PROJECT IDENTIFICATION FORM (PIF)[1]
PROJECT TYPE: FULL-SIZED PROJECT
TYPE OF TRUST FUND: GEF TRUST FUND

PART I: PROJECT IDENTIFICATION

Project Title:	Conservation of biodiversity and sustainable land management in the soda saline-alkaline wetlands agro pastoral landscapes in the western area of the Jilin Province		
Country(ies):	China	**GEF Project ID:**[2]	4632
GEF Agency(ies):	FAO	**GEF Agency Project ID:**	611430
Other Executing Partner(s):	Water Resource Department of the Jilin Province	**Submission Date:**	25 January, 2012
GEF Focal Area (s):	LD and BD	**Project Duration (months):**	48 months
Name of parent program (if applicable): ➢ For SFM ☐		**Agency Fee:**	262,700

A. FOCAL AREA STRATEGY FRAMEWORK[3]:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative Grant Amount ($)	Indicative Co-Financing ($)
BD-2	Outcome 2.1: Increased sustainable managed landscapes and seascapes that integrate biodiversity conservation	Output 2.2 National and Sub-national land-use plans (3) that incorporate biodiversity and ecosystem services valuation	GEFTF	1,415,000	6,700,000
BD-2	Outcome 2.2: Measures to conserve and sustainable use biodiversity incorporated in policy and regulatory frameworks	Output 2.1. Policies and regulatory frameworks (1-3) for production sectors	GEFTF	221,000	500,000
LD-1	Outcome 1.2 Improved agriculture management (increased land area with sustainable productivity and reduced vulnerability to climate variability)	Output 1.3 Sustainable SL/WM interventions to increase vegetation cover in agro-ecosystems Output 1.5 Information on SLM technologies and good practice guidelines disseminated	GEFTF	512,000	6,000,000
LD-3	Outcome 3.1 Enhanced cross-sector enabling environment for integrated landscape management (policies support integration of agriculture, rangeland, and other land uses)	Output 3.1 Integrated land management plans developed and tested	GEFTF	35,000	300,000
LD-3	Outcome 3.2 Integrated landscape management practices adopted by local communities (application of integrated natural resource management practices (INRM) in wider landscapes)	Output 3.2 INRM tools and methodologies developed and tested Output 3.4 Information on INRM technologies and good practice guidelines disseminated	GEFTF	312,000	2,500,000
		Sub-Total		2,495,000	16,000,000
		Project management cost[4]		132,000	800,000
		Total project costs		2,627,000	16,800,000

[1] It is very important to consult the PIF preparation guidelines when completing this template.
[2] Project ID number will be assigned by GEFSEC.
[3] Refer to the reference attached on the Focal Area 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.

B. PROJECT FRAMEWORK

Project Objective: Develop a model for mainstreaming conservation of biodiversity and Sustainable Land and Water Management (SLWM) in the water and land-use sector in the western Jilin Province.						
Project Component	**Grant Type**	**Expected Outcomes**	**Expected Outputs**	**Trust Fund**	**Indicative Grant Amount ($)**	**Indicative Co-financing ($)**
1. Incorporation of Sustainable Land and Water Management (SLWM) principles and biodiversity conservation in policy, planning and regulatory framework	TA	Policies, plans, and regulations on land and water resources in the Jilin Province incorporate biodiversity conservation and SLWM principles based on new management model for wetlands agro-pastoral landscapes (measured through the BD-2 TT scorecard for sector policies and regulations incorporating Biodiversity conservation and LD AMAT score for cross-sector enabling environment)	Integrated land management plans incorporating biodiversity and ecosystem services valuations developed for 3 pilot sites (and implemented in component 2 and 3) New SLWM model for restoration and conservation of ecosystem services and biodiversity in the western saline-alkaline wetlands and grasslands developed (based on the technical studies and testing of approaches in component 2 and 3) Plans, policies and regulations for the use of land and water resources reviewed and renewed in accordance with new management model for wetlands agro-pastoral landscapes in western Jilin Province	GEFTF	130,000 (BD: 70,000; LD: 60,000)	800,000
2. Identification and piloting of suitable land and water management approaches and practices	INV	Integrated landscape management practices adopted by at least 23 local communities (application of integrated INRM and BD conservation in wider landscapes) Degradation and desertification processes reversed in 170,780 ha saline-alkaline land with improved vegetation cover resulting in sustainable productivity and reduced vulnerability to climate variability 220,000 ha of integrated production landscape under SLWM practices	Pilot water control and measurement system established to enable multiple functions (disaster risk management – flooding control, wetlands and grasslands restoration, ecosystem services and biodiversity conservation, and food security). Proper operation strategy of the pilot water control system developed and tested for optimal adjustment and utilization of flooding water for reversing degradation and desertification processes and rehabilitation of wetlands (49,883 ha.) and native grasslands and improving local agriculture activities Integrated agro-pastoral land management plans incorporating biodiversity and ecosystem services valuations (developed in component 1) implemented in 2 pilot sites with local communities Options for land use models evaluated including analysis of local dynamics in climate and water cycles, salt movements in soil and water important for land rehabilitation and degradation	GEFTF	1,400,000 (BD: 700,000; LD: 700,000)	10,000,000

