



PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE:

TYPE OF TRUST FUND:

For more information about GEF, visit www.TheGEF.org

PART I: PROJECT IDENTIFICATION

Project Title:	Sustainable forest management to enhance the resilience of forests to climate change in China		
Country:	China	GEF Project ID:	
GEF Agency:	FAO	GEF Agency Project ID:	619120
Other Executing Partner(s):	State Forestry Administration (SFA)	Submission Date:	April 5, 2013
GEF Focal Area (s):	Climate Change, Biodiversity Multi-Focal Areas	Project Duration (months):	72
Name of parent program (if applicable):		Agency Fee (\$):	679,509
	<ul style="list-style-type: none"> For SFM/REDD+ <input checked="" type="checkbox"/> 		

A. FOCAL AREA STRATEGY FRAMEWORK¹:

Focal Area Objectives	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-Financing (\$)
CCM-5: Promote conservation and enhancement of carbon stocks through sustainable management of land-use, land-use change, and forestry.	GEFTF	4,475,455	30782000
BD-2: Mainstream biodiversity conservation and sustainable use into production landscapes/seascapes and sectors.	GEFTF	889,091	5768000
SFM/REDD-1: Reduce pressures on forest resources and generate sustainable flows of forest ecosystem services.	GEFTF	1,788,182	11850000
Total project costs		7,152,728	48,400,000

B. PROJECT FRAMEWORK

Project Objective: To enable rural communities in three Chinese provinces to practice incentive-based sustainable forest management to enhance carbon sequestration and biodiversity conservation through reforestation and restoration activities.

Project Component	Grant Type ²	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co financing (\$)
Component 1. Strengthened institutional, policy and regulatory frameworks for forest management.	TA	1.1: Provincial Forestry Bureaus (PFB) and (farmer-based) Forest Management Units (FMU) apply new policies and guidelines for SFM and biodiversity conservation in their work, resulting in: - Improved effectiveness of policies that integrate SFM (as measured by tracking tool). - Improved SFM and biodiversity-oriented management of 40,000 ha of forestland in project provinces (direct impact) and improved SFM across 30% of plantation forests or 2,433,000 ha in three pilot provinces (indirect). - Habitat improved and restored for rare and	1.1.1 A package of modifications in forest regulations, policies and standards for household-level SFM & biodiversity conservation including: (i) regulations with forest ecosystems / biodiversity criteria, management standards for SFM and enforcement guidelines; (ii) guidelines to facilitate the adoption of key incentives by farmer households for SFM, (short & long term). 1.1.2 National programme for biodiversity conservation across household forests endorsed by SFA. 1.1.3 Strengthened biodiversity standards for certification (China Forest	GEFTF	760,274 CC: 447,045 BD: 134,410 SFM: 178,819	6,000,000

¹ Refer to the reference attached on the Focal Area Results Framework and LDCF/SCCF Framework when completing table A.

² TA includes capacity building and research and development.

		<p>endangered species, including:</p> <ul style="list-style-type: none"> - Silver oriole (VU) (<i>Oriolus mellianus</i>) - White-eared Night Heron (CR) (<i>Gorsachius magnificus</i>) - Chinese Yew (EN) (<i>Taxus wallichiana</i>) <p>- 3 Provincial and 6 County Forest Bureaus staff trained in and applying respective guidelines for SFM, biodiversity, and MRV.</p>	<p>Certification Scheme or CFCS), incl. high conservation value assessments & guidelines for mainstreaming such standards and assessments into community-based SFM.</p> <p>1.1.4.a Guidelines to: improve forest inventory procedures to account for C and GHG emission from land-use.</p> <p>b. MRV guidelines for REDD+ activity enable forest carbon monitoring system to account for C sequestration and avoided emissions from land-use.</p> <p>1.1.5 Training program in the use and application of new policies and guidelines at provincial, county and township levels.</p>			
<p>Component 2. Innovative forest management unit models for SFM, enhancing carbon storage and certifying biodiversity conservation through forest management that enhances generation of revenues, demonstrated and adopted</p>	TA	<p>2.1. FMUs empowered and capacitated to demonstrate improved SFM (re-forestation of damaged forests; restoration and silvicultural transformation of mono-cultural forests; and natural regeneration) across 40,000 ha of forest land resulting in:</p> <ul style="list-style-type: none"> - <i>SFM knowledge effectively transferred to provincial forestry bureaus and FMU.</i> - <i>15,000 ha degraded forest under improved SFM increases sequestration: benefits accruing years 1-6: 11,591,474 tCO_{2e}. For years 7-15 (post-project) : 46,595,156 tCO_{2e};</i> - <i>15,000 ha monoculture conversion to mixed stand increases sequestration: benefits accruing years 1-6: -3,661,867 tCO_{2e}. For years 7-15 (post-project): 46,770,652 tCO_{2e}</i> - <i>10,000 ha under natural regeneration increases sequestration: benefits accruing years 1-6: 6,658,131 tCO_{2e}. For years 7-15 (post-project): 26,051,774 tCO_{2e};</i> - <i>At least 30,000 hectares of FMU managed forest certified under the CFCS.</i> - <i>At least 500 families benefiting from an incremental stream of benefits brought by SFM</i> 	<p>2.1.1. Strengthened SFM, biodiversity and carbon sequestration knowledge and capacity of at least 100 Forest Management Units (FMUs).</p> <p>2.1.2. At least 100 pilot SFM plans designed and applied by FMUs mainstream biodiversity conservation (CFCS standards) and carbon sequestration as key objectives.</p> <p>2.1.3. At least 50 practical business plans complement the SFM plans with sustainable revenue generating activities detailed.</p> <p>2.1.4. At least 2 SFM plans with main elements of voluntary carbon market "Panda Standard" (PS) methodology for "Improving Low Value Forests" incorporated.</p> <p>2.1.5. At least 30 FMUs strengthened in their capacities for SFM and in their ability to plan.</p> <p>2.1.6. SFM model scenarios applied to enhance carbon storage in forest systems.</p>	GEF TF	<p>5,001,249</p> <p>BD: 642,181</p> <p>CC: 3,145,342</p> <p>SFM: 1,213,726</p>	36,000,000

Component 3. Knowledge development; education, awareness building; monitoring, evaluation and dissemination of best practices.	3.1. Enhanced capacity and knowledge base for forest management and monitoring resulting in: - <i>Improvement in capacity development indicators in Capacity Development Scorecard –township forestry technicians, 2,600 FMU members applying SFM practices.</i> - <i>Awareness of ecosystem service and other benefits from sustainable land, forest and biodiversity management increased by 30% over baseline levels in 2 target audiences (government staff and FMUs).</i> - <i>increased uptake of FMUs (no. of user groups engaged in SFM increases against baseline target).</i>	3.1.1 Provincial and county-level forest bureaus trained in carbon and biodiversity monitoring; - in MRV to inform national forest inventory and carbon monitoring system, enabling it to account for C sequestration and AE from land-use; and to support monitoring of forest management according to CFCS standards.	GEF TF	1,051,205 CC: 670,568 SFM: 310,637 BD: 70,000	5,200,000
		3.1.2 Data management portals for stakeholders at national, provincial and county levels 3.1.3 Strengthened social networks and new social capital in the form of local forest management associations. 3.1.3 Targeted education, awareness and outreach campaigns aimed at specific target audiences implemented. 3.1.4 M&E system established to measure project progress and impacts.			
Sub-Total				6,812,728	47,200,000
Project management Cost (PMC) ³				340,000	1,200,000
Total project costs⁴				7,152,728	48,400,000

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 (\$)
National Government and Provincial Governments	State Forestry Administration and Provincial Forestry Departments	In-kind	40,800,000
National Government and Provincial Governments	State Forestry Administration and Provincial Forestry Departments	Cash	7,200,000
GEF Agency	FAO	Grant	400,000
Total Co-financing			48,400,000

D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY, FOCAL AREA(S) AND COUNTRY

GEF Agency	Type of Trust Funds	Focal Area	Country Name	Grant Amount (\$) (a)	Agency Fee (\$) (b) ¹	Total (\$) c=a+b
FAO	GEFTF	Climate Change Mitigation	PR China	4,475,455	425,168	4,900,623
FAO	GEFTF	Biodiversity	PR China	889,091	84,464	973,555
FAO	GEFTF	SFM/REDD	PR China	1,788,182	169,877	1,958,059
Total Grant Resources				7,152,728	679,509	7,832,237

¹ Indicates fees related to this project.

E. PROJECT PREPARATION GRANT (PPG)

Amount Requested (\$) Agency Fee for PPG (\$)⁴

- (Up to) \$50k for projects up to & including \$ 1 million

³ To be calculated as percent of subtotal

⁴ PPG fee percentage follows the percentage of the GEF Project Grant amount requested.

