

Ex-ante Evaluation

1. Name of the Project

Country: The Socialist Republic of Vietnam

Project: Second Ho Chi Minh City Water Environment Improvement Project (II)

(Loan Agreement: March 31, 2008; Loan Amount: 13,169 million yen; Borrower: The Government of the Socialist Republic of Vietnam)

2. Necessity and Relevance of JBIC's Assistance

(1) The actual state of the water environment sector in Vietnam and the problems it faces

Accompanying the industrialization and concentration of population into the cities, the urban areas of Vietnam have witnessed a surge in industrial wastewater and domestic sewage. However, the development of sewerage systems is not progressing, and polluted water is being discharged directly into rivers, causing serious pollution to the water environment. The water contamination is being triggered by a combination of factors including the fact that (i) waste products are being dumped in rivers, lakes, etc., (ii) leachate from waste landfill sites is left untreated, and (iii) nearly all industrial and domestic wastewater is discharged without first being treated. Such deterioration of the water environment is especially pronounced in Ho Chi Minh City, Vietnam's largest city.

Ho Chi Minh City is surrounded by the marshland of the Saigon River's downstream basin, and within the city is a complex network of canals and rivers (the Saigon River, the Dong Nai River, and the Nha Be River) that are affected by tide levels. In addition, the city is at a low height barely above sea level (majority of the city is only 2–3 m above sea level), and has high rainfall. This results in terrain that is easily damaged by flooding caused by rain or changes in tide levels. From October to January, when the tide levels are high, the high tide levels raise the water levels of rivers and canals to the ground elevation or higher, while the average monthly rainfall during the monsoon season (May to November) reaches 250 mm or higher (the average monthly rainfall in Tokyo is about 125 mm), resulting in flood damage triggered by poor drainage.

(2) Water environment sector policy in Vietnam

In its Guidelines for Urban Drainage and Sewerage System Development Effective to Year 2020 adopted in 1999, the government of Vietnam set a goal of increasing the coverage rate of drainage systems in principal cities such as Hanoi and Ho Chi Minh and industrial areas to 80% or higher. The government also adopted goals of controlling urban floods and promoting the hygienic treatment of sewage, as well as developing a fund-raising system for improving the drainage system in all urban areas of Vietnam.

(3) Consistency with JBIC's assistance policy

In its "global issues and peace building" as part of its Medium-Term Strategy for Overseas Economic Cooperation Operations (FY2005–2007), JBIC attaches importance to supporting "water pollution measures" as one of its priority areas. Since this project aims to improve the sewerage and drainage systems in Ho Chi Minh City, it is consistent with JBIC's assistance policy. Thus it is highly necessary and relevant that JBIC should support the project.

3. Project Objectives

This project aims to reduce flood damage and enhance sewage treatment capacity by improving the sewerage and drainage systems in Ho Chi Minh City, and thereby contribute to the improvement of the city's urban and living hygiene environment.

4. Project Description

(1) Target Area

Tau Hu and Ben Nghe Canal basin, Ho Chi Minh City

(2) Project Outline

- (a) Expansion of sewage treatment plants (treatment capacity: 328,000 m³/day [expanded portion], final capacity: 469,000 m³/day), expansion of wastewater relay pump stations, laying and improvement of sewage and drainage pipes
- (b) Construction and expansion of pumping stations, improvement of drainage canals
- (c) Consulting services (construction management)

(3) Total Project Cost / Loan Amount

84,185 million yen (Yen Loan Amount: 73,177 million yen; Phase II Loan Amount [this time around]: 13,169 million yen)

(4) Schedule

December 2007–October 2014 (83 months). Project completion is defined as when the facilities improved by the project begin to be used.

(5) Implementation Structure

- (a) Borrower: The Government of the Socialist Republic of Vietnam
- (b) Executing Agency: People's Committee of Ho Chi Minh City
- (c) Operation and Maintenance System: Urban Transportation Management Department (UTMD1)

(6) Environmental and Social Consideration

(a) Environmental Effects / Land Acquisition and Resident Relocation

(i) Category: A

(ii) Reason for Categorization

This project is likely to have significant adverse impact on the environment under the "Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations" (established in April 2002). Thus this project is classified as Category A.

(iii) Environmental Permit

The Environmental Impact Assessment (EIA) report concerning this project was approved by Ho Chi Minh City Department of Natural Resources and Environment (DONRE) in October 2005 and December 2005.

(iv) Anti-Pollution Measures

Sewage that flows into sewage treatment plants will be discharged into rivers after it is treated in a manner that meets the water emission standards of Vietnam. Thus the discharge is not expected to have any adverse impact on the environment. Additionally, polluted sludge originating out of sewage treatment plants will be treated appropriated at existing landfill sites.

