Japanese ODA Loan

Ex-Ante Evaluation (for Japanese ODA Loan)

Southeast Asia Division 3, Southeast Asia and Pacific Department,
Japan International Cooperation Agency (JICA)

1. Basic Information

Country: The Socialist Republic of Viet Nam (Viet Nam)
Project: Ha Long City Drainage and Wastewater Treatment Project
Loan Agreement: November 25, 2020

2. Background and Necessity of the Project

(1) Current State and Issues of the Urban Water Environment Sector in Viet Nam and the Positioning of the Project

Due to rapid economic growth and urbanization, the volume of domestic drainage is increasing in urban areas of the Socialist Republic of Viet Nam (hereinafter referred to as "Vietnam"). However, the sewerage coverage ratio of urban areas remains at about 15% on average (2015). In urban areas, most of the sewage water is treated in septic tanks[1], in general. However, it is often the case that the sludge is not properly removed and the septic tanks are poorly maintained. As a consequence, rivers and water channels in the urban areas are becoming heavily polluted by untreated sewer water. This reaches other rivers and eventually flows into the ocean, and the deterioration of its water quality is becoming more and more serious. The "Adjusted orientation on development of industrial parks and urban water supply to 2025 with a vision to 2050**",** determined by the Prime Minister in April 2016, sets forth a goal to improve the rate of treated sewage water in urban areas of Viet Nam to 50% by 2025.

Ha Long City is the capital of Quang Ninh Province, located in northern Vietnam. The city has a strong tourism sector, being located at the entrance to Ha Long Bay, which is registered as a World Heritage site. The city is also known for its coal mining industry, having one of the country's leading mine field. Due to these flourishing industries, urbanization and population growth, to treat the increasing sewer water is a serious problem for Ha Long City. The sharp deterioration of the water quality of Ha Long Bay has been pointed out by International Organizations including the International Union for Conservation of

[1] Putrefaction tank; simplified technology to treat domestic drainage implemented individually in household in order to decentrally treat sewer water at originating sources.

Nature and Natural Resources (IUCN)[2] and the United Nations Educational, Scientific and Cultural Organization (UNESCO). A Decision adopted at the 35th World Heritage Committee in 2011 mentioned that the worsening water quality was negatively affecting the universal value of Ha Long Bay, and UNESCO requested Vietnam to take necessary measures to improve the situation. Since then, the water quality of Ha Long Bay is regularly monitored by the Committee.

Five sewerage facilities, including those built under the World Bank financed project, are in operation in Ha Long City, but the sewage coverage of the city remains at about 22.5% (2017). Due to insufficient drainage capacity and rising risks of water pollution, Ha Long City is becoming increasingly vulnerable to disasters. For example, in 2015, a typhoon caused vast floods and landslide disasters, resulting in flood damage to about 3,000 households and evacuation of more than 1,450 households. Under these circumstances, in the "Resolution on the Environmental Protection in Quang Ninh Province from 2018 to 2022" (approved in March 2018), Quang Ninh Province recognized the improvement of sewer water treatment capacity including drainage capacity as an important issue, and set targets to install automatic uninterrupted wastewater survey systems in all factories and commercial facilities which drain more than 1,000 m^3 /day by 2022. The results of automated system will be sent to the Department of Natural Resource and Environment (hereinafter called "DONRE"), enabling constant monitoring. Moreover, in the new urban area of Ha Long City, a target that all domestic drainage must meet the discharge standard (BOD density: 30 mg/L or less, etc.) before it is discharged to natural environment has been set.

(2) Japan and JICA's Cooperative Policy, etc. for the Urban Water Environment Sector in Vietnam

In Japan's Country Assistance Policy for the Socialist Republic of Viet Nam (December 2017), "Response to Fragility" is specified as a priority area; this entails providing support to address emerging environmental issues (urban environment and natural environment) caused by rapid urbanization and industrialization, which are negative aspects of growth.

Moreover, in the JICA Country Analysis Paper for the Socialist Republic of Viet Nam (June 2020), "addressing urban problems due to rapid economic growth and industrialization" has been identified as a priority area. This Project is thus

[2] An international network for nature conservation established in 1948 under global cooperative relationship and consisting of nations, government agencies, and non-government agencies.

consistent with these policies and analysis.

