

Simplified Ex-Post Evaluation for Technical Cooperation Project

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Project Name	Water Environment Restoration Pilot Project in Taihu Lake	January 2010 – December 2010

I Project Outline

Country Name	People's Republic of China		
Project Period	May 2001-May 2006		
Executing Agency	Chinese Research Academy of Environmental Science, Jiangsu Environmental Protection Bureau, Jiangsu Research Academy of Environmental Science, Jiangsu Environmental Monitoring Center, Jiangsu Wuxi Environmental Protection Bureau, Wuxi Environmental Monitoring Station		
Cooperation Agency in Japan	Ministry of the Environment, Ministry of Land, Infrastructure, Transport and Tourism, National Institute for Environmental Studies		
Total Cost	909 million yen		
Related Projects (if any)	JICA, "Study on Integrated Management Master Plan for Taihu Lake Basin Water Environment" (1996-1998)		
Overall Goal	To reduce the inflow of nitrogen and phosphorus into Taihu Lake using technologies provided by the project for remediation of the lake water environment		
Project Objective(s)	To develop and transfer technology for the treatment of domestic wastewater from various decentralized pollution sources in the basin of Taihu Lake, that are suitable for the natural, social and economic conditions of the target area and that are of practical use and can be widespread throughout the area; and to make them widely recognized by the people in the area.		
Output[s]	<ol style="list-style-type: none"> 1. Technologies for the practical use of advanced wastewater treatment tanks, developed for decentralized domestic wastewater sources. 2. Information for the application of eco-engineering water purification technologies effective for decentralized domestic wastewater sources will be sorted and organized. 3. Experiments on the mechanism of water bloom outbreaks and control that will produce positive outcomes. 4. Practical technologies that have been developed in the project will be widely recognized by the people of the communities in the target area. 		
	Inputs (Japanese Side)	Inputs (Chinese Side)	
Experts	7 long term, 37 short term	Staff allocated	Chinese Research Academy of Environmental Science : 11, Jiangsu Environmental Protection Bureau : 16, Jiangsu Wuxi Environmental Protection Bureau : 12
Equipments	350 million yen	Equipments	Unknown
Local Cost	74.5 million yen	Local Cost	Approx. 6.62 million Chinese yuan in total (or about 92.7 million Japanese yen) at the exchange rate of 14 yen to one yuan (at the time of ex-post evaluation)
Trainees Received	26	Land etc provided	A survey/research site and laboratory (with the necessary power capacity); offices for experts; an office for the project; meeting rooms
Others	Project Consultation Teams are dispatched 4 times by the Interim Evaluation.	Others	Interpreters and others

II Result of the Evaluation

Summary of the evaluation
<p>This project was planned with the intention of contributing to the improvement of the water environment in the Taihu Lake Basin through technical development of advanced wastewater treatment tanks and transfer of water purification technology using eco-engineering. While the project objective has been essentially achieved, the stated Overall Goal in fact has been unattainable by the project. In terms of efficiency, the project period had to be extended, and in addition, it is observed that some input factors have negatively impacted the efficiency of the project. As the Chinese government is making unswerving efforts to strengthen its environmental protection policy and is tightening regulations, it is thought that the technology transferred under this project will be efficiently used, and thus its effectiveness attained by the project may be sustainable.</p> <p><Recommendations></p> <p>As recommendations to JICA, It was noted that the project was realized under the authority of seven executing agencies from three different regions. This situation necessarily involved operational difficulties in terms of the competence, authority and interrelationships among the seven that may have inherently blurred responsibility for each activity of the project. Therefore, to avoid this potential complication and malfunction caused by a similar arrangement in the case of future projects, adequate attention should be paid by JICA to reduce executing agencies to the optimal number and ensure that there is an appropriate management structure so that there is a clear allocation of tasks and responsibilities to each implementing agency, and an effective chain of command.</p>

<Constraints of this evaluation study>

Since the PDM of this project did not set numerical indicators for the evaluation of achieved objectives and outputs, it is difficult to conduct quantitative analysis in the ex-post evaluation.

