

Country Name	<b>Technical Assistance Project for Enhancing Management Capacity of Sewage Works</b>
Socialist Republic of Viet Nam	

**I. Project Outline**

Background	<p>The water environment of urban cities in Viet Nam had been deteriorating severely because the development of sewerage facilities had not matched the pace of rapid industrialization and urbanization since the 1990s. Water pollution of urban streams and canals was significant, and prompt improvement was required. Thus, the Government of Viet Nam (GOV) considered developing a sewerage system as an urgent social issue and promoted rapid construction of sewerage facilities, especially in large cities, which was expected to be expanded to small and medium-sized cities. However, it was evident that the number of capable engineers and managers was considerably limited. Sewerage management capacity in the country was also limited in terms of the maintenance of facilities necessary to sustain sewerage operations, the formulation of financial plans and investment plans for such facilities, and the establishment of organizations and systems to implement these plans.</p>				
Objectives of the Project	<p>Through clarifying the needs of human resource development, preparing the establishment plan of the organization to implement training in the field of sewerage, implementing the basic training based on the comprehensive curriculum, and developing the sewerage and drainage master plan (MP) in a specific city and reflecting it in the basic training, the project aims at enhancing MOC and CUWC's* capacity to implement training in the field of sewerage in Viet Nam, thereby contributing to enhancing the planning, implementation, and management capacity of the sewerage sector to meet the future needs.</p> <p>(*MOC: Ministry of Construction, CUWC: College of Urban Civil Works)</p> <ol style="list-style-type: none"> <li>Overall Goal: To enhance the planning, implementation and management capacity of the sewerage sector to meet the future needs in Viet Nam.</li> <li>Project Purpose: MOC and CUWC's capacity to implement trainings in the field of sewerage is enhanced.</li> </ol>				
Activities of the Project	<ol style="list-style-type: none"> <li>Project Site: Overall Viet Nam</li> <li>Main Activities: (1) Identify the needs for human resource development, project implementation support, and Research and Development (R&amp;D) through the review of relevant sewerage sector reports and interviews with local governments; (2) Draft structure, establishment plan, and budget plan of the organization to implement training in the field of sewerage and submit them to the competent authority; (3) Design the effective training curriculum, prepare the training materials, conduct the basic training courses, prepare the plan for training facilities and equipment, formulate the SNS network of trainees, and conduct seminars for appropriate sewerage planning and management; and (4) Support the development of sewerage and drainage MP in a specific city and reflect experience and knowledge derived from developing the MP into the contents of sewerage planning training etc.</li> <li>Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <b>Japanese Side</b>            1) Experts: 3 persons (long term) and 28 persons (short term)            2) Trainees Received: 17 persons            3) Equipment: Laptop computers, projector, large-sized screen, software, model of sewage treatment facilities etc.         </td> <td style="width: 50%; vertical-align: top;"> <b>Vietnamese Side</b>            1) Staff Allocated: 11 persons            2) Rental fee of project office, accommodation fee for trainees of pilot training course         </td> </tr> </table> </li> </ol>			<b>Japanese Side</b> 1) Experts: 3 persons (long term) and 28 persons (short term) 2) Trainees Received: 17 persons 3) Equipment: Laptop computers, projector, large-sized screen, software, model of sewage treatment facilities etc.	<b>Vietnamese Side</b> 1) Staff Allocated: 11 persons 2) Rental fee of project office, accommodation fee for trainees of pilot training course
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Project Period	(ex-ante) February 2016 – May 2019 [40 months] (I: February 2016 – March 2017, II: April 2017 – May 2019) (actual) January 2016 – February 2020 [50 months] (I: January 2016 – March 2017, II: April 2017 – February 2020)	Project Cost (Japanese side only)	(ex-ante) 390 million yen, (actual) 486 million yen		
Implementing Agency	Ministry of Construction (MOC), College of Urban Civil Works (CUWC)				
Cooperation Agency in Japan	Nippon Koei Co., Ltd., Sewerage Business Management Centre, Japan Techno Co., Ltd., Water Agency Inc., Nihon Suiko Sekkei Co., Ltd., Yokohama Water Co., Ltd.				

