



PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project

THE GEF TRUST FUND

Re-Submission Date: 12/23/2009

PART I: PROJECT IDENTIFICATION

GEF PROJECT ID: PROJECT DURATION: 36 months
GEF AGENCY PROJECT ID: P108592
COUNTRY(IES): China
PROJECT TITLE: Huai River Basin Marine Pollution Reduction
GEF AGENCY(IES): World Bank,
OTHER EXECUTING PARTNER(S): n/a
GEF FOCAL AREA (S): International Waters
GEF-4 STRATEGIC PROGRAM(S): IW-SP2 (see preparation guidelines section on exactly what to write)
NAME OF PARENT PROGRAM/UMBRELLA PROJECT (if applicable):
GEF/WB Strategic Partnership Investment Fund for Pollution Reduction in the Large Marine Ecosystems of East Asia

INDICATIVE CALENDAR*	
Milestones	Expected Dates mm/dd/yyyy
Work Program (for FSP)	March 2010
CEO Endorsement/Approval	July 2011
Agency Approval Date	August 2011
Implementation Start	Sept 2011
Mid-term Evaluation (if planned)	
Project Closing Date	Sept 2014

* See guidelines for definition of milestones.

A. PROJECT FRAMEWORK

Project Objective: To demonstrate innovative and cost-effective pollution reduction practices in Dongying city in order to reduce nutrient and pollution load to the Bohai Sea.

Project Components	Indicate whether Investment, TA, or STA ^{a, b}	Expected Outcomes	Expected Outputs	Indicative GEF Financing ^a		Indicative Co-Financing ^a		Total (\$) c = a + b
				(\$) ^a	%	(\$) ^b	%	
1. Wetland Construction	investment, TA	(a) nutrient and pollution to Bohai Sea reduced; (b) increased public and targetted group awareness and education;	(a) xx tons of nutrient and pollutants reduced (to be decided during project preparation); (b) constructed wetlands in place; (c) training center established;	2,700,000	11	20,900,000	89	23,600,000
2. Innovative Nutrient and Pollution Control Practice Demonstration	investment, TA, STA	(a) non-point pollution reduced through FEPA operations; (b) water body self-purification capacity improved through optimization of water gates operations; (c) improved coverage of	(a) FEPAs established; (b) scientific operation scheme for key water gates in place; (c) new waste water treatment plant constructed; (d) xx tons of nutrient and pollutants reduced (to be decided during	1,300,000	13.00%	8,610,000	87	9,910,000

		urban waste water treatment;	project preparation);					
3. Policy Development	TA, STA	(a) water system and nutrient / pollution control in Guangli river watershed strengthened; (b) replication strategy tested and disseminated;	(a) action plan developed; (b) replication strategy developed;	500,000	50	500,000	50	1,000,000
4. Project Monitoring and Capacity Building	TA STA	(a) M&E for pollution control improved; (b) overall institutional capacity strengthened;	(a) M&E system in place; (b) training and workshop organized;	450,000	56	350,000	44	800,000
5. Project management				50,000	14	300,000	86	350,000
Total project costs				A5,000,000		B30,660,000		35,660,000

^a List the \$ by project components. The percentage is the share of GEF and Co-financing respectively of the total amount for the component.

^b TA = Technical Assistance; STA = Scientific & Technical Analysis.

B. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE and by NAME (in parenthesis) if available, (\$)

Sources of Co-financing	Type of Co-financing	Project
Project Government Contribution	Unknown at this stage	30,660,000
GEF Agency(ies)	(select)	
Bilateral Aid Agency(ies)	(select)	
Multilateral Agency(ies)	(select)	
Private Sector	(select)	
NGO	(select)	
Others	(select)	
Total Co-financing		B30,660,000

C. INDICATIVE FINANCING PLAN SUMMARY FOR THE PROJECT (\$)

	Previous Project Preparation Amount (a)	Project (b)	Total c = a + b	Agency Fee ¹
GEF financing		A5,000,000	5,000,000	
Co-financing	500,000	B30,660,000	31,160,000	
Total	500,000	35,660,000	36,160,000	

¹ Agency Fee received at Council approval of Trance 1 of the World Bank/GEF Investment Fund for Pollution Reduction in the Large Marine Ecosystems of East Asia.

