

Ex-Ante Evaluation (for Japanese ODA Loan)

1. Name of the Project

Country: India

Project: Guwahati Water Supply Project

Loan Agreement: March 31, 2009

Loan Amount: 29,453 million Yen

Borrower: The President of India

2. Background and Necessity of the Project

(1) Current State and Issues of the Water Supply / Sewage and Sanitation Sectors in India

In India, demand for water usage is increasing with its population and economic growth, but, from a lack of infrastructure, the water supply shortage is becoming acute. Further, reliance on groundwater is lowering the groundwater level and leading to higher content of fluorine, arsenic, and other toxic substances. Also, with a sudden population influx in the urban areas along with industrialization, sewage emission is exceeding treatment which threatens the public health and living environment of local residents. In terms of operation and maintenance of water supply services, there are technical and financial issues such as water quality, non-revenue water and level of water tariff, etc.

(2) Development Policies for the Water supply / Sewage and Sanitation Sectors in India / Assam State and the Priority of the Project

In its Eleventh Five Year Plan (April 2007 – March 2012) the Indian Government has outlined a goal of providing water supply, sewage and sanitation facilities to all the urban population by 2011/2012. Further, in the current administration's Common Minimum Programme (May 2004), there is a commitment to expand public investment in water supply facilities, and the supply of drinking water to all levels of society in both urban and rural areas, and increasing drinking water supplies is one of the top-priority issues.

The per capita GDP in Assam state in 2004 ~ 2005 was 6,721 Rupees, which is only 35% of the national average, and the poor make up 31% of the population. Only 31% of urban households get their drinking water from the water supply system, less than half of the urban average in India. Taking this into account, based on the policies of the central government given above, the Assam state government has come out with a plan to work on developing water supply infrastructure and is prioritizing this project in Guwahati, the largest city in the state.

(3) Japan and JICA's Policy and Operations in the Water Supply / Sewage and Sanitation Sectors in India

Taking into account the rapidly growing urban population, Japan and JICA have supported the supply of adequate and safe drinking water and the remediation of poor public sanitation conditions in order to improve living standards and to prevent water contamination in major rivers. Further, in rural areas, water infrastructure projects are supported as part of the development of basic infrastructure for improving the living environment of the poor. In Japanese ODA Loans, in the in the water supply / sewage and sanitation sector, 20 projects with loans totaling over 343.2 billion Yen have been approved. Further, as technical assistance and grants, policy advisors and other experts have been dispatched three times since 2004.

(4) Other Donors' Activities

The World Bank and ADB have provided assistance to the water supply / sewage sectors as part of their measures to reduce poverty in India. Focus areas are (a) assistance to states / cities that are proactive in making reforms, (b) promotion of competition in service improvements in water supply / sewage service among local governments, (c) rationalization of water tariff levels, (d) utilization of private sector resources and (e) consideration of poverty impacts. As of 2007, approved assistance of the World Bank totaled \$4,031 million and of the ADB \$543 million.

(5) Necessity of the Project

Guwahati, with a population of over 1 million (2006), is the main city in Assam state in the North-East of India, and is the biggest city in the North-Eastern states, and is developing rapidly around the oil and tea industries. However, only roughly 30% of the city has water supply, and this supply is only provided 2 ~ 3 hours/day. Additionally, through population influx from nearby regions, the population is expected to nearly double by 2025, which is expected to result in further supply-demand gap of water supply. Also, introduction of appropriate operation management methods such as improvements in the tariff structure and collection frameworks is imperative. Accordingly, it is essential to expand and construct water supply infrastructure to create a sustainable water supply that can meet the increasing demand, and to improve the living conditions of local residents. There is therefore a high level of necessity and relevance for JICA to support this project.

3. Project Description

(1) Project Objective(s)

The objective of this project is to provide safe and stable water supply service that

will meet the surging demands for water by expanding existing and constructing new water supply facilities in the South Central and North wards of Guwahati, Assam state; thereby contributing to improvement of the living conditions of local residents.

(2) Project Site / Target Area

South Central and North wards of Guwahati city

(3) Project Component(s)

1) Water supply facilities: Construction of water intake facilities / treatment plants / distribution reservoirs / transmission network and placement of water meters and SCADA, etc.

2) Consulting services:

- Construction implementation: Detailed design, tender support, construction monitoring and supervision, project oversight, support for implementation and monitoring, etc.

- Organization capacity development: Operation and maintenance management framework improvement, financial management improvement, personnel development framework improvement, support for individual house connections and support for PR activities related to the new tariff structure, etc.

(4) Estimated Project Cost (Loan Amount)

35,524 million yen (ODA loan amount: 29,453 million yen)

(5) Schedule

March 2009–January 2017 (94 months). The project completion is defined as completion of the consulting service.