This Project will construct sewer facilities in Ha Long City, which will contribute to the improvement of the public health environment and measures against heavy rains and floods, and the conservation of water quality of Ha Long Bay, a World Natural Heritage site. This Project will contribute to SDGs Goal 6 (Clean Water and Sanitation), Goal 13 (Climate Action) and Goal 14 (Life Below Water).

(3) Other Donors' Activities

In the "Country Partnership Framework (2018-2022)" for Viet Nam, the World Bank recognizes the improvement of urban water environment in one of the three pillars "increase sustainability of the country's development" and has implemented wastewater and sanitation improvement projects in several provinces and cities so far. Furthermore, the Asian Development Bank places environmental sustainability and response to climate change as one of the three pillars in the "Country Partnership Strategy (2016-2020)" and emphasizes the importance of improving infrastructure for supplying clean water and sewage treatment and structural enhancement of water supply and sewerage system entities, in order to reduce the burden on the environment caused by urbanization, and to promote the entry of private companies in the future.

In Ha Long City, Bai Chay Sewage Plant and Ha Khanh Sewage Plant were constructed under the World Bank financed "Three Cities Sanitation Project (1999 - 2009)." Although this project includes the expansion of Ha Khanh Sewage Plant, there will be no duplication with World Bank Project for this plant.

3. Project Description

(1) Project Objective

The objective of the project is to increase the waste water treatment volume in Ha Long City, by constructing waste water treatment facilities, thereby contributing to the improvement of sanitary conditions in the city and the Ha Long Bay and sustainable development of the Province.[3]

(2) Project Site/ Target Area

Ha Long City, Quang Ninh Province

(3) Project Components

1) Construction of two new sewage plants (19,000m^3/day, 9,300m^3/day) and

[3] Supporting the enhancement of sewage treatment capacity in Ha Long City, where industries such as sightseeing and coal mining are active, will contribute to sustainable economic development in Quang Ninh Province.

expansion of one sewage plant (17,500m^3/day)

2) Intercepting sewer (about 47 km), junction pipe (about 1.2 km), etc.

3) Consulting service (construction supervision, support for operation and maintenance)

(4) Estimated Project Cost

16,161 million yen (E/S project: 1,276 million yen, this project: 14,885 million yen. yen loan for this project: 11,891 million yen)

(5) Project Implementation Schedule

From July 2015 (start of “Ha Long City Water Environment Improvement Project (Engineering Service)) until June 2027 (144 months in total). This project shall be complete when the facility’s operation starts (June 2025).

(6) Project Implementation Structure

1) Borrower: The Government of the Socialist Republic of Viet Nam

2) Executing Agency: Ha Long City People’s Committee

3) Operation and Maintenance: Will be selected by bidding in according with the ordinance of Viet Nam

(7) Cooperation and Sharing of Roles with Other Schemes and Donors

1) Japan’s Assistance Activities

JICA implemented the “Technical Assistance Project for Enhancing Management Capacity of Sewage Works” (January 2016 - May 2019). The objective of this project was to strengthen structural organization for operation and maintenance, and the Department of Construction of Quang Ninh Province joined its training. JICA is also supporting to improve the environment of Ha Long Bay through the JICA Partnership Program “Cooperation and Support for Application of Lake Biwa Model to Ensure Sound Management of Cat Ba Archipelago and Its Surrounding Zone” (March 2020 - February 2022).

2) Other Donors’ assistance activities

None in particular

(8) Environmental and Social Consideration/Cross-cutting issues/ Category of Gender

1) Environmental and Social Consideration

① Category: B

② Reason for Categorization: This project does not fall into a large scale project of a sewerage sector as specified in the “JICA Guidelines for Environmental and Social Considerations” (published in April 2010). This

project doesn't have any significant impact on the environment. Furthermore, the project does not have characteristics that are liable to cause adverse impacts and is not located in/near sensitive areas, as specified in the above mentioned JICA Guidelines.

③ Environmental approval and license: The Environmental Impact Assessment (EIA) for this project has been approved by DONRE, Quang Ninh Province in December 2013. The revised EIA due to partial changes in the project scope after approval has also been approved in March 2018.

④ Pollution control measures: Mitigation measures such as shielding of construction area, watering, proper disposal of sediment and waste, limitation of construction hours will be conducted against air quality, water quality, noise and vibration during construction. Affect on water quality, noise, vibration and waste after commencement of services will be minimized by taking such measures as adoption of sewage treatment method with less environmental load, placement of buffer zones in sewage plants, adoption of underground pumps and proper sludge treatment in waste disposal sites.

