Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by China Office: September, 2021

Country Name	**The Project for Development of the Capacity in rural waste water treatment**
People's Republic of China	

I. Project Outline

Background	In China, the volume of domestic waste water discharged in rural areas amounted to 9 billion m^3 per year, and most of the waste water was discharged without treatment. Such uncontrolled discharge of the waste water became a threat to the environment as well as the health of the people in the rural area. However, as of 2010, waste water treatment projects/programs in the rural areas were not yet implemented except for some water source protection areas. The Ministry of Housing and Urban-Rural Development (hereinafter referred to as the MHURD), which was in charge of formulation and implementation of policies related to waste water treatment projects/programs, had less experiences and technical knowledge on waste water treatment in the rural areas because the rural areas had different characteristics from urban areas, where the MHURD had concentrated their implementation efforts (figures at the time of ex-ante evaluation).		
Objectives of the Project[1]	The project aimed to develop the model on rural waste water treatment techniques and management[2], which is to be referred to, when making the 13th Five-Year Plan (FYP), in China through (i) studying laws, institutions, implementation system etc. for improvement of rural waste water treatment and showing the future direction, (ii) studying application methods, design and maintenance techniques on rural waste water treatment and showing the future direction, and (iii) strengthening the system to optimize operation and management of rural waste water treatment projects/programs, thereby starting waste water treatment model projects in rural area on the basis of the technical guidelines by the project. 1. Overall Goal: Waste water treatment model projects are started in rural area on the basis of the technical guidelines by the project. 2. Project Purpose: The model on rural waste water treatment techniques and management is developed, which is to be referred to, when making the 13th FYP.		
Activities of the Project	1. Project Site: Rural area in China[3]. 2. Main Activities: (i) studying laws, institutions, implementation system etc. for improvement of rural waste water treatment and showing the future direction, (ii) studying application methods, design and maintenance techniques on rural waste water treatment and showing the future direction, and (iii) strengthening the system to optimize operation and management of rural waste water treatment projects/programs. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 5 persons and 9 times of study missions (4 persons) 2) Trainees Received: 47 persons 3) Equipment: Electromagnetic flowmeters, portable ultrasonic flowmeters, office equipment, etc. 4) Local Cost Chinese Side 1) Staff Allocated: 5 persons from the MHURD and 8 persons from the Research Center for Eco-Environmental Science (hereinafter referred to as the RCEES) 2) Building and facilities: Project office at the RCEES etc. 3) Local cost		
Project Period	(ex-ante) December 2013-December 2016 (actual) September 2014-September 2017	Project Cost	(ex-ante) 255 million yen, (actual) 260 million yen
Implementing Agency	The Ministry of Housing and Urban-Rural Development (the MHURD); The Research Center for Eco-Environmental Science (the RCEES)/Chinese Academy of Science		
Cooperation Agency in Japan	IDEA Consultants, Inc.; Institute for Global Environmental Strategies; Kabushiki Gaisha Data Sekkei; National Institute for Environmental Studies; The Japan Association of Rural Solutions for Environmental Conservation and Resource Recycling; Ohmi Environment Conservation Foundation; Shiga Prefecture		

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

1. A part of the Project Purpose ("(the model on rural waste water treatment techniques and management) is to be referred when making the 13th FYP") meant "(the above model) is of such high quality that it would be utilized in making the 13th FYP" according to the existing documents related to the project. As the project was implemented from September 2014 to September 2017, the 13th FYP (2016-2020) was prepared without waiting for the model to be developed by the project; however, the description of the Project Purpose was not modified. The reason for this was not available in the existing documents related to the project. In this ex-post evaluation, the effectiveness of the project was evaluated based on the degree of achievement

[1] The English text of the Objectives are based on the English version of the terminal evaluation summary of the project, which is partly adjusted to be consistent with the Japanese text used in the official documents signed by both Japanese and Chinese sides such as the Minutes of the Meeting on the Joint Terminal Evaluation (July 2017)

[2] "(T)he model on rural waste water treatment techniques and management" in the Project Purpose referred to the techniques, institutional and organizational systems, etc. that could be applied to other areas. The Overall Goal ("Waste water treatment model projects are started") aimed that development and renovation of facilities, operation of institutional systems, etc. would be actually started.

