Simplified Ex-Post Evaluation for Grant Aid Project

Evaluator, Affiliation	Nobuko Fujita Foundation for Advanced Studies on International Development	Duration of Evaluation Study
Project Name	The Project on Strengthening of Water Examination System in the People's Republic of Bangladesh	January 2010 – December 2010

I Project Outline

Country Name	The People's Republic of Bangladesh	
Project Period	September 2004-March 2006	
Implementing Agency	Department of Public Health Engineering (DPHE)	
Project Cost	Grant Limit: 495 million yen	Actual Grant Amount: 493.7 million yen
Main Contractors	Construction: Shimizu Corporation Procurement: Sumitomo Corporation	
Main Consultants	Kokusai Kogyo Co., Ltd.	
Basic Design	Basic Design Study: February 20, 2004-August 10, 2004	
Related Projects (if any)	1. JICA, Development study on the groundwater development of deep aquifers for safe drinking water supply in arsenic affected areas(2000-2003) 2. JICA, Expert in arsenic mitigation(Local Government Department 2000-2002 and 2004-2008, and DGHE 2000-2006) 3. JICA, The Mobile Arsenic Center Project for Solving Arsenic Contamination of Drinking Water (2002-2004) (Partnership Program) 4. JICA, The Project for Sustainable Arsenic Mitigation under the Integrated Local Government System in Jessore, 2005-2008 (Project-Type Technical Cooperation) 5. JICA, The Project for Strengthening Capacity for Water Quality Analysis and Monitoring Systems in Bangladesh, 2009-2012 (Project-Type Technical Cooperation)	
Project Background	Since arsenic contaminated wells were first found in Bangladesh in 1993, arsenic contamination of underground water has become the nation wide problem. Previously simple examination of the water safety was implemented, but an adequate examination system that ensured accurate analysis of drinking water was not established. The problems of the examination system were: a lack of laboratories, equipment, and human resources to do analysis; inadequate equipment maintenance and procurement of test kits; inappropriate management of data on water quality; and lack of policy feedback of the examination results.	
Project Objective	To establish the Central Laboratory in Dhaka and rehabilitating two local laboratories in Jhenaidha and Noakhali, in order to establish drinking water examination system in Bangladesh	
Output[s] (Japanese Side)	1. Establishing the Central Water Examination Laboratory in Dhaka with adequate equipment 2. Rehabilitate the existing local laboratories in Jhenaidha and Noakhali districts with adequate equipment	

II Result of the Evaluation

Summary of the evaluation

This Project established the Central Water Examination Laboratory (Central Laboratory) and rehabilitated local laboratories in Jhenaidha and Noakhali districts. Prior to this Project, a nationwide water examination system did not exist, and local laboratories were under the control of the district offices of Department of Public Health Engineering (DPHE). Because of this, although the examination data were sent to the central authority, there was no organization to manage them properly. This Project established a new section, the Water Quality Monitoring and Surveillance Circle (WQMSC), to manage drinking water examination nationwide at DPHE, and established a nationwide system to manage the Central laboratory and the eleven local laboratories including Jhenaidha and Noakhali to carry out drinking water quality examinations.

After the completion of the three laboratories, the full operation was put off for 1-2 years due to the delay in staff assignment. During this period, the staff seconded or temporarily assigned from other local laboratories operating machinery periodically for maintenance, and newly recruited staff was trained by short-term experts in order to gradually start the operation. Meantime, a technical cooperation project, "The Project on Strengthening of Water Examination System (2009-2012)" with an objective to enhance water examination and monitoring capacity of DPHE was started and is still continuing.

Because of that, the number of water quality examinations at central and local laboratories, and the number of training sessions at the Central Laboratory have almost achieved the pre-set target. The water quality examination results are used to promote and develop alternative water sources. We can expect further upgrading of technique and organizational strengthening by the above technical cooperation project.

Although this evaluation understands that it may take more time to establish water supply system in order to achieve the overall goal "to improve the safety of drinking water," its first step, to establish and strengthen drinking water examination systems, was achieved. This evaluation also observed some problems in sustainability because of delays repairing of some equipment and the difficulty in assigning staff to the central and local laboratories. However, since above mentioned technical cooperation project is currently underway, improvement in capacity of WQMSC is expected.

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

<Recommendations>
Even if buildings and equipment are completed within the planned period, the equipment maintenance may incur costs and the effects of the soft component may be reduced if the implementing agency is not ready to utilize the facilities. It is recommended to monitor personnel assignments, and if they are delayed, to prod the Bangladeshi government so that the project can start operating as soon as facilities and equipment are ready.

1 Relevance

(1) Relevance to the Development Plan of the People's Republic of Bangladesh
"The fifth 5 year plan (1997-2002)" includes a goal of "improvement of sanitation in water supply." Also, PRSPII, revised in 2008, includes water and sanitation as an area for "improvement of public services to meet BHN" in its strategy to achieve the MDGs. The government also emphasizes arsenic mitigation and formulated the "National Policy for Arsenic Mitigation" in 2004 to strengthen the policy implementation.

(2) Relevance to the Development Needs of the People's Republic of Bangladesh
While Bangladesh has had a serious arsenic poisoning problem, the water quality examination system of DPHE was inadequate. Without the core organization necessary for establishing a nationwide drinking water quality examination system, it was difficult to maintain appropriate equipment and procure test kits. In addition, accuracy management, water quality data management, and feedback from examination outcomes in the policy implementation were difficult. Even today, arsenic poisoning requires continuing and prompt countermeasures that include upgrading of nationwide water quality examination system.

(3) Relevance to Japan's ODA Policy
"Japan's Country Assistance Program for Bangladesh" formulated in May 2006 designates social development (basic human life and human resource development) as one of the four pillars of assistance.

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

2 Efficiency

(1) Project Outputs
Construction of the DPHE Central Laboratory, procuring equipment for it, and the rehabilitation of two local laboratories were completed as planned except for minor changes in the roof and window specifications. As part of the soft component, 75 personnel were trained in the management of laboratories, analysis, equipment maintenance, and database management among others.

(2) Project Period (Project Inputs)
Including detailed designing and tendering periods, the Project was completed in 17 months, 2 months shorter than planned. (equal to 89.5% of planned period)

(3) Project Cost (Project Inputs)
The Project spent 493.7 million yen against the Project budget of 495 million yen. (equal to 99.7% of planned cost)

From the above, both project period and project cost were within the plan, therefore efficiency of the Project is high.

