

Ex-Ante Evaluation (for Japanese ODA Loan)

1. Name of the Project

Country: Socialist Republic of Vietnam

Project: Southern Binh Duong Province Water Environment Improvement Project - Phase II

Loan Agreement: March 30, 2012

Loan Amount: 19,961 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 Urban Water Environment Sector in Vietnam

Backed by industrialization, Vietnam recorded a high annual average GDP growth rate of 7.3% during the period of 2000–2009, as a result of which rapid population concentration in and inflow into urban areas are progressing. The development of infrastructure for urban environmental facilities has not kept pace with urbanization, leaving sewerage facilities in particular lagging. The southern part of Binh Duong Province, the target area of the Project, is located in the northeast of Ho Chi Minh City and is undergoing development of large-scale industrial complexes. An increase in population including factory workers results in an increase in the amount of daily wastewater in the region, but the wastewater is simply treated only with septic tanks and discharged through drainage pipes that are laid down in some parts, canals or water conduits to the Saigon River. Therefore, water at many points of the river fails to satisfy the national standards for surface water quality that is applicable to water areas used to take clean water.

(2) Development Policies for the Urban Water Environment Sector in Vietnam and the Priority of the Project

The Decree on drainage and sewerage and its detailed implementation guidelines published in May 2007 set out the obligation to connect the sewage system in regions where the system is available and the responsibilities of the central and regional governments and organizations involved in the sewage sector. In November 2009, the Government of Vietnam approved “Orientation for sewerage and drainage development in urban areas and industrial zones to 2025 and vision to 2050”, in relation to which the prime minister presented his determination to cover 70-80% of the urban areas with the sewage and drainage system by 2015 and 80% or more by 2020.

The Project is a successor project to the “Southern Binh Duong Province Water Environment Improvement Project” (hereinafter called "Phase I") (to be completed in

2014) and aims to expand the sewerage network in Thu Dao Mot area of the province and newly build a sewage system in the neighboring Thuan An area. The Project adopts, as in Phase I, a separate sewage system that is recommended by the above-mentioned decree and aims to alleviate polluted load of wastewater discharged from the areas to the Saigon River. Intakes of the Thu Dao Mot Water Purification Plant (for Binh Duong Province) and the Tan Hiep Plant (for Ho Chi Minh City), both of which use the Saigon River as the intake source, are located upstream of the target site of the Project. The river flow is unstable due to fluctuations in the tidal level of the East Sea, and, the area and period subject to salt water intrusion have been expanded due to recent climate change impacts. In such situations, the Project to be implemented downstream is expected to contribute to the conservation of upstream water quality.

(3) Japan and JICA's Policy and Operations in the Urban Water Environment Sector

The Country Assistance Program for Vietnam formulated in July 2009 states that Japan will cooperate in the field of "urban environmental management" under one of the four priority areas of "Environmental conservation", so the Project is consistent with the plan. Moreover, JICA follows the plan and states that it will support an improvement in hard and soft aspects of urban environmental management as part of its commitment to environmental conservation.

(4) Other Donors' Activity

The World Bank has been implementing a project to develop sewage and drainage facilities in Ho Chi Minh City and an environmental improvement project covering the poverty group in Ho Chi Minh and other urban cities, neither of which overlaps the coverage of the Project.

(5) Necessity of the Project

The Project is consistent with Japan and JICA's priority area for assistance and the policy of the Government of Vietnam, and contributes to an improvement of the hygienic environment of Binh Duong Province and Ho Chi Minh City. Thus given the above, JICA's assistance for the Project is highly necessary and relevant.

<h2>3. Project Description</h2>
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(1) Project Objective

The objective of the Project is to increase the sewerage coverage in southern Binh Duong Province to prevent the deterioration of the water quality in Saigon River, by expanding and constructing urban sewage systems, thereby contributing to the improvement of living conditions and preservation of the water source in Ho Chi Minh

City and its surrounding areas.

(2) Project Site/Target Area

Thu Dao Mot and Thuan An areas, Binh Duong Province

(3) Project Components

- 1) Development and expansion of the sewage systems
- 2) Procurement of operational and management equipment
- 3) Consulting services (detailed designing, construction supervision, etc.)