			processes SLWM practices tested including conservation agriculture, management of grasslands, and water saving technologies to: increase vegetation cover; minimize use of agrochemicals avoiding pollution of wetlands; and reverse degradation processes.			
3. Rehabilitation and conservation of wetlands biodiversity	INV	Rehabilitation and conservation of 49,883 ha wetland managed as an integrated part of the freshwater fishery and irrigated crop and grassland production landscape providing important habitats for endangered migratory birds resting and feeding in these wetlands. Wetland habitat for freshwater fish, mammals, water fowl and endangered migratory birds is conserved leading to: 1) population of IUCN red listed Crane species (Siberian, Hooded, White-naped, and Red crowned) maintained or increased in pilot sites by the end of the project (<5% variance); 2) population of wetlands mammals such as the IUCN red-listed Eurasian otter increased Agriculture non-point source pollution controlled and monitored within the project areas	Drainage channels from irrigation and flooding water diversion system constructed and water quantity and quality monitoring system established to allow for rehabilitation of wetlands (including buffer zone, ponds and lakes). Water quality improvement capacity and efficiency of the buffer zone analyzed and monitored as a function of the inflow water quality and quantity; early warning system for pollution threats established; and operation strategy of the inflow and outflow control structures of the buffer zones established and tested. Fishery resources inventoried and monitored and management measures established Wetland hydrobionts species, waterfowl, migratory birds, evaluated; biodiversity indicators identified; and management and monitoring measures established including zoning and use regulations. Integrated wetlands management plans incorporating biodiversity and ecosystem services valuations (developed in component 1) implemented in 1 pilot sites with local communities	GEFTF	800,000 (BD: 800,000)	4,000,000
4. Education and awareness raising	TA	Enhanced awareness of wetland ecosystem services and conservation measures in local land and water management, agriculture activities, and in planning and regulation of the use of land and water resources in the western Jilin Province	Biodiversity conservation and SLWM technologies and good practice guidelines developed (based on testing results in component 2 and 3) and disseminated 500-800 decision makers and technical staff of the provincial government planning and water departments are trained in: a) cross-sector integrated natural resource management, ecosystem	GEFTF	137,000 (BD: 88,000; LD: 49,000)	900,000

			and biodiversity conservation; b) dynamics between agriculture activities, salt movements and water management in saline alkaline soils; c) incorporation of valuation of biodiversity and ecosystem services in land use planning processes; and d) conservation of wetland habitats and global important biodiversity Awareness raising events conducted and educational material available and disseminated to farmers communities and the civil society in the pilot project area (50,000-80,000 farmers).			
5. Project monitoring and evaluation	TA	Project implementation based on results based management and application of project findings and lessons learned in future operations facilitated	Project monitoring system operating providing systematic information on progress in meeting project outcome and output targets Timely biannual project progress reports available for adaptive and results based management Midterm and final evaluation conducted	GEFTF	28,000 (BD: 15,000; LD: 13,000)	300,000
			Sub-Total		2,495,000	16,000,000
			Project management Cost	GEFTF	132,000 (BD: 80,000; LD: 52,000)	800,000
			Total project costs[4]		2,627,000	16,800,000

C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, ($)

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount ($)
Local Government	Water Resource Department of the Jilin Province	Grant	16,600,000
GEF Agency	FAO	In-kind	200,000
Total Co-financing			16,800,000

D. GEF/LDCF/SCCF RESOURCES REQUESTED BY AGENCY (IES), FOCAL AREA(S) AND COUNTRY[1]

GEF Agency	Type of Trust Funds	Focal Area	Country Name/ Global	(in $)		
				Project amount (a)	Agency Fee (b)	Total c=a+b
FAO	GEFTF	Biodiversity	China	1,753,000	175,300	1,928,300
FAO	GEFTF	Land Degradation	China	874,000	87,400	961,400
Total Grant Resources				2,627,000	267,700	2,889,700

[1] In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table

PART II: PROJECT JUSTIFICATION

A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

A.1.1. THE GEF FOCAL AREA STRATEGIES:

By focusing on conservation of key ecosystem services (wetland habitat for global important threatened species, land and water cycle supporting flood control, soil conservation and agriculture activities for food security, and native grassland supporting livestock production) the proposed project is cross-cutting linking the GEF Biodiversity and Land Degradation focal area strategies.

Regarding the **BD strategy** the project will support the objective 2: *Mainstream biodiversity conservation and sustainable use into production landscapes/seascapes and sectors* through development of institutional capacities of the Jilin province government for spatial land use planning that incorporates the valuation of biodiversity and ecosystem services in wetlands and agro-pastoral landscapes including habitat for migratory birds and rare fish species. Wetlands projects under development or implementation in China including the six projects under the GEF5 Wetlands programme are mainly BD-1 projects focused at conservation of wetlands biodiversity in nature reserves (protected areas) led by provincial bureaus of forestry responsible for nature reserves. Most of these projects are truckling with establishing an appropriate dialogue with the water sector which makes decisions over water usage and flows being the most important factor in the conservation of wetlands and its biodiversity. The proposed project differs importantly from these projects by: 1) being a BD-2 project focusing at the conservation of wetlands biodiversity in an agro-pastoral and artisanal in-lands fisheries production landscape by mainstreaming the conservation in the planning and use of water and land resources; and 2) by having the Provincial Department of Water as the proponent and lead agency behind the project which is the key sector for mainstreaming of wetlands biodiversity conservation. As such this project offers an opportunity for developing and piloting a new SLWM model for restoration and conservation of ecosystem services and wetlands biodiversity that could be of great importance for wetlands conservation with an ecosystem approach and as integrated in production landscapes and incorporated in fisheries, livestock and agriculture sectors..

To support the GEF BD-2 objective technical assistance and investments will be financed to: (i) support the provincial government in particular the Department of Water and local communities in the development and implementation of integrated land and water management plans incorporating biodiversity and ecosystem services valuations; (ii) develop and test a new management model for restoration and conservation of ecosystem services and biodiversity while pursuing local food security in the western saline-alkaline wetlands and agro-pastoral landscape; (iii) review and renew relevant plans, policies and regulations in accordance with the new management model; (iv) rehabilitate 49,883 ha of wetlands (including buffer zone, ponds and lakes) by constructing drainage channels from irrigation and flooding water diversion system and by developing and implementing a system for analyzing, monitoring and controlling the water quality improvement capacity and efficiency of the buffer zone as a function of the inflow water quality and quantity, an early warning system for pollution threats from agriculture non-point source, and an operation strategy of the inflow and outflow control structures of the buffer zones; (v) identify and implement management and monitoring measures for wetland hydrobionts species, waterfowl and migratory birds based on biodiversity indicators and zoning and use regulations.