3 Effectiveness / Impact

(1) Quantitative Effects
Central Laboratory did not have staff assigned when the construction was completed and transferred; this delayed the full operation by one and half years. Subsequently, staff recruitment gradually proceeded and since WQMSC was established in July 2008, organization was improved and water examination is currently full operational. The number of drinking water examinations in 2009 combining regular examinations and irregular ones requested by NGOs and others was 1,375 which is close to the 2011 goal of more than 1,500.
Laboratories at Jhenaidha and Noakhali had delays in personnel assignment after the rehabilitation and installation of the equipment, and this delayed the initiation of the full operation by two years and one year respectively. Currently each laboratory has a staff of 5 and the number of the examinations was 3,932 at Noakhali laboratory and 1,286 at Jhenaidha laboratory in 2009, accounting for 25 % of all the examinations by 11 local laboratories in total.
The total annual number of examinations by existing local laboratories supervised by WQMSC reached 20,746 in 2009, accounting for 2/3 of the 2011 goal which was 30,000. (Prior to the Project, the number of examinations in the all local laboratories in 2004 was 8,000). The number of training sessions at the Central Laboratory was 25 in 2009, almost achieving the 2011 objective of 26 sessions. It can be said that the planned objective was almost achieved, although this is largely due to the technical cooperation project previously mentioned.

(2) Impacts (Impacts on the natural environment, Land Acquisition and Resettlement, Unintended Positive/Negative Impact)
Although the Project had "the supply of safe water without arsenic poisoning among others" as an overall goal, improving drinking water safety requires not only an examination system but also a water supply system, and this requires substantial time. The results of water examination upgraded by this project contributed to developing alternative drinking water sources. There was no impact on land acquisition and the natural environment.

From the above, this project has somewhat achieved its objectives; therefore its effectiveness is high.

4 Sustainability

(1) Structural Aspects of Operation Maintenance

As mentioned above, WQMSC was established to manage the central and local laboratories for nationwide water examination at DPHE, 135 positions were newly established, and 99 positions are already staffed up to now.

In the Central Laboratory, only 13 out of 37 positions are filled. Particularly, positions at managerial rank are not sufficiently staffed and the need to strengthen management is pointed out.

Local laboratories have just over half of their positions staffed (Jhenaidha 5 out of 9 positions, Noakhali 5 out of 9 positions). This causes difficulty in administering all the necessary well water sampling tests including the ones in remote areas although they are able to examine water brought in.

The assistance from central to local laboratories includes training, chemical supplies and spare parts, and advice regarding maintenance and simple repair. Local laboratories also send to the Central Laboratory monthly water examination reports, reports on the chemical stocks semi-annually, and the chemical waste to be treated appropriately by the Central Laboratory waste management facility.

(2) Technical Aspects of Operation Maintenance

Currently, it is reported that the equipment is mostly well used, maintenance manuals are prepared, and regular examinations are undertaken.

Among the personnel who were trained during the project period, all the seven personnel of the Central Laboratory and three out of four staff remain assigned to the Jhenaidha laboratory. At the Noakhali laboratory, all the three who received training resigned; however other staff received training on a separate occasion, thus causing no negative effect on examination activities. The technical cooperation project mentioned above increased the opportunities of training and it is expected that the Central Laboratory will continue to provide technical assistance to local laboratories.

(3) Financial Aspects of Operation Maintenance

The Central Laboratory received more than the planned budget as of FY2008, and since FY2009, the budget for WQMSC is allocated as independent regular budget. The equipment has not yet had major problems, and all the chemicals and spare parts which are available in the country are procured for both central and local laboratories as annually planned.

(4) Current Status of Operation Maintenance

Equipment is regularly maintained by using instruction manuals, and the chemicals are safely stored. Some equipment and air conditioners at the central and Jhenaidha laboratories need to be repaired.

Some problems have been observed in terms of staffing and equipment therefore sustainability of the project effect is fair.

Simplified Ex-Post Evaluation for Grant Aid Project

Evaluator, Affiliation	Akihiro Nakagome, Shiro Otomo Ernst & Young Advisory Co., Ltd.	Duration of Evaluation Study
Project Name	The Project for Construction of Primary Schools and Junior High Schools	February 2010 – December 2010

I Project Outline

Country Name	The Democratic Republic of Timor-Leste	
Project Period	May 2004-February 2006	
Executing Agency	Ministry of Education, Culture, Youth and Sports	
Project Cost	Grant Limit: 550 million yen	Actual Grant Amount: 528 million yen
Main Contractors	Tobishima Corporation	
Main Consultants	Mohri Architect & Associates, Inc.	
Basic Design	The Basic Design Study on the Project for Construction of Primary Schools in the Democratic Republic of Timor-Leste, JICA, August, 2003	
Related Projects (if any)	Fundamental School Quality Project (World Bank), 100 School Project (UNICEF),	
Project Background	In Timor-Leste, after most of the school facilities were destroyed during the conflict in 1999, the construction and the rehabilitation of many classrooms was required at primary education institutions. Emergency repairs of classrooms were carried out mainly with the aid of the World Bank provided through the Timor-Leste Trust Fund (TFET). From May 2002, Fundamental School Quality Project (FSQP) got started in securing the quality of school facilities. As part of the project, plans were formed for setting up integrated primary and junior secondary schools, which were expected to serve as model schools in the districts, and for constructing and repairing primary schools. Under the plans, the construction and rehabilitation of classrooms was carried out. In FSQP, however, it turned out that for financial reasons it would be difficult to construct all the integrated primary and junior secondary schools. There were doubts as to whether the system of integrated primary and junior secondary schools could get started in all the districts. In addition, classrooms that had not been included in the project for aid were left neglected with no plan prepared for their rehabilitation. Throughout the country, there was therefore still a great need for the construction and rehabilitation of school facilities.	
Project Objective	The objective of the project is to construct and repair facilities for primary and junior secondary schools in Timor-Leste for the purpose of setting up integrated primary and junior secondary schools (Escola Basica: EB) and improving the educational environment of the schools covered by this project.	
Output[s] (Japanese Side)	<Construction> Construction of 63 classrooms, and teacher's rooms in 6 EB and 6 PS (Primary School) Construction of special classrooms in 6 EB Procurement of educational furniture for the above constructed classrooms Construction of students toilets in 6 EB and 6 PS <Software Component Program> Technical assistance for the school facility maintenance	

II Result of the Evaluation

Summary of the evaluation

In this project, facilities were constructed for and repaired at primary and junior secondary schools in East Timor. This construction and rehabilitation was carried out generally as planned, with the software components also provided generally as planned. It is acknowledged that EB schools constructed or repaired have served to a certain degree to allow for the operation of the EB system, and the primary schools have also enabled the cluster system to become prevalent.

