Overview of Ex-post Evaluation Results

JICA conducts ex-post evaluations according to the scale of the project through external evaluations by external experts and internal evaluations primarily by JICA's overseas offices, in order to ensure the transparency and objectivity of project evaluations. The following presents an overview of the evaluation findings and analysis results from the ex-post evaluations conducted in FY2012.

● Introduction

JICA has strived to develop a common evaluation method for all three schemes of ODA Loan, Grant Aid, and Technical Cooperation. In FY2012, ex-post evaluations were conducted based on a uniform evaluation system following on from FY2011. Detailed ex-post evaluations were conducted for 96 projects (50 ODA Loan, 26 Grant Aid, 20 Technical Cooperation). Internal evaluations were conducted for 82 projects (34 Grant Aid, 48 Technical Cooperation).

○ Overview of findings analysis

This chapter analyzes ex-post evaluation findings cross-sectorally and compiles the lessons learned from individual evaluations on "the appropriate operation, maintenance, and management and activities after the completion of cooperation." The ratings given by detailed ex-post evaluations and their distribution are then analyzed by evaluation criterion. In addition, projects cited as having issues in detailed ex-post evaluations and the findings of internal evaluations are summarized. P.22 onwards present an overview of selected detailed ex-post evaluation findings.

○ Rating system

Of the ex-post evaluations, detailed ex-post evaluations give projects a rating to present the findings in an easy to understand way. Each project is evaluated on: (1) relevance; (2) effectiveness/impact; (3) efficiency; and (4) sustainability. Based on the findings, an overall rating is given according to a flowchart on a fourpoint scale: "A (highly satisfactory)"; "B (satisfactory)"; "C (partially satisfactory)"; and "D (unsatisfactory)." Efforts are made to minimize discrepancies among the evaluators' perspectives by establishing general guidelines on the perspectives applied to each criterion. However, because the ratings do not reflect all aspects of a project, too much emphasis should not be given only to the ratings and they should be considered as a point of reference (→see p.50 for the main items examined in the ratings and the flowchart).

● Cross-sectoral analysis: The Appropriate Operation, Maintenance, and Management and Activities After the Completion of Cooperation

JICA extends a variety of cooperation, including infrastructure development, capacity development, and institutional assistance. Yet JICA's cooperation is not for eternity, making it important that the developing country partner operate, maintain, and manage the project after its completion and continue to advance the target activities. However, the ex-post evaluations found a number of problems.

It is vital that JICA take measures in the context of project management, in order to ensure that developing country partners are able to fulfill their role of operating, maintaining, and managing a project after its completion and continuing the activities.

This cross-sectoral analysis focused on one of the items from last year's cross-sectoral analysis, "examination accounting for post-project completion." To promote the post-project efforts of developing country partners, the lessons learned from the results of this year's detailed ex-post evaluations are described below.

○ Strengthening Project Operation, Maintenance, and Management within a Project Scope

One of the key measures of a project is to enhance the implementers' capacity to operate, maintain, and manage a project. In this light, the following efforts are described.

"The Project of Water Supply in Rural Areas of Middle Guinea" (see p.36) was a project to construct wells and have resident organizations operate, maintain, and manage the wells. At the planning stage, an assessment was done of the residents' needs, maintenance and management costs, and residents' willingness to maintain and manage the wells. During the implementation stage, residents had opportunities to participate in the decision-making regarding the selection of Water Committee members, the establishment of the water tariff, and other matters. This contributed to the smooth implementation of activities by residents' organizations after the project's completion.

In the "Lunawa Environment Improvement and Community Development Project" in Sri Lanka (see p.28), the entity undertaking the construction work and the entities undertaking the operation, maintenance, and management work were different. Based on lessons learned from preceding projects, the operation, maintenance, and management entities took part in the project planning and implementation. As a result of the efforts to foster ownership, responsibility for operation, maintenance, and management was transferred smoothly.

These examples demonstrate the importance of appropriately involving operation, maintenance, and management implementers into the project to foster and maintain their ownership, accounting for the circumstances of the project and past lessons learned.

○ Provision of Incentives to Beneficiaries for Smooth Operations

In some cases, beneficiaries must be given incentives to use the services provided by projects. For example, as was noted in last year's thematic evaluation, smooth operations are incumbent on such factors as whether or not electricity consumers wish to be connected to an electrical grid.

"The Project for Rural Electrification Phase II" in Uganda developed a power supply system, but it was planned that residents shoulder the costs of connecting to the system. Although preceding projects confirmed that households were connected, in this project, electricity consumers were disinclined to pay the connection fee. Currently, efforts are being made to offer connections free of charge. The lessons learned from this project were that studies should be conducted at the planning stage, and that the feasibility of providing free connections using donor funds should be examined.

On the other hand, the "Micro, Small and Medium Enterprises Energy Saving Project" in India (see p.22), which provided funds for purchasing energy saving equipment (ESE) and which, unlike other projects requiring the destruction of existing less energy efficient equipment to shift to new ESE, allowed additional ESE to be installed without destroying existing equipment. The project therefore satisfied the needs of companies hoping to expand their businesses in India. Furthermore, as a result of awareness campaigns, the number of instances of financing in this region was larger than in other regions, contributing to the smooth operation of the funds.

These examples show that projects need to consider facilitating operations by accounting for the needs of stakeholders, including private sector beneficiaries.

○ Detailed Review of the Environment Affecting Project Operation, Maintenance and Management, and Activities

As already explained, to appropriately operate, maintain, and manage as well as continue the activities after a project's completion, it is important to encourage the participation of beneficiaries as well as the organizations directly operating, maintaining, and managing the facilities and systems established. However, the environment surrounding the project also affects these aspects. Below are such examples.

In the "Improvement of Packaging Technology for Philippine Food Products in the Regions" project aimed at improving the food packaging of SMEs, the implementing organization was not a permanent organization. However, during this project, the implementing organization established clear objectives of packaging technology and a mid- to long-term strategy, prepared a detailed work plan, and set out a clear roadmap, making the intentions of this project clear. The organization gained permanent status, and contributed to the continuation of the activities. The "Project for Revitalization of the Deteriorated Environment" in Thailand provided assistance for agricultural infrastructure development, as well as assistance in farmers' techniques and institutionalization. This assistance extended to the sales of agricultural products produced using infrastructure. Assistance was provided over a long period based on the situation in the field and the progress of the activities of the farmers. As the project scope covered the period up to the farmers witnessing the results firsthand, the project contributed to farmers' independent operations, including subsequent marketing activities.

On the other hand, in the "Project to Support the Women's Empowerment in the Mayan Region in the State of Quintana Roo" in Mexico aimed at improving the lives of women's groups, the activities were not fully continued after the project's completion. Despite verifying the needs of the implementing organization, the project did not verify its human resource capacity for the post-project stage. A sufficient involvement of other organizations was also lacking for the continuation of the activities. These factors are deemed to have contributed to the project's inadequate supports for improving the livelihood of Mayan women from a broad perspective.

The environment surrounding projects varies, as do the factors affecting the operation, maintenance, and management and post-project activities. It is believed that properly examining and understanding these factors and incorporating solutions into the project scope will contribute to realizing the project's intended objectives. It is believed that promoting efforts outside of the project scope and addressing factors jointly with developing country partners will also contribute to this end.

○ Insights Gained from the Post-Project Situation

The above examples described initiatives taken during a project's planning and implementation stages. Below are observations made from examples in which the situation changed after the project's completion.

In "The Project for the Groundwater Development in Central Highland Provinces" in Viet Nam aimed at improving residents' access to safe and sanitary water, the well excavation equipment and the team in charge of its operation, maintenance, and management were set up not in the anticipated project area, but in the capital city of Hanoi after the project's completion. As a result, well excavation activities were limited in the project area. "The Project for Sustainable Regional Development through Eco-Tourism in Bosnia and Herzegovina" was aimed at strengthening human resources and organizations for regional development. During the project, relevant cities concluded funding MOUs, and financing was secured during the project period. However, funding assistance terminated immediately after the project's completion. Financial concerns after completion were known during the project's implementation. The lessons learned were that a concrete vision should have been presented at the completion stage, and measures should have been considered, including the conclusion of necessary MOUs.

Meanwhile, in the "Mindanao Sustainable Settlement Area Development Project" in the Philippines aimed at improving lives through improvements in agricultural and medical facilities etc., the participation of the local municipalities that would take over the operation, maintenance, and management was promoted even from the planning stage. When the sub-projects were handed over to the local municipalities, a "continuation plan" was attached to the MOU concluded with each the local municipalities. Accordingly, the operation, maintenance, and management budget was allocated in each of the local municipalities annual plans, and this is believed to be contributing to the appropriate management of relevant roads.

It is not easy to secure budgets as in the above example. Nevertheless, these examples show that even at the completion stage, it is important to discuss with the partner entity how the operation, maintenance, and management and activities would be continued after the project's completion, and present and share a concrete vision for the smooth implementation of these tasks by the partner entity.

○ Way Forward

Post-project operation, maintenance, and management and activities are affected not only by the organizational structure, technology, and funding, but also a variety of other factors, including policies and relevant stakeholders. Assuring these processes at the planning stage is not a simple task.

At the same time, it is important to be aware of post-project needs, and this should be done upon considering all aspects of the counterpart partner. JICA must discuss and confirm with the counterpart its ideas and understand the post-project needs. JICA must also promote the counterpart's own efforts and the implementation of the project with a view to arriving at solutions. Depending on the circumstances, JICA may consider extending a combination of funding cooperation and Technical Cooperation, among other options.

The completion of a project will bring JICA's direct assistance to an end. However, JICA can contribute to more appropriate post-project operations, maintenance, and management as well as activities by developing country partners if JICA, at the time of the completion, re-discusses and confirms post-project needs and the necessary activities of developing country partners. It is believed that such efforts would lead to the realization of mid- to long-term effects.

Rating of Detailed Ex-post Evaluations *1 *2

Country	No	Scheme *3	Project name	page *4	Relevance	Effectiveness *5	Efficiency	Sustainability	Overall rating
Armenia	1	L	Electricity Transmission and Distribution Project		③	③	②	②	B
Bangladesh	2	T	Project for Strengthening Primary Teacher Training on Science and Mathematics		③	③	①	③	B
Cambodia	3	G	The Project for Flood Protection and Drainage Improvement in the Municipality of Phnom Penh (Phase II)	26	③	③	③	②	A
	4	T	National Tuberculosis Control Project Phase 2		③	③	②	②	B
	5	T	Freshwater Aquaculture Improvement and Extension Project		③	③	③	③	A
China *6	6	L	Shenyang Environment Improvement Project: (1) (2)		③	③	②	③	A
	7	L	Beijing Environmental Improvement Project		③	③	②	③	A
	8	L	Henan Environmental Improvement Project	30	③	②	②	③	B
	9	L	Anhui Environmental Improvement Project		③	③	②	③	A
	10	L	Yichang Water Environmental Improvement Project		③	③	②	③	A
	11	L	Public Health Infrastructure Facility Improvement Project (Hunan Province, Jiangxi Province, Anhui Province, Shanxi Province, Jilin Province, Heilongjiang Province, Liaoning Province)		③	③	②	③	A
	12	L	Shaanxi Water Environmental Improvement Project (Shaanxi Province)		③	③	②	③	A
	13	L	Guiyang Environment Model City Project (1) (2)		③	②	②	②	C
	14	L	Hunan Urban Flood Control Project		③	③	②	③	A
	15	L	Yunnan Higher Education Project		③	③	②	③	A
	16	L	Sichuan Higher Education Project		③	③	②	③	A
	17	L	Chongqing Higher Education Project		③	③	②	③	A
	18	L	Gansu Higher Education Project		③	③	②	③	A
	19	L	Inland Higher Education Project (Guizhou)		③	③	②	③	A
	20	L	Shaanxi Loess Plateau Afforestation Project		③	③	①	③	B
	21	L	Shanxi Loess Plateau Afforestation Project		③	③	①	③	B
	22	L	Inner-Mongolia Loess Plateau Afforestation Project		③	③	②	③	A
India	23	L	Ghatghar Pumped Storage Project		③	③	①	③	B
	24	L	Rajasthan Forestry and Biodiversity Project		③	③	②	③	A
	25	L	Bakreswar Thermal Power Station Units Extension Project		③	③	②	③	A
	26	L	Micro, Small and Medium Enterprises Energy Saving Project	22	③	③	③	②	A
Indonesia	27	L	Surabaya Airport Construction Project (I) (II)		③	③	②	③	A
	28	T	Project for Ensuring Maternal and Child Health Service with MCH HB Phase II		③	②	③	②	B
Mongolia	29	G	The Project for Construction of the Eastern Arterial Road and Improvement of the Related Equipments		③	③	③	②	A
Myanmar	30	G	The Project for the Afforestation in the Dry Zone		③	③	②	③	A
Pakistan	31	L	National Drainage Program Project		③	③	②	②	B
Samoa	32	G	The Project for Construction of the Inter-Islands Ferry		③	③	③	②	A
Sri Lanka	33	L	Plantation Reform Project (II)		②	②	②	③	C
	34	L	Lunawa Environment Improvement and Community Development Project	28	③	③	②	②	B
	35	L	Power Sector Restructuring Project		③	③	②	②	B
	36	L	Small and Micro Industries Leader and Entrepreneur Promotion Project (III)		③	②	③	②	B
	37	G	The Project for Construction of New Mannar Bridge and Improvement of Causeway		③	③	③	②	A
	38	T	The Project for Agriculture and Rural Development for Rehabilitation and Reconstruction through Community Approach in Trincomalee District		③	②	③	②	B
Tajikistan	39	G	The Project for Improvement of Dusty – Nijiny Pyandzh Road		③	③	①	②	C
Thailand	40	L	Integrated Agriculture Development in Land Reform Areas		③	③	②	②	B
The Philippines	41	L	Mindanao Sustainable Settlement Area Development Project		③	③	②	②	B
	42	L	Agno River Flood Control Project (Phase II) (Phase II-B)		③	③	②	②	B
	43	L	Bago River Irrigation System Rehabilitation and Improvement Project		③	③	②	③	A
	44	L	Laoag River Basin Flood Control and Sabo Project		③	③	②	②	B
	45	L	Bohol Irrigation Project (Phase 2)		③	③	①	③	B
	46	T	Project for the Improvement of Packaging Technology for Philippine Food Products in the Regions		③	③	②	③	A
	47	L	Second Magsaysay Bridge and Butuan City Bypass Road Construction Project		③	③	②	②	B
	48	L	Metro Cebu Development Project (III) (Cebu South Reclamation and Cebu South Coastal Road)		②	①	②	③	D
	49	L	Second Mandaue -Mactan Bridge (Phase II) and Metro Cebu Road Project	32	③	②	②	②	C
	50	L	Subic-Clark-Tarlac Expressway Project		③	②	②	③	B
	51	L	LRT Line 1 Capacity Expansion Project (II)		③	②	②	②	C
	52	T	Project for Enhancement of the Community-Based Forest Management Program (CBFMP)		②	②	③	②	C
Uzbekistan	53	T	The Nursing Education Improvement Project	24	③	③	②	③	A
Viet Nam	54	L	Small and Medium-Sized Enterprises Finances Project (II)		③	③	③	③	A
	55	L	Haiphong Port Rehabilitation Project (II)		③	③	②	③	A
	56	G	The Project for the Groundwater Development in Central Highland Province		③	②	②	②	C
	57	T	The Project for Implementation Support for 3R Initiative in Hanoi City to Contribute to the Development of a Sound Material-Cycle Society		③	②	②	②	C
	58	T	Traffic Safety Human Resources Development in Hanoi		③	③	①	③	B
Pacific Region	59	T	The Project for Strengthening Expanded Programme on Immunization in the Pacific Region		③	②	③	②	B
Bolivia	60	T	The Technological Center on Agriculture and Livestock in the Republic of Bolivia (CETABOL) Phase II Project		③	③	②	②	B
	61	T	Mining Environment Research Center Project		②	①	①	②	D
Brazil	62	L	Guanabara Bay Basin Sewerage System Construction Project		③	②	①	①	D
Mexico	63	T	Project to Support the Women's Empowerment in the Mayan Region in the State of Quintana Roo		②	①	②	①	D
Paraguay	64	L	Road Improvement Project (II)		③	③	②	③	A
	65	L	Asuncion Power Transmission and Distribution Network Improvement Project		③	③	②	②	B
	66	G	The Project for Improvement and Transfer of Asunción University Hospital (El Proyecto del Traslado y del Fortalecimiento del Hospital de Clínicas de la Universidad Nacional de Asunción)	34	③	②	②	②	C
	67	T	The Technological Center on Agriculture in the Republic of Paraguay (CETAPAR) Phase II Project		③	③	②	②	B
	68	T	Project of Strengthening of Paraguayan Quality and Productivity Center (CEPPROCAL)		③	②	③	②	B
Latin America Region	69	T	The Mercosur Tourism Project		③	③	②	③	A
Benin	70	G	The Project of Reinforcement of Lagune Mother and Child Hospital of Cotonou (Le Projet de renforcement des installations et équipements de l'Hôpital de la Mère et l'Enfant-Lagune de Cotonou en République du Bénin)		③	②	①	③	C
Eritrea	71	G	The Project for Urban Water Supply in Debub Region		③	②	③	①	C
Ethiopia	72	G	The Project for Water Supply in Southern Nations, Nationalities and Peoples' Regional State		③	②	②	②	C
Guinea	73	G	The Project of Water Supply in Rural Areas of Middle Guinea	36	③	③	②	②	B
	74	G	Project of Improvement of Drinking Water Supply in Conakry/ Project for Improvement of Drinking Water Supply in the Capital		③	②	②	①	D
Kenya	75	G	The Project for Improvement of District Hospitals in the Western Region of the Republic of Kenya		③	③	②	③	A
Madagascar	76	G	The Project of Classroom Construction of Primary Schools in Antsiranana and Toliara Provinces		③	③	③	②	A
	77	G	The Project of the Primary School Construction Phase II in the Republic of Madagascar		③	③	②	②	B
	78	G	Project of Construction of a By-Pass of National Route 7 (Projet de construction d'un By-Pass de la Route Nationale N°7)		③	③	③	②	A
	79	G	The Project of Groundwater Development in South-Western Region of Madagascar (Phase II)		③	③	②	①	C
	80	T	The Aquaculture Development Project in the Northwest Coastal Region of Madagascar	38	②	①	①	①	D
Malawi	81	G	The Project for the Rehabilitation of the Bwanje Valley Irrigation System/The Project for the Rehabilitation of the Bwanje alley Irrigation System (Phase 2)		③	③	②	②	B
Mauritania	82	G	The Project for Improvement of Hygienic Examination Facilities for Fishery Products in Nouakchott (Le Projet D'aménagement des Centres D'examen Hygiénique de Produits Maritimes)		③	③	③	②	A
Sechelles	83	G	The Project for Construction of Artisanal Fisheries Facilities in Mahe Island		③	③	①	③	B
Sierra Leone	84	G	Project for Urgent Improvement of Electric Power Supply System in Freetown		③	②	③	②	B
Tanzania	85	G	The Project for Water Supply Development around the Metropolitan Area		③	②	②	②	C
Uganda	86	G	The Project for Improvement of Medium Wave Radio Broadcasting Network		③	③	②	②	B
	87	G	The Project for Rural Electrification Phase II		③	①	②	③	D
Algeria	88	L	Earthquake-Affected Education Sector Reconstruction Project		③	③	①	③	B
Egypt	89	L	Zafarana Wind Power Plant Project	40	③	③	①	③	B
	90	T	Regional Environmental Management Improvement Project		③	③	②	②	B
Jordan	91	G	The Project for Improvement of the Water Supply for the Zarqa District (Phase II)		③	③	③	②	A
Morocco	92	L	Water Supply Sector Development Project (II)		③	②	②	③	B
	93	L	Rural Electrification Project (II) (III)		③	③	②	③	A
Tunisia	94	L	Rural Water Supply Project (I) (II)		③	③	②	②	B
Bosnia and Herzegovina	95	T	The Project for Sustainable Regional Development through Eco-Tourism		③	②	②	②	C
Romania	96	L	Railway Rehabilitation Project of Bucharest-Constanta Line		③	③	①	③	B

