Bangladesh

The Project for Balancing, Modernization, Rehabilitation and Expansion of the Chandnighat Water Treatment Plant

Project Sites

Dhaka

1. Background of Project

The majority of Bangladeshi people use water from shallow wells, rivers, and ponds for everyday activities including drinking, washing, and bathing. Accordingly, they are living in extremely unsanitary conditions and 80% of all diseases in Bangladesh can be attributed to water; in particular, water-borne diarrhea is responsible for Bangladesh's 30% infant mortality rate.

In particular, in the capital of Dhaka, the population is increasing rapidly while the development of tap water resources lags behind. In the area of Old Dhaka where the population is particularly concentrated, there is a fear of land subsidence due to the overdrawing of existing wells.

Under these conditions, the Government of Bangladesh requested grant aid from Japan in order to renovate, expand, and modernize its only water treatment facility that uses surface water, the Chandnighat water treatment plant, for the purpose of supplying safe drinking water for the residents of Dhaka.

2. Project Overview

(1) Period of Cooperation

FY1993-FY1996

(2) Type of Cooperation

Grant aid

(3) Partner Country's Implementing Organization

Dhaka Water Supply and Sewage Authority (DWASA)

(4) Narrative Summary

1) Overall Goal

To improve the lives of the people of the Dhaka metropolitan area.

2) Project Purpose

To supply a stable and hygienic water supply to the people of the Dhaka metropolitan area.

3) Outputs

a) To rehabilitate the Chandnighat water treatment plant.
b) To lay main water distribution pipes.
c) To establish a management system for the Chandnighat water treatment plant.

4) Inputs

Japanese Side

Grant 3.742 billion yen (E/N amount)

Bangladeshi Side

Land
Facilities management and maintenance staff
Local costs

3. Members of Evaluation Team

JICA Bangladesh Office
(Commissioned to Crown Agents)

4. Period of Evaluation

15 March 1999-31 March 1999

5. Results of Evaluation

(1) Efficiency

Construction, including the rehabilitation of the treatment plant and the laying of water distribution pipes, was enacted according to plan, and the facility was handed over to the Bangladeshi side.

(2) Effectiveness

Although the water supply facility was handed over to the Bangladeshi side as originally planned, due to the rapid deterioration of water quality at its water source by the discharge of industrial polluted water from some industries located upstream in the Buriganga River, which was initially unforeseen, fetid, colored, poor-quality water has been supplied. In addition, because of the fact that the population is concentrated in Dhaka and energy consumption is increasing (particularly throughout the dry season) due to the development of industry, power outages have occurred frequently. As a result power distribution periods have been unstable, and water supply from the plant has sometimes been cut off.

(3) Impact

There are no particular problems with the sanitary condition

of the treated water and residents are using it as drinking water.

(4) Relevance

Because 95% of Dhaka's water resources come from deep wells, there is a fear of land subsidence due to overdrawing of water. Therefore, the renovation and enlargement of the Chandnighat water treatment plant, a water supply facility that uses surface water, has high relevance.

(5) Sustainability

Because water supply is an enterprise that supports the foundation of residents' lives, management is supposed to be continued by the Bangladeshi side in the future. However, in order to provide high-quality, clean water, it is necessary to improve the technological capabilities of DWASA.

6. Lessons Learned and Recommendations

(1) Lessons Learned

This project appropriately implemented rehabilitation of the facility, however, due to initially unforeseen social problems such as deterioration of the living environment, and power outages caused by rapidly increasing energy consumption by population concentration and the development of industry (especially during the dry season), the facility has not functioned satisfactorily since it was handed over. Therefore, it is necessary to consider and examine the social environmental changes after the construction at the planning stage.

(2) Recommendations

It is necessary to investigate future measures for the stable supply of clean water.

7. Follow-up Situations

In an effort to improve management and maintenance capabilities at the Chandnighat water treatment plant, an individual expert was dispatched from September 1999 for a period of six months to provide technical guidance.

Concerning the problem of frequent power outages, the DWASA side are making efforts, such as the purchase of electricity generation equipment and step-up transformer out of their own budget, aiming to improve management of the water treatment plant and provide clean water of good quality by ensuring a stable supply of electricity.

Bhutan

The Paro Valley Agricultural Development Project

Project Sites

Paro

1. Background of Project

In Bhutan, 41.4% of the gross domestic product (GDP) was accounted for by agriculture and stockbreeding industries, in which 82.2% of the working population was involved. The agriculture and stockbreeding industries were by far the most important industries in the country. Since the majority of the land is comprised of the Himalaya Mountains and there are hardly any flatlands, the productivity of these industries was extremely low. For this reason, the Government of Bhutan requested grant aid from Japan in order to establish a base for agriculture in the Paro Valley (agricultural land 3,500ha, population 11,168, farming households 1,930), determined as the most important of the five areas nationwide targeted in prior development plans.

2. Project Overview

(1) Period of Cooperation

FY1989, FY1990, FY1993-FY1995

(2) Type of Cooperation

Grant aid

(3) Partner Country's Implementing Organization

Ministry of Agriculture

(4) Narrative Summary

1) Overall Goal

To raise agricultural productivity in the Paro Valley.

2) Project Purpose

To establish a base for agriculture in the Paro Valley.

3) Outputs

a) Irrigation facilities (canals, dams) are repaired.
b) Farm roads are developed.
c) River walls are constructed.
d) Bridges across the Paro and Dotey rivers are constructed.
e) Facilities and equipment (construction equipment, concrete plants, etc.) are provided.

4) Inputs

Japanese Side

Grant total 3.218 billion yen (E/N amount)

Bhutan Side

Local cost

3. Members of Evaluation Team

Facilities Evaluation:

Mr. Koji YAMANAKA, Development Specialist, JICA

Management Conditions Evaluation:

Mr. Tomoyuki TADA, Follow-up Division, Grant Aid Project Management Department, JICA

4. Period of Evaluation

28 July 1998-7 August 1998

5. Results of Evaluation

(1) Efficiency

This project was planned according to the general policy of maximizing the use of already existing agricultural bases and making only minor changes to the production and social forms already in application. As a result, the scale and contents of the project were well suited for the circumstances. Various agricultural bases were developed and related facilities and equipment were provided as originally planned, and the project on the whole was implemented efficiently.

(2) Effectiveness

The 29km of irrigation canals that were repaired are steadily supplying water to 418 hectares of farmland, including fields for paddy rice, vegetables and fruits. The two bridges that have been constructed are an important means of transportation for the local people, and the farm roads built along the river embankments have facilitated journeys to and from agricultural land and the villages. Given these elements, the project purpose, to establish a base for agriculture in the Paro Valley, has been achieved.

(3) Impact

It is projected that the repairs to irrigation facilities will bring indirect benefits to 1,562 hectares of paddy fields, 371 hectares of farmland and 360 hectares of fruit orchards. The construction of the farm roads has stimulated economic activity in the Paro Valley. The establishment of such agricultural

infrastructure has led to an increase in harvests of paddy rice, vegetables and fruits, and caused a shift in production to winter vegetables and fruits that provide a major source of cash income.

Conducted using existing agricultural bases that were in place, this project made an integral contribution to agricultural development without impacting seriously on the environment and the production and social forms of agriculture.

Furthermore, considering the bridges constructed through the project to be the best built in Bhutan, the Government of Bhutan is using them as a reference for bridges to be constructed in the future.

(4) Relevance

Given that agriculture is the most important industry in which the majority of the population of Bhutan is engaged, the agricultural bases developed through the project meet the needs of both the government and farmers of Bhutan, and the relevance of the project is therefore high.

(5) Sustainability

A maintenance system for the bridges, farm roads and embankments has been put in place by the Public Works Division of the Bhutan Ministry of Communications. At the same time, with regard to irrigation facilities, although an irrigation association has been formed, the farmers are still relatively unaware of conducting maintenance in an organized manner. As such, there is a need to monitor whether appropriate maintenance will be conducted.

Furthermore, although the construction equipment, concrete plants and other materials used in the construction work were handed over to the Bhutan side following completion of the work, and since the materials and facilities will not be used solely for agricultural-related work in the Paro Valley, where there are very few flatlands, it is necessary to examine effective utilization methods for them in the future.

6. Lessons Learned and Recommendations

(1) Lessons Learned

It would be desirable to introduce a soft component into the agriculture base development project in order to improve sustainability. Furthermore, it is vital that the farmers are fully consulted in the project formulation stage to heighten their sense of involvement.

In projects where construction equipment is handed over to the partner country side following completion of work, there is a need to verify beforehand the plans for using the equipment by the partner country side after it is handed over, and when necessary to provide technical guidance relating to equipment operation and maintenance.

(2) Recommendations

It is recommended that where required, technical cooperation, with respect to facilities maintenance and water control, be considered while paying attention to the state of use and maintenance and control of irrigation facilities.

Provided equipment is being used to pave a connecting road to a bridge built with grant aid

A bridge under construction

China

Prevention of Air Pollution

Project Sites

Shanghai

1. Background of Project

In China, air pollution was spreading along with rapid economic growth. Through the "Shanghai Air Pollution Control Master Plan" development study implemented from 1986 to 1988, Japan implemented technology transfer concerning surveying current air pollution conditions and planning prevention measures. However, because China had not been conducting adequate training of administrators and engineers at the local level in air pollution prevention, the Chinese government requested from Japan in-country training program aimed at local administrators.

2. Project Overview

(1) Period of Cooperation

FY1994-FY1998

(2) Type of Cooperation

In-country training program

(3) Partner Country's Implementing Organization

National Environmental Protection Agency

(4) Narrative Summary

1) Overall Goal

To improve China's environmental situation which is worsening due to air pollution.

2) Project Purpose

For ministry and municipal administrators concerned with measures against air pollution to learn the necessary expertise and skills to plan and implement policies to address the particular air pollution conditions in each region.

3) Outputs

a) Trainees grasp air pollution conditions and understand basic information and practical technology concerning data analysis.

b) Trainees understand the basic ideas and techniques to formulate sustainable plans that can respond to the different levels of development in each city.

c) Trainees expertise and skills to establish a municipal environmental information system.