- (Up to) \$100k for projects up to & including \$ 3 million
- (Up to) \$150k for projects up to & including \$ 6 million
- (Up to) \$200k for projects up to & including \$ 10 million
- (Up to) \$300k for projects above \$ 10 million

153,200

14,554

PPG AMOUNT REQUESTED BY AGENCY, FOCAL AREAS AND COUNTRY FOR MFA AND/OR MTF PROJECT ONLY

Type of Trust Funds	GEF Agency	Focal Area	Country Name	PPG (\$) (a)	Agency Fee (\$) (b)	Total (\$) c=a+b
GEFTF	FAO	Climate Change Mitigation	PR China	91,000	8,645	99,645
GEFTF	FAO	Biodiversity	PR China	24,150	2,294	26,444
GEFTF	FAO	SFM/REDD	PR China	38,050	3,615	41,665
Total Grant Resources				153,200	14,554	167,754

PART II: PROJECT JUSTIFICATION

A. PROJECT OVERVIEW

A.1. Project description. Global environmental problems, root causes and barriers that need to be addressed;

1. In 2006, China’s 7th National Forest Inventory (NFI) determined the total extent of forest coverage in China to be 196,524,000 hectares. In 2010, FAO’s China Forest Resources Assessment (FRA) projected the total extent of forest coverage to be 206,860,000 ha or ~22% of the land area. Of this 125,403,000 ha is natural forest⁵; 64,545,000 ha is plantation forest, and 16,912,000 ha of recently afforested, cut or burned areas. Total standing volume is 14.9 billion m³. Box 1 summarizes the forest type by each one of the project’s three pilot provinces, the total coverage and representative forest biomes. China’s forest area has been increasing steadily during the last two decades, averaging an annual 1.39% increase since 1990 (Global FRA 2010).

Box 1: Forest type, # ha and representative forest biomes in pilot provinces.		
Project provinces/ Forest type	Ha	Forest Biome
Henan		
Natural forest	1,192,000	Temperate coniferous; Temperate deciduous broadleaf; Mixed coniferous and broadleaf.
Plantation Forest	2,174,000	
Guangxi		
Natural Forest	5,178,000	Subtropical coniferous; Sub-tropical evergreen broadleaf;
Plantation forest	5,155,000	
Hainan Island		
Natural forest	500,000	Sub-tropical evergreen broadleaf; Tropical rain forest/monsoon.
Plantation forest	1,253,000	
Forest area in 3 provinces:	15,452,000	

2. But this is a story of quantity over quality. Many millions of acres of China’s forests are monoculture, single age stands with weak resilience to climate induced shocks and natural pests. And, monoculture stands have been found to have lower carbon stocks both above and below ground, diminishing their usefulness for carbon sequestration.^{6,7} It is also a story of rapid change not only in the number of hectares but in the ownership of those forests (or it is

more accurate to say the ownership of the *use rights of those forests* since all land in China ultimately is owned by the central government). For example in the five years between the 6th NFI and the 7th NFI, ownership patterns changed dramatically: the number of ha of forestlands under private ownership (individual households and corporations) nearly doubled from 34 to 62 million. Collective-owned forest lands decreased from 68 to 57 million ha and State-owned forest lands remained largely unchanged. This GEF incremental investment will help forest stakeholders and in particular the most rapidly growing segment of forest owners/managers (household level) to improve the quality of forestlands while generating global benefits from increased carbon sequestration and improved habitat for rare and endangered species.

⁵ primary forests that have never been harvested or secondary forests that have been allowed to regenerate naturally at times supplemented with some planting

⁶ He, Y, et. al. 2012. Carbon storage capacity of monoculture and mixed species plantations in subtropical China. Forest Ecology and Management 295 (2013) 193-198.

⁷ Kanowski, J. and Catteral, C. 2010. Carbon stocks in above-ground biomass of monoculture plantations, mixed species plantations, and environmental restoration plantings in north-east Australia. Ecological Management and Restoration, Vol. 11 No. 2.

3. This story of increasing forest area carries over to carbon stocks in China's AFOLU sector (Box 2). China's net CO₂ removal through land use change and forestry was 422 Mt after considering emissions from forest land conversion and sequestration from forest growth (2nd NCCC, 2012). Box 2 summarizes data on carbon biomass as reported through the 2010 FRA. Above ground carbon (C) stocks as of 2010 for China as whole were 6.202 billion metric tonnes.

4. China ranks in the top three countries in the world for biodiversity with a flora of about 30,000 species of vascular plants, of which 58% or 17,300 are endemic including 8 genera of gymnosperms and 232 genera of angiosperms (2.5% and 7.4% respectively). The project's site provinces (Henan, Guangxi, Hainan) contain at least four hotspots for "endemic woody seed plant species" diversity or EWSPS, including Hainan Island and the mountainous areas of western and northern Guangxi and western Henan. Notable rare and endangered tree species threatened with habitat loss include Gingko (*Ginkgo biloba*; EN), Chinese or Himalayan yew (*Taxus wallichiana*; EN), the endemic Nan (*Phoebe zhennan*; VU & *P. nanmu*; EN), and the endemic Fragrant rosewood (*Dahlbergia odorifera*; VU).

FRA 2010 Categories	2000	2005	2010
C in above-ground biomass	4013.9	4392.1	4675.5
C in below-ground biomass	1281.0	1409.9	1527.4
Total: C in living biomass (million metric tonnes)	5295.0	5801.9	6202.9

5. The project's pilot provinces encompass globally significant fauna diversity, including at least one Global 200 Ecoregion (Southeast China-Hainan Moist Forest) and least three Endemic Bird Areas (EBA): Chinese Subtropical Forest EBA; South-east Chinese Mountains EBA; Hainan EBA. The Subtropical Forest EBA is home to the endemic Golden fronted fulvetta (*Alcippe variegaticeps*) and the restricted range Silver oriole (*Oriolus mellianus*; VU). The mixed broadleaf-coniferous forest of the South-east Chinese Mountains EBA is home to four restricted range species, including the White-eared night heron (*Gorsachius magnificus* - CR), the endemic Cabot's tragopan (*Tragopan caboti*), the endemic White-necklaced partridge (*Arborophila gingica*) and the endemic Elliot's pheasant (*Syrnaticus ellioti*). Hainan EBA's Montane evergreen forest and lowland evergreen rain forest harbors 46 endemic sub-species including: the Grey Peacock pheasant (*Polyplectron katsumatae*) the Black browed barbet (*Megalaima oorti faber*) and the Blythe's kingfisher (*Alcedo Hercules* - VU). The southeast China-Hainan region also harbors endemic amphibians including the Asiatic salamander (*Vibrissaphora liu*) and the horned toad (*Megophrys kuatunensis*).

2) Baseline scenario and associated baseline projects;

6. **BASELINE:** The PRC has long recognized the importance of forests to its national well-being and has made and continues to make considerable baseline investment to address the forest loss and degradation primarily through afforestation activities. Deforestation in the mid-late 20th century in China created huge areas devoid of forest. Afforestation programmes in many provinces, mainly in the south and south west, over the past 30 years have led to considerable expansion of plantation forests that now have watershed, and other ecosystem service values. Over the five year period 2004 to 2009 the national forest area increased by more than 20 million ha through what are known as the Six Key Ecological Forestry Programs, including the Shelterbelt Programme in the Three-Norths Region and along the Yangtze River (commenced 1978 & 1989), Coastal Shelterbelt Programme (commenced 1991), Natural Forest Conservation Programme (2000 to 2020), Grain for Green Programme (commenced 2000), and the Nature Reserves and Biodiversity Conservation Programme (commenced 2001). The total investment in forestry by the Government between 1998 and 2010 increased from US\$ 2.26 billion (13.53 billion Yuan) annually to US\$ 20.49 billion (122.96 billion Yuan) annually, an average annual increase of ~ 20% over 12 years. Substantial funding has been directed into various afforestation and other forestry programmes referred to above, also into forest fire and pest control programmes, development of forest industry, strengthening of an ecological culture and enhancing public awareness of forestry. Afforestation has in most places been immensely successful in terms of area covered. However, these afforested areas have little biodiversity value and lack resilience, which is key to sustainable biodiversity conservation and carbon sequestration. This has led to increasing levels of forest degradation over time as mono-culture stands fall prey to pests and weather events. While this has been a challenge for many rural communities, the presence of millions of hectares of degraded forestland presents a strategic opportunity for innovative initiatives to help China further shift forest management in the direction of ecosystem-based SFM with significant global benefits in the biodiversity and CC areas.

