

PROJECT IDENTIFICATION FORM (PIF) PROJECT TYPE: Full-sized Project TYPE OF TRUST FUND:GEF Trust Fund

PART I: PROJECT IDENTIFICATION

Project Title:	Payment for Watershed Services in the Chishui River Basin for the Conservation of Globally Significant Biodiversity				
Country(ies):	China	GEF Project ID:	5096		
GEF Agency(ies):	UNDP	GEF Agency Project ID:	4822		
Other Executing Partner(s):	Ministry of Environmental Protection	Submission Date: Resubmission Date:	August 22, 2012 September 12, 2012 January 10, 2013		
GEFP Focal Area (s):	Biodiversity	Project Duration (months):	48		
Name of parent programme: For SFM/REDD+	N/A	Agency Fee:	181,324		

A. FOCAL AREA STRATEGY FRAMEWORK

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative co-financing (\$)
	Outcome 2.1: Increase in sustainably	Output 2.1 National and sub-national	GEF	1,199,450	8,945,000
BD-2	managed landscapes and seascapes that	land-use plans (1) that incorporate	TF		
	integrate biodiversity conservation	biodiversity and ecosystem services			
		valuation			
	Outcome 2.2: Measures to conserve and	Output 2.2. Policies and regulatory	GEF	537,226	5,605,000
	sustainably use biodiversity incorporated	frameworks (1) for production sectors.	TF		
	in policy and regulatory frameworks				
Sub-total				1,736,676	14,550,000
Project management cost			GEF	172,000	1,450,000
, v		TF			
Total proje	ect costs			1,908,676	16,000,000

B. PROJECT FRAMEWORK

Project Objective: Operationalization of a replicable Payment for Watershed Services (PWS) scheme in the Chishui River Basin provides an incentive to catalyse land and natural resource use systems that conserve biodiversity and ecosystem processes.

Project Component	Grant type	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative co- financing (\$)
1. Systemic and institutional framework for PWS development and management at municipal and provincial level	ТА	 Institutional capacity of provincial/municipal governments is emplaced to coordinate PWS ¹programmes, allowing for the systematic scale up of PWS across the Chishui watershed (1,893,200 hectares) Increased government investment in proconservation PWS in the Chishui River Basin by EOP. 	 An office in charge of planning and managing PWS mechanisms is established within the provincial Environmental Protection Bureau (EPB), with capacity installed for developing, supervising and scaling up pro-conservation PWS mechanisms along the Chishui River within Guizhou province. This includes capacity for mapping and monitoring ecosystem services and land use changes using GIS tools, establishing transparent payment mechanisms as well as independent verification and certification of watershed services rendered, and mechanisms for enforcement in case of non-compliance with 	GEF TF	738,550	8,050,000

¹ PWS is a business proposition through which the provision of ecosystem service is negotiated. The payment will on the one hand finance the cost necessary for conservation actions and on the other it will provide regular income for poor farmers (seller) while the corporate buyer downstream secures the provision of clean water essential for its business.

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	 Conservation status of threatened habitats is improved (baseline to be confirmed during the PPG): Land Use Change restrictions codified in provincial development / land use plans prevents the construction of dams along ecologically sensitive areas in the Chishui River watershed, thus protecting a unique habitat for endemic fish species (conservation status of 15 species assured). 	 contract provisions. A "Standardized Biodiversity Scorecard" system is instituted within the municipal and provincial governments in the Chishui River Basin to measure and assess the extent of biodiversity impacts through PWS schemes. PWS mainstreamed into related policies including the Regulations on Ecological Compensation and other provincial -level regulations, as well as in the 13thFive-Year environmental policy drafts and other regulations, in order to install a mechanism for: (i) regulating land uses to prevent certain types of land uses that PES cannot compensate (i.e dam construction); and (ii) assessing and negotiating tradeoffs. Based on pilot PWS, lessons learned, the provincial EPB produces management guidelines and methodological protocols for scaling-up and replicating PWS in additional watersheds along the Chishui River Basin. Lessons learned are systematically communicated and disseminated by Government Agencies and through business fora to catalyse private financing for conservation. 			
2. Testing of PWS INV scheme(s) in the selected sub- watersheds.	,	 financing for conservation. PWS pilot mechanisms established in the selected (sub) watersheds, generating uptake of biodiversity friendly land use options that enhance the quality and spatial coverage of forest & grassland habitats, and conservation of globally significant species. Ecosystem services in the selected subwatershed are defined, measured and assessed. Marketable value is determined Prospective sellers and buyers are identified, village cooperatives established to bundle the supply of ecosystem services by communities, and ensure cost effectiveness in payment distribution Capacity of community land users to modify land use practices is enhanced through technical assistance / extension on biodiversity friendly land use practices PWS agreements are brokered between sellers (village cooperatives) and buyers (liquor producing companies) PWS agreements implemented. A longterm financial agreement specifying conditions for its operation (Value of service) agreed upon by buyers and sellers of watershed services and operationalised through public/private partnerships. Monitoring and verification system measures the impact of intervention (PWS mechanism) on land use changes (actual delivery of ecosystem services), biodiversity and livelihoods in PWS areas using standards and indicators derived from baseline information. Training is provided to municipal governments to monitor and 	GEF TF	998,126	6,500,000

		enforce compliance.			
Sub-total				1,736,676	14,550,000
Project management cost		GEF	172,000	1,450,000	
			TF		
Total project c	osts	Total project costs		1,908,676	16.000.000

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

Type of Co-Name of Co-financier Sources of Co-financing Amount (\$) financing Ministry of Environmental Protection 500.000 National Government Grant Guizhou Province 10,000,000 Local Government Grant Private Sector Maotai Co. Ltd. Grant 5,000,000 UNDP **GEF** Agency Grant 500,000 **Total Co-financing** 16,000,000

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

GEF Agency	Type of Trust	Focal Area	Country	In US\$			
OLI figency	Funds	Focal Alea	Name	Project amount (a) Agency Fee (b)	Total c=a+b		
UNDP	GEF TF	Biodiversity	China	1,908,676	181,324	2,090,000	
Total GEF Resources:					2,090,000		