Regarding the **LD strategy** the project will support objective 1: *Maintain or improve flows of agro-ecosystem services to sustain livelihoods of local communities* and objective 3: *Reduce pressures on natural resources from competing land uses in the wider landscape* through: point (i), (ii), and (iii) mentioned under biodiversity above; (iv) building of technical and institutional capacities for SLWM and piloting integrated approaches to conservation agriculture and SLWM in wetlands and agro-pastoral landscapes; (v) establishing pilot water control and measurement system to enable multiple functions (disaster risk management –flooding control, wetlands and grasslands restoration, ecosystem services and biodiversity conservation, and food security) and development and testing of proper operation strategy for optimal adjustment and utilization of flooding water for reversing degradation and desertification processes, increasing vegetation cover on native grasslands, and improving local agriculture activities; (vi) evaluating options for land use models including analysis of local dynamics in climate and water cycles, salt movements in soil and water important for land rehabilitation and degradation processes; (vii) testing and provision of pilot experiences for subsequently up-scaling of SLWM practices including conservation agriculture, management of grasslands, and water saving technologies to increase vegetation cover, minimize soil erosion and use of agrochemicals, and reverse degradation processes. The development of the SLWM model and practices to be applied will be supported by installed capacities in

China on LADA-WOCAT[5] (see section B.6) and will aim at balancing competing land uses and mitigating droughts and land degradation processes as part of an ecosystem based climate change adaptation strategy.

A.2 NATIONAL STRATEGIES AND PLANS OR REPORTS AND ASSESSMENTS UNDER RELEVANT CONVENTIONS, IF APPLICABLE, I.E. NAPAS, NBSAPS, NATIONAL COMMUNICATIONS, TNAS, NIPS, PRSPS, NPFE, ETC.:

The priorities of the Government of China (GoC) in mainstreaming biodiversity conservation in production sectors, reaching the 2010 biodiversity targets, and linkages to the implementation of other UN conventions are set out in China's Fourth National Report on Implementation of the Convention on Biological Diversity, 2008 and the China National Biodiversity Conservation Strategy and Action Plan, 2011-2030 (NBSAP). The NBSAP identifies 35 priority regions for biodiversity conservation in China where the Songnen Plain in the western Jilin province is identified as priority area in the Hilly Plain priority Region in North East China. The proposed project will in particular support the implementation of two of the four conservation priorities for this area which are: i) develop plans for wetland conservation and establish transboundary wetland reserves to address issues of water shortage and pollution of wetlands; and ii) establish marsh wetlands, migration and reproduction areas for rare and migratory birds and protected areas for rare fishes and cold-water fishes including in Songnen and Three Rivers Plains. The proposed project will also support the implementation of in particular 5 of the 30 priority actions identified in the NBSAP which are: Action 1 *Develop policies to enhance biodiversity conservation and sustainable use*; Action 2 *Improve the legal system of biodiversity conservation and sustainable use;* Action 4 *Incorporate biodiversity conservation into relevant sectoral and regional planning and programmes* (action 1, 2, and 4 will all be addressed in component 1 based on testing and piloting in component 2 and 3 of the proposed project); Action 6 *Reduce impacts of environment pollution on biodiversity* (component 2 and 3 of the proposed project); Action 29 *Establish mechanisms of public participation* (component 4 of the proposed project)

The Chinese government has integrated the conservation and sustainable use of wetland biodiversity into the priorities of China's Agenda 21. The China Wetland Conservation Action Plan (2000) has the objective to strengthen the conservation and maintain ecosystem services of wetlands and to ensure the sustainable use of wetland resources. The National Project Plan for Wetlands Conservation (2002-2030) sets the target that by 2030, 713 wetland reserves and 80 wetlands of international importance will be established, effectively conserving over 90% of the country's natural wetlands including the wetlands in western Jilin. By the end of 2007, more than 550 wetland reserves of different levels and types had been established in China and about 45% of natural wetlands were effectively protected. The Ministry of Water Resources (MRW) has integrated water ecology conservation during the planning, design, construction and operation of water diversion and conservation projects. In 2004, the MWR issued the Recommendations on Protecting and Restoring Water Ecosystems followed by pilot campaigns in some counties.

China has the last decade done significant improvements in management of grassland conservation responding to the fact that 90% of grasslands have been degraded by varying degrees according to the NBSAP. A number of major systems, such as the Basic Grassland Conservation System, the Forage-livestock Balance System and the Grazing Ban and Grazing Land Non-use Period System have been developed and implemented. The Ministry of Agriculture is aiming to restore native grassland vegetation and increase grassland productivity by implementing these systems and the project Returning Grazing Land to Grassland and Accommodation of Carrying Capacity. These projects and measures have boosted more balanced development between grassland ecology and animal husbandry. The National Master Plan for Grassland Conservation, Construction and Utilization (2007) sets the overall target to basically control grassland degradation nationwide, to significantly improve the ecological environment of grasslands and to improve the agricultural and animal husbandry structure and economic structure of grassland regions by 2020.

As part of the implementation of UNCCD, China has integrated the reversing of land degradation processes with biodiversity conservation including the rehabilitation of ecosystem functions. The National Plan for Desertification Prevention and Control (2005-2010) was issued in 2005 and the legislative system for protection of desert ecosystems include the Law on the Prevention and Control of Desertification, Forest Law, Grassland Law, Law on Water and Soil Conservation, Land Administration Law, Environmental Protection Law, etc. For biodiversity conservation purposes, grazing, reclamation and logging are forbidden in dry land and deserts, stocking rate is determined according to the carrying capacity of grasslands and the rationally use

[5] Methodologies for identification and mapping of land degradation processes in dry lands, their causes and solution options in terms of land use planning and natural resources management responses developed in China supported by the UNEP/FAO/GEF **Land Degradation Assessment in Dryland (LADA)** and the **World Overview of Conservation Approaches and Technologies (WOCAT)** decision-support tool which comprises a global standardized and robust documentation of sustainable land management technologies and approaches in different land-use systems at the community and landscape levels.

of water resources. From 2000 to 2004, China's total area of deserts was reduced by 6,416 km2 which was a historic turning point, from an annual average expansion of 3,436 km2 in the late 1990s.

