

# Overview

## 1. Projects Evaluated in Fiscal 2002

The number of projects targeted for ex-post evaluation that appear in this report totals 41. Geographical distribution of the 41 projects shows that the great majority were located in the Asian regions (11 projects in Indonesia, 7 projects in China, and 4 projects in the Philippines, etc.). The share by sector was led by transportation, followed by social services (water supply and sewerage, education and health, etc.), electric power and telecommunications.

Sector/Region	Asia	Middle East/Europe	Africa	Central and South America	Total
Electric Power	7	1			8
Transportation	14				14
Telecommunications	4			1	5
Agriculture, Irrigation, and Flood Control	3				3
Mining and Manufacturing	2				2
Social Services	6			3	9
Total	36	1	0	4	41

## 2. Project Evaluation

The following is a summary of the evaluation findings for all 41 projects in fiscal 2002, based on the five evaluation criteria (relevance, efficiency, effectiveness, impact and sustainability) of the Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD).

### (1) Relevance

Since ODA loan projects are undertaken on the premise that the importance and priority of each project within the developing country's develop-

ment plan have been confirmed at the time of appraisal, the great majority of projects subjected to evaluation have already been determined inherently relevant within their sectors and are thereby considered to have an ongoing critical role. However, some projects lack any consideration of related projects, one example being the maintenance of water pipes in water supply projects. In addition, there are projects in which demand expectations are shown to be excessive.

### (2) Efficiency

- Transportation Sector: For road projects, 6 out of 8 projects were delayed more than three years due to procedures pertaining to land acquisition.
- Social Sector: All of the 5 water supply and sewerage/hygiene projects were delayed for three to eight years due to difficulties in securing project sites. The Asian currency crisis necessitated the reduction in the scope of one health project.
- Electric Power Sector: Although 4 out of 8 projects were delayed for more than two years due to time spent on planning changes and bidding procedures, all of the targeted facilities were constructed almost as originally planned. However, there were some projects that experienced delays of eight years due to political instability.
- Telecommunications Sector: To respond to technological progress, the contents of 3 out of 5 projects were revised.
- Agricultural, Irrigation and Flood Control Sector: Projects were largely undertaken according to plan.
- Mining Sector: In conjunction with the lengthening of project implementation, the cost in 1 out of 2 projects increased due to price increases, etc.

### (3) Effectiveness and (4) Impact

The transportation sector and electric power sector

projects, while attempting to improve the physical distribution of the region and the conditions of electric power, contributed to the development of the region through the influx of new investments, etc. Moreover, in terms of the agricultural, irrigation and flood control sector projects as well as social sector projects, effects such as income increase for beneficiary farming households, prevention of water damage and the improvement of the living environment have been achieved, and have been confirmed through interviews with inhabitants, in addition to quantitative data. On the other hand, 8 out of 41 projects have experienced difficulty in realizing satisfactory results, due to various factors such as delays in associated projects, climate conditions and policy issues.

The confirmed results/impact in this evaluation and plans that have had only a limited effect at the present stage are shown below by sector. In regard to the latter, responding to the circumstances of each case, in addition to examinations and measures being implemented through the responsibility of the borrowing government/executing agency, JBIC itself undertakes possible follow-ups, including Special Assistance for Project Sustainability (SAPS).

#### **[14 Projects in the Transportation Sector: Roads/Bridges 8, Airports 3, Railways 2, Ports 1]**

- Roads/Bridges: In road restoration and regional road maintenance projects in Indonesia, due to the improvement in road surface conditions, effects of shortened traveling time and the alleviation of road congestion appeared, and the activation of the regional economy and the reduction of the number of isolated villages were promoted. The bridge projects of Bangkok and the Colombo Metropolitan Area dealt with urbanization and the large increase in traffic volume that accompanied the progress of economic development, and contributed to the improvement in physical distribution and the elimination of traffic congestion within the cities and suburbs. On the other hand, in the expressway project in the Philippines, delays have been experienced in construction of the remaining section of expressway under BOT methods, and in the expressway project in Thailand the traffic volume is currently below the target value at the present due to the fact that a road that had overlapping objectives was con-

structed at the same time by another executing agency. In the trans-island road project in Papua New Guinea, given that the road network of the entire country is not being developed, traffic volume has remained at a low level.