PART II: PROJECT JUSTIFICATION

A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

A.1. THE GEF FOCAL AREA STRATEGIES: The project aims to trigger a shift from contra-conservation to conservation-compatible land uses in the biodiversity-rich Chishui River Basin in Guizhou Province, using payment for watershed services (PWS) to provide the additional utilitarian incentives needed to engender the desired changes in land use. The project will introduce market-oriented PWS mechanisms to complement the government-administered Eco-Compensation Programme². This will increase the conservation "toolbox"—the selection of PES tools that can be used or combined to suit different circumstances on the ground. The project advances the goals of GEF BD-2 "Mainstream Biodiversity Conservation and Sustainable Use into Production Landscapes, Seascapes and Sectors". It is aligned with outcome 2.1: Increase in sustainably managed landscapes and seascapes that integrate biodiversity conservation, through clearly addressing the issue of currently nonsustainable agricultural practices by poor farmers upstream. Land use changes will directly influence biodiversity conservation, in particular the aquatic biodiversity. Through replication of good land management practices in the river basin, it will directly reduce threats to both terrestrial and aquatic biodiversity within the protected areas in the basin. The project also directly addresses Output 2.2: National and sub-national land use plans that incorporate biodiversity and ecosystem services valuation. Valuation of ecosystem services is a key component of the project particularly as a pilot which will be scaled up. Also, it is a pre-requisite for a business agreement between buyers (liquor industry) and sellers (upstream farmers) of ecosystem services (stable flow of quality water), and will be integrated in the local land use plans. At the national level, the Ministry of Environmental Protection in collaboration with the Guizhou Provincial Government will jointly endeavour to mainstream biodiversity and ecosystem services in the land use plan, realigning the key ecological function zones and protected areas. Implementation of PWS schemes will mainstream biodiversity conservation and sustainable use in upstream farming area and the middle stream liquor production sector of Chishui river, totally covering 670,000 ha. The project also aims to catalyse private sector investment in China for biodiversity conservation in the long term. Furthermore, the Project will directly contribute to the achievement of the Aichi Targets in particular; target 3 and 4 under Strategic Goal A "address underlying causes of biodiversity loss by mainstreaming biodiversity across government and society" and target 6,7 and 8 under Strategic Goal B "Reduce the direct pressures on biodiversity and promote sustainable use".

The project aligns with the GEF focal area results framework

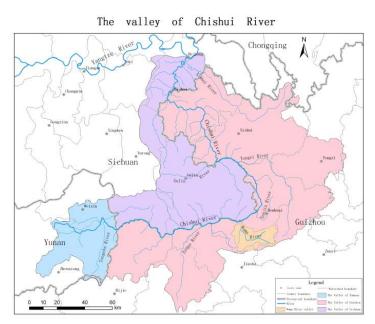
² The Eco-Compensation Programme provides funding for the management of: (i) nature reserves, (ii) key ecological function areas, (iii) mineral development areas, and (iv) watersheds. However, the existing eco-compensation mechanisms are mostly for pollution control based on the polluter-pays principle or a fiscal transfer from the national government to local government to undertake land management to secure environmental public goods. There is however no obligation for the fund to be appropriated for biodiversity conservation per se, nor for compensating those individuals who bear the opportunity costs of conservation management.

A.2. NATIONAL STRATEGIES AND PLANS OR REPORTS AND ASSESSMENTS UNDER RELEVANT CONVENTIONS: In 2010, the Chinese Government finalised, released and began to implement the China National Biodiversity Strategy and Action Plan (2011 - 2030) which charts out the goals and guiding principles for achieving biodiversity conservation over the next two decades. The project directly supports implementation of NBSAP Priority Domain 1 "To improve the policy and legal system (governing) biodiversity conservation and sustainable use". This explicitly stipulates that China will "improve ecological compensation policies, expand their coverage and increase investments" to support conservation and address the conservation financing gap. The NBSAP classifies the Chishui River Basin as a "priority inland terrestrial and aquatic biodiversity conservation area". It is also within the "Limestone Area of West Guangxi and South Guizhou in Priority Areas of Biodiversity Conservation" within one of the eight ecoregions under the NBSAP namely the Mountainous and Hilly Areas in Central South and West China³. The Government has accordingly designated the Chishui River Basin as a priority landscape for the roll out of a PWS scheme to secure water quality and to create an incentive for the sustainable management of biodiversity by local communities. The project also advances the objectives of the China Eco-Compensation Programme that has been in place since 2005. The Programme aims to diversify and accelerate implementation of PES mechanisms, according to the "Guiding Framework for Carrying out PES" issued by the Ministry of Environmental Protection (MEP) in 2007. In 2010, the Government launched a legislative reform programme for PES, tasking the National Development and Reform Commission (NDRC) with the further development of needed enabling policies and regulations. Last, the Twelfth Five-Year Plan for Economic and Social Development (2011) identifies as a need the further operationalisation of PES schemes.

B. PROJECT OVERVIEW:

B.1 DESCRIBE THE BASELINE PROJECT AND THE PROBLEM THAT IT SEEKS TO ADDRESS: China is listed as one of the world's 17 mega-diverse countries, with 60% of all species occurring in just 1.5% of the world's land area. China is home to some 10% of all plant species and 14 percent of the Earth's faunal assemblage. The Chishui River Basin is a large tributary on the south bank of the Yangtze River headwaters, and forms the border

between the Yunnan-Guizhou Plateau and the Sichuan Basin. The length of its main stream is 444 km, and the total area of the water basin is 1,893,200 ha, of which 12% is situated in Yunnan Province, 62.3% in Guizhou Province (initial area of intervention), and 25.7% in Sichuan Province. The Basin is an important storehouse of biodiversity. lying within Conservation International's Mountains of Southwest China biodiversity hotspot, as well as the WWF's Yangtze Freshwater Ecoregion and Forests of the Upper Yangtze Ecoregion. 257 families, 883 genera and 1,700 species of flowering plants have been documented (just within the three national nature reserves in the mid and downstream zones of the Chishui River. At least 70- of these species are considered threatened, including Alsophila spinulosa and Taxus chinensis. The region harbours a number of endangered species of mammals, including musk deer and the clouded



leopard. As many as 241 species of fish have been identified. The conservation significance of the area is amplified by the fact that the Chishui river is the only tributary in the upper reaches of the Yangtze river that has not been dammed—meaning that key ecological processes have been maintained. Some 28 fish species endemic to the upper reaches of the Yangtze River, comprising 27.2 percent of the 103 endemic fish species found in the region, depend on the Chishui river basin for their long-term survival. Many of these species have been extirpated elsewhere in the upper Yangtze as a result of the changes in hydrological conditions that have occurred following construction of the Three Gorges Reservoir.