The National Master Plan for Land Use (1997-2010) 1999 defines the overall target of national land use as maintaining the dynamic balance of total farmland while ensuring the conservation of the environment. The plan aims at bringing the land degradation under control and improving land use management capacities. The National Ecological Functional Zoning Plan issued in 2008 provides guidance for regional ecological conservation, ecological construction, sectoral development layout, resources utilization and economic and social development. The Ministry of Land and Resources (MLR) has integrated biodiversity conservation into the overall land use plans where one target is to protect forest land and increase forest coverage and vulnerable ecosystems among other measures through establishment of nature reserves.

B. PROJECT OVERVIEW:

B.1. DESCRIBE THE BASELINE PROJECT AND THE PROBLEM THAT IT SEEKS TO ADDRESS:

The western part of the Jilin province in north-eastern China is characterized by soda saline-alkaline soils, extensive temperate wetlands and rich grasslands exposed to seasonal flooding created in the flat Songnen Plain. Western Jilin is in the Southwest part of the Songnen Plain and is in the semi-arid temperate continental monsoon climate belt, with an average temperature of 4.4C (varying from 23.4C in July to -18.1C in January). The annual precipitation (around 400 mm/year) is much lower than the annual evaporation (1030 mm/year). This makes the area dependent on water inflow from the mountain areas and higher plateaus north and west of the Songnen Plain and vulnerable to changes in temperatures and the fragile water and salt concentration balance. Main rivers crossing the area include Tao'er River, Huolin River, Songhuajiang River, Second Songhuajiang River and the Nenjiang River.

These wetlands provide important ecosystem services of global and local importance. They are habitat for a variety of waterfowls, freshwater fish, and wetlands mammals such as the Eurasian otter (on the IUCN red-list for threatened species) and serve as important resting and feeding areas for migratory water birds on their route between Siberia and the southern part of China and further south. Many of these water birds in particular the cranes are on the IUCN red-list (white-naped crane and hooded crane are classified as vulnerable, Siberian and red-crowned cranes are classified as endangered) and also the Ciconia Nigra or Black Stork. These wetlands have also included grasslands with one of the highest productivity in China because of the native grass species (i.e. Leymus chinensis) dominating the plain ideal for pasture and forage. The grass plains and swampland, with thousands of small ponds and lakes scattered throughout the plain, have contributed to livestock production and supported local livelihoods based on artisanal freshwater fishery. These wetlands also serve as a buffer for downstream flood control.

The western Jilin province is constituted by 11 counties, a territory of 51081.5 km2, and with a population of 4.83 million and is among the poorer regions in China. The wetlands in this area have in the last 60 years been influenced by land use and climate changes affecting the ecosystem services they provide. The impacts include drying up of swamps, ponds and lakes (reduced by 21% from 1930 to 2000 including the significant reduction of the Chagan Lake in the 70-ties), disappearance of grassland (reduced by 21% from 1954-2004 Da'an county), and decertification and salinization processes (increase in salinized land by 28% from 1954-2004 Da'an County) leading to significant emissions of green house gasses and reduction in carbon stocks (an estimated 42% loss in organic carbon in the last 50 years). The fish habitats have gradually disappeared including degeneration of reed communities. The main causes for these degradation processes are decreasing water inflows from upstream areas, climate change, overgrazing, and conversion to cropland without any land use planning considering the carrying capacities of the ecosystems.

The last 50 years the average temperature has increased by 1.9C and average annual precipitation has decreased by 64mm (14%). This could both be a result of the global climate change trend and locally or regionally induced changes caused by the wetland degradation processes. Since the 1950s, the population in the western Jilin area has been growing and livestock have been an important part of local livelihood. From 1985 to 2000 there was a 100% increase in the number of animals reflecting the agricultural reforms from cooperatives to contract farming. This has lead to overgrazing, decreased grassland productivity (from 1500-3000kg/ha in the 1950s to 450-600kg/ha in 2007), increased evaporation rates and soil temperatures, and decreased soil organic matter because of reduced vegetation cover and increased decomposition rate, accumulation of salt in surface soils (salinization processes) creating non-useable lands (or land degradation) also called waste lands with very low content of plant nutrients and organic matters in soils. In the western Jilin area the conversion to cropland occurred rapidly in the early 50s, where cropland reached a total 48% of the land use. In 2000, the cropland area had reached 52% but has since then been stagnating and in some counties even decreasing due to land degradation processes. Abandoned cropland with no vegetation cover is

vulnerable to further degradation processes and turns into wasteland following the same degradation processes as grassland exposed to overgrazing.