The schools included in this project continue to operate. However, in terms of operation and maintenance, since the present state of arrangements for operation and maintenance could not be obtained from the implementing agency during the survey, an evaluation cannot be made in terms of the sustainability of the project.

In light of the evaluation result on its effectiveness and impact, this project can be evaluated to produce the fairly sufficient outcomes.

<Constraints of this evaluation study>

Since neither the present state of the facilities constructed in this project nor the state of their operation or maintenance was known, the evaluation cannot be made in terms of sustainability of this project.

1 Relevance

(1) Relevance with the Development Plan of Timor-Leste

This project is related to "primary and secondary education," a priority area in Timor-Leste's National Development Plan (2000-2003) and also in a draft of the current Strategic Development Plan (2011-2030). It is also related to "Human Resources Development," which the country has ranked third among its seven National Priorities for 2010. Therefore, the project is relevant to its development plan.

(2) Relevance with the Development Needs of Timor-Leste

The country continues to carry out policies for the construction and rehabilitation of school facilities in order to develop its educational infrastructure. The construction and repair of facilities at primary and junior secondary schools in this project are relevant to its development needs.

(3) Relevance with Japan's ODA Policy

According to Japan's principles on ODA for Timor-Leste stated in the Japan ODA Data Book (2003), "human resources development" and "infrastructure development" are regarded as priority areas for the country. This project is related to both these targets, so it is relevant to Japan's ODA policy.

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

2 Efficiency

(1) Project Outputs

Outputs on the Japan side were as planned.

(2) Project Period (Project Inputs)

The project, designed to be completed in 21 months according to the plan, was actually completed in 25 months, slightly longer than planned by four months (119% of the planned period). However, the actual period includes the period from conclusion of a contract to inception of the detailed study and the period for issuance of the certification on the completion of the study by the implementing agency, those were excluded in the planned period. Since substantive works of the detailed design and construction were conducted within the planned duration without any delay, it can be said that the project period was as planned.

(3) Project Cost (Project Inputs)

While the planned cost was 590 million yen, the actual project cost was 568 million yen, within the plan and 22 million yen lower than planned (96% of planned cost).

The project cost was lower than planned. Although the project period was slightly longer than planned, the project period of the substantive works were completed within the planned duration. Therefore, the efficiency of the project is high.

3 Effectiveness / Impact

(1) Quantitative Effects

At schools constructed or repaired in this project, the "number of students per classroom" improved, falling from 51.2 (2003) to 39.3 (2009). While the target had been set at 30.6 students in 2006, the actual figure in 2006 could not be obtained. The actual figure in 2009 was missed mainly because alterations in the shift system at the schools involved resulted in a decline in the total number of classrooms based on the shifts. In this connection, if there were no change in the shift system at the schools, the actual result can be estimated to achieve the target number.

(2) Qualitative Effects

According to a response from the implementing agency, EB schools constructed in this project are being effectively used, a fact that suggests their contribution to development of the EB system to a certain degree.

(3) Impacts (Impacts on the natural environment, Land Acquisition and Resettlement, Unintended Positive/Negative Impact)

According to responses from the implementing agency, the facilities provided in this project are also effectively used for social education activities in the communities. The primary schools are also effectively used for promoting cluster activities. These facts suggest that this project contributes to such activities to a certain degree. A reduction in the operation and maintenance expenses was also reported in a response from the agency.

There was no impact on the natural environment. Neither was there any negative impact from the relocation of residents or land acquisition.

This project has somewhat achieved its objectives, therefore its effectiveness is fair.

4 Sustainability

(1) Structural Aspects of Operation Maintenance

The facilities at each school are operated and maintained by the school itself. According to responses from the Ministry of Education, Culture, Youth and Sports (MECYS), schools do not seem to have any staff specifically designated for the operation or maintenance of their facilities, and no information is available concerning the operation and maintenance systems in the schools, with the current state of such systems left unknown. An evaluation is therefore not possible.

(2) Technical Aspects of Operation Maintenance

No information is available concerning the technical aspects of operation and maintenance of the implementing agency and the schools, an evaluation is therefore not possible.

(3) Financial Aspects of Operation Maintenance

Sufficient information is not available concerning the financial aspects, an evaluation is therefore not possible.

In this connection, the budget for MECYS is on an upward trend. The 2010 budget for MECYS mentions the provision and maintenance of school facilities as a target in the annual action plan, although the breakdown of the appropriations is unknown and school construction and rehabilitation programs have been established for the plan.

(4) Current Status of Operation Maintenance

Sufficient information is not available concerning the current status of the operation and maintenance of the schools, an evaluation is therefore not possible. However, the schools included in this project are still in operation.

As stated above, since sufficient information could not be obtained from the implementing agency, the current condition of the facilities at the schools and the status of the operation maintenance by the implementing agency and the schools are unknown. An evaluation in terms of the sustainability is therefore not possible.