4) Inputs

Japanese Side

Short-term experts	6
Training expenses	55 million yen

Chinese Side

Training facilities	
Training expenses	10 million yen (approx. 15% of the total expense)

3. Members of Evaluation Team

Team Leader:

Mr. Toichi IWATA, Director, Second Contract Division, Procurement Department, JICA

Air Pollution Measures:

Mr. Kazuya SAKIHARA, Chief, Air Pollution Control Division, Osaka Prefectural Government

Training Planning:

Mr. Toshiyasu TSURUHARA, Second Training Division, Training Affairs Department, JICA

4. Period of Evaluation

10 December 1998-19 December 1998

5. Results of Evaluation

(1) Efficiency

This training was implemented very efficiently against a backdrop of increasing interest in China's environmental problems, with first-rate instructors and an implementing organization with adequate management capabilities.

(2) Effectiveness

According to a survey implemented by the National Environmental Protection Agency, the organization that conducted the training, the trainees responded that the training was very understandable. Therefore, it can be judged that the project purpose was met.

(3) Impact

In a questionnaire survey of the trainees, more than 80%

of the trainees responded that they had advanced towards planning and implementation of measures against air pollution. Even in discussions amongst the trainees themselves, many activities conducted by the trainees were reported concerning planning and implementation. It is expected that, in the future, the trainees will spread their training by working as instructors.

Aside from the increase in the trainees' knowledge and experience, because the training was a gathering of individuals from all over the country who are concerned about air pollution prevention, the mutual understanding between central and local authorities concerning the prevention of air pollution improved even further. Also, because the training was publicized widely by the mass media, education about air pollution was also promoted to the general public.

(4) Relevance

Because this training was implemented as a solution to China's environmental problems at a time of increasing concern about air pollution, it was very timely. As the content of the training also complemented precisely Chinese governmental policy, it was an appropriate plan.

However, because the training was aimed at a wide range of people, the trainees who expected intensive training concentrating on a specific subject may have felt some dissatisfaction.

(5) Sustainability

As National Environmental Protection Agency is also independently carrying out other training, training implementation ability is high. In addition, because the Chinese government is actively working in this field, it can be expected that this training will be sustained by the Chinese side.

6. Lessons Learned and Recommendations

(1) Lessons Learned

It is important to carry out evaluations often and precisely grasp the training needs of the participants. It is necessary to be flexible in rethinking the original plan, for example, making changes in the curriculum and the group targeted for training, in order to respond to the change in China's domestic situation.

(2) Recommendations

Because the Chinese side is currently conducting introductory training in this field, in cases of future cooperation in this area, more specialized or detailed training would be desirable. Furthermore, because programs such as the Japan-China Environment Model Cities Plan and the Environmental Information Network Plan are already being implemented as part of environmental cooperation with China, predominantly by the Japan-China Friendship Environmental Protection Center, it will be necessary to investigate the possibility of cooperation which takes coordination with these programs into consideration.

An instructor gives a lecture

The severity of the air pollution problem is evident in this photograph

China

The Research Center of Mineral Resources Exploration Project

Project Sites

Beijing

1. Background of Project

Following the economic growth in China, there was a massive consumption of mineral resources, which produced a remarkable shortage in the supply of domestic mineral resources. China, with its vast size, is believed to have a potentially large amount of mineral resources buried underground. If exploration-related technologies were advanced by the comprehensive use of science technology, these advancements would greatly contribute to the discovery of all sorts of mineral resources.

In order to respond to this situation, the Research Center of Mineral Resources Exploration, which took on the main task of mineral resource exploration by earth science methods, was established at the Chinese Academy of Sciences. China requested that Japan implement Project-type technical cooperation for the purpose of transferring exploration and research techniques and carrying out research cooperation.

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 Organization

Chinese Academy of Sciences

(4) Narrative Summary

1) Overall Goal

To discover mineral resources within China (particularly copper, gold, silver, rare metals and rare soils).

2) Project Purpose

To conduct inquiry into the earth science methods of mineral resources (particularly copper, gold, silver, rare metals and rare soils) at the Research Center of Mineral Resources Exploration belonging to the China Science Institute.

3) Outputs

a) Basic research techniques necessary for mineral resource exploration were learned.

b) Ability to study the ore deposit formation process was developed.

c) Ability to study the predicted amount of underground reserves of mineral resources through earth science was developed.

d) Ability to examine the ground for potential geological exploration for development was furthered.

e) Organizational and operational systems for implementing mineral resource exploration were facilitated.

f) Equipment needed for mineral resource exploration was provided.

4) Inputs

Japanese Side

Long-term experts	11
Short-term experts	30
Trainees received	15
Equipment	410 million yen
Local cost	28 million yen

Chinese Side

Counterparts	33
Center facilities	
Equipment	2.54 million yuan (approx. 37 million yen)
Local cost	11.62 million yuan (approx. 168 million yen)

3. Members of Evaluation Team

Team Leader:
Dr. Yoshimasu KURODA, Professor Emeritus, Shinshu University

Resource Science:
Dr. Hirokazu FUJIMAKI, Professor, Tohoku University

Ore Science:
Dr. Takahiko MARUYAMA, Professor, Akita University

Evaluation Cooperation:
Mr. Yoshiki MIZUGUCHI, First Technical Cooperation Division, Social Development Cooperation Department, JICA

Evaluation Survey:
Mr. Kosei HASHIGUCHI, Sanyu Consultants Inc.

Interpreter:
Ms. Tomoko YAMASHITA, Japan International Cooperation

Center

4. Period of Evaluation

24 March 1999-2 April 1999

5. Results of Evaluation

(1) Efficiency

The 11 long-term experts and 30 short-term experts were dispatched according to the project's progress. All of the counterparts who had participated in training in Japan were satisfied with the contents of their training in Japan, which was consistent with their expertise and expectations. The supplied equipment was selected appropriately and was used for many analyses and measurements. However, the system of the newly formed Research Center of Mineral Resources Exploration was not coordinated as an organization. As a result the project did not make much progress in the first two years due to insufficient posting of counterparts, budgetary problems, delays in laboratory reconstruction and development, difficulty in acquiring geographical and geological information, and the illness of the person responsible for the project, among other things.

(2) Effectiveness

From the third year of this project, things started to go on track. Activities progressed greatly, and the development of the research system and improvement in accuracy of analysis and measurement at the Research Center for Mineral Resources Exploration achieved the original objectives. However, investigation of the predicted amount of underground reserves of mineral resources and the potential site for exploration will require the firm establishment of exploration technologies for mineral resources.

(3) Impact

Although the importance of science is fully recognized in China, this is not always the case regarding the importance of basic science. However, this project included China's first attempt to apply hydrogen isotope measurements to all aspects of mineral deposit study, petrology and mineralogy. This development indicates the importance of basic science and contributes to the improvement of technological prowess in basic science areas.

(4) Relevance

The increase in mineral resource consumption and the insufficient mineral resource supply in China continue to this day. Together with the development of science technology, the demand for rare earth substances that are essential to the development of new materials is expected to continue to expand. Therefore, this project remains highly relevant at this time.

(5) Sustainability

Measurement and analysis techniques that use the supplied equipment have been transferred and have already been firmly established. In addition, a person has been assigned to be in charge of each piece of equipment and a healthy maintenance situation has been achieved. The counterparts are also engaged in ongoing work at the Research Center for Mineral Resources Exploration. However, the transfer of practical and applied technologies for the investigation of the predicted amount of underground reserves of mineral resources and areas for exploration has not been completed. Therefore, the Center is not at the stage of exploring and developing mineral resources on its own.

Exploration techniques are transferred on site

6. Lessons Learned and Recommendations

(1) Lessons Learned

When initiating a project with a newly established organization and structure, it is necessary to sufficiently coordinate and confirm matters such as counterpart assignments and budgetary measures by the partner country's implementing organization before the start of the project.

(2) Recommendations

It will be necessary to extend the period of cooperation by two years in order to achieve project outputs in areas where technology has not yet been sufficiently transferred and project goals, and also to ensure project sustainability.

7. Follow-up Situations

Based on the above recommendation, the cooperation period was extended by two years, until August 2001.

China

The Tianjin Drug Quality Control Project

Project Sites

Tianjin

1. Background of Project

Tianjin City was one of the major regions for production of medicines in China, and every year a significant volume of herbal medicine and synthetic medical products from Tianjin were sold through Tianjin Harbor to destinations in China and abroad. The Government of China made efforts to strengthen the quality control of medical products through its seventh and eighth five-year plans (1986-1995). However, the quality of the manufactured medicines was yet to fully meet international standards.

Because of this, the Government of China requested Japan to implement project-type technical cooperation to ensure medicine safety and effectiveness through improvements in quality control and testing technology.

2. Project Overview

(1) Period of Cooperation

6 November 1993-5 November 1998

(2) Type of Cooperation

Project-type technical cooperation

(3) Partner Country's Implementing Organization

Tianjin Municipal Institute for Drug Control

(4) Narrative Summary

1) Overall Goal

To improve the safety and effectiveness of medicine distributed in China.

2) Project Purpose

To improve the levels of drug control and testing technology at Tianjin Municipal Institute for Drug Control.

3) Outputs

a) Implementation criteria for non-clinical testing, good laboratory practice (GLP), regarding drug safety are understood.

b) Analysis method validation is understood.

c) Testing environment is developed.

d) Technicians for drug testing and investigation are cultivated.

e) Joint research on drug quality control is implemented.

f) Exchange of technology and research information between Tianjin Municipal Institute for Drug Control and institutes for drug control in other provinces is conducted.