There are a total of 800 towns and villages located within the Chishui river watershed, with an estimated population of approximately 10 million people of which more than 80% depend on smallholder, largely

³ The region includes the entire area of Guizhou Province and part of Henan, Hubei, Hunan, Chongqing, Sichuan, Yunnan, Shaanxi and Gansu and covers an area of 910,000 square kilometers. Four out of the 32 terrestrial/freshwater priority biodiversity areas fall under this ecoregion, including the Limestone Area of West Guangxi and South Guizhou (No.21 on the priority biodiversity conservation area map in the NBSAP), which Chishui River Basin is located.

subsistence-based, farming for their livelihood. As much as 45% of households fall under the absolute poverty line. 40% of the populace are ethnic minorities. This river basin is typical of the situation prevailing across watersheds in China in terms of the economic disparity evident between upstream and downstream areas. The per capita GDP of Zhenxiong County, the source of the Chishui River (upstream), was RMB4 ,007 (634 USD) in 2010; while the per capita GDP of Renhuai County, located in the middle reaches of the river basin, was RMB 36,632 (5.799 USD). Renhuai City, the County capital, is tagged as China's Wine Capital. The city has 143 liquor enterprises (2009), which collectively register annual sales of RMB 12.69 billion (almost 2 billion USD). This accounts for over 90% of the local industrial value added of the County. These companies harvest water from the Chishui river and their financial prospects are dependent on the quality of water. This is however, being undermined as a result of watershed degradation.

Threats to biodiversity: China has become the 2nd largest economy in the world. With 22% of the world's human population to feed, the country has only 9 percent of the world's tillable land and 6 percent of global freshwater reserves. The consequences are over-exploitation of resources, declining groundwater levels, worsening pollution, and shrinking habitats for China's rich animal and plant life. In common with the rest of the country, the biodiversity of the Chishui River Basin faces growing anthropogenic pressures, namely: (1) Habitat loss and fragmentation: Habitat loss is the single greatest threat to biodiversity in the Chishui River Basin. The forest cover in upstream areas has decreased from 30% of the area extant in the 1950s to the current 20%. Subtropical vegetation including Alsophila spinulosa and Tryon and Davidia involucrata baill is particularly threatened. About 15% of the total cultivated land in the watershed is located in steep slopes with gradients over 25°. Unsustainable land use in these areas causes severe water losses and soil erosion, as well as threatening terrestrial and aquatic biodiversity by fragmenting remaining terrestrial habitats and increasing sedimentation and turbidity in wetlands; (2) Overexploitation: Widespread consumption of wild animals and plants for food and medicine, coupled with weak protection has led to an accelerated loss of species and genetic biodiversity. Over 15% of the higher plant species in China are endangered and a large number of 5,000 species of medical and other economically valuable plants species in the upper Yangtze River are threatened by overharvesting. In the Chishui River Basin, species such as Psephurus gladius (Chinese paddlefish) and a large number of endemic Cyprinidae species including Rhinogobio ventrailis, Procypris rabaudi (rock carp) are critically endangered due to their overharvesting; and (3) Pollution: According to CCICED (2010), 850 out of 1,200 monitored rivers in China are polluted as a result of agricultural run-off, and industrial and domestic effluent discharges. 50% of the remaining lakes are now eutrophic, which is harmful to fisheries, agriculture and human health. The widespread introduction of new agricultural technologies relying on increased chemical use endanger many downstream water bodies. The pollution threat to the Chishui River Basin includes soil run off, inappropriate application of fertilizers and insecticides, sewage emissions from towns and pollution from paper mills and coal mines.

Baseline: China has made significant efforts to conserve its biodiversity. By the end of 2011, 2,640 nature reserves had been established in China, covering 14.93% of China's total land area which is 2.9% higher than the global average. In the Guizhou part of the Chishui River Basin, the government has designated 130 nature reserves covering 5.5% (961,000 ha) of the provincial territory. While most of these protected areas are designated to conserve terrestrial ecosystems, the Ministry of Agriculture and the State Council for the Three Gorges Dam Project have jointly established a nature reserve for fish in the upper reaches of the River Basin. The annual spend on PA management in the Province is estimated to be approximately US\$1,700,000.

Municipal and Provincial authorities in Guizhou Province are aware of the importance of maintaining the ecological integrity and biodiversity of the Chishui river basin and have introduced a number of initiatives to address conservation needs. The Management Plan for the Chishui River Basin Ecosystem Function Area was promulgated in 2007; a budget of RMB 2.6 billion (around 411 million USD) has been voted over the period through to 2020 for the construction of pollution control infrastructure in towns and villages.

At the national level, the Government has been implementing the Eco-Compensation Programme (ECP) since 2005. A large number of the government-led compensation schemes have been implemented with a massive investment exceeding US\$ 90 billion in existing and planned schemes. The Eco-Compensation Programme, also known as "mechanism" is a broad heading under which a wide range of policy and programmes have been developed. These include a growing number programmes that are experimenting with different types of PES schemes. However, schemes under the Eco-Compensation Programme are typically based on a fiscal transfer from the national government to provincial governments, for pollution abatement and the conservation and restoration of forests, wetlands, and grasslands. While in theory the Eco-Compensation Programme addresses issues of nature conservation and establishes payment schemes to finance them, including PES as a market mechanism, in practice no working payment for watershed services has been established in the country. This is mainly due to the fact that the government is struggling with issues such as property rights and equitable distribution of costs and benefits. Moreover the eco-compensation funds are not being utilised to directly reward

the implementers of conservation actions with a clear disconnect between conservation and livelihood issues. This means that the eco-compensation funds are not necessarily rewarding directly the implementers of conservation actions (service providers). A new mechanism which will form part of the "tool box" for the Eco-Compensation Programme is needed which directly involves resource managers as the ecosystem service providers in a negotiated contractual agreement with the service buyers. Such a mechanism will act as a financing mechanism for biodiversity conservation incentivising the local land/resource users and mangers to change their practices to enhance conservation.

