



REQUEST FOR CEO ENDORSEMENT¹

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

PART I: PROJECT INFORMATION

Project Title: Shaanxi Weinan Luyang Integrated Saline Land Management			
Country(ies):	People's Republic of China	GEF Project ID: ²	4633
GEF Agency(ies):	AsDB (select) (select)	GEF Agency Project ID:	44037
Other Executing Partner(s):	Weinan City Government	Submission Date:	10/04/2012
GEF Focal Area (s):	Land Degradation	Project Duration(Months)	36 months
Name of Parent Program (if applicable):	PRC-GEF Land Degradation Partnership for Dryland Ecosystems	Agency Fee (\$):	200,000
For SFM/REDD+ <input type="checkbox"/>			

A. FOCAL AREA STRATEGY FRAMEWORK³

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount (\$)	Cofinancing (\$)
(select) LD-1	Outcome 1.2: Improved agricultural management	Output 1.2 Innovative SL/WM practices introduced at field level	GEF TF	1,000,000	47,500,000
(select) LD-1	Outcome 1.3: Sustained flow of services in agroecosystems	Output 1.3 SL/WM interventions to increase vegetative cover in agroecosystems	GEF TF	975,000	30,000,000
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)			(select)		
(select) (select)	Others		(select)		
Subtotal				1,975,000	77,500,000
Project management cost ⁴			GEF TF	25,000	2500000
Total project costs				2,000,000	80,000,000

B. PROJECT FRAMEWORK

Project Objective: To improve the natural environment and rural livelihoods in Luyanghu area through improved management of saline soils						
Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount (\$)	Confirmed Cofinancing (\$)
1. Improved	Inv	1.1. 2.6-3.2% annual	1.1.1. Testing of at least	GEF TF	900,000	37,500,000

¹ It is important to consult the GEF Preparation Guidelines when completing this template

² Project ID number will be assigned by GEFSEC.

³ Refer to the [Focal Area/LDCF/SCCF Results Framework](#) when filling up the table in item A.

⁴ GEF will finance management cost that is solely linked to GEF financing of the project. PMC should be charged proportionately to focal areas based on focal area project grant amount.

<p>management of saline soils through rehabilitation of drainage system and introduction of Sustainable Land and Water Management (SL/WM) best practices</p>		<p>reduction in soil salinity on 21,200 ha of land leading to 13-16% increase in agricultural productivity on 18,600 ha of land and benefitting 32,400 people in the project area (LD 1.2)</p>	<p>10 innovative and replicable Best Practices (BPs) on 10 ha each, in rehabilitation of saline soils, including use of:</p> <ul style="list-style-type: none"> a) soil amendments (e.g. soil desalination agents, integrated pest and soil fertility management); b) biological measures (e.g. crop rotation, green manure, planting of salt resistant tree crops); and c) physical measures (e.g. water-saving irrigation, conservation tillage) to increase soil productivity (GEF) <p>1.1.2. Rehabilitate main desalination drainage canals of about 50 km by 2015 (Loan)</p> <p>1.1.3. Rehabilitate 90 km of drainage ditches and improve 316 small drainage ditches by 2015 (Loan)</p> <p>1.1.4. Replication of BPs in saline soil management through establishment of Farmer Field School (FFS) in Pucheng and Fuping Counties (GEF)</p>			
<p>2. Improved resilience to climate change of agro-ecosystems and reduced flood risk to local people</p>	<p>Inv</p>	<p>2.1. Increased resilience to climate change of the Luyanghu agro-ecosystems and reduced flood risk through improved land cover on 2,000 ha of land and improved rural livelihoods in poor</p>	<p>2.1.1. Testing of at least 2 best practices for establishment of green belts (covering 2 ha), including:</p> <ul style="list-style-type: none"> a) establishment of a multifunctional Greenway system that supports ecotourism in agricultural areas; and b) planting of 	<p>GEF TF</p>	<p>540,000</p>	<p>29,500,000</p>

		<p>rural areas with 10% increase in income from alternative livelihoods, including ecotourism (LD 1.3)</p>	<p>indigenous and multi-purpose tree species as shelterbelts along irrigation canals (GEF)</p> <p>2.1.2. 130 ha of greenbelts established by 2017 using Best Practices, and total forest area increased by 2,000 ha (Loan)</p> <p>2.1.3. 100 villagers trained on alternative livelihoods, including wetland and salt pan ecotourism, marketing, etc. by 2015 (GEF)</p> <p>2.1.4. Establishment of an incubator for small rural enterprise development, including ecotourism (GEF)</p>			
3. Improved wetland management	TA	<p>3.1. 1,070 ha of the Luyanghu National Wetland Park rehabilitated, managed and protected by 2017 and 1,000 villagers supported through ecotourism and/or other activities identified in the Master Plan (LD 1.3)</p>	<p>3.1.1. One management plan for the wetlands that incorporates ecosystem service assessment, valuation and integrated land and water management arrangements (GEF)</p> <p>3.1.2. Assessment of opportunities for establishment of an eco-compensation mechanism (GEF)</p> <p>3.1.3. 100 villagers trained, including 50 women, on livelihood skills during 2013-2015 (Loan)</p> <p>3.1.4. 50 officials trained on wetland ecosystem functions and management by 2016 (Loan)</p> <p>3.1.5. Testing of at least 2 innovative and</p>	GEF TF	435,000	10,000,000

			<p>replicable Best Practices in wetland rehabilitation (covering 10 ha), including:</p> <p>a) improved environmental and socio-economic sustainability of salt pan management; and</p> <p>b) community-based ecotourism as alternative livelihoods in wetlands (GEF)</p> <p>3.1.6. 860 ha of wetlands rehabilitated by 2016 using Best Practices (Loan)</p>			
4. Development of adaptive management capacity, monitoring and evaluation	TA	4.1. Project implementation conducted with adaptive results-based management, supported by progress monitoring and evaluation and linked to the PRC-GEF LD Partnership. (LD 1.2 & 1.3)	<p>4.1.1. Project monitoring system harmonized with the PRC-GEF LD Partnership and operating systematically and providing information on progress in meeting project output and outcome targets, and identifying lessons learned (Loan)</p> <p>4.1.2. Analysis of SLM monitoring data during project implementation and development of adaptive management strategies and protocols (GEF)</p>	GEF TF	100,000	500,000
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
			Subtotal		1,975,000	77,500,000
			Project management Cost ⁵	GEF TF	25,000	2,500,000
			Total project costs		2000000	80000000

⁵ Same as footnote #4.

C. SOURCES OF CONFIRMED COFINANCING FOR THE PROJECT BY SOURCE AND BY NAME (\$)

Sources of Co-financing	Name of Co-financier (source)	Type of Cofinancing	Cofinancing Amount (\$)
GEF Agency	AsDB	Hard Loan	50,000,000
Local Government	People's Republic of China	Hard-loan	30,000,000
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
Total Co-financing			80,000,000

D. GEF/LDCF/SCCF/NPIF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY¹

GEF Agency	Type of Trust Fund	Focal Area	Country Name/ Global	(in \$)		
				Grant Amount (a)	Agency Fee (b) ²	Total c=a+b
AsDB	GEF TF	Land Degradation	People's Republic of China	2,000,000	200,000	2,200,000
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
Total Grant Resources				2,000,000	200,000	2,200,000

E. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

Component	Estimated Person Weeks	Grant Amount (\$)	Cofinancing (\$)	Project Total (\$)
Local consultants*	587.00	481,000	106,000	587,000
International consultants*	90.00	405,000		405,000
Total		886,000	106,000	992,000

* Details to be provided in Annex C.

F. PROJECT MANAGEMENT COST

Cost Items	Total Estimated Person Weeks/Months	Grant Amount (\$)	Co-financing (\$)	Project Total (\$)
Local consultants*	156.00	25,000	131,000	156,000
International consultants*	156.00		702,000	702,000
Office facilities, equipment, vehicles and communications*			1,667,000	1,667,000
Travel*				0
Others**	Specify "Others" (1)			0
	Specify "Others" (2)			0
Total		25,000	2,500,000	2,525,000

* Details to be provided in Annex C.

** For others, to be clearly specified by overwriting fields *(1) and *(2).

G. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? No

(If non-grant instruments are used, provide in Annex E an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/NPIF Trust Fund).

H. DESCRIBE THE BUDGETED M & E PLAN:

In addition to regular monitoring, project performance will be reviewed annually and jointly by ADB, the Government, Shaanxi Provincial Government (SPG), Weinan Municipal Government (WMG), and local partners. Reviews will assess implementation performance and achievement of project outcomes and outputs, assess financial progress, identify issues and constraints affecting implementation, and work out a time-bound action plan for their resolution. ADB, the Government, and SPG will undertake a midterm review (MTR) to assess implementation status and take appropriate measures—including modification of scope and implementation arrangements, and reallocation of loan and grant proceeds, as appropriate—to achieve the project objectives.

Project performance monitoring. To monitor project progress in achieving the planned outcome and outputs, the PMO will establish and maintain a project performance management system (PPMS), which will be designed to permit adequate flexibility to adopt remedial action regarding project design, schedules, activities, and development impacts. The PPMS will adopt agreed indicators relating to the following aspects of the project: (i) project physical and financial progress; (ii) results of capacity development of the PMO and WLCDC through consulting services and training; (iii) implementation of the wetland park; (vi) outsourcing of O&M for drainage canal, wetland park management, and WLCDC. At the beginning of project implementation, the PMO will develop comprehensive PPMS procedures to systematically generate data in the above areas in consultation with the implementing agency and the PIOs, and with the assistance of consultants. The PMO will refine the PPMS framework, confirm achievable targets and monitoring and recording arrangements, and establish relevant systems and procedures not later than 6 months after loan effectiveness. The PMO and PIOs will assign staff, or contract consultants, to collect baseline and progress data at the requisite time intervals, including annual reporting. The PMO will be responsible for analyzing and consolidating reported data through its MIS, and reporting outcomes to ADB through quarterly progress reports.

Compliance monitoring. During project implementation, ADB and the PMO will closely monitor the compliance of all the covenants under the project and will take necessary remedy actions for any noncompliance. The compliance status will be reported in the quarterly progress report by the PMO and will be reviewed during project review missions.

Safeguards monitoring. Safeguards monitoring will be limited to environmental monitoring, which will be undertaken by the PMO through the environmental management unit that they will establish and staff. Further, the PMO will engage an environmental management company/consultant to assist the PIOs and PIUs in carrying out environmental management and monitoring activities. The PIOs will appoint one environment officer to supervise the work of the environmental management companies/consultant, report to the environment coordinator in the PMO, and coordinate with the PIUs. The PMO will monitor and assess overall project activities under the project design and monitoring framework, including environmental targets. The PMO will report to ADB the progress of the NWP, information on project implementation, environmental performance of the contactors, and environmental compliance through quarterly

project progress reports and semi-annual internal environmental monitoring reports. During construction, the PIUs will support the PMO and PIOs to conduct internal environmental monitoring and inspections to ensure that environmental mitigation measures are properly implemented. Inspections or audits will mainly cover construction activities, but these will also review the affected environment. External monitoring and inspection will be conducted by local environmental monitoring centers under the local environment protection bureaus. They will be responsible to undertake regular and random environmental monitoring and inspection activities before, during, and after construction as well as in the event of emergencies.