4) Inputs

Japanese Side

Long-term experts	13
Short-term experts	78
Trainees received	26
Equipment	380 million yen
Local cost	9 million yen

Chinese Side

Counterparts	41
Chemicals, animal testing labs, books, lecture rooms, etc.	
Rebuilding and repairs (aseptic rooms, etc.)	20 million yuan (289 million yen)
Local cost	1.3 million yuan (19 million yen)

3. Members of Evaluation Team

Team Leader:
Mr. Tadao TERAO, Director General, National Institute of Health Sciences

Drug Analysis:
Mr. Shigeo KOJIMA, Director, Division of Drugs, National Institute of Health Sciences

Antibiotics:
Mr. Satoshi MIZUNO, Director, Bioactive Molecules Department, National Institute of Infectious Diseases

Drug Examination:
Mr. Shigeki TSUDA, Deputy Director, International Affairs Division, Minister's Secretariat, Ministry of Health and Welfare

Cooperation Planning:
Ms. Yasuko KITAHARA, Deputy Director, First Medical Cooperation Division, Medical Cooperation Department, JICA

Interpreter:
Ms. Misako TANAKA, Japan International Cooperation Center

4. Period of Evaluation

20 July 1998-28 July 1998

5. Results of Evaluation

(1) Efficiency

In this project, based on frequent meetings with the Chinese side, inputs from the Japanese side were carried out in timely fashion. However, the delay in the construction of animal houses by the Chinese side had an effect on the animal and animal house management methods based on GLP as well as technology transfer related to methods of determining the results of long-term toxicity tests.

(2) Effectiveness

Although transfer of the aforementioned technologies was not necessarily sufficient, technologies for antibiotic drug testing, microbiological testing, biochemistry testing methods, herbal medicine quality tests and biological assay were fully transferred through appropriate guidance by experts and the level of drug management improved. Enhancement of the testing environment through the provision of equipment was accompanied by a drastic improvement in the investigation and testing technologies of the Tianjin Municipal Institute for Drug Control, and the number of commissioned tests from drug manufacturers in China increased considerably from 197 in 1994 to 2,130 in 1997. This Institute has reached the rank of a top-class institute for drug control, so the project can thus be judged to have highly achieved its purpose.

(3) Impact

Thanks to the drastic improvement in the investigation technology of the Tianjin Municipal Institute for Drug Control, the quality and safety of drugs passing through Tianjin City have improved and this has contributed to the health of the Chinese people.

In addition, thanks to its drastically improved efficiency and reliability of investigation, the Institute set 15 of the standards concerning the production of standards and examination methods in the 2000 edition of the Chinese Medical Dictionary. This will lead to a future effect on drug testing methods and standards in China.

(4) Relevance

The improvements in the levels of drug quality control and testing technology are pressing issues not only at Tianjin Municipal Institute for Drug Control, but also at institutes for drug control throughout China. The State Drug Administration is incorporating the strengthening of local drug control institutes in its policies. The relevance of this project remains high even now.

(5) Sustainability

The technology necessary for drug testing work has been sufficiently transferred and it is thought that the project can be sustained technologically and organizationally. Increased confidence in the Tianjin Municipal Institute for Drug Control has led to increased revenue from drug testing work and joint research. However, it is desirable that the Institute practice financial management based on a plan to prepare for the upgrading of the provided equipment several years from now.

6. Lessons Learned and Recommendations

(1) Recommendations

The Tianjin Municipal Institute for Drug Control improved its testing technology as well as its examination and research environment, and is expected to maintain sustainability. It has been decided that follow-up is not required. However, regarding areas where technology transfer was not sufficient in this project, such as animal and animal house management methods based on GLP and methods of determining the results of long-term toxicity tests, from now on the dispatch of short-term experts should be preferable.

China

The Dairy Product Manufacturing Technology Development Project, Inner Mongolia

Project Sites

Huhhot

1. Background of Project

In China, the correction of widening disparities between industrializing coastal areas and inland regions was a priority item in its national development plan. Although stockbreeding was one of the major industries in the Inner Mongolia Autonomous Region, its productivity had been low. The region had been actively processing dairy products since olden times, but its hygiene management and production technologies were underdeveloped and its dairy products on the market were low in quality.

In order to promote the dairy product and the traditional food industries through the dissemination of modern dairy products and its research and development based on traditional dairy products in the region, the Government of China requested that Japan carry out project-type technical cooperation.

2. Project Overview

(1) Period of Cooperation

1 June 1994-31 May 1999

(2) Type of Cooperation

Project-type technical cooperation

(3) Partner Country's Implementing Organization

Inner Mongolia Institute of Agriculture and Animal Husbandry

(4) Narrative Summary

1) Overall Goal

The development of the dairy product industries in the Inner Mongolia Autonomous Region.

2) Project Purpose

To enhance the technical and research level of academic staff involved in the manufacturing of dairy products in the Inner Mongolia Institute of Agriculture and Animal Husbandry.

3) Outputs

a) The Inner Mongolia Institute of Agriculture and Animal Husbandry's technologies for collecting, isolating, identifying and preserving beneficial microbes are improved.

b) The Inner Mongolia Institute of Agriculture and Animal Husbandry's technologies for manufacturing, hygiene and quality control of the popular dairy products are improved.

c) The Inner Mongolia Institute of Agriculture and Animal Husbandry's capacity for instruction regarding the training of local diary industry technicians in Inner Mongolia Autonomous Region is improved.

4) Inputs

Japanese Side

Long-term experts	8
Short-term experts	34
Trainees received	25
Equipment	371 million yen
Local cost	61 million yen

Chinese Side

Counterparts	30
Land and facilities (Land for dairy processing plant and microorganisms testing lab, Construction of lodgings for experts, etc.)	
Local cost	approx. 66 million yen

3. Members of Evaluation Team

Team Leader/Quality Control of Milk for Processing:
Mr. Shintaro INATSUGI, National Racing Horse Owners Benevolent Society

Dairy Product Microbiology:
Mr. Katsuhiko NODA, Meiji Milk Products Co. Ltd.

Dairy Product Manufacturing:
Mr. Shinichi OKI, Meiji Milk Products Co. Ltd.

Cooperation Evaluation:
Mr. Kenji MATUSHIMA, Technical Cooperation Division, Economic Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries

Project Operation Management:
Mr. Toshifumi EGUSA, Livestock and Horticulture Division, Agricultural Development Cooperation Department, JICA

4. Period of Evaluation

8 March 1999-20 March 1999

5. Results of Evaluation

(1) Efficiency

Dispatch of experts, reception of trainees, supply of equipment and share of local cost by the Japanese side were all implemented accurately and appropriately according to the original plan. On the Chinese side, the assignment of counterparts and the outlay from the operating budget were also carried out for the most part as planned. However, it was impossible to secure budget allocation for the construction of the dairy processing plant and the microbiological testing lab, which were the project's major facilities, and in the end the Japanese side had to cover these costs. Although the delay in the construction of these facilities set back technology transfer, thanks to the efforts of the experts, this delay was made up later on.

(2) Effectiveness

Using the provided facilities and equipment, technologies for collecting, separating, identifying and storing effective microorganisms for traditional dairy products, as well as all technologies for manufacture, hygiene management and quality control of basic dairy products were all transferred to the counterparts. The capacity for instruction regarding the training of local diary industry technicians is also rising at the Inner Mongolia Institute of Agriculture and Animal Husbandry.

(3) Impact

People involved in the dairy industry that underwent training at the Institute mastered techniques for manufacturing a new product (a yogurt drink) and have brought their test samples to urban markets on an experimental basis. Thus, a new center for technology development and training regarding dairy products has taken shape in food production areas in northern China. A manufacturing shift from the old traditional home production and consumption to production for product sales is now being promoted. The socioeconomic impact is great and future development of the dairy product industry in Inner Mongolia Autonomous Region is expected.

(4) Relevance

The correction of disparities between coastal areas and inland regions is a priority item in China's national development plan. The goals of this project were consistent with the policies of the Government of China from the beginning until the present. They are also consistent with the policies of Inner Mongolia Autonomous Region, which are trying to promote stockbreeding and the manufacture of traditional food products.

(5) Sustainability

Organizationally, continued support can be expected from related organizations. There have also been moves toward merging the Inner Mongolia Institute of Agriculture and Animal Husbandry with another institute to form a university.

The Inner Mongolia Institute of Agriculture and Animal Husbandry's main source of income is from the manufacture and sale of dairy products. However, there is a limit to production capacity because their manufacturing plant was built for training purposes. Therefore, from now on, it will be necessary for the Institute to strive for financial independence through production of high-income products such as creams and butter for hotels and accepting contracts for the development of and research on dairy products.

Since the executives of the Institute do not sufficiently recognize the importance of operation and management and the Institute relies heavily on aid organizations, particular improvement is needed in order to continuously develop the fruits of this project.

6. Lessons Learned and Recommendations

(1) Lessons Learned

When drawing up project plans, a hard look at organizational cultivation and independence after completion of the project must be taken, and the soft aspects of cooperation, such as the development of managerial capabilities, must be incorporated as part of the task. In addition, the impact on related markets due to technology transfer and the dissemination of technical results to outside organizations need to be fully considered from the planning stage.

China

Forest Protection Research Project in the Ningxia Hui Autonomous Region

Project Sites

Ningxia Hui Autonomous Region

1. Background of Project

Since 1987, reforestation had been advancing in the Ningxia Hui Autonomous Region of China, including target areas of the Three-North Shelter Belt System. However, in later years, certain insects that were harmful to the forest, predominantly the long-horned beetle, were found. The blighted trees amounted to 40,000 cubic meters annually. The damage in the Ningxia Hui Autonomous Region was the most marked. As a result, the Government of China established the Forest Protection Research Center in the Autonomous Region and requested project-type technical cooperation from Japan for the research and development of technology to prevent forest damage caused by insects.

2. Project Overview

(1) Period of Cooperation

1 April 1994-31 March 1999

(2) Type of Cooperation

Project-type technical cooperation

(3) Partner Country's Implementing Organization

Ningxia Science and Technology Commission, Ningxia Forest Bureau

(4) Narrative Summary

1) Overall Goal

The Ningxia Forest Protection Research Center proposes ways to prevent damage caused by insects to forests in target areas of the Three-North Shelter Belt System.

2) Project Purpose

A base for implementation of independent and ongoing research on the prevention and extermination of insects harmful to forests at the Ningxia Forest Protection Research Center is established.

3) Outputs

a) Forest damage situations due to insects are understood.
b) Research into the ecology in which insects breed is clarified.
c) Ways to control insects is researched.
d) Model forests and equipment for research on pest control technology are developed.