Category	Area (1,000 ha)		
	1990	2000	2005
Afforestation	5094.5	4737.1	4385.0
Reforestation	625.0	630.0	304.4

7. Although the need for restorative reforestation efforts is acute, reforestation has been a relatively small part of China's forest work in recent years. Box 3 illustrates this reality, showing that the number of

hectares reforested in 2005 declined to less than 1/10 the number of hectares afforested. There are many single species even-aged forest stands, established 10-30 years ago. Most forests in this category have not been thinned or managed in a meaningful way since they were established. Depending on age, location and forest history there has been little to no wood harvesting. Forests are at risk of damage or loss as they become older and more vulnerable to extreme weather events, especially wind, pests and diseases and lack biodiversity and ecological resilience. Restoring the health of existing degraded forests through reforestation/restoration is not an area where China has focused its efforts. It is strategic for the GEF to provide incremental support to this.

8. China's forest land is State-owned but progressive revision of policies from the 1990s has led to far-reaching reform of land use rights and management of forest resources, arguably the largest undertaken in modern times anywhere both in terms of area and the number of people affected. Forest land use reforms have been applied to approximately 100 million ha that is home to more than 400 million people and is widely promoted by the Government as a step towards private household property, part of the broader social and political trend aiming for the de-collectivization of China's rural landscape and the establishment of free markets. Forestry programme operations are decentralized to provinces and counties. The larger plantations are sometimes county-owned forest farms that enjoy considerable managerial autonomy, others are managed individually as local village-based management units. Significant private investments are being made in fast-growing short rotation plantations on land held by farmers owning the management rights. This policy shift is now central to forest development planning and investment considerations in the forestry sector and is a significant basis for improving the socio-economic situation of rural communities, especially forest communities. Pilot trials of this new approach to forest harvest management commenced in 2008 in 193 counties in 24 provinces.

9. The aim is to shift from volume quota management to the introduction of planned SFM based forest management plans that emphasize the formation of multi-species stands and increasing floral diversity including in the understory; both are positive for maintaining biodiversity and ecosystem health. Such plans would emphasize local ecological conditions and multiple functions of forests. Currently, such management practices lack any robust certification standards, providing a strategic entry point for GEF financing. In addition, this shift in management emphasis has not kept pace with the fast-paced change in forest land ownership referred to above – to the decentralization of forest land use down to the community and farmer household level. Enabling SFM among the increasing number of forestland owners is a significant challenge, particularly when combined with C sequestration and biodiversity goals and objectives. A compelling mix of incentives will be key to facilitating this change at the forest level. The proposed GEF project will focus its incremental efforts on demonstrating the possibility of generation a stream of benefits that provides an incentive to the changes in local livelihoods that SFM adoption will imply. While the revenue from carbon credits will provide income benefits in the longer term, the project will also pilot local specific incentives to adoption of SFM in the short term.

10. Forest certification. Forest certification is growing in China with the ongoing work of the FSC and the SFA's own China Forest Certification Scheme (CFCS), now under formal review for endorsement by the Geneva-based Programme for the Endorsement of Forest Certification Schemes (PEFC). Looking to develop a forest certification scheme with Chinese characteristics the design of the CFCS started in 2001 and concluded with the launch of CFCS in 2010. The CFC Council oversees the CFCs program. Its Working Group on Standard Setting is in charge of formulating CFCS's certification standards. The standards must go through field trials, expert and public consultations and expert approval before official publication.

FMCS Principles for certification of SFM:

- 1: Comply with **national legal framework**
- 2: Clearly defined **forest tenure/use rights**
- 3: Recognition and respect for **local community and laborer's rights**
- 4: Scientific **forest management plan** necessary
- 5: Apply **silviculture** practices to support SFM
- 6: Forest management shall conserve and improve **biodiversity**
- 7: Minimize **environmental impacts** & emphasize ecosystem services
- 8: **Protect forest** from fire, pests and disease
- 9: **Forest monitoring** is important to inform good management

11. Multiple forest certification standards will be elaborated under the CFCS, including: forest management (FM) certification and chain-of-custody (CoC) certification, carbon sink forest certification, non-timber wood product certification, certification of forest ecosystem services. The FM and CoC certification standards have already been promulgated, while the formulation of the other standards is ongoing.

12. CFCS's FM Certification Standard (FMCS). China's FM standard includes 9 principles, 45 criteria and 118 indicators. The FM Standard prescribes the principles, criteria and indicators that shall be followed by the certification of sustainable forest management and the performance requirements that forest management unit shall realize in order to achieve sustainable forest management. In 2009, the first third party independent

certifier was established and in 2011, more than 3.4 million hectares of forests in NE China were certified under the CFCS. To date, the CFCS has not been applied to farmer household forests due to barriers associated with inadequate policy and planning capacity, costs of certifying small holdings, and awareness. GEF funds will enable stakeholders to overcome such barriers, and enable farmer households to form FMUs in order to have larger areas certified at once, reducing costs raising awareness of the benefits of certification.

13. Forest Inventory & Carbon Monitoring. In 2010 the SFA set up the National Forestry Carbon Sequestration Accounting and Monitoring Center (NFCSA) in the Academy of Forestry Inventory and Planning. The NFCSA works through a network of national level institutions such as Chinese Academy of Forestry Science to elaborate the monitoring methodology and to gather and analyze national-level baseline data on forest carbon stock and carbon flux. Currently carbon monitoring is a national level activity with no local level monitoring methodologies developed or piloted. Ultimately four regional carbon monitoring centers will operate in the northwest, central south, east and southwest of China in the corresponding regional institutions of forestry survey, planning and design. GEF incremental funds will enable the Center to develop and pilot local-level monitoring methodology working with local stakeholders to begin C monitoring (sequestration and avoided emissions) to complement the national, large-scale approach of the Center. GEF inputs will support capacity-building activities on MRV (measurement, reporting, verification) of sub-national activities for local governments.

14. Voluntary Carbon Market. Carbon emission trading is coming to China, creating new innovative opportunities for incentive based approaches to SFM. The 12th FYP (2011-2015) calls for establishing a national carbon emission trading system by 2015. Experiments with voluntary markets are in their early stages and are growing in number. Voluntary Emission Reductions (VERs) have been established. The Shanghai Environment and Energy Exchange completed China's first "Standard for Voluntary Carbon Emission Reduction", approved by NDRC in 2011.

15. The China Beijing Environment Exchange (CBEEEX) and BlueNext, with the support of Winrock International, founded the Panda Standard (PS) as the first voluntary carbon standard designed specifically for China, in order to support the nascent carbon market and encourage investment in the rural economy. Governed by the Panda Standard Association, the PS focuses on Agriculture, Forestry and Other Land Use (AFOLU) offset projects with poverty alleviation benefits. The PS determines additionality using both standardized and project-based methods. To date in AFOLU Sector, the PS has one approved methodology (bamboo) and in December 2010, BlueNext, the Agence Française de Développement, and CBEEEX signed a MoU to support a 15000 ha bamboo plantation as the first pilot project for the PS. The methodology for the project was finalized and approved by the Technical Committee in early 2012 and it was registered in late 2012. A second PS methodology *Grassland restoration* is undergoing review for approval. The Nature Conservancy of China is working to develop a third AFOLU PS methodology entitled *Improving Low-value Forests* with a focus on degraded lands that are expected to remain degraded or continue to degrade in the absence of the project. Completing the methodology and field-testing it with forest bureaus and private forest land owners will be the next step. In July 2012, the NDRC issued a regulation on "Interim Measures for the Administration of National GHG Emission Voluntary Trading Activities", which lays the foundation for domestic carbon offsets in China. The Panda Standard is in the process of being approved by the NDRC; when this happens, the CCERs (Chinese Certified Emission Reductions) credits generated under the PS will be eligible in the country's future carbon markets. GEF incremental support will enable communities to assess the feasibility of accessing carbon markets and support capacity-building activities. Based upon the assessment of pros and cons, GEF support FMUG-based efforts to access certification schemes.

16. **Baseline Programmes:** A European Investment Bank-Government of China (*EIB-GOC*) *Forestry Framework Loan* (February 2012, €100 million), together with Government of China co-financing, serves as this project's primary "baseline programme. The Forestry Framework Loan focuses on four main areas of work: (i) establishment of protective forests for soil and water erosion control/timber forest plantation; economic trees, (ii) tendering or modification of low-efficiency forest, (iii) sustainable development of forest ecosystems, (iv) establishment of biomass plantations. Activities funded under this new framework loan will include capacity building, long-rotation afforestation and the development of socially and economically important forests having high and sustainable income generation potential. This approach provides a strategic baseline for the GEF's incremental investment, which focuses on developing, piloting and replicating new and innovative tools and incentives for mainstreaming biodiversity and sequestering and avoiding CO₂ emissions, including forest management certification and SFM-based reforestation and restoration (not afforestation). The GEF investment will enable stakeholders to focus more on: a) enhancing forest productivity to avoid the losses of carbon from management neglect/forest decay and enhance carbon sequestration; and b) the mainstreaming of biodiversity conservation objectives and practices into local level SFM.

