

## **Ex-Ante Evaluation**

### **1. Name of the Project**

Country: Socialist Republic of Vietnam

Project: Ho Chi Minh City Water Environment Improvement Project (III)

Loan Agreement: May 27, 2010

Loan Amount: 4,327 million yen

Borrower: The Government of the Socialist Republic of Vietnam

### **2. Background and Necessity of the Project**

#### **(1) Current State and Issues of the Water Supply and Sewerage Sector in Vietnam**

Ho Chi Minh City, the largest city in Vietnam (with a population of about six million people), has developed as the center of commerce and industry in Vietnam. It experiences the rapid increase in population, inflow of people and the expansion of the city. The Saigon River, the Dong Nai River, and the Nha Be River flow through Ho Chi Minh City and create a complex network of canals and sewers that are affected by tide levels. The city's wastewater system had been developed since the 1870s by French. Subsequently the system was expanded and improved with assistance from U.S.A. However, the facilities have the capacity to meet the needs of only approximately 1.5 million people and, moreover, have markedly deteriorated, thereby causing a serious shortage of wastewater treatment capacity. At the same time, in the city's wastewater system treatment facilities have not been adequately developed, which creates a situation in which collected wastewater is commonly discharged into water canals and drainage canals without being treated. Thus, the city's water canals and drainage canals are extremely contaminated. The urban environment has been marred and, what is worse, there is concern about negative impact on the health of residents by waterborne diseases. Hence, it is an urgent issue to improve water quality and alleviate flood damage by developing wastewater and drainage systems.

#### **(2) Development Policies for the Water Supply and Sewerage Sector in Vietnam and the Priority of the Project**

The Vietnamese government's Ten-Year National Environment Protection Strategy (2003) and Five-Year Social and Economic Development Strategy (2006-2010) have established numerical objectives in environmental improvements; to develop a centralized wastewater system in 40% of urban districts and 70% of export processing zones by 2010 and to provide connection to the centralized wastewater system in 100% of urban districts, industrial areas and export processing zones by 2020. This project is

consistent with these objectives.

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

The Japan's Country Assistance Program for Vietnam (July 2009) states that priority will be given to assistance for "urban environmental management" within the frame of "environment conservation" which is one of the four main pillars of assistance. This project is consistent with the Program. Moreover, in concert with this Program, JICA has set its policy to address the issue of urban environmental management from both "hard (physical)" and "soft (technical)" aspects as part of "environment conservation" that is one of the four aid priority areas listed in the JICA Country Program (April 2009). This project constitutes a part of the Urban Water Environment Management Program. The initial loan was agreed in fiscal 2000 and 2002.

(4) Other Donors' Activities

The World Bank, the Asian Development Bank, Belgium and Denmark have been implementing their own projects in the areas of urban environmental improvements and wastewater treatment.

(5) Necessity of the Project

This project is consistent with Japan and JICA's aid priorities, and the necessity and validity of this project are very high.

### **3. Project Description**

(1) Project objectives:

This project aims for reducing flood damage and improving the water quality of canals by developing wastewater systems and enhancing wastewater treatment capacity, thereby contributing to improvements in the living environment of regional residents including public sanitation environment.

(2) Project Site/Target Area: Ho Chi Minh City in the Socialist Republic of Vietnam

(3) Project Components: The project consists of the rehabilitation and expansion of wastewater networks in the central part of Ho Chi Minh City, the construction of intercepting sewers and a wastewater relay pumping station, conduits and a treatment plant, the improvement of Tau Hu and Ben Nghe Canal, and the construction of wastewater pumping facilities in two flood-prone districts (Thanh Da and Ben Me Coc).

1) Civil engineering work and material procurement: (Improvement of Tau Hu and Ben Nghe Canal, development of wastewater pumping facilities in two flood-prone districts (Thanh Da and Ben Me Coc), rehabilitation and expansion of wastewater networks in the central part of the city, and construction of intercepting sewers, a wastewater relay pump station, conduits, and a wastewater treatment plant)

- 2) Consulting services (Detailed design review, bidding support and construction supervision, etc.)
- (4) Estimated Project Cost: ¥40,123 million (including a loan amount of ¥4,327 million)
- (5) Schedule: March 2001 ~ August 2013 (150 months in total): the project shall be completed when the facility begins its operation (August 2011).
- (6) Project Implementation Structure
  - 1) Borrower: The Government of the Socialist Republic of Vietnam
  - 2) Executing Agency: People's Committee of Ho Chi Minh City, Northern Airports Corporation
  - 3) Operation and Maintenance System: Same as the above
- (7) Environmental and Social Considerations/Poverty Reduction/Social Development
  - 1) Environmental and Social Considerations
    - a) Category: Type B (Category A)
    - b) Reason for Categorization:

