PROJECT BRIEF

PROJECT IDENTIFICATION

Project Number:	
Title of Project:	Nature Conservation and Flood Control in the Yangtze River Basin
Duration of Project:	Five years
Implementing Agency:	United Nations Environment Programme (UNEP)
Executing Agency:	State Environmental Protection Administration (SEPA)
Requesting Country:	China
Eligibility:	China is eligible under paragraph 9 (b) of the GEF Instrument. China ratified the Convention on Biological Diversity in January 1993, the UN Convention on Climate Change in January 1993, and the UN Convention to Combat Desertification in February 1997
GEF Focal Area(s):	OP12. Global benefits under BD, CC, and SLM
GEF Programming Framework:	OP12: Integrated Ecosystem Management. Priority on IEM 4(b), BD strategic priorities I and II, CC strategic priority S4, and SLM priority I identified in Strategic Business Planning: Direction and Targets.

Project Summary:

As part of its efforts to reduce floods in the Yangtze River basin, the Government of China (GOC) is implementing a series of soil and vegetation conservation programs in the upper Yangtze River basin. In an effort to further increase the benefits of these measures, the GOC plans to implement an Ecosystem Function Conservation Areas (EFCAs) program, that will not only increase water retention capacity and reduce sediment loads, but will also provide global benefits in biodiversity, carbon sequestration, sustainable land management and Integrated Ecosystem Management (IEM) in the upper Yangtze River basin. The GOC is most interested in participatory IEM as a sustainable mechanism to help reduce poverty and balance the various environmental benefits and costs. The project uses the incremental cost approach to help the GOC set up a system of EFCAs with multiple environmental benefits in the upper basin of the Yangtze River. The main objectives include: (i) To complement national efforts to design a system of EFCAs ensuring the protection of global environmental values; (ii) To establish a management-oriented monitoring and early warning system to detect gains and losses of ecosystem functions in EFCAs and protected areas; and (iii) To help establish two demonstration sites showing how EFCAs can actually work and interact with the monitoring and early warning system. The two demonstration sites will also show how to alleviate poverty, increase water retention capacity and reduce sediment loads, coordinate sector programs, protect biodiversity, and increase carbon gains in an integrated manner. In each province where a demonstration site is located, a committee with representation from all major stakeholders, which is presided by the provincial government will coordinate all activities in the EFCAs. The GOC will replicate project results throughout the upper basin of the Yangtze River in the future, based on the results of the demonstration activities.

Costs and Financing (Million US $):

GEF:	-Project:	$3.65 M
	-PDF:	$0.35 M
	Subtotal GEF:	*$4.00 M*
Co-financing (PDF-B):-IA:		$0.12 M (UNEP)
	- Other International	$0.02 M (UN-HABITAT)
	- Government	$0.06 M (GOC)
Co-financing (FP) - IA		$0.25 M (UNEP)
	-Other International:	$2.49 M (TNC)
	-Government:	$20.01 M (GOC)
	Subtotal Co-financing:	*$22.95 M*
Total Project Cost:		**$26.95 M**
Baseline:		$14.70M

Associated Financing (Million US $): $9,289.49 M (GOC investment on flood control, soil, water and vegetation conservation measures in the upper Yangtze River Basin)

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LIST OF ACRONYMS

ADB	Asian Development Bank
AL	Alternative Livelihood
APR	Annual Project Report
BD	Biodiversity
CAS	Chinese Academy of Sciences
CC	Climate Change
CI	Conservation International
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CRAES	Chinese Research Academy of Environmental Sciences
DEPI	Division of Environmental Policy Implementation (of UNEP)
DROC	Divisional Review and Oversight Committee (of UNEP)
EFC	Ecosystem Function Conservation
EFCA	Ecosystem Function Conservation Area
EPB	Environmental Protection Bureau
FC	Function Conservation
FECO	Foreign Economic Cooperation Office (of SEPA)
FSG	Field Survey Group
GEF	Global Environment Facility
GIS	Geographical Information System
GOC	Government of China
GPS	Global Positioning System
IA	Implementing Agency
IC	Incremental Cost
ICIMOD	International Center for Integrated Mountain Development
ICO	Inter-ministry Coordination Office
IDRC	International Development Research Center
IEM	Integrated Ecosystem Management
IEMCC	Integrated Ecosystem Management and Conservation Committee
IUCN	The World Conservation Union
LSC	Local Steering Committee
MEWS	Monitoring and Early Warning System
MLR	Ministry of Land and Resources
MOA	Ministry of Agriculture
MOC	Ministry of Construction
MOF	Ministry of Finance
MSP	Medium-sized Project
MWR	Ministry of Water Resources
NDRC	National Development and Reform Commission
NFPP	Natural Forest Protection Program
NGO	Non-Governmental Organization
NPD	National Project Director
OP12	Operational Program number 12

PA	Protected Area
PDF-B	Project Development Facility-Block B
PIR	Project Implementation Review
PLEC	People, Land Management and Environmental Change
PMO	Project Management Office
PMU	Project Management Unit
PRC	People's Republic of China
PSC	Project Steering Committee
RS	Remote Sensing
SAG	Science Advisory Group
SC	Steering Committee
SDC	Swiss Development Corporation
SEPA	State Environmental Protection Administration
SFA	State Forestry Administration
SICP	Sino-Italian Cooperation Program for Environmental Protection
SLM	Sustainable Land Management
SNS	Sacred Natural Site
TNC	The Nature Conservancy
TPR	Tripartite Project Review
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UN-HABITAT	United Nations Human Settlement Programme
WB	World Bank
WWF	World Wide Fund for Nature
YPFP	Yangtze Protection Forest Program
YRWRC	Yangtze River Water Resource Commission

TABLE OF CONTENTS

LIST OF ANNEXES

SECTION I. BACKGROUND AND CONTEXT

1.1 Yangtze River floods and ecosystem conservation

1. The Yangtze River is the largest river in China, with the total length of 6,300 kilometers and a drainage area of 1.8 million km^2. Over 400 million people live in the Yangtze River basin. Water discharge by the Yangtze River amounts to about 960 billion cubic meters per annum, and has significant impacts on the environment of the East China Sea.

2. One third of the total Chinese population lives in the Yangtze River Basin, and the Basin's economic activities contribute significantly to the country's GDP. Population density in the basin is about 220 people/km^2. The basin is the economic center of China, and one of the most developed areas in terms of agriculture, fishery, industry, and transportation. The basin has 23.3 million ha of arable land, which is about 24.3% of China's total. Agricultural output from the region amounts to about 32% of China's total agricultural production and about 35% of the total grain production. Major agricultural products include rice, cotton, sesame, fiber, tea, and tobacco. Tai Lake, Dongting Lake, Poyang Lake and the Jianghan Lake Group are nationally important fishery grounds.

3. The catastrophic 1998 Yangtze River floods caused severe damage to human life, property and the natural environment. 1,075 dykes burst, submerged an area of 3,210 km^2 and affected 2.29 million people. The floods caused direct economic loss of about US$20 billion and the deaths of 1,562 people living in the middle and lower reaches of the basin. The 1998 floods were not isolated events and it is apparent that the scale and frequency of Yangtze River floods have reached the level where sustainable development of the basin is threatened.

4. Persistent rain was the direct cause of the 1998 floods. About 70% of the maximum discharge during the 30-day flood period arrived at the Hankou station (middle Yangtze reach) came from the upper reaches of the Yangtze River. Therefore, water retention capacity and soil conservation in the upper Yangtze basin are of significance to mitigate the threat of flood to middle and lower reaches of the Yangtze River. The Report of the UNEP Scoping Mission to the Yangtze River Basin, in January 1999, pointed out three main ecological causes exacerbating the phenomenon: (i) sharp decline in water retention capacity of forests and grasslands due to deforestation and overgrazing; (ii) decrease in water storage capacity in the middle and lower reaches of the Yangtze River due to loss of lakes and wetlands; and (iii) siltation of the rivers and loss of wetlands in the Yangtze River basin. The report encouraged the GOC to implement ecologically sound management of the upper Yangtze River basin.

5. The following table describes the general situation in the upper Yangtze River basin:

Land Use Type	**Upper Basin**
Size of Region	100.0 million ha.
Population	153.1 million
Forest	34.30 million ha.
Grassland	32.57 million ha.
Cropland	15.15 million ha.
Water bodies	2.18 million ha.
Residential areas, roads and mining areas	2.49 million ha.
Land not suitable for human use	1.83 million ha.
Unused land	11.48 million ha.

6. The catastrophic 1998 floods of the Yangtze River system prompted the Government of China (GOC) to formulate a set of guiding principles for flood control and damage mitigation. These guidelines recommended several measures, including logging bans, re-conversion of cleared lands to forests, prohibition of cultivation on steep slopes, re-conversion of reclaimed agricultural lands to wetlands, relocation of populations living in vulnerable areas, strengthening of river banks, and dredging of river channels.

7. Provincial governments responded to central government instructions by taking swift actions. For example, Sichuan Province introduced a logging ban on natural forests in September 1998, and transformed the activities of logging companies into afforestation, and trained loggers on tree planting and forest ranching. Yunnan Province forbade commercial logging in the Jinsha River Valley in October 1998. By 2000, there was almost no commercial use of timber in natural forest protection areas.

8. In October 1999, Sichuan Province implemented a program to convert cultivated areas on steep slopes into forest/grass lands, and to compensate affected farmers. It achieved its conversion target of two thousand km^2 within a year.

9. The National Peoples' Congress approved the Western Development Strategy in early 2000, including restrictions on the use of steep slopes.

10. The GOC gave high priority to rehabilitation and conservation of natural ecosystems in the upper and middle basins of the Yangtze River. Nature conservation in this region has never received as much attention and support as it does today. The GOC is now planning to invest about $9.29 billion in the next five years in the upper Yangtze River basin. These resources, paying for rehabilitation and restoration measures, will be sector-based and led by the various ministries (MLR, MWR, MOC, MOA, SFA, SEPA, etc.). Part of these rehabilitation and restoration efforts form the baseline of investments that this project will build upon to achieve global environmental benefits.

11. It is important to note that the degradation of the environment of the catchment,

caused by cultivation on steep slope, deforestation, soil erosion and wetland reclamation, is closely associated with the socio-economic conditions of the local communities. The upper Yangtze basin is characterized by high population pressure and limited land suitable for cultivation. In 2000, per capita farmland in the upper basin was 0.049 ha, which was lower than the Chinese average of 0.084 ha. In 1999, the GDP per capita was approximately 4,100 Chinese *yuan* (approximately US$500), which is about 67% of the national average. In mountain areas, such as the Wujiang River basin, annual GDP per capita does not exceed 2,207 *yuan*. In addition to limited economic productivity, energy supply in the upper basin is limited. Of 78 counties in the hilly and low mountain areas in the upper basin, 60 counties lack in sufficient firewood, which accounts for approximately 80% of the total energy consumption.

1.2 Ecosystem Function Conservation Areas

12. The GOC is willing to pioneer an integrated ecosystem management approach for flood control, which aims at poverty alleviation and at achieving global environmental benefits. Such an approach goes beyond the traditional sector-based method of flood control. The GOC believes it can arrest land degradation by integrating ecosystem management with the elimination of threats to ecosystem integrity and their root causes. This desire of the GOC to go beyond a traditional sector-based approach is the entry point for the GEF project. The GOC seeks GEF support to a series of critical steps leading to the establishment of integrated ecosystem management and demonstration of how to use it to control floods and sediments, conserve biodiversity, and sequester and reduce emission of carbon.

13. The 1998 floods can also be seen as aggravated by a decline of key "ecosystem functions" in the basin. The definition of the term "ecosystem functions" encompasses important ecosystem attributes for the maintenance of a sound ecological balance, ensuring regional environmental safety and provision of services to people. These functions include water retention, water purification, sediment control, carbon sequestration, nutrient cycling, biodiversity maintenance, etc. From a flood control perspective, the most important ecosystem functions are water and soil retention. Major government interventions have addressed rehabilitating and strengthening these functions. For example, the GOC recently developed a plan for the use of water resources and a general plan to control floods.

14. The goal of this project is to establish and demonstrate integrated ecosystem management systems of a rich set of ecosystem functions, including those associated with global environmental values.

15. The project will target "Ecosystem Function Conservation Areas (EFCAs)", as defined by the GOC. The National Ecological Conservation Guidelines developed by the State Environmental Protection Administration (SEPA) together with other related ministries/administrations and approved by the State Council at the end of November 2000, provide EFCA details. EFCAs have the goal of maintaining/restoring sound ecological balances and ensure environmental safety. The GOC will establish EFCAs in important headwater areas, natural areas essential for flood control, soil conservation areas, critical areas to prevent damage caused by hurricanes, and vulnerable coastal ecological regions. In essence, EFCAs will

conserve/restore key ecosystem functions helping prevent natural disasters, such as floods.

16. The EFCA is a new conservation instrument in China. According to the EFCA principles, the EFCAs can prohibit activities detrimental to key ecosystem functions, and address population growth exceeding the local carrying capacity, and unsustainable production. The EFCAs principles, at the same time, indicate that the EFCAs objective is not to eliminate human activities altogether, but to encourage and promote environmentally friendly activities essential to poverty alleviation and sustainable development. There are, however, technical challenges for the effective implementation of EFCAs, such as management strategies to ensure the integrity of key ecosystem functions, types and scope of human activities, and identifying capacity building needs for effective management of EFCAs.

17. The State Council of China approved the National Tenth Five-Year Plan for Environmental Protection, covering the period of 2001-2005, in December 2001. The Plan includes as major conservation activities establishment of 15 national as well as 40 provincial-level EFCAs. The Plan gives high priority to headwater areas and critical wetlands in the middle and upper basins of the Yangtze River, and commits $240.24 million to their establishment. In addition, SEPA is planning to conduct a study on the geographical distribution of ecological functions in 12 western provinces/municipalities. The study will be essential to identifying the location of critical EFCAs.

18. Before embarking on this large-scale study, SEPA envisages to conduct a smaller-scale assessment with GEF support in the upper basin of the Yangtze River. SEPA will use lessons learned and experiences from this sub-basin level assessment in future broader EFCAs identification. Developing methodologies to assess the possible location of future EFCAs is therefore an essential component of this project. The other components relate to management-oriented monitoring of ecological functions and an early warning system in EFCAs, and the establishment of two demonstration sites as conservation/restoration of ecosystem functions.

1.3 Linkages to the other national programs and action plans

19. China has increasingly recognized the importance of addressing the nationally and globally significant environment in the Yangtze River basin by establishing a number of nature reserves. In Sichuan Province alone, a total of 97 forest, wildlife, and wetland nature reserves have been established. The areas contained in these nature reserves amount to 13.0% of the province. In Yunnan Province, on the other hand, there are 146 reserves, covering about 7.3% of the province.

20. Several nature reserves in the basin have international importance and are included in UNESCO's "Man and Biosphere" reserve network, or identified as the World Nature Heritage Sites or the Ramsar wetlands. Wild Animal Reserves such as Wolong, Tangjia River, Wanglang, Jiuzhaigou, Huanglong Temple, and wetland nature reserves, such as Poyang Lake, and Dongting Lake are among the better known. Most of the 17 existing panda nature reserves are located in the mountain areas of the Yangtze River basin.

21. China developed its Biodiversity Action Plan in 1994. The Plan sets out goals and objectives directly related to the upper and middle reaches of the Yangtze River. The Plan advocates, *inter alia*, adoption of forestry practices consistent with biodiversity conservation, protection of major habitats outside nature reserves, and strict conservation of grasslands and wetlands. The 1998 China National Report on Implementation of the Convention on Biological Diversity also listed the upper and middle reaches of the Yangtze River basin among priority conservation areas.

22. The State Council issued, in 1998, the National Ecological Construction Plan that identified the upper basin of the Yangtze River as key to conservation, with focus on deforestation, land degradation, desertification, and loss of biodiversity.

23. The China National Climate Change Committee and China Meteorological Administration drafted a set of guidelines for climate change planning (2001-2010). The guidelines clearly stated that the GOC would strengthen its capacity to monitor and mitigate climate change in the upper basin of the Yangtze River. The GOC has made and will continue to make significant efforts to control CO_2 emission and increase carbon sequestration in this area as one of the critical targets of these efforts.

24. The China National Action Program to Combat Desertification (1996) focuses on arid and semi-arid environments. The headwater areas of the Yangtze River belong to such environment. The Yangtze project will contribute to achieving the target set for rehabilitation of degraded rangeland and forest areas for the second phase (2001-2010) of the implementation of the National Action Program.

1.4 Linkages to other GEF-funded projects and IA program

25. The UNEP/GEF project on People, Land Management, and Environmental Change (PLEC) included in its project scope, a focus on developing participatory models for sustainable land management in two locations in Yunnan Province (Xishuanbanna and Gaoligongshan). Although these two sties are outside the Yangtze basin, the SLM models developed and tested at the PLEC sites hold potential for replication and upscaling in the upper Yangtze basin. UNEP and ADB are implementing a GEF MSP on Prevention and Control of Dust and Sandstorms in Northeast Asia, which will generate a monitoring and early warning system for land degradation related pressures, which could be used as a model for the monitoring component of the Yangtze project.

26. The WB/GEF Sustainable Forestry Development Project, Protected Areas Management Component substantially acts on 13 nature reserves for biodiversity conservation purpose. The UNDP/GEF supported project - Wetland Biodiversity Conservation and Sustainable Use supports conservation and the sustainable use of wetlands at four demonstration sites. The above projects are located outside the Yangtze River basin, but will provide important lessons for implementation of the Yangtze project.

27. The WB/GEF Lake Dianchi Aquatic Biodiversity Restoration MSP will restore and manage habitats around the lake in order to secure the conservation of the remaining endemic species of Lake Dianchi and its immediate tributaries. UNDP also initiated a

medium-sized project entitled "Multi-Agency and Local Participatory Cooperation in Biodiversity Conservation in Yunnan Upland's Ecosystem" with its focus on the upland biodiversity of Wuliangshan (Yunnan Province). This project will seek lessons that may be useful during the execution of the upper Yangtze initiative.

28. In 1999, the GOC requested ADB to take the lead in preparing a China/GEF Partnership on land degradation and desertification. The ADB Partnership will take place in the dryland of northwestern China, which is climatically and biologically different from the Yangtze River basin, and in a different administrative and socio-economic context. The Yangtze River basin is much richer in biodiversity than the northwest. Threats to the environment differ in the two regions: logging and erosion in the Yangtze basin and salinization and "sandification" in the northwest. Moreover, the overall target of the ADB effort is capacity building and land management, whereas the goals of this project are flood and sediment control through integrated ecosystem management, also incorporating global environmental benefits. Implementation of the ADB lead initiative will, however, provide important lessons for integrated ecosystem management and this project will coordinate closely with it.

29. During the project preparation, consultations were conducted with the World Bank, UNDP and Asian Development Bank through a series of PDF-B Steering Committee meetings. It was concluded that possible multiple linkages between this project and the above-mentioned initiatives would be sought and that WB, UNDP and ADB would be invited to the Steering Committee to ensure synergies and avoid overlaps.

30. The proposed project was developed based on UNEP's support for the GOC in addressing the underlying environmental causes of floods, which were identified in the UNEP scoping mission report prepared immediately after the 1998 Yangtze floods. UNEP also organized in 2000 a series of training workshops on mountain ecosystems, wetland management and renewable energy, which provided a basis for the Yangtze project. UNEP Disaster Management Programme continues to provide technical input based on the vulnerability assessment conducted in the Yangtze River basin.

31. UNEP's China Country Work Programme (2004-2005) accords programmatic priorities to environmental law development and implementation, environmental education and awareness raising, environmental assessment and early warning, environmental capacity building, cleaner production, and environmental emergency prevention and response. The Work Programme further gives a priority to the implementation of the GEF Yangtze project, as it contributes to the programmatic priorities the Work Programme is giving. The implementation of the present project will be coordinated through the UNEP China office under its overall program to support the GOC and to coordinate the implementation of the Country Work Programme, in order to ensure smooth coordination with the GOC.

1.5 Global environmental values in the upper basin of the Yangtze River

32. **a) Carbon sequestration**. The Yangtze River basin has great potential of sequestering greenhouse gases. Reforestation and conservation of ecosystems in the basin will contribute to the net reduction of greenhouse gas emissions from China.

Under the assumption that 1 m^3 of standing wood can sequester about 350kg/year of carbon and the average productivity of forests in the upper basin is 6t/ha/a, a total carbon sequestration in the 47.7 million hectare of forests in the upper basin may reach up to 222.6 million tons/year. The planned reforestation and restoration programs in the upper basin (7.1 million ha) can be expected to sequester another 192.3 million tons of carbon in the next 10 years. Under this project, additional reforestation and improved land management will be needed in the two demo sites, illustrating how to sequester carbon and reduce emissions. Carbon sequestration by soils is yet to be evaluated, but increase in the sequestration amount is possible through improved land management.

33. **b) Biodiversity values**. The Yangtze River basin ecosystems have unique and rich species assemblages, various habitats and enormous productivity. They are among the most biodiversity-rich areas in China. Its middle and upper reaches are one of the Global 200 Sites (WWF) and one of the Hot Spots of global biodiversity (Conservation International). Of the eleven most critical terrestrial regions for biodiversity conservation in China identified by the China's Biodiversity Country Study (February 1998), four are at least partly located in the upper and middle parts of the Yangtze River basin. These four regions were included in the China Biodiversity Action Plan as critical areas of conservation. They are the Qinghai-Tibet plateau, the southern part of Hengduan Shan, the northern part of Hengduan Shan, and the mountain region between Guizhou and Sichuan.

34. According to presently incomplete statistics, there are more than 10,000 species (240 families and 1600 genera) of higher plants and 1,300 species of mosses and lichens living in this region, including 84 endangered species under protection with national level priority. Scientists have recorded more than 5,000 species of medicinal plants and other economically valuable plants in the region, and more than a thousand vertebrate species. Ten percent of these fall in the endangered species list with national level priority.

35. Protected plant species include: *Cystiathyrium chinensi, Sorolepidium glaciale, Ginkgo biloba, Taxus chinensis, Taxus chinensis var. mairei, Davidia involucrata, Davidia involucrata var. vilmoriniana, Kingdonia uniflora, Cupressus chengiana, Larix mastersiana, Picea complanata, Aecr catalpifolium, Cercidiphyllum japonicum, Eucommia ulmoides, Cinnamomum longipaniculatum, Cinnamomum camphora, Phlebe zhennan, Glycine soja, Magnolia officinalis, Magnolia sinensis, Magnolia wilsonii, Tetracentron sinense, Toona ciliate, Cercaeaster agrestis, Emmenopterys henryi, Pterostyrax psilophyllus, Torreya fargesii, Cordyceps sinensis, Magnolia sargentiana, Lindera tienchuanensis, Cinnamomum mairei, Dipteronia sinensis, Picea brachytyla, Prunus grayana, Salix magnifica, Dysosma versipellis, Rododendron rex, Gastrodia elata, Syringa pinnatifolia, Euptelea pleiospermum, Coptis chinensis, Tapiscia sinensis, Sinopodophyllum emodi,* etc. Vertebrate species listed in the CITES include, but not limited to: *Ailuropoda melanoleuca, Rhinopithecus roxellanae, Neofelis nebulosa, Panthera uncial, Panthera pardus, Panthera tigris, Equus kiang, Cervus albirostris, Budorcas taxicolor, Ailurus fulgens, Macaca arctoides, Macaca mulatto, Felis temmincki, Felis lynx, Ursus arctos pruinosus, Selenarctos thibetanus, Moschus berzovskii, Moschus sifanicus, Capricornis sumatraensis, Naemorhedus goral, Ovis ammon, Cuon alpinus, Lutra spp., Prionodon pardicolor, Felis bengalensis,* etc.

36. The project area has rich aquatic biodiversity as well. The river and its associated wetlands are the habitats of: *Andrias davidianus*, *Myxocyprinus asiaticus*, *Hucho bleekeri*, *Acipenser dabryanus*, and *Psephurus gladius*.

37. Endangered bird species include: *Nipponia nippon*, *Anser albifrons*, *Aix galericulata*, *Aquila chrysaetos*, *Haliaeetus leucoryphus*, *Gypaetus barbatus*, *Falconidae spp.*, *Tetraophasis obscurus*, *Ithaginis cruentus*, *Lophophorus spp.*, *Crossoptilon crossoptilon*, *Pucrasia macrolopha*, *Syrmaticus reevesii*, *Grus grus*, *Grus nigricollis*, *Bubo bubo*, and *Tyto capensis*.

38. The Protected Areas (PAs) in China are designated at different administrative levels: national, provincial and local governments. In Sichuan Province, for example, there are 97 PAs, of which 13 are administratively and financially managed by provincial ministries, 54 managed by the provincial government and 30 managed by local governments. In Yunnan Province there are 146 PAs. Many PAs are managed by forestry department, but others are managed by environmental protection department. The GOC recognizes that, despite the number of PAs, management efficiency of PAs needs to be reviewed to meet the needs of effective biodiversity conservation.

39. **c) Sustainable land management.** The upper basin of the Yangtze River has rich land resources due to its diverse ecosystems. The project area has suffered from land degradation in recent years from the perspectives of both sustainable ecological productivity and native biological richness because of cultivation on steep slopes, overgrazing and irrational forestry activities. The GOC is now paying close attention to land degradation in the area and has earmarked on significant funds for relevant projects, such as the Natural Forest Protection Program and Farm-to-Forest Program. Under this project, root causes of land degradation will be addressed by mainstreaming existing relevant efforts by related government departments to improve both livelihoods and economic well-being of local people and to preserve or restore ecosystem integrity, stability, functions, and services in the two demo sites through scientifically sound and integrated approaches.

40. **d) Ecosystem integrity**. Main vegetation types in the upper basin of the Yangtze River include subtropical evergreen broad-leafed forests, subtropical evergreen broad leafed and deciduous broad-leafed forests, subtropical coniferous forests, grasslands and wetlands. The rich array of ecosystems in the upper basin (see in Annex G details about ecosystems in the two demonstration sites) are in danger of degradation and desertification associated with mismanagement and unsustainable land use practices. Ecosystem services, such as water and soil conservation, carbon sequestration, biodiversity conservation, nutrient cycling, and pollution control are at risk without adopting an integrated ecosystem management approach. The global community needs to give urgent attention to these areas in order to prevent further degradation of important ecosystem values.

1.6 Threats to ecosystem integrity and their root causes

41. Despite the national and global importance of natural ecosystems in the upper basin of the Yangtze River, the area has suffered from serious degradation for decades. The localized threats to the upper basin of the Yangtze River result from mismanagement

of natural resources. The threats include:

42. *Deforestation*. Unregulated development of croplands, logging, and fuelwood collection, has lead to forest loss, habitat fragmentation, and reduction of soil and water retention capacity. Deforestation had been a continuing trend in China for a hundred of years until the logging ban in 1998. Statistics in the 1940s showed that average forest coverage was about 30% in the upper basin, while in mountains of western Sichuan and northern Yunnan, forest cover was more than 50% at that time. Exacerbated deforestation at the expense of natural forests has been prevalent since mid 1960s. In 1970s, average forest cover of the upper basin decreased to 10%, and forest cover was less than 5% in places with dense population, such as Sichuan Basin and Yunnan-Guizhou Plateau. Statistics from 1999 showed forest cover had increased in the upper basin since the 1970s. However, in dry valleys and limestone areas in northern Yunnan and western Sichuan, it is difficult to reforest with deforestation worsening.

43. *Grassland degradation through overgrazing*. Grassland degradation in the upper basin leads to decreased coverage and declining biomass production. In the headwater areas, grasslands with less than 60% grass cover account for 25% of the total available grasslands, while grasslands with less than 5% grass cover account for 15%. Average edible herb productivity of grasslands in the headwater areas fell from 1,200 kg/ha in the 1950s to 690 kg/ha in the 1990s. Furthermore, desertification is in progress in some part of the upper basin due to grassland degradation. For example, desertification is expanding at a rate of 3,300 ha/year in Aba prefecture of northwestern Sichuan, and 1.9 million ha of grassland in Qinghai Province has been deserted.

44. *Soil erosion*. Cultivation on steep slopes and vegetation degradation have lead to soil erosion, increase in flood frequency and damage to the social economy. Ecologically damaging human activities, such as deforestation and overgrazing have caused serious soil erosion in the upper reaches of the Yangtze River basin. Most cultivated land in mountain areas is on steep slopes (more than 25 degrees). There are no soil conservation measures for about 60% of cultivated land on slopes. Grassland areas affected by soil erosion in the headwater areas amount to 10.6 million ha. Of this, 4.2 million ha show erosion to a high degree, and 0.1 million ha to an extremely high degree.

45. *Wetland loss by land reclamation*. Wetland loss has lead to loss of water retention capacity, decreased carbon sequestration and habitat fragmentation affecting globally important migratory birds. Wetlands in the headwater areas of the Yangtze River collectively cover an area of 800,000 ha. However, wetland area is decreasing. For example, Wulanwula Lake in the headwater area, which covers an area of 30,000 ha, has been reduced to form four independent small lakes, and 70,000 ha of swamps have dried up in northwestern Sichuan.

46. The above-mentioned threats are present in the two demonstration sites and the project will show how sound integrated ecosystem management can eliminate them. The underlying causes of these threats are:

47. *Lack of an integrated approach to ecosystem management*. Natural resources

assessment and management is sector-based and uncoordinated. Various departments carry out specific independent assessments, but these are centered on each department's interests and concerns instead of ecosystem functions. For example, the State Forestry Administration is responsible for assessments on forestry resources, the Ministry of Water Resources carries out assessments on soil erosion and run-off, and the Ministry of Land and Resources carries out assessments on land use. Provincial, prefecture and county level governments all have their own development plans, but they do not pay attention to nature conservation and are not conceived to act on a collaborative basis. Therefore, current land use patterns tend to be unsustainable.

48. *Limited awareness of ecosystem functions at all levels.* Local communities, decision-makers, and even the government emphasize economic productivity and have limited awareness of the significance of conserving ecosystem functions for long-term sustainability.

49. *Inadequate information for decision-makers to assess ecosystem in an integrated manner.* In China, there are several monitoring systems established by the Ministry of Land and Resources, Ministry of Water Resources, Chinese Academy of Sciences, Ministry of Agriculture, State Forestry Administration, and State Environmental Protection Administration. Each one of these systems deals only with a specific subject and is not always compatible with each other. There is a need for a management-oriented, integrated monitoring system based on the existing systems under the various government bodies.

50. *Limited technical capacity and lack of experiences in integrated ecosystem management.* The Western Development Strategy approved in early 2000 advocates a harmonized approach to environmental protection, disaster prevention and socio-economic development. The Tenth Five-Year Plan also advocates the EFCA approach. The GOC established an inter-ministerial agreement on this new integrated approach and an EFCAs Evaluation Committee, which is attended by high-level officials and experts of related ministries, including SEPA, NDRC, MOF, MLR, MOC, MWR, MOA and SFA and chaired by a Vice Minister of SEPA. However, the EFCA approach is new, and there is a need to demonstrate its applicability and efficiency and build technical capacity to carry out successful EFCAs management.