[3] The target areas for the current situation survey included Changshu City in Suzhou City in Jiangsu Province, Xiamen City in Fujian Province, Chongqing City, Beijing City, etc. The applicability assessment of the manual and the recommendation prepared in the project were conducted in Changshu City, Xiamen City, and Chongqing City.

of the indicators, without verifying the above-mentioned part of the Project Purpose ("(the model) is to be referred when making the 13th FYP"), in accordance with the judgment made in the terminal evaluation of the project.

2. The Overall Goal was defined as the goal to be achieved in 3-5 years after the project completion in the terminal evaluation summary; therefore, achievement status at the time of ex-post evaluation, which was 4 years after the project completion, was confirmed. As for the indicator in the latest logical framework ("Model projects are started in the rural area"), the ex-post evaluation checked whether the contents of the rural waste water treatment projects started were in line with the definition of "model projects" agreed in the logical framework (i.e., projects for planning, design, operation, and management of waste water treatment facilities etc. utilizing the Manual of Application Methods of Rural Wastewater Treatment and Design and Maintenance and the Recommendation on the Proper Operation and Management of the Rural Waste Water Project developed by this project) and description of the Overall Goal ("Waste water treatment model projects are started in rural area on the basis of the technical guidelines by the project").

1 Relevance

<Consistency with the Development Policy of China at the Time of Ex-Ante Evaluation >

At the time of ex-ante evaluation, the Government of China set forth a policy of "promoting the comprehensive development and improvement of the rural environment" in the Outline of the 12th FYP (2011-2015) announced in March 2011, and waste water treatment in rural area was recognized as one of the priority issues.

<Consistency with the Development Needs of China at the Time of Ex-Ante Evaluation >

At the time of ex-ante evaluation, the project was consistent with the development needs of China for improvement of rural waste water treatment as described in the "Background".

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

At the time of ex-ante evaluation, the project was consistent with Japan's ODA policy because it was positioned as "cooperation towards resolving environmental and other global issues", one of the priority areas and issues of the Economic Cooperation Program for China (2001) of the Government of Japan.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the Time of Project Completion>

The Project Purpose was achieved at the time of project completion. As the technical and management guidelines on rural waste water treatment, the Technical Guide of Domestic Wastewater Treatment in Rural Area (hereinafter referred to as the Technical Guide) was developed by the MHURD, reflecting information and knowledge on rural waste water treatment both in Japan and China acquired through a series of project activities (Indicator 1 and Indicator 2).

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

The project effects were continued at the time of ex-post evaluation. After the project completion, the Technical Guide was updated to and promulgated as a national standard (the highest level of technical standard in China) i.e., the Technical Standard for Domestic Waste Water Treatment Projects in Rural Area (hereinafter referred to as the Technical Standard) in 2019. The results of the project as well as the knowledge on the relevant standards in Japan obtained in the project were reflected in the Technical Standard as the staff of the implementing agency allocated to the project served as the chief editor, and two other staff were members of the editing group of the Technical Standard[4] (also see <Status of Achievement for Overall Goal at the Time of Ex-post Evaluation>). In addition, the contents of the Manual of Application Methods of Rural Wastewater Treatment and Design and Maintenance (hereinafter referred to as the Manual) and the Recommendation on the Proper Operation and Management of the Rural Waste Water Project (hereinafter referred to as the Recommendation), which were prepared in this project, were introduced at the Waste Water Treatment Forum Meeting for Rural Area and Townships in China annually held by the MHURD although they were not distributed because they were not officially published. The forum was open to local government officials, researchers and companies involved in rural waste water treatment projects/programs across the country, with 700 participants in 2019 and 500 in 2020. In 2021, it was scheduled to be held in September and presentation of the results of the project would be continued.

