

Ex-ante Evaluation

1. Name of the Project

Country: The Socialist Republic of Vietnam

Project: Second Hanoi Drainage Project for Environmental Improvement (I)

(Loan Agreement: March 31, 2006; Loan Amount: 3,044 million yen; Borrower: The Government of the Socialist Republic of Vietnam)

2. Necessity and Relevance of JBIC's Assistance

Hanoi is situated approximately 100 km from the estuary of the Red River delta. The average monthly rainfall during the typhoon season from May to September is approximately 250 mm (cf. monthly average rainfall in Tokyo of approx. 125 mm). Flooding is frequent particularly in the low-lying areas along the Red River because of the limited capacity of the river and rainwater drainage facilities and the fact that some areas have no drainage facilities. Therefore, installation and improvement of drainage systems is an urgent matter. Moreover, sewage treatment plants have not been constructed even though the amount of industrial effluent and household wastewater has increased sharply in recent years accompanying rapid industrialization and urbanization. In many cases, polluted water generated in the city is discharged untreated into the river. As a result, pollution of closed bodies of water, such as canals, lakes, and marshes, has become critical. Much of the sewage pipe system has not been improved since the French colonial period, and expansion is required to accommodate the advancement of urbanization. Furthermore, the pollution in the river water flowing through Hanoi is so serious that residents in the city and neighboring provinces are demanding a reduction in the pollution discharged from the city.

In 1999, the Vietnam government adopted the "Orientation on Urban Drainage and Sewerage Development up to 2020." Its stated goals are to pursue urban flood control and sanitary treatment of wastewater, together with increasing the installation rate of drainage systems to 80% or more in major urban areas such as Hanoi and Ho Chi Minh City, and moreover to develop a mechanism for the procurement of the necessary funds to install urban drainage systems nationwide.

In JBIC's current Medium-Term Strategy for Overseas Economic Cooperation Operations, "assistance for resolution of global problems and peace-building" is positioned as a priority area, and assistance is to be provided for measures for water pollution. In JBIC's country strategy for Vietnam, assistance for environmental measures is a priority area.

Therefore, JBIC's assistance is highly necessary and relevant.

3. Project Objectives

The objective of this project is to develop drainage and sewerage systems in Hanoi City in order to decrease flood damage, improve water quality and thereby contribute to improve urban sanitation and living environment.

4. Project Description

(1) Target Area

To Lich River basin, Hanoi

(2) Project Outline

Civil works and services that are necessary for the implementation of the project in the city of Hanoi will be provided as follows.

- (a) Installation of drainage system
- (b) Installation of sewerage system
- (c) Consulting services (detailed design, tendering assistance, construction supervision, preparation of the F/S for the large-scale sewerage treatment plant)

(3) Total Project Cost/Loan Amount

33,441 million yen (Yen Loan Amount: 3,044 million yen)

(4) Schedule

October 2006-December 2012 (75 months)

(5) Implementation Structure

- (a) Borrower: The Government of the Socialist Republic of Vietnam
- (b) Executing Agency: Hanoi People's Committee
- (c) Operation and Maintenance System: Hanoi Sewerage and Drainage Company, Operation and Maintenance Unit for Thong Nhat Park Wastewater Treatment Plant, and Hanoi Transportation Works Company No. 3

(6) Environmental and Social Consideration

(a) Environmental Effects/Land Acquisition and Resident Relocation

(i) Category: B

(ii) Reason for Categorization

This project is classified as Category B because it is not in a sector nor does it have characteristics likely to exert impact, nor is it in a sensitive region, and so no significant adverse impact on the environment is considered likely, under the "Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations" (established April 2002).

(iii) Environmental Permit

The EIA report was approved in November 2005 by the Hanoi Department of Natural Resources and Environment. Permits have been obtained for landfill sites for dredged soil and sewer sludge.

(iv) Anti-Pollution Measures

Water discharged from the sewerage treatment plant is expected to meet the national water discharge standards. Dredged soil and sewer sludge will be buried, but in the event that the amount of toxic substances contained exceeds the national standards, the substances will be processed appropriately at a controlled landfill. For air pollution and noise pollution during

construction, mitigation measures including usage of appropriate materials, water sprinkling, and consideration of construction hours are planned.

(v) Natural Environment

The project site is not located in or around national parks, nationally designated protected areas, or rare species' habitats, so no significant adverse impact is foreseen.

(vi) Social Environment

The project is expected to require land acquisition (approximately 53 ha) and the resettlement of approximately 40 households. The compensation plan and the resettlement plan which were prepared by the executing agencies are scheduled to be implemented appropriately. The compensation plan and the resettlement plan were prepared in consultation with the affected households, and their basic agreement with the contents has been received.

(vii) Others/ Monitoring

The executing agency will conduct monitoring of the air quality, noise, and water quality as well as monitoring of the resident relocation and land acquisition, etc., during construction and operation stages.

(b) Promotion of Poverty Reduction

There are plans to hold workshops in collaboration with NGOs and local government in an effort to promote activities for environmental education and environmental awareness that will improve the living conditions particularly of the poor living within the project area.

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

Because this is a large-scale infrastructure project in a country where there is concern over spreading HIV/AIDS infection, the executing agency plans to implement measures against HIV/AIDS for the construction workers in cooperation with the contractors and the HIV/AIDS countermeasures section of the Hanoi People's Committee Health Department, and this will be stipulated in the bidding documents.

(7) Other Important Issues

None

5. Outcome Targets

(1) Evaluation Indicators (Operation and Effect Indicator)

Indicator	Baseline (2005)	Target (2012, at time of completion)
Population for which wastewater is treated (persons)	0	41,200
Wastewater treatment volume (m ³ /day)	0	10,605
BOD concentration at sewage treatment plant (intake, discharge, and removal rate)	-	Intake: 200 mg/l Discharge: 20 mg/l Removal rate: 90%
Runoff capacity at flood reference point (m ³ /sec.)	45	90

Inundated area due to rainfall (km ²) (1/10-year flood)	13.2	0
Number of houses inundated due to rainfall (houses)	- 1,000	0

(2) Internal Rate of Return

Economic internal rate of return (EIRR): 7.7%

- (a) Cost: Project cost (excluding tax), and operation and maintenance cost
- (b) Benefit: Reduction of flood damage, income from wastewater treatment charges
- (c) Project Life: 40 years

6. External Risk Factors

Occurrence of floods exceeding the planned scale (of 10-year floods)

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

In ex-post evaluations of similar projects in the drainage, sewerage, and sanitation sector in the past, recognition is given to the effectiveness of Japanese local governments' collaboration in securing sustained effects from projects following their completion of construction. Based on this, the project will actively incorporate assistance from local governments in promoting awareness and behavioral change among local residents with regard to the environment.

8. Plans for Future Evaluation

(1) Indicators for Future Evaluation

- (a) Population for which wastewater is treated (persons)
- (b) Wastewater treatment volume (m³/day)
- (c) BOD concentration at sewage treatment plant (intake, discharge, and removal rate)
- (d) Runoff capacity at flood reference point (m³/sec.)
- (e) Inundated area due to rainfall (km²) (1/10-year flood)
- (f) Number of houses inundated due to rainfall (houses)
- (g) Economic internal rate of return (EIRR) (%)

(2) Timing of Next Evaluation

After project completion