Gender and social dimensions monitoring. Project activities will create labor opportunities and have other impacts on social issues. The consolidated annual monitoring reports will include a section that describes (i) activities, advancements and impacts on women and other gender issues; and (ii) job opportunities created for poor and other vulnerable groups. It may also include, if deemed important, social issues as they emerge, such as the development of residential areas and residents. Social safeguard monitoring will also focus on the implementation of the resettlement plan, which includes a sustainable livelihood restoration plan, especially for vulnerable group and a gender action plan for the affected persons. Internal monitoring will be undertaken by the PIO with support from the social safeguard specialist as part of the consulting services. WPMO will submit the internal resettlement monitoring report to the ADB on the progress through the quarterly project progress reports. External monitoring of the resettlement plan implementation will be conducted by independent experts engaged by PMO. The external monitor will investigate progress and submit reports to ADB and PMO semi-annually.

Global environmental benefits monitoring. Results to be monitored include: changes in land cover and soil productivity, irrigation flows, and socio-economic benefits. The project that will improve irrigation flows and reduce salinity on an estimated area of 21,200 ha, will lead to improved agricultural productivity on 18,600 ha with an average increase of productivity of 13-16%; re-vegetation/ reforestation of 2,000 ha; and protection of 860 ha of wetlands. Advice will be sought from STAP on measurements of increases in total system carbon thanks to SLM as well as from the PRC-GEF LD Partnership that is developing a soil carbon measurement and accounting tool for dryland areas in China. Carbon will be monitored at some of the best practices pilot sites.

An Inception Workshop will be held at project start-up. It will involve local partners with assigned roles in the project organization structure, ADB and other stakeholders. The Inception Workshop is crucial for building ownership for the project results and to plan the first year's AWP. The Inception Workshop report will be a key reference document and will be prepared and shared with participants to formalize various agreements and plans decided during the meeting.

As the project progresses, the PMO will also update the Land Degradation tracking tool (as required), confirm achievable targets, and firm up monitoring and recording arrangements. Baseline and progress data will be reported at the requisite time intervals by the IA to the PMO. The PMO will be responsible for analyzing and consolidating reported data through its management information system, and for reporting outcomes to ADB through quarterly progress reports. The PMO will also report to the CPMO of the PRC-GEF Land Degradation Partnership at the requisite time intervals.

A project completion evaluation will be undertaken at least one month before the end of the project to assess the achievement of project outcomes and outputs and lessons learned. In accordance with GEF procedures, project evaluations will be publicly accessible and project documentation will be made available to the GEF Evaluation Office.

A summary of the M&E activities relevant to GEF is provided below. Further information regarding the performance and impact indicators for project implementation, along with their corresponding means of verification are provided within the Project Design and Monitoring Framework (Annex A). The PMO total funding allocated to project monitoring and evaluation amounts to US\$100,000 from the GEF, which constitutes 5% of the total project cost to GEF.

Type of M&E activity	Responsible Parties	Project Budget US\$ (Excluding project team staff time)	Time frame
Inception Workshop and Report	<ul style="list-style-type: none"> ▪ PMO/PIO ▪ ADB 	US\$ 15,000	Within first two months of project

Type of M&E activity	Responsible Parties	Project Budget US\$ (Excluding project team staff time)	Time frame
			start up
Measurement of project results	<ul style="list-style-type: none"> PMO in consultation with ADB will oversee the identification and measurement of key results indicators related to socio-economic benefits and global environmental benefits (GEBs). Results to be monitored include: changes in land cover and soil productivity, irrigation flows, and socio-economic benefits. 	US\$ 20,000	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Project Progress on <i>output and implementation</i>	<ul style="list-style-type: none"> The PIO will adopt the following agreed indicators: (i) physical progress of planting of greenbelts (based on survival rates), (ii) changes in soil salinity and drainage; (iii) changes in farm productivity and profitability; (iv) improvement of soil quality in irrigated fields; (v) reduction of poverty in the project area; and (vi) provision of technical services in the project area. 	US\$ 30,000	Annually prior to PIR and to the definition of annual work plans
PIR	<ul style="list-style-type: none"> PMO/PIO ADB 	None	Annually
Periodic status/ progress reports	PIU	None	Quarterly
Mid-term Evaluation	<ul style="list-style-type: none"> ADB External Consultants (i.e. evaluation team) 	US\$ 20,000	At the mid-point of project implementation.
Final Evaluation	<ul style="list-style-type: none"> ADB External Consultants (i.e. evaluation team) 	US\$ 30,000	At least three months before the end of project implementation
Project Terminal Report	<ul style="list-style-type: none"> PMO/PIO ADB 	None	At least three months before the end of the project
Audit	<ul style="list-style-type: none"> ADB Weinan City Government 	None	Yearly
Visits to field sites	<ul style="list-style-type: none"> ADB Representatives from Weinan City Government and Shaanxi Province 	Paid from GEF agency fee and operational budget as well as counterpart funding	Yearly
TOTAL indicative COST to the GEF Excluding ADB staff and travel expenses		US\$ 100,000	

PART II: PROJECT JUSTIFICATION

A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

A.1.1. The [GEF focal area/LDCF/SCCF strategies/NPIF Initiative](#):

The objectives and activities of the proposed project are consistent with the Land Degradation focal area and its objective 1 on: Maintain or improve flow of agro-ecosystem services sustaining the livelihoods of local communities. It will contribute to:

Outcome LD 1.2 Improved agricultural management through introduction of at least ten innovative sustainable land and water management practices to improve agricultural management on saline lands that will lower soil salinity and improve other soil properties, such as soil organic carbon, and enhance soil productivity by 13-16%,

thereby improving incomes of rural households residing in the Luyanghu area.

Outcome LD 1.3 Sustained flow of services in agro-ecosystems through improved irrigation flows on 21,200 ha of saline land, improvement of vegetation cover on 2,000 ha of land, and rehabilitation and protection of 860 ha of wetlands, which will enhance the provision of ecosystem services, such as water regulation (flows and quality), soil retention, water storage, and local climate moderation.

A.1.2. For projects funded from LDCF/SCCF: the LDCF/SCCF eligibility criteria and priorities:

N/A

A.1.3 For projects funded from NPIF, relevant eligibility criteria and priorities of the Fund:

N/A

A.2. National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NIPs, PRSPs, NPFE, etc.:

National 5 Year Plan (2011-2015): The project supports the new 12th Five Year Plan, which emphasizes the importance of reducing the degradation of lands. In particular, it includes binding targets for local governments to ensure that there will be no net loss of farming land resources during the 2011 to 2015 period.

National Poverty Reduction Strategy and Country Partnership Strategy: The project area is part of the Guanzhong–Tianshui Economic Zone, which was approved by the State Council in 2009 to strengthen the development of the western region of the People’s Republic of China (PRC). The baseline project will provide small-scale infrastructure for environmental and agricultural development in line with the PRC’s overall development strategies, particularly the development of the western provinces and a ‘harmonious countryside’.

Government Land degradation Sector Strategy: The Project is closely aligned with the Western Development Strategy in 1999, which has two main objectives: (i) reduce economic disparities between the western and other regions and (ii) ensure sustainable natural resource management. The project is also linked to a number of plans and programs to combat land degradation developed by the Government, include the following:

- i) National Plan for Ecological Environment Construction (1998–2050). This plan coordinates water and soil conservation with national economic development. The plan also aims to improve living standards and prevent water and soil loss.
- ii) Natural Forest Protection Program. Under this program, industrial logging in natural forests was banned (beginning in 1998) in most PRC areas. The program applies to all forests in the western region and is the largest nationally funded forest conservation program.
- iii) National Land Conversion Program (2000–2008). This program aims to reverse vegetation degradation and soil erosion by converting steep lands that are cultivated or barren into forest, shrub, or grassland cover.
- iv) Small Watershed Program of the Ministry of Water Resources. This program will improve technical management of small- and modest-sized watersheds.
- v) Desertification prevention and control programs. These programs include three north shelterbelt system programs, Plain Farmland Shelterbelt System Program, Taihang Mountain Afforestation Program, and National Program for Prevention and Control of Desertification. Shelterbelt forests in the middle and lower reaches of the Yangtze River and Yellow River and Taihu lake catchments will also be affected by prevention and control programs.
- vi) CCD-NAP. This program focuses on 265 priority counties in western PRC. Implementation is over three phases: 2001–2010, 2011–2030, and 2031–2050. A key objective of CCD-NAP in its first phase is to control 22 million hectares of degraded land by 2010. An investment programs blue book, submitted in 2000 by provincial authorities to the Chinese Committee for Implementation of the Convention to Combat Desertification (CCICCD) for consideration and support by prospective development partners, lists 24 projects covering priority areas, with a total budget of \$1.26 billion. None of these projects attracted development partner financing, as they were seen as too traditionally forestry oriented.
- vii) Biodiversity Conservation Action Plan. This plan was formulated in response to the Convention on

Biological Diversity (CBD) and the Country Study Report on Biodiversity in China, which carried out comprehensive assessments of biodiversity, indexed endangered animals and plants, and put forward policy suggestions regarding the strengthening of national capacity for biodiversity protection and the sustainable use of biological resources.

In line with national plans, **Shaanxi Provincial Government** has developed several relevant regulations and measures to promote management of natural resources and reverse the impacts of land degradation, including the following:

- i) Measures for Implementation of Land Contracting Act of China in Shaanxi Province (2007)
- ii) Measures for Implementation of Environmental Assessment Act of China in Shaanxi Province (2007)
- iii) Regulations for Environmental Protection in Coal, Oil, and Natural Gas Development in Shaanxi (2007)
- iv) Regulations for Mountain Closure and Grazing Ban in Shaanxi Province (2008)
- v) Regulations for Environmental Protection in Qinling Ecosystem in Shaanxi Province (2008).

Shaanxi's Integrated Ecosystem Management (IEM) Plan to Combat Land Degradation: Shaanxi Province adopted an IEM Plan in 2008 that was developed under the PRC-GEF Land Degradation Partnership to Combat Land Degradation in Dryland Ecosystem that was formed in 2002 to support the implementation of the UNCCD NAP in PR China. Shaanxi's IEM Plan is operationalizing the NAP at provincial level. The proposed Project is consistent with the key priorities of this plan and in particular the priority activities related to 'Identifying and popularizing best practices for land reclamation to improve the productivity of the Shaanxi provincial ecosystems', as well as its focus on transformation and recovery of desert forest and grasslands in the Yellow River basin.

Government Wetlands Sector Strategy: From 2008-2010, China designated 127 pilot national wetland parks and 74 local wetland parks covering an area of 680,869 ha and 176,696 ha, respectively. A total of 247 wetland parks have been designated with a total area of 1.161 million ha. More funding is expected for conservation, restoration, and sustainable use of important wetlands, infrastructure construction for wetland conservation, awareness raising and training, wetland resource survey, monitoring, research and evaluation, and expanded demonstration of wise use of wetlands. Through these efforts, wetland conservation and management will be promoted in the 12th Five-Year Plan period.

