

## SIGNATURE PAGE

Country: INDIA

UNDAF Outcome(s)/Indicator(s): Communities are aware of their vulnerabilities and adequately prepared to manage (and reduce) disaster and environmental related risks

Expected Outcome(s)/Indicator(s): Progress towards meeting national commitments under multilateral environment agreements

Expected Output(s)/Indicator(s): National efforts supported towards conservation and management of natural resources

Implementing partner: Government of Madhya Pradesh  
(Designated institution/Executing agency)

Other Partners: Department of Forest, Government of Madhya Pradesh

### NARRATIVE

The ecological balance of Madhya Pradesh (MP) is of critical importance to India as a whole, as it encompasses a major part of the highlands of Central India and constitutes parts of the upper catchments of five principal river systems. The state has been affected by deforestation and land degradation which is jeopardizing the livelihood of tribal and rural communities. The objectives of the project are to reverse the process of land degradation, improve ecosystem integrity services and functions, and improve human livelihoods in the target area. This will be achieved through the promotion of integrated and sustainable community-based natural resource management activities such as rehabilitation of degraded bamboo forests, livestock breed conservation and improvement, soil conservation measures on farmland/forest land, Bio resource based SME development and the promotion of alternatives sources of fuel wood (e.g. biogas) etc.

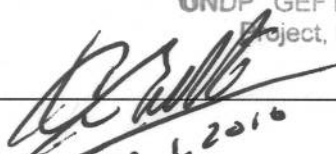
Programme Period: 2008-2012  
Programme Component: Environment and Energy  
Project Title: Integrated Land and Ecosystem Management to Combat Land Degradation and Deforestation in Madhya Pradesh  
Project ID: 00070765  
Project Duration: 5 years  
Management Arrangement: National Implementation

Total budget:	101,286,750
Allocated resources:	101,286,750
Government	95,523,750
Other: GEF	5,763,000

Agreed by (Government):

  
CCF & Project Director  
UNDP, GEF Land Degradation  
Project, M.P Bhopal

Agreed by (UNDP):

  
23.1.2016



**PROJECT DOCUMENT  
(PIMS 3512)**

**Government of India  
Global Environment Facility  
United Nations Development Programme**

**INTEGRATED LAND AND ECOSYSTEM MANAGEMENT TO COMBAT LAND DEGRADATION  
AND DEFORESTATION IN MADHYA PRADESH**

The State of Madhya Pradesh encompasses the major part of the highlands of Central India and constitutes parts of the upper catchments of five principal river systems – the Yamuna, Ganga, Mahanadi, Godavari and Narmada. It is endowed with rich and diverse forest resources. Variability in climatic and edaphic conditions brings about significant differences in forest types. The latest estimate of the Forest Survey of India suggests that forests cover 24.4% of the State's land area. The landscape being targeted by the project is also endowed with globally significant biodiversity. The districts in which the project will be undertaken are home to 2 National Parks and 3 Sanctuaries. Some of the key threatened and endangered faunal species in these protected areas are Tiger, Panther, Wild dog, Chausingha Bison, and many other species of mammals and reptiles in addition to approximately 200 species of birds. The maintenance of the ecological balance of the state is hence of critical importance to the Nation as a whole, as it provides ecosystem services beyond its borders such as water and climate regulation, and provides some of the last remaining habitats for India's threatened biodiversity.

Despite the thrust towards watershed development in the last decade, catchments continue to degrade and rates of soil erosion continue to be high in the State with negative downstream externalities. Unsustainable land management practices, especially deforestation and overgrazing, have been both cause and consequence of the livelihoods crisis among tribal and rural communities living in and around forest areas. In the absence of a large and coordinated intervention, with incremental support from GEF, that builds on the vast experiences in integrated management of natural resources in the State, the livelihood system being practiced in forest fringe villages, which consists of (a) low productivity, rain fed, extensive agriculture; (b) uncontrolled grazing of livestock in forests; and (c) unsustainable exploitation of NTFPs, will continue to undermine ecosystem services. This will be further compounded by the effects of climate change and variability that are increasingly threatening traditional ways of life. In order to preserve the range of ecosystem services important for local livelihoods as well as for the global environment, the long-term solution is to support and promote sustainable rural livelihoods, which balance socio-economic needs with environmental benefits at the community-level. Furthermore, each component of the livelihood system should be adapted to increase its resilience to climate change and variation. The main barriers to realizing this vision and to remove the direct drivers of environmental degradation and loss of ecosystem services can be clustered as follows: (a) institutional barriers; (b) economic and financial barriers; (c) technology and knowledge barriers. The project strategy is thus to focus on removing barriers to promoting sustainable rural livelihoods that are ecologically sustainable and provide a broader range of livelihood options for the tribal/rural poor. Demonstration activities will be targeted in four districts of Madhya Pradesh organized on the basis of 4 micro-catchments/ watersheds.

Global environmental benefits will accrue from addressing land degradation trends that are adversely affecting critical ecosystem services, such as water holding capacity of the land, soil carbon sequestration, agricultural productivity, habitat and range of threatened and endangered wildlife resources that depend on forest areas and adjacent lands in national parks and reserve forests. Global benefits include: enhancement of ecosystem services through SLEM on approximately 17,500 ha of land in critical upper watershed areas. Benefits will be further magnified through replication and up-scaling of good SLEM practices developed by the project through a National SLEM Replication Mechanism linked to the World Bank-led SLEM Partnership for India.

## TABLE OF CONTENTS

<b>ACRONYMS/ ABBREVIATIONS .....</b>	<b>3</b>
<b>SECTION A: ELABORATION OF THE NARRATIVE.....</b>	<b>5</b>
PART A.1 SITUATION ANALYSIS .....	5
1.1 <i>Environmental context and global significance</i> .....	5
1.2 <i>Socio-economic context of project districts</i> .....	8
1.3 <i>Climate change context</i> .....	10
1.4 <i>Analysis of drivers of loss of ecosystem services</i> .....	12
1.5 <i>Legislative, institutional, policy and programming context</i> .....	14
1.6 <i>Barriers to sustainable land and ecosystem management</i> .....	21
1.7 <i>Stakeholder analysis</i> .....	22
PART A.2: PROJECT STRATEGY .....	23
2.1 <i>Conformity with GEF Policy</i> .....	23
2.2 <i>Project Goal, Objective, Outcomes and Outputs</i> .....	24
2.3 <i>Project Indicators</i> .....	37
2.4 <i>Project Risks and Assumptions</i> .....	38
2.5 <i>Expected global, national and local benefits</i> .....	39
2.6 <i>Country Ownership: Country Eligibility and Country Driven-ness</i> .....	40
2.7 <i>Sustainability</i> .....	41
2.8 <i>Replicability</i> .....	42
PART A.3 MANAGEMENT ARRANGEMENTS .....	42
PART A.4 MONITORING AND EVALUATION PLAN AND BUDGET.....	43
PART A.5 BUDGET AND COST EFFECTIVENESS .....	49
5.1 <i>Budget</i> .....	49
5.2 <i>Cost-effectiveness</i> .....	50
PART A.6 LEGAL CONTEXT .....	52
<b>SECTION B: STRATEGIC RESULTS FRAMEWORK (SRF) AND GEF INCREMENT .....</b>	<b>53</b>
PART B.1: INCREMENTAL COST ASSESSMENT .....	53
PART B.2: LOGICAL FRAMEWORK .....	57
<b>SECTION C: TOTAL BUDGET AND WORK PLAN (UNDP ATLAS) .....</b>	<b>64</b>
<b>SECTION D: ADDITIONAL INFORMATION .....</b>	<b>67</b>
PART D.1: OTHER AGREEMENTS .....	68
PART D.2: SELECTION OF DEMONSTRATION SITES WITHIN THE FOUR PROJECT DISTRICTS.....	69
PART D.3: TERMS OF REFERENCES FOR KEY PROJECT STAFF AND CONSULTANTS.....	70
PART D.4: STAKEHOLDER INVOLVEMENT PLAN .....	78
PART D.5: BOTANICAL NAMES OF LOCAL TREE AND SHRUB SPECIES AND PRODUCTS.....	80
PART D.6: RESPONSE TO STAP COMMENTS OF 31 JULY 2008.....	81
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## ACRONYMS/ ABBREVIATIONS

AH	Animal Husbandry
APR	Annual Project Report
AWP	Annual Work Plan
CBIA	Community Based Impact Assessment
CBO	Community-based Organization
CDM	Clean Development Mechanism
CSI	Climate Sensitivity Index
FSP	Full Size Project
GEF	Global Environment Facility
GOI	Government of India
HGFF	Home Garden Farming Fund
IA	Implementing Agency
IC	Incremental Cost
ICRISAT	International Crops Research Institute for the Semi Arid Tropics
INC	Initial National Communication
INR	Indian National Rupees
IR	Inception Report
IW	Inception Workshop
JFM	Joint Forest Management
JFMCs	Joint Forest Management Committee
JSDF	Japan Social Development Fund Grant For Capacity Building For Community Forest Management
LREIG	Low Rainfall Energy Improvement Group
M&E	Monitoring and Evaluation
MFP	Minor Forest Produce
MFPF	Minor Forest Produce Federation
MOEF	Ministry of Environment and Forests
MP	Madhya Pradesh
MPFD	Madhya Pradesh Forest Department
MSP	Medium Size Project
NGOs	Non-governmental organizations
NREGS	National Rural Employment Guarantee Scheme
NTFPs	Non Timber Forest Products
PA	Project Assistant
PBSA	Participatory Benefit Sharing Agreement
PC	Project Coordinator
PDF-B	Project Development Facility-B
PIR	Project Implementation Review
PSC	Project Steering Committee
RCU	Regional Coordination Unit
RGMWM	Rajiv Gandhi Mission for Watershed Management
SA	Social Assessment
SBAA	Standard Basic Assistance Agreement
SC/ ST	Scheduled Cast and/ or Scheduled Tribes
SHGs	Self-help Groups
SLEM	Sustainable Land and Ecosystem Management
SLM	Sustainable Land Management
SME	Small and Medium sized Enterprises
SPS	Samaaj Pragati Sahyog
SRF	Strategic Results Framework
SWC	Soil and Water Conservation
TORs	Terms of Reference
TPR	Tripartite Review
TTR	Terminal Tripartite Review
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme

UNDP-CO	United Nations Development Programme – Country Office
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollars
VDC	Village Development Committee
VFC	Village Forest Committees
WUGs	Water User Groups

## SECTION A: ELABORATION OF THE NARRATIVE

### PART A.1 Situation Analysis

#### 1.1 Environmental context and global significance

1. Madhya Pradesh lies at the geographical centre of India. It encompasses major parts of the central highlands as well as parts of the eastern highlands<sup>1</sup>. It constitutes parts of the upper catchments of five principal river systems – the Yamuna, Ganga, Mahanadi, Godavari and Narmada. Madhya Pradesh is endowed with rich and diverse forest resources. Variability in climatic and edaphic conditions brings about significant differences in forest types, which include Dry thorn, Dry and Moist Deciduous, Sub-Tropical Semi-Evergreen, and Tropical Moist Evergreen Forest. The area harbors native flora such as Teak, *Diospyros melanoxylon*, *Syzygium* and another 170 tree species. Based on species composition, there are four main forest formations, namely: Teak Forest, Sal Forest, Bamboo Forest and Miscellaneous Forest. The latest estimate of the Forest Survey of India suggests that forests cover 24.4% of the State's land area, with dense forest constituting 13.66% and open forest 10.74%.

