



Completion Report

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People's Republic of China: Capacity Building on River and Ocean Eco-Environmental Management and Plastic Waste Pollution Control

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TECHNICAL ASSISTANCE COMPLETION REPORT

TA Number, Country, and Name: TA 9801-PRC: Capacity Building on River and Ocean Eco-Environmental Management and Plastic Waste Pollution Control		Amount Approved: \$600,000	
		Revised Amount: Not applicable	
Executing Agency: Ministry of Ecology and Environment	Source of Funding: Technical Assistance Special Fund (TASF–other sources)	Amount Undisbursed: \$226,359.32 ¹	Amount Used: \$373,640.68
TA Approval Date: 19 September 2019	TA Signing Date: 31 October 2019	TA Completion Date	
		Original Date: 30 June 2021	Latest Revised Date: 30 April 2022
		Financial Closing Date: 21 July 2022	Number of Extensions: 2
TA Type: Knowledge and support TA	Nature of Activity: Capacity development, research and development	TA Arrangement: Not applicable	

Description

The knowledge and support technical assistance (TA) aimed to build up the capacity and enhance the knowledge of the Government of the People's Republic of China (PRC) in preparing strategy and implementing actions on integrated watershed environmental management, river and ocean eco-environmental management, and plastic waste pollution control that will support the implementation of the Yangtze River Economic Belt (YREB) Development Plan and the Rural Vitalization Strategy, aligned with the PRC's vision of achieving an ecological civilization.

The government has been promoting ecological civilization, with specific targets identified in the PRC's Thirteenth Five-Year Plan, 2016–2020. Ecological civilization denotes a departure from the past emphasis on economic growth as the core of development to the prioritization of quality and efficient development. However, water pollution control in major watersheds of the PRC has recorded slow progress, with the water and eco-environmental impacts to downstream areas highlighting the importance of linkages between river and ocean ecological and environmental areas.

The TA complemented lending and nonlending assistance under the Asian Development Bank's (ADB) YREB framework approach, addressing the areas of ecosystem restoration and environmental protection, institutional and policy reform, and capacity building. ADB is also co-leading a special policy study on eco-compensation and green development institutional reform in the YREB with the China Council for International Cooperation on Environment and Development to create an enabling policy framework and serve as a knowledge sharing platform.

The TA has built capacity supporting the improved coordination of institutions and regulations, which strengthened the national river and ocean ecological and environmental management systems. A case study on plastic waste pollution control and management has raised awareness about the significant solid waste management challenge, which has major impacts on river and ocean ecological and environmental areas, with national and global ramifications.

Expected Impact, Outcome, and Outputs

The expected impact of the TA was ecological and environmental protection in the YREB achieved. The expected outcome was coordinated river and ocean eco-environmental management and plastic waste pollution control systems enhanced. The outputs are: (i) river and ocean ecological and environmental management system analyzed; (ii) strategy for plastic waste management prepared; and (iii) knowledge and skills in institutional coordination for ecological and environmental management and plastic waste pollution control improved.

Implementation Arrangements

ADB administered and coordinated TA implementation through the East Asia Department and worked closely with the Ministry of Ecology and Environment (MEE), the executing agency. A TA steering committee was established by MEE which guided and supervised the overall TA implementation. The steering committee was composed of members from MEE's Department of Institutional Administration and Human Resources Management, Department of Solid Waste and

¹ The unutilized amount was mainly due to canceled international study visits and three workshops for skills improvement, and savings from consultants' travel budget due to coronavirus disease (COVID-19) pandemic.

Chemicals, and Foreign Environmental Cooperation Center. A stakeholder participation mechanism was established during the TA implementation. Stakeholders included other sector agencies such as the PRC's ministries of agriculture and rural development, natural resources, and water resources; the Yangtze River Watershed Commission; representatives of provincial and/or local governments; and nongovernment organizations active in plastic waste pollution control.

