

Ex-ante Evaluation

1. Name of the Project

Country: People's Republic of China

Project: Heilongjiang Province Harbin City Water Environment Improvement Project,
(Loan Agreement: June 23, 2006; Loan Amount: 7,398 million yen; Borrower: The Government of the People's Republic of China)

2. Necessity and Relevance of JBIC's Assistance

This project will take place in Harbin City, the provincial capital of Heilongjiang Province. Harbin has a population of approximately 9.5 million people (roughly equivalent to 80% of the population of Tokyo), and a surface area of 53,000 km² (70% of that of Hokkaido). With a population of roughly 3.94 million (equivalent to that of Shizuoka Prefecture) and a surface area of 4,200 km² (equivalent to that of Yamanashi Prefecture), the town district straddles both banks of the mid-stream portion of the Songhua River, China's seventh largest river. In Harbin's urban district, thanks to the rapid pace of industrialization and urbanization, as well as the rapid increase in population in recent years, the volume of industrial waste water and domestic sewage has likewise risen. As only 60% of water is treated, large quantities of polluted water flow untreated directly into the Songhua river. As a result, the water in Songhua river areas downstream of Harbin as well as in tributaries within the city limits has become of such poor quality that it does not satisfy the requirement of being suitable for use as a water resource for drinking water, as stipulated in China's national water quality environmental standards. Moreover, even if one looks at the entire Songhua river, it is one of the most polluted rivers in all of China; according to a water quality study conducted in FY2004, in only 20% of all the observation points was the water clean enough to serve as a water resource for drinking water.

Under these circumstances, when the Chinese government enacted its The Tenth Five Year Plan for Environmental Protection, it established a goal of having 70% of polluted water in major cities treated. In the wake of this, the Harbin City government adopted the The Tenth Five Year Plan for Environmental Protection and Perspective Plan for 2010 in Harbin City (encompassing the years 2001-2010). These plans contained directives to strive to improve the water environment. Specifically, they established as their target a sewage treatment rate of 90% within the urban district by 2010, and further stipulated that the Songhua River's water quality be maintained to such a level that it would be suitable for use as a source of drinking water.

In order to attain these objectives, in March 2004 Harbin City adopted a master plan for the provision of sewerage facilities by the year 2020. As part of that master plan, the present project is positioned as a project of great importance and high priority.

The Japanese government announced the Economic Cooperation Program for China in October 2001, and set out a policy placing more emphasis on areas such as conservation of environments and eco-systems, improvement of living standards and social development in the inland regions, human

resources development, institution building, and technology transfer. Moreover, the reduction of water pollution/pollution control and the development of human resources are also established as priority areas in JBIC's Medium-Term Strategy for Overseas Economic Cooperation Operations. Thus, JBIC's assistance for this project is highly necessary and relevant.

3. Project Objectives

This project aims to improve the sewerage treatment capacity in Harbin City, Heilongjiang Province, by providing sewerage facilities in that city. In so doing, the projects hopes to help improve the living environment of the local residents by reducing the pollution load in the river running through the city.

4. Project Description

(1) Target Area

Harbin City, Heilongjiang Province

(2) Project Outline

The provision of machinery and materials for, and the construction of, sewerage facilities in Harbin City of Heilongjiang Province, together with training for people to oversee the work.

(a) Develop sewage pipe system

(b) Construct a new sewage treatment plant

(c) Provide training

(3) Total Project Cost/Loan Amount

14,893 million yen/7,398 million yen

(4) Schedule

July 2006-April 2011 (58 months).

(5) Implementation Structure

(a) Borrower: The Government of the People's Republic of China

(b) Executing Agency: Harbin Municipal People's Government

(c) Operation and Maintenance System: Harbin Inland River Construction and Development Co., Ltd

(6) Environmental and Social Consideration

(a) Environmental Effects/Land Acquisition and Resident Relocation

(i) Category: B

(ii) Reason for Categorization

This project does not correspond to sensitive sectors, characteristics, or areas sensitive to impact as stipulated in the "Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations" (established April 2002) or the surroundings of such areas, and as such is not judged to have serious undesirable environmental impacts. For this reason, the project is classified as Category B.

(iii) Environmental Permit

The Environmental Impact Assessment (EIA) for this project was approved by the Helongjiang Province Environment Protection Bureau in November 2002.

(iv) Anti-Pollution Measures

Final effluent leaving sewerage facilities will be treated to meet Chinese domestic water emissions standards before being discharged into the river, where it is not foreseen to have any particular impacts. Also, sludge created at sewage treatment plants is planned to be appropriately disposed of at existing landfill disposal sites.

(v) Natural Environment

The project target area does not correspond to an area sensitive to impact or the surroundings of such areas, such as a national park. Undesirable impacts on the natural environment are assumed to be minimal.

(vi) Social Environment

Because the rights of use of the land reserved for this project belong to the Harbin Municipal People's Government, there is no need to acquire land or relocate residents.

(vii) Others/Monitoring

The Harbin City Environmental Protection Bureau will monitor the quality of drainage water for the project.

(b) Promotion of Poverty Reduction

None.

(c) Promotion of Social Development (e.g. Gender Perspective)

None.

(7) Other Important Issues

None.

5. Outcome Targets

(1) Evaluation Indicators (Operation and Effect Indicator)

Indicator	Baseline (2004)	Target (2010, 1 year after completion of project)
Population served with sewage treatment (10,000 people)	260	317
Sewage treatment volume (10,000t/day)	65	90
Percentage of sewage treated (%)	60	67
Final effluent water quality (BOD) (mg/l)	200	20

(2) Financial Internal Rate of Return (FIRR): 5.7%

(a) Cost: Project costs, operation and maintenance cost

(b) Benefit: Revenue from fees

(c) Project life: 30 years

6. External Risk Factors

- (1) Current city planning may change planned areas for roads or other developments, causing construction site changes and delays.
- (2) Change in the policy of principle of fee burden could cause a shortage of fiscal funds or fees collected. This in turn could affect operation and maintenance.

7. Lessons Learned from Findings of Similar Projects Undertaken in the Past

From past ex-post evaluations of yen loan projects, the lesson has been learned that to ensure sustainability of project results, it is important to set an appropriate fee system, considering operation and maintenance costs, investment cost, ability of beneficiary residents to pay, and the capacity for fiscal burden. It is also important to formulate technical standards for maintenance frequency, such as of operation and maintenance, and evaluation of the necessity for facility renewal. Thus, bearing this in mind, the project will confirm through interim supervision and other means that a system will be created to establish an appropriate fee system and formulate technical standards.

8. Plans for Future Evaluation**(1) Indicators for Future Evaluation**

- (a) Population served with sewage treatment services (10,000 people)
- (b) Volume of sewage treated (10,000m³/day)
- (c) Percentage of sewage treated (%)
- (d) Final effluent water quality (BOD) (mg/l)
- (e) FIRR (%)

(2) Timing of Next Evaluation

After completion of project