1 Relevance

(1) Relevance to the Development Plan of China

As a high priority environmental protection measure, the Chinese government (the State Council of China) adopted a systematic pollution control program for some designated lakes, including Taihu Lake, during the period of National Ninth Five-Year Plan (“11-5 Plan”, 1996~2000), under the so-called 33211 Program. Further, the Water Pollution Control Plan for Taihu Lake during the period of the 11-5 Plan and the 2010 Long-term Plan”* has been devised to control water pollution, mainly by industrial and municipal effluent. The subsequent National Tenth Five-Year Plan (2001~2005) and National Eleventh Five-Year Plan (2006~2010) of the Chinese government have included environmental targets of reducing environmental contamination, mitigating ecological deterioration and of improving the water pollution control. Accordingly, various related policies have been shaped and appropriate measures have been taken.

As mentioned above, therefore, the project was in line with the environmental policy of China throughout the implementation period.

* The implementation period of this project corresponded to Phase III scheduled under the Plan (2001-2010). The main targets of the phase were as follows: (1) drastic solution of eutrophication, ecological destruction and organic pollution in Taihu Lake; (2) water environment improvement in Taihu Lake and its basin; and (3) sustainable utilization of Taihu Lake water resources over the long term and pollution source control in its basin.

(2) Relevance to the Development Needs of China

Rapid economic growth in China has accelerated eutrophication in many lakes, polluting these water bodies as drinking water sources and natural landscapes. Taihu Lake, the target lake of the project, provides a valuable water source for some 33 million people living around the lake. It is also a valuable tourism resource. Taihu Lake is visited by millions of people every year. As in the previous National Ninth Five-Year Plan, the Wastewater Control Program in Taihu Lake has been planned by the Chinese government during the period of National Tenth Five-Year Plan. The program promotes further control measures. As a result, major point-sources of pollution have been placed under control. Efforts to control area sources such as decentralized domestic wastewater sources, however, have lagged behind, requiring further measures to be taken.

As mentioned above, therefore, the project was in line with the development needs of China throughout the implementation period.

(3) Relevance to Japan’s ODA Policy

In accordance with the Japanese government’s Economic Cooperation Program for China, its focus was on cooperation towards resolving environmental and other global issues as one of the focus areas/issues for its assistance. This project comes under the aforementioned focus area/issue. Therefore, this project was in line with the Japanese government’s ODA policy.

This project has been highly relevant to China’s development plan, development needs, as well as Japan’s ODA policy; therefore, its relevance is high.

2 Effectiveness / Impact

(1) Achievement of Project Outputs and Project Objective(s)

With respect to the verifiable indicator for Output 1: “Technical guidelines and evaluation method for advanced wastewater treatment tanks that are suitable for the community conditions of the target area will be developed,” the compilation of the guidelines on the structure and maintenance of advanced wastewater treatment tanks suitable for the local communities has been completed, so this output has been achieved (JICA internal information)

In relation to the indicator 2-1 for Output 2: “Evaluation of eco-engineering treatment technologies as reference case,” the technology transferred during the training in Japan is being used in other projects and is rated high, showing that it has been achieved (terminal evaluation report).

As to the indicator 2-2 for Output 2: “Degree of gathering of research materials on eco-engineering treatment technologies,” there is a case in point that such Japanese technologies has been compiled into video CDs (VCDs) in Chinese. They were also presented in a joint symposium in the form of research papers for sharing information. Therefore, it has been achieved.

As for the indicator for Output 3: “The number of presentations/reports at learned societies and the number of research papers,” it is difficult to make an evaluation because no numerical indicators were established. However, since two papers have been written by the counterparts who were trained in Japan, Output 3 can be evaluated to have been achieved to a certain degree.

As to the indicator 4-1 for Output 4: “The number of technical presentations and environmental education meetings held for agencies/persons concerned, the number of persons present, and evaluation of those present,” it is also difficult to make an evaluation because of no numerical indicators were established. However, since five local seminars were held with a total of 456 participants and were favorably commented upon, it can be evaluated to have been achieved (terminal evaluation report).

