PROJECT IDENTIFICATION FORM (PIF)
PROJECT TYPE: FULL SIZED PROJECT
TYPE OF TRUST FUND: THE GEF TRUST FUND

PART I: PROJEC IDENTIFICATION

Project Title:	Developing an effective multiple use management framework for conserving biodiversity in the mountain landscapes of the High Ranges, Western Ghats, India.		
Country(ies):	India	**GEF Project ID:**	TBD
GEF Agency(ies):	UNDP	**GEF Agency Project ID:**	4651
Other Executing Partner(s):	Ministry of Environment and Forests (MoEF), Departnment of Forests and Wildlife, Kerala	**Submission Date:**	January 4, 2012
GEF Focal Area (s):	Biodiversity	**Project Duration:**	60 months
Name of parent programme: **For SFM/REDD+** ☐	Not Applicable	**Agency Fee:**	USD 627,500

A. FOCAL AREA STRATEGY FRAMEWORK:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Indicative Financing from GEF	Indicative Co Financing ($)
Objective 1: Improve Sustainability of Protected Area Systems	Outcome 1.1: Improved management effectiveness of existing and new protected areas.	Output 1. New protected areas (covering 13,400 ha) that cover unprotected ecosystems and improve management effectiveness of 26,600 ha of existing PAs	1,023,750	4,000,000
Objective 2: Mainstream Biodiversity Conservation and Sustainable Use into Production Landscapes, Seascapes and Sectors	Outcome 2.1: Increase in sustainably managed landscapes and seascapes that integrate biodiversity conservation.	Output 1. Policies and regulatory frameworks for production sectors (forestry, tea, cardamom, tourism)	4,306,250	20,000,000
	Outcome 2.2: Measures to conserve and sustainably use biodiversity incorporated in policy and regulatory frameworks.	Output 2. National and sub-national land-use plans that incorporate biodiversity and ecosystem services valuation for mountains landscape covering over 200,000 ha	650,000	4,000,000
Project management cost			295,000	2,000,000
Total project costs			6,275,000	30,000,000

B. PROJECT FRAMEWORK

Project Objective: Biodiversity of High Ranges of the Western Ghats in peninsular India is protected from existing and emerging threats through building an effective collaborative governance framework for multiple use management of mountain landscapes.

Project Component	Grant Type	Expected Outcomes	Expected Outputs	GEF Financing ($)	Co-Financing ($)
Effective governance framework for Multiple Use Mountain Landscape (MUML)	TA	An effective governance framework for planning, managing and compliance monitoring in the MUML. No net loss of forest cover in major habitat blocks totaling 85,600 ha in the High Range Mountain Landscape (HRML) covering 200,000 ha and reducing pressures on wildlife populations with ranges shared with PAs of > 100,000 ha adjacent to the Landscape. Improved instituional capacities to effectively plan, implement, monitor and mainstream biodiveristy considerations into production activities at landscape level as measured by atleast 20% increase in Capacity Scorecard (baseline to be established during PPG).	• Landscape Level Land-Use Plan (LLLUP) and regulations in place that allocates lands to optimal land uses based on biodiversity considerations by a) improving the management of existing Protected Areas (PAs); b) identifying areas of high biodiversity to be accorded higher protection status; c) prescribing appropriate land uses and management practices in the adjacent production landscape; d) strengthening land use regulations, thus avoiding, reducing and mitigating impacts from physical development in major production sectors • Dedicated cross sectoral landscape coordination platform ensuring sectoral compliance with the LLLUP prescriptions. • Improved decision support system for managing multiple use mountain landscapes through: a) values of forests (e.g. *valuation of ecosystem goods and services from HRML)* and externalities of	500,000	2,000,000

		Knowledge generation and implementation of decision support systems with well informed replication strategies for incorporating biodiversity and ecosystem values into land use planning and management in at least 3,000,000 ha of mountain landscapes across the Himalayas, Western and Eastern Ghats, and Central Indian Highlands.	deforestation and forest degradation incorporated into sector decisions and finance secured to offset opportunity costs; b) GIS mapping tools inform physical development and placement of infrastructure across the landscape.		
Applying Multiple Use Mountain Landscape (MUML) management	INV	Improved PA management effectiveness (measured by METT) delivers enhanced protection to 26,600 ha of 7 existing mountain PAs and leads to increase in PA coverage by another 13,400 ha in the High Ranges. Population status of globally threatened species such as Nilgiri tahr, Grizzled giant squirrel and Elephants remains stable or increases At least 45,000 ha of High Value Biodiversity Areas (HVBAs) accorded elevated protection status ensuring conservation of biodiversity rich areas and leading to improved ecological connectivity between PAs that enhances PA resilience to climate change Direct reduction in pressure from production sectors (tea, cardamom, tourism) as evidenced by a) no net loss of natural forest blocks in critical corridors on estates; b) reduction in usage of chemical pesticides in tea and cardamom sectors; c) number of energy efficient processing/ curing units adopted by tea and cardamom sectors	• PA management functions strengthened. This includes: monitoring and enforcement, and visitor management; • Notification of additional areas of significant biological diversity as part of PA system; • Key corridors between PAs secured through a) identifying and mapping key HVBAs and forest fragments in the project landscape; b) elevating the legal status of identified critical biodiversity areas outside PAs ; c) rehabilitation/ eco-restoration of critically degraded areas (with co- finance). • Financial resources secured to meet long term PA management objectives for the expanded PAs and HVBAs. • Integration of biodiversity considerations into the operations of key economic sectors through: a) incentivizing sustainable resource use through product branding/ certification for environmentally sustainable production operations (tea, cardamom) and other market mechanisms (e.g. premium sale of organic products); • Implementation support to critical activities identified in the LLLUP (e.g. regeneration of forest fragments, planting of native species as canopy trees in cardamom plantations, promotion of solar technology for energy use in tea and cardamom plantations, improving productivity of energy woodlots of tea industry, delineating 'no take-zones' in forest fragments in tea/ cardamom areas).	3,480.,000	15,000,000
Community -based sustainable use and management of wild resource	TA	Sustainable use management system for wild resources by local communities improves BD conservation status of mountain forest areas as indicated by: a) reduction in biodiversity pressures (illicit felling, over-grazing, poaching); b) reduced reports in the media and other sources about human-wildlife conflicts (reduced crop and livestock depredation); c) key harvested species populations (e.g. *medicinal plants, black dammar*.) remain stable through-out project period; d) 15 percent increase in the income of local communities attributed to BD friendly enterprises	• Community based organizations (local self-governments, JFMCs, Self Help Groups (SHGs)) for co-managing wild resource harvests with the Forest Department. Clear rules, roles and responsibilities agreed between the Forest Department and local communities. Sustainable use management system in place that prescribes: i) resource off-take limits; ii) zones where harvesting can take place; iii) mechanisms for monitoring and enforcement including community sanctions against defaulters; iv) internal democratic and equitable benefit sharing mechanism. • Safeguards for financial, technical and business management support to avoid	2,000,000	11,000,000

		[Baseline to be established during PPG]	promoting practices with negative impacts on BD • Specific community-based natural resource management governance model for unique tribal local self-government (*Edamalakkudi panchayat)*. This will serve as a learning centre for potential replication across the country in the context of Forest Rights Act, 2006.		
Sub-total				5,980,000	28,000,000
Project management cost				295,000	2,000,000
Total project costs				6,275,000	30,000,000

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

Sources of Co-financing	Name of Co-financier	Type	Amount ($)
Project Government Contribution	MoEF and Kerala Sate Government	Grant	28,000,000
GEF Agency	UNDP	Grant	1,000,000
Private Sector	Tea, cardamom and tourism companies	In kind	1,000,000
Total Co-financing			30,000,000

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

GEF AGENCY	TYPE OF TRUST FUND	FOCAL AREA	Country name	Project amount (a)	Agency Fee (b)	Total c=a+b
UNDP	GEF	Biodiversity	India	6,275,000	627,500	6,902,500
Total GEF Resources				6,275,000	627,500	6,902,500

