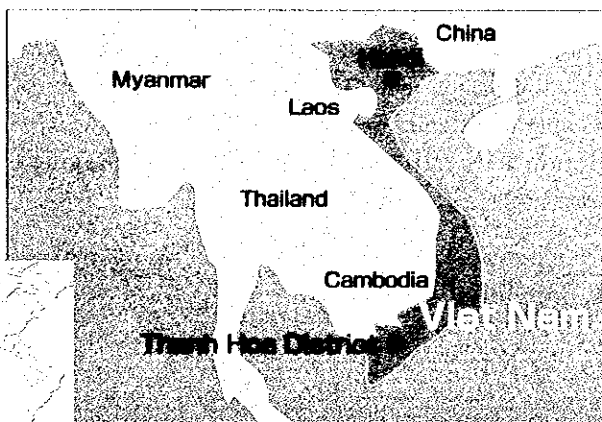


The Afforestation Technology Development Project on Acid Sulphate Soil in the Mekong Delta



Project Sites

Thanh Hoa District (Long An Province)

1. Background of Project

In the Mekong Delta area of South Viet Nam, half the area (2 million hectares) is covered by acid sulphate soil. Most of the grassland in this area is not used effectively and devastated. Thus, effective utilization of acid sulphate soil in the Mekong Delta is an important task for South Viet Nam. Accordingly, the Government of Viet Nam requested technical cooperation from the Government of Japan to better utilize the area, integrating agriculture and afforestation, including the introduction of Melaleuca which is used by farmers as a source of firewood and oil.

2. Project Overview

(1) Period of Cooperation

20 March 1997-19 March 2000

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organization

Forest Science Institute of Viet Nam, International Cooperation Development, Ministry of Agriculture and Rural Development

(4) Narrative Summary

1) Overall Goal

To promote effective and sustainable use of utilized land with acid sulphate soils in the Mekong Delta for forestry and agriculture.

2) Project Purpose

To develop practical afforestation technology for the land with acid sulphate soils in the Thanh Hoa area, Long An Province.

3) Outputs

- a) Developed soil improvement technologies for acid sulphate soils in the Thanh Hoa area.
- b) Selected tree species adaptable to acid sulphate

soils in the Thanh Hoa area.

- c) Developed techniques of nursery practices and care for tree species adaptable to acid sulphate soils in the Thanh Hoa area.
- d) Proposed methods to mitigate negative effects on the surrounding environment caused by leaching of harmful substances from acid sulphate soils.
- e) Produced appropriate guidelines of substances harmful to acid sulphate soils.
- f) Established demonstration forest on acid sulphate soils.

4) Inputs

Japanese Side

Long-term experts	4
Short-term experts	15
Trainees received	11
Equipment	approx. 88 million yen
Local cost	approx. 75 million yen

Vietnamese Side

Counterparts	14
Land, facilities and experimental forest	
Local cost	approx. 1.17 billion don (8.87 million yen)

3. Members of Evaluation Team

Team Leader:

Yoshiaki KANO, Managing Director, Forestry and Fisheries Development Cooperation Department, JICA

Silviculture and Nursery:

Hiromichi ONODERA, Section Director, Silviculture Section, Forestry Technology Division, Forestry and Forest Products Research Institute (FFPRI), Ministry of Agriculture, Forestry and Fisheries (MAFF)

Soil:

Kazuhito MORISADA, Chief of Site Evaluation Laboratory, Forest Site Environment Section, Forest

Environment Division, FFPRI, MAFF

Planning Evaluation:

Hitoshi HORI, Project Officer, Forestry Cooperation Division, Forestry and Fisheries Development Cooperation Department, JICA

Evaluation Analysis:

Hajime SONODA, IC Net Limited

4. Period of Evaluation

4 October 1999-16 October 1999

5. Results of Evaluation

(1) Efficiency

Inputs to the project were mostly appropriate and utilized effectively. The efficiency of the project was high in the sense that the project was implemented by a small number of experts in a short period, in spite of the fact that technical transfer and development covered broad areas. However, one shortcoming was that several activities were implemented simultaneously rather than consecutively. Consequently, the project leader and soil improvement experts were overburdened with work.

(2) Effectiveness

The project was implemented according to schedule and successfully, though the abnormal climate in 1998 and 1999 and the forest fire in 1998 caused problems for field experiments. Some of the new techniques regarding Melaleuca plantations were put into practical use before the end of the project. For example, Melaleuca that was introduced from Australia showed rapid growth and therefore yielded sooner than expected. However, many other experiments started by the project are still ongoing and can not be completed by the end of the project period. For one, planting trials must be monitored until the first yield. Therefore, it is too early to evaluate the practical applicability of newly proposed techniques taking economic aspects into consideration.

(3) Impact

With the Vietnamese policy of encouraging forest plantation and high marketability of Melaleuca poles for construction as a driving force, the improved techniques were put to practice immediately, and the intended impacts realized before the end of the project period. For example, farmers living near the project site would visit the project and introduce the new techniques, and this contributed to the expansion of Melaleuca plantations.

(4) Relevance

The effective utilization of acid sulphate soil is very important for development and poverty alleviation in the



Selection of seedlings of Melaleuca

region. The Vietnamese Government launched an extensive afforestation program under their agriculture development policy. Thus, the relevance of the project is judged as high, its purpose matching the needs and policy of the area.

However, the project term (three years) was too short to achieve the project purpose "to develop practical afforestation technology for the land with acid sulphate soils".

(5) Sustainability

The Forest Science Institute acquired organizational capacity and a sufficient number of staff to operate the institute independently. Nevertheless, financial sustainability could not be assured at the time of evaluation due to financial constraints of the Vietnamese Government.

6. Lessons Learned and Recommendations

(1) Lessons Learned

To realize more efficient technological development, it is necessary to examine the areas covered by the project, to ensure the appropriate number of experts and set up an appropriate project period.

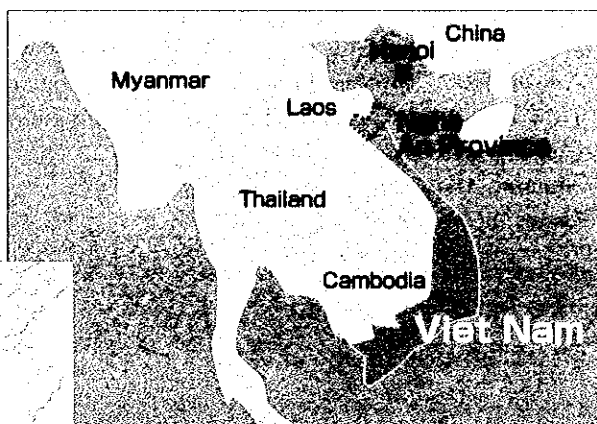
(2) Recommendations

Follow-up cooperation was recommended in fields such as the management techniques of a planted forest and further analysis of the data collected by the project, in order to improve the precision of research outcomes.

7. Follow-up Situation According to the above

According to the above recommendation, Follow-up cooperation is being implemented for two years from March 2000 to March 2002.

The Reproductive Health Project in Nghe An Province



Project Site Nghe An Province

1. Background of Project

Viet Nam has established an efficient health service system that covers its entire population with a relatively small budget. Viet Nam has a larger number of health-service personnel than its neighboring countries. However, many health-service personnel have not been trained properly, and the quality of perinatal care remains unsatisfactory. As a result, perinatal complications are the main cause of death among patients in public-health facilities, and the Maternal Mortality Rate has not declined since the 1980s. With this situation, the Vietnamese Government requested technical cooperation from Japan to strengthen the public-health administration and improve community health services. Nghe An Province was selected as the project's model area since its poverty situation was more severe and the number of midwives scarce.

2. Project Overview

(1) Period of Cooperation

1 June 1997-31 May 2000

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organization

Nghe An Province

(4) Narrative Summary

- 1) Overall Goal
Reproductive Health (RH) of women is improved in Nghe An Province.
- 2) Project Purpose
Reproductive Health of women of reproductive age with special focus on communal women in the intensive area is improved in Nghe An Province.
- 3) Outputs
 - a) Project Units (PUs) are established at all levels (Maternal & Child Health / Family Planning Center at province level, and Health Centers at district and commune level)
 - b) Quality of health personnel with focus on communal level is improved.
 - c) Necessary medical equipment is improved.

- d) Necessary health facilities are improved.
- e) Capacity of mobile teams is improved.
- f) Sufficient necessary drugs and contraceptives are provided.
- g) Information, education and communication (IEC) on RH is improved.

4) Inputs

Japanese Side

Long-term experts	3
Short-term experts	28
Trainees received	8
Equipment	92 million yen
Local cost	80 million yen

Vietnamese Side

Counterparts	8
Land and facilities	9 million yen
Local cost	26 million yen

3. Members of Evaluation Team

Team Leader:

Taro TAMADA, Professor Emeritus, Jichi Medical University

Cooperation Planning:

Akira HASHIZUME, Director, First Medical Cooperation Division, Medical Cooperation Department, JICA

Midwifery Education:

Yasuko AOKI, Professor of Nursing and Midwifery, Kiryu Junior College

Project Management:

Sumie YAMAGUCHI, Director, Development Planning Department, JOICEP

NGO Collaboration:

Ryoichi SUZUKI, Director, Information Division, JOICEP

Project Evaluation:

Tsuyoshi ITO, Researcher, IC Net Ltd.

Interpreter:

Yoshie NASU, Training Coordinator, Japan International Cooperation Center

4. Period of Evaluation

16 December 1999-28 December 1999

5. Results of Evaluation

(1) Efficiency

In this project, the collaboration among the three main groups (health facilities such as communal health centers (CHCs), the project's main activity base at the communal level; communal people's committee which is in charge of health service administration and budgeting; and women's unions which work directly with community women) was very effective. Further, it was evaluated that the fact that the project allocated 59 percent of its total budget to the communal level and focused more on the communal level contributed to achieving the project objectives more effectively.

(2) Effectiveness

Outputs such as improvement of perinatal services at CHCs and improvement of CHC staff were achieved. As a result, the average number of ante-natal visits per pregnant woman (average of eight target provinces) has increased from 1.9 in 1995 to 3.3 in June 1999, surpassing the target number of "3 visits per pregnant woman". Furthermore, all the objectively verifiable indicators established such as the percentage of pregnant women who received ante-natal care and the percentage of delivery at CHCs have improved, and it was recognized that the reproductive health status of women of reproductive age in Nghe An Province has improved, thereby contributing to achieving the project purpose. However, it was difficult for the project to fully improve the quality of care of CHCs within the project's short cooperation period of three years, and some of the indicators established for evaluation have not yet shown improvement. Therefore, it was judged that the expected level of performance of the project would not be attained before the end of the cooperation period.

(3) Impact

Although it was difficult to judge the level of achievement of the project's overall goal (measured by the Maternal Mortality Rate (MMR) in eight provinces), the average MMR in the targeted areas decreased from 27.6 in 1995 to 24.3 in June 1999. On the other hand, the project's performance was recognized by others in this field, and some technologies introduced by the project were adopted in other districts. Thus, it is assumed that the potential of project activities might be diffused among the neighboring areas in the future.

(4) Relevance

Within the five-year plan (1996-2000) of the Ministry of Health of Viet Nam, maternal and child health and family planning were considered important issues. Specifically, the five-year plan emphasizes issues such as strengthening human resources and the infrastructure of CHCs, ante-natal counseling at communal level, promotion of delivery attended by health personnel, promotion of family planning, and strengthening mobile services by district hospitals. As all of these issues



Group interview at communal health center.

coincide with the contents of the project, it was judged that the relevance of the project was high.

(5) Sustainability

Nghe An Province depends on the Ministry of Health for 50 percent of the total budget required for Maternal and Child Health; therefore, the financial sustainability after the termination of project was questioned. Further, as to organizational sustainability, the province lacked sufficient human resources to manage the Maternal & Child Health and the Family Planning Center in Nghe An Province (operational institution at district level). Thus, it was suggested that the management capacity of the Center should be improved.

6. Lessons Learned and Recommendations

(1) Lessons Learned

It takes time for Vietnamese counterparts to understand and accept participatory, logical, and objective-oriented project management methodology through PDM, as they are used to "top-down orders" under the communist's one-party rule. In order for them to better practice project management through PDM, they need to experience the entire process of PDM: Planning, Implementation, and Evaluation.

(2) Recommendations

In case the project implements "Phase II cooperation," as requested by Vietnamese Government, the focus should be on the diffusion of the project's impact to the non-target areas, and, at the same time, completion of project activities which were not completed within the phase I period due mainly to time constraints. Further, it was recommended that the period of phase II should be five years in order for the project to establish the model as a final result.

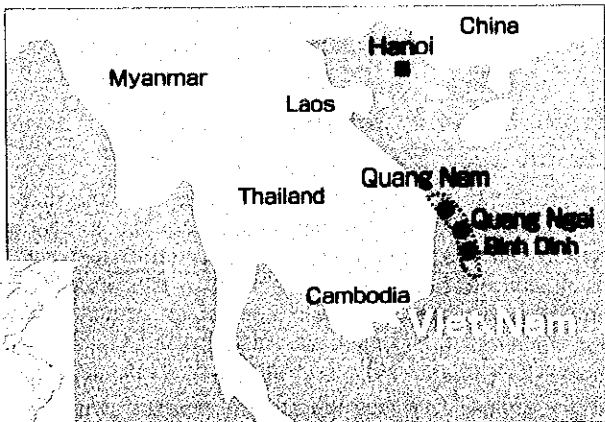
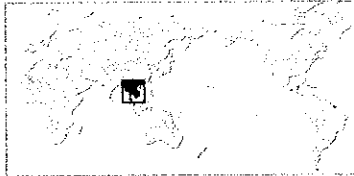
7. Follow-up Situation

In response to the above-mentioned recommendations, phase II, which is to run five years, started from 1 September 2000 and is expected to terminate on 31 August 2005.

The Project for the Improvement the Facilities of Primary Education (Phase IV) (Stage 1/2)

Project Sites

Quang Nam Province (Da Nang City),
Quang Ngai Province,
Binh Dinh Province



1. Background of Project

Emphasizing the development of human resources driven by the transition to a market economy, the Government of Viet Nam had highlighted "Education for All" as a national objective. However, the lack of primary education facilities and the superannuation of existing facilities had compelled Viet Nam to provide lessons on a shift basis (2 or 3 shifts/day), which had in turn created an impediment to improving enrollment and graduation rates. Therefore, the Government of Viet Nam formulated a plan for the rapid enhancement of 610 schools in 30 provinces.

In response to the plan, Japan provided grant aid to enhance primary education facilities in three provinces in the Red River Delta region (Phase I) and three provinces in the north central coastal region (Phases II and III).

Following the previous cooperation, the Vietnamese Government formulated a fourth plan and requested Grant Aid from Japan to establish 40 primary schools in three provinces in the Central Coastal region (including Quang Nam, Quang Ngai, and Binh Dinh) in the first stage, and 40 primary schools in three provinces in the South Central Coastal region (Huu Lien, Khanh Hoa, Binh Thuan) and Quang Ninh Province in the Red River Delta region in the second stage. This evaluation study was carried out to examine the first stage of Phase IV of the project.

2. Project Overview

(1) Period of Cooperation

FY1997

(2) Type of Cooperation

Grant Aid

(3) Partner Country's Implementing Organizations

Department of International Relations, Ministry of Education and Training

(4) Narrative Summary

1) Overall Goal

- a) Human resources necessary for Viet Nam's transition to a market economy are developed.
- b) Education standard in local areas is improved and this contributes to regional development and the alleviation of regional gaps.

2) Project Purpose

The elementary educational environment in Da Nang City and three provinces in the central coastal region (Quang Nam, Quang Ngai, and Binh Dinh) is improved.

3) Outputs

- a) Renovation and construction of 500 classrooms in 40 primary schools is conducted.
- b) Educational facilities (desks, chairs, blackboards, textbooks, etc.) are provided.