Baseline initiatives and investments

To stop degradation processes and conserve the wetlands and native grassland, national and province governments launched in 1999 environmental protection and restoration policies and activities including fencing areas of degraded grassland prohibiting grazing activities. The recuperation processes in these areas have been slow but the results can be seen now in terms of recovered vegetation and decrease in numbers of livestock. Recognizing the importance of improved management of land and water resources the Water Resource Department of the Jilin Province has analyzed options for win-win solutions for wetlands biodiversity and soil conservation and livestock and crop production. The aim is to develop and test a water and land use planning and management model for mainstreaming the conservation of wetlands and native grasslands in policies, planning and management processes. Possibilities of diverting water from flooding rivers for multiple uses and floods control has been evaluated for multiple benefits securing ecosystem services currently decreasing from the drying up of marsh wetlands pounds and lakes. A solution has been identified where diverted water will allow for the rehabilitation of wetlands and native grasslands by reversing desertification and salinization processes and also reduce the pressure on nature grasslands and wetlands placed by local requirements for food security through development of sustainable intensified agriculture systems on focused lands. This win-win solution is inspired by the successful rehabilitation of the Chagan Lake in the 80s where the local population, in order to protect their livelihoods based on freshwater fisheries, rehabilitated the water balance and habitats of the lake by digging a channel from the Second Songhuajiang River diverting water to the lake. Connecting the lake and related wetlands to the Second Songhuajiang River gives access to an alternative source of water instead of the reduced inflow from other upstream areas. The Chagan Lake is now a National Conservation Area and is one of the highest yielding lakes for in-land artisanal freshwater fishery in China and habitat for a rich diversity of water-fowls and migratory birds being one of the key resting and feeding areas, the latter making it particularly important as biodiversity conservation site. The 35,000 ha lake receives rainfall, the water diverted from Shonghuajiang River, and drainage water from an 28,700 ha paddy irrigation system constructed in the 40s and pumping water from the Second Songhuajiang River. The drainage water is passed through a 3,100 ha buffer wetland southeast of the Chagan Lake improving the water quality before it is lead into the lake controlled by a gate. Even though the channel established in the 80s has improved the water balance in the lake its surface is still slowly decreasing.

To address the loss of habitats, biodiversity threats and grass and crop land degradation processes in the western Jilin province the province government with the Water Resources Department taking the lead is further developing this win-win model combined with approaches and practices for SLWM adequate for soils vulnerable to salinization processes and specific interventions facilitating the recovery, monitoring and conservation of wetlands biodiversity. The long-term aim is to reach a conservation model that can be incorporated in policies, programmes and regulations in the water, agriculture and livestock sectors within the western Jilin province to secure the mainstreaming of wetlands, native grasslands and soil conservation in planning and management processes. The Jilin Water Resource Department include the Water Conservation and Hydropower Survey and Design Institute, Hydrology and Water Resource Section, Soil and Water Conservation Institute, Aquatic production Institute and other units directly under Water Resource Department. The background and capacities of those departments are strong and include: safeguard and rational utilization of water resource, water resource protection, assessment of carrying capacity and pollution of water bodies, regulation of limits for pollution discharge, monitoring hydrology and water resource, soil and water conservation/protection and synthetic management in the water ecosystem environment including fishery and aquatic wild fauna and flora. Jilin University and Northeast Normal University and other Universities are also participating in the initiative.

For the baseline project the province government has selected pilot sites to develop and test the conservation model, which are all served by the same two water diversion, conservation and control systems. The baseline investments include two new water diversion, conservation and control systems implemented in the central area of the soda saline alkaline land receiving water from the Hadashan water project and reservoir: one for irrigation in the Songyuan Scheme and wetland protection around Chagan Lake; and one for irrigation in Da'an County and wetland protection around Yueliang Lake. The total investment of the water diversion, conservation and control system is more than USD 700 millions including infrastructure at the intake from the Second Songhuajiang River and irrigation channels. The water diversion, conservation and control systems and the proposed GEF project will be implemented by Jilin Water Resource Department which will provide an additional USD 16.6 million in co-financing of the proposed GEF project. The co-financing resources will finance: drainage channels from irrigation and flooding water control systems for rehabilitation of wetlands;

design of experiments, testing and implementation of water and soil improvement measures; and technical assistance, equipment, local travel etc. to support project activities and project management.

The pilot sites served by the Songyuan and Da'an water diversion, conservation and control systems will be used in order to test and adjust approaches and practices and to develop the new SLWM model for restoration and conservation of ecosystem services and biodiversity (which will be supported by component 2 and 3 in the proposed GEF project). These approaches and practices and the new model will be applied in the wider western Jilin province through integration in the policy, planning and regulatory framework of the province (component 1of the proposed GEF project) and through education and awareness raising (component 4 of the proposed GEF project). The specific area of the pilot sites is among the most seriously impacted in the western Jilin province by the drying up of ponds and lakes, disappearance of wetlands habitats threatening biodiversity and land degradation processes. The area includes the Chagan Lake which has a particular significance for conservation of wetland habitats and biodiversity with global importance because of its role as resting and feeding area for migratory birds which is reflected in its status as a National Conservation Area. Securing the water inflow to the lake and rehabilitating wetlands in its surrounding will have a beneficial impact on wetlands habitat and its biodiversity including freshwater fish, mammals and the migratory birds many of which are vulnerable and endangered (see above).

The proposed GEF project will improve the baseline water diversion and management model into a new SLWM model for restoration and conservation of ecosystem services and biodiversity based on a landscape approach. In the pilot sites the project will: support the rehabilitation of 49,883 ha of wetlands part of which will serve as a buffer in the west of the Chagan lake; reverse degradation and desertification processes in 170,780 ha saline-alkaline land, part of which will be restored into grassland; support SLWM and sustainable agriculture intensification on a total area of 220,000 ha; and reduce the flooding risk of the downstream areas of the Second Songhuajiang River through diverting water mainly in flooding season from the river. The Second Songhuajiang River is part of the Songhuajiang River Basin which is the third largest river basin in China after the Yangtze and Yellow Rivers. The Songhuajinag River originates from two main sources, namely the Second Songhuajiang and Nen rivers, which meet near Songyuan to form the main Songhuajiang River. From this confluence, the Songhuajiang River flows in northeast direction to join the Heilong (Amur) River on the border between Russia and China. About 54% (300,000 km2) of the basin area belongs to the Nen River catchment, 13% (73,000 km2) to the Second Songhuajiang catchment, and the remaining 33% (184,000 km2) is immediately adjacent to the Songhuajiang River main channel.