Simplified Ex-Post Evaluation for Grant Aid Project

Evaluator, Affiliation	Akihiro Nakagome, Shiro Otomo Ernst & Young Advisory Co., Ltd.	Duration of Evaluation Study
Project Name	The Project for Rehabilitation of Power Supply in Dili	February 2010 – December 2010

I Project Outline

Country Name	The Democratic Republic of Timor-Leste	
Project Period	March 2003-February 2006	
Executing Agency	Electricidade De Timor Leste (EDTL)	
Project Cost	Grant Limit: 528 million yen	Actual Grant Amount: 525 million yen
Main Contractors	ITOCHU Corporation	
Main Consultants	Yachiyo Engineering Co., Ltd.	
Basic Design	The Basic Design Study on the Project for Rehabilitation of Power Supply in the Democratic Republic of Timor-Leste, JICA, August, 2003	
Related Projects (if any)	JICA, Power Station Maintenance Advisor at Comoro (2000, UNDP), Rural Power Station Rehabilitation (2000, UNDP), Project for Rehabilitation of Power Distribution Network in Dili (2003)	
Project Background	The citizens of the Democratic Republic of Timor-Leste chose independence from Indonesia in a national referendum held in August 1999. As a result of the disturbances that immediately followed the referendum, approximately 70% of infrastructure facilities, including power-supply facilities nationwide, were damaged. Since immediately after the disturbances, recovery of damaged infrastructure facilities has advanced, with the cooperation of donors including Japan and UN agencies. However, recovery of power-supply facilities, which constitute an important category of infrastructure facilities, has been delayed, impeding the supply of electric power to users. Furthermore, the increasing power demand due to rapid rehabilitation has been forcing planned power cuts in the capital city Dili and full-time operation of generating units designed to meet peak demand at the Comoro Power Station, and as a result it has remained impossible to conduct the necessary maintenance work.	
Project Objective	The purpose of the project is to ensure a highly reliable, economical, and stable power supply in Dili through the rehabilitation of generating facilities at the Comoro Power Station.	
Output[s] (Japanese Side)	A. Procurement and installation of No. 5 generating unit for Comoro Power Station (1) Procurement and installation of a Diesel Engine Generator (DEG), Output 4.0 MW (outdoor type) (2) Procurement and installation of auxiliary mechanical equipment/systems for the DEG (3) Procurement and installation of auxiliary electrical equipment for the DEG (4) Common power equipment (5) Common equipment for the DEG (6) Civil engineering work, etc. (7) Procurement of spare parts necessary for two (2) years operation and maintenance tools (8) Procurement of operation and maintenance manuals (including textbooks for OJT) and implementation of OJT	

II Result of the Evaluation

Summary of the evaluation

In this project, a new generating unit was procured for rehabilitation of the generating facilities whose operation had been suspended due to damage at the Comoro Power Station. The generating unit procured has been in operation without any problem from when its operation began through today, securing reserve power supply capacity at the power station, and as a result it has been confirmed that this unit is playing an important role in providing a stable power supply to Dili. While the implementing agency has secured the number of personnel needed for operation maintenance, since it is difficult to carry out maintenance on its own due to the lack of skilled expert engineers, there are issues regarding technical sustainability.

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

<Recommendations>

As recommendations for the implementing agency, in order to enact transfer to engineers at Comoro Power Station of skills related to operation maintenance focusing on planning and implementation of periodic inspections, through consultants who have concluded management contracts on management of Comoro Power Station, it would be desirable to assign engineers to receive transfer of skills from the consultants and to implement training and other activities to develop engineers capable of serving in the role of the consultants,. In addition, it would be desirable to improve the capability of planning through creating the medium- and long-term plan for development of power supply in Dili by studying the factor such that how long the current power supply capacity of Comoro Power Station is projected to comply with the increasing demand of electricity in recent years.

<Constraints of this evaluation study>

Details of the state of new improvements to generating units conducted by the implementing agency following implementation of this project, are unavailable from the answers to questionnaires from the implementing agency. For this reason, while indicators such as annual hours of power cuts, which is an operation and effect indicator, and reserve power supply capacity, which is an indicator of

impact, also include the effects of the generating units newly improved outside of this project, clear distinction of the contributions of the generating unit procured with this project has not been given consideration in evaluation of these.

1 Relevance

(1) Relevance with the Development Plan of Timor-Leste

Since the field of electric power is identified as an area of focus in the National Development Plan (2000-2003) as well as the current draft Strategic Development Plan (2011-2030), this project is consistent with development plan in that it concerns increasing Timor-Leste's self-sufficiency in power generation and improving its power grid.

(2) Relevance with the Development Needs of Timor-Leste

Since demand for electric power has continued to increase since the time of planning, and it is important to secure a stable power supply to respond to such growth, the project is recognized to be consistent with the development needs of Timor-Leste.

(3) Relevance with Japan's ODA Policy

Since this project involves enhancement of the electric-power infrastructure in infrastructure rehabilitation and improvement, it is consistent uniformly with Japan's ODA policy.

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

2 Efficiency

(1) Project Outputs

Outputs on the Japan side were as planned.

(2) Project Period (Project Inputs)

Since the actual project period was 16 months, vs. a planned period of 19 months, the period was three months shorter than planned (84% of the planned period).

(3) Project Cost (Project Inputs)

While the planned cost was 528 million yen, the actual project cost was 525 million yen, within the plan and 3 million yen lower than planned (99% of planned cost).

Both project period and project cost were within the plan, therefore efficiency of the project is high.

3 Effectiveness / Impact

(1) Quantitative Effects

The target figure has been achieved on base load generating capacity, an operation and effect indicator of this project.

While annual hours of power cuts showed no decrease immediately following this project, the addition of the results of new generating units installed in fiscal 2009 results in a decrease of approximately 30% vs. fiscal 2003.

(2) Qualitative Effects

According to the implementing agency, periodic inspections are conducted. However, implementation tends to be delayed in comparison with planned schedules, and while periodic inspection of the generating unit installed in this project had been scheduled for August 2010, at present only the budgeting for this inspection has been secured, with implementation planned for completion during fiscal 2011. It was difficult to identify in this survey the cause of this delay in implementation.

(3) Impacts (Impacts on the natural environment, Land Acquisition and Resettlement, Unintended Positive/Negative Impact)

Since there was a marked increase in power demand immediately following this project, the equipment has continued to operate under conditions of excess load. However, these excess-load conditions have been resolved as a result of installment of new generating units in addition to the generating unit procured with this project, thereby reserve power supply capacity is secured in fiscal 2008 and later.

Since small-scale generating units with relatively low levels of efficiency also are in operation to respond to rapidly growing power demand, no improvement in fuel-consumption efficiency has been recognized.

There has been no impact on the natural environment or adverse impacts such as relocation of residents or land acquisition.

This project has somewhat achieved its objectives, therefore its effectiveness is fair.

4 Sustainability

(1) Structural Aspects of Operation Maintenance

Since there has been no change in the agency in charge of operation maintenance and the planned number of personnel has been secured, it is thought that there is little concern in areas such as outflow of engineers.