PART II: PROJECT JUSTIFICATION

A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

A.1.1. THE GEF FOCAL AREA STRATEGIES:

The project will conserve globally significant biological diversity in the High Ranges of the Western Ghats. It will put in place a cross-sectoral land use management framework, and compliance monitoring and enforcement system to ensure that development in production sectors such as tea, cardamom and tourism is congruent with biodiversity conservation needs. The project will seek to establish a conservation compatible mosaic of land uses, anchored in a cluster of protected areas, managed to protect wildlife refugia and corridor areas on production lands. It will catalyze a shift from the current sector-focused land use planning system, which is deficient because it does not account for the adverse cumulative direct and indirect impacts of different production activities across economic sectors on biodiversity. Unless tackled, this situation is likely to lead to the loss of globally significant biodiversity in a key biodiversity area. Furthermore, the land management system will seek to avoid, reduce and mitigate the impacts of roads and other physical infrastructure in ecologically sensitive areas. In this regard, it will ensure that the indirect impacts of development are taken into account in decision making. In parallel, the project will seek to engineer a paradigm shift towards sustainable use of wild resources by local communities, where such use is currently unsustainable or is projected to become so as a result of changes in population and consumption.

In taking a landscape approach to conservation—the project will work both within and outside of protected areas. It is designed to realize GEF Biodiversity Focal Area Strategic Objective One: *Improve sustainability of Protected Area (PA) systems* by seeking to expand coverage (by 13,400 hectares) and strengthen the management effectiveness of a cluster of PAs (around 26,600 ha)[1]. The project is developing a new paradigm for the management of mountain landscapes, building on PAs. In doing so it will reduce pressures on PAs, and establish a replicable model that will improve the security of other PAs in the PA system in mountain areas. It will also improve conservation and management of forest fragments and other High Value Biodiversity Areas[2] (HVBAs) in around 59,000 ha of adjacent production lands, thus advancing Biodiversity Strategic Objective Two: *Mainstream biodiversity, conservation and sustainable use into production landscapes, seascapes and sectors*. The foci production activities include tea and cardamom estates, forest plantations, private tree plantations, homestead agro-forestry, tourism, and urban and peri urban development. These production lands provide habitats vital to the survival of threatened wide ranging fauna, including Tiger, Leopard, Wild Dogs, Elephants and Gaur, amongst others.

[1] It will also improve the conservation status of over 100,000 hectares of PAs neighboring the target landscape, whose populations of Tigers, Leopards, Sloth Bears, Wild Dogs, Elephants, Gaur and other wide ranging wildlife are shared with the HRML—and would face extirpation were HRML habitats to be lost.

[2] High Value Biodiversity Areas (HVBAs) are biodiversity rich areas under the control of the Forest Department but lying outside the purview of Protected Areas.

A.2. NATIONAL STRATEGIES AND PLANS OR REPORTS AND ASSESSMENTS UNDER RELEVANT CONVENTIONS.

The project is directly supportive of and consistent with India's national priorities and policies related to global environmental concerns and development. The National Biodiversity Action Plan, 2008[3] advocates the integration of biodiversity concerns into economic and social development plans and investments. The National Environmental Policy, 2008 prioritizes measures for conserving the mountain ecosystems in the country[4]. The National Forest Policy 1988 stipulates that 60% of the country's extensive mountainous region need to be under forest and tree cover while the National Wildlife Action Plan, 2008 stipulates expansion of the PA network to incorporate areas of representative biodiversity. Other national policies, legislation and guidelines relevant to this project are: National Water Policy (2002), National Agricultural Policy (2000), National Tourism Policy (1998), Biological Diversity Act (2002), Indian Forest Act (1927), Forest (Conservation) Act (1980), Wildlife (Protection) Act (1972), Environmental (Protection) Act (1986), The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act (2006), National Conservation Strategy and Policy Statement on Environment and Development (1992), National Action Plan on Climate Change, (2008), and Joint Forest Management Orders and Guidelines. The project is also in consonance with the decisions adopted by the 10th Conference of Parties to the CBD on Mountain Biological Diversity and fulfillment of the Aichi Biodiversity Targets. Further, integrated management of mountain landscapes is identified as a priority area by the GEF-UNDP supported *National Capacity Self-Assessment - Thematic Assessment Report on Biodiversity (*2007). The project was discussed at length and endorsed as a priority in the GEF National Dialogue Initiative (NDI)[5] which was initiated in 2010 and which concluded in September 2011.

B. PROJECT OVERVIEW:

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

Mountain landscapes constitute more than 90% of the landmass of the three identified 'global biodiversity hotspots' in India, namely, the Himalayas, Indo-Burma, and the Western Ghats and Sri Lanka[6]. Most of these landscapes support an admixture of subsistence and commercial activities, as well as habitat blocks of various sizes. They play a crucial physical and biological function- influencing climate, hydrology and nutrient cycling, and serving as a critical storehouse of biological diversity.

Running parallel to the west coast of India (from the Tapti river south), the Western Ghats (WGs) form the fluted western edge of the Indian peninsular plateau, which is a stable mass of Archaean and Pre-Cambrian formations[7]. These mountains -- – 1,600 km long and 160,000 sq km in extent-- cut the Indian States of Gujarat, Maharashtra, Goa, Karnataka, Tamil Nadu and Kerala. The average elevation is 1,200 m above MSL, increasing towards the South (where the mountains often transcend 2,000 m above MSL). The WGs harbor 27% of India's floral wealth within a number of different vegetation types, including tropical wet evergreen forests, montane evergreen forests, moist deciduous forests, dry thorn, scrub forests, and high altitude grasslands. There are 16 endemic mammal species (eg. the Niligiri Langur and Lion Tailed Macaque) out of 137 species[8] in total and 16 endemic bird species (i.e. Malabar Gray Hornbill) among the 500 species of birds reported from the area. The WGs is identified as an Endemic Bird Area and given High Priority status by Bird Life International. The World Conservation Monitoring Centre (WCMC) has identified the Ghats as one of the important areas of freshwater biodiversity[9].

Over 45 million people depend directly on the Western Ghats for their livelihoods; moreover, approximately 245 million people living in peninsular India receive most of their water supply from rivers with headwaters in the WGs (collectively draining 40% of India's land area)[10]. The population density in the WGs, varies from 100 to 300 inhabitants per sq.km[11]. A characteristic feature of the southern reaches of the WGs is the presence of lofty mountains, deep valleys and plateaus. The locus of the project is one such unique geographical region called the High Ranges. Though the High Ranges in a broader sense extends over an area of around 400,000 ha, the area of direct focus of the project (called High Range Mountain

[3] The key elements of India's National Biodiversity Action Plan (2008) include: augmentation of the natural resource base and its sustainable utilization; integration of biodiversity concerns in economic and social development; development of biodiversity databases; strengthening implementation of policy, legislative and administrative measures for biodiversity management; development of national capacities for biodiversity conservation; valuation of goods and services provided by biodiversity and use of economic instruments in development decision making processes, and improving the control of alien invasive species.

[4] These include, among others, i) adopting appropriate land-use and watershed management practices; ii) adopting "best practice" norms for infrastructure construction in mountain regions to avoid or minimize damage to sensitive ecosystems; iii) improve the sustainability and conservation compatibility of agriculture, in particular smallholder agriculture and iv) promote sustainable tourism through adoption of "best practice" norms for eco-friendly and responsible tourism.

[5] National consultative forum convened by Government of India for each GEF programming cycle to review the GEF portfolio, and prioritize new interventions.

[6] Fourth National Report to CBD, MoEF, 2008; National Biodiversity Action Plan, 2008, MoEF.

