

Ex-ante Evaluation (for Japanese ODA Loan)

1. Name of the Project

Country: India

Project: Kerala Water Supply Project (III)

Loan Agreement: March 31, 2009

Loan Amount: 12,727 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 and for the Water Supply / Sewage and Sanitation Sectors in India / Kerala 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.

In Thiruvananthapuram, the state capital of Kerala, and in Kozhikode, water supply facilities have not been improved to meet the growing population resulting from urbanization, and there is a severe water supply shortage.

(3) Japan and JICA's Policy and Operations in the Water Supply / Sewerage 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 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' Activity

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. Note as of 2007, approved assistance of the World Bank totaled \$4,031 million and of the ADB \$543 million.

(5) Necessity of the Project

While the population coverage of water supply services has increased from 54% in 1996 to 65% in 2006, Kerala, with a population of over 32 million remains one of the states in India with the lowest percentage of water supply coverage along with the North-Eastern states, This project is the third phase of the Project, in continuation of Kerala Water Supply Project (1996) and Kerala Water Supply Project (II) (2006) .

In this project, water supply facilities will be constructed or rehabilitated in five areas with a total population of 3.4 million (2006), of which only 1.45 million currently has access to safe water supply. In particular in the Cherthala region, Meenad village and Pattuvam village, population coverage is extremely small, with less than 10%. In these three areas, although people are heavily relying on groundwater due to a lack of surface water supply, groundwater quality is rapidly deteriorating as sea water permeates the underground water, and therefore development of surface water resources is urgently required. There is also a severe water supply shortage in Thiruvananthapuram, the state capital of Kerala, and in Kozhikode. In these two areas, the percentage of non-revenue water including leaked water is over 30%, which is extremely high. Accordingly, there is a high level of necessity and relevance for JICA to support this project to provide safe and stable water supply service by constructing new and rehabilitating water supply facilities and improving operation efficiency of the executing agency.

3. Project Description

(1) Project Objective(s)

The objective of this project is to provide safe and stable water supply service to meet the growing demand for water by installing water supply facilities in the state of Kerala in southern India; thereby contributing to improving living conditions of the local residents.

(2) Project Site / Target Area

Thiruvananthapuram, Kozhikode, Cherthala, Meenad, Pattuvam, and the surrounding areas.

(3) Project Component(s)

1) Water supply facilities: Construction of water intake facilities / conducting tubes / treatment plants / water mains / distribution reservoirs / distribution pipes and rehabilitation of existing facilities

2) Consulting services: Detailed design, tendering assistance supervision, project oversight, etc.

3) Institutional strengthening of the executing agency: IT system development, equipment procurement, training, etc.

(4) Estimated Project Costs (Loan Amount)

75,150 million yen (ODA loan amount: 12,727 million yen)

(5) Schedule

August 1997 – December 2010 (160 months). The project completion is defined as completion of the construction and consulting service.

(6) Project Implementation Structure

1) Borrower: The President of India

2) Executing Agency: Kerala Water Authority (KWA)

3) Operation and Maintenance System: Same as 2) above.

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

1) Environmental and Social Consideration

a) Category: Does not apply

b) Reasons for categorization: For this project, the "OECD Guidelines for Environmental Considerations" (first edition) are applied. (Furthermore, this project is classified as Category B under the "Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations" (established April 2002) because it was determined that the project will not have any significant undesirable impact on the environment given that the characteristics of the sector is not likely to exert impact, and the characteristics of the region make it unsusceptible to impact.)

c) Environmental Permit: The EIA report is not required for the project in the country's

legal system.

d) **Anti-Pollution Measures:** No ground subsidence is foreseen due to intake of surface water from rivers in each area. The sludge generated at the water treatment plant will be processed at sludge treatment facilities to be constructed inside the water treatment plant sites.

e) **Natural Environment:** The project site is not located in and around any sensitive areas such as national parks, and it is likely to have a minimal adverse impact on the natural environment.

f) **Social Environment:** Land acquisition of 76.38 ha has been completed as of November 2008, and the remaining 0.75 ha is proceeding in accordance with the country's domestic procedures. The resident relocation of 8 households in Kozhikode and 5 households in Cherthala has been completed in accordance with the country's domestic procedures.

g) **Other/Monitoring:** KWA will monitor water quality, etc.

2) **Promotion of Poverty Reduction:** Improvement in living standards in poor regions.

3) **Promotion of Social Development (e.g. Gender Perspective, Measure for Infectious Diseases Including HIV/AIDS, Participatory Development, Consideration for Persons with Disabilities, etc.):** None.

(8) **Collaboration with Other Donors:** None.

(9) **Other Important Issues:** None.

4. Targeted Outcomes

(1) Performance Indicators (Operation and Effect Indicator)

Indicator	Baseline (Actual value in 2006)		Target (2012) [Expected value 2 years after completion]	
	Thiruvananthapuram and the surrounding area	Kozhikode and the surrounding area	Thiruvananthapuram and the surrounding area	Kozhikode and the surrounding area
Total population served (thousand persons)	698	560	845	1,011
Amount of water supply (m3/day)	190,000	72,000	264,000	246,000
Rate of facility utilization (%)	-	-	95	95
Non-revenue water rate (%)	37	30	29	25
Percentage of population served (%)	77	52	90	90

Indicator	Baseline (Actual value in 2006)	Target (2012)
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			[Expected value 2 years after completion]	
	Cherthala and the surrounding area	Meenad and the surrounding area	Cherthala and the surrounding area	Meenad and the surrounding area
Total population served (thousand persons)	54	70	559	453
Amount of water supply (m ³ /day)	7,000	13,000	111,000	73,000
Rate of facility utilization (%)	-	-	85	85
Non-revenue water rate (%)	-	-	19	19
Percentage of population served (%)	10	16	100	100

Indicator	Baseline (Actual value in 2006)	Target (2012) [Expected value 2 years after completion]
	Pattuvam and the surrounding area	Pattuvam and the surrounding area
Total population served (thousand persons)	69	405
Amount of water supply (m ³ /day)	9,000	93,000
Rate of facility utilization (%)	-	85
Non-revenue water rate (%)	-	19
Percentage of population served (%)	16	90

(2) Internal Rate of Return

Based on the conditions indicated below, the project's Economic Internal Rate of Return (EIRR) is 8.7%.

[EIRR]

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

Benefit: Increase in willingness to pay for water tariff

Project life: 40 years

5. External Factors and Risk Control

None

6. Lessons Learned from Past Projects

From ex-post evaluations of previous projects, it has been learned that that it is necessary to study measures to strengthen management of the water services from the project formation and appraisal stage. In this project, it is decided to take measures

including those for reduction of non-revenue water rate, improvement of financial condition, reinforcement of public relations and improvement of information system etc.

Additionally, from previous water supply services, it has been learned that it is important to use water tariff received from users for investment in the water supply services, and this can be done by establishing a public company or introducing self-sustained system. In this project, received water tariffs will become income of the Water Authority, and be used for water supply operations, so as to function as incentives to improve the cost recovery of the executing agency.

7. Plans for Future Evaluation

- (1) Indicators to be Used
 - 1) Total population served (thousand persons)
 - 2) Amount of water supply (m/day)
 - 3) Rate of facility utilization (%)
 - 4) Non-revenue water rate (%)
 - 5) Percentage of population served (%)
 - 6) Internal rate of return: EIRR (%)
- (2) Timing
 - 2 years after project completion.

End