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

The Overall Goal was achieved at the time of ex-post evaluation. In rural areas across the country, model projects as defined by the indicators (i.e., projects for planning, design, operation, and management of waste water treatment facilities using the Manual and the Recommendation) were started. As mentioned above, the contents of the Manual and the Recommendations were introduced on a nationwide scale every year and the Technical Guide that the project had been involved in preparing was updated to a national standard (i.e., the Technical Standards) so that their contents became the reference for rural waste water treatment projects/programs that were started after the project completion across the country and the standard in implementation of those projects/programs. For example, in Xiamen City, where the site survey was conducted in this ex-post evaluation, the methods recommended in the Technical Standard were referred and used when designing new rural waste water treatment facilities. As an example, the septic tanks recommended in the Technical Standard were adopted for the waste water treatment of farms scattered in mountainous areas (Indicator).

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

According to the implementing agencies, the project promoted understanding about Japanese decentralized domestic waste water treatment system, which became an important reference for establishment and improvement of regulations and management systems for domestic waste water treatment in the rural area in China. For example, the MHURD was considering establishment of a water quality monitoring system for treated water from decentralized waste water treatment facilities, mainly in the rural area, based on the Japanese third-party supervision system introduced through the project. The implementing agencies also stated that, through implementation of waste water treatment projects using the results of the project, the living environment and water quality of public water bodies in the rural area were already improved although it was difficult to grasp the current situation with detailed data. Referring to the Japanese system of

[4] For example, contact oxidation method was introduced for waste water treatment in villages and by farmers, referring to the decentralized treatment methods in Japan.

the qualified Johkaso (septic tank) Operator and Installation Worker introduced at the time of the Detailed Planning Survey of the project, the RCEEC initiated training for the related staff who had not studied waste water treatment technology professionally in China to be the staff in charge of operation and maintenance of the facilities. Since 2018, training was conducted 3 times, and a total of 240 people participated in the training over the past 3 years. The training curriculum was developed by the RCEES. Meanwhile, negative impacts were not observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results	Source
(Project Purpose) The model on rural waste water treatment techniques and management is developed, which is to be referred when making the 13th FYP.	Indicator1: Draft technical guidelines of rural waste water treatment techniques are prepared by the MHURD.	Status of the Achievement (Status of the Continuation): achieved (continued) (Project Completion) -As the technical and management guidelines on rural waste water treatment, the Technical Guide of Domestic Wastewater Treatment in Rural Area was developed by the MHURD through a series of project activities. (Ex-post Evaluation) -After the project completion, the above-mentioned Technical Guide was updated and promulgated as a national standard i.e., the Technical Standard for Domestic Waste Water Treatment Projects in Rural Area.	source: Project Completion Report, questionnaire and interview survey to the implementing agencies.
	Indicator2: Draft management guidelines of rural waste water treatment techniques are prepared by the MHURD.	Status of the Achievement (Status of the Continuation): achieved (continued) (Project Completion) *Refer to the Results of Indicator 1. (Ex-post Evaluation) *Refer to the Results of Indicator 1.	source: ditto.
(Overall Goal) Waste water treatment model projects are started in rural area on the basis of the technical guidelines by the project.	Indicator: The model projects are started in rural area. *See No.2 of <Special Perspectives Considered in the Ex-post Evaluation>.	(Ex-post Evaluation) achieved -The model projects were started in the rural area across the country. The contents of the Manual and the Recommendation prepared by the project were introduced on a nationwide scale every year, and the Technical Guide that the project had been involved in preparing was updated to the Technical Standard, which was a national standard. Therefore, their contents were utilized as reference for the rural waste water treatment projects that were started after the project completion and became the standard in implementation of those projects.	source: Questionnaire and interview survey to the implementing agencies.

3 Efficiency

Although the project cost slightly exceeded the plan (ratio against the plan: 102%), the project period was within the plan (ratio against the plan: 100%). The Outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

Rural waste water treatment projects/programs continued to be one of the priorities in the national policy of China. The 14th FYP (2021-2025) prioritized development of agriculture and rural areas and fully promoted development of townships and villages. It included improvement of the living environment in rural areas in the related projects/programs and set forth promotion of rural domestic waste water treatment, focusing on locations of township governments and main villages. Following the above, the MHURD continued the Rural Waste Water Treatment Model Project, which had been launched under the 13th FYP (2015-2020)[5], in the 14th FYP. In addition, there were relevant technical standards, and as noted in "Effectiveness/Impact", the Technical Standard for Rural Domestic Wastewater Treatment Project, a national standard, was promulgated in 2019, updating the Technical Guide developed under this project.