51. *Lack of integrated approach to land use planning and management.* The provincial, prefecture and county governments have different levels of land use planning. Land use plans are developed for specific administrative units, without taking into consideration existing ecosystem functions. In this way, short-term economic benefits are given priority in land use planning, and longer-term ecosystem values are not taken into full account.

52. *Rural poverty, inadequate access to education and renewable energy.* More than 50% of the total project area is mountainous, and frequently people have inadequate access to education and other services and resources. As a result, land use practices that have severe environmental impacts prevail, such as cultivation on steep slopes, overgrazing, and wetland reclamation.

53. The ultimate development goal of the project is to build capacity that will start a process of EFCA establishment to help protect the above-mentioned global

environmental values in the upper Yangtze River basin. The process will have to include management of these threats and underlying causes. The project will work on two demonstration areas, set up the EFCA identification process and establish a management-oriented monitoring and early warning system for EFCAs.

1.7 Baseline activities

54. The project will modify some baseline programs and add new critical initiatives demonstrating how to remove threats and root causes menacing globally significant environmental values in the two demonstration areas. It will complement current efforts to build EFCAs around flood and sediment control and show how to manage ecosystems for poverty alleviation and multiple global environmental benefits. These goals of developing capacity and demonstrating, in practice, how to integrate ecosystem management while providing benefits in terms of biodiversity and carbon sequestration as well as avoiding land degradation, are fully consistent with OP12.

55. Without GEF support, the GOC will continue developing EFCAs around flood and sediment control, but an opportunity to harness global environmental benefits and ensure environmental sustainability would be lost. Ecosystems in EFCAs will become biologically simpler and biodiversity will be lost. Integrated management approaches, securing sustainable livelihoods and global environmental benefits would neither be demonstrated nor be available for replication in future EFCAs. Without successful demonstration of integrated ecosystem management, continued sector-based initiatives would prevail and land degradation would continue.

56. The project has three major objectives focusing on the upper Yangtze River basin: (i) assessment and planning for establishing EFCAs with multiple global environmental benefits; (ii) a general Ecological Monitoring and Early Warning System for EFCAs and protected areas; and (iii) two critical EFCA demonstrations showing that IEM is in practice. Objective one is planning for the future expansion of EFCAs. Objective 2 encompasses a management-oriented monitoring system addressing ecological functions and threats in EFCAs, and Objective 3 is the actual implementation of the new conservation approach. Under this last objective, the project will establish detailed methods for new conservation practices.

57. The two demonstration sites chosen (Baoxing and Laojunshan, see details and a location map in Annex G) were selected based on ecosystem and vegetation types, flood related functions, global environmental benefits, threats, root causes, pressure, alternative scenarios, as well as replicability. These two demonstration sites represent different mixes and types of ecosystems and show different assemblages of threats. They represent a large part of the ecosystem and capture social variability, and have the potential to generate global environmental as well as domestic benefits in the upper basin.

58. The assessment and planning for the establishment of EFCAs with multiple global environmental benefits will complement currently uncoordinated baseline efforts by various agencies:

59. Within the life of the project, the State Environmental Protection Administration is

planning to carry out ecosystem function-based zoning and introduce some conservation-oriented regulations in the 12 western provinces ($1,497,560). The Yangtze Project will use these data.

60. The Ministry of Water Resources will conduct a survey on soil erosion that will provide basic information on water and soil retention functions to the assessment component of the proposed GEF project. ($1,497,560).

61. The Chinese Academy of Sciences is currently conducting the National Key Basic Research Project (No. 973) on the biodiversity of the Yangtze River. Data and information emanating from this research project will provide valuable information to the proposed GEF project. ($2,439,042).

62. The State Forestry Administration (SFA) carries out surveys on forest resources every five years. Indicators include forest coverage, timber volume and area of different forest types. Results of this survey will be one of the data sources on carbon sequestration potential in the integrated assessment in the proposed GEF project. ($2,439,042).

63. The Ministry of Land and Resources carries out land and resources surveys every year. The data on distribution of croplands will be made use of by this project. ($2,719,512).

64. Surveys by the State Environmental Protection Administration on eco-environment in the western region will provide part of the data and information needed for the ecological threats and root cause analysis. ($2,100,000).

65. EFCAs planning in Northwest Yunnan and Jiajin Mountain will provide data and information useful in recommending EFCAs establishment. ($390,243).

66. SEPA will organize training and workshops for government officials and technicians to disseminate EFCAs knowledge. This effort will be part of the baseline to the public awareness campaign. ($121,951).

67. The information from the above provides some baseline information but is clearly insufficient to build the desired integrated assessment of ecosystem functions. Under the project, the GOC will generate all additional information needed to assess the flood and sediment control functions of EFCAs. The GEF will cover the collection of information needed to assess biodiversity and carbon sequestration benefits.

68. The general Ecological Monitoring and Early Warning System (MEWS) for EFCAs will also be constructed using a baseline of networks:

69. In the upper reaches of the Yangtze River, there are 225 hydrology stations; 769 precipitation stations; 109 water quality stations; three research stations belonging to the Chinese Academy of Sciences; and 30,000 sampling sites belonging to the SFA providing data every 5 years. ($1,239,000).

70. At the demo site level, there are a rainfall station, a hydro-monitoring station and a water quality station at the Laojunshan demo site, and a rainfall station and a hydro-monitoring station at the Baoxing demo site. These stations will provide baseline data to the project, which are valued at $95,000.

71. The above-mentioned efforts to monitor the environment are insufficient and do not specifically address integrated approach for conservation and integrated ecosystem management. Under the project, the GOC will cover the costs for measures that will lead to the establishment of a complementary monitoring system allowing monitoring variables related to flood and sediment control benefits. The GEF will support the integration of information and the establishment of all monitoring needed to generate global environmental benefits.

72. The two critical EFCA demonstrations at Baoxing and Laojunshan, will add to project-relevant baseline investments in these demo areas. Without the project, investments in the next 5 years in the two areas will be $14,528 (Baoxing) and $150,000 (Laojunshan). Although project-relevant baseline investments in the two areas are relatively small, the project will leverage from the GOC and TNC significant investments that will lead to sustainable integrated management at the sites.

73. Baoxing demo site and its surrounding area: Basic biodiversity attributes of this site and its protected areas, socio-economic conditions, and threats to its biodiversity are supplied in Annexes E and G. There are protected areas at this site: Fengtongzhai, Labahe and Baoxinghe. Except salaries for PA staff (GOC, $14,528), the GOC had no budgets for corridors and buffer zones. Without the integrated approach of the GEF project, there would be no IEM, no mainstreaming of sector programs to meet global environmental values, insufficient carbon gains and avoidance of emissions, and insufficient protection of biodiversity because of conflict between local residents and natural resources.

74. Laojunshan demo site and its surrounding area: Basic biodiversity attributes of this site, socio-economic conditions, and threats to its biodiversity are supplied in Annexes E and G. Without the GEF support, the following initiatives by the GOC would take place: Drafting of sector-based regulations for natural resources management ($50,000), drafting of sector-based management plans ($ 50,000) and small investments in biodiversity protection ($50,000). Without the GEF project, there would be no IEM, no mainstreaming of sector programs to achieve global environmental values, insufficient carbon gains and reduction in emissions, and insufficient protection of biodiversity.

SECTION II. RATIONALE AND OBJECTIVES

2.1 Project description

75. The broad development objective of the project is to initiate a process leading to integrated ecosystem management in EFCAs in the upper basin of the Yangtze River. The strategic goal of the project is to build necessary capacity to assess and plan the location of future EFCAs, design and implement a system to monitor environmental

values, and to demonstrate integrated ecosystem management aimed at multiple environmental benefits in EFCAs. The desired integrated management system will include measures reducing quick runoff and excessive sediment loads to the river. In addition, the project will lead to sequestration of carbons, protecting globally significant biodiversity and improving the livelihoods.

76. The project is based on the principle of incremental cost. The project will add to the current national efforts to control water runoff and sediment loss in the Yangtze River basin. The GOC will fully cover all expenses related to runoff and sediment control, as well as improvement of sustainable livelihoods in the two proposed demonstration sites. The GEF will help pay for expenses associated with conservation and sustainable use of globally significant biodiversity and carbon sequestration benefits, as well as integrated ecosystem management. These goals and approaches are fully consistent with the goals of the GEF OP12 on Integrated Ecosystem Management and address priority on IEM 4(b), BD strategic priorities I and II, CC strategic priority S4, and SLM priority I identified in Strategic Business Planning: Direction and Targets.

2.2 Project components and expected results

77. The project will implement inter-related activities to reach four major Outcomes (i.e. components): (i) Fully developed institutional mechanism for assessment of ecosystem functions and planning for Ecosystem Function Conservation Areas in the upper Yangtze basin; (ii) Established ecosystem-function-based Monitoring and Early Warning System (MEWS) in the upper Yangtze basin; (iii) Demonstrated efficiency and effectiveness in achieving global environmental benefits and local environmental and socio-economic benefits by taking an IEM approach in the Baoxing demo site, and (iv) Demonstrated efficiency and effectiveness in achieving global environmental benefits and local environmental and socio-economic benefits by taking an IEM approach in the Laojunshan demo site. To achieve each Outcome, the project will complement Baseline investments to produce a sustainable Alternative with global environmental, and local environmental and socio-economic benefits.

78. **Outcome 1. Fully developed institutional mechanism for assessment of ecosystem functions and planning for Ecosystem Function Conservation Areas in the upper Yangtze basin. Total Cost $ 2,378,500 (GOC $1,903,500, GEF $475,000).** The project will add to the efforts of the GOC to assess and plan for the establishment of EFCAs in the upper basin of the Yangtze River. The assessments will allow establishment of provincial and national level EFCAs in the whole basin. The overall assessment will be on a scale of 1: 1,000,000 and will produce reports and maps for a range of ecosystem functions, and an integrated recommendation on EFCAs to meet multiple objectives. Costs reflect that EFCAs can provide national as well as global environmental benefits. The assessment will include baseline ecosystem functions, such as water retention capacity, sediment retention capacity, and reduction of soil loss. In addition, there will be an inventory of land use patterns including agriculture, forestry, fishing, energy use, and cultivation on steep slopes. The evaluation will also include population density and distribution. The GOC will cover infrastructure and training costs to carry out the baseline assessment, including computers, satellite images, image processing hardware and software, GIS, basic databases and maps, vehicles, field equipment, etc.

79. The GEF will contribute to the costs of assessing globally significant biodiversity benefits and potential carbon sequestration benefits. Both potential carbon gains and biodiversity will be assessed using satellite images and software. Selected ground surveys will allow for calibration of remote sensing results. Some training will also be conducted. Existing surveys by WWF and other agencies will help these assessments. The GEF will contribute to the costs of integrating all information into a comprehensive report appropriate for integrated decision-making, and will contribute to disseminating this information among national and provincial governments.

80. These goals will be achieved while conducting the following activities:

81. Activity 1.1. Assess ecosystem functions relevant to nature conservation and flood control. (GEF$115,000; GOC $853,500). The project will use remote sensing and field surveys to obtain data on key indicators of water retention, soil erosion, biodiversity, carbon sequestration, and land use patterns and map these variables.

82. Activity 1.2. Assess threats to, and root causes for degradation of ecosystem functions and economically evaluates the ecosystem functions. (GEF $82,000; GOC $233,500). The project will identify and map main ecological threats to, and root causes for degradation of ecosystem functions in different areas. Special effort will lead to unraveling of the linkages between threats and their root causes to social surveys and socio-economic analyses. Assessment of economic values of all ecosystem functions will provide decision-makers with necessary information from an economic perspective.

83. Activity 1.3. Present integrated assessment of ecosystem functions. (GEF $23,000; GOC $69,000). The project will compile and integrate digital information from Activities 1.1 and 1.2 and provide integrated, weighted maps.

84. Activity 1.4. Recommend new Ecosystem Function Conservation Areas. (GEF $155,000; GOC $457,500). The activity will include preparation and publication of a report balancing the various assessments and proposing location of EFCAs.

85. Activity 1.5. Disseminate and initiate replication of results. (GEF $100,000, GOC $290,000). The project will produce reports, maps and other means to disseminate the results throughout and outside China.

86. At the end of the project, the GOC will have an integrated document, with maps at a scale of 1:1,000,000, on the distribution of relevant ecosystem functions, threats and root causes in the upper basin, and a set of recommendations on the location of future EFCAs. The national and provincial governments in further developing EFCAs in the upper basin of the Yangtze River and elsewhere will use this proposal and its methodologies.

87. **Outcome 2: Established ecosystem-function-based Monitoring and Early Warning System (MEWS) in the upper Yangtze basin. Total Cost $ 3,466,250 (GOC $ 2,845,250, TNC $150, 000, GEF $471,000).** The project will support efforts

by the GOC to establish a Monitoring and Early Warning System (MEWS) focused on ecosystem functions in EFCAs and existing protected areas in the upper basin. These efforts of the GOC to build the system will use existing monitoring stations handled by various ministries, and the project would only complement these efforts as necessary to secure global environmental benefits. The goal is not to duplicate the existing early warning system for floods, but to create a system that will alert decision-makers of gains and losses, and balances of key ecosystem functions in the system of EFCAs in the upper basin of the Yangtze River. In year two, MEWS will develop habitat quality, native vegetation cover and other indices that will facilitate integrated management of EFCAs.

88. MEWS will not be able to provide all information needed by decision-makers, but will be able to warn them of trends that later targeted research can complement and verify. MEWS will be an adaptive management tool that evolves with the needs of managers. The project will make a special effort to develop MEWS in close connection with the participatory IEM and conservation plans developed and approved for each one of the two EFCAs demo sites (Activity 3.2, 4.2).

89. MEWS will be adapted to the needs of decision-makers and will grow in parallel with the EFCAs system. During the life of the project, it will be established and used in decision-making in the two demonstration sites. During the project, costs and outputs of MEWS per site/per year will be refined.

90. MEWS will provide information at a scale of 1: 1,000,000 for the whole upper basin of the Yangtze River and 1:100,000 for two demo sites. For demo management, MEWS will provide annual information. MEWS will include basic information related to functions of primarily national interest, such as population in the target area and in the surrounding 10 km belts, rainfall and temperature (including daily maximum), run-off, land use, and GDP. It will also include cover by natural and agricultural vegetation, forest cover, grassland cover and productivity, surface area of degraded grasslands, quantity and types of livestock, firewood consumption, cultivation on slopes, soil erosion and sediments loads, surface areas that underwent reforestation, logging areas, commercial logging areas, energy use structure, industrial structure, and extent and quality of wildlife habitat. This basic information will allow calculation of the following ecosystem functions: capacity to regulate water retention, capacity to retain sediments, capacity to protect globally significant wildlife, carbon sequestering capacity, and an estimate of the tendency of threats to the delivery of these ecosystem functions. The first two MEWS reports, in years four and five, will allow feedback from the EFCA managers and thus its first adjustments.

91. MEWS will use satellite images and selected ground verification. The GOC will cover the capital, training and running expenses related to baseline costs, including staff salaries, computers, satellite images, image processing hardware and software, GIS, basic databases and maps, cars, field equipment, etc. During project execution, the GEF will contribute to cover expenses related to biodiversity conservation (wildlife habitat quantity and quality), carbon sequestration, and integration of information for decision-makers. After project completion, the GOC will cover all costs for continuing MEWS.

92. The project will achieve those goals while carrying out the following activities:

93. Activity 2.1. Establish technical capacities for MEWS in the upper basin. (GEF $211,000; GOC $1,764,500). Activities will include construction of databases, development of ecological monitoring models, development of an early warning system in coordination with the two demos, recruitment and training of staff, purchasing of vehicles, software, and computers for GIS image processing, and ground verification.

94. Activity 2.2. Establish capacities for MEWS at the Baoxing and Laojunshan demonstration sites. (GEF $139,000; GOC $397,750; TNC $100,000). Activities include the provision of offices, hiring of staff, purchase of computers, training, establishment of ecological monitoring model, and construction of databases, development of remote sensing-based indices on ecosystem functions and of management indices for integrated ecological management, and coordination with the two demos.

95. Activity 2.3. Report on Ecosystem function monitoring at the demonstration sites for years 4 and 5, and initiate replication of the demo-level MEWS. (GEF $121,000; GOC $683,000, TNC $50,000). By the end of years four and five, MEWS will produce integrated reports for use in integrated resource management at the two demos.

96. At the end of the project, the GOC will have a fully developed MEWS design for upper basin EFCAs. MEWS will also be fully functional and providing integrated reports useful for the management of the two demos. MEWS will be an evolving working tool for the management of the two demos. As new EFCAs are established, they will be able to join the MEWS.

97. **Outcome 3. Demonstrated efficiency and effectiveness in achieving global environmental benefits and local environmental and socio-economic benefits by taking an integrated ecosystem management approach in the Baoxing demonstration site. Total Cost $10,365,800 (GEF $1,247,400; GOC $9,118,400)**. The contribution of the GOC will originate as new investments and as modified baseline investments to ensure global benefits. The project will implement IEM, produce local benefits, ensure protection of globally significant biodiversity using giant panda as an umbrella species, and increase carbon gains/reduce emissions of 22,950 tons C compared with the baseline. Biodiversity benefits will arise from strengthening of the current protected areas, creating buffer zones and corridors among two of them and measures to protect the overall biodiversity in the area (see Annex G). Under this outcome, the project will spend $3,109,600 providing additional sources of income for local farmers, allowing conversion from a land-degrading lifestyle to one of ecosystem conservation and sustainable resource use. To secure this outcome, the project will conduct the following activities:

98. Activity 3.1. Establish an institutional framework for IEM at the Baoxing demonstration site. (GEF $347,100; GOC $100,200). The project will establish a Local Steering Committee (LSC) with responsibilities in project execution at the site and in integrated ecosystem management and conservation. Governors of Sichuan Provincial Government will lead the LSC and will have high-level participation of

critical provincial-level authorities. Rather than having a completely new committee formed, the existing provincial-level EFCA Evaluation Group of Sichuan will act as the core group for the LSC. This Group is composed of representatives at the Deputy Director level from the various provincial bureaus concerned, including planning bureau, finance bureau, environmental protection bureau, bureau of land and resources, bureau of construction, bureau of water resources, bureaus of forestry and agriculture. Besides these core members, the LSC will also include representatives from NGOs and the local communities. The Local Steering Committee's role is to mobilize and coordinate input and contributions from the various departments at the local level, and supervise the execution of the demonstration component of the project.

99. After project execution, the LSC will become the permanent Integrated Ecosystem Management and Conservation Committee (IEMCC) with the responsibility to guide and coordinate all programs that directly or indirectly affect the ecosystem functions in the EFCA. During the project execution, the Provincial Governor, SEPA and the LSC will approve the functions of the Committee. The Committee will periodically receive information from the MEWS and act accordingly.

100. A small project office staffed with a project manager (responsible for the timely delivery of all EFCA demo outputs), a technical assistant (responsible for providing technical support to the manager and facilitate educational programs) and an administrative assistant, will be established and equipped. The project office will be in charge of daily business of executing the project and will be in direct communication with the provincial project coordinator.

101. Activity 3.2. Develop a participatory IEM plan for public acceptance, and strengthen rules and regulatory framework. (GEF $100,000; GOC $161,600). An participatory IEM plan for the EFCA will be drafted and approved by LSC by the end of year one, and will be amended based on the results of MEWS and fully approved by LSC by the end of year four. (GOC $41,600). This plan will establish the zoning and adaptive management plans for all zones in the EFCA taking into consideration the various needs and the conservation of ecosystem functions. The project office will keep MEWS informed of its development on a monthly basis.

102. In China, resource management has traditionally been sector based. The project will analyze existing rules and regulations at the Sichuan Province level to determine what changes are needed. It will also make recommendations for modification to these rules and regulations.

103. Activity 3.3. Mainstream existing sector programs, including forest management and quarry operations. (GEF $135,000; GOC $5,284,000). During project execution there will be 150 km^2 managed as run-off areas. The project will revise the existing plans to make them friendlier towards global environmental values. Among actions envisioned at this point are change of a fraction of the plantations to native trees to improve habitat for wildlife, planting of fruit trees near protected areas as a livelihood option for farmers and establishing firewood plantations around villages. The forest protection program involves 820ha and the re-conversion of slope farmlands to forests involves 164ha.

104. There are several quarries in the EFCA. The GOC will determine which one will be closed and which needs technological improvement. It will then introduce new technologies to reduce the environmental impacts of these mines.

105. Activity 3.4. Strengthen PAs and establishment of buffer zones and corridors. (GEF $433,700; GOC $2,000,000). The project will strengthen the Fengtongzhai, and Baoxinghe protected areas. At the end of the project, protected areas will have integrated and participatory management plans, trained staff, and basic infrastructure. Bamboo corridors between Fengtongzhai and Labahe protected areas will be established and managed as giant panda's habitat. Buffer zones around the protected areas will be established and managed accordingly. Provision of alternative livelihood will help support villagers living in the buffer zones.

106. Activity 3.5. Design and provide Alternative Livelihoods (AL) around PAs and other key areas. (GEF $20,000; GOC $1,400,000). The project will develop an alternative livelihood package with the full participation of all local stakeholders. It will also conduct the pilot demonstration of eco-tourism and agro-tourism projects around Fengtongzhai and Jiajin Mountain, and plant bamboo. The project will also capacitate local stakeholders for the development and management of alternative livelihoods. Any existing Sacred Natural Sites will be given attention.

107. The total GOC support for alternative sources of income at the Baoxing demo site is composed of contributions under Activity 3.5 and under Activity 3.3, totaling $3,109,600. Activity 3.3 includes $725,600 for sustainable forestry development, $388,000 from the natural forests protection program, and $596,000 to plant bamboo and fruit trees. All these programs will provide additional biodiversity-friendly income to local farmers, help reduce land degradation, and conserve ecosystem functions.

108. Activity 3.6. Raise public awareness, and disseminate the demonstration values. (GEF $211,600; GOC $172,600). Under this component, local communities will be informed about approaches for the management of the EFCA, its ecosystem functions and their values. The project will prepare and deliver a training syllabus and materials for 1,000 school children, farmers, government authorities, and various managers, including all agencies represented in the IEMCC. At the end of the project, a series of workshops and selected visits to Baoxing will promote its replication.

109. At the end of the project, the Baoxing EFCA will be fully functional and have a management plan and a management structure ensuring future sustainability and the protection of local as well as global environmental benefits.

110. **Outcome 4. Demonstrated efficiency and effectiveness in achieving global environmental benefits and local environmental and socio-economic benefits by taking an integrated ecosystem management approach in the Laojunshan demonstration site. Total Cost $9,033,676 (GEF $918,260; GOC $5,773,006; TNC $2,342,410).** The contribution of the GOC will originate as new investments and as modified baseline investments to ensure global environmental benefits. The project will implement IEM, produce local benefits, ensure protection of globally significant biodiversity, and increase carbon gains/reduce emissions equivalent to 109,337 tons C compared with the baseline. Biodiversity benefits will arise from creating habitat for Yunnan Golden Monkey as an umbrella species. The project will create a new nature

reserve and support measures to conserve the overall biodiversity at this site (see annex G). Under this outcome, the project will spend $3,405,291 providing additional sources of income for local farmers, allowing conversion from a land-degrading lifestyle to one of ecosystem conservation and sustainable resource use. To secure this outcome, the project will conduct the following activities:

111. Activity 4.1. Establish an institutional framework for IEM at the Laojunshan demonstration site. (GEF $327,100; GOC $1,657,098; TNC $5,000). The project will establish a Local Steering Committee (LSC) with responsibilities of project execution in the site and integrated ecosystem management and conservation. Governor of Yunnan Provincial Government will lead the LSC. It will have high-level participation of provincial-level authorities. In Laojunshan, rather than forming a fully new committee, the existing provincial-level EFCAs Evaluation Group of Yunnan Province will act as the core group of the LSC. This group is composed of representatives at the Deputy Director level from the various provincial bureaus, including planning bureau, finance bureau, environmental protection bureau, bureau of land and resources, bureau of construction, bureau of water resources, bureaus of forestry and agriculture. Besides these core members, the LSC will also include representatives from NGOs and the local communities. The Local Steering Committee's role is to mobilize and coordinate inputs and contributions from the various departments at the local level, and supervise the execution of the demonstration component of the project.

112. After project execution, the LSC will become the permanent IEMCC with responsibility to guide and coordinate all programs that directly or indirectly affect the ecological functions of the EFCAs. During project execution, the Provincial Governor, SEPA, and the LSC will approve the functions of the Committee. The committee will periodically receive information from the MEWS and act accordingly.

113. As in Baoxing, a small Project Management Unit (PMU) staffed with a project manager and technical and administrative assistants will be established and equipped. The project office will be in charge of daily business of executing the project and will be in direct communication with the provincial project coordinator.

114. Activity 4.2. Develop a participatory IEM plan for public acceptance and strengthen rules and regulatory frameworks. (GEF $100,000; GOC $105,917; TNC $4,800). A participatory IEM plan for the EFCA will be drafted and approved by LSC by the end of year one, and will be amended based on the results of MEWS and fully approved by LSC by the end of year four. This plan will establish the zoning and adaptive management plans for all zones in the EFCA taking into consideration the various needs and the conservation of ecosystem functions. The project office will inform the MEWS on developments on a monthly basis.

115. In China, resource management has traditionally been sector based. The project will analyze existing rules and regulations at the Yunnan Province level to determine what changes are needed. It will also make recommendations for modification to these rules and regulations.

116. Activity 4.3. Mainstream existing sector programs, including forestry and energy programs. (GEF $120,260; GOC $1,423,967; TNC $1,030,610). The project will select appropriate native species for forestation, ensure the planting of 3,500 ha of trees to

increase habitat availability for the Yunnan Golden Monkey and other endangered species, and re-convert 589 ha of agricultural lands on steep slopes to forest lands covered with native species.

117. Extraction of firewood is one of the threats to global environmental and local values in the EFCA. Increase in efficiency in the use of stoves and providing alternative sources of energy has, therefore, important consequences for the overall EFCA. The project will fund cost-effective demonstrations of biogas production in 5,116 households, and will provide, on a demo basis, energy-saving stoves for 8,725 households. These two measures will reduce firewood carbon emissions from 102,320 tons to 72,647 tons in the first 10 years.

118. Activity 4.4. Establish New Protected Areas (PAs). (GEF $211,350; GOC $1,383,537, TNC 300,000). The project will establish a new nature reserve for sustainable conservation of the Yunnan Golden Monkey and associated biodiversity. The management of the current wetland nature reserve will be strengthened by modifying and improving the management plan, training staff, and constructing conservation-related infrastructure. The black-necked crane and associated wetland biodiversity will be effectively protected by re-conversion of 167 ha farmlands into wetlands within the nature reserve.

119. Activity 4.5. Design and provide livelihoods (AL) around PAs and key areas. (GEF $20,000; GOC $1,040,635; TNC $1,000,000). The project will identify critical threats and strategies to abate these threats through a process of systematic conservation area planning involving all stakeholders. The project will implement threat abatement activities to address direct threats, such as illegal hunting, habitat destruction, and overgrazing. The alternative livelihood package will be developed and amended based on the results of MEWS. Pilot demonstration of eco-tourism project in and around Laojunshan EFCA, cash crop (apple trees, pear trees, plum trees, walnuts, Chinese peppers, and medical herbs) planting, deer breeding, and organic kidney bean planting will also be conducted. The training programs will also increase the capacity of natural resource professionals and local stakeholders. Any existing Sacred Natural Sites will be given attention.

120. The total amount devoted to improvement of the livelihood of local farmers is more than the allocation under the Activity on AL. At Laojunshan there will be $1,040,635 from GOC and $1,000,000 from TNC under Activity 4.5; plus $1,364,656 from the GOC under Activity 4.3 ($642,774 for the planting of multi-use trees, $96,646 under the slope land re-conversion program, and $625,236 for energy programs). Thus, the total amount devoted to improvement of livelihoods at this site will be $3,405,291.

121. Activity 4.6. Improve public awareness and disseminate EFCA demonstration values. (GEF $139,550; GOC $161,852; TNC $2,000). Under this most important component, local communities will be informed about approaches for the management of the EFCA, wildlife in the area, and ecosystem functions and their values. The project will prepare and deliver training syllabus and materials for 1,000 school children, farmers, authorities and various managers, including all agencies represented in the IEMCC. At the end of the project, the project will organize a series of workshops promoting replication and selected visits to see the EFCA.

122. At the end of the project, the Laojunshan EFCA will be fully functional and have a management plan and structure ensuring future sustainability and the protection of local as well as global environmental benefits.

SECTION III. RISKS AND SUSTAINABILITY

3.1 Risks.

123. The key to the success of this multi-disciplinary initiative will be the actual level of cross-sectoral cooperation, stakeholder involvement, and technical support received. The actual level of cooperation of various ministries with this SEPA-led initiative could be a major issue, because IEM requires inter-sectoral cooperation. There is, however, an instruction from the State Council authorizing SEPA to coordinate such initiatives. As the risk mitigation measure, during project execution, the Inter-ministerial Coordinating Office (ICO) will closely follow up such cooperation, and in the log-frame matrix there are specific indicators to this effect. Frequent meetings of the Project Steering Committee at the beginning of the project will also help solve possible issues.

124. The project area possesses environmentally and culturally diverse features. Without full understanding of such diverse environmental and social setting, stakeholder consultation and involvement will not be fully achieved. With information collated and stakeholder consultation during the PDF-B, the risk is assessed to be low. However, the project from the inception will promote stakeholder coordination and obtain locally available knowledge.

125. Other risks are related to funding:

126. Changes in funding for baseline activities. Funding for baseline activities described in background section may change with changes in national priorities. This risk is low given the emphasis of the GOC on environmental protection, and the ICO will play an important role in countering this risk. To mitigate this risk, as stated in the implementation arrangements section, the ICO will help solve any conflicting issues regarding Baseline activities.

127. Delays in the appropriation of co-financing commitments. Co-financing may fail or be postponed due to strategic changes of non-GEF donors. This risk is currently low. As a risk mitigation measure, during project implementation, the project director will further consult and coordinate with them and inform UNEP.

3.2 Sustainability

128. A number of factors will contribute to sustainability. The Government of China is strongly committed at all levels to EFCAs management. This commitment is evident in the on-going and planned baseline activities, and by strong policy support of GOC, as indicated in the Section I and the presence of the EFCAs Evaluation Groups at national and provincial levels. These provincial EFCAs Evaluation Groups will form the core of the LSCs, and after the project concludes, will continue having a critical supervision

role in EFCAs development. This is an essential element of continuity in IEM, maintaining the values developed during the life of the project.