17. To maximize the strategic synergies between the GEF project and the EIB Framework Loan, the GEF project will be designed to enable and catalyze the replication of its piloted activities by larger investments under the EIB Framework Loan. The PIF preparation team has judged that the GEF resources will directly top-up or improve approximately US\$48 million of the total baseline program amount summarized below. This is the amount that is included in the co-funding. This will be further refined and/or expanded under the PPG process. The GEF resources will enable local stakeholders at the county and township levels to demonstrate improved forest management under three different scenarios using an approach that integrates new and innovative incentive mechanisms (forest management certification and/or voluntary carbon markets) into these efforts. It will also expand awareness and improvement of SFM that over time will lead to more sustainably managed ecosystems and more ecologically resilient forests that better conserve biodiversity and store carbon on a sustainable basis. GEF's incremental investment, by complementing China's baseline, will yield significant global benefits over time across China's millions of hectares of forestlands.

Co-financing sources baseline project	Name of Co-financier	Brief Description of Co-funded Baseline Project Activities	Type of Co-financing	Amount (\$)
National Government	SFA	<ul style="list-style-type: none"> - FA staff services and procurement of facilities. - Establishment of forests demonstrating fire protection & control. - Focuses on state managed and controlled plantation areas. - Carbon monitoring at national level - CFCS in late stages of development; early stages of use. - Voluntary carbon market for AFOLU in nascent stages. 	In-kind	124,000,000 (€100,000,000)
Multi-lateral	EIB	<ul style="list-style-type: none"> - Afforestation, protective forests for erosion control/timber forest plantation; economic trees, - tendering or modification of low-efficiency forest, - establishment of biomass plantations & capacity building 	Loan	124,000,000 (€100,000,000)
			Total	US\$248,000,000

18. **Threats: Climate Change (CC):** CC is the predominant over-arching threat to forest ecosystem health in China, particularly the planted/managed forests that are the focus of this PIF and baseline programme. The unforgiving continental climate inland and the sensitivity of coastal sites to tropical storms aggravates the ecologically fragility of many forests in China and their susceptibility to human-induced ecological disturbance. Observed and projected climatic changes, especially rising winter temperatures, early springs, unseasonably heavy rainfall and more extreme droughts will place increasing amounts of stress on China's vast areas of managed forest and their ability to sequester carbon and sustain biodiversity. There has been an increased occurrence of climate-related events specifically droughts and floods with grave consequences for ecological stability and for forest productivity and with serious repercussions for infrastructure and public safety. CC will aggravate the uneven distribution of water resources in China, already a serious concern. Rises in temperature will increase evapo-transpiration, increasing stress on low resilience, mono-culture forest stands. More frequent wildfires, continuing adverse impacts of insect pests and diseases, and greater water stress are among the major factors of degradation and are predicted to accompany CC going forward.

19. More than 27% of plant and animal species are considered threatened. CC events have led to considerable losses of forests in China. In January-February of 2008 freezing rain and snow with unusually low temperatures in the southern-central provinces destroyed 20 million ha of forests, mostly young or middle aged conifer stands: a loss of 30 years' of effort to reforest hilly land. The direct economic losses alone of this extreme weather event exceeded \$22 billion. The effects were widespread: crown loss, stem bending, trunk breakage and uprooting. The damage led to secondary problems, particularly soil erosion, mudslides, insect infestation and tree disease outbreaks, and later, of many forest fires because of the accumulation of dead litter. In 2010 a prolonged drought in southwest China caused heavy forest losses, damaging habitat for wildlife and leading to forest fires. About 5.3 million hectares of forest have been lost in recent years. There have been substantial losses of biomass and of sequestered carbon in forests through these climatic events – losses aggravated by the fact that most of these forests are monotypic, single-age stands and thus lack resilience to high and low temperatures and the impacts thereof.

20. The primary threat of CC to forest biodiversity is habitat degradation and possibly destruction where rare and endangered trees and other plants occur. The adverse impacts of pests and diseases may also be aggravated by over-dense un-thinned forests, made worse by scant undergrowth comprised of only a few plant species. CC is likely to worsen this situation and may cause larger areas of low resilience forests that are inadequately managed to become vulnerable to damage from pests and diseases caused by changing climatic conditions. This project can help address this concern by supporting the establishment of forests comprising a natural mix of species across the different critical forest niches, including rare species, and encouraging co-

management by local communities. The project is likely to reduce risks of forest degradation and the impacts of CC by promoting SFM practices founded on sound ecologically based forest management plans.

21. **Barriers:** The baseline projects fall short of achieving long-term solutions for SFM to secure multiple ecosystem services while enhancing ecosystem resilience to climate change, for the following reasons:

Barrier #1: Inadequate regulatory framework and management guidelines for sustainable forest management, biodiversity mainstreaming and carbon sequestration and monitoring in forest areas

22. China's forestry policy and legal framework is relatively well established and implemented. However, a significant barrier to achieving sustainable forest and biodiversity management in forest areas is inadequate regulations and guidelines, in particular, for implementing operational SFM programmes at village level through community co-management in clearly conceived and effectively operated forest management units. There is a need to compile local regulations and realistic guidelines that will provide practical and meaningful guidance for implementing and monitoring SFM programmes. These will be understood and acceptable to the farmer members of forest management units and to county-level state forest farms and will incorporate a range of SFM models with imbedded incentives to adoption. The same can be said for the Chinese Forest Certification Scheme (CFCS) which needs to address biodiversity concerns in a more robust, yet simple manner. The Panda Standard and the voluntary carbon market in general, lacks sufficient guidelines for how to begin the process of generating C credits and is in need of additional proof of concept in the form of verified projects. The proposed GEF project can contribute towards overcoming this barrier by supporting the formulation of guidelines for more robust biodiversity mainstreaming into the CFCS as well as a new methodology for generating carbon credits while improving low value forests. This will require collaboration between private forest land owners/managers and civil society stakeholders developing new methodologies.

Barrier #2: Inadequate knowledge in many rural communities about how to apply SFM practices in a practical and beneficial way.

23. There is a trend towards decentralization of forest management responsibility and ownership of forest resources to farmers. Far reaching reform of land policies introduced in the 1990s has led to the allocation of land and forest user rights to farmers over large areas together with responsibility for forest management and utilization. A barrier to achieving more effective forest management by farmers and forest management units (farmer groups at a village level) and also many state forest farms is a lack of experience in actually designing and implementing SFM programmes at the county or forest farm level. This results in inadequate knowledge and low confidence about sound planned and sustainable forestry management technologies, which generate streams of global and local incremental benefits, and their application in practice. There is a compelling need to design and apply a range of training and other capacity building programmes that will lead to effective comprehension about silvicultural principles and their application in practice for achieving sustainable forest management outcomes. The GEF incremental investment will contribute positively towards overcoming this barrier by providing suitable training to farmers and other stakeholders together with a range of demonstrations of how sound forest methodologies can be applied in practice and to enable them to be scaled-up rapidly.

Barrier #3: Minimal experience in SFM and biodiversity conservation in production forest management

24. The acceptance and implementation of SFM plans incorporating BD conservation by community groups is a relatively new concept in China and is one of the barriers to the adoption and mainstreaming of biodiversity conservation into SFM practices. Considerable efforts are needed to overcome this barrier through patient and careful guidance from technical assistance that will gradually lead to an acceptance of this new approach in forest management. The GEF incremental investment will contribute towards overcoming this barrier by providing technical assistance and advice. Although there is increasing capacity and understanding by local forestry officials in production and protection forestry concepts and practices there is a gap in their understanding of the critical role of biological diversity in the management of forest landscapes and of its importance for maintaining ecological complexity as an approach towards developing resilience and ability of forests to store carbon.

25. In addition, conservation biology and landscape ecology, show that the geographic scale of biodiversity management has been too restricted, focused more on specific areas much smaller than whole regions. The GEF support and investment in this project will help to integrate biodiversity conservation objectives into productive forest management practices and policies across China's vast managed forest landscape and couple them with incentives from carbon credits sale and private exploitation of forest revenue, opening up significant new possibilities for managed biodiversity going forward.

Incremental cost reasoning and the proposed alternative scenario, with a brief description of expected outcomes and components and the project.

26. The proposed project builds on and complements the baseline project. The GEF funded alternative will address the above capacity constraints and policy barriers to mainstreaming biodiversity conservation and SFM into productive forest management practice. GEF's incremental investment will further strengthen participatory management of forest resources to secure global biodiversity and climate change benefits, and national and local benefits for local communities. GEF funding will support measures to mitigate climate change such as managing semi-natural forests and plantations to emphasize natural regeneration through the adoption of practical silvicultural practices that in turn will avoid emissions caused by forest degradation, increase sequestration through enhanced biomass and improve forest productivity.