D. GEF RESOURCES REQUESTED BY AGENCY (IES), FOCAL AREA(S) AND COUNTRY(IES)¹

GEF Agency	Focal Area	Country Name/ Global	(in \$)		
			Project (a)	Agency Fee (b) ²	Total c=a+b
(select)	(select)				
(select)	(select)				
(select)	(select)				
(select)	(select)				
(select)	(select)				
Total GEF Resources					

¹ No need to provide information for this table if it is a single focal area, single country and single GEF Agency project.

² Relates to the project and any previous project preparation funding that have been provided and for which no Agency fee has been requested from Trustee.

PART II: PROJECT JUSTIFICATION

A. STATE THE ISSUE, HOW THE PROJECT SEEKS TO ADDRESS IT, AND THE EXPECTED GLOBAL ENVIRONMENTAL BENEFITS TO BE DELIVERED:

China's Huai River Basin involves four provinces, i.e. Shandong, Jiangsu, Anhui and Henan. The major development issue in the Huai River Basin is the imbalance between social, economic development and environment protection. With rapid social and economic development, many rivers in the Huai River Basin have become increasingly polluted and more nutrients and pollutants are discharged into the Bohai Sea and Yellow Sea and contaminating these international waters. Shandong Province, with the longest coastlines of the Bohai Sea and the Yellow Sea within the Huai River Basin, is contributing more nutrients and pollutants to these seas than any of the other three provinces. Coastal cities such as Dongying in Shandong province are both significant contributors to and direct victims of such pollution. Dongying city is located in the south western bank of the Bohai Sea and established on one of China's major oil fields. Dongying has been the central city of the Yellow River delta since its establishment in 1983 with a total area of about 7,923 km², a total Bohai Sea coastline of over 350 km, and a total population of about 1.8 million. Though a young city and despite constant effort made in the past, the delicate eco-system of Dongying city has been impacted by increasing environment pollution.

Major pollution in Dongying is derived from both urban and rural areas and point and non-point sources such as industries, household wastes, livestock wastes, chemical fertilizer and farm pesticides. Though improved, the total nutrient and pollutant discharged into the Bohai Sea from Dongying city reached 2,100 tons of COD, 393 tons of BOD, 368 tons of NH⁺-N, 85 tons of total P, and 48 tons of total N in 2008 according to monitoring results by Dongying Environmental Protection Bureau.

The proposed project is part of the WB/GEF Strategic Partnership Investment Fund for Pollution Control in the Large Marine Ecosystems of East Asia (the IF), a program approved by the GEF in 2005 to finance innovative demonstration projects in pollution control. Compliant with the IF, the proposed Project intends to demonstrate innovative and cost-effective solutions in Dongying city to reduce discharge of land-based nutrient and pollution to and minimize adverse impact of the nutrient and pollution on Bohai Sea through (a) reduction of nutrient and pollutants to rivers including both point and non-point pollution sources (establishment of farmer environment protection associations to help control rural point and non-point pollution); (b) optimize water gate operation in conjunction with wetland development to increase the environmental carrying capacity of the rivers and adjust water flow to the wetland; (c) participatory formulation and enforcement of the policies and regulations for the Guangli watershed and preparation of replication strategy to disseminate demonstrated technologies and practices to other watersheds in the Huai River Basin and beyond as well as through the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), the Bank's partner for the Regional Component of the Strategic Partnership, which is responsible for information dissemination; and (d) nutrient and pollution control capacity building. This proposed Project will provide an incremental benefit to the baseline World Bank financed China Huai River Basin Flood Management and Drainage Improvement Project (HRBFMDI Project) which is currently under preparation for FY10. The proposed GEF project would consist of the following five components

- Component A: Wetland Construction. Component activities would include (a) construction of a wetland at the Shaying (2.2 km²) as a secondary treatment of the existing Shaying Waste Water Plant; (b) construction of a wetland at the Dongbalu (10 km²) as a reinforced tertiary treatment for nutrient and pollution reduction; and

(c) construction of a Huai River Basin environmental education and training center located in Guangli River Watershed.