Wetland regulations were adopted by the People's Congress of Shaanxi Province on 2 April 2006. The purpose of these regulations is to enhance wetland protection, maintain the ecological functions and biological diversity of wetlands, and guarantee the sustainable utilization of wetland resources. The SPLNWP was gazetted and its master plan approved by Shaanxi Forest Department (SFD) in December 2008. SPLNWP was listed in the SFA national register of wetland parks as National Wetland Park Number 234. However, no subsequent action was taken to establish the Park through allocation of funding, boundary demarcation, installation of signage, appointment of staff, or construction of management infrastructure. In 2010, Weinan City government delegated funding, construction, and management responsibility for the Park to WLCDC. WLCDC incorporated this responsibility into its overall development plan for the Luyanghu region. The Luyanghu development plan included amelioration of the impacts of floods and saline soils on farming. WLCDC sought funding for this activity from domestic commercial banks and from ADB.

Government Tourism Sector Strategy: Following the introduction of the economic reform policy in, tourism in China has developed rapidly to become a significant economic activity. During the 1990's the emphasis of policy shifted to economics over politics, allowing tourism to develop within a socialist market economy model. At the same time, and in response to environmental damage, there was growing support for nature conservation and interest in the potential ecotourism offered for linking goals of economic growth and environmental protection. China's Biodiversity Conservation Action Plan specifically calls upon ecotourism to provide income and employment to local communities close to or within protected natural areas. The proposed Project is fully in line with this policy.

Government Development Strategy: Located in the east of Guanzhong Plain, Weinan City is part of the

Guanzhong–Tianshui Economic Zone, which was approved by the State Council in 2009 to strengthen the development of the western region. In line with the goals of the Guanzhong–Tianshui Economic Zone, including that the gross domestic product (GDP) output reaches one-third of the western region by 2020, the Weinan City Government has prepared a long-term development plan (2007–2025) for the Luyanghu area to improve local livelihoods and environment. As there is already an established aerospace industry in the region, the development plan has been prepared to attract additional high-tech industrial investment, promote local tourism, and create job opportunities. The Weinan City Government established the WLCDC to take charge of the planning and infrastructure improvement of the area and the Weinan Luyanghe Development Committee to coordinate the development efforts.

B. PROJECT OVERVIEW:

B.1. Describe the baseline project and the problem that it seeks to address:

Background. The Project is located in the northern part of the Guanzhong Plain, Shaanxi Province, and is part of the Guanzhong–Tianshui Economic Zone, which was approved by the State Council in 2009 to strengthen the development of the western region. The Luyanghu area has been barren for decades, mainly due to the long-term problems of saline soils, high groundwater tables, and a poor drainage system. Luyanghu is a low-lying waterlogged area, with a watershed of 1,207 square kilometers (km²) across Fuping and Puchen counties. The area belongs to the warm temperate semi-arid monsoon climate with an average annual temperature of 13.5° C, annual rainfall of 550.8 mm, and annual evaporation of 1,851.4 mm. 50 years of data from the Pucheng national meteorological station shows considerable inter-annual variability in precipitation, but no persistent trend.

The Luyanghu lake was formed more than 10,000 years ago, and was gradually silted because of dry weather and agricultural activities. The water receded further after a devastating earthquake in 17th century. Currently, only two shallow mud flats are left in Luyanghu area, namely Luboa Tan and Neifu Tan. The groundwater table in Luyanghu area is around 0–3 meters below the ground surface. Salt and mineral contents in the groundwater and soils have become very high, which make agricultural activities almost impossible. Local people grow limited wheat, cotton and corn crops, with productivity only half of that in the surrounding Weinan area.

The saline soils in the Luyanghu area are located in small closed basins, where underground runoff and salt have no discharge path. Controlled by a semi-arid climate with low precipitation and high evaporation rates, the salt accumulation process is accelerated at the soil surface. Most of the Project area is covered by moderate to heavy salinized soils, according to the classification below, with soda-saline soils in the lowest lying areas that are not used for agriculture.

Soil salinization and classification in Luyanghu area			
Grade	Salt content index (g/kg)		
	Soda	Chloride	Sulfate
I No salinization	< 1	< 2	< 3
II Mild salinization	1-3	2-4	3-5
III Moderate salinization	3-5	4-6	5-7
N Heavy salinized	~5	•6	•7

Saline soil reclamation measures need to be specific to this area and the management of the groundwater table is

critical, as it must be lower than the critical depth at which soil becomes salinized and crops suffer from salt damage, which is estimated to be 1.8 meters. The basic method for saline soil acclimation in this area is to establish drainage systems for lowering of the groundwater table and discharging water with high mineralization. Saline soil reclamation should be implemented combining biological measures with agricultural practices, such as forest plantation and crop planting, which could result in very high-yielding agro-ecosystems.

To remove salts from the soil and improve agricultural productivity in Luyanghu area, the government established the Luoxi desalination drainage system in 1974, which consists of four main desalination drainage canals, i.e., main, west, central, and east canals; and associated minor drainage ditches. The desalination drainage system serves an area of about 418 km², which is also the area covered by this Project. The original design of the desalination system was of low quality partly due to insufficient investment. Because of the lack of maintenance and management, the system has silted and fails to remove salts to the expected extent. The soil salinity is still high, and agricultural activities are therefore hampered.

Luyang Lake also includes a wetland complex consisting of a variety of wetland types: natural saline lakes, seasonal marshes, man-made canals and sodium sulfate ponds. It is a unique wetland area in the Guanzhong Plain and also a representative site of this wetland type in PR China. There are rare species of birds stopping by the wetlands in the project area during migratory seasons, such as red-crowned crane, whooper swan, little egret, and Temminck's stint. Two globally threatened species, Chinese Softshell and Great Bustard, have also been recorded in the project area. However, the area of reed marsh that provides a critical habitat for many of these species are threatened by agricultural encroachment. In 2009, the State Forestry Administration designated part of the Luyanghu area as one of the national pilot wetland parks to protect the brackish wetland environment, and to strengthen institutional capacity of wetland management in the country. Weinan city government also has a plan dating from 2008 to rehabilitate the wetland environment and to develop the ecotourism potential of the area.

The Luyanghu area is one of the national poverty areas, with about 32,400 villagers. Most of them were mainly immigrants from Henan and Shandong provinces. More than 90% of the villagers are impoverished. Their 2006 average per capita income was only CNY1,480, which is CNY780 lower than the Shaanxi provincial average. Because of the flat topography and poor flood management system in the area, flooding is common during the rainy season. The heavy storm in August 2003 is a case in point that caused heavy casualties and stranded thousands of villagers for days. International development organizations, such as the Department for International Development of the United Kingdom, the Government of Finland, and the World Bank have provided financial support to improving irrigation infrastructure and rural livelihoods in the area in projects such as: Expansion Project of Donglei Yellow River Pumping in Shaanxi Province; Western Provinces Rural Water Supply, Sanitation, and Hygiene Promotion Project; and Sustainable Development in Poor Rural Areas Project.

ADB has also been providing investment and technical assistance in the region to help address land degradation, biodiversity recovery, environmental quality, and transport in projects such as Xi'an-Xianyang-Tongchuan Environment Project; Shaanxi Roads Development Project; Capacity Building to Combat Land Degradation Project co-financed by GEF, Zhengzhou-Xi'an Railway Project; and Shaanxi Qinling Biodiversity Conservation and Demonstration Project, also co-financed by GEF. ADB has also worked with the GEF-funded FAO LADA Project to disseminate best practices for salinization control in dryland.⁶ The need for the proposed Project stems from highly saline soils resulting in poor agricultural productivity and crop diversity, impacts of severe flooding due to poor drainage systems and low flood storage capacity, and ongoing degradation of important wetland ecosystems.

The baseline project will help the Weinan City Government to improve land uses in Luyanghu area, and achieve its goals of attracting high-tech industrial investment, promoting tourism, and creating job opportunities. The project impact will be sustained economic growth in Guanzhong-Tianshui Economic Zone. The project outcome will be improved natural environment and rural livelihoods in Luyanghu area. The project comprises four outputs which are briefly described below.

⁶ China Forestry Publishing House. 2008. *Best Practices for Land Degradation Control in Dryland Areas of China*. Beijing.

Output 1 ***Saline soils rehabilitated*** will rehabilitate the existing Luoxi drainage system, which was constructed in the 1970's to reduce salinity in the project area. The Luoxi drainage system was poorly designed and constructed, and silting has rendered the drainage system in-effective. Output 1 will reduce soil salinity over a total area of 212 km²—including 186 km² of existing agricultural land and 15 km² of the economic development zone—and increase productivity and climate resilience in the agricultural lands. This output has two components: (i) rehabilitation of Luoxi drainage system, and (ii) support for improved resilience to climate change of agro-ecosystems. Under component 1(i), activities under the baseline project will include: (a) dredging and rehabilitating the main desalination drainage channels of about 46.9 km; (b) dredging of the branch and secondary branch drainage channels of about 90.3 km; (c) rehabilitating 450 small structures, including 153 bridges, 69 culverts, 54 aqueducts, and 174 flow confluences; and (d) constructing and rehabilitating 35.6 km of rural roads. Under component 2(ii), support will be provided to local farmers to improve crop productivity in the 186 km² of agricultural areas where draining will be improved. Activities under the baseline project include constructing of 130 ha of greenbelts .

Output 2 ***Flood risk management implemented*** has one component on flood storage capacity improvement to improve flood storage capacity of Luyanghu area to reduce flood risks to local people. This output includes (i) the construction of the Tianlu lake covering 130 ha, which covers the connection with the Tianjiao lake west of the line connecting the entrance point of the middle main channel at the lake to the exit point of the central main channel; and (ii) 18.6 km of the road around the Tianlu lake. Combined with Tianjiao lake, the project will provide a total storage capacity of 5.4 million cubic meter (m³) ranging to 10.8 million m³ in flooding events, allowing a total free board of 3.3 m and additional flood storage capacity of 5.4 million m³, ranging up to as much as 12.6 million m³ with surcharging to the road surface elevation. The drainage system rehabilitation and wetlands ecosystem conservation will also contribute to reduced flood risk for the Luyanghu area.

Output 3 ***Wetland ecosystem conservation established*** has two components: (i) the establishment of the Luyanghu National Wetland Park (LNWP), and (ii) the promotion of livelihoods and tourism opportunities for local communities. The wetlands conservation will reverse the degradation of this important ecosystem caused by agricultural encroachment and other pressures associated with the high population numbers within the project area. Under the baseline project, Component 3(i) will (a) rehabilitate 860 ha of natural wetlands; (b) prepare and support the implementation of the LNWP master plan covering 1,070 ha; and (c) establish a wetland management training facility. Component 3(ii) of the baseline project will support the development of ecotourism focusing on the ecological values of the wetlands and the long cultural heritage of salt harvesting in the area. Training will be provided for 100 villagers, including at least 50 women, on livelihood skills.