27. In the baseline program, China will establish 30 million hectares of new forest areas and work to improve the management across 35 million hectares of existing planted forests, which currently suffer from degradation and weak resilience in the face of climate extremes, resulting in the loss of carbon and biodiversity. GEF's incremental investment will enable these efforts to be based on a normative framework and to establish mechanisms for the monitoring and certification of the improvement in forest management as well as to pilot incentives to SFM such as revenue from carbon sequestration. The **objective** of the GEF funded alternative is: "To enable rural communities in three Chinese provinces to practice incentive-based sustainable forest management to enhance carbon sequestration and biodiversity conservation through reforestation and restoration activities." The project's incremental investment will enable the significant forest management baseline to generate global benefits, as detailed in the table below:

Global Benefits

- ❖ Improved effectiveness of policies that integrate SFM (as measured by tracking tool).
- ❖ Improved SFM and biodiversity-oriented management of 40,000 ha of forestland in project provinces (direct impact) and improved SFM across 2,433,000 ha or 30% of plantation lands in the three pilot provinces (indirect).
- ❖ Habitat improved and restored for rare and endangered species, including: Silver oriole (VU) (*Oriolus mellianus*); White-eared Night Heron (CR) (*Gorsachius magnificus*); Chinese or Himalayan yew (EN) (*Taxus wallichiana*)
- ❖ SFM knowledge effectively transferred to provincial forestry bureaus and FMU.
- ❖ 15,000 ha degraded forest under improved SFM increases sequestration: benefits accruing years 1-6: 11,591,474 tCO₂e. For years 7-15 (post-project) : 46,595,156 tCO₂e;
- ❖ 15,000 ha monoculture forest revitalized under SFM increases sequestration: benefits accruing years 1-6: -3,661,867 tCO₂e. For years 7-15 (post-project): 46,770,652 tCO₂e
- ❖ 10,000 ha under natural regeneration increases sequestration: benefits accruing years 1-6: 6,658,131 tCO₂e. For years 7-15 (post-project): 26,051,774 tCO₂e;
- ❖ At least 30,000 hectares of FMUG forest management (biodiversity oriented) certified under the CFCS.

28. Incremental GEF resources will promote the conservation and enhancement of carbon stocks, the mainstreaming of biodiversity conservation and sustainable forest management objectives and practices into forest management. The project will do this through three main components. These components are summarized below and will be elaborated fully during the full project preparation.

Component 1: Strengthened institutional, policy and regulatory frameworks for forest management

29. The project under GEF support will enable the institutional, policy and regulatory framework for sustainable forest management and participatory biodiversity conservation to be achieved. This component will build a much-needed and relevant basis for institutionalizing sustainable participatory forest and biodiversity management in the forest sector and to build institutional capacity at national, local and community levels. GEF incremental resources will enable stakeholders to develop and adopt a set of modifications in the policy and regulatory framework to strengthen participatory forest management as the primary mechanism to achieve SFM and biodiversity mainstreaming.

30. More specifically, this component will include modifications to forest regulations, policies and standards for SFM, biodiversity conservation and forest carbon monitoring. Specific action is proposed (a) to revise regulations and guidelines to support the development of healthy forest ecosystems/biodiversity criteria, and (b) benefit sharing regulations and guidelines to incentivize SFM in rural forest communities, specifically to provide for profit sharing from forest products sales, as well as from forest management certification and the generating and selling of carbon credits under China's emerging voluntary carbon markets.

31. A National programme for forest biodiversity conservation to be endorsed by the FA is proposed to reinforce existing national arrangements and biodiversity policies and guidelines will be revised to allow and encourage community co-management, use and benefits. Biodiversity criteria and management standards for SFM, namely CFCS, and appropriate enforcement guidelines will be redefined. This work will draw upon examples and guidance from other well known certification standards as well as from China's own experience in forest management in order to define the criteria and standards in China's national context. To facilitate the use of these criteria, guidelines for main-streaming such standards into community/ farmer-based SFM will also be produced.

32. Strengthened SFM and biodiversity regulations and by-laws as well as new standards and guidelines for national forest carbon monitoring will enable improved management over the long term to be applied to more than 2 million ha of plantation forests in project provinces, and beyond. Importantly, training in SFM and biodiversity conservation and carbon monitoring at national, provincial, county and township levels, as well as in sustainable forms of revenue generation for FMU, will be designed and implemented.

33. And finally, in order to manage for biodiversity and carbon sequestration/avoided emissions, these must be measured. Under this component GEF resources will support the elaboration and application by stakeholders of a multiple scale monitoring approach for biodiversity and carbon storage. Biodiversity monitoring will include: a) a broad regional scale monitoring component; b) a diagnostic component to evaluate areas meeting specific status and change criteria; and c) a cyclic-incremental component to evaluate effectiveness of specific management prescriptions in achieving desired conditions in components of biodiversity. The carbon sequestration /emission avoidance monitoring will imply establishing a system for the measurement, report and verification of carbon credits that can be traded in the developing Chinese voluntary carbon market.

Component 2: Innovative models for SFM, enhancing carbon storage and certifying biodiversity conservation through farmer-based forest management that enhances revenue generation, demonstrated and adopted.

34. Under Component 2, Forest Management Units (FMU) will be empowered and capacitated to demonstrate improved SFM under three different scenarios: reforestation of damaged forests; proactive silvicultural transformation of mono-cultural forests; and natural regeneration of deforested land across a combined total of 40,000 ha. GEF resources will enable *SFM knowledge to be effectively transferred to provincial forestry bureaus and FMU.*

35. GEF's incremental investment will support mainstreaming of sustainable and participatory biodiversity conservation and SFM into forest management systems at provincial, county and forest levels and is expected to benefit all stakeholders, especially forest farmers and their local communities, and lead to effective and robust forest management arrangements that have enduring value over the long term. In practical terms this component will first support the formation and strengthen the capacity of at least 100 Forest Management Units (FMUs). Each FMU will be responsible for an area between 500 to 1,000 ha. This provides an institutional basis for local management of forest resources.

36. Forest farmer members of FMUs will be trained in SFM and biodiversity conservation and monitoring as well as in at pilot sites (specific subjects of the training to be decided according to relevance to each site and FMU). This will enable biodiversity conservation and carbon sequestration objectives and targets to be mainstreamed into at least 100 SFM FMU Plans by the end of the project. The formulation of these plans will be based on the guidelines for good practice and standards and criteria compliance for different aspects of SFM that will be developed in Component 1. Complimenting at least 50 of these SFM plans will be practical business plans designed to enable FMU members to plan their SFM work to achieve multiple benefits, including improved revenue generation from their forest lands. This will come from an enhanced mix of species that produce valuable fruits and nuts, in addition to low-level sustainable log harvest.

37. Building upon this strengthened capacity, GEF resources will enable stakeholders to demonstrate, through well designed and focused extension activities, improved forest land management and SFM across three different scenarios to enhance carbon sequestration. These will rely on sound silviculture practices that transform highly vulnerable mono-species stands into more resilient and diverse mixed species uneven aged forest. This transformation will result in the improvement of forest ecosystem structure and biodiversity, forest productivity, reduced forest ecosystem degradation and increase in carbon sequestration.

38. *Scenario 1* involves the restoration and reforestation of 15,000 hectares of snow & ice damaged plantation forests using mixed pine, cypress, Chinese fir and various broadleaved species (including oak, birch, Phoebe, Liquidamber, Liriodendron and other ecologically appropriate slow-growing indigenous

species). An initial assessment of the forested areas estimates that about 80% of forest stands have been destroyed or severely damaged, therefore justifying the need for restoration. One assumption is that there would be no mechanical preparation of the land (direct planting will be used), so it is assumed that there will be no direct carbon emissions from land preparation or planting.

39. On fertile and sheltered sites, slow-growing “rare and precious” indigenous tree species will be used for reforestation of snow/ice damaged forestland for the production of high value non-wood forest products. Species could include yew (*Taxus*), walnut (*Juglans*), neem (*Melia*) and ginkgo (*Ginkgo*) - and other native species. Equally important to what will be done under this component is what will not be done. Reforestation using eucalypts and poplars would be disallowed as their use is not consistent with long-term carbon storage aims. They are fast-growing, light-demanding broadleaved species that cannot easily be managed under selection harvesting silvicultural practices in mixture with conifer & slow growing broadleaved tree species. Typically they are grown as even-aged stands, usually on short rotations and are only harvestable by clear cutting; most of the sequestered carbon in the biomass is not permanently stored.

40. *Scenario 2* will involve the diversification/restoration of existing monoculture forest into mixed species stands by increasing significantly the species mix. GEF resources will enable FMUs to pilot the transformation of 15,000 ha of predominantly single species mostly even-aged forest stands into mixed broad-leaf species stands. There are many forests in this category, established between 10 and 30 years ago. This activity assumes that at maturity, more biodiverse plantations would have sequestered more carbon than monoculture plantations (see footnotes 6 and 7). Innovations to be demonstrated will include restoration of under-productive land with ecologically appropriate long rotation species, including “rare and precious” endangered species such as Chinese yew and Ginkgo that yield high value fruit and foliage. To assess the carbon sequestered by these more ecologically diverse forests, growth rate and biomass content at maturity will be compared to the *non-project baseline scenario* i.e. mono-culture even-age stands forests where no thinning or silvicultural management occurs.