The Hadashan reservoir and the Songyuan and Da'an water diversion, conservation and control systems have been approved within the framework of the comprehensive planning for the Songliao Basin which began in 1983 and three big plans were finalized in 1991 including the "Songhua River basin comprehensive plan" (including the Songyuan and the Da'an systems). In October 1993 the Ministry of Water Resources endorsed the plans and, in August 1994 the State Council approved the plans. The requirements for minimum environmental water flow (the minimum quantity, timing, and quality of water flows required to sustain freshwater ecosystem services downstream) were clearly spelled out in the plan. In the Fuyu section of the Songhua River basin, which is the section where the Second Songhuajiang River runs into the main Songhuajinag River the minimum environmental flow should be P = 90% and in the dry months the minimum ecological flow (sufficient flow to sustain aquatic ecosystem and its species) should be 100m3/s (20% of the average monthly stream flow for the dry months) discharge from the Hadashan water diversion construction in the Second Songhuajiang River.

To update the Environmental Impact Assessment and the ecological river flow requirements to changes in technology, policy and hydrological data series a reassessment was conducted in 2007 applying: (i) the "Technical Guidelines on water conservation for hydropower project's -EIA on river ecological water, low water and fish passage facilities"; (ii) hydrological data series from 1956 to 2003; and (iii) the Tennants standards for ecological water flows. This assessment came out with a minimum ecological flow of 50.9m3/s (10%). Since this is lower than the original assessed ecological flow the original minimum ecological flow of 20% was maintained to minimize ecological risks. Water flow monitoring at the Hadashan reservoir shows that the discharge is 333 m3/s (65%) in November to April (including the dry months December-March), it goes down to 114 m3/s (22%) in May and June, and reaches 367 m3/s (72%) in July-October. According to the Tennants standard for minimum ecological flow these are all above the limits that would have caused damage to the aquatic ecosystems downstream. A study conducted as part of the preparation of the ADB loan project "Songhua River Basin Water Pollution Control and Management" concluded in 2005 that considering the estimated future water demands for domestic, industrial and agricultural uses and all the water diversion and modification constructions in the Second Songhuajiang River the contribution to the main Songhuajiang River would decrease with an estimated 7% and would be within the established P=90% for the minimum

environmental flow for downstream impacts. Finally from the Hadashan reservoir in the Second Songhuajiang River and downstream to the main Songhuajiang River is 40 km of farmland with no important wetlands habitats and biodiversity that could have been impacted by the reservoir. By applying the win-win model for water diversion, conservation and management the diverted water will not only benefit farmland, be an important input for the reversion of degradation and desertification processes, but the water will also allow for the rehabilitation of wetlands habitats important for threatened migratory water birds which is an important biodiversity gain.

One critical aspect in the success of this baseline project will be to develop and apply an adequate land and water use planning and management model to serve the multiple purposes in ecosystem services, biodiversity conservation, food security and flood control, which could serve as a model in other degraded wetland areas in the northeast China. The indirect impact of the project will as such be a lot more than the rehabilitated ha mentioned above. Testing of water flows, quantity and quality requirements for different land uses and habitat conservation are needed as well as analysis of soil carbon generation processes and salt movements in the soil in the complex process of reversing the desertification and salinization processes.

In order to have the support from high level international expertise in managing the complex ecosystem dynamics involved in this project and assure that it will create sustainable global and local environmental benefits conserving ecosystem services of the wetlands, the Water Resource Department of the Jilin province has requested support from FAO in preparing and implementing a GEF project.

B. 2. INCREMENTAL REASONING: DESCRIBE THE INCREMENTAL ACTIVITIES REQUESTED FOR GEF FINANCING AND THE ASSOCIATED GLOBAL ENVIRONMENTAL BENEFITS TO BE DELIVERED BY THE PROJECT:

Without the GEF resources the Water Resource Department of the Jilin Province will continue the construction of the water diversion system for rehabilitation of native grasslands and wetlands by reversing desertification and salinization processes in saline-alkaline soils. This restoration model will only apply few alternatives for land uses adequate for known intensive cultivation options, with limited consideration of integrated biodiversity and ecosystem services conservation. It will not include conservation agriculture as an alternative for soil conservation and mitigation of land degradation. An integrated SLWM approach for the entire production landscape taking into account the conservation of biodiversity will only be achieved more long term and at slower speed. Analysis and management of water flows to satisfy the needs of different land uses and ecosystems will be undertaken and the water quality will be monitored on a general level as required in the Chinese water quality control programme. Areas of wetlands will be increased and the Chagan Lake will be managed as a national conservation area but without systematic management of fisheries resources, waterfowl habitats and pollution threats as well as systematic monitoring and management of ecosystem health in contributory channels and buffer zone wetlands. The development and incorporation of an integrated SLWM and conservation model in policies, programmes and regulations in the water, agriculture and livestock sectors within the western Jilin province to secure the mainstreaming of wetlands, native grasslands and soil conservation in planning and management processes will only be achieved as a long-term goal.

With the GEF resources an integrated SLWM and conservation model for the entire production landscape in the Western Jilin Province considering ecosystem services and biodiversity valuation will be developed from the beginning of the project and different options for mitigating land degradation processes, managing salt accumulation (or salinization process) in the soil and water will be analyzed and tested applying the LADA-WOCAT methodology and conservation agriculture practices and lessons learned. Water quality improvement capacity and efficiency of the buffer zones receiving the drainage water from the irrigation system before it flows into the Chagan Lake will be analyzed and monitored as a function of the inflow water quality and quantity as the basis for land use decisions in the irrigation area and water management. An early warning system for pollution threats will be established to insure the conservation of wetland habitats for waterfowls and migratory birds, and fishery resources will be inventoried, monitored and managed based on carrying capacity. The ecosystem based SLWM model developed in this project will be followed up by adjustment in policies and regulations securing the mainstreaming of biodiversity and soil conservation in planning and management processes in the water, agriculture and livestock sectors and documented for replication in other complex production landscapes integrated by water diversion systems, paddy-fields, dry cropland, grassland and wetlands.