- Component B: Innovative Nutrient and Pollution Control Practice Demonstration. This component would support (a) optimization of operations of five key water gates in the Guangli River Watershed including support to three key existing water gates and construction of two water gates at the intake and discharge points of the new Dongbalu wetland; (b) establishment of Farmer Environmental Protection Associations in 11 townships with rural residents and agricultural activities within Guangli River Watershed as a vehicle to reduce rural pollution i.e. rural household wastes, livestock wastes, wastes from application of chemical fertilizer and pesticides and (c) support to construction of the Xichengnan waste water treatment plant as a part of the complete urban point-source pollution treatment network.
- Component C: Policy Development. This component would support (a) preparation of an Action Plan for integrated water system management and pollution control in Guangli River Watershed; and (b) development of a Huai River Basin-wide Replication Strategy for comprehensive pollution control.
- Component D: Project Monitoring and Capacity Building. This component would support (a) establishment of a monitoring and evaluation system for implementation of project activities; (b) capacity building and institutional development for key implementing agencies involved in project implementation and for project beneficiaries; (c) workshops for replication strategy development, and (d) close collaboration with the PEMSEA, the Bank's partner responsible for the Regional Component of the Strategic Partnership. The project would provide information to GEF's IW:LEARN hub, set up a project website according to the guidelines from IWLEARN, and participate in GEF's information sharing activities e.g. its biannual IWLEARN conference, and PEMSEA's triannual East Asia Seas Congress. The project would also join the UNEP's Best Practices and Success Stories Global Network, and report annually on the GEF 4 output indicators using the IW Tracking Tool.
- Component E: Project Management. This component would support project management of government agencies involved in project implementation at Dongying city, Shandong province and Huai River Basin Commission.

B. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH NATIONAL/REGIONAL PRIORITIES/PLANS:

The proposed project is in full consistency with China's national priorities. The "Eleventh Five-Year Plan for State Environment Protection", developed by the State Environmental Protection Administration (now Ministry of Environment Protection) and the National Development and Reform Commission and endorsed by the State Council of China, listed the following as priorities: (a) reduction of SO₂ and COD by 10% by 2010 from 2005 level; (b) actions taken to control pollution in key basins including Huai River, Hai River, Liao River, Tai Lake, Cao Lake, Dianchi Lake and Songhuajiang River basins; (c) expediting treatment of urban sewage and wastes; (d) prevention and control of rural non-point source pollution; (e) reduction of land-based pollutants to seas; and (f) cleaner water in Bohai Sea. The "Development Program for High Efficiency and Ecological Economic Zone in Yellow River Delta", covering Dongying and five other cities of Shandong province, lists environmental protection including both urban and rural pollutions as one of priorities.

The proposed project fits within the Bank Group and China's Country Partnership Strategy (CPS, May 23, 2006), which states that, "better resource management is essential to sustainable development." The CPS states that the Bank Group will help to mainstream environmental concerns into the development process. "Taking steps to minimize water pollution" and piloting and scaling up "policies and mechanisms to address agriculture non-point pollution" are among areas where Bank engagement will focus on. Lastly, the project fits with the regional PEMSEA strategy, of which the IF is a partner, which aims to achieve sustainable development in the region.

C. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH [GEF STRATEGIES](#) AND STRATEGIC PROGRAMS:

The Project is fully consistent with GEF International Waters Focal Area Strategy and Strategic Programs for GEF-4, in particular with current Strategic Program 2 "Reducing Nutrient Over-Enrichment and Oxygen Depletion from Land-Based Pollution of Coastal Waters in LMEs Consistent with the GPA". Strategic Program 2 lists Asia as one of the areas where a doubling of nutrient loadings is projected by 2050 and states that more attention will be placed by GEF on this trans-boundary concern..