4) Inputs

Japanese Side

Grant	Total 2.24 billion yen (E/N amount)
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Vietnamese Side

Land

3. Members of Evaluation Team

JICA Viet Nam Office
(Commissioned to Nhat Viet Co., Ltd.)

4. Period of Evaluation

1 October 1999-15 January 2000

5. Results of Evaluation

(1) Efficiency

All the material resources and equipment used in this project were procured locally even though there were some reservations regarding quality of local materials. However, the materials used were appropriate as a whole considering the regional characteristics of this project, the construction of primary schools, and budget limitations. During the construction period, Japanese consultants and contractors formulated the execution guidelines with illustrations for each type and stage of construction and conducted training in execution methods for the head of the Vietnamese contractor in an effort to guarantee the quality of construction work. In addition, standardization of the design of the school building and facilities enabled construction of a large volume of facilities in broad areas in a short period of time.

As a result of these efforts, all the primary school facilities were constructed as planned and these facilities and educational equipment were delivered to the Vietnamese side.

(2) Effectiveness

All the school buildings and educational equipment were used soon after the delivery to the Vietnamese side. Therefore, it was considered that the project purpose to improve the environment of primary education in the project sites was achieved.

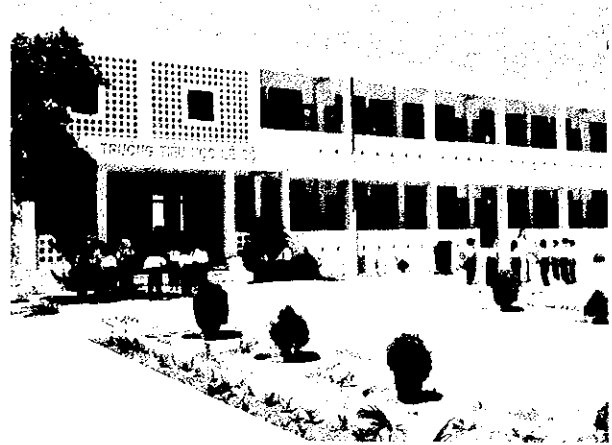
(3) Impact

As a result of the remarkable improvement of educational environment, motivation was enhanced among those students and teachers who were provided with new buildings. Students were naturally conscientious about keeping school buildings clean and using equipment carefully. Also, support for schools by the communities and guardians began to grow spontaneously.

Impacts on technical aspects were that this project contributed to the establishment of various standards and designs for the construction of primary schools in Viet Nam, where the standards of construction and school furniture were not fully established.

(4) Relevance

Since there was a serious shortage and superannuation of primary school facilities in Viet Nam, this project corresponded appropriately to the needs of the three provinces. It was also evaluated that the policy of the project to construct many high-quality educational facilities at minimum cost in a short time frame was



Elementary school constructed by the Project

appropriate and in good consideration of the situation of Viet Nam.

(5) Sustainability

In the areas where primary schools were provided, there was an increasing consciousness to support schools by guardians and communities, and various self-help activities were carried out aiming at making schools clean and beautiful. However, how to allocate the necessary funds for maintaining and further enhancing the facilities in the future remained an issue.

6. Lessons Learned and Recommendations

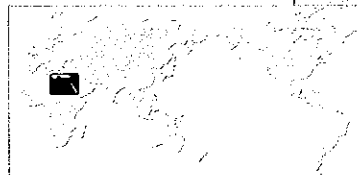
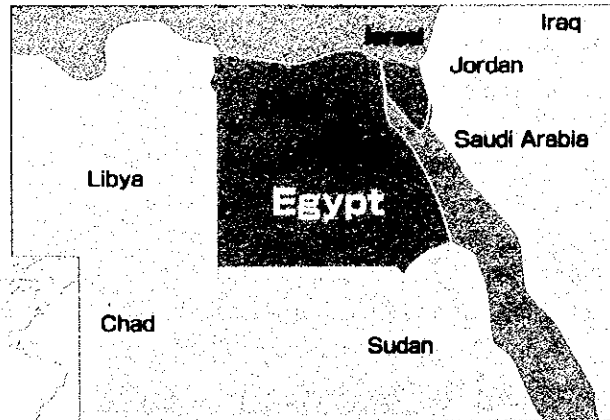
(1) Lessons Learned

In projects aiming at the construction of many facilities in broad areas as was the case with this project, it would be effective to formulate materials and manuals, which are visual and simple, and to give guidance to several contractors at once through training. Although this would take time at the beginning, it would enable smooth progress of the management of operation and quality management and also would make project procedures efficient as a whole.

(2) Recommendations

Phase IV (the second stage) of the Grant Aid program of the project for the improvement of primary school facilities in Viet Nam was almost completed. In response to this situation, it was recommended to organize and analyze the progress of the project throughout the first phase to the fourth, points of improvement and the lessons applicable to other projects.

Total Quality Management System in Metal Forming



Project Site Helwan

1. Background of Project

The Central Metallurgical Research and Development Institute (CMRDI) is directly affiliated with the Ministry of Science and Technology and contributes to the research, development and improvement of production technologies in the mining and industrial sectors in Egypt. The Government of Japan has continuously supported research in the department of welding through technical cooperation since 1985. Based on the welding technologies established by the technical cooperation, the Government of Egypt requested the Government of Japan to provide cooperation that aims at enhancing the quality of industrial products, particularly tin products by transferring the technologies of metal forming and quality management to the CMRDI.

2. Project Overview

(1) Period of Cooperation

1 April 1997-31 March 2000

(2) Type of Cooperation

Experts Team Dispatch Program

(3) Partner Country's Implementing Organization

Central Metallurgical Research and Development Institute (CMRDI)

(4) Narrative Summary

1) Overall Goal

The quality control system of metal forming is established and the stable delivery of high quality products is achieved.

2) Project Purpose

CMRDI effectively transfers its technical skills in metal forming and quality management to the

technicians in enterprises (public & private).

3) Outputs

- a) CMRDI staff acquires the knowledge of total quality management system in the field of sheet metal fabrication technologies such as planning, material selection, processing, welding, painting and testing.
- b) CMRDI staff can transfer their technologies to engineers in the industrial sector.

4) Inputs

Japanese Side

Long-term experts	3
Short-term experts	3
Trainees received	3
Equipment	28 million yen
Local cost	19 million yen

Egyptian Side

Counterparts	19
Facilities and equipment	
Local cost	40,000 Egyptian pounds (1.24 million yen)

3. Members of Evaluation Team

Team Leader:

Mitsuru HAGINO, Development Specialist, JICA

Metal Forming Technologies:

Seiji BAN, Industrial Service International, Co.

Cooperation Planning:

Hiromichi KATAYAMA, Middle East and Europe Division, Regional Department IV, JICA

4. Period of Evaluation

25 March 2000-1 April 2000

5. Results of Evaluation

(1) Efficiency

Most of the inputs were provided as planned, and generally, the project achieved the outputs efficiently. However, a press bending machine fault found after delivery caused a delay in the process of basic technical transfer in the metal forming department using the machine.

(2) Effectiveness

The counterparts understood well the concepts of total quality management and how to achieve standardization. Also, the manual for the quality check list was developed and utilized at the workplace. Although some activities are still ongoing such as the Quality Control (QC) activity, generally the outputs were nearly achieved. However, the activity of technical transfer to outside enterprises, a project purpose, was not yet achieved when the evaluation was made. CMRDI had received many technical inquiries from enterprises, but since the three-year cooperation period limited the degree of technical transfer of the basic technologies, application in industry must continue through steady on-the-job transfer of skills and knowledge.

(3) Impact

As mentioned above, the CMRDI has not gone so far as to provide quality management technologies to other enterprises yet, so there were no significant impacts in the industrial sector. But the counterparts developed several drawings and manuals in the local language, and made efforts to apply the technologies acquired on their own. Therefore, by gaining more experience in the future, it will be possible to transfer technologies to other enterprises and to contribute to enhance the quality of metal-forming-process products in Egypt.

(4) Relevance

As Egypt is now in transition from a government monopoly system to privatization of enterprises, there is an urgent need to promote competition among enterprises. To achieve this, it is necessary to achieve total quality management in each enterprise, and as a research and development institute of metal-forming processes, the CMRDI plays a key role in promoting the industrial sector, so the relevance of this project was confirmed. However, as both the metal-forming process technologies and total quality management were newly introduced ones for the CMRDI, the three-year-cooperation period was too short to achieve the level for technology transfer to other

enterprises.

(5) Sustainability

The basic technology transfer to the CMRDI was almost completed and it was considered that the CMRDI was able to give technical instruction to other enterprises after acquiring more experience.

In the welding and metal-forming process sectors, which were the focus of the project, the CMRDI demonstrated its clear intention to be an authorized organization of ISO that disseminates total quality management (TQM) based on the technology and specific sectors cited above, so it is expected to be sustained on its own.

6. Lessons Learned and Recommendations

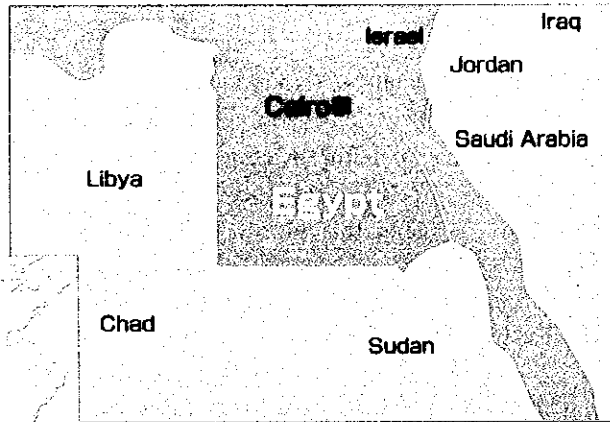
(1) Lessons Learned

As the outputs were almost achieved and the project purpose expected to be achieved in the future, it was recommended that the project be completed at the end of March 2000. However, in order for technicians to increase their practical experience, the Egyptian side requested the Government of Japan to dispatch short-term experts who would address problems faced in the workplace. Regarding this request, the Government of Japan considered to respond as much as possible.

7. Follow-up Situation

Based on the status of CMRDI, a Project-type Technical Cooperation Program titled "Upgrading of Metal Processing Technologies" has begun from October 2000 and will run to September 2004. The aim was to promote technology transfer to the counterparts by granting additional equipment and strengthening technical services to outside groups and enterprises.

The Project for Rehabilitation and Upgrading of Amyria Water Treatment Plant (Phase II)



Project Site Cairo

1. Background of Project

In Egypt, the annual population increase is as high as 2.3 percent, and it is especially high at 3.3 percent in Greater Cairo, the capital region. Along with the population rise, the demand for water in the area has also grown rapidly. The Amyria Water Treatment Plant, one of the largest three water treatment plants in Greater Cairo, could supply 420 thousand m³/day of water (300 thousand m³/day of surface water and 120 thousand m³/day of groundwater) at maximum. However, because of the controlled water intake from groundwater due to its low quality, and the deterioration of the existing facilities, the daily amount of water supply decreased to 330 thousand m³/day, causing a daily water shortage for residents in Greater Cairo. The Government of Egypt requested Grant Aid from Japan in order to increase the water supply capacity of the Amyria Plant.

2. Project Overview

(1) Period of Cooperation

FY 1995, FY 1996, FY 1997

(2) Type of Cooperation

Grant Aid

(3) Partner Country's Implementing Organization

General Organization for Greater Cairo Water Supply (GOGCWS)

(4) Narrative Summary

- 1) Overall Goal
To improve the water supply services in Greater Cairo.
- 2) Project Purpose
To increase the water supply capacity of Amyria Plant.
- 3) Outputs

- a) The facilities of Amyria Plant are rehabilitated and upgraded including facilities for raw water intake, filtration, chlorination, clear water transmission, connection pipes and electrical instrumentation.
- b) Water quality monitoring equipment is installed.

4) Inputs

Japanese Side

Grant	Total 2.86 billion yen (E/N amount)
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Egyptian Side

Counterparts
Land

3. Members of Evaluation Team

Facilities study:

Keiko YAMAMOTO, JICA Expert

Operation and maintenance study:

Mitsutaka HOSHI, Training Division, JICA Hachioji International Training Center

4. Period of Evaluation

5 December 1999-16 December 1999

5. Results of Evaluation

(1) Efficiency

Each stage of the project, including design, procurement and rehabilitation, was implemented smoothly; therefore, project efficiency was evaluated as high. The timing of procurement of equipment and materials was appropriate, despite that for 80 percent of these it took as long as 35 days to be transported from Japan. Although the project was implemented while existing facilities continued operation, no large problems

arose. This was considered partly a result of the overall good coordination among operation /maintenance, supervising and construction staff.

(2) Effectiveness

The project purpose was achieved, as the water supply capacity of Amyria Plant increased to 430 thousand m³/day, which was 100 thousand m³/day more than before the project.

(3) Impact

The project brought positive impacts. The water supply amount per person a day increased by 60 liters in the area served by the Amyria Plant. Water quality also improved since low-quality groundwater was no longer used as a water resource. On the other hand, there was some concern that communication difficulties between the Japanese team and the Egyptian Government during project implementation might adversely impact the operation and maintenance of the rehabilitated facilities by GOGCWS engineers.

(4) Relevance

The purpose and activities of the project were relevant to the needs and policies of Egypt. The project was consistent with the "Third Five-Year Water Supply Plan" and "Water Treatment Plant Development Plan", which are both based on "The Greater Cairo Water Supply Master Plan" formulated in 1979 and updated in 1990.

(5) Sustainability

The rehabilitated and upgraded facilities were well maintained and operated. Since the staff of the Amyria Plant had the basic skills for operating the facilities, there was technical sustainability. In this evaluation, however, defects were found in part of the machinery. It was considered important to improve the technical training for better operation and maintenance, and to select more appropriate equipment, which would be easier to maintain in Egypt.

Regarding the financial aspects, the management of water supply is vulnerable to the financial situation of the Government. GOGCWS allocates the plant's operation and maintenance budget. Since GOGCWS does not have a self-supporting accounting system, the increase in water supply of the Amyria Plant did not lead to a revenue increase for the Plant. As water tariffs remained extremely low, the operation and maintenance of GOGCWS facilities were subsidized by the Government.

In addition, some of the electrical instrumentation was difficult to maintain locally by the Egyptian side. Troubles with this instrumentation system would cause operational problems.



Water treatment facility



Electric operation board

6. Lessons Learned and Recommendations

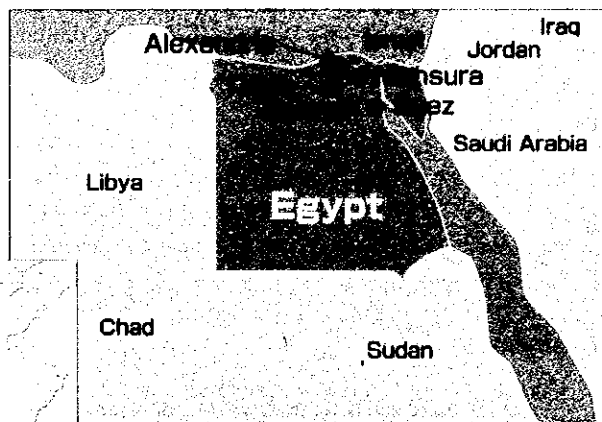
(1) Lessons Learned

As seen in this project, high-tech electrical equipment procured from Japan is sometimes difficult to maintain in partner countries. Considering future operation and maintenance, it is recommendable to select equipment that can be procured and easily maintained within the country.

(2) Recommendations

At the time of the evaluation, the necessity for Follow-up cooperation was not recognized. For the improvement of operation and maintenance skills, however, it would be important to coordinate with the ongoing Project-type Technical Cooperation in Cairo, namely the "Water Supply Technology Training Improvement Project" (June 1997 to May 2002). Furthermore, it is advisable to revise the present water tariff system, so that the operation and maintenance costs are covered by collected water fees.

