

Ex-Ante Evaluation (for Japanese ODA Loan)

1. Name of the Project

Country: The Democratic Socialist Republic of Sri Lanka

Project: Anuradhapura North Water Supply Project Phase 1

Loan Agreement: March 14, 2013

Loan Amount: 5,166 million yen

Borrower: The Government of Democratic Socialist Republic of Sri Lanka

2. Background and Necessity of the Project**(1) Current State and Issues of the Water Supply Sector in Sri Lanka**

Anuradhapura District in North Central Province, Sri Lanka is one of the major districts in the region, and its increasing population due to urbanization and high numbers of tourists who visit World Heritage Buddhist sites are boosting the district's demand for water. The northern part of Anuradhapura District, the target region of this project, is an arid region without any nearby reservoirs or other water sources, and residents rely on limited underground water, which is less than 10% of national standard in some areas, drawn from deep or shallow wells for daily living. In some areas, the amount of underground water represents less than 10% of the national water supply standard.

In addition, a high concentration of fluoride, which is harmful to the human body, has been detected in the underground water in Anuradhapura district, and the use of underground water has resulted in a number of patients with dental and bone fluorosis as a serious health issue in the country. Anuradhapura district is known for the highest CFI (Community Fluorosis Index), which shows degrees of dental fluorosis caused by a high concentration of fluoride. The population with access to safe water in this district is only 10 percent, significantly lower than the country as a whole (87 percent), and switching from underground to surface water sources is a high priority to cease the detrimental effects of fluoride on the health of the residents.

(2) Development Policies for the Water Supply Sector in Sri Lanka and the Priority of the Project

The government of Sri Lanka defines securing access to safe drinking water critical and indispensable, and under the national development plan called "Mahinda Chintana (2010-2016)" the government is aiming to increase the percentage of the population with access to safe drinking water to 100%, while increasing the coverage of the water supply system to 60% by 2020. This project will build water supply system in order to provide safe drinking water to the people, so that the project will be given high priority in accordance with the government development goal.

(3) Japan and JICA's Policy and Operations in the Water Supply Sector

Japan's "Country Assistance Program for Sri Lanka (June, 2012)" focuses on the improvement of infrastructure as a part of the focal area of "promotion of economic growth." "JICA Country Analytical Work" also states that the construction of water supply and sewerage systems is a focal task in its support for Sri Lanka to promote building essential infrastructure for improved living environment, so that JICA has designed the "Program for Environment Improvement." JICA recently has provided an ODA loan to "Eastern Province Water Supply Project" (March, 2010, 4,904 million yen).

(4) Other Donors' Activities

The World Bank has been implementing "Sri Lanka: Emergency Northern Recovery Project" (December, 2009), focusing on improving rural water supply. The Asian Development Bank (ADB) supports community water supply projects through "Secondary Towns and Rural Community-Based Water Supply and Sanitation Project" (October, 2006). The ADB has also been implementing the "Jaffna and Kilinochchi Water Supply and Sanitation Project" (December, 2010) to rebuild and expand existing water

supply facilities in conflict affected areas.

(5) Necessity of the Project

This project aims at constructing water supply facilities using surface water as its water source, providing safe drinking water, and meeting the objective of improving the level of health and sanitation in the target region. As the project is consistent with development policy of Sri Lanka and assistance policy of Japan and JICA, it is highly necessary and relevant for JICA to support the implementation of the project.

3. Project Description

(1) Project Objective

The objective of this project is to construct new water supply facilities, improve the access to safe drinking water and increase water supply coverage in the northern part of Anuradhapura district, thereby contributing to improvement of the level of sanitation and health of the target region.

(2) Project Site/Target Area

Anuradhapura North (791 km²)

(3) Project Components

- 1) Construction of intake facility, water treatment plant, ground sumps, elevated tanks, and related mechanical and electrical works (International Competitive Bidding)
- 2) Installation of transmission and distribution mains (International Competitive Bidding)
- 3) Installation of distribution sub-mains (Local Competitive Bidding)
- 4) Procurement of O&M equipment (Local Competitive Bidding)
- 5) Consulting services (detailed design, tender assistance, construction supervision, awareness campaign to area residents, etc.) (Consultants will be short listed)

(4) Estimated Project Cost (Loan Amount)

6,817 million yen (including the agreed loan amount: 5,166 million yen)

(5) Schedule

Planned for March, 2013 to February, 2019 (a total of 72 months); the project will be completed when the use of facilities begins (February, 2018).

