

PIP annex 9 - B of GEF Hai Basin Integrated
Water and Environment Management Project

**The Environmental Management
Plan (EMP) of the GEF Hai Basin
Project**

(Final Version)

GEF Hai Basin Project Office of SEPA and MWR

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1. Agency Management System and the Allocation of Management Personnel

An important component of the GEF project is project management and project training. Project management and project training include (i) developing an international consulting team and a Chinese consulting team; and (ii) training related ability for Chinese project management personnel. The project implementation will improve the comprehensive management ability for water resources and water environment in Hai He Basin and develop a complete set of environmental management system of water resources and water environment. In addition, a great group of management personnel will be trained in the process of project implementation. Figure 1 is the framework of GEF project management, and it can provide a better and clearer understanding for general project management system.

In addition, project monitoring and evaluation will be carried out by Project PMOs. Annual monitoring and evaluation reports will be prepared that detail the Project implementation progress of activities and finances for each subcomponent and the performance indicators. This will be tracked in the Project MIS system. In addition each IWEMP and demonstration project will include a monitoring and evaluation component that will specifically address the implementation and effectiveness of the IWEMPs and demonstration projects. The monitoring and evaluation plans for these activities will be prepared during the first phase of Project implementation. IWEMPs and demonstration projects will include baseline surveys/inventories of surface and groundwater quantity and quality conditions, uses and trends and establish specific objectives, timelines and indicators for IWEMP and demonstration Project implementation both during the life of the Hai Basin Project and beyond. Budget will be included in the implementation of the IWEMPs and Demo Projects.

2. Implementation and Improvement of Water Law and Regulation

Through the project implementation, a cooperation among the monitoring and management of water quality, environmental protection, and water conservancy works, will provide a clear relationship between future water resources and water

environment. In addition, the project implementation can also define the legal status of basin management agency. Therefore, a basin management system of water resources and water environment as well as the framework of policy, law, and regulation is necessarily established, which is suitable and harmonious with social and economic development in Hai He Basin. Correspondingly, the implementation and improvement of water law and regulation will further strengthen management system of using water and saving water, and then bring a successful establishment and implementation of water saving policies.

3. The Improvement of the Ability of Monitoring and Controlling

To better improve water environment it is necessary to strengthen monitoring and communication through increasing the monitoring points in existing monitoring networks within the basin, meanwhile, to enhance the control ability for water environment while treating wastewater and improving water body quality. The IWEMPs and demonstration projects will include programs to monitor surface and groundwater quantity and quality and to review past trends and changes during and after implementation.

(i) The monitoring networks and stations of surface water

The monitoring networks and stations of surface water is composed by national basic stations and networks and local (special) ones. The monitoring for surface water can be improved through optimizing or building monitoring stations if necessary.

(ii) The monitoring networks and stations of groundwater

The monitoring networks and stations of groundwater are laid to adapt to production. The monitoring documents are compiled and printed into yearbook by taking district and country as unit. Meanwhile, the briefing and communiqué of groundwater resources that are compiled by national, local, and municipal Ministry of Water Resources the PRC (bureau) per year as well as the documents and research results of groundwater can be shared.

(iii) The monitoring networks and stations of water quality

The monitoring of water quality is required according to the responsibilities of different sectors. Some environmental protection, hydraulic, municipal, agricultural, and marine sectors developed corresponding monitoring for water quality in different level. Each region publish automatic monitoring weekly report of water quality, monthly report of water quality in drinking source water and monthly report of water quality in major watershed towards the nation through national general monitoring station, and also publish all kinds of communiqués towards regional and municipal governments as well as environmental management sectors.

4. The Improvement of Integrated Management Abilities of Water Resources and Water Environment

Obviously, the project implementation will improve integrated management abilities of water resources and water environment. Before and during project implementation it is necessary to train project management personnel and technical personnel including visiting, study tour and studying. After the project is built, the project management office will hand over established demonstration project to related sectors to have a centralized maintenance and management, which will assuredly give a continuous benefit of demonstration project. The demonstration engineering projects must be surveyed and designed according to the requirements of technical specifications issued by related national sectors. The project program and construction plan must be formulated with strict requirement of technology and quality and strict institution of examination and approval. Moreover, the project implementation must comply with some laws issued by the nation such as Water Law, Water Environmental Protection Law, and Water and Soil Conservation Law, etc. as well as a series of detailed rules of implementation and management issued by local government, to insure the successful completion of the project.

In addition, the integrated management of water resources and water environment can also be realized through concentrating the management of water issues and developing integrated management information system of water resources and water environment. It is advantageous to save water, improve water environment, address

the issues of water saving, wastewater discharge, and dealing with pollution, and improve the eco-environment. Therefore, it is applicable from the point of environmental protection view.

5. Environmental Management Policy Framework

To mitigate possible environmental impacts, an environmental management framework, which is propitious to relief the pressure of small civil works to the environment, will be prepared. In addition, each demonstration project plan and IWEMP will include a mitigation plan to minimize negative environmental impacts.

