

Country Name	Model Planning Project for Water Saving Society in China
People's Republic of China	

I. Project Outline

Background	<p>In China, water shortages became a serious problem following population growth, industrialization and economic development. China's per-capita water resource use was about 25% of the world's average (approximately 2,151 m³/year) in 2005. China's population was estimated to reach 1.6 billion by 2030, leaving less and less water left for use. To this end, the Chinese government defined the establishment of a water-saving society that effectively manages and uses water resources as a national goal and formulated "the 11th Five-Year Plan for Water Saving Society Establishment (2006-2010)". The Five-Year Plan targeted to select one hundred designated water-saving cities from the provinces all over the country, and the government promoted water-saving initiatives in collaboration with national and local administrations. However, some deficiencies were found in the legal systems for promoting water conservation as well as insufficient social awareness of water saving to achieve the goals of the Five-Year Plan. To cope with this issue, the government requested to Japan, which had an efficient water resource management system, water-saving technology, and high level of water conservation awareness, to provide technical cooperation to promote the establishment of a water-saving society in China.</p>						
Objectives of the Project	<p>Through a proposal of an improvement of water resource management system, a proposal of efficient water resource management methods based on activities conducted in model rivers, and strengthening of the ability to promote public awareness, the project aimed at strengthening the comprehensive water resource management system (Project Purpose), thereby contributing to promoting the establishment of a water-saving society throughout China in accordance with relevant development plans (Overall Goal). The project objectives set forth are as follows:</p> <ol style="list-style-type: none"> Overall Goal: Establishment of a water-saving society is promoted throughout China while using the benefits of Japan-China technical cooperation. Project Purpose: The institutional systems required for efficient water resource management are strengthened, which is essential for establishing a water-saving society in China. 						
Activities of the Project	<ol style="list-style-type: none"> Project site: (1) Beijing, (2) Zhengzhou, Henan Province, (3) Zibo, Shandong Province ((2) and (3) are model cities), (4) The Jialu River in Zhengzhou, (5) The Xiaofu River in Zibo ((4) and (5) are model rivers) Main activities: Preparation of improvements in the water resource management system (draft), guidelines for setting river flow rates to be maintained (draft), guidelines for formulating water utilization plans (draft) and training materials etc., and implementation of trainings for water resource administrators in central and local governments, trainings on water-saving technology and methods for water users and public awareness activities etc. Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> Japanese Side <ol style="list-style-type: none"> Experts: 23 persons Trainees received: 33 persons Machinery and equipment: vehicle, digital camera, video, projector, portable anemometer, simplified water quality measurement kit, water level observation device, and geographical information system (GIS) software etc. </td> <td style="width: 50%; vertical-align: top;"> Chinese Side <ol style="list-style-type: none"> Staff allocated: 74 persons Land and facilities: project office, full-time interpreter, and driver etc. Local cost: 14 million yuan (half of the cost for releasing dam water in model rivers, salaries of counterparts, vehicle cost, cost for conducting conferences, trainings and seminars, and travelling expenses etc.) </td> </tr> </table> 					Japanese Side <ol style="list-style-type: none"> Experts: 23 persons Trainees received: 33 persons Machinery and equipment: vehicle, digital camera, video, projector, portable anemometer, simplified water quality measurement kit, water level observation device, and geographical information system (GIS) software etc. 	Chinese Side <ol style="list-style-type: none"> Staff allocated: 74 persons Land and facilities: project office, full-time interpreter, and driver etc. Local cost: 14 million yuan (half of the cost for releasing dam water in model rivers, salaries of counterparts, vehicle cost, cost for conducting conferences, trainings and seminars, and travelling expenses etc.)
Japanese Side <ol style="list-style-type: none"> Experts: 23 persons Trainees received: 33 persons Machinery and equipment: vehicle, digital camera, video, projector, portable anemometer, simplified water quality measurement kit, water level observation device, and geographical information system (GIS) software etc. 	Chinese Side <ol style="list-style-type: none"> Staff allocated: 74 persons Land and facilities: project office, full-time interpreter, and driver etc. Local cost: 14 million yuan (half of the cost for releasing dam water in model rivers, salaries of counterparts, vehicle cost, cost for conducting conferences, trainings and seminars, and travelling expenses etc.) 						
Ex-Ante Evaluation	2007	Project Period	June 2008 to June 2011	Project Cost	399 million yen		
Implementing Agency	Ministry of Water Resources of the People's Republic of China (Department of International Cooperation, Science and Technology, Department of Water Resources, Department of Policy, Law and Regulations), International Economic & Technical Exchange and Cooperation Center, Zhengzhou Water Supply/Saving Office, Zibo Water Resource Management Office, and Beijing Water Authority						
Cooperation Agency in Japan	Ministry of Land, Infrastructure, Transport and Tourism and Fukuoka City Waterworks Bureau						

