during the extension period of the project strengthened the activities and outcome of the preceding five-year cooperation; thus, they were mostly appropriate. Meanwhile, there was a comment from the Thai side that the changes in the period of assignment and specialization of some short-term experts led to their delayed dispatch. There were some cases in which technology transfer was not fully carried out.

(2) Effectiveness

The functions of DMSc and FDA were strengthened by the project. For example, 84 labs out of 155 in the DMSc were in the process of introducing GLP and the remaining 71 labs had already applied for it. Also, as a result of the strengthened FDA activities such as training and campaigns targeted at private food processing factories and consumers on food sanitation and quality control, 47 factories obtained and another 42 applied for the international certificates for quality control of food processing such as HACCP (Hazard Analysis Critical Control Point) and GMP (Good Manufacturing Practice) during the one-year extension period.

(3) Impact

Based on the outputs achieved by the project, a National Food Safety Scheme was drafted. Also, research carried out on the food sanitation situation in neighboring countries conducted as a technical cooperation activity for neighboring countries (TCNC) made the capabilities of the DMSc known to the concerned organizations in the countries studied, which raised their interest in food sanitation and quality control.

Following the research in the countries where Thai food is distributed, the dispatch of Thai experts to Laos and Cambodia was carried out. Therefore, it was concluded that the technical skills of the implementing organizations reached a level at which they could support neighboring countries and that a first step was made toward technology transfer from Thailand to neighboring countries.

(4) Relevance

The Thai Government holds the improvement of food sanitation as one of the issues in the National Health Consumers Protection Plan and the National Food Safety Scheme. Also, in the Eighth National Development Plan, the government expresses its commitment to support neighboring countries in the solution of problems in the health sector. Considering these facts it was evaluated that relevance of the project was high.



Site visit to laboratory

(5) Sustainability

Both the DMSc and FDA had established organizational structures as responsible agencies for inspection and administration, respectively, on food sanitation and safety control. The coordination mechanism between both organizations and among concerned ministries and other organizations was also well developed. Through the project, the techniques necessary for the introduction of GLP were transferred to the counterparts, who started disseminating these techniques to other officers through seminars and other means. Regarding financial aspects, it was likely that both the DMSc and FDA would be able to secure a stable budget to continue their activities. Based on these findings, sustainability of the project was evaluated to be high.

6. Lessons Learned and Recommendations

(1) Lessons Learned

In order to dispatch short-term experts more effectively, the Japanese side should allow sufficient time to identify appropriate personnel and complete the recruitment procedure. At the same time, the government of the recipient country is advised to make necessary personnel arrangements at an early stage so that counterpart needs match the specialization of the experts.

(2) Recommendations

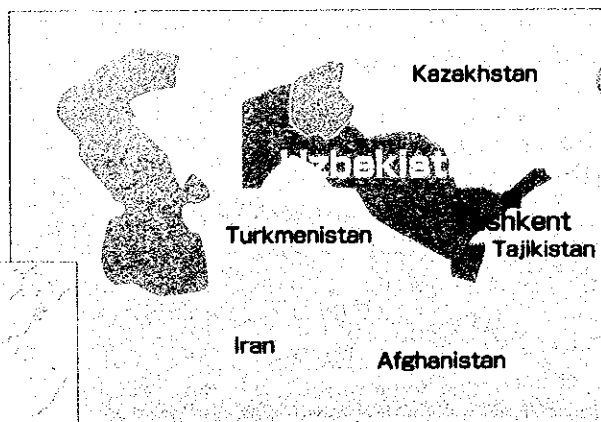
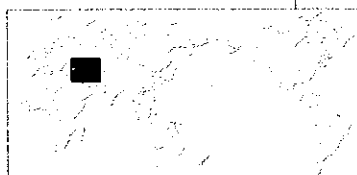
Through the extension of the cooperation period, the technical skills of the Thai side on food sanitation reached the level which technology transfer from Thailand to other countries would be possible. Indeed, both the DMSc and FDA requested the implementation of a Third-country Training Program after the termination of the project. It was thus recommended that the Japanese side respond to the request and provide support indirectly, such as through the Dispatch of Experts.

7. Follow-up Situation

Based on the above recommendation, a Third-country Training Program titled "Strengthening of Food Sanitation" is being implemented.