(2) Technical Aspects of Operation Maintenance

Since there are not enough engineers to handle operation maintenance, only the minimal training needed is conducted.

Effectively, activities such as maintenance planning and proposing purchase of spare parts are conducted by engineers who have concluded management contracts. As such, it would be difficult to say that engineers with the experience and skills needed for operation maintenance as EDTL employees have been trained and secured.

(3) Financial Aspects of Operation Maintenance

Regarding the financial conditions of EDTL, while details of financial data have not been obtained, efforts are being made to increase the rate of collection of electricity tariff from users, and an increase in revenue has been confirmed. The budget for the Ministry of Infrastructure, which has jurisdiction over EDTL, is in an increasing trend in recent years, and under the government budget for fiscal 2010 budgeting has been secured for EDTL management contracts as well. For these reasons, there are no particular financial problems regarding EDTL operation maintenance.

(4) Current Status of Operation Maintenance

While the periodic inspection of the generating unit procured in this project scheduled for August 2010 has been delayed, prior

periodic inspections were conducted, and the unit is operating without any problems.

Effectively, drafting of maintenance plans including those for periodic inspection is conducted by consultants who have concluded management contracts with EDTL. As such, it is conceivable that there is a need for transfer of skills to EDTL employees and engineers.

Some problems have been observed in terms of technical aspects of the maintenance, therefore sustainability of the project effects is fair.

Simplified Ex-Post Evaluation for Grant Aid Project

Evaluator, Affiliation	Maki Hamaoka Foundation for Advanced Studies on International Development	Duration of Evaluation Study
Project Name	The Project for Improvement of Machinery and Equipment for Construction of Rural Agricultural Road	January 2010 – December 2010

I Project Outline

Country Name	Kingdom of Bhutan	
Project Period	February 2005-February 2006	
Implementing Agency	Ministry of Agriculture/Department of Agriculture/Central Machinery Unit (CMU)	
Project Cost	Grant Limit: 521 million yen	Actual Grant Amount: 473 million yen
Main Contractors	Mitsubishi Corporation, ITOCHU Corporation	
Main Consultants	Construction Project Consultants, Inc.	
Basic Design	Basic Design Study on "the Project for Improvement of Machinery and Equipment for Construction of Rural Agricultural Road in the Kingdom of Bhutan", JICA/ Construction Project Consultants, Inc., November, 2004	
Related Projects (if any)	1. Development Study "The Feasibility Study on the Lhuntshi Mongar Integrated Agricultural Development Project" (1987), "The Study on Agriculture and Farm Road Development in the Lhuntse and Mongar District"(2003) 2. Technical Cooperation "The Agriculture Research and Extension Support Project in Lhuntse and Mongar" (2004-2009) 3. Senior Volunteer (1 (2004-2006), 1 (2009-) 4. Grant Aid "The Project for the Paro Valley Agricultural Development in The Kingdom of Bhutan" (1989-1995), "The Project for Improvement of Machinery and Equipment for Construction of Rural Agricultural Road" (Phase2)" (January, 2010) (ongoing)) 5. Other donors: FAO "Second Eastern Zone Agricultural Programme (SEZAP)" (1999-2005), "Agriculture, Marketing and Enterprise Promotion Programme (AMEPP)" (2006-2012), WFP "Food for Work" (2003), UNDP "Decentralized Support Project" (2002-2007)	
Project Background	The Government of Bhutan (GOB) placed priority on construction of rural agricultural roads for development and enhancement purposes. The six (6) target eastern districts (Lhuntse, Mongar, Pemagatsel, Samdrupjongkar, T/Yangtse, and Transhugang) lacked farm roads and the social and economic situations left much to be desired. Despite the urgent need for the improvement of the rural agricultural roads, construction equipment belonging to Department of Agriculture (DOA) of the Ministry of Agriculture (MoA) was obsolescent and unsuitable for the road construction work in the target area due to their low maneuverability and workability. Under such circumstances, the GOB made a request to the Japanese Grant Aid for the supply of equipment for farm road construction to contribute to the effective development of farm roads.	
Project Objective	To procure the machinery and equipment for the targeted roads in order to improve accessibility to the eastern region of Bhutan	
Output[s] (Japanese Side)	Procurement of a range of machinery and equipment for construction of farm roads and power tiller tracks (hereinafter referred to as "Equipment") (Bulldozer (5), Hydraulic shovel (medium type) (5), Hydraulic shovel (small type) (5), Hydraulic shovel (mini type) (5), Dump truck (5), Vibration roller (5), Hand guide roller (5), Wheel Loader (5), Air compressor (medium type) (1), Air compressor (small type) (5), Wheel Tractor (5), Cargo truck with crane (8 ton) (1), Cargo truck with crane (4 ton) (1), Service truck (4x4) (1), Self loading Truck (1))	

II Result of the Evaluation

Summary of the evaluation

The Central Machinery Unit of the DOA of the Ministry of Agriculture (hereinafter referred to as "CMU") constructed a total of 440km of farm roads (hereinafter referred to as "FR") in the 17 districts in the whole country until 2009 using the Equipment, of which 277 km were constructed in the six eastern target districts. These 277 km were equal to 118% of the initial target expected by the Basic Design Study. In light of the above, it can be concluded that the Equipment has been effectively utilized and that initial objectives of the Project have been achieved.

There have been various positive impacts such as reductions in travel time, smoother transportation of agricultural products and reductions in transport cost and increases in transaction quantity of agricultural products. No negative impacts have been reported.

The Equipment has been appropriately maintained by CMU. It is well functioning without any serious damage. Organizational structure and managerial responsibilities of CMU in operation and maintenance systems are clear. The technical capacity is sufficient and the total budget of the CMU as well as operation and maintenance budget is sufficiently secured. The sustainability of the Project effects through effective use of the Equipment is thus expected.

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

<Recommendations to CMU>

It is assumed that the frequency of malfunction of most of the Equipment will increase in 5-6 years when their service lives are

expired. Though there is no problem in current operation and maintenance systems, the total structure of CMU needs to be reviewed in preparation for such inevitable malfunctions. Increasing the number of personnel of the branches nearer to construction sites may be necessary to keep current operation and maintenance status.

