

**PROJECT INFORMATION DOCUMENT (PID)  
APPRAISAL STAGE**

Report No.: PIDA53256

<b>Project Name</b>	GEF Mainstreaming Integrated Water and Environment Management (P145897)
<b>Region</b>	EAST ASIA AND PACIFIC
<b>Country</b>	China
<b>Sector(s)</b>	Agricultural extension and research (70%), Water supply (30%)
<b>Theme(s)</b>	Water resource management (60%), Other environment and natural resources management (40%)
<b>Lending Instrument</b>	Investment Project Financing
<b>Project ID</b>	P145897
<b>GEF Focal Area</b>	International waters
<b>Borrower(s)</b>	People's Republic of China
<b>Implementing Agency</b>	Ministry of Water Resources, Ministry of Environment Protection (MEP), Ministry of Water Resources (MWR)
<b>Environmental Category</b>	B-Partial Assessment
<b>Date PID Prepared/Updated</b>	15-Mar-2016
<b>Date PID Approved/Disclosed</b>	17-Mar-2016
<b>Estimated Date of Appraisal Completion</b>	01-Mar-2016
<b>Estimated Date of Board Approval</b>	09-May-2016
<b>Appraisal Review Decision (from Decision Note)</b>	Given all the relevant elements are ready such as safeguards, technical design and implementation arrangements, the project is ready to go for the next steps towards project implementation. The team was authorized to appraise the project based on the above comments and recommendations.

## I. Project Context

### Country Context

The rapid growth of China's cities and industries in recent years has created a strong demand for water in the agriculture, domestic and industrial sectors. In addition, climate change impacts have created new challenges to achieving and maintaining the sustainable management of water resources in the country. In terms of water scarcity this is particularly relevant in China's drier northeast region that is increasingly being affected by drought. It is known that since 1980 precipitation has declined by 10%. Reduced precipitation has resulted in a growing imbalance between water supply and demand and as a consequence there has been a gradual drying up of waterways and increased incidence of over-exploitation of groundwater resources. Surface and groundwater are also heavily polluted; According to China's Water Resources Bulletin in 2014,

some 28% of the country's total river's courses are considered polluted defined as equal to/or worse than Class 4 on a scale of five. To make matters worse, China has been facing a severe drought in recent years that has further reduced surface water availability exacerbating the problem of groundwater overexploitation.

The non-sustainable use of water resources contributing to large-scale changes in water quantity and quality is also affecting downstream users and ecosystems that depend on the resource. China's Bohai Sea is a large, shallow embayment of the Yellow Sea that in turn connects to the Pacific Ocean. The interconnectivity among these water bodies is important because of their shared physical and biological inter-connectivity. Of particular importance are the fish and shellfish stocks found in the Yellow Sea that are dependent on the Bohai Sea as a reproduction and nursery area. These fishery resources are important both to China and the neighboring countries that border the Yellow Sea, Japan and North and South Korea.

The Bohai Sea is also one of the world's most ecologically stressed, water bodies. The major causes of degradation of the Bohai Sea are two-folds: (i) decreasing fresh water inflows and (ii) increasing pollution loads from its surrounding river basins (Liao River Basin, Hai River Basin and Yellow River Basin).

Average annual fresh water inflows to the Sea have been reduced by over 50%, which have adversely affected its ecological balance. With respect to pollution more than 40 rivers discharge into the Bohai Sea, of which the Liao, Hai and Yellow are the most significant. Moreover there are some 105 discrete sources of pollution located along its coast that discharge directly into the Sea. Estimates indicate that the area of contaminated water has increased from 3,600 km<sup>2</sup> to 13,800 km<sup>2</sup> over the period 2002 to 2008; the latter figure accounting for 18% of the total area of water body. Contaminants (mainly TP, TN, COD and NH<sub>4</sub>-N) transported by these rivers not only affect the local ecology and associated fisheries and biodiversity but also are thought to pose a growing risk to both the health of the local population and the country's economy. In time the effects associated with the continued degradation of the Bohai Sea are expected to reach the coastal waters of China's neighboring countries.