The Project for Supply of Equipment for the Regional Environmental Monitoring Network



Project Sites

Cairo, Alexandria, Mansura, Tanta, Suez

1. Background of Project

In Egypt, concern over air pollution and water contamination in large cities, such as Cairo and Alexandria, and in the Nile River basin had been growing since the rapid industrialization and urbanization of the 1960s. In 1994, the Government of Egypt formulated the Environmental Law, which aimed at designing and implementing strategies for environmental protection, and appointed the Egyptian Environmental Affairs Agency (EEAA), established as an organization under direct control of the prime minister in 1982, as the main implementing and coordinating organization.

EEAA planned to establish a regional environmental monitoring network system consisting of the Cairo Central Center (CCC) and eight Regional Branch Offices (RBOs) in order to monitor the status of the environment on a nation-scale and requested Grant Aid from Japan for the procurement of the necessary monitoring equipment. The Government of Egypt also requested technical cooperation under the Project-type Technical Cooperation Program.

2. Project Overview

(1) Period of Cooperation

First Stage: FY1996
Second Stage: FY1997

(2) Type of Cooperation

Grant Aid

(3) Partner Country's Implementing Organization

Egyptian Environmental Affairs Agency (EEAA)

(4) Narrative Summary

- 1) Overall Goal
Environmental monitoring network system is established at the national level in Egypt.

2) Project Purpose

Environmental monitoring and analysis in Cairo Central Center (CCC) and the five Regional Branch Offices (RBOs) in Cairo, Alexandria, Mansura, Tanta, and Suez is improved.

3) Outputs

- a) Examination and test equipment is provided in CCC and five RBOs.
- b) Training in the operation of the provided examination and testing equipment is conducted for the staff of CCC and five RBOs and monitoring of the environment is carried out.

4) Inputs

Japanese Side

Grant	Total 924 million yen (E/N amount)
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Egyptian Side

Facilities (Construction of the laboratories)

3. Members of Evaluation Team

JICA Egypt Office
(Commissioned to Environmental Quality International)

4. Period of Evaluation

1 October 1999-15 January 2000

5. Results of Evaluation

(1) Efficiency

Provision and installation of equipment, installation guidance and dispatch of engineers for test operation were all conducted conveniently as scheduled; therefore, project efficiency was evaluated as high.

(2) Effectiveness

As the necessary sets of equipment for CCC and RBOs to carry out their functions was provided, the environmental monitoring capability was improved. While simple measurement instruments for site use were used frequently though not in an organized or planned fashion, some of the provided equipment was not adequately used at the time of the evaluation. Reasons for this include: 1) Lack of a comprehensive plan for environmental monitoring at both national and regional levels; 2) Lack of clarity in the roles within individual organizations and between organizations concerned with environmental monitoring; 3) Operation plans of each laboratory of EEAA were not formulated; and 4) Training of staff was inadequate. Therefore, it was recommended that the partner country make corrective efforts in the future.

(3) Impact

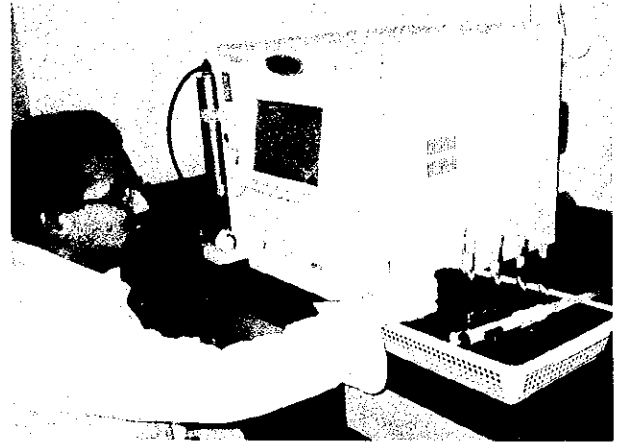
Mobile measurement instruments were frequently used to obtain and analyze polluting substances at the source of pollution outbreaks, and this provided the comprehensive basic information necessary for the enforcement and implementation of environmental laws. Since mobility was improved following the provision of the mobile measurement instruments, potential offenders seem to have been deterred. In addition, awareness concerning environmental pollution was also growing among the citizens; thus, the impact of this project was high.

(4) Relevance

The relevance of this project was considered very high as it corresponded to the needs of EEAA, responsible for the installation and operation of the environmental monitoring network system, and the need of the nation to resolve the issue of pollution. The selected target organizations, the five RBOs and the CCC, also corresponded to the priority set by EEAA. In this sense, the relevance of this project was also high.

(5) Sustainability

There were some issues of sustainability of the system on the Egyptian side in terms of improving the function of environmental monitoring. Issues of concern were that the operational plans of laboratories were not yet formulated and the capability of personnel was insufficient. In particular, personnel had attempted to improve their capability by participating in training, but the level was still not sufficient to carry out the accurate research required by laboratories and to maintain the equipment.



A staff of CCC, analyzing total organic carbon

It was also necessary to secure the budget for spare parts and reagents to maintain and use equipment in a sustainable manner. EEAA had an optimistic view in this respect, and in fact, the central environmental monitoring center had already agreed to a long-term contract for the supply of spare parts and reagent.

6. Lessons Learned and Recommendations

(1) Lessons Learned

It is important to consider measures for technology transfer and sustainability including the maintenance of equipment, rehabilitation and acquisition of spare parts in projects of this sort.

(2) Recommendations

The project provided the major equipment necessary for improved environmental monitoring, but the Egyptian side still had problems in terms of human resources and institutional conditions for the best use of the equipment. To resolve such problems, intensive training was planned to provide all laboratory staff with the skills to fully use the provided equipment. At the same time, it was suggested that training should not be limited to the operation of equipment only, but should cover broad areas of environmental monitoring technology and quality management of testing research.

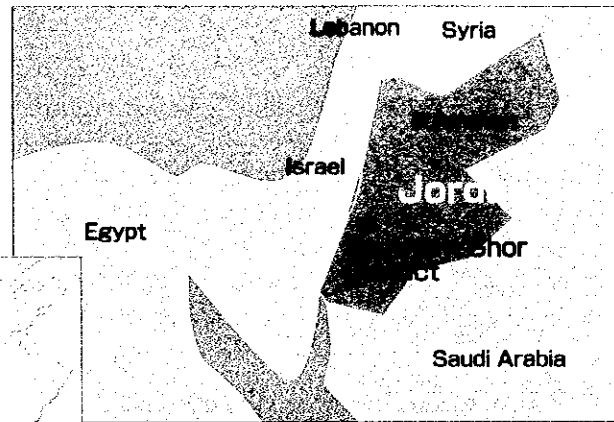
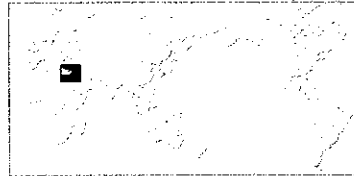
7. Follow-up Situation

The Environmental Monitoring Training project has been carried out under the Project-type Technical Cooperation since September 1997 and would continue for five years until 31 August 2002. The skills of maintenance, repair, and securing spare parts have been transferred. As such, the center has been attempting to secure sustainability.

Family Planning and Women in Development

Project Site

Southern Ghor District (Karak Governorate)



1. Background of Project

In Jordan, women marry young and have many children in keeping with the culture and religion, so the annual average population growth is high at 3.4 percent. At the same time, the economy had been stagnant during and shortly after the Gulf crisis in 1990, as a result of the repatriation of overseas migrant workers and decreased assistance from the other oil-producing Middle-East countries. The high population growth also hinders economic restoration. With this situation, the Government of Jordan considered that population growth was an important national problem, and formulated a comprehensive family planning policy that included health, gender and education issues. Family planning and the full participation of women in society were promoted, but due to the lack of technical experience and human resources in this area, the Government of Jordan requested the Government of Japan to provide technical cooperation.

2. Project Overview

(1) Period of Cooperation

1 July 1997-30 June 2000

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organizations

National Population Commission (NPC)
Ministry of Health
Jordan Hashemite Fund for Human Development (JOHUD)

(4) Narrative Summary

- 1) Overall Goal
Population growth is reduced in Southern Ghor District, Karak Governorate.
- 2) Project Purpose
Family Planning Practice is promoted in Southern Ghor District, Karak Governorate.
- 3) Outputs

- a) Information on demographic, health and socio-economic conditions is collected and used for project activities.
- b) People's awareness on health and socioeconomic issues in the project area is enhanced.
- c) Family planning and reproductive health services in the project area are strengthened.
- d) Women in the project area participate in economic activities.

4) Inputs

Japanese Side

Long-term experts	6
Short-term experts	10
Trainees received	9
Equipment	103 million yen
Local cost	28 million yen

Jordan Side

Counterparts	6
Land and facilities	
Local cost	

3. Members of Evaluation Team

Leader:

Makoto ATOH, Deputy Director General, National Institute of Population and Social Security Research

Obstetrics:

Shigeki MINOURA, Director, Department of Obstetrics and Gynecology, International Medical Center of Japan

Reproductive Health:

Aiko IJIMA, Director, Human Resource Development Division, Japanese Organization for International Cooperation in Family Planning

WID:

Azumi TSUGE, Associate Professor, Department of Sociology, Faculty of Sociology and Social Work, Meiji Gakuin University

Cooperation Planning:

Tsutomu NAKANO, Deputy Director, Second Medical

Cooperation Division, Medical Cooperation Department,
Japan International Cooperation Agency

Evaluation Analysis:

Kimiko ABE, International Development Center of
Japan

4. Period of Evaluation

19 October 1999-31 October 1999

5. Results of Evaluation

(1) Efficiency

The inputs from the Japanese side were generally appropriate in quality, quantity and timing, and operation and maintenance of equipment were satisfactory. However, the experts for income generation were dispatched only in the final year of the cooperation (May 1999), so the output that women participate in economic activities could not be achieved.

(2) Effectiveness

Regarding reproductive health, as a result of functional expansion in the Maternal and Child Health Center, and education and dissemination activities in cooperation with community development promoters selected from men and women in the communities and Moslem leaders, the number of outpatients seeking a first medical examination for contraception increased from 107 (1996) to 224 (1998).

Meanwhile, regarding women's participation in economic activities, as mentioned above, the activity was started late, so at the time of the evaluation the work plans for apiculture and goat rearing were being formulated, and the training for women was just starting.

Although the project objective of promoting family planning cannot be achieved in a short time, considering the outputs achieved, as mentioned above, and the 50 percent contraceptive prevalence rate estimated by the experts, it is perceived that the project purpose would be achieved by the end of the cooperation period.

(3) Impact

By employing young women in their 20s as community development promoters, this project provided the opportunity to participate in health and social activities, and enabled them to gain new experience. Also, by inviting traditional Moslem leaders who have strong influence in Islamic society to the lectures and seminars, the project succeeded in sensitizing rural men and Moslem leaders to family planning.

(4) Relevance

The overall goal and the project purpose are consistent with the policies of Jordan which promote the reduction of population growth and family planning, and



A community development promoter reporting on the results of their survey at a monthly meeting

therefore the project has high relevancy.

(5) Sustainability

As family planning and reproductive health are important policies of the Government of Jordan, it was expected that the government of Jordan would continuously support the NPC.

6. Lessons Learned and Recommendations

(1) Lessons Learned

When various types of activities are implemented to achieve a certain purpose as was the case in this project, it is necessary to have a common understanding of each activity among stakeholders and to make efforts to link and coordinate activities in order to integrate outputs from each activity into the project purpose so that they contribute to achieving the overall goal.

(2) Recommendations

The project achieved the outputs satisfactorily in terms of raising the people's awareness, improvement of health services and empowerment through women's participation in economic activities. However, as mentioned above, it is necessary to recognize that these activities are all measures to reduce population growth. For this, it is necessary to confirm the changes in people's ideas about delivery and child rearing, awareness of family planning, contraceptive prevalence rate and continuous user rate.

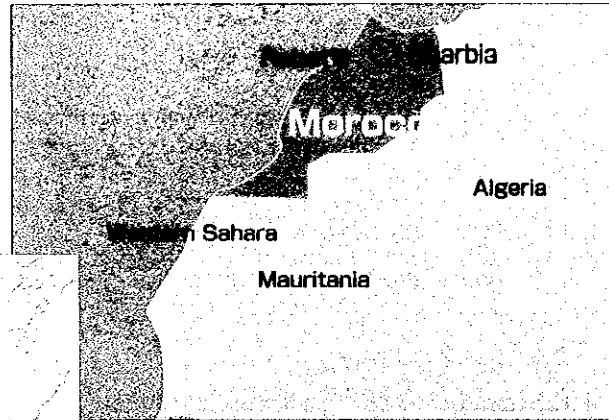
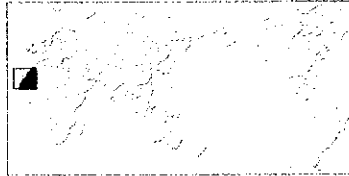
7. Follow-up Situation

After the completion of the cooperation period, the target area was expanded to the whole of Karak Governorate, and Phase II cooperation is now being implemented (from July 1 2000 to June 30, 2003).

The Project for Development Plan of Hydro-agriculture in Ouergha River Basin

Project Site

Rharbia, Province de Taounate



1. Background of Project

In Morocco, agriculture is a major industry supporting the national economy. However, production was unstable because farmers mainly depended on rainfall, making crops subject to drought and other natural disasters. On account of this, the development of hydro-agriculture was promoted by the Government of Morocco. Ouergha river basin was set as a priority development area of hydro-agriculture development and agricultural land protection. An agricultural development plan was also formulated, which aimed at improvement of agricultural productivity through the construction of medium- and small-scale dams. Following this, Morocco requested Grant Aid from Japan to implement the plan.

2. Project Overview

(1) Period of Cooperation

FY1995-FY1997

(2) Type of Cooperation

Grant Aid

(3) Partner Country's Implementing Organization

Directorate General of Hydraulics, Ministry of Equipment

(4) Narrative Summary

1) Overall Goal

The foundation for hydro-agriculture production in the Ouergha river basin is established.

2) Project Purpose

Pilot model of water supply facilities for domestic use and livestock through the construction of small-scale dams and irrigation facilities and upgrade of existing infrastructure is established.

3) Outputs

- a) Small-scale dams are constructed.
- b) Irrigation channels are installed.
- c) Water supply facilities for domestic use and for livestock are installed.
- d) Construction work of river basin protection is executed.

4) Inputs

Japanese Side

Grant	Total 1.17 billion yen (E/N amount)
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Moroccan Side

Land
Facilities for river basin protection

3. Members of Evaluation Team

Facilities study:

Masato ISHIMORI, Grant Aid Management Department, Office Technical Coordination and Examination, JICA

Operation and maintenance study:

Kenji TAKADA, Welfare and Labor Relations Division, Personnel Department, JICA

Interpreter:

Tadao ARAI, Japan International Cooperation Center

4. Period of Evaluation

12 September 1999-22 September 1999

5. Results of Evaluation

(1) Efficiency

Procurement of construction machinery and execution management both proceeded on schedule. All

construction materials were procured within the country. Most of the equipment procured was made in Morocco or in Europe, so it could be maintained and repaired in the country. As such, inputs were efficiently completed as planned, and dams and irrigation channels covering 108 hectares and six domestic and livestock water supply facilities were established.

(2) Effectiveness

Since the amount of rainfall was insufficient and, thus, impoundment was small, it was difficult to evaluate the conditions of operation at the time of evaluation. However, some faults were found concerning the construction of dams¹⁾.

Although both domestic and livestock water supply facilities were not operating at full-scale due to the shortage of water, 14 households in model areas drew water directly from dams and efficiently used the water for domestic use and for their cattle.