Output 4 ***Capacity development and project implementation support provided*** has two components: (i) institutional strengthening, and (ii) project management support during project implementation. Component 4.1 will support capacity development and training in ADB project management procedures. Component 4.2 will provide overall project implementation support for the executing and implementing agencies.

It is estimated that the total investment cost of the *baseline project* will be \$163.2 million, including \$100 project co-financing from ADB, and \$63.2 million counterpart funds from Weinan Municipal Government. Saline soil reclamation measures will be designed to be specific to the project area, with special consideration to management of the groundwater table, i.e., groundwater table depth must be lower than the critical depth at which soil becomes salinized and crops suffer from salt damage. The basic method for saline soil reclamation will be to support investments in drainage systems (and associated infrastructure) for lowering of the groundwater table to at least 1.8 meters and discharging water with high mineralization. Flood management infrastructure improvements will be supported by (i) improvements to the drainage channels to decrease the severity of flood events, (ii) reconstruction of lakes with flood storage capacity, and (iii) construction of road for operations and maintenance, emergency access and flood evacuation.

B. 2. [incremental /Additional cost reasoning](#): describe the incremental (GEF Trust Fund/NPIF) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF/NPIF financing and the associated [global environmental benefits](#) (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

To help the government develop the western region and improve livelihoods in Luyanghu area, the GEF grant

resources will be used to enhance the project outcomes through four project components: (i) improve management of saline soils through rehabilitation of drainage system and introduction of sustainable land and water management best practices; (ii) improve resilience to climate change of agro-ecosystems and reduce flood risk to local people; (iii) improve wetland management, and (iv) develop adaptive management capacity and support monitoring and evaluation. The requested support from GEF will be instrumental in enhancing the environmental benefits of the project in several ways:

Component 1. Improved management of saline soils through rehabilitation of drainage system and introduction of S/WLM best practices

GEF funding will be used to introduce and test at least 10 innovative Best Practices in rehabilitation of saline soils, using a small grants mechanism whereby communities can apply for up to US\$50,000 to test best practices on around 10 ha of land each including:

- a. Use of soil amendments, such as different types of desalination agents, and integrated pest and soil fertility management;
- b. Biological measures, such as planting of green manure, use of green mulch, cover crops, improved crop rotations, introduction of more salt tolerant tree crops and agroforestry (e.g. peach, grape, jujube tree, pear trees, medlar, fluff ash tree, willow, neem nuts, white mulberry, great white yu, neem nuts, DuLi, etc.); and
- c. Physical measures, such as introduction of water saving irrigation practices and conservation tillage.

Identification of these practices will be based on the specific requirements and soil conditions of the selected pilot areas and will be aided by global knowledge platforms, such as World Overview of Conservation Approaches and Technologies (WOCAT), and the UNCCD Performance Review and Assessment of Implementation System (PRAIS) module on Best Practices. The PRC has already published one volume of WOCAT Best Practices for Land Degradation Control in Dryland Areas of China, and is currently finalizing a second volume. These include an assessment of both biophysical and socio-economic benefits of the BPs and this will be used as a starting point. Detailed activities include: (i) identification and assessment of all factors that influence the sustainability of agricultural production in the project area (e.g. farm inputs, land ownership, shelter belts, availability of infrastructure, institutional setting, etc); (ii) identification and assessment of innovative and sustainable agricultural practices for testing at demonstration sites; (iii) identification of 10 suitable demonstration areas/sites in the project area. Simple economic and biophysical evaluation of the BPs will be conducted after testing to inform up-scaling, using tools, such as the framework of cost-benefit analysis (CBA) and the CBA Manual developed for the PRC-GEF Land degradation Partnership by the China National Forestry Economics and Development Research Center (Liu, 2012).

To increase adoption and uptake of good SL/WM practices, Farmer Field Schools (FFS) will be established where farmers take the lead in training other farmers. It is proposed that the Northwest Agroforestry Science University in Shaanxi Province will be sub-contracted to assist with the setting up of FFS following the same model that has been used successfully elsewhere in PRC under the PRC-GEF Land Degradation Partnership. For example, models for Integrated Pest Management (IPM) as well as fertilizer management that have been developed in the FFS context can be tested in the Project area. The FFS approach allows for the assessment of the environmental and socio-economic benefits of best practices from the farmers' perspective. It also promotes replication and up-scaling and further investment in SL/WM approaches and technologies that prove to be successful in the Luyanghu context. This, in turn, will maximize the impact of the investment component of the project and ensure that promotion of SL/WM on rehabilitated land will lead to increase in provision of ecosystem services thanks to improved vegetation cover, improved storage of carbon in soils and vegetation, and improved irrigation flows.

Component 2. Improved resilience to climate change of agro-ecosystems and reduced flood risk to local people

This component will reduce the vulnerability of local communities to climate change through enhanced provision of regulating ecosystem services, such as water and temperature regulation and soil retention, which will improve the

resilience of ecosystems to climate change. GEF funding will be used to introduce and test at least two innovative and replicable best practices for establishment of shelter belts in the wider Luyanghu area and drainage basin surrounding the lakes and salt pans, through the same small grants mechanism established for Component 1. Using the same methods as under component 1, promotion of innovative practices for shelterbelt establishment includes testing of the biophysical and socio-economic sustainability of:

- (a) A multifunctional Greenway System that will provide wind protection to crops and soils, flood protection and transport route enhancement as well as linear recreation routes that distributes visitors across the wider rural areas of the Luyanghu Project site; and
- (b) Planting of indigenous and multipurpose tree species for 130ha of shelterbelts.

Through a training program on skills development related to sustainable wetland and saline soil management, including marketing skills, local officials and villagers will learn how to sustain and generate income from critical ecosystem services provided by the Luyanghu area. Community-based ecotourism activities will be piloted, as the Project site lends itself to the development of ecotourism that combines cultural and environmental experiences with underlying conservation and educational benefits, such as the salt pan landscape that is both an important habitat for biodiversity and an important cultural and historical heritage. An Incubator for small rural enterprises will be established to support the development of alternative livelihoods, including development of a network of competitive ecotourism and small agri-businesses. It is proposed that the training program and the establishment of an Incubator be sub-contracted to a local NGO, Shaanxi Gender and Development Solutions (GDS), that has long experience of working with farmers in the area on development of alternative livelihoods and income generating activities.

Activities for this component include: (i) critical analysis of livelihood and ecotourism business opportunities in the Luyanghu area; (ii) development of a report to a multi-stakeholder workshop/training (organised by GDS under training sub-contract) in order to further refine strategies and outline recommendations (e.g. key job areas, needed training, business plan); (iii) based on workshop inputs, identification of practical follow-up activities for sustainable livelihoods, including eco-tourism for Luyanghu.

Global environmental benefits will be generated by sustainable livelihoods based on maintenance of ecosystem services in the area that generate both environmental and cultural experiences important for attracting visitors, including climate and water regulation, provision of habitat for biodiversity and cultural ecosystem services related to the heritage values of the salt pans. Moreover, planting of greenbelts will reduce evaporation and thus contribute to reduced risk of salinization of soils. Establishment of greenbelts will also increase vegetation cover and lead to increased carbon sequestration below and above ground. Flood behavior and its impact within concerned areas will be analyzed under the loan component of the project with special consideration given to management of ecological impacts.

Component 3. Improvement of wetland management and rural livelihoods

GEF funding will be used to finalize a management plan for the wetlands that integrates ecosystem service assessment, valuation and integrated land and water management arrangements (Master Plan (draft 2012) of the National Wetland Park). The Wetland Management Plan will be developed in consultation with local communities residing in or adjacent to the wetlands. The Plan will be implemented in a participatory manner and provide the basis for development of income generating activities to support sustainable livelihoods and protect wetland ecosystem services. Opportunities for establishing an eco-compensation mechanism for wetland protection and sustainable land and water management will also be assessed based on recommendations for development of eco-compensation mechanisms for forests and watersheds prepared by the PRC-GEF Land Degradation Partnership (Guangcui, 2012). Such an eco-compensation mechanism would be designed to compensate users in the upper part of the Luyanghu basin, using e.g. income from ecotourism, for implementing tested best practices in soil and water management that reduce siltation in the wetlands.

GEF funding will be used to introduce and test at least two innovative and replicable best practices in wetland

rehabilitation through the same small grants mechanism established for Component 1. Wetlands will be protected by testing of:

- (a) Options for improved salt pan management that improves environmental and socio-economic sustainability; and
- (b) Opportunities for alternative livelihoods in wetlands, including community-based ecotourism.

Detailed activities for establishment of demonstration activities include: (i) review of current land use, species/habitat knowledge as well as land-use rights in the NWP. Knowledge gaps will be supplemented with field surveys and village interviews; (ii) preparation of an assessment report indicating the confirmed or likely presence of key species, especially migratory waterbirds (degree of certainty), with geographical information as to where in the Wetland Park the key species persist and where they do not, a brief threats assessment on key species and their habitats and recommendations for their management; (iii) finalisation of the draft Wetland Management Plan; and (iv) identification of 2 possible demonstration areas for sustainable wetland management involving local communities.

Activities related to the eco-compensation mechanism include: (i) review of legal and policy framework for long-term sustainable management of the Luyanghu Wetland Park; (ii) review of eco-compensation models relevant to the project area; (iii) review of the draft Wetland Management Plan to identify possible eco-compensation mechanisms for the Luynaghu wetlands; (iv) preparation of a draft financing plan for implementation of the Wetland Management Plan for the Luyanghu wetlands.

Improved management of the Luyanghu wetlands will lead to enhanced protection of important resting and refueling habitats along the East Asian-Australasian flyway of migratory birds, as well as winter habitats for some waterbirds, including ducks, herons and egrets. Improved wetland management will also enhance typical wetland functions, such as water quality improvement, flood storage and local climate moderation important for increasing the agricultural productivity in the surrounding production landscape.

Component 4: Development of adaptive management capacity, monitoring and evaluation

To be implemented efficiently and effectively, project management will need a specific monitoring and evaluation (M&E) system, allowing for a close monitoring of the different project activities, outcomes and impacts to draw useful lessons for the future, capitalize on the experience acquired and support adaptive management.

The project will make use of the ongoing activities by the PRC-GEF Land Degradation Partnership to establish a comprehensive land degradation and sustainable land management monitoring and assessment framework, involving relevant sectors (agriculture, forestry, water resource, and rangeland sectors), to identify appropriate land degradation and SLM monitoring indicators and assessment methodologies to measure global environmental benefits of GEF support to the Partnership. This includes (a) defined relevant indicators at the national and local levels drawing from the Land Degradation Assessment in Drylands Project; and (b) defined SLM indicators for GEF-5. This will include land cover, land productivity, irrigation flows, rural poverty, and carbon sequestration. Other activities include establishment of comprehensive procedures for and design of a system to permit ongoing tracking and adoption of remedial action regarding project design, schedules, activities and impacts. Data will be systematically updated and generated based on project outcome, inputs, investment outputs, as well as agreed-upon project performance indicators, SLM, environment and social monitoring indicators, etc. This will ensure measuring of project impact, output, and compliance with ADB safeguard requirements and GEF targets.