4) Inputs

Japanese Side

Long-term experts	8
Short-term experts	36
Trainees received	17
Equipment	176 million yen
Local cost	73 million yen

Chinese Side

Counterparts	12
Land and facilities (Center, parking lot, etc.)	3.79 million yuan (approx. 55 million yen)
Local cost	3.02 million yuan (approx. 44 million yen)
Clerical employees	13

3. Members of Evaluation Team

Team Leader:
Mr. Akihiko TAKEYA, Director, Forestry Division, Forestry and Forest Research Institute, Forestry Agency, Ministry of Agriculture, Forestry and Fisheries

Prevention Technology:
Mr. Shuichi NAKASHIMA, Chief, Chemical Control Laboratory, Forestry and Forest Research Institute, Forestry Agency, Ministry of Agriculture, Forestry and Fisheries

Forest Insects:
Mr. Shunichi MAKINO, Chief, Insect Taxonomy and Ecology Laboratory, National Forest Research Institute, Ministry of Agriculture, Forestry and Fisheries

Evaluation Planning:
Ms. Shoko KATO, Forestry Cooperation Division, Forestry and Fisheries Development Cooperation Department, JICA

Evaluation Analysis:
Mr. Shinsuke TSURUTA, Director, Regional Planning International Co., Ltd.

Interpreter:
Ms. Akiko KAMIYA, Japan International Cooperation Center

4. Period of Evaluation

23 November 1998-5 December 1998

5. Results of Evaluation

(1) Efficiency

Inputs on the Japanese and Chinese sides were all appropriate in terms of timing, quality and quantity, thus contributing to the realization of outputs. The Ningxia Forest Protection Research Center is an organization that was newly created in conjunction with the initiation of this project. The Chinese side transferred researchers from the Ningxia Institute of Agriculture and Forestry and the Ningxia Department of Forestry to become counterparts in the project. Because of this, there were weaknesses in organizational management and these had an effect on the efficiency of project implementation.

(2) Effectiveness

Through this project, the actual state of the damage being caused to the forests by the insects was grasped and research into the ecology in which these insects breed and technology to keep them under control has been progressing at the Center. Improvements have also been seen in the counterparts' research capabilities, and 27 of their research papers have been published in a collection of the Center's research treatises.

However, further cooperation from the Japanese side will be effective regarding systematization of each type of insect control technology, research management, maintenance of equipment, and utilization of model forests.

(3) Impact

Through the implementation of this project, the importance of forest protection has been widely promoted to the general public. The level of expertise and technology of those working in forest conservation concerning control of harmful insects has also improved and forest conservation activities have become lively in the region.

As for the Three-North Shelter Belt System, the fruits of the Center's activities are now held in high regard even by the Central Government Forestry Section, amid developments such as expanded damage caused by harmful insects in the target areas and the damage caused by flooding in 1998.

(4) Relevance

This project is consistent with the Three-North Shelter Belt System and other national policies. In addition, the Chinese side's interest in this project, which is aimed at forest conservation, has risen due to the forest damage by flooding in 1998. Therefore, this project is deemed as highly relevant.

(5) Sustainability

The damage to forests in the Ningxia Hui Autonomous Region caused by insects is great. The regional government fully recognizes the seriousness of the situation, having been responsible for the assignment of counterparts, construction of research facilities, securing of land for testing and research costs. Based on this situation, the

Forestry Department of the Autonomous Region has decided that the Center will remain as a permanent organization even after the completion of the project. Therefore, there is no problem with sustainability in terms of the institution. In order to maintain and improve the research level from now on, it is desirable that joint research and academic exchange are carried out vigorously.

6. Lessons Learned and Recommendations

(1) Lessons Learned

In cases where a new organization is established as a project-implementing organization, a certain amount of time is necessary before the organization itself begins to function efficiently. Because obstacles to decision-making and the goal setting process occur during this time, the formulation of a plan that predicts such obstacles is indispensable.

(2) Recommendations

Since fine-tuning to the systematization of pest control technology and the development of a research management system are essential for the further sustainability of the Center, it is advisable that Japan provide follow-up cooperation for two years. From the standpoint of effective use of the equipment supplied, it is also desirable that a system is developed wherein equipment can be used in advancing joint research with other research organizations and also by other research organizations.

7. Follow-up Situations

Based on the above recommendation, a two-year follow-up cooperation ending in March 2001 is being implemented.

China

The China Energy Conservation Training Center in Dalian

Project Sites

Dalian

1. Background of Project

In 1979, the Chinese government formulated a plan to curtail energy consumption in the year 2000 to within twice that of 1980.

The government also established the Energy Conservation Training Center in Dalian to draw company engineers from all over China and conduct training for energy conservation. For this reason, China requested project-type technical cooperation in skilled worker education from Japan.

Japan began project-type technical cooperation in 1992 and also enacted follow-up cooperation one-and-a-half years after the project's completion in 1997.

2. Project Overview

(1) Period of Cooperation

9 July 1997-8 January 1999

(2) Type of Cooperation

Project-type technical cooperation (Follow-up cooperation)

(3) Partner Country's Implementing Organization

Dalian Economic Commission

(4) Narrative Summary

1) Overall Goal

To promote the spread of energy conservation technology throughout China.

2) Project Purpose

The Energy Conservation Training Center in Dalian is able to train experts on energy conservation throughout China.

3) Outputs

a) A management system at the Center is established.

b) Training capacity of counterparts in energy conservation technology (industry management technology, heat management technology, electricity management technology) is improved.

c) An energy conservation research course is established at the Center.

d) The Center establishes a foundation for the spread and publishing of energy conservation information.

4) Inputs

Japanese Side

Long-term experts	4
Short-term experts	9
Equipment	18 million yen
Local cost	7 million yen

Chinese Side

Counterparts	31
Land and facilities	
Equipment	61,000 yuan (approx. 1 million yen)
Local cost	1.6 million yuan (approx. 24 million yen)

3. Members of Evaluation Team

Team Leader:

Mr. Taichiro KAWASE, General Manger, International Engineering Department, Energy Conservation Center

Evaluation Analysis:

Mr. Hideyo SHIMAZU, Unico International Corporation

Interpreter:

Mr. Yuzuri HANAZONO, Japan International Cooperation Center

4. Period of Evaluation

9 November 1998-18 November 1998

5. Results of Evaluation

(1) Efficiency

Despite the follow-up cooperation's short length of only one-and-a-half years, technology transfer was carried out efficiently, because, in addition to the fact that the purpose of the program was clear, the experts and counterparts were able to come to an intimate mutual understanding. The counterparts' understanding towards energy conservation was high, and they seriously attempted to master practical technology; this also contributed to a smooth transfer of technology.

(2) Effectiveness

The management system of the Energy Conservation

Training Center was strengthened and the total number of trainees at the Center rose from 1,068 in March 1997 to 2,336 in November 1998. The number of factories at which the Center conducted diagnostic examinations of energy also increased across the board, from five companies in March 1997 to 25 in November 1998.

Also, at the Center, information concerning energy conservation technology is being disseminated countrywide through seminars, energy exhibitions, the publishing of advertisements, and the production of instructional videos. Through this follow-up cooperation, the Center's function has been enhanced.

(3) Impact

The counterparts' work capacity has improved remarkably. Counterparts have become able to run diagnostic examinations of energy, propose improvements and conduct training in response to the various needs of companies including measurements of the efficiency of steel, cement, boilers, oil, and electricity. These abilities are highly valued, and counterparts have also been able to serve as instructors for training conducted through Japan's Association for Overseas Technical Scholarship (AOTS).

Beginning with the four largest oil chemistry companies, companies that had undergone a diagnostic examination by the Center have managed to cut expenses through energy conservation.

(4) Relevance

As explained above, the Center's training and factory diagnosis record have doubled as a result of this follow-up cooperation. This project has responded to the energy conservation technology needs that have increased commensurate with the development of industrialization of China, and its relevance is high.

(5) Sustainability

Regarding institutional aspects, through a Dalian municipal ordinance (bill), the Center has been granted the right to conduct energy conservation observations. In addition, the Dalian Economic Commission has indicated that it will maintain the Center in the same way it has been until now. The State Economic and Trade Commission has also proposed continued support of the Center. Therefore, the Center seems poised to establish itself as China's national center for energy conservation.

In terms of finances, the Dalian Economic Commission has indicated its recognition of the Center's autonomy in the budget allocation for the Center. Thanks to this, income from energy conservation diagnoses and observations and from contracted training can be expected.

Finally, on the technological front, counterparts have become able to implement paid training and energy conservation diagnoses and observations, and therefore, a foundation for sustainable development has been laid.

Trainees practice diagnosis at a steel factory

A short-term expert conducts training

China

The Computer Software Technology Training Center

Project Sites

Beijing

1. Background of Project

In its Eighth Five Year Plan, China deemed the development of its computer software technology to be an important policy. Given the importance of training and educating the scarce numbers of software technicians, the Government of China established the Computer Software Technology Training Center and requested that Japan implement project-type technical cooperation at the Center in order to enhance software development capacities and promote industrialization.

2. Project Overview

(1) Period of Cooperation

12 November 1993-11 November 1998

(2) Type of Cooperation

Project-type technical cooperation

(3) Partner Country's Implementing Organization

The Institute of Scientific and Technical Information of China

(4) Narrative Summary

1) Overall Goal

More technicians in China's computer software management field are cultivated.

2) Project Purpose

The Computer Software Technology Training Center becomes able to implement computer software technology that is of high quality and well suited to market needs.

3) Outputs

a) Instructors for system development and management technology are cultivated.
b) The curriculum for the training course is developed.
c) Training facilities and equipment are provided.
d) Training materials and manuals for the training program are created.

4) Inputs

Japanese Side

Long-term experts	10
Short-term experts	24
Trainees received	14
Equipment	410 million yen

Chinese Side

Counterparts	21
The training center	
Equipment	1.25 million yuan (approx. 19 million yen)
Local cost	15.9 million yuan (approx. 230 million yen)

3. Members of Evaluation Team

Team Leader:
Mr. Fumio YAMASHITA, Deputy Director, First Technical Cooperation Division, Mining and Industrial Development Cooperation Department, JICA

Technical Cooperation Planning:
Mr. Hiroshi SAWANO, Information Service Industry, Machinery and Information Industries Bureau, Ministry of International Trade and Industry

Equipment/Training Planning:
Mr. Shinichi SASAKI, Overseas Systems Department, Information Systems Division, Hitachi, Ltd.,

Evaluation Management:
Mr. Keiji KONDO, First Technical Cooperation Division, Mining and Industrial Development Cooperation Department, JICA

Evaluation Analysis:
Mr. Ryujiro SASAO, IC Net Ltd.