(3) Impact

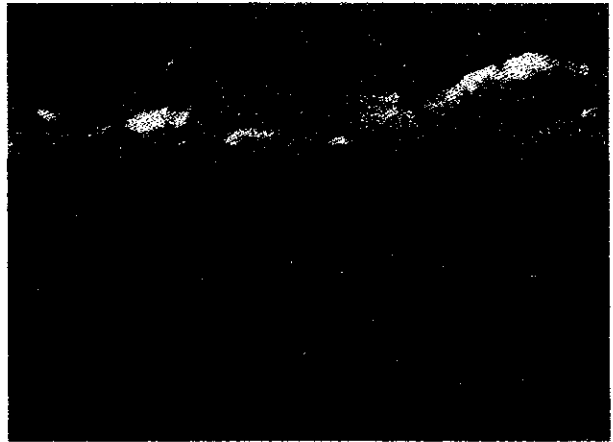
It was impossible to examine the impact on agriculture because irrigation facilities were not functioning. On the other hand, water supply facilities for domestic use and for livestock were used not only by the fourteen households in model areas but also in ten surrounding villages, thereby producing greater impact than expected even at the time of low rainfall and impoundment. In addition, the project reduced the workload of water collection for women and children, who normally spent three hours on the task.

(4) Relevance

This project was carried out based on "the Development Plan of Hydro-agriculture in Ouergha River Basin" and master plan formulated by JICA's development study requested by the Government of Morocco. Also, the development of irrigation and supply of water for domestic use targeted by this project fitted the needs of the Ouergha area, and so the project was highly relevant.

(5) Sustainability

Directorate General of Hydraulics, the implementing organization on the Moroccan side, had high-technology for dam construction, rich experience and the financial resources. Based on sufficient rainfall, the repair costs for the facilities could be covered by revenue from hydro-agriculture, and so future sustainability would be expected to be adequate.



Cultivated land in the Ouergha river basin (a well is seen at the center)

6. Lessons Learned and Recommendations

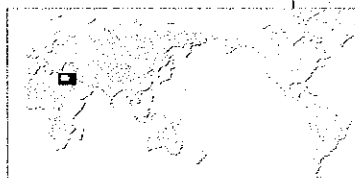
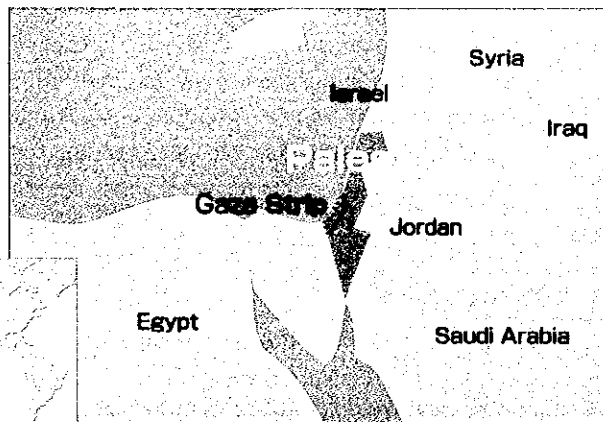
(1) Recommendations

As dam construction technology and the system of operation and maintenance for machinery were both at a high level, it was evaluated that Follow-up cooperation would not be necessary.

However, a comprehensive evaluation to examine the relevance of constructed dams should be carried out a few years later, since the required reservoir for the operation of irrigation facilities would be largely affected by the amount of rainfall. Also, the condition of the dam reservoirs should be examined for a minimum of five years, since the scale of dams and reservoirs were built based on the assumption that a shortage of water would occur once every five years.

¹⁾ Repair work on faulty parts was carried out later by construction workers.

The Project for Construction of School Facilities for Basic Education in the Gaza Strip



Project Site Gaza Strip

1. Background of Project

Educational facilities in Palestine were superannuated due to lack of repair during Israel's occupation. In addition, increasing enrollment aggravated the shortage of educational facilities, which forced many schools to adopt double shifts and to have classes on a tight schedule. The Palestine Interim Self Government Ministry of Education stated the policy to "ensure the quantity and quality of schools and establish schools in appropriate sites," and considered it a high priority after initiating the interim autonomy government. However, it was too early for the new Interim Self-Government to secure the financial resources necessary for constructing school facilities; thus, the Government had to depend on assistance from overseas. Schools had been constructed so far through assistance from international organizations and foreign countries, but the target number of classrooms had yet to be attained.

Therefore, with a view to improving learning conditions in classrooms, the Palestine Interim Self-Government requested the Japanese Government to formulate a plan for primary and secondary school construction in the Gaza Strip, where the situation was particularly critical in terms of school shortage, and to provide the Grant Aid necessary for executing the plan.

2. Project Overview

(1) Period of Cooperation

FY1997, FY1998

(2) Type of Cooperation

Grant Aid

(3) Partner Country's Implementing Organization

Ministry of Education

(4) Narrative Summary

1) Overall Goal

Educational environment is improved in the Gaza Strip.

2) Project Purpose

Classes are held in newly constructed primary and secondary schools.

3) Outputs

- a) Ten sets of primary and secondary school facilities (1 school building, 1 toilet facility for students, 1 sunshade, 1 canteen, 1 guard's room, etc.) are constructed.
- b) Materials for science education (experiment apparatus, microscope, etc.), furniture, and other equipment and materials are procured.

4) Inputs

Japanese Side

Grant	Total 2.60 billion yen (E/N amount)
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Palestinian Side

Land

3. Members of Evaluation Team

Operation and Maintenance Study:

Makoto INABA, Appraisal Officer for Grant Aid Program, Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs

Facilities Study:

Reiko HAYASHI, Japan International Cooperation System

4. Period of Evaluation

5 February 2000-13 February 2000

5. Results of Evaluation

(1) Efficiency

There were some restrictions in this project. For instance, builders had to go through the same formalities applied to those traveling from foreign countries in order to enter the Gaza Strip from Israel's territory, and the procurement of materials and machinery was also a cumbersome process. However, the total of 10 schools (222 classrooms) were completed within a limited period of construction, which led to the conclusion that the project was executed efficiently.

(2) Effectiveness

The project supplied 10 schools (222 classrooms) in the Gaza Strip, where a total of 9,477 students were enrolled. Also, construction of multi-purpose classrooms, laboratories, and the like made the learning environment in the new schools much better than that of the old schools. The project purpose was almost attained, as was described above.

(3) Impact

The existing classrooms in some areas became less congested due to the newly constructed schools.

The project carried out not only new construction and extension work of classrooms but also the headmaster's offices and teachers' rooms, which opened the way to an attempt to build capacity into school administration.

In addition, the Japanese engineers were dispatched for a long-term stay during the construction, which contributed to transferring construction technology and to enhancing awareness of safety control.

(4) Relevance

On a global scale, the Gaza district was a rarity in terms of overpopulation. There were 125 large-scale schools, each with enrollments of 1,000 or more as of 1998/99, and it was becoming more and more difficult for the schools to continue carrying on classes in a single shift. Therefore, the demand for new construction and extension work was very high. The project was also relevant to the priorities to "ensure quantity and quality of schools and establish schools in appropriate sites" set by the Ministry of Education. In summary, the project was considered highly relevant.

(5) Sustainability

At the time of the evaluation, the necessary costs for small repair and maintenance work were ensured and funds for large-scale rehabilitation work were to be



A school building provided by the project



Children study in a new classroom

provided by the Ministry of Education. Therefore, financial independence was confirmed for the present.

6. Lessons Learned and Recommendations

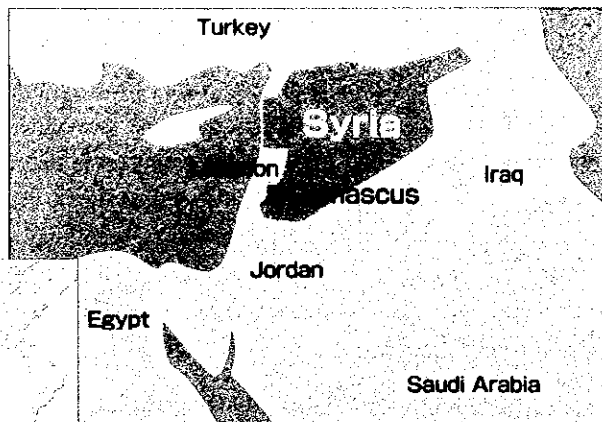
(1) Lessons Learned

The evaluation team made trips to observe not only newly constructed schools but other schools, as well. Many schools were facing problems regarding water and electric power supply. It was recommended that when installing water and electric power supply systems for the same type of project on the west bank in the future, training in day-to-day maintenance and immediate repair in an emergency, etc. should be included.

(2) Recommendations

It was found at the time of evaluation that there was no need to provide Follow-up cooperation. However, since it was difficult to assess Palestine's maintenance capability so early after the completion, it may be necessary to conduct a survey 10 to 15 years from now.

Improvement of Agricultural Statistics and Information Systems



Project Site **Damascus**

1. Background of project

For many years, Syria put industrial development as a priority over agricultural development, but then wanted to increase agricultural production. In the 7th Five Year Plan, one objective of the agricultural sector was to plan crops production based on agricultural policies. However, for the formulation of agricultural policies, the appropriate and regular submission of basic agricultural statistics was not guaranteed due to the lack of reliability of estimation, inefficiency of data compilation, delay of data publication, and insufficient equipment for statistical research. As a result, these problems hindered the implementation of the policies. To solve these problems, experts were dispatched from the Government of Japan.

2. Project Overview

(1) Period of Cooperation

1 June 1996-31 May 1999

(2) Type of Cooperation

Experts Team Dispatch Program

(3) Partner Country's Implementing Organization

Planning and Statistics Directorate, Ministry of Agriculture and Agrarian Reform

(4) Narrative Summary

- 1) Overall Goal
Agricultural productivity is increased in Syria.
- 2) Project Purpose
The precision and reliability of agricultural statistics are improved and the results of statistical findings are made quickly available for use in appropriate agricultural policy making.
- 3) Outputs
 - a) The precision of statistics is improved.
 - b) Efficiency in compilation and estimation is achieved.
 - c) Collected data is published promptly.

- d) Technical training in agricultural statistics is conducted.

4) Inputs

Japanese Side

Long-term experts	2
Short-term experts	5
Trainees received	8
Equipment	44 million yen
Local cost	3.35 million syrian pounds (7.6 million yen)

Syrian Side

Counterparts	5
Land, facilities and equipment	
Local cost	

3. Members of Evaluation Team

Team Leader:

Katsuhiko EBINA, Resident Representative, JICA Syria Office

Agricultural Statistics Administration:

Masaaki SASAKI, Director of the Office of International Affairs, Department of Statistics and Information, Ministry of Agriculture, Forestry and Fisheries

Survey Method:

Yasuhiro MIYAKE, Section Chief, Office of International Affairs, Department of Statistics and Information, Ministry of Agriculture, Forestry and Fisheries

Evaluation Analysis:

Shinji GOTO, Assistance Resident Representative, JICA Syria Office

4. Period of Evaluation

13 May 1999-23 May 1999

5. Results of Evaluation

(1) Efficiency

The planned inputs by both Japan and Syria were all achieved. The stationing of competent counterparts with few personnel changes was a major factor contributing to the efficient technology transfer. Also, the three-month counterpart training in Japan was sufficient to cover a wide range of technologies from the basic technologies to applied ones, which met the needs of Syria; therefore, it is perceived that there were considerable impacts from the training.

(2) Effectiveness

Through the technical transfer of the concepts and methods of sampling survey in this project, staff in the Ministry of Agriculture and Agrarian Reform were able to conduct research based on the sample design related surveys on their own. Also, with new computers and other equipment, human errors of compilation were reduced, and correction time for errors was reduced by the fax arrangement and the improvement of the information system, so precision and speed of data compilation were significantly improved.

(3) Impact

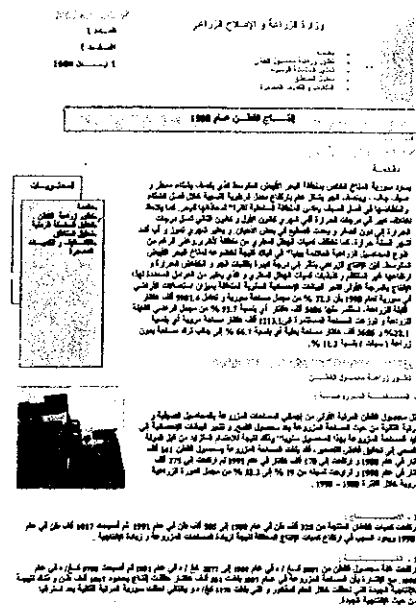
Because statistics have only an indirect impact on agricultural productivity, it is difficult to perceive any direct impact from the project.

(4) Relevance

The improvement of agricultural statistics is listed as a priority in the 7th Five-year Plan in Syria. Particularly, agricultural statistics are the base of the production plan that the Ministry of Agriculture and Agrarian Reform formulate every year, so their precision and reliability are critical. There was also a move in Syria to expand the use of agricultural statistics in the private sector and agribusiness, including agriculture producers and traders, and the needs for up-to-date and reliable statistics are high; therefore, it was perceived that the relevance of the project is high.

(5) Sustainability

The Government of Syria recognized the importance of agricultural statistics, and therefore, it was considered that the function of the Ministry of Agriculture and Agrarian Reform would further be strengthened. Financially, the cost of maintaining the existing equipment and statistics surveys would presumably be covered by the annual budget. But other budget arrangements would be needed for training and equipment to enhance technologies. Technically, despite the technical transfer on the computer system, the skilled technicians were still short of skills needed to develop the database and expand the network in the future, and they were unable to improve capacity on their own.



A flash report of cotton-production statistics



Agricultural Statistics information is provided on CD-ROM

6. Lessons Learned and Recommendations

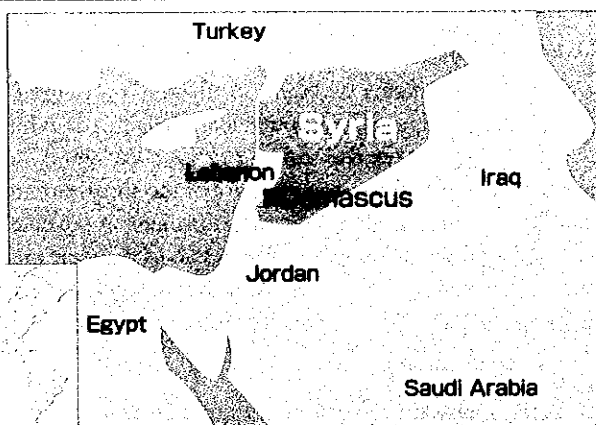
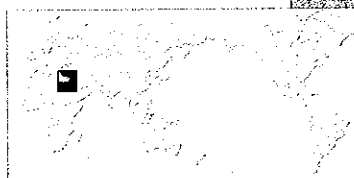
(1) Lessons Learned

In order to enhance efficiency in technical cooperation, it is important to examine competence of expected counterparts in the preliminary stage and also to confirm whether personnel changes are scheduled during the cooperation period.

(2) Recommendation

The dispatch of this team was terminated as planned at the end of May 1999. It was expected that through the next agricultural census, which would be conducted in the near future, the sampling surveys and skills of field survey that were transferred to the counterparts would be put into practice, and the Government of Syria would continue to support financially the improvement of agricultural statistics.

National Standards and Calibration Laboratory (Phase II)



Project Site **Damascus**

1. Background of Project

The Syrian Government recognized the need to establish measurement standards in order to manufacture reliable and high-quality products and develop industry. Therefore, the Syrian Government established measurement standards in the fields of electricity and temperature with the help of technical cooperation from JICA from October 1987 to October 1992. Following this first phase project, the Syrian Government requested a second phase of Project-type Technical Cooperation from the Japanese Government with the purposes of 1) establishment of measurement standards in the fields of length, mass, pressure and force and 2) Follow-up of the first phase project, i.e. improved accuracy of electricity and temperature measurements.