- Airport: Due to the airport flight control, navigation and airport projects of China, Kyrgyz and Papua New Guinea, the level of safety and punctuality of air transportation has increased.
- Railway: The effects of foreign currency savings have been recognized at the passenger carriage repair plants in the railway project in Uzbekistan. On the other hand, peak time congestion rates stand at around 80% on underground railways in China and although the socioeconomic effects of time saving, etc., are acknowledged, the volume of passengers transported is falling behind the projected targets.
- Port: In the fishing port construction project in the Philippines, the project port became an important regional economic base through the promotion of the seafood industry.

#### **[9 Projects in the Social Sector: Water supply and Sewerage/Hygiene 5, Education 2, Health/Medical 1, Living Foundations 1]**

- Water supply and Sewerage/Hygiene: In the waterworks maintenance and underground water development projects in El Salvador and Guatemala, in response to the increased water supply demand of the citizens of the metropolitan area and regional cities, access to safe water has increased, due to the large increase in water supply capacity. In the urban waste disposal project in Indonesia, in response to the increase in waste disposal demand accompanying population increase, improvements in the living and hygiene environment have been seen. On the other hand, the volume of water supply fell below the level planned in the water supply project in India, due to problems in the sales price of the water to operators and incomplete maintenance of water supply networks. In addition, in the water supply projects of Pakistan, following the large volume decrease in the pooled water supply due to drought and incomplete maintenance of water supply networks, water supply volume fell below planned levels.
- Education: Due to the junior secondary school building construction project in Indonesia, the school attendance rate in targeted provinces has increased. In the engineering and science edu-

cation project in the Philippines the enhancement of engineering and science related universities has enabled the development of high quality human resource.

- **Health/Medical:** Due to the project in Indonesia to improve community health centers, the regional expansion and improvements in quality of health center services, and the expansion of systems that transfer patients from health centers to hospitals were achieved.
- **Basic Necessities for Daily Life:** In the social investment fund project in Guatemala, through over 900 sub-projects, improvements in living conditions and the hygiene environment were achieved.

### **[8 Projects in the Electric Power Sector: Thermal Power 5, Hydroelectric Power 1, Power Distribution 2]**

- **Thermal Power:** Regarding the thermal power projects in China and India, they met the increasing electricity demand for each country, and have supported economic development. In addition, in regard to the thermal power project in Jordan, the effect of a stable supply of electricity has been fully realized by responding to the annual increase in Jordan's electricity demand, in addition to coordinating electricity supply with neighboring countries through electricity transmission networks.
- **Hydroelectric power:** In the hydroelectric power projects in Laos, given that the supply of electricity has exceeded the volume originally planned, it has been able to respond to the rapid increase in the electricity demand of Laos. The executing agencies, related organizations and inhabitants have cooperated to tackle environmental issues, making it possible to keep nega-



China Sanhe Thermal Power Plant Project ( I ) ( II )

tive environmental impact at a minimal level.

- **Power Distribution:** In regard to the power transmission project of Indonesia, through the alleviation of excessive operational overload, the number/duration of power failures have vastly improved over the past 10 years in the region.

### **[5 Projects in the Telecommunications Sector]**

- Regarding the optical fiber cable project in China, a distribution network covering three provinces and one autonomous ward complete with high-quality communication services has been provided to many people. Moreover, in regard to the telecommunications maintenance project in Indonesia, telephone capacity and user lines in East Java have significantly increased, and have contributed to the reduction of the difference in services with the Jakarta Metropolitan Zone. In the satellite telecommunications project in Paraguay, due to the new construction and expansion of the international satellite line facility, the business transactions of multi-national companies were made more efficient. On the other hand, in the regional communication facility expansion project in the Philippines, the usage rate of facilities is falling below projected values due to the competition with the private sector.

### **[3 Projects in the Agriculture, Irrigation, Flood Control Sector: Irrigation 2, Flood Control 1]**

- **Irrigation:** In regard to small-scale irrigation management projects in Indonesia, participatory projects, including the formation of a farmer's organization and agricultural management guidance have led to an increase in agricultural productivity. As a result, the improvement of living standards among rural farmers, such as increases in education levels of children, and land and property ownership have been confirmed. Moreover, even regarding the water resource development project in Indonesia, the restoration of irrigation facilities and flood control systems has resulted in a rise in living standards and the securing of employment opportunities.
- **Flood Control:** In regard to the multi-purpose dam project in China, due to the unusually light rains the storage of water has made little progress, and the effects upon flood control and

the agricultural use of water supply have been extremely limited.