2. Bamboo bearing areas are also very widely distributed within the State. India is the second richest country in bamboo genetic resource after China. In India, bamboo has a wide range of distribution forming an under story in several forest types<sup>2</sup>. The total forest area covered by bamboo in the country is about 9.6 million hectares (about 12.8% of the total forest area of the country). In Madhya Pradesh, bamboo covers more than 1.8 million hectares. The major species are *Bambusa arundinacea*, *Cephalostachyum pergracile*, *Dendrocalamus strictus* and *Oxytenanthera nigrociliata*. Of these, only *D. strictus* is exploited on a commercial basis as the other species are found only in small patches. With increased population pressure, natural stands of bamboo are being indiscriminately cut for fuel, wood and furniture, for obtaining cultivable lands, and grazing, endangering its valuable germ plasm.

3. Madhya Pradesh is endowed with globally significant biodiversity and is home to 34 protected areas covering almost 10,862 km<sup>2</sup> (3.5% of the State's land area), of which nine are National Parks, and the rest are Sanctuaries. Kanha, Bandhavgarh, Panna and a host of other parks and sanctuaries dot the Madhya Pradesh landscape. Ten of these are well over 400 km<sup>2</sup> in size and several are interconnected with corridors, forming a large viable area for a host of animal species characteristic of central, deciduous India. Some of the key threatened and endangered faunal species in these protected areas are as follows: Tiger, Panther, Wild dog, Chausingha, Bison, and many other species of mammals and reptiles, in addition to approximately 200 species of birds. Threatened flora include species of grasses and herbaceous flora. In addition to forested areas, the rural landscape primarily consists of tribal populations relying on the natural resource base for subsistence through rain-fed agriculture, livestock rearing, and use of a wide variety of forest products.

4. The landscape being targeted by this project provides critical ecosystem services for the State of Madhya Pradesh such as provisioning services (food, fresh water, fuel wood, fiber, and other non-timber forest products), cultural services (the social, religious and cultural life of the tribal communities residing

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<sup>1</sup> India has 10 biogeographic zones that have been described on the basis of internationally recognized, large distinctive units of similar ecology, biome representation, community and species: (1) Trans-Himalaya; (2) The Himalaya; (3) The Indian Desert; (4) The Semi-arid zone; (5) The Western Ghats; (6) The Deccan Peninsula; (7) The Gangetic Plain; (8) The Northeast; (9) The Islands; and (10) The Coast. The Deccan Peninsula zone is further divided into five distinct sub-divisions based on floral communities and general topography: a) The Chota Nagpur Plateau; b) The Central Highlands; c) The Deccan Plateau North; d) The Deccan Plateau South; and e) The Eastern Highlands. Portions of the Central and Eastern Highlands are found in the State of Madhya Pradesh.

<sup>2</sup> The tropical moist deciduous forests of northern and southern India and the deciduous and semi evergreen forests of northeastern India are the natural habitats of bamboo.

in Madhya Pradesh are closely linked to the forest), supporting services (soil formation, nutrient cycling and primary production). There are also upstream-downstream linkages in terms of generation and consumption of environmental services, starting from the micro and meso-watershed levels to the larger macro river-basin and inter-state levels, with different sets of downstream beneficiaries. There is a clear hydrological linkage between the presence of forest vegetation in upstream catchment areas and the watershed services accruing to downstream beneficiaries in terms of soil and water conservation, silt control, flood and landslide prevention, water quality and quantity regulation, wetland maintenance, and such<sup>3</sup>. The maintenance of the ecological balance of the State is hence of critical importance to the Nation as a whole, as it provides ecosystem services beyond its borders.

5. Within this broader landscape, the project is focusing on four districts that are prominent for their combination of human poverty and fragile ecosystems -- **Betul and Chhindwara** in the southern part of Madhya Pradesh and **Sidhi and Umaria** in the eastern part of the State. The selected village clusters of the four target project districts have a forest cover of roughly 45-50% of geographical area. The project districts play a critical role in protecting ecosystem services, such as water regulation and soil retention that have downstream impacts in bordering states, as well as for harboring endemic, endangered, threatened and rare fauna and flora. Table 1 below summarizes the principle environmental features of the project districts.

6. The project districts are primarily located in dry deciduous zones, with high precipitation and temperatures. Soil and agro-ecological conditions are thus not adequate for a long agricultural season. The rural landscape is highly susceptible to soil erosion, surface soil run-off, and seasonal floods owing to its characteristically undulating terrain, fragile geological conditions, and heavy rains. In areas of intensive land use, soil erosion, forest degradation, and reduction of soil fertility in agricultural land have become increasingly evident.

7. For example, in East Batkakhapa forest division in the eastern part of Chhindwara, over the last 30 years, the area has been affected by severe land degradation and subsequent loss of fertile land. With highly undulating terrain and eroding soil surfaces, the area faces a multitude of problems – land degradation, high population density, overgrazing, deforestation, hydro geological conditions that cause the rates of natural groundwater recharge to be very low, and heavy monsoon rains. Since the 1970s, around 20% of the land area of the villages, has been lost or rendered unproductive due to land degradation and soil erosion. Consultations with poor tribal local residents during project preparation revealed that around 65% of the households in the villages have been affected; crop production has decreased by 25-30%, average household income has reduced by 25% and about 40% of the forest and grazing area has reduced as a result of land degradation. Simultaneously, during this period, the human population has increased by 15-20% and cattle population by 50% placing added stress on an already overburdened ecosystem. There is general understanding that anthropogenic factors such as overgrazing, deforestation, illegal tree felling, poor farming practices, reduced fertile inputs to land, poor soil and irrigation water management, and poor entitlements for agrarian development have contributed to land and ecosystem degradation.

**Table 1. Environmental features of project districts**

District	Environmental features
Betul	Betul adjoins Chhindwara district and is in the southern part of Madhya Pradesh, bordering Maharashtra State. The 2 districts are located on the famous Satpura Hill Ranges known for their rich flora and fauna. It was the splendor of the forests of Satpura, which attracted the British to protect these forests and lay the foundation of forest management in this region in the second half of the nineteenth century.

<sup>3</sup> Sengupta et al, Developing markets for watershed protection services and improved livelihoods in India: Discussion paper, Winrock International India, New Delhi. In collaboration with International Institute for Environment and Development, London, June 2003

District	Environmental features
	<p>Betul is a central plateau surrounded by a belt of hilly and forest covered country, wide in the north and west and narrow in the east and south, draining into the Narmada and Tapti basins. The rock formation is sandstone in the northern third of the district, and traps<sup>4</sup> elsewhere. The sandy soils in sandstone areas are shallow and of little value for cultivation and mostly covered by forest trees. The plateau area of traps has fertile black soils. The flat tops of larger hills are under cultivation. The Pachmarhi Biosphere Reserve falls within Betul and Chhindwara districts.</p> <p>The principal species in the forest of Betul is Teak. The associate important species are Saja, Lendia, Dhawara, Haldu, Dudhi, Arjun, Salai, Bija, Aonla, Mahua, Achar, Palas, Tendu (for Latin or English names for all local species mentioned in this project document, see <a href="#">Part D5</a>). The normal density of the forest is 0.4 to 0.8 and quality is III/IV. The bamboos of quality III grow almost all over the forest with Teak and Mixed Forest. The main NTFP in the forest is Tendu Patta, Mahua, Achar, Aonla, Gums, Harra, Baheda and number of Medicinal plants like Musli and other tubers and roots.</p>
Chhindwara	<p>Chhindwara has high hills up to 650 meters in the north, a high undulating plateau in the central part and lower plains in the southern part. The northern part drains in to the Narmada River and the remaining part drains through tributaries in to Godavari River.</p> <p>The cup shaped valley of Tamia (Patalkot) sheltered by high hills and inhabited by the Bharias and Gonds on the slopes of the Satpuras remained cut off from outside contact for centuries and is still not easily accessible.</p> <p>Pench National Park falls within Seoni and Chhindwara (90% in Seoni and Chhindwara and 10% in Maharashtra State).</p> <p>Good quality Teak Forest occurs on the plateau and easier slopes. Mixed forest is found in all the three Divisions of the District. Sal Forest grows in West Chhindwara Division in Delakhadi, Tamia, Sangakheda, Jamaie and Damua Ranges. Bamboo grows mostly on hill slopes. The other species are more or less the same as found in Betul. Among NTFPs, the quantity and quality of Achar is very significant. A variety of medicinal plants, Mahul leaves and honey are also produced in substantial quantity.</p>
Umaria	<p>Umaria is located in the Maikal Range in the eastern part of Madhya Pradesh.</p> <p>Drainage is through Johilla, Chhoti Mahanadi and Son rivers forming the catchments of Ganga.</p> <p>It is known for the Bandhavgarh National Park. The varied topography, numerous streams and remoteness preserve a great variety of wildlife. The important wildlife found in Bandhavgarh National Park today is Tiger, Panther, Jungle Cat, Civet Cat, Mongoose, Hyena, Jackal, Wild dog, Langoor, Sloth bear, four horned antelope Chansinga, Nilgai, Bison, Deer, Sombhar, Spotted Deer, Barasingha, Mouse Deer, Porcupine, Otter, Wild Boar, Reptiles, and variety of birds.</p> <p>Umaria has mostly Sal Forests and Mixed Forests. Teak Mixed Forest is confined to ten percent area. The other important species are Bija, Saja, Haldu, Mundi, Khamer, Shisham, Tinsa, Bhirra, Dhaua, Siris etc. Among the NTFP, the Lac cultivation on Palas trees was the important activity during the Rulers time. It has still the potential along with Bamboos, Mahua, Tendu Patta, Achar, Gum, honey and Medicinal Plants.</p>
Sidhi	<p>Sidhi is located in the Vindhya Range in the eastern part of Madhya Pradesh. Being the eastern most district, it borders Uttar Pradesh and Chhattisgarh States.</p> <p>The extensions of the Kymore Range from west to east scarp sharply to the South and block the northern banks of the River Son. Parallel to the scarp lays the narrow but fertile valley of Son, the southern portion is part of Chhota Nagpur Plateau. Son, the tributary of Ganga, is the major river flowing north-east through the northern part of the district. Geologically, the northern part is formed of Vindhians, the middle portion of Archaeans and the southern part of Gondwana formations giving rise to Mixed Red and Black Soil and deep medium black soil.</p> <p>The district is rich in wildlife. Sanjay National Park (1471 km<sup>2</sup>), Bagdara Sanctuary (478 km<sup>2</sup>), Sanjay-Dubri Wildlife Sanctuary (365 km<sup>2</sup>) and Son Ghariyal Sanctuary (42 Km<sup>2</sup>) are in Sidhi.</p>

<sup>4</sup> The **Deccan Traps** are a large igneous province located on the Deccan Plateau of west-central India and one of the largest volcanic features on Earth. They consist of multiple layers of solidified flood basalt that together are more than 2,000 m thick and cover an area of 500,000 km<sup>2</sup>. The term 'traps' is derived from the Swedish word for stairs (*trappa*, or sometimes *trapp*), referring to the step-like hills forming the landscape of the region.