[7] Satish Chandran Nair, 1991, The Southern Western Ghats – A Biodiversity Conservation Plan, INTACH

[8] www.zoosprint.org/zooprintjournal/2001/november/629-639.pdf

[9] Table 16, Global Hotspots of Fresh Water Biodiversity – WCMC-Biodiversity Series No.8.

[10] National Forest Commission Report, 2005, MoEF.

[11] Census figures 2011, Government of India.

Landscape (HRML)) is in around 200,000 ha, located within the State of Kerala. This region typifies the WGs in terms of its ecological characteristics and socio-economic make up, namely the presence of high value and threatened biodiversity of global importance, high population pressure, interspersed human settlements within fragmented forests, presence of multifarious economic sectors and a rapidly changing developmental context. The key attributes of the landscape are as follows:

Geo-physical setting: HRML comprise of high mountains rising to over 2,000 m above MSL and includes the highest peak south of the Himalayas - *Anaimudi* (2,695 m). It is characterized by steep rugged terrain and highly dissected valleys which form the source of four major rivers (*Periyar, Kaveri, Chalakkudi* and *Edamalayar*). Due to its topography, the climate within the HRML exhibits remarkable variation. Average annual rainfall in the rain-fed Western region varies from 3,000 to 8,890 mm, but in the Anjanad Valley it goes as low as 1,270 mm. The dry season commences from January and lasts until May on the western side, and in the eastern valley it extends to July[12]. The temperature varies between sub-zero and 35° C.

Ecological setting: The HRML is highly ecologically diverse. At higher elevations, the environment is dominated by high-elevation subtropical evergreen forests known as *sholas* found within sheltered valleys, interspersed with grasslands. The *sholas* are a relict vegetation community harboring species that have survived the climatic and ecological changes that have occurred since the last glacial era, 30,000 to 20,000 years ago. These Pleistocene refugia are among the most endangered ecosystems in the world. The humid mid-elevation region of the HRML comprises largely of tropical wet evergreen forests. The eastern extremities of the landscape lie in a rain shadow during the SW monsoons, and support dry thorn and scrub forests and some unique habitats (e.g. riverine forest, sandal tract, etc). A significant feature of the landscape is the occurrence of gregarious flowering ("outburst" once in 12 years) of a plant species - *kurinji* (*Strobilanthus kunthianus*) that literally carpets the grasslands giving them a blue hue. The HRML is rich in faunal diversity and noted for its high degree of endemism. Globally significant fauna that occurs in the landscape include Nilgiri tahr, Indian elephant, Tiger, Gaur, Nilgiri langur, Lion-tailed macaque, and threatened avifauna such as the Great Indian hornbill, and Black and rufous flycatcher [13]. HRML is part of one of the five viable breeding population centres for tigers in India[14]. HRML contains almost half the remaining global population of (less than 2000 individuals) of Nilgiri tahr and a significant population of Grizzled giant squirrel. *Eravikulam* National Park and *Chinnar* Wildlife Sanctuary (that harbor the endangered Nilgiri tahr and Grizzled giant squirrel respectively) are among the 7 PAs (see Table 1). The Landscape falls within the *Munnar, Mankulam, Marayur* and Kottayam Forest Divisions which contain large swathes of High Value Biodiversity Areas (HVBAs) outside these PAs.

Table 1: Protected Areas

Protected Area	Area (in ha.)	Vegetation Type
Eravikulum National Park	9700	Shola-grasslands, wet evergreen forests
Chinnar Wildlife Sanctuary	9040	Dry thorn and scrub forests, riverine forests
Kurinjimala Wildlife Sanctuary	3200	Shola-grassland, deciduous forests, wattle plantations
Anamudi National Park	750	Shola-grasslands, wattle and eucalyptus plantations
Pambadumshola National Park	130	Shola-grasslands, wattle and eucalyptus plantations
Mathikettanshola National Park	1280	Shola, wet evergreen forests, cardamom plantations
Thattekkadu Wildlife Sanctuary	2500	Low elevation evergreen forests, teak plantations
TOTAL	**26600 ha.**	

Socio-economic Setting: The total estimated population of HRML is 0.6 million. The HRML has seven indigenous hill tribes - *Mannan, Muthuvan, Paliyans, Mala Arayas,Urali, Ulladan and Hill Pulayas* (approximately 23,200 persons in 105 settlements) who depend on the natural environment for their subsistence and livelihoods. Smallholder farming (e.g. of pepper), collection of non-wood forest produce (NTFP) and small artisanal enterprises (e.g. lemon grass distillation) underpin their livelihoods. Across the landscape, economic development is uneven and poverty is rife among rural communities particularly in the tribal hamlets. There are 31 *Panchayati Raj Institutions* (PRIs[15]-- these are elected local government organisations) in the project landscape that play a crucial role in land-use and development planning and implementation at the grass roots level. In Addition, 98 Joint Forest Management Committees (JFMCs) involving local communities (with varying degrees of functional presence) have been established in the HRML by the Forest Department.

[12] Satish Chandran Nair, 1994, The High Ranges, INTACH
[13] James Zacharias, Management Plan, Eravikulam National Park, 2002.
[14] Reports of Project Tiger, 2008, Ministry of Environment and Forests
[15] A Panchayati Raj Institution (PRI) is a local-level institution for self-government in rural areas that are recognized by the Constitution of India. PRIs are elected bodies and operate at three levels, a cluster of villages, a block and at the district level. PRIs are responsible for the preparation of plans for economic development and social justice and also for the implementation of schemes as entrusted to them by the state and central government.

Currently, more than half the area of HRML is under agricultural land-use (planted with tea, cardamom, pepper and coffee). Large-scale conversion of natural forests occurred during the 19th and early 20th centuries mostly by British planters establishing cash crop plantations (tea most significantly but also some coffee). India is a leading global producer (producing 870 million kilograms per year) and consumer of tea. The High Ranges comprise the largest tea producing area in southern India. The tea industry is a major local employer. Tea processing is an energy intensive activity and tea factories rely heavily on biomass from captive plantations (Eucalyptus) to meet thermal energy requirements for drying tea. Thus the industry has historically triggered forest conversion directly—for the development of tea gardens- and indirectly, by spurring the development of mono-species fuelwood plantations. Interestingly, the tea gardens still harbor several interspersed forest fragments (varying in extent from 0.5 ha to 1000 ha) along the crest line of mountains and in the sheltered valleys. Moreover, the gardens are used as corridors for wildlife migrating between large habitat patches, including Tiger, Leopards and Elephant, and harbor important prey species such as Barking Deer (within and outside the landscape). The second half of the 20th century witnessed further opening up of the region for fuelwood plantation development, both for the tea industry, and for urban consumption. Large tracts of natural vegetation were converted to monoculture plantations of Eucalyptus and Acacia (both under State production and under private ownership). Cardamom and coffee is grown on private lands and smallholder homesteads, generally under indigenous rainforest trees. Although there has been a gradual shift to sun grown cardamom, as is the case with coffee, both crops can provide a biodiversity friendly land use when grown under shade. Smallholder homesteads generally practice multi-species and multi-tiered agro-forestry systems, growing coffee and pepper. These often simulate rainforest conditions – and are rich in agro-biodiversity, especially that of wild cultivars and edible plants. HRML also has seven hydro-power projects established to harness hydro-energy. During the last decade, the region has become a bustling mass tourism destination which has led to associated unplanned infrastructure development.