(v) Natural Environment

The area targeted by this project is not located in or around sensitive areas, such as national parks, and so adverse impact on the natural environment is assumed to be minimal.

(vi) Social Environment

The project will involve the acquisition of approximately 2 ha of land and resident relocation of 211 households, which will be carried out by the Relocation Compensation Committee of Ho Chi Minh City in accordance with the relocation plan and the domestic procedures of Vietnam. In a conference held in September 2007 where the local residents were briefed about the project, it was concluded that there was no particular opposition to the implementation of the project.

(vii) Other/Monitoring

In this project, PMU will monitor, among other things, air quality, water quality and noise, as well as resident relocation during construction, while UTMD1 will monitor the same when the improved facilities are in use.

(b) Promotion of Poverty Reduction

As part of the consulting services offered in the project, an action plan will be worked out to reduce poverty and improve the hygiene environment in the target area. JBIC has already agreed with PMU to consider implementing such action plan within the framework of the next phase loan.

(c) Promotion of Social Development (e.g. Gender Perspective, Measure for Infectious Diseases Including AIDS, Participatory Development, Consideration for the Handicapped, etc.)

PMU will implement HIV/AIDS measures for construction workers in cooperation with the HIV/AIDS Countermeasure Section of Ho Chi Minh City Department of Health. In addition, an agreement has already been reached with PMU that (i) a HIV/AIDS clause will be included in the bidding document and the contractor will be asked to cooperate in the implementation of the HIV/AIDS measures, and (ii) the execution of the program will be monitored by the HIV/AIDS Countermeasure Section of Ho Chi Minh City Department of Health. Moreover, in this project, education in hygiene and the environment will be administered to raise local residents' awareness of the importance of preserving the water environment.

(7) Other Important Issues

None

5. Outcome Targets

(1) Evaluation Indicators (Operation and Effect Indicator)

Indicator	Baseline (2007 actual)	Target (2014, at completion)
Population treated (persons)	0	1,422,000
Amount of wastewater treated (m ³ /day)	0	469,000
BOD concentration in sewage treatment plants (inflow, water release, disposal rate)	–	Inflow: 200 mg/l Water release: 50 mg/l Disposal rate: 75%
Discharge capacity (m ³ /s)	52	73
Area inundated by 2-year probable rainfall (km ²)	12	0
Annual maximum inundated depth caused by 10-year rainfall (m)	1.68	1.44

(2) Number of Beneficiaries

Approx. 1.8 million (population of the area targeted by the project)

(3) Internal Rate of Return (Economic Internal Rate of Return)

Based on the conditions indicated below, the economic internal rate of return (EIRR) is 5.3%

[EIRR]

- (a) Cost: Project cost (excluding tax), operation and maintenance expenses
- (b) Benefit: Reduction in the amount of flood damage
- (c) Project Life: 40 years

6. External Risk Factors

None

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

From the ex-post evaluation of similar projects in water supply and sewerage and health sectors in the past, it has been learned that, regarding the assurance of a project's sustained effectiveness after completion, the effectiveness of cooperation at the local government level of Japan should be recognized. Another lesson learned is that to realize the effectiveness of a project, it is useful to secure the participation of local residents by conducting awareness raising activities concerning the environment and hygiene from early stages of the project. Additionally, from the perspective of securing sustainability after project completion, the lesson learned is that strengthening of operation and maintenance is indispensable on fiscal, technical and personnel fronts, and therefore implementing consulting services for staff education and training and consigning private companies should be considered as and when necessary. A further lesson learned is that, on the fiscal front, it is important to support efforts to make improvements on the institutional front including establishing an appropriate fee structure and putting in place a lending mechanism for those too poor to pay the cost of connecting their homes to sewerage systems. On the basis of these lessons, in this project, as part of its consulting services, an action plan is being drawn for reducing poverty and improving the

hygiene environment, and at present, under a survey being conducted with JBIC's assistance, support is being provided for selecting organizations to take charge of operation and maintenance, preparing an operation and maintenance agreement, and setting the sewerage charge in Ho Chi Minh City. Furthermore, with regard to the operation and maintenance of the sewage treatment plants and relay pumping stations under construction in the phase I project prior to the execution of this project, capacity building through OJT training by contractors is scheduled for staff members of the organization in charge of operation and maintenance in the sewage sector of Ho Chi Minh City.

8. Plans for Future Evaluation

(1) Indicators for Future Evaluation

- (a) Population treated (persons)
- (b) Amount of wastewater treated (m³/day)
- (c) BOD concentration in sewage treatment plants (inflow, water release, disposal rate)
- (d) Discharge capacity (m³/s)
- (e) Area inundated by 2-year probable rainfall (km²)
- (f) Annual maximum inundated depth caused by 10-year rainfall (m)
- (g) Economic rate of return (EIRR) (%)

(2) Timing of Next Evaluation

At project completion