Interpreter:
Ms. Mari HIROSE, Japan International Cooperation Center

4. Period of Evaluation

17 August 1998-2 September 1998

5. Results of Evaluation

(1) Efficiency

Because the quantity, quality and timing of the dispatch of long- and short-term experts and the equipment supply were undertaken in an appropriate manner, the efficiency level of the project was high. Additional counterparts were allocated from the outside and the personnel resource of lecturers at the Training Center was greatly expanded. As a secondary effect,

a human resource network with external organizations was established.

(2) Effectiveness

Not only high quality training among system development/ management technicians, but also various basic training programs that were not scheduled initially were implemented at the Computer Software Technology Training Center. It can be said that the project purpose was met fully.

(3) Impact

A stable framework was established at the Training Center, enabling computer software technology to be spread throughout a wide range of people, from system engineers to the general people.

Furthermore, some of the businesses that dispatched trainees to the Training Center are now able to apply their newly acquired technology to manufacture products for exporting to overseas countries. Thus, the project has attained economic effects.

(4) Relevance

The central items of China's eighth and ninth national five year plans, the development of an information infrastructure and the advancement of the information industry, are consistent with the overall goal of the project. Moreover, in response to the deepening of the market economy policies and the changes in needs of China's computer market that occurred during the cooperation, the project plan was revised accordingly, making the project relevant to China's situation.

(5) Sustainability

The Training Center is considered a principal branch of the Institute of Scientific and Technical Information of China. Excluding a part of the personnel, the Training Center is operated independently. In terms of personnel, a minimal number of full-time staff needed and external lecturers are stationed, making the Training Center well prepared as an organization to respond appropriately to the growing needs of training. Furthermore, because the technical standards of the counterparts are good and well-rooted, institutionally and technologically, the Training Center maintains a position to sustain itself.

However, the Training Center needs to become financially independent in three years time. Though at present, the Training Center's income is increasing, it may be difficult for it to acquire sufficient funds to gain complete independence.

6. Lessons Learned and Recommendations

(1) Lessons Learned

The expansion of the range of lecturers and the establishment of a human resource network, brought about by inviting counterparts from external organizations, are very effective with regard to institutional/technological sustainability. It is desired that counterparts from external organizations be allocated for future training-type projects, if necessary.

With regard to computer-related projects, since technical innovation are remarkably fast in that field, it is important to provide the equipment gradually throughout the cooperation period in order to avoid the hardware and software from becoming out-dated.

(2) Recommendations

The technology transfer for this project and the development of an infrastructure for implementing training programs that meet the demands of the market were completed. Although the financial situation of the Training Center is still unstable, institutionally and technologically, it has enough potential for self-sustainability. Therefore, neither an extension of the cooperation period nor a follow-up cooperation is required.

Mongolia

The Institute of Geology and Mineral Resources

Project Sites

Ulaanbataar

1. Background of Project

Mongolia is famous worldwide for its mineral resources. In particular, it is said that it has the greatest number of copper deposits in the world as well as production of other minerals including coal, fluorite, molybdenum, tin and tungsten. The Government of Mongolia considers the development of mineral resources for the expansion of nonferrous metal sectors the most essential element amid industrialization and its economic development strategies. Thus the mining industry is regarded as the driving force behind economic growth in Mongolia's development plan.

Until 1990, the Government of Mongolia had been receiving aid from the former Soviet Union and countries in Eastern Europe for research on mineral and petroleum resources. However, with the breakdown of the former Soviet Union, the aid received from former Eastern-block countries had greatly decreased. As a result, further self-help efforts by the Government of Mongolia and aid from Western countries were now being counted on in the development of Mongolia's underground resources.

Faced with such circumstances, the Government of Mongolia made a request to Japan for project-type technical cooperation aiming to improve technologies for its geological surveys and resource exploration expertise at the Institute of Geology and Mineral Resources.

2. Project Overview

(1) Period of Cooperation

9 March 1994-8 March 1999

(2) Type of Cooperation

Project-type technical cooperation

(3) Partner Country's Implementing Organization

The Institute of Geology and Mineral Resources

(4) Narrative Summary

1) Overall Goal

Mongolia's mineral resource development is promoted.

2) Project Purpose

Mineral resource survey and analysis technology at the Institute of Geology and Mineral Resources is improved.

3) Outputs

a) Metal deposit surveys are carried out and the resultant data is organized.

b) Sample preparation, instrument analysis and data interpretation are conducted.

c) Analysis and survey results are interpreted and a database is built.

d) Comprehensive evaluations of the geological and mineral aspects in the survey regions are carried out.

4) Inputs

Japanese Side

Long-term experts	9
Short-term experts	30
Trainees received	16
Equipment	324 million yen
Local cost	24 million yen

Mongolian Side

Counterparts	37
Facilities	
Local cost	53.5 million tugrik (approx. 1 million yen)

3. Members of Evaluation Team

Team Leader:

Mr. Kaoru HATTORI, Deputy Managing Director, Mining and Industrial Development Cooperation Department, JICA

Analysis Techniques:

Mr. Masakatsu SASADA, Director, International Geology Office, Geological Survey of Japan, Agency of Industrial Science and Technology, Ministry of International Trade and Industry

Evaluation Management:

Mr. Tomoyuki UDA, Second Technical Cooperation Division, Mining and Industrial Development Cooperation Department, JICA

Evaluation Analysis:

Mr. Hiroshi HASEGAWA, Unico International Corporation

4. Period of Evaluation

1 December 1998-12 December 1998
24 November 1998-12 December 1998 (Mr. Hasegawa only)

5. Evaluation Analysis

(1) Efficiency

Inputs from the Japanese and Mongolian sides were appropriate in terms of quality, quantity and timing, and were efficiently converted into outputs. In particular, the Mongolian side held the project in extremely high regard, and its shouldering the burden of local costs several times more than what was initially planned, contributed significantly to the smooth implementation of the project.

Halfway through the period of cooperation, some counterparts resigned because they were headhunted by foreign-affiliated companies. However, the Mongolian side appointed new young researchers as counterparts and the Japanese side took appropriate measures in this situation as well. Significant damage to the transfer of technology was avoided through these countermeasures.

(2) Effectiveness

In line with the striking improvement in various expertise of the counterparts, the mineral resource survey and analysis capabilities at the Institute of Geological and Mineral Resources also progressed. It is foreseen that the project purpose will be achieved by the end of the period of cooperation.

(3) Impact

As a result of improvements in its mineral resource survey and analysis capabilities, there has been an increase in the number of requests at the Institute of Geological and Mineral Resources for analysis from other institutes, universities, mining-industry related companies, and elsewhere.

The project's research results have been made public through publishing academic journals, holding international seminars and by other means. In the future, the research results from this project will become widespread in Mongolian mineral resource industry circles, and promotion of Mongolia's mineral resource development is anticipated.

(4) Relevance

In Mongolia, which is in a period of transition toward a market economy, mineral resources are essential as a prime mover for acquiring foreign currency. Interest in mineral research development at foreign-affiliated companies also remains high. The project is judged to be highly relevant as it is in keeping with Mongolia's key agenda and needs.

(5) Sustainability

The role and description of activities at the Institute of Geology and Mineral Resources are clearly stipulated in a new mining law relating to mineral resource development, and mineral resource development plan. There are no problems in terms of organizational and institutional sustainability. Also in terms of technology, this project has enabled counterparts to conduct geological surveys and analysis by themselves, and is therefore judged to be highly sustainable. Financial independence is thought to be possible, owing to the fact that in addition to the securing of adequate local costs during the project, in future, some portion of tax revenues will be given priority in their allocation through the new mining law.

Previously, weights had been used, but electric scales made more precise measurement of mineral samples possible

The ICP has facilitated analysis of rare-earth elements, which was previously impossible in Mongolia

6. Lessons Learned and Recommendations

(1) Lessons Learned

As far as a research project is concerned, the publication of academic journals does not just provide an opportunity to announce counterparts' research results, but it can act as an extremely effective means for promoting research activities since it renders possible information exchange with survey centers and research institutes around the world.

(2) Recommendations

It is expected that this project will achieve its purpose, and since it is thought that the Institute of Geology and Mineral Resources will also be highly sustainable following the completion of cooperation, extension of the period of cooperation as well as follow-up cooperation is deemed unnecessary.

Nepal

The Water Induced Disaster Prevention Technical Center Project

Project Sites

Patan

1. Background of Project

In Nepal, because of steep topography and heavy rains during the rainy season, each year there are many cases of landslides, earth and rock avalanches, and flooding that cause great damage to human lives and property. To respond to this situation, the Government of Nepal built the Disaster Prevention Technical Center (DPTC) and planned to improve the center's ability to respond to disasters by carrying out development of related technologies along with training and information management. For this plan, Japan supported the construction of the DPTC through grant aid and implemented technical support through project-type technical cooperation.

2. Project Overview

(1) Period of Cooperation

7 October 1991-6 October 1996
7 October 1996-31 March 1999 (extension)

(2) Type of Cooperation

Project-type technical cooperation

(3) Partner Country's Implementing Organization

Ministry of Water Resources

(4) Narrative Summary

1) Overall Goal

The Government of Nepal's functions for responding to disasters are strengthened.

2) Project Purpose

The DPTC functions as Nepal's central organization involved in preventing disasters caused by water.

3) Outputs

a) The ability to develop the appropriate technologies is cultivated.
b) Nepalese experts and technicians undergo training at the DPTC.
c) Databases that can be applied to prevention, recovery and countermeasures against disasters caused by water are constructed.
d) Public awareness regarding disaster prevention and defense is heightened.
e) Administrative mechanisms at the DPTC are established.