With regard to the indicator 4-2 for Output 4: “Recognition level of the practical use plan in the selected model zone,” although the model plan was completed, its recognition level is unknown, and thus its achievement level cannot be evaluated (terminal evaluation report and JICA internal information).

As above, while it is not possible to evaluate the achievement level of some verifiable indicators, the intended purpose has nearly been achieved according to our overall evaluation of other elements.

With respect to the verifiable indicator for Project Objective 1: “completion level of the technical guidelines for advanced wastewater treatment tanks that have been developed in the project (nitrogen and phosphorus removal percentage, stability, profitability, etc.),” it has been achieved as the compilation of both the technical and maintenance guidelines have been completed.

As to the indicator for Project Objective 2: “Recognition level of the environmental protection technologies (advanced domestic wastewater treatment tanks and water purification technology using eco-engineering) resulting from the R&D activities by related administrative agencies and facilities in the project,” it can be evaluated to have been achieved as the need for utilization of these treatment tanks is recognized as one of control means for area sources (terminal evaluation report).

As above, the project objective has nearly been achieved according to our evaluation.

(2) Achievement of Overall Goal, Intended and Unintended Impacts

According to the replies received from the implementing agencies, there has been a ripple effect: efforts are being made towards establishing an effective Environmental Technology Verification (ETV) system by making use of the furnished performance evaluation testing equipment for decentralized wastewater treatment tanks (advanced domestic wastewater treatment tanks) and the transferred technologies as well.

On the other hand, as to the indicator for the Overall Goal: “Dissemination in Taihu Lake Basin, of the advanced treatment technologies for reducing nitrogen and phosphorus developed in the Project,” it is not an easy task to research the dissemination rate of the developed technology that is employed as indicator data. Additionally, the intended effect has not yet been produced at the time of the ex-post evaluation (the inflow load of nitrogen and phosphorus into Taihu Lake is reduced by the application of the technologies for restoring the lake water environment that has been developed in the project).

This indicates that the Overall Goal of the project was not properly designed as a technical cooperation project corresponding to the “basic formation” stage for local dissemination of the technologies as pointed out in the expert’s observation report of the project (terminal evaluation report).

As above, while the expected project objective has been achieved in some measure, the intended effect is limited due to the inappropriate design of the overall goal.

3 Efficiency

(1) Outputs

As mentioned above, the intended outputs have been produced although some problems are involved.

(2) Elements of Inputs

The inputs for this project are as shown in the Project Outline. The project activities fell behind schedule due to several factors. It took a long time for the Japanese experts and Chinese counterparts to come to agreement regarding equipment procurement and installation time. The other was the spread of the severe acute respiratory syndrome (SARS), which caused delays in sending Japanese experts to China (terminal evaluation report and materials at the completion of the Project).

Considering that the decentralized advanced wastewater treatment tanks furnished under the project were not suitable for practical use in China in terms of costs (initial and running costs) and technology (ease of maintenance) (materials at the completion of the Project), part of the inputs might have been inadequate.

(3) Project Cost, Period of Cooperation

The period of cooperation for this project was extended to make the actual duration 70.5 months against the planned 60 months (117.5% as compared with the planned period). The total cost for the cooperation was 909 million yen. Although the projected cost is

unknown, it is estimated that the actual cost should have exceeded the projection because of the extension of the initially planned period of cooperation.

Other factors that have affected the efficiency include the complex project implementation structure whereby the seven implementing agencies spanned three different cities (Beijing, Nanjing and Wuxi), the situation of which involved the complication of the communications with each other, absence of centralized decision-making, disparity in the level of understanding of the project, etc.; reportedly, all of these encumbered the progress of the project (documentation at the completion of the project). It was also indicated that Taihu Lake Basin Administration, the principal agency for administration of the lake, was excluded from the implantation structure. This fact may have hindered an efficient implementation process of the Project (terminal evaluation report).

Some of the inputs [project cost / period of cooperation] are not appropriate for producing outputs and achieving the project objective; therefore, efficiency of the project is fair.