In summary, the funding requested from GEF is considered to be vital for testing of innovative SL/WM practices for up-scaling under the investment component of the Project to ensure that it takes into consideration the value of critical ecosystem services provided by the Luyanghu area, such as increased provision of food thanks to improved agricultural productivity, provision of habitats for migratory birds, regulation of water and climate to enhance climate resilience, as well as provision of recreational opportunities through ecotourism.

B.3. Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits

(GEF Trust Fund/NPIF) or adaptation benefits (LDCF/SCCF). As a background information, read [Mainstreaming Gender at the GEF.](#)":

Rural households in the project area are lagging behind in terms of access to social services and income, and particularly to opportunities for improving their livelihoods and living standards. The project will improve agricultural infrastructure and services related to agricultural production, thus providing the households with better and more secure income. Improved access to capacity development, training, and services such as extension will improve overall empowerment of the households. The proposed project contains improved rural livelihoods, improved farmer incomes and improved agricultural productivity as indicators and objectives of the project. They also refer to gender equity and improvements in the situation of women. Improved rural livelihoods and improved farmer income will be achieved by the end of project implementation to ensure reduction in poverty and improvements in livelihoods. The project will also contribute to ADB’s overall vision of an Asia region free of poverty, and contribute to achievements under its strategy 2020 through inclusive growth.

Women will benefit in various ways: Agricultural production in PRC is supposedly increasingly carried out by women, a fact that increases the workload on them. Improved arable land will increase the available income and thus improve the living standard of the women, and reduce the need for out-migration, thus potentially decreasing their workload: (i) the improvement to the drainage system will, among other things, improve agricultural production and increase income and give them access to nonfarm activities; (ii) as ensured through the **gender action plan** (GAP). Project implementation will improve women’s access to information and provide more opportunities for participating in public affairs, and taking part in project planning, implementation, and monitoring and evaluation. Women will be entrusted with power and will develop a sense of ownership; (iii) a series of trainings will be provided to women and their concerns fed into the training schedules and curricula; and (iv) with more specialized industries, including tourism development, more opportunities will be offered for women to choose work; and their work independence will increase.

Training and capacity development will provide women with new knowledge, and more importantly, with new channels for getting access to knowledge. The GAP includes features to: (i) improve participation of women in project decision making; (ii) improve participation of women in associations created and/or strengthened under the project; (iii) ensure women benefit from employment opportunities; and (iv) women will benefit from capacities and skills development opportunities under the project. These features are aligned with the different project outputs.

B.4 Indicate risks, including climate change risks that might prevent the project objectives from being achieved, and if possible, propose measures that address these risks to be further developed during the project design:

The overall project risk is considered moderate with specific risks and mitigation measures summarized in the table below.

Risks	Risk assessment without mitigation	Management plan or measure	Assessment with mitigation
Inappropriate choice of technology, system and design, equipment, or material failure	Low	Adopt innovative but proven technologies and provide international technical assistance for design review, implementation support, and training	Low
Pollution and eutrofication of the Tianju Lake area	Medium	Secure assurance from WMG to prepare and implement a nutrient management plan	Low
WMG and unfamiliarity with ADB policies,	Medium	Provide training during project implementation to	Low

Risks	Risk assessment without mitigation	Management plan or measure	Assessment with mitigation
procedures, and requirements for project implementation		WMG staff on related EMP, procurement, disbursement, and other procedures	
Late and/or insufficient allocation of counterpart financial resource for project implementation	Low	Agree beforehand on the timely provision of counterpart funding in full amount; and obtain commitment letters from WMG prior to loan negotiations	Low
Fragmented operational arrangements	Medium	Secure WMG's assumption of the oversight role to ensure adequate coordination and supervision	Medium
Limited sustainability of because of inadequate financial income; and operational staff's lack of experience in maintaining the drainage and lake area. Limited socio-economic sustainability because of non-recovery of soil productivity.	Low	Include the assurances for WLMIDZMC to budget for adequate operation and maintenance of project facilities operations in the loan agreement and secure before loan negotiations Support to alternative livelihoods will mitigate the risk to sustainable livelihoods of non-recovery of soil productivity in areas with high salinity by introducing opportunities for income generation from eco-tourism, etc.	Low
Extreme rainfalls exceed the designed drainage and storage capacity and affects agricultural productivity and salt movement in the soil.	Medium	Provide technical support during the preparation of the detailed design to ensure adequate engineering designs. The rehabilitated drainage system will keep the groundwater table sufficiently low to keep salts from moving up to surface soil.	Low
Support from local communities for the establishment of the national wetland park	Medium	Use participatory approach for management of national wetland park and provide training on alternative livelihoods	Low
Overall	Medium		Low

B.5. Identify key stakeholders involved in the project including the private sector, civil society organizations, local and indigenous communities, and their respective roles, as applicable:

Primary stakeholders will include rural households benefitting from saline soil improvement, flood control and overall environment improvement, and those households affected by land acquisition and resettlement. Secondary stakeholders include village committees; and government units at township level and particularly the Luyanghu management committee. Key stakeholders include:

- Shaanxi Provincial Government is responsible for overall oversight of financial management of the project at provincial level.
- Weinan Municipal Government is the project Executing Agency and responsible for the Project Management Office (PMO)
- The Weinan Luyanghu Development and Construction Co. Ltd. (WLCDC) is the project Implementing Agency and responsible for the Project Implementation Office (PIO).
- Local communities and land users in the project area in Pucheng and Fuping Counties will participate in income generating demonstration activities on SL/WM, shelter belt establishment, wetland management and ecotourism.
- Other people living in the Luyanghu area, and people using the lakes to be deepened will be consulted for the finalization of the Master Plan of the National Wetland Park.
- Shaanxi Gender Development Solutions (GDS), which is a local NGO, will be sub-contracted for training on alternative livelihoods, including ecotourism.
- Northwest Agroforestry Science University will be sub-contracted for establishment of Farmer Field Schools in Fuping and Pucheng Counties.

B.6. Explain how cost-effectiveness is reflected in the project design:

During project preparation, due diligence was performed through technical analysis of engineering feasibilities, financial analysis and financial management assessment, economic analysis, environmental impact assessment, resettlement planning, poverty and social impact assessment and institutional analysis. The purpose of the due diligence analysis was to maximize the ecological and socioeconomic benefits of the loan with the available financing and with the least environmental and social impacts.

For each of the project components, extensive discussions and consultations were undertaken during the project preparation to identify and assess possible positive and negative aspects of different design alternatives, including cost-effectiveness. As part of the Project preparation phase, several design improvements have been achieved.

- **Reduced area of new lake construction and protection of saline ponds:** The initial constructed lake design included three lake Tianjiao, Tianlu and Tianzi, with a total areas of over 5 km². Following an initial assessment of the saline wetland flats in the west of the Project Area, the proposed site for Tianzi, was found to host important migratory bird habitat. These saline wetland flats are highly modified and used for salt harvesting, however the shallow evaporative ponds also offer excellent habitat for native and migratory birds. It was concluded that the proposed excavation and dredging of this area, replacing with a deep lake environment, had the potential to result in negative environmental impacts to critical habitat and biodiversity. Based on this assessment, Tianzi lake construction was removed from the project design, and the saline wetland flats have been included in the wetland management plan for enhancement of the existing habitat and conservation protection.
- **Drainage channel improvements options:** During the Project preparation various alternatives were considered for the drainage channel improvement works, with consideration for technical, economic, energy efficiency, and environmental criteria. In terms of environmental consideration, the primary objective was to identify and adopt options with the least adverse environmental impacts and maximum environmental benefits. Key environmental factors used included minimizing (i) the amount of earthwork requirements (related to vegetation disturbance, soil erosion potential, and spoil disposal), (ii) requirement for household relocation, (iii) land requirements, focusing on minimizing or avoiding requirement for acquisition of agricultural land and forested land, (iv) opportunities to reduce emissions associated with construction activities, and (v) support options for use of gravity flow rather than requirement for pumping. Three key drainage channel improvement design

options were evaluated comparing work amount, annual project operation cost, construction method and work schedule, water protection, EIA, energy saving, and reliability.

Cost-effectiveness of the project is directly supported by the GEF grant through introduction of SL/WM that in combination with the improved soil drainage funded by the ADB loan, will lead to substantial increases in soil productivity (13-16%) and thus farm income. The total benefit in production improvement for the four main types of crops – winter wheat, summer corn, cotton and rape - following the implementation of the saline soil drainage system has been estimated to be up to \$126.3 million (796 million CNY) for 5 years. The GEF grant will also support protection of wetland ecosystem functions. The benefit of wetland ecosystem conservation is the loss of wetland value due to no protection of the wetland. The loss rate is assumed to be 2.5% of the value of the wetland, which include direct uses, such as food production and recreation, and indirect uses, such as water regulation and purification. The total predicted economic value is about 131 Million CNY. In addition, income generating activities associated with sustainable ecotourism emanating from improved management of wetlands will be jointly supported by the ADB loan and the GEF grant. Combined, these measures will lead to the most cost-effective and environmentally sustainable utilization of natural resources in the project area.

B.7. Outline the coordination with other related initiatives:

The project will become an integral part of the PRC-GEF Land Degradation Partnership in Dryland Ecosystems. It will consult and coordinate its activities with the provincial and national technical experts who have been involved in the Partnership. Notably these include the experts of the Shaanxi Provincial Project Coordination Office (PPCO) and the Provincial Project Management Office (PPMO). Moreover, the project will cooperate with the Integrated Ecosystem Management Data Center that has been established in the Province. The Data Center has established monitoring procedures for land degradation in the province and has built up an important database of relevant information which is crucial for the proposed project.

Best practices for land degradation control in dryland areas of the PRC, such as the World Bank-financed project on salinization control by hidden pipe drain and its lessons, will be capitalized on to ensure the success of the investment project. The project will also benefit from lessons learnt from all seven projects under the PRC-GEF Partnership on Land Degradation in Dryland Ecosystems, its best practices publications and monitoring and assessment framework.

The Project will also develop close links with the FAO/UNEP/GEF project on Land Degradation Assessment in Drylands (LADA) and its partner program World Overview of Conservation Approaches and Technologies (WOCAT) that is being institutionalized in China, to identify suitable best practices for rehabilitation of saline soils.

In addition, synergies will be developed with the government funded Desertification Prevention Programs that include Plain Farmland Shelterbelt System Program, Taihang Mountain Afforestation Program, and National Program for Prevention and Control of Desertification, including shelterbelt forests in the middle and lower reaches of the Yangtze and Yellow rivers.

C. GEF AGENCY INFORMATION:

C.1 Confirm the co-financing amount the GEF agency brings to the project:

The government requests a loan of \$100 million from ADB's ordinary capital resources to finance investments under components (i) and (ii) of the project. 50 per cent of the loan, i.e. \$50 million, can be counted as direct co-financing to the GEF project.