The anticipated direct **global environmental benefits** in the project pilot sites will be: (i) Degradation and desertification processes reversed in 170,780 ha saline-alkaline land with improved vegetation cover resulting in sustainable productivity and reduced vulnerability to climate variability; (ii) 220,000 ha of integrated

production landscape under SLWM practices; (iii) Rehabilitation and conservation of 49,883 ha wetland managed as an integrated part of the freshwater fishery and irrigated crop and grassland production landscape providing important habitats for endangered migratory birds resting and feeding in these wetlands; (iv) Wetland habitat for freshwater fish, mammals, water fowl and endangered migratory birds is conserved leading to: 1) population of IUCN red listed Crane species (Siberian, Hooded, White-naped, and Red crowned) maintained or increased in pilot sites by the end of the project (<5% variance); 2) population of wetlands mammals such as the IUCN red-listed Eurasian otter increased in pilot sites.

Further to these direct global benefits in the pilot sites the project will also have indirect benefits in the wider western Jilin wetlands and agro-pastoral landscape (50 000 km2). The valuation of biodiversity and ecosystem services in land use and water planning and management; the mainstreaming of the integrated SLWM and conservation model in policies, programmes and regulations in the water, agriculture and livestock sectors within the western Jilin province; and the enhanced awareness of wetland ecosystem services and conservation measures in local land and water management and agriculture activities, will allow for that the global benefits of the project will cover significantly more hectares than the rehabilitated hectares mentioned above.

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) OR ADAPTATION BENEFITS (LDCF/SCCF). AS A BACKGROUND INFORMATION, READ MAINSTREAMING GENDER AT THE GEF.":

The beneficiaries of the project will be local communities living in the Chagan Lake and irrigation area dependent on the ecosystem services of the saline-alkaline wetlands. The socio economic benefits will result from reversing of degradation processes and increase in crop production and increased productivity of rehabilitated grasslands. A further socioeconomic analysis will be conducted during project preparation. Through awareness raising activities included in component 4 and participatory gender sensitive methodologies applied in component 2 and 3, the population in the project area will be closely involved in project activities including the testing of SLWM practices and conservation of biodiversity in wetlands and agropastoral landscapes. The project will for this end among others draw on the experiences gained in community involvement in management of wetland reserves as part of the project Wetland Biodiversity Conservation and Sustainable Use in China (see B.6 below). Options for participatory and gender sensitive methodologies tailored to local socio-cultural conditions of the population in the Chagan Lake project area will be further identified during project preparation.

B.4 INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS THAT MIGHT PREVENT THE PROJECT OBJECTIVES FROM BEING ACHIEVED, AND IF POSSIBLE, PROPOSE MITIGATION MEASURES THAT WILL BE FURTHER DEVELOPED DURING THE PROJECT DESIGN:

The western Jilin province is experiencing the impacts of **climate change risks** (considered as high) causing desertification and soil salinization processes and drying up of wetlands. The project will mitigate this risk imposed on local livelihoods and ecosystem habitats by increasing the availability of water resources for agriculture, grassland and rehabilitation of wetlands and applying an ecosystem based SLWM approach as an adaptation strategy. The **risk that the water diversion of flooding water will cause negative impacts downstream** (considered as low) has been mitigated during the design of government investment project including the EIA assessing and setting limits for minimum environmental flow (the minimum quantity, timing, and quality of water flows required to sustain freshwater ecosystem services downstream) and the minimum ecological flow (sufficient flow to sustain aquatic ecosystem and its species). These flows are monitored by the Hadashan reservoir administration and the discharge in different periods are all above the limit that could cause damage on the aquatic environment downstream (see also section B.1 above). One major purpose of the GEF project is to assist the government in better implementing and realize these mitigation measures through the adoption of integrated land and water planning, optimal operation strategy for flooding water diversion and allocation, and proper monitoring and management systems. The **risk of salt moving to the upper layers of the soil** (considered as medium) making the soil inadequate for crop cultivation as a result of irrigation will be mitigated through careful studies and evaluation of different options for land use models including analysis of local dynamics in climate and water cycles, salt movements in soil and water, and soil organic material rehabilitation and degradation processes. There are no risks of delays in implementation because of the strong planning and implementation capacities of the Water Resource Department of the Jilin Province combined with stability in technical staff and the government administration. A more detailed risk analysis will be carried out during project preparation and mitigation measures will be built into the project design.

B.5. IDENTIFY KEY STAKEHOLDERS INVOLVED IN THE PROJECT INCLUDING THE PRIVATE SECTOR, NGOS, CIVIL SOCIETY ORGANIZATIONS, AND THEIR RESPECTIVE ROLES, AS APPLICABLE:

The Water Resource Department of the Jilin Province will be the main partner for project execution. The project will work closely with other policy makers and provincial government institutions responsible for policies, plans and regulations on land and water resources and biodiversity conservation including the provincial forestry and agriculture and environment Departments and provincial and local water and land use planning agencies. Setting up a coordination committee with subcommittees for the different project components will be explored during the development of the project execution scheme as an option to ensure coordination and political support for project objectives and activities. A technical advisory committee with the participation of research institutions (Jilin University, Northeast Normal University, Jilin Chinese Academy of Science) will support the development and implementation of technical analysis and testing of approaches and practices. Local communities and residents living in or around the Chagan Lake and irrigation area dependent on the ecosystem services of the saline-alkaline wetlands will play an important role in testing local land use planning and SLWM approaches and practices. A more detailed stakeholder analysis will be undertaken during full project design and a detailed project execution scheme will be developed and agreed upon with local partners

B.6. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:

During project preparation lessons learned and approaches developed under the UNDP/GEF project Wetland Biodiversity Conservation and Sustainable Use in China will be considered. This project has built organization and planning skills, and strengthened information management and community involvement in wetland reserves, and improved the management level of wetlands and wetland biodiversity conservation in China which will benefit the proposed project. Likewise, the project will benefit from habitat protection approaches developed for the highly threatened migratory bird, Siberian Crane, by the UNEP/GEF Siberian Crane Wetland project which had the western Jilin province wetlands as one of its intervention sites resulting in an increased population.