2. Project Overview

(1) Period of Cooperation

1 December 1995-30 November 1999

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organization

National Standards and Calibration Laboratory (NSCL)

(4) Narrative Summary

- 1) Overall Goal
Measurement standards (traceability) system is established in Syria.
- 2) Project Purpose
NSCL becomes a national standards laboratory that can supply calibration services regarding length, mass, pressure, electricity and temperature to domestic industries in Syria.
- 3) Outputs
 - a) Operation system of the project is established.
 - b) Standards of length, mass and pressure, as well as relevant measuring and calibration techniques are established.
 - c) Measurement standards system and management

system regarding electricity and temperature is improved.

- d) Calibration services regarding electricity are more widely extended.
- e) Technical capability of the counterpart personnel is upgraded.

4) Inputs

Japanese Side

Long-term experts	5
Short-term experts	44
Trainees received	19
Equipment	450 million yen
Local cost	12 million yen

Syrian Side

Counterparts	24
Staff	26
Buildings and facilities	
Local cost	45 million syrian pounds (approx. 102 million yen)

3. Members of Evaluation Team

Team Leader:

Mitsuru HAGINO, Development Specialist, JICA

Technical Cooperation Planning:

Kazumi SAGISAKA, Chief of Measurement Standards Unit, Weights and Measures Office, Machinery and Information Industries Bureau, Ministry of International Trade and Industry (MITI)

Measurement Standards:

Yoshiaki AKIMOTO, Senior Officer of International Relations, National Research Laboratory of Metrology (NRLM), MITI

Evaluation Management:

Hironori KIMURA, First Technical Cooperation Division, Mining and Industrial Development Cooperation Department, JICA

Evaluation Analysis:

Hajime SONODA, IC Net Limited

4. Period of Evaluation

20 August 1999-7 September 1999

5. Results of Evaluation

(1) Efficiency

Inputs were in generally adequate. Assignment of the long-term expert for length standards was shortened because of his health condition. Several short-term experts for length standards were dispatched in order to make up for the absence of the long-term expert. The dispatch of the long-term expert for length standards was further delayed because of the Iraq crisis in 1998, and it was foreseen that it would be difficult to complete all the activities within the cooperation period. A working group was, therefore, created in Japan and facilitated technical transfer regarding length standards. As a result of these extensive efforts, the technology was expected to be successfully transferred according to the plan.

(2) Effectiveness

The operations manual and calibration procedure for each field were almost completed. The calibration service vehicle for on-site calibration of electrical measurement was mobilized inside and outside Damascus, and had provided 379 calibration site visits by the time of the project evaluation. The technical evaluation by bilateral international comparison¹⁾ was high. Full scale calibration services for length, mass and pressure were about to be started. With these achievements, the project purpose was expected to be realized by the end of the cooperation period.

(3) Impact

With the enhanced technological capability brought through implementation of the project, NSCL started providing calibration services on electrical, temperature and mass measurement to the Industrial Testing and Research Center (ITRC), the secondary calibration institute providing calibration services to Syrian industries. By providing measurement standards to the secondary institutions in this general way, the project contributed to the establishment of the Syrian measurement standards system, i.e. the overall goal of the project.

(4) Relevance

The Syrian Government highly sought the enhancement of the international competitiveness of its industrial products. The establishment of a measurement standards system was vital to achieving that goal. Thus, the overall goal of the project was relevant to the national policy. The project purpose was also relevant because it met the need for reliable calibration services from the Syrian industry.

(5) Sustainability

The NSCL acquired the appropriate organizational structure and managerial capability through the project. It also established a management system for providing extensive calibration services outside of the laboratory. In



National Standards and Calibration Laboratory

addition, the Scientific Studies and Research Center (SSRC), the upper organization of the NSCL, made a commitment to provide continuous political support for the NSCL. Considering these factors, the institutional sustainability of the NSCL was considered high. Regarding financial sustainability, judging from the satisfactory budget allocation in the past and SSRC's strong commitment for continuous support, it was expected that sufficient financial resources would be secured for the NSCL. With regard to technical aspects, by accumulating practical calibration services experience outside the laboratory, maintaining and upgrading the technical level of NSCL was viewed as probable.

6. Lessons Learned and Recommendations

(1) Lessons Learned

At the planning stage of a project, not only the priority needs of the recipient country, but also the availability of Japanese experts should be taken into account. Based on these considerations, the appropriate period and scope of cooperation should be decided and the purpose of the project clarified. Back-up and support systems from Japan for proper technology transfer is also crucial.

(2) Recommendations

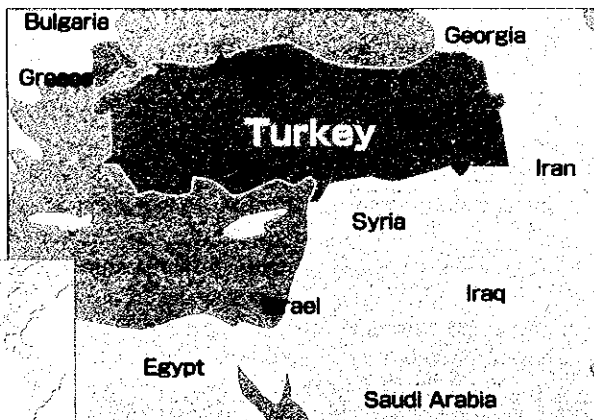
Although the Syrian side expressed its anticipation for the third phase cooperation for further expansion of the coverage of the measurement standards, it was considered to be more important to fix and improve the technology transferred through the project.

7. Follow-up Situation

Beginning in fiscal year 2001, the Third-country Training Program on "Measurement standards and calibration technology in the field of electricity and temperature" is underway for three years.

¹⁾ International comparison of measurement standards conducted between two countries

The Port Hydraulic Research Center



Project Site Ankara

1. Background of Project

Turkey, which is located at the interface of Europe, the Middle East, Caucasus and Central Asia, had an urgent need to establish and develop new ports to address the growing amount of export-import cargo. Although an accurate design and plan based on scientific data is necessary for the construction of highly reliable port facilities, the General Directorate of Railways, Ports, and Airports Construction (DLH) did not have any laboratories for such activities. Considering this, the Turkish Government planned to establish the Port Hydraulic Research Center in order to develop rational and economical technologies for designing and planning the port buildings. The Government then requested Project-type Technical Cooperation from the Japanese Government to achieve this goal.

2. Project Overview

(1) Period of Cooperation

1 January 1995-31 December 1999

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organizations

General Directorate of Railways, Ports and Airports Construction (DLH)
Port Hydraulic Research Center

(4) Narrative Summary

1) Overall Goal

Port buildings are rationally and economically designed in Turkey.

2) Project Purpose

The Port Hydraulic Research Center capable of carrying out research work in the field of hydraulic model tests, physical and numerical model experiments and field investigations is established.

3) Outputs

- The necessary facilities and equipment are provided for the Center.
- The organizational structure of the Center is established.
- Turkish counterparts are able to carry out hydraulic model tests, numerical model experiments and field investigations.

4) Inputs

Japanese Side

Long-term experts	6
Short-term experts	34
Trainees received	9
Equipment	approx. 364 million yen
Local cost	approx. 13 million yen

Turkish Side

Counterparts	10
Land and facilities	
Local cost	approx. 387.5 billion lira (approx. 69 million yen)

3. Members of Evaluation Team

Team Leader:

Masayuki WATANABE, Development Specialist, JICA

Port and Harbor Policy:

Takashi KADONO, Director, Sakata Port Construction Office, First District Port Construction Bureau, Ministry of Transport

Hydraulic Research:

Noriaki HASHIMOTO, Director Hydrodynamics Laboratory, Marine Environment Division, Port and Harbour Research Institute, Ministry of Transport

Evaluation Planning:

Ryuhei MIZUTANI, Special Advisor, Second Technical Cooperation Division, Social Development Cooperation Department, JICA

Evaluation Analysis:

Kaoru IWAKAWA, PADECO Co., Ltd.

4. Period of Evaluation

7 September 1999-19 September 1999

5. Results of Evaluation

(1) Efficiency

The inputs on the Japanese side, such as Dispatch of Experts, counterpart training and provision of equipment, were carried out on schedule, and the quality, quantity and timing of inputs were generally appropriate. The construction of the Port Hydraulic Research Center was also completed as planned as a whole.

(2) Effectiveness

The project outputs were mostly accomplished following the plan as the counterparts became capable of conducting field research, hydraulic testing of multi-directional random waves, as well as numerical model experiments. However, achievement of the project purpose in terms of establishment of the Center was not completely successful. The amount of experimental data accumulated by researchers was still insufficient for continuing effective research activities. This was considered a result of the short time period of technology transfer, which was carried out by experts for only two years after the first three years of the cooperation. During the first three years of the project, activities were concentrated on the establishment of the infrastructure and the installation, set up, and coordination of the buildings and facilities. Therefore, the remaining period for research and transfer was not long enough for the sufficient gathering of the necessary data for the analyses.

Moreover, counterparts had not gained enough experience even in the areas where technology transfer had been completed, such as plane water tank experiment for harbor tranquility analysis to the extent to be able to investigate the causes of damage and revise design methods accordingly when the port facilities were damaged. Also, the management systems for research activities and facilities were not yet established since this was not stated in the project purpose.

(3) Impact

Significant effects of the project were not yet observed at the time of evaluation since it was only about two years after the opening of the Center. However, the Center and its state-of-the-art research facilities were introduced at conferences in Europe, so it was becoming well known to researchers in this field. Hence, the Center was expected to take on a leading role in the field of port hydraulic study both within Turkey and in the countries along the East Mediterranean and Black Sea.

(4) Relevance

In Turkey, there was a rapidly growing need for the construction of new ports and for personnel able to design projects based on a port hydraulics view. Therefore, the overall goal and the purpose of the project were considered highly relevant to the Turkish needs for the development of port facilities.

(5) Sustainability

The Center was clearly recognized as part of the national administrative network and its organizational sustainability was expected to be maintained. Nevertheless, the management systems for the research activities, facilities, and general affairs were not fully established.

In terms of technical sustainability, there were some engineers with a high technical capability among the Center's port hydraulic researchers and they had been contributing to the improvement of the port engineering technologies in Turkey. However, the number of researchers was still insufficient for the further development of the research activities, although this issue was being addressed.

6. Lessons Learned and Recommendations

(1) Lessons Learned

The establishment of the Center's management system was not defined as a cooperation component in this project. When the project aims at the building of organizational functions, the establishment of the management system should be included in the activities and defined as a part of project outputs. The Dispatch of Experts who are able to give long-term guidance was also considered to be necessary.

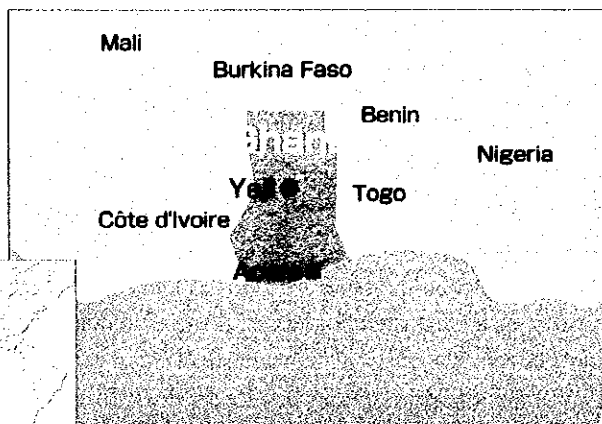
(2) Recommendations

The project purpose initially agreed to in the plan was generally accomplished, thus the project was terminated at the end of 1999. The enhancement of the research management system, the establishment of the department in charge of management of facilities and general affairs, and the additional recruitment of research fellows were all deemed necessary in order to further strengthen the Center's sustainability.

7. Follow-up Situation

In order to strengthen research activities, an Individual Expert (Coastal Engineering) was dispatched in May 2002 for two years.

The Project for Rural Electrification of Asesewa and Yeji Areas (Stage 2/2)



Project Sites Yeji Area

1. Background of Project

In 1995, the Government of Ghana published their National Development Policy Framework called "Vision 2020". As part of it, the Government formulated the National Electrification Scheme aiming to provide electricity across the nation by 2020.

Asesewa and Yeji areas had been contributing largely to the economic development of Ghana, since both are important areas for food production and agriculture, including inland fisheries in Yeji. These areas, however, had always been without electricity. As Asesewa and Yeji are some distance away from the electrified district capital, it was expensive to connect these areas to the national electricity grid.

The Government of Ghana requested grant aid from Japan for the electrification of Asesewa and Yeji areas. The Government of Japan assisted the electrification of the Asesewa area in the first phase of the Project, and that of the Yeji area in the second phase.

This evaluation deals with the second phase, the electrification of Yeji area.

2. Project Overview

(1) Period of Cooperation

FY 1997

(2) Type of Cooperation

Grant Aid

(3) Partner Country's Implementing Organizations

Ministry of Mines and Energy
Volta River Authority
Authority of Electric Supply of Ghana

(4) Narrative Summary

1) Overall Goal

- a) To improve the standard of living of the residents of the Yeji area.
- b) To activate industries in the Yeji area.

2) Project Purpose

To provide stable electricity to the residents and industries in the Yeji area.

3) Outputs

- a) Transmission line facilities are constructed in the Yeji area.
- b) An appropriate operation and maintenance system for transmission line facilities is established.

4) Inputs

Japanese Side

Grant	605 million yen (E/N amount)
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Ghanaian Side

Land, storage of equipment and machinery
Local cost

3. Members of Evaluation Team

JICA Ghana Office
(Commissioned to Quans Inter-Continental Associates Ltd.)

4. Period of Evaluation

8 November 1999-15 December 1999

5. Results of Evaluation

(1) Efficiency

The construction of facilities, including 86.1km of

33kV line and 95 km of low voltage network and substations, was completed as planned. Overall project implementation was highly efficient.

(2) Effectiveness

The project purpose was achieved, as the nine targeted villages had been connected to the national electricity grid. However, due to the shortage of electric meters procured by the Ghanaian side, only 20 percent of interviewed households were actually supplied with electricity. The remaining 60 percent were waiting to be connected to distribution lines, which accompanies the installation of meters.

(3) Impact

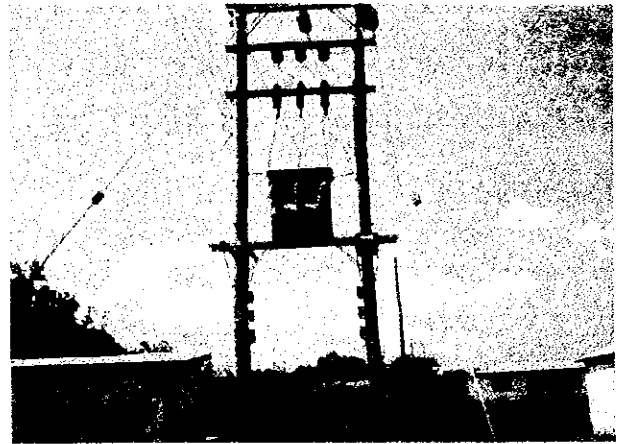
Residents supplied with electricity were able to enjoy an improved standard of living. For example, safety in the area was increased by the spread of night-lighting, and access to information was improved by listening to the radio for longer periods of time. Food preservation and housework also became more convenient. Regarding business activities, the interviewed business people answered that the supply of electricity had revitalized business activities in the area: 35 percent had extended their business hours by about 1.5 hours; 40 percent improved their facilities by introducing electrically-operated appliances; and 60 percent were planning to extend their business operations. It is still too early to evaluate the project impact on employment, but the number of people who were engaged in economic activities using electricity had increased, especially in the area of agricultural product processing, retail sales and small supermarkets.