4) Inputs

Japanese Side

Long-term experts	16
Short-term experts	63
Trainees received	34
Equipment	395 million yen
Local cost	238 million yen

Nepalese Side

Counterparts	26
Land and facilities	
Local cost	203 million nepalese rupees (approx. 357 million yen)

3. Members of Evaluation Team

Team Leader:
Mr. Hidetomi OI, Development Specialist, JICA
Comprehensive Disaster Prevention:
Mr. Shigekiyo TABATA, Vice President, Sabo Frontier Foundation
River Planning:
Mr. Atsushi KOMATA, Deputy Director, River Department, Chubu Regional Bureau, Ministry of Construction
Soil Erosion Control and Land Slide:
Mr. Astushi OKAMOTO, Deputy Director, Sabo Division, River Bureau, Ministry of Construction
Evaluation Planning:
Mr. Toru UEMACHI, First Technical Cooperation Division, Social Development Cooperation Department, JICA
Evaluation Survey:
Ms. Yasuyo HIROUCHI, International Development Associates Ltd.

4. Period of Evaluation

23 August 1998-31 August 1998

5. Results of Evaluation

(1) Efficiency

The experts, equipment and other inputs from the Japanese side were appropriate in terms of both quality and quantity. In addition, collaboration with the various concerned Nepalese government ministries and agencies was carried out appropriately under the project and efficiency was satisfactory for the most part.

(2) Effectiveness

The project met all of its goals regarding technology development, training, databases and public awareness activities, and established the status of the DPTC as a guiding organization in the fields of flood damage and landslide damage prevention.

(3) Impact

The project has contributed to the strengthening of mutual collaboration among Nepalese organizations involved in the prevention of flood damage and landslide damage. Moreover, the training and other activities conducted at model sites contributed to heightening prevention awareness among technical staff of related ministries and agencies, local residents and others.

(4) Relevance

This project is relevant in the context of Nepal's current Ninth Five Year Plan.

(5) Sustainability

There are basically no problems in terms of organization, finances and technology.

However, it is thought to be necessary that, in the organizational aspect, the DPTC be early established as a permanent organization. Also in the technological aspect, the development of technologies that are easier to disseminate and their guidelines will be required.

6. Lessons Learned and Recommendations

(1) Recommendations

From now on, in order to promote the dissemination of the technology developed through the project, it will be necessary to prepare technical guidelines by the end of the cooperation period and promote further cost reduction of disaster prevention technologies.

Nepal

The Primary Health Care Project

Project Sites

Nuwakot Bhaktapur

1. Background of Project

The Ministry of Health of Nepal formulated a new health policy in 1991 with the goal of reducing both infant mortality and maternal mortality rates and improving the people's health.

Based on this policy, Japan implemented this project with the goal of expanding health services in rural areas, and also implemented a one-year follow-up cooperation after completion of the original cooperation period.

2. Project Overview

(1) Period of Cooperation

1 April 1993-31 March 1998
1 April 1998-31 March 1999 (Follow-up cooperation)

(2) Type of Cooperation

Project-type technical cooperation

(3) Partner Country's Implementing Organization

Ministry of Health

(4) Narrative Summary

1) Overall Goal

The health of the people in the districts of Bhaktapur and Nuwakot is improved.

2) Project Purpose

Primary health care (PHC) activities in the districts of Bhaktapur and Nuwakot are strengthened.

3) Outputs

a) A system for processing PHC related information is developed.
b) People's participation in the formulation of community health plans is promoted.
c) Community access to health care services is improved.
d) Collaboration between district public health offices and district hospitals is strengthened.

4) Inputs

Japanese Side

Long-term experts	17
Short-term experts	37
Trainees received	17
Equipment	182 million yen

Nepalese Side

Counterparts	13
Facilities	
Local cost	

3. Members of Evaluation Team

Team Leader:
Mr. Akira ENDO, Executive Director, Department of Health and Human Service, Saitama Prefectural Government

PHC:
Mr. Toshitaka OMURA, Director, Chuo Public Health Center, Saitama Prefectural Government

Health Administration:
Mr. Noboru OGAWA, Director, Public Health and Welfare Policy Division, Health and Welfare Department, Saitama Prefectural Government

Evaluation Planning:
Mr. Takuya OTSUKA, First Medical Cooperation Division, Medical Cooperation Department, JICA

4. Period of Evaluation

5 September 1998-16 September 1998

5. Results of Evaluation

(1) Efficiency

Under this project, public health nurses, pharmacists and public health instructors were dispatched as long-term experts, and pediatricians were continuously dispatched as short-term experts for three-month assignments in order to maximize the cooperation effects. The project was also efficient in that nearly all the experts except project coordinators were dispatched from the Saitama Prefectural Government, and continuity and uniformity of the project were maintained.

On the Nepalese side, health employees and local volunteers actively participated in the project, but there was a need to tackle the lack of the operating funds for the relevant medical facilities, doctors and nurses.

(2) Effectiveness

Through technology transfer to counterparts by utilizing

provided equipment and repair of X-ray rooms, functions of hospitals in the districts were improved. Although a PHC system has not yet been established in part of the Nuwakot District, both of the target districts of the project are becoming models of PHC in Nepal.

(3) Impact

Through public education activities by health employees and local volunteers, participatory health activities have been promoted. In addition, in the target regions, development of the base for PHC, such as an increase in the community awareness of PHC, has been progressing.

(4) Relevance

This project is consistent with Nepal's new health policies aimed at improving the health of the people. In addition, it is relevant in that it encourages the active participation of the communitity, which is indispensable to the dissemination of PHC.

(5) Sustainability

As evidenced by the case of Nuwakot, sustaining PHC activities in hill communities with undeveloped infrastructures and a lack of human and financial resources is not an easy task. However, the awareness of controlling one's own health by oneself is being cultivated among the people in the project area, and therefore further development of PHC activities is expected in the future.

6. Lessons Learned and Recommendations

(1) Lessons Learned

Under this project, the development of infrastructure, including the ensuring of access in hill areas such as Nuwakot, was a pressing task. In projects aimed at PHC activities in regions where infrastructure is not yet developed, the more themes in PHC activities are narrowed down, the more evident the fruits of cooperation will be.

Nepal

The National Tuberculosis Control Project Phase II

Project Sites

Pokhara, Kathmandu

1. Background of Project

For the Government of Nepal's National Tuberculosis Program (NTP), Japan built the National Tuberculosis Center (NTC) through grant aid, and carried out technical cooperation toward the development of measures against tuberculosis centering on the NTC.

Based on the results of the cooperation, the Government of Nepal requested technical cooperation from Japan for Phase II of the project with the goal of strengthening the NTP and expanding the Directly Observed Treatment Short-Course (DOTS) implementation zone.

2. Project Overview

(1) Period of Cooperation

5 July 1994-4 July 1999

(2) Type of Cooperation

Project-type technical cooperation

(3) Partner Country's Implementing Organization

Ministry of Health

(4) Narrative Summary

1) Overall Goal

The effect of tuberculosis on the lives of the people in Nepal is reduced.

2) Project Purpose

The organization and functions of the NTP are strengthened.

3) Outputs

a) Logistics management technology is improved.
b) Tuberculosis bacteria testing technology is improved.
c) DOTS is introduced in western areas, centering on the Regional Tuberculosis Center (RTC).

4) Inputs

Japanese Side

Long-term experts	10
Short-term experts	18
Trainees received	11
Equipment	139 million yen
Local cost	105 million yen

Nepalese Side

Counterparts
Facilities
Local cost

3. Members of Evaluation Team

Team Leader:
Mr. Karafumi FUKUHARA, Managing Director, Medical Cooperation Department, JICA

Tuberculosis Measures:
Mr. Nobukatsu ISHIKAWA, Director, the Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association

Technical Cooperation:
Mr. Kazumi JIGAMI, Deputy Director, Technical Cooperation Division, Economic Cooperation Bureau, Ministry of Foreign Affairs

Cooperation Planning:
Ms. Yasuko KITAHARA, Deputy Director, First Medical Cooperation Division, Medical Cooperation Department, JICA

Tuberculosis Measures Advisor:
P. Y. NOVAL, Tuberculosis Measures Advisor, World Health Organization

4. Period of Evaluation

10 January 1999-23 January 1999

5. Results of Evaluation

(1) Efficiency

Both Japan's and Nepal's inputs were implemented according to plan. The X-ray equipment provided to the RTC was also chosen considering the ability to repair it locally. The holding of DOTS workshops with participation by members of the community was also effective in increasing their awareness of tuberculosis measures.

(2) Effectiveness

Through preparation and revision of an outline of tuberculosis countermeasures, various guidelines, reporting methods and training manuals, etc., the project contributed to the strengthening of the organizations and systems for implementing the NTP. Introduction of DOTS in the model

regions also achieved considerable results in terms of strengthening the NTP and improving tuberculosis treatment, causing the effectiveness to be high.

(3) Impact

Through the establishment of the National Tuberculosis Center (NTC), collaboration with the WHO was promoted. The national seminars and regional seminars implemented under this project promoted awareness of staff regarding tuberculosis, from the central Ministry of Health to district Health Departments.

In addition, DOTS workshops with participation by members of the community were adopted as part of the NTP's activities.

(4) Relevance

In Nepal, the necessity of further strengthening of the NTP and the improvement of tuberculosis treatment through DOTS remains unchanged, and this project is consistent with Nepal's national measures against tuberculosis. Therefore, this project is deemed highly relevant.

(5) Sustainability

In order for this project's results to be distributed throughout Nepal and sustained, further support for the NTP, including strengthening at the regional level, is indispensable.

6. Lessons Learned and Recommendations

(1) Lessons Learned

In expanding DOTS strategy, it is easy for patients in urban areas to be left out of treatment due to movement of population. In addition, in hill areas, there is difficulty in implementing DOTS due to geographical conditions as well as large burdens shouldered by patients. From now on, it will be necessary to further promote collaboration with NGOs and other organizations and consider regional DOTS implementation.

(2) Recommendations

In order for this project to be sustainable and to distribute its results throughout Nepal, the implementation of follow-up cooperation is necessary.

7. Follow-up Situations

Based on the above recommendations, follow-up cooperation is currently being implemented for a period of one year, until July 2000.

Nepal

The Community Development and Forest/Watershed Conservation Project

Project Sites

Kaski, Parbat

1. Background of Project

In the remote hilly regions of Nepal, forest quality had deteriorated due to excessive use of forest resources, and the environment continued to worsen. In the Master Plan concerning forest/watershed conservation and development, it is indicated that cooperation initiated by residents and the improvement of their living conditions are essential for promoting environmental conservation in remote hilly areas.