129. Stakeholders participated extensively during the design of the project. These stakeholders will also participate in implementation of the project and will be involved in extension and promotion of the project results after its completion (Annex F).

130. Activities in demos are conceived as sustainable (alternative livelihood, tourism programs), and will be overseen by the provincial governments (IEMCCs) or the national government (MEWS, PMO).

131. Also at the demo level, the Local Steering Committee, composed of representatives from relevant provincial/local government sectors, local communities, NGOs, and private sectors, will function as coordination mechanism, deploying conflict resolution methodologies, such as alternative livelihoods, consideration of cultural diversity and natural sacred sites, etc. Experiences in conflict resolution will be documented to be learned by other EFCAs.

132. In the two demo sites, new PAs will be created or the existing PAs will be reinforced. After the project, the PA management will be maintained by the local governments. The project will involve local communities in PA management through provision of alternative livelihoods, establishment of corridors, and initiation of eco-tourism. Successful community involvement, particularly economic activities related to the PAs, would contribute to the sustained management of the PAs even after the project.

133. After completion of the proposed project, the PMO and PMUs will become part of the future EFCAs management structure.

134. The Monitoring and Early Warning System established by the project will become a permanent entity affiliated to SEPA. After project completion, MEWS will be responsible for releasing a bulletin "Monitoring Ecosystem Functions", and for extending the results to the whole EFCAs system.

135. The GEF intervention will be replicable within the planned EFCAs system in the upper basin of the Yangtze River and in China as a whole. SEPA listed EFCAs establishment as one of its key tasks. The project will disseminate its methodologies on integrated ecosystem management allowing for their expansion to more than 100 future EFCAs. The project makes special provisions to this effect.

136. UNEP has a long-term cooperation program with the GOC. If needed, UNEP could provide additional support to ensure the sustainability of the project achievements.

3.3 Replicability

137. The project, by conducting science-based ecosystem function assessment, will develop methodologies for such assessment. The project will disseminate not only the assessment results, but also the assessment methodologies, so that methodologies used can be replicated in other parts of China, as well as in other countries, particularly in Asia where the socio-economic and environmental features are similar to those of the upper Yangtze

basin. The project further will adopt a strategy that the developed assessment methodologies will be submitted to the existing national-level EFCA Evaluation Committee, so that the project methodologies can be applied to evaluation and selection of EFCA for all over China. SEPA is planning to conduct a nation-wide ecosystem function assessment, and will use for its assessment the methodologies developed through this project. Further, through the EFCA Evaluation Committee, the methodologies for integrated ecosystem function assessment can also be replicated by other sectors, such as agriculture, water resources, fisheries, and land use planning.

138. The MEWS, once established for the two demo sites, can trigger creation of other local MEWS for the existing and planned EFCAs. In order to prompt this, towards the end of the project, managers of other EFCAs or leaders of other local/provincial governments will be invited to visit the two demo sites, for replication within the upper Yangtze basin, as well as outside the basin. On a national-scale, the project will create a core ecosystem-function based MEWS capability affiliated to SEPA, by creating the MEWS model on the upper Yangtze basin scale. Such core national capacity, to be maintained by the Government, will allow easy application of the model to other river basins in China. Toward the end of the project and after the project, the central MEWS will issue newsletters to report on the change in the major ecosystem functions in the upper Yangtze basin, so that other river basin managers can see the efficiency and effectiveness of the MEWS for their consideration for adoption of the MEWS model in their ecological monitoring system.

139. The two demonstration sites were selected taking into consideration high replicability. Based on the wider framework of the EFCAs management at the national level, the results of the two demonstrations will clearly indicate the way the EFCA can actually function, while producing global and local environmental benefits and ensuring improved livelihoods. Towards the end of the project, managers of other EFCAs or PAs, or leaders of provincial/local governments as well as from outside China are invited to visit the two demonstration sites for replication of the IEM mode in EFCA/PA management.

140. Disseminating of project results is a key part of the project strategy to replicate the results of the project for building a system of EFCAs in the Yangtze River basin, in other part of China and outside China. The project aims at disseminating the results to more than 100 EFCAs all over the country. The project will, at its early stage of implementation, develop a replication strategy, so that any project results can be disseminated in a most effective manner.

SECTION IV. IMPLEMENTATION ARRANGEMENTS AND STAKEHOLDER PARTICIPATION

4.1 Implementation arrangements

141. The United Nations Environment Programme (UNEP) will be the GEF Implementing Agency for the project, and the State Environmental Protection Administration (SEPA) of the GOC will be responsible for overall project execution. Day to day management of the project will be the responsibility of a Project Management Office under the oversight of SEPA. UNEP China Country Office will be charged with coordination between the IA and the Executing Agency for smooth project execution.

142. The project will establish a Project Steering Committee (PSC) chaired by the Vice Minister of SEPA. The PSC will have Director-General level representatives of the National Development and Reform Commission (NDRC); Ministry of Finance (MOF); Ministry of Land and Resources (MLR); Ministry of Construction (MOC); Ministry of Water Resources (MWR); Ministry of Agriculture (MOA); State Forestry Administration (SFA); Chinese Academy of Sciences (CAS); and State Environmental Protection Administration (SEPA). High level representatives from the Government of Sichuan Province, the Government of Yunnan Province; UNEP; UNDP; ADB; WB; TNC; other bilateral agencies and interested organizations will be invited to the regular PSC meetings.

143. The roles and responsibilities of the PSC will be to: (i) function as the highest authority guiding and supervising project implementation; and (ii) make decisions on the major issues related to the project. The PSC will meet at least twice a year during the first two years of the project and thereafter once a year.

144. The GOC already established an EFCA Evaluation Committee as part of the EFCAs program. In order to mainstream project activities into the EFCAs program at the national level and receive their scientific guidance, this EFCA evaluation committee will also function as the Scientific Advisory Group (SAG) for the project. The members of the SAG will, therefore, be technical experts from SEPA, National Development and Reform Commission, Ministry of Finance, Ministry of Land and Resources, Ministry of Water Resources, Ministry of Agriculture, State Forestry Administration, Chinese Academy of Sciences, Chinese Academy of Social Sciences, and Chinese Research Academy of Environmental Sciences. The responsibilities of Scientific Advisory Group will be to: (i) provide scientific guidance to project activities; and (ii) provide guidance on the integration of project with China EFCAs program. The Scientific Advisory Group will meet at least every six months during the first two years of the project and thereafter once a year.

145. Considering the cross-sectoral nature of the project, it is also necessary to establish an Inter-ministerial Coordination Office (ICO). The leader of International Cooperation Department, MOF will chair the ICO. The ICO will have division chief level representatives of the central government bodies, including National Development and Reform Commission (NDRC); Ministry of Land and Resources (MLR); Ministry of Water Resources (MWR); Ministry of Agriculture (MOA); Ministry of Construction (MOC); State Environmental Protection Administration (SEPA); State Forestry Administration (SFA); and Chinese Academy of Sciences. Responsibility of the ICO will be to: (i) coordinate central government bodies, local governments and relevant international organizations in terms of co-financing, data sharing, fund mobilization; (ii) review implementation plan of the project; (iii) provide policy guidance on daily work of the PMO; and (iv) report to the PSC about project progresses as necessary. The ICO chair will convene meetings as frequently as needed to solve coordination issues among national institutions.

146. Daily management of the project will be the responsibility of a Project Management Office (PMO). A senior SEPA staff member will be the National Project Director (NPD) and lead the PMO on behalf of SEPA. The NPD will be primarily responsible to SEPA and the PSC for the timely achievement of all four Outcomes and all project activities listed in the log-frame matrix. In addition, she/he will convene and liaise

with the PSC and the SAG, keep them posted of project execution, and coordinate with international and national agencies as needed to ensure successful completion of all project outputs.

147. The PMO will consist of three full-time staff: a project manager (responsible for the timely delivery of all outputs designed in the project), a technical advisor (responsible for technical support to the project manager during project implementation), and an administrative assistant. Responsibility of the PMO will be to: (i) assist the NPD to prepare project execution scheme; (ii) take charge of overall execution and daily management of the project to achieve all project objectives and outputs in time and directly responsible for the timely execution of all Assessment and MEWS related outputs; (iii) coordinate financial auditing of funds according to the standards and rules established by UNEP and prepare work plans, reports, budgets, and terms of reference for sub-contractors and consultants; and (iv) with the guidance from ICO, liaise on a day-to-day basis with various ministries, local governments, donors involved in the project and the Implementing Agency to facilitate the implementation of the project and promote exchanges of information among project participants.

148. At the provincial level, the existing EFCA Evaluation Groups of the Yunnan/Sichuan Province, consisting of relevant departments, will act as core of the Local Steering Committees (LSC). Local communities and NGOs will also participate as full members. The Local Steering Committee's role is to coordinate relevant plans and actions in the provinces, mobilize inputs and contributions from the various departments at the local level, and supervise the implementation of demonstration component of the project. Through the LSC, the project will ensure the coordination among relevant sectors within the provincial and local governments. For PAs managed by bureaus other than the environmental protection bureaus, the LSC can also function for coordination mechanism.

149. Daily management of the demonstration project will be the responsibility of local Project Management Unit (PMU), located in the Environmental Protection Bureau (EPB) nearest to the demo site. For each of the two provinces (Sichuan and Yunnan), a senior staff member of the provincial EPB will be the Provincial Coordinator and lead the PMU on behalf of the provincial EPB. The Provincial Coordinator will be primarily responsible to the Central PMO for the timely achievement of all demo level outputs listed in the log-frame matrix. In addition, he/she will convene and liaise with the LSC to keep it posted of project execution, and coordinate with provincial departments, international donors and other stakeholders, as needed to ensure successful completion of all demo level outputs.

150. PMU will consist of three full-time staff: a project manager (responsible for coordination needed for the timely delivery of all demo level outputs), a technical assistant (responsible for technical support to the project manager during project implementation) and an administrative assistant. The PMU will be responsible for timely execution of all outputs pertaining to the demos, and will: (i) liaise with the central PMO on all project accounting, auditing and monitoring issues; (ii) organize and supervise the demo level activities; and (iii) promote exchange of information among project participants.

4.2 Stakeholder participation

151. Stakeholders include international agencies, and national, provincial and local government authorities, relevant scientific and research institutes and local communities. The following sectors/groups are important stakeholders in this project: planning, finance, land and resources, construction, water resources, forestry, agriculture and environment, as well as local communities and NGOs. During project preparation, all these stakeholders actively participated in project design (see Annex F for details). The Steering Committee, including ministries and relevant provincial governments and relevant international organizations fully endorsed the final Project Brief at the Third Meeting of the Steering Committee of GEF PDF-B on Nature Conservation and Flood Control in the Yangtze River Basin held on 5-6 August 2003 in Beijing.

152. In addition, during project preparation local stakeholders participated actively in defining the project (see Annex F for details) and fully endorsed its goals.

153. During project execution the following stakeholders will be involved:

List of stakeholders

Level	Stakeholders
Central government bodies	National Development and Reform Commission (NDRC), Ministry of Finance (MOF), Ministry of Land and Resources (MLR), Ministry of Construction (MOC), Ministry of Water Resources (MWR), Yangtze River Water Resource Commission (YRWRC), Ministry of Agriculture (MOA), State Forestry Administration (SFA), Chinese Academy of Sciences (CAS), and State Environmental Protection Administration (SEPA)
Local government bodies	Yunnan Provincial Government: departments of planning, finance, land and resources, construction, water resources, agriculture, forestry, and environmental protection; Sichuan Provincial Government: departments of planning, finance, land and resources, construction, water resources, agriculture, forestry, and environmental protection;
Local communities	Farmers, fishermen, herders, and other local residents.
Private sectors	Interested private sectors, such as resort companies, both inside and outside the demo sites
International organizations	United Nations Environment Programme (UNEP); United Nations Development Programme (UNDP); Asian Development Bank (ADB); World Bank (WB)
Bilateral governments	Italian government, Norwegian government, etc.
International NGOs	The Nature Conservancy (TNC), World Wide Fund for Nature (WWF)-China, Conservation International (CI)

Scientific and research institutes	Chinese Research Academy of Environmental Sciences, Institute of Geographical Sciences and Natural Resources Research of CAS, Institute of Zoology, CAS; Institute of Mountain Hazards and Environment, CAS & MWR

154. Key stakeholders will participate in PSC and/or LSCs meetings, and all of them will be directly involved in the implementation of relevant project components. Therefore, all will be active participants in the project and will help steer it in desired direction.

155. Relevant departments at national and provincial levels were involved in project design, and will be involved in coordination and implementation; local communities will participate directly in the demonstration activities, especially alternative livelihoods. (For more information on stakeholder participation during project execution, see Annex F).

SECTION V. INCREMENTAL COSTS AND PROJECT FINANCING

156. The project uses an incremental cost approach to determine funding allocations. In the baseline are all projects under implementation and activities executed during the project, related to flood and sediment control. That is, the funds China brings to its own benefit and for its own sustainable development. However, if this baseline were to continue unaltered, significant global environmental values would be neglected. Therefore, the project will add to these baseline efforts with a series of measures aimed at Integrated Ecosystem Management, protecting globally significant biodiversity, and increasing carbon sequestration and reducing carbon emissions. The GEF will help fund these latter measures aimed at achieving global environmental benefits. In addition, and as part of its efforts to give sustainability to project outcomes, the GOC will be implementing alternative sustainable livelihood programs in critical areas.

157. The Alternative costs total $41,647,664 and the baseline is valued as $14,703,438. The total increment is $26,944,226. The GEF contribution will be $3,999,660 (including PDF-B). The ratio of non-GEF to GEF funding is about 6:1 (including PDF-B) and the GEF will fund only 9.6% of the cost of the Alternative. See Annex A for more details regarding incremental costs.

158. **Project financing by Donors and Outcomes, including PDF-B, is as follows (in US$):**

	GOC	UNEP	UN-HABITAT	TNC	GEF	TOTAL
Outcome 1. Assessment and Planning	1,903,500	--	--	--	475,000	2,378,500
Outcome 2. MEWS	2,845,250	--	--	150,000	471,000	3,466,250
Outcome 3. IEM in Baoxing	9,118,400	--	--	--	1,247,400	10,365,800
Outcome 4. IEM in Laojunshan	5,773,006	--	--	2,342,410	918,260	9,033,676
National Support Structure (details in Section IV)	368,000	250,000	--	--	538,000	1,156,000
Sub-total	20,008,156	250,000	--	2,492,410	3,649,660	26,400,226
PDF-B	64,000	115,000	15,000	--	350,000	544,000
Total	20,072,156	365,000	15,000	2,492,410	3,999,660	26,944,226

Not: The symbol " -- " indicates "no financial input".

Project financing by donors and outcomes is as follows (in US$):

	Total Cost	GEF Contribution	GOC	TNC	UNEP	UN-HABITAT
Outcome 1						
Activity 1.1	968,500	115000	853,500	--	--	--
Activity 1.2	315,500	82,000	233,500	--	--	--
Activity 1.3	92,000	23,000	69,000	--	--	--
Activity 1.4	612,500	155,000	457,500	--	--	--
Activity 1.5	390,000	100,000	290,000	--	--	--
Subtotal	**2,378,500**	**475,000**	**1,903,500**	**--**	**--**	**--**
Outcome 2						
Activity 2.1	1,975,500	211,000	1,764,500	--	--	--
Activity 2.2	636,750	139,000	397,750	100,000	--	--
Activity 2.3	854,000	121,000	683,000	50,000	--	--
Subtotal	**3,466,250**	**471,000**	**2,845,250**	**150,000**	**--**	**--**
Outcome 3						
Activity 3.1	447,300	347,100	100,200	--	--	--
Activity 3.2	261,600	100,000	161,600	--	--	--
Activity 3.3	5,419,000	135,000	5,284,000	--	--	--
Activity 3.4	2,433,700	433,700	2,000,000	--	--	--
Activity 3.5	1,420,000	20,000	1,400,000	--	--	--
Activity 3.6	384,200	211,600	172,600	--	--	--
Subtotal	**10,365,800**	**1,247,400**	**9,118,400**	**--**	**--**	**--**
Outcome 4						
Activity 4.1	1,989,198	327,100	1,657,098	5,000	--	--
Activity 4.2	210,717	100,000	105,917	4,800	--	--
Activity 4.3	2,574,837	120,260	1,423,967	1,030,610	--	--
Activity 4.4	1,894,887	211,350	1,383,537	300,000	--	--
Activity 4.5	2,060,635	20,000	1,040,635	1,000,000	--	--
Activity 4.6	303,402	139,550	161,852	2,000	--	--
Subtotal	**9,033,676**	**918,260**	**5,773,006**	**2,342,410**	**--**	**--**
National support structure (details in Section IV)	1,156,000	538,000	368,000	--	250,000	--
Total of the above	**26,400,226**	**3,649,660**	**20,008,156**	**2,492,410**	**250,000**	**--**
PDF-B	544,000	350,000	64,000	--	115,000	15,000
Total	**26,944,226**	**3,999,660**	**20,072,156**	**2,492,410**	**365,000**	**15,000**

Note: The symbol " -- " indicates "no financial input".

SECTION VI. MONITORING, EVALUATION, AND DISSEMINATION

159. The NPD will be responsible for continuously monitoring the project and of timely completion of all goals according to the agreed timetable and logframe matrix.

160. UNEP and SEPA will formally monitor and evaluate the project following UNEP-GEF rules and procedures. The NPD will prepare and submit to UNEP half-yearly progress reports in line with the UNEP format. Half-yearly progress reports will address project implementation issues. Further, UNEP's country representative will be engaged in project progress monitoring.

161. Project implementation will also be subject to joint review by the NPD, SEPA, and UNEP every 12 months, and wherever necessary, an extraordinary review meeting may be organized. This annual project tripartite review will coincide with a PSC meeting.

162. The NPD will prepare and submit to each annual tripartite review meeting an Annual Progress Report (APR). Annual reports will specifically address the timely completion of activities listed in the log-frame matrix of this project, as well as project implementation issues. Particularly, monitoring of project impacts, using the performance indicators in the logframe, will be conducted as part of the APR. During the first year of project implementation, the first task of the MEWS at two demo sites will be to identify the baseline ecosystem conditions. The baselines will be established in relation to the set indicators in the logframe, but particularly the following categories are considered: IEM-related institutional arrangements, catchment water retention, soil erosion, wildlife habitat conditions, sequestration of carbon, and reduction of emission of green house gases, and socio-economic conditions. The baseline conditions as of project year 1 will be agreed upon at the LSCs and PSC.

163. At the demo level, the PMUs, particularly the Provincial Coordinators, are tasked with demo-level project Monitoring and Evaluation. The demo MEWS can create information on the changes in ecosystem functions for the Years 4 and 5, to be reported to the LSCs. The Provincial Coordinators will report to the project progress to the PSC, as well as PMO. Local communities will participate in the demo MEWS activities, using the MEWS local indicators, and they will monitor the demo progress.

164. The NPD will prepare a terminal completion report upon conclusion of the project. A terminal report will specifically address the timely completion of activities and the impacts listed in the logframe matrix.

165. If deemed necessary, the Implementing Agency will request for additional reports during project execution.

166. The project will have two independent evaluations. The first evaluation will be a mid-term review, 30 months after inception. The second and final independent evaluation will be upon project termination. Evaluation reports will also become public to facilitate mutual learning, and strategic planning. UNEP, at its discretion, may schedule additional independent evaluations if deemed necessary. (For more detailed explanations of the monitoring and evaluation plans, see Annex H).

167. Disseminating project results is a key part of the strategy to build a system of EFCAs in the Yangtze River basin. The project is, therefore, making special provisions to ensure dissemination of all its results within the Yangtze River basin and within China, and as appropriate outside China. All the four outcomes have special resource allocations for dissemination: Assessment ($275,000), MEWS ($24,000), and demos ($1,043,354). The total amount dedicated to dissemination is $1,342,354 (see logframe matrix and the description of results in the main text).

LIST OF ANNEXES

Annex A. Incremental Costs Analysis

1. BROAD DEVELOPMENT GOALS

The Yangtze River is the largest river in China, with the total length of 6,300 kilometers and a drainage area of 1.8 million km^2. Over 400 million people live in the Yangtze River basin. The water discharged by the Yangtze River amounts to about 960 billion cubic meters per annum, and has significant impacts on the environment of East China Sea and the littoral provinces in central China.

The catastrophic 1998 Yangtze River floods caused severe damage to human life, property and the natural environment. 1,075 dykes burst, submerged an area of 3,210 km^2 and affected 2.29 million people, and produced direct economic loss of about $20 billion. The deaths of 1,562 people in the middle and lower reaches of the basin were recorded. The 1998 floods were not isolated events, and it is apparent that the scale and frequency of Yangtze River floods have reached the level where sustainable development of the basin is threatened.

In managing Yangtze River floods, the GOC is interested in pioneering an approach that goes beyond the traditional sector-based approach. Such an approach integrates ecosystem management for flood control with poverty alleviation, and addresses the needs of the global environment. The GOC believes it can avoid further land degradation by integrating ecosystem management with the elimination of threats to ecosystem integrity and their root causes. This desire of the GOC to go beyond a traditional sector-based approach is the entry point for the GEF project.

The 1998 floods can also be seen as aggravated by a decline of key "ecosystem functions" in the basin. The definition of the term "ecosystem functions" encompasses hydrological, geo-chemical and biological attributes of a specific ecosystem used by people for productive activities. These functions include water retention, water purification, carbon sequestration, nutrient cycling, transfer and accumulation of pollutants, biodiversity maintenance, etc.

The project will target "Ecosystem Function Conservation Areas (EFCAs)", as defined by the GOC. EFCAs conserve/restore key ecosystem functions helping prevent natural disasters, such as floods. The purposes of building EFCAs are to maintain/restore a sound ecological balance and ensure environmental safety. The GOC will establish EFCAs in important headwater areas, natural areas essential for flood control, important water conservation and soil conservation areas, critical areas to prevent damage caused by hurricanes, and vulnerable coastal ecological regions.

The ultimate development goal of the project is to build capacity and launch a process of EFCAs establishment that will help protect the above-mentioned global environmental values in the whole upper Yangtze River basin. The project, will work on two demonstration areas, set up a comprehensive EFCAs identification process and establish a management-oriented monitoring and early warning system for EFCAs.

The project will modify some baseline programs and add new critical initiatives in showing how to remove threats and root causes menacing globally significant environmental values in the two demos. These goals of providing capacity and showing, in practice, how to integrate ecosystem management while providing benefits in biodiversity and carbon sequestration and avoiding land degradation, are fully consistent with OP12.

The project has major objectives, focused on the upper Yangtze River basin: (i) provide an integrated ecosystem function assessment for the establishment of EFCAs with multiple global benefits; (ii) design and establish a general Ecological Monitoring and Early Warning System for EFCAs and protected areas; and (iii) establish two critical EFCA demonstrations. Objective one is the planning of the future expansion of EFCAs. Objective 2 is a management-oriented monitoring

system addressing ecological functions and threats in EFCAs, and Objective 3 is the actual implementation of the new conservation approach. Under this last component, the project will establish detailed methods for the new conservation practices.

2. GLOBAL ENVIRONMENT OBJECTIVE

The Yangtze River basin has great potential to sequester greenhouse gases. Reforestation and conservation of ecosystems in the basin will contribute to a net reduction of greenhouse gas emissions from China. Under the assumption that 1 m^3 of standing wood can sequester about 350kg/year of carbon, total carbon sequestration in the 47.7 million hectare of forests in the upper basin may reach up to 7.82 billion tons/year. The planned reforestation and restoration programs in the upper basin (7.1 million ha) can be expected to sequester another 192.3 million tons of carbon in the next 10 years. Under this project, additional forestation and activities reducing carbon emissions will take place in the demo two sites.

The Yangtze River basin ecosystems are among the most biodiversity rich areas in China, and China is one of the few "Mega-diversity" countries in the world. Main vegetation types in the upper basin of the Yangtze River include subtropical evergreen broad-leafed forests, subtropical evergreen broad leafed and deciduous broad-leafed forests, subtropical coniferous forests, grasslands, and wetlands. The middle and upper reach region is one of the Global 200 Sites (WWF) and one of the Hot Spots of global biodiversity (Conservation International). Of the eleven most critical terrestrial regions for biodiversity, conservation in China identified by the China's Biodiversity Country Study (February 1998), four are at least partially located in the upper and middle basins of the Yangtze River. These four regions were included in the China Biodiversity Action Plan as critical areas for conservation.

According to presently incomplete statistics, there are more than 10,000 species (240 families and 1600 genera) of higher plants and 1,300 species of mosses and lichens living in this region. There are 84 endangered species under national level protection. Scientists have recorded more than 5,000 species of medicinal plants, other economically valuable plants, and more than a thousand vertebrate species. Ten percent of them are endangered species under national priority protection.

The upper basin of the Yangtze River has rich land resources due to its diverse ecosystems. The project area has suffered from land degradation in recent years from the perspectives of both sustainable ecological productivity and native biological richness because of cultivation on steep slopes, overgrazing and irrational forestry activities.

The rich array of ecosystems in the 1.0 million km^2 of the upper basin is in danger of degradation and desertification associated with mismanagement and unsustainable land use practices. Ecosystem services, such as provision of water, soils, carbon sequestration, biodiversity conservation, nutrient cycling, and pollution control are at risk without integrated ecosystem management.

The project will show how integrated ecosystem management can help China reduce floods and protect the global environment.

3. SCOPE OF ANALYSES

The Assessment and Planning will be conducted for the whole upper basin (see map on Annex G). The project will produce a well-justified list of priority sites for future EFCAs.

The Monitoring and Early Warning System (MEWS) will be designed at the upper basin of the Yangtze River and demo site levels (Baoxing, Laojunshan), and will have the capacity to incorporate new EFCAs as they are established. MEWS will be an adaptive management tool,

essentially based on remote sensing, facilitating integrated ecosystem management for maintenance/restoration of multiple environmental benefits.

The two demos, Baoxing (314,425 ha, population of 55,105) and Laojunshan (205,460 ha, population of 81,856), are two sites initially chosen for their value in flood and sediment control. These two sites, however, can also provide important global environmental benefits. Baoxing has national level EFCA recognition and Laojunshan has provincial level EFCA recognition. The project will show integrated ecosystem management (IEM) in these contrasting situations. IEM will aim at protecting national environmental values (flood and sediment control) as well as global environmental values (integrated ecosystem management, biodiversity, and carbon sequestration/reduction in emissions).

4. THE PROJECT BASELINE

The Assessment and planning for the establishment of EFCAs with multiple global environmental benefits, will complement uncoordinated baseline efforts by various agencies. Within the life of the project, the State Environmental Protection Administration is planning to carry out demarcation of ecosystem functions in the 12 western provinces ($1,497,560). The Yangtze Project will refer to the data to be produced. The Ministry of Water Resources will conduct a survey on soil erosion that will provide basic information on water and soil retention functions to the Assessment component. ($1,497,560). The Chinese Academy of Sciences is currently conducting the National Key Basic Research Project (No. 973) on the biodiversity of the Yangtze River. Data and information from the project will provide valuable information to this project. ($2,439,042). The State Forestry Administration carries out surveys on forest resources every 5 years. Indicators include forest coverage, biomass, and areas of different forest types. Results of this survey will be one of the data sources on carbon sequestration potential in the integrated assessment in the proposed GEF project. ($2,439,042). The Ministry of Land and Resources carries out land and resources surveys every year. The data on distribution of croplands will be part of this project. ($ 2,719,512). Surveys by State Environmental Protection Administration on eco-environments in the western region will provide part of the data and information needed for the ecological threats and root cause analyses. ($2,100,000). EFCAs planning in Northwest Yunnan and Jiajin Mountains will provide data and information useful when recommending EFCA establishment. ($390,243). SEPA will organize training and workshops for government officials and technicians to disseminate EFCAs knowledge. This effort will be part of the baseline to the public awareness campaign. ($121,951). This information provides some baseline information, but is clearly insufficient to build the desired integrated assessment of ecosystem functions. Under the project, the GOC will generate all additional information needed to assess the flood and sediment control functions of EFCAs. The GEF will cover the collection of information needed to assess biodiversity and carbon sequestration benefits.

The Ecological Monitoring and Early Warning System (MEWS) for EFCAs will also be constructed using baseline efforts: In the upper reach of the Yangtze River, there are 225 Hydrology Stations, 769 Precipitation Stations, 109 Water Quality Stations, 3 Research Stations by CAS; Local statistics; 30,000 sample sites by SFA, which provide updated data every 5 years. ($1,239,000). At the demo level, there is one rainfall station, one hydro-monitoring station and one water quality station in the Laojunshan demo site, and one rainfall station and one hydro-monitoring station in the Baoxing demo site. These stations will provide baseline information to the project, which are valued at $95,000. These efforts to monitor the environment are insufficient and do not specifically address integrated approach for ecosystem conservation and management. Under this project, the GOC will cover the costs for measures that will lead to the establishment of a complementary monitoring system allowing monitoring variables related to flood and sediment control benefits. The GEF will support the integration of information and the establishment of all monitoring needed for global environmental benefits.

The two critical EFCA demonstrations, at Baoxing and Laojunshan, showing how EFCAs can succeed, will add to project-relevant baseline investments in these demo areas. The project will leverage from the significant GOC and TNC investments that will lead to sustainable and integrated management at the sites.

Baoxing Demo. There are three protected areas at this site: Fengtongzhai, Labahe and Baoxinghe. Except salaries for the PA staff (GOC $14,528), there are no further plans for biodiversity conservation, or for corridors and buffer zones. Without the integrated approach of the GEF project, there would be no IEM, no mainstreaming of sector programs to meet global environmental values, insufficient carbon gains and reduction in emissions, and insufficient protection to biodiversity because of conflict between local residents and sound natural resource use.

Laojunshan Demo. Without GEF support, the following initiatives by the GOC would take place: Drafting of sector-based laws and regulations for natural resources management ($50,000); drafting of sector-based management plans (GOC $50,000) and small investments in biodiversity protection ($50,000). Without integrated approaches of GEF project, there would be no IEM, no mainstreaming of sector programs to meet global environmental values, insufficient carbon gains and reduction in emissions, and insufficient protection of globally significant biodiversity.

5. THE GEF ALTERNATIVE

Without GEF support, GOC would continue developing EFCAs around flood and sediment control, but an opportunity to capture global environmental benefits and sustainability would be lost. EFCAs will be more simplistic through planting fast-growing exotic species without biodiversity conservation measures. Integrated management, securing sustainable livelihoods for the people and global benefits would neither be demonstrated nor be available for replication in future EFCAs. Without successful demonstrations of integrated ecosystem management, continued sector-based initiatives would prevail and land degradation would continue.