Long-term vision and barriers to achieving it: China's Eco-Compensation Programme is an important step, but insufficient by itself to address the myriad pressures facing China's biodiversity. There is a need to augment fiscal transfers with market based PES schemes, that channel payments from private sector buyers to local communities supplying conservation services with a view to altering their economic behaviour and curbing adverse changes in land use that are leading to the loss of biodiversity. The long term vision is to operationalise such a market based payment system—focusing initially on the maintenance of water quality. However, two barriers currently hamper the realisation of this vision.

Barrier	Description
1. Weak Enabling Framework and institutional capacity for PWS implementation and scale-up	A market based PES system will require the creation of institutions responsible for brokering payments—mapping and monitoring ecosystem services, making performance based payments based on changes in land use and corresponding ecosystem functionality, verification and certification of the services and the enforcement of contracts with buyers and sellers. Currently, the managerial capacity to undertake these various functions is limited. Moreover, there is a need to meld biodiversity management and watershed management—to ensure that efforts to secure water quality also address biodiversity needs (conservation of priority habitats, in particular large habitat blocks, establishment of corridors for the movement of wildlife between these blocks, and measures to reduce the unsustainable harvest of wildlife). In particular, capacity for monitoring biodiversity pressure and status needs to be installed, in conjunction with measures to improve monitoring of ecosystem services. Market based PWS schemes need to be jointly programmed with fiscal transfer measures—with the latter funds being deployed in addition to financing infrastructure, to improve the enforcement of land use strictures. There is a need to define acceptable biodiversity-friendly land uses and codify management measures to promote their uptake in land use plans. Clearly PES will not discourage all types of land uses—the trigger price for the uptake of biodiversity friendly land use versus conservation incompatible land use needs to be determined (this will include the additional costs of intensifying agriculture in sustainable way). This price will need to be used as a benchmark to determine payment levels. Moreover, measures need to be put in place to prohibit/ regulate land uses that cannot be compensated through PES payments—such as the construction of dams. Finally, numerous government agencies regulate and support different aspects of land and natural resource use (agriculture, forestry, fisheries, pollution control amongst others; there is an unme
2. Insufficient experiences and know-how on establishment of viable PWS mechanisms for biodiversity conservation	A key barrier to the operationalisation of a market based PWS scheme is the lack of successful working models, which secure ecosystem services (water quality and supply) and biodiversity. There is a need to identify prospective sellers and buyers of ecosystem services. On both sides, there is a need for bundling—on the demand side for aggregating payments and the supply side, for organising suppliers into groups so as to reduce the transaction costs of dealing with numerous individual households. One option is to establish village cooperatives, each with vested rights and responsibilities for a specific area in the watershed, and which may assume a group responsibility for ensuring compliance with land use change restrictions and for the performance of individual members, and for payment distribution. The capacity of members to modify land use practices will need to be improved—one option would be to use extension services as a vehicle for building capacity. Finally, capacity needs to be built in developing and enforcing PWS contracts.

B. 2. Incremental /Additional cost reasoning: describe the incremental activities requested for GEF financing and the global environmental benefits (GEF Trust Fund) to be delivered by the project:

The Objective of the Project is to establish a Payment for Watershed Services (PWS) mechanism in the Chishui River Basin to catalyse land use systems that conserve biodiversity and ecosystem processes. In particular, the project aims to protect the endangered fish species⁴ of the Chishui River by improving their habitat, controlling pollution and decreasing sedimentation. Furthermore, improved and biodiversity mainstreamed land use practice in the area will ensure ecosystem stability and health of three national nature reserves downstream.⁵ . The PWS

⁴ A survey at the Chishui River was conducted between April and October of 2007 to assess the current status of fish species assemblages it contains. A sample of 51 sites in the river basin helped to identify a total of 119 species belonging to 5 orders, 16 families and 75 genera. Among them, 25 species were new records for the Chishui River basin and 34 species were endemic to the upper Yangtze. *Sinocrossocheilus labiatus* was present only in the Chishui River.

⁵These are: (i) Rare and Endemic Fishes National Nature Reserve Furthermore, which harbours hundreds of fish species that have been wiped out downstream, including four types of wild carp; (ii) XiShui National Nature Reserves that protects sub-tropical evergreen broad-leaved forest and its unique

scheme and land use changes will be replicated and will reduce pressure on the nature reserves in the basin with an array of globally important endemic fauna and flora. The project aims to catalyse the business sector financing for conservation, and to catalyse the institutionalisation of PWS as a watershed based biodiversity conservation mechanism which at the same time delivers livelihood improvement in an equitable manner.

The incremental approach can be summarised as follows: In the baseline situation, a lack of a clear official framework, capacity and resources, and insufficient experience in managing successful market-oriented PWS schemes will hamper their development. In the alternative scenario enabled by the GEF, the existing ecocompensation schemes will be significantly improved by adding a market-based PWS mechanism. PWS will be operationalised on-the-ground in the Chishui river basin, between willing and able service providers and local community service users. The immediate <u>global benefits</u> are improved management of 1,893,200 ha of ecosystems in the Chishui River Basin – thus improving the conservation status of the Mountains of Southwest China global biodiversity hotspot, the Yangtze Freshwater Ecoregion and Forests of the Upper Yangtze Ecoregion. Through establishment of the PWS pilot, land use management will be initially improved over an area of 7,100 ha, having a positive impact on habitats covering 1,179,464 hectares in the biodiversity-rich Chishui watersheds within the Guizhou Province. Furthermore, the security of the protected areas in the Guizhou Province in particular those which are downstream of the project area would be enhanced from improved land use and management and improved connectivity.