(4) Relevance

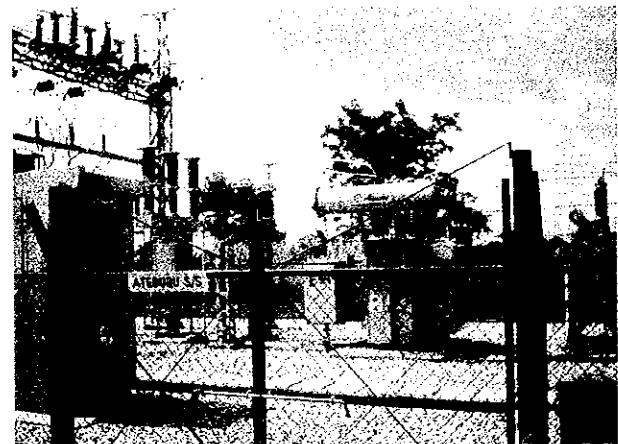
The purpose and activities of the project were highly relevant to the needs and policies of Ghana. The project was consistent with the Government of Ghana's National Development Policy ("Vision 2020") aiming to supply electricity to all, and contributed to the improvement of standards of living of the people. At the same time, the Project met the development assistance policies of Japan, which target especially underdeveloped areas in the partner countries. The project promotes good relations between Ghana and Japan.

(5) Sustainability

Since power industries are maintained and operated by user fees, the supply of electricity aided financial sustainability in that industries and incomes were



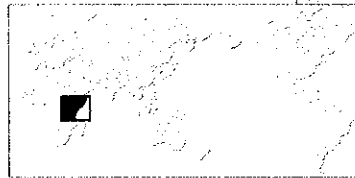
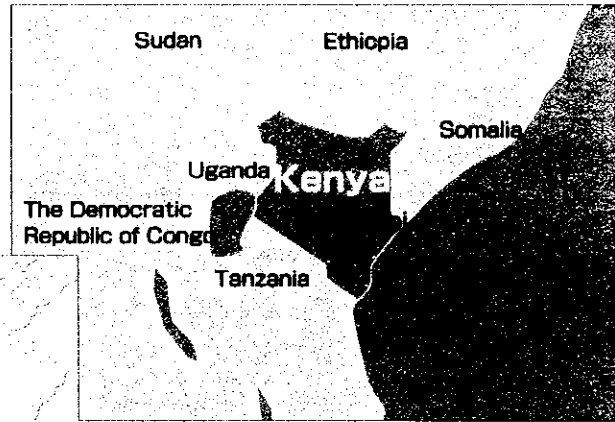
A transformer placed on a telegraph pole



Booster Station at Atebubu area

enhanced which in turn increased user-ability to pay. On the other hand, the fact that many users are still poor and may not be in a position to pay electric bills promptly may inhibit sustainability.

The Kenya Institute of Surveying and Mapping Project



Project Site Nairobi

1. Background of Project

In Kenya, geographical information, such as maps and aerial photographs, which are essential for the development of agriculture, socio-economic infrastructure, and energy and water resources, were insufficient. In addition, the number of skilled and qualified personnel in the field of surveying and mapping was inadequate. Recognizing that the development of human resources in these areas was necessary, the Government of Kenya requested the construction of the Kenya Institute of Surveying and Mapping (KISM) under the Japanese Grant Aid program (1995-1997). They also requested assistance from Japan in the establishment of an organizational structure, training system and facilities, and capacity building of the lecturers under the Project-type Technical Cooperation scheme.

This study focuses only on the evaluation of the Project-type Technical Cooperation.

2. Project Overview

(1) Period of Cooperation

1 October 1994-30 September 1999

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organizations

Survey Department, Ministry of Lands and Settlement
Kenya Institute of Surveying and Mapping (KISM)

(4) Narrative Summary

- 1) Overall Goal
The supply of qualified officers in the fields of surveying and mapping meets demand.
- 2) Project Purpose
The Kenya Institute of Surveying and Mapping (KISM) is established as the national training organization for fostering qualified officers in the fields of surveying and mapping.
- 3) Outputs
 - a) Organization of KISM is established.

- b) Appropriate training facilities and equipment are installed.
- c) Qualifications of a sufficient number of Kenyan lecturers are upgraded.
- d) Guidelines, syllabi and curricula for the training courses are developed.
- e) Textbooks and teaching materials for the training courses are developed.
- f) In-depth training in the fields of surveying and mapping are conducted in diploma, higher diploma and short-term courses.

4) Inputs

Japanese Side

Long-term experts	18
Short-term experts	29
Trainees received	25
Equipment	approx. 216 million yen
Local cost	approx. 56 million yen

Kenyan Side

Counterparts	55
Land and facilities	
Local cost	19.1 million pounds (approx. 764 million yen)

3. Members of Evaluation Team

Team Leader:

Takashi MIZUNO, Deputy Director, Second Technical Cooperation Division, Social Development Cooperation Department, JICA

Geodesy/Cartography:

Hiromichi TSUJI, Head, International Affairs Office, Planning Department, Ministry of Construction

Cadastral Survey:

Takaaki TAKEZAWA, Chief Official, National Land Survey Division, Land Bureau, National Land Agency

Data Analysis:

Hiroshi IMAIZUMI, PADECO. Co., Ltd.

4. Period of Evaluation

27 June 1999-8 July 1999

5. Results of Evaluation

(1) Efficiency

Inputs on the Japanese side were carried out on schedule overall. Inputs on the Kenyan side were also completed as planned although there was a shortage of the budget allocation for the purchase of training facilities. Therefore, the delay in the construction of the Institute, which was completed in December 1998 under the Grant Aid program requested along with this technical cooperation, delayed the start of the training courses.

(2) Effectiveness

The three-year diploma course for high school graduates started in June 1996 as planned. Some 265 students were taking the course in June 1999. Counterparts had acquired sufficient skills and knowledge through technology transfer to be able to formulate curriculum and textbooks. As a result, the pass rate for the national examination of the first sixty-seven graduates reached 96 percent. This success rate is extremely high compared with the average success rate of the graduates of the Kenya Polytechnic who achieved 60 percent from 1987 to 1990 and 78 percent in 1998. In this regard, the diploma course of KISM came to play a key role in training qualified professionals in the field of land surveying and mapping.

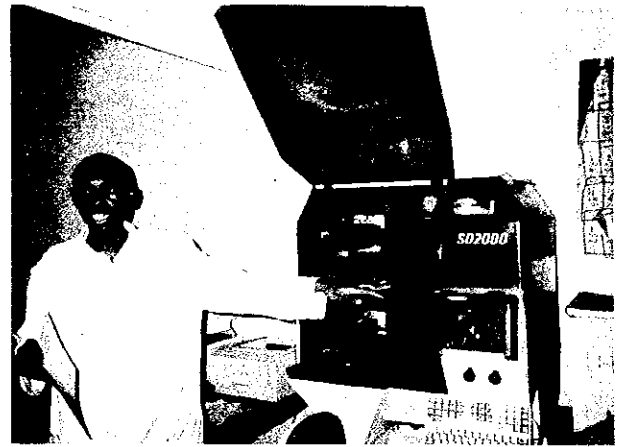
However, the two-year higher diploma course for officials of the Land Survey Division started two years behind schedule from the initial plan in January 1998 due to the delay in the construction of the Institute. Fifty-nine students were attending the course in June 1999. The completion of the technology transfer was hindered by the delay in the launch of the higher diploma course.

(3) Impact

The high success rate for the national examination of graduates of the diploma course contributed to satisfying the personnel requirements in the fields of land surveying and mapping in Kenya. Although the recruitment of the newly qualified national civil servants was on temporary hold at the time of evaluation due to the economic crisis in Kenya, it was expected that skilled workers for land surveying and mapping would be satisfied by the year 2002, if recruitment resumed and the high success rate for the national examination of KISM graduates was maintained. Furthermore, KISM came to receive requests for mapping and similar work from other government agencies and international organizations as a result of becoming an established training institution.

(4) Relevance

The Government of Kenya promoted industrial land use in the National Economic Development Plan. Land surveying and mapping would provide important land



A lecturer explains their activities to evaluation team.

information and play a significant role for the implementation of the plan. This project closely matched the national plan in terms of the training of land survey engineers; therefore, the overall goal and project purpose were deemed to be relevant.

(5) Sustainability

KISM covered a portion of management costs through course fees and the formulation and sale of maps. However, it was considered necessary for the institute to establish new sources of revenue, for example, by undertaking consulting work for private enterprises, in order to protect itself against the unstable financial situation of the government as well as to prepare for its future status as a parastatal organization which independently generates its own resources. In terms of technical aspects, mechanical skills (for operation of the equipment) were generally satisfactory, but further improvement in the area of management was required.

6. Lessons Learned and Recommendations

(1) Lessons Learned

It is often difficult for training institutions to generate sufficient revenue through course fees only. However, once the training facilities and organization are established, the number of projects commissioned by other organizations would likely increase and the financial foundation would be strengthened as a result.

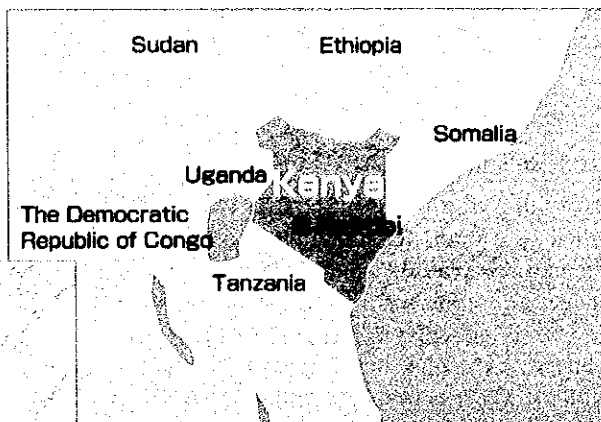
(2) Recommendations

Follow-up cooperation to develop the higher diploma course of which technology transfer was delayed was recommended.

7. Follow-up Situation

Following the above-mentioned recommendation, a two-year Follow-up Cooperation was implemented. As a result of that Follow-up Cooperation, the project also achieved its project also purpose for higher depuroma course .

Jomo Kenyatta University of Agriculture and Technology (Bachelor Degree)



Project Site Nairobi

1. Background of Project

The Government of Kenya outlined a policy to establish a high technology education system that would train engineers for nation building. To realize this aim, in February 1977, the Kenyan Government requested cooperation from the Japanese Government to establish the Jomo Kenyatta University of Agriculture and Technology (JKUAT). Responding to the request, the Japanese Government constructed school buildings and established relevant facilities under Grant Aid cooperation programs in the years 1978-1980, 1983 and 1989-1991. In addition, the Japanese Government carried out a Project-type Technical Cooperation in support of the diploma course (technology education course) in three departments (horticulture, agricultural engineering, and food engineering) of the Faculty of Agriculture, and in three departments (civil engineering, mechanical engineering, electronics and electrical engineering) of the Faculty of Engineering.

After establishment of the bachelor's course at the JKUAT, the Government of Japan launched another Project-type Technical Cooperation program in three departments in each of the Faculties of Agriculture and Engineering as well as in the Department of Computer Science of the Faculty of Science. The initial period of cooperation was extended two years from April 1995 and then a three-year Follow-up cooperation program began in April 1997. Particular target issues were enhancement of the University management system and promotion of research and community-based development. This evaluation focuses only on the Follow-up cooperation of the last three years.

2. Project Overview

(1) Period of Cooperation

April 1997-April 2000 (Follow-up period)

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organizations

Ministry of Education, Science and Technology

Jomo Kenyatta University of Agriculture and Technology (JKUAT)

(4) Narrative Summary

1) Overall Goal

The graduates of the JKUAT contribute to the development of agriculture and industry in Kenya.

2) Project Purpose

Students from the targeted seven departments of JKUAT acquire the necessary knowledge and skills to work in the fields of agriculture and industry.

3) Outputs

- a) The management system of JKUAT is improved.
- b) Both theoretical and practical education are provided to the students enrolled in bachelor's courses.
- c) The quality of teachers is improved.
- d) Facilities and equipment necessary for the course work and research activities are improved.
- e) Research activities are conducted.

4) Inputs

Japanese Side

Long-term experts	10
Short-term experts	44
Trainees received	26
Equipment	approx. 53 million yen
Local cost	approx. 74 million yen

Kenyan Side

Counterparts	16
Land and facilities	
Local cost	approx. 876 million KSH (approx. 1,374 million yen)

3. Members of Evaluation Team

Team Leader/Civil Engineering:

Hiroji NAKAGAWA, Professor, Faculty of Science and Engineering, Ritsumeikan University

Agricultural and Food Engineering:

Atsushi YOMOTA, KAIHATSU Inc.

Horticulture/Farmland:

Masaharu MASUDA, Professor, Faculty of Agriculture,
University of Okayama

Electric Engineering/Mechanical Engineering:

Yutaka FUKUI, Professor, Faculty of Engineering,
University of Tottori

Education Administration:

Toshihiro OBATA, Office of Educational and cultural
exchange, science and International Affairs Bureau,
Ministry of Education, Science, Sports and Culture

Planning Evaluation:

Junpei WATANABE, Director, Second Technical
Cooperation Division, Social Development Cooperation
Department, JICA

Cooperation Planning:

Kazuro SHIBUYA, Second Technical Cooperation
Division, Social Development Cooperation
Department, JICA

Evaluation Analysis:

Akira MATSUMOTO, IC Net, Ltd.

4. Period of Evaluation

10 February 2000-21 February 2000

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

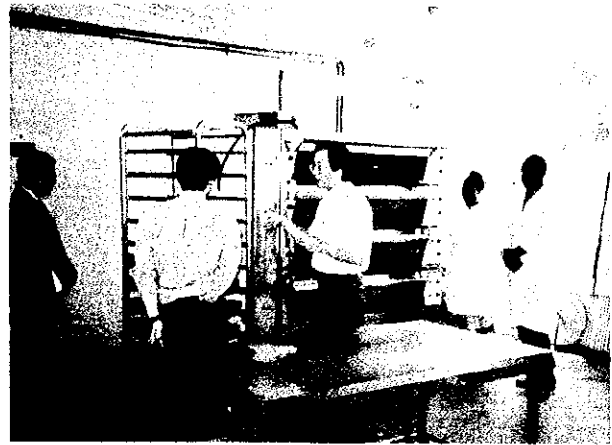
Inputs on the Japanese side were carried out generally as planned and contributed to accomplishing the outcomes. However, in terms of the short-term experts, difficulties arose since most were university professors who were very busy with their own work, and thus their mission period was very limited. In terms of inputs on the Kenyan side, the construction of the building for the Faculty of Science was suspended due to the shortage of the construction budget and this hindered the smooth implementation of the education and research programs.

(2) Effectiveness

A manual for developing the annual project plan was formulated and utilized, and the management system of the JKUAT was also strengthened. In all seven target departments, a bachelor's curriculum that integrated theoretical and practical approaches was also established. A total of 510 students graduated from the seven departments during the Follow-up period. The pass rate of the exit examination was high, above 90 percent in most departments. JKUAT strengthened its capacity to conduct independent research as requested by private enterprises. Based on these achievements, it was evaluated that the project purpose was generally accomplished.

(3) Impact

Due to the increased recognition of JKUAT, better students were attracted to the school and the level of graduates was upgraded as a result. The employment situation for graduates was relatively favorable for a university with a short history. Many students graduating from JKUAT attained suitable positions and were valued



Counterpart explaining their activities to evaluation team.

by their employers.

In addition, JKUAT was conducting Third-country Training Programs, which helped disseminate research findings to neighboring countries.

(4) Relevance

The Government of Kenya declared the development of industry as one of the important issues in the Eighth National Development Plan. In terms of the development of human resources in this field, JKUAT's educational policy and practical curriculum, which contained trainings at outside organizations and research activities applicable to the real world, were highly relevant to fulfilling the national policy.