C.2 How does the project fit into the GEF agency's program (reflected in documents such as UNDAF, CAS, etc.) and staff capacity in the country to follow up project implementation:

ADB took the lead in developing and coordinating the PRC-GEF Partnership on Land Degradation in Dryland Ecosystems, and has served as the lead GEF agency for the Partnership, and as the GEF agency responsible for supporting capacity building efforts and coordination mechanisms. Notably, the ADB has taken the lead in

preparing and supervising the implementation of the Capacity Building to Combat Land Degradation Project and the Management and Policy Support for Combating Land Degradation in Dryland Ecosystems project. ADB's comparative advantage as the lead GEF agency for the proposed project includes considerable experience with the identification, design and implementation of investment projects with the PRC as well as the ability to incorporate capacity building and technical assistance into its projects. The ADB has developed the two new larger investment projects being implemented through the Partnership, namely the 'Ningxia Integrated Ecosystem and Agricultural Development Project', that commenced in 2009 (\$211.0 million total, including a \$100.0 million ADB loan and \$4.55 million GEF grant); and the 'Forestry and Ecological Restoration Project in Three Northwest Provinces' (\$181.76 million total, including a \$100.0 million ADB loan and \$5.76 million GEF grant). During the implementation of the PRC-GEF Partnership on Land Degradation in Dryland Ecosystems, significant institutional capacity has been built in the central government, and participating provinces and autonomous regions, including Shaanxi province. Provincial legal and policy frameworks have been developed, provincial integrated ecosystem management strategies have been prepared, and an integrated ecosystem approach has been applied to combat land degradation. There will be adequate knowledge and officials in the Ministry of Finance, and Shaanxi provincial government to follow up the implementation of the proposed GEF activities in the project area in Luyanghu, Weinan city.

Moreover, ADB's Country Partnership Strategy (CPS), 2011–2015, for the People's PRC focuses on innovative projects where ADB can play a catalytic role in addressing poverty, rising income inequality, and widening regional disparities, and in promoting a less carbon-intensive economy. The CPS, 2011–2015, is closely aligned with priorities of the PRC's 12th Five-Year Plan covering 2011-2015, particularly efforts to move the country to a greener and more inclusive development path. The strategy also reflects the PRC's changing role as a rapidly growing middle-income country, with growing emphasis on knowledge sharing to promote South-South cooperation. The CPS is built on the three pillars of ADB's long-term strategic framework, Strategy 2020: inclusive growth; environmentally sustainable growth; and regional cooperation and integration. The CPS also focuses on natural resources and agriculture; energy; transport; and urban development, with lending and technical assistance centered on new technology, green or social development, and enhanced synergies with regional cooperation and integration programs. Aside from direct financing, ADB continues to support microfinance, small and medium-sized enterprise finance, green finance, and municipal finance. The project design's strong focus towards natural resources and agriculture improvement is closely aligned with the ADB CPS for PRC.

PART III: INSTITUTIONAL COORDINATION AND SUPPORT

A. INSTITUTIONAL ARRANGEMENT:

ADB is the GEF agency implementing this project under the current phase of the PRC-GEF Land Degradation Partnership for Dryland Ecosystems.

B. PROJECT IMPLEMENTATION ARRANGEMENT:

The WMG will be the executing agency for the project and will have the overall responsibility for project implementation. The PMO established under the TA will carry out the overall supervision and monitoring of project activities. The PMO will also serve as the focal point between ADB and the project. The PMO will have adequate senior staff. It will not be engaged in daily project management work, and will assume more of a supervision role.

The WLMIDZMC will be the implementing agency. A project implementation office (PIO) established at the WLMIDZMC will supervise and coordinate implementation activities at the project level, including the undertaking of procurement, and monitoring and evaluation. The Project Implementation Office (PIO) will have 5 permanent staff. The PIO will provide guidance and support to the Project Implementation Unit (PIU) on project implementation including procurement management, disbursement, reporting and liaison with various government agencies.

A Project Leading Group (PLG) will be established by WMG to provide policy guidance and facilitate inter- and intra-agency and sectorial coordination. The PLG will be chaired by the Vice Mayor of Weinan Municipality, and its members will comprise senior officials from relevant agencies, including, at least, the Finance Bureau, Development

and Reform Commission, Environmental Protection Bureau, Forestry Bureau, Water Resources Bureau, Agricultural Bureau, and the Land Bureau of WMG. PLG will meet semi-annually, and as needed, to discuss project progress and resolve policy-related implementation issues. Figure 4 presents the project organization structure.

PART IV: EXPLAIN THE ALIGNMENT OF PROJECT DESIGN WITH THE ORIGINAL PIF

The Project is fully consistent with the original PIF and no changes have been made to the overall design. More detailed information on outputs and activities has been added in the Project Framework and Section C.2. A small amount of funding (US\$40,000) has been moved from Component 3 on Wetland Management to Component 2 on Climate Change Resilience to cover costs for support to alternative livelihoods also relevant for people living in the wetland area of the project.

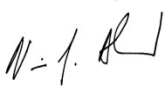
PART V: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

- A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT(S) ON BEHALF OF THE GOVERNMENT(S):**
 (Please attach the [Operational Focal Point endorsement letter\(s\)](#) with this template. For SGP, use this [OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Jiandi Ye	GEF Operational Focal Point for China / Director, International Department	MINISTRY OF FINANCE	08/29/2011

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for CEO endorsement/approval of project.

Agency Coordinator, Agency Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Nessim Ahmad Director, Environment and Safeguards concurrently Practice Leader (Environment) Asian Development Bank		October 4, 2012	Frank Radstake, Senior Environment Specialist	+632 632 5636 / + 632 632 6951	fradstake@adb.org

ANNEX A: PROJECT RESULTS FRAMEWORK (Draft, still requires final approval in ADB)

Design Summary	Performance Targets and Indicators	Data Sources and Reporting Mechanisms	Assumptions and Risks
<p>Impact Sustained and inclusive economic growth in Guanzhong-Tianshui Economic Zone</p>	<p>By 2020, GDP outputs reached one-third of northwest region.</p>	<p>Shaanxi Provincial Government year books</p>	<p>Assumptions The economic growth of the PRC remains sufficient to develop the Guanzhong-Tianshui Economic Zone Land in Luyanghu area is improved to attract business investment.</p>
<p>Outcome Improved natural environment and rural livelihoods in Luyanghu area</p>	<p>By 2017, Reduced flood risks to 113,064 villagers. Improved productivities of 18,600 ha of agricultural land by 13 – 16 % by 2017.</p>	<p>Weinan City government survey County agricultural centers' survey</p>	<p>Assumptions The drainage system and wetlands perform to their design standards. The Weinan City Government allocates regular annual budget to maintain the drainage system and the wetlands including management actions in the Master Plan of the National Wetland Park. Livelihood skill training is up-to-date. Risks Extreme rainfalls exceed the designed storage capacity of the wetlands. Extreme weathers affect agricultural productivity. Future economic development in and around the Project Area is not integrated with the natural resource management plans developed in the project, specifically including the National Wetland Park</p>

			Master Plan and integrated nutrient management plan.
Outputs 1. Saline soils rehabilitated	Soil salinity of 18,600 ha of agricultural land reduced by 13 – 16 % by 2017 1,500 ha of land improved in the economic development zone 10 best practices on sustainable land management implemented	Contractual payment records Acceptance reports	Assumption The drainage system will keep groundwater table low enough to keep salts from moving up to surface soil. Risk Extreme rainfalls exceed the designed storage capacity of the wetlands of 1 in 10 year floods.
2. Flood risk management implemented	Flood reservoir capacity increased with 5.4 million m ³	Contractual payment records Acceptance reports	Risk Extreme rainfalls exceed the designed storage capacity of the wetlands. Comment as above
3. Wetland ecosystem conservation established	By 2017, 1,070 ha of the Luyanghu National Wetland Park rehabilitated, managed and protected By 2017, livelihoods for 1,000 villagers supported through ecotourism and/or other activities identified in the park Master Plan	Contractual payment records Acceptance reports Training reports Final Master Plan for Luyanhgu National Wetland Park	Assumptions Local county governments are committed to cooperate and implement the Luyanghu National Wetland Park master plan. Officials trained in wetland management continue to work in the National Wetland Park, ensuring that skills are retained in the project area. Training is well received by trainees and villages.
4. Capacity development and	Qualified staff trained and	Review mission reports	Assumption Offices trained remain in their posts.

<p>project Implementation support provided</p>	<p>maintained in the PMO and PIO</p> <p>Effective O&M arrangements have been established.</p> <p>Project delivery on time and within budget by year 5</p>	<p>Training reports</p>	
<p>Activities with Milestones</p> <p>1. Saline soils rehabilitation</p> <p>1.1 Dredge and rehabilitate main desalination drainage channels of about 46.9 km by 2017</p> <p>1.2 Dredge branch and secondary branch drainage channels of about 90.3 km by 2017</p> <p>1.3 Rehabilitate 450 small structures, including 153 bridges, 69 culverts, 54 aqueducts, and 174 flow confluences by 2017</p> <p>1.4 Construct and rehabilitate 35.6 km of rural roads by 2017</p> <p>1.5 Testing of at least 10 innovative and replicable Best Practices in rehabilitation of saline soils in an area of 100 ha.</p> <p>1.6 Provide training on saline land management</p> <p>1.7 Construction of 130 ha of greenbelts by 2017</p> <p>1.8 Testing of at least 2 innovative and replicable best practices for the establishment of shelter belts (covering 2 ha)</p> <p>1.9 Support for farmers to market products and increase alternative livelihood income generating</p> <p>2. Flood risk management</p> <p>2.1 Construction of 130 ha Tianlu Lake and connection to Tianjiao Lake by 2016</p> <p>2.2 Construction of 18.6 km of road around the lake</p> <p>3. Wetland ecosystem conservation</p> <p>3.1 Preparation and implementation of the Luyanghu National Wetland Park master plan covering 1,070 ha by 2014</p> <p>3.2 Rehabilitate c.860 ha of wetlands by 2017 (excluding lake environment)</p> <p>3.3 Establish a wetland management training facility during 2014-2015</p> <p>3.4 Testing of at least 2 innovative and replicable Best Practices in wetland Rehabilitation (covering 10 ha)</p> <p>3.5 Train 50 number of officials on wetland environment and management during 2015-2018</p> <p>3.6 Train 100 number of villagers, including 50 of women, on livelihood skills during 2013-2015</p>		<p>Inputs (\$ million)</p> <p>ADB \$100</p> <p>Weinan Municipal Government \$63.2</p> <p>GEF \$2</p>	

4. Capacity development and project Implementation support

- 4.1 Train 10 number of officials on ADB procurement procedures during 2012
- 4.2 Train 10 number of official on ADB disbursement procedures during 2012
- 4.3 Support project final design and implementation

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Response to GEFSEC review of project ID 4633: Shaanxi Weinan Luyang Integrated Saline and Alkaline Land Management Review Dated 2 September 2011