Component 1: Systemic and institutional framework for PWS development and management at municipal and provincial level allowing for Pilot demonstrations and interventions to be scaled-up

This component will support the establishment of an enabling framework for biodiversity-oriented PWS mechanisms, so that the local governments and stakeholders will have systemic and institutional capacity to use PWS to ensure sound management of biodiversity and ecosystem services. The Institutional Framework will be built so as to facilitate the removal of the aforementioned barriers which have prevented or might hinder in the future, the successful implementation of PWS in support of biodiversity conservation. The project will target two main institutions: namely the provincial and municipal Environmental Protection Bureau (EPB) and corporate actors doing business within the watershed. The project will develop methodological Guidelines⁶ for PWS. An office in charge of planning and managing PWS mechanisms will be established within the provincial EPB, with capacity installed for developing, supervising and scaling up pro-conservation PWS mechanisms in the Chishui River Basin. Capacity will be installed to undertake the following functions: (i) mapping and monitoring ecosystem services and land use changes using GIS tools; (ii) establishing transparent payment mechanisms; (iii) undertaking verification and certification; and (iv) enforcement in case of non-compliance with contract provisions. Furthermore in order to support the efforts of local governments to systematically measure and assess the biodiversity impacts arising through PWS schemes, a standardised biodiversity scorecard system will be developed. Capacity will also be put in place within private institutions, initially (during the Pilot) among a sample of Liquor Companies based in Renhuai City (around 140 companies) led by the Maotai Co⁷ which has already signalled its readiness to enter into PWS contracts. Maotai will coordinate with the EPB of the Guizhou Province the formulation of policy proposals aiming at internalizing environmental externalities (placing the market value of watershed services as a real cost) in their accounting books. The company will establish a PWS Liaison Unit responsible for coordinating with Government agencies and participating upstream Communities business proposals for the buying/selling of watershed services.

wild fauna and flora; and (iii) Cyathea Spinulosa National Nature Reserve that protects the stronghold of endangered rare Cyathea and Camellia luteoflora. Improved and biodiversity mainstreamed land use practice in the area will ensure ecosystem stability and health of these national nature reserves downstream.

⁶ The preparation of the Guidelines will be initiated during the PPG phase. It will be developed jointly by public and private participating institutions (i.e. Environmental Protection Bureau, Liquor Companies) in a participatory manner constituting a capacity building exercise in itself. These Guidelines will assist in the linking of the Government top-down approach to conservation with the more open, volunteer and participatory approach of market mechanisms. It will also emphasize a more holistic approach to biodiversity conservation rather than a single-focused programme designed to control pollution. The Guidelines will also assist in the elaboration of specific strategies regarding mainstreaming conservation measures into Local Government Developmental Policies. In short, the Guidelines as an integral part of the enabling framework will give Government staff a useful tool to overcome the barriers that have so far prevented the development of sustainable conservation policies.

⁷ With approximately 4,000 employees, Moutai Distillery Group has been in the wine industry for 2,000 years. In recent years the Group has had an annual capacity of 4,000 tons of Moutai Liquor and 6,000 tons of Moutai series products. It has total group assets of RMB 1.5 billion, with annual profit and tax totals estimated around RMB 200 million in 2010, with export value consistently reaching US\$ 10 million annually. Maotai drinks are a national liquor staple and are designated official state banquet wines. Their large-scale producion started during the Qing Dynasty (1644-1911).

At the Policy level, the Project will seek to influence the introduction of PWS as part of the mandate of the Legislative Task Force for Regulations on Ecological Compensation (Provincial NDRC). The Project will also work closely with the EPB in order to introduce budget provisions into the "Planning of Ecosystem Function Area in the Upstream of Chishui River Basin" so that at least 1% of its total budget is allocated for up scaling activities thus assuring the sustainability of the Programme. Also, the project will seek to mainstream PWS into related policies including the Regulation on Ecological Compensation and other provincial level regulations such as ones under the "Guizhou Provincial Chishui River Protection Act", as well as in the 13th Five-Year Environmental Policy regulations, aiming to install mechanisms for: (i) regulating land uses to prevent certain types of land uses that PES cannot compensate and (ii) assessing and negotiating tradeoffs of different land-uses. This is expected to result in the codification of land use restrictions in the provincial development plan and accompanying land use plan. Finally, building on the lessons learned from the roll out of PWS under Component 2, the project will support the provincial EPB to scale up PWS by producing good practice guidelines highlighting the conditions under which PWS works best in China. Lessons learned will be distilled and widely disseminated. The project will establish a close linkage with existing and emerging business forum for conservation and communicate the project experiences using the forum to a wider range of private sector companies in China, with an aim to catalyse the business sector finance for biodiversity conservation.

Component 2: Testing of PWS scheme(s) in the selected pilot sub-watershed

In tandem with Component 1 and in order to remove the aforementioned 2nd barrier, the project will support establishment of a PWS scheme in sub-watersheds within the Chishui River Basin, in order to generate uptake of biodiversity friendly land use options. The project will start with piloting of a biodiversity-oriented PWS mechanism in one sub-watershed and will replicate the mechanism in at least one more watershed. There are several upstream sub-watersheds such as Wuma, Erdao and Changyan that can be viable pilot areas. However, the initial pilot is expected to focus on the Wuma sub-watershed where buyers (liquor producing companies) downstream and sellers upstream (7 villages in the sub-watershed) have been preliminarily identified. This is contingent of further verification of interest during further project preparation.

The 45-km long Wuma sub-watershed is a main branch of the Chishui River Basin covering approximately 124,200 ha. The town of Wuma comprises 7 villages and 92 sub-villages with approximately 7,834 families and 32,439 people. Approximately 50% of the total watershed is forested and around 42% is cultivated. Nature reserves cover 5.37% of the river basin. The watershed is a microcosm of watersheds in the Chishui River Basin, characterised by environmentally unsustainable and low-yield farming practices. About 15% of the total cultivated land in the watershed is located on steep slopes with gradients over 25°. Unsustainable land use causes severe water losses and soil erosion. In the last 10 years the erosion rate at the middle of the river basin has increased from 3% to 29%. The ecological degradation upstream is aggravated by significant economic disparities between upstream and downstream dwellers. Land tenure in the area is characterised by collective ownership of community land. Individuals and organisations can acquire land use rights to farm on some plots. A significant portion of the Wuma watershed is managed by ethnic minorities including Gelao (circa 3,500 people) and Miao (circa 2,800 people) with land management and resource use rights. Guizhou Province officials have been working in the area and have ascertained the local willingness to participate in a PWS mechanism.