(6) Project Implementation Structure

- 1) Borrower: The Government of Democratic Socialist Republic of Sri Lanka
- 2) Executing Agency: Ministry of Water Supply and Drainage (MWSD)
- 3) Operation and Maintenance System: National Water Supply and Drainage Board (NWSDB)

(7) Environmental and Social Considerations/Poverty Reduction/Social Development

- 1) Environmental and Social Considerations
 - a) Category : B
 - b) Reason for the Categorization : Since this project does not involve any sectors or characteristics that are liable to cause adverse environmental impact nor sensitive areas specified in the “JICA Guidelines for Environmental and Social Considerations” (published in April, 2010), it is unlikely that the project will have any severe negative impact on the environment.
 - c) Environmental Permit : The domestic laws of Sri Lanka do not mandate the preparation of the Environmental Impact Assessment (EIA) report for this project.
 - d) Anti-Pollution Measures : Noise, dust and muddy water caused during the construction are

expected to be controlled below the domestic environmental standards by using low-noise machinery and watering. Waste water and sludge generated during the operation will be properly processed in the sludge lagoon in the water treatment plant before used for landfill.

- e) Natural Environment : The area(s) affected by the project are not designated as or near national parks or other sensitive areas, and the level of undesirable impact to natural environments is expected to be minimal.
 - f) Social Environment : This project requires the acquisition of land of 0.9ha and the relocation of two residents. The relocation and compensation procedures will be taken according to the domestic laws of Sri Lanka and the “JICA Guidelines for Environmental and Social Considerations.”
 - g) Other Aspects/Monitoring : The executing agency monitors the level of noise, vibration and dust during the construction, and water quality and noise after the operation.
- 2) Promotion of Poverty Reduction : None in particular
 - 3) Promotion of Social Development : None in particular

(8) Collaboration with Other Schemes and Donors

None in particular

(9) Other Important Issues

Original request of the government of Sri Lanka consists of two separated schemes which depend on Mahakanadarawa reservoir and Wahalkada reservoir respectively as their water sources. This project targets Mahakanadarawa scheme on a priority basis due to responding to its urgent needs.

4. Targeted Outcomes

(1) Quantitative Effects

- 1) Performance Indicators

Indicators	Baseline (Actual value in 2012)	Target (2020) (Expected value 2 years after project completion)
Population who has access to safe drinking water (*)	2,600	61,000
Water supply coverage (use surface water) (%) (*)	0	55
Fluoride in drinking water (mg/L) (*)	1.6 or more	0.5 or less
Rate of facility utilization (%)	N/A	80.9

(*)Figures are measured in the target area

- 2) Internal Rate of Return

Based on the conditions below, the economic internal rate of return (EIRR) of the project will be 9.14%.

Cost : Project cost (excluding taxes), and operating and maintenance costs

Benefit : Willingness to pay and reduction in medical costs to treat dental fluorosis

Project life : 30 years

(2) Qualitative Effects

Improvement of hygiene and health, and reduction in housework time of collecting drinking water which leads to increased opportunities for new type of economic and social activities in target area

5. External Factors and Risk Control

Risks caused by other projects. Water right in 2034 of this project will be secured by the completion of a neighboring irrigation project.

6. Lessons Learned from Past Projects

(1) Results of Evaluation of Similar Past Projects

Based on the ex-post evaluations of past water supply projects include the “Greater Kandy Water Supply Project”, it has been pointed out that it is necessary to implement awareness campaign to the target residents in order to promote the use of safe drinking water, enhancing project effects.

(2) Lessons for the Project

Under this project, it is planned to implement project publicity and awareness campaign explaining risks of drinking well water with a high concentration of fluoride and the importance of water bill payment to secure access to safe drinking water for the target residents since most of the residents have never experienced the payment due to the use of local wells.

7. Plan for Future Evaluation

(1) Indicators to be Used

- 1) Population who has access to safe drinking water
- 2) Water supply coverage (use surface water) (%)
- 3) Fluoride in drinking water (mg/L)
- 4) Rate of facility utilization (%)
- 5) Economic internal rate of return (EIRR) (%)

(2) Timing of Next Evaluation

Two years after project completion