⑤ Natural environment: Undesirable influence to natural environment is assumed to be kept to the minimum as the target area is not a vulnerable area such as national parks, etc.

⑥ Social environment: About 5.0ha of land including farm land will be acquired. Land acquisition and compensation was completed in 2018 based on the relocation plan which was made following domestic procedures of Viet Nam and JICA guidelines.

⑦ Others and monitoring: In this project, air quality, water quality, noise, vibration, waste and others will be monitored by the implementing agency during construction, and by the operation and maintenance company after commencement of services.

2) Cross-Cutting Issues

① Cases relating to measures against climate change

This project contributes to adaptation to climate change. Deterioration of the public health environment caused by heavy rains and floods, which are assumed to be a result of climate change, is expected to be alleviated by improving rainwater drainage through the improvement of sewer facilities.

② Counter measures against infection such as AIDS/ HIV

A clause on countermeasures against HIV/ AIDS will be included in the special condition of bidding document for each package.

3) Gender Category:

[Exemption] “(GI) Investigation and analysis case of needs for gender mainstreaming”

<Detail of activity/ reason for classification> Although the needs for gender mainstreaming was investigated and confirmed in this project, no specific effort was deployed which contributes to gender equality and women empowerment.

4. Targeted Outcomes

(1) Quantitative Effect

Performance Indicators (Operation and Effect Indicator)

Indicator	Baseline (Actual values in 2016)	Target (2028) [Expected value three years after project completion]
Population subject to sewage water treatment in the target area of this project (person)	78,545	254,545
Amount of treated sewage water in the target area of this project (m^3/day)	10,800	44,800
Usage rate of facilities in newly-built sewage plants (%)	0	>=40
BOD density (of discharged water from treatment facilities in this project) (mg/L)	<50	<=30

Penetration rate of sewer in the target area of this project (%)[4]	<30	80

(2) Qualitative Effect

Improvement of public health conditions and reduction of flood and landslide disaster and flood damage in Ha Long City

(3) Internal Rate of Return

The economical internal rate of return (EIRR) of this project becomes 17.13%[5] based on the following premises. Financial internal rate of return (FIRR) is not calculated in this project because there is no income through this project.

[EIRR]

Cost: Operating cost (except taxes), operation and maintenance cost

Benefit: Less flood damage, reduction in economic loss due to fragile environment, enhancement of sightseeing industry, rise in land prices as habitation area

Project life: 30 years

5. Preconditions and External Factors

No in particular

6. Lessons learned from Past Projects

Ex-post Evaluation on "Yamuna Action Plan Project" in India, the survey results in the development plan survey-type technical cooperation to the Federative Republic of Brazil, "Study on Intergrated Plan of Environmental Improvement in the Catchment Area of Lake Billings in Sao Bernardo do Campo" and others pointed out that enhancing the operation and maintenance systems of finance, technology and personnel is essential to ensure effectivity and sustainability after completion of a project. If necessary, training of staff through consulting services or by private companies should be considered. For the financial aspect, it is important to review the tariff collection system, and to support institutional improvement such as special tariff collection mechanism for the poor who have difficulties in paying the connection fee.

Based on the lessons above, it is planned to support the improvement of

[4] Calculated by dividing population treated by population subject to treatment
[5] Value for the present loan

maintenance of sewer facilities through consulting services in this project. Furthermore, if there should be training opportunities such as the one held in the Technical Cooperation “Technical Assistance Project for Enhancing Management Capacity of Sewage Works”, implementing agencies and operation/maintenance companies will be recommended to participate, and JICA Trainings will be utilized in order to develop human resource. For the financial aspect, it has been confirmed that operation and maintenance cost will be covered by the environmental protection fee and the budget of Ha Long City. Continuous securement of the sewage plants’ cost by the city budget will be checked through the implementing agency.

7. Evaluation Results

There is a great need to support implementation of this project as it will contribute to the improvement of the public health environment, countermeasures against heavy rains and floods and conservation of water quality in the marine area in Ha Long Bay, a World Natural Heritage site, through the improvement of sewer facilities of Ha Long City. This Project will also contribute to SDGs’ Goal 6 “Clean water and Sanitation”, Goal 13 “Climate Action” and Goal 14 “Life below water.”

8. Plan for Future Evaluation

(1) Indicators to be used: As indicated in section 4.

(2) Schedule: Three years after project completion (Ex-post evaluation)

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