(5) Sustainability

At the time of the Kenyan Government's financial crisis, the strengthening of primary and secondary education received more emphasis than that of higher education in the educational policy. Therefore, the budget allocation from the government to the national universities, such as JKUAT, was not sufficient. In 1999-2000, the annual revenue for JKUAT was expected to be 439 million shillings (approx. 688 million yen), an amount sufficient to sustain basic educational activities. However, the budget was very limited for research activities; therefore, sustainability was weak in this aspect.

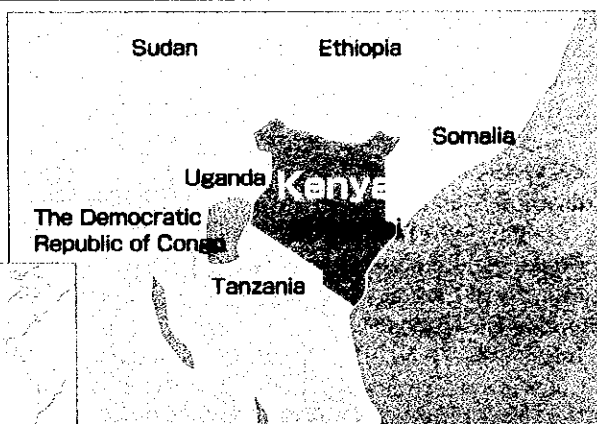
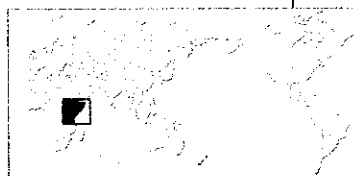
6. Lessons Learned and Recommendations**(1) Lessons Learned**

The project approach, which emphasized both theory and its application to the real world, was evaluated highly by the industrial sector. This approach was recommended to future projects concerning higher education in Africa.

(2) Recommendations

Although JKUAT still had financial problems, it established the basic foundation to carry out its own activities as a university. Self-sustenance on the Kenyan side was expected and thus it was determined that the cooperation terminate as initially planned.

The Project for Improvement of the Kenya Medical Training College



Project Sites **Nairobi**

1. Background of Project

Kenya Medical Training College (KMTc) was the only public training institute of paramedical personnel in Kenya, and had been training 80 percent of the medical workers in the country. However, superannuation of the almost 30-year-old facilities and the lack of training instruments made it difficult to provide high-quality lessons and training in the latest medical technologies. In response to the situation, the Government of Kenya requested Grant Aid from Japan for the renovation of facilities and provision of educational equipment.

2. Project Overview

(1) Period of Cooperation

FY1996, FY1997

(2) Type of Cooperation

Grant Aid

(3) Partner Country's Implementing Organizations

Ministry of Health
Kenya Medical Training College (KMTc) and other
Medical Training Colleges (MTCs)

(4) Narrative Summary

1) Overall Goal

The students of KMTc acquire proper and adequate medical skills.

2) Project Purpose

The educational environment of KMTc is improved.

3) Outputs

- a) Facilities of KMTc and three MTCs outside of Nairobi are renovated.
- b) Training equipment is provided to KMTc and 19

MTCs.

- c) A maintenance system is established in KMTc and MTCs.

4) Inputs

Japanese Side

Grant	Total 1.851 billion yen (E/N amount)
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Kenyan Side

Land

3. Members of Evaluation Team

JICA Kenya Office
(Commissioned to ALMACO MANAGEMENT
CONSULTANTS LTD.)

4. Period of Evaluation

20 March 2000-31 March 2000

5. Results of Evaluation

(1) Efficiency

The renovation of facilities and the provision of equipment were implemented without any major changes or trouble; thus, KMTc and the facilities of three MTCs were renovated and equipment was provided to KMTc and 19 MTCs.

Since this project was planned with a central focus on KMTc, there were some cases where equipment not considered high in priority was provided to MTCs located outside of Nairobi. Also, there were some instances where newly provided equipment was used in old facilities because part of the renovation work of MTCs was left to the self-efforts of the Kenyan side and was excluded from

the Japanese grant aid.

(2) Effectiveness

Some of the provided equipment for MTCs was not effectively used as the systems for maintenance of the facilities and equipment that was the responsibility of the Kenyan side were not yet established. Otherwise, the facilities and equipment of the 19 schools were used effectively and the educational environment was greatly improved.

(3) Impact

The students' learning environment was improved through use of the provided equipment, allowing more opportunities for practical training. As a result, the integration of theory and practical learning was made easier. In addition, school staff members were seen to have more motivation as a result of this project.

(4) Relevance

The Eighth National Development Plan, 1997-2001, and the Poverty Eradication Plan, 1999-2015, included measures for improvement of health and medical services; and the 1996 Health Policy Framework Implementation Action Plans targeted the development of human resources related to health. Considering these policies, this project corresponded to the policy of the government of Kenya, and thus, the relevance was considered high.

(5) Sustainability

During this evaluation study, self-help efforts by the Kenyan side, including the renovation of student dormitories, were observed. However, because of the limited financial resources of the government of Kenya and the difficulty of allocating an adequate budget for maintenance activities, the maintenance center of KMTC was not yet active. Nor were workrooms to manage maintenance activities provided to all the MTCs. Thus, the system and manuals for this kind of work were not formulated. The security of independent income was recommended through the collection of course fees and payment for services.

6. Lessons Learned and Recommendations

(1) Lessons Learned

When equipment is provided, it is necessary to give adequate guidance on operation and maintenance methods at the time of delivery. Even though the equipment is basic, some kinds of equipment may be new to



Kenya Medical Training College constructed by the Project



Model of human body utilized for health education

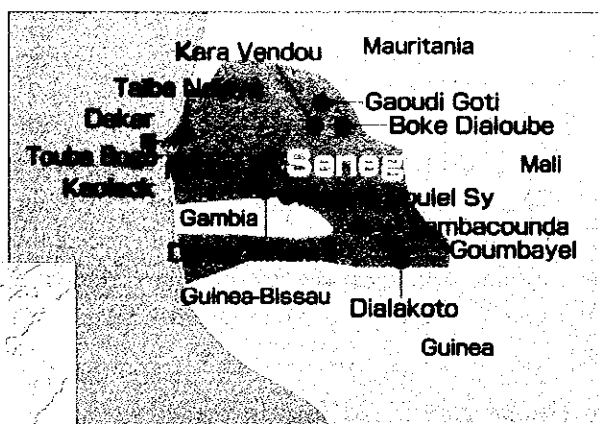
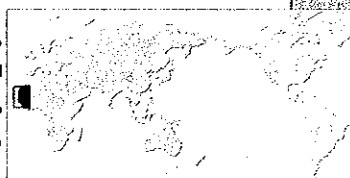
counterpart countries.

(2) Recommendations

It was expected that the Kenyan side would enhance self-help efforts in terms of the improvement of finances. In particular, immediate establishment of the maintenance system for equipment was required. In addition, it was considered necessary to improve lessons and training for the staff of MTCs on the use of new equipment.

Reinforcement of Rural Water Supply System

Project Sites Tambacounda, Kaolack, Touba Bogo, Medina Boulel Sy, Darou Minam II, Moure, Boke Dialoube, Gaoudi Goti, Taïba Ndiaye, Dialakoto, Goumbayel, Kara Vendou



1. Background of Project

In Senegal, located south of the Sahara desert, rural communities, home to about 60 percent of the total population, faced a serious shortage of water due to the drought of the 1970s and 1980s. Therefore, the Government of Senegal identified the establishment of rural water works as an urgent and primary issue, and attempted to formulate a concrete maintenance plan. Japan had implemented some cooperation programs in the field of rural water supply in Senegal, but repair work and extension of the existing water supply facilities was necessary as part of the network was more than ten years old and the demand for water grew apace the growth in population. Establishing a maintenance center was also needed to conduct large-scale repair work of water supply facilities.

Under these circumstances, the Government of Senegal formulated "the Project for Reinforcement of Rural Water Supply System" and requested Grant Aid from Japan with the aims of renovating and extending ten water supply facilities and two maintenance centers.

2. Project Overview

(1) Period of Cooperation

FY1995-FY1997

(2) Type of Cooperation

Grant Aid

(3) Partner Country's Implementing Organization

Department of Waterworks, Ministry of Hydraulics

(4) Narrative Summary

- 1) Overall Goal
Rural communities and rural industry in Senegal are developed.
- 2) Project Purpose

A stable water supply is provided to community people in the targeted villages for domestic use and for livestock.

3) Outputs

- a) Ten water supply facilities are renovated.
- b) Two maintenance centers are established.

4) Inputs

Japanese Side

Grant	Total 1.39 billion yen (E/N amount)
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Senegal Side

Water supply facilities
Land

3. Members of Evaluation Team

Team Leader:

Kiyohumi KONISHI Director, Project Monitoring and Coordination Division, Grant Aid Management Department, JICA

Facilities Study:

Kinichi HASHIMOTO, GIJUTU KOKAI

Operation and Maintenance Study:

Yasuyo OKUMOTO, Institute for International Cooperation, JICA

Interpreter:

Toshiyuki MORITA, Japan International Cooperation Center

4. Period of Evaluation

10 April 2000-20 April 2000

5. Results of Evaluation

(1) Efficiency

The project was efficiently implemented and the construction of facilities and procurement of equipment

were conducted as initially planned.

(2) Effectiveness

In all three villages where the evaluation study was carried out (Dialakoto, Goumbayel, and Taïba Ndiaye), 35 liters of safe water were distributed per person per day, and water for livestock was also secured. The same situation was identified in the other seven villages where perfunctory examinations were carried out in tandem with this evaluation study.

Before the project was implemented, there was only one head office for maintenance work which was responsible for the maintenance of about 230 deep wells, therefore it took two to three months to carry out repair work on distant facilities. After the establishment of the two maintenance centers, the wait period for repair work was reduced to about one week. As such, it was considered that the project purpose was accomplished.

(3) Impact

It was recognized that various self-help activities were attempted in the villages according to their conditions. For example, one village prepared vegetable gardens and started to grow vegetables in order to utilize surplus water for productive activities, with the women's association receiving a subsidy from the Ministry of Agriculture. Another village established a day care center and attempted group nursing in order to make collaborative work of vegetable cultivation easier. As these results showed, it was evaluated that the project had a significant impact on the improvement of people's lives.

(4) Relevance

Extension and improvement of water facilities and enhancement and construction of rural infrastructure were incorporated in the Ninth Plan for Social and Economic Development (1997-2001) of the Government of Senegal as well as in its strategic policy that set the goals of quality improvement of government services and provision of infrastructure work and enhancement of rural development and integration. Therefore, the relevance of this project, which aimed at establishing rural water supply facilities, was evaluated to be high.

(5) Sustainability

A maintenance system was established in each village as a result of the efforts of the Government of Senegal and no problems were found in terms of facility operation by community people. In principle, funds for operation of water supply facilities were covered by village people and the money was collected by the water management association. In the villages visited by the evaluation team, a clear collection system was there and collection of fees



Water supply facilities in Dialakoto village

was strictly enforced.

In order for people in rural communities to afford water fees, they have ways to earn a cash income. In some villages, people started to grow vegetables using surplus water, even though they lacked the knowledge and skills of vegetable cultivation. Measures such as the transfer of technology on vegetable cultivation seemed to be necessary in order to raise productivity, ensure a cash income, and achieve efficient use of water.

In terms of the maintenance center, although the government's financial situation was difficult at the time, appropriate allocation of budget and personnel was secured by the Ministry of Hydraulics. Therefore, it was considered that there would be no problem of sustainability.

6. Lessons Learned and Recommendations

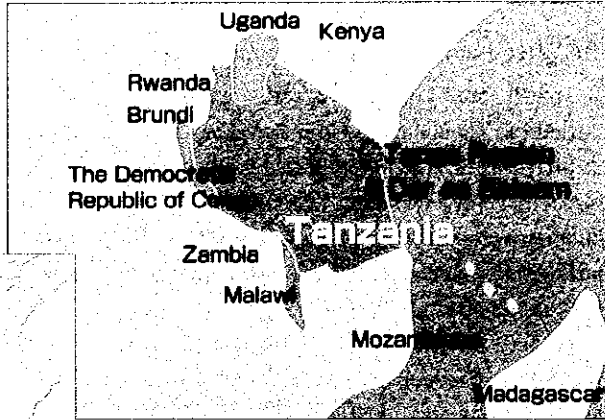
(1) Lessons Learned

When a cooperation program is carried out in the field of rural water supply, cooperation should not be limited only to the area of hardware, such as provision of facilities and equipment. Cooperation for software, such as low-profile support for rural development, also should be considered together with the partner countries and community people.

(2) Recommendations

It was evaluated that there was no need for Follow-up cooperation as this project achieved the expected outcomes. However, it would be desirable to consider the possibility of transfer of technology on vegetable cultivation in order to further enhance sustainability of this project through achieving efficient use of water and secure collection of water fees.

Maternal and Child Health



Project Sites

Dar Es Salaam, Tanga Region

1. Background of Project

Tanzania has one of the highest infant mortality rate in the East African region, and due to the lack of doctors, nurses and medical equipment, health and medical services cannot be readily expanded. To address the situation, the Government of Tanzania set the objectives of reducing infant and maternal mortality and requested Project-type Technical Cooperation from the Government of Japan in order to achieve them.

2. Project Overview

(1) Period of Cooperation

1 December 1994-30 November 1999

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organizations

Directorate of Preventive Services, Ministry of Health
Department of Paediatrics Muhimbili Medical Center (MMC)
Department of Microbiology, Muhimbili University
College of Health Sciences
Tanga Regional Health Management Team (RHMT-Tanga)

(4) Narrative Summary

- 1) Overall Goal
To attain the national maternal health and child survival goals by the year 2000.
- 2) Project Purpose
To reduce maternal and child morbidity and mortality.
- 3) Outputs
 - a) Improve maternal and child health services in Tanga and the Korogwe Districts as model areas are improved
 - b) Virology diagnostic capacities in EPI diseases at MMC is improved
 - c) The capability of activities directed towards the reduction of maternal, infant and child mortality rates at MMC is strengthened.

4) Inputs

Japanese Side

Long-term experts	13
Short-term experts	13
Trainees received	16
Equipment	204 million yen
Local cost	96 million yen

Tanzanian Side

Counterparts	27
Land and facilities	
Local cost	

3. Members of Evaluation Team

Team Leader:

Hiroshi SHIKU, Dean & Professor of the Faculty of Medicine, Mie University

Pediatrics:

Minoru SAKURAI, Director of Ueno City Hospital

Public Health:

Yasuo CHINZEI, Professor of the Department of Zoology, the Faculty of Medicine, Mie University

Virology:

Takao YOSHII, Senior Researcher, Department of Anti-virus Products, National Institute of Infectious Diseases

Laboratory Administration:

Katsuhito NISHIOKA, Director, Educational Affairs Division, Faculty of Medicine, Mie University

Evaluation Planning:

Akira SUZUKI, Second Medical Cooperation Division, Medical Cooperation Department, JICA

4. Period of Evaluation

9 June 1999-24 June 1999

5. Results of Evaluation

Because it was recognized that the project includes three different components (MCH activity in Tanga region, enhancement of virological diagnosing capacity,

and enhancement of pediatric capacity), a separate evaluation was carried out for each of the three.

(1) Efficiency

The inputs for the MCH in Tanga Region and Pediatrics at MMC, were all provided as planned. The construction of the virological laboratory at MMC was delayed on the Tanzanian side, but a full-functioning laboratory was eventually completed, so it was perceived that the main output was achieved with minimum inputs.

(2) Effectiveness

For MCH in Tanga Region, 227 trained traditional birth attendants (TBAs), approximately one-third of all TBAs in the project area, could provide safer delivery service as a result of using sterilized delivery kits. However, the maternal mortality and infant mortality rates were not clear in the five-year period of the project.

Regarding virology at MMC, a polio laboratory was newly established, and the virological laboratory work was initiated by the Tanzanians themselves. The surveillance achievement of Acute Flaccid Paralysis (AFP) was eight cases in 1997, 128 in 1998, and 64 as of June 1999; therefore, this result was evaluated highly.