The project will support public consultations in the communities with a view to designing the PWS mechanism and a Memorandum of Understanding will be signed between potential buyers and sellers signalling their approval to enter into land use changes activities. Down/mid stream buyers will be selected among liquor producing corporations led by Maotai a financial powerhouse and producer of emblematic liquor in China. Sellers will be selected among upstream villages according to their hydrological and livelihood profile. Thus those villages that account the most for the hydrological problem downstream (water quality deterioration, soil erosion, deforestation) will be included in the Pilot. Xienong Village is expected to be the initial point of entry for the demonstration pilot. Participating villages will be selected according to the following criteria: livelihood indicators, ecosystem degradation and biodiversity significance. The size of the area of direct intervention will be approximately 7,100 ha.

The project will facilitate the steps needed to establish a working PWS mechanism. Firstly, ecosystem services in the selected sub-watershed will be defined, measured and assessed (including opportunity costs, transaction costs and maintenance costs), and the marketable value of the ecosystem services will be determined. Cost-Benefit Analyses will be undertaken to demonstrate the financial advantages of PWS. Village cooperatives will be established to bundle the supply of ecosystem services by communities in order to ensure cost-effectiveness in payment distribution. The project will develop the capacity of community land users to modify land use practices by supplying technical assistance and extension on biodiversity friendly land use systems. This will include

introduction of better practices for land management (erosion control, reforestation, terracing, cash crops, organic farming) so as to decrease pressures on biodiversity and ecosystem services. PWS agreements will be brokered between sellers and buyers. The Project will facilitate the process based on experiences and lessons learned in Asia and globally. The project component development will fully take into account the STAP advisory notes on PES.⁸

Once agreements are signed, the project will support their implementation hrough public-private partnerships. It will support the development of a watershed-wide biodiversity management plan as well as its implementation. Scientific monitoring for biodiversity and ecosystem services will be conducted on a regular basis from the onset of the project. It will measure the impact of intervention (PWS mechanism) on livelihoods among upstream farmers and biodiversity in the area of intervention. The financial impact of service provision (stable flow of quality water) among water users downstream will be also monitored. The project will support the operationalisation of the monitoring and verification system, measuring the impact of intervention through the PWS mechanisms on land use changes (actual delivery of ecosystem services), biodiversity and livelihoods using standards and indicators derived from baseline information. Training will be provided to municipal governments to monitor and enforce compliance. The following changes in the land management practices is expected to regenerate the service provision capacity of these selected watersheds, while maintaining and enhancing habitats for terrestrial and aquatic species.

FROM (without project intervention)	TO (with project intervention)	Biodiversity Benefits
Subsistence/unsustainable agriculture. Minimal production for self consumption; low land productivity: use of chemicals; poor irrigation techniques; Low income: below poverty line. Limited number of crops, no technology to improve production, limited /no access to credit.	 Sustainable agriculture with improved livelihood: Production for self-consumption and for the market; irrigation technology; organic production. At least 50% of agricultural crops currently located in steep slopes (25 or more degrees of gradient) will be moved to more suitable locations. At least 50% of current agricultural crops within 50 meters of the riparian zone will be removed, substituted by increased productivity through a variety of measures including improved irrigation systems, introduction of superior quality seeds, improved access to market, introduction of cash crops, improved land management etc. Cash crops will be introduced in 20 % of the area of intervention, with purchasing agreement for sorghum between liquor companies and upstream communities. Emphasis will be placed on organic farming. Higher income from cash crops, selling hydrological services (stable flow of quality water). Increased food security: more, better yields. 	 Improved protection of the habitats of upper-Yangtze endemic fish species and other protected species. Reduction of threats from land use changes to rare and endemic fish species and national nature reserves (NNRs) in the upper reaches of the Yangtze River including the Chishui Alsophila NNR, Xishui NNR and other provincial and municipal nature reserves. Establishment of biodiversity corridors between NNRs such as Alsophila spinulosa, Phoebe Zhennan and Python molurus
Soil erosion and high sedimentation: crops in hillsides with steep slopes (25 degrees gradient) resulting in the erosion rate of 25%. high run-off; crops near riparian zone.	 Soil retention and increased soil filtration capacity: Re-located agricultural fields away from slopes with 25 degrees or more of gradient, resulting in a reduction in erosion rate to 15%. Increase in reforested areas Decreased run-off 	 Improved protection of aquatic biodiversity
No systematic biodiversity and ecosystem management: leading to biodiversity loss and associated ecosystem and	 Watershed wide biodiversity management: Current forest areas will be maintained and where appropriate increased for creating improved habitats and corridors for wildlife. Forest and grasslands will be protected so as to maintain the current number (70) of protected rare plant and animal protected 	 Enhanced management of the NNRs for protection of endangered species including_Alsophila spinulosa, Taxus chinensis,

⁸ The STAP advisory note identifies four potential threats to PES effectiveness: (i) non-compliance with contractual conditions; (ii) poor administrative selection (i.e. contracts are offered to areas or individuals who are not in the best position to supply environmental services cost-effectively); (iii) special demand spillovers (a.k.a., general equilibrium effects, or "leakage") whereby protecting a resource in one location pushes pressure onto resources elsewhere; and (iv) adverse self-selection, where people would have supplied the contracted PES service or activity even in the absence of a payment. Therefore every GEF PES project proposal is expected to describe design choices to minimize these threats and specify indicators that will permit one to evaluate the importance of these threats in the project.

livelihood deterioration, with loss of/reduced ecosystem services	 species. Enhanced habitat through soil retention, afforestation, reforestation, riparian zone protection and improved ecosystem health generating ecosystem services. 	Neofelis nebulosa and Psephumia gladius.
	 Protected, stable biodiversity Production/sale of hydrological services from restored ecosystem. 	