Table 2: Land Use—Summary table*

Land Use	Land Area (in ha.)	Land Use Description
Protected Areas	26,600	There are seven PAs and these largely comprise of high elevation shola-grasslands, wet evergreen forests, moist deciduous forests, dry thorn and scrub forests, and riverine forests.
Tea gardens	14,000	Extensive tea plantations belonging to corporate sector and smaller, scattered ones belonging to small growers. Profuse use of pesticides.
Fuel wood plantations	8,000	Managed by corporate plantations for fuel and individuals for sale to newsprint factory.
Cardamom estates	42,000	Intensive cardamom cultivation with fast depleting canopy cover. Over use of pesticides.
Coffee plantations	4,000	Coffee plantations with widely opened canopy.
High Value Biodiversity Areas outside PAs/ forest fragments	59,000	Mostly managed and protected by the Forest Department - 8000 ha of commercial plantations mainly of teak, eucalyptus and wattle; and 22,000 ha of reeds for extraction. Besides, there are 5000 ha forest fragments of varying sizes under corporate management and other government departments.
Reservoirs	2,000	Water spread area used for electricity generation and fisheries
Mixed crops and settlements	50,000	Small and medium homesteads with multi species agro forestry systems
Pepper	9,000	Mostly grown in homesteads
Tourism	10,000	Overlaps with other types of land use; but mostly occur in and around PAs and Munnar town.

* Some of these land uses overlap each other.

In short, the current land-use pattern in the HRML is a complex production mosaic (often with competing objectives). Nevertheless about 40% of the area is under forest cover (including primary and secondary indigenous forests). However, these areas are increasingly threatened. Broadly, the threats to biodiversity within the High Ranges landscape are as follows:

Threats to the PA system: The management effectiveness of the PA system in HRML remain weak on account of various factors that start with sub-optimal coverage of PAs in terms of encompassing and sustaining a representative sample of biodiversity (the average size of PAs is 3,800 ha and PAs occupy less that 13% of the landscape). Threats to PAs also come from plans to open up new/ retrofit abandoned infrastructure (e.g. access routes) and disappearance of vital corridors on production lands (due to forest conversion, encroachments, infrastructure development, etc). Other threats stem from changing land-use practices in areas adjoining PAs (e.g. destruction of forest fragments in tea and cardamom estates); deterioration in site quality and degradation (particularly because of uncontrolled fire, grazing and proliferation of invasive species such as Wattle, Eupatorium, Lantana, etc) and persistent enforcement related challenges (threat of encroachment, poaching, grazing and fire). Increasing human-animal conflict and mass tourism (e.g. annual visitation to Eravikulam National Park is around 400,000 persons) is placing heavy pressures on PA managers leaving them less time to deal with other pressures. The increasing influx of tourists into PAs is spurring demands to open up more areas in the PAs for commercial tourism operations and is affecting species behavior particularly as a result of disturbance from vehicular traffic.

Threats to High Value Biodiversity Areas (HVBAs)/ forest fragments outside the PA system: Large, medium and small forest fragments are found across the landscape--the largest habitat blocks lying on State forest lands and smaller blocks on plantations. In the absence of focused and consistent conservation approaches, they suffer on various counts. For instance, the management practices employed (eg. reed extraction and teak, eucalyptus, and wattle plantation management) emphasize production rather the conservation (although new areas are not being opened up for plantation development, a focus on production in existing plantations rather than on biodiversity conservation means that natural forest fragments receive sub-optimal attention). Capacities to effectively enforce conservation mandates are short of what is needed (both in terms of manpower and in terms of technical know-how); moreover unclear jurisdictional boundaries for development across sectors and incomplete consolidation of human settlements and production enclaves lying interspersed with HVBAs complicates management. Local communities utilize forest areas to collect firewood, to harvest non timber forest products and for grazing. Such use is not being effectively managed, and is not always sustainable as currently practiced. Moreover, there are growing conflicts between community user groups, the Forest Department and commercial interests over resource use rights.

The changing contours of production operations pose several threats to HVBAs. For instance, of late, the tea industry has become increasingly prone to structural destabilization due to global economic fundamentals (fluctuations in tea price), and the shortage of skilled labour. This is likely to have significant ecological impacts (on account of land–use change, to less conservation compatible uses, and unsustainable land husbandry) and socio-economic impacts (deepening poverty and social unrest). The area under cardamom cultivation has gradually been reduced from an area of 60,000 ha in 1980 to 40,000 ha in 2010. Reckless use of chemical pesticides and change in cropping pattern to more sun-loving varieties (leading to loss of top canopy trees) are growing problems[16]. As both tea estates and cardamom plantations provide vital habitat for wildlife, this is a major concern. The High Ranges have become a major locus for tourism, with visitors drawn to the hill station of Munnar and its surrounds. The area currently receives in excess of 500,000 tourists per annum, mostly domestic tourists who visit the area on account of its cool climate. Tourism is expected to grow exponentially in the future, as the economy grows. This is having a number of impacts—catalysing the growth in urban and peri urban areas, roads and other infrastructure, which could lead to land use conversion of tea estates and agriculture. There is also an escalating problem with waste management.

Threats to biodiversity from climate change: Climate change is projected to have significant impacts on mountain ecosystems. Considering that high altitude ecosystems are delicately calibrated to the nuances of climatic factors, even minor changes in the prevailing climate could disrupt species ecology with serious debilitating impacts on biodiversity. It is reported that every 1^0 Celsius rise in temperature will lead to shifting the zone of occurrence of several specialist species by 270 m vertically (to get similar ecosystem conditions). Though the exact impacts of climate change in the HRML is yet to be studied in detail, some pioneering studies show that endemic mammals like Nilgiri tahr face an increased risk of extinction[17]. Further, there are indicative reports of certain species (e.g. Black and rufous flycatcher) shifting their lower limits of distribution to higher reaches and sporadic dying of patches of *shola* forests with the rise in ambient surface temperatures[18].

Baseline projects: The baseline project may be broken into four parts, based on the source of funds as described below:

Investments by the national government: Conservation of mountain biodiversity is a key priority in the National Biodiversity and Action Plan, 2008 and the National Action Plan for Climate Change, 2008. The Central government has established Protected Areas, Biosphere Reserves, and Reserve Forests and provides technical and financial support for conservation initiatives in the MUML. On average, the Government of India spends USD 20 million per annum for the conservation of mountain areas under various centrally funded schemes, *viz. Integrated Development of Wildlife Habitats, Project Tiger, Intensification of Forest Protection, Project Elephant* and *National Afforestation & Ecodevelopment Programme*. Annual support from the national government for conservation activities in the HRML under these schemes amounts to some USD 1 million. This is directed towards fortifying enforcement, reforestation, habitat improvement, forest fire management, and invasive species removal. The national government also invests approximately USD 2 million per annum in the HRML through the National Agriculture Development Programme. This seeks amongst other things to engender sustainable land management, improve productivity, and enhance market opportunities. More specifically, as part of this, the National Horticulture Mission supports vegetable seed production, organic farming, vermi-compost units, and integrated pest management. The Spices Board supports replanting and rejuvenating small cardamom holdings, improving curing, organic certification, quality control measures and market information and promotion to support the cardamom industry. The Coffee Board is investing in water quality management, and pollution abatement, and coffee processing etc.; and the Tea Board is providing financial and technical assistance for tea cultivation, manufacture and marketing, and aiding research and development activities. The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) has an annual

[16] Muthusamy Murugan et al, 2011, Environmental impacts of intensive cardamom (small) cultivation in Indian cardamom hills: need for sustainable and efficient practices, *Recent Research in Science and Technology 2011, 3(2): 09-15*

[17] Sukumar et al, 1995, Climate change and its impact on tropical montane ecosystems in southern India, Journal of Biogeography, 22, 533-536

[18] Stakeholder consultations at Munnar, September 2011.

outlay of around USD 6 million in the HRML and support enhanced livelihood security by guaranteeing wage employment. A special assistance programme from the Central government - *Measures to Mitigate Agrarian Distress in Idukki District of Kerala* also brings around USD 10 million per annum into HRML for soil conservation, and revamping farming systems.

Investments from the state government: The state government provides an outlay of around USD 1 million per annum for the management of PAs in the HRML. In addition, it invests USD 2 million annually in managing the forests lying outside the PA system and the forest production sector (e.g. planting, timber operations, protection, infrastructure development etc). Similarly, the State Agriculture Department invests approximately USD 1 million in HRML on various agricultural schemes aimed at improving soil conservation and supporting agricultural extension. The Tourism Department has an annual budget of USD 1 million that is largely spent on planning and sprucing up tourism infrastructure in the landscape. *The* State government also provides manpower and infrastructure for the implementation of the above-mentioned baseline projects.

