

## Ex-ante Evaluation

### **1. Name of the Project**

Country: The Democratic Socialist Republic of Sri Lanka

Project: Water Sector Development Project II

Loan Agreement: July 29, 2008

Loan Amount: 8,388 million yen

Borrower: The Government of the Democratic Socialist Republic of Sri Lanka

### **2. Necessity and Relevance of JBIC Assistance**

#### **1. Situation and issues of the water works sector in Sri Lanka**

Although 76% of the population of Sri Lanka has access to safe drinking water through wells and surface water, the percentage of population connected to piped water has remained low at around 30%. In addition, demand for water is growing rapidly in line with the population which is increasing year by year, with water consumption for the whole of Sri Lanka increasing from 147 million m<sup>3</sup> in 1995 to 247 million m<sup>3</sup> in 2005.

The water supply system of Greater Colombo area is comparatively advanced, and it serves 58% of its targeted population of approximately 3.6 million people. However, the water supply is unable to keep up with the increasing demand for water brought about by rapid urbanization. Even in regions where it is possible for people to access water supply, the water consumption volume per person is constrained and has been decreasing in recent years; in addition, 24-hour services are now limited to only around half the area. Furthermore, striking deterioration of the water transmission pipes and water distribution pipes in the water supply system in the city of Colombo is giving rise to high levels of water leakage (30.7% water leakage rate). Installation and improvement of the water transmission and distribution network, and raising the maintenance and management capacity, are urgent issues.

#### **2. Development policies of the Government of Sri Lanka**

Mahinda Chintana (2006-2016) (the vision of Mahinda, the name of the president) in addition to setting out the improvement of access to water as an objective, points out the particular need to improve the water supply system in Greater Colombo area. Having set out the securing of access for all citizens to safe water as one of its efforts for reducing poverty, the Government of Sri Lanka set out its policy in the form of the “National Policy of Water Supply and Sanitation” in 2002, and based on the Millennium Development Goals set out objectives aiming for 85% of the population of the whole of Sri Lanka to have access to safe water through well water or surface water by 2015, and 100% by 2025; it also aims to increase the prevalence of water supply to cover 100% of urban populations including Greater Colombo area and 75% of regional populations by 2015.

#### **3. Direction of Japan’s and JBIC’s assistance policies for Sri Lanka and the water works sector**

In Japan’s Country Assistance Program for Sri Lanka (April 2004), “Assistance for systematic reforms and the improvement of economic infrastructure” is stated as the direction for assistance during the

next five years. Moreover, the water works and sewerage sector is one part of “basic infrastructure aimed at sustainable growth” which is positioned as a priority area in JBIC’s Medium-Term Strategy for Overseas Economic Cooperation Operations; such infrastructure is thus an important issue. Thus, JBIC’s support of this project is highly necessary and relevant.

### **3. Project Objectives**

The project aims at the safe and stable supply of water for daily use in Greater Colombo area through the installation and expansion of a water supply system which takes its source from the Kalu Ganga River, and at the reduction of non-revenue water in the city of Colombo including the low income settlements, thus contributing to the improvement of the living environment in the area.

### **4. Project Description**

#### (1) Target Area

Greater Colombo area

#### (2) Project Outline

(a) Construction of water treatment plants, etc.

Installation of a water treatment plant taking the Kalu Ganga River as its source, and related water intake facilities and water transmission/distribution facilities

(b) Countermeasures against non-revenue water

Promotion of replacement of water distribution pipes and of direct connections to individual households in the low income settlements, in the city of Colombo

(c) Consulting services

- Project management (tendering assistance, assistance for construction supervision, etc.)
- Updating of master plan (updating of master plan for the Western Province, including Greater Colombo area)
- Technical assistance relating to operation and maintenance

#### (3) Total Project Cost/Loan Amount

10,846 million yen (Yen Loan Amount: 8,388 million yen)

#### (4) Schedule (as envisaged at time of appraisal)

May 2008 to December 2011 (44 months). The project will be considered completed when the construction work is completed.

#### (5) Implementation Structure

(a) Borrower: The Government of the Democratic Socialist Republic of Sri Lanka

(b) Executing Agency: National Water Supply and Drainage Board (NWSDB)

(c) Operation and Maintenance System: Same as (b).

#### (6) Environmental and Social Consideration

(a) Environmental Effects/Land Acquisition and Resident Relocation

(i) Category: B

(ii) Reason for Categorization

This project is classified as Category B because it does not correspond to a sector or characteristics which are likely to have an impact on the environment, or it is not located in a sensitive area under the “Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations” (established in April 2002), and it is thus judged that adverse impact on the environment will not be significant.

(iii) Environmental Permit

Under Sri Lankan law, the drawing up of an Environmental Impact Assessment (EIA) is not required for this project.

(iv) Anti-Pollution Measures

Noise and odors will be taken into consideration in the design of the water purification plant, pumps and other water works facilities. In addition, it is planned for the sludge which is produced by the water treatment plant to be disposed of through landfill etc.