41. Selection forest management and log harvesting will be introduced and will improve ecosystem structure, maintain a healthy forest cover over the long term, strengthen forest resilience to climate change and increase carbon storage and the area under certification of biodiversity-oriented SM practices. Forests under Scenarios 1 and 2 will be managed (a) to produce limited yields (~ 2 m³/ha/year) of logs for sale as solid wood for sawmilling under long-term, selective log harvesting arrangements, and (b) to sequester and store atmospheric carbon in the forest biomass in perpetuity. The long-term aim should be to progressively increase and maintain the forest biomass and to maintain ecologically stable, mixed species all-aged forests in perpetuity. Harvesting of forests by clear cutting would be disallowed, except on small areas (<1 ha), where technically necessary to improve opportunities for achieving SFM aims. Protection of forests from fire is essential. Ecologically stable mixed species forests can be expected to be more resilient towards pests and fungal diseases; the risks of pathological damage or losses is likely to be lower in mixed species all-aged forest stands compared with even aged monocultures.

42. *Scenario 3* intends to restore 10,000 ha non-forested lands (ex. converted forests into grasslands) that have a good potential for natural regeneration by a mix of pine and broadleaf forest types, with the goal of developing ecologically diverse mixed species multi-story forests. Areas would be selected based on the relative proximity of natural forests and seedling potential. Activities would include the delimitation of these areas, potentially with fences, and minor silvicultural activities would be conducted throughout the regeneration process, including the removal of invasive species and control of over-represented pioneer species that could prevent the establishment of other desirable species. To assess the carbon that could be sequestered by this component, we assume that, over the same time period, naturally regenerating forests would sequester only about 50% of the carbon than similar areas where direct planting occurs (such as under scenario 1). The non-project scenario is no management of degraded forestlands, with the lands dominated by tall grasses and some pine.

43. Also under Component 3, GEF resources will fund a small but important effort to elaborate at least 2 SFM plans that incorporate the main elements of the voluntary carbon market “Panda Standard” methodology for “Improving Low Value Forests”. As described under the baseline, China is putting a great deal of effort into developing a VCM and this small innovative effort under this project could catalyze important real revenues for forest-based projects in the longer term.

44. Arrangements will be designed and introduced to ensure that baseline carbon data will be documented and that carbon sequestration and emission reductions are measured, reported and verified and/or that forest certification procedures are put in place. Work under these three scenarios will be monitored by local stakeholders with the help of GEF and co-financing resources to enable longer-term MRV capacity. At least 3

county carbon monitoring program will be elaborated where the scenarios are implemented. GEF resources will strengthen capacity/provide training to local forestry officials and FUGs to begin monitoring carbon to support national monitoring of avoided emissions from land-use change.

45. Through the implementation of the 100 SFM plans, the project will demonstrate/pilot new certification (CFCS) standards across 30,000 hectares of forestlands. This pilot program will begin with a capacity needs assessment of the participating FMU. The results from this assessment will inform the elaboration of a targeted capacity development program by the respective provincial forest departments to strengthen the knowledge and capacity of at least 100 FMU to meet CNFCC standards and trained in SFM.

Component 3: Knowledge development, education, awareness building, evaluation and dissemination of best practices

46. This component will support the generation of relevant information and make the necessary bridges between the technical assistance and training activities under remaining project components. This will ensure coordination and complementarity between all the interventions supported by the project. Capacity and the knowledge base for forest management and monitoring for stakeholders at all administrative levels will be increased. Stakeholders will have improved access to knowledge and data, strengthened social networks that will enhance capability for achieving sustainable management of Chinese forests. A comprehensive programme of targeted education, awareness building and technology and management outreach campaigns aimed at specific audiences and coordinated with the capacity development activities supported through the previous components will be supported. The technical capacity of national professional staff will be upgraded through on-the-job training, in-country meetings, field visits and study tours. Lessons learned from these experiences will be used to improve training modules and good practice guidance generated by the project.

47. Specific carbon sequestration-related and other research programmes will be designed and implemented through relevant Chinese Academies of Forestry that will support improved forest management, overcome constraints for implementing SFM and for enhancing the resilience of Chinese forests to climate change, namely, in silviculture, ecology, growth & yield, biomass and in wood density. An M&E system established under this component to measure project progress and impacts. Component 4 will fill important capacity, knowledge and awareness gaps that are required to support participatory management of forest ecosystems.

48. Innovativeness, sustainability and potential for scaling up. This project is innovative in that it focuses its SFM and CCM work at the local forest user level to enable a very large scale trend in Chinese forest management – the increasing number of hectares of forestland being given over or given private use rights of ownership in China. This project seeks to enable this trend to generate global benefits for biodiversity and climate change mitigation. The project also takes some manageable risks in search of some innovative results by targeting some pilot work on China’s emerging voluntary carbon market and enable stakeholders to investigate whether and how the voluntary carbon market can benefit small holder forest users in the future and thus provide a meaningful long-term incentive for SFM/carbon sequestration. The project’s baseline project as comprised of the SFA budget and the EC forestry project/loan will be elaborated further under the PPG to facilitate the large scale scaling up of the project’s FMUG-based SFM work to influence at least 30% of the pilot provinces’ plantation forest lands.

A.2 Stakeholders.

Stakeholder Institution	Relevant roles/responsibilities related to project & project preparation
State Forestry Administration (SFA)	Responsible for setting forest management policy and for overseeing forest management across China. Will be the primary executing partner of FAO for this project preparation.
Provincial Forest Departments (PFD)	PFD in the project’s pilot provinces of Henan, Guangxi and Hainan Island are responsible for effective forest management in their province and for executing national policy at the provincial and local levels. They will be key project counterparts under this project and hosts of project preparation consultations.
National Forestry Carbon Sequestration Accounting and Monitoring Center (NFCSA)	Located in SFA’s Academy of Forestry Inventory and Planning, the NFCSA will be a key partner elaborating and implementing the project’s work to strengthen carbon inventory and monitoring at the local and provincial levels in China.
County governments	They play a critical role in hosting the County forest department offices, which operate at the ground level with local communities and forest management user groups.
Local farmers	Under Central government policy, forest land use rights are being handed over to farmers

	across China. Farmers, together with County and Provincial Forest departments, are the main target beneficiaries of this project.
Civil Society Organizations (CSO)	The project will collaborate with CSOs such as the World Wildlife Fund (WWF) and The Nature Conservancy (TNC) on innovative and cutting edge work: with WWF cooperation will relate to High Value Conservation Forest Assessments with respect to the project's work on Forest Certification; with TNC on how the emerging voluntary carbon market Panda Standard may be applied to FMUG lands. The Central Government has recognized both TNC and WWF contributions to environmental work in China.

A.3 Risks.

49. This project presents mainly low risks since forestry development, management and utilization and SFM in particular, are well supported by existing legal frameworks and by strong political will. A number of potential risks have been considered:

Risk	Rating	Mitigation measures
Climate change impacts may increase to the extent that even if the project implements activities to improve forest management it may not be enough to make a significant difference. New threats could emerge, specifically, insect infestations, epidemics or diseases caused by CC.	Medium	<p>The project will introduce and reinforce SFM that is based on sound scientific principles and technologies into participatory forest management culture and practice. It will enable stakeholders, especially forest farmers, to amend and adapt SFM approaches as needed to changing institutional, biophysical and social circumstances.</p> <p>The project will not be designed to respond rigidly to one threat or another – it will seek to put in place processes and methods that will enable stakeholders to adapt SFM practice that can be translated into practical, improved management for any given context defined by any specific threat. Well-managed forest stands will also be healthier and more resilient to climate change.</p> <p>Technical capacity exists in many research academies to address any unforeseen insect infestations/epidemics or diseases that might arise caused by climate change. Research supported by this project will reinforce this capability.</p>
Capacity building at national, local and community level to support new forest management is increasing but may not be sustained at the level of villages to enable forest farmers to understand and apply SFM.	Low	A range of capacity building initiatives are underway at all levels of forest administration in China, driven by firm policies and supported by national and donor-funded programmes. For example, the extensive Sino-German forestry programmes in several provinces have participatory forestry and capacity building objectives aimed at strengthening capability at village and township levels. The project will target capacity building at national, provincial and local levels to strengthen participatory forest management. It will build on practices and principles being applied through such programmes. SFM arrangements will be demonstrated in FMUs in target provinces before being scaled up for replication elsewhere.
Given that stakeholders do not own the land outright in China (the Government does), stakeholders may manage their forest holdings unsustainably, despite the project's best efforts.	Medium	In China, no one owns land outright – all land is owned by the State. Therefore having long-term use rights over land, particularly forest land which is typically on land that is not usable for other development, is about as secure a land-use right as can be had in China. In addition, SFM will be mainstreamed into the stakeholders management plans for their forests, which will obligate them to manage the forest along those parameters as the management plan serves as a basis for their forest use rights. Planning will be done in a participatory way that maximizes benefits, but it is also a priority of the State to see forests managed this way and the “use right” may in part be predicated on this.