Review criteria	Questions	Secretariat comment at PIF Work Program Inclusion	ADB Response
Project Consistency	Is the project aligned with the focal areas results framework?	No. As the project proposal stands now, the main expected outcomes of (1) Rehabilitation of drainage systems and reduction of soil salinity (2) Improvement of flood storage capacity (3) Improvement of wetland management do not or only partly fit with the LDFA results framework.	The project outcomes have been revised and now include: (i) improved management of saline and alkaline soils through rehabilitation of drainage system and and introduction of SLM best practices; (ii) improved resilience to climate change of agro-ecosystems and reduced flood risk to local people; (iii) improvement of wetland management and rural livelihoods
	Are the relevant GEF-5 focal area objectives identified	Question: Table B also refers to BD-2 but no funding from BD is requested?	The reference to BD-2 has been removed, as China has decided to only provide LD STAR resources to the project.
	Is the project consistent with the recipient country's national strategies and plans or reports and assessments under relevant conventions, etc.	The project is predominantly in line with the State Council's decision to create the Guanzhong-Tianshui Economic Zone. The linkages to NAPA are considered weak.	See Section A.2. Linkages to the UNCCD NAP at national as well as provincial level (through the IEM Plan) are explained in two paragraphs. Linkages to the National Wetlands Conservation Action Plan has been added Alignment with the 12 th National 5-year Plan has been explained.
Project Design	Is the project framework sound and sufficiently clear?	Not fully. As mentioned above (#7) there are questions regarding the alignment with LDFA objectives. Another issue is that Table B appears to include several activities that form the baseline for this project, e.g.: 1.1.3. Rehabilitated 800 bridges and 35 km of roads.	See Table B – Project Framework – The project objective has been rearticulated and the project components revised to better align the project with the LD results Framework. The main project outcomes now include: (i) improved management of saline and alkaline soils through rehabilitation of drainage system and and introduction of SLM best practices; (ii) improved resilience to climate change of agro-ecosystems and reduced flood risk to local people; (iii) improvement of wetland management and rural livelihoods Baseline activities not directly relevant to the GEF project objective have been removed as outputs, including the earlier output 1.1.3. Rehabilitated 800 bridges and 35 km of roads. We would however like to

Review criteria	Questions	Secretariat comment at PIF Work Program Inclusion	ADB Response
			highlight that these investments are still relevant to the overall project objective as the roads and bridges are being provided to improve access to the drainage and desalinization system for operations and maintenance (which is essential for the sustainability of the investments) and for emergency flood evacuation.
	Is the project consistent and properly coordinated with other related initiatives in the country or in the region?	The project is mainly coordinated with "Guanzhong - Tianshui Economic Zone Program". The link to combating land degradation and desertification is weak.	Coordination with other initiatives on combating land degradation and desertification have been added and include: 1. The PRC-GEF Partnership on Land Degradation in Dryland Ecosystems 2. The FAO/UNEP/GEF project on Land Degradation Assessment in Drylands (LADA) and its partner program World Overview of Conservation Approaches and Technologies (WOCAT) to identify suitable best practices for rehabilitation of saline and alkaline soils. 3. The government funded Desertification Prevention Programs.
Project Financing	Is funding level for project management cost appropriate?	Yes. However, activities listed under component 4 are partly additional management costs. Efforts should be made to reduce monitoring and reporting costs.	GEF funding to Component 4 has been reduced by \$25,000 from \$125,000 to \$100,000. Budget for monitoring and reporting costs will be covered through the baseline project with support from ADB staff.
	Is the funding and co-financing per objective appropriate and adequate to achieve the expected outcomes and outputs?	The co-financing appears to be inclusive of baseline investments that do not essentially contribute to the project objective. Please clarify.	The project is designed as an integrated environment and development project and baseline investments in infrastructure are essential for attaining the development objectives of the project, such as improving livelihoods through ecotourism, that are dependent on achievement of the environmental objectives. The baseline project will include 4 main areas of infrastructure investments: (i) dredging of desalination drainage canals – this investment will contribute to saline soil acclimation and improved agricultural productivity, by establishing a drainage systems for lowering of the groundwater table and discharging water with high mineralization. Improved drainage will also reduce flood risks to local communities and associated crop losses. (ii) access and improvements associated of bridges and roads along the canals – this investment will

Review criteria	Questions	Secretariat comment at PIF Work Program Inclusion	ADB Response
			<p>improve access to the drainage and desalinization system for operations and maintenance (which is essential for the sustainability of the investments) and for emergency flood evacuation.</p> <p>(iii) dredging and rehabilitation of wetland area of 800 hectares (ha), and reconstruct Tianjiao, Tianlu, and Tianze lakes – This investment will improve the ecological functioning and flood storage capacity of the wetland area, with associated climate resilience benefits.</p> <p>(iv) Planting of 1300 ha of greenbelts along the lake shores and canals – This investment will further contribute to the ecological function of the wetlands, and the protection of the drainage canals from flood damage and erosion. Shelterbelts will also support land improvements for degraded soils, land stability and erosion protection on agricultural lands.</p>

Response to STAP Review, 12 April 2012:

STAP recommendation	ADB response
<p>1. Overall, the project needs to identify clearly and explicitly define the global environmental benefits that this investment will generate. This must include detail as to how the global environmental benefits will be measured and monitored. STAP suggests that the methods for tracking and monitoring impact be harmonized with other projects and that specific international advice be sought on methods, for example, to track change in total system carbon, land cover, agricultural productivity and ecosystem resilience. This information is missing in the proposal. Without it the project is, strictly speaking, ineligible for GEF finance.</p>	<p>Section H on M&E outlines how the project impacts will be measured. Global environmental benefits that will be monitored include changes in land cover and soil productivity, irrigation flows, and socio-economic benefits. In addition, changes in soil carbon will be monitored at selected pilot sites using the carbon measurement and accounting tool under development by the PRC-GEF Land Degradation Partnership. Collaboration will also be sought with STAP to monitor total system carbon.</p> <p>The project that targets an estimated area of 21,200 ha, will lead to improved agricultural management on 18,600 ha with an average increase of productivity of 13-16%; re-vegetation/ reforestation of 2,000 ha; protection of 860 ha of wetlands; and improved irrigation flows on 21,200 ha of land. Advice will be sought from STAP on measurements of increases in total system carbon thanks to SLM as well as from the PRC-GEF LD Partnership that is developing a soil carbon measurement and accounting tool for dryland areas in China. Carbon will be monitored at some of the best practices pilot sites.</p>
<p>2. The project title identifies both saline and alkaline conditions requiring land management. The two conditions are very different, requiring radically different approaches. A third condition is also likely to be found associated with wetlands and land drainage, namely acid-sulphate soils [NB. the existence of</p>	<p>The soils in the Luyanghu project area cannot really be divided into either saline or alkaline soils. In the Chinese system they are classified as saline-alkaline (or saline-sodic according to other classification schemes). These are soils with sufficient exchangeable sodium to interfere with growth of most plants,</p>

STAP recommendation	ADB response
<p>sulphates is very briefly mentioned in the proposal in Section B]. It could be argued that alkalinity or sodicity and acid-sulphate soils are by far the more challenging situations, although their spatial extents would be far more limited. STAP is concerned that most of the proposal appears to focus on salinity. Granted, this is the condition most frequently found, primarily because it is derived from poor land management. Sodicty and acid-sulphate conditions are largely natural. So, for example, the Component 1 Expected Outcome is only about salinity and the three expected outputs also only about salinity, notwithstanding that the component title includes both salinity and alkalinity. STAP urges the project proponents to identify clearly a differentiation between land management for salinity, for alkalinity (very occasionally both may co-exist) and for acid-sulphate. At the very least, there must be clear evidence that the proponents recognize the differences and would not, for example, put drainage ditches on sodic soils, which would be disastrous, and drain wetlands containing sulphide minerals (such as iron pyrites) turning the locality toxic with sulphuric acid and rendering agricultural production impossible. Such mistakes have happened elsewhere, providing a salutary lesson which needs to be recognized and heeded.</p>	<p>and containing appreciable quantities of soluble salts (see Landon, 1991: Booker Tropical Soil Manual).</p> <p>A table of the combined sodium and salt content of the soils in the project area – from mildly saline to strongly saline – has been included in section B.1, to provide a better background on the soil conditions in the project area. The term saline soils was used in the PIF to cover all the different permutations of sodium and salt levels in the soils found in the table, and at CEO endorsement, it has been agreed that agricultural activities will only be supported on saline soils. Drainage ditches will not be constructed in the lowest lying project areas with more sodic soil conditions, as these sensitive areas will be conserved as wetlands and/or salt pans by the project for recreation and tourism (project component 3).</p> <p>Acid sulphate soils have not been found in the project area (see ADB Project Preparation Technical Assistance (PPTA) Report, Appendix 12, soils assessment). As the climate is temperate at the project site, the risk of encountering acid sulphate soils after further soil sampling is considered to be low, as these conditions are mainly found in more humid tropical climates.</p>
<p>3. From the above point, STAP considers that the problem statement and the baseline in Section B1. To understand further the complexities surrounding the drivers and implications of desertification (including loss of soil resources), a more detailed and differentiated description of these issues is recommended. For example, it would be useful to provide data on annual precipitation, changes in rainfall patterns, and further details about the degraded sodic area of interest to the project (for example - size of targeted area, and a description of the basic soil profiles). This information also would contribute to strengthening the project baseline, without which it will be impossible to track beneficial impact of the project.</p>	<p>The baseline section B1 now includes more detailed information on the size of the area and characteristics of the saline and sodic soils (see above), as well as data on temperature, rainfall and evaporation.</p>
<p>4. STAP also has concerns over the lack of identification of simple economic and financial assessment tools, such as Cost-Benefit Analysis of individual practices and private economic rationality of land users joining the new land management schemes. 'Best practices' are unfortunately usually supported mainly by their biophysical performance, rather than their rationality in contributing to local livelihoods. The WOCAT database can assist with this analysis, but there should be explicit intention to include such analysis because of its importance in achieving acceptance by local land users.</p>	<p>The PRC has already published one volume of WOCAT Best Practices for Land Degradation Control in Dryland Areas of China, and is finalizing a second volume. These include biophysical as well as socio-economic assessments of BPs and this will form the basis for selection of BPs to be implemented at pilot sites. Moreover, the current phase of the PRC-GEF Land Degradation Partnership has focused on preparing four thematic studies on innovative SLM topics to inform further up-scaling of SLM. One of the studies is on CBA and a CBA framework for the Partnership as well as a CBA Manual have been produced and will guide the application of CBA in this project. This is explained under Section B.2 on Incremental Reasoning.</p>
<p>5. Under component 1, it would be useful to describe on what basis the selection of the ten best practices will be made. For example, the proposal indicates that WOCAT and PRAIS will be used to identify the best practices. WOCAT, however, is a global database that receives examples of best practice; and PRAIS is a national reporting system that may well shortly encourage countries to report on their best practices to the UNCCD. Neither is a deriver of best practices, though both when fully operative may give suggestions as to what may be tried as a suitable land management practice. It would be useful to describe explicitly the factors influencing the selection</p>	<p>As part of the project preparation, a soil assessment was undertaken (PPTA Report, Appendix 12) that identified different categories of best practices that could be tested and implemented in the area to improve the productivity if saline-alkaline soils. These are explained under section B.2 and the final selection will be undertaken together with local communities interested in participating in the pilot testing. Economic valuation will be undertaken of all tested BPs using e.g. the CBA Manual developed by the PRC-GEF LD Partnership, which is also explained under B.2.</p>