**II. Result of the Evaluation**

&lt;Special Perspectives Considered in the Ex-Post Evaluation&gt;

- [How to evaluate Indicators 1 and 2 of the Project Purpose] (no numerical target was set for these indicators)
  - Indicator 1 (Organization Structure to implement trainings (CUWC)): The indicator of Output 2 is “Structure and establishment plan of the organization to implement training in the field of sewerage are submitted.” and “Means of Verification” for Indicator 1 of the Project Purpose in the PDM is “Document about organization to implement trainings,” and thus, for Indicator 1 to be ‘(mostly) achieved,’ a submission of such document to the competent authority is necessary.
  - Indicator 2 (Quality of contents for training): As “Means of Verification” for Indicator 2 of the Project Purpose in the PDM is “survey on training implementation (i.e., questionnaire to trainees), financial document related to implement trainings, and textbooks of trainings,” for Indicator 2 to be ‘(mostly) achieved,’ (1) the contents and materials of training need to be improved and (2) the training needs to be evaluated by participants as ‘mostly satisfactory’ or higher.

<p><b>1 Relevance/Coherence</b></p> <p>[Relevance]</p> <p>&lt;Consistency with the Development Policy of Viet Nam at the Time of Ex-Ante Evaluation&gt;</p> <p>The project was consistent with the development policy of Viet Nam at the time of ex-ante evaluation. In its “Five-Year Socio-Economic Development Plan (SEDP) (2016-2020)”, GOV positioned the development of urban sewerage systems as one of the critical issues for achieving its development goal of sustainable development under high growth conditions. In addition, as the policy to materialize this, No.589/QD-TTg, Decision by the Prime Minister was approved in April 2016, in which the revised goals were to expand the service coverage of the urban drainage system to at least 70% of the area and the sewage collection and treatment rate in urban centers to 15-20% by 2020; to expand the urban drainage system penetration rate to 80% by 2025; and to have the drainage system in urban centers in place and complete by 2050.</p> <p>&lt;Consistency with the Development Needs of Viet Nam at the Time of Ex-Ante Evaluation&gt;</p> <p>The project was consistent with the development needs of Viet Nam at the time of ex-ante evaluation. More than half of Viet Nam’s urban population lived in four cities (Hanoi, Ho Chi Minh City, Haiphong, and Danang), and environmental pollution, especially water pollution, in these cities and their surrounding areas was severe. In light of further economic growth, high population growth rates and concentration of population in urban areas, and the less advanced state of urban infrastructure development compared to neighboring countries, there was concern that environmental problems would become even more severe. While GOV was promoting rapid construction of sewerage facilities, there were not enough sewerage engineers, particularly in small and medium-sized cities where the development of public sewage treatment plants was planned, and there were not a few issues with the ability to implement sewerage projects, including the formulation of sewerage development plans.</p> <p>&lt;Appropriateness of Project Design/Approach&gt;</p> <p>The project design/approach was appropriate. In the beginning, the project aimed to enhance the planning, implementation, and management capacity of the sewerage sector through the establishment of the Vietnam Sewerage Center (VSC). Pilot activities of three functions: training course, project implementation support, and R&amp;D, were completely carried out as preparation for establishing the VSC. The project prepared a plan to establish the VSC including an organizational structure and a business plan of the Center and clarification of each function of training, project implementation support, and R&amp;D, to contribute to improving the capacity of sewerage planning and implementation nationwide. However, due to the policy restricting the establishment of new units in the government agencies and the Decree No. 81/2017/ND-CP, which was enacted in 2017 and regulates the functions, tasks, and organizational structure of the MOC, the establishment of the VSC could not take place. In accordance with the Decree, the project adjusted project outputs and activities appropriately, and VSC’s functions were integrated into the Training Center of Water and Environment (CNEE) under the CUWC. This was an unpredictable external factor and it was unpreventable for all the stakeholders. The project design change is not attributed to the project responsibility.</p> <p>&lt;Evaluation Result&gt;</p> <p>In light of the above, the relevance of the project is ③<sup>1</sup>.</p>
<p>[Coherence]</p> <p>&lt;Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation&gt;</p> <p>The project was consistent with Japan’s ODA policy to Viet Nam at the time of ex-ante evaluation. The “Country Assistance Policy for the Socialist Republic of Viet Nam” (2012) states that in order to deal with the negative aspects of the growth, Japan supports Viet Nam to address emerging environmental issues (urban environment and natural environment) caused by rapid urbanization and industrialization.</p> <p>&lt;Collaboration/Coordination with JICA’s other interventions&gt;</p> <p>The collaboration/coordination between the project and JICA’s other cooperation scheme was planned at the time of ex-ante evaluation and was implemented, the positive effect was confirmed at the time of ex-post evaluation. At the time of ex-ante evaluation, the Sewerage Policy Advisor, a long-term expert dispatched to the MOC, was to serve as the Chief Advisor for this project and conduct project activities in line with Viet Nam’s sewerage policy. In the implementation phase, three long-term experts assigned to JICA’s Global Environment Department, Viet Nam Office, and MOC and consultants collaborated to implement this work as a project team on the Japanese side. As a result, there was a synergy effect that the research capacities with experiences in Japan of the Sewerage Policy Advisor and other long-term experts were utilized, leading to better project performance.</p> <p>&lt;Cooperation with other institutions/ Coordination with international framework&gt;</p> <p>The cooperation/coordination with the German Agency for International Cooperation (GIZ) was planned at the time of ex-ante evaluation and implemented as planned, and the positive effect was confirmed at the time of ex-post evaluation. GIZ participated in the pilot training conducted in 2016 as a trainer and supported the training through the Vietnam Water and Sewerage Association (VWSA) to exchange information on training methods and textbook content. The cooperation and coordination with GIZ contributed to the successful implementation of training under the project.</p> <p>&lt;Evaluation Result&gt;</p> <p>In light of the above, the coherence of the project is ③.</p>
<p>[Evaluation Result of Relevance/Coherence]</p> <p>In light of the above, the relevance/coherence of the project is ③.</p>
<p><b>2 Effectiveness/Impact</b></p> <p>&lt;Status of Achievement of the Project Purpose at the Time of Project Completion&gt;</p> <p>At the time of project completion, the Project Purpose was mostly achieved as planned. While the proposal on the organization structure to implement training in the sewerage sector was prepared, it was not submitted to the competent authority, as CUWC intended to incorporate the training function of the sewerage field into the existing CNEE under CUWC for the time being (Indicator 1). As for the</p>