The TA implementation was supported by 12 individual consultants (2 international and 10 national consultants): (i) institutional reform specialist (international, 2.0 person-months); (ii) ocean plastic waste management specialist and deputy team leader (international, 2.7 person-months); (iii) institutional reform specialist for integrated water governance and team leader (national, 8.0 person-months); (iv) plastic waste and chemical pollution management specialist and deputy team leader (national, 6.0 person-months); (v) integrated watershed management specialist (national, 6.0 person-months); (vi) capacity development specialist (national, 5.0 person-months); (vii) capacity development specialist (national, 5.0 person-months); (viii) environmental law and policy specialist (national, 1.8 person-months);² (ix) environmental policy specialist (national, 5.0 person-months); (x) environmental policy specialist (national, 3.0 person-months); (xi) plastics industry specialist (national, 6.0 person-months); and (xii) life cycle analysis specialist (circular economy, national, 5.0 person-months). The TA completion date was extended twice due to delays in implementation caused by coronavirus disease (COVID-19) pandemic.

Conduct of Activities

The inception mission was conducted on 30 October 2020, the interim mission on 18 October 2021, and the final review mission on 25 April 2022, all virtually. Activities conducted under each output are explained in detail below.

Output 1: River and ocean ecological and environmental management system analyzed. The following planned activities were successfully conducted: (i) review of the current legal and institutional landscape for ecological and environmental management of river and ocean environmental areas, with a focus on the Yangtze River and its connectivity to the East Sea; (ii) identification of issues, gaps, and challenges in the integrated river and ocean ecological and environmental management, including the legal foundation and decision-making procedure, financial support, operating mechanism, information management, and public participation; (iii) consultation with multiple stakeholders on the river and ocean eco-environmental management approaches, including the river, lake, or gulf chief system; and (iv) promotion of understanding of international best practices based on literature review of local and international case studies. Due to COVID-19 travel restrictions, planned international study visits did not push through. Policy and research reports on recommended proposals for institutional reform of the river and ocean eco-environmental management functions and processes were developed and shared with policy makers.

Output 2: Strategy for plastic waste management prepared. A preliminary roadmap was formulated for the effective management of white pollution through (i) a review of current strategy and practices for solid waste management; (ii) examination of (a) issues, challenges, and effectiveness and gaps in current strategies and programs which address plastic waste collection and disposal, and (b) opportunities for recycling and reuse; (iii) screening and selection of good practices and approaches; and (iv) preparation of policy and research reports which incorporated the recommendations for suggested actions on plastic waste pollution control to support the roadmap or strategy, including conduct of case studies in three cities or provinces, and on preliminary gap assessment against international best practices from two model cities.

Output 3: Knowledge and skills in institutional coordination for ecological and environmental management and plastic waste pollution control improved. Activities completed include (i) capacity building and knowledge sharing activities which aimed to improve institutional coordination for protection and management of river and ocean ecological and environmental areas and for plastic waste pollution control, including preparation of the workshop proceedings and training materials from workshops; and (ii) preparation of a knowledge product that captures and summarizes the experiences, findings, and key lessons from the inputs collected under Output 1 and the case studies conducted under Output 2.

Technical Assistance Assessment Ratings

Criterion	Assessment	Rating
Relevance	The PRC government attached great importance to plastic pollution management. TA recommendations were integral part of the "Fourteenth Five-Year Action Plan for Plastic Pollution Control" issued by the National Development and Reform Commission and MEE on 15 September 2021. With the impact of plastic pollution in the PRC, exploring the establishment of an integrated coastal, river, and ocean synergistic management system	Relevant

² Contract was terminated on 5 January 2022 due to family reasons.