Outcome 1: Fully developed institutional mechanism for assessment of ecosystem functions and planning for Ecosystem Function Conservation Areas in the upper Yangtze basin. The project will add to efforts of the GOC to assess and plan for the establishment of EFCAs in the upper basin of the Yangtze River. The GOC will use these assessments to establish provincial and national level EFCAs in the whole basin. The overall assessment will be at a scale 1: 1,000,000 and will produce maps for the various ecosystem functions, and an integrative recommendation on EFCAs meeting multiple objectives. Costing reflects the national or global environmental benefits of the EFCAs. The baseline ecosystem functions are water retention capacity, run-off, sediment retention capacity, and soil loss. In addition, there will be an inventory of land use including agriculture, forestry, fishing, energy uses, and cultivation on slopes. The project will evaluate population density and distribution. The GOC will cover the infrastructure and training to carry out the baseline assessment, including staff salary, computers, satellite images, image processing hardware and software, GIS, basic databases and maps, cars, field equipment, etc. The GEF will contribute to the costs of assessing globally significant biodiversity benefits and potential carbon sequestration benefits. Both, potential carbon gains and biodiversity will be assessed using satellite images and software. Selected ground surveys will help check remote sensing assessments. There will also be limited training conducted. Existing surveys by WWF and other agencies will help calibrate these assessments. The GEF will also contribute to the costs of integrating all information into a comprehensive report appropriate for integrated decision-making, and contribute to disseminating this information among national and provincial governments. At the end of the project, the GOC will have an integrated document, with maps at a scale of 1:1,000,000, on the distribution of relevant ecosystem functions, threats and root causes in the upper basin, and a set of recommendations on the location of future EFCAs. The national and provincial governments in further developing EFCAs in the upper basin of the Yangtze River and elsewhere will use this

proposal and its methodologies.

Outcome 2: Established ecosystem function-based Monitoring and Early Warning System in the upper Yangtze basin. The project will support efforts by the GOC to establish a Monitoring and Early Warning System (MEWS) focused on ecosystem functions in EFCAs and existing protected areas in the upper basin. The goal is not to duplicate the existing early warning system for floods, but to create a system that will alert decision-makers of gains and losses, and balances of key ecosystem functions in the system of EFCAs in the upper basin of the Yangtze River. During year two, MEWS will develop habitat quality, native vegetation cover and other indices that will facilitate integrated management of EFCAs. MEWS will not be able to provide all the information needed by decision-makers, but will be able to warn them of trends that later targeted research can complement and verify. MEWS will be an adaptive management tool that evolves with the needs of managers. The project will make special efforts to develop MEWS in close connection with the participatory IEM and conservation plans developed and approved for each one of the two EFCAs. MEWS will be adapted to the needs of decision-makers and will grow in parallel with the EFCAs system. During the life of the project, it will be established and used in decision-making only in the two demonstration sites. MEWS will include basic information related to functions of primarily national interest, such as population in the target area and in the surrounding 10 km belts, rainfall and temperature (including daily maximum), run-off, land use and GDP. It will also include cover by natural and agricultural vegetation, forest cover, grassland cover and productivity, surface area of degraded grasslands, quantity and types of livestock, firewood consumption, cultivation of slopes, soil erosion and sediments loads, reforestation surface areas, logging areas, commercial logging areas, energy use structure, and industrial structure, extent and quality of habitat for wildlife. This basic information will allow calculation of the following ecosystem functions: capacity to regulate water retention, capacity to retain sediments, capacity to protect globally significant wildlife, carbon sequestering capacity, and an estimate of the tendency of threats to the delivery of these ecosystem functions. MEWS will use satellite imagery and selected ground verification. The GOC will cover the capital, training and running expenses related to baseline costs, including computers, satellite images, image processing hardware and software, GIS, basic databases and maps, cars, field equipment, etc. During project execution, the GEF will contribute to cover expenses related to biodiversity conservation (wildlife habitat quantity and quality), carbon sequestration, and integration of information for decision-makers. After project completion, the GOC will cover all costs for continuing MEWS. At the end of the project, the GOC will have a fully developed MEWS design for upper basin EFCAs. MEWS will also be fully functional and providing integrated reports useful to the management of the two demos.

Outcomes 3 and 4: Demonstrated efficiency and effectiveness in achieving global environmental benefits and local environmental and socio-economic benefits by taking an integrated ecosystem management approach in the Baoxing and Laojunshan demo sites. The project will show how to support and coordinate the development and implementation of sustainable alternative livelihood programs, reduce water retention, reduce sediment loads and eliminate threats to, and the promotion of, global environmental values. The project will provide $ 6,514,891 of non-GEF funds to support ecologically-friendly livelihoods among inhabitants of the two demo sites. At both demonstration sites, the project will also secure protection of globally significant biodiversity, will reduce CO_2 emissions and will enhance carbon sequestration mechanisms. The key issue will be the introduction of integrated ecosystem management coupled with the Monitoring and Early Warning System. At each site, the project will support the establishment of a participatory decision-making committee lead by the provincial governor. This committee will make management decisions considering environmental and social variables. All current and future programs on natural forest protection, reforestation, water management and irrigation, conversion of slope cultivation back to forests, strengthening of protected areas, and management of soil and water conservation in the two demos will be authorized by this committee, thus ensuring that local and global values will be protected. The committee will make decisions

consistent with the goals of IEM, conservation and the MEWS reports. This committee will also coordinate the creation of all alternative livelihoods under this project. These demos will become models for later replication in other EFCAs.

Outcome 3: EFCAs demo at Baoxing. The contribution of the GOC will originate as new investments and as modified baseline investments to ensure global benefits. The project will establish IEM, produce local benefits, ensure protection of globally significant biodiversity using giant panda as an umbrella species, and increase carbon gains/reduce emissions of 22,950 tons C compared with the baseline. Biodiversity benefits will arise from strengthening two of the three protected areas, creating buffer zones and corridors among two of them and measures to protect the overall biodiversity in the area.

Outcome 4: EFCAs demo at Laojunshan. The contribution of the GOC will originate as new investments and as modified baseline investments to ensure global benefits. The project will establish IEM, produce local benefits, ensure protection of globally significant biodiversity, and increase carbon gains/reduce emissions equivalent to 109,337 tons C compared with the baseline. Biodiversity benefits will arise from creating habitat for Yunnan Golden Monkey as an umbrella species. The project will create new buffer zones around the protected areas and measures to conserve the overall biodiversity in this site.

At the end of the project, the Baoxing and Laojunshan EFCAs will be fully functional and have management plans and structures ensuring future sustainability and the protection of local as well as global environmental benefits.

National Support Structure. For effective management of the project, the project will establish the Project Management Office, which is staffed and fully equipped. The Steering Committee and Scientific Advisory Group will be established and become operational. The alternative for this is US$1,156,000, and GEF will cover US$538,000.

6. COSTS AND THE INCREMENTAL COSTS MATRIX

The Alternative costs $41,647,664 and the Baseline (business as usual) costs $14,703,438. The total Increment is $26,944,226. The GEF contribution will be $3,999,660 (including PDF-B). The GEF will fund around 9.6% of the cost of the Alternative (including PDF-B). The project is leveraging a substantial amount of resources ($22,944,566) or about 6 dollars for each GEF dollar contributed.

INCREMENTAL COSTS MATRIX

	Domestic Benefits	Global Benefits
Outcome 1. Fully developed institutional mechanism for assessment of ecosystem functions, and planning for Ecosystem Function Conservation Areas in the upper Yangtze basin ***Baseline*** $ 13,204,910	Under the business as usual scenario, the GOC will continue with sector-based assessments and training with limited scope: mostly in water retention, sediment loss, and land resources. GOC will designate EFCAs based mostly on water retention and sediment loss. There would be limited dissemination of EFCA values. $6,226,826.	There will be some global benefits arising from more knowledge about the biodiversity in the area, and from forest surveys. SEPA's assessment will provide information on threats and root causes. There are no plans to coordinate among surveys, or to integrate assessments to generate maps of potential EFCA location maximizing local and global environmental values. $ 6,978,084.
Alternative $ 15,583,410.	Complementary activities to assess water retention, soil retention, and land use $494,500 (Paid by GOC) on top of the baseline assessment.	The project will complement Baseline surveys and produce an integrated assessment of ecosystem functions, including the ones of primarily national interest and the ones with global environment values: BD, CC, SLM and IEM. The project will generate and disseminate a well-justified list of priority sites for future EFCAs with multiple environmental values. The project will disseminate the results of the assessment widely. $15,088,910.
Increment Total Increment is $ 2,378,500. Of this sum, the GEF will cover only $ 475,000.	The Increment includes activities needed to assess water retention, soil retention and land use surveys. (The GOC will cover all these costs – US$494,500).	The Increment includes additional surveys in BD, carbon sequestration, integration of assessments, preparation and dissemination of integrated reports (The GOC and GEF will share the costs). (GEF: US$475,000, GOC: US$1,409,000)

Outcome 2. Established ecosystem-function-based Monitoring and Early Warning System (MEWS) in the upper Yangtze basin		
Baseline $1,334,000.	There will be scattered hydrological, rainfall, water quality, and local statistics and measurements of limited use in constructing MEWS. $1,334,000.	These activities will generate no real global benefits in IEM, BD or CC. $0
Alternative $4,800,250.	From a domestic benefit perspective, MEWS will provide the same information as the Baseline. $1,334,000	The project will produce a Monitoring and Early Warning System providing integrated information on ecosystem functions on a yearly basis, essential for IEM and in securing global environmental benefits in EFCAs and PAs. $3,466,250.
Increment Total Increment $3,466,250. Of this, the GEF will contribute $ 471,000.	The Increment does not include activities with additional domestic benefits.	The Increment includes infrastructure, monitoring and information integration systems that will allow establishment of IEM with multiple environment benefits. US$3,466,250 (GEF: US$471,000, GOC: US$2,845,250. TNC: US$150,000)
Outcome 3. Demonstrated efficiency and effectiveness in achieving global environmental benefits and local environmental and socio-economic benefits by taking an IEM approach in the Baoxing demo site		
Baseline $ 14,528	No measures will be taken to achieve domestic benefits, US$0.	These activities will provide very limited and insufficient investments in biodiversity protection, $14,528. There would be no IEM, and unsatisfactory carbon sequestration or avoidance of carbon emission.
Alternative $ 10,380,328	The project will improve livelihood of local stakeholders, and reduce water pollution	The project will show how to support and coordinate the development and implementation of sustainable alternative

	$3,379,000.	livelihood programs, mainstream sector programs, reduce water discharges, reduce sediment loads, and eliminate threats and promote global environmental values through IEM. At both demonstration sites, the project will secure protection of globally significant biodiversity, will reduce CO_2 emissions and will enhance carbon sequestration mechanisms. The key will be IEM coupled with MEWS. $7,001,328.
Increment. $ 10,365,800. Of this the GEF will cover $ 1,247,400	Domestic benefits of the increment will include reduction of water pollution and provision of alternative livelihood consistent with project objective. The GOC will cover this cost. US$3,379,000.	Global benefits include establishment of IEM, protection of globally significant biodiversity and avoidance of carbon emissions. US$6,986,800 (GEF: US$1,247,400: GOC: 5,739,400)
Outcome 4. Demonstrated efficiency and effectiveness in achieving global environmental benefits and local environmental and socio-economic benefits by taking an IEM approach in the Laojunshan demo site		
Baseline $ 150,000	The GOC will draft sector-based laws and regulations, and natural resources management plans. $100,000.	These activities will provide very limited and insufficient investments in biodiversity protection, $50,000. There would be no IEM, and unsatisfactory reduction of carbon emission or carbon sequestration.
Alternative $ 9,183,676	The project will improve livelihood of local stakeholders, improve energy use and reduce water pollution. $3,791,891.	The project will show how to support and coordinate the development and implementation of sustainable alternative livelihood programs, mainstream sector programs, reduce water discharges, reduce sediment loads, and eliminate threats and promote global environmental values through IEM. At both demonstration sites, the project will secure protection of

		globally significant biodiversity, will reduce CO_2 emissions and will enhance carbon sequestration mechanisms. The key will be IEM coupled with MEWS. $5,391,785.
Increment. $ 9,033,676. Of this the GEF will cover $ 918,260	Domestic benefits of the increment will include reduction of water pollution and provision of alternative livelihood consistent with project goals.US$3,691,891	Global benefits of the Alternative include establishment of IEM, protection of globally significant biodiversity and reduction of carbon emissions. US$5,341,785 (GEF: US$918,260, GOC: 2,081,115, TNC: US$2,342,410))

Summary of project costs

Total Baseline:	**$ 14,703,438**
Total Alternative (including PDF, national support costs):	**$ 41,647,664**
Total Increment (including PDF, national support costs):	**$ 26,944,226**
Total GEF contribution towards the increment:	**$ 3,999,660**

Detailed costing by activities of the Baseline, Alternative, Total Increment, and the GEF contribution (in US$):

	Baseline (B)	Alternative (A)	Total Increment	GEF Contribution
Outcome 1				
Activity 1.1	10,592,716	11,561,216	968,500	115000
Activity 1.2	2,100,000	2,415,500	315,500	82,000
Activity 1.3	--	92,000	92,000	23,000
Activity 1.4	390,243	1,002,743	612,500	155,000
Activity 1.5	121,951	511,951	390,000	100,000
Subtotal	**13,204,910**	**15,583,410**	**2,378,500**	**475,000**
Outcome 2				
Activity 2.1	1,239,000	3,214,500	1,975,500	211,000
Activity 2.2	95,000	731,750	636,750	139,000
Activity 2.3	--	854,000	854,000	121,000
Subtotal	**1,334,000**	**4,800,250**	**3,466,250**	**471,000**
Outcome 3				
Activity 3.1	--	447,300	447,300	347,100
Activity 3.2	--	261,600	261,600	100,000
Activity 3.3	--	5,419,000	5,419,000	135,000
Activity 3.4	14,528	2,448,228	2,433,700	433,700
Activity 3.5	--	1,420,000	1,420,000	20,000
Activity 3.6	--	384,200	384,200	211,600
Subtotal	**14,528**	**10,380,328**	**10,365,800**	**1,247,400**
Outcome 4				
Activity 4.1	--	1,989,198	1,989,198	327,100
Activity 4.2	100,000	310,717	210,717	100,000
Activity 4.3	--	2,574,837	2,574,837	120,260
Activity 4.4	50,000	1,944,887	1,894,887	211,350
Activity 4.5	--	2,060,635	2,060,635	20,000
Activity 4.6	--	303,402	303,402	139,550
Subtotal	**150,000**	**9,183,676**	**9,033,676**	**918,260**
National support structure	--	**1,156,000**	**1,156,000**	**538,000**
Total of the above	**14,703,438**	**41,103,664**	**26,400,226**	**3,649,660**
PDF-B	--	544,000	544,000	350,000
Total	**14,703,438**	**41,647,664**	**26,944,226**	**3,999,660**

Note: The symbol "--" indicates "no financial input".

s of impact (objectives) and successful pletion (outputs, end of the year-mpletion) (Baseline condition[1])	**Means of verification**	**Risks and assumptions**
e end of Year 5, SEPA re-organizes th ı Evaluation Committee to take the IE M ach for evaluation and management o stem functions, based on the science- assessment and planning methodolog es ished through the current project and ı n sults of the two demonstration sites line: the Government of China has ished the EFCA Evaluation Group); e end of Year 5, an ecosystem functio ı - Monitoring and Early Warning Syste ı ı e upper Yangtze basin is able to send l report to SEPA on the situation of stem functions, in support of integrated stem management of the upper Yangtze (Baseline: there are sectoral monitoring ties). l on the recommendations made by the ct, by the end of Yr.5, SEPA and the ıcial governments plan the ishment of 6-8 new EFCAs in the upper	1.Report from the Chair of the EFCA Evaluation Group to the PSC, which is to be recorded in the PSC minutes 2. Report from the MEWS operation to the PSC 3. Letters from provincial governors to SEPA, and SEPA decision records.	SEPA and/or provincial governments may change their priorities, and/or may find other more attractive EFCA models. Environmentally and culturally diverse nature of the project area prevents smooth coordination of stakeholders, and clear indication of achievement of global environmental benefits. Ministries maintain current interest in EFCA development.

ıdicative nature, and during Year 1, the baseline conditions will be assessed, so that the stakeholders at the LSC and PSC

tze River basin (baseline: two national EFCAs, but no EFCA established based on mprehensive scientific assessment). e end of Yr. 5, the two demos are legally ished, and when compared to year 1, : .t least 5% average increases in water etention (baseline: 1,212 million – 1,5 2 illion m^3) .t least 20% average reductions in ediment loads (baseline: 0.8-1.2 kg of ediments in 1 m^3 of runoff.), ffective protection of 136,869 ha of rime wildlife habitat (Baseline: 6,090ha), .dditional carbon sequestration and voidance of emissions equivalent to 32,287 tons C (Baseline: 1,598,975 to is). mproved local income level by 5-10% Baseline: 1,014-2,259 Chinese Yuan) e end of Yr.5, Yunnan and Sichuan ha e anent provincial level mechanisms ing information from the 2 EFCA site ; aking broad management decisions stent with agreed national and global its. (Baseline: no provincial mechanis n ished) e end of Yr.5, the Sichuan and Yunnan ncial governments adopt EFCA gement goals in agriculture, forestry, esources, water resources, planning and onment, in the two demonstration as. (Baseline: no EFCA management established)	4.PMO reports to SEPA based on the monitoring and measurement of: (i) water retention capacity (model based on remote sensing of vegetation cover); (ii) reduction in sediment loads (soil loss estimate method available in China); (iii) wildlife habitat (reports of the provincial governments); (iv) carbon sequestration (estimated from changed land use patterns), and carbon emission avoidance (estimated from provision of more energy efficient stoves); and (v) local income level (local income survey) 5. Letters from provincial governors to SEPA informing of the establishment of these EFCA mechanisms. 6. New regulations are available at the SEPA and PMO offices.	
Situation on the ecosystem functions in	1. Published integrated report, which is	EFCA planning process at both national

Yangtze River Basin in 2008 is estimated inated. (Baseline: no integrated t and dissemination of ecosystem	approved by the SC	and provincial levels will be coordinated with the progress in the ecosystem function assessment.
The Government of China and five governments establish a streamlined and sed EFCA assessment and designation ı, based on the existing EFCA Committee and Groups (baseline: The luation Committee at the national level Evaluation Groups at the provincial but its decision is not based on the sed assessment)	2. SEPA and provincial reports available at SEPA.	
SEPA and five provincial governments stablish 6-8 new EFCAs in locations with the recommendations of the t. (Baseline: Two national-level EFCAs r Yangtze basin, but no EFCA base on scientific assessment)	3. SEPA and ministries records.	
The SC approves the assessment reports ecosystem functions related to water ınd soil retention in the upper Yangtze n.	Minutes of the SC.	- Delays caused by unexpected delivery or data management issues.
The SC approves the assessment report ecosystem functions related to y, carbon sequestration/emissions and current and planned land use and y in the upper Yangtze Basin.	Minutes of the SC.	- Same as above. No problems with surveys. - Delays caused because of difficulties with agreeable indicators.
e SC approves the assessment report of root causes for degradation of critical functions.	Minutes of the SC.	-Problems may arise with timely data acquisition.

ıe SC approves the assessment report of ıic values of all critical ecosystem	Minutes of the SC.	- Delays may be caused by setting up an valuation methodology
e SC approves the integrated assessment *ll* critical ecosystem functions and	Minutes of the SC.	.- There may be non-anticipated delays and problems with integration.
e SC approves the recommended list of cluding the final report of the t, all maps, and the GIS.	Minutes of the SC.	- Delays may be caused by the integrated assessment report not clearly indicating the ecosystem functions and their values
sults are disseminated to relevant governments, relevant ministries and al organizations.	Letters of all institutions acknowledging receipt of the documents.	- Delays may be caused if all reports are not delivered in time.
PA initiates to use the assessment and methodologies in overall EFCA mechanism	Report of SEPA to the Steering Committee.	

nd of Yr.4, an independent evaluation ıe usefulness of MEWS in managing the sites. (baseline: no management oriented WS established)	1. Report of the independent evaluation.	-MEWS could be too slow in developing and its report may not be incorporated into management on time. - Other EFCAs and PAs may find MEWS expensive and/or not very useful.
ɛnd of Yr. 4, the Local Steering ɛs in two demonstration sites approve the nagement plans of the two demo sites, ıe results provided by MEWS. no management plans on EFCA demo	2. LSC minutes indicating approval of the revised EFCA management plans and acknowledging input from MEWS.	
n the capacity of upper Yangtze MEWS l and connected with provincial and	3. Letter by SEPA/MEWS to the SC	

s (By Year 2), by the end of Yr. 5, SEPA cover other river basins in the MEWS seline: ecological monitoring capacity at e Academy of Environmental Sciences)		
end of Yr. 5, at least 3 non-project d PAs request MEWS support for their nt. (Baseline: no request for MEWS	4. Letters from managers of at least 3 non-project EFCAs and/or PAs requesting MEWS technical support.	
of Yr. 2, all needed equipment is all personnel is trained, and all are in place.	A report from PMO to SC indicating all needed equipment purchased, all personnel trained, all databases in place.	Delays may be caused by long procedure of procurement.
, 4, and 5, there are 1:1,000,000- scale water retention, soil conservation nd vegetation cover.	Available at the PMO.	
of Yr. 3, all needed equipment is all personnel is trained, and all are in place.	-Reports from PMU to SC indicating all needed equipment purchased, all personnel trained, and all databases in place	Delays may be caused by long procedure of procurement.
of Year 3 the list of management with initial conditions are developed and MUs, and approved by the LSCs and	-Minutes of LSCs and PSCs, indicating their approval on demo site management indicators.	
ars 4 and 5, full monitoring reports of are submitted to the LSCs.	- Minutes of the LSCs, acknowledging the monitoring reports and PMU responses.	Delays may be caused by unexpected delivery or data management issues.
of Year 5, experiences of the demo-S are disseminated to other EFCAs s.	- Letters by other EFCAs and/or PAs acknowledging receipt of the MEWS reports	Other EFCAs and PAs may show interests in other MEWS models.

nd of Year 4, the LSC is official ›y local and provincial governments, as ding IEM-EFCA committees with ıagement responsibility. end of Yr. 4, at least 3 non-project e the results and experiences of the emonstration site. ring initial conditions (Year 1 Baseline) ›revailing by the end of the project; the emonstration site shows: % average increase in water retention ty (baseline: 2,800-3,300 m^3/ha); % average reductions in sediment loads ine: 0.8 kg of sediments in 1 m^3 of run- ve protection of 15,000 ha of wildlife t (baseline: 39,567 ha); onal carbon sequestration equivalent to) tons C. (baseline: 1,045,407 'year); and ge income of local residents in the ıstration site increased by 5% (baseline: Chinese Yuan).	1. Year 4: Letters from governors to SEPA . 2. Three letters show non-project EFCA leaders visit the sites and use their results. 3.PMO reports to SEPA based on the MEWS results : (a) water retention capacity (model based on remote sensing of vegetation cover); (b) reduction in sediment loads (soil loss estimate method available in China); (c) wildlife habitat (reports of the provincial governments); (d) carbon sequestration (estimated from changed land use patterns); and (e) average income (local survey).	-The EFCA models implemented provides acceptable balances of local and global benefits. -Success in implementation makes the inter-sector approach desirable to all parties. -Climatic conditions allow ecological variables to respond fast enough for early demonstration of on-the-ground impacts during the life of the project.
i) LSC agrees on the IEM as EFCA nt principle, ii) Bylaws and regulations e adopted by local governments, iii) ıffed, trained and equipped.	(i) LSC minutes (with a list of participants), showing agreements on IEM applicable to EFCA management, ii) Reports by local government to LSC on bylaws and regulations, iii) Report from PMU to LSC on staffing, training and equipment.	Inter-sector cooperation may not be smoothly achieved.

an IEM plan for the EFCA is fully y LSC. : a list of necessary changes in rules and is identified by LSC. : a revised IEM plan, based on the ults, is fully approved by LSC. : Acts indicating changes are enacted.	Minutes of LSC, which are submitted to PSC. -Minutes of LSC, approving necessary changes in laws and regulations; Minutes of LSC, which are submitted to PSC. -Reports by local governments to LSC on the acts	Delays may be caused due to time-consuming negotiations.
a list of needed changes to the existing rams, is approved by LSC. Target rams are: forestry, re-conversion of ultural land into forests, quarry. , all changes are incorporated into the sector programs are implemented in IEM.	Minutes of LSC, approving a list of changes needed; Minutes of LSC, reporting on the changes already incorporated into the programs Minutes of the LSC.	Delays may be experienced because of inappropriate political incentives for inter-sectoral IEM in each relevant sector.
PA plans are approved by the LSC e: training of staff and trails are finished.	-Minutes of the LSC, approving the PA plan; -Reports by PMU on the staff training and trail development	Training, negotiation and approval of plans may require longer time than expected. Delays in planting due to seedling availability.
, an AL Plan is approved by LSC.	Minutes of the LSC, approving the AL plan;	Problems in negotiating and agreeing on AL with all stakeholders.

' and five: AL is implemented, resulting d economic conditions.	Field visits and interviews, to be reported to LSC	
syllabus and materials are developed to training.	Publication by PMU of the syllabus and materials, to be reported to LSC	-Delays may be caused in preparing the materials. Materials may be of satisfactory quality but delivery may not be done effectively.
², four and five: 1000 students, farmers, akers are trained.	Report by PMU on the training activities to LSC.	
there are at least 30 visits to the EFCA ision-makers at the national and level.	Reports on and vouchers for the visits, prepared by PMU and submitted to LSC.	-Key visitors will come to the site and will be interested in EFCAs.

nd of Year 4, the LSC is official ›y local and provincial governments, as ding IEM-EFCA committees with ıagement responsibility.	1. Year 4: Letters from governors to SEPA .	-The EFCA models implemented provides acceptable balances of local and global benefits.
ɛnd of Yr. 4, at least 3 non-project e the results and experiences of the n demonstration site.	2. Three letters show non-project EFCA leaders visit the sites and use their results.	-Success in implementation makes the inter-sector approach desirable to all parties.
ɾing initial conditions (Year 1 Baseline) ›revailing by the end of the project; the n demonstration site shows: ıverage increase in water retention ty (baseline) 2,100-2,600 m^3/ha), 20% average reductions in sediment (baseline: 1.2 kg of sediments in $1m^3$ of), ve protection of 121,869 ha of wildlife t (baseline: 6,523 ha), ı sequestration equivalent to 94,500 tons idance of carbon emissions amounting 337 tons. C (baseline: 553,568 ton C of ı sequestration and 10,232 ton C of ı emission), and ge income of the local residents in the ıstration site increased by 10% ine: 1,014 Yuan)	3.PMO reports to SEPA based on the MEWS results : (a-1) terrestrial water retention capacity (model based on remote sensing of vegetation cover); (a-2) wetland water storage capacity (using formula established by Yunnan province and using the satellite images through MEWS); (b) reduction in sediment loads (soil loss estimate method available in China); (c) wildlife habitat (reports of the provincial governments); (d-1) carbon sequestration (estimated from changed land use patterns); (d-2) reduction in carbon emission (estimated from provision of more energy efficient stoves; (e) average income (local survey).	-Climatic conditions allow ecological variables to respond fast enough for early demonstration of on-the-ground impacts during the life of the project.
i) LSC agrees on the IEM as EFCA nt principle, ii) Bylaws and regulations ɛ adopted by local governments, iii) ıffed, trained and equipped.	(i) LSC minutes (with a list of participants), showing agreements on IEM applicable to EFCA management, ii) Reports by local government to LSC on bylaws and regulations, iii) Report from PMU to LSC on staffing, training and equipment.	Inter-sector cooperation may not be smoothly achieved.

an IEM plan for the EFCA, is fully ›y LSC.	Minutes of LSC, which are submitted to PSC.	Delays may be caused due to time-consuming negotiations.
: a list of necessary changes in rules and ›, is identified by LSC.	-Minutes of LSC, approving necessary changes in laws and regulations;	
: a revised IEM plan, is based on the ›ults, fully approved by LSC.	Minutes of LSC, which are submitted to PSC.	
: Acts indicating changes are enacted.	-Reports by local governments to LSC on the acts	
a list of needed changes to the existing ›rams, is approved by LSC. Target ›rams are: forestry, re-conversion of ultural land into forests, wetland and anagement, and energy.	Minutes of LSC, approving a list of changes needed;	Delays may be experienced because of inappropriate political incentives for inter-sectoral IEM in each relevant sector.
, all changes are incorporated into the	Minutes of LSC, reporting on the changes already incorporated into the programs	
sector programs are implemented in IEM.	Minutes of LSC.	
: Biogas energy is supplied for 5,116 ›, and improved stoves are provided for ›eholds.	Through local survey conducted by PMU	
Protected Area plans are approved by	-Minutes of the LSC, approving the PA plan;	Training, negotiation and approval of plans may require longer time than expected.
e: training of staff and trails are finished.	-Reports by PMU on the staff training and trail development	Delays in planting due to seedling availability.