<sup>1</sup> ④ : very high, ③ : high, ② : moderately low, ① : low

quality of contents for training, the contents and materials of training as well as the presentation of lectures, were improved, and the training contents were evaluated by the majority of participants as ‘mostly satisfied’ (Indicator 2).

<Continuation Status of Project Effects at the Time of Ex-Post Evaluation>

The training function of the sewerage field has been incorporated into the CNEE, and there is no intention to set up an independent VSC at the time of ex-post evaluation.

No training course for sewerage planning and design, periodical needs survey to local governments, or revision of training curriculum, contents, and materials has been conducted at all by the CNEE or the CUWC after the project completion, largely due to the COVID-19 pandemic. Another factor hindering the continuation of the training at the CNEE is the fact that the mini-pilot water treatment station was not established at the CNEE, as agreed by both the Japanese and Vietnamese sides during the project implementation, with the expectation that the station would contribute to the implementation of the training courses in the potential Phase 2. CUWC reserved an area for construction; however, Phase 2 of the project was not realized, and thus, the station was not constructed. Nonetheless, at the time of ex-post evaluation, the CNEE is contacting some companies in the field of sewerage to find potential opportunities to collaborate for conducting training courses. The CNEE also plans to start periodical needs surveys to local governments along with building relationships with companies.

While the project effects have not continued to the time of ex-post evaluation, below are some examples of the positive results of the project’s training, as revealed by a mini-survey of some of the former trainees.

In July 2024, a mini-questionnaire survey was conducted with three former trainees who participated in the project’s training courses, including one working for the People’s Committee of Vinh City, Nghe An Province (Northern region), one working for the Department of Construction (DOC) of Dong Thap Province (Southern region), and one working for DOC of Buon Ma Thuot City, Dak Lak Province (Southern region). All of them highly appreciated the training courses provided under the project.

[Major findings from the survey]

- During the course of the project and after its completion, the knowledge and experience of the training course have been applied to the trainees’ work in the field of urban planning and management, environmental impact assessment of residential area projects, evaluation of wastewater collection and treatment technology plans, appraisal of new construction projects, renovation of urban rainwater and wastewater drainage systems etc.
- The knowledge gained from the training was reported to the Board of Directors and shared with colleagues in other organizations such as the Dong Thap Provincial People’s Committee, the Department of Natural Resources and Environment (DONRE), the Department of Fisheries (DOF), the Division of Urban Management of Cao Lanh City, Sa Dec City, and Hong Ngu City, and some consulting companies in Dong Thap Province.
- The knowledge gained from the training was applied to planning, construction, operation, and maintenance of drainage systems in Vinh City, Nghe An Province, contributing to the promotion of sustainable urban development. The former trainee also advised the Vinh City People’s Committee on more effective and scientific solutions in the management of the city’s wastewater drainage system in the city (planning, investment, construction, operation, maintenance, etc.), training discipline, work responsibility etc., utilizing the knowledge gained from the courses.