Criterion	Assessment	Rating
	to accelerate the improvement of plastic waste pollution management capacity has become even more critical and relevant.	
Effectiveness	The TA findings were presented to multiple stakeholders during workshops for technical inputs throughout TA implementation. The consultants' reports for the TA and the knowledge product were satisfactory. The expected outputs were delivered satisfactorily except the three workshops (Output indicator 3a) due to COVID-19 restrictions. The research works under Output 2 on comparative case studies and preliminary roadmap for effective plastic waste management were in-depth and comprehensive, and the recommendations in the policy report under Output 1 were practical and feasible. These TA outputs supported the outcome which was essentially achieved. The TA enhanced coordination of river and ocean eco-environmental management and plastic waste pollution control systems through institutional reforms (Appendix 1).	Effective
Efficiency	The TA was rated efficient in terms of process efficiency, fund utilization, and socioeconomic value. Although the TA experienced delays caused by COVID-19 pandemic, the TA progressed generally well. Despite of several slowdowns since the start of TA implementation due to lockdowns and travel restrictions, the TA team managed to pull through using online platforms for communication, coordination, data and information gathering and sharing, meetings, consultations, and workshops. Shifting to virtual activities resulted in savings in travel and venue related expenses. TA funds were used as budgeted. The TA was completed utilizing 62.3% of the approved budget. The TA provided a systematic assessment and in-depth study of the problems that exist in the operation of the current institutional mechanism for ecological and environmental management of watersheds and puts forward corresponding reform proposals to address the development concerns.	Efficient
Overall Assessment	The TA was generally successful with the delivery of high-quality outputs. The TA successfully provided policy recommendations in (i) building the PRC's regulatory and administrative system of trans-jurisdiction watersheds and sea areas for integrated watershed environmental management; and (ii) strengthening the regulatory and administrative system's capacity for ecological and environmental management, particularly on plastic waste pollution control.	Successful
Sustainability	The TA benefits will most likely continue beyond TA completion. The TA findings and recommendations provided relevant information for subsequent policy actions to improve the whole chain of plastic pollution control and to enhance the capacity building of plastic pollution control in the PRC. The research study is forward-looking and provided models for international reference in terms of how to integrate and coordinate ecological and environmental management systems in watersheds and plastic waste pollution control.	Most likely sustainable

Lessons Learned and Recommendations

Design and/or planning	TA should focus on one specific field of research work. To have more research tasks with less relevance, will make it difficult to guarantee the technical soundness of the TA design and objectives.
Implementation and/or delivery	If TA includes more unrelated or less related tasks, it may be difficult to organize TA implementation as some tasks may be implemented separately. Consultants' tasks and working hours may need to be adjusted and reallocated throughout TA implementation.
Management of staff and consultants	The TA main outputs, which focused on eco-environmental management and plastic waste pollution control, were associated to different departments under the executing agency. While the steering committee was established to oversee the overall TA activities, it still posed challenges in overall coordination within MEE and more resources from the executing agency to coordinate with the TA team could have improved the communication process.

	Although the consultants' performances were generally satisfactory with quality reports delivered, the large number of consultant contracts posed some challenges in coordination, and it is advisable for future recruitment to engage consultants through a firm to improve efficiency in managing experts' inputs. There were some changes to consultants' inputs during implementation due to inability of some consultants to deliver the contracted work inputs which resulted in reallocation of resources. The team leader was required to be very involved in the coordination work which could have worked better if experts were managed through a firm.
Knowledge building	TA recommendations provided lessons on establishing an overall coordination mechanism for eco-environmental management of watersheds and sea areas which is complemented by relevant regulations and legislation including the Yangtze River Protection Law, which is being used as a model framework for other river basins and watersheds in the PRC and offers a model for other developing member countries.
Stakeholder participation	TA steering committee should have the function and capability to organize and coordinate with other stakeholders to participate in TA activities.
Partnership	If TA steering committee can organize and coordinate with other institutions and local agencies to participate in TA activities and works, more inputs will be collectively gathered for the achievement of TA outputs.
Replication and/or scaling up	The TA recommendations and findings provide a sound basis for replication and scaling up of the policy actions especially related to the importance of institutional strengthening for achieving well-coordinated and consistent policy approaches to address eco-environmental management at river basin level, and application of the case studies on plastic waste pollution control.