This project corresponds to the wastewater sector listed in the JBIC Guidelines for Environmental Considerations in ODA Loans (established in October 1999). Thus, Type B is applied. {This project corresponds to the sewage/wastewater treatment sector under the JBIC Guidelines for Confirmation of Environmental and Social Considerations (formulated in April 2002) and carries a sensitive feature. Hence, this project is classified as Category A.}
    - c) Environmental Permit:

The Ministry of Science, Technology and Environment (currently the Ministry of Natural Resources and the Environment) approved the EIA for this project in October 1999.
    - d) Pollution control measures:

Air quality, water quality and noise/vibration both during construction and in service shall be controlled to meet the Vietnamese environmental quality standards through taking mitigation measures such as water sprinkling, installation of sedimentation tanks and establishment of soundproof walls.
    - e) Natural Environment:

The target area of this project does not include sensitive zones such as national parks. Hence, it is assumed that an adverse effect on the natural environment is minimal.
    - f) Social Environment:

This project involves the expropriation of an area of about 58.5 ha and the relocation of 2,573 households in total. The procedures for land expropriation and

resident relocation were completed in 2007 in compliance with the Vietnamese domestic laws and the resident relocation plan formulated by the executing agency.

g) Other/Monitoring:

The executing agency is periodically monitoring air pollution, noise, water contamination and vibration.

2) Promotion of Poverty Reduction: None in particular

3) Promotion of Social Development: As part of safety measures in the project operations, the contractor takes HIV/AIDS prevention measures. That is, workers receive information and education about AIDS more than once a month.

(8) Coordination with other donors: None in particular

(9) Other Important Issues: None in particular

#### 4. Targeted Outcomes

(1) Performance Indicators (Operation and Effect Indicator)

Indicator	Baseline (Actual Value in 2000)	Target (2013) (Expected value 2 years after project completion)
Population treated (person)	0	545,000
Amount of wastewater treated (m <sup>3</sup> /day)	0	140,000
BOD concentration (mg/l) in sewage treatment plants (influent and effluent)	Influent: — Effluent: —	Influent: 170 Effluent: <50
Area inundated by 5-year probable rainfall (ha)	48	7.2

(2) Internal rate of Return: Based on the conditions indicated below, the Economic Internal Rate of Return (EIRR) for this project is 10.8%.

#### 【EIRR】

Costs: Project costs (excluding taxes), operation and maintenance costs

Benefits: Reductions in flood damage on housing, vehicles and public facilities, reductions in damage on agricultural products, improvement of water quality and improvements in the sanitation environment

Project life: 50 years

## **5. External Factors and Risk Control**

None in particular

## **6. Lessons Learned from Findings of Similar Projects Undertaken in the Past**

From the ex-post evaluation of the past ODA loan projects, it has been learned that it is necessary to address issues in multiple sectors simultaneously including waste treatment as well as operation and maintenance of pumping facilities and wastewater treatment plants in order to make sure the manifestation and sustainability of the effects of urban wastewater and sewerage projects. Based on this lesson and also in light of this project's characteristics, coordination has been secured with the development projects implemented by other donors within the frameworks of donor coordination and Special Assistance for Project Implementation (SAPI) (for instance, in setting wastewater service charges) and training has been provided to the executing agency concerning project management under this project.

Similarly, JICA has been implementing the Project for Capacity Development on Sewerage Management in Ho Chi Minh City (May 2009 ~ November 2010) as technical cooperation in order to improve the wastewater administration and institutional capacity of SCFC. It is planned to dispatch a short-term expert each for electricity, machinery, water quality management and asset/budget management three times in total in addition to one long-term expert.

## **7. Plans for Future Evaluation**

### (1) Indicators for Future Evaluation

- 1) Population treated (in person)
- 2) Amount of wastewater treated (m<sup>3</sup>/day)
- 3) BOD concentration in sewage treatment plants {influent (mg/l) and effluent (mg/l)}
- 4) Area inundated by 5-year probable rainfall (ha)
- 5) Economic rate of return (EIRR) (%)

### (2) Timing of Next Evaluation

Two years after the project's completion