4 Sustainability

(1) Related Policy towards the Project

In 2008, the National Development and Reform Commission (NDRC) of China framed the Comprehensive Control Act for Taihu Lake Basin Water Environment. The law sets forth the calculations of regulatory requirements for wastewater reduction as well as various projects to establish water quality improvement targets in stages (COD, ammonia nitrogen, total phosphorus and total nitrogen) during the period 2007 to 2012 and up to 2020, ensure drinking water safety (intensified water source development and water quality monitoring) and to give practical effect to the regulation for total wastewater emissions. Accordingly, the Jiangsu provincial government established its Comprehensive Control Act for Jiangsu Taihu Lake Basin Water Environment (February 2009). This law of Jiangsu Province sets forth the regulatory implementation of ten major projects including the intensified control of industrial point-sources of pollution, municipal sewage and waste disposal, control of rural area sources of pollution, ecological restoration, and so on. Wuxi City, particularly, has given effect (in April 2008) to the new environmental policy under which the first- and second-rank protection zones of Jiangsu Taihu Lake Basin are positioned within the urban planning framework as green ecological functional zones (ecotourism model zones).

As above, the relevance of the project is judged to be sustainable.

(2) Institutional and Operational Aspects of the Executing Agency

There is no particular problem in these aspects according to the report of the implementing agency. The project for dissemination of advanced wastewater treatment tanks is addressed by the Chinese Research Academy of Environmental Science, Jiangsu Environmental Protection Bureau, and Wuxi Environmental Protection Bureau in their respective areas. Additionally, in keeping with the control policy intensification for Taihu Lake in recent years, Taihu Lake Water Pollution Control Office (a branch office of agency level) was newly established (in July 2009) as the comprehensive supervisory agency for water pollution control in the zone of Taihu Lake located within the Jiangsu Province.

(3) Technical Aspects of the Executing Agency

In the Chinese Research Academy of Environmental Science, the project activities are carried out mainly by the counterparts who were trained in Japan. There is no particular problem in these aspects.

(4) Financial Aspects of the Executing Agency

The aforementioned Comprehensive Control Act for Taihu Lake Basin Water Environment states that a total of 111.498 billion yuan will be invested by the central government of China on behalf of the water environment control of Taihu Lake Basin (the Jiangsu provincial government will receive 58.373 billion yuan from the said amount). The Environmental Resources Local Compensation Act for Jiangsu Taihu Lake Basin was put in force (in March 2009). This law provides that any upstream municipality or district that generates wastewater flow in excess of the regulatory target shall pay compensatory damages to its downstream municipality or district or the Jiangsu provincial government (15 thousand yuan per ton for COD, 100 thousand yuan per ton for ammonia nitrogen and total phosphorus, respectively, in 2009). The Act provides that all the collected compensatory damages shall be used to cover the costs of water pollution control of the lake.

In view of these legal provisions, the funds required for controlling the inflow load of nitrogen and phosphorus into Taihu Lake will be invested over the long term as the national policy of China. Moreover, according to the information provided by a former expert, the project activities being carried out in the Chinese Research Academy of Environmental Science fall under the coverage by the Wen Jiabao Project (one trillion yen for a period of 10 years), and receive a substantial amount of funds from the government budget.

Because no data or documentation could be obtained from Chinese counterparts in this evaluation study, the financial aspects of the project are unknown. Nevertheless, judging from the above observations, it is anticipated that financial resources will be provided for sometime in the future.

(5) Continuity of Effectiveness and Impact

According to the information from the implementing agency, the equipment and materials furnished under the project are being used for R&D activities. In particular, the performance evaluation testing equipment is used mainly for R&D activities for advanced wastewater treatment tanks as the first performance evaluation testing laboratory for decentralized wastewater treatment tanks. This is instrumental in establishing an effective Environmental Technology Verification (ETV) system. According to the reply received from the implementing agency, the guidelines prepared in the project are also in use for the guidance of operation and maintenance of the wastewater treatment tanks. Therefore, it can be evaluated that their impact is sustained. Likewise, the progress and dissemination of the transferred technology are expected as the reply from the implementing agency indicates that some projects are being carried out in Taihu Lake Basin using them.

As above, it is expected that the impact of the project will be positively sustained in the future in spite of unclear financial aspects of the Project.