*1 ③ : High, ② : Moderate, ① : Low / A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory (→ see p.50 for details)
*2 Detailed ex-post evaluations are for projects costing over 1 billion yen or other projects deemed to provide valuable insight.
*3 L: ODA Loan, G: Grant Aid, T: Technical Cooperation
*4 Regarding projects which have page numbers listed, please refer to p.24 and onwards of this report.
*5 Effectiveness includes evaluation of impact.
*6 New provision of ODA loan to China was halted with the six Loan Agreements in December 2007.

Explanation of Ratings Distribution (Detailed Ex-post Evaluation)

Overall rating

The results of the detailed ex-post evaluations conducted in FY2012 are as listed on p.16. Evaluations were conducted for 96 projects: 50 ODA Loan projects; 26 Grant Aid projects; and 20 Technical Cooperation projects. Most of the projects were carried out in Southeast Asia, South Asia, and Africa by region and in sectors such as power, road and bridge, water supply and sewerage, education, and health. The overall ratings of the 96 projects are: 36 projects were rated A (37%); 38 projects were B (40%); 15 projects were C (16%); and 7 projects were D (7%). A and B combined account for 77% of the total; such projects largely generated the results which were expected. Some of the reasons for giving project ratings of C or D include "changes in the environment surrounding the project" and "problems with the organizational structure of operations, maintenance, and management."

Criterion-based rating

With regard to relevance, 90 projects were rated "③" (94%) and 6 projects were "②" (6%); therefore, many of the projects were deemed relevant. Issues were found in some projects although they were aligned with the partner country's policies and the needs of the entire country. This was because of problems related to the appropriateness of the project design. Problems included, "lack of transparency of organizational position of counterpart agency", "decline in development needs due to changes in the international environment", and "inadequate project plan for the achievement of objectives."

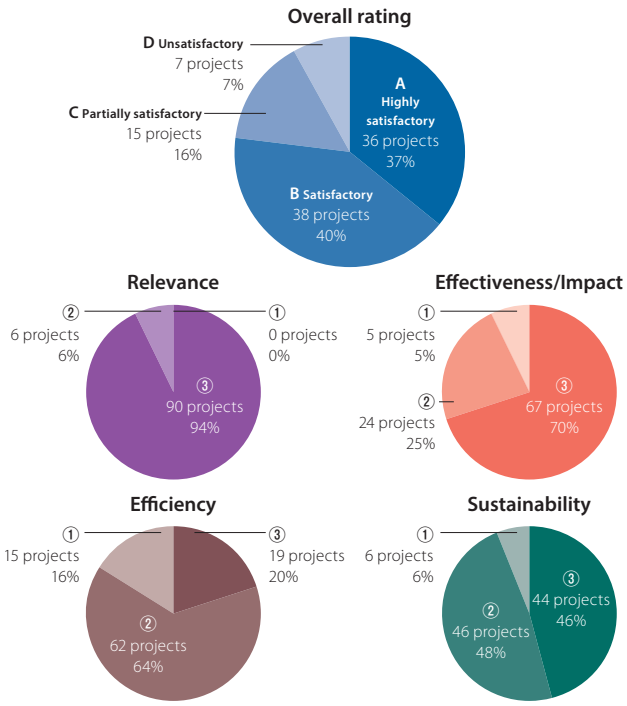
Regarding effectiveness/impact, 67 projects were rated "③" (70%), 24 projects were "②" (25%), and 5 projects were "①" (5%). Therefore, many projects were deemed to have effectiveness/impacts. Projects deemed to have issues of some kind include: projects which produced outputs, such as facilities, but did not exhibit the degree of effectiveness that was initially targeted; and projects in which the counterpart government did not adequately continue the activities after the project's completion. The reasons vary by project, e.g., "the continuation of the initial plan became difficult due to changes in the economic environment", and "measures were not sufficiently taken for the continued delivery of project effects."

As for efficiency, 19 projects were rated "③" (20%), 62 projects were "②" (64%), and 15 projects were "①" (16%). Therefore, the projects were not necessarily efficient. Some projects were deemed to have issues primarily because they could not be completed within planned period and/or budget. The reasons for these assessments are attributed to "delays in construction and procurement", "the need for revised design accompanying changes in the plan and the need for additional time for permit procedures", and "the need for additional investment."

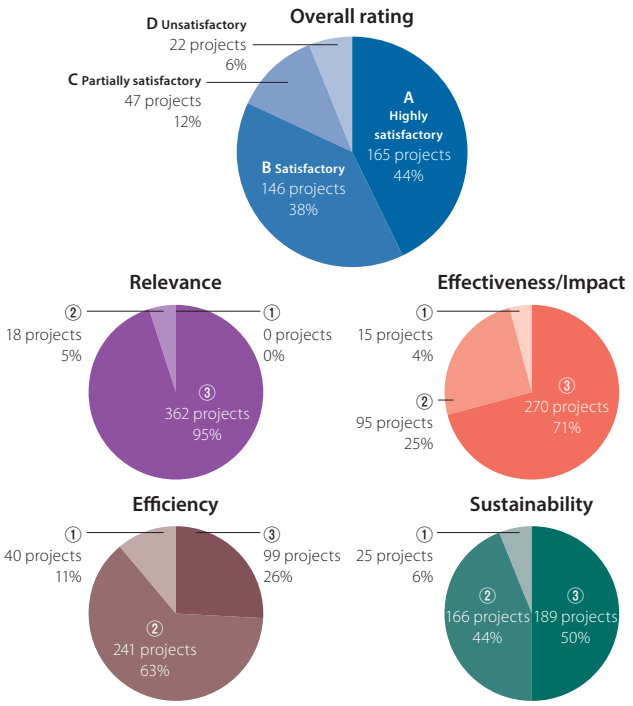
With regard to sustainability, 44 projects were rated "③" (46%), 46 projects were "②" (48%), and 6 projects were "①" (6%). Therefore, there is room for improvement. While many factors are involved, such as organizational structural issues, many projects were found to have insufficient funds for operation and maintenance, and continued activities. The reasons for insufficient funds include "insufficient budget allocations from the central and local governments for project operation and maintenance" and "inability to cover costs required for operation and maintenance from fee collection". It was also found that "necessity for strengthening organizational and institutional capacity of those responsible for project operation and maintenance".

Regarding these issues, individual project evaluations identify recommendations and lessons learned for JICA and the developing country. The recommendations and lessons learned will be fed back to the developing country as well as to JICA in order to steadily improve the evaluated project and future new projects. In thematic evaluations, analyses were conducted on the use of lessons learned and financial considerations (see pp.44-47), and these analyses will also be fed back to JICA.

<Overall Rating for FY2012 Projects and Distribution of 4 Criteria>



<Totals for FY2009 to FY2012 Projects>



● Projects Cited as Having Issues in Ex-post Evaluation

Based on detailed ex-post evaluations, the following seven projects of those evaluated in FY2012 were evaluated as D (unsatisfactory). JICA will conduct appropriate post-project monitoring in response to the challenges, recommendations, and lessons learned identified in the ex-post evaluation, and take stock of them for future similar projects.

The Philippines: Metro Cebu Development Project (III) (Cebu South Reclamation) (Cebu South Coastal Road)

○ Evaluation result

The purpose of this project was to attract companies by developing a reclamation area for an industrial zone in Metro Cebu and to facilitate city traffic flow by constructing a coastal road, and thereby, contribute to the development of Metro Cebu's regional economy. The construction of the coastal road has facilitated city traffic flow in Metro Cebu. On the other hand, the reclamation area for the industrial zone, while its construction is completed, has not been able to make adequate progress in attracting foreign companies due to external factors such as the Asian Financial Crisis. As a result, the plan was modified to attracting domestic companies and industries, and efforts are being made to attract universities, shopping malls, residences, and plants of light manufacturing industries. As of the publication of this report, only some of these facilities have been built, making the effects of this project very limited compared with the plan. In addition, fishermen on the other side of the reclamation area have lodged complaints about their worsening living environment, and Cebu City's social compensation programs are ongoing. The ex-post evaluation noted that the environmental impact assessment at the planning stage was weak.

○ Recommendations and lessons learned

In continuing the social compensation programs of Cebu City, it was recommended that the technical capacity of individual participants be enhanced as well as the capacity to operate the project. Lessons learned included the importance of carrying out adequate technological reviews and environmental impact assessments in light of the level of impact and risks of the project.

○ Action plan by responsible department in JICA

The ex-post evaluation found that the ongoing social compensation program has had some achievements and benefits. To ensure that the achievements last, JICA will monitor the efforts continuously. JICA will also continue to monitor the efforts of Cebu City through studies and other means with regard to attracting industries, universities, and other businesses to the reclaimed area.

Mexico: Project to Support the Women's Empowerment in the Mayan Region in the State of Quintana Roo

○ Evaluation result

The purpose of this project was to contribute to the economic development of Mayan women's groups in a difficult economic situation. The project was designed to establish a program for supporting the creation and sales of handcrafts by women's groups, through the organizational strengthening of the Institute of the Women in the State of Quintana Roo (IQM).

A support program was created during the project period through the preparation of the Operation Manual and Training Guidelines. However, the use of the support program has not been continuous after the project's termination. Most of the handcraft brands supported by the project are no longer made, and former products are now being made and sold. With the exception of IQM, relevant organizations deemed necessary for the promotion of handcrafts have had little involvement. It is believed that the lack of verifications of the support program's implementation caused the limited effects.

In addition, IQM's personnel shortage and budget restrictions are limiting support activities that require routine follow-ups.

○ Recommendations and lessons learned

It was recommended that partnerships with the Department of Economic Development of the State of Quintana Roo be strengthened, and that the Operation Manual be proactively utilized. The lessons learned obtained were that in projects aiming to build programs and models, adequate opportunities should be set up in advance to verify the validity of the programs and models, and that whether the project goes beyond the mandate of the implementing agency should be confirmed in advance.

○ Action plan by responsible department in JICA

JICA currently selects and concentrates Technical Cooperation projects in Mexico in areas which the Mexican government has significant interest in and are high on its priority list, and which can be expected to yield significant outcomes. When designing new projects, rigorous reviews are already being conducted in advance, including of the appropriateness of the implementing agency. JICA will fully draw on the lessons learned from this ex-post evaluation in identifying and formulating future projects.