Indonesia – Small Scale Irrigation Management Project (2)

## [2 Projects in the Mining Industry Sector]

- In regard to the fertilizer factory construction project in China, on the basis of the policy to alternate imported goods and services, the stable supply of fertilizer was promoted through effective operation of Chinese national resources. Moreover, in the industrial estates project in Sri Lanka, on the basis of export promotion/local industrial development policies, fiber and clothing related industries and the rubber product-related industries that are local industries are in operation and are contributing to the production of employment.

### (5) Sustainability

- In order to ensure that project impact is both sustainable and imbued with the capacity to continue and expand, it is a basic requirement that the executing agencies have appropriate operations and management systems in place, and that such systems are technically and financially sound. In this evaluation, the maintenance of comparatively large-scale projects such as power plant projects was generally sound. On the other hand, in regard to Indonesia, the transfer of rights and responsibility systems over maintenance accompanied with regional decentralization needs to be undertaken promptly. The characteristic and major issues of each sector are as follows.
- In regard to road projects, the implementation of appropriate maintenance is essential for long-term effects to be realized. The securing of a maintenance budget is an issue common to each country.
- The policies of governments concerning public

service charges have a great influence on the management and administration of electricity and water supply projects. Moreover, improvements in the collection rate of charge payments can be said to be a common issue. As there are cases when management is commissioned to private companies, the role of public agencies and the format of private participation are becoming issues.

- In regard to telecommunications projects, through the commissioning of private companies and privatization, management has been made efficient and competition with other telecommunications operators has been addressed.

## 3. Lessons Learned and Recommendations

The main lessons learned and recommendations acquired from this evaluation report are as follows.

### (1) General Remarks

- In regard to the project implementation stage, the economic status and profitability of the projects are significantly affected by any of the following: progress of related projects, progress in technology, status of competition, priority level/needs in developing countries and changes in policy. It is important not only to examine the project effects in response to the changes in the outside environment by strengthening JBIC's monitoring system, but also to flexibly address the changes of project scope and specifications through continuation of policy dialogue with the governments of the developing countries.

### (2) Transportation Sector

- For road projects, as the effects greatly depend on the maintenance conditions of the entire road network, the monitoring system for relevant projects should be strengthened during implementation. In addition, it is essential to revise the project and to conduct an appropriate policy dialogue, based on examination of the feasibility of related projects and the risk of delay.
- Measures for consideration of the environment/society in smooth land acquisition should be strengthened.

### **(3) Social Sector**

- In regard to water supply projects, as the effects greatly depend upon the condition of the distribution pipe installation, comprehensive monitoring of the water supply network as well as purification plants is required.
- In regard to projects concerning regional decentralization including education and health projects, it is necessary to include a learning process that allows us for trials and improvements to the project. In addition, it is necessary to enhance monitoring and evaluation systems during implementation. Moreover, in order to form a project that builds up local residents' organizations and corresponds to the needs of the community, examination is required of assistance policies such as partnership with local government and NGOs.

### **(4) Electric Power Sector**

- Even if the performance of power plants is excellent, in case that the cost of electricity supply is too high, it is possible that project sustainability could be lost. It is essential to improve profitability as well as to conduct a thorough cost and benefit analysis in advance.
- In large-scale developments, in order to reduce the burden of impact on the environment and local residents to the minimal level, a careful ex-ante evaluation, sharing information among those concerned and appropriate feedback, have been proved effective. Moreover, in order to respond to environmental issues that emerged (air pollution and impact upon coral reef), JBIC surveys and recommendations at an early stage have been effective.

### **(5) Agriculture, Irrigation, Flood Control Sector**

- In a project that involves dam construction, a more careful water analysis at the planning stage is necessary.
- The use of NGOs from the planning stage improved communication between the government and farmers, which led to a smooth composition/progress of projects and to a voluntary contribution from irrigation associations (beneficiary farming households) at the maintenance stage.
- After the rise in agricultural productivity due to irrigation, it is important to conduct training related to marketing and agricultural management to farmers and irrigation associations.