², an AL Plan is approved by LSC.	Minutes of the LSC, approving the AL plan;	Problems in negotiating and agreeing on AL with all stakeholders.
and five: AL is implemented, resulting d economic conditions.	Field visits and interviews, to be reported to LSC	
syllabus and materials are developed to training.	Publication by PMU of the syllabus and materials, to be reported to LSC	-Delays may be caused in preparing the materials. Materials may be of satisfactory quality but delivery may not be done effectively.
², four and five: 1000 students, farmers, akers are trained.	Report by PMU on the training activities to LSC.	
there are at least 50 visits to the EFCA ision-makers at the national and level.	Reports on and vouchers for the visits, prepared by PMU and submitted to LSC. Field visits and interviews, to be reported to LSC.	-Key visitors will come to the site and will be interested

EACH ACTIVITY:

ld surveys to get water retention indicators such as vegetation types and their coverage. Litter and water retention capacity. Assessed and ecosystem. Database of key indicators of soil erosion and sediment retention. Remote sensing and field surveys to provide inputs for ntation. Database of key indicators including habitat quality, species distribution, especially those of an endangered or threatened nature to ips of especially critical biodiversity areas. Assessed and mapped areas and types of national key programs, such as reforestation, farmlands l grasslands. Evaluated carbon sequestration (sink) potential. Mapped energy adjustment programs, such as fuel wood-saving kitchens and on on land use and land use changes to evaluate current productivity of agricultural lands, grasslands, water areas and forest ecosystems.
l threats and root causes to ecosystem functions in different areas. Assessed linkages between threat factors and their root causes to social Assessed economic value of all ecosystem functions to provide decision-makers with necessary information from an economic perspective.
ort of the ecosystem functions (under Activities 1.1-1.2) with integrated and weighted maps.
arious assessments and proposing EFCA locations.

ely through publication of reports, workshop, web page and target training for decision-makers.

monitoring models and early warning system in coordination with the two demos. Recruited and trained staff. Purchased vehicles, software, and verified by ground verification.
puters. Training of staffs. Ecological monitoring model and databases. Remote sensing-based ecosystem and integrate ecological

elated data. Integrated report for use in integrated resource management at the two demos.

ers from various provincial bureaus, representatives form NGOs and local community. Local project office at Baoxing demo site.
n in line with MEWS and approved by LSC. Analyzed existing rules and regulations at the Sichuan Province level to determine changes ent rules and regulations.
Plant native trees to improve habitat for wildlife, planted fruit trees near protected areas and established firewood plantation around villages. ew technologies to reduce their environmental impacts.
icipatory management plans. Training of staff. Basic infrastructure to strengthen the management of Fengtongzhai and Baoxinghe protected gtongzhai nature reserve and bamboo corridors between Fengtongzhai and Labahe nature reserves for giant panda as an umbrella species.
ivelihood package with full participation of all local stakeholders. Pilot demonstration of eco-tourism and agro-tourism projects around anted bamboo. Capacitated local stakeholders for the development and management of alternative livelihoods.
aterials for 1000 school children, farmers, authorities and various managers, including all agencies represented in the IEMCC. Disseminated ugh a series of workshops and selected visits to Baoxing demo site.

ers from various provincial bureaus, representatives form NGOs and local community. Local project office at Baoxing demo site.
n in line with MEWS and approved by LSC. Analyzed existing rules and regulations at the Yunnan Province level to determine changes ent rules and regulations.
)0 ha of trees planted. 589 ha of agricultural land on steep slopes re-converted into forestlands with selected native species. Cost-effective 5,116 households. Provision of 8,725 households with energy-saving stoves.
serve for sustainable conservation of the Yunnan Golden Monkey and associated biodiversity. Modified and improved management plan. l infrastructure to strengthen the management of the PAs. 167 ha of farmland re-converted.
ıd developed sustainable livelihood package with full participation of all local stakeholders. Pilot demonstration of eco-tourism project in crop planting, deer breeding, organic kidney bean planting and planting of bamboo in line with MEWS. Training programs to increase the ıls and local stakeholders.
terials for 1000 school children, farmers, authorities and various managers, including all agencies represented in the IEMCC. Disseminated izing workshops and selected visits to Laojunshan demo site

Annex C. STAP Roster Technical Review

Project title: Nature Conservation and Flood Control in the Yangtze River Basin
Reviewer: Pei Sheng-ji,
Professor, Kunming Institute of Botany,
Chinese Academy of Sciences,
President, Center for Biodiversity and Indigenous
Knowledge, Kunming, China, and
Ex-President of International Society of Ethnobiology
Date: 3 September 2003

1. Scientific and Technical Soundness of the Project

The conceptual framework of the project follows current concepts and principle of the Ecosystem Function Conservation Areas (EFCAs) to integrate water and soil erosion control, biodiversity conservation, carbon sequestration and ecosystem management together, to reduce floods in the Yangtze River basin, The proposed project will set up implementation of protection of global environmental values; establishment of monitoring and early warning system; and help to establish two demonstration sites in the upper reaches of the Yangtze River. These are scientifically sound and essential components of the integrated conservation and management of mountain ecosystem. There is a sufficient knowledge and indigenous wisdom in the region to plan and implement the proposed action. UNEP and SEPA have had an outstandingly competent staff and policies since its establishment, and can be expected to engage this scientific, technical and social knowledge when managing this project.

The approaches proposed have very high probability of achieving the goal and objectives of the project. The Logframe Matrix (Annex B.) will help guide the process. The risks are not with the project design itself but with working in the environmentally and culturally sensitive region to any changes or interventions, as noted in the risk assessment of the proposal. There is a comment from the reviewer to stress a need to get on with project implementation as soon as possible. The critical issue is to launch the social dimensions of the project together with the project activities in the initial stage of the project to quickly gain community confidence, trust and support for the project. Livelihood, food security, land and resource tenure etc. must improve quickly for buy-in to nature conservation so that local actions become reality.

2. Identification of Global Environmental Benefits

The global benefits in the proposal are well presented and clear. This is no question that the biodiversity of the upper Yangtze Region is one of the global 'Hot Spots', and part of the world bio-cultural heritages recognized by international conservation agencies (IUCN, WWF, CN, TNC etc.) and UNESCO-World Heritage Programme.

The Yangtze River basin has great potential of sequestrating greenhouse gases. Reforestation and conservation of ecosystem in the basin will contribute to the net reduction of green house gas emission from China.

These are well presented in the GEF Programming of the proposal.

3. How Does the Project Fit within the Context of the Goal of the GEF?

The project focuses on mountain range of highest biodiversity value. The scale of the proposal covers a geographic space of sufficient size to embrace of the key elements of the mountain ranges of upper Yangtze (known as the Hengduan Mountains of Eastern Himalayas). This will enable the conservation program to provide a better opportunity for

conserving globally important species: Giant Panda, Golden-hair Monkey, endemic and unique Eastern Himalayan floristic components and ecosystems.

4. Regional Context

The geographic area of the proposal lies within China, which sustains more than 200 million population in China. However these are no immediate international dimensions in the project.

5. Replicability

It is important to note that the implication of the project as a model have significance to other mountain regions of China, as well as to other Himalayan countries: Bangladesh, Bhutan, India, Myanmar, Nepal and Pakistan. The challenges faced throughout the Himalayas are similar to those of the Yangtze River ecosystems. The Himalayan Region is biodiversity-rich and critical to water supplies down-streams, known as one of the 'Water Towers of the World'. Indigenous people that can contribute to and benefit from cooperative management of the area occupy this region as well.

The Eco-regional Conservation Programme proposed by WWF and funded by UNEP in the Himalayas, the Eastern Himalayan Biodiversity Programme proposed and implemented by ICIMOD (International Center for Integrated Mountain Development, based in Kathmandu, Nepal), and the PARDYP (People And Resources Dynamics Project) funded by SDC/IDRC and implemented in China, India, Nepal and Pakistan, as well as other entities, seek to promote the extension of such projects throughout the Himalayan Mountain Ranges from Nepal to India, Pakistan to Myanmar. In this regard, the project could include a more explicit activity to link its efforts with other projects throughout the Himalayas. The Nature Conservation and Flood Control in the Yangtze River Basin Project could explicitly link with conservation efforts of other projects to ensure that what is learned can be accessed by other governments and communities.

6. Specific Comments

Activity 1.1: Assessment of biodiversity retention capacity. The indicators for establishment of priority biodiversity areas should be further developed to cover both natural and cultivated species, key stone species, landraces of mountain crops, and linkage between protected areas and managed landscapes. These can be prepared in consultation with experts and institutions and universities located in the country (particular in Sichuan and Yunnan Provinces).

Activity 1.1: Assessment of carbon sequestration and avoidance of carbon emissions potential. An important aspect of this is to explore and identify proper tree species for reforestation and herbaceous plants for pastures as the level of absorbing CO_2 of different plant species is significant as well.

Activity 1.1: Assessment of land use and productivity for various ecosystem shall be conducted, studying all traditional land management practices, and respecting local knowledge and indigenous strategies. In many cases, mountain people pay more attention to maintaining higher biodiversity in surrounding ecosystems rather than productive in the marginal lands. This point is also applicable to Activity 1.2: economic valuation of ecosystem function.

Outcome 2: MEWS: This is extremely important and also a very challenging task amongst project activities. On one hand it is related to how to coordinate existing monitoring stations handled by various ministries at local level; and on the other hand, it is required to have scientific and technical coordination between different disciplines.

EFC-A demo at Laojunshan: There is no mentioning about the role of traditional culture in the conservation. The area has a long history of the Sacred Natural Site (SNS) conservation approach by different ethnic cultural groups. There is a need to recognize and integrate this traditional conservation approach into the demo site (According to Luo Peng, 2001). In the Naxi village 'He Yen' in Lijiang District, the total farming land is only 5% of the total land but the SNS makes up 42% of the total collective forests at present. It is my suggestion to include the SNS in the mapping of land use in both Laojunshan and Baoxing demo sites.

The project should pay attention to the invasive species, eg. *Agratina adenophorum* in the middle mountains of the Yangtze region. At least the issue should be dealt with at the start up monitoring work and is to be included in the MEWS plan.

Finally, I would like to conclude my review in the below:
This is an excellent project and I recommend its support without reservation.

Additional Review Comments from Pei Shengji , STAP Reviewer, on 07.09.2003.

7. How the project fits within the context of the goals of GEF

Section 3: This project fits properly within the context of the Goal of the GEF. The Yangtze River and its ecosystem are globally important as the basin is inhabited by a number of globally important endemic relic and rare species (e.g. Giant Panda, Golden Hair Monkey spp., the Yangtze Dolphin, the living fossil tree Metasequa, etc.), which are critically threatened by human population, population increase and disasters like floods. Conservation efforts with GEF support will be a great contribution to global biodiversity and environment. The project has close linkages with GEF strategies and program priorities of biodiversity, water and carbon sequestration, and is relevant to the CBD and UN Convention on climate change.

8. Replicability

Section 5: The project can make special contribution to the integrated ecosystem management of great river systems in China and other pats of Asia, in particular on the interrelationship of lowlands and highlands of a river system. It is highly expected that Immediate Objective 2: MEWS will provide experiences in this regard. The other value-added for the global environment beyond the project itself are improvement of livelihood of mountain rural communities and promotion of social and cultural development among local ethnic minorities through local people participating in project activities as well as strengthening of cooperation of local institution in environment conservation.

9. Sustainability of the project

Conservation of the Yangtze River and its ecosystems is long-term policy prioritized by the Chinese government, and supported by all societies in the region. There is, therefore, no doubt about the sustainability of the project.

10. Linkage with other GEF operational programs

This project has distinctive linkages to GEF operational programs: a strong linkage with biodiversity and water conservation reflected in the implementation of the project, linkage with conservation of biodiversity in natural habitats and agro-biodiversity in farming land of the two domo sites of the project, linkages of biodiversity and carbon sequestration in Activity 1.1 of the project.

11. Other beneficial or damaging environmental effects

The reviewer believes that this project will benefit not only the environment of the project demo site areas, but also the environment of the downstream of the Yangtze River. I cannot see any damaging environment effects with the project.

12. Degree of involvement of stakeholders

This project has a wide range of involvement of stakeholders, from conservation line agencies at central, provincial and local levels, to community people of different cultural groups. The degree of involvement of stakeholders of this project is very high, which brings challenges for coordination of project implementation.

13. Capacity building

There is a strong component of capacity building designed in the project. As the project covers biodiversity, water and carbon sequestration, and environment monitoring/working systems (MEWS), training of people involved in this project at different levels is of importance. Environmental awareness education, practical technology training on tree plantings, management and protections are critical issues in the two demo sites, which are included in the project activities. Additional adjustment is needed in the course of implementation (e .g. PRA methods in project planning).

14. Innovativeness of the project

There is innovativeness in this project, as I observed at least two aspects: one is the EFCAS which is put into implementation practice (from concepts and principles) for a large conservation project, and the other is a sound linkage established between protected areas, managed landscaping and natural sites for conservation in a large watershed, which are new developments of conservation activities.

Annex C1. Response to STAP

Reviewer: Dr. Pei Sheng-ji
IA Response: UNEP task team

1. SCIENTIFIC AND TECHNICAL SOUNDNESS OF THE PROJECT

The reviewer believes that the project is scientifically and technically sound, following the concept and principles of the Ecosystem Function Conservation Areas (EFCAs). The project components are essential elements of integrated mountain ecosystem conservation and management.

The EFCAs concept and policy is the basis for designing and implementing the project. We note this, and an integrated approach should be maintained throughout the project implementation.

There is sufficient knowledge and indigenous wisdom in the region to plan and implement the proposed action, and such knowledge should be used for the management of the project.

From the initial stage of the implementation of the project, local stakeholders should be closely contacted to absorb locally available knowledge.

The reviewer suggests that the risk associated with the project is not relevant to the project design but to environmentally and culturally sensitive area to any changes and interventions.

We fully agree that the risk is associated with the implementation of a project in environmentally and culturally sensitive areas and the risk statement in SECTION III and Logframe matrix has been modified to highlight his concern.

The reviewer suggests that the critical issue is to launch the social dimension of the project, to quickly gain community confidence, trust and support for the project.

We fully agree and appreciate the suggestion by the reviewer. It is strongly recognized that socio-economic issues are critical in addressing root causes for the degradation of the ecosystem functions. As soon as the demo components are established, a wider stakeholder consultation will be conducted through the activities 3.2 and 4.2 in the two demonstration sites. In order to emphasize social as well economic issues, some more information on socio-economic issues in two demo sites has been presented in paragraph 11 and Annex G.

2. IDENTIFICATION OF THE GLOBAL ENVIRONMENTAL BENEFITS AND/OR DRAWBACK OF THE PROJECT

The reviewer believed that the global environmental benefits related to biodiversity, bio-cultural heritage, sequestration of green house gases have been well identified and presented.

In addition to the clear presentation of the biodiversity and climate change related global environmental benefits, the project also aims at sustainable land management benefits. To reinforce the presentation on sustainable land management benefits, SECTIONS I and II have been modified. Further, more information on land management issues is added to ANNEX G.

The project covers a geographic area of sufficient size to address key elements of globally significant biodiversity-rich Eastern Himalayas mountain ridge.

The project targets the upper Yangtze River basin, and its size would be sufficient to conserve globally significant species.

3. HOW THE PROJECT FITS WITHIN THE CONTEXT OF THE GOALS OF GEF, AND LINKAGE WITH OTHER GEF OPERATIONAL PROGRAMMES

The reviewer believes that the project fits clearly within the GEF operational strategy and programs of biodiversity and climate change.

The project will also aim at securing global environmental benefits related to integrated ecosystem management as outlined in the GEF Operational Program 12. In order to emphasize the GEF programmatic linkage with the Operational Program 15, information on sustainable land management benefits has been added in SECTIONS II and III.

4. REGIONAL CONTEXT

The project geographical coverage falls entirely in China, and there is no regional dimension of the project.

It is estimated that some of the underlying issues for floods (deforestation, soil erosion, loss of water retention capacity, etc.) may be common in surrounding countries, particularly countries sharing the Hindu Kush Himalaya (HKH) and/or Southeast Asian countries. These countries may take interests in the IEM approach the project is pursing. Although the project is designed as a single-country based project, the results of the projects will be disseminated in English to the interested countries through the UNEP network as well as its partners such as ICIMOD and TNC. Further, existing experiences and lessons in other countries, particularly from Asia will be introduced through training of project management personnel. These issues are now reflected in project components and expected results.

5. REPLICABILITY OF THE PROJECT (ADDED VALUE FOR THE GLOBAL ENVIRNMENT BEYOND THE PROJECT ITSELF)

It is important to note that the project functions as a model, and this model be replicated to other mountain areas in China and other Himalaya countries. Local communities can

contribute to and benefit from cooperative management. Explicit activities should be included in the project to this effect.

During the PDF-B, selection criteria for demonstration sites were developed, and one of the criteria was replicability. Among the candidate sites identified through the stakeholder consultation, the selected two sites therefore have high potential of replication in the other part of the upper Yangtze River basin and possible in the other parts of China.

The project will seek regional dimension through dissemination of the results to other parts of China and to other countries in Himalayas. Lessons from other countries will also be introduced to project implementation.

We highly appreciate that the reviewer introduced some relevant projects, either planned or implemented, which are potential vehicles to disseminate the results of the project, and to obtain lessons learnt from other parts of the world. The project management team will keep close contact with the projects that have been indicated by the reviewer.

The project can make contribution to integrated ecosystem management of great river systems in China and other Asian countries, in particular on the lowland and highland relationship. MEWS can gain experience in this.

We note that such a lowland-highland aspect can be addressed through the integrated ecosystem management approach. It is expected that the MEWS results will show such linkages between lowland and highland.

The other value-added for the global environment beyond the project itself is improvement of livelihood of mountain rural communities and promotion of social and cultural development among local ethnic minorities.

This is a critical aspect of the project. Through the activities relevant to the alternative livelihoods, socio-economic development of mountain rural communities can be promoted.

6. SUSTAINABILITY OF THE PROJECT

Conservation of the Yangtze River and its ecosystems is a long-term policy of the Chinese Government, and supported by all societies, and thus there is no doubt about sustainability.

Based on the overall long-term priority of the Government, the project will seek immediate sustainability (end of the project) through integration of the project management structure into existing central and local government structure. Further, by demonstrating actual benefits in which the project approach can result, the long-term government policy for the integrated ecosystem approach is anticipated to be maintained and strengthened.

7. LINKAGE WITH OTHER PROGRAMMES AND ACTION PLANS AT REGIONAL OR SUB-REGIONAL LEVELS

The reviewer proposed that linkages should be established with the proposed WWF/ICIMOD/UNEP project on Eastern Himalaya Biodiversity Programme, PARDYP (People and Resources Dynamics Project) by SDC/IDRC.

The Yangtze River project will seek and maintain linkage with the project indicated by the reviewer during the project implementation, particularly for exchange of lessons learned and dissemination of results.

8. OTHER BENEFICIAL OR DAMAGING EFFECTS

The reviewer suggests that there be environmental benefits downstream of the Yangtze River.

The project's overall development goal is to achieve nature conservation and flood control in the Yangtze River basin and when expected results are produced in the upper basin, there should be positive environmental effects on downstream, reduced sediments, reduced flood risks, etc. The assessment component, although targeting the upper basin, can clarify possible downstream benefits in a more concrete term.

9. DEGREE OF INVOLVEMENT OF STAKEHOLDERS

The high degree of stakeholder involvement of different culture will bring challenges to the project implementation.

We appreciate the comment, and during the project implementation, we would like to ensure social and cultural issues are well taken into consideration.

10. CAPACITY-BUILDING ASPECTS

The project covers multiple disciplines, and involves strong capacity building component. The reviewer, however, gives importance to environmental education and awareness raising and practical technology training on tree planting, management and protection.

We agree that the two pronounced fields for training are important for the two demo site, for which project has corresponding components. During the implementation of the project, environmental education and awareness raising, as well as tree planting training on technology aspects will be conducted within the components.

11. Innovativeness of the project

The reviewer identified two aspects of innovativeness of the project: the EFCAs concept and principle will be put in practice, and establishing linkage between protected areas and landscape management in a large watershed.

We note this comment.

12. Other specific comments

Activity 1.1: The indicators for establishment of priority biodiversity areas should be further developed in consultation with experts and institutions in the country (particular in Sichuan and Yunnan Provinces)

We agree that this is of importance. During the project, under the Activity 1.1 and in consultation with the Scientific Advisory Group as well as other experts, such indicators will be developed. The indicator should cover the issues related to habitat quality, mountain crops, and nature reserves and corridors.

Activity 1.1: It is important to explore and identify appropriate tree species for reforestation and herbaceous plants for pastures as the level of absorbing CO_2 of different plant species is significant.

The activities Output 1.4 aim at assessing the current programs and sequestration potential. We would rather suggest that such identification of appropriate plant species be conducted under Outputs 3.4 and 3.13.

Activities 1.1 and 1.2: Assessment of land use and productivity should be based on a study of all traditional land management practices, respecting local knowledge and indigenous strategies.

We agree that, in many cases, local knowledge and indigenous strategies are helpful for maintaining biodiversity. Activity 1.1 incorporates such an issue.

Outcome 2: MEWS is a challenging task amongst project activities, in two aspects: coordination of existing monitoring stations by various ministries at local level; and scientific and multi-disciplinary technical coordination.

It is our main principle concerning the MEWS that the existing monitoring systems by various ministries/administrations should be used as much as possible. In terms of coordination among existing stations, the Local Steering Committee will be able to take a proactive role in the coordination of monitoring activities by various bureaus. To achieve this Outcome, we will seek necessary input from technical experts of differing technical background through the Scientific Advisory Group, as well as direct engagement of such experts.

Demo at Laojunshan: The area has a long history of Sacred Natural Site (SNS) conservation approach by different ethnic cultural groups. There is a need to recognize and integrate this traditional conservation approach into the demo site. The reviewer suggests to include the SNS in the mapping of land use in both Laojunshan and Baoxing demo sites.

While there are not many SNS areas in the two demonstration sites, SNS, as a critical issue suggested by the reviewer, will be given full attention. The SNS will be identified when alternative livelihoods in the demo sites are planned and implemented under Activities 3.5 and 4.5, and will be clearly mapped.

The project should pay attention to the invasive species, eg. *Agratina adenophorum* in the middle mountains of the Yangtze region, at least in the monitoring work.

We agree that the invasive species are one of the threats to critical ecosystem functions in the demo sites and will be a subject for the MEWS.

Annex D. Letter of Endorsement

Annex E. Threats and Root Causes of Ecosystem Degradation at Two Demos

This Annex was edited from the text initially drafted by representatives of local stakeholders after discussions in the field, and later translated into English. As will be seen, overall threats and root causes described in the main text are also valid at the two demo sites, but some of them require special emphases:

BAOXING

Threats

Inappropriate management of marble quarries

1) Old and environmentally-unfriendly technologies used and insufficient interest so far in changing these technologies.

Human encroachment decreases habitat for giant pandas and other animals and plants.

Rapid increase of local population: In Baoxing, there were 39,160 people reported in the year 1956, and 55,104 in 2000. Rapid increase in local population requires more natural resources. Population of the demo site will reach 55,359 in 2005 and 56,023 in 2010. Lack of control and enforcement.

Capacity to manage PAs is insufficient and capacity to manage buffer zones and corridors are non-existent.

1) Capacity building and monitoring system specific on ecosystem function conservation, BD and CC lacking;
2) Corridors management lacking; and
3) The concept of EFCAs has just been proposed and it is not yet integrated into the management of PAs or buffer zones.

Insufficient biodiversity-friendly land-use planning and development.

1) Capacity in multi-sectoral agencies remains weak; and
2) No demos of BD-friendly land use available.

Alternative livelihood schemes not developed for local communities in the demo site

1) There is a need to review current schemes and look for new options; and
2) Current alternative livelihood schemes are designed mainly by Baoxing Tourism Bureau without participation of local communities.

Root causes

Lack of institutional frameworks for integrated ecosystem management of BD, CC, and ecosystem function conservation (FC).

1) Inter-agency co-operation is lacking and there are no focal points responsible for BD, CC, FC, and development planning and implementation at county level;
2) Lack of institutional framework for encouraging the participation of local communities in the demo site.
3) *Ad hoc* reviews and monitoring continue in an un-coordinated approach to county activities for nature conservation, and flood control;
4) No inter-agency coordination system or mechanism established;
5) Lack of support from county level to the establishment and operation of provincial and national level management systems; and
6) Lack of sufficient provincial and county level awareness of Giant Panda protection needed in PAs, buffer zones and corridors.

Enabling policy, legal and financial mechanisms and frameworks are not instituted.

1) Local capacity to develop sound integrated ecosystem management polices, and to execute management strategies are weak; and
2) Capacity to enforce environmental regulations are weak.

Policies to conserve ecosystem functions related to water and soil conservation are not operationalized.

1. Forest logging: The forest resources were very rich in Jiajin Mountain, and it has long been the wood-supplying center for Chengdu Basin. The eastern side was almost bare after large-scale logging. The first and second tributaries of the Qingyi River are also subject to various degrees of commercial logging. Such logging leads to the fragmentation of the habitats of Giant Panda. In addition, logging will degrade soil structure.
2. Human-induced causes for soil erosion include cultivation practices on the slopes over 25 degrees; logging and timber collection; and irrational and improperly managed mining. No integrated approach to manage these threats has been operationalized so far.
3. Integrated measures to conserve water and soil are not well implemented or demonstrated;
4. Nature conservation is not well integrated into current land use plans; and.
5. No buffer zones or corridors planned.

Lack of public awareness in the demo sites on the ecological functions related to flood control, biodiversity conservation, carbon storage and integrated management of ecosystems;

1) Target groups are not identified and the awareness programs/materials are not designed;
2) Awareness campaigns on EFCA, IEM, PA, buffer zones and corridors in appropriate formats are not available; and
3) Capacity of agency/staff for environmental education is weak;

LAOJUNSHAN

Threats

Loss and quality degradation of habitat for Yunnan Golden Monkey, water birds and other plants and animals.

1) Since 1970s the forests are largely destroyed due to large-scale commercial logging. Forest coverage at the demo site has reduced from 56% in 60s to 30% in 80s. Large-scale fuelwood collection, traditional slash-and-burn livelihood of Yi people, conversion of forestland and wetland into farmland resulted in loss of habitat for many focal protection species at demo site. So far, commercial logging is banned. However, due to the poverty and no alternative energy option, the fuel wood collection and slash-and-burn livelihood in some high mountain areas continued and resulted in further habitat loss.
2) Tourism industry is now being developed as a key industry at the demo site. Different tourism plans have been drafted and approved at the Laojunshan demo site. Unfortunately, environmental dimensions are not well planned. Infrastructure construction for modern tourism facilities resulted in loss of soil and destruction of vegetation in some areas. The retention of sewage and garbage in scenic spots had increased and still is increasing adverse impacts on the habitat quality. Especially in Lashihai, overfishing in Lashihai continues and food for birds is limited because of lack in well-developed alternative livelihood for local communities. Although husbandry industry has not been well developed at the demo sites, overgrazing in some areas has resulted in continuous grassland degradation, and decrease in grass production and high quality grasses.

PAs are small and there is limited PA management capacity.

1) Small PAs, which are insufficient for conservation of focal species and targeted ecosystems; and
2) Limited management capacity of local management agencies for PAs, and lack of knowledge and effective management tools.

Continued soil erosion and increasing sediment production at the demo site.

1) Slope cultivation (60% of cultivated slopes have no conservation measures), over-collection of firewood, mismanaged tourism, not well-planned infrastructure construction and slash-and-burn agriculture by Yi people etc. lead to continuing soil erosion and sedimentation in Chongjiang River and Lashihai sub-basin of the Yangtze River;
2) No multi-sector mechanism to implement the conservation projects on sediment control; and
3) Limited management capacity of implementing conservation projects.

Root causes

1. Lack of multi-sector management mechanisms. Natural resources management is in the hand of sectoral agencies that usually do not allow local governments to implement or coordinate other integrated projects. Comprehensive solutions cannot be implemented.
2. There are no sustainable zoning plans allowing for the conservation of ecosystem functions, and no preparation of management plans and training programs for staff.
3. Lack of participation of major stakeholders. No participation of local stakeholders will affect practicality and sustainability of projects and plans.

4. Lack of an integrated conservation network. Relative to globally significant biodiversity resources, the area of PAs is not large enough. Besides, distribution of the existing PAs is too scattered.
5. Lack of effective conservation planning and monitoring system. There is no long-term cross-sectoral conservation planning and monitoring system from the perspective of flood and sediment control. Much less so for biodiversity.
6. Lack of the sustainable models for flood and sediment control and conservation of other key ecosystem functions.
7. Lack of public awareness. It is noted that after 1998's logging ban, the ecological crisis of Laojunshan demo is all related to local communities' activities, which demonstrate a need of local communities' participation in the conservation practices and enhancement of public awareness to implement those conservation practices.
8. Lack of effective financial mechanisms that provide incentive conservation practices. Continued conflicts over resource utilization due to lack of well-developed alternative livelihood schemes for local communities at the demo site. Lack of review and evaluation on available AL schemes. Current AL schemes are not well developed for local communities within and around PAs.

The project was designed to deal with all threats and root causes at these two sites. IEM and a centralized management structure at provincial level will be key elements for the solution to these threats and root causes.

Annex F. Public Involvement Plan

The first part of this annex provides details of public participation during the project preparation. The second part outlines participation during the project execution.

1. STAKEHOLDERS PARTICIPATION/CONSULTATION DURING PROJECT PREPARATION

During the period of the PDF-B, the project preparation team organised participation/consultation meetings at national, provincial and local levels. Meetings of the PDF B Steering Committee (SC) where all key ministries participate and the PDF B Scientific Advisory Group (SAG), were key instances of participation. The following were brief summary of relevant meetings, reflecting their spirits and achievements, which led to the preparation of the project.

A) NATIONAL LEVEL PARTICIPATION

Three steering committee meetings were organized during the PDF-B, respectively, April 2002, October 2002, and August 2003. These meetings were attended by national government ministries (National Development and Reform Commission (NDRC), Ministry of Finance (MOF), Ministry of Land and Resources (MLR), Ministry of Construction (MOC), Ministry of Water Resources (MWR), Ministry of Agriculture (MOA), State Forestry Administration (SFA) and State Environmental Protection Administration (SEPA)), provincial governments (Sichuan, Yunnan, Guizhou, Chongqing, and Qinghai), local governments where demonstration sites are located, international organisations (UNEP, UNDP, World Bank, UN-HABITAT, and Asian Development Bank), international NGOs (The Nature Conservancy (TNC), World Wide Fund for Nature (WWF)-China, Conservation International (CI)), bilateral donors (Netherlands, Sweden, Australia, Finland, Norway, and Italy).

At the third meeting of the Steering Committee, the participants also raised some issues and made comments as follows:

MOA and SFA were of the opinion that it had been a short time since the concept of EFCAs was initiated in China. Therefore, there were not adequate scientific bases or regulations. NDRC suggested that pilot projects be initiated so as to provide basis for decision–making in the construction of EFCAs. Representatives from MOA, SFA and ADB, etc. suggested that the project be closely linked with the existing projects implemented by various ministries and administrations so as to avoid duplication.

Representatives from MOA, SFA, MOLR and YRWRC, etc. suggested to further clarify mechanisms of coordination and cooperation among various ministries and administrations. Representative from SDRC said such mechanisms should be explored and tested first at some

pilot sites. He suggested to rely on local governments especially municipal and county level governments for coordination. Representatives from ADB and UNEP emphasized that relevant ministries and administrations, local governments and other stakeholders should strengthen their corporation in the implementation of the project.

Representatives from MOA, UNDP, ICIMOD and WWF said that in the designing of the demonstration activities, adequate attention should be given to economic development and livelihood of local residents. Compensation mechanisms for ecosystem conservation should be explored in order to ensure sustainability of the project.

Representative from MOLR said that the project would be implemented at local areas. He suggested to clarify the involvement patterns of local communities in combination with the existing work in local areas.

Representatives from CI and YRWRC suggested that more concrete indicators for monitoring and evaluation of EFCAs be developed for assessing the status of development and operation of EFCAs.

Representative from CI said that the relationship among EFCAs system, the existing nature reserve system and natural resource management should be clarified so as to ensure implementation of the project in an integrated manner.

Representatives from CI said that EFCAs should not be limited within their administrative boundaries. He suggested to strengthen coordination of trans-boundary ecosystem conservation.