STAP recommendation	ADB response
<p>process for best practices, such as less costly to adopt and maintain the practice. The project developers also may wish to consider Singh, K., Pandey, V. (2012) et al. Ecological restoration of degraded sodic lands through afforestation and cropping. ECOENG-2142. The study analyses the restoration of sodic soils using afforestation and cropping systems in semi-arid regions in northern India. Its results indicate that afforestation measures induced greater changes in soil properties compared to cropping systems. Thus, the study and its findings may be helpful in the design of this project.</p>	
<p>6. Also under component 1, STAP recommends to support the expected outcomes with scientific literature and/or rigorous local unpublished evidence. For example, the following statement could be supported with the proper references "This, in turn, will maximize the impact of the investment component of the project and ensure that promotion of SL/WM on rehabilitated land will lead to increase in provision of ecosystem services thanks to improved vegetation cover, improved storage of carbon in soils and vegetation, and improved irrigation flows."</p>	<p>To increase adoption and uptake of good SL/WM practices, Farmer Field Schools (FFS) will be established where farmers take the lead in training other farmers. The FFS approach allows for the assessment of the environmental and socio-economic benefits of best practices from the farmers' perspective. It also promotes replication and up-scaling and further investment in SL/WM approaches and technologies that prove to be successful in the Luyanghu context, thus helping to maximize the impact of the investment component of the project and ensure that promotion of SL/WM on rehabilitated land will lead to both environmental and socio-economic benefits. This is explained under section B.2.</p>
<p>7. Under component 2, STAP urges project developers to specify further how the selection of best practices will be made, and to support the expected outcomes with proper references (scientific literature and/or rigorous unpublished evidenced). The latter also holds true for section B.3 especially regarding the statement "Improved arable land will increase the available income; and thus, improve the living standards of women..." The gender dimensions of the project are inadequately explored or recognized.</p>	<p>For selection of best practices see responses above.</p> <p>As part of project preparation activities, a Gender Action Plan (GAP) has been prepared (see ADB PPTA Report) that includes specific indicators for women's participation in the project and the benefits they will derive from it. The project GAP is summarized in section B.3.</p>
<p>8. On component 3, STAP recommends to refer to its advisory document on "Payment for Environmental Services and the Global Environmental Facility". The document highlights a number of potential barriers to PES effectiveness that would be useful to consider in the project development. Furthermore, the document outlines how GEF projects can help build the evidence base for PES effectiveness in case the project developers wish to consider this further. The document can be downloaded at www.unep.org/stap</p>	<p>Component 3 now includes an output on assessment of opportunities for establishing an eco-compensation mechanism for conserving the wetlands in Luyanghu. The assessment will be guided by the extensive work already done in the PRC on eco-compensation and the thematic study on PES/eco-compensation prepared by the PRC-GEF LD Partnership, explained under section B.2.</p>
<p>9. In its current form, it is unclear what contribution component 4 will make to project monitoring, given that the land degradation tracking tool includes a number of indicators for this purpose. STAP prefers to see project monitoring, especially the scientifically-based tracking of the impact of project investments, integrated with the substantive components of the project, rather than be separated as an isolated component. Monitoring is an on-going exercise of identifying what is working and correcting what is not. It would be useful if the project developer could distinguish the monitoring activity further from the land degradation tracking tool and justify why it should be a separate component.</p>	<p>The monitoring has been designed as a separate component to ensure compliance with the M&E system of the PRC-GEF LD Partnership and easy aggregation of project results and impacts across projects up to program level. This component will also allow for analysis of SLM monitoring data during project implementation and the development of adaptive management strategies and protocols.</p>
<p>10. The Risk Assessment at Section B.4 is limited and partial. There are, for example, risks concerning the magnitude of livelihood benefits over and above the costs associated with</p>	<p>Pilot testing and subsequent evaluation of best practices in SLM prior to further up-scaling through FFS and investments will contribute to both biophysical and socio-economic sustainability</p>

STAP recommendation	ADB response
<p>implementing best practices. The proposal also assumes that soil productivity and soil resilience will be achievable throughout the targeted area. However, STAP recommends including the risk of non-recovery.</p>	<p>of the project.</p> <p>Support to alternative livelihoods will mitigate the risk of non-recovery of soil productivity in areas with high salinity by introducing opportunities to work with eco-tourism, etc.</p> <p>The risk matrix in section B.4 has been updated since the PIF and reflects these considerations.</p>

ANNEX C: CONSULTANTS TO BE HIRED FOR THE PROJECT USING GEF/LDCF/SCCF/NPIF RESOURCES

<i>Position Titles</i>	<i>\$/ Person Week*</i>	<i>Estimated Person Weeks**</i>	<i>Tasks To Be Performed</i>
For Project Management			
Local			
Project Operations Specialist	1,000	25	Major tasks of the Project Operations Specialist include: (i) coordination with the PMO and Team Leader/Water Resources Management Specialist for the implementation of GEF activities according to the GEF project work plan and budget; (ii) ensure reporting and consistency with GEF formats and timelines; assist inception meeting, mid-term and final evaluations and overall evaluation of GEF performance targets
International			
Justification for travel, if any:			
For Technical Assistance			
Local			
M&E Specialist	1,000	50	To monitor project (Loan + GEF) progress and achieve planned outcome and outputs, an M&E specialist will be hired. That will work to (i) establish comprehensive procedures for and (ii) design of a system to permit ongoing tracking and adoption of remedial action regarding project design, schedules, activities and impacts. Data will be systematically updated and generated based on project outcome, inputs, investment outputs, as well as agreed-upon project performance indicators, SLM, environment and social monitoring indicators, etc. The input of the M&E specialists will thus (iii) ensure measuring of project impact, output, and compliance with ADB safeguard requirements and GEF targets.
SLM Specialist	1000	156	The SLM specialist will work with the international SLM consultant and (i) in a participatory way identify, describe, and

			<p>assess the major types of farming systems in the project area; (ii) identify and assess all factors that influence the sustainability of agricultural production in the project area; (iii) identify and assess potentially beneficial agricultural practices or other measures that may enhance sustainable agricultural and increase opportunities for sustainable production; (iv) consult with local communities in the project area on suitable demonstration areas/sites; (v) in a participatory way, establish 10 demonstration sites on best practices in saline soil management and 2 on shelterbelt best practices; (vi) contribute to comprehensive evaluation of the BPs.</p>
Wetland Specialist	1000	155	<p>The National Wetland Specialist should work with the international wetland consultant to: (i) Review current knowledge on land use and species/habitat, particularly migratory waterbirds, as well as land-use rights; supplement knowledge gaps with field surveys and village interviews (ii) Finalise the draft Wetland Management Plan; (iii) Develop a wetland databases, and (iv) Establish 2 demonstration activities on sustainable wetland management involving local communities.</p>
Livelihood, ecotourism and rural business development Specialist	1000	120	<p>The key tasks assigned this post include: (i) Collect data and information on dependence on natural resources management by local households and communities and particularly disadvantaged groups such as women and the poor; (ii) Identify the end use of the resource (e.g. local consumption, outside market), means of extraction, location within/adjacent to the Wetland Park, its availability (per seasonal calendar), as well as potential for that resource replication as pilot model; (iii) Support the establishment of a business incubator to promote small rural enterprises based on sustainable use and management of the natural resources of Luyanghu.</p>
International			
SLM Specialist	4,500	30	<p>The SLM specialist will work with the national SLM consultant to (i) identify and assess all factors that influence the sustainability of agricultural production in the project area (e.g. farm inputs, land</p>

			ownership, shelter belts, availability of infrastructure, institutional setting, etc); (ii) identify and assess innovative and sustainable agricultural practices and best practices for shelter belt establishment for testing at demonstration sites in the Luyanghu area; (iv) propose 10 suitable demonstration areas/sites in the project area for sustainable management of saline and alkaline soils and 2 for establishment of shelter belts; (v) develop criteria for evaluation of the biophysical and socio-economic impacts of the BPs.
Wetland Specialist	4500	20	Main tasks include: (i) Review of current land use, species/habitat knowledge as well as land-use rights in the NWP; supplement knowledge gaps with field surveys and village interviews; (ii) prepare a short rapid assessment report indicating the confirmed or likely presence of key species (degree of certainty) if possible with geographical information as to where in the Wetland Park the key species persist and where they do not, a brief threats assessment on key species and their habitats and recommendations for their management; (iii) Finalisation of the draft Wetland Management Plan; and (iv) Identification of 2 possible demonstration activities on sustainable wetland management involving local communities.
Livelihood, ecotourism and rural business development specialist	4500	20	The main tasks of this assignment include: (i) critical analysis of livelihood and ecotourism business opportunities in the Luyanghy area; (ii) Present draft report to a multi-stakeholder workshop/training (organised by GDS under training sub-contract) in order to further refine strategies and outline recommendations (e.g. key job areas, needed training, business plan); (iii) based on workshop inputs, identify practical follow-up activities for sustainable livelihoods, including eco-tourism in Luyanghu.
Eco-compensation Specialist	4,500	20	Key tasks include: (i) Review of legal and policy framework for long-term sustainable management of the Luyanghu Wetland Park; (ii) Review of eco-compensation models relevant to the project area; (iii) Review the draft Wetland Management Plan, and work with the Wetland Specialists to identify possible eco-compensation mechanisms for the

			Luyanghu wetlands; (iv) Prepare a draft financing plan for implementation of the Wetland Management Plan for the Luyanghu wetlands.
<p>Justification for travel, if any: 1) National consultants are assumed to be based in Weinan. As such, neither travel nor per diem is provided.</p> <p>2) Travel cost for international consultants for technical assistance: 8 round trips at \$3,000 per round trip totaling \$24,000.</p> <p>3) Per diem for international consultants: 94 days at \$100 per day totaling \$9,400.</p>			

* Provide dollar rate per person week. ** Total person weeks needed to carry out the tasks.

ANNEX D: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS

A. EXPLAIN IF THE PPG OBJECTIVE HAS BEEN ACHIEVED THROUGH THE PPG ACTIVITIES UNDERTAKEN.

THE PROJECT DID NOT RECEIVE PPG FUNDING.

B. DESCRIBE FINDINGS THAT MIGHT AFFECT THE PROJECT DESIGN OR ANY CONCERNS ON PROJECT IMPLEMENTATION, IF ANY:

C. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES AND THEIR IMPLEMENTATION STATUS IN THE TABLE BELOW:

<i>Project Preparation Activities Approved</i>	<i>Implementation Status</i>	<i>GEF/LDCF/SCCF/NPIF Amount (\$)</i>				<i>Cofinancing (\$)</i>
		<i>Amount Approved</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>	<i>Uncommitted Amount*</i>	
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
	(Select)					
Total		0	0	0	0	0

* Any uncommitted amounts should be returned to the GEF Trust Fund. This is not a physical transfer of money, but achieved through reporting and netting out from disbursement request to Trustee. Please indicate expected date of refund transaction to Trustee.

ANNEX E: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/NPIF Trust Fund or to your Agency (and/or revolving fund that will be set up)