Based on this suggestion, the Government of Nepal requested project-type technical cooperation from Japan as part of its soil conservation and watershed management plan aimed at improving the natural environment and upgrading land productivity through community development, giving particular consideration for women and the poor, in the remote hilly districts of Kaski and Parbat.

2. Project Overview

(1) Period of Cooperation

16 July 1994-15 July 1999

(2) Type of Cooperation

Project-type technical cooperation

(3) Partner Country's Implementing Organization

Department of Soil Conservation and Watershed Management, Ministry of Forest and Soil Conservation

(4) Narrative Summary

1) Overall Goal

To improve the natural environment in the hill areas in Nepal through community resources (including forest resource and human resources), development and conservation.

2) Project Purpose

To improve the natural environment and land productivity, particularly to mitigate the depletion of forests and other natural resources, and build up the capacity of people for development and conservation of community resources by deployment of exemplary community development activities for the improvement of the living standard of the rural communities, promoting their own initiatives and efforts, and paying due consideration to women and poverty issues.

3) Outputs

a) Models for community resources development and conservation would be establishment and activated based on the people's (both men and women) initiative in Kaski and Parbat districts through the rural community development activities.

b) Methods and related technologies for community resources development and conservation are transferred to Kaski and Parbat DSCO staff and NGO staff.

c) Appropriate methods for community resources development and conservation applicable to other hill areas in Nepal are proposed.

4) Inputs

Japanese Side

Long-term experts	9
Short-term experts	29
Trainees received	16
Equipment	104 million yen
Local cost	138 million yen

Nepalese Side

Counterparts	24
Local cost	22.13 million nepalese rupees (approx. 39 million yen)

3. Members of Evaluation Team

Team Leader:
Mr. Hiroyuki HATORI, Development Specialist, JICA

Drainage Basin Administration/Forest Conservation:
Mr. Yoshiaki TAKEDA, Wood Distribution Division, Forest Policy Planning Department, Forestry Agency, Ministry of Agriculture, Forest and Fisheries

Community Development/WID:
Ms. Nobuko YAMAGISHI, Project Manager, Global Link Management, Inc.

Community Development Methods:
Mr. Hironobu SHIWACHI, United Graduate School of Agricultural Science, Kagoshima University

Evaluation Planning:
Mr. Ichiro SATO, Forestry Cooperation Division, Forestry and Fisheries Development Cooperation Department, JICA

JOCV Evaluation Planning:
Ms. Yukari SAITO, Second Overseas Assignment Division, Secretariat of Japan Overseas Cooperation Volunteers, JICA
Evaluation Analysis:
Mr. Makoto ISHIZUKA, Nippon Koei Co. Ltd.

4. Period of Evaluation

23 November 1998-10 December 1998

5. Results of Evaluation

(1) Efficiency

The inputs on the Japanese and Nepalese sides were appropriate. The collaboration with JOCV was particularly effective. By dispatching JOCV to communities covered by the project, experts were able to accurately grasp the needs of local residents. Conversely, through the experts' support given to JOCV in technical aspects, effective technology transfer was made possible. The utilization of NGOs knowledge in local conditions also contributed to the smooth implementation of the project.

However, an insurgent group attacked one of the site offices and, although no people were hurt, funds were stolen. The office had to be relocated and difficulties in project operation emerged.

(2) Effectiveness

The residents of the areas covered by the project came to a full understanding of suitable and sustainable development and conservation of community resources. They also improved their capacity to put this understanding into practice and are steadily making their way toward the improvement of the natural environment as well as the upgrading of land productivity.

(3) Impact

This project's activities were carried out while giving consideration to disadvantaged members of society such as women and those in low occupational castes[1)], and therefore had a considerable impact. In particular, in the Kaski district, the desire of women to participate in community development projects rose and the men began to recognize women's positive participation. In addition, through community development projects involving income increase and literacy education, women's solidarity, confidence, interest in the outside world and place in the home were improved. Similar results are being shown in the empowerment of occupational castes.

Thanks to the active efforts of NGOs, the Department of Soil Conservation and Watershed Management now recognizes them as partners in implementing the Integrated Watershed Management Plan. As a result, their collaboration has deepened and the implemented functions of the Plan have been strengthened.

(4) Relevance

This project is being advanced with the residents of hilly regions (the beneficiaries) as the direct targets of assistance, using participatory development methods that are based on the requests of the residents. Therefore, the project's activities are consistent with the beneficiaries' needs as well as with the Ninth Five Year Plan of the Government of Nepal. Thus, the project is deemed highly relevant.

(5) Sustainability

The Nepalese side is considering applying the results of this project to other regions and the infrastructure needed to sustain the activities of this project is being formed.

However, there are many financial difficulties facing the continuation of activities. The formulation of policies for the stable and continuous securing of funds is necessary. In addition, in order to sustain and expand this project's activities into the future through resident's participation, further support from the Department of Soil Conservation and Watershed Management will be necessary.

6. Lessons Learned and Recommendations

(1) Lessons Learned

Under this project, as part of community development activities, community level sub-projects in response to residents' requests were always implemented. Therefore, the results of individual sub-projects were scattered, causing difficulty in organically connecting each sub-project and thus difficulty in using them to work toward to the project purpose of improving the natural environment. It is important to organize and summarize the desires of residents toward the project purpose and overall goal, based on consensus through ongoing dialog with residents in order to lend mutual relevance between the plan and sub-projects.

1) Originating from Hinduism. Occupations are traditionally passed down hereditarily to determine social standing.

Pakistan

Civil Air Transport

Project Sites

Karachi

1. Background of Project

When airline accidents occur there is a high potential for tragic disaster. Continuous training of personnel is indispensable to securing airline safety. Such training demands a wealth of expertise and experience and requires advanced high-tech equipment and the skills to operate it.

Because of these requirements, there are many developing countries that are unable to implement training consistent with international standards on their own. For this purpose, a third country training program for Asian and African airline personnel that could be participated in free of charge was implemented at the Pakistan International Airlines (PIA) Training Center, which had trained its own employees as well as those of over 30 other airlines since its establishment in 1956. The training program started in FY1987 with an initial period of five years. Later, the cooperation period was extended for the three years from FY1992, and for an additional five years from FY1995.

2. Project Overview

(1) Period of Cooperation

FY1995-FY1999

(2) Type of Cooperation

Third country training program

(3) Partner Country's Implementing Organization

Pakistan International Airlines (PIA) Training Center

(4) Narrative Summary

1) Overall Goal

To have airport and airline enterprises operate accurately and safely in countries participating in training.

2) Project Purpose

To have trainees from Asia and Africa acquire advanced expertise and skills regarding safe air transportation.

3) Outputs

a) Trainees learning operation management and aviation control.

b) Trainees acquiring expertise and skills regarding safety management and fuel control in air transportation.

c) Trainees understanding the roles of the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA).

4) Inputs

Japanese Side

Short-term experts	5
Training expenses	17 million pakistani rupee (approx. 41 million yen)

Pakistani Side

Instructors	136

Training facilities, equipment and educational materials

3. Members of Evaluation Team

JICA Pakistan Office
(Commissioned to Khwaja Tanawwur & Co.)

4. Period of Evaluation

24 December 1998-27 February 1999

5. Results of Evaluation

(1) Efficiency

Since PIA Training Center was originally set up for training, it had advanced training operation capabilities and suitable instructors, equipment and educational materials.

There were no problems with allocation from the governmental authorities' budget.

However, in recent years, the center has been bogged down in administrative procedures, and this has begun to hinder training. The center is located in Karachi, which is quite far from Islamabad, where the JICA office is situated. This is one factor making it difficult to solve problems swiftly.

(2) Effectiveness

Over four training courses between FY1995 and FY1998, a total of 78 trainees holding middle and upper management position (more than five to ten years of work experience) at civil aviation companies from 21 African and Asian countries have completed training under this program, acquiring advanced expertise and skills regarding air transportation.

According to a questionnaire of trainees that is given out at the end of training each year, an average of about 70% of

trainees over a four-year period responded that the contents of the training matched their expectations and nearly all responded that the contents were practical it can be said that the goals of the training were achieved.

(3) Impact

Due to the importance and special nature of expertise and skill in this field, there is a high probability of trainees staying in this industry and it is anticipated that the skills acquired through this training will be used effectively toward instruction of junior personnel and improvement of airline safety. However, it is difficult to provide training in skills that require special equipment and facilities in individual countries. Therefore, it is anticipated that from now on there will be reliance on overseas training in many areas.

(4) Relevance

Few developing countries have the ability to carry out training for aviation employees in their own country and there is a great need for overseas training programs of this sort. The number of applicants for this raining also increased from 26 in FY1995 to 42 in FY1998, over double the program's capacity, further indicating the high relevance of this training.

(5) Sustainability

The PIA Training Center implements separate training courses on a commercial basis. This training program will also be able to achieve sustainability by making a change in the future.

6. Lessons Learned and Recommendations

(1) Lessons Learned

In cases where third country training programs are carried out continuously, it is important to sufficiently examine the processing capability of the training implementing organization as well as its operating capability in a technical aspect and the training needs of the participating country.

(2) Recommendations

Since its inception in 1987, this training has been carried out 12 times and a significant number of airline company administrators have been trained. The fact that this training can be undergone, using training equipment that participating countries do not have, at no cost to the third country trainees and the organizations to which they belong contributes greatly to aviation safety in participating countries. Although the need for this training remains high, PIA training center also implements separate training programs for Asian and African airline personnel on a commercial basis, and each airline company is carrying out and participating in the necessary training programs through its own efforts. Therefore, this kind of training should be entrusted to the PIA training center's regular training course (commercial basis) and it is appropriate that the JICA training program end in FY1999 as originally scheduled.

A lecture being given at air traffic control

Pakistan

Operation and Maintenance of Construction Machinery

Project Sites

Islamabad

1. Background of Project

Pakistan's Construction Machinery Training Institute (CMTI) was constructed through grant aid enacted in FY1984, and through project-type technical cooperation enacted during the five years following April 1985, the Center's training ability was improved and its machinery was enriched. Afterwards, through after-care cooperation of project-type technical cooperation and the provision of machinery through grant aid, CMTI's expertise and skills concerning the operation and maintenance of construction machinery were accumulated.