(6) Project Implementation Structure

1) Borrower: The President of India

2) Executing Agency: Guwahati Metropolitan Development Authority

3) Operation and Maintenance System: Guwahati Jal Board (To be founded)

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

1) Environmental and Social Consideration

a) Category: A

b) Reasons for categorization: This project will take place in a region which is easily affected based on the “Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations” (established April 2002).

c) Environmental Permit: While not required under Indian law, the EIA for this project was done in October 2008. A provisional permit for construction of distribution reservoir and related facilities in reserved forests has been received

from the Indian Forest Department in charge, and a final permit is expected to be received in July 2009.

d) Anti-Pollution Measures: Water will be taken from surface water, so no ground subsidence is expected. Noise pollution will be considered during construction of the treatment plants and distribution reservoirs, etc.

e) Natural Environment: Reserved forest (0.9534ha) is included in the project area, but as degradation of the land is already in progress through use of the land including illegal squatting, a condition of the project permit is that replacement planting is performed. Further, the project will be implemented taking into consideration the surrounding environment.

f) Social Environment: This project requires land acquisition of 0.30ha and resident relocation of 6 households. These will be performed in accordance with Indian domestic procedures and Assam state resident relocation policies.

g) Other/Monitoring: In this project, the executing agency will monitor the condition of reserved forest and water quality, etc.

2) Promotion of Poverty Reduction: Assistance for urban poverty will mainly be laying of distribution pipes and establishment of individual house connections in order to improve water supply service to the poor in the slum areas. Further, Guwahati will consider the impact on poverty of the water tariff / new individual connection fees in the water tariff legislative bill that is expected to be passed in the future.

3) Promotion of Social Development (e.g. Gender Perspective, Measure for Infectious Diseases Including HIV/AIDS, Participatory Development, Consideration for Persons with Disabilities, etc.): Educational activities will be implemented in collaboration with local NGOs to improve water environment for slum residents and to promote individual house connections.

(8) Collaboration with Other Donors: The ADB is considering a water infrastructure support project in the South East ward of Guwahati. There is a possibility that the ADB may provide cooperation for assistance for capacity development of the Guwahati Jal Board, which will be responsible for the operation and maintenance of water infrastructure throughout Guwahati in the future. Further, in relation to capacity development of the executing agency, the Fukuoka City Waterworks Bureau has given advice regarding management reforms.

(9) Other Important Issues: In conjunction with the introduction of a usage-based tariff scheme and a new tariff collection system, local NGO will be hired to provide explanations to residents and provide an opportunity for exchange of opinions.

4. Targeted Outcomes

(1) Performance Indicators (Operation and Effect Indicator)

Indicator	Baseline (Actual Value in 2008)	Target (2019) [Expected value 2 years after completion]
Population served (1000 persons)	289	930
Percentage of population in target areas served	Roughly 30%	100%
Water supply (m3 / day)	44,900	186,000
Rate of Facility Utilization	South central: 57% North: 43%	South central: 81% North: 79%
Water quality (at the tap)	-	Less than or equal to contamination level 1 Less than or equal to color level 5
Water leakage ratio	South central: 38% North: 15%	South central: 10% North: 10%
Available water per capital per day (L)	South central: 135 North: 70 ~ 100	South central: 135 North: 135

(2) Internal Rate of Return

Based on the conditions indicated below, the project's Economic Internal Rate of Return (EIRR) is 16.5% in the South Central ward, and 9.1% in the North ward.

[EIRR]

Cost: Project cost (excluding tax), operation and maintenance expenses

Benefit: Increase in water charge payments through improved awareness, decrease in operation and maintenance expenses

Project life: 40 years

5. External Factors and Risk Control

Changes in the public security of Guwahati city.

6. Lessons Learned from Past Projects

From ex-post evaluations of existing water supply / sewage projects, it has been

learned that it is important to conduct a public relations and awareness raising campaign for the project targeting the residents in order to boost the projects effects. Accordingly, in this project, public relations and awareness raising campaigns explaining the new pricing scheme and payment scheme for the residents will be implemented.

Further, in light of the stressed importance of considering measures to improve management of water supply operations, in this project, it is agreed that the executing agency will take measures to reduce non-revenue water and to improve financial condition through the development of new water tariff system and collection systems. The executing agency will also take measures on personnel development. These will be implemented with the capacity development consulting service that will be provided to the future Guwahati Jal Board,

7. Plans for Future Evaluation

- (1) Indicators to be Used
 - 1) Population served (1000 persons)
 - 2) Percentage of population in target areas served
 - 3) Water supply (m³ / day)
 - 4) Rate of Facility Utilization
 - 5) Water quality (at the tap)
 - 6) Water leakage ratio
 - 7) Available water per capital per day (L)
 - 8) EIRR

- (2) Timing
2 years after project completion.

End