D. JUSTIFY THE TYPE OF FINANCING SUPPORT PROVIDED WITH THE GEF RESOURCES:

The proposed project is expected to support works, equipments, consultant services, training, workshops and other costs necessary for project implementation. GEF grant will be required to support some physical construction but also for consultant services, training, workshops, knowledge management, capacity building and other costs which are critical to project implementation but often underfinanced by government funding. To provide an incentive and fund activities that would enhance the baseline investments (wastewater treatment plant) with critical additional activities i.e. constructed wetland, environmental education and training center, farmer environmental protection association that would not otherwise get funding; the GEF grant also contributes a focus to international waters that would otherwise be absent. The GEF grant is critical for the success of project implementation.

E. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:

This Project is part of the WB/GEF Strategic Partnership Investment Fund for Land-based Pollution Reduction in the Large Marine Ecosystems of East Asia, which focuses on both urban waste-water treatment and agricultural pollution reduction. The IF is managed in cooperation with the PEMSEA, who has developed a Regional Sustainable Development Strategy of the Seas of East Asia. PEMSEA is also part of the regional implementation plan of the UNEP's Global Program of Action (GPA) for the Protection of the Marine Environment from Land-based Activities. The objective of the IF is to scale up investment to reduce land-based water pollution in coastal areas and major river basins in East Asia.

Project preparation will incorporate experience and lessons learned from many other international and national initiatives and programs already existing or under way around the Bohai Sea and Yellow Sea and will maintain close coordination with them during project preparation and implementation. Major related projects and programs include (a) Reducing Environmental Stress in the Yellow Sea Large Marine Ecosystem (GEF/UNDP); (b) Regional Program on PEMSEA (GEF/IMO); (c) Hai River Basin Integrated Water and Environment Management Project (GEF/WB); and (d) Shanghai Agricultural and Non-point Pollution Reduction Project (GEF/WB). The proposed Project is prepared to join the Yellow Sea Partnership – an inter-agency initiative established to facilitate co-operation and coordination among various organizations which conduct activities for environmental conservation in the Yellow Sea. This will provide additional links between the IF and the YSLME.

F. DISCUSS THE VALUE-ADDED OF GEF INVOLVEMENT IN THE PROJECT DEMONSTRATED THROUGH INCREMENTAL REASONING :

This proposed Project takes a comprehensive and coordinated approach in a relatively enclosed Guangli river watershed to (a) address both point and non-point pollution issues; (b) cover both urban and rural areas; (c) integrate technological solutions, policy development; monitoring, training and dissemination; and (d) involve agencies at city, province and Huai River Basin levels to achieve the Project objectives. The proposed Project is designed to provide innovative and demonstrative experience to catalyze further investments for nutrient and pollution reduction to international waters which can be replicated in Shandong province, Huai River Basin, China and other countries in the region under the support of the IF and PEMSEA. The proposed Project is incremental to the IBRD funded China HRBFMDI Project. Without GEF grant support, the following will not be considered as priorities by the local government in the next few years due mainly to its focus on urban pollution issues and limited budget available for environmental protection: (a) comprehensive approach in nutrient and pollution reduction; (b) actions to reduce nutrient and pollution to international waters; and (c) control of rural non-point source pollution through farmer environmental protection association.

G. INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS, THAT MIGHT PREVENT THE PROJECT OBJECTIVE(S) FROM BEING ACHIEVED, AND IF POSSIBLE INCLUDING RISK MITIGATION MEASURES THAT WILL BE TAKEN:

The project concept, based on strong analytical results by reputable universities and research institutes and successful small-scale experiments in China, is well accepted by Dongying government and strongly supported by Shandong provincial government and Huai River Basin Commission, Ministry of Water Resource and Ministry of Finance. This proposed Project is also closely associated with the IBRD funded China HRBFMDI Project, which aims to provide better and more secured protection against floods and water logging, to increase farmland productivity and reduce property losses in predominantly poor rural areas in the Huai River Basin. As such, the overall risk of the proposed Project is modest. The potential risks and relevant mitigation measures that will be taken are shown below:

- Risk 1: Technical failure risk as a result of (a) inappropriate choice of technology and system, (b) design, equipment or material failure, or (c) lack of practical and efficient O&M arrangement.
Mitigation: The proposed Project will introduce innovative but proven technologies; the client will recruit

specialists to provide technical assistance; training will be provided to all operators of the systems to be supported under this project to ensure practical and efficient O&M arrangement in place.