II. Result of the Evaluation

Constraints on Evaluation: The evaluation judgments were made based on information collected and analyzed through questionnaires and interviews with stakeholders by telephone and e-mail. Site surveys were not conducted under this ex-post evaluation partly due to difficulties of visual judgment of the appropriateness of implementation of water utilization plans. There was another constraint that the evaluator had to give low evaluations in some aspects, especially regarding Impact and Sustainability, as the sufficient information necessary for evaluation judgment was not provided by the implementing agency.

1 Relevance

<Consistency with the Development Policy of China at the time of ex-ante and project completion>

The project has been consistent with China's development policy on 'strengthening of water resource management for establishment of a water-saving society' as set forth in "the 11th Five-Year Plan (2006-2010) for National and Social Development of People's Republic of

China”, “the 11th Five-Year Plan for Water Saving Society Establishment (2006-2010)”, “National Water Resources Planning (approved by the State Council in November 2010)” and “the 12th Five-Year Plan for Water Saving Society Establishment (2011-2015)”.

<Consistency with the Development Needs of China at the time of ex-ante and project completion>

The project met the development needs for “strengthening of the efficient water resource management system and development of methods for establishment of a water-saving society”, “introduction of water-saving technology” and “implementation of public awareness activities on water-saving”.

<Consistency with Japan’s ODA Policy at the time of ex-ante evaluation>

The project was consistent with the Japan’s ODA policy, as stated in the “Economic Cooperation Program for China (2001)”.

<Evaluation Result> In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. Existing status and issues of the water resource management system in China were analyzed based on a comparison with the system in Japan, and methods for setting flow rates to be maintained and formulating water utilization plans were verified in model rivers. Based on these outcomes, “the Comprehensive System Improvement (draft)” was prepared, and “the Water Resource Management System Improvement Guideline (draft)” required for actual implementation of the system improvement was prepared in cooperation between Japan and China, so that the Guideline would become appropriate to the realities in China (fulfilment of indicator). In addition, three types of training materials for efficient water resource management and a tool for public awareness activity (picture-story show) were prepared. The number of water resource administrators who attended the trainings on water-saving technology reached 1,200 persons and those who attended the trainings on public awareness activity for water conservation reached 500 persons.

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

After project completion, the contents of “the Water Resource Management System Improvement Guideline (draft)” were referred during a formulation of “the 12th Five-Year Plan for Water Saving Society Establishment (2011-2015)”, and “the Administrative Measures of Planning Water Use” was formulated in order to steadily implement the system improvement in accordance with the Guideline. However, the evaluator could not confirm the degree to which such outputs of this project were referred. Trainings for approximately 500 water resource administrators have been provided every year in Changzhou in Jiangsu Province and Hefei in Anhui Province etc. regarding total water requirement, water efficiency, limitation on sewage emission, responsibility of water resource management and a system of inspection etc. However, to what extent training materials prepared under the project have been utilized in these trainings could not be verified. As for public awareness activity, water-saving leader trainings have been provided for approximately 80 teachers of primary and secondary schools for three times since project completion in each of Beijing, Tianjin and Zibo in Shandong Province, which is a continuation of trainings conducted under the project. Moreover, water-saving education has been conducted for more than 600 primary and secondary school students every year in Zhengzhou in Henan Province. In areas of the Jialu River and the Xiaofu River, which are model rivers of the project, public awareness activity for water conservation has been conducted by actively utilizing various media including newspapers, television, magazines and internet. According to the implementing agency, teaching materials developed by this project have been used in such public awareness activity.