1 Relevance

(1) Relevance with the Development Plan of Bhutan

At the time of the Basic Design Study during the 9th Five-Year Plan (FYP) (July 2002-June 2008), the construction of a total 550km of FR and power tiller tracks (hereinafter referred to as "PTT") was planned. Meanwhile, the existing construction equipment and machinery of DOA/CMU was obsolescent and unsuitable for the work, so it was quite difficult for DOA/CMU to meet the requirements of the target roads. For this reason, new construction machinery and equipment were essential. At the time of the ex-post evaluation, the 10th FYP (July 2008-June 2013) places priority on improvement of rural infrastructure aiming at bringing 85% of the rural population to within a half day's travel from a motorable road head. In addition to 1,754km of FR constructed under the 9th FYP, another 3,264km of FR are planned under the 10th FYP. Thus, it is still quite important to expand agricultural roads in line with such development plans.

(2) Relevance with the Development Needs of Bhutan

Bhutan is a mountainous country, with farmhouses and isolated villages distributed on steep slopes. In such conditions, the need for construction of FR is high in line with rural population's needs in access to markets and social services. To achieve the target set under the 10th FYP, "To reduce a proportion of rural population living more than 1 hour's walk from a motorable road head from 40% (2005) to 20% (2013)", a total 3,264 km of FR are required. The existing equipment belonging to CMU is not sufficient to achieve this target, even though some portions are constructed by privately owned equipment. Thus, the machinery and equipment for agricultural road construction are necessary in the whole country.

(3) Relevance with Japan's ODA Policy

There is no "Country Assistance Program" or assistance policy based on well-defined formulation guidelines and policy consultations for Bhutan. The only official document available is the basic policy on ODA to Bhutan contained in the Japan ODA Country Data Book (2004) which specifies main priority areas such as (a) Agriculture and Rural Development (agricultural modernization, agricultural infrastructure development), (b) Economic Infrastructure Development (road network development, improvement of rural electrification), (c) Improvement of Social Services (human resource development and employment generation, improvement of education service and health care service, and (d) Good Governance (decentralization, improvement of information equity).

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

2 Efficiency

(1) Project Outputs

Outputs by Japanese side, namely machinery and equipment for construction of farm roads and power tiller tracks were achieved as planned.

(2) Project Period (Project Inputs)

The actual Project period was 12 months against a planned period of 12 months.

(3) Project Cost (Project Inputs)

The actual grant cost was 473 million yen against the planned cost of 521 million yen (equal to 91% of the planned cost). This difference was due to the result of the competitive bidding.

Both project period and project cost were mostly as planned/within the plan, therefore efficiency of the project is high.

3 Effectiveness / Impact

(1) Quantitative Effects

After the procurement of the Equipment, CMU constructed a total 277km of agricultural roads (232km of FR and 45 km of PTT) in the 6 target eastern districts until 2009. This achievement equals 118% of the target total length planned by the basic design study (total length 235km (161km of FR, 74km of PTT)). In light of this, the initial objective of the Project is deemed to be achieved.

(2) Impacts (Impacts on the natural environment, Land Acquisition and Resettlement, Unintended Positive/Negative Impact)

A total 1,156km of agricultural roads were constructed during the period of the 9th FYP. With this achievement, the total length of the agricultural roads in the country increased from 598 km to 1,754km at the end of the 9th FYP. Of the expanded length of 1,156km, 440 km was constructed by CMU equipment procured by Japanese grant aid. The road expansion allowed 25% of the rural population to live within a half day from a motorable road head at the end of the 9th FYP (2008). The construction equipment and machinery procured under the Japanese grant aid made a large contribution to this progress. After completion of the Project, travel time was greatly reduced for the target population. In most of the target areas, the population traveled by foot or by horse (5 hours for traveling 10km on average. One day for 15-20 km's replacement in Lhuntse district, the most mountainous area). Now, people are able to take taxis, private cars and power tillers taking only 2-4 hours for the same journeys. No negative impacts have been reported including land acquisition or environmental impacts.

This project has largely achieved its objectives, therefore its effectiveness is high.

4 Sustainability

(1) Structural Aspects of Operation Maintenance (O & M)

CMU was established under the DOA, Ministry of the Agriculture in 2002, as a unit for dispatching and maintaining construction machinery and equipment in response to a request from the districts. CMU has its headquarters in Bumthang district and 2 branch offices in Khangma and Gelephu. Currently, 100 personnel are employed including 91 technical personnel working for operation and maintenance of the construction machinery and equipment. More than half of the drivers, operators, engineers and mechanics have more than 10 years' experience. When a diagnosis of malfunction of the equipment requires relatively high technical capability, such experienced personnel execute the diagnosis. Regarding the internal personnel training, newly hired technical personnel are trained through on-the-job training basis training over several months at worksites under instruction of senior operators and drivers. The number of operators and drivers has not been changed even after the procurement of the Equipment; however, it is efficiently operated through multi tasking, rotating with free operators among different machinery when they are stationed in the same worksite. In light of the above, there is no problem in O&M systems since managerial responsibilities are clear.

(2) Technical Aspects of Operation Maintenance

Maintenance works of small and medium repairs are executed by CMU mechanics, and major repairs are done by private workshops or agencies of manufacturers. For strengthening CMU technical capability, a JICA senior volunteer (hereinafter referred to as "SV") has been dispatched to CMU to develop the standard operation and maintenance package. The dispatch of SV has been continued still now. The linkage between the Project and SV was deemed to be effective for technical capacity development of CMU. No problems are observed in technical aspects for operation and maintenance.

(3) Financial Aspects of Operation Maintenance

The operation and maintenance cost for CMU equipment and machinery is allocated from the central government's general budget via the MoA. The total budget to CMU has been largely increased since the procurement of the Equipment in February 2006 compared with previous years. The average operation and maintenance cost for 5 years after the procurement of the equipment corresponds to 40% of the total expenditure of CMU. The operation and maintenance cost borne by CMU is sufficient to cover annual O & M cost estimated at the time of the Basic Design Study (11.817 million Nu). According to a related project implemented after this Project, CMU has been allocated an appropriate budget for operation and maintenance. In light of the above, no problems are observed in financial status of O & M of the Equipment.

(4) Current Status of Operation Maintenance

There has been no major breakdown of the 55 units of the Equipment procured in the Project, though 5 units were under repair at the time of the ex-post evaluation. Consumable parts and spare parts remain in the stock and are replaced appropriately. Periodical maintenance and replacement of parts are recorded in machine history books and the stock of spare parts is recorded in a parts inventory. CMU keeps the same number of manuals such as operation manuals and parts catalogues as provided at the time of procurement of the Equipment. There is no problem in status of operation maintenance.