Local self-government and communities investments: Local self governments (*panchayats*) have a strong presence in the landscape and carry out grass root level planning for economic development. They also implement various production sector programmes (e.g. agriculture, animal husbandry, fisheries, minor irrigation and small scale industries). The spending undertaken by local self government and relevant in the context of the project (on resource management) amounts to USD 4 million per annum. Other community institutions like JFMCs, SHGs, etc also bring in complementary contributions to the tune of USD 1 million per annum through participation in forest protection, social mobilization, community welfare, etc.

Investments from the production sectors: The major production sectors in the landscape - cardamom and tea industry invest around USD 40 million every year on various land-use operations and practices. The investments include - soil and water conservation, shade management, fuel plantation management, weed management, and disease and pest management.

The long term solution and barriers to achieving it: While there are several initiatives (across different sectors) that address resource management issues in HRML, they are not adequately coordinated to reduce pressures on biological diversity. The operations of individual agencies are very much sector-focused and the region lacks a comprehensive planning and management framework that specifically integrates biodiversity conservation needs in production sector planning and operations. As is the case elsewhere in the country, the existing conservation framework in HRML is still 'Protected Area' centric. As PAs alone will not be able to secure the biodiversity future of HRML (due to their sub-optimal coverage and threats both external and internal), it is imperative to adopt a broader landscape level approach to biodiversity conservation. The *long-term solution* proposed by the project is thus to put in place a collaborative governance mechanism and build the know-how for multiple-use management of a mountain landscape that secures Protected Areas and outlying critical habitats, mainstreams biodiversity management into production sector operations and promotes conservation compatible livelihoods.

The following barriers currently hinder the attainment of this long-term objective:

Barrier 1: *Institutional and policy framework for collaborative governance and know-how for Multiple Use Mountain Landscapes (MUML) is inadequate:* The existing governance framework (policy, institutional, operational and legal) is insufficient for facilitating a comprehensive, and science based land use management system in the landscape. The *National Capacity Self-Assessment-Thematic Report on Biodiversity* has given the Western Ghats a score of only 73.3% out of 100% (based on existing capacity status/ strength of different institutions/thematic areas to handle biodiversity-related issues as articulated in CBD Articles 05 to 20). The problem starts with the planning process itself which is mostly driven by short-term (five years in production sector and ten years in the conservation sector) sectoral considerations and is not coordinated across sectors. Further, the sectoral frameworks *in vogue* are characterized by overlapping mandates and often mutually exclusive objectives that accentuates conflict between development goals *versus* biodiversity concerns. For instance, the tourism sector institutions, mandated with maximizing visitor growth, seldom take into account the impacts of unregulated tourism on biodiversity. There also exists incompatibility among various sectoral legislation and polices. While the policies and legal instruments governing the conservation sector (e.g. Forest Policy, Forest Conservation Act, Wildlife Act, etc) have strong conservation elements, other production sectors (e.g. Agriculture, Tourism, etc) have a weak focus on such aspects, creating conflicts over land-use. Further, planning and decision making (among various sectors, agencies and communities) in HRML take place based on limited/ fragmented information. This impedes effective environmental impact assessment and management—in particular efforts to avoid impacts in the most sensitive areas and reduce and mitigate impacts in other localities. In the broader production arena, the lack of information on sustainable practices (e.g. carrying capacity assessments for sustainable tourism; energy efficient curing/ processing technology in cardamom and tea industry, etc) hamper their prospective adoption into production practices. Knowledge and capacity constraints also limit production sectors from pursuing alternate ecologically benign revenue mobilization options (eg. farm tourism and crop diversification).

Barrier 2**:** *Limited application of landscape level land use planning and management that maximizes biodiversity conservation needs*: The landscape in the project area consists of protected areas, forest areas of high biodiversity significance outside protected areas and adjoining areas where production sectors such as tea, cardamom and tourism operate. At present the PA system alone cannot sufficiently address threats to biodiversity posed by the development in the

production sectors which largely are outside the PAs – both spatially and in terms of management jurisdiction. A related impediment is also the fact that much of the funding for existing PAs come from central government and currently is inadequate to cover operations costs. In addition, areas of high biodiversity significance and ecologically sensitive areas that are outside the PA system will need to be afforded higher levels of protection to secure biodiversity both within these areas and to also preserve connectivity between different PAs. There is an urgent unmet need to consolidate such key HVBAs and forest fragments to secure vital corridors in the landscape. In addition to strengthening PA management, addressing threats to biodiversity in such a setting requires implementation of a landscape approach that considers among others allocation of land to different land uses according to biodiversity conservation needs and application of appropriate management practices congruent with biodiversity conservation in production areas. There is however limited experience with such a system of moving away from site / sector based management approach to a landscape based one. In addition there is a need to put in place monitoring and enforcement mechanisms that ensure that sector strategies are in line with the landscape level planning priorities and as agreed for each sector. Further there is a need to integrate biodiversity conservation principles into production sector practices to reduce pressures on biodiversity. Incentives also need to be designed and implemented to move production practices from currently unsustainable (harmful) practices to sustainable (biodiversity-friendly) practices.

Barrier 3: *Community level barriers - knowledge, experience and market - constrain the adoption of biodiversity conservation objectives in community-level land and resource use decisions*: There are various barriers at community level that encumber communities from adopting better land-use practices and wild resource use based livelihoods. One of the prominent challenges is the disintegration of the traditional knowledge base and customary resource use practices due to market forces and the changing aspirations of local communities. Currently, community level land use and natural resource management planning and management is undertaken mostly through a) Panchayats, and b) Joint Forest Management Committees. However, the capacities of these institutions are insufficient to ensure sustainable utilization. Currently communities harvest a number of wild resources—poles and lianas and other non timber forest products, fuelwood, reeds and medicinal plants, and wild fruits amongst others. This is critical for their subsistence (nutrition) and overall welfare. However, in many cases offtakes are higher than the amount that can be sustained, and production practices may be deleterious (for instance the practice of smoking trees to collect wild honey, which can start fires). There is a need to strengthen the capacity of panchayats, JFMC and community organizations to jointly plan and manage resource use to ensure sustainability. This will require that sustainable use thresholds are established, management measures designed, compliance monitoring systems put in place and impacts monitored. This system will need to be designed with the full participation and consent of communities, if it is to work. Moreover, attention will need to be paid to addressing conflicts between user groups, and strengthening internal representation and governance within the management committees. There is a need to reorient baseline investments to support value addition and certification for sustainably produced resources at community level, and make catalytic investment in alternative livelihoods, including, notably community based tourism. There is a need to focus efforts in the predominantly tribal hamlets where wild resource use is crucial to the local economy.