Bolivia: Mining Environmental Research Center Project

○ Evaluation result

The aim of this project was to have the Mining Environmental Research Center (hereafter, "the Center") function as a support base for environmental administration, strengthen the monitoring activities on water pollution caused by mining operations in Potosi Department, establish a foundation of technological development and research for reducing the pollution load, and reflect these achievements into administration.

Water quality monitoring of the Pilcomayo River basin was strengthened, and research and technology development were generally undertaken for reducing the pollution load. However, the project did not lead to the establishment of the Center's organization and to recommendations on environmental administration guidelines. At present, the Center continues to

operate provisionally as part of Autonomous University of Tomas Frias, but does not function as a research center engaged in environmental administration as initially planned. Although the CIMA has the technical capacity to support the environmental administration of Department of Potosi, the CIMA's position were vague from the planning stage to the ex-post evaluation stage and this is believed to have caused these outcomes.

○ Recommendations and lessons learned

The ex-post evaluation recommended that relevant agencies discuss the responsibilities and roles of the CIMA and clearly identify its position. The lessons learned obtained were that when establishing a new organization, its responsibilities and roles should be made clear in the policy of the counterpart government at the planning stage. In addition, if policies and institutions are undeveloped, a project should fully examine the feasibility of the objectives at the planning stage, and incorporate activities for enhancing the institutional arrangements.

○ Action plan by responsible department in JICA

Although the CIMA's role was not made clear in the counterpart government's policy, the water monitoring work of the Center was maintained and it commissions testing work. The functions of the Center which were strengthened by the project are increasing in importance. The counterpart government agencies have already started reviewing the Center's organizational role and are taking budgetary measures. JICA will continue to monitor the status of the efforts of the counterpart government.

Brazil: Guanabara Bay Basin Sewerage System Construction Project

○ Evaluation result

The aim of this project was to construct sewage facilities in the western part of Guanabara Bay in the State of Rio de Janeiro, improve the sanitation environment of the people, reduce the volume of pollutant inflow into the Bay, and thereby, contribute to the resident life and conserve fishery and tourism resources in Guanabara Bay.

In this project, the construction of the sewerage treatment plant was completed. However, at the time of the ex-post evaluation, the sewer to be constructed using the funds of the State Government of Rio de Janeiro was partially incomplete, and the amount of treated sewage was low at 30% of the planned amount. Furthermore, the amount of reduction of pollutants was around 70% of the planned amount. Improvements in the hygiene environment were observed in some areas where sewers were constructed, and the inflow of pollutants into the Bay decreased. Nevertheless, no significant improvements in the water quality of the Bay were observed, and the project had limited impact.

Many issues were found with the operation, maintenance, and management. The sewerage plant had a shortage of personnel, the budget was inadequate, and payments were not made on a timely basis. In addition, in the absence of a preventive maintenance system, some of the facilities are unable to operate properly.

○ Recommendations and lessons learned

In order to quickly complete the construction of sewers and appropriately operate, maintain, and manage the sewerage plant, it was recommended that the necessary reviews and planning be conducted and that there is coordination among the stakeholders. A lesson learned obtained was that it is important to give considerations during the planning and implementation of similar projects to ensure that there are no discrepancies in the level of completion of the sewerage plant and sewer.

○ Action plan by responsible department in JICA

The incomplete sewer is to be constructed with the funds of the State Government of Rio de Janeiro. Its completion is delayed due to problems, such as with the tender procedure and budget shortage. JICA will continue its dialogue with the Federal Government of Brazil and the State Government of Rio de Janeiro and monitor the progress of the construction towards the swift completion of the project.

Uganda: The Project for Rural Electrification (Phase II)

○ Evaluation result

This project procured, installed, and upgraded equipment, including high-voltage power distribution line equipment, to improve the electrification rate and provide a stable power supply in the Iganga District, Eastern Region; Hoima and Kibale Districts, Western Region; Bugiri District, Eastern Region; and Masaka District, Central Region in Uganda.

The development of the power distribution networks in the project's beneficiary areas made progress. However, the actual number of electrified households is 706 compared to the target of 18,991 in the project plan, mainly because the project's beneficiaries, the people in rural areas, consider the connection fee is high for enrolling in the electricity service. In the project's basic design study, it was deemed that many people are willing to pay the connection fee and wiring fee, which led to the said projected number of connections. The study of the electrification target and its feasibility was ultimately inadequate.

It is expected that through the cooperation fund, "Output Based Aid (OBA)," a multi-donor trust fund supported by several donors and the Ugandan government, people will be subsidized for the connection fees they paid, and by extension, this will increase the number of households connected to electricity. Therefore, the project may generate reasonable effects in the near future.

○ Recommendations and lessons learned

It was recommended that the status of the use of the system of subsidizing connection fees be monitored periodically. The lessons learned were that in rural electrification projects, it is important to carefully analyze customer ability to pay, carry out studies and design projects by taking account of the background and issues of the entire rural electrification assistance policy as a whole, including the subsidy system, and be aware of the anticipated risks at the time of the project formulation and consider and implement countermeasures.

○ Action plan by responsible department in JICA

According to the Ugandan government, more than half of the households in one of the four project sites have been connected through the use of OBA, etc. The use of OBA from this year is expected to considerably improve the situation in the remaining three sites. JICA is requesting Uganda to thoroughly carry out routine monitoring, and will continue to check the progress towards the steady generation of effects.

Madagascar: The Aquaculture Development Project in the Northwest Coastal Region of Madagascar

○ Evaluation result

This project was implemented to develop shrimp aquaculture technologies at the Shrimp Culture Development Center (CDCC; presently Center of Development of Aquaculture; CDA), for the purpose of promoting the aquaculture of small-scale *Penaeus Monodon* (the so-called black tiger shrimp) in Madagascar.

The project improved CDCC's technical capabilities and successfully developed shrimp aquaculture technologies for small-scale farmers. However, due to a slump in international shrimp prices, existing small-scale farmers withdrew from *Penaeus Monodon* aquaculture. In addition, no new farmers entered the market. Consequently, no small-scale farmers are engaged in *Penaeus Monodon* aquaculture after the project's termination. Therefore, the technologies developed through this project are not being fully utilized, and its objective of promoting small-scale *Penaeus Monodon* aquaculture has not been achieved.

International shrimp prices continue to stagnate as of the timing of the ex-post evaluation. Some issues have been observed regarding the structural and financial aspects of CDCC, and thus, concerns remain over the sustainability of the technologies that were developed.

○ Recommendations and lessons learned

The lessons learned were that when support is provided for the production of an agricultural product that is susceptible to international market prices, it is important to fully consider the risks involved in advance. Should prices fluctuate during the project's implementation, it is important to once again carry out a sufficient study and make a decision on a timely basis, including project modification and cancellation. The ex-post evaluation recommended that CDCC's objectives in *Penaeus Monodon* aquaculture are reconsidered, and that a mid- to long-term management plan is established.

○ Action plan by responsible department in JICA

This project did not lead to the promotion of the *Penaeus Monodon* industry as was initially anticipated, due to a slump in international prices. However, CDCC has been restructured into CDA and is developing aquaculture technologies for not only shrimp but a wide range of fish and shellfish. CDA, as the implementing agency of JICA's ongoing Technical Cooperation project, continues to receive transfer of technologies. Furthermore, JICA continues to provide support for the resolution of the issues identified in regard to the institutional and financial aspects of CDA.

Guinea: Project of Improvement of Drinking Water Supply in Conakry / Project for Improvement of Drinking Water Supply in the Capital

○ Evaluation result

This project aimed to increase water production by: extending the Yessoulou Water Treatment Plant that supports water service in the capital city of Conakry; and improving the water flow of raw water and treated water pipelines. Improvements were made to the plant and water pipes as planned. However, breakage of the water pipe restricted the water flow of the water pipe developed by this project. This is being dealt with by increasing the amount of water flowing through other water pipes. With supports from other donors, the population served by this system and per capita water supply increased as expected. However, the breakage of the water pipe has disrupted water supply in some areas of the city.

The cause of the breakage is under investigation, but with the technology of the implementing agency, preventing its reoccurrence is difficult. The ex-post evaluation found operation, maintenance, and management issues, including financial problems.

○ Recommendations and lessons learned

The ex-post evaluation recommended that once the cause of the breakage is known, countermeasures be taken, the people's discontent be mitigated by giving prior notification of water supply restrictions, and the earnings of the water supply business be increased through improving the water supply service.

The lessons learned were that when using pipe materials in countries for the first time, adequate reviews be undertaken from the perspectives of operation, maintenance, and management, and that when there is an incident, JICA should also investigate its cause as necessary.

○ Action plan by responsible department in JICA

The implementing agency has replaced the broken part of the water pipe as an emergency measure. JICA is recommending low-pressure operation to Guinea and providing advice on coping with breakage. As a result, there have been no new breakage as of the publication of this report.

JICA is cooperating with the investigation of the causes. It is providing supports to prevent the reoccurrence of breakage, prepare an emergency response manual as a preparatory measure, give technical guidance, and provide necessary supplies in the case of a breakage.

Overview of Internal Ex-Post Evaluation Results

About Internal Ex-Post Evaluation

Since FY2010, JICA has been conducting internal evaluations of projects over 200 million yen and below 1 billion yen, whereby overseas offices act as evaluators under the assistance of the evaluation department. With internal evaluations, evaluators of overseas offices conduct evaluations by carrying out interviews of implementing agency and project site inspections. This fiscal year, 82 internal evaluations were conducted, including some carried over from the previous year.

Overall evaluation

Internal ex-post evaluations were conducted for 82 projects: 34 Grant Aid projects and 48 Technical Cooperation projects. The project areas were worldwide, with many in Southeast Asia, Central and South America, and Africa. The projects covered a wide range of sectors, including health, water resource and disaster management, and agricultural and rural development. The overall evaluation of the 82 projects indicates that approximately 60% of projects have delivered the expected result at the time of ex-post evaluation, while approximately 40% of projects were found to have some issues.

Evaluation by criterion

Evaluation results by criterion show that in terms of relevance, most of the projects were consistent with the policies of the project-targeted countries and met their needs. Meanwhile, in a few projects, issues were found with the appropriateness of the project plan and approach.

Regarding effectiveness/impact, approximately 50% of all projects achieved expected outcomes and the 50% were regarded to have some challenges to get results. For grant aid projects, it is observed that changes in demand and problems with maintenance and management resulted in the underutilization of equipment and facilities. It is also observed that the delays in partner countries' portion hindered the planned effects. For some technical cooperation projects, it is noted at the time of ex-post evaluation that the projects' achievement is not disseminated and/or expanded as planned. The reasons pointed out include; the projects' effects achieved during the project are not being continued, the models and guidelines introduced by the project are not fully utilized and the arrangements for the scaling up of the projects' effects are not appropriate.

As for efficiency, approximately 30% of the projects were completed within the planned period and cost. Approximately 70% of the projects were found to have problems with efficiency. In case of grant aid projects, delays in equipment procurement, facility construction, and customs clearance resulted in the longer project period than the planned period. As for technical cooperation projects, the project amount exceeded the planned amount as more funds were needed than initially planned for the achievement of objectives and outcomes.

Concerning sustainability, approximately 20% of the projects were expected to be highly sustainable, while approximately 80% of them were identified as having challenges, showing that many projects confront problems of some kind. It was found that funding was insufficient for operation, maintenance, and management and project implementation for many of the projects. Some projects were also found to have challenges with inadequate organizational structure, skills, as well as operation, maintenance, and management, including inadequate assignment of appropriate personnel, lack of technical capabilities and routine inspections and repairs.

Future efforts

Challenges identified in each project are relayed to recipient countries and relevant JICA departments in the form of concrete recommendations. Those recommendations are then used to facilitate improvements. Furthermore, through internal evaluation activities, overseas offices have gained a number of lessons for project development and monitoring. These are also relayed to the relevant JICA departments and to be utilized for the planning and monitoring of similar projects within JICA.

In implementing this year's internal evaluations, JICA was mindful of utilizing quantitative indicators for increasing objectivity. In addition to ensure the clarity of the evaluation result by increasing objectivity, JICA will examine the more efficient approaches of evaluation. JICA will continue to enhance the evaluation capacity of overseas offices while exploring means of further improvement, including the content and method of the assistance of the evaluation department.

Field survey of the "Regional Primary Health Service Reinforcement Project" in the Dominican Republic

Micro, Small and Medium Enterprises Energy Saving Project

Asia
India

Enhancing the Effects of Energy Conservation by Combining Japanese ODA Loans with Technical Assistance

External Evaluator: Yumiko Onishi, IC Net Limited

Project Outline

- Loan Amount / Disbursed Amount: 30,000 million yen / 30,000 million yen
- Loan Agreement: November 2008
- Terms and Conditions: Interest rate: 0.3% Repayment Period: 15 years (Grace Period: 5 years)
- Final Disbursement Date: November 2010
- Implementing Agency: Small Industries Development Bank of India (SIDBI)

Project Objectives

Overall Goal: To contribute to improvement of the environment, sustainable development of the economy, and climate control in India by promoting greater efficiency in energy use.

Project Purpose: To promote energy saving through micro, small and medium enterprises (MSME) in India

Output:
1. Provision of the medium to long-term funding necessary for energy saving initiatives for MSMEs in India.
2. Strengthening of loan appraisal capacity of the executing agencies and participating financial institutions (PFI).
3. Promotion of awareness toward energy saving amongst MSMEs.

Effects of Project Implementation (Effectiveness, Impact)

In this project, Japanese ODA loan funds were utilized to promote energy saving by MSMEs, and loans were provided directly from SIDBI or through PFIs for investment in energy-saving equipment. The average rate of energy saving by MSMEs from the project was 35.67%. It can be said that the project achieved reduction in energy consumption approximately 10% above the benchmark target of the government policy at the time of appraisal. The reduction of energy consumption achieved through this project was equivalent to 119MW per annum, which contributes to 12% of the potential energy consumption reduction of MSMEs through energy saving (1,000MW per annum) estimated by the Confederation of Indian Industries. Considering that the number of end users covered by the project is less than 1% of all the MSMEs in the country, it is clear that the amount of energy saved through the project is tremendous.

Furthermore, this project was more effective in encouraging MSMEs to save energy more effectively by combining the provision of Japanese ODA loans with support, provided through Technical Assistance Consultants. Activities conducted to raise awareness of energy saving not only raised awareness and the level of interest among participating MSMEs, but also pushed the MSMEs to take concrete energy-saving measures by showing them specific examples of initiatives and the benefits that can be gained through such initiatives. In the areas where awareness campaigns were carried out, the number of loans provided was comparatively higher than in areas where they were not. In addition, a list of energy-saving equipment that was eligible for loans (Energy Saving Equipment List, or ESEL) was drawn up and provided to loan screening officers of financial institutions and MSMEs, which contributed to the efficient loan appraisal process. Therefore effectiveness and the impact of the project effect are high.

Energy-saving equipment purchased by one of the end-user companies (paper making industry) using the loans provided

Cardboard boxes manufactured using the energy-saving equipment

Relevance

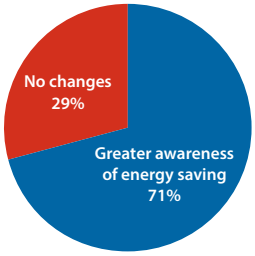
India is undergoing rapid economic growth. In order to secure stable energy supplies for the future and protect the environment going forward, promoting efficiency of energy usage has become an urgent task for the country. In particular, it was considered that there was potential for further improvement in the efficiency of energy usage among MSMEs, which lagged behind in investing in energy-saving equipment and faced the problem of aging equipment, causing inefficient energy consumption. Therefore the relevance of the project effect is high.