No major problems have been observed in the operation and maintenance system; therefore, sustainability of the project effect is high.

Simplified Ex-Post Evaluation for Grant Aid Project

Evaluator, Affiliation	Miho Kawahatsu Waseda Research Institute Corporation (WRI)	Duration of Evaluation Study
Project Name	The Project for Improvement of Medical Equipment of Da Nang Hospital in the Socialist Republic of Viet Nam	January 2010 – December 2010

I Project Outline

Country Name	The Socialist Republic of Viet Nam	
Project Period	January 2005-December 2005	
Executing Agency	Da Nang Hospital	
Project Cost	Grant Limit: 326 million yen	Actual Grant Amount: 324 million yen
Main Contractors	Sojitz Corporation	
Main Consultants	Fujita Planning Co. Ltd. / Medical Engineering & Planning Co. Ltd.	
Basic Design	July 2004	
Related Projects (if any)	JICA, "The Project for Improvement of Medical Service in Central Region" (2005-2010) (Technical Cooperation Project)	
Project Background	Based on the analysis in "Health Care and Protection Strategy for the Period of 2001 to 2010" and "the Master Plan for the Development of the Hospital Network in Viet Nam until 2050 and 2010," the central region of the country is deemed to require additional investment to strengthen existing medical centers and core medical facilities. Specifically, Da Nang Hospital serves as one of the most important referral hospitals in the region. However, holdings of both equipment and supplies in the hospital have greatly deteriorated over the years, preventing supply of the desired level of medical services. Therefore, the government of Viet Nam urgently requested Japan to provide necessary equipment to improve medical services both in terms of quality and quantity.	
Project Objective	To refurbish the medical equipment and supplies of Da Nang Hospital, in order to improve the quality of medical services in the central region of Viet Nam.	
Output[s] (Japanese Side)	1. Imaging Diagnosis: X-ray Fluoroscopic Machine, X-ray General Machine, X-ray Mobile Machine,Ultrasound A , Ultrasound, Color Doppler 2. Operation: Anesthesia Machine with Ventilator, Operation Table. Electro Surgical Unit, Operation Lamp, Patient Monitor B, Electro Suction Pump, Surgical Instrument Set, Syringe Pump, Steam Sterilizer B 3. ICU: Patient monitor A, Ventilator, Electro Suction Pump, Electrocardiograph, Syringe Pump 4. Emergency: Defibrillator, Operation Lump, Patient Monitor A Ventilator, Electrocardiograph, Electro Suction Pump 5. OB/GY Examination: Fetal Actocardiograph, Ultrasound B 6. Pediatric (ICU + Pathological neonate): Patient monitor, Ventilator, Electrocardiograph, Electro Suction Pump, Syringe Pump, Infant Incubator, Phototherapy Unit, Bilirubin, Analyzer 7. Examination (Endoscopic Diagnosis, Cardiovascular, Hematology, Microbiology) : Gastrointestinal Fiberscope, Broncho Fiberscope, Colono Fiberscope, ERCP Endoscopy, Stress Test System, Microscope, Steam Sterilizer, Vertical type 8. Blood Bank: Refrigerator 9. Sterilization: Steam Sterilizer A, Instrument Washing Machine	

II Result of the Evaluation

Summary of the evaluation

From data and information compiled according to five criteria, we note that on the whole, the project is highly evaluated. Regarding its efficiency, it was carried out within the scope of the plan. In particular, regarding the effectiveness, according to the indicators determined at the time of project planning, the actual numbers surpass the target numbers and they remain on an upward trend. The continuation of its effectiveness in quantitative terms is most likely the result of Da Nang Hospital's proactive policy for streamlining its system of medical service by providing capabilities such as shown in the constant increase of the size of the medical staff. And it can be said that the project is an exemplary case in that it could contribute in terms of further enhancement of medical services and human resources of the executing agency. While we note that there is a high degree of usage of equipment provided by the project, there is some concern regarding the purchase of spare parts and renewal of certain items of equipment. As has been indicated by Da Nang Hospital, given the increasing demand for medical services in Da Nang city, usage of equipment may have exceeded proper levels. However, it is deemed that this problem mainly arises from the drastic population increase including influx in Da Nang city which is undergoing socio-economic change, promoted by the rapid economic growth in Viet Nam.

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

<Recommendations>

As a recommendation to the executing agency, as shown by the numbers for the quantitative indicators, it is inevitable that Da Nang Hospital continues to face ever- increasing medical services demand from many patients in the region. To do so, based on accurate demand projections for medical services, it requires strategic investment in human resource management, in order to maintain

the proper number of skilled technical staff members for fully utilizing the medical equipment provided by the project. Also, to support realization of such a future investment plan, it is important to take measures for securing a stable revenue source from the earnings structure.

<Constraints of this evaluation study>

Detailed information about financial status item by item was not obtained. It was difficult to carry out in-depth analysis on financial issues regarding sustainability. Further, as noted above regarding the relationship between medical service demand at Da Nang Hospital and population increase in the city, it was difficult to obtain quantitative data which clearly show the contribution of the project in terms of the number of patients and utilization rate of equipment for diagnosis.

1 Relevance

(1) Relevance with the Development Plan of Viet Nam

Throughout the time of project planning to the ex-post evaluation, as addressed in a series of policy documents, "Socio-Economic Development Strategy for 2001~2010", "Health Care and Protection Strategy for the period of 2001 to 2010 years" and "the Master Plan for the Development of the Hospital Network in Viet Nam until 2005 and 2010", Viet Nam has been trying to provide high-quality medical services by making additional investment in existing core medical institutions. This project has been consistent with priority programs.

(2) Relevance with the Development Needs of Viet Nam

Potential beneficiaries of Da Nang Hospital can be reasonably taken to be its entire population. At the time of project planning, the city had a population of over 700,000 (720,000 in 2002) but this increased to 900,000 in 2009. At the time of the ex-post evaluation the city had the highest rate of population increase in the entire central region. In 2014 the population is projected to reach one million. Therefore when those children to be born in the future are included in considerations, it is clear that the number of beneficiaries and their needs continue to be high. In addition to this, the hospital serves the central plateau region, where many residents are in poverty, so this project can also be said to have the vital mission of contributing to the supply of medical and health care services to the poor.

