

Ex-Ante Evaluation

1. Name of the Project

Country: The Democratic Socialist Republic of Sri Lanka

Name of the Project: Kalu Ganga Water Supply Expansion Project (I)

Loan Agreement: July 7, 2017

Loan Amount: 31,810 million yen

Borrower: The Government of the 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

Western Province is the center of Sri Lanka's political and economic activities, as around 42% of GDP (Central Bank of Sri Lanka, 2014) and 28.5% of the population is concentrated in this area (Central Bank of Sri Lanka, 2015). The province has been center of economic development in the country with industrial complexes, export processing zones, and the largest international airport. The infrastructure is relatively well developed in the Western Province. For example, the first water supply system in the country have been introduced in 1882, and since then, ten water treatment plants are in operation.

The water supply coverage in the province is 62.7%, higher than the national average of 45.9%, however, there is a wide difference in rates between districts, with Gampaha and Kalutara Districts at 43.8% and 38.4% (National Water Supply and Drainage Board, hereafter "NWSDB," 2015), in contrast to Colombo District at 92.4%. In districts other than Colombo, water supply in many regions still rely on wells and other means. The expansion of water supply system is a challenge that needs to be tackled as the government of Sri Lanka has a policy of further developing the Western Province, and it is expected to undergo further urbanization, with its population projected to grow by 40.9% between 2015 and 2040, and water demand by 91.4% (NWSDB, 2013).

Additionally, while the nationwide average non-revenue water (NRW) rate in Sri Lanka is 28.5%, the NRW rate in the Western Province exceeds this national average at approximately 30-40%. The NRW rate in Colombo District is particularly high at 45% (NWSDB, 2014). The reasons for these high NRW rates are a) considerable leaks due to the aging of existing water distribution pipes; b) the inability to update aging pipes due to inadequate information management of existing water distribution pipes; and c) illegal connections and uninstalled water meters. Improving water supply efficiency by reducing NRW rates is one of the challenges to meet increasing demand of water supply.

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

NWSDB is in charge of the nationwide development, supply, operation and supervision of water supply and drainage in Sri Lanka (excluding facilities owned by city governments). In its Corporate Plan (2016-2020), the organization defines targets for the nationwide piped water supply coverage and NRW rate at 60.0% and 25.3% by 2020, respectively, to which this project is aligned with. This project also corresponds to Phase 2 of the Kalu Ganga water supply upgrade plans included in the Western Province Metropolitan Area Water Supply Master Plan (2013).

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

In Japan's Country Assistance Policy to the Democratic Socialist Republic of Sri Lanka (2012), the government of Japan identifies "promoting economic growth" through infrastructure improvement as the priority area of its assistance. Additionally, the JICA Country Analysis Paper for the Democratic Socialist Republic of Sri Lanka (2014) indicates that assistance in water supply expansions (including measures for reducing NRW rates) in major urban areas is essential for improving the living conditions. This project is aligned with this policy and analysis.

(4) Other Donors' Activity

The World Bank is providing assistance for water supply and drainage facilities in rural areas through its North East Local Services Improvement Project (2010, Loan Amount: 90.3 million dollars) and Water Supply and Sanitation Improvement Project (2015, Loan Amount: 165 million dollars). The Asian Development Bank (hereafter "ADB") is providing assistance for the installation and improvement of facilities relating to water supply and sewerage, and measures for countering NRW through its Greater Colombo Water and Wastewater Management Improvement Investment Program (2012, Loan Amount: 300 million dollars). Neither of these programs overlaps with regions covered in the Kalu Ganga Water Supply Expansion Project.

(5) Necessity of the Project

This project aims to manage water supply and demand, and achieve efficiency in water supply, consequently contributing to the improvement of the living conditions of this project area. This project is in line with the development issues and policies of Sri Lanka and the assistance policies of Japan and JICA. This project is expected to contribute to the Sustainable Development Goals (SDGs) 6: ensure access to water and sanitation for all. Therefore, it is highly necessary for JICA to implement this project.

3. Project Description

(1) Project Objectives

The objective of this project is to improve access to safe water and water supply efficiency in the southern area of Western Province by expanding the Kalu Ganga water supply facilities and restructuring water distribution networks, thereby contributing to improvement in the living conditions of this project area.

(2) Project Sites/Target Area

Kalutara and Colombo Districts, Western Province

(3) Project Components

1) Installation of new water supply and restructuring of water distribution networks (international competitive bidding):

[Phase 1] Intake & water treatment plant facilities, transmission pipes, reservoirs, pump stations, etc.

[Phase 2] Transmission & distribution feeder main pipes, house connections, etc.

2) Countermeasures for NRW (local competitive bidding):

[Phase 1] Rehabilitation of existing transmission and distribution pipes in the Dehiwala, procurement of O&M equipment, etc.

[Phase 2] Rehabilitation of existing transmission and distribution pipes in the Dehiwala and Moratuwa, excluding regions covered in Phase 1.

3) Consulting services (detailed designs, tender assistance, construction supervision, awareness-raising campaign to residents, etc.) (Short-list system)

(4) Estimated Project Cost (Loan Amount)

39,069 million yen (Loan Amount: 31,810 million yen)

(5) Schedule

June 2017 to March 2025 (94 months in total). Project Completion is defined as when the facility service is commissioned (scheduled in March 2024). Water treatment plant included in Phase 1 of this project is scheduled to be commissioned in October 2023.