Follow-up Actions

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| <ul style="list-style-type: none"> (i) The PRC has adopted several different management approaches in the Yangtze River and Yellow River basins. It was suggested during the final review workshop that evaluation of the effects of different management approaches be studied in the future. (ii) Conduct in-depth research on the integration of the two networks of waste recovery system and recycling system proposed by the Solid Waste Law and how to further improve the recycling capacity of biodegradable plastic products in future. (iii) Examine possible cooperation with Alibaba on the issue of plastics pollution control building on the Agreement on Digitization of Food Supply Chain and Waste Management signed between ADB and Alibaba on 25 September 2020. |
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DESIGN AND MONITORING FRAMEWORK

Impact the TA is Aligned with Ecological and environmental protection in the YREB achieved. (Outline of the YREB Development Plan, 2016–2030) ^a		
Results Chain	Performance Indicators with Targets and Baselines	Achievements
Outcome Coordinated river and ocean eco-environmental management and plastic waste pollution control systems enhanced	By 2021: a. At least one eco-environmental institutional reform policy issuance on improving coordination of government functions and responsibilities approved by the government for deployment (2019 baseline: NA) b. At least one strategy or road map on white pollution control that incorporates the TA recommendations adopted by relevant government agency (2019 baseline: 0)	a. Achieved. List of Ecological Environmental Protection Responsibilities of Relevant Departments of the Central and State Organs was issued by the General Office of the Central Committee of the Communist Party of China and the General Office of the State Council on 4 March 2020. b. Achieved. Fourteenth Five-Year Action Plan for Plastic Pollution Control was issued by the National Development and Reform Commission and MEE on 15 September 2021.
Outputs 1. River and ocean ecological and environmental management system analyzed 2. Strategy for plastic waste management prepared 3. Knowledge and skills in institutional coordination for ecological and environmental management and plastic waste pollution control improved	1a. A policy report on recommended proposals for institutional reform and update of regulations on river and ocean eco-environmental management functions and processes for review and approval by ministerial decision makers submitted by 2020 (2019 baseline: 0) 2a. A research report incorporating a preliminary roadmap or strategy for effective plastic waste management and recommended actions based on comparative case studies which identify and document good practices among at least three case study cities or provinces and gap assessment against international best practices from at least two model cities prepared by 2020 (2019 baseline: 0) 3a. At least three workshops for skills improvement on ecological and environmental management and plastic waste pollution control conducted by 2020 (2019 baseline: 0) i. Of which at least a total of 150 participants attended the three workshops (2019 baseline: 0) ii. Of which at least 40% of the participants being women (2019 baseline: 0)	1a. Achieved. The policy report on recommendations from the TA findings was submitted to MEE and ADB on 28 April 2022. 2a. Achieved. The research report “Capacity Building on River and Ocean Eco-Environmental Management and Plastic Waste Pollution Control” which includes a section on the preliminary roadmap or strategy for effective plastic waste management and recommended actions (Section 3.6), was submitted to MEE and ADB on 18 April 2022. 3a. Not Achieved. Due to the impact of COVID-19 and domestic regulations, it was not possible to hold the workshops.

Results Chain	Performance Indicators with Targets and Baselines	Achievements
	3b. At least one knowledge product, documenting experiences and key lessons from case studies and workshops; and including workshop proceedings and/or training materials, prepared by 2021 (2019 baseline: 0)	3b. Achieved. The knowledge product on Enhancing Capacity Building on River and Ocean Eco-Environmental Management and Plastic Waste Pollution Control was submitted to ADB on 30 April 2022.