(v) Natural Environment

This project will not take place in or near any national parks, and any adverse environmental impact stemming from this project is expected to be minimal.

(vi) Social Environment

The acquisition of 0.64ha of land for the project is underway, in accordance with the domestic laws of Sri Lanka. No residents are to be relocated.

(vii) Other/Monitoring

The executing agency will monitor air quality, water quality, noise and land acquisition during the construction.

(b) Promotion of Poverty Reduction

In order to improve the poor’s access to water services and to reduce non-revenue water, it is planned to give assistance to promote direct connections to individual households, targeting the households in the low income settlements in the city of Colombo. As this project has a specific component for targeting the poor, it corresponds to a Poverty Focused Project as defined by JBIC.

(c) Promotion of Social Development (e.g. Gender Perspective, Countermeasures for Infectious Diseases Such as HIV/AIDS, Participatory Development, Consideration of the Disabled etc.)

The direct water supply connections to individual households and the prohibition of public water taps in the low income settlements will be promoted through awareness-raising of targeted households, and the shift to direct connections to individual households and the prohibition of public water taps will be carried out only after gaining their agreement. The realization of direct connections to individual households in the low income settlements is expected to reduce the work of water fetching for women and children.

(7) Other Important Issues

None.

**5. Outcome Targets**

(1) Evaluation Indicators (Operation and Effect Indicators)

Indicators	Baseline (2007 figures)	Targets (2013, 2 years after project completion)
Population served (1,000 people) (Note 1)	344.2	490.6
Amount of water supply (daily average) (m <sup>3</sup> /day )	-	48,000
Number of direct connections to individual households (1,000 households) (Note 1)	63.6	110.6
Non-revenue water rate (%) (Note 2)	52.7	37.9
Facility usage rate (daily average) (%)	-	80
Increase in number of individual household connections (households) among the poor households (Note 3)	-	3,000

Note 1: The figure includes the facilities of the Kalu Ganga Water Supply Project for Greater Colombo (Kalu Ganga Phase I Stage I)

Note 2: Figures are for the whole of the city of Colombo. The actual non-revenue water rate is planned to be measured before the project is implemented.

Note 3: Targets all households in the low income settlements (tenement gardens) in the areas targeted by the non-revenue water reduction component (CBI District and Colombo 02 District in the city of Colombo)

#### (2) Number of Beneficiaries

146,415 people (the increase in the revenue water population resulting from the Kalu Ganga water treatment plant following project completion)

#### (3) Internal Rate of Return (IRR) (Economic Internal Rate of Return (EIRR)/Financial Internal Rate of Return (FIRR))

Based on the following assumptions, this project's Economic Internal Rate of Return (EIRR) is set at 12.4%. The Financial Internal Rate of Return (FIRR) is set at 5.0%.

#### Economic Internal Rate of Return (EIRR)

Costs: Project costs (excluding costs of land acquisition and tax), operation and maintenance costs

Benefits: Total amount of willingness to pay

Project Life: 30 years

#### Financial Internal Rate of Return (FIRR)

Costs: Project costs, operation and maintenance costs

Benefits: Income from water fees and income from connection fees

Project Life: 30 years

**6. External Risk Factors**

Possibility of project being delayed due to climatic conditions, particularly flooding.

**7. Lessons Learned from Findings of Similar Projects Undertaken in the Past**

The lesson has been learned from ex-post evaluations of similar projects conducted previously in the water supply and sewerage sector that it is essential to establish an appropriate supply/demand plan. Bearing this fact in mind, in this project a demand/supply forecast and investment plan review were carried out by commissioning a survey, and investment was established on an appropriate scale based upon this. In addition, support will be given to the setting out of a mid- to long-term demand/supply plan through assisting the updating of the master plan under the consulting services of this project.

The lesson has also been learned that it is essential to bear in mind the renovation of the already existing water distribution network when increasing the water treatment and water transmission capacity in a water supply project. Therefore, in this project, the non-revenue water countermeasure (renovation of the water distribution network) is included in the project, and it is envisaged that this will prevent the wasting of water and strengthen water supply capacity.

Finally, the lesson has been learned that it is essential to strengthen the capabilities of the executing agency to ensure that there are no delays in procurement. The management consulting services for capacity building has been carried out in the Water Sector Development Project, which was agreed on last fiscal year, aiming at capacity building of the executing agency.

**8. Plans for Future Evaluation****(1) Indicators for Future Evaluation**

- (a) Population served (1,000 people)
- (b) Amount of water supply (daily average) (m<sup>3</sup>/day )
- (c) Number of direct connections to individual households (1,000 households)
- (d) Non-revenue water rate (%)
- (e) Facility usage rate (daily average) (%)
- (f) Increase in number of individual household connections (households) among the poor households
- (g) Economic Internal Rate of Return (EIRR) (%)
- (h) Financial Internal Rate of Return (FIRR) (%)

**(2) Timing of Next Evaluation**

Two years after project completion