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

Regarding the Overall Goal, the implementing agency answered that the goal stipulated in “the 12th Five-Year Plan for Water Saving Society Establishment (2011-2015)” was achieved in all of the designated water-saving cities by the time of ex-post evaluation (fulfilment of indicator), although the evaluator could not obtain data to support that answer. Also, the contribution of the project to this achievement is considered to be somewhat limited from the situation described below. While there are approximately 100 designated water-saving cities in China at the time of ex-post evaluation, formulating regional-level policies and laws on efficient water resource management based on the methods proposed under the project, setting and maintaining appropriate river flow rates and formulating and implementing water utilization plans in accordance with such policies and laws were confirmed only in Zibo and Zhengzhou etc., which were model cities of the project, among the whole designated water-saving cities.

<Other Impact Observed at the time of Ex-post Evaluation>

No negative impact on natural or social environment has been occurred under the project. As a positive impact, the implementing agency mentioned the improvements of water level and quality in both model rivers in Zibo and Zhengzhou as a result of various activities including enhanced regulations based on project outcomes¹.

<Evaluation Result> While the Project Purpose was achieved by the time of project completion, some problems have been observed in terms of a continuation of some project effects and contribution of the project to the achievement of the Overall Goal. Therefore, effectiveness and impact of the project are fair.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) The institutional systems required for efficient water resource management are strengthened, which is essential for establishing a	The Comprehensive System Improvement (draft) as a recommendation for establishment of a water-saving society is prepared by the end of 2010.	Status of achievement: <u>Achieved/Continued</u> (Project Completion) “The Comprehensive System Improvement (draft)”, which was summarized from “Improvements in the Water Resource Management System (draft)”, “Guidelines for Setting River Flow Rates to be Maintained (draft)”, and “Guidelines for Formulating Water Utilization Plans (draft)”, and “the Water Resource Management System Improvement Guideline (draft)”, which articulates laws, operating procedures, examination standards and improvements of technical guidelines required for actual

¹ The implementing agency said that there were positive changes as follows: in the pilot site in Shandong Province, “most contaminant sources have been removed, the vegetation coverage rate has greatly increased, the water sources have been effectively recharged, the groundwater retention capacity has significantly improved, and water birds began to be seen.” In the pilot site in Zhengzhou, “the ground water levels on both banks of the river became higher again, and the the water quality has improved.” However, specific data to verify those changes was not available.