District	Environmental features
	Sal occupies the rolling grounds and plain areas where the moisture conditions are better. Hilly areas are covered by Mixed Forests. The species are Haldu, Bija, Tinsa, Kari, Kasai, Lendia, Tendu, Moyan, Kekad, Salai, Kusum, Khair etc. Bamboo mostly occurs in areas of Mixed Forest. Just 30 years back, Sidhi had very good bamboo forests, but now they are highly degraded. The forests are facing problems of encroachment, illicit, felling and heavy grazing.

## 1.2 Socio-economic context of project districts

8. The total population of the 4 project districts is approximately 5.5 million persons, with the population density being a little below the average for the State (Table 2). The population is comprised of people from different ethnic groups<sup>5</sup>, with significant numbers belonging to tribal groups. Tribal populations have over the generations considered the forests as their natural habitat and their dependency on forest and forest based resources was almost 100%. Increasing population pressure and depleting forest resources have forced them to look for other alternatives such as agriculture and animal husbandry. The literacy level in the project districts is below the state average, except in Chhindwara.

9. Being a predominantly agrarian society, 90 percent of the population lives in tribal/ rural areas<sup>6</sup> and subsists on an integrated livelihood system of rain-fed agriculture, livestock rearing, and use of a wide variety of forest products. However, this does not cover their livelihood needs for the whole year. For more than 100 days in the lean period, villagers have to search for alternative sources of earning livelihood such as migrating to earn wages or engaging in illicit extraction of forest resources (timber or fuel wood for sale). It is only near the thermal power stations and collieries where people get employment and earn their livelihood without depending on the forest or agriculture.

10. 70 percent of the districts' population is classified as poor, based on a food poverty line, and 98 percent of the poor live in tribal/rural areas where poverty is many folds greater than in urban areas as compared with the Human Development Report data and correlated with the primary study findings during the PDF-B phase of the project. In general, poverty tends to be high in remote areas, where difficult terrain and agro-climatic conditions constrain land productivity as well as access to government schemes and entitlements, roads, markets and basic amenities. Land degradation and fertility loss are important causes of poverty in the project districts. Ownership and access to productive assets, including land, are another important determinant of poverty. More than half of tribal/ rural families have less than two hectares of land and these lands are primarily rain fed lacking irrigation facilities.

**Table 2. Population density of project districts**

District/ State	Geographic area	Population	Population density
	(km <sup>2</sup> )	(thousands)	(persons/ km <sup>2</sup> )
Betul	10,043	1,395	138.90
Chhindwara	11,815	1,849	156.50
Umaria	4,076	516	126.59
Sidhi	10,526	1,831	173.95
Total for project districts	36,460	5,591	153.35
Madhya Pradesh	308,245	60,348	195.78

## Agriculture

<sup>5</sup> The vast majority (85%) of ethnic minority in Umaria, Sidhi, Betul and Chindwara are Gond's, Baiga's and Bhariya's.

<sup>6</sup> This is higher than the rural-urban population ratio for Madhya Pradesh State as a whole, which stands at 74:26 according to the 2001 census.

11. Agriculture, which is primarily rain-fed, is the major source of income in the villages. The majority of farmers fall in the landless, marginal (<2.5 acres) or small (2.5-5 acres) farmer categories. Farmers living within 5 km of the forest are mostly marginal and small farmers undertaking cultivation without irrigation. Without irrigation and the ability to apply chemical fertilizers, farm production is very low. Fields are also not improved with soil and water conservation measures. Table 3 provides information on land use patterns in villages surveyed during the PDF-B phase.

12. In the majority of villages food grains are the primary choice followed by pulses, oil seeds, cash crops and vegetables. The varieties of food grains commonly raised are paddy, kodo kutki, Jowar, Maize, Wheat, and Oat. Cash crops and vegetables are raised on irrigated land; cotton is raised in Sidhi, and vegetables in Betul, Chhindwara and Sidhi.

**Table 3. Land use pattern in project districts**

District	No. of villages surveyed	Total Geographical Area (ha.)	Forest land (ha.)	Degraded Bamboo Area (ha.)	Agriculture land (ha.)	Currently Cultivated land (ha.)	Single cropped area (ha.)	Double Cropped area (ha.)	Irrigated land (ha)	Grazing land (ha.)	Area available for fodder development (ha.)
Betul	55	35,198	19,752	5,641	9,133	6,685	5,133	1,258	1,308	908	85
%			56%	16%	26%	19%	77%	19%	20%	3%	
Chhindwara	55	36,102	16,097	10,366	16,580	14,542	12,585	2,885	2,528	2,398	803
%			45%	29%	46%	40%	87%	20%	17%	7%	
Sidhi	29	18,612	8,775	7,708	9,629	8,787	5,721	3,009	1,706	537	361
%			47%	41%	52%	47%	65%	34%	19%	3%	
Umaria	46	40,518	21,098	2,305	14,253	11,552	7,131	2,955	1,833	7,614	523
%			52%	6%	35%	29%	62%	26%	16%	19%	

Source: PDF-B reports

### Livestock rearing

13. Table 4 provides information on livestock numbers for the 4 project districts. Villagers mostly maintain, groom and nurture a large number of animals as a status symbol; the larger the number of animals one owns or possesses the greater is the status in the community and village. The project districts are also frequented by livestock from Rajasthan and Maharashtra for grazing.

14. 65% of the livestock population is fully dependent upon the forest to meet fodder requirement. Stall feeding is practiced only in some villages of Betul and Chhindwara. Although grazing in the forest is being regulated according to Grazing Rule 1980, the ever increasing livestock population has a critical impact on the natural forests. Grazing units have not been formed and grazing capacity has not been notified. Grazing is placing severe pressure on the forests. These pressures can be reduced by developing grazing land, introducing rotational grazing (opening only ¼ area at a time for grazing), and effective regulation of grazing.

**Table 4. Livestock numbers in project districts**

District	Cows	Bullocks	Buffaloes	Goats	Other	Total
Betul	8,449	7,843	1,822	3,854	647	22,615
Chhindwara	8,766	7,339	2,673	8,394	11,945	39,117
Sidhi	4,634	5,271	1,155	7,563	435	19,058
Umaria	3,540	2,639	890	2,214	2,329	11,612

Source: PDF-B reports

## Use of forest products

15. Following agriculture, the next major source of income is from NTFP-related activities such as collection, processing, sale, and trade. Historically, villagers could exercise their rights to use of forest resources, granted by the Ruler, to remove a certain quantity of forest produce from forests (*Malguzari* Forests) annually to meet their requirements. This system is popularly known as *Nistar*, and was continued by the Forest Department even after the *Malguzari* system was abolished. However, with increasing demand for timber, fuel and bamboo under *Nistar*, and limited production of these in the forest, the Government regulated the supply of *Nistar* to villages that were 5 km from the forest. Table 5 shows the number of villages within 5 km from the forest in the project districts. It is these villages that have the most impact on forest resources and that are most significant for managing land and forest degradation trends being observed in the project districts.

**Table 5. Villages in the project districts within 5 km of the forest**

State/District	Number of forest villages <sup>7</sup>	Number of revenue villages <sup>8</sup>	No. of revenue villages within 5 km of forest
Madhya Pradesh	925	51,806	21,797
Betul	92	1,328	1,134
Chhindwara	49	1,903	1,426
Umaria	0	683	212
Sidhi	12	1,822	1,465

*Source: Forest Statistics*

16. Tribal populations continue to collect the valuable NTFPs, partly for their own consumption and use, and partly for sale. Due to the lack of awareness, know-how on processing and storage, they usually end up selling the products to local middlemen, usually in a desperate sale as they are mostly unaware of techniques for storing and preserving. Aonla, Tendu Patta, Harra, Mahua flowers and seeds, Sal Seeds, Gum, Achar and medicinal herbs are the important NTFPs being collected from the forests by the villagers (for Latin or English names for all local species mentioned in this project document, see [Part D5](#)). Tendu Patta, Sal Seeds and Kullu gum are nationalized NTFP products. Their collection and sale is organized through the State Minor Forest Produce Federation, Madhya Pradesh. The sale proceeds have a profit sharing mechanism with the village level poor collectors/families apart from the wages they earn for its collection from the MFP federation. This is collectively organized through the Primary Cooperative Societies at the village level. The non-nationalized products like medicinal and aromatic plants/herbs, aonla, chironjee etc are collected in unorganized manner by villagers, processed by them and sold through the local traders.

17. To ensure the poor forest dependent families livelihood and to promote the NTFP collection process as a sustainable initiative, several possibilities for NTFP-based production activities have been suggested such as rope making (sisal), Dona and Pattal manufacture, preparation of medicines, oil extraction from mahua seed, and such.

### *1.3 Climate change context*

18. [India's Initial National Communication](#) (INC, 2004) to the UNFCCC notes that a decreasing trend in monsoon seasonal rainfall has been observed over east Madhya Pradesh and adjoining areas, while a significant warming trend has been observed in central India, among other areas. In terms of spatial

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<sup>7</sup> Forest villages are those that are located within forest land that is under the jurisdiction of the Forest Department.

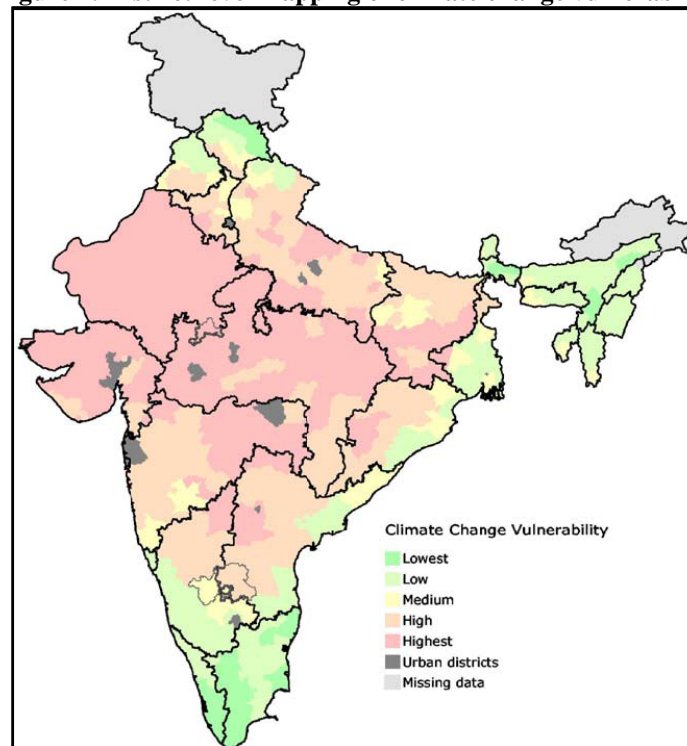
<sup>8</sup> Revenue villages are located outside forest land and fall under general jurisdiction. The project will cover both revenue village that are within 5 km of forests and forest villages in a ratio of approximately 80:20.

patterns of observed extreme daily maximum temperatures, it has been noted that over the central parts of India, the maximum temperatures recorded exceed 45°C.