A.4 Coordination. Outline the coordination with other relevant GEF financed and other initiatives.

50. This proposed project will be coordinated with a range of ongoing initiatives in China related to forest and biodiversity management. The project preparation team will elaborate a clear coordination/consultation mechanism for this project to learn from the work of relevant GEF financed and other initiatives. Most focus on achieving improved forest management and this project will coordinate with these to achieve outcomes where best operational practices are incorporated into the proposed GEF project's integrated approach. FAO will ensure coordination between and among its growing portfolio of GEF projects in China, many of them being biodiversity conservation related projects. This relates in particular to the nearly completed GEF project *Securing Biodiversity Conservation and Sustainable Use in Huanghsan Municipality* and the FAO-GEF project *Piloting Provincial-level Wetland PA System in Jiangxi Province*. WWF's ongoing work in promoting FSC

forest certification in commercial forests will provide reference to the proposed project (that seek promote forest certification by the FUGs). IUCN, another large NGO, aims to conserve forest biodiversity, reduce illegal logging and promote the sustainable use of forest products for the benefit of the rural poor in China through its Livelihoods and Landscapes Strategy and Forest Law Enforcement and Governance activities. The KfW Development Bank-funded Sino-German Afforestation Projects in North and South China (1998-2018) are being implemented in several provinces including Henan province, which falls under this proposed GEF project. It provides substantial financial and technical assistance under grant and loan arrangements to achieve effective afforestation of formerly barren and unproductive land and sustainable management of undermanaged and underutilized older forest stands. UNDP-GEF projects in China also provide an important body of work with which coordination will also be important. This includes the GEF-funded CBPF-MSL: Strengthening the Management Effectiveness of the Wetland Protected Area System in Hainan for Conservation of Globally Significant Biodiversity (CEO Endorsement March 2013). More specific coordination steps will be worked out during the full project preparation but will likely include organizing biodiversity project meetings at already organized events such as the Ministry of Finance's annual GEF project meeting in China.

B. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

B.1 National strategies and plans or reports and assessments under the relevant conventions.

51. The Peoples Republic of China (PRC) in June 2007 announced a National Climate Change Programme that will be based on sustainable natural resources management, environmental protection, reduction of greenhouse gas emissions and enhancing capacity to adapt to climate change. The project will support the China's policies and actions to cope with climate change through the forestry sector, as stipulated in the Second National Communication on Climate Change submitted to UNFCCC on 8 November 2012. The *Part IV, Chapter 5: Stabilization and Increase of Forest Carbon Sink* of the second national communication specifically refers to the actions to be taken in the forestry sector during China's Twelfth Five-Year Plan (12th FYP: 2011-2015). China's 12th FYP for Forestry Development emphasizes climate change mitigation and carbon storage. The project supports key forestry and climate change mitigation elements of the Energy and Climate Goals of China's 12th FYP, including enlarging forest areas by 12.5 million hectares and forest stock volume by 600 million m³ by 2015. The project will contribute, through piloting the community-based forest carbon monitoring, to the development of a nationally appropriate mitigation actions and MRV, including forest carbon sink monitoring and accounting, which China is obliged to consider under the Bali Action Plan.

52. The National Biodiversity Action Plan (NBAP) for China was approved and commenced in 1994/95. It was revised in 2010 designating 35 priority conservation areas covering 23% of the country. The revised NBAP for the period 2010-2030 comprises eight strategic tasks, 29 actions and 11 safeguarding measures. It aims to increase the area of biodiversity conservation of China from 15% to 18% by 2020. It is a comprehensive plan and includes "a review of the present status of biodiversity in China" (chapter 2), "gap analysis and identification of future conservation priorities" (chapter 3), a "national biodiversity strategy" (chapter 4), a "national biodiversity action plan" (chapter 5) and "measures to ensure compliance with implementation of the national biodiversity action plan and strategy" (chapter 6). Component 2 of the proposed project, Mainstream biodiversity conservation and sustainable use into multi-functional SFM, is consistent with the NBSAP and Strategy. Specifically the expected outcome 2.1 of the proposed project, Provincial, county and forest level stakeholders mainstream sustainable and participatory biodiversity conservation into forest management systems, responds to "Priority Domain 2" of China's NBSAP: "To incorporate biodiversity conservation into sectoral plans and promote sustainable use."

53. China ratified the United Nations Framework Convention on Climate Change in August 2002 and it entered into force in February 2005. China's *National Climate Change Programme* (NCCP) announced in 2007 provides strong, long-term policy support for sustainable natural resources management, including in forestry. The strategic goal for responding to climate change is to control GHG emissions, to enhance the capability for continuous adaptation to climate change, to promote climate-change related research and technology, to raise public awareness on climate change issues and to strengthen institutional arrangements concerning climate change. In addition, the NCCP proposes increased international cooperation, specifically for capacity building.

54. The project supports key elements of China's national "Forestry Action Plan to Address Climate Change." The project is particularly relevant to "*Action 6: Expand area of closing off mountains for natural regeneration and scientifically reform single species plantations*" under the plan's Key Area #3, Sustainable

Forest Management. This baseline priority is what underlines the GEF investment. *Action 6* talks of using natural regeneration in some areas to restore forests by simply fencing off the forestland that is degraded. For farmer household managed forest lands, this will require participatory planning and improved short-term and long-term benefit planning. Action 6 also prioritizes the ecological rehabilitation/transformation of monoculture plantations into more diverse assemblages of forest types and habitats. How to catalyze natural regeneration of some areas and reform of single species plantations at the farmer household level using new kinds of tools forms the basis for this GEF incremental investment.

B.2 GEF focal area and/or fund(s) strategies, eligibility criteria and priorities

55. The project is consistent with the GEF Climate Change (CC) and Biodiversity (BD) Focal Areas strategies and the strategy for the Sustainable Forest Management (SFM)/REDD mechanism. It is aligned with CCM-5 (Promotion of conservation and enhancement of carbon stocks through sustainable management of land use, land-use change and forestry) and proposes several initiatives that strengthen capacity especially at local levels and achieve improved carbon sequestration and storage outcomes through expanded afforestation and improved long-term forest management. An innovative feature is afforestation using long-rotation rare and endangered high-value indigenous tree species. The project is aligned with BD-2 (Mainstream biodiversity conservation and sustainable use into production landscapes/ seascapes and sectors) as it will strengthen policy and regulatory frameworks that delegate responsibilities for production forest management to local communities and create incentives for sustainable forest use and the progressive formation of more species diverse and healthy forest ecosystems. It will enlarge institutional capacity and the knowledge base at national, provincial and local levels to support local user groups and ensure sustainable management of forest resources by incorporating biodiversity valuation in SFM plans for production forests and produce biodiversity-friendly management and harvesting. The project will contribute to the objectives of SFM/REDD-1 (Reduce pressures on forest resources and generate sustainable flows of forest ecosystem services) by strengthening the enabling environment within the forestry sector and across sectors and by introducing good management practices promoting sustainable forest management, avoiding deforestation and will contributing to ecological and social sustainability. It will scale-up innovative and proven participatory forest management practices which enjoy the support of local communities and will lead to improvements in multi-species forest management in project provinces.

B.3 The GEF Agency's comparative advantage for implementing the project

56. One of FAO's strategic goals is the sustainable management of the world's forests. The mandate of the Forestry Department (FD) of FAO is to support member countries to implement SFM by providing policy advice, technical knowledge and reliable information while ensuring that forests and trees contribute to sustainable livelihoods. FAO serves as a neutral forum for policy dialogue, as a reliable source of information on forests and trees and as a provider of expert technical assistance and advice to help countries develop and implement effective national forest programmes. The FAO FD employs about 150 staff including about 10 staff working in the Asia Pacific Region. FAO has a rich and unique experience worldwide designing and implementing with country partners projects to build institutional capacities for forestry, biodiversity and natural resource management and in integrating forest with biodiversity conservation and forest management. In China, FAO has been a trusted partner for many decades. The relationship FAO has built working with Chinese partners is an important element in FAO's comparative advantage, as the proposed GEF project will build on this foundation. FAO has also significant experience in climate change mitigation and recently developed Ex-Act, a software system to monitor carbon impact of projects of this type. Finally, FAO will bring to this project its global knowledge of best practices gained through its numerous technical programmes and field projects in SFM.