Actual Key Activities with Milestones

1. River and ocean ecological and environmental management system analyzed

- 1.1 Reviewed the current legal and institutional landscape for protection and management of river and ocean ecological and environmental areas, with a focus on the Yangtze River and its connectivity to the East Sea as a case study (Q3 2020–Q1 2022).
- 1.2 Identified issues, gaps, and challenges in the integrated river and ocean ecological and environmental management, including the legal foundation and decision-making procedure, financial support, operating mechanism, information management, and public participation (Q3 2020–Q1 2022).
- 1.3 Consulted with multiple stakeholders on the river and ocean eco-environmental management approaches, including the river, lake, or gulf chief system (Q3 2020–Q1 2022).
- 1.4 Summarized and promoted understanding of international best practices based on literature review of local and international case studies and undertake comparative analysis of the YREB's integrated river and ocean ecological and environmental management against international and national good practices and approaches (Q1 2021–Q1 2021). Planned international study visits did not push through due to COVID-19 travel restrictions.
- 1.5 Submitted the policy and research reports on recommended proposals for institutional reform of the river and ocean eco-environmental management functions and processes for review and approval by ministerial decision makers (Q2 2022).

2. Strategy for plastic waste management prepared

- 2.1 Reviewed the current strategy and practices for solid waste management, with a focus on plastic wastes and case studies (particularly on the use of plastic shopping bags and plastic packaging of e-commerce, especially in the consumer food and retail sector); and examine (i) issues, challenges, and effectiveness and gaps in current strategies and programs which address plastic waste collection and disposal, and (ii) opportunities for recycling and reuse by life cycle analysis or green supply chains (Q3 2020–Q1 2022).
- 2.2 Conducted a survey on white pollution control in the PRC (in selected cities or provinces located in the Yangtze River basin) with a focus on plastic wastes such as plastic shopping bags and plastic packaging of e-commerce, especially in the consumer food and retail sector; and screen and select international and national good practices and approaches (Q3 2020–Q1 2022).
- 2.3 Formulated a preliminary road map and strategy for the effective management of plastic waste pollution control in the context of overall protection and management of river and ocean ecological and environmental areas and submit policy and research reports on recommended institutional reform and update on regulations for river and ocean eco-environmental management functions and processes to raise awareness on plastic waste pollution control and management (Q3 2021–Q1 2022).

3. Knowledge and skills in institutional coordination for ecological and environmental management and plastic waste pollution control improved

- 3.1 Conducted online knowledge sharing activities and TA workshops with relevant government officials and stakeholders (Q4 2020–Q4 2022). COVID-19 pandemic had impacted the conduct of planned field works and capacity development activities.
- 3.2 Prepared a knowledge product, which captures and summarizes the experiences, findings, and key lessons from the inputs collected under Output 1 and the two case studies conducted under Output 2 of the TA, to be disseminated to relevant stakeholders in the PRC and in other developing member countries (Q4 2022).

Actual Inputs

Asian Development Bank: \$373,640.68

Government: The government provided counterpart support in the form of available relevant government data and studies for the TA consultants' use, office accommodation, and other in-kind contributions.

ADB = Asian Development Bank, COVID-19 = coronavirus disease, MEE = Ministry of Ecology and Environment, NA = not applicable, PRC = People's Republic of China, Q = quarter, TA = technical assistance, YREB = Yangtze River Economic Belt.

^a Government of the PRC. 2016. *Outline of the Yangtze River Economic Belt Development Plan, 2016–2030*. Beijing. Source: Asian Development Bank.

TECHNICAL ASSISTANCE COST

Table A2.1: Technical Assistance Cost by Activity
(\$'000)

Item	Amount	
	Original	Actual
1. Consultants	525.0	351.9
2. Training, seminars and/or conferences	60.0	21.7
3. Surveys	10.0	0.0
4. Contingency	5.0	0.0
Total	600.0	373.6

Source: Asian Development Bank.

Table A2.2: Technical Assistance Cost by Fund
(\$'000)

	TASF–other sources
1. Original	600.00
3. Actual	373.6
4. Unused	226.4

TASF = Technical Assistance Special Fund.

Source: Asian Development Bank.