19. As described above, the primary livelihood system in the target area is agriculture-based. The agriculture sector in India is particularly vulnerable to present-day climate variability, including multiple years of low and erratic rainfall. In terms of future climate change and its impacts based on scenarios generated by global circulation models, in spite of uncertainties, there is general consensus that major agricultural production areas are likely to be adversely affected by climate change, particularly in areas that become increasingly water-stressed. An overall decrease in the number of rainy days is expected particularly in central and western India (>15 days/year). Scenarios carried out for all states indicate that Madhya Pradesh will face a mean annual temperature rise of between 2°C and 3°C by the end of the century. The results of a recent report<sup>9</sup> that mapped vulnerability to climate change for different districts in India are presented below.

20. The district-level mapping of adaptive capacity, where adaptive capacity is measured as a composite of biophysical, social, and technological indicators, shows that the project districts rank in the low to lowest categories of adaptive capacity. District-level mapping of the climate sensitivity index (CSI), which is (a) based on observed climate data (1961–1990) and (b) based on results from the HadRM2 model, showed that the project districts are ranked medium to high in terms of climate sensitivity to observed climate data, and are ranked high to highest in terms of sensitivity to exposure. Finally, district-level mapping of climate change vulnerability (Figure 1), measured as a composite of adaptive capacity and climate sensitivity under exposure to climate change, shows that the target project districts are ranked highest in terms of climate vulnerability.

**Figure 1: District-level mapping of climate change vulnerability**



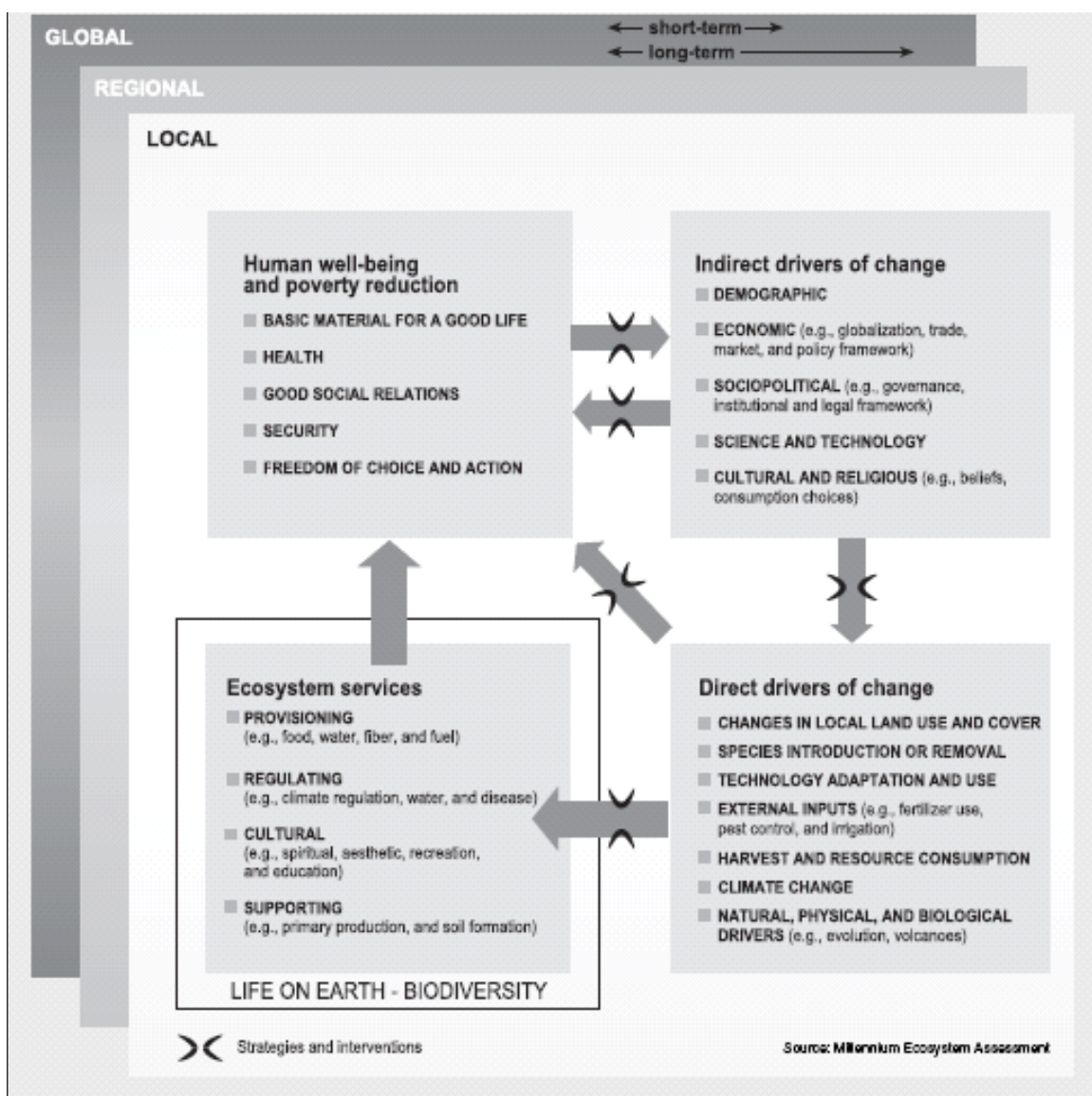
<sup>9</sup> Karen O'Brien et al. "Mapping vulnerability to multiple stressors: climate change and globalization in India. *Global Environmental Change* 14 (2004) 303–313

#### 1.4 Analysis of drivers of loss of ecosystem services

21. This section gives an overview of the direct and indirect drivers of land and ecosystem degradation in the Project Districts of Madhya Pradesh. The analysis is conducted using the Millennium Ecosystem Assessment Framework as it integrates socio-economic and biophysical drivers, including climate change, and their impact on human well-being (Figure 2).

22. “A driver is any natural or human-induced factor that directly or indirectly causes a change in an ecosystem. A direct driver unequivocally influences ecosystem processes. An indirect driver operates more diffusely, by altering one or more direct drivers.” The drivers are summarized in table 6 below and Figure 2 depicts how they impact on different types of ecosystems services, i.e. provisioning, regulating, cultural and supporting services.

**Figure 2: Millennium Ecosystem Assessment Conceptual Framework**



**Table 6. Direct and indirect drivers of loss of ecosystem services**

Direct drivers	Indirect drivers
<p>1) Changes in local agricultural land use patterns: Agricultural extensification: Villagers tend to illegally occupy on community, forest and pasture lands impacting the balance of natural resources/biodiversity.</p>	<p>Demographic: Since the 1970s, the human population has increased by 15-20%</p> <p>Economic: Poverty and small land holdings on marginal lands lead to a vicious cycle of instability in agricultural output due to dependence on unpredictable rainfall → reduced capacity to access formal credit and situations of servicing more expensive debts → constraints on investment in external inputs that can increase yield and inability and unwillingness to reinvest in land-based activities → further declines in income resulting in a downward yield spiral → farmers opt for extensification</p> <p>Technology: Villagers lack access to improved technology and knowledge systems, such as irrigation systems and practices, improved soil and water conservation practices</p>
<p>2) Changes in local pasture land use patterns: Decrease in grazing areas due to conversion to marginal agricultural land; High density of grazing animals has led to overgrazing and further degradation of pastures</p>	<p>Demographic: Human population is increasing; along with that livestock numbers are also increasing (increased by 50% since the 1970s)</p> <p>Economic: Poverty, small land holdings, dependence on rainfall, are causing villagers to convert pastures to marginal agricultural land; local livestock breeds are relatively unproductive leading to a need for larger numbers of livestock to meet needs</p> <p>Socio-political: While village-level institution for monitoring and managing grazing regimes in the form of JFMCs exist, they do not have the capacity to effectively regulate grazing.</p> <p>Cultural: Livestock maintained as a status symbol/ asset</p>
<p>3) Harvest and consumption of forest resources 3a) Unsustainable exploitation of forests for fuel wood; an estimated 600,000 people are making their living through sale of fuel head load; the bulk of the energy requirement is being met by fuelwood supplemented by cow dung cakes and kerosene oil; because of the meager and non-fuel value of agricultural production, agricultural waste is not available as a domestic fuel.</p>	<p>Demographic: Since the 1970s, the human population has increased by 15-20%.</p> <p>Economic: fuel wood sale can supplement meager agricultural incomes; bulk of energy needs of villagers are met through fuel wood from forests – alternative energy sources are not available</p> <p>Socio-political: JFMCs are not effectively regulating fuel wood extraction</p> <p>Technology: Alternative options for reducing dependence on forest for fuel wood are not available to villagers</p>
<p>3b) Overgrazing in forests – 65% of livestock is fully dependent on forest lands; this has adversely affected forest regeneration and led to increased growth of unpalatable weeds.</p>	<p>Demographic: Human population is increasing; along with that livestock numbers are also increasing (increased by 50% since the 1970s)</p> <p>Economic: Grazing lands are reducing due to conversion to agriculture, and villagers do not have the financial capacity to impound livestock, and buy fodder to stall-feed, hence they roam in the forests</p> <p>Socio-political: There is inadequate monitoring and control of cattle that roam in forests</p>
<p>3c) Over harvesting of NTFPs</p>	<p>Demographic: Since the 1970s, the human population has increased by 15-20% leading to increased demand for NTFP's for self-consumption and to supplement meager agricultural incomes</p> <p>Economic: The quantity of NTFP's is limited and number of collectors is increasing. At the same time the demand is also increasing. Thus, harvest per person is declining, and competition among the collectors to collect maximum NTFP at the earliest is increasing. As a result unsustainable harvest practices (lopping branches of trees for collecting the produce that too when it is not fully ripe or mature) are damaging trees, resulting in less and less production from those trees in subsequent years. The same is the case with medicinal herbs which are uprooted and or harvested to</p>

Direct drivers	Indirect drivers
	such an extent that many of them have become rare. Socio-political: Non Nationalized NTFP collection and sale is unorganized. Non-Nationalized NTFP's are sold generally to local traders (except for Tendu Patta, Sal Seeds and Kullu Gum which are nationalized NTFP's that are sold to MFP Federation on pre-fixed rates). Villagers are generally exploited by local traders and do not get the proper price. Forest resources are seen as open access resources with no incentives for individual collectors to manage collection in ways that do not harm future supply.
4) Forests of the state are mostly dry and deciduous and prone to forest fires in the summer season; forest fires take a heavy toll on natural regeneration.	Socio-political: Management plan for controlling forest fires consists of fire line creation. In case of fire, crisis management is the only option.
5) Climate change and variability: increased variability and overall decline in rainfall as well as increase in temperatures are predicted over large parts of India (see section on <a href="#">climate change context</a> ), which is also exacerbating problems, such as forest fires.	Global increases in GHG emissions driven by unsustainable production and consumption.