Efficiency

Capacity enhancement training for SIDBI and PFIs, provided through the Technical Assistance Consultant, continued even after the final disbursement date. However, loan financing to MSMEs was accelerated as a result of measures such as awareness campaigns and the expansion of PFIs, resulting in the completion of loan disbursement 11 months earlier than planned. Project cost also remained within the planned budget. Therefore the efficiency of the project effect is high.

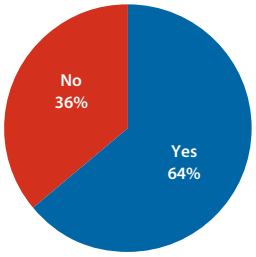
Rating		
Effectiveness and Impact	③	Overall Rating
Relevance	③	
Efficiency	③	A
Sustainability	②	

<How did awareness toward energy saving change as a result of the awareness campaigns carried out in this project? (Based on the results of Beneficiary Survey*1)>



*1: Interviews or questionnaire survey conducted on 45 MSMEs that had received loans through this project

<Did you implement energy-saving initiatives on your own, apart from the energy savings loans? (Based on the results of Beneficiary Survey)>



Sustainability

There were no particular problems in institutional and technical aspects of operations and maintenance. However, the financial conditions of some of the PFIs raised concern. Moreover, it was not possible to monitor repayment situation and re-lending status specific only to the loans for this project through SIDBI's data system, which originally had been assumed to be possible. Therefore sustainability of the project effect is fair.

<Energy consumption and electricity charges of Company A, end-user company in this project>

	Before	After
Energy consumption (per ton of cardboard box)	78.00kWh	49.00kWh
Electricity charges (per ton of cardboard box)	Rs. 0.40	Rs. 0.25

Key points in the evaluation: Conditions surrounding the MSMEs

An analysis was conducted about the degree of development of business development services (BDS) *2 and the roles played by BDS providers connecting the PFIs and beneficiaries (MSMEs) in this two-step loan project.

BDS providers in India provide services in various fields such as accounting, export, and training. More than 14,000 BDS providers are registered on the web portal operated by SIDBI (as of December 2012). Of these, 20% provide administration services related to accounting and tax procedures. As it is very common to use certified public accountants in India, when the beneficiary companies of this project were surveyed with the exclusion of BDS usage for such administrative services, it was found that only an insignificant number of MSMEs had used BDS for services other than for administrative services. It was also clear that insufficient access to BDS providers poses a significant barrier to the use of BDS. However, the end-users that had used BDS expressed that it had contributed to their business performance.

Even without BDS, this project has attained a certain level of efficacy in providing loans to MSMEs. On the other hand, it does not necessarily mean that MSMEs do not have any need for BDS. Rather, this study highlighted that (1) MSMEs that have achieved a certain level of growth have a need for BDS, and (2) there are inadequacies in the matching of MSMEs with such needs and BDS providers.

*2: BDS refers to services that help companies to grow and become competitive. They include training, consulting, marketing assistance, information provision, legal and accounting services, technical development and dissemination. However, they do not include financial assistance.

Conclusion, Lessons Learnt, and Recommendations

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

This project made a definite contribution to enhancing efficiency in energy use and reducing energy consumption. In order to achieve even greater energy efficiency and ease environmental problems through energy saving, SIDBI is requested to review additional measures and energy-saving loan systems that target even more MSMEs, based on the approach taken in this project and successful examples. It is expected that loans will continue to be provided toward energy saving.

Lessons learnt through this project include the combination of Japanese ODA loans with support through Technical Assistance Consultants. In addition, taking a flexible approach, such as by accepting the introduction of additional equipment instead of restricting loans only to companies making the conversion from existing equipment with poor energy efficiency to energy saving equipment, contributed to promoting loans to MSMEs. Restricting loans to replacements of existing equipment may be perceived as an unattractive financial product to MSMEs that are expanding in business scale and which require additional equipment. Furthermore, by going through PFIs that are deeply rooted in the respective regions, there is potential for the efficient and effective disbursement of loans through the utilization of the even broader networks of the PFIs, as compared to the implementation of the project by a single executing agency.

The Nursing Education Improvement Project

Asia
Uzbekistan

Establishing a Nursing Education Model Based on the New Concept of Client-Oriented Nursing

External Evaluator: Hisae Takahashi, Ernst & Young Sustainability Co., Ltd.

Project Outline

- Total Cost (Japan): 591.72 million yen
- Period of Cooperation: July 2004 - June 2009
- Implementing Agency: Ministry of Health, Ministry of Higher and Secondary Specialized Education
- Number of Experts Dispatched: Long Term: 5; Short Term: 103
- Number of Trainees Received (Japan): 39
- Main Equipment Supplied: Audio-visual equipment, material preparation and printing equipment, medical equipment for demonstrations, etc.

Project Objectives

Overall Goal

To provide nursing education based on "Client-Oriented Nursing" (CON*1) at Medical Colleges (MC) nationwide.

Project Purpose

To establish a model for nursing education (in-school education/clinical practices outside of school) based on CON principles.

Output

1. Introduction of CON concepts into in-school education
   1-1. A proposed curriculum based on CON is drawn up.
   1-2. Materials based on CON are drawn up.
   1-3. Nursing education methods based on CON are understood by teachers.
2. Practical training based on CON is introduced at the main practice hospitals and healthcare facilities of model hospitals and model schools.
3. Standards for nursing education are recommended (teaching plans and teaching programs*2), and additionally a foundation is developed for introducing CON into nursing education systems across the country.

Effects of Project Implementation (Effectiveness, Impact)

This project was implemented with the objective of providing a new nursing education model based on the concept of "Client-Oriented Nursing" (CON) at medical colleges (MC) in Uzbekistan. Through project activities, curriculum and teaching materials were modified; MC teachers were re-trained; and a foundation was developed for equipment and facilities. As a result of the introduction of the new nursing education system in model schools, changes were observed in the attitudes of MC teachers and students toward nursing, and it was found that there was a higher degree of understanding of CON-based nursing education. Prior to implementation of the project, more than 70% of MC-related respondents recognized nursing work as being the subsidiary role of doctors. However, after the implementation of the project, the proportion decreased to approximately 10%. Conversely, more than 60% viewed nursing work as being an independent task of nurses, and more than 70% regarded the work of supporting patients and their families as part of the work of nurses. This shows that perceptions of nursing work had changed significantly. In the results of surveys conducted on beneficiaries, changes were observed even amongst doctors and nurses working at model hospitals. For example, numerous comments expressing gratitude to nurses for treatment and care received at the hospital were found in the notebook placed at the reception counter for patients to write in. Hence, the effects and impact of introducing CON-based nursing education were observed. Furthermore, this new nursing education model was introduced, disseminated, and implemented in all MCs across the country after the completion of this project. Therefore effectiveness and impact of the project effect are high.

Scene of a practice session for child health nursing education at an MC

Textbooks for students produced by MC teachers after the completion of the project

Relevance

In Uzbekistan, which is putting effort into reforming its healthcare system, from the time of the ex-ante evaluation to the completion of the project, the consistent aim of the reform was to enhance the quality of medical services by improving the education for medical personnel. Japan has established reform of medical and education services as a priority pillar under JICA's country operation plan, and "fostering and strengthening the role of nurses" has been positioned as a priority assistance area. Therefore relevance of the project effect is high.

Efficiency

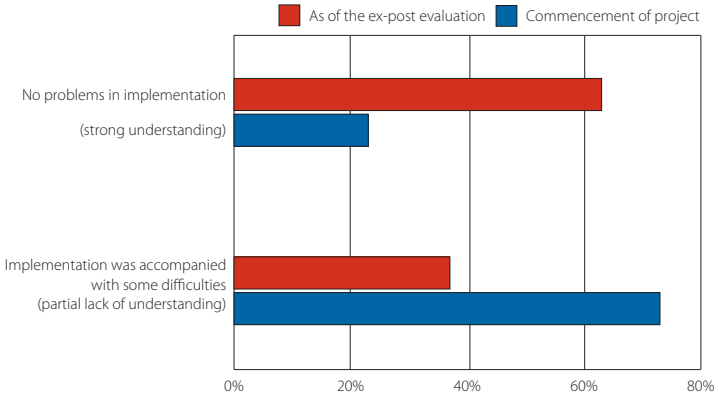
The period of cooperation was within the period laid out in the plan. However, the cost of the project significantly exceeded the budget allotted for in the plan. This was due to factors such as the frequent dispatch in all seven nursing subjects*3, as well as the additional input of interpreters and translators in order to communicate new concepts in their native languages. Therefore the efficiency of the project effect is fair.

Rating		
Effectiveness and Impact	③	Overall Rating
Relevance	③	
Efficiency	②	A
Sustainability	③	

*1: CON is the abbreviation for Client-Oriented Nursing, and refers to providing nursing services "close" to the patient. It involves providing nursing and life support based on the needs of each patient's life cycle stages (childhood, puberty, adulthood, and elderly stages).
*2: The teaching program refers to the proposed educational syllabus.
*3: The seven nursing subjects are: fundamental nursing, maternal health nursing, child health nursing, adult health nursing, gerontological nursing, psychiatric nursing, and community health nursing.

<Implementation of the new nursing education system based on the CON concept>

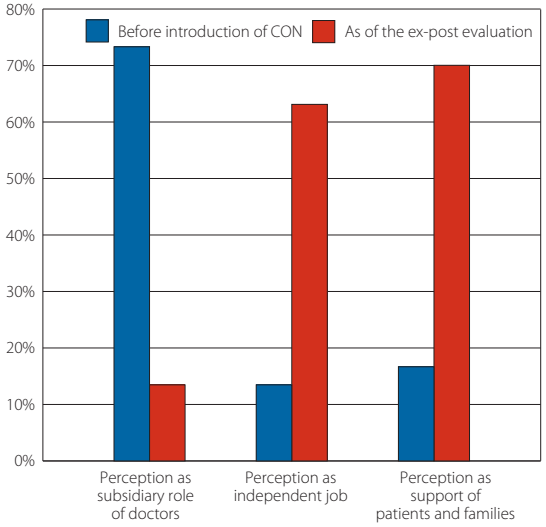
(Comparison before commencement and during the ex-post evaluation)



Source: Beneficiary Survey

<Perception of nursing>

(Changes before and after introduction of the CON concept>



Source: Beneficiary Survey

Sustainability

The new nursing education system introduced through this project has been disseminated and implemented in all MCs across the country. Although some issues remain with regard to the future role of the Nursing Education Center (NEC), which is responsible for the retraining of MC teachers, there were no problems in the policy, structural, technical, and financial aspects in the implementation of this project. Therefore sustainability of the project effect is high.

Key points in the evaluation: Establishment of a nursing education model and nationwide dissemination of this model

In this project, activities were conducted with the aim based on establishing a new nursing education model based on the "Client-Oriented Nursing" concept in Uzbekistan, where nurses are positioned to play a subsidiary role to doctors. Specifically, a curriculum that had originally been grouped according to specialties*3 was revised into seven nursing subjects from the perspective of the patient. Accordingly, teaching guidelines and nursing practice guidelines were revised, enabling students to acquire the knowledge and skills needed in order to provide CON-based nursing services; and initiatives were taken to introduce these into the education sites (model schools). In addition, in light of the situation of nurses who had had no opportunity to come into contact with patients, learning environments were created at the actual sites of medical practice so that students could learn about how to communicate with patients and families. This included utilizing medical equipment for practices, providing practice sessions through the use of demonstration medical material or models, and introducing a system for assigning patients to student nurses during nursing practice at model hospitals. It can be said that these supports eventually reconstructed the country's training method for nursery. The revised curriculum was accepted as a standard for nursing education in Uzbekistan by the Ministry of Health and the Ministry of Higher and Secondary Specialized Education. After the conclusion of the project, the two ministries pushed strongly for the system to be introduced into MCs across the country even more quickly than initially planned. As the direction of reform taken by the country and by this project were consistent with one another, the implementing agencies acknowledged the importance of the new nursing education model. Consequently, it became possible to steadily disseminate, establish, and develop the new CON-based nursing education model to MCs across the country.

*3: For example, medical nursing, surgical nursing, and dermatological nursing, etc.

Conclusion, Lessons Learnt, and Recommendations

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

In this project, a new concept known as CON was introduced into the nursing education system. However, there was a lack of translators to communicate the intentions and significance of the concept to the Uzbekistan side, and this impeded the progress of the activities. Through such experiences, we have learnt that it would be desirable to plan an appropriate number of personnel, including interpreters and translators, in cases that involve the creation of a concept. Furthermore, it was pointed out that there were difficulties in sharing information adequately in processes for activities involving a wide range of experts; consequently, the personnel involved did not grasp some of the indicators that should have been achieved. In light of these problems, in projects involving a large number of experts, it is necessary to develop a system that takes into consideration the deployment of personnel who are responsible for overall coordination work. In addition, in view of the current situation where there is a lack of clarity on future financial resources to support the continuation of NEC activities, one of the lessons drawn from this project is the importance of having prospects for the future sustainability of the main institutions for continuing activities at an early stage.

As there was inadequacy in the medical equipment available for practice in MCs in some regions, one recommendation to the implementing agencies was to promote the adequate supplies of equipment for use in clinical practices, which is critical to the implementation of a new nursing education model. This is to prevent the lack of equipment from hindering the improvement of students' understanding. On top of that, a recommendation to JICA would be to take follow-up measures to the Ministry of Health where necessary in order to secure budgets for future activities by the NEC, which has played the role of retraining MC teachers.

The Project for Flood Protection and Drainage Improvement in the Municipality of Phnom Penh (Phase II)

Asia
Cambodia

Significant contribution to reducing flood damage in Phnom Penh City

External Evaluator: Jun Totsukawa, Sano Planning Co., Ltd.

Project Outline

- Grant Limit/Actual Grant Amount: 2,644 million yen / 2,354 million yen
- Exchange of Notes Date: Detailed Design: January 2007 Main Contract: June 2007
- Project Completion Date: February 2010
- Implementing Agency: Phnom Penh City Department of Public Works and Transport (DPWT)

Project Objectives

Overall Goal: To contribute to the maintenance of capital functions and reduce the impact of natural disasters.

Project Purpose: To improve the degree of flood control safety and reduce the damage caused by flooding disasters.

Output: Development of flood protection facilities and drainage facilities in Phnom Penh City.

Effects of Project Implementation (Effectiveness, Impact)

This project aimed to improve the degree of flood control safety in Phnom Penh City, and reduce damage caused by flooding disasters, through revetment work on flood protection facilities and the development of drainage facilities in the city.

With regard to the improvement of flood protection facilities, the quantitative effect of the project has been determined as the "highest water level of the Mekong and Tonle Sap rivers, corresponding to about a 30-year probability of planning scale, does not overtop the dike without causing any structural damages to the revetment facilities". At the time of the ex-post evaluation of this project, there was no conspicuous damage to the revetment facilities through this project. In addition, since the completion of revetment work, overtopping and dike breaks have not occurred, meaning that floods have been prevented; and suggesting that the target effects have been attained.