<Institutional/Organizational Aspect>

There was no change in the organizational structure of the implementing agencies for promotion of rural waste water treatment projects in rural areas. The MHURD was jointly in charge of rural waste water treatment projects with the Ministry of Agriculture and Rural Affairs and the Ministry of Ecology and Environment, while the RCEES was responsible for consultation and technical research related to rural domestic waste water treatment. As of June 2021, the MUHRD and the RCEES respectively allocated 4 and 10 staff members to rural waste water treatment projects and, according to them, the necessary number of staff was allocated to fulfill their respective roles. In fact, judging from the recent steady progress of rural waste water treatment projects/programs as described in "Effectiveness/Impact" and <Policy Aspect> above, it is considered that there were no serious problems in the organizational structure and staffing.

<Technical Aspect>

The MUHRD and the RCEES maintained and updated the knowledge and skills related to rural waste water treatment enhanced through the project by applying them to the related works, participating in training and exchange programs of cooperating organizations overseas such as European Union and International Water Association, and self-study[6]. In addition, as stated in "Effectiveness/Impact", the

[5] At the time of the ex-post evaluation, the project were implemented in 120 model prefectures.

[6] For example, at the RCEES, as a research institute under the Chinese Academy of Sciences, researchers had to set aside 30 hours of study time every year. The researchers updated their knowledge through study online and at university and kept abreast of the latest research results and topics by reading

Technical Standard, the updated version of the Technical Guide, as well as the Manual and the Recommendation, which had been prepared under the project, were utilized to promote rural waste water treatment projects.

<Financial Aspect>

As the MUHRD and the RCEES had respectively conducted rural waste water treatment projects and the related technical research and consultation continuously after the project completion, it is presumed that they had secured or basically secured the necessary budget. The MHURD secured the necessary budget for the rural waste water treatment projects from the national budget, and the RCEES secured the financial resources for research and consultation on the rural waste water treatment projects from the project expenses of the Ministry of Science and Technology and the consulting expenses of the MUHRD.

<Evaluation Result>

In light of the above, no problem has been observed in terms of the policy, institutional/organizational, technical, and financial aspects. Therefore, the sustainability of the project effects is high.

5 Summary of the Evaluation

The project achieved the Project Purpose ("The model on rural waste water treatment techniques and management is developed, which is to be referred when making the 13th FYP") at the project completion. The effects of the project continued and the Overall Goal ("Waste water treatment model projects are started in rural area on the basis of the technical guidelines by the project") was also achieved. Regarding Sustainability, no problems were observed in terms of policy, institutional/organizational, technical, and financial aspects. As for Efficiency, the project cost slightly exceeded the plan. Considering all of the above points, this project is evaluated to be highly satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

-It is recommended that the RCEES devise a way to ensure that the contents of the Manual and the Recommendation be always available for viewing as early as possible, such as posting the Manual and the Recommendation on its website, in order to ensure continuation of the effects and impacts of the project.

Lessons Learned for JICA:

-The period of this project, targeting rural waste water treatment, coincided with the period when the Chinese government was making efforts to improve the living environment in the rural area, and the implementing agencies had been conducting activities and research on the related topics before the implementation of the project. Because of this, it was possible to develop the Technical Guide in the project, which not only incorporated Japanese technology but also fully reflected the situation of rural waste water treatment in China, and this led to updating of the Technical Guide to a national technical standard after the project completion. The implementation of the project that fully considered the needs and timing of rural waste water treatment in China contributed to continuation and expansion of the project effects.

A village waste water treatment station built in 2019 in Tong'an District, Xiamen City. (It is possible that reference was made to the promulgated Technical Standard, which were compiled based on the Technical Guide that this project had been involved in preparing.)

professional journals.