B. 2. INCREMENTAL COST REASONING AND THE ASSOCIATED GLOBAL ENVIRONMENTAL BENEFITS:

The project's seeks to put in place collaborative governance and know-how for multiple-use management of mountain landscapes to conserve biological diversity. This will have wider replication potential across other mountainous regions across India. The project will engineer a paradigm shift from current sector based and unsustainable practices to integrated multiple use management of mountain landscapes to deliver global environmental benefits as described in Table 3 below:

Current Practice	Alternatives to be put in place by the project	Expected Global Benefits
Inadequate management of the PA system: a) PAs are too small and do not adequately cover representative biodiversity and b) management measures in PAs are sub-optimal in terms of addressing the growing threats.	1. Coverage of PAs in the project landscape expanded by approximately 13,400 over the baseline.. 2. PA functions improved to account for existing and emerging threats including human-animal conflicts (covering 40,000 ha). 3. Wildlife populations ranging into PAs adjacent to the landscape (> 100,000 ha) secured—thus indirectly sustaining their ecological integrity.	1. PA systems cover more representative areas of global biodiveristy significance (e.g. *shola*-grasslands). 2. Population status of several globally significant species maintained or increased – e.g. *1. Nilgiri Tahr; 2. Grizzled Giant Squirrel;3. Tiger;4: Leopard 5: Nilgiri Yellow Throated Marten 6: Clawless Otter 7: Asian Elephant;8:Gaur*
Limited protection accorded to biological diversity outside the PA systems: Extensive areas of HVBAs and forest fragments currently face growing threats from unsustainable use and land use change—threatening vital animal movement corridors.	1. Landscape Level Land-Use Plan developed and a functional cross-sectoral institutional mechanism established for the sustainable management of HRML. 2. Key HVBAs and forest fragments in the project landscape identified, mapped, conservation/ eco-restoration plan prepared and implementation support provided by reorienting baseline investments.	Extensive areas of HVBAs and forest fragments (totaling 59,000 hectares) brought under conservation management and function as stepping stone corridors/ 'escape routes' ensuring species and genetic flow across the whole of southern Western Ghats. This is particularly important to ensure the survival of high altitude species threatened by climate change (e.g.Black and rufous flycatcher). It is also critical to ensure the survival of wide ranging species such as Tiger

	3. Conservation sector staff capacitated viz improved conservation practices, collaborative governance, stakeholder engagement, eco-restoration, etc (applicable to PA staff too).	and Elephant—which need large home ranges
Production sectors do not adopt sustainable practices: a) economic production activities have limited focus, capacities and technologies that are less detrimental to ecology, b) production sectors have limited market opportunities for adopting ecologically sustainable activities.	1. Focused implementation support and transfer of knowhow to key production sectors in designing and implementing biodiversity production practices. 2. Business models, market mechanisms and branding developed to incentivize sustainable resource use.	Production sectors develop capacities for mainstreaming biodiversity considerations into their operations and practices across 200,000 ha area—reducing the negative foot print on biodiversity and sustaining critical wildlife blocks. Production sector operations have adverse minimal impacts on the regional ecology and functionality of key ecosystems improves.
Community institutions fail to govern sustainable land and resource use: Community capacities for effective management of natural resources are weakening and livelihoods shrinking.	1. Local self governments and community institutions incorporate improved practices for managing wild resource use to ensure sustainability. 2. Market mechanisms developed (certification for organic farm products and NTFPs) for sustainable use of natural resources.	1. Community incomes augmented, socio-economic situation improved – providing a utilitarian incentive for conservation and improving conservation status and security. 2. Uptake, replication and mainstreaming of community models on improved resource management into legal, policy and programme framework. 3. Improved conservation status of heavily utilized species (i.e. medicinal plants)

Three project components will help achieve this objective as described below:

Component 1: Effective governance framework for Multiple Use Mountain Landscape (MUML): This component will put in place a cross-sectoral land use management framework, compliance monitoring and enforcement system to ensure that development in production sectors such as tea, cardamom and tourism is congruent with biodiversity conservation needs. To begin with, it will support the formulation of a Landscape Level Land Use Plan (LLLUP). This plan shall seek to balance biodiversity needs and production ones: a) improving the management of existing Protected Areas (PAs); b) identifying areas of high biodiversity to be afforded higher protection status; c) prescribe appropriate land uses and management practices in the adjacent production landscape. The component shall also strengthen land use regulations, thus avoiding, reducing and mitigating impacts from physical development in major production sectors. Then this component will enable evolution of a dedicated multi-sector landscape level platform for ensuring sectoral compliance with LLLUP management prescriptions. It will also help in improving the knowledge base and decision support systems for managing MUML through a) valuation of ecosystem goods and services and identifying options (e.g. visitor fees to offset opportunity costs; and b) improving capacities to use GIS mapping technologies to inform development and infrastructure placement in the landscape.

Component 2: Applying Multiple Use Mountain Landscape (MUML) management: This component shall implement the provisions of the LLLUP and related Sectoral Plans for mainstreaming biodiversity into landscape development. With regard to the PA system, it will invest in strengthening PA management functions. These will include for instance, improvement of enforcement, strengthening capacities of PA staff for visitor management and also increased engagement with various stakeholders including communities and the private sector. In addition, to increase representativeness, secure high biodiversity rich and ecologically sensitive areas, additional areas (around 13,400 ha) outside the PA will also be added to the PA system through government notification. This component will also support ensure better linkages and connectivity in the landscape and across PAs, key HVBAs/ forest fragments falling outside the PA systems by bringing such areas under improved conservation management through: a) inventorying and prioritizing key ecological corridors and dispersal areas; b) elevating the legal status of key HVBAs (59,000 ha); and c) rehabilitation/ eco-restoration of critically degraded areas. Financial resources will also be secured to meet long term PA management objectives for the expanded PAs and HVBAs.

Simultaneously, economic production sectors (tea, cardamom and tourism) will be supported to mainstream biodiversity considerations into their operations. This requires a composite strategy involving demonstration of appropriate technology, providing incentives and continued and focused skill upliftment. This objective will be achieved through a) incentivizing sustainable resource use through promoting branding/ certification for environmentally sustainable production operations (tea, cardamom) and other market mechanisms (e.g. premium sale of organic products); b) implementation support to select activities identified in the LLLUP and sector plans (e.g. regeneration of forest fragments, planting of native species as canopy trees in cardamom plantations, promotion of solar technology for energy use in tea and cardamom plantations, improving productivity of energy woodlots of tea industry, delineating 'no take-zones' in forest fragments in tea/ cardamom areas. This component shall engender a change in the overall land use in the High Ranges as detailed in the table below.

Land Use	Current Situation	Alternative Paradigm
Tea	Limited inventory/ mapping of forest fragments; no approved management plan for conservation of forest fragments; infractions in shola forests mostly for firewood; corridors degraded in certain areas; rampant human-elephant conflicts; excessive use of pesticides; low awareness of biodiversity conservation and management options among staff and labourers.	Scientifically prepared sector plan that has prescriptions for sustainable land use; forest fragments inventoried and mapped in detail; vital ecological corridors reestablished; degraded natural forests restored (with cofinance); elephant-human conflicts mitigated through proper information system and compensation; regulated pesticide use in BD rich areas; fuel efficient technology introduced; staff and workforce fully aware of values of biodiversity; marketing strategy shifts to sustainable production.
Cardamom and Coffee	Intensive production operations necessitating canopy clearance/ opening and a deluge of pesticides; erratic fluctuations in commodity price triggering land use change; removal of trees for fuel wood; inefficient drying units; ambiguous tenurial issues leading to land use changes; preference for non-native species as shade trees; limited awareness about pesticide impact.	Ambiguity regarding land use rules/ regulations removed; support for sustainable production and marketing in place; energy efficient options and alternate energy sources adopted; rational use of pesticides; incentives for sustainable cultivation; increased revenue though promotion of homestead tourism; better awareness among farmers and Panchayats about benefits of sustainable farming.
Tourism	Uncontrolled tourist inflow; weak controls and regulations on visitation /infrastructure; carrying capacity assessment not done for visitor management; tourism operations exerting pressure on PAs and biodiversity; unscientific waste disposal; transformation/ conversion of BD rich areas/ corridors into other land use. Unorganized tourism operations.	Biodiversity friendly Tourism Sector Plan in place; regulations on visitation to PAs; increased income from tourism to local communities; local Self Governments have more say over tourism management; better garbage disposal strategy; regulations on infrastructure developments in BD rich areas/ corridors; more organized and responsible tourism industry; awareness created for sustainable tourism; small/medium entrepreneurs benefit more from tourism.
Physical Infrastructure	Mushrooming of unplanned physical infrastructure cause strain on resources (e.g. biodiversity, water, power etc); unplanned expansion of infrastructure (e.g roads, hotels, etc) results in degradation of habitats and hinders animal movement.	Code of conduct and compliance in place for creating physical infrastructure; retrofitting measures for reopening corridors; rationalized road network and traffic regulations.