water-saving society in China.		implementation of the system improvement, were prepared in cooperation between Japan and China. A memorandum was signed in October 2010. (Ex-post Evaluation) (See the Overall Goal column) The Chinese government (Ministry of Water Resources) referenced “the Water Resource Management System Improvement Guideline (draft)” in formulation of “the 12th Five-Year Plan for Water Saving Society Establishment (2011-2015)”, and distributed the Plan nationwide in January 2012. Based on that draft Guideline, the Ministry of Water Resources also formulated “the Administrative Measures of Planning Water Use” in 2014 as a national level guideline in order to enhance management of water users’ needs and water use processes.
(Overall Goal) Establishment of a water-saving society is promoted throughout China while using the benefits of Japan-China technical cooperation.	Medium-term goal stated in the next national water conservation plan is achieved in all of the designated water-saving cities by 2015.	<u>Status of achievement: Achieved</u> (Ex-post Evaluation) “The 12th Five-Year Plan for Water Saving Society Establishment (2011-2015)” states that total water requirement in the country needs to be controlled up to 635 billion m ³ , water requirement per 10,000 yuan of GDP needs to be controlled up to 105 m ³ , water requirement per 10,000 yuan of industrial added value needs to be controlled up to 63 m ³ , and effective utilization coefficient of irrigation water for farmland needs to be enhanced to 0.53 by 2015. According to the implementing agency, this goal has been achieved in all of the designated water-saving cities, although data to verify the achievement was not available.
	(Supplemental information) The Ministry of Water Resources prepares national-level policies, laws, regulations and technical standards based on “the Water Resource Management System Improvement Guideline (draft)”, and water departments in each regional government of the designated water-saving cities prepare regional-level policies and laws etc. in accordance with national-level policies and laws etc., set and maintain appropriate river flow rates and formulate and implement water utilization plans.	<u>Status of achievement: Partially achieved</u> (Ex-post Evaluation) See the Project Purpose column for the Ministry of Water Resources. In Zibo in Shandong Province, regulatory documents such as “Regulations on Water-Saving of Zibo” and “Zibo Municipal Tariff Collection Management Rules for Water Resources Fees of the Incremental Water Consumption Exceeding the Quota” have been formulated. In addition, limitation on sewage emission into the Xiaofu River has been strictly controlled based on pilot activities conducted under the project and sewage treatment capacity of the river has been enhanced. As a result, sewage emission has been remarkably reduced and water environment has been improved. In Zhengzhou in Henan Province, “Zhengzhou Municipal Action Plan for Promoting Ecological Progress of Water Resources” is under preparation, in which outcomes of pilot activities in the Jialu River conducted under the project are utilized. The groundwater level at both banks of the river has recovered and water quality has been improved. Policies and laws on water resource management have been prepared based on local conditions in other designated water-saving cities, however, it has not been confirmed how outcomes of the project have been utilized in these cities.

Source : Internal documents, Terminal evaluation report, Questionnaire survey to International Economic & Technical Exchange and Cooperation Center

Note: Supplemental information was used to assess whether the Overall Goal has been achieved by “using the benefits of Japan-China technical cooperation”, as stated in the Overall Goal.

3 Efficiency

Both project cost and project period were mostly as planned (the ratio against the plan is 95% and 100% respectively). Therefore efficiency of the project is high.

4 Sustainability

<Policy Aspect>

Three control indicators for water resource management in China, which are “total volume control”, “water efficiency” and “permissible amount of water pollutant”, are set in “the 12th Five-Year Plan for Water Saving Society Establishment (2011-2015)”. The Ministry of Water Resources plans to formulate and implement “the 13th Five-Year Plan for Water Saving Society Establishment (2016-2020)” after 2015, and establishment of a water-saving society is expected to be planned and implemented continuously as China’s national policy. Therefore, the project is still positioned as important.

<Institutional Aspect>

The Department of Water Resources in the Ministry of Water Resources (20 persons assigned) is responsible for guidance on establishment of a water-saving society, formulation of national water-saving plans, and provision of instructions on water supply, discharge, water-saving, sewage treatment and water reuse in cities etc. The Department of Policy, Law and Regulations in the Ministry of Water Resources (20 persons assigned) is responsible for formulation of water-related laws and general rules and regulations on water administrations, supervision of implementation of these laws and regulations, and provision of instructions on formulation of regional-level water-related laws etc. International Economic & Technical Exchange and Cooperation Center (23 persons assigned) is responsible for implementation and management of loan and grant projects financed by international financial institutions and foreign governments. Thus, the organizational structure of the implementing agency is established. The number of officials assigned in water-related departments in the designated water-saving cities including Zibo Municipal Bureau of Water Resources and Fishery (which contains Water Resource Management Office) and Zhengzhou Municipal Bureau of Water Resources (which contains Water Supply/Saving Office) is judged sufficient, as planned activities are properly implemented. “The Review Meetings on Water Resource Management” composed of relevant departments in the Ministry of Water Resources, which was initiated during project implementation, played a role of developing the results of the activities into the System Improvement Plan, and was effective in proposing improvements in policy and institutional aspects of

water resource management. It was however difficult to regularly hold the meetings even during the project implementation, due to difficulties in coordinating attendance of upper level officials of concerned organizations (required as members), and the meetings did not continue after project completion. Nevertheless, officials who participated in the project have continued to perform a role of proposing such improvements in their offices.