Representative from MOC said that the designing of the demonstration sites should be harmonized with urban and township plans and master plans for cities. At the same time attention should also be paid to the coordinated management of the project with existing nature reserves, scenic spots and world heritage sites. She said that the cost for the establishment of the Monitoring and Early Warning System (MEWS) in the whole upper reach of the Yangtze River was high, therefore, she suggested that MEWS be established first in the demonstration sites, and their results could then be disseminated in the basin.

Representative from ADB said that they had begun implementing the *Partnership Programme on Land Degradation in Arid Ecosystems in China* since 2002. The program and this project both belonged to OP12. He suggested to strengthen experience sharing and information exchange during project implementation. He also suggested to integrate the Integrated Ecosystem Management (IEM) into economic development. He said that experts of various departments should be invited to participate in the project evaluation.

Representative from UN-HABITAT supported the development of the strategy and plan for the involvement of stakeholders, especially local people. Consultation and discussion with them should be strengthened.

PMO responded as follows:

National Ecological Environment Protection Guidelines issued by the State Council and other relevant documents have specified that EFCAs should be established. The EFCA is the demonstration and practice of the IEM concept and it is different from the nature reserve.

SEPA is actively making legislations, regulations and criteria on EFCAs in cooperation with other relevant ministries and administrations. The implementation of the project will provide experiences for construction and management of EFCAs.

One of the project objectives is to serve the ecosystem conservation in local areas. In the designing of the project, adequate consideration will be given to all the existing and planned projects, such as natural forests protection projects and projects for re-converting the reclaimed land into forests, etc. Efforts should be made to coordinate relevant projects well.

During the designing and implementation of the project, attention will be paid to the involvement of, coordination and corporation with various departments, and give into full play the role of the Steering Committee consisting of relevant ministries and administrations. Expert groups consisting of experts nominated by relevant departments will be established to participate in the implementation of the project and provide guidance.

Attention will be given to the livelihood of local people, which will be an important element of the project and the economic, and ecosystem functions will be integrated. In the process of protecting natural resources, local economic development will be promoted.

Compensation mechanisms for ecosystem conservation are an important approach, which will be one of the research subjects during the project implementation.

During the designing of the project, opinions of the local people have been heard. Their views will continuously be sought. They will be invited to participate directly in the project implementation.

In the project implementation, relevant results achieved by various departments, CI, WWF, etc. will be fully made use of, such as selection of critical ecosystems, etc.

In regard to project evaluation, the Logframe Matrix and the Monitoring and Evaluation Plan have been produced which are annexed to the project brief. In the Logframe Matrix, indicators for evaluation targeted at each output are listed.

It has been agreed that the demonstration sites will be the major targets of monitoring and early warning. The monitoring in the upper reach of the Yangtze River will be based on the existing work and future plans made by relevant departments.

The *Partnership Programme on Land Degradation in Arid Ecosystems in China with* ADB taking the lead is the first OP12 program in China. It covers the areas of 6 western provinces, and this project mainly focuses on Sichuan Province and Yunnan Province. These two are complementary to each other in terms of the Western Development Strategy in China. The concept and guiding principles of the Partnership Programme and this project are similar. Therefore, it is agreed that communication and exchange of information will be strengthened in project implementation.

The meeting endorsed the GEF Project Brief on Nature Conservation and Flood Control in the Yangtze River Basin.

B) PROVINCIAL AND LOCAL LEVEL DISCUSSIONS

In order to secure the interests of local governments, Non-Governmental Organizations (NGOs) and interested people, the project preparation team organized a series of meetings at the provincial and local levels. At the same time, members of the field visit group visited local households to have interviews with local people to discuss project design. Main objectives of these meetings were to identify main environmental threats and corresponding measures underway within the proposed areas; assess local co-financing possibility. Additional objectives are to discuss with the representatives from local governments and communities, alternative livelihood, find out ways to cooperate with local governments and local communities, and to collect required information, such as data and maps, etc. The following only provides the records of consultations in Sichuan and Yunnan, among other consultations at the provincial and local levels.

Meeting Minutes and field visit in Sichuan Province

The Deputy Director General of the Sichuan EPB, Mr. Xietian, as a member for the Project Steering Committee, takes part in the Inception Meeting. Meanwhile, according to the agreement reached by PMO and Sichuan EPB in May, Mr. Yang Youyi, Deputy Director of the Division of International Cooperation, has been appointed as the local coordinator, who will facilitate preparation of related meetings and collection of the related materials, data and maps. In terms of the agreement of the PMO, officials from EPB of Sichuan Province, national experts and local experts, the field visits will be arranged in the Dengchigou area and Fengtongzhai National Nature Reserve (belongs to Yaan city, Sichuan province). At the same time, consultation meetings had been held

with the relevant governmental officials, communities and local people during the field visit.

Meeting in Chengdu, Sichuan (June 8,2002, Sichuan EPB)

Participants: 6 representatives from EPB of Sichuan province (Mr. Duming and Mr. Yang Youyi from Division of International Cooperation, Mr. Xu Jicun from Department of Nature and Ecological Conservation, Ms. Liao Hongfang, Ms. Zhou Wenhong from Foreign Economic Cooperation Office); 3 representatives from Chengdu Mountain Hazards and Environment Institute, Chinese Academy of Sciences, 7 representatives from the Field survey Group.

The Topic and the Discussion Results

1) The Field Survey Group introduced the objectives and contents of the project, the aims and significance of the field survey activities, and briefly introduced the assessment and planning for conservation of ecosystem functions, the monitoring and early warning system, and the criteria and procedure of selecting demonstration sites. The project manager, Mr. Sude introduced the project background, the project goals and the contents, also touched upon the aims and significance of this research activity. He provided the list for necessary materials that need to be collected with the help of local experts. He hoped that the local government could provide some facilities and co-finance. (2) The domestic experts on assessment and planning introduced the main subject of the assessment on the ecosystem in the upper reach of the Yangtze River, and briefly introduced the materials list that is necessary for the project: a. the natural and social situation of the proposed demo site (background data), b. The root causes for main eco-problems in the demo sites; c. The adopted measures (the existed eco-projects and the situation of the project implementation); d. the problems in the nature reserves of the proposed demo site; (3) the domestic experts on monitoring part introduced the designed content of the ecological monitoring and early warning system, the information need to be obtained include: a. the existing ecological monitoring system and running situation; b. the possibility of data-sharing; c. the possibility of corporation with local governments; d. the approaches of local stakeholders' involvement. (4) The domestic expert on demo part briefly introduced the criteria for choosing demo site, and he hoped to get some materials for compiling the document, and he discussed with local governmental officials for corporation intention.

2) The Director of Division of Ecological Environment, Department of Nature and Ecological Conservation, EPB of Sichuan province, Mr. Xu, introduced the status of the monitoring ecosystem in Sichuan province. Research on ecological status finished in 2002, and got a great deal of data and basic materials, which established the basis for ecological functions planning in the west of Sichuan province, and Sichuan EPB planned to build the Green Belt in the upper reach of Yangtze River Basin, which extends from Wuolong of Qionglai mountain to Xiaoliang mountain through Jiajin mountain. This area is the first ecological barrier for the west edge of Sichuan Basin. Here coexists a rich species array, including giant panda. Sichuan EPB attached much

attention on protecting this EFCA. He also said that if GEF project could choose Baoxing as a demo site, which will provide experiences for other EFCAs. The provincial EFCAs planning and EFCAs division also could provide co-finance for the project; (3) at present, Fengtongzhai nature reserve in Baoxing demo site is an important nature reserve for giant panda. During the period of the tenth five-year plan, the Chinese government will support the management and development of this nature reserve, and protect the rare and endangered species in this area, which can be seen as the co-finance of China.

3) The researcher Mr. Chen Fubin, Chengdu Mountain Institute, Chinese Academy of Science, thought that the threat for the biodiversity degradation is the local economic activities: (1) he introduced the natural climate, biodiversity, the existing threats and nature disasters in the Dengchigou in Sichuan province; (2) He also introduced the application procedure of the world legacy giant panda habitat which was charged by Chengdu Mountain Institute (see the protection planning on world heritage nomination in Jiajin mountain); (3) he introduced the scientific research results in Baoxing and Sichuan province done by Chengdu mountain institute, he also showed the willingness of corporation with project for protecting giant panda and its habitat as technological assistance unit.

4) Experts of Nature Conservation and Flood Control UNEP/GEF project and the leaders of EPB of Sichuan Province reached an agreement to select the Dengchigou region Jiajin Mountain range as one of the main demonstration sites in Sichuan province, and they agreed to decide the scope and relevant activities according to the results of field visit.

Meeting in Baoxing county, Yaan city (June 9,2002, Baoxing Hotel, Yaan city)

Participants: Representatives from Yaan government, Yaan Forestry Bureau, Yaan EPB, Yaan Tourism Bureau, Baoxing government, Fengtongzhai Nature Reserve Management Office, Foreign Economic Cooperation Office, EPB of Sichuan province, and 7 people from the Field Survey Group,

The Main Topic and the Discussion Results

1) The deputy mayor of Yaan thought that: the ecological environment protection is one of main tasks for the tenth five-year plan. The approval and implementation of the project will promote the environment protection and flood control in Baoxing, and the promotion of the project will demonstrate for other sites and multi-departments' corporation; (2) he also introduced the nature circumstances, biodiversity recourses, and also introduced the main biological threats and the ongoing ecological conservation activities; (3) he briefly touched upon the background materials of Baoxing county: Here existed rich species, especially giant panda. Sichuan EPB attached much attention on protecting this EFCA.

2) The Director general of Yaan EPB, Mr. Zhu introduced their work on environment protection and the biodiversity conservation: a. during the period of the tenth five-year plan, central and local government would strengthen the eco-environment

protection, different eco-projects have been implemented or just ongoing, part of these work can be seen as the co-finance of the project; b. he also introduced the status of existing environment monitoring establishments. Yaan has complete civil and county level environment protection agencies, has capability to implement the ecological monitoring in demo site; c. he thought that the eco-monitoring system that the project need to build up is very important, it can provide the scientific tools for ecosystem management, and also provide the experience for the EFCAs in the upper reach of the Yangtze River; d. Yaan environment protection agencies will support the application and implementation of the project, provide the relevant background data and information, and to implement the demo activities during the implementation of the project.

3) The Director General of Yaan Forestry Bureau, Mr. Li briefly introduced the recourses status and main ecological threats existing at Yaan city: a. the status of forest resources at Yaan; b. he also introduced main ecological projects on forestry (the project on Natural Forests Protection, the Conversation of Cultivated Lands to the Forests, the project on protecting wild animals), and he said that they could provide the budget input of forestry projects during the tenth five-year plan; c. Mr. Li, as a representative of forestry agencies of Yaan city, he said he showed a lot of interests in new approaches for vegetation restoration and giant panda's habitat protection, and he hoped the achievements of the project could be promoted to other similar areas.

4) The representative of Yaan Water Resources Bureau, introduced the situation and characteristics of Baoxing demo site: a. the proposed Baoxing demo site is a famous rainstorm center, and Baoxing river is the third-grade tributary of the Yangtze River, the destruction to ecosystem at Baoxing river will influence the flood and sediment retention of the lower reach of Baoxing river and demo site; b. the proposed demo site located at the critical position of the upper reach of the Yangtze river, it will be the critical area for implementing the flood control plan for the tributaries of the Qingyi river, also this area is the critical area for water and soil conservation plan of Baoxing county, all these projects can be seen as the national co-finance of the project.

5) The representative of Yaan tourism bureau introduced the tourism resources and the future plan of demo site: a. the proposed Baoxing demo site support rich and unique natural scenery, many national and provincial nature reserves and places of interests have been established at this area. Here is the hometown of tea, and one of hometowns of giant panda; here settled many minorities and has special culture and custom. b. At present, this area has good base for tourism development (the freeway from Chengdu to Yaan and other facilities), Yaan government carried out many large-scale eco-tourism, and strengthen the dissemination; c. he said that he hoped to see the demo activities for eco-tourism at Yaan, and this kind of activities can be seen as the national co-finance of the project.

6) The head of Baoxing county introduced the ecological status of Baoxing county: a. he made a welcoming address for the field visit group; b. ecological environment protection is one of main tasks of Baoxing county, and the implementation of the project will stimulate the ecological projects and flood control of Baoxing during the course of the tenth five-year; c. the implementation of project will provide demo pattern for other areas, and the relevant alternatives will provide the reference for decision makers of government; d. he touched upon the natural resources and biodiversity of Baoxing county; e, he introduced main threats of Baoxing county: serious steep slope cultivation resulted in serious water and soil loss, and some regions could not be reclaimed just depending on the present capacity of Baoxing county; mining is the largest rate paying industry in Baoxing county, irrational mining exploration resulted in vegetation destroy and vegetation degradation; f. the present ecological projects include: natural forest conservation, the conversion of cultivated land to the forest, wild plants and animals protection, and the project on controlling water and soil loss etc; g. the Baoxing government has done a lot of work on ecosystem protection, and it is planned to build an EFCA at the east of Jiajin Mountain, which includes Tianquan, Lushan and Baoxing county, etc; h, he said that Baoxing government had interests in the project and they would do better coordination for the implementation of the project, and he himself would actively involve in the proposed activities of the project.

Summary of the field visit and the discussion with the local farmers

Global significance: Dengchigou is one of tributary of the Mingjiang River, which also is a branch of the Yangtze River-----one of the small basins of Qingyijiang River, lies in the abdomen of the Jiajin mountain range which is the habitat of giant panda, is the important region of the biological diversity and rare or almost extinct species. It has 17 species of animals under the national first level protection, 51 species of animals under the national second level protection, and 20 species of plants under the national first level protection, 16 species of plants under the national second level protection, and it also is one of the biggest rare giant panda habitat, is the key region for the global ecological diversity protection and climate control. Therefore, to protect this region will bring forth the global environment benefits;

Demonstration significance: Through this research we know that many human activities such as mineral exploitation, forest cutting, and steep slope cultivation are the reasons of the degradation of the ecological environment, which destroyed the habitats of the many rare animals and plants. The flood in Baoxing River and the rising sedimentation rate in rivers provide the examples for the degradation of the mountain ecosystem. Setting up our demonstration sites will bring the satisfied promotion and demonstration significance for the ecological diversity protection, ecological tourism development, and the rehabilitation of the degraded ecosystem.

Fengtongzhai National Nature Reserve: This is a national nature reserve, which has monitoring station and scientific research foundation and accumulation of scientific data, also it joined the giant panda Ecological Monitoring Network built by State Forestry

Administration and WWF. In regard to the conservation construction, besides some capital constructions, we implement *the conserve and the public common regulations* around the reserves at the back of county governments or the village governments.

Random household visits and interviews: By discussing with local people, members of the field visit group found that the local communities have certain awareness on present vegetation degradation, steep slope cultivation, water and soil loss, and the threats of flood. However, about 99% of the proposed area are mountain region, and the local settlers there have to exploit mountain resources in traditional ways to practice cultivation, animal husbandry and orchards. After introduced the new alternatives to the local people, such as new technology for water and soil conservation, planting economic fruit trees and developing eco-tourism etc, they showed great interests in the project. But local people still lack in knowledge on how to protect ecological functions and what long-term benefits will be secured through such protection. All these technologies and knowledge need to be introduced and showed to the local people.

Minutes of Meetings During Field Visit----Yunnan Province

Mr. Guo Zhenren, Deputy Director General of Yunnan Environmental Protection Bureau, has attended the Inception Meeting as member of the Steering Committee. Meanwhile, with the agreement reached by PMO and Yunnan Environmental Protection Bureau, Mr. Yang Weimin, Chief, Department of Foreign Economic Cooperation, is recommended and appointed as the local coordinator to help with preparation of meetings and materials collection. Among the recommended sites by Yunnan Environmental Protection Bureau, Laojunshan is chosen to conduct a four-day visit after discussion with Yunnan EPB, The Nature Conservancy (TNC) and the field visit group. Meeting with local government and relevant departments were held at the same time.

Meeting in Kunming, Yunnan, (3 June 2002, Yunnan Environmental Protection Bureau)

Participants: Representatives from Yunnan Agriculture Bureau, Yunnan Forestry Bureau, Yunnan Water Resources Committee, representatives of the Nature Conservation Department and Foreign Economic Cooperation Department of Yunnan Environmental Protection Bureau, three representatives from TNC and four members from field visit group.

Discussing Topics and Results

1) Mr. Tuo Zhengyang, the Director of Nature Conservation Department of Yunnan Environmental Protection Bureau, introduced the general situation of Laojunshan, a Provincial level Nature Reserve and its application to National Nature Reserve: a. he introduced the research report on the ecological status, this research has been finished at 2002, and got a large amount of data; b. the ecological function assessment and planning of GEF project at basin level will provide a new methodology and scientific theory; the IEM and conservation plan in demo sites will provide experiences and lessons for EFCAs management; c. Yunnan government and Yunnan EPB have known the importance of building up national EFCAs, and they have done a lot of work on ecosystem protection. At present, *the national EFCA in the northwest of*

Yunnan province has been approved by SEPA and as the second group of national EFCAs; d. this area is in the critical area for water and soil conservation, its eco-function restoration and sustainable development will have great impact on the flood in the middle and lower reaches of the Jinsha river. The work has done just in the preliminary phase and needs to refer to the experiences and lessons of other relevant projects. e. The ecological function assessment and planning and the ecological monitoring and early warning system provide the scientific management approaches and tools. The demo site at Laojunshan will provide experiences and lessons for provincial EPB and local administrative agencies; f. The input of provincial governments and agencies to the eco-assessment and eco-monitoring could be seen as the national co-finance for the project; g. there are Lashihai provincial nature reserve in Laojunshan demo site as the important wetland and nature reserve for water foul; h. during the tenth five-year, the Chinese government strengthens the support to this area, at present, the Ministry of State Forestry has ratified to input 7.8 million Yuan to this nature reserve from 2003 to 2006; at the same time the provincial Laojunshan nature reserve will become national nature reserve; i. During the tenth five-year, the central government will invest 30 million Yuan for the construction of Laojunshan nature reserve.

2) Representatives from local Agricultural Bureau, Forestry Bureau and Water Resources Committee introduced the currently undertaken and scheduled work in Laojunshan. In October of 1998, Yunnan Province began to implement the natural forest protection. Laojunshan is listed as the critical logging ban area. The natural forest protection project includes prohibition of cutting the natural forests, conversion of the cultivated land to forests, the field improvement and the capital constructions etc. in 2000, Lijiang County is listed as the national trial site for the conversion project. From 2003 to 2008, Chinese government will increase the investment for the eco-project at Laojunshan. All these projects could provide co-finance for the proposed project.

3) Mr. Edward, Senior Consultant, TNC, presented and introduced the background of TNC, and their plan of programs to be developed. He also expressed TNC's willing to cooperate and indicated that TNC would invest USD 2 Million in Laojunshan to conduct biodiversity protection and provide information and data on biodiversity protection.

4) Members of the field visit group and representatives of the local government bodies had reached the agreement to consider Laojunshan as the first choice for demonstrating Nature Conservation and Flood Control in Yunnan Province and make final decision after the field visit.

Stakeholder meeting in Lijiang city, (6 June 2002, Lijiang Environmental Protection Bureau)

Participants: representatives from Foreign Economic Cooperation Department, Yunnan Environmental Protection Bureau, Lijiang Environmental Protection Bureau (4 people),

Lijiang Environmental Monitoring Station, TNC (2 people) and filed visit group (4 people).

Discussion Topics and Results

1) Mr. Long Yongcheng, Project Manager of Nature Conservation and Development of Yunnan Laojunshan Area TNC Project, gave a brief introduction to above mentioned project, and its process and future plan. The activities in Laojunshan proposed by TNC include: a. help the Yunnan EPB to build up the data system for Laojunshan nature reserve; b. to implement the alternative energy plan; c. eco-tourism plan.

Summary of the filed visit and discussion with local communities

Global benefit: After the field visit, it is considered that to construct a demonstration site of the UNEP/GEF Yangtze River Project in Laojunshan area would achieve global environmental benefits, which could be expressed as following: (1) Rich biodiversity of over 900 endemic species; (2) Complicated ecological systems, including mountain systems, blend forest of coniferous tree and broadleaved tree, fir forest, etc; (3) Well-developed vegetarian that has certain influence on global climate; (4) Important area in international biodiversity protection and world cultural heritage; (5) Habitat of minority nationalities and outstanding national cultures.

Demo significance: During the field visit, it is also acknowledged that such serious problems as cultivation on slope, deforestation, and destruction by tourism activities and other human activities exist. However, significance of promotion and demonstration progress in biodiversity protection, ecological tourism, rehabilitation of ecological system is hopefully to be achieved with the establishment of demonstration site.

Random household visits and discussion with local communities: (1) Through the field visit and discussion with local people at Shitou village and Jiuhe village, the field visit group knew that the local farmers became aware of impacts of ecological degradation phenomenon, such as firewood collection, steep slope cultivation□water and soil loss, flood etc at some degree. Local people had not many alternatives except practicing cultivation, animal husbandry and fishery in the traditional ways. The livelihoods of the local people have been changed at different degrees by implementation of natural forest protection in 1998 and the conversion project in 2000. But irrational human activities still existed, and the support from the governments of different levels and intervention of international organizations are critical to find out new alternatives and protect the ecological environment. (2) At present, some households began to use alternative energy (bio-gas and energy saving stove etc.) with the help of local government and TNC, the scope for such effort is limited, and the firewood collection is still serious. The domestic experts introduced the proposed alternatives to the local people, such as water and soil conservation, fruit trees and firewood plantation, eco-tourism development and alternative energy etc, and the local people showed that they are willing to accept and demonstrate these alternatives. (3) Through discussion with

local farmers, the field visit group knew that the local settlers have limited knowledge on how to protect ecosystem functions and what kind of benefits they could get from such protection. It is needed to strengthen the public awareness of ecosystem function protection and introduce and show the knowledge and technology of practicing integrated ecosystem management.

2. STAKEHOLDER PARTICIPATION DURING PROJECT EXECUTION.

During project execution, international agencies, national and provincial level governments, local communities and NGOs will participate as members of the Project Steering Committee and/or Local Steering Committees. All of them will be able to express their views and participate in regular meetings scheduled during implementation.

Main stakeholders during project execution will be:

Level	Stakeholders
Central government bodies	National Development and Reform Commission (NDRC), Ministry of Finance (MOF), Ministry of Land and Resources (MLR), Ministry of Construction (MOC), Ministry of Water Resources (MWR), Ministry of Agriculture (MOA), State Forestry Administration (SFA) and State Environmental Protection Administration (SEPA)
Local government bodies	Yunnan Provincial Government: departments of planning, finance, land and resources, construction, water resources, agriculture, forestry and environmental protection; Sichuan Provincial Government: departments of planning, finance, land and resources, construction, water resources, agriculture, forestry and environmental protection.
Local communities	Farmers, anglers and herders, and other local inhabitants.
Private sectors	Interested private sectors, such as resort companies, both inside and outside the demo sites
Bilateral governments	Italian government, Norwegian government, etc.
International NGOs	The Nature Conservancy (TNC), World Wide Fund for Nature (WWF)-China, Conservation International (CI)
International Organizations	UNEP, WB, UNDP, ADB
Scientific and research institutes	Chinese Research Academy of Environmental Sciences, Institutes of Chinese Academy of Sciences, including Institute of Geographical Sciences and Natural Resources Research, Institute of Mountain Hazardous and Environment, and Institute of Zoology, etc.

Community participation activities will include:

Activity	Responsible Agencies
Regular meetings (once every 6 months) with representatives of the PSC to get policy guidance	NPD & Central PMO
Meetings between community representatives and representatives of the ICO	NPD & Central PMO

Participation of representatives in LSC.	Local PMO
Representatives from the local communities will be involved in project implementation and evaluation	LSC & local PMO
Existing Local Management Committee (LMC) in each DEMO site, representing villages and towns, will help in coordinating land use planning, management and monitoring. LMC Members will be trained in planning, management and monitoring methods.	LSC & local PMO
Villagers will participate in information dissemination within the target communities.	LSC & local PMO
Hands-on training programs	LSC & local PMO
Enable communities to determine measures necessary to improve and sustain their quality of life beyond the life of this project.	LSC & local PMO

Annex G. Reference Documents of Two Demo Sites (including maps)

Annex G1. Attributes of Two Demo Sites

The two demonstration sites selected (Baoxing and Laojunshan) represent different mixes of ecosystems and challenges to integrated management. Main vegetation types in the upper basin of the Yangtze River include subtropical evergreen broad-leafed forests, subtropical evergreen broad leafed and deciduous broad-leafed forests, subtropical coniferous forests, grasslands and wetlands. Main threats in the upper reach include habitat fragmentation, erosion of soil, loss of water retention capacity of vegetation and loss of wetlands. Baoxing and Laojunshan sites confront all of these threats, collectively. Besides, Baoxing is one of the regions with high precipitation and runoff in the upper basin, while Laojunshan site is one of the regions with high sediment contribution to the upper reach of the Yangtze River.

Attribute	**Baoxing**	**Laojunshan**
Size	314,425 ha	205,460 ha
Population	55,105	81,856
Area with residential, mining and road infrastructure	1,085 ha	Negligible
Forests	223,614 ha	118,409 ha
Grasslands	63,742	19,946 ha
Cropland	4,779 ha	10,029 ha
Water bodies	2,361 ha	1,356 ha
Ecosystems and Vegetation type	Subtropical evergreen broad leafed forest, subtropical evergreen broad leafed and deciduous broad leafed mixed forest, warm temperate coniferous and broad leafed mixed forest, temperate and cold temperate coniferous forest, frigid shrubs and meadows.	Shrub lands, subtropical coniferous forest (spruce and fir), coniferous and broad leafed mixed forest, meadows, small shallow lakes and grasslands.
Flood related characters	Famous rainstorm region in China. Areas with altitudes of 2100-2300m asl can show annual precipitation of 2000-2500mm.	Annual average runoff is 0.41 billion m^3, the runoff of May to October is 0.35 billion m^3, 85.4% of annual runoff. Annual sediment discharge is 503,000 ton, annual average silt content is 1.22 kg/m^3, average precipitation is 767.8mm
Biodiversity	Umbrella species: Giant Panda	Umbrella species: Yunnan Golden Monkey

Biodiversity at Baoxing

Plant resources: According to preliminary investigations, vascular plants distributed from the subtropical to the Frigid Zone belong to over 160 families, 560 genera and more than 1050 species, covering about 68.9% of the total county area. Main types of vegetation include alpine meadows, alpine shrub- meadows, alpine shrubs, alpine coniferous forests, coniferous and broad-leaved mixed forests, evergreen coniferous and broad-leaved mixed forest, evergreen broad-leaved forest and secondary mixed shrubs. Timber forests are mainly composed of *Abies fabri, Picea aspertata, Tsuga chinensis, Larix potaninii, Betula spp., Cryptomerica japonica, Pinus yunnanensi.* Ancient species of the Demo site include *Cercidiphyllum japonicum, Davidia involucrate, Alangium chinense,* and *Cystopteris moupinensis*. Economic forests are composed of bamboo, fruit tree, tea shrub, palm, *Eucommia, Magnolia, Phyllodendron*. The demo site has various grassland types, and more than 200 species of medicinal herbs.

Animal resources: According to preliminary investigations, the county has more than 270 species of birds, 12 species of fish and 64 species of mammals. The national treasure, Giant Panda was first found here and more than 200 individuals of the species now live in the area.

Conservation status. At Baoxing there are 429 species of vertebrates, of which 17 under first-class protection and 51 under second-class protection. More than 3,000 species of higher plants have been reported in this area, among which 8 species have been listed as National First Class Protected Species (I), 20 as National Second Class (II), and Sichuan Province (III) protects other 16. Among the wild life distributed in the demonstration site, there are 40 species listed in CITES and 20 reported by IUCN as endangered species (EN) or rare species (R) (See Table 1). More than 100 Giant Pandas, which account for one third of the total in China, live here. Besides Giant Panda, some other endangered species, including golden monkey, pheasant and dove tree are also present in this area. Among plants, some rare and monotypic species including dove tree and gingko are called living fossils. Some dominant plants, such as *Abiesi, Picea and Betula*, most species in *Cinnamomum* and *Quercus* are derived from Tertiary or earlier ancestors. Fengtongzhai National Nature Reserve, has global biodiversity significance.

Table 1. Animals protected in Baoxing Demo

	Latin Name	Ranks		
		National	CITES (1995)	IUCN (1994)
1.	*Ailuropoda melanoleuca*	1	I	EN
2.	*Rhinopithecus roxellanae*	1	I	VU
3.	*Neafelis nebulosa*	1	I	VU
4.	*Panthera uncia*	1	I	EN
5.	*Panthera pardus*	1	I	
6.	*Panthera tigris amoyensis*	1	I	EN
7.	*Equns kiang*	1	II	VU
8.	*Cervus albirostris*	1		VU
9.	*Budorcas taxicolor*	1	II	VU
10.	*Gypaetus barbatus*	1	II	
11.	*Haliaeetus albicilla albicilla*	1	II	VU
12.	*Lophophorus thuysii*	1	I	EN
13.	*Lophophorus sclateri*	1	I	R
14.	*Tetraophasis obscurus*	1		
15.	*Grus nigricollis*	1	I	VU
16.	*Ciconia nigra*	1	II	

17.	*Python molurus bivittatus*	1	II	
18.	*Ailurus fulgens styani*	2	II	EN
19.	*Macaca speciosa thibetana*	2	II	
20.	*Macaca mulatto mulatta*	2	I	
21.	*Felis temmincki*	2	II	
22.	*Lynx lynx*	2	II	
23.	*Veverra zibetha ashtoni*	2		
24.	*Viverricula indica*	2		
25.	*Ursus pruinosus*	2	I	
26.	*Selenarctos thibetanus*	2	I	VU
27.	*Moschus berzovskii*	2	II	
28.	*Moschus sifanicus*	2	II	
29.	*Cervus unicolor dejeani*	2		
30.	*Cervus elaphus macneilli*	2		
31.	*Cervus elaphus*	2		
32.	*Capricomis sumatraensis*	2	I	VU
33.	*Naemorhedus goral*	2	I	VU
34.	*Pseudois nayaur*	2		
35.	*Ovis ammon*	2	II	VU
36.	*Cuon alpinus*	2	II	VU
37.	*Martes flavigula*	2		
38.	*Lutra lutra chinensis*	2	II	
39.	*Prionodon pardicolor pardicolor*	2	II	
40.	*Buteo buteo*	2		
41.	*Milvus korschun*	2		
42.	*Accipiter nisus*	2		
43.	*Aegypius monachus*	2	II	VU
44.	*Falco columbarius iusignis*	2	II	
45.	*Falco tinnunculus*	2	II	
46.	*Tragopan temminckii*	2		
47.	*Ithaginis cruentus*	2		
48.	*Chrysolophus pictus*	2		
49.	*Chrysolophus amherstiae*	2		
50.	*Crossoptilon auritum*	2		
51.	*Syrmaticus reevesii*	2	I	R
52.	*Crossoptilon crossoptilon*	2	I	
53.	*Pucrasia macrolopha*	2		
54.	*Lerwa lerwa*	2		
55.	*Treron sphenura*	2		
56.	*Grus grus*	2		
57.	*Psittacula derbiana*	2	II	
58.	*Otus bakkamoena*	2		
59.	*Bubo nipalensis*	2	II	
60.	*Bubo bubo*	2	II	
61.	*Athene noctua*	2		
62.	*Strix aluco*	2		
63.	*Strix uralensis*	2		
64.	*Glaucidium cuculoides*	2		
65.	*Glaucidium brodiei brodiei*	2		
66.	*Aix galericulata*	2		
67.	*Andrias davidianus*	2	I	
68.	*Hucho bleekeri*	2		
69.	*Elaphodus cephalophus*	3		
70.	*Felis bengalensis*	3	II	
71.	*Vulphes hole*	3		
72.	*Mustela altaica temon*	3		
73.	*Petaurista petaurista*	3		
74.	*Cuculus sparverioides*	3		

75.	*Caprimulgaus indicus*	3		
76.	*Hirundapus caudacutus*	3		

Land use and Socio-economic conditions at Baoxing

Baoxing is comprised of arable land of 83,000 Chinese mu[2], forest area of 3.3 million Chinese mu, grassland of 965,000 mu. The population size is 55,105, and of this, the agricultural population is 45,495, accounting for 82.35 % of the total population. The minority of Tibetans of 4,650 also live in Baoxing. The GDP in Baoxing is 473 million Yuan, and the annual increase is 10.8%. The per capita GDP reaches 8,610 Yuan. The gross output of agriculture is 172 million Yuan, and the gross output of industry is 639 million Yuan. Per capita net income of farmers is 2259 Yuan. Approximately 82% of the population is engaged in agriculture. The main crop is rice. In 1998, Baoxing enacted a logging ban on natural forests, and closed 16 forest industries. In 1999, Baoxing started implementing the slope re-conversion project. Accordingly the agricultural conditions and structure have been modified and improved.