Component 3: Strengthened community capacities for community based sustainable use and management of wild resources: Under this component, the project will provide technical assistance to the local communities and community institutions as relevant to adjust land uses and adopt sustainable use practices to reduce pressures on biodiversity. The project strategy will include support to promote of BD-friendly businesses which will include community based tourism, and non timber forest product based enterprises. To ensure that these enterprises remain viable, the project will strengthen technical, financial, administrative and marketing capacities. In addition, to ensure that businesses with negative impacts on biodiversity are not promoted inadvertently, the project will put in place safeguards for financial, and business management support. The project will also engage with local self-government and community institutions to build their capacities to enter into co-management agreements with local forest departments and other institutions as relevant for the management and use of forest resources and NTFP. This agreement will define roles and responsibilities of each party and define mechanisms for reducing community pressures on the forest resource and engendering biodiversity conservation. In the design of practices, the project will draw on existing experiences within India on Joint Forest Management as well as from the region such as on community forestry from Nepal. Further, a governance model on improved biodiversity conservation and enhanced livelihoods shall be demonstrated at *Edamalakkudi*, the only tribal panchayat (local self government) in HRML. This is relevant in the context of the implementation of the Forest Rights Act[19] in India and shall have a high replication value[20].

B.3. THE SOCIOECONOMIC BENEFITS TO BE DELIVERED BY THE PROJECT, INCLUDING CONSIDERATION OF GENDER DIMENSIONS, AND HOW THESE WILL SUPPORT THE ACHIEVEMENT OF GLOBAL ENVIRONMENT BENEFITS.

At the community level, the focus is on developing sustainable livelihoods that will not only ensure livelihood security in the immediate /short-term but also long term prosperity for the rural poor through improved income, increased farm productivity, higher social capital from improved collective action potential. Reinforcing/ revitalizing community knowledge institutions and practices on sustainable resource use and developing branding and facilitating better market opportunities for community products shall improve their socio-economic situation. Further, the project will strengthen the capacities of the only tribal Panchayat in the HRML (at Edamalakkudi) to support biodiversity conservation and sustainable use management. Besides, several of the interventions planned with the production sectors will have direct/ indirect benefits

[19] The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act (2006) is a milestone piece of legislation and has enormous potential for conservation of biodiversity by involving forest dependents. But the implementation of the Act still remains a challenge. A high biodiversity tract like Edamalakkudy , occupied exclusively by the indigenous Muduvan tribe, offers great opportunity for developing a working model for FRA implementation.

[20] This is one of the few exclusive tribal local self governments in the whole of the Western Ghats and hence requires specific attention in the context of the implementation of the Forest Rights Act.

for rural communities (e.g. sustained labour opportunities and better working conditions in the tea and cardamom production and tourism sector). Similarly, the project design recognizes women as primary stakeholders in land and resource management – both as beneficiaries of sound conservation management and victims of ecological destruction. The project will seek to empower women and other excluded groups including tribal communities through social mobilization by way of nurturing community groups through organizational development, Women Self Help Groups (SHGs), skill development, education and training. Many of the community institutions that the Project aims to deal with have built in gender empowerment systems. The Panchayats have 50% women representation as do PFM institutions. In addition, there exists a vast network of community based women's organizations in the landscape under the tutelage of the Panchayats. The project will develop a gender empowerment strategy/ disaggregated data for monitoring in line with the UNDP gender marker. The full and effective participation of local communities and in particular tribal communities will be critical to securing biodiversity. This is important to cultivate and sustain local political support for conservation, and fundamental to crafting locally informed and agreed biodiversity management systems that also cater to the social and economic needs of communities.

B.4 RISKS, INCLUDING CLIMATE CHANGE RISKS THAT MIGHT PREVENT THE PROJECT OBJECTIVES FROM BEING ACHIEVED, AND IF POSSIBLE, PROPOSE MEASURES THAT ADDRESS THESE RISKS:

Risk/ Assumption	Rating	Mitigation Strategy
Limited support from production sector due to apprehension that their economic interests would be jeopardized due to participation in the planned conservation interventions	M	The production sectors operating in the HRML (tea, cardamom and tourism) are critically dependent on natural resources. Depletion of natural resources shall inevitably act against the sustainability of these sectors in the long run; a fact that will be used as a spring board for engaging with enterprises. Necessary measures (including both technical and market based instruments) shall be undertaken by the project (under Component 2) to influence their production practices and choices. Further, production sector representatives will be key participants in the cross-sectoral institutional platform to be established by the project (under Component 1). Knowledge products will be developed highlighting the benefits of a well-governed mountain landscape. In addition, the project will identify appropriate technological options/ incentives that would be beneficial to these sectors and form part of the LLLUP
Policy amendments and regulations for addressing biodiversity conservation in sector practices may not receive government and political support under future administrations	M	In amending policies and the regulatory framework, a highly consultative approach will be used drawing on reviews and inputs from various stakeholders (government, private sector, communities, local bodies and academicians) to ensure the feasibility and acceptability of the proposed changes. The proposed cross-sectoral multi stakeholder institutional platform to be set under the project shall lead this process in consultation with key ministries.
Local communities may not be willing to participate in the project unless the project addresses their livelihood needs	L	The project will work closely with the local communities by providing technical and financial support for engendering sustainable use of natural wild resources. Planned interventions include skills upliftment, value addition to on-farm and forest produce shall result in income augmentation of communities. The project will also recognize the traditional knowledge of local communities and fully integrate this in designing management interventions. These interventions will be developed with the full participation of communities (Component 3).
The benefits generated by the project may be offset by the impacts of climate change.	M	To start with, the project proposes to address this risk by building a better understanding on the impacts of climate change on HRML (Component 1). The findings of this study will give inputs into the process of landscape-level planning – a key focus being on maintaining functional connectivity across the landscape, and maintaining functional diversity (both key to enhancing the resilience of ecosystems to climate changes induced fire, drought and other perturbations). By reducing existing anthropogenic stressors to ecosystems, the project will enhance the capacity of ecosystems to recover following such climate changed induced perturbation.

B.5. KEY STAKEHOLDERS INVOLVED IN THE PROJECT, INCLUDING THE PRIVATE SECTOR, CIVIL SOCIETY ORGANISATIONS, LOCAL AND INDIGENOUS COMMUNITIES AND THEIR RESPECTIVE ROLES:

Key stakeholders	Relevant Roles and Responsibilities (indicative)
Ministry of Environment & Forests (MoEF)	The MoEF is the nodal agency in the administrative structure of the national Government for planning, promoting, coordinating and overseeing implementation of India's environmental, forestry, land degradation and climate change related policies and programmes. MoEF shall provide the overall project coordination at the national level and facilitate implementation particularly policy reforms and coordination among Ministries.
Other Union Ministries/ Agencies	Other union ministries whose mandate and domain has a bearing on this project are the Ministry of Agriculture (including Tea Board, Spices Board and Cardamom Board); Ministry of Rural Development; Ministry of Tribal Affairs; Ministry of Panchayati Raj; Ministry of Power, Ministry of Non-Renewable Energy and the Ministry of Tourism. These central ministries shall contribute to project objectives by aligning sectoral programmes and policies in line with LLLUP and also provide necessary co-financing at the national