## List of Projects Targeted for Evaluation

1	China	Sanhe Thermal Power Plant Project (I) (II)
2	China	Shanxi Hejin Thermal Power Plant Project (I) (II)
3	China	Beijing Subway Construction Project Phase 1 (I) (II), Phase 2 (I) - (IV)
4	China	Air Navigation & Air Traffic Control System Modernization Project (I) (II) (III)
5	China	Guanzhou-Kunming-Chengdu Optic Fiber Cable Construction Project
6	China	Liaoning Baishi Reservoir Construction Project
7	China	Luzhai Fertilizer Plant Construction Project (I) - (IV)
8	Indonesia	Java-Bali Transmission and Substation Project (East Java) (I) (II) [2 Projects]
9	Indonesia	Road Rehabilitation Project (III)
10	Indonesia	Local Road Development Project (3)
11	Indonesia	Regional Telecommunications Networks in Surabaya (1) (2) [2 projects]
12	Indonesia	Small Scale Irrigation Management Project (2)
13	Indonesia	Project Type Sector Loan for Water Resources Development
14	Indonesia	Jakarta Solid Waste Management System Improvement Project
15	Indonesia	Junior Secondary School Building Construction Project
16	Indonesia	Improvement of Community Health Center Project
17	Laos	Nam Leuk Hydropower Project
18	Philippines	South Luzon Expressway Construction Project (I)
19	Philippines	Fishing Ports Development Project (II)
20	Philippines	Regional Telecommunications Development Project in Region (III)
21	Philippines	Engineering and Science Education Project
22	Thailand	Ramintra - At Narong Expressway Construction Project (I) (II)
23	Thailand	Krungthep Bridge Construction Project
24	India	Assam Gas Turbine Power Station and Transmission Line Construction Project (I) (II) (III)
25	India	Faridabad Gas Based Power Station and Associated Transmission Line Construction Project
26	India	Urban City Water Supply Project
27	Pakistan	Metropolitan Water Supply Project (Khanpur I)
28	Sri Lanka	Sri Lanka - Japan Friendship Bridge Widening Project
29	Sri Lanka	Industrial Estates Development Project
30	Kyrgyz	Bishkek-Manas International Airport Modernization Project
31	Uzbekistan	Railway Passenger Transport Improvement Project
32	Papua New Guinea	Transisland Highway Project (I) (II)
33	Papua New Guinea	National Road Improvement Project
34	Papua New Guinea	Port Moresby International Airport Redevelopment Project (I) (II)
35	Jordan	Aqaba Thermal Power Station Project (I) (II)
36	El Salvador	Water Supply and Sewage System Improvement Project
37	Guatemala	Guatemala City Groundwater Development Project
38	Guatemala	Social Investment Fund Project
39	Paraguay	Project for Improvement of Earth Stations for Telecommunication via Satellite.

### Third-Party Evaluators

Country	Name	Profile
China	Lei Jiasu	Obtained a doctorate in Technological Economics from Tsinghua University, China. Presently holds the post of Professor, School of Economics and Management, Tsinghua University, also serving as Senior Adviser, Henan Linghua Company (Group). Specializes in technological economics.
	Jian Rong	Presently holds the post of Professor, Beijing University of Technology, specializing in traffic engineering, transportation impact analysis and transportation planning, etc.
	Lin Jiabin	Obtained a doctorate in Regional Development and Planning from University of Tokyo. Presently, holds the position of deputy director, Department of Social Development Research, Development Research Center, the State Council of China. Specializes in regional development.
	Mao Yushi	Graduated from Department of Mechanical Engineering from Jiaotong University, Shanghai. Presently, Chairman of Board, Unirule Institute of Economics, specializing in economics and micro-economics, etc.
Indonesia	Firdaus Ali	Obtained a doctorate in Environmental Engineering from the University of Wisconsin, U.S.A. Presently, holds the post of Professor, Civil and Environmental Engineering at the University of Indonesia. Specializes in water supply systems, waste water engineering, waste disposal systems and environmental assessment, etc.
	Bambang Permadi Soemantri Brodjonegoro	Obtained a doctorate in Urban and Regional Planning from the University of Illinois, U.S.A. Presently, serves as Associate Professor, Faculty of Economics, University of Indonesia. Specializes in urban and regional planning, regional economics and economics of development, etc.
	B S Kusbiantoro	Obtained a doctorate in Public Policy and Management from the University of Pennsylvania, U.S.A. Presently, holds the position of Professor, Faculty of Urban and Regional Planning, Bandung Institute of Technology. Specializes in urban transportation planning, urban and regional development, etc.
	Pande Radja Silalahi	Obtained a doctorate in State Finance at University of Commerce, Kobe, Japan. Presently, serves as Vice Chairman of Indonesia Antimonopoly Authority, specializing in macroeconomics.
	Mohamad Ikhsan	Obtained a doctorate in Economics from the University of Illinois, U.S.A. Presently, serves as a lecturer, University of Indonesia, specializing in monetary economics, development economics, macroeconomics and international trade, etc.
Laos	Phosy Chanhming	Obtained a MBA in Corporate Venture from Waseda University. Presently, Lecturer at the Faculty of Economics and Management, National University of Laos, specializing in economy and management.
Philippines	Olegario G. Villoria, Jr.	Obtained a doctorate in Civil Engineering from Ohio State University, U.S.A. Presently works as ITS senior researcher at TransCore, U.S.A. Specializes in urban and regional transportation engineering, economy/policy analysis, etc.
	Ruperto P. Alonzo	Obtained a doctorate in Economics from University of Chicago, U.S.A. Presently, holds the post of Professor, School of Economics, University of the Philippines. Specializes in poverty reduction, informal sector and economical analysis, etc.
Thailand	Yordphol Tanaboriboon	Obtained a doctorate in Civil Engineering from Virginia Polytechnic Institute and State University, U.S.A. Presently, holds the post of Professor, School of Civil Engineering, Asian Institute of Technology, specializing in transportation engineering and transportation planning, etc.
India	Sankaran Kartha Narayanan Nair	Graduated from University of Madras, India. Presently serves as advisor at the National Council of Applied Economic Research, India, specializing in infrastructure maintenance policy, electric power, transportation (railways) and communication, etc.
	Usha P. Raghupathi	Obtained post graduate diploma from the Institute for Housing and Urban Development Studies, the Netherlands. Presently, holds the post of Professor, National Institute of Urban Affairs, India, specializing in urban development (water supply and sewerage, poverty and the environment, etc.)

