

Ex-Ante Evaluation (for Japanese ODA Loan)

**1. Name of the Project**

Country: Socialist Republic of Vietnam

Project: Hanoi City Yen Xa Sewerage System Project (I)

Loan Agreement: March 22, 2013

Loan Amount: 28,417 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**

With the rapid economic growth and urbanization in progress, the development of sewage facilities lags behind in Vietnam. The wastewater treatment capacity is fairly limited although the volume of household, commercial and industrial wastewater discharge has been increasing. Wastewater is simply treated with septic tanks even in urban areas, and the sewage system coverage in Hanoi City was only 12% or so in 2010. The appropriate operation and maintenance with regular cleaning and sludge withdraw is not applied to the septic tanks and the drainage pipe network is not well developed, so wastewater is not appropriately treated. Therefore, rivers, water canals and groundwater in the urban area are considerably affected by polluted load of untreated wastewater discharged from household and other consumers. Untreated wastewater eventually pours into the major rivers which serve as sources of clean water for households, and the water in those rivers also fails to meet the national surface water quality standards.

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

In November 2009, the Prime Minister Decision on “Orientation for sewerage and drainage development in urban areas and industrial zones to 2025 and vision to 2050”, in which 40-50% of the urban areas shall have the sewage and drainage system by 2015. JICA conducted a development study for the drainage and sewage infrastructure of Hanoi (1993-1995), based on which a Master Plan for the Drainage and Sewage Infrastructure in Hanoi until 2010 (completed 1995) and a Revised Master Plan until 2020 (completed 1998) were formulated. The Project is, based on the master plans, a successor project to the Hanoi Drainage Project for Environmental Improvement (completed 2005) and the Second Hanoi Drainage Project for Environmental Improvement (to be completed 2015). These two projects were designed to improve the water environment of the city by easing possible flood damage through improving and strengthening the capacity of the decrepit drainage facilities in the city, and constructing small-scale wastewater treatment plants. The

Project will, on the other hand, construct the largest wastewater treatment plant in Hanoi for a wider area. The target areas are particularly highly populated districts in Hanoi City. Untreated wastewater from households in these districts pour via the existing combined drainage system into rivers and water canals, which thus suffer from high contamination concentration. The Project is given high priority as it aims to improve the water quality of public water areas that must be urgently improved.

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

The Country Assistance Program for Vietnam (December 2012) states that Japan will cooperate in the field of “environmental issues emerging as a result of rapid urbanization and industrialization” under one of the three priority areas “Response to vulnerability”, 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. JICA has been in fact supporting the development sewage systems, building of operation and maintenance systems and strengthening the capacity in Ho Chi Minh, Hai Phong and Hue Cities, Binh Duong Province, etc., other than Hanoi City.

### **(4) Other Donors' Activity**

The World Bank, Asian Development Bank and others have been implementing projects to develop sewage and drainage facilities, and environmental improvement projects covering the poverty group in various provinces and cities. However, assistance to the sewage sector in Hanoi is limited, and none of these projects overlaps the coverage of the Project.

### **(5) Necessity of the Project**

The Project is consistent with Japan and JICA's priority area and the policy of the Government of Vietnam, and contributes to an improvement of the hygienic environment of Hanoi City. Thus given the above, JICA's assistance for this project is highly necessary and relevant.

## **3. Project Description**

### **(1) Project Objective**

The objective of this project is to increase wastewater treatment coverage in Hanoi City, by constructing urban wastewater treatment facilities, thereby contributing to the improvement of sanitary conditions and sustainable development of the City and its downstream regions.

### **(2) Project Site/Target Area**

Thanh Tri District (construction site of the wastewater treatment plant), Thanh Xuan

District, Dong Da District, Ba Dinh District, Hoang Mai District, Ha Dong District, Tu Liem District and Thanh Tri District (target area for wastewater collection) of Hanoi City.

### **(3) Project Components**

- 1) Development of sewage systems (international competitive bidding): (i) Wastewater treatment plant (270,000m<sup>3</sup>/day) and (ii) Sewer network
- 2) Consulting services: detailed designing, bidding assistance, construction supervision, assistance to operation and maintenance, etc.

### **(4) Estimated Project Cost (Loan Amount)**

66,687 million Yen (Loan Amount: 28,417 million Yen)

### **(5) Schedule**

March 2013 – December 2021 (106 months). The project will be completed when the facilities start operation (December 2020).

### **(6) Project Implementation Structure**

- 1) Borrower: the Government of the Socialist Republic of Vietnam
- 2) Executing Agency: Hanoi City Department of Construction
- 3) Operation and Maintenance System: a joint venture of Hanoi Sewage and Drainage Corporation (HSDC) and Japanese company, or HSDC

### **(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 detailed Environmental Impact Assessment (EIA) report on this project was approved by the Hanoi City People's Committee in July 2010.
  - (4) Anti-Pollution Measures: Water discharged from the wastewater treatment plant is treated to satisfy the effluent standard 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 13 ha of land for construction site of the wastewater treatment plant. The procedures for the land acquisition will be made in accordance with the domestic procedures and the JICA Guidelines for Environmental and Social Considerations.

(7) Other / Monitoring: The executing agency will monitor air quality, noise, vibration, water quality, etc. during construction, and HSDC 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.): The contractor will perform HIV/AIDS control activities for workers.

**(8) Collaboration with Other Donors:**

None

**(9) Other Important Issues:**

The project, through developing the sewage systems, which can lead to the deterioration of the sanitary conditions and living environment, etc. caused by climate change, is expected to contribute to the adaptation to climate change.

**4. Targeted Outcomes**

**(1) Quantitative Effects**

1) Performance Indicators (Operation and Effect Indicators)

Indicator	Baseline (Actual Value in 2013)	Target (2022) 【Expected value 2 years after project completion】
Sewerage Coverage Population (persons)	0	900,000
Sewage Coverage Ratio (%)	0	87.6
Treated Sewage Volume (m3/day)	0	236,585
Biochemical Oxygen Demand (BOD) Concentration of Effluent (mg/l)	-	50
Suspended Solids (SS) Concentration of Effluent (mg/l)	-	100

2) Internal Rate of Return

Based on the conditions indicated below, the economic internal rate of return (EIRR) of the Project is 5.7%. Since sewerage tariff collection plan is not formulated at this point, the financial internal rate of return (FIRR) is not calculated.

[EIRR]

Cost: project cost (excluding taxes) and operating and maintenance costs

Benefits: a rise in land price, willingness to pay, reduction in medical expenses and revenues in tourism

Project life: 40 years

## **(2) Qualitative Effects**

Improvement of living environment and climate change adaptation

## **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 evaluation of the Hanoi Drainage Project for Environmental Improvement points out that the sharing of information about social benefits from the project, and land acquisition and compensation schemes as well as proactive promotional activities are important for smooth land acquisition.

### **(2) Lessons for this project:**

In light of the above mentioned lessons, the executing agency will closely collaborate with a land acquisition committee that is to be established by the municipal government, and promote understanding and cooperation of the citizens.

## **7. Plan for Future Evaluation**

### **(1) Indicators to be Used**

- 1) Sewerage Coverage Population (persons)
- 2) Sewage Coverage Ratio (%)
- 3) Treated Sewage Volume (m<sup>3</sup>/day)
- 4) Biochemical Oxygen Demand (BOD) Concentration of Effluent (mg/l)
- 5) Suspended Solids (SS) Concentration of Effluent (mg/l)
- 6) EIRR (%)

### **(2) Timing**

Two years after project completion