	level. National Biodiversity Authority (NBA) with a mandate of pursuing the implementation of the Biological Diversity Act, 2002, shall be an important statutory body from the perspective of the project.
State Government Departments	State Departments like the Forests & Wildlife; Local Self Governance; Biodiversity Board; Education & Planning; Agriculture & Animal Husbandry; Fisheries; and Land & Water Resources. The Department of Forests & Wildlife shall be the nodal agency at the state level for coordinating and implementing the project. Other state level departments and agencies shall contribute to project objectives by aligning sectoral programmes in line with LLLUP and also provide necessary co-financing at the state level.
District Administration	Headed by the District Collector[21], and include functionaries responsible for different aspects of district governance such as district planning (District Planning Officer), agriculture (District Agriculture Officer), forests and wildlife (Divisional Forest Officer), tribal development (District Tribal Officer), livestock (District Animal Husbandry/Livestock Officer), soil & water engineers, officials of the women and child dept. These district level functionaries are responsible for planning and implementing sectoral programmes in the project landscape and will form primary stakeholders in the project
Panchayati Raj Institutions	At the District level there is *District Panchayat*; at the block level there are *Block Panchayats*, and at the village level there are Gram Panchayats. These three levels of local government are responsible for the preparation of plans for economic development and social justice and also for the implementation of schemes at the grassroots level and will be actively involved in the project in particular in delivering components 1 and 3.
Research and Educational Institutions	Agricultural research institutions of the Indian Council of Agriculture Research (ICAR), State Agricultural University, Kerala Forest Research Institute, Tropical Botanical Garden and Research Institute, School of Social Sciences, Periyar Foundation, Cardamom Research Centre, United Planter's Association of South India, etc have a presence in the region and will be responsible for informing the land use and sector management measures to ensure they are grounded in sound science.
Private Sector companies	Tea, cardamom, tourism are the major production sector agencies in the project landscape. Their interests are largely represented through tea companies (mostly corporate in nature), cardamom federations (representing large number of scattered cardamom growers). Similarly, the tourism sector is represented by District Tourism Promotion Council (DTPC) and local tour operators. These actors will play a major role in implementing interventions under component 2.
Local communities and Community institutions (JFM Committees, FDAs, EDCs,Unit Level Committees (ULCs) and Vana Samrakshana Samities [22]	Local communities will form the main beneficiaries of project interventions and improvements especially those related to enhancing community capacities to plan and manage natural resources. The community institutions targeted are grass root level organizations supported by the Forest Department for participatory forest management. In addition to being project beneficiaries, they are also a critical repository of knowledge.
NGOs	High Range Wildlife and Environment Preservation Association, Munnar Environment and Wildlife Society, etc. These organizations promote conservation awareness and conduct outreach programmes in the region.

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

India has implemented several programmes, over the past two decades that specifically sought to strengthen institutional structures at different levels (national and sub-national) to create an enabling environment for biodiversity conservation. An earlier GEF aided project – India Ecodevelopment Project (1996-2004) – has shown that providing sustainable livelihoods to communities is central to the success of conservation in India, and lessons from this project have resulted in upstream policy changes (e.g. amendment of the national wildlife legislation in 2006). The proposed GEF project shall add another layer to the existing framework of conservation in India (that still remains PA centric) by engaging production sectors and promoting integrated landscape management approaches to safeguard biodiversity in mountain landscapes. The GEF-UNDP-Gulf of Mannar Biosphere Reserve project (currently nearing completion), wherein an integrated, multi-sectoral approach was adopted to secure the critical linkage between improved coastal and marine resources and the local livelihoods, is particularly relevant. UNDP is also currently implementing two projects under the *India:GEF-UNDP- Coastal and Marine Programme* that aims at mainstreaming biodiversity conservation into production sector operations in the critically vulnerable coastal and marine zones of Godavari, Andhra Pradesh (east-coast) and Sindhudurg, Maharashtra (west-coast). The project will establish necessary communication and coordination mechanisms (through the Ministry of Environment and Forests) with this programme. Further, a GEF-UNDP Project- *Energy Conservation in Small Sector Tea processing Units in Southern India* has demonstrated that by adopting energy efficient options in tea curing units, there could be 20% savings in electrical and thermal energy. This learning would be dove-tailed into the proposed project in the tea and cardamom sector. Similarly, a couple of other initiatives – *Community Based Natural Resource Management* and the GEF *Small Grants Programme* – have developed models of viable and ecologically sustainable "community owned ecosystem based enterprises" with high replication potential. The proposed project shall build on the lessons learned and experiences gained from these projects as well and the lessons learnt from the project shall be up-scaled, mainstreamed and replicated into

[21] District Collectors are officers of the Indian Administrative Service and in charge of the administration of the district. They are entrusted the task of handling law and order, revenue collection, taxation, the control of planning and handling of natural and man-made emergencies.

[22] Forest Protection Committees

relevant national programmes and policies. The project will also coordinate with the Critical Ecosystems Partnership Fund (CEPF) that is investing in community and CSO conservation actions to preserve and protect globally threatened species and habitats in the Western Ghats. Efforts will be made to ensure synergies, sharing of lessons and cross-fertilization of ideas between the two. Similarly, through inviting participation on the Project Steering Committee at the national level, synergy and coordination with the Global Tiger Iniatiave of the World Bank and GEF will also be guaranteed. In addition, the project will coordinate actions with other government and non-government initiatives where similarities in the strategy of the proposed project open up an opportunity for cross fertilizing good practices.

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

C.1 Indicate the co-financing Amount the GEF Agency is Bringing to the Project.

UNDP is leveraging a total of $30 million of co-financing including $1 million from its own core fund supported programmes.

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

UNDP has a long standing environmental programme with the Government of India, and has supported national policy development with regards to multi-lateral environmental agreements. UNDP has helped the national Government in setting up the Wildlife Institute of India (premier institution on PAs) and Indian Council of Forestry Research and Education (apex institution for forestry research and related issues). UNDP currently is implementing several projects on natural resource management, where similar cross-sectoral and community based resource management approaches are being piloted. Three relevant UNDP core funded projects in this regard are *Natural Resource Conservation Outside Protected Areas, Community Based Natural Resource Managemen*t and *Strengthening Institutional Structures for Implementing the Biological Diversity Act*. Lessons from these projects will be of invaluable use to the proposed project. UNDP is supporting GEF financed and other initiatives aimed at strengthening PA management effectiveness, and PA financial sustainability in some 1,000 PAs globally with a combined area of 130 million hectares. UNDP will ensure that lessons learned from this work are applied to the proposed project. Interventions proposed under this project are in line with India's efforts to meet its commitments under MEAs while meeting national environmental goals under three thematic areas - climate change, biodiversity conservation, chemical management. This is within the overarching objective of the UNDAF outcome (4.3) that is – 'by 2012 the most vulnerable people, including women and girls, and Government at all levels have enhanced abilities to prepare, respond and adapt to sudden and slow-onset disasters and environmental changes.' The project aligns well with UNDP efforts to contribute towards the implementation of national policy and legislative frameworks related to environment, putting in place effective collaborative governance systems for the conservation of biodiversity and natural resources. The UNDP India CO has sufficient capacity to handle this project with a dedicated team (with three Programme Officers having a combined experience of more than 40 years) dealing with natural resources management. The project will also benefit from technical expertise of staff from other work clusters such as climate change, governance and poverty reduction. Further, UNDP has also been selected as the Implementing Agency for this project during the GEF Portfolio identification exercise and the confirmed during the GEF National Dialogue Initiative conducted by the government in 2011.

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

A. Record of Endorsement of GEF Operational Focal Point (S) on Behalf of the Government(S): (Please attach the Operational Focal Point endorsement letter(s) with this template).

Name	Position	Ministry	Date *(MM/DD/YYYY)*
Hem Pande	Joint Secretary & GEF Operational Focal Point,	Ministry of Environment and Forests	**November 29, 2011**

B. GEF AGENCY (IES) CERTIFICATION

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

Agency Coordinator, Agency name	Signature	Date *(MM/DD/YYYY)*	Project Contact Person	Telephone	Email Address
Yannick Glemarec, UNDP/GEF Executive Coordinator		January 4, 2012	Doley Tshering - RTA, EBD UNDP Asia-Pacific Regional Centre	+6622882726	doley.tshering@undp.org

Annexure 1. Map of the High Ranges Mountain Landscape