(4) Estimated Project Cost (Loan Amount)

23,676 million Yen (Loan Amount: 19,961 million Yen)

(5) Schedule

March 2012 – March 2019 (85 months). The Project will be completed when the facilities start operation (April 2018).

(6) Project Implementation Structure

- 1) Borrower: The Government of the Socialist Republic of Vietnam
- 2) Executing Agency: Binh Duong Province People's Committee
- 3) Operation and Maintenance System: Sewerage treatment company (to be established under the control of the Binh Duong Water Supply-Sewerage-Environment Co., Ltd.)

(7) Environmental and Social Consideration/Poverty Reduction/Social Development

- 1) Environmental and Social Consideration
 - (1) Category: B
 - (2) Reason for Categorization: The Project is not located in a sensitive area, nor has it sensitive characteristics, nor falls it into sensitive sectors under the JICA Guidelines for Environmental and Social Considerations (published April, 2010), and its potential adverse impacts on the environment are not likely to be significant.
 - (3) Environmental Permit: the Environmental Impact Assessment (EIA) report on the Project was approved.
 - (4) Anti-Pollution Measures: water discharged from the wastewater treatment plant is treated to satisfy the discharge standards of Vietnam.
 - (5) Natural Environment: the project site is not located in or around sensitive areas such as a national park, and so adverse impact on the natural environment is assumed to be minimal.

(6) Social Environment: the Project requires acquisition of approximately 3.5 ha of land for construction site of the wastewater treatment plant and resettlement of 2 households. The procedures for the land acquisition and resettlement are in progress in accordance with the domestic laws of Vietnam.

(7) Other / Monitoring: in the Project, BIWASE will monitor air quality, noise, vibration, water quality, etc. during construction, and the sewerage treatment company will do so after the facilities start operation.

2) Promotion of Poverty Reduction: none

3) Promotion of Social Development (e.g. gender perspective, measure for infectious diseases including HIV/AIDS, participatory development, consideration for the person with disability etc.): none

(8) Collaboration with Other Donors:

None

(9) Other Important Issues:

None

4. Targeted Outcomes

(1) Quantitative Effects

1) Performance Indicators (Operation and Effect Indicators)

Indicator	Target (2020) 【Expected value 2 years after project completion】	
	Thu Dao Mot area	Thuan An area
Sewerage coverage population (persons)	41,411	79,675
Sewerage connection rate (%)	90	26
Treated sewerage volume (m3/day)	6,030	4,420
Biochemical oxygen demand (BOD) concentration (mg/l)	-	30
Total nitrogen (T-N) effluent (mg/l)	-	15
Chemical oxygen demand (COD) reduction (kg/year)	682,295	500,123

2) Internal Rates of Return

Based on the conditions indicated below, the economic internal rate of return (EIRR) of the Project is 5.69%.

[EIRR]

Cost: project cost (excluding taxes) and operating and maintenance costs
Benefits: water environment (clean water resources) conservation, reduction in medical expenses and fishery yields
Project life: 40 years

(2) Qualitative Effects

Improvement of living environment, conservation of clean water resources and adaptation to climate change

5. External Factors and Risk Control

None

6. Lessons Learned from Past Projects

(1) Evaluations of similar projects undertaken in the past:

The ex-post evaluations of past ODA loan projects for water environment improvement have pointed out the importance of activities to disseminate information to local residents about the project objectives, benefits, impacts on the environment, etc. as early as possible, and to conduct awareness campaign.

(2) Lessons for this project:

The Project adopts a separate sewage system and promotes connection of individual households to the sewage network in Thu Dao Mot and Thuan An areas. For this purpose, the Project will prompt the executing agency to perform activities to make the residents concerned understand the Project at an early stage, and ask the agency to submit relevant reports on implementation status of house connections.

7. Plan for Future Evaluation

(1) Indicators to be Used

- 1) Sewerage coverage population (persons)
- 2) Sewerage connection rate (%)
- 3) Treated sewerage volume (m³/day)
- 4) BOD concentration (mg/l)
- 5) T-N effluent (mg/l)
- 6) COD reduction (kg/year)

(2) Timing

Two years after project completion