Laying and outfitting work for drainage pipes was also carried out with the aim of improving drainage facilities. The drainage pipes laid through this project have larger tube diameters compared to that of existing drainage pipes in Phnom Penh City; hence, they are extremely effective and efficient in draining water. As a result of the pipes laid in this project, significant improvements were noted in the duration and depth of inundation, suggesting that the target effects have been attained. In addition, this contributed to easing the traffic congestion that lasted for long periods of time during floods, as well as to extensions of stores' opening hours in the region and reducing damage to products as a result of inundation.

Therefore effectiveness and impact of the project effect are high.

Nameplate (set up along the Tonle Sap River)

Near the Royal Palace (Drainage pipes from this project pass under the roads)

Near the Royal Palace (2004)

Relevance

The Social-Economic Development Plan II (SEDP II) drawn up by the Government of Cambodia established the aim to develop towns with no flooding or inundation. Furthermore, in Phnom Penh City's City Development Strategy (CDS), the rehabilitation and improvement of old drainage pipes was raised as a specific target issue. Based on the above, the project is highly relevant and consistent with the policies of Cambodia, as well as the needs of the target area. Therefore relevance of the project effect is high.

Efficiency

The revetment and drainage facilities planned for in this project were constructed according to the plan. The project cost and project period were within the plan, at 89% and 99% of the planned cost and period respectively. Therefore efficiency of this project is high.

Rating		
Effectiveness and Impact	③	Overall Rating
Relevance	③	
Efficiency	③	A
Sustainability	②	

<Recognition of improved traffic congestion at times of flooding>

	Significantly improved	Improved	No real change	Slightly worsened	Worsened	Don't know	Total
Stores	11	49	7	4	9	0	80
Companies	4	6	8	1	0	1	20
Total	15	55	15	5	9	1	100

Source: Results of Beneficiary Survey

Sustainability

In order to ensure that drainage effects continue to be generated, it is important to clean drainage pipes in accordance with an appropriate cleaning plan. Currently, the number of cleaning staff under the Drainage and Sewage Division (DSD) of Phnom Penh City is relatively fewer in proportion to the wide area under the jurisdiction of the DSD. In addition, at this point in time, the capability to formulate suitable cleaning plans is still being developed. Although the budget for maintenance and management has been secured to a certain extent, it is still somewhat insufficient. Therefore sustainability of the project effect is fair.

<Recognition of economic effects>

Item	% of respondents
Extended business hours (days) for stores	68.7 %
Amount of products wasted due to inundation has decreased (reduction in products unable to be sold due to submersion or spoilage)	41.8 %
Decrease in damages to furniture, shelves, etc. in stores due to inundation which can render them unusable, cause lingering odors, and so on.	9.0 %
Cessation of interruptions to activities such as stocking operations (cease obstructions to those going to purchase goods, or to intermediate wholesalers bringing in goods)	32.8 %
Fewer foul odors seeping from leakages in underground drainage	55.2 %
Increased visitors (as there are no visitors during floods)	28.4 %

Source: Results of Beneficiary Survey
Note: From multiple responses obtained from 67 (out of 80) store operators who responded "flood damage has been reduced."

Key points in the evaluation: Easing traffic congestion through reduction of flood damage, and economic effects

Through the improvement of regional drainage systems in this project, the generation of effects in the form of improvements in traffic congestion during flooding, and decrease in economic losses arising as a result of inundation, was expected. At the time of planning for this project, the duration of inundation in the target area lasted for half a day or more, inevitably resulting in the absence of commuters from work in local government offices and companies, or in major traffic congestion. Currently, inundation lasts for approximately one to two hours, thereby significantly easing the traffic congestion which plagued commuters previously. Even in the shopping streets, while product losses due to inundation were a frequent occurrence in the past, such losses have now been reduced.

The target area in this project is an area in where government offices and companies are concentrated. It is, at the same time, a tourist destination facing the Tonle Sap River. According to the results of the Beneficiary Survey, a great deal of feedback has been received about how the implementation of this project has reduced damage from flooding, and contributed to an increase in the number of tourists. This increase in tourist numbers could be said to have also contributed indirectly to an increase in sales in the shopping district, in no small measure. In addition, the development of a green belt along the Tonle Sap River was also carried out in tandem with this project, and many responses acknowledge that the views along the Tonle Sap River have improved as a result of these initiatives.

Hence, this project has helped to ease traffic congestion, and improved economic effects for commercial operators. Furthermore, it has contributed to an increase in the number of tourists. As such, it could be described as a project that has generated a wide range of impact based on the development of infrastructure.

Conclusion, Lessons Learnt, and Recommendations

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

One of the recommendations to the DSD could be to carry out periodic cleaning work, in order to ensure the effective and long-term use of drainage facilities in this project. The following are four specific actions that can be taken: (1) Formulation of a highly effective and viable cleaning plan; (2) Increase in the number of cleaning personnel based on the plan; (3) Effective use of equipment such as high-pressure cleaning vehicles and sludge suction vehicles; and (4) Raising awareness about garbage disposal among residents.

Currently, as part of the Project for Flood Protection and Drainage Improvement in the Municipality of Phnom Penh (Phase III), which is successor to this project, support is being provided through soft components for capacity building in relation to the formulation of cleaning plans. Going forward, improvement in the ability to formulate cleaning plans is anticipated. The enrichment of cleaning equipment such as cleaning vehicles, achieved through support from Japan, Vietnam, and other countries, is a favorable factor for enhancing the sustainability of the project. However, on the other hand, the population, as well as residential and commercial areas, of Phnom Penh City is expanding continuously; and it is a fact that the role and responsibilities of DSD are also growing alongside its expansion. Hence, faithful implementation of (1) to (4) described above will become even more important in the future. Furthermore, the amount of water supply fees allocated to the maintenance and management of drainage facilities is partly responsible for obstructing the implementation of the necessary cleaning work, and it would be desirable to increase the existing amount allocated.

It has been pointed out that a lesson drawn from this project is the importance of taking adequate steps to approach the government of the target country at the planning stage, in order to verify the cleaning plan and system, and cleaning track record, in greater detail; and to ensure that the partner government takes necessary measures and develops the necessary systems.

Lunawa Environment Improvement and Community Development Project

Asia
Sri Lanka

Drawing on lessons learnt in the previous project to contribute to improving the living environment

External Evaluator: Tomoko Tamura, Kaihatsu Management Consulting Inc.

Project Outline

- Loan Amount/Disbursed Amount: 6,906 million yen/6,339 million yen
- Loan Agreement: December 2001
- Terms and Conditions:
  Interest Rate: 1.7%
  Repayment Period: 30 years (Grace Period: 10 years)
  [Consulting Services: Interest Rate: 0.75%
  Repayment Period: 40 years (Grace Period: 10 years)
- Final Disbursement Date: April 2010
- Implementing Agency: Ministry of Water Supply and Drainage

Project Objectives

Overall Goal: To contribute to improving the hygiene conditions and living environment of the area around Lunawa Lake, which suffers from serious flood damage.

Project Purpose: To reduce flood damage in the target area.

Output: Development of drainage systems in the target area and measures to improve the living environment in underserved communities.

Effects of Project Implementation (Effectiveness, Impact)

This project aimed to reduce flood damage and improve the living environment of the area around Lunawa Lake, located approximately 15 km south of the heart of Colombo City. To that end, drainage systems were developed and measures taken to improve the living environment of underserved communities. The target area has low altitude and was frequently flooded prior to the implementation of this project, due to lacking developed drainage systems. This had serious impacts on the socioeconomic life of residents. According to the results of the Beneficiary Survey, after the project was completed, significant reductions were observed in the number of houses flooded; and in the frequency, length of time, and depth of inundation. Hence, it was confirmed that the project had achieved the anticipated effect in reducing flood damage. The success attained in enhancing flood control effects can be attributed to the utilization of lessons drawn from previous projects. This was utilized not only in developing main and secondary drainage systems, but also in the development of small-scale drainage systems and side drains in residential areas, the improvement of waste treatment by municipal councils in the target area, and activities to raise awareness on preventing the disposal of waste into drainage systems.

As part of this project, the construction of drainage and rain gutters, the introduction of sewage systems, and road improvement were implemented for low-income communities in this project's target area. According to the results of the survey, the implementation of this project had contributed to improvements in the landscape of the target area, hygiene conditions such as waste and drainage management and foul odors, as well as improvements in living environments, such as transportation and traffic during the rainy season.

Therefore effectiveness and impact of this project effect is high, as the effects anticipated in the plan were mostly observed.

Drainage system prior to the implementation of the project (taken in 2002)

Drainage system after the implementation of the project

Relevance

This project is consistent with the development policies of Sri Lanka, which positions flood measures and improvement of environment and hygiene in urban areas as important issues; and is consistent with Japan's ODA policy. As floods occur frequently in the target area and have a serious impact on the socioeconomic lives of residents in the area, there has been a greater need for flood countermeasures. Therefore the relevance of this project is high.

Efficiency

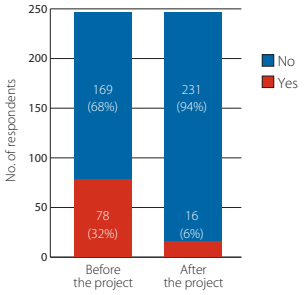
The project cost was within the planned budget, and the output achieved, such as the construction of roads for operation and maintenance purposes, exceeded the expected output laid out in the plan. On the other hand, as the project took a considerably longer time to complete than planned, its efficiency is evaluated as fair. The extension of the project period was mainly caused by land acquisition and resettlement of residents.

Sustainability

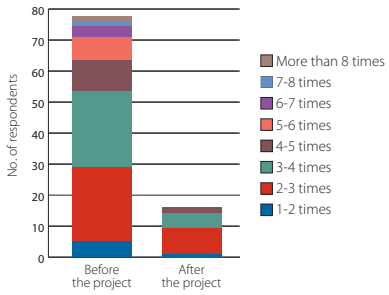
With regard to the operation and maintenance of drainage systems, although the management system and the operation and maintenance conditions of the Dehiwala-Mt. Lavinia Municipal Council (DMMC) and the Sri Lanka Land Reclamation and Development Corporation (SLLRDC) were mostly satisfactory, there were problems with the management system and the operation and maintenance conditions of the Moratuwa Municipal Council (MMC). Moreover, concerns remained with regard to water quality of the drainage system. Therefore sustainability of the project effect is fair.

Rating		
Effectiveness and Impact	③	Overall Rating
Relevance	③	
Efficiency	②	B
Sustainability	②	

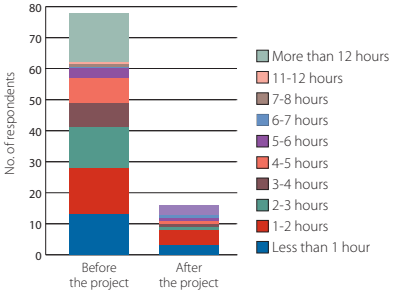
<Was your house inundated before and after the project?>



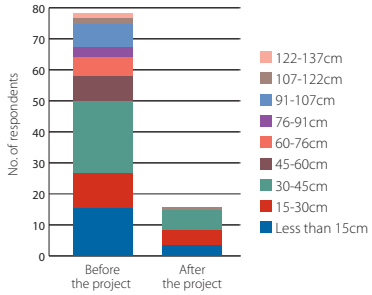
<How many times a year was your house inundated on average before and after the project?>



<How many hours was your house inundated for on average before and after the project?>



<What was the average depth of inundation at your house before and after the project?>



Source: Beneficiary survey conducted during ex-post evaluation

▶Key points in the evaluation: Involvement of operation and maintenance organizations from the planning stage

In the Greater Colombo Flood Control and Environment Improvement Project (II), which preceded this project, the implementing agency had been a different organization from the operation and maintenance organization. In that project, after its completion, the transfer of the responsibility for the operation and maintenance of drainage systems did not proceed smoothly. Hence, at the time of the ex-post evaluation, it was unclear where the responsibility for operation and maintenance lay. One of the factors contributing to this problem was perceived to be the non-involvement of operation and maintenance organizations in the implementation of the project, resulting in a lack of ownership toward the drainage systems developed under the project.

In this project, the implementing agency is the Ministry of Water Supply and Drainage, and the operation and maintenance organizations for the drainage systems developed under this project are the two municipal councils for the target area. Drawing from the lessons learnt in the preceding project, as described above, the two municipal councils were involved from the formulation stage of the project plan. During the implementation of the project, some of the construction work for the drainage systems was also contracted to the municipal councils as part of efforts to create a sense of ownership for the operation and maintenance of the drainage systems. As a result of these efforts, the transfer of operation and maintenance responsibility after the completion of the project proceeded smoothly. Currently, although there are remaining issues with the operation and maintenance situation, the respective municipal councils have clearly identified the personnel in charge of operation and management, and there are no problems in the sharing of responsibilities. Based on this, it could be said that involving operation and maintenance organizations in the planning and implementation of a project is important in order to facilitate the smooth transfer of operation and maintenance responsibilities. With regard to the resettlement of residents, a new compensation policy provided for by the Sri Lankan government was adopted. In addition, through processes such as the participation of residents in the development of the resettlement areas and consultation at information centers, residents gained a higher degree of satisfaction through the sincere response provided by the implementing agency. It is important to ensure that the implementing agency has the capability to carry out such participatory processes.

● Conclusions, Lessons Learnt, and Recommendations

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

A recommendation for MMC, which is one of the operation and maintenance organizations, would be to secure and deploy suitable personnel for the operation and maintenance of drainage systems, and to take prompt steps to formulate an operation and maintenance plan; as well as to carry out work and monitor the situation in line with the plan. For the Ministry of Water Supply and Drainage, which is the implementing agency for this project, it is recommended that a suitable system is established to facilitate the monitoring and guidance for the operation and maintenance of drainage systems, and at the same time, to take even more active steps to improve water quality of drainage systems.

One of the lessons learnt through this project is the importance of involving operation and maintenance organizations in the planning and implementation of projects in cases where the implementing agency and the operation and maintenance organization are different institutions. This would facilitate the smooth transfer of operation and maintenance responsibility. As described previously, in this project, in addition to the development of main and secondary drainage systems, the implementation of sub-component activities such as the development of small-scale drainage systems and side drains in residential areas, raising awareness to prevent waste disposal, and improvement of waste treatment management, helped to generate even greater flood control effects. Hence, the flood control project not only culminated in the development of main and secondary drainage systems, but also raised flood control effects through the comprehensive implementation of related projects. The importance of this is another lesson drawn from this project.

Henan Environmental Improvement Project

Asia
China

Challenging the worsening problem of air pollution—Conversion of energy from coal to natural gas

External Evaluators: Yuko Kishino and Shima Hayase, IC Net Limited

Project Outline

- Loan Approved Amount/Disbursed Amount: 19,295 million yen / 19,174 million yen
- Loan Agreement Signing Date: March 2003
- Terms and Conditions:
  Interest Rate: 0.75%
  Repayment Period: 40 years
  (Grace Period: 10 years)
- Final Disbursement Date: July 2010
- Implementing Agency: Henan Provincial People's Government

Project Objectives

Overall Goal: To contribute to improving the air quality in Henan Province.

Project Purpose: To achieve conversion from fuels such as coal to natural gas in five cities in Henan Province (Jiaozuo, Luohe, Pingdingshan, Xinyang, Zhumadian).