57. As one of the three partner agencies of the UN-REDD Programme, FAO leads the work stream on National Forest Monitoring Systems and on Monitoring, Reporting and Verification of carbon stocks and GHG emissions from the LULUCF sector. FAO's strong reputation, its capacity to deploy expertise and implement activities in developing countries, as well as its renown technical expertise in the field of forestry, particularly for the assessment and monitoring of forest resources, makes it the most reliable and reputable partner for the development and implementation of national forest monitoring and MRV systems for REDD+, both at the national and sub-national level. To support REDD+ readiness in developing countries, FAO relies on a team of over 20 experts specialized in each of the essential elements required for NFMS and MRV system development, including national forest inventories, remote sensing technologies, geographic information systems, GHG inventories, as well as IPCC and UNFCCC guidelines. The team currently supports over 40 countries globally in the planning and deployment of NFMS and MRV systems.


58. FAO as a UN agency is supporting a range of land management initiatives in China and has supported the forestry sector in the past in the definition of criteria and indicators for sustainable forest management. FAO will be responsible for technical support and overall management and financial supervision of project implementation. The project will be supervised technically by the Senior Forestry Officer based in the Bangkok, working closely with the FAO Country Office in China and with technical support from forest officers in FAO Headquarters. The Senior Forestry Officer will be the Lead Technical Officer (LTO) for FAO on this project. The LTO's job will be to ensure adequate technical support for project implementation and to provide technical support throughout preparation and implementation of the project. The project will also be guided and supported by a multidisciplinary Project Task Force that will be established in FAO and the FAO-GEF coordination Unit in the Investment Center Division in FAO headquarter in Rome.

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 Operational Focal Points endorsement letter(s) with this template. For SGP, use this OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE (MM/DD/YYYY)
Ms. Jiandi Ye	Director, IFI Division III, International Department	MINISTRY OF FINANCE	SEPTEMBER 12, 2012

B. GEF AGENCY CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for project identification and preparation.					
Agency Coordinator, Agency name	Signature	Date (MM/DD/YYYY)	Project Contact Person	Telephone	Email Address
Laurent Thomas Officer-in-Charge Investment Centre Division Technical Cooperation Department FAO Viale delle Terme di Caracalla (00153) Rome, Italy TCI-Director@fao.org		April 5, 2013	Jeffrey Griffin Environment Officer TCIO FAO Rome	+3906 5705 5680	Jeffrey.Griffin@fa o.org
Barbara Cooney FAO GEF Coordinator Email:Barbara.Cooney@fao.org Tel: +3906 5705 5478					

Annex: Carbon Calculations.

Scenario_1

[1]	Forest Baseline Age	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
[2]	Biomass Volume (t/ha)[Zhao & Zhou, 2005]	123.2913	126.04315	128.667	131.1741	133.5746	135.877	138.0892	140.2178	142.269	144.2482	146.1603	148.0097	149.8004	151.536	153.2198
[3]	Biomass Expansion Factor [from Brown, 1997]	2.174585	2.1504306	2.128128	2.107448	2.088199	2.070219	2.053371	2.037538	2.02262	2.00853	1.995191	1.982537	1.97051	1.959057	1.948134
[4]	ABG (= [2]*[3])	268.1074	271.04705	273.8198	276.4427	278.9303	281.2952	283.5483	285.6991	287.7562	289.7268	291.6178	293.4348	295.1832	296.8677	298.4927
[5]	Carbon Factor (IPCC 2006)	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
[6]	Carbon(t/ha)=[4]*[5]	126.0105	127.39211	128.6953	129.9281	131.0973	132.2087	133.2677	134.2786	135.2454	136.1716	137.0603	137.9143	138.7361	139.5278	140.2916
[7]	Reforested Area (=15000 ha)	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000
[8]	Total_Carbon (= [6]*[7])	1890157	1910881.7	1930430	1948921	1966459	1983131	1999015	2014179	2028681	2042574	2055905	2068715	2081042	2092918	2104374
[9]	20% Total_Carbon [Forest was 80% degraded]	378031.4	382176.34	386086	389784.3	393291.8	396626.2	399803.1	402835.8	405736.2	408514.9	411181	413743	416208.3	418583.5	420874.7
[1]	Project Age (years)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
[2]	Biomass Volume (t/ha)[Zhao & Zhou, 2005]	0	0	16.28993	32.51577	45.10152	55.38482	64.07922	71.61066	78.25386	84.1964	89.57209	94.4797	98.99427	103.1741	107.0654
[3]	Biomass Expansion Factor [from Brown, 1997]	0	0	6.055598	4.268434	3.617158	3.260112	3.028233	2.862658	2.736997	2.637483	2.556164	2.488095	2.430018	2.379695	2.335531
[4]	ABG (= [2]*[3])	0	0	98.64527	138.7914	163.1393	180.5607	194.0468	204.9968	214.1805	222.0666	228.961	235.0744	240.5579	245.523	250.0547
[5]	Carbon Factor (IPCC 2006)	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
[6]	Carbon(t/ha)=[4]*[5]	0	0	46.36328	65.23197	76.67547	84.86352	91.202	96.34851	100.6649	104.3713	107.6117	110.485	113.0622	115.3958	117.5257
[7]	Reforested Area (=15000 ha)	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000
[8]	Total_Carbon (= [6]*[7])	0	0	695449.2	978479.6	1150132	1272953	1368030	1445228	1509973	1565569	1614175	1657275	1695933	1730937	1762885
[9]	80% Total_Carbon	0	0	556359.3	782783.7	920105.7	1018362	1094424	1156182	1207978	1252455	1291340	1325820	1356746	1384750	1410308
[10]	Degradation(=5% of [9])	18901.57	19108.817	19304.3	19489.21	19664.59	19831.31	19990.15	20141.79	20286.81	20425.74	20559.05	20687.15	20810.42	20929.18	21043.74
[11]	Sequestered Carbon(=[9]-[10])	-18901.6	-19108.82	53705.5	763294.5	900441.1	998530.9	1074434	1136040	1187691	1232030	1270781	1305133	1335936	1363820	1389265
[12]	Sequestration Project Period[1-6yrs]	Carbon	CO2eQ													
[13]	Sequestration Post-Project Period[7-15yrs]	3161311	11591474													
		12707770	46595156													

Scenario 2:															
Tot_Carbon (Baseline) (tonnes Carbon or tC)	1651287	1684964	1717347	1748510	1778517	1807428	1835296	1862167	1888086	1913092	1937222	1960507	1982980	2004666	2025593
Replacement (Project) (tC)	0	0	115900	278975	470675	682825	94224	229453	395373	586558	799498	1031670	1098116	1159753	1217325
Baseline Sequestration (tC)	0.0	33677.0	32383.1	31162.6	30007.4	28910.9	27867.3	26871.5	25919.1	25006.2	24129.4	23285.6	22472.2	21686.7	20927.0
Harvesting (tC)	378025	394925	398950	402775	406400	409850	0	0	0	0	0	0	0	0	0
Net Sequestration (tC)	-378025	-428602	-315433	-154963	34268	244064	66357	202581	369454	561552	775369	1008384	1075644	1138066	1196398
	Carbon	CO2e													
Sequestration Project Period[1-6yrs]	-998691	-3661867													
Sequestration Post-Project Period[7-15yrs]	12755632	46770652													

Scenario 3															
Stand Age(yrs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Biomass Volume (t/ha)[Zhao & Zhou, 2005]	3.5801	7.1302	10.6503	14.1404	17.6005	21.0306	24.4307	27.8008	31.1409	34.451	37.7311	40.9812	44.2013	47.3914	50.5515
Biomass Expansion Factor [from Brown, 1997]	0	0	7.508325	6.505109	5.823077	5.321392	4.93279	4.620566	4.362773	4.145377	3.958934	3.796823	3.654248	3.52764	3.414277
Above Ground Biomass (t/ha)	0	0	79.96592	91.98484	102.4891	111.9121	120.5115	128.4554	135.8607	142.8124	149.3749	155.5984	161.5225	167.1798	172.5968
Carbon Factor (CF)	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
Carbon density (t/ha)	0	0	37.58398	43.23287	48.16986	52.59867	56.64041	60.37405	63.85452	67.12182	70.20622	73.13123	75.91558	78.5745	81.12051
Forest Area (ha)	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
Total Carbon Sequestration	0	0	375839.8	432328.7	481698.6	525986.7	566404.1	603740.5	638545.2	671218.2	702062.2	731312.3	759155.8	785745	811205.1
	Carbon	CO2e													
Sequestration Project Period[1-6yrs]	1815854	6658131													
Sequestration Post-Project Period[7-15yrs]	7105029	26051774													

Brown, S. 1997. Estimating biomass and biomass change of tropical forests: a primer. FAO Forestry Papers 134, 55

pp. Rome, Italy, FAO.

Zhao M. & Zhou G-S 2005. Estimation of biomass and net primary productivity of major planted forests in China based on forest inventory data. Forest Ecol & Mgt 207: 295-313.