23. The conceptual analysis, using the MA framework, of the drivers underlying environmental change and loss of ecosystem services has been used to identify linkages to human well-being and the livelihoods of local communities in the project area, which in turn has informed the design of the project and the priority issues to be addressed.

### *1.5 Legislative, institutional, policy and programming context*

24. This section describes the laws, institutions, policies, and programs that are related to sustainable management of land resources (specifically forests, agricultural and pasture lands). This forms the essential foundation on which any efforts for controlling the increasing severity and extent of land and ecosystem degradation must be built.

#### 1.5.1 Legislative context

25. *Constitutional Provisions and Obligations:* Environmental conservation has been an integral part of the Indian ethos, as reflected in India's Constitution adopted in 1950. Articles 48A and 51G of the Directive Principles of State Policy enjoin upon the State to protect and improve the environment and safeguard forests and wildlife. The Constitution also enables the Centre and the States to enact laws to carry out the duties of preservation, afforestation and conservation of natural resources. Article 39(b) and (c) lays down the duty of the State and the Centre to develop natural resources for common good. Land and Water are subjects that fall within the State List<sup>10</sup> and therefore are under the purview of the State government; Forests fall under the Concurrent List, and therefore are under the purview of both the central and state government. Article 40 of the Constitution calls for organization of villages as units of self-government. Thus, a favorable atmosphere for empowering grassroots communities and for assisting them to take initiatives in the areas of environmental management, including combating desertification, already exists.

<sup>10</sup> Under the Constitution the central government has the powers to enact laws on subjects under the union list, while the state governments have the powers to enact laws on subjects under the state list. Both the central as well as the state governments can enact laws on subjects under the concurrent list. However, the laws enacted by the central government under the concurrent list override the laws enacted by the state government when a conflict arises between those laws.

26. *Legislative Acts and Bills:* There are several Acts and Bills that provide the legislative foundation for addressing ecosystem degradation trends in forests, agriculture and pasture lands in the project districts of Madhya Pradesh. These are summarized in the Table below.

**Table 7. Legislative foundation for addressing ecosystem degradation**

Name of Act	Year	Objectives
Forest (Conservation) Act	1980	An act to provide for the conservation of Forests and for matters connected therewith or ancillary or incidental thereto
Environment (Protection) Act	1986	To conserve and protect the environment of the country.
Wildlife (Protection) Act	amended 1988	Provides for the conservation of wildlife in the country.
Panchayat Raj Act (Seventy Third Amendment)	1992	Gives responsibility for land related subjects to the Panchayati Raj Institutions (Local Self Governments) at the village, block and district levels to ensure participatory planning, decision making, and monitoring of programmes by local self governments (programmes relating to agriculture, land consolidation and soil conservation, water management and watershed development, animal husbandry, fuel wood and fodder, social forestry, etc.)
The Biological Diversity Act	2002	To provide for conservation of Biological Diversity, sustainable use of its components and equitable sharing of the benefits arising out of the use of biological resources and for matters connected therewith or incidental thereto.
The Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006	2006	To recognize the usufruct rights over the natural resources and access to various other resources that the tribal's are traditionally using

### 1.5.2 Planning framework

27. *Development planning process:* The overarching planning tool of the Government of India to chart the country's development trajectory (covering economic, social, and environmental objectives) is the Five-Year Plan. These are developed, executed and monitored by the Planning Commission, with the Prime Minister as the *ex officio* Chairman. The tenth plan completed its term in March 2007 and the eleventh plan is currently underway. A central theme of the 11<sup>th</sup> plan that runs from 2007-08 to 2011-12 is to achieve inclusive economic growth, based on the recognition that India needs a "...growth process that will achieve a rapid reduction in poverty, accelerate the pace of both industrialization and employment-generation, reduce the rural-urban divide, and bring measurable benefits to Scheduled Castes/ Scheduled Tribes, minorities and other excluded groups". This central planning theme for the next 5 years fits very well with the objective of addressing ecosystem degradation trends in the four project districts of Madhya Pradesh that are having a disproportionate effect on marginalized communities that form a significant part of the population inhabiting these areas.

### 1.5.3 Government policies in support of land and ecosystem management

28. There are various national and state-level policies that are of relevance to controlling land and ecosystem degradation, and these are summarized in the tables below.

**Table 8. Relevant policies at the national and state levels**

Policy	Year	Objectives
National Water Policy	1987	The Policy is a broad statement covering various aspects, with the ones most relevant to this project being highlighted below: Resource planning has to be for a hydrological unit such as a drainage basin as a whole or a sub-basin. Water zoning for use and economic development would be undertaken.



Policy	Year	Objectives
		<p>Water management issues relating to agriculture, particularly with reference to irrigation systems- their management and efficiency and also at costs.</p> <p>There would be an integrated and multi-disciplinary approach to the planning, formulation and approval and implementation of water related projects, including catchment treatment and management, environmental and ecological aspects, rehabilitation of affected people, and command area development. Measures for minimizing land erosion would be taken up.</p> <p>Groundwater potential would be assessed and exploited keeping its recharge potential in view.</p> <p>Water rates would ensure to cover costs of O&amp;M. Due regard would be given to small and marginal farmers.</p> <p>Drought-prone areas would have special water conservation measures. The needs of drought-prone areas would be given priority in water resource development projects. Drought proofing methods would be given special attention.</p>
National Forest Policy	1988	<p>Maintenance of environmental stability through preservation and, where necessary, restoration of the ecological balance that has been disturbed by the serious depletion of forests of the country.</p> <p>Conserving the natural heritage of the country by preserving the remaining natural forests with the vast variety of flora and fauna,</p> <p>Checking soil erosion and denudation in the catchment areas of rivers, lakes, reservoirs in the interest of soil and water conservation, for mitigating floods and droughts and for the retardation of siltation of reservoirs.</p> <p>Increasing substantially the forest/tree cover in the country through massive afforestation and social forestry programmes, especially on all denuded and degraded, and unproductive lands.</p> <p>Meeting the requirements of fuel wood, fodder, minor forest produce and small timber of the rural and tribal population.</p> <p>Increasing the productivity of forests to meet the essential national needs.</p> <p>Encouraging efficient utilization of forest produce and maximizing substitution of wood.</p> <p>Creating a massive people's movements involving women, for achieving these objectives and to minimize pressure on existing forest.</p>
National Policy on Education	1986; Revised 1992	<p>Recognizes the paramount need for creating consciousness of the environment and stipulates that it must permeate all ages and all sections of society, beginning with the child. Environmental consciousness should inform teaching in the schools and colleges. The policy seeks to integrate this aspect in the entire educational process.</p>
National Livestock Policy Perspective	1996	<p>(i) to transform the national and global market pull into an engine for generating sectoral and national competitive advantage, (ii) to enable small producers all over the country to participate in the process growth and globalization and (iii) to ensure the ecological sustainability of the growth of the livestock sector. The strategy includes providing credit support to landless to own bullocks under the anti-poverty programmes. It also promotes programmes like Joint Forest Management, community fodder farms and grazing land protection committees as a method of sustainable use of village common property resources.</p>
National Agricultural Policy	2000	<p>Seeks to promote technically sound, economically viable, environmentally non-degrading, and socially acceptable use of country's natural resources – land, water, and genetic endowment – to promote sustainable development of agriculture. The policy particularly emphasizes integrated and holistic development of rain fed areas by conservation of rain water by vegetative measures on watershed basis and augmentation of biomass production, for maintenance of ecological balance and for higher income generation through agro and farm forestry with the involvement of the watershed community and by evolving technology, extension and credit support packages. It, inter alia,</p>

Policy	Year	Objectives
		indicates the broad policy framework for management of grazing land for increasing availability of animal feed and fodder, promoting use of unutilized wastelands for agriculture and afforestation, reclamation of degraded and fallow lands as well as problem soils for optimization of their productive use; generation and transfer of technology; improving input use efficiency; pooling and evaluating traditional practices, knowledge and wisdom; promoting investments in agriculture, strengthening institutional infrastructure, ensuring better risk management and introducing management reforms, to achieve the objectives.
National Environmental Policy	2006	Gives impetus to enhancing biodiversity conservation in productive landscapes
National Biodiversity Action Plan	2008	Gives importance to augmentation of natural resource base and their sustainable utilization to ensure inter and intra generation equity Focuses on integrating biodiversity conservation issues to policies, programmes and projects for social and economic development Provide importance to assess vulnerability to climate change and adaptation.
National Action Plan for Climate Change	2008	National action plan for climate change emphasizes protection of poor and vulnerable communities through sustainable use that are sensitive to climate change Implementation of programmes through unique linkages involving civil society and local government institutions through public-private partnerships. Promotes deploying appropriate technologies for adaptation and mitigation of green house gas emissions
State Forest Policy	2005	Preference to environmental protection and increase in employment/rise in income opportunities of local community over generation of revenue from forest in the earlier policy. Preference to development of participatory approach over contractual system of working in the earlier forest policy. More emphasis to non-timber forest products including medicinal plants product with upgradation and value addition. Strengthening forest protection system, adoption of biodiversity conservation, information technology, promotion of people-forestry in non forest areas and adoption of non conventional energy sources. Development of Forest committees and weaker section of the society especially women has been given more support. Forest villages to be converted into revenue villages. Encouragement to forest based industries and simplification of process for exploitation, transportation and trade of trees standing on private land. Wild life protection and conservation is given more weight and system of compensating damage to agricultural crop by wild animals. Development of ecotourism sector. Therefore, the linkage between global commitments with national and regional policies is clearly emphasized. The proposed project also envisages the continuance of these commitments.
JFM Resolution under the State Forest Policy		The Government of Madhya Pradesh issued the first resolution in 1991, with revisions made in 1995, 2000 and 2001. The Resolution makes provision for the formation of Committees, with specified roles and responsibilities, with in a radius of 5 km from the periphery of forest to enhance community participation ion forest management.

#### 1.5.4 Baseline programs related to management of forests and watersheds

29. The State Government has a number of on-going large scale programs/ schemes aimed at promoting sustainable forest management, integrated natural resource management, watershed management, agriculture, and social development in remote, rural/ tribal areas of the State. The initiatives

are a direct subsidy to the remote regions of the project districts; most of the beneficiaries are typically small producers on rain-fed lands, located in areas targeted for pro-poor growth. The emphasis is on various poor micro-regions throughout the four project districts, comprising blocks and villages classified as extremely poor, and predominantly settled by indigenous communities.

30. These different initiatives now form part of the integrated community based strategy under the State Development Plan. The State Development Plan is the principal instrument for natural resource, agricultural and rural development in the State, with an estimated annual budget exceeding US\$1 billion. The integrated community based strategy directly responds to the need for sustainable upliftment of the rural/ tribal society and economy and aims to increase employment and incomes of rural and tribal communities through increased production and productivity primarily in the natural resource, agriculture and livestock sectors. The principal components of the strategy include rehabilitation and management of natural resources, technological innovation, the capitalization of rural production units, the integration of rural pro-poor communities and the development of the human capital of rural and tribal stakeholders. These are complemented by programs of research and technology transfer, agricultural and food security, bio/non-bio resource promotion and information systems for decision making at the community level.