Output: The development of natural gas supply facilities in the aforementioned five cities in Henan Province.

Effects of Project Implementation (Effectiveness, Impact)

This project was implemented in conjunction with the West-East Gas Pipeline Project, China's national project to construct a natural gas main pipeline stretching from Xinjiang Uyghur Autonomous Region in western China to Shanghai. The objective of the project is to construct a natural gas distribution system in five cities in Henan Province through which the main pipeline would pass. This was in order to improve China's grave air pollution problem by converting the use of coal to natural gas, a form of clean energy. Although the effectiveness of the project was limited by the shortage of natural gas supply by the West-East Gas Pipeline in its early stage, the supply of natural gas to the consumer sector became prioritized under the Natural Gas Utilization Policy in 2007, which contributed to the comparative progress in the spread of natural gas use in households. On the other hand, as a result of restrictions in supply to the industrial sector, there were difficulties in expanding the conversion to natural gas in that sector. Consequently, this had a negative impact on the overall effectiveness of the project. In 2008, the West-East Gas Pipeline II was opened, providing secure sources for Liquefied Natural Gas (LNG) and methane gas. This gradually eased the inadequacy in natural gas supply and facilitated the smooth conversion to natural gas.

As a result, the overall achievement rate of air pollutant reduction for the four cities*1 was 53% (SO248%, NOx53%, TSP59%). The air quality was also affected by the increased amount of coal consumed due to the rise in demand for primary energy and the increased number of vehicles owed, resulting from population growth and economic development. Although clear improvements were not observed in the air environment in Henan Province, it can be acknowledged that this project had contributed to air pollutant reduction.

Therefore effectiveness and impact of this project effect are fair.

Pipeline, meters, and gauges used to make adjustments to gas pressure (Jiaozuo)

Gate stations receiving supplies of natural gas from the main pipeline (Zhumadian)

Relevance

Air pollution is a serious problem in China, which is undergoing rapid economic growth. Improving the air environment is a priority issue in national policy, in environment and energy sectors, and in Henan Province. This project developed natural gas supply facilities in each of the cities in conjunction with the commencement of supply through the West-East Gas Pipeline, which is a national project; and aimed to improve the air environment. Therefore relevance of the project effect is high.

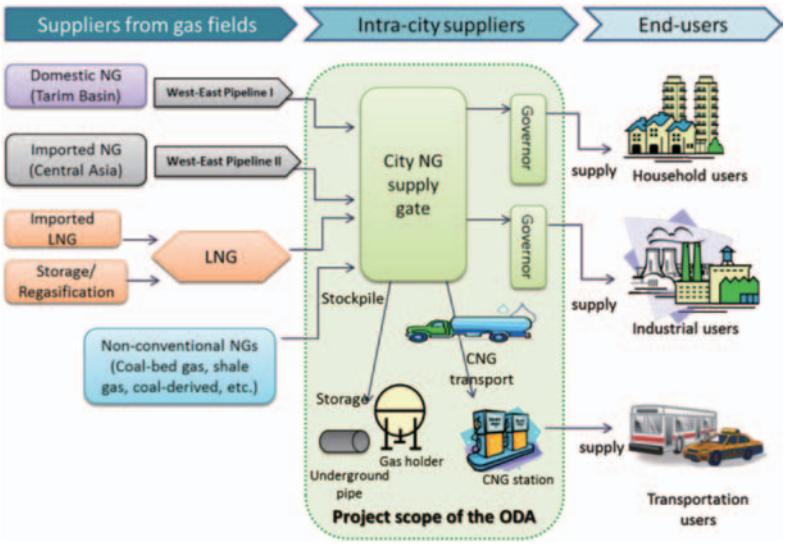
Efficiency

The Luohe City project was cancelled due to withdrawal by the Chinese side. However, the construction of natural gas supply facilities in the other four cities proceeded mostly according to the plan. Despite the impact of a price escalation, the introduction of new gas storage technologies helped to keep project costs within the planned budget. On the other hand, it took time to amend the construction plan in line with the city plan, and to obtain permission to implement the project. The actual project period exceeded the planned period. Therefore efficiency of the project effect is fair.

*1: Of the five cities, a sub-project was cancelled for one city.

Rating		
Effectiveness and Impact	②	Overall Rating
Relevance	③	
Efficiency	②	B
Sustainability	③	

<Supply flow of natural gas>



<Degree of contribution to the reduction of air pollutant emissions in Henan Province through the sub-projects (four cities)>

	2008	2009	2010	2011
SO_2	0.69%	0.91%	1.32%	1.99%
NOx	0.21%	0.26%	0.37%	0.46%
TSP	0.49%	0.70%	1.23%	2.55%

Source: Implementing agency

Sustainability

There were no major problems with the operation and maintenance of gas supply facilities, and the institutional and technical aspects were also well-developed. The financial status of gas companies operating in the respective cities is sound, and they have established fee collecting systems as well as close to 100% fee recovery ratio. As the retail prices of natural gas are regulated by the government, uncertain elements remain with regard to profitability. However, under current conditions, sustainability of the project effect is high.

Key points in the evaluation: Initiatives to improve the air environment amidst various challenges

This project, which was planned in conjunction with the West-East Gas Pipeline Project, involved the construction of "relay" facilities, so to speak, in a natural gas supply network. The effective utilization of project facilities called for the construction of the West-East Gas Pipeline and the supply of natural gas from the pipeline. In the two-year period from 2004, when supply from the West-East Gas Pipeline commenced, priority supply was given to large cities, while supply to Henan Province was restricted. Thereafter, in order to complement domestic natural gas production volume, LNG was imported and supply from the West-East Gas Pipeline II commenced. In 2011, Henan Province began to receive stable supplies. Until then, the project had to proceed with limitations on natural gas conversion in order to match the ceiling of the supply quantity. This deviation from the plans had an impact on achieving the project targets. Due to the Natural Gas Utilization Policy, an order of priority was established for the use of natural gas. On the other hand, the conversion of fuels at thermal power stations, which had been anticipated at the planning stage, did not materialize. Hence, policies had a direct impact on the effectiveness of this project.

In this way, the effectiveness of this project has been significantly influenced by national policies. In the future, this effectiveness is expected to improve through the construction of new pipelines by the government, expansion in the types of natural gases, easing of usage restrictions on natural gas, and application of preferential and compulsory measures. It is a fact that demand for primary energy continues to grow in Henan Province, and the amount of cheap coal consumed at large factories and thermal power stations is on the rise. The number of vehicles is also increasing rapidly. There are as many factors influencing the air environment as before, and the country is only halfway on the way toward improving its air environment.

Conclusion, Lessons Learnt, and Recommendations

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

One of the lessons learnt is that in projects such as this one, which are significantly impacted by national development programs and energy policies, it is vital for the government to take timely and appropriate measures to stabilize energy supply; as well as put in place policies such as compulsory and preferential measures to promote conversion.

As the use of natural gas became increasingly widespread across the country, domestic production failed to keep up with demand, and natural gas supply restrictions were imposed. On the other hand, compulsory measures put in place by the respective city governments based on national policies, such as restrictions on the emission of air pollutants and penalties for non-complying companies, as well as preferential measures such as financial incentives for the conversion to natural gas, have boosted natural gas conversion. Furthermore, operators in the respective cities are considering the expansion to the use of pipelines other than the West-East Gas Pipeline, and the use of non-conventional natural gases such as coal-bed gas. While business operators take initiatives toward providing stable natural gas supply, providing support to promote the efficient use of natural gas is desirable.

Second Mandaue-Mactan Bridge (Phase II) and Metro Cebu Road Project

Asia
The Philippines

Contributing to regional development through the construction of a coastal road and a bridge connecting Cebu City with an international airport

External Evaluator: Yasuhiro Kawabata, Sanshu Engineering Consultant

Project Outline

- Loan Amount/Disbursed Amount: 6,593 million yen / 6,340 million yen
- Loan Agreement: March 1997
- Terms and Conditions: Interest Rate: 2.70% Repayment Period: 30 years (Grace Period: 10 years) [Consulting Services: Interest Rate: 2.30% Repayment Period: 30 years (Grace Period: 10 years)]
- Final Disbursement Date: June 2004
- Implementing Agency: Department of Public Works and Highways (DPWH)

Project Objectives

Overall Goal: To contribute to the regional economic development of the Metro Cebu.

Project Purpose: To improve the safety and efficiency of transport between Cebu City and Mactan Island (Cebu International Airport side), and to alleviate traffic congestion in central Metro Cebu.

Output: Construction of the Second Mactan Bridge connecting Cebu City with Mactan Island, and rehabilitation of the First Mactan Bridge. In addition, construction of the Talisay section of the coastal road.

● Effects of Project Implementation (Effectiveness, Impact)

This project aimed to improve transport safety and efficiency and alleviate traffic congestion in central Metro Cebu through the rehabilitation of the First Mactan Bridge connecting Cebu with Mactan Island and its airport, as well as the construction of the Second Mactan Bridge and the Cebu South Coastal Road (Talisay Section). The rehabilitation of the First Mactan Bridge was cancelled from the scope of this project. With regard to the Second Mactan Bridge, based on the results of the traffic county survey in 2012, traffic volume at the approach road on the Cebu side was 11,400 vehicles per day (16,000 vehicles per day, including two-wheeled vehicles), which was approximately 40% as compared to the volume established in the plan. On the other hand, traffic volume at the Cebu South Coastal Road (Talisay Section) in 2011 was 21,300 vehicles per day, and traffic congestion occurred during peak hours. Similarly, the existing national road, the Cebu South Road, recorded traffic volumes close to the full capacity of the road. If the Cebu South Coastal Road (Talisay Section) had not been not available, the Cebu South Road would have been likely to experience major traffic congestion throughout the day.

While the Second Mactan Bridge constructed in this project is the only bridge that large-sized vehicles can pass through, the traffic volume fell below planned volume. With regard to the improvement in the safety and efficiency of transport between Cebu and Mactan Island, the effects were relatively limited than planned. On the other hand, the Cebu South Coastal Road (Talisay Section) is used to the extent that traffic congestion occurs at peak traffic volumes on this road. Hence, the project is evaluated to have generated effects that are close to those expected in the plan. Therefore certain effects were observed through the implementation of this project, and effectiveness and impact of project effect are fair.

Ramp for left-turning vehicles on the Mactan Island side of the Second Mactan Bridge

Cebu South Coastal Road (Talisay Section)

● Relevance

The Second Mactan Bridge is becoming of great importance, partly because there are restrictions for vehicles with less than six wheels on the First Mactan Bridge (completed in 1973).

The Cebu South Coastal Road (Talisay Section) contributes to alleviating traffic congestion in central Cebu by diverting some of the traffic on the seriously congested existing Cebu South Road to the Cebu South Coastal Road. This project is consistent with the development policy of the Philippines and Japan's assistance policy, and there is a great development need. Therefore relevance of the project effect is high.

Rating		
Effectiveness and Impact	②	Overall Rating
Relevance	③	
Efficiency	②	C
Sustainability	②	

<Annual average daily traffic on the Second and First Mactan Bridges>

Annual average daily traffic (vehicles per day)	Actual					
	2007	2008	2009	2010	2011	2012
Second Mactan Bridge	—	—	—	—	—	11,400 (16,000)
First Mactan Bridge	19,600 (25,900)	23,400 (33,200)	23,942 (33,700)	22,600 (32,000)	—	—

Source: Planning Division of DPWH Regional Office VII
Note 1: Numbers in ( ) are traffic volumes including two-wheeled vehicles.
Note 2: Daily traffic volume on the Second Mactan Bridge was estimated assuming that the actual daytime traffic volume, counted from 6:00 to 17:00 (11 hours) on Wednesday, January 4, 2012 was 60% of daytime traffic.

<Annual average daily traffic at Cebu South Coastal road (Talisay Section)>

Annual average daily traffic (vehicles per day)	2010	2011
	20,300 (29,100)	21,300 (30,400)

Source: Planning Division of DPWH Regional Office VII
Note 1: A counting station is between Rafael Rabaya and San Roque Road along Talisay section.
Note 2: Numbers in ( ) are traffic volumes including motorcycles.

< Annual average daily traffic at Cebu South Coastal road (existing national road)>

Annual average daily traffic (vehicles per day)	2010	2011	2012
	38,552	38,340	40,412

Source: Department of Public Works and Highways (DPWH)
Note 1: A counting station is in the Lawaan I area.
Note 2: Numbers include motorcycles.

● Efficiency

The planned project period for the construction of the Second Mactan Bridge was 30 months, and the actual period was also 30 months. The bridge opened to traffic in August 1999 as planned. On the other hand, the Cebu South Coastal Road (Talisay Section) took 87 months to complete against the planned period of 38 months, due to delays in procurement and start of construction. This was significantly longer than planned (228% against the planned period).

While project cost stayed within the planned budget, as the project period exceeded the planned period by a large margin, efficiency of the project effect is fair.

● Sustainability

The operation and maintenance of the Second Mactan Bridge was only transferred officially to the DPWH in February 2013, more than 10 years after its completion in 1999. It is still unclear if appropriate operation and maintenance will be carried out. Therefore sustainability of the project effect is fair.

▶ Key points in the evaluation: Importance of a transportation network plan that takes the overall picture into consideration

One of the key objectives of this project is the improvement of safety and efficiency of transport between Cebu City and Mactan Island, and the Second Mactan Bridge was constructed to that end. However, as described above, traffic volume after the construction of the bridge is approximately 16,000 vehicles per day, which was only about 40% of the forecasted traffic volume. On the other hand, traffic volume at the existing First Mactan Bridge is approximately 32,000 to 34,000 vehicles per day, which is close to the full capacity of the bridge.

One of the reasons for this situation is that all the connecting points to the First Mactan Bridge, on the Cebu side, and on Lapu Lapu on the Mactan island side, are close to the heart of the city. A second reason is that although the traffic volume of the bridge section (a four-lane divided highway) in the construction of the Second Mactan Bridge was boosted through this project, the inadequacy in road capacity at the connection road sections on the Cebu side is causing a bottleneck.

In light of these, and in consideration of the perspective of securing the capacity for the bridge section as well as the neighboring part, the importance of a wide-area, overall road plan has been reaffirmed. This includes the erection of grade separation for the intersection of the connecting roads with general roads, the balance of traffic volume on general roads that connect/intersect with the bridge sections, and furthermore, city-wide road networks including the connections between connecting roads and existing road networks.

● Conclusion, Lessons Learnt, and Recommendations

In light of the above, this project is evaluated to be partially satisfactory. It is recommended to periodically monitor traffic volume (for a fixed period and place every year). Traffic volume is fundamental data that is vital to the formulation and planning of operation and maintenance activities every year and in the future, as well as for the formulation of road development plans later on. As such, it is desirable for the operation and maintenance authority to take charge of the monitoring, analysis, and storage of data.

A lesson learnt is that from the planning stage, consideration needs to be fully given to balance of highway capacity at the bridge section and of connecting/crossing roads (e.g. planning of a grade separation at the intersection where a connecting road and a general road intersect), and to the highway network in the city.

The Project for Improvement and Transfer of Asunción University Hospital

Latin America
Paraguay

Toward balancing the provision of medical services and medical education and research in a university hospital

External Evaluator: Hajime Sonoda, Global Group 21 Japan, Inc.