### **Sectoral and institutional Context**

To address the issue of the degradation of the Bohai Sea will require maintaining or where required, restoring the necessary ecological flow rates in the main rivers entering the Sea. To achieve this goal the issues of both water scarcity and water pollution must be addressed in the upper reaches of the respective river basins.

Water scarcity has been a long-standing problem in China. The country's current total yearly water use exceeds 610 billion m<sup>3</sup>, or 87% of total available water resources (700 billion m<sup>3</sup>) by 2030 and there are limits to its further utilization. Moreover demand for water is increasing with China's continuing socio-economic development. Irrigation is still China's top water user, accounting for over 60% of total allocated water supply. Around 39% of the country's land area is arid or semi-arid characterized by relatively fragile environments that are easily affected by human activities such as over-extraction of water and if degraded are often difficult to restore. Groundwater is also seriously over-exploited, with 160 areas identified nation-wide covering 190,000 km<sup>2</sup> and representing in aggregate an annual rate of over-extraction of around 21.5 billion m<sup>3</sup>. Over-exploitation of groundwater resources has been cited as directly contributing to problems associated

with land subsidence, seawater intrusion and loss of water resources for agriculture and daily needs.

Water pollution and erosion problems are severe in China and have combined to contribute to the degradation of aquatic environments in numerous areas around the country. Some water bodies have been affected and/or are decreasing in size and water quality is declining. In 2014, only 5.9% of China's rivers had water classified as Category I (the lowest level of pollution), while 43.5% were Category II, 23.4% were Category III, 10.8% were Category IV, 747% were Category V and 11.7% were extremely polluted at above Category V levels. Several critical pollution incidents have also occurred, threatening public safety.

Institutional cooperation between the different sectors responsible for water resources and environmental management needs to be strengthened. Responsibilities are split and/or overlap between two key departments, Ministry of Water Resources (MWR) and the Ministry of Environmental Protection (MEP). For example, MWR is responsible for the water quality of China's designated water functional areas, while MEP manages wastewater discharges. Other institutions with relevant responsibilities include Ministry of Agriculture (MoA) and State Forestry Administration (SFA). A lack of integration in planning, target-setting and data-sharing makes it difficult to ensure a balance between water resource utilization and environmental protection. The proposed project will involve the cooperation of a number of sectors but is focused on water resources and the environment. Balancing the competing demands for China's water resources and fostering cooperation between sectors will be vital in ensuring more sustainable and stable development in the future.

## II. Proposed Development Objectives

The Project Development Objective (PDO) is to increase water productivity and reduce pollution discharges in the project areas to mainstream and scale up an innovative approach to integrated water and environmental management in the three river basins entering the Bohai Sea.

The PDO will be achieved through: (a) increasing irrigation water use efficiency and all other ways possible to effectively use water under a cap of water consumption; (b) reducing water pollution discharges under a cap of environment capacity and (c) increasing ecological river flows. The above measures will minimize the negative impacts on the ecosystem of Bohai Sea, contributing to the achievement of global environmental benefits (GEBs).

## III. Project Description

### Component Name

Component 1: Mainstreaming of Innovative IWEM Approach

### Comments (optional)

Component 1 will carry out research on new policy options, and the application of existing government policies as well as innovative technologies to mainstream the ET/EC-based IWEM approach and promoting its standardization through the development of operational manuals and guidelines, which will be informed through the results for project-supported activities in two demonstration areas (Component 2) in the Hai River Basin complemented with case studies and research combining to encourage a shift towards more efficient modes of production.