When the project was planned the hospital had 730 beds and at the time of the ex-post evaluation there were 1,100. We are told that the number of patients at the hospital daily exceeds 1,500, indicating that demand for the services of the hospital continue to be at a high level. Also, the relationship between this project and the improvement of medical care services at the hospital is recognized and it is reported that the target group and target scope are generally appropriate.

(3) Relevance with Japan's ODA Policy

At the time the project was planned, the assistance program Japan had for Viet Nam (released in 2004) gave as one of three priority areas the improvement of people's lives and various social services. Within the priority, one of target sectors mentioned was healthcare and medical services, so the project conforms to ODA policy.

This project has been highly relevant with Vietnam's development plan, development needs, as well as Japan's ODA policy, therefore its relevance is high.

2 Efficiency

(1) Project Outputs

As output from the Japanese side, the plan was essentially accomplished, although with minor modifications such as alteration of the location of some pieces of equipment accompanied with the completion of the new emergency ward, outpatient and examination wing on December 26, 2004.

(2) Project Period (Project Inputs)

The plan period of the project was from January 2005 (E/N) to December of the same year, or 12 months, and the project was accomplished as planned (100%).

(3) Project Cost (Project Inputs)

The funding for the project was 326 million yen and actual cost was 324 million yen, so the accomplishment was within planned budget (99%).

Both project period and project cost were mostly as planned, therefore efficiency of the project is high.

3 Effectiveness / Impact

(1) Quantitative Effects

To determine the effects of supply of the major equipment, namely X-ray, ultrasound, and endoscope units, the number of persons examined was compared to the target figures. There was a degree of doubt as to whether the target figures were appropriate considering the high level of demand at Da Nang Hospital. The objective of this project was to achieve an increase of 15% over the levels of 2003 but no target year was decided other than it should be after the equipment was provided.

As a result the degree of usage of the X-ray and ultrasound equipment at the time the equipment was provided, 2004, already exceeded the target. Although this does not permit the judgment that all of the equipment supplied has been similarly used, it is believed from the growth in the number of patients that endoscopes have been effectively used.

Specifically, the target for use of the X-ray equipment was about 80,000 patients, but in 2004 the number exceeded 90,000 and in 2006 it was 130,000. In 2009 more than 180,000 persons were examined using the equipment. A similar situation took place concerning ultrasound equipment, and usage has been at a consistently high level since the project was completed. The situation is somewhat different for endoscopes. The target was about 5,500 patients; in 2006, after the project was completed, 5,000 examinations were made, somewhat short of the target. In 2009, however, the number was above 7,000.

It has also been confirmed that subsequent to 2004 the number of medical staff assigned to these items of equipment has increased. This indicates that the hospital has taken action on its own to use the provided equipment for its intended purpose, to meet the need for more accurate diagnostic work. In terms of determining the effectiveness of the project, this finding is highly desirable.

Moreover, targets had been determined in terms of the number of patients. Comparison was made of the number at the time of planning, 2003, and in 2007.

The target was made a total of 24,000 patients. This was 2,000 higher than the number treated in 2005, prior to the supply of the equipment. After the equipment was provided, in 2006, in 2007 the total rose to 40,000, reaching the target. We can say that this represented an increase in the need to provide examinations at Da Nang Hospital that exceeded the initial estimate. For that reason it is difficult to state that the high number treated is a reflection only of the project.

(2) Impacts (Impacts on the natural environment, Land Acquisition and Resettlement, Unintended Positive/Negative Impact)

Considering the impact from the viewpoint of improvement of diagnosis and precision of therapeutic care required as the top referral medical institution in the region, what can be noted is that there was a great increase in the number of patient after the project was completed. Specifically, the number of patient referral was 20,000 in 2005 before the equipment was provided, and in 2007 was above 300,000. The number of patient referral consistently makes up the majority.

Further, according to testimonial from patients, it is noteworthy that the improved precision of examination and diagnosis is being provided for the same price as before the project; and the improved ability to administer treatment for more number of patients by the hour; we have been told that this has greatly abetted the increase in patients examined with the equipment.

No particular problem was reported regarding the natural environment, land acquisition and resettlement, or other negative impacts.

This project has largely achieved its objectives, therefore its effectiveness is high.

4 Sustainability

(1) Structural Aspects of Operation Maintenance

After completion of the project, support on its behalf has been provided by the hospital management as well as the Da Nang People's Committee and central government policy. It is confirmed that the project, through the use of the equipment provided, has improved the financial condition of the hospital and in view of the response to us indicating that the number of staff members has been increased it is believed that the overall arrangements for use of the equipment are set in place.

(2) Technical Aspects of Operation Maintenance

Eighteen persons were newly assigned to operation and maintenance of the equipment after completion of the project. Further, a training program in O&M of medical equipment has been carried out for senior staff of the hospital as well as medical and health care personnel including personnel from equipment makers. It was also reported to us that checks were duly made to ensure that the staff members understood the contents of the manuals for the equipment.

(3) Financial Aspects of Operation Maintenance

The response to our questions indicated that the ordinary expenses of O&M for medical equipment at Da Nang Hospital were stably provided by the government. Da Nang Hospital receives financial support from the central government for improvement of its medical services, so the finances of the hospital appear to be firm. We have confirmed, however, that the annual cost of O&M of the equipment greatly exceeds the original estimate of the basic design. There is some cause for concern over the extent that need to make use of the equipment has grown, the need to replace equipment, the need to buy spare parts, and the need for a contingency budget in anticipation of a sudden, unexpected breakdown. Further, since there has been the formidable increase in staffing of 300 persons compared to the level of 2005, and an increase in personnel costs of five-fold, when we consider the ratio of O&M expense for the equipment relative to the overall scale of the hospital budget, it is thought that it is fully possible to secure the necessary funding for O&M.

(4) Current Status of Operation Maintenance

At present 10 pieces of equipment out of the 40 provided are inoperative. Six of them are waiting for replacement parts and one is deemed not repairable. However, judging from the financial data obtained from the hospital, it is thought to be within the reasonable capability of the hospital to purchase the needed spare parts.

No major problems have been observed in the operation and maintenance system, therefore sustainability of the project effects is high.