<Technical Aspect>

It is considered that there is no problem in the technical aspect: the project counterparts in the Ministry of Water Resources, International Economic & Technical Exchange and Cooperation Center, Zibo Municipal Bureau of Water Resources and Fishery and Zhengzhou Municipal Bureau of Water Resources are still in charge of relevant tasks such as guidance, training, awareness activities and water use surveys at the time of ex-post evaluation. As stated in “2 Effectiveness/Impact,” trainings are provided for water resource administrators every year by referencing training materials prepared under the project. For other cities than the model cities, the implementing agency replied that the technical levels of technicians in water-related departments in the designated water-saving cities across the country are sufficient to implement efficient water resource management, although it is difficult to make judgment due to unavailability of supporting information.

<Financial Aspect>

While it was replied in the questionnaire survey that sufficient amount of budget has been secured for efficient water resource management in the Ministry of Water Resources, International Economic & Technical Exchange and Cooperation Center, Zibo Municipal Bureau of Water Resources and Fishery, Zhengzhou Municipal Bureau of Water Resources and water-related departments in other designated water-saving cities, data on the amount of budget allocation and expenditures was not provided, as such data is confidential. It is presumed that the necessary budget has been secured based on the fact that activities such as guidance, training, awareness and water use surveys have been carried out as mentioned in the “Technical Aspect” above. However, detailed confirmation was not possible.

<Evaluation Result> While no major problems have been observed in policy and institutional aspects of the implementing agency, adequate verification cannot be conducted on the technical and financial aspects. Therefore, sustainability of effects of the project is fair.

5 Summary of the Evaluation

The project achieved its Project Purpose, “Strengthening of the institutional systems required for efficient water resource management, which is essential for establishing a water-saving society in China”, as planned. Regarding the Overall Goal, the implementing agency stated that “the Water Resource Management System Improvement Guideline (draft)”, which was prepared under the project, was referred during a formulation of “the 12th Five-Year Plan for Water Saving Society Establishment (2011-2015)”, and the goal stipulated in the Plan was achieved in all of the designated water-saving cities. However, the data to support such information was not available. Also, formulating regional-level policies and laws on efficient water resource management, setting and maintaining appropriate river flow rates, formulating and implementing water utilization plans, and implementing trainings for water resource administrators and public awareness activities by utilizing outcomes of the project were confirmed only in some cities, which were model cities of the project, among the whole designated water-saving cities. Thus, the contribution of the project to achievement of the Overall Goal is somewhat limited. In terms of sustainability, no major problems have been observed in terms of consistency between the project and development policy in China, and the institutional aspect of the implementing agency required for continuation of project activities and dissemination of outcomes. However, adequate verification cannot be conducted on the technical and financial aspect due to a lack of data.

In light of the above, this project is evaluated to be satisfactory.

III. Recommendations & Lessons Learned

<Recommendations for Implementing Agency>

“The Review Meetings on Water Resource Management”, which was initiated during project implementation, promoted the achievement of the project purpose through proposing improvements in policy and institutional aspects of water resource management. However, it was difficult to regularly hold the meetings, and they did not continue after project completion. It is recommended to consider regular holdings of the meetings by relevant departments again in order to further promote efficient water resource management in China.

<Lessons Learned for JICA>

In order to establish a water-saving society, consent and cooperation of local residents as well as implementation of effective water resource management are necessary. Thus, public awareness activities for local residents could be incorporated to the scope of a project from the project planning stage.



Site survey in Zibo (picture taken during project implementation period)



A Japanese expert instructs students and water-saving leaders (picture taken during project implementation period)