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: Establishment of the PWS mechanisms and development of the systemic and institutional capacity needed for their implementation will yield significant socioeconomic benefits at local and river basin levels. The PWS scheme will include a system for monitoring changes in food security and income levels. The project's initial intervention in the Wuma catchment is expected to focus on one of the 12 village groups north of Wuma town, with a population of approximately 4,560. These will be the direct project beneficiaries of the demonstration pilot. However the population of the Wuma town (population 30,000) will also benefit indirectly. Potential beneficiaries from the project are located downstream in the city of Renhuai (population 630,000) where most of the liquor companies are located. Conservatively 40,000 people will benefit directly as the business of liquor companies, the basis of the city's economy, is secured as a consequence of a guaranteed flow of quality water. As the scheme is expanded, more sub watersheds will introduce PWS as a conservation and development tool, ultimately benefiting up to 10 million people in the Chishui River Basin. These actions will have a National impact as the only river in China not crossed by a dam will be protected through innovative conservation finance mechanisms. Concerning Gender dimensions it has been demonstrated in several studies that biodiversity conservation efforts become more effective and efficient when women and vulnerable groups are empowered to participate as equal partners in information sharing and generation, education and training, technology transfer, organizational development, and policy development. This project will plan interventions to take into account gender differences in how resources are used and managed giving special consideration to women's roles as primary land and resource managers.

Risks	Rating	Preventive Measures
Mismatch of time scales between financial payments (relatively short to medium term) and environmental changes (relatively long term) impacts the credibility of the PWS mechanism. Financial benefits especially for sellers can be delivered in 1 to 4 years. Ecosystem restoration effectiveness to deliver services may take more than 10 years.	Medium	Demonstration sites must be planned so as to show in a relatively short time (4 years) the benefits both, economic and ecological of the mechanism at a reduced scale. Rigorous scaling up techniques will follow up showing with reasonable certainty the delivery of services within an acceptable time frame. Cost benefit analysis conducted by the project managers jointly with buyers/sellers should show benefits across time which cannot be achieved under the "business as usual scenario". Performance based payment schemes will structure financing to ensure that part payment (amount to be determined) will be paid upon certified delivery of ecosystem services. However, an ex ante component of the payment will also be needed to encourage uptake of new land use management systems and farming methods.
Legal –Institutional framework might be either inadequate to establish formal contractual association between buyers and sellers, or required adjustments may take more time to be in place than buyers, sellers or the ecosystem can afford to wait without losing interests/confidence in the PWS mechanism.	Medium	During the PPG phase an in-depth assessment of the legal and institutional framework for PWS establishment will be conducted and plans for improvements through the project will be devised. PPG will support rigorous baseline assessments including an institutional mapping of key actors in the formal decision-making process as well as the network of associations both horizontal and vertical between them. It will also assess legislative gaps or "holes" that may prevent formal transactions between buyers and sellers. This will reduce the risk of the PWS mechanism establishment prolonging beyond the project period.
Buyers and/or sellers of watershed services show willingness to participate in a PWS mechanism but lack the capacity to pay a market price for the service or to deliver the service adequately (failure of the contingency principle)	Low	The Maotai Liquor company with US\$ annual turnover is identified as the potential buyer of the watershed services, and preliminary discussions have taken place. It is therefore deemed that the buyer does have the capacity to pay a market price for the service. During the PPG, a thorough capacity assessment of potential service providers (communities) and buyers will be conducted, and capacity building plans will be developed to ensure the

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

		adequate capacity will be in place for successful PWS establishment.
Climate change increases the risks of natural disasters (e.g. droughts, floods) in project sites impacting proposed land use change effectiveness	Medium	The Project will improve mitigation/adaptation measures in high risk areas particularly vulnerable to droughts and floods. Project activities in selected sites will include water harvesting techniques to deal with the former and will introduce reforestation, agro-forestry, terracing in slopes to deal with the latter. In addition Project managers will work in cooperation with China Biodiversity Partnership Framework (CBPF) Project which deals with climate change risks.

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:

Stakeholders	Relevant roles in the project
Ministry of Environmental Protection (MEP)	Through its Foreign Economic Corporation Office (FECO), MEP is the national executing agency for this project providing a national project director and ensuring quality and timely results monitoring and reporting of the project. The bureau is also responsible for reporting to the CBD, and house the National GEF Secretariat office.
Guizhou Provincial Government	The provincial executing agency for the project, housing the project management office within its Bureau of Environment Protection which is responsible for environmental management. Other agencies such as Bureau of Land Resources, Bureau of Forestry, Bureau of Tourism, Bureau of Water Resources, etc. Coordinate BEP under the government guide to implement PES project.
Yunnan and Sichuan Provincial Government	Provincial governments for the riparian provinces of the Chishui River. Critical partner for the transboundary river basin cooperation under the Guizhou Province Chishui River Basin Conservation Ordinance, building on the Summit Forum on Conservation and Development of Chishui River Basin participated by the three riparian provinces in 2008.
Local Governments – Renhuai, Wuma, Chishui , Xishui Municipalities	Key stakeholders and implementers for the pilot interventions. In particular their potential roles include monitoring and evaluation of land use changes and poverty reduction and other impacts deriving from the changes. Target institutions for focused training.
National institutes of Environmental Sciences and local universities	Key provider of technical expertise on hydrological, botanical and zoological aspects. The project will collaborate with them for species conservation work, and it would be a collaborator for the systematic biodiversity monitoring strengthening component of the project.
Media sectors and schools	Key partners for the publicity and education about PWS Project through adding the relevant programs and lessons.
Urban Communities	Key users and beneficiaries of the water resources and biodiversity. They have a potential lay a major role in local habitat conservation, controlling of poaching, and natural resource management. Critical participants of the project at the local level.
Farming Communities	Key resource users and potential sellers of ecosystem services. Implementers of changes in land use patterns from subsistence agriculture to sustainable agriculture. Direct beneficiaries of alternate livelihood interventions and increasingly consulted during project planning processes.
International Agencies (ADB etc.) and NGOs (WWF etc.)	Provide technical advice and conduct education and awareness work. These organizations can provide knowledge, experiences and lessons learned, as well as technical support to the project. They are also potential implementer an implementer /financier of components of the project.
Private businesses (Liquor Companies, tourism companies)	Potential buyer of ecological services, and will work towards internalising the environmental cost in their production cost.