<Status of Achievement of the Overall Goal at the Time of Ex-Post Evaluation>

At the time of ex-post evaluation, the Overall Goal has not been achieved. The number of cities that have developed a sewerage and drainage MP has increased after the project completion; however, this was supported by GIZ. While the number of sewerage projects implemented in Viet Nam has also increased after the project completion, this does not seem clearly and directly attributable to this project, as no training activities have been conducted after the project completion, as stated above (Indicator 1). However, with the application and dissemination of the knowledge gained from the training courses by some of the former trainees working for key organizations with key roles in urban planning and development in Vietnam as mentioned above, the project could be considered to have contributed to the above urban development projects to some extent.

<Other Impacts at the Time of Ex-Post Evaluation>

No negative impacts on the natural environment nor any other positive or negative impacts have been observed.

<Evaluation Result>

Though the project effects have not clearly continued after the project completion and the contribution of the project to the achievement of the Overall Goal is considered to be low, these are largely due to the external factor including the COVID-19 pandemic. Therefore, the effectiveness/impact of the project is ②.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results	Source
(Project Purpose) MOC and CUWC’s capacity to implement trainings in the field of sewerage is enhanced.	Indicator 1 Organization Structure to implement trainings (CUWC)	Status of the Achievement (Status of the Continuation): partially achieved (not continued) (Project Completion) The “Proposal on Sustainable Training Organization in the Sewerage Sector of Viet Nam” was prepared; however, the official document was not prepared or submitted to the public agency, including MOC. The CUWC intended to incorporate the training function of the sewerage field into the existing CNEE and establish a new training center for the sewerage field in CUWC in the future. CUWC was expected to prepare the official document related to the organization structure and the financial plan of the newly established training center in the future. (Ex-Post Evaluation) The training function of the sewerage field has been incorporated into the CNEE, but no training has been implemented after the project completion, largely due to the COVID-19 pandemic.	Project Completion Report, questionnaire survey to CUWC

	Indicator 2 Quality of contents for training	Status of the Achievement (Status of the Continuation): mostly achieved as planned (not continued) (Project Completion) Six training courses for sewerage planning and three training courses for preliminary design were conducted. The questionnaire survey for trainees was implemented in each training course, and the contents and materials of the training, class hours, and the presentation of the lecture were improved. Textbooks were prepared by the Japanese side first, which were improved by Vietnamese lecturers by themselves. (In the questionnaire surveys to the trainees on the training contents of the planning course implemented five times during 2017-2018, the major answer was “mostly satisfied,” and the weighted mean was beyond 4.0 out of a 5-point scale.) (Ex-Post Evaluation) The CNEE’s activities have been affected by the COVID-19 pandemic, and no training course for sewerage planning and design nor periodical needs survey to local governments has been conducted. The training curriculum, contents, materials, and presentation of the lectures have also not been revised after the project completion.	Project Completion Report, questionnaire survey to CUWC
(Overall Goal) To enhance the planning, implementation and management capacity of the sewerage sector to meet the future needs in Viet Nam.	Indicator 1 The number of cities implementing sewerage works (including the number of cities that have been developing sewerage and drainage master plan) increase.	Status of the Achievement: not achieved (Ex-Post Evaluation) The number of cities that developed a sewerage and drainage MP increased to three cities in total (Long Xuyen City, Ca Mau City, and Rach Gia City), and the number of sewerage projects implemented in Viet Nam has increased from 66 to 82 in total after the project completion. However, it is unlikely that this project contributed to such an increase, as no project activities have continued after the project completion.	Questionnaire survey to the Administration of Technical Infrastructure (ATI), MOC

### 3 Efficiency

Both the project cost and the project period slightly exceeded the plan (the ratio against the plan: 125% and 125%, respectively). The project period was extended for ten months due to a strong request by the Vietnamese side, and the actual cost also increased accordingly.

	Project Cost (Japanese side only, yen)	Project Period (months)
Plan (ex-ante)	390 million yen	40 months
Actual	486 million yen	50 months
Ratio (%)	125%	125%

Outputs were produced mostly as planned.

In light of the above, the efficiency of the project is ③.

### 4 Sustainability

#### <Policy Aspect>

In the “SEDP (2021-2025)” and the “Plan on the Formulation of the Water Supply and Sewerage Law by 2025” (Decision No.141/QD-BXD, issued in March 2023), the development of urban sewerage systems is still prioritized for achieving its development goal of sustainable development. It is also expected that the Water Supply and Sewerage Law will provide a clear path for the MOC to propose again the establishment of the VSC and the development of human resources in the sewerage sector to meet the needs of sewerage and drainage systems throughout the country. Based on this perspective, there is some potential for establishing the VSC or a similar model of training center in the future.