Regarding pediatrics at MMC, the purpose of enhancement of examination and diagnosing capacities was mostly achieved in terms of technologies. Although the mortality rate in the pediatric ward has remained at the same level over the past three years, the capacity of the laboratory and quality of diagnostics were enhanced and medical services were improved. Therefore, it was judged that the project purpose was generally achieved.

(3) Impact

Regarding MCH in Tanga Region, cost recovery for delivery was introduced, and 85 percent of the community women in the study areas desired assistance from TBAs who were trained by JICA. Thus, it was considered that the project had a high impact on raising the awareness of health issues among community people.

Regarding virology at MMC, if the performance of polio diagnosis in Tanzania is considered (polio was eliminated), it is expected that accurate and timely virological diagnosis will be achieved at the laboratory in the near future.

Regarding pediatrics at MMC, the introduction of the idea of Laboratory Based Medicine was a major achievement.

(4) Relevance

The activities of MCH in Tanga Region, Virology at MMC, and Pediatrics at MMC will contribute to safe delivery, eliminate polio and reduce the morbidity and mortality rate of children and infants. Therefore, these were consistent with the improvement of MCH services in the National Policy of Tanzania.

(5) Sustainability

Regarding the MCH activity in Tanga Region, it was expected that the activities of TBAs could ensure safer



Examination room of pediatrics in Muhimbili Medical Center

delivery if the TBA kits (hygienic and safer delivery kits, among which the consumable items are paid for by the beneficiaries) in trial use were permanently established.

Regarding virology at MMC, if the Center can strengthen cooperation with other related organizations such as WHO and continue to secure reagents and other consumable goods, sustainability would be very high.

Regarding pediatrics at MMC, technical sustainability was expected in terms of laboratory and diagnostic capacities, but securing the funds for reagents and consumable goods in the laboratory and maintenance of equipment was a major issue. If income is increased through cost recovery for the laboratory services being introduced, and operation of the laboratory is assured, higher sustainability would be possible.

6. Lessons Learned and Recommendations

(1) Lessons Learned

As this project simultaneously implemented three different areas of cooperation, various difficulties arose in project management. Thus, when one project includes three different components that must be implemented separately, it is necessary for the two countries to discuss and coordinate more closely than usual when the project is being planned.

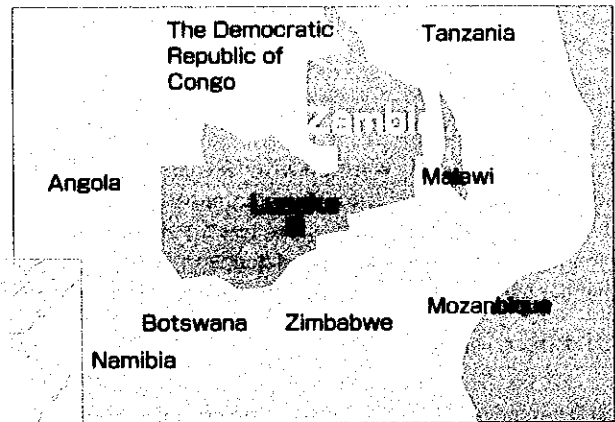
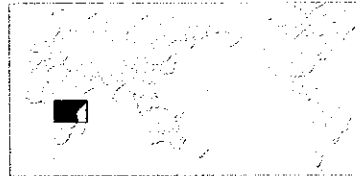
(2) Recommendations

It was felt that MCH services would be further improved by the strengthening of TBAs in Tanga Region, and self-operation of the laboratory and medical teamwork system at the pediatrics of MMC could be sustained by additional cooperation. Therefore, Follow-up cooperation in this area was recommended.

7. Follow-up Situation

In view of the foregoing, after the cooperation period ended, a two-year Follow-up cooperation program was implemented to run from 1 December 1999 to 30 November 2001.

Infectious Diseases Control Project



Project Site **Lusaka**

1. Background of Project

In Zambia, infectious diseases are the principal cause of ill health. Specifically, 20 percent of the adult population is infected with the AIDS virus, and the incidence of tuberculosis has increased rapidly since the mid-1980s. Against this background, Japan implemented Project-type Technical Cooperation titled "University of Zambia, School of Medicine Project" from February 1980 to February 1989. This project provided technical cooperation to the University Teaching Hospital in Zambia (UTH) mainly in the fields of neonatal care and pediatric surgery. Following this project, another Project-type Technical Cooperation, "Infectious Diseases Project" was implemented in the field of medical technology for viral diseases from April 1989 to March 1994.

Based on the outcome of these previous cooperation activities, the Government of Zambia requested Japan to provide technical cooperation with the aim of strengthening the functions of the UTH Virology Laboratory, which had been set up through the Infectious Diseases Project, so that the Laboratory would be capable of laboratory diagnosis not only on viral diseases but also bacterial infections.

2. Project Overview

(1) Period of Cooperation

1 April 1995-31 March 2000

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organization

University Teaching Hospital in Zambia (UTH)

(4) Narrative Summary

1) Overall Goal

To control infectious diseases in Zambia through development of human resources.

2) Project Purpose

To strengthen the functions of the Virology Laboratory at UTH as a public health laboratory

for improved diagnosis of infectious diseases.

3) Outputs

- The quality of laboratory diagnosis on infectious diseases at UTH is improved.
- Etiological and epidemiological studies on infectious diseases are conducted at the hospital and in communities.
- The surveillance system for infectious diseases is strengthened.
- Essential laboratory techniques for infectious diseases are improved at the district level.
- Data obtained from the project are effectively utilized.

4) Inputs

Japanese Side

Long-term experts	8
Short-term experts	14
Trainees received	10
Equipment	approx. 212 million yen
Local cost	approx. 118 million yen

Zambian Side

Counterparts	17
Land, facilities, equipment	
Local cost	approx. 1 million yen

3. Members of Evaluation Team

Team Leader:

Youichi MINAMISHIMA, Vice President, Miyazaki Medical University

Epidemiology and Human Resource Development:

Hiroshi SUZUKI, School of Medicine, Niigata University

Bacteriology and Immunology:

Kazuo SUGAMURA, School of Medicine, Tohoku University

Virology:

Kiyoto NAKAMURA, School of Medicine, Yamagata University

Project Management:

Ikuo TAKIZAWA, Second Medical Cooperation

Division, Medical Cooperation Department, JICA

4. Period of Evaluation

20 July 1999-5 August 1999

5. Results of Evaluation

(1) Efficiency

Since most of the inputs including major equipment were implemented effectively and produced a number of outputs, they were judged to be mostly efficient. However, due to the characteristic of research-oriented projects where core activities bring about a number of smaller research themes, project activities tended to diffuse over time as the project progressed, which made the implementation of specific research programs and output-oriented project management difficult. Also, the considerable delay in the dispatch of one long-term expert and the consequent delay in activities of the tuberculosis division might have restricted achievement of the anticipated outputs.

(2) Effectiveness

Most of the planned transfer of microbiological techniques (viruses and acid-fast bacteria) were completed. Also, through five technical workshops for district hospital staff, the project trained a total of 226 doctors and technologists on surveillance and laboratory diagnosis of HIV and polio. From these achievements, it was considered that UTH established its technical and organizational base for carrying out surveillance of infectious diseases as well as providing technical support for other laboratories in the country; thus, the purpose of the project was mostly achieved.

(3) Impact

The UTH Virology Laboratory gained increasing international reputation because of its improved laboratory techniques and research capacity. The Laboratory was designated as a national reference laboratory for the polio eradication program under the Africa Regional Polio Laboratory Network, and was also recognized as a national institute for influenza by WHO in 1997. As a result, researchers in Zambia were highly motivated to work in the Laboratory, which may have a long-term impact on retaining highly skilled human resources within the country. Moreover, data collected by the etiological and epidemiological studies supported by the project provided valuable base-line information for the health reform proceeding in Zambia. In this way, the project also contributed to the better control of infectious diseases.

(4) Relevance

Control of infectious diseases has continued to be an urgent and important public health issue in Zambia. The recently defined essential package of health-care services also included control of infectious diseases as one of its

major targets. Also, it was significant to develop virological laboratories in Africa, where the basis for virus control is still fragile, and therefore relevance of the project was considered to be high.

(5) Sustainability

The retention rate of trained counterparts in the UTH Virology Laboratory was high. It was thus considered possible that they would continue to supervise and guide the younger members of the laboratory staff. Regarding financial aspects, the activities of UTH related to polio, HIV and influenza were receiving financial support from donors including NORAD, WHO and UNICEF. Other activities that were currently funded from the project would likely be sustainable to some extent considering the efforts of the Laboratory to introduce cost-sharing mechanisms through charging for some of the services it provides. However, there were some concerns over the availability of funds for operation and maintenance of equipment provided, especially for the supply of high-cost consumables necessary for some equipment.

6. Lessons Learned and Recommendations

(1) Lessons Learned

When planning a project that includes components of research and development, the planners should prepare, in addition to PDM and other standard project documents, a detailed implementation plan of individual research programs. Once such a project starts, the implementers should always make sure that the activities are carried out in accordance with the implementation plan.

(2) Recommendations

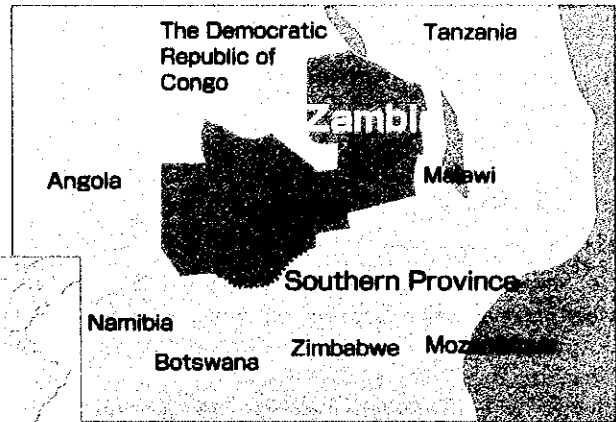
Since the tuberculosis section had not fully achieved the intended output due to the delay in the dispatch of one long-term expert, it was recommended to extend the term of the expert for one year and to provide additional technical cooperation after the termination of the project. Also, in the event Zambia requests another technical cooperation project to utilize the UTH Virology Laboratory, it was considered desirable that the Japanese side respond to the request positively after confirming the possibility of securing the necessary support mechanism (i.e., human resources to be dispatched as experts and host organizations to accept Zambian trainees).

7. Follow-up Situation

Based on the above recommendation, the term of the expert in the field of tuberculosis was extended one year and two months.

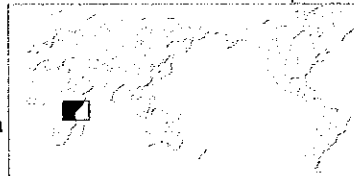
In addition, with the aim of strengthening the system of testing for AIDS and tuberculosis (as an AIDS-related complication) infection, Project-type Technical Cooperation, "The HIV/AIDS and Tuberculosis Control Project" is being implemented for a five year duration from 30 March 2001.

Southern Province Water Supply Project



Project Sites

Monze, Sinazongwe, and Namwala Districts in the Southern Province



1. Background of Project

Despite the Zambian Government's efforts to promote the construction of wells in villages in the Southern Province, many facilities were not in use due to the lowering of the water level of shallow wells and breakdown of pumping facilities. As a consequence, the water supply coverage rate was estimated to be as low as 18 percent. Community people resorted to using hand-made shallow wells, distant surface water and stagnant water for their water supply, and drank this water without filtration or boiling. The situation was further aggravated by low rainfall in 1992, and the shortage of domestic water and incidence of diseases associated with water became serious.

Under these circumstances, the Government of Zambia formulated a plan for the construction of borehole water supply facilities and the improvement of water conditions in the villages in southern provinces, and requested Grant Aid from Japan. In this project, DfID oversaw the maintenance activities of wells carried out by community members under the WASHE program¹⁾.

burden of water collection on community people are reduced.

2) Project Purpose

Community people in the project sites have access to safe water for domestic use.

3) Outputs

- a) 60 borehole facilities with hand pumps are constructed.
- b) Resources and equipment necessary for the maintenance of borehole facilities are provided.
- c) The organizational capability and activities of WASHE committees are enhanced in order to strengthen the maintenance activities of borehole facilities. (DfID)

4) Inputs

Japanese Side

Grant	Total 702 million yen (E/N amount)
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Zambian Side

Land

2. Project Overview

(1) Period of Cooperation

FY1996

(2) Type of Cooperation

Grant Aid

(3) Partner Country's Implementing Organizations

Ministry of Energy and Water Development (MEWD)
Department of Water Affairs (DWA)

(4) Narrative Summary

1) Overall Goal

The incidence of disease associated with inadequate water and poor hygiene practices and

3. Members of Evaluation Team

JICA Zambia Office
(Commissioned to ASCO, accompanied by Harumi IDA, Project Formulation Adviser, JICA)

4. Period of Evaluation

7 November 1999-20 November 1999

5. Results of Evaluation

(1) Efficiency

The construction of boreholes and the provision of resources and materials were implemented as scheduled.

(2) Effectiveness

A total of 220 borehole facilities were installed in the villages and the schools in the city and nine districts through Phase I and II of this project.

Most of the sixty boreholes constructed in phase I and then studied by the evaluation team were still being used at the time of evaluation, two years after the delivery to the Zambian side. However, the establishment of drainage facilities on the side of community people was behind schedule in some areas.

At the same time, the organization of WASHE committees was promoted at the village level (V-WASHE) as reflected by the enhancement of organizational capability and activities of district-level WASHE committees (D-WASHE) which DfID took charge of. As a result, a V-WASHE committee consisting of community representatives was established in every village where a borehole was installed, and a certain level of maintenance activities were carried out by community people. Also, sanitary education was implemented in most villages. However, measures to protect water supply facilities, such as putting a fence around wells, and maintenance activities were not adequate in those villages which were inaccessible by road and difficult to receive the support of WASHE committees.

(3) Impact

With the exception of a few areas, clean water became available for community people year-round in the areas where boreholes were installed. Also, time spent for collection of water was reduced; therefore, this project contributed to the improvement of the quality of life of villagers.

(4) Relevance

The target villages were those areas where the provision of infrastructure was delayed and public services were not accessible. Thus, the villagers in these areas urgently required water-supply facilities. In addition, this project was based on the national water policy of the government of Zambia; therefore, the relevance of this project was considered high.

(5) Sustainability

The borehole maintenance system had some weaknesses particularly in communities that lacked harmony and support from NGOs. Also, small technical problems frequently occurred as no regular maintenance of boreholes was carried out. Although, in principle, water fees were collected regularly from community people, there was concern that the funds would not be sufficient for large-scale renovation work. Furthermore, it was



Deep well for manual fire engine (Monze District)

difficult to charge such fees in the areas where many users were poor.

6. Lessons Learned and Recommendations

(1) Lessons Learned

In projects where water supply facilities, such as boreholes, are installed, drainage facilities should be provided at the same time. In order to keep the water safe for drinking, there should be measures to protect wells and drainage ditches, such as planting a hedge or building a log fence to deny access to animals.

(2) Recommendations

Support to V-WASHE committees should be continued in order to enable sustainable maintenance activities by communities. In particular, a training program on the methods of maintenance and renovation of wells and the issues of health and hygiene should be provided to borehole managers, WASHE members and borehole users. In addition, community fund raising for maintenance is necessary, and further support on the software side should also be considered in order to make the project more sustainable at the community level.

¹⁾ The WASHE (Water, Sanitation, Health and Education) program outlines the basic concepts and framework for the system of water supply and sanitation activities in local villages. WASHE aims to promote concrete measures and resolve the salient issues laid out in the National Water Policy in a comprehensive manner. The activities are promoted through the WASHE committees established at every administrative and regional level.