Biodiversity at Laojunshan

Plant resources. According to preliminary investigations, vascular plants distributed from the subtropical to the Frigid Zone belong to over 151 families, 637 genera and more than 1901 species. Main types of vegetation include warm temperate conifer forest, north sub-tropical mixed forest, deciduous broadleaf forest, cold temperate conifer forest (sub-alpine conifer forest), cold temperate Rhododendron dwarf forest, Rhododendron scrub, alpine cold meadow and wetland vegetation. Timber forests are mainly composed of fir, spruce, and *Pseudotsuga forrestii Craib*, *Tsuga yunnanensis* and *Picea bracluytyla*. Economic forests are composed of *Picea likiangensis*, *Rhododendron dwarf forest*, *Betula platyphylla*, *Pterocarya delavayi*, *Abies delavayi*, *Abies georgei*, *Pinus yunnanensis* and fruit trees. The demo site has various meadows and scrub types, and more than 163 species of medicinal herbs.

Animal resources. According to preliminary investigations, the Laojunshan demo site has more than 43 species of mammals, 263 species of birds and 54 species of amphibians. About 100-200 individuals of Yunnan Golden Monkey (*Rhinopithecus bieti*) now live here (The total number of Yunnan Golden Monkeys in China is estimated at 1400-1700 individuals).

Conservation status. At Laojunshan, there are 52 national priority protection flora species, which belong to 11 families and 33 genuses, including 1 national first-class protected species and 51 national second-class protected species. There are 12 species of national protected mammals, of which 2 species are under first-class national protection, 10 under second-class national protection; 31 species of national priority protection bird, of which 7 under first-class national protection and 24 under second-class national protection; 3 species of national priority protection amphibian and reptiles, of which 1 species under first-class national protection and 2 under second-class national protection. Among the wildlife distributed in the demonstration site, there are 26 species listed in CITES (See Table 2). Besides Yunnan Golden Monkey, some other endangered species, including clouded leopard, black bear, little panda, black-necked crane,

[2] 1 ha equals to 6 Chinese mu.

hooded crane, and black stork also are distributed in this area. The proposed Laojunshan National-level Nature Reserve and the existing Lashihai Provincial level Nature Reserve have global biodiversity significance.

Table 2. Priority Protected Animals in Laojunshan Demo Site

	Latin Name	Ranks	
		National	CITES
1.	*Rhinopithecus bieti*	1	I
2.	*Neofelis nebulosa*	1	I
3.	*Aquila chrysaetos*	1	
4.	*Gypaetus barbatus*	1	
5.	*Syrmaticus humiae*	1	I
6.	*Ciconia nigra*	1	II
7.	*Mergus squamatus*	1	
8.	*Grus nigricollis*	1	I
9.	*Grus manacha*	1	I
10.	*Python molurus bivittatus*	1	I
11.	*Macaca mulatta*	2	II
12.	*Tupaia belangeri*		II
13.	*Canis lupus*		II
14.	*Cuon alpinus*	2	II
15.	*Selenarctors thibetanus*	2	I
16.	*Ailurus fulgeus*	2	I
17.	*Martes flavigula*	2	
18.	*Lutra lurta*	2	I
19.	*Viverra zibetha*	2	
20.	*Viverra indica*	2	
21.	*Prionailurus bengalensis*		II
22.	*Manis pentadactyla*	2	II
23.	*Moschus bercozovskii*	2	II
24.	*Milvus korschun*	2	
25.	*Accipiter gentiles*	2	
26.	*Accipiter nisus*	2	
27.	*Accipiter virgatus*	2	
28.	*Buteo buteo*	2	
29.	*Falco subbuteo*	2	
30.	*Falco tinnunculus*	2	
31.	*Tetraogallus tibetanus*	2	
32.	*Ithaginis cruentus*	2	II
33.	*Grossoptilon crossoptilon*	2	I
34.	*Tragopan temminckii*	2	
35.	*Lophara nycthemera*	2	
36.	*Chrysolophus amherstiae*	2	
37.	*Grus grus*	2	II
38.	*Porzana bicolor*	2	
39.	*Treron sphenura*	2	
40.	*Psittdcula derbiana*	2	
41.	*Psittacula imalayana*	2	
42.	*Bubo bubo*		II
43.	*Glaucidium cuculoides*		II
44.	*Strix aluco*		II
45.	*Cygnus cygnus*	2	
46.	*Grus grus*	2	II
47.	*Anser indicus*	2	

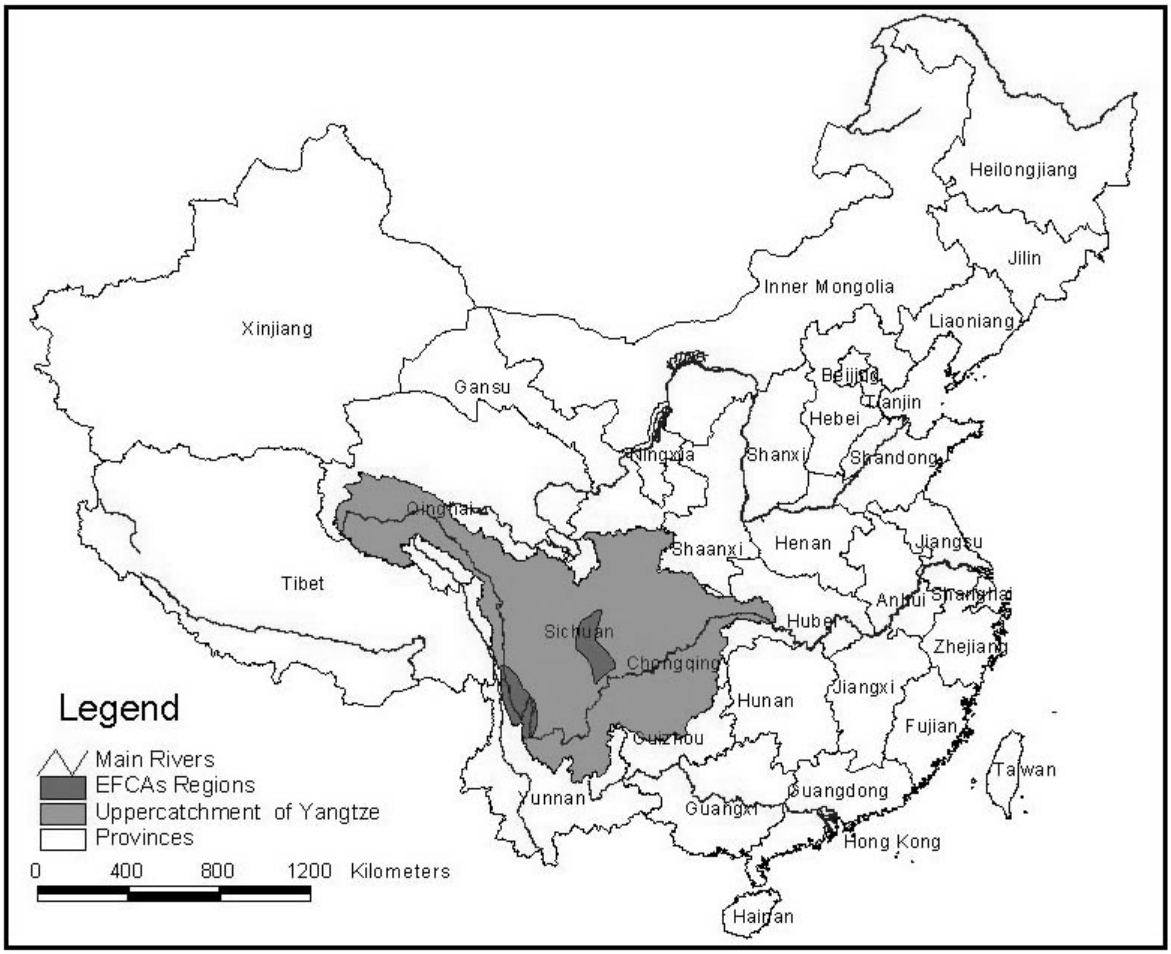
48.	*Circus aeruginosus*	2	
49.	*Falco tinnunculus*	2	
50.	*Buteo buteo*	2	
51.	*Tylototriton verrucosus*	2	
52.	*Rana tigrina rugulosa*	2	II
53.	*Ptyas mucosus*		II

Land use and socio-economic conditions at Laojunshan

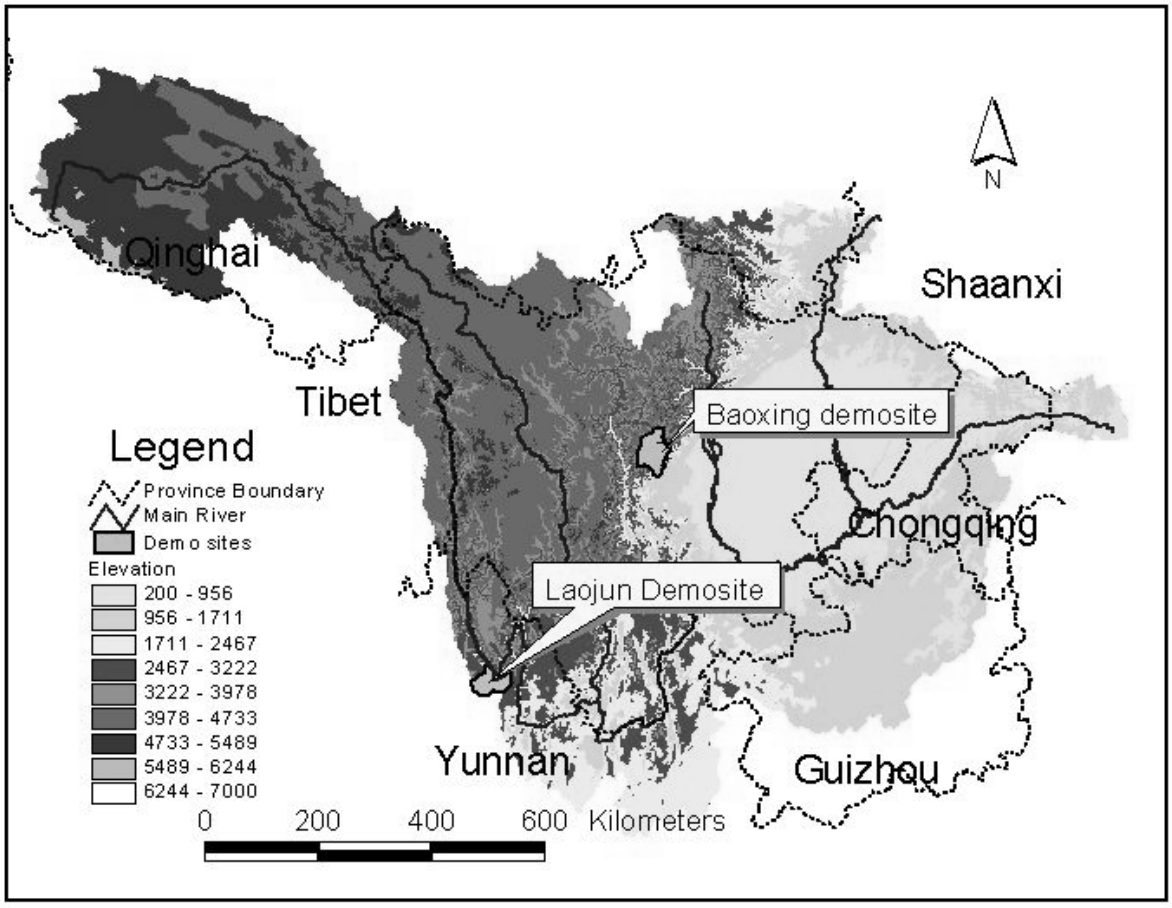
Of the total land area of the demo site, the areas of forests, farmland and grassland are, respectively, 156,000 ha, 10,029 ha and 19,946 ha. The main minority groups include: Naxi, Bai, Han, Lisu, Pumi and Yi. The average net income per capita is 1,014 Chinese yuan. The demo area is characterized by weak agricultural industry, and strong dependency on forest resources (including firewood). After the implementation of the logging ban, the economic development slowed down. It is proposed to develop the following alternative livelihoods: animal husbandry, fruit trees and medicinal plants, and eco-tourism.

Annex G2. Geographical Location of Two Demo Sites

Map 1: Location of the Project Area



Map 2: Location of the Demo Sites in the Upper Basin of the Yangtze River



Annex H. Monitoring and Evaluation Plan

I. Outline

The project monitoring and evaluation will be conducted following the UNEP Project Monitoring and Evaluation procedure. The Logframe Matrix (Annex B) is particularly a useful tool to be employed for the project monitoring and evaluation purposes, particularly in order to monitor and evaluate the progress in achieving project objectives, and listed benchmarks (using the indicators in the Logframe Matrix). The project monitoring will be conducted on a periodic basis, in order to assess if planned substantive and financial activities are implemented according to the workplan and financial plan, and to evaluate if these activities are actually giving the same level of effects as have been originally planned.

Evaluation will be conducted, respectively, at the mid-term of the project duration and at the terminal point of the project implementation, unless the project monitoring indicates a need for extraordinary evaluation for the purpose of re-direction of project implementation. The project evaluation will objectively evaluate efficiency and cost-effectiveness of the project implementation, actual impacts of the project vis-à-vis set project objectives and global environment targets. The evaluation also involves the issues of the sustainability of the project and its impacts, stakeholder participation, and financial management.

In order to effectively monitor the impacts of the project activities, during the first year of the project implementation, the baseline level will be clearly identified and agreed upon among the stakeholders. This exercise will be carried out based on the preliminary assessment of the ecosystem functions in the upper Yangtze Basin, developed during the PDF-B.

Within the Executing Agency (SEPA), the National Project Director (NPD) will take the overall responsibility for project monitoring and evaluation. Within the Implementing Agency (UNEP), the project task manager will take the overall responsibility for project monitoring and organization of external evaluation.

II. Monitoring:

Regular communications will be established between the NPD and the UNEP on the progress of the project implementation through regular contacts, as well as required project half-yearly progress reports, to be prepared in a UNEP format.

The project will be subject to tripartite project review (TPR) at least once every 12 months by representatives of PMO, SEPA and UNEP, and wherever necessary, extraordinary tripartite project review meetings may be organized. UNEP may seek external expert(s) to participate in the review meetings, in order to maintain objectivity of the progress review and to supplement the expertise needed for the review. The TPR will be organized in conjunction with the PSC meetings, and the reports emanating from the review meetings will be used to modify and improve the orientation and performance of the project implementation. The results of the monitoring components, particularly relevant to the two demo sites, will be

made available, when the environmental status indicators are evaluated. When the project is judged to be at risk by the TPR, UNEP task manager will submit the TPR report to UNEP/GEF Divisional Review and Oversight Committee (DROC), and until a risk flag is lifted, TPR reports will be continuously submitted to DROC for its policy guidance on the overall direction of the project implementation.

The PMO shall prepare and submit to each tripartite review meeting an Annual Project Report (APR) in line with the Project Implementation Review required by GEF. This will ensure that design and inception activities are closely monitored and modification to the project plan can be made in time. Any other project and substantive reports will be submitted to SEPA and UNEP for their agreements prior to their finalization. The following table indicates the tools to be used for project implementation monitoring:

Table H-1: A summary of Project Monitoring tools and their use

Tool	**Frequency**	**Responsible Unit to prepare**	**Review and acceptance by UNEP**
Half-yearly progress reports prepared in a UNEP format.	June and December every year	PMO	UNEP reviews and approves them.
Quarterly expenditure reports prepared in a UNEP format.	March, June, September and December every year	PMO	UNEP and UNON review and approve them
Annual financial report and terminal project auditing	December every year	SEPA	Annual reports and terminal audit reports will be submitted to UNEP for review.
Annual project review (APR) reports, reporting on indicators in the Logframe, in the form of PIR.	June every year	PMO	Submitted to the Tripartite Review Meeting
Reports of the Tripartite Project Review (TPR), highlighting the outstanding and risk issues	July/August every year	TPR	Agreed by TPR based on the Annual Project Review.
Project Implementation Review (PIR)	September every year	UNEP Task Manager	UNEP task manager prepares PIR based on the TPR and APR, to be submitted to portfolio manager.
Overall and annual work plans, which may and will be modified, based on the Steering Committee Meeting results.	When needed, at the Steering Committee meetings	PMO	Steering Committee approves changes.
Proposal for any change in budget and its allocation.	When needed, at the Steering Committee meetings	SEPA	A proposal to be submitted to UNEP for its approval.
Disbursement and co-financing plans	At the inception of the project	SEPA	Plans to be approved by UNEP, and disbursement of GEF funds recorded by UNON.
Procurement plan (non-expendable equipment)	As part of quarterly financial reporting	SEPA	Inventory of Non-Expendable Equipment

equipment)	process.		submitted to UNEP for records.
Audit reports and other ad-hoc reviews.	As deemed necessary by internal and external auditors	Auditors.	Audit reports will be submitted to UNEP for its action.
Project Steering Committee (PSC) report, tracking implementation progress, and providing guidance on annual workplans.	Once a year except first two years when there are two meetings per annum.	PSC	Minutes of SC meetings will be put on the UNEP web.
Local Steering Committees (LSCs) reports, outlining demo implementing progress and demo on-the-ground impacts.	At least once a year.	LSCs	Minutes of LSC meetings prepared by PMUs will be submitted to PSC.

a. Monitoring of project impacts and outcomes

The project outcomes and impacts will be monitored annually based on the Logframe Matrix at the TPR based on the Annual Project Review. Indicators set for this purpose will be used for the performance of the project implementation. The baseline condition is preliminarily set in the Logframe matrix, but during the first year of project implementation, the first task of the MEWS at the two demo sites will be to identify the baseline ecosystem and socio-economic conditions. The baseline ecosystem conditions as of project year 1 will be agreed at the LSCs and PSC.

b. Monitoring of project outputs

The project monitoring activities will also oversee the timing, quantity and quality of major outputs expected from the project. Any drafts for substantive reports will be submitted to UNEP for its review prior to official finalization and publication. The outputs will be delivered in line with the established project implementation timetable. A summary of oversight plan for substantive report delivery is provided below:

Table H-2: A summary of expected substantive reports and their delivery

Outcomes and Activities	**Expected outputs**	**Expected timing of draft submission to UNEP**	**Expected timing of finalization and publication**
Outcome 1:			
1.1	Report of the water retention ecosystem functions in the upper Yangtze Basin	Aug. 2005	Dec. 2005
1.1	Report of the soil retention related ecosystem functions in the upper Yangtze Basin	Aug. 2005	Dec. 2005
1.1	Report of the biodiversity related ecosystem functions in the upper Yangtze Basin	May. 2006	Sept. 2006
1.1	Report of the carbon sequestration/ emission related ecosystem functions in	Aug. 2006	Dec. 2006

	the upper Yangtze Basin		
1.1	Report on current and planned land use and productivity in the upper Yangtze Basin	Oct. 2006	Dec. 2006
1.2	Report on threats and root causes for the degradation of critical ecosystem functions in the upper Yangtze Basin	Nov. 2007	Jan. 2008
1.2	Report on economic values of the critical ecosystem functions in the upper Yangtze Basin	Dec. 2007	Jan. 2008
1.3	Report on integrated assessment of the critical ecosystem functions in the upper Yangtze Basin	Dec. 2007	Jan. 2008
1.4	Report on recommendation of new EFCAs based on the scientific assessment in the upper Yangtze Basin	Dec. 2007	Jan. 2008
Outcome 2:			
2.1	Reports of monitoring of water retention and soil conservation capacity	Oct. 2006, 2007, 2008	Dec. 2006, 2007, 2008
2.2	Reports of the list of management indicators	Oct. 2006	Dec. 2006
2.3	Full monitoring reports of two sites	Sept. 2007, 2008	Dec. 2007, 2008
Outcome 3:			
3.2	An IEM plan for the Baoxing EFCA	Nov. 2004	Dec. 2004
3.3	Management plans for PAs and corridors	Aug. 2006	Dec. 2006
3.4	Report of the alternative livelihood action plan	Aug. 2008	Dec. 2008
3.5	Detailed plans to improve environmental standards	August 2006	Dec. 2006
3.6	Syllabus and materials	Aug. 2008	Sep. 2008
3.6	Reports of decision makers visit	Aug. 2008	Dec. 2008
Outcome 4			
4.2	An IEM plan for the Laojunshan EFCA	Nov. 2004	Dec. 2004
4.4	A PA plan	Aug. 2005	Dec. 2005
4.5	An AL Plan	Aug. 2006	Dec. 2006
4.6	Syllabus and materials	Aug. 2005	Sep. 2005
4.6	Reports of visits by decision makers	Nov. 2008	Dec. 2008

c. Monitoring of stakeholder participation:

Concerning the demonstration component, local stakeholders have been actively engaged in the process of designing the project and project strategies are built upon active public participation in integrated ecosystem management. As per the Stakeholder Participation Plan

during the implementation of the project (Section 2 of Annex F), stakeholder participation is closely monitored by the TPR.

d. Monitoring of financing, disbursement and expenditure

A GEF fund disbursement plan will be prepared during the project appraisal phase in line with the project implementation timetable (Annex I). In correspondence with this GEF disbursement plan, co-financing plan will also be established during the project appraisal phase. In order to achieve maximum efficiency of fund activities, GEF fund will be disbursed based on successful completion of activities during the preceding quarter and with proof of matching co-financing.

e. Monitoring of partnership

Periodic review will be conducted through the TPRs on the partnership arrangements (IA, EA, supporting international and national organizations) for maximum efficiency of project implementation. Potential agencies or organizations may be identified through the TPR if specific expertise is needed to implement specific component(s) of the project.

f. Monitoring of building sustainability and replicability

The TPR will also review whether institutional and financial arrangements are being made for sustaining the project impact after the project is completed. This would include arrangements within SEPA to establish an EFCA Unit for continuing EFCA-IEM related activities for the Yangtze River basin, and preparation of a replication action plan to disseminate and replicate lessons learned and demonstration results.

III. Evaluation

Annual mandatory self-evaluations will be performed, and results will be used to adapt project strategies. UNEP will inform GEF of the evaluations during the annual Project Implementation Review (PIR). Evaluation reports will also be made available to the public, and will be shared with other GEF projects in China to facilitate mutual learning, and strengthen strategic planning. In the mid-way of the project implementation, an external consultant will be recruited to conduct a mid-term review of the project. Upon completion of the project, the National Project Director will submit to UNEP a project terminal report. Further, external consultant(s) will be recruited to conduct a final evaluation of the project. The final evaluation report will be published by UNEP and shared with stakeholders involved and GEF. The project may be subject to a GEF Secretariat Managed Project Review (SMPR).

IV. Monitoring and Evaluation schedule

Table H-3: Monitoring and Evaluation schedule

Timing	**M&E Activities**
July 2004	First Half-Yearly Progress Report
July or August 2004	First Steering Committee meeting
December 2004	Second Steering Committee meeting and first TPR
December 2004	Second half-yearly progress report
July 2005	Third half-yearly progress report
August 2005	Third Steering Committee meeting and second TPR (PIR)
December 2005	Fourth Steering Committee meeting
January 2006	Fourth half-yearly progress report
July 2006	Fifth half-yearly progress report
July 2006	Fifth Steering Committee meeting and third TPR (PIR), combined with the mid-term review
January 2007	Sixth half-yearly progress report
July 2007	Seventh half-yearly progress report
July 2007	Sixth Steering Committee meeting and fourth TPR (PIR)
January 2008	Eighth half-yearly progress report
July 2008	Ninth half-yearly progress report
July 2008	Seventh Steering Committee meeting and fifth TPR (PIR)
December 2008	Tenth and last half-yearly progress report
December 2008 - February 2009	Terminal Evaluation
January 2009	Sixth and last meeting of the TPR

V. Overall responsibility of project implementation partners

Project monitoring and evaluation will be conducted as part of the overall project implementation arrangements, involving Implementing Agency, Executing Agency, steering committees, PMO and PMUs, as well as co-financing agencies. The roles and responsibilities of these agencies are outlined in the table below:

uation Roles and Responsibilities

roject Management ffice (PMO)	**SEPA**	**Project Steering Committee**	**Project Management Units**	**Local Steering Committees**
ational Project Director	Department of Nature Conservation	Chair of the PSC	Provincial Coordinators (Sichuan and Yunnan)	Chairs of the LSCs
stablish reporting network prepare necessary and ceptable reports in time r submission to UNEP	Establish reporting network on financial (particularly co-financing) and policy responsibilities	Review overall progress in the implementation based on the reports prepared by the PMO	Establish reporting network to prepare necessary and acceptable reports on the demos in time for submission to PMO	Review overall progress in the implementation on the demos based on the reports prepared by the PMUs
reparation of half-yearly ogress reports and APR ports egular visits to demo sites d communications with MUs verall implementation ersight on assessment and EWS components ecretariat function for PSC d participation in the PR. reparation of a draft work an for submission to PSC	Preparation of policy and co-financing related input to half-yearly progress reports and annual project review. Participation in the TPR and PSC.	Review of and agreement on the workplan Review the progress report prepared by PMO.	Preparation of input to half-yearly progress reports and APR reports Frequent visits to demo sites Overall implementation oversight on demo activities Secretariat function for LSC and participation in the PSC. Preparation of demo work plans for submission to LSCs	Review of progress reports by PMUs. Review and approval of workplans.

repare input on actual kpenditure to SEPA reparation of a rocurement plan	Prepare reports on co-financing, and certify GEF expenditure to be submitted to UNEP Procure equipment	Review financial activities based on reports prepared by PMO/SEPA	Prepare input on actual expenditure to SEPA Preparation of procurement plans to be submitted to SEPA	Review financial activities based on reports prepared by Provincial governments
ubmit draft reports to NEP for its review and earance eceive draft reports from MUs for its review	Ensure the substantive reports are in line with the SEPA policy	Review substantive reports	Preparation of substantive report drafts to be submitted to PMO for review	Review of demo-related drafts
rganize logistics for valuations, including site sits nterviews with external valuation consultants. omment on draft valuation reports hen selected by SMPR, cilitate site visits	Receive interviews with external evaluation consultants Comment on draft evaluation report When selected by SMPR, facilitate site visits	Review recommendations in the evaluation reports	Organize logistics for evaluations, including site visits Interviews with external evaluation consultants. When selected by SMPR, facilitate site visits	Review recommendations in the evaluation reports

le

	First Year *				Second Year				Third Year				Fourth Year				Fifth Year			
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ction for years 4 mo-level													√	√	√	√	√	√	√	√
ite																				
framework site	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
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g sector nt and			√	√	√	√	√	√	√	√	√	√	√	√	√	√				
l idors	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√				

	First Year *				Second Year				Third Year				Fourth Year				Fifth Year			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
AL) around	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
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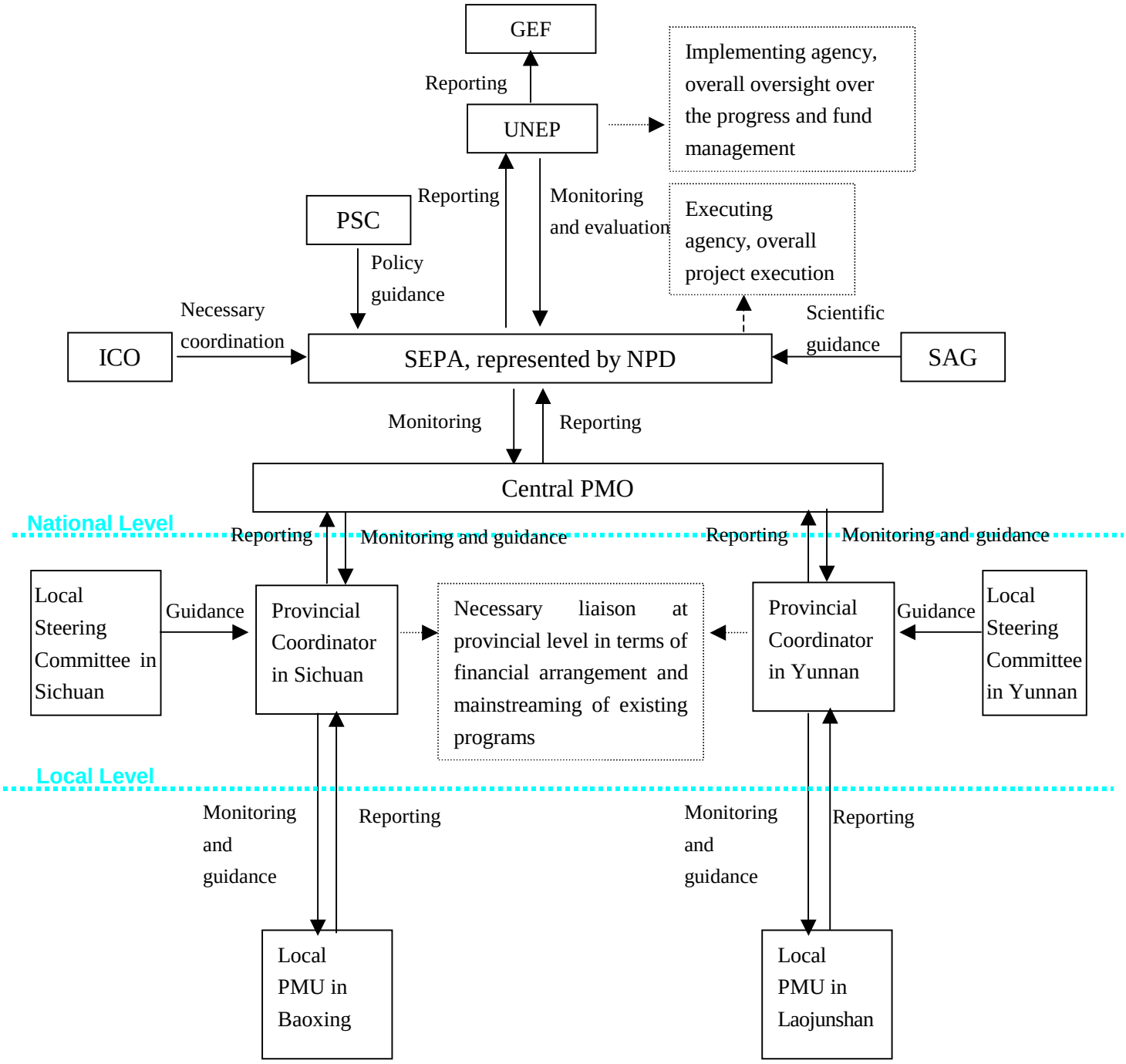
ıo site																				
framework ion site	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
EM plan ules and	√	√	√	√	√	√	√	√	√	√	√	√			√	√				
g sector ;y	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Areas	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
hoods	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
s and ıes		√	√	√	√	√	√	√			√				√		√	√	√	√

in the beginning of Year 2004. ** Numbers 1-20 in the title raw indicate project quarters.