Because the establishment of infrastructure is generally a pressing issue in developing countries, in order to spread this accumulated expertise to the countries of Asia and Africa, the Pakistani government requested a third country training program from Japan with the CMTI as the implementing organization.

2. Project Overview

(1) Period of Cooperation

FY1995-FY1999

(2) Type of Cooperation

Third country training program

(3) Partner Country's Implementing Organization

Ministry of Communication, Construction Machinery Training Institute (CMTI)

(4) Narrative Summary

1) Overall Goal

To increase the level of construction machinery skills in each participating country.

2) Project Purpose

To increase the level of construction machinery operation and maintenance skills of the trainees from Asian and African countries.

3) Outputs

a) For the trainees to acquire skills and expertise in regular maintenance.

b) For the trainees to acquire skills and expertise in safety recognition.

c) For the trainees to acquire skills and expertise in testing instruments.

d) For the trainees to understand engine construction.

e) For the trainees to acquire skills and expertise in workshop management.

4) Inputs

Japanese Side

Long-term experts	4
Training expenses	16.8 million pakistani rupee (approx. 38 million yen)

Pakistan Side

Instructors

Training expenses

Training facilities, equipment, and educational materials

3. Members of Evaluation Team

JICA Pakistan Office

(Commissioned to Khwaja Tanawwur & Co.)

4. Period of Evaluation

24 December 1998-27 February 1999

5. Results of Evaluation

(1) Efficiency

The CMTI has attained a high level of technological skill and facilities through Japanese grant aid and project-type technical cooperation, and, because it was originally established as a training facility, has also shown extremely high skill in training management. In addition, thanks to assistance provided by the Ministry of Communication, this training was implemented very smoothly.

However, the fact some trainees did not speak English well affected the entire training schedule. Also, some of the targeted countries did not have a Pakistani embassy, and therefore, despite their need for training, there were few applicants from these countries, their applications were not submitted by the deadline, and the application process did not go smoothly.

(2) Effectiveness

Over the four training sessions until FY1998, a total of 73 basic and high-level construction machinery managers (from construction, housing, and irrigation related ministries and offices) from 18 Asian and African countries completed training under this program. The trainees acquired a wide range of skills and expertise in construction machinery operation and maintenance, from the basic to the applied. As there were some who, although they had already obtained a high level of theoretical understanding in their own countries, had never actually touched a construction machine, this training was a good opportunity to correct skills and expertise that overemphasized the theoretical aspect.

According to the results of a questionnaire survey given to the trainees at the end of every year's training session, more than 95% of trainees over a four-year period responded that the content of the training met their prior expectations, and that it was practical. Therefore, it can be said that the objectives of this training program were achieved.

(3) Impact

Many of the ex-trainees have been working in management-level positions and training subordinates after returning to their countries. According to the questionnaire survey implemented as part of this evaluation, most of the ex-trainees and the organizations to which they were attached reported that the skills and expertise acquired through this training have been utilized in the transmission of expertise within the organization and in the education of the local offices, instructors, and machine operators.

(4) Relevance

Because the establishment of infrastructure is generally a pressing issue in developing countries, there is great demand for skills in this field. However, because many of the countries do not have the spare financial and human resources to invest in training, the need for this training program is high. In fact, the number of participating countries has increased from nine in the first year (FY1995) to 12 in FY1998. The relevance of this training program is as high as before.

(5) Sustainability

There are no problems in the implementation and management of training in the aspects of CMTI's implementation and its facility, but the need for financial assistance from JICA to cover training costs is high.

6. Lessons Learned and Recommendations

(1) Lessons Learned

When choosing participating countries, the question of whether or not the targeted country has an embassy of the host country is an important element in ensuring that the application process is smooth.

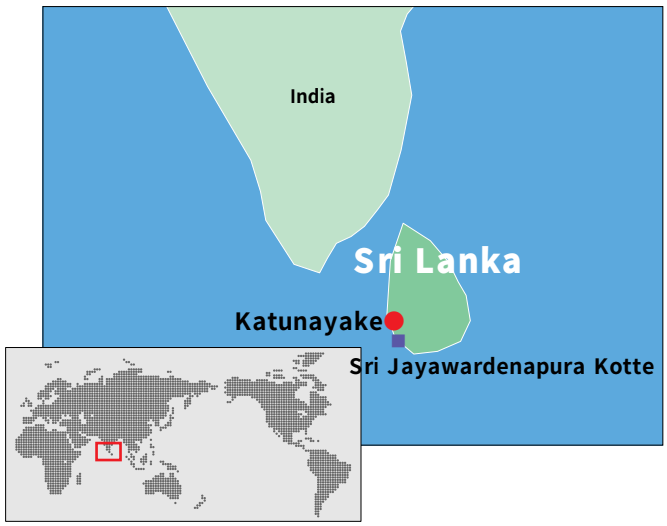
(2) Recommendations

The original five-year training period of this program was scheduled to end in FY1999, but because the need for this type of training is high, it is hoped that this training program will be continued after the reselection of the participating countries, and that the new selection will include countries that have not yet nominated any candidates.

Trainees undergoing work experience

Sri Lanka

The National Plant Quarantine Services Project



Project Sites

Katunayake

1. Background of Project

Agriculture was a key industry in Sri Lanka, and the achievement of staple food self-sufficiency and the acquisition of foreign currency via the export of farm products were the priority state policy goals. The importation of excellent seedlings was indispensable to achieving these goals.

However, in the past Sri Lanka had experienced great damage to products such as coffee, tea and coconuts due to disease and pests. In addition, the inadequacy of its quarantine system for the export of farm products had made Sri Lanka subject to various restrictions imposed by importing countries.

Given such circumstances, the Government of Sri Lanka requested Japan for grant aid to set up the National Plant Quarantine Services (NPQS) facility and project-type technical cooperation in order to equip the NPQS with an efficient and effective plant quarantine system.

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

National Plant Quarantine Services (NPQS), Ministry of Agriculture and Lands

(4) Narrative Summary

1) Overall Goal

Sri Lanka's plant quarantine services are improved.

2) Project Purpose

The NPQS becomes able to smooth implementation of pathological examinations, examinations of pests and sterilization processing.

3) Outputs

a) Basic technologies for pathological examinations, examinations of pests and sterilization processing at the NPQS are improved.

b) Manuals for pathological examinations, examinations of pests and sterilization processing are developed.

c) NPQS becomes able to carry out training for plant quarantine officials.

4) Inputs

Japanese Side

Long-term experts	6
Short-term experts	24
Trainees received	22
Equipment provided	163 million yen
Local cost	17 million yen

Sri Lankan Side

Counterparts	41
Facilities	
Local cost	5.44 million Sri Lankan rupees (approx. 10 million yen)

3. Members of Evaluation Team

Team Leader:

Mr. Isamu MAEJIMA, Director, Tokyo Branch, Yokohama Plant Protection Station, Ministry of Agriculture, Forestry and Fisheries

Plant Quarantine Technology:

Mr. Shigeyoshi SATO, Research Division, Yokohama Plant Protection Station, Ministry of Agriculture, Forestry and Fisheries

Sterilization Processing Technology/Pests Examination Technology:

Mr.Masahiro TAO, Moji Plant Protection Station, Ministry of Agriculture, Forestry and Fisheries

Technical Cooperation:

Mr. Motoharu WAKABAYASHI, Agricultural Technical Cooperation Division, Agricultural Development Cooperation Department, JICA

Evaluation Analysis:

Mr. Hajime SONODA, IC Net Ltd.

4. Period of Evaluation

17 January 1999-29 January 1999

5. Results of Evaluation

(1) Efficiency

Inputs by both the Japanese side and the Sri Lankan side were carried out according to plan for the most part. The facilities and equipment provided through grant aid were utilized effectively and the necessary consumable items were also sufficiently supplied.

This project was implemented extremely efficiently thanks to several facts: two long-term experts had been already dispatched at the NPQS before the start of the project as individual experts; responsible personnel on the Sri Lankan side fully recognized the importance of plant quarantine and there were no personnel changes during the cooperation period; solidarity among leaders on both sides was strong; experts and counterparts made efforts for mutual understanding; and the project enjoyed the full support of Japan's Plant Protection Stations.

However, personnel changes involving some counterparts in the area of sterilization treatment, late arrivals of machinery in Sri Lanka, and delays in customs clearance and pick up caused obstructions to technology transfer.

(2) Effectiveness

In Sri Lanka, high quality and uniform fruit could not be secured due to the absence of developed plant production, collection and distribution/storage systems, and testing aimed at developing sterilization treatment methods was insufficient. However, the counterparts acquired basic technologies concerning pathological examinations, examinations of pests and sterilization treatment. Some of these technologies are already being put to use in their work. Training for plant quarantine officials was also initiated. From now on, based on the Sri Lankan side's self-help efforts, the improvement of quarantine technologies and the preparation of manuals are expected.

(3) Impact

The upgrading of technology standards at the NPQS, development of quarantine manuals and training for technical experts have produced definite results. The project also enabled NPQS to deepen its ties with other quarantine stations and Sri Lanka's plant quarantine services continue to improve. Moreover, a deeper understanding of the importance of plant quarantine has been gained with the promotion of work to review the entire plant quarantine system, including the maintenance of its legal system and its organizational structure.

(4) Relevance

The project purpose and the overall goal of this project are consistent with the agricultural policy goals of Sri Lanka, and therefore this project is highly relevant.

(5) Sustainability

Sustainability from now on will require improved finances for plant quarantine, the strengthening of management in related institutes centering on the NPQS, knowledge and technology sharing within related institutes, improvement of access to the latest technology information, establishment of machinery maintenance and repair systems, and the securing of budgets.

Counterparts discussing how to perform an experiment

A counterpart inspecting supplied equipment

Continual effort by the Sri Lankan side will be necessary.

6. Lessons Learned and Recommendations

(1) Lessons Learned

The transfer of sterilization treatment technology is more effective when it is implemented after production technology for the items to be sterilized (tropical fruit trees, etc.) is established to ensure a certain level of quality of the items is ensured.