#### <Institutional/Organizational Aspect>

While no training activities have been conducted after the project completion, largely due to the COVID-19 pandemic, as stated above, the training function of the sewerage field has been incorporated into the CNEE. All personnel trained under the project still work at the CUWC (including the CNEE) at the time of ex-post evaluation. Six staff at the CNEE and eight staff at the Department of Water Supply and Drainage, which is under the CUWC, are in charge of promoting the training courses for the sewerage sector. In addition, the CNEE can also mobilize external experts with relevant expertise and experience for each training course. Thus, in principle, a sufficient number of staff members is secured for training activities. Furthermore, the CNEE also has cooperative linkages with the VWSA as well as the National University of Civil Engineering and Hanoi University of Civil Engineering to promote training courses for the sewerage sector.

#### <Technical Aspect>

The staff of the CUWC and the CNEE who are in charge of promoting the training courses for the sewerage sector have sustained the necessary skills and knowledge through participating in training courses, seminars, and workshops conducted by other organizations, conducting research, and cultivating knowledge in the field of drainage and sewerage voluntarily. However, the activities of the CUWC have been largely affected by the COVID-19 pandemic, and no training system has been established or sustained in the CUWC or the CNEE to conduct training for their staff. The equipment, software, and displays (the model of sewage treatment facilities and the model of household connection to sewer line, etc.) donated to the project have been utilized and maintained for teaching classes for intermediate-level students in the CUWC, although training courses for local governments have not continued after the project completion.

In addition, as mentioned above, some of the former trainees plan to continue sharing the knowledge gained from the training courses with their colleagues in working sessions, cadre training, advising (Vinh City) People’s Committee in the process of carrying out professional tasks, appraising urban drainage planning (rainwater and wastewater drainage planning), and planning the location of

wastewater treatment stations and the collection network.

<Financial Aspect>

The CUWC and the CNEE have managed to secure budget to maintain necessary human resources in the sewerage sector and conduct training courses in the field of water supply, but they have not been able to secure enough budget for promoting the training courses for the sewerage sector. They have also not been successful in increasing tuition fee collection through periodically distributing a brochure on the training contents to potential trainees or creating a new page exhibiting the training courses on its website, largely due to the COVID-19 pandemic.

<Environmental and Social Aspect>

No issue on environmental and social aspect has been observed, and it has not been necessary to take any countermeasures.

<Evaluation Result>

In light of the above, some problems have been observed in terms of the technical and financial aspects of the implementing agency. Therefore, the sustainability of the project effects is ②.

5 Summary of the Evaluation

The project mostly achieved enhancing MOC and CUWC's capacity to implement training in the field of sewerage as planned (Project Purpose) but not achieved enhancing the planning, implementation, and management capacity of the sewerage sector in Viet Nam (Overall Goal). While training courses were successfully implemented under the project, they were unable to be continued after the project completion, largely due to the unavoidable factor (COVID-19 pandemic). Thus, a clear project's contribution has unable to have been confirmed against the Overall Goal. Concerning sustainability, some issues have been observed in the technical and financial aspects. A training system has not been established or sustained in the CUWC or the CNEE to conduct training for their staff, and a sufficient budget for promoting the training courses for the sewerage sector has not been secured.

Considering all of the above points, this project is evaluated to be partially satisfactory.

**IV. Recommendations & Lessons Learned**

Recommendations for Implementing Agency:

The training courses implemented under the project were helpful in improving the capacity of project counterparts. Continuous training would also help upgrade MP and implement the sewage infrastructure projects. At the time of ex-post evaluation, the COVID-19 pandemic is under control. Thus, the CUWC and the CNEE should start conducting training courses in the sewerage sector, coordinating with other training institutions.

Lessons Learned for JICA:

The lack of a legal system for establishing centers made it impossible to ensure the continuity and sustainability of past projects, which was a lesson learned from past projects identified at the time of ax-ante evaluation. However, this lesson was not utilized in this project, and thus, VSC could not be established, and some project activities necessary for the achievement of the Overall Goal were removed. If a project that involves the establishment of a new unit in governmental organizations is to be implemented in the future, a project should be planned and initiated after a legal system for setting up such an unit is established.



Closing ceremony of training course under the project



Site visit to Nha Trang City for checking the sewerage pipe (taken during the project implementation)