Annex J. Structure of Project Implementation



ANNEX K: LETTERS OF CO -FINACNING COMMITMENTS

1. Government of China

1a. State Environmental Protection Administration

中华人民共和国国家环境保护总局

STATE ENVIRONMENTAL PROTECTION ADMINISTRATION PEOPLE'S REPUBLIC OF CHINA

July , 2003
Mr. Shafqat Kakakhel
Deputy Executive Director
United Nations Environment Programme
Nairobi, Kenya

Dear Mr. Shafqat Kakakhel,

On behalf of State Environmental Protection Administration (SEPA) of China, I wish to express our acknowledgement to UNEP for attaching importance to and supporting the GEF Project on Nature Conservation and Flood Control in the Yangtze River Basin.

The Yangtze River is the largest river in China with drainage area of 18% of China's territory and one third of the total Chinese population. Being one of the most developed areas in terms of agriculture, fishery, industry and transportation, the Yangtze River Basin is the important economic center of China and its GDP accounts for 48% of the national total. In this regard, ecosystems of the basin have significant impacts not only on sustainable social and economic developments of the basin itself, but also on that of the whole country. As regards the reduction to emission of the greenhouse gases, the ecological vegetations in the basin have strong function of carbon sequestration and contribute a lot to reduction of greenhouse gases emission in China and even in the world, as total carbon sequestration by the forests in the upper watershed is estimated to at least 222.6 million ton per year. In regard to biodiversity, the upper watershed of the Yangtze River is one of the most biodiversity rich areas in China and has been counted on the list of Global 238 Eco-regions identified by World Wild Fund (WWF) and the list of Global 25 Biodiversity Hotspots recognized by Conservation International (CI). Referred to the incomplete statistics, there are over 10,000 species of higher plants, about 1300 species of moss and lichen and over 1000 species of wild vertebrates in the upper watershed of the Yangtze River Basin, including those most famous rare and/or endangered species such as *Davidia involucrata, Taxus chinensis, Ailuropoda melanoleuca, Cervus albirostris, Equus kiang, Grus nigricollis, Aquila chrysaetos etc.*

NO.115 XIZHIMENNEI NANXIAOJIE BEIJING 100035 P.R.OF CHINA

中华人民共和国国家环境保护总局

STATE ENVIRONMENTAL PROTECTION ADMINISTRATION PEOPLE'S REPUBLIC OF CHINA

Ecosystems in the Yangtze River Basin, especially in the upper watershed have been suffering from gradual degradation in the recent years and both local and global benefits of the basin are under threats. Relevant surveys showed that the ecosystem degradation is one of the causes for the catastrophic flood of the basin in 1998. International society keeps a close eye on eco-environmental issues in the Yangtze River Basin. Since 1998, UNEP and SEPA have jointly carried out careful studies in the fields of flood causes, capacity building for flood mitigation, vulnerability assessment, and ecological protection etc and experienced fruitful cooperation.

The project on Nature Conservation and Flood Control in the Yangtze River Basin will take on effective Integrated Ecosystem Management (IEM) approach to promote development of Ecosystem Function Conservation Areas (EFCAs), protect and restore ecological environment in the upper watershed, maintain eco-safety of the entire basin, further sustainable development of the local economy and society and capture global benefits on carbon sequestration, biodiversity protection, integrated ecosystem management and sustainable land management.

During the PDF-B phase of the project, relevant central and local government bodies, local communities and interested international organizations have been fully involved in and supported the project implementation. The provincial governments of Yunnan and Sichuan, where the demonstration sites locate have also attached much importance to the project and provided co-financing commitments in written form to assure their financial and staff time support in line with the project design. Some relevant international organizations expressed their interests in the project as well. The Nature Conservancy (TNC) has promised to co-finance the project as described in the project brief.

SEPA, as the executing agency of the project, will assure domestic co-financing of US$20.04 million to meet requirement of the project in conjunction with the National Tenth Five-year Plan for Environmental Protection and other relevant local plans related to the two demonstration sites in Yunnan and Sichuan. In addition, we will make necessary arrangements in terms of project implementation and co-financing issues according to the requirements of UNEP and GEF, and make the domestic co-financing available at due time through effective coordination and monitoring mechanisms to ensure successful implementation of the project.

NO.115 XIZHIMENNEI NANXIAOJIE BEIJING 100035 P.R.OF CHINA

中华人民共和国国家环境保护总局
STATE ENVIRONMENTAL PROTECTION ADMINISTRATION
PEOPLE'S REPUBLIC OF CHINA

If you have any questions, please do not hesitate to contact us.

Sincerely,

Zhu Guangyao 23/9

Vice Minister
State Environmental Protection Administration
People's Republic of China

NO.115 XIZHIMENNEI NANXIAOJIE BEIJING 100035 P.R.OF CHINA

1b. Government of Sichuan Province

四川省人民政府

川府函〔2003〕146号

四川省人民政府
关于长江流域自然保护与洪水控制全球环境基金(GEF)项目配套融资的函

国家环境保护总局：

宝兴县是我省的重要生态保护区，"长江流域自然保护与洪水控制"全球环境基金(GEF)项目将我省宝兴县列入项目示范区，对加强我省的生态环境保护具有重要意义。

我省同意雅安市政府配套融资的报告和宝兴县项目资金分配表，并将在机构建设、人员、设备及资金等方面作出安排，积极配合项目实施。我省所有项目配套融资将根据项目设计要求，在国家级项目办的协调和监督下，由省级项目办根据项目活动统筹安排，合理使用，以确保项目成功实施。

四川省人民政府

二〇〇三年六月十二日

附件:

配套融资分解情况表

项目产出	融资额（美元）	其中（美元）		分类分解情况	融资方
		现金	实物		
建立有效的生态系统综合管理制度框架	111,200	60,000	51,200	省长或主管环保副省长兼职作为地方指导委员会主任：30 月*2000/每月=60,000； 地方指导委员会会议：32,000； 地方指导委员会办公室：19,200。	四川省政府
参与式生态综合管理计划得到认可	41,600**	41,600**		生态功能保护区建设环境，经济和社会可行性分析：32,000** 支持示范区生态功能保护区参与式管理计划的制定和批准：9,600**	四川省宝兴地方政府
加强法制框架	120,000**	120,000**		地方管理机构开发和实施生态系统管理政策和管理战略能力建设：40,000**（对地方管理人员进行相关培训 2 次） 加强地方管理机构实施生态功能保护区有关管理条例的能力建设：80,000**（审视现有法规，并参与相关法规的修订）	四川省宝兴地方政府
将现行有关项目与生态系统综合管理计划相融合	3,400,000*		3,400,000*	将现行有关项目与生态系统综合管理计划相融合：天然林保护工程 970,000*；可持续林业管理 1,814,000*；尖竹，果树和薪炭林建设 616,000*	四川省宝兴地方政府
加强现有保护区建设，扩展缓冲区和建立合理的廊道	2,000,000*		2,000,000*	蜂桶寨国家级自然保护区基础建设：1,840,000*现有自然保护区管理能力建设：160,000*	四川省宝兴地方政府
保护区周边地区及其它关键地段替代生计	1,400,000*		1,400,000*	保护区周边地区及其它关键地段开展生态旅游：1,400,000*根据《宝兴县旅游规划》	四川省宝兴地方政府
环境容量的采矿活动	1,884,000*		1,884,000*	建立两处污水处理厂：1,884,000*	四川省宝兴地方政府

提高公众生态功能保护意识	161,600**	161,600**		公众环境保护教育设施建设：160,000**（公告栏及广播电视设施的更新） 环保教育部分材料：1,600**	四川省宝兴地方政府
示范点层次监测和预警系统	116,400*		116,400*	数据共享能力建设：36,400*	四川省宝兴地方政府
				地方环保局数据采集能力建设：80,000*	归属机构
	183,600**	183,600**		示范点生态环境监测和预警体系办公室建立及人员配置：108,000**；计算机及应用软件：10,400**；生态监测模型开发：11,200**；数据库建设：21,200**；人员培训：32,800**	四川省宝兴地方政府
小计	9,418,400	566,800**	8,851,600*		

注：*已有相关规划的投入；**因本 GEF 项目而新增投入的资金

unofficial translation of the letter from the Government of Sichuan Province

Sichuan Provincial Government
June 12, 2003

Co-financing Commitment from Sichuan Provincial Government for the proposed GEF Project on Nature Conservation and Flood Control in the Yangtze River Basin

Baoxing is an important ecological protection area in Sichaun and it is great support to Sichuan's ecological environment protection that Baoxing, Yaan was included into the demonstration sites of the proposed GEF project on Nature Conservation and Flood Control in the Yangtze River Basin.

Sichuan provincial government agrees to the co-financing report by Yaan and co-financing table from Baoxing, and will make careful arrangement on institutional framework, staff, equipment and funds etc to facilitate implementation of the project. All the co-financing from Sichuan province in line with project design will be mobilized and allocated by the local project management unit (PMU) under the supervision of the central project management office (PMO) to ensure successful implementation of the project.

Co-financing Breakdown from Sichuan Province (in US$)

Project Outputs	Co-financing	Of which		Detailed breakdown	Responsible agency
		Cash	In-kind		
Output 3.1. Institutional framework at Baoxing fully established and functioning.	111,200	60,000	51,200	Governor or Deputy Governor in charge of environmental affairs will concurrently hold the post as the Chairperson of local Steering Committee (LSC): 30 months * 2000 / month = 60,000; Hold LSC meetings: 32,000; Set up and maintain LSC office: 19,200;	Sichuan Government
Output 3.2. Formal acceptance of the participatory IEM plan for the EFCA.	41,600**	41,600**		Feasibility study of the participatory IEM plan from the perspectives of environment, economy and society: 32,000** Support and facilitate the establishment and ratification of participatory EFCA management plan at the demo site: 9,600**	Baoxing government, Sichuan province
Output 3.3. Strengthened legal and regulatory frameworks.	120,000**	120,000**		Capacity building of local management agencies on ecosystem management policies and strategies: 40,000** (Have two training to local management personnel) Strengthen capacity building of local management agencies on implementing regulations and rules on EFCAs: 80,000** (review existing regulations and make suggestions)	Baoxing government, Sichuan province
Output 3.4. Mainstreaming of existing programs.	3,400,000*		3,400,000*	Mainstream present projects into IEM Plan: Natural Forest Protection Programme: 970,000*; Sustainable Forest Management: 1,814,000*; Plant Arrow Bamboo, fruit trees and firewood forests: 616,000*	Baoxing government, Sichuan province
Output 3.5. Strengthening of PAs and establishment of buffer zones and corridors.	2,000,000*		2,000,000*	Infrastructure construction at Fengtongzhai National Nature Reserve (NR): 1,840,000*; Strengthen present NR management capacity: 160,000*	Baoxing government, Sichuan province
Output 3.6. Alternative livelihoods (AL) around PAs and other key areas.	1,400,000*		1,400,000*	Carry out ecological tourism at PAs, its surrounding areas and other critical ecological areas: 1,400,000*	Baoxing government, Sichuan province
Output 3.7. Environmentally sound management of quarries.	1,884,000*		1,884,000*	Build two sewage farms: 1,884,000*	Baoxing government, Sichuan province
Output 3.8. Improved public awareness.	161,600**	161,600**		Infrastructure construction for environmental protection education: 160,000** (Bulletin and broadcast facilities etc) Prepare materials for environmental protection education: 1,600**	Baoxing government, Sichuan province

Output 2.2. Establishment of capacities for MEWS at the Baoxing and Laojunshan demos.	116,400*		116,400*	Capacity building on data share: 36,400**	Baoxing government, Sichuan province
				Capacity building on data collection of Local Environmental Protection Bureaus: 80,000*	Authority of existing monitoring stations
	183,600**	183,600**		Build MEWs office and arrange staffs and office supplies: 108,000**; purchase computer and software: 10,400**; Develop monitoring modules: 11,200**; Build databases: 21,200; Staffs training: 32,800**	Baoxing government, Sichuan province
Total	9,418,400*	566,800**	8,851,600*		

Note: * mainstreamed projects/ activities; ** fresh cash mobilized.

1c. Government of Yunnan Province

云南省人民政府办公厅（函）

云政办函〔2003〕46号

云南省人民政府办公厅关于长江流域自然保护与洪水控制全球环境基金项目地方配套融资的承诺函

国家环保总局办公厅：

将我省丽江老君山列为“长江流域自然保护与洪水控制”全球环境基金（GEF）项目示范区，是对我省生态环境保护工作的关心和支持，省政府十分重视，积极协调、支持项目的实施。

为保证项目成功实施，实现预期目标，我们将认真按照贵局的有关要求，在项目管理、组织实施及配套资金等方面作好安排。根据当前项目设计的内容和活动，经协调省级有关部门及项目实施

所在地，已落实项目配套融资587万美元，其中现金配套498.2万美元，非现金配套88.8万美元。具体配套融资分解见附表。

附表："长江流域自然保护与洪水控制"全球环境基金(GEF)项目配套融资表

二〇〇三年六月二十七日

主题词：环保　资金　函

打字：陈庆莲　　校对：杨正基

“长江流域自然保护与洪水控制”全球环境基金（GEF）项目配套融资表

项目产出	融资额 美元	其中:		分类分解情况	融资方
		现金 美元	非现金 美元		
3.10 建立有效的生态系统综合管理制度框架	1,657,098	1,611,048	46,050	滇西北国家级生态功能保护区管理局建设：1,391,536，见《滇西北国家级生态功能保护区规划，待批》中管理局建设工程 老君山示范生态功能保护区管理办公室建设：30,000，包括建立办公室（20,000）和办公家具(10,000)的费用 生态功能保护区地方指导委员会建设:219,512，见《滇西北国家级生态功能保护区规划，待批》中管理局建设工程 生态功能保护区地方指导委员会能力建设/培训:5,000，提供培训场所及云南省相关政府部门的人员参与和时间投入 生态功能保护区地方指导委员会定期会议:11,050，提供会议场所(1,050)及云南省相关政府部门的人员参与和时间投入(10,000)	国家发改委 国家环保总局 云南省
3.11 制定生态功能保护区综合管理计划并得到认可	74,741	56,341	18,400	滇西北生态功能保护区综合生态系统管理和保护规划:56,341， 老君山示范生态功能保护区综合生态系统管理和保护规划:18,400，主要为专家投入	云南省
3.12 加强法制框架以支持生态系统综合管理	31,176	10,976	20,200	制定和完善滇西北生态功能保护区管理条例:10,976，根据《滇西北国家级生态功能保护区规划，待批》中管理法规和技术政策制定预算估算 制定和完善老君山示范生态功能保护区管理条例:20,200，根据《滇西北国家级生态功能保护区规划，待批》中管理法规和技术政策制定预算估算,主要包括专家投入	云南省
3.13 将现行天然林保护和退耕还林等相关工程与全球效	783,581	763,581	20,000	现行天然林保护和退耕还林(湿)工程:763,581，根据《天然林资源保护工程云南省实施方案》，《退耕还林规划》和《拉市海自然保护区管理计划》的有关预算进行估算，具体包括天然林保护工程投入642,774，退耕还林工程投入120,807	云南省丽江市

益相结合				现行工程执行机构的能力建设: 20,000, 主要包括人员等实物投入	
3.14 建立新的保护区，以促进生物多样性保护和资源可持续利用	1,383,537	1,010,037	373,500	老君山国家级自然保护区的申请及批准: 145,000 加强老君山国家级自然保护区管理 (人员配置、基建、保护区综合管理规划及保护战略的开发，动植物资源调查，管理人员培训): 240,976 加强拉市海省级自然保护区管理 (人员配置、基建、保护区综合管理规划及保护战略的开发): 997,561，见云南省《拉市海自然保护区基本建设项目投资表》和保护区管理人员工资（资金已经到位）	国家林业局 云南省
3.15 通过替代生计减轻当地居民对生态系统的负面影响	1,040,635	786,635	254,000	制定社区生态旅游规划并列入地方发展计划: 65,551.根据《滇西北地区保护与发展行动计划》有关生态旅游活动的预算进行估算 基于PRA概念的试点村的选择及生态旅游活动的实施: 204,000, 主要包括实地考察， PRA活动的设计及执行，生态旅游示范村的基建等 其它替代生计活动的开发及实施(分析和评估示范区替代生计的潜在可能性，与当地政府及社区共同设计替代生计方案，实施替代生计方案，通过监测和预警系统对替代生计活动的实施情况进行监控并进行适当的调整): 771,084，根据《丽江县“十五”计划》中有关预算进行估算，主要包括野生动物驯养投入(养鹿)，有机绿色食品(白芸豆)生产基地建设投入、畜牧业发展的投入、药材种植等	云南省丽江市
3.16 节约能源和替代能源示范	640,386	606,951	33,435	农村能源消费现有资料收集及实地考察:2,750 建立农村能源推广委员会: 3,000 试点村的选择: 5,200 沼气及节能灶使用及推广应用: 625,236，根据《丽江县农村能源“十五”规划》估算， 推广应用经验和问题总结和分析: 4,200	云南省丽江市
3.17 提高公众生态功能保护意识	144,512	92,000	52,512	分析和评价目标人群的宣传教育需求: 7,800,主要包括公众调查及专家费用 设计和实施生态功能保护区宣传活动,包括宣传材料的准备: 84,200，根据《滇西北国家级生态功能保护区规划，待批》中有关预算进行估算，具体包括有关生态功能保护区宣传材料准备，散发宣传材料，大众传媒介入等	云南省丽江市

				支持当地社区有关宣教活动(特别是保护区和缓冲区的社区共管计划的开发和实施):52,512，主要包括村民大会，小型座谈会，参与生态旅游，散发教育材料,等活动的费用	
3.18 示范结果宣传推广	17,340	6,290	11,050	给示范点省级和地方管理人员提供培训提高其监督和评估能力: 3,950 评价示范活动实施效果: 2,600, 主要包括制作评价报告和专家费用 为地方,省级及国家生态功能保护区政策和制度提供建议:2, 500, 主要包括专家费 示范活动经验和教训的宣传和推广(制作相关的项目宣传材料及研讨会): 8,290 根据《滇西北国家级生态功能保护区规划，待批》中有关监控能力建设预算进行估算	云南省丽江市
示范点层次监测与预警系统	35,000	20,000	15,000	数据共享能力建设: 20,000 地方环保局数据采集能力建设: 15,000	云南省丽江市
	62,750	18,250	44,500	示范点生态环境监测和预警体系办公室建立及人员配置: 32,500 计算机及应用软件: 6,500， 生态监测模型开发: 7,000，数据库建设: 11,250， 人员培训: 5,500	云南省丽江市
	5,870,756	4,982,109	888,647		

unofficial translation of the letter from the Government of Yunnan Province

Co-financing Commitment from Yunnan Provincial Government for the proposed GEF Project on Nature Conservation and Flood Control in the Yangtze River Basin

Identification of Laojunshan, Lijiang as one of the demonstration sites of the proposed GEF project on Nature Conservation and Flood Control in the Yangtze River Basin is great support to ecological environment protection of Yunnan Province. Yunnan provincial government attaches great importance to the project and will take active role in coordinating relative departments for the successful implementation of the project.

In order to ensure successful implementation of the project and realize the expected objectives, we will carefully commence necessary arrangements in terms of project management, implementation and co-financing etc in accordance with SEPA's requirements. According to the present project contents and the activities designed, the committed co-financing for the project that was fixed through coordination with relevant provincial departments and local governments of the demonstration site amounts US$5.87 million, including US$4.982 million in cash and US $0.888 million in kind.

2. The Nature Conservancy

The Nature Conservancy
China Program
中国项目

美国大自然保护协会中国项目
中国云南省昆明市人民东路2号
新华大厦11楼

TNC China Program
XinHua Plaza 20F, 5 Renmin Donglu,
Kunming, Yunnan, 650051 China

Tel: +86 871 316.2797
Fax: +86 871 316.2793

June 30, 2003

Mr. Zhu Guangyao
Deputy Minister
SEPA
115 Xizhimennei Nanxiaojie
Beijing 100035
People's Republic of China

Dear Minister Zhu:

On behalf of The Nature Conservancy's China Program, I want to express both our support for your project proposal to GEF, titled "Nature Conservation and Flood Control in the Yangtze River Basin", within the cooperation MOU framework between SEPA and TNC, as well as TNC's long-term commitment to biodiversity conservation in and around the *Laojun Ecosystem Function Conservation Area (EFCA) demonstration site.*

Globally-Significant Biodiversity Value

The Laojun Ecosystem Function Conservation Area (EFCA) demonstration site identified in your project proposal straddles two highly-significant, biologically-rich areas identified in the joint priority-setting ecoregional planning effort of Northwest Yunnan by the Yunnan province government, P. R. China and The Nature Conservancy (1999-2001)– Laojunshan and Lashihai Conservation Areas.

The Laojunshan Conservation Area, stretching from Baima Xueshan Nature Reserve to Jianhu Lake in the south and flanked by the Mekong and Yangtze Rivers, is an exceptionally biologically rich and unique area of the world. This area hosts over 1900 species of plants, over 50 of which are state-protected, and over 290 species of wildlife, nearly 20% of which are rare and/or endemic, found nowhere else in the world. Notably, this area encompasses:

- Substantial range of the Yunnan golden monkey (*Rhinopithecus bieti*), a highly endemic and endangered primate, restricted to a narrow corridor of habitat in Northwest Yunnan and Southeastern Tibet. Two of only 13 natural populations are found here;
- Unique purple sandstone geology that supports an unusual biota, the second largest occurrence of this geologic type in China;
- Extensive remaining tracts of old-growth mixed forest and alpine coniferous forest, providing valuable habitat for a wide variety of wildlife;
- Almost one-tenth of the total rhododendron species in the world;
- Outstanding intact alpine ecosystems, from distinctive cirque lakes to natural meadows, home to numerous rare and medicinally-valuable plants.
- Portions of the upper watersheds of two great river basins – the Mekong and Yangtze Rivers, providing critical ecological services, especially for highly-populated centers of south and east Asia.

The Lashihai Conservation Area, moreover, encompasses the highest wintering waterfowl richness and abundance of all the lakes and reservoirs in Northwest Yunnan, providing critical migratory habitat for vast concentrations of wading and swimming birds that summer and nest in Siberia and Tibet. Lashihai Nature Reserve is believed to embrace the highest concentration of migratory waterbirds in

all of China, hosting over 60 species each year, including seven First or Second-Rank Nationally Protected Species of China such as scaly-sided merganser, black stork, black-necked crane, and hooded crane. Indeed, between 50,000-80,000 migratory waterfowl visit the Lashihai wetland complexes each year. TNC's Laojunshan and Lashi Conservation Areas span broader areas substantially overlapping with the Laojun EFCA demonstration site will present valuable opportunities for us to work synergistically.

TNC's Past, Current, and Future Work

Because of these exceptional, globally-significant biodiversity values, TNC has been working at both the Laojunshan and Lashihai Conservation Areas for nearly 3 years. Significant past work has included: participatory conservation planning and research/surveys; design and background work to develop provincial proposal for designation of Laojunshan Nature Reserve; initiation of alternative energy program to reduce threat of excess fuelwood collection on prime forests; development of ecotourism demonstration program at Lashihai to provide alternative income sources for local communities while increasing appreciation for the environment; and introduction of innovative environmental education programs at local schools. Over the last 3 years, the total investment by is US$263,283 in these two areas.

Key plans for near-term future work at both sites also enhance your GEF proposal's objectives, including:

- Initiation of Range-wide Yunnan golden monkey program to protect this sensitive and rare primate throughout its habitat (contribution to Output 3.13);
- Refinement of wetland and waterfowl management zones for proper habitat management at Lashihai (contribution to Output 3.13);
- Development of comprehensive General Management Plan for Laojunshan Nature Reserve that integrates all aspects of protected area management and can serve as a model for protected areas across China (contribution to Output 3.14);
- Upgrading provincial-level Laojunshan NR to state-level Nature Reserve (contribution to Output 3.14);
- Development of sustainable, natural resource information management system/GIS at Laojunshan in conjunction with the newly-created Yunnan Conservation Data Center, to serve as a model for protected area information management (contribution to Output 3.14);
- Establishment of compatible-use community projects at both Laojunshan and Lashihai (contribution to Output 3.15);
- Continued demonstration and installation of alternative energy technologies at both sites (contribution to Output 3.16).

Commitment and Support

Based on previous resource investment and plans for future investment, TNC intends to put the same level of investment in the Laojunshan and Lashihai Conservation Areas at least as this year over the next 5 years. Attached, please find the annual budget for our projects in Yunnan for our fiscal year 04 (July 1st 03 to June 30, 04), which include our detailed budget for Laojunshan and Lashihai for your reference. But please be aware that The Nature Conservancy is a non-profit organization, the annual budgets for the China Program and for specific sites such as Laojunashan and Lashi Hai must be approved by The Nature Conservancy's senior management, and these annual budgets are be affected by fundraising and other factors.

We believe that TNC's conservation activities and SEPA's GEF proposal for development and demonstration of EFCA at the Laojun Site will greatly complement and enhance each other, benefiting not only conservation in this area, but throughout China. The importance of ecosystem function while protecting globally significant and imperiled biodiversity, addressing unsustainable land-uses, improving livelihoods of local communities, and utilizing integrated ecosystem management, is absolutely critical. Our work will be mutually beneficial, including habitat restoration for the Yunnan golden monkey and for wetland ecosystems and associated waterfowl (Output 3.13); establishment of new protected areas and associated management capacity (Output 3.14); community compatible use programs (Output 3.15); and alternative energy implementation (Output 3.16). In addition, TNC will eagerly share any relevant ecological or socio-economic data to facilitate your information collection and analyses. We reiterate our commitment to long-term sustainable conservation of the rich biological resources and maintenance of the ecological integrity of this outstanding area.
Thus, The Nature Conservancy strongly supports your application for GEF funds to implement your "Nature Conservation and Flood Control in the Yangtze River Basin" Project.

If you have any questions, please do not hesitate to contact us.

Sincerely,

Rose Niu

Director
The Nature Conservancym, China County Program

Cc: Mr. Shong Xiaozhi, deputy director of the Foreign Economic Corperation Office, SEPA
Mr. Zhang Shigang, deputy director of the International Cooperation Department, SEPA
Mr. Yang Chaofei, director of Nature & Ecology Conservation Department, SEPA

Annual budgets for TNC's activities related to the proposed GEF Yangtze Project in the fiscal year 04 (in US$)

		Operation			IRPAM *	Alternative Energy			Conservation Science			Total
		Kunming	Lijiang	Beijing	Laojunshan	Kunming	Laojunshan	Lashihai	Kunming	Laojushan	Lashihai	
EXPENSES												
7902	PERSONNEL & FRINGE	-	-	-								
7901	CONTRACTUAL	-	-	-	150,000	10,000	80,000	17,150		43,840	7,000	307,990
7903	COMMUNICATIONS	19,600	6,900	6,200		3,000						35,700
7906	TRAVEL	30,000	3,000	2,000		10,000	8,000	1,715	20,000	10,000	3,250	87,965
7904	SUPPLIES AND EQUIPMENT	24,100	14,200	7,200		12,000				51,000	12,500	121,000
7907	OCCUPANCY	36,000	11,200	22,000								69,200
5750	EXTERNAL DONATIONS	-	-	-								
7909	OTHER EXPENSES	-	-	-								
	TOTAL EXPENSES	109,700	35,300	37,400	150,000	35,000	88,000	18,865	20,000	104,840	22,750	621,855

* IRPAM: Integrated Resource and Protected Areas Management

5. UNEP

United Nations Environment Programme

برنامج الأمم المتحدة للبيئة • 联合国环境规划署

PROGRAMME DES NATIONS UNIES POUR L'ENVIRONNEMENT • PROGRAMA DE LAS NACIONES UNIDAS PARA EL MEDIO AMBIENTE

ПРОГРАММА ОРГАНИЗАЦИИ ОБЪЕДИНЕННЫХ НАЦИЙ ПО ОКРУЖАЮЩЕЙ СРЕДЕ

11 September 2003

Dear Mr. A. Djoghlaf,

This is to confirm that UNEP will co-finance the GEF Project on Nature Conservation and Flood Control in the Yangtze River Basin, China in an amount of US$ 250,000 for 5 years from 2004 to 2009. The contribution will be made in kind, that is, half of the staff time of the Coordinator, UNEP China Office in Beijing, who will be engaged in project implementation coordination.

With Best regards,

Yours sincerely,

Xia Kunbao
Coordinator
UNEP China Office

Mr. Ahmed Djoghlaf
Director
Division of Global Environment Facility
UNEP
Nairobi, Kenya

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2 Liangmahe Nanlu (Road), Beijing 100600, P.R. China
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