These mitigation plans will include the following mitigations, where appropriate:

- Small works construction contracts will require compliance with the countermeasure plans.
- Underground water pollution treatment and protection countermeasures: based on the analysis of forecast result, put forward the underground water pollution treatment and protection measure for project development, including management, operation, production, etc.
- Air pollution treatment and prevention countermeasures: based on the analysis of forecast result, put forward the air pollution treatment and protection measure for project development, including management, operation, production, etc.
- Solid waste disposal countermeasures: analysis the rationality of the solid waste disposal option in planning, and provide the recommendation for safe disposal measure.
- Noise pollution treatment and prevention countermeasures: analysis the feasibility of noise pollution treatment and protection measure option in planning, and the rationality of engineering overall draft plane arrangement. Aiming at the character of the engineering, and provide the recommendation for develop the noise pollution control measure.
- Ecology environment protection countermeasures: according to local environmental function demand and the project development policy, provide the specific measure and recommendation for ecosystem and environment protection,

land utilization, etc.

- Risk management plan and the contingency measures: in order to ensure the project normally operate, prevent the accident and risk occurring, provide the risk management plan and contingency measure based on the results of project risk assessment.
- Circular Economy and Clear production countermeasures: according to the Eco-Industry and the clear production analysis, clarify the main issue existing in the project operation and product activities, provide the recommendation on the clear production option.
- Pollution product in construction period prevention and treatment countermeasures: provide the reasonable pollution treatment and prevention countermeasure for sewage, exhaust gas, solid waste, noise etc happened in construction period.
- Measures to be taken when encountering culturally significant sites during construction.

The environmental screening procedures for environmental mitigation measures will be carried out as follows:

- Analysis the project content, nature, dimension, location, and the construction conditions;
- Determination of the environment influence factors;
- Selection of the factors that are related to the project;
- Determination of the emphasis and scope of the evaluation.

For this purpose, a review mechanism will be established to screen the potential impacts of demonstration subprojects and IWEMPs. A screening by the PMOs will be carried out on an annual basis for each province/municipality, and they will be reviewed by the respective province/municipality and accepted by the World Bank.

Responsibility for preparation and implementation of mitigation measures (including responsibility for meeting all costs associated with resettlement) rests with the borrower. The PMOs have the overall responsibility for administrative aspects and are

responsible for oversights of any mitigation measures as described above.

6. The Cost of Project Environmental Management

In order to reduce the potential negative environmental impact during the implementation of the GEF Hai He Basin Project, each IWEMP and demonstration project plan will include the specific cost applied to relevant countermeasures during the construction period. In addition, during the implementation or after it, it should develop a series of environment management activities including environment supervision, monitoring, impact assessment, which need invest relevant funds. The IWEMPs and demonstration projects are 16 involved with environment supervision management, they are 5 in Beijing, 5 in Hebei, 3 in Tianjin, and 1 in Shandong, Shangxi, and Henan. Based on the character of the project, and activities, we estimate the activities above need 571 thousand dollars (Table 1).

Table 1: Environmental Supervision Costs (Unit: 000' dollars)

No.	Subject	Cost	Note
1.	Current status research and material fee	52.8	Collect in separate based on project and local situation
1.1	Social environment research	<u>4.8</u>	
1.2	Environmental, hydrologic, geological, weather research	<u>8.0</u>	
1.3	Surface water and under ground water current status research	<u>24.0</u>	
1.4	Ecological environment current status research	<u>8.0</u>	
1.5	Engineering status research fee	<u>8.0</u>	
2.	Assessment fee	111.6	Includes the assessment after the implementation and all demonstration projects. Confirm the undertaking organ by bidding.
2.1	EIA outline compose	<u>8.0</u>	
2.2	Engineer assessment	<u>16.0</u>	
2.3	Environment current status assessment	<u>24.0</u>	
2.3.1	Surface water	9.6	
2.3.2	Gas	3.2	
2.3.3	Solid waste	1.6	
2.3.4	Ecology	4.8	
2.3.5	Noise	1.6	
2.3.6	Social-economy	3.2	
2.4	Forecast on EIA	<u>18.8</u>	
2.4.1	Surface water	12.8	
2.4.2	Gas	4.8	
2.4.2	Noise	3.2	
2.5	EIA, countermeasure, environment plan	<u>44.8</u>	
2.5.1	Surface water	9.6	
2.5.2	Gas	3.2	
2.5.3	Solid waste	1.6	
2.5.4	Noise	1.6	
2.5.5	Under ground water, soil, ecology	3.2	
2.5.6	Total amount control option	3.2	
2.5.7	Clear production analysis	1.6	
2.5.8	Pollution treatment and prevention measure	8.0	
2.5.9	Profit and loss analysis	1.6	

No.	Subject	Cost	Note
2.5.10	Environment management and monitoring plan	3.2	
2.5.11	Public participant	8.0	
3.	Monitoring and measure fee	160.0	Including surface water, gas, noise, under ground water, soil. The local water resource and environment protection organs undertake the responsibilities.
4.	Compose report	48.0	Completed by EIA organs.
5.	Print	8.0	
6.	viaticum	48.0	
7.	Consultation	48.0	
8.	Management and tax	57.2	13.2% of above
9.	Unpredictable fee	37.4	7% of above
TOTAL		571.0	

Figure 1: GEF Hai Basin Institution and Organization Relationship Sketch Map