Project Outline

- Grant Limit/Grant Amount:
  (I) 1,370 million yen,
  (II) 419 million yen (Total: 1,789 million yen) /
  (I) 1,228 million yen,
  (II) 412 million yen (Total: 1,640 million yen)
- Exchange of Notes Date:
  (I) June 2006, (II) August 2007
- Project Completion Date: February 2009
- Implementing Agency: National University of Asunción

Project Objectives

Overall Goal
To improve advanced medical services and promote the training of specialized doctors in Paraguay.

Project Purpose
1. To relocate Asunción University Hospital.
2. To improve health and medical services qualitatively and quantitatively.
3. To expand research and education activities for the Faculty of Medical Science.

Output
Construction of hospital facilities and provision of medical equipment at the National University of Asunción San Lorenzo Campus (new campus).

Effects of Project Implementation (Effectiveness, Impact)

The National University of Asunción Hospital (hereafter referred to as the "UNA Hospital") was located in a remote corner of the Old Town of Asunción. The facilities were dilapidated, and flow lines were confusing, as the result of a series of building extension and alteration works. Furthermore, there were insufficient medical equipment and hospital beds. Through this project, the hospital was relocated to a new campus, and the number of patients increased massively as a result of the improvement in hospital location. Improvements were observed in the efficiency of diagnosis and treatment, and the hospital admission environment for patients, through the separation and concentration of various functions. On the other hand, the number of patients increased by a far larger number than estimated in the plan. As a result, the treatment capacity of the hospital is at its maximum limit and it takes time to conduct examinations. Further, the layout of the facility, which had been logically planned for in the beginning, was altered due to the congestion. Therefore, the effectiveness of the project was partially decreased.

Although the development of building facilities and provision of medical equipment improved the quality of medical services and enhanced the quality of education and research, such as the learning of medical science using the most advanced equipment in a suitable environment, the relocation of the Faculty of Medical Science did not materialize; and it could not be said that improvements in medical education and research facilities were sufficient. As a result of the increase in patient numbers, a large number of cases could be provided to medical students and doctors in training. However, the busy schedule of doctors has a negative impact on educational opportunities, resulting in insufficient time for the study of cases and various practices by doctors, medical students, and doctors in training; as well as a lack of time for students to communicate with experienced doctors. The hospital provides advanced medical services at a low cost to patients, so the benefits extend nationwide. However, as the referral system*1 is not functioning properly, the advanced medical treatment capability of the hospital is not being fully utilized.

Therefore effectiveness and impact of the project effect is fair.

Treatment room in the expanded ward in the emergency department after the completion of the project

ICU ward and medical students

Relevance

The relocation of the aging UNA Hospital to the new campus was decided in 1996. Despite that, relocation was limited to only a part of the hospital, and the completion of this relocation was a pressing problem. Although the scale of the facility was small compared to the diagnosis and treatment needs at the new location, there was an urgent need for the project. It was also consistent with the development policy of Paraguay and Japan's assistance policy. Therefore relevance of the project effect is high.

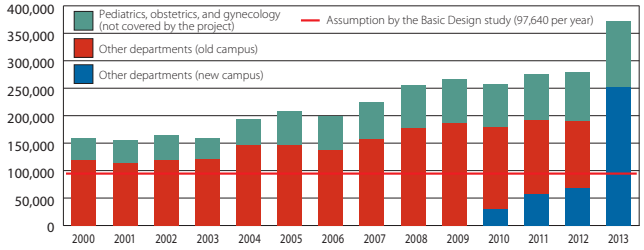
Efficiency

Due to inadequate budgetary measures on the Paraguay side, there were significant delays in the construction of hospital buildings, which the Paraguay side was responsible for. In addition, the construction of the main building for the Faculty of Medical Science had also not materialized at the time of the ex-post evaluation. The complete relocation of the hospital took more than twice the amount of time than planned. Although project expenses stayed within the planned budget, the duration of the project far exceeded the planned duration. Therefore efficiency of the project effect is fair.

Rating		
Effectiveness and Impact	②	Overall Rating
Relevance	③	
Efficiency	②	C
Sustainability	②	

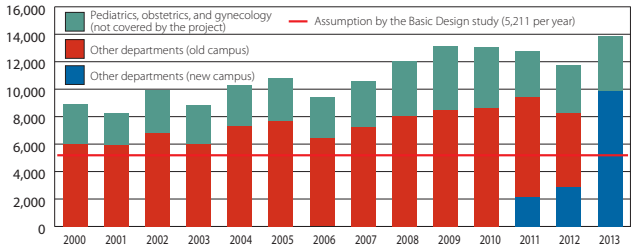
*1: A referral system is a "hospital liaison" system whereby a patient who cannot be treated in a lower tier medical facility such as a primary health care facility is introduced and smoothly transferred to an upper tier medical facility such as a secondary or tertiary facility.

<Number of general outpatients treated at UNA Hospital (2000 – 2013)>



Source: Implementing Agency

<Number of operations at the UNA Hospital (2000 – 2013)>

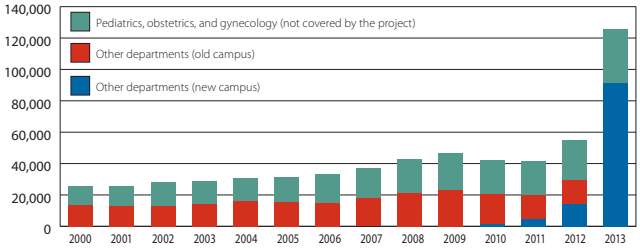


Source: Implementing Agency

Sustainability

While the operation and maintenance of the buildings and general equipment are generally acceptable, there are concerns about securing funding for operation and maintenance. There are also issues in the institutional and technical aspects with regard to the operation and maintenance of the procured electrical medical equipment. A part of the main medical equipment is unable to function fully. Therefore sustainability of the project effect is fair.

<Number of emergency outpatients treated at the UNA Hospital (2000 – 2013)



Source: Implementing Agency

Key points in the evaluation: Important points in providing cooperation and support for the development of university hospital facilities

Typically, university hospitals are perceived to play the following two roles: (1) provide appropriate medical services to patients that need advanced medical treatment, and (2) conduct quality medical education and research. The objective of this project was to provide support for these two roles. However, after the relocation of the hospital through this project, the number of patients increased massively beyond the anticipated numbers provided for in the plan. As such, the treatment capacity of the hospital was unable to match this rise in patient numbers, diagnosis and treatment could not be provided efficiently, and the busy schedule of doctors meant that adequate guidance could not be provided for medical students and doctors in training. These were some of the factors that had a negative impact on the project.

The unexpected increase in the number of patients could be attributed to the lack of consideration given to the rise in patient numbers, due to the improvement in the hospital's accessibility when deciding on the scale of the facility. Moreover, the referral system did not function properly, so even the university hospital was unable to take appropriate steps to restrict the number of patients.

Accordingly, when JICA provides a similar form of support through its projects, it is important to carefully study the anticipated treatment needs forecasted by the implementing agency, verify if proper consideration has been given to the functioning status of the referral system and changes in hospital accessibility. At the same time, it is also important to conduct additional studies where necessary, and ensure that the forecasts are accurate. It is also vital to make plans for the appropriate scale of a facility that can meet the forecasted treatment needs; and to explore the potential for cooperation on the development of the referral system, aiming to achieve a balance between the two objectives of providing medical service and conducting medical education and research.

Conclusion, Lessons Learnt, and Recommendations

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

With regard to the National University of Asunción, recommendations were made to continuously improve and develop facilities, secure and execute the necessary budget and deploy the appropriate personnel for operation and maintenance, improve hospital operations, improve education based on the results of the curriculum reform project that is ongoing, take firm steps to realize an integrated patient information management system, secure funding for the construction of the main building for the Faculty of Medical Science, and complete relocation as soon as possible. For the Ministry of Public Health and Social Welfare, recommendations were made to ensure that the referral system functions fully, and to continue working to improve the treatment capacity of lower tier medical institutions operated by the Ministry.

The following two points are lessons drawn from this project:

(1) When planning a relocation of a facility providing a service for the public in general, it is essential to forecast future demand for the facility in question as accurately as possible, taking any change of accessibility and the trends of users of the service into account.

(2) It is important for a university hospital to control the number of patients to accept at an adequate level, on the basis of the severity of the diseases. To achieve such control, it is essential to develop an effective nationwide referral system, where lower-tier medical institutions have sufficient diagnosis and treatment capacity.

The Project of Water Supply in Rural Areas of Middle Guinea

Africa

Guinea

Contributing to reducing water-related diseases and the effective utilization of time for daily activities

External evaluator: Yumiko Nakamura, Binko International Ltd.

Project Outline

- Grant Limit/Actual Grant Amount: 1,073 million yen / 1,069 million yen
- Exchange of Notes Date: Term 1/2: June 2004 Term 2/2: June 2005
- Project Completion Date: 28 June 2007
- Implementing Agency: National Water Authority of Guinea (Service National d'Aménagement des Points d'Eau: SNAPE)

Project Objectives

Overall Goal

1. To improve the hygiene environment for residents of the target area of this project.
2. To increase opportunities for the effective utilization of time for daily activities in the target area.

Project Purpose

To increase the population that has access to safe and stable supplies of drinking water through the development of water supply facilities in the target area of the project.

Output

1. Construction of deep wells with manual pumps and a piped water supply facility.
2. Establishment of an operation and maintenance system by community participation at the village level.
3. Deployment of personnel with the necessary technical skills for operation and maintenance of water supply facilities (patrolling technicians, repair technicians of the Water Committees, and operators of piped water supply facilities).
4. Improvement of the Monitoring and Evaluation (M&E) system on the administrative side.

● Effects of Project Implementation (Effectiveness, Impact)

Guinea has been late in developing infrastructure, such as water supply facilities, to provide stable supplies of safe potable water. As such, many residents have been using sources such as rainwater, digging shallow wells, and rivers which are highly likely to be contaminated, for drinking water. Such an unhygienic living environment was one of the factors in the spread of water-related diseases such as diarrhea and cholera, and the improvement of the living environment through the development of water supply facilities has been a pressing issue. In order to improve this environment, water supply facilities were constructed in three prefectures in central Guinea*1 in the form of 173 deep wells with foot pumps and one piped water supply facility. As a result, about 53,000 people were newly granted access to stable supplies of safe potable water. This was 94% of the target number of 57,200 people.

In the 169 villages covered by the scope of this evaluation, the construction of water supply facilities facilitated the shift from the use of unhygienic water sources for their daily use to water sources that are much safer. The rate of prevalence for water-related diseases also fell significantly as compared to before the implementation of the project. In addition, the provision of water supplies close to their living quarters reduced the amount of labor needed to fetch water, and much of the time that had previously been spent on fetching water could now be spent on farming activities, the purification of palm oil, construction of houses, etc. There has therefore been an increase in the opportunities for effective use of time for daily activities. Other secondary effects were also observed. These included improvements in the health of livestock, increase in the quantity of vegetables and fruit harvested, and increase in the number of houses constructed. Therefore this project was recognized to have generated adequate impact, and effectiveness and impact of the project effect are high.

Foot-pumped deep wells with iron remover

Water tank of piped water supply facility

● Relevance

The National Socio-Economic Development Program of Guinea places great importance on the development of water resources as a foundation for the country's economic development, revitalization of rural communities, and reduction of poverty. This project is also consistent with Japan's assistance policy which aims to provide support through fulfilling the developmental needs for water supply facilities in rural communities, as well as the development of fundamental socioeconomic infrastructure. Therefore relevance of the project effect is high.

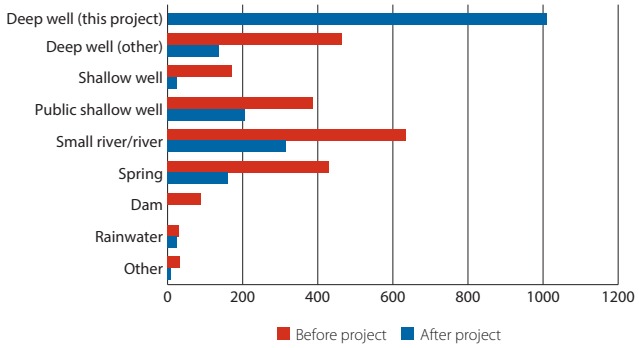
● Efficiency

This project was implemented for 36 months, in line with the project period laid out in the plan. On the other hand, although project cost stayed within the planned budget (94% against the plan), there was some decrease in output. Therefore efficiency of the project effect is fair.

*1: The target areas for this project are Gaoual, Koundara, and Mali Prefectures located in the central part of Guinea.

Rating		
Effectiveness and Impact	③	Overall Rating
Relevance	③	
Efficiency	②	B
Sustainability	②	

<Major water sources before and after the implementation of the project (multiple responses)>



Source: Beneficiary Survey

<Water use>

	Deep well with foot pump		Piped water supply facility	
	Before project (2003)	After project (2013)	Before project (2003)	After project (2013)
Water use (ℓ/person/ day)	9.7	Dry season: 23.9 Rainy season: 12.4	13.4	25
Frequency of fetching (times/ day)	3.6	Dry season: 4.1 Rainy season: 2.0	3.2	1
Time required for fetching (min/way)	22.3	7.6	13.2	3

Source: Results of ex-post evaluation survey

<Population newly served with water supply by this project, and operation rate of facilities>

	Target		Actual (during ex-post evaluation)			
	No. of facilities	Pop. served with water supply	No. of facilities	No. of operating facilities/No. of surveyed facilities	Operation rate	Pop. served with water supply
Deep well with foot pump						
Koundara	55	16,500	55	53/54	98%	15,900
Gaoual	58	17,400	58	53/57	93%	15,900
Mali	71	21,300	60	57/60	95%	17,100
Sub-total	184	55,200	173	163/171	95%	48,900
Piped water supply facility						
Mali	1	2,000	1	1/1	100%	3,856
Total	-	57,200	-	-	-	52,756

Source: Target: BD Study Report; During ex-post evaluation: Results of ex-post evaluation survey

Sustainability

The average operation rate of water supply facilities for the three prefectures is 95%. However, minor problems were observed in the monitoring system for the water supply facilities by the administration, aimed at sustaining the effect of the project; as well as with the technical and financial aspects, the maintenance and inspection skills of the water committees (CPE), and their financial status. Therefore sustainability of the project effect is fair.

Key points in the evaluation: Initiatives for the operation and maintenance of the facilities

The average operation rate of facilities in the three target prefectures in this project is 95%. This may be attributed to the numerous initiatives taken through the whole process, from the pre-implementation to the stage after project completion. Prior to project implementation, a detailed survey was conducted on the water needs and attitudes of the residents toward the operation and maintenance of facilities. Sites with a high level of needs and awareness were selected as the priority targets for this project. From an early stage, initiatives were also taken to establish a citizen-led operation and maintenance system, which is in line with the opinions and demands of the residents. As part of this system, for example, residents took the lead in setting up CPE and establishing water fees, and the CPE were encouraged to carry out daily inspection activities and clean the facilities. In addition, other notable initiatives include the establishment of a parts procurement system, including the selection of pumps prepared by the parts procurement network; disseminating information about parts procurement at the dealers; and making it mandatory to purchase parts. Initiatives taken after the completion of the project include the continuous inspection and repair work carried out under the cooperation between CPE and the patrolling repair technicians deployed to each district.

