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33 Yamuna Action Plan Project

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This project's objective was to reduce pollution load in the Yamuna River by providing sewers and public toilets, and implementing educational activities regarding environment and hygiene in 15 cities in the 3 states situated in the Yamuna River Basin, and thereby contribute to the improvement of water quality conservation in the river and to the hygiene environment in the cities in the river basin.

Loan Amount/Disbursed Amount: 17,773 million yen/15,084 million yen

Loan Agreement: December 1992

Terms and Conditions: Interest rate 2.6%; Repayment period, 30 years (grace period 10, years); General untied (consultant component: partially untied)

Final Disbursement Date: February 2003

Executing Agency: National River Conservation Directorate (NRCD), Ministry of Environment and Forests



External Evaluator: Chiaki Nakamura (Global Link Management, Ltd.)

Field Survey: September 2004

Evaluation Result

In this project, the installation of sewers and public toilets, and the educational activities concerning environment and hygiene were implemented almost as planned. The project period exceeded the plan significantly due to delays in the construction of the sewage treatment plants and in the educational activities. The project cost was lower than planned.

The total processing capacity is high, with a facility usage ratio of 89%, or approximately 730,000 m³/day at the sewage treatment plants providing service to 6 cities in the state of Haryana, 1 city in the state of Delhi, and 8 cities in the state of Uttar Pradesh (UP). The estimated number of beneficiaries in the 15 cities is 5.6 million persons, which is nearly equivalent to the population of Fukuoka Prefecture, Japan. The monthly number of users of public toilets is approximately 270,000 persons in Haryana and 550,000 persons in UP. 75% of the participants replied that the educational activities "were useful" in the beneficiary survey on the changes in residents' awareness that resulted from the educational activities.

However, the water quality in the Yamuna River overall is not necessarily being maintained, as the level of biological oxygen

demand (BOD) has deteriorated in the upper, middle, and lower reaches of the river. One of the factors is the increase in the load of pollution resulting from the population growth accompanying India's economic development. In the future, further study on countermeasures for this is necessary.

Operation and maintenance is conducted by the Ministry of Environment and Forests and each local government, with a portion consigned to NGOs. There are no problems in the technical capacity or the financial status, aside from some of the public toilets where a review of the NGO's maintenance system is being conducted.

Third-Party Evaluator's Opinion

This project has been implemented by local agencies in unison with national policy. It is desirable to shift the operation and maintenance entirely to the local agencies and to improve profitability for the project sustainability.

Third-Party Evaluator: Mr. Baby Kurian Veettal (NGO)

Obtained a doctoral degree in economics from the University of Kerala. Currently active as senior advisor to the Socio-Economic Unit Foundation. Former Revenue Divisional Officer and Sub-Divisional Magistrate, Government of Kerala, specializing in economics, community development, and organizational strengthening.

Implementation of Impact Study and Feedback

Professor Yoshitaro Fuwa of the Graduate School of Environmental Management at Hosei University carried out an impact study on improvement of the living condition of local residents by public toilets installation and on the operation and maintenance conditions of the public toilets.

Living condition and sanitation environment improvement by public rest room installations were confirmed for local residents, rickshaw drivers, and day laborers. Besides, needs for continued awareness activities concerning health, safe water, and prevention of outdoor defecation and promotion of public toilets for women and children were confirmed.

Based on these results, in the feedback seminar provided to the executing agency in August 2005, there was discussion concerning the importance of continued improvement and awareness activities. Furthermore, JBIC conducted various studies for the purpose of improving of project effectiveness, including investigation of possibilities of provision of services at the city level, which is familiar with the residents, and organizational strengthening by improving the financial condition of local government (city of Agra in UP) through improving the collection rate of property taxes.



Costume party held as part of the educational activities



Public toilets where operation and maintenance is conducted