31. *Forest management:* The growing demand for forest-based resources has increased the pressure on various natural ecosystems and threatened its unique biodiversity balance. The local community's unsustainable use of natural resource and illicit felling of forest, forest land conversion and unsustainable use of common property resources have led to the loss of naturally existing forest lands that are critical to watershed protection. These negative human-induced impacts have made the proactive development, management and protection of forest resources into a high priority of the government.

32. At the national level, since the 1990s, the government has been trying to bring about historical and fundamental changes in India's forestry sector by promoting community participation in forest management through the Joint Forest Management Program (JFM). Involvement of rural communities living close to forests in the protection and management of forest resources is enshrined in the National Forest Policy 1988. The translation of the policy found expression in the resolution of Government of India, Ministry of Environment and Forests, issued in June 1990 in which it is envisaged that local communities will be entitled to sharing of usufructs in a manner specified by the concerned State Forest Departments. This led to the initiation of Joint Forest Management (JFM) program. Madhya Pradesh is a pioneering state in implementing this program. The Government of Madhya Pradesh issued the first resolution in this regard in 1991. Learning from experience, the State Government revised the JFM resolution in 1995, 2000 and 2001. The Government Resolution makes provision for the formation of Village level Committees, with specified roles and responsibilities, with in a radius of 5 km from the periphery of forest. Studies have shown a positive impact of JFM on the regeneration of the forests, an improvement in the socio-economic conditions of rural communities as well as their relationships with the forest department. However, in some cases, low participation in JFM initiatives have also emerged because of lack of awareness among people at village level..

33. *Watershed management:* The State Department for Rural Development has taken micro-watersheds as the territorial intervention unit for planning and implementing activities under its Rajiv Gandhi Mission for Watershed Management (RGMWM) program. Since 1997, the RGMWM has promoted rural development, natural resource conservation and management, and poverty reduction in different micro-watersheds of the State. The overall goal is a significant reduction in poverty, improved livelihoods and better access to water resources among the poorest indigenous and non-indigenous groups in rural communities by improving the depleting water resources and its related impacts. This is achieved through various natural resource management based initiatives like the improved soil and water conservation activities that have a direct impact on soil moisture content and the water table of the area in turn enhancing regeneration of vegetative cover. (The table below summarizes the main baseline forest and watershed management programs.)

**Table 9. Baseline programs for management of forests and watersheds**

Program	Department	Objectives	Link with current project
Joint Forest Management (JFM) program	Madhya Pradesh Forest Department (MPFD)	This program is in line with the Joint Forest Management Resolution which requires that rural communities living close to forests be involved in the protection and management of forest resources as a participatory process. To realize this, the JFM program has put in place a governance system at the village level (Joint Forest Management Committees <sup>44</sup> ). A total of about 60,000 sq. km of forest area is under JFM, which is about 63% of the total forest area of the State. <sup>45</sup> The program has prepared micro-plans based on the views and aspirations of the villagers. The State Government has approved a JFM manual, which includes detailed instructions on constitution of committees, preparation of micro plan and account keeping. The program has also imparted training to the members of JFM Committees (Orientation module, Micro-planning module and Accounts module).	The project interventions have planned to identify the JFMC's of each village for imparting the planned activities by promoting the respective JFMC's as the CBO's at the district level.
Japan Social Development Fund Grant For Capacity Building For Community Forest Management (JSDF Project)	MPFD	This is a pilot project with the objectives of imparting community to community training and capacity building on Financial, Administrative and Technical skills related to forestry issues; (Component 'A'), Building Capacity and improving Co-ordination among strategic Partners (Component 'B'); to strengthen the Community Forest Management by way of capacity building in Small and Medium sized Enterprises (SME) Development and to provide sub grants to some Joint Forest Management Committees to run SME business plan (Component 'C').	The community to community trainers groups formed through CB initiatives under the JSDF project will play the role of master trainers for CB needs of JFMC members under the UNDP project.
Annual and Five-year Forest Development Plans of the Forest Department	MPFD	Protection, Regeneration and Rehabilitation depending upon the requirements of the site for treatment as envisaged in the working plan prepared for the particular area. Protection is extended to ecologically fragile areas which are prone to rapid degradation due to erosion and biotic pressures. Regeneration is prescribed to forest areas with cover more than 40 percent and is productive stands <sup>46</sup> . The activity consists of regenerating the area after harvesting and is usually achieved by natural assistance extended to area by protecting it from grazing and fire or by artificial regeneration where soil is good in open areas to support planted saplings. Rehabilitation is achieved by extending protection to areas with less than 40 percent forest cover and allowing previous root stock to take over.	The working plan information of all the four project districts have been integrated to support and plan the project design activities from rehabilitation of the degraded bamboo forests to community based energy and fodder plantations on the forest lands etc.

<sup>44</sup> There are 3 kinds of committees – Forest Protection Committees (FPC) for protection of well-stocked forests; Village Forest Committees (VFC) for rehabilitating the degraded forest areas; and Eco-development Committees (EDC) in and around Protected Areas (PAs) with a view to ensure biodiversity conservation in National Parks and Sanctuaries.

<sup>45</sup> [www.forest.mp.gov.in/jointforestmanagement.html](http://www.forest.mp.gov.in/jointforestmanagement.html)

<sup>46</sup> [www.forest.mp.gov.in/developmentscheme.html](http://www.forest.mp.gov.in/developmentscheme.html)

Program	Department	Objectives	Link with current project
Rajiv Gandhi Mission for Watershed Management (RGMWM) program	Department for Rural Development	Specific objectives include: (i) strengthening human and social resources in poor rural communities; (ii) improvements in soil, water and vegetation conservation and management using the territorial definition of the micro-watershed as the basic intervention unit; (iii) increased income levels for beneficiaries' families through improvements in the production and marketing of agrarian produce, livestock and micro-enterprise products, achieved in an economically and environmentally sustainable way; and (iv) strengthening of capacity for participatory planning and implementation of local development and natural resource conservation actions, and increasing institutional coordination capacity at all levels of the government (district/ state/ national).	The watershed interventions planned to be carried out under the project will be in accordance with the RGWM initiatives at the district level. The project villages identified for watershed activities will be integrated further by RGWM for other relevant activities.
Various activities of the Animal Husbandry/ Veterinary, Agriculture, and Horticulture Departments aimed at providing sectoral extension services to farmers in project districts.			

34. While the government has taken positive steps towards sustainable management of forests and watersheds, it still faces many challenges to realizing sustainable management of forest and natural resources in the ecologically critical landscapes of Betul, Chhindwara, Sidhi and Umaria. There is a solid legislative and policy foundation in place for addressing drivers of land and ecosystem degradation. Likewise, initial steps have been taken to translate this framework into action through the above described programs and projects. However, on-the-ground impacts in terms of reversing direct drivers of land and ecosystem degradation needs more community participation and time to realize as a sustainable effort.

35. In terms of forest management, the government has initiated the forming of Joint Forest Management Committees (JFMCs) in many of the villages, allotting certain forest areas to these committees to realize sustainable, community-based forest management. However, micro plans are yet to be prepared in some cases. Where the micro plans have been prepared, still some improvement is required for its implementation since they are prepared with the community's participation and consent and the local community is not mature to conceive the management of forest resources as desired technically. The JFMC's where they have been formed, needs more capacity building and awareness sensitization as an institutional mechanism for effectively fulfilling their forest protection role and functional participation in conservation and protection of the forests.

36. In terms of agriculture, lot of efforts has been made to promote soil and water conservation on a watershed basis (such as those through the RGMWM). However, often, the soil and water conservation structures are not sustainable "owned" by the communities after the withdrawal strategy and fall into disrepair. Effective social mobilization in support of sustainable management of micro/ milli watersheds has not been adequate in many instances. Animal husbandry programs recently initiated in the past decade or so are often geared mostly in replacing local breeds with breeds that are not as well-suited to local environmental conditions. The non-nationalized NTFP collection as a local livelihood practice is still unorganized. The trade involves the role of middle men who share most of the monetary benefits. Current NTFP-based activities are under the process of strategic reforms through the State Minor Forest Produce Federation (MFPF) and as a result the potential for capturing benefits from NTFP collection at the village level is yet to be realized.

37. In the absence of a large and coordinated intervention, with incremental support from GEF, that builds on the vast experiences in integrated management of natural resources in the State, the livelihood system being practiced in forest fringe villages (5 km from forest), which consists of (a) low productivity, rain fed, extensive agriculture; (b) uncontrolled grazing of livestock in forests; and (c) unsustainable exploitation of NTFPs, will continue to undermine ecosystem services. Given anthropogenic pressures

and rapidly degrading ecosystems, land and forests will increasingly be unable to meet food, fuel and water needs of the tribal population (provisioning services); the ability of the forests of the central and eastern highlands to regulate local climate and water will be compromised with adverse impacts on five principal river systems of India (regulating services); tribal communities' cultural and spiritual needs that are so critically dependent on local forests will be affected (cultural services); and, finally, the degrading ecosystem will result in a vicious cycle further undermining primary production and soil formation (supporting services). This will be further compounded by the effects of climate change and variability that are increasingly threatening traditional ways of life. In order to preserve the range of ecosystem services important for local livelihoods as well as for the global environment, the long-term solution is to support and promote sustainable rural livelihoods, which balance socio-economic needs with environmental benefits at the community-level. Furthermore, each component of the livelihood system should be adapted to increase its resilience to climate change and variation.

### *1.6 Barriers to sustainable land and ecosystem management*

38. The main barriers to realizing this vision can be clustered as follows: (a) institutional and governance barriers; (b) economic and financial barriers; (c) technology and knowledge barriers.

#### 1.6.1 Institutional barriers

39. Weaknesses in the institutional system act as a barrier to sustainable land and ecosystem management. Sectoral approaches to natural resource management and poverty alleviation makes it difficult to promote integrated natural resource planning at the village level. Programs and projects tend to target one aspect of the livelihood system. What is needed is an inter-sectoral approach to improve sustainability of all components of the livelihood system, as these are all interdependent, so as to address the drivers of ecosystem degradation.

40. Within sectoral departments the technical capacities for promoting sustainable management of land resources are limited. Sectoral departments (agriculture, animal husbandry, rural development) need to be sensitized to the importance of integrating sustainable use of biodiversity resources into the future development of these sectors, given the adverse impacts on ecosystem services and livelihoods in the long-term. Sectoral department staff needs the methods and tools for achieving this mainstreaming. Furthermore, there is a need to further build the knowledge and skills of sectoral institutions to take impacts of climate change into consideration in adversely affected sectors, such as agriculture, forestry, pasture and water resources management.