The project will directly apply capacities and methodologies for identification and mapping of land degradation processes in dry lands, their causes and solution options in terms of land use planning and natural resources management responses developed in China supported by the UNEP/FAO/GEF Land Degradation Assessment in Dryland (LADA) project (mentioned in section A.1 and B.2 above).

Regarding ongoing projects or projects under preparation coordination to maximize synergies will be established with: the three wetlands FAO/GEF/China projects *Demonstration of estuarine biodiversity conservation restoration and protected area networking in China, Securing biodiversity conservation and sustainable use in China's Donting Lake protected area*, and *Protection and Sustainable Use of Poyang Lake Wetland Ecosystem*; and the UNDP/GEF/China wetlands PA programme *Main Streams of Life – Wetland PA System Strengthening for Biodiversity Conservation.* As mentioned under section A.1 above, the proposed project could offer important additional approaches to wetlands conservation in China to the wetlands PA centred approaches of these projects. The proposed project is a key entrance point to the mainstreaming of wetlands biodiversity in the water sector which could add value to the experiences gained in the PA focused programme and projects.

C. DESCRIBE YOUR AGENCY'S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT:

FAO has significant expertise and experience in developing methodologies and practices and providing technical assistance and capacity building in the management of land and water resources, including conservation agriculture and sustainable intensification of production which is among FAO core priorities. Assisting countries to address water scarcity in agriculture and strengthen their capacities to improve water productivity of agricultural systems at national and river basin levels, including transboundary water systems, are other priority areas of work and reflected in the FAO Strategic Framework 2010-2019, Medium-term Plan 2010-2013 and Programme of Work and Budget 2010-2011. In particular, FAO provides water policy services to address water management strategies in support to rural development and agricultural productivity enhancement, and the adoption of effective water allocation under conditions of scarcity. FAO also strengthens national capacity to address irrigation performance and modernization, water use efficiency and productivity enhancement, water quality management and technological development using information and databases, including mapping systems and FAO crop-model (AQUACROP) and guidelines.

As the executing agency for the LADA-WOCAT project FAO has jointly with the participating countries (in China the LADA-WOCAT executing partner was the State Forestry Administration (SFA) – the national focal point for UNCCD supported by the Beijing Forestry University) developed methodologies for analysis,

mapping and identification of land use and conservation options for dry-lands vulnerable to land degradation processes. These methodologies and tools will be particular beneficial for the proposed project.

FAO has during GEF-4 increased its involvement in China regarding GEF biodiversity projects and has established good working relationships with the Chinese government at the national and the provincial level that will benefit this project.

The FAO Regional Office for Asia and the Pacific (FAORAP) has rich experiences and good cooperation relationships with the Ministry of Water Resource, Wuhan University, Chinese National Committee on Irrigation and Drainage, other provincial departments, institutes and irrigation management agencies in both paddy areas and arid regions. In the past six years these relationships has included joint work on irrigation modernization, water saving irrigation and productive, equitable and sustainable water resources management and utilization in the agriculture sector. FAORAP also has close linkage with China Agriculture University working together on integrated plant nutrient management, conservation agriculture and soil and water conservation. These relationships will benefit the development and implementation of the proposed project.

C.1 INDICATE THE CO-FINANCING AMOUNT YOUR AGENCY IS BRINGING TO THE PROJECT:

FAO will provide USD 200,000 (in-kind). In addition FAO will provide high level international technical expertise in managing the complex ecosystem dynamics involved in this project which include expertise in saline alkaline soils, conservation agriculture as a response to degradation processes in dry-lands, and water quality and quantity monitoring and management modelling in complex wetlands agro pastoral landscapes securing wetlands ecosystem services. Further, FOA will provide its technical expertise in inlands fisheries management based on an ecosystem approach including conservation of reproduction habitats, sustainable harvesting and water pollution control.

C.2 HOW DOES THE PROJECT FIT INTO YOUR OWN AGENCY'S PROGRAM (REFLECTED IN DOCUMENTS SUCH AS UNDAF, CAS, ETC.) AND YOUR STAFF CAPACITY IN THE COUNTRY TO FOLLOW UP PROJECT IMPLEMENTATION:

The recently approved UNDAF 2011-2015 for China has prioritized the environment sector. This project fit very well the UNDAF Outcome 1: Government institutions and other stakeholders ensure environmental sustainability, address climate change, and promote a green, low carbon economy. While technically supported by FAO Headquarters and the Regional Office, the FAO Office in China has rich experiences in project implementation and operation. The Office is implementing a number of environment-related projects on biodiversity and climate change, which are funded by EU, Spanish MDG Fund and other donors.

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

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the country endorsement letter(s) or regional endorsement letter(s) with this template).

NAME	POSITION	MINISTRY	DATE *(Month, day, year)*
Ms. Jiandi Ye	Director, IFI Division III, International Department	Ministry of Finance	AUGUST, 30, 2011

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF policies and procedures and meets the GEF/LDCF/SCCF criteria for project identification and preparation.					
Agency Coordinator, Agency name	**Signature**	**Date *(Month, day, year)***	**Project Contact Person**	**Telephone**	**Email Address**
Charles Riemenschneider Director, Investment Centre Division Technical Cooperation Department FAO Viale delle Terme di Caracalla 00153, Rome, Italy		January 25, 2012	Rikke Olivera, Natural Resource Programme Officer, FAO Investment Centre Division FAO Rome, ITALY	+3906 5705 5701	Rikke. Olivera@fao.org
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