In the ex-post evaluation, in order to conduct a detailed investigation into the factors that had an impact on the operation and maintenance of facilities, a survey was conducted on 1,039 households in 149 villages, selected through random sampling. Based on the data collected, a multiple regression analysis was carried out. The results provided quantitative evidence that the aforementioned active involvement of households in CPE activities, ease of procuring parts, deployment of patrolling repair technicians, and number of visits, had positive effects on operation and maintenance. In addition, the availability of competing substitute sources of water and the availability of CPE repair technicians were also found to have effects on the functioning rate of facilities.

Conclusion, Lessons Learnt, and Recommendations

In light of the above, this project is evaluated to be satisfactory. In this project, the detailed needs survey conducted prior to the selection of sites, and initiatives taken toward operation and maintenance during the project period (refer to "Key points in the evaluation"), were perceived to have contributed to the continuous operation of the facilities. Accordingly, in the case of planning and implementation of similar projects in the future, it is essential to obtain an accurate grasp of residents' needs and encourage the involvement of residents in the decision-making process from the early stages of project implementation. In areas where the procurement of parts in a timely manner is expected to be difficult, advance procurement of parts should be considered as a means of maintaining the facilities. Other lessons drawn from this project are the importance of promoting patrolling inspections by technicians, and establishing a monitoring system for the outcome of the project during implementation.

The following are recommendations for the implementing agency: (1) Thorough updating of data relating to the operation of facilities, in order to ensure that follow-ups on the operation and maintenance of existing facilities can be carried out effectively; (2) Deployment of personnel to further strengthen monitoring and follow-up activities, disseminating information about methods and roles of the administration in monitoring activities, and drawing up budgets for costs; (3) Reviewing the monitoring system by patrolling repair technicians; and (4) Strengthening the technical capabilities of CPE.

The Aquaculture Development Project in the Northwest Coastal Region of Madagascar

Africa
Madagascar

Developing aquaculture of Penaeus Monodon (commonly known as "black-tiger shrimp") for small-scale aquaculture farms

External Evaluator: Koichiro Ishimori, Value Frontier Co., Ltd

Project Outline

- Total Cost (Japanese Side): 917.1 million yen
- Period of Cooperation: April 1998 – May 2006
- Implementing Agency: Shrimp Culture Development Center (Centre de Développement de Culture de Crevette: CDCC)
- Number of Experts Dispatched: Long Term: 7; Short Term: 18
- Number of Trainees Received (Japan): 11
- Main Equipment Supplied: machine for producing baits, refrigerators, various measuring instruments, etc.

Project Objectives

Overall Goal: To develop small-scale shrimp aquacultures that can be sustained by small-scale shrimp aquaculture farms in Northwest Madagascar.

Project Purpose: To strengthen technological development capabilities in the CDCC with consideration given to the local environment and conditions.

Output:

1. Improvement in seed production technology.
2. CDCC employees are able to carry out seed production activities efficiently.
3. Clarification of small-scale shrimp aquaculture systems that are suitable for the region.
4. CDCC employees are able to disseminate shrimp aquaculture technology.
5. Improvement in CDCC management.
6. Establishment of a pond management system for small-scale shrimp aquaculture, and improvement in feed development, as well as epidemic disease prevention systems.

● Effects of Project Implementation (Effectiveness, Impact)

The target goals of this project were to improve the technological level of the CDCC (presently CDA), and to develop black-tiger shrimp that grew out within 150 days, weighed 25 g or more on average at the time of harvest, and achieved survival rates higher than 55% as well as feed conversion rates lower than 2.5*1. Against these targets, the project succeeded in developing black-tiger shrimp that grew out within 112 days, weighed 25.4 g on average at the time of harvest, and achieved survival rates higher than 97%, as well as feed conversion rates lower than 0.74. Hence, it could be said that this project was successful in developing aquaculture technology for small-scale aquaculture farms. However, as a result of a decline*2 in international shrimp prices, as well as the difficulties faced in actively popularizing and revitalizing aquaculture by this project and the Madagascar government, all the existing small-scale aquaculture farms have withdrawn from the market. Also, there were no new entrants to the small-scale aquaculture industry, and the number of small-scale aquaculture farms engaged in shrimp aquaculture, as well as the area of aquaculture ponds, reached zero. Hence, this project did not have its intended impact. The project did not achieve its goal of increasing the number of small-scale shrimp aquaculture farms and area of shrimp aquaculture ponds against 2003 figures. Therefore effectiveness and impact of this project effect is low.

Aquaculture pond

Water tank used for culturing post-larval shrimp

● Relevance

This project was consistent with the development goals of Madagascar, which aimed to increase production of farmed marine products including shrimp; and with Japan's assistance policy. At the start of the project, although the project was in line with development needs such as the new entry of several aquaculture farms into the industry, the decline in international shrimp prices caused the small-scale aquaculture farms to withdraw from the market. Hence, at the time of completion of the project, there were parts of the project that were not in line with the development needs of Madagascar. Therefore relevance of this project effect is fair.

Rating		
Effectiveness and Impact	①	Overall Rating
Relevance	②	
Efficiency	①	D
Sustainability	①	

*1: An indicator showing the efficiency of aquaculture: the quantity of feed (kg) needed for fish (or shrimp in this case) to grow to a weight of 1kg.
*2: $17.4/kg (2000) → $10.4/kg (2006) → $8.6/kg (2012)

<Production volume for post-larval black-tiger shrimp>

	Plan	1999	2000	2001	2002	2003	2004	2005	2006
Production volume (10,000)	1,000	504	1,191	1,782	1,292	332	628	87	22

Source: CDCC

<Number of small-scale shrimp farms and area of aquaculture ponds>

	2003	2012
Small-scale shrimp farms (households)	5	0
Area of aquaculture ponds (ha)	41.4	0

Source: CDCC

Efficiency

In the initial stage, the achievement level for the outcome did not reach a sufficient level for the achievement level of the goal set out in the project plan. The project period increased as new output activities were implemented in the extended phase of this project (plan: 60 months; actual: 98 months). For the same reason, the project cost also increased from the planned budget of 680 million yen to the actual figure of 917.1 million yen. Therefore efficiency of the project effect is low.

Sustainability

As a result of the decline in international shrimp prices, the Madagascar government continued to be confronted by difficulties in popularizing and revitalizing small-scale aquaculture, and there was little support from institutional policies. Concerns also remain with regard to the system of CDCC (presently CDA), as well as the technical and financial aspects. Therefore sustainability of the project effect is low.

Key points in the evaluation: Taking the risks of competition with the global market into consideration

During the ex-ante evaluation for this project, international prices for shrimp had been on an upward trend. Hence, this project aimed to revitalize the shrimp aquaculture industry by targeting the overseas market. However, during the ex-ante evaluation and the extended phase of this project when the international prices for shrimp began to fall, there were no signs that sufficient analysis of the trends in overseas markets was carried out. A survey of the domestic market had been conducted during the implementation of the project during the extended phase, and it was pointed out that there was the potential for finding a domestic sales route, if large-size black-tiger shrimp could be developed cheaply. Despite that, against the background of international shrimp prices that continued to decline thereafter, small-scale aquaculture farms lost the incentive to carry out shrimp aquaculture, and existing small-scale aquaculture farms began to withdraw from the time of the implementation of the project. Ultimately, the number of small-scale aquaculture farms in the target area became zero. When providing support for products targeted at overseas markets, as in the case of this project, there is the risk of being significantly impacted by market trends. Hence, it is important to conduct a full analysis into the trends for the same products in overseas markets during the planning stage as well as the implementation stage. Based on the results of such an analysis, the design of the project can be revised, and in certain cases, make timely decisions including decisions to suspend the project. This will then help to minimize the risks to the project.

Conclusion, Lessons Learnt, and Recommendations

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

A lesson learnt in this project is, when planning a technical cooperation project targeted at the support and revitalization of products that are easily impacted by price fluctuations, it is important to first conduct a detailed market survey, and to fully review the feasibility and risks of engaging in the production of the products in question. Then, based on the results of the market survey, if it is difficult to grasp market trends, it is important to consider changing the design of the project, such as providing support for the production of products that are not easily impacted by fluctuations in international prices. In certain cases, it is also important to consider cancelling the project planning. If international prices fluctuate against the expected direction during the implementation of the project, and market conditions change, a second detailed market survey should be conducted again. In such cases, it is important to consider changing the design of the project such as some of the output, project purpose or overall goals, or to consider cancelling the implementation of the project.

Recommendations to the implementing agency, CDCC (presently CDA), include a reconsideration of the positioning and role of the center in shrimp aquaculture for small-scale farms, as well as the drawing up of medium to long-term management plans that include the diversification of revenue sources. For JICA, it is important to continue its consultation and discussions with CDCC (presently CDA), and to place focus on formulating the aforementioned medium to long-term management plan.

Zafarana Wind Power Plant Project

Middle East
Egypt

Contributing to increasing power supply and reducing greenhouse gas emissions through the construction of a wind power plant

External Evaluators: Yasuhiro Kawabata, Masami Tomita, Sanshu Engineering Consultant

Project Outline

- Loan Approved Amount/Disbursed Amount: 13,497 million yen / 13,497 million yen
- Loan Agreement: December 2003
- Terms and Conditions: Interest Rate: 0.75%; Repayment: 40 years (Grace Period: 10 years)
- Final Disbursement Date: July 2010
- Implementing Agency: New and Renewable Energy Authority (NREA)

Project Objectives

Overall Goal: To contribute to the alleviation of air pollution, reduction of greenhouse gas emissions as compared to the operation of thermal power plants of the same scale, and suppression of global warming.

Project Purpose: To increase power supply and reduce the use of fossil fuels.

Output: Construction of a new 120MW wind power plant in Zafarana, along the coast of the Red Sea, located 220km southeast of Cairo.

Effects of Project Implementation (Effectiveness, Impact)

Through the construction of the new 120MW wind power plant, this project aimed to increase power supply, which Egypt was facing shortages of, and to reduce the use of fossil fuels such as natural gas and crude oil.

The actual utilization factor of the new wind power plant constructed in this project is approximately 32%, and the actual net electric energy production is approximately 336GWh two years after the completion of the project. Both figures are about 80% of the target values established at the time of the appraisal. According to implementing agency, the New and Renewable Energy Authority (NREA), the main reason for the shortfall in achieving the target values for utilization factor and net electric energy production lies in the decrease in wind speed in the last few years (at the time of appraisal: 9.0m/s (actual figures); at the time of ex-post evaluation: 7.5m/s (actual figures). On the other hand, actual maximum output is approximately 121MW, and actual availability factor is 99%. As both of these figures were marginally higher than the target values, it could be said that the plan had mostly achieved its targets overall. Through the implementation of this project, the use of fossil fuels fell by approximately 60,000 to 75,000 tons per year after the completion of the project, and CO_2 emissions fell by approximately 180,000 to 190,000 tons per year. Hence, the project is considered to have contributed to the alleviation of air pollution and global warming. Therefore this project is evaluated to have mostly achieved the intended objectives, and effectiveness and impact of the project effect are high.

Wind power plant constructed in this project

Substation facility built in this project

Relevance

Both at the time of the appraisal and at the time of the ex-post evaluation, the focus was placed on strengthening power supply capability, and promoting the utilization of new and renewable energy, which are laid out in Egypt's development policy. After the appraisal, electric power demand continued to rise in Egypt, and the development need was fully acknowledged. Consistency with Japan's ODA policy was also confirmed. Therefore relevance of the project effect is high.

Efficiency

The actual project costs for this project increased because actual cost for civil engineering works largely exceeded the planned budget. During the project period, there were delays in the bidding process for the construction of the main structure, as well as delays in starting construction. Additionally, time was required to respond to the hike in steel prices. Hence, the project period significantly exceeded the planned duration. Therefore efficiency of the project effect is low.

Rating		
Effectiveness and Impact	③	Overall Rating
Relevance	③	
Efficiency	①	B
Sustainability	③	

<Power supply situation for Zafarana Wind Power Plant>

Indicator	Target (two years after completion)	Actual (two years after completion)	Target achievement rate
Maximum output (MW)	120	120.7	101%
Utilization factor (%)	40	31.8	80%
Availability factor (%)	97	98.7	102%
Net electric energy production (GWh/ year)	415	335.8	81%
Amount of fossil fuels saved (tons/year)	N/A	72,000	N/A
CO_2 emissions reduction by the project (tons/year)	233,000	185,000	79%

Source: JICA documents, Implementing Agency

● Sustainability

The wind power plant constructed in this project is operated and maintained by NREA, while the substation facilities are operated and maintained by the Egyptian Electricity Transmission Company (EETC). Maintenance manuals have been prepared, and regular inspections are carried out in accordance with the manuals. No major problems have been observed in the institutional, technical, and financial aspects related to the operation and maintenance of the facilities built through this project. Therefore sustainability of the project effect high.

▶ Key points in the evaluation: Contributing to the reduction of greenhouse gases as a Clean Development Mechanism (CDM) project

In this project, technological knowhow was transferred to NREA in order to get an approval for a Clean Development Mechanism (CDM) project, a system introduced as one of the market mechanisms related to climate change measures as stipulated in the Kyoto Protocol. As a result, the project received approval from the CDM Executive Board of the United Nations in 2007. This was the first Japanese ODA loan project to receive approval as a CDM project. The CDM approval process for this project is as follows:

1) Preparation of a Project Design Document (PDD) for a CDM project by project holder
2) Approval of the PDD by the designated national authority in the investing country (Japan) and in the host country (Egypt)
3) Validation of the CDM project by the Designated Operational Entity (DOE: the third party entrusted by the CDM Executive Board)
4) Registration of the CDM project by the CDM Executive Board (if DOE judges it is appropriate to approve the project as a CDM project)
5) Project implementation and monitoring (monitoring of emissions reductions by the implementing agency)
6) Verification and certification of Certified Emissions Reductions (CER) by DOE
7) Issuance and distribution of CER credits by the CDM Executive Board to the project participants

According to NREA, in the aforementioned process, there were some obstacles such that the approval procedures were complicated and difficult, and the regulations of the procedure were revised often. The DOE responsible for the verification and certification of CER had little experience and performed poorly. However, through these exchanges and communication, they succeeded in gaining experience and familiarizing themselves with the CDM application and approval procedures. NREA has utilized the knowledge and experience gained through this project, and received CDM approval for three wind power plant projects from 2010 to 2011.

● Conclusion, Lessons Learnt, and Recommendations

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

One of the lessons learnt was that for both the construction work for the power plant and the substation, the bidding procedures for the construction work took a long time, and ultimately extended the actual project period far longer than the planned period. If the partner government's inexperience in handling the procurement procedures stipulated under Japanese ODA loans raises concerns for project delays, it would be desirable to capture the risks at the time of the appraisal, and consider countermeasures.

There were no explanations about the actual performance of substation portion or actual figures of operational effect indicators in the project completion report (PCR) of the project submitted by the implementing agency. Also, there were inconsistencies in the actual project cost of the power plant facilities stated in the PCR. The PCR needs to be carefully checked by JICA's operating departments to ensure the appropriate implementation of PDCA (Plan-Do-Check-Action) cycles by the executing agencies, as well as the effective monitoring of project status and outcomes by donors.