- Risk 2: Institutional risk due to inadequate collaboration among key agencies involved that have sometimes non-compatible interests and priorities and are not accustomed to working closely together.
Mitigation: An overall project institutional arrangement for entities at Dongying, provincial and Huai River Basin levels will be agreed based on experience of the HRBFMDI Project. Respective responsibilities among institutions involved will be specified and agreed upon during project preparation.
- Risk 3: Financing risk due to insufficient financial resources neither in sufficient amount nor on a timely basis from committed sources to implement the project.
Mitigation: Provision of counterpart funding in full amount and on a timely basis will be agreed. Commitment letter from each financing source will be obtained prior to project negotiations.
- Risk 4: Operational failure risk resulting from (a) lack of ownership and local community support; (b) operational and management support not available or inadequately accessible.
Mitigation: These issues will be addressed during project preparation. Farmer Environmental Protection Association will be established by farmers on a voluntary basis. The demonstrations will focus on those environmental issues with their most concerns and Farmer Environmental Protection Associations will be involved in activity design and implementation. An agreement among government agencies and other participants involved in project preparation and implementation will be reached to specify the responsibilities and record commitment. A Project Management Office with competent staff of adequate numbers will be established to provide required service and support.
- Risk 5: Climate change risks. Climate change risk is expected to have negligible impact on the proposed project because:
 - wetlands under the project will be designed to demonstrate cost-effective pollution reduction practices with multi-functions including improved flood management and drainage;
 - the project area, Dongying city, has an average elevation of 6-8 meters above the sea level and is not subject to immediate impacts of sea level rise in short and mid terms;
 - Dongying City will benefit from an improved flood management and drainage system in Shangdong Province, which will be financed by the IBRD-funded Huai River Basin Flood Management and Drainage Improvement Project. In addition, five key watergates in the project area will be strengthened under the project, which will further improve the area's capacity in flood management as well as mitigate the effect of potential sea level rise, if there is any.

H. DESCRIBE, IF POSSIBLE, THE EXPECTED COST-EFFECTIVENESS OF THE PROJECT:

While specific studies on cost-effectiveness have not been carried out, it is generally acknowledged that some technologies the project intends to introduce are among cost-effective practices such as wetland, anaerobic and aerobic processes for livestock wastes treatment and optimal use of existing infrastructure (water gates). Pollution reduction through Farmer Environmental Protection Associations to be established under the project is likely to offer an innovation for cost-effectiveness of the GEF grant. The project will take a comprehensive and coordinated nutrient and pollution control approach which is the most effective way to fulfill the overall nutrient and pollution reduction objectives and choose interventions that take consideration of innovation, efficiency, cost effectiveness, low operation and maintenance cost, and high potential for replication. During preparation, quantitative estimates of nutrient and pollution reduced per unit of investment will be made for the Project components.

I. JUSTIFY THE COMPARATIVE ADVANTAGE OF GEF AGENCY:

The Bank's comparative advantage in this project is through the mobilization of local funds (amounting to over six times the GEF grant), and through direct investments and integration with the China HRBFMDI Project (\$200 million IBRD loan). The World Bank has the comparative advantage to mobilize the \$30.66 million in cofinancing needed for the proposed Project to succeed.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)


A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):

(Please attach the [country endorsement letter\(s\)](#) or [regional endorsement letter\(s\)](#) with this template).

NAME	POSITION	MINISTRY	DATE (<i>Month, day, year</i>)
Fangyu Liu	GEF Operational Focal Point	FINANCE	November 27, 2009

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for project identification and preparation.

Agency Coordinator, Agency name	Signature	Date (<i>Month, day, year</i>)	Project Contact Person	Telephone	Email Address
Steve Gorman GEF Executive Coordinator, World Bank		December 8, 2009	Jiang Ru	202-473- 8677	jru@worldbank.org