Country	Name	Profile
Pakistan	Arshad Waheed	Obtained a master's degree in social policy and planning in developing countries from London School of Economics. Presently, holds the position of Director Institute of Social Policy, Islamabad, specializing in social policy and planning.
Sri Lanka	Tevaratantrige Lalithasiri Gunaruwan	Obtained a doctorate in Economics from the University of Paris Pantheon-Sorbonne, France. Presently, works as senior lecturer, Department of Economics, University of Colombo, specializing in infrastructure maintenance, project evaluation, railways, transportation and energy, etc.
	Weligamage Don Lakshman	Obtained a doctorate in Economics from University of Oxford. Presently holds the post of Professor, Department of Economics, University of Colombo, specializing in trade, public policy, development economy and public utility works, etc.
Kyrgyz	Olga Kan	Obtained a MBA from Bishkek International School of Management and Business, Kyrgyz. Presently, head of International Department, Academy of Management, Kyrgyz, specializing in business administration and international affairs.
Uzbekistan	Rafik Sh. Sayfulin	Obtained a doctorate in History from Moscow State University, Russia. Presently, works as an independent consultant. Specializes in policy, economics and security, etc.
Papua New Guinea	Elizabeth Kopel	Obtained a doctorate in Social Policy from the University of York, U.K. Presently, lecturer at the University of Papua New Guinea, specializing in social policy, community planning, etc.
	Billy Manoka	Obtained a doctorate in Resource Economics from University of Massachusetts, U.S.A. Presently, head of Economics Department, University of Papua New Guinea. Specialises in natural resource economics, environmental economics, economic analysis and transportation economics, etc.
Jordan	Hani Shehadeh Obeid	Obtained a doctorate in Electrical Systems and Networks from Leningrad Polytechnic Institute, (now St. Petersburg Technical State Polytechnic University), Russia. Presently, serves as Associate Professor, Department of Engineering, Applied Science University, Jordan, specializing in electrical system networks.
El Salvador	Maria Teresa de Rendon	Obtained a degree in Business Management from the University of Central America, El Salvador. Completed a course in constitution. Presently works as an independent consultant. Specializes in project evaluation (socioeconomic infrastructure) and macro-economics, etc.
Guatemala	Carolina Roca	Obtained a master's degree in Public Administration, from Harvard University, U.S.A. Presently works as a director at the Investment and Development Corporation (IDC), specializing in public and private sector projects and finance, etc.
Paraguay	Oscar E. Carvallo Gonzalez	Obtained a master's degree in Public Administration from State University of New York, U.S.A. Presently works as an independent consultant, specializing in economic analysis and public policy.