B.6. Outline the coordination with other related initiatives: This project is closely linked with the GEF/UNDP supported "CBPF Priority Institutional Strengthening and Capacity Development to Implement the China Biodiversity Partnership and Framework for Action." Implementation of the project will significantly contribute to achievement of CBPF results : (1) the project will leverage private investment for biodiversity conservation through the PWS mechanism, and therefore increase financial flows to biodiversity conservation, contributing to result 4 "Financial flows to biodiversity conservation increase over current baseline"; (2) As buyers and sellers of eco-services in pilots, communities and private sector's roles in biodiversity will be significantly strengthened compared with the current government-dominating picture, contributing to Result 6 "Communities, NGOs and private sector play an adequate role in biodiversity conservation"; (3) By encouraging private investment in organic farming of cash crops in targeted river basins, local livelihoods will be improved. Biodiversity conservation and poverty alleviation activities will become more mutually supportive, contributing to Result 13 "Biodiversity conservation and poverty alleviation programmes in China are mutually supportive"; (4) A critical consideration of the project is to facilitate land use change towards sustainable management through various

project activities, to minimise anthropogenic damage to habitats, thus conserve biodiversity, contributing to Result 21 "Land-use planning and management systems contribute effectively to conserving biodiversity".

The project will also complement the GEF/UNDP financed CBPF-Main Streams of Life Wetland PA System Strengthening Programme through development of an enabling framework for PWS as well as establishment of actual financing mechanisms, which are will likely to have application for financing conservation in and around nature reserves. This project will also closely coordinate work with the Asian Development Bank (ADB) geared to developing national eco-compensation policy legislation as well as related knowledge products on the ecosystem market in China. WWF with a \$ 50,000 grant from ADB is working on the project entitled "Public-Private-Partnership: Pilot Development of a Mechanism for Payment for Watershed Services in Chishui Watershed". The project will build directly on the initial efforts to engage with local stakeholders to start developing a foundation for a viable PWS mechanism in the watershed. Integrated river basin management in Chishui River is an important part of the EU-China River Basin Management Programme (RBMP). The vision of the RBMP is to make a significant contribution to China's national goals for the water sector and achieve "sustainable management and use of China's water resources that are compatible with socio-economic development". RBMP is structured in five components. The component of Yangtze River Integrated River Basin Management is working in Chishui River which has been chosen as a pilot site to promote and replicate policies, plans and measures for integrated river basin management. The GEF supported project builds on experiences and information produced through the RBMP. Moreover, it will add a significant value to the on-going initiative by realising PWS as a finance mechanism which includes the private sector as well as poor farming communities in a negotiated transaction for the production/ delivery of properly valued watershed services as well as for biodiversity conservation.

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

C.1. INDICATE THE CO-FINANCING AMOUNT THE GEF AGENCY IS BRINGING TO THE PROJECT: UNDP is investing a total of US\$ 500,000 from its core resources, in support of water governance and water resource management. UNDP is also leveraging a total of US\$ 10,500,000 from provincial and national governments.

C.2. HOW DOES THE PROJECT FIT INTO THE GEF AGENCY'S PROGRAM AND STAFF CAPACITY IN THE COUNTRY TO FOLLOW UP PROJECT IMPLEMENTATION: UNDP has been supporting natural resource management, biodiversity and ecosystem management in China for over three decades. UNDP implemented/is implementing a number of GEF supported projects that are complementary to this project. Of particular relevance is the Priority Institutional Strengthening and Capacity Development to Implement the China Biodiversity Partnerships and Framework for Action, which aims to operationalise the CBPF. UNDP was also the implementing agency for the \in 51 million EU-funded ECBP programme, which is part of the CBPF, which targets 18 field pilot projects, which ended in 2011. In addition, since 2007, UNDP has been the co-executing agency of the GEF supported CBPF, together with MOF and MEP, and has supported development and finalization of the National Biodiversity Strategy and Action Plan in 2010.

The United Nations Development Assistance Framework (UNDAF) for 2011 to 2015 provides the framework for the UN-China partnership over the coming five years, coinciding with the period of China's 12th Five Year Plan. One of the three priority areas, or UNDAF Outcomes, is Outcome 1: Government and other stakeholders ensure environmental sustainability, address climate change, and promote a green, low carbon economy. This project will contribute to the achievement of this outcome, in particular directly contributing to Output 1.1. Policies and regulations are strengthened to create a green economy; Output 1.2. Policy and implementation mechanisms to manage natural resources are strengthened, with special attention to poor and vulnerable groups; and Output 1.3. China's vulnerability to climate change is better understood and adaptation responses are integrated into Government policy. Corresponding to the UNDAF, the UNDP Country Programme (2011 to 2015) seeks to conserve biodiversity and build ecosystem resilience, which is the fundamental building block of the ecosystems' provisioning, regulating and support services that are essential for China's social and economic development. The country office (CO) has an energetic and professional environment team with a programme manager and an associate specifically assigned to biodiversity-related projects and broader support from the policy, administrative and financial sections. The UNDP Regional Technical Adviser based in Bangkok will provide technical support to the CO for implementation, monitoring and evaluation of the project.

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):

NAME	POSITION	MINISTRY	DATE
			(MM/DD/YYYY)
Jiandi Ye	Director: International Financial institution	Ministry of Finance	August 17, 2012
GEF Operational Focal Point	Division III, International Department		

B. GEF AGENCY(IES) CERTIFICATION

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

Agency Coordinator, Agency name	Signature	Date	Project Contact Person	Telephone	Email Address
Yannick Glemarec, Executive Coordinator, UNDP/GEF	Ste	January 13, 2013	Midori Paxton, Regional Technical Advisor – EBD, UNDP	+66- 818787510	midori.paxton @ undp.org