41. Despite efforts in recent years towards more decentralized government in general, and joint management of forests with communities more specifically, emerging institutional, legal and policy reforms still need to be fully implemented on the ground. There is a need and opportunity to continue to develop the capacity of local government institutions to implement the national joint forest management strategy by addressing their new role of facilitating and supporting improved management of natural resources by local government and community based institutions (Joint Forest Management Committees).

42. At the village level, the JFMCs often have inadequate management capacity as well as capacity to mobilize broad-based support from villagers. They also have limited access to technology and knowledge that would enable them to more effectively fulfill their roles. The committees need to become more representative of the average population. At present, the involvement of the local community in participatory decision making especially regarding the use of available natural resources in and around their villages is not adequate. The capacity of these committees needs to be strengthened so that they are perceived by the community at large as an effective mechanism for voicing community feedback on land use alternatives, for resolving conflicts on rights to grazing and forest resource use, and for ensuring equitable benefit-sharing from initiatives to revive village common lands for sustainable natural resource use such as bamboo, fodder, pasture development. If they are seen as more effective, there will be more

incentive to shift to more sustainable and climate resilient uses of land, water, forest and biodiversity resources.

### 1.6.2 Economic and financial barriers

43. Villagers lack the economic and financial incentives to switch from short-term resource exploitation to long-term guardianship. This is because non nationalized NTFP (other than Sal Seeds, Tendu Patta and Kullu Gum) collection is not regulated, and as a result collectors compete against each other resorting to harmful extraction techniques that undermine future resource productivity. In addition, collectors lack the skills and capacities for adding value to the raw materials they harvest, thus constraining their ability to secure and retain a greater share of economic benefits from resource extraction at the village-level. In general, villagers lack access to credit that can enable them to invest not only in NTFP enterprises but also in more time and resource intensive activities that increase sustainability of agricultural and livestock systems (e.g., soil and water conservation activities, stall feeding livestock).

### 1.6.3 Technology and knowledge barriers

44. Another significant barrier to promoting sustainable land use and livelihood systems is the lack of supporting knowledge and technologies for uptake by the villagers. This ranges from knowledge on sustainable harvest rates and techniques for different NTFPs, skills for establishing viable NTFP-based enterprises, alternative options that can reduce dependence on forests for fuel wood (e.g., more efficient stoves/*chullahs*, solar cookers), improved irrigation systems and soil and water conservation practices, to knowledge of climate-resilient techniques that can be integrated into further development of natural resource sectors.

## *1.7 Stakeholder analysis*

45. The project's primary beneficiaries would be landless and smallholder agrarian farmers living in the poorest of poor tribal areas, including men, women, rural youth, and community leaders. During the project development phase a detailed assessment was conducted of the population in the project districts. The study covered selected villages within the four project districts of Sidhi, Umaria, Chhindwara and Betul. An exhaustive list of 629 villages spread over all the four districts (Sidhi – 98; Umaria – 153; Chhindwara- 189; and Betul – 189) was made available by the project office. As per the selection criteria of the studies undertaken for the PDF-B phase, 30% of the villages were surveyed, adopting a selection based on simple random sampling technique (i.e., picking every third village from the list already arranged alphabetically). The villages thus selected were critically examined against the following criteria and parameters: the village is in the vicinity of degraded forest area ( $\pm$  5 kms); the village has degraded land (forest/ non forest); the village has access to NTFP; the village has scope for watershed interventions and its impact. In each district, 5 control villages were also selected. These control villages were relatively more developed with respect to Watershed Management, Natural Resources Management / other livelihood options, and such. The total sample size for the study thus comprised 200 villages.

46. Based on this study, an overwhelming share of the population (64%) in the project districts are from Scheduled Tribes; nationally, Scheduled Tribes comprise 8% of the population as per the 2001 census. The percentage of families falling below the poverty line (also referred to as BPL families) is 38.5%, which is considerably high when considered against the national average of 22%. Literacy levels stand at 39.24%, as against the national average of 64.8%.

47. Roughly 26% of the population falls in the landless category, 30% are classified as marginal farmers, and well-off farmers comprise only 3.9% of the population. Migration from villages to seek supplementary earning is as high as 6.6%. Therefore, provision of employment and income generating

activities through micro-enterprises could form an important part of a diversified livelihood strategy in many cases.

48. Women outnumber men in the sample. However, women lack education, awareness and depend on men for most of the activities. They contribute to household work, agriculture and as casual labor, contributing 25 to 30% of family income. In the project districts only 18.75% women are literate.

49. Other key stakeholders include local NGOs, service cooperatives and local associations that are either already working as partners under various initiatives or that could be involved as partners in future initiatives.

50. State-level stakeholders include State Government institutions (particularly Agriculture, Horticulture, Animal Husbandry, Forest, and Rural Development Departments) and NGOs (the State Associations of Agricultural Workers, the Cooperative Associations of livelihood projects). For further details on stakeholder involvement in project preparation and implementation see [Part D4](#).

## **PART A.2: Project Strategy**

51. Based on an analysis of the baseline situation and consultations with the project stakeholders described above, the project strategy is to take an integrated approach to maintaining ecosystem services in the four Project Districts of Madhya Pradesh, wherein project actions are integrated along the following 4 dimensions:

- (i) Taking an integrated approach to promoting the three global environmental objectives of sustainable land management, mainstreaming sustainable use of biodiversity in livelihood sectors, building resilience to climate change
- (ii) Balancing ecological needs with livelihood needs
- (iii) Strengthening the linkages between on-the-ground investments with upstream institutional strengthening and policy change
- (iv) Providing a spatial continuum of interventions from the village-level, through the State level, to the national level (impact at the national level will be realized by feeding project experiences into the overall SLEM Partnership being led at the national level)

52. In order to optimize the use of limited resources, the project will focus on removing barriers to promoting integrated ecosystem management that balance ecological and livelihood needs and provides a broader range of livelihood options for the tribal/rural poor, while maintaining critical ecosystem services. Further, demonstration activities will be targeted in four districts of Madhya Pradesh organized on the basis of 4 micro-catchments/ watersheds. In these four micro-catchments, the project will strengthen the capacity of poor tribal and rural residents living within 5 kilometers of forests, and village leaders to take concerted action on priority community-based initiatives for the use of their local natural resources, and demonstrate the income-generating potential of sustainable land, forestry, and agricultural practices. The strategy is to demonstrate how (i) unsustainable dependency on the forests and pasturelands can be reduced; (ii) ecosystem services can be sustained and agricultural productivity increased through sustainable practices so as to increase long-term food security and reduce poverty; and (iii) increased participation and empowerment of women and vulnerable and marginalized groups through a greater sensitivity to the participation constraints of these social groups can lead to more sustainable livelihood systems in the long term.

### *2.1 Conformity with GEF Policy*

53. The proposed project is being developed under the Sustainable Land and Ecosystem Management Country Partnership Program (henceforth referred to as the SLEM Program), which was approved by the GEF Council in 2007. It will provide valuable lessons and experiences with promoting sustainable land and ecosystem management in the Central Highlands biogeographic zone of India that is driven by community-based decision-making.



54. The project is aligned with GEF policies and priorities in three focal areas: Land Degradation, Biodiversity, and Adaptation to Climate Change.

- **Land Degradation:** The project objectives fit well with SP 1: Supporting Sustainable Agriculture and Rangeland Management and SP 2: Supporting Sustainable Forest Management in Production Landscapes under the land degradation focal area. It is consistent with SO 1 to develop an enabling environment that will place Sustainable Land Management (SLM) in the mainstream of development policy and practices at the regional, national, and local levels in India. The project will contribute to mainstreaming of land degradation concerns into national level policies and regulatory framework through the SLEM partnership.
- **Biodiversity Conservation:** The project will address the regulatory and institutional constraints to mainstreaming of biodiversity conservation into livelihood activities in the wider agricultural production landscape surrounding protected areas thereby contributing to the biodiversity focal area's SP 4 on Strengthening the Policy and Regulatory Framework for Mainstreaming Biodiversity in productive sectors and landscapes.
- **Climate Change Adaptation:** Through its activities on developing adaptive capacity, the project is also relevant to the Strategic Priority on Adaptation and will contribute to enhanced resilience of land and forest ecosystems and reduced vulnerability of local communities to climate change, including variability.

## 2.2 Project Goal, Objective, Outcomes and Outputs

55. The project will contribute to the achievement of the following objective of the SLEM Programme: To promote sustainable land management and use of biodiversity as well as maintain the capacity of ecosystems to deliver goods and services [benefitting local livelihoods] while taking account of climate change. The project will contribute to this Programme objective (which becomes the project-level goal) along with the other projects being developed under the Sustainable Land and Ecosystem Management Programme.

56. The project objective is: To promote community-driven sustainable land and ecosystem management at the landscape level through integration of watershed management, joint forest management, and sustainable livelihoods development so as to balance ecological and livelihood needs. The project objective will be achieved through the following outcomes.

- Outcome 1: Creation of an enabling environment for climate-resilient, sustainable land and ecosystem management
- Outcome 2: Community-driven, climate-resilient approaches for sustainable land and ecosystem management are demonstrated in 4 micro-catchments
- Outcome 3: Capacities for adaptive management, learning and replication of project lessons are developed

### **Outcome 1: Creation of an enabling environment for climate-resilient, sustainable land and ecosystem management**

57. The objective of this project outcome is to ensure that sectoral policies on management of forests, watershed, agriculture, livestock and tribal welfare take into account climate-resilient, sustainable land and ecosystem management principles as fundamental criteria for realizing policy objectives. Further, capacities need to be developed so that policy modifications can be effectively implemented.

#### *Output 1.1 State-level policies on forest, agriculture, animal husbandry, watershed management, tribal welfare reflect climate-resilient, sustainable land and ecosystem management principles*

58. Studies will be undertaken to review relevant state sectoral policies governing the management of natural resources (including forests, water and land resources) and recommend climate-resilient, SLM

guidelines that should be integrated. A highly consultative approach will be employed in developing recommendations, involving inputs from government, non-government, and research institutes.

59. To ensure that biodiversity conservation objectives are integrated into the management of forests, agriculture, pasture and other community lands, this output will identify the potential adverse impacts of activities in these sectors on globally significant biodiversity in the targeted landscape. Recommendations will be provided on modifying sector development plans and strategies to minimize the adverse impacts on biodiversity and capitalize on synergies. The use of Strategic Environmental Assessments as a tool to realize this mainstreaming objective will be considered in consultation with biodiversity experts and sector staff.

60. A key bottleneck to integrating the climate change threat has been the lack of knowledge and proper understanding of climate change impacts on the local ecosystem and how current land use practices affect this relationship. Currently, land use decisions do not employ climate change scenario planning as part of the decision-making and planning exercise. Through this output, the project will introduce climate change scenario planning as part of the routine management of forests, agriculture, pasture and other community lands. Capacity to synthesize existing climate data patterns to understand climate change impact will be developed within the State Forest Department and also among district, block and village level stakeholders. As current data on climate change are only available at national level, this will involve building of linkages between State-level institutions and the National Ministry of Environment, in particular office responsible for Second National Communication, including a training programme for officials and JFMCs.