Human Resources Development for Promotion of Market-Oriented Economy

Project Site Tashkent



1. Background of the Project

Since independence in 1991, Uzbekistan has promoted a market-oriented economy, but the reforms did not progress smoothly due to a lack of information on and knowledge of market-oriented economies among government officials. As a result of the situation, the Government of Uzbekistan established the Academy for State and Social Construction for the purpose of retraining management officials and undertaking human resources development. The Government of Japan focused attention on this Academy and selected seven themes in relation to a market-oriented economy 1) Japanese Administration, 2) Economic Policy/Industrial Policy, 3) Business Enterprise Management, 4) Enhancement of Service Standards, 5) Public Health/Social Security/Environmental Policy, 6) Financial and Monetary Policies/Account Auditing, 7) National Land Development/ Regional Development) and provided co-operation in the form of Dispatch of Experts who gave lectures, Acceptance of Trainees, and provision of machinery and equipment.

2. Project Overview

(1) Cooperation Period

1 March 1997-29 February 2000

(2) Type of Cooperation

Cooperation to Support Formulation of Key Government Policies

(3) Partner Country's Implementing Organization

Academy of State and Social Construction

(4) Narrative Summary

1) Overall Goal

A market-oriented economy is promoted in the

areas in which the auditing students of the Academy of State and Social Construction are involved.

2) Project Purpose

Government officials become aware of the aspects of a market-oriented economy through training received at the Academy of State and Social Construction.

3) Outputs

- a) Auditing students in the Academy understand a market-oriented economy.
- b) Lecture notes and materials are made public and used for self enlightenment and works of auditing students.
- c) Auditing students in the Academy understand the Japanese system.

4) Inputs

Japanese Side

Long-term expert	1
Short-term experts	40
Trainees received	22
Equipment	5.7 million yen

Uzbekistan Side

Counterpart
Land and facilities
Equipment
Local cost

3. Members of Evaluation Team

Team Leader:

Noriyuki TAKAYAMA, Professor, The Economic Institute, Hitotsubashi University

Market Economy:

Yoshiaki NISHIMURA, Professor, The Economic Institute, Hitotsubashi University

Co-operation Planning:

Midori NANBA, Deputy Director, Regional Department II, JICA

4. Period of Evaluation

15 December 1999-25 December 1999

5. Results of Evaluation**(1) Efficiency**

Regarding the seven areas upon which all people concerned agreed, the intellectual transfer was completed as scheduled by the dispatch of mainly short-term experts.

(2) Effectiveness

After the graduates of the Academy returned to their offices, they used the knowledge acquired in lectures, made recommendations for the reforms of a market-oriented economy and began to produce research reports that can be a base for policy formulation. Also, as some graduates were already involved in policy-making for a market-oriented economy, it was judged that the project purpose was achieved.

(3) Impact

The Uzbek people became familiar with and developed an understanding of Japan through the broadcasting of television programs that were made by participants trained in Japan, and also through publicity on the Internet. Also, regarding the achievement of the overall goal, it was expected that knowledge transferred would be used by the young officials in their respective areas, who might be promoted to higher posts in the future, which would further promote a market-oriented economy.

(4) Relevance

After graduation from the Academy and return to their offices, many officials were given key posts. Therefore, the project was considered to have contributed significantly to long-term human resources development. However, initially the Japanese side intended to directly influence policy making, but as there was a big discrepancy between the policy-making systems of Japan and Uzbekistan and other transitional countries, there was a large constraint to realizing this goal.

(5) Sustainability

Through this project, the level of understanding of market-oriented economies in the Academy was enhanced and its management capacities were significantly strengthened. The Academy planned to continue holding courses independently in the areas that help promote a market-oriented economy; therefore, the knowledge and know-how transferred by this project shall definitely be carried over through the counterparts and the graduates of the Academy who are potential candidates for professors. But because the economic situation in Uzbekistan is still severe, securing the necessary budget for materials and textbook development is an outstanding issue.

6. Lessons Learned and Recommendations**(1) Lessons Learned**

As the market-oriented economy in Uzbekistan was originally implemented based on its own policies and measures, radical recommendations for reform would not be realistic. It was considered important to examine the co-operation depending on the speed of reform in the country.

(2) Recommendations

The Academy requested the further dispatch of Japanese experts for some lecture areas. It was recommended to dispatch the experts in the lecture area which Japanese Government could respond.