### Component Name

Component 2: Demonstration in Hai Basin on the IWEM Approach

### Comments (optional)

Component 2 will support the preparation and implementation of Target Value Allocation Plans (TVAPs) in two sub-river basins (the Luan and Hutuo), where the possible impact of climate change will be considered. Based on the target ET and EC values allocated, the component will also support preparation and implementation of the Integrated Water and Environment Management Plans (IWEMPs) in two demonstration city areas Chengde (water-pollution dominant areas) and Shijiazhuang (water-overuse dominant areas) in the Hai River Basin whose implementation will lead to improved water productivity, reduced water consumption and water pollution and increased ecological environment flows in the rivers through the integration of ET and EC targets to guide and control water extraction, utilization and pol

#### **Component Name**

Component 3: Scaling up the IWEM Approach to Three River Basins

#### **Comments (optional)**

Component 3 will scale-up the ET/EC-based IWEM approach with innovative technologies and policy interventions tested in the two pilot sub-river basins and demonstration cities under the previous components to cover additional areas in the Liao, Hai and Yellow river basins, respectively. Together with the demonstration projects supported under components an estimated 35% of the “Problem Areas” in the three river basins will be covered (see Table 1 above). The development of two platforms with accompanying data bases at the national level will also be supported for purposes of monitoring actual ET values and actual water pollution discharges and facilitating the consultation and negotiation of the ET and EC target values needed to meet the sustainable development objectives among different s

#### **Component Name**

Component 4: Capacity Building and Project Management

#### **Comments (optional)**

Following the suggestions stemming from the STAP review of the Project, Component 4 will place considerable emphasis on strengthening the capacity of the central and local governments to support IWEM through consulting services and training, workshop and study tours.

#### **IV. Financing (in USD Million)**

Total Project Cost:	9.50	Total Bank Financing:	0.00
Financing Gap:	0.00		
<b>For Loans/Credits/Others</b>			<b>Amount</b>
Borrower			0.00
Global Environment Facility (GEF)			9.50
Total			9.50

#### **V. Implementation**

Management and implementation of the Project represents a continuation of earlier cooperation between Ministry of Environment Protection (MEP) and Ministry of Water Resources (MWR) supported by the project provinces participating in the 1st phase GEF Hai Basin Integrated Water and Environment Management Project (GEF/WB Hai Basin Project), which was successfully implemented from 2005 to 2012. The Minutes on Cooperation for IWEM signed recently in 2015 between the Ministers of MEP and MWR has greatly strengthened and deepened the cooperation between two ministries at the national level for this Project.

## VI. Safeguard Policies (including public consultation)

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	x	
Natural Habitats OP/BP 4.04	x	
Forests OP/BP 4.36		x
Pest Management OP 4.09		x
Physical Cultural Resources OP/BP 4.11		x
Indigenous Peoples OP/BP 4.10		x
Involuntary Resettlement OP/BP 4.12	x	
Safety of Dams OP/BP 4.37		x
Projects on International Waterways OP/BP 7.50		x
Projects in Disputed Areas OP/BP 7.60		x

### Comments (optional)

Environmental and Social Management Framework: An Environmental and Social Management Framework (ESMF) has been prepared, setting out the guidelines and procedures to address the environmental impacts of the project activities. The ESMF includes, among others: (a) the Bank's safeguards policies to be taken into account in the development of the technical assistance activities financed under the project; (b) guidelines and procedures to address environmental and social issues caused by the demonstration activities; (c) Environmental Code of Practice (ECOP) to address general construction related impacts; (d) institutional arrangements; and (e) public consultation.

Gender Issue: The project ensures that gender consideration is mainstreamed into project design and implementation. Based on gender disaggregated data, project social assessment (SA) in the Environment and Social Management Framework (ESMF) has identified different needs, roles and priorities of men and women, and specified women's demands and aspirations to project activities so that women could benefit from the project as expected. On the ground, women farmers participate in project through WUAs, and they should account for 50 percent of local WUA membership. On the upper levels of project management, women's participation should take 40 percent in PMOs and the related.

In addition to US\$9.5 million of GEF Grant Financing, US\$95 million of government parallel financing is planned as external resources to contribute to attainment of Project Development Objective (PDO). The parallel financing is a small portion of the investment for the implementation of the 13th Five Year Plan (2016-2020) and was approved already by the government. The activities under the parallel financing are carefully selected to contribute to achieving the PDO.

## VII. Contact point

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