(6) Project Implementation Structure

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

2) Executing Agency: Ministry of City Planning and Water Supply

3) Operation and Maintenance: NWSDB

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

1) Environmental and Social Considerations

i) Category: B

ii) Reason for Categorization: This project is classified as Category B because it does not fall under the sector likely to have any significant impact on the environment nor have characteristics that are liable to cause adverse impacts or not located in or near sensitive areas as specified in the JICA Guidelines for Environmental and Social Considerations (published in April 2010).

iii) Environmental Permit: Sri Lanka's domestic laws do not mandate the preparation of an environmental influences assessment (EIA) report for this project.

iv) Anti-Pollution Measures: While air quality, noise, waste and other aspects can conceivably be affected during construction, domestic emission standards and environmental standards of Sri Lanka can be met by measures such as installing

covers when transporting materials including soil, conducting water spraying, installing dust-proof walls, enforcing construction vehicle speed limits, restricting nighttime construction work, and implementing appropriate disposal measures for soil that is excavated during pipe laying work. While an increase in water treatment sludge likely to be generated after the facilities are commissioned, this is expected to be treated at the existing sludge treatment facilities.

v) Natural Environment: This project is not located in sensitive areas such as national parks or world heritage sites. As such, this project's effects on the natural environment are presumed to be minimal.

vi) Social Environment: While this project will not require the involuntary resettlement, approximately 2.87 hectares of land must be acquired. Residents are scheduled to be compensated through the Simplified Resettlement Action Plan (RAP) created and approved based on JICA Guidelines and domestic Sri Lankan laws. It has been verified that no opposition has been raised against the implementation of this project in stakeholder discussions.

vii) Other/Monitoring: In this project, contractors will monitor air quality, noise and other matters under the supervision of the executing agency, and the executing agency will conduct monitoring on the relocation of residents and other matters. After commissioning, the executing agency is scheduled to conduct monitoring in areas such as water treatment sludge and water quality.

2) Promotion of Poverty Reduction: It is scheduled to conduct awareness-raising campaign to residents, including impoverished groups, on the topic of public sanitation, water environment preservation and other matters.

3) Promotion of Social Development

i) Gender perspective

The executing agency is scheduled to implement action plans that take into consideration the gender perspective (such as the promotion of female participation in educational activities relating to water and sanitation).

ii) Measures to Prevent Infectious Diseases including HIV/AIDS

The tender documents will include the implementation of HIV/AIDS countermeasures for construction workers, and the contractors are scheduled to implement HIV/AIDS countermeasures.

(8) Collaboration with Other Donors: Co-financing with ADB for Phase 2 of this project is considered.

(9) Other Important Issues: None in particular.

4. Targeted Outcomes

(1) Quantitative Effects

1) Performance Indicators (Operation and Effect Indicator)

| Indicator | Baseline (Actual Value in 2016) | Target (2026) [Expected value 2 years after project completion] |
|---|------------------------------------|---|
| Water supply volume (m ³ /day) | 115,000 | 260,000 |
| Service connections (connections)(Colombo District) | 79,513 | 103,276 |
| Service Connections (connections)(Kalutara District) | 66,961 | 140,834 |
| Non-revenue water rate (%) (Dehiwala and Moratuwa) | 24.09% | 18.5% |

(2) Qualitative Effects

Improvement of living conditions of the project area

(3) Internal Rate of Return

Based on the conditions below, the economic internal rate of return (EIRR) for this project is 11.19%, and the financial internal rate of return (FIRR) is 1.52%.

【EIRR】

Cost: Project cost (excluding taxes), operation and maintenance cost

Benefit: Increased water supply volume, reduction in costs required for alternative methods of water supply through means other than water supply

Project life: 30 years

【FIRR】

Cost: Project cost, operation and maintenance cost

Benefit: Revenues from water supply charges

Project life: 30 years

5. External Factors and Risk Control

(1) NWSDB's financial condition

The government of Sri Lanka has planned to submit a bill that places NWSDB under the supervision and regulation of the Public Utilities Commission of Sri Lanka (PUCSL) in an effort to revise fees, improve productivity, and improve business operations at NWSDB. However, there is a possibility that reforms relating to fee revisions may not move forward smoothly due to, among other reasons, public opposition to price hikes. It is needed to follow NWSDB's financial condition and the progress in legislative initiatives that relate to PUCSL, and also take notice of any deterioration in NWSDB's financial condition.

(2) Installation of water distribution networks

This project may face the risk of delays in the installation of water distribution pipes. In this project, contractors will be responsible for the installation of a new water distribution networks, including the connection of water supply pipes to end customers. The total length of the water distribution networks to be installed is approximately

848.4 km, with water tap connections to 95,000 units. Construction site conditions (roads, houses, location of existing pipes, etc.) are expected to be diverse, so it will be necessary to verify that the installation of the water distribution networks is executed in a reliable manner. Therefore, it will be important for NWSDB to prepare and provide detailed drawings of the sites prior to construction to contractors, and regularly monitor the status of execution on the sites.

(3) Co-financing with ADB

Because co-financing with ADB that is being considered for Phase 2, JICA will share information with ADB on a regular basis, and promote the smooth implementation of Phase 1.

6. Lessons Learned from Past Projects

(1) Lessons learned from similar projects in the past

It has been cited in an Ex-Post evaluation of the Kalu Ganga Water Supply Project for Greater Colombo in the Democratic Socialist Republic of Sri Lanka that special attention must be paid to time management when procuring consultants to prevent frequent delays in procurement procedures. The evaluation also cited that NRW countermeasures should be continuously implemented.

(2) Applying these lessons to the current project

This project includes activities of expediting procurement procedures by providing technical assistance to the executing agency, and also NRW countermeasures, such as the establishment of District Metered Area (DMA). Technical assistance for NRW will also be considered going forward.

7. Plan for Future Evaluation

(1) Indicators for Future Evaluation

- 1) Water supply amount (m³/day)
- 2) Service Connections (connections)
- 3) Non-revenue water rate (%)
- 4) EIRR
- 5) FIRR

(2) Timing

Two years after project completion