*Output 1.2 Community-based organizations and government staff is trained in promoting community-driven, climate-resilient, sustainable land and ecosystem management*

61. Under the [Joint Forest Management Resolution](#) of the Government of India, local communities are entitled to sharing of usufructs in a manner specified by the concerned State Forest Departments, and Village Forest Committees (VFC), among other committees, have been established for joint management of forest areas, within a radius of 5 km from the periphery of forests. An equally critical part of the equation for ensuring that these committees can effectively carry out their role are government line department staff at the local level (particularly at the District and Block levels), as well as representatives of the elected bodies at village, block and district levels<sup>11</sup> responsible for administration of economic development and social justice issues.

62. The project will focus on developing the capacity of these existing committees<sup>12</sup> to take action on priority community-based initiatives for sustainable use of local natural resources, and demonstrate the associated income-generating potential. The aim is to enable forest committees to emerge as a village-level community-based organization (CBO) that prioritizes initiatives and provides oversight for benefit sharing mechanisms between the State Forest Department and under-privileged stakeholders. Such ownership and benefit-sharing, in turn, will help reduce over-exploitation of common property natural resources, and provide stronger incentives for communities to manage their forest, pastoral and agricultural resources in a sustainable manner. In addition, the project will aim for adequate representation of women in decision-making positions within the targeted JFMCs. While the primary target will be JFMC representatives, capacity building efforts will also include selected local representatives of government line departments (forest, water resources, agriculture, veterinary/animal husbandry, tribal) and representatives of elected bodies of local administration (village, block and district levels).

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<sup>11</sup> i.e., the Gram Panchayats (Village level), Panchayat Samitis (Block level), and Zilla Parishads (District level).

<sup>12</sup> Committees are comprised of a representative from each family in the village.

63. Capacity building efforts will be designed to sensitize and improve the capacity of participants on issues related to relevant government policies that provide the framework for undertaking activities geared to sustainable use of forest and land resources, win-win options for sustainable land and ecosystem management that can be applied in and around the target villages, project planning and management, community mobilization, conflict resolution, understanding local variations in weather patterns and related vulnerability to climate change, and such.

64. A training-of-trainers approach will be used to train approximately 2,000 members of JFMCs, covering JFMCs from each target village in the 4 districts. The objective is to develop a village-level pool of human resource that has the skills and ability to impart further community-based training sessions. The training will also be used as a basis for surveying and gauging community awareness of increasing variations in local weather patterns, and what measures are being taken to counteract such variations. Experience from the JSDF project has shown that such community-level experts are more capable of relating to community needs; ongoing training of these community experts will ensure that their technical skills are periodically updated. Knowledge, skill transfer and an outreach process amongst the community stakeholders by the community itself is the foundation of this project activity. Community-to-community transfer of knowledge, skills, and experience will also be facilitated through this capacity building activity. This output is expected to produce the following impacts:

- 400 JFMC members from the four project districts trained to become community trainers (100 JFMCs will be taken, 4 trained members will become master trainers, out of the 20 JFMC members selected as trainee participants from each of the 100 JFMCs)
- At least 10% of the trainers are women from the identified villages
- Training material on specific local issues in local language is developed for training local communities in the four project districts
- At least 25% of the Community-to-Community trainers involved locally at the block level for community based training in relevant local issues
- At least 5% of Community-to-Community trainers gain recognition by other development agencies as resource persons for such pro-community activities

**Outcome 2: Community-driven, climate-resilient approaches for sustainable land and ecosystem management are demonstrated in 4 micro-catchments**

65. This outcome will address land degradation in four selected micro watersheds/ micro-catchments in order to ensure continued ecosystem functions, reduce risks to globally significant environmental assets and help sustain rural livelihoods. This will be accomplished through the promotion of sustainable land management technology packages and practices that have local and global benefits. The four micro-catchments will cover approximately 3,000 hectares of forest/ non-forest land, and 14,500 hectares of degraded bamboo areas within forest land. Approximately 100 villages are to be covered by the demonstrations.

66. In these micro-catchments, the project will demonstrate a multi-sectoral approach to sustainable management and use of natural resources. In order to address all components of the local livelihood system, this will include forest and pasture management with crop and indigenous livestock production, as well as soil and water conservation as an integrated system. Further, given the important role of rain-fed agriculture in the livelihood system, and its vulnerability to climate change, including variability, resource management at the watershed level will take into account climate change, including variability, to enhance adaptive capacity. All demonstration activities aimed at promoting land stabilization, resource rehabilitation, and sustainable resource use will be designed and implemented at the watershed level. Undertaking work at the watershed level will facilitate the identification and convergence with other efforts taking place within the identified watershed that can be mobilized to achieve the project objective.

67. The planning and management of natural resource use will follow a participatory approach directly engaging communities through their community based organizations (JFMCs) in decision making and

prioritization of potential sustainable land management (SLM) investments at the village level. The purpose is to ensure that the management of natural resources (grazing and agricultural land, water, forest) in target villages is led by representative community bodies in accordance with sustainable land and ecosystem management principles that reduce degradation pressures. The current unsustainable patterns of land use in the project districts have been both cause and consequence of the deteriorating ecological conditions and the livelihoods crisis among tribal and rural communities living in and around forest areas. Communities living in and around forest areas need to be involved, through legitimate community-based organizations, in determining how best to modify their livelihood system to meet their needs as well as support ecosystem health. Further, vulnerabilities to climate change also need to be taken into account in this process. This will be done through community based monitoring of variations in local weather together with documenting any related changes in farming and natural resource management practices. The outputs of this process will be used to (1) better interpret the results of national climate change modeling and forecasting efforts as they relate to Madhya Pradesh; (2) inform the development of the Self Help Group demonstration activities (see below).

68. It is through demonstrating the feasibility and associated benefits of adopting such an approach in different clusters of villages that the project hopes to motivate further uptake and replication. There is a need to demonstrate win-win options that both improve livelihoods and ecosystem health such as, reducing dependence on the forest for firewood, sustaining agriculture-dependent livelihoods by improving soil and water conservation within catchment areas, and imaginatively moving in the direction of non-agricultural livelihoods. In terms of the latter, Madhya Pradesh presents unique possibilities of developing forest-based livelihoods, especially if value-addition avenues are explored and firm market linkages are established. Through enhanced benefit-sharing with communities, they can be more actively engaged in maintaining ecosystem health and resilience.

69. Demonstration activities will be undertaken in selected clusters of villages in the 4 project districts, and will include marginal and small farming households as well as landless farming households. During the project development phase a list of potential criteria for [selection of villages](#) has been prepared and this will be used in the inception phase to identify approximately 100 villages where demonstrations are to take place. The mechanism for undertaking demonstration activities under this outcome will be through self-help groups (SHGs) established under the institutional umbrella of the Joint Forest Management Committees (JFMCs), with each SHG representing some common interest (e.g., SHG for undertaking bamboo rehabilitation, SHG for processing bamboo into baskets, SHG for other NTFPs, SHG for improvements in rain-fed agriculture, water user groups, and such). Key outputs and indicative activities to be pursued under this outcome are described below.

*Output 2.1 Plans for rehabilitation and sustainable management of degraded bamboo areas in forest lands near target villages are developed and implemented.*

70. The rehabilitation and co-management of degraded bamboo forest areas offers many opportunities for recovering provisioning services of the local ecosystem thus adding to sustained livelihood security and for securing supporting services such as better soil formation. Through this output, the project plans to enhance the role of bamboo forest areas in maintaining (a) connectivity between relatively undisturbed forest tracts that provide refuge for globally significant biodiversity and (b) the livelihood system of about 700 families (or 100 Self Help Groups) in the four project districts<sup>13</sup>. The project will work with the tribal/rural landless and marginal land holding families who have significant dependency on the surrounding forest areas for socio-economic needs. The aim is to demonstrate a model for addressing poverty

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<sup>13</sup> This is estimated on the following basis: in each of the 100 villages, 7-10 pro-poor families will be selected to form Self-Help Groups (SHGs), under the umbrella of the JFMC of that village. On average, this amounts to 100 SHGs or 700 families. A needs-based approach will be adopted in selection.

alleviation and environmental protection by engaging needy families in sustainable management of bamboo areas found in forest lands in and around their villages, and sustainable harvest of the resource.

71. Each pro-poor family will be allocated approximately 20 hectares of degraded bamboo forest area in and around their villages for rehabilitation and sustainable co-management, targeting 5 hectares per year over the four year time frame of the project. This amounts to coverage of approximately 14,500 hectares by 700 families.

72. The SHGs will be provided with financial and technical assistance for sustainable management of degraded bamboo areas, as well as for sustainable harvesting. These SHGs will benefit in the short-term from an additional source of income for rehabilitation services rendered, broadening the income base of these families. Over the long term, sustainable co-management practices undertaken by the SHGs would regenerate the local bamboo forest resources creating opportunities for families to access the resource for income generation, as per the existing JFM resolution and government order of Madhya Pradesh. This will help diversify sources of livelihood in the short and long term, in turn, having a beneficial regional impact by reducing distress migration under socio-economic duress.

73. Target families will develop their skills for managing and protecting degraded bamboo forest areas (survey and demarcation, cleaning of clumps, soil work around clumps, soil moisture conservation through check dams/ contour trench, fire protection, watch and ward), and for sustainably harvesting bamboo<sup>14</sup>. This output is expected to produce the following impacts:

- Ecological impact: 14,500 hectares of degraded bamboo forest land in the four project districts is rehabilitated in collaboration with the local community to produce the following environmental benefits:

Rejuvenation of micro ecological and biological services over the long term by enhancing connectivity between relatively undisturbed forest tracts that provide refuge for globally significant biodiversity

Rehabilitation would help curtail the negative impact of land degradation processes such as high sedimentation rate, and assist in better recharge of ground water, improvements in soil fertility of nearby forest and non-forest lands, restoration of the capacity of bamboo vegetation to provide a refuge for local biodiversity.

Enhanced carbon sequestration as healthy bamboo stands are estimated to absorb at least 4 tons of carbon annually. Therefore, 14,500 ha of degraded bamboo forest land when treated would help in sequestration of 58000 tons of carbon annually.

- Livelihood impact: Community-led sustainable management of degraded bamboo areas would lead to a good harvest of bamboo culms<sup>15</sup>. It is expected that clumps would improve from 15-20 culms (baseline scenario) to 25-35. Therefore, it is estimated conservatively that by the end of the project period degraded bamboo areas would generate at least 1.5 to 2 million bamboo culms<sup>16</sup>. Approximately 0.3 to 0.4 million bamboos will be obtained annually, which can be used by the community as fodder for livestock and as an income-generating resource:
- Enhanced ability to meet fodder needs: Regeneration of bamboo would promote healthy growth of foliage. It is estimated that through regeneration the project could deliver about 3-5 tons of biomass<sup>17</sup> per hectare, which amounts to a conservative estimate of about 40,000 to 70,000 tons of biomass from 14,500 hectares for meeting the fodder needs of livestock. This will be especially important in the lean season when dependency on forests for uncontrolled grazing increases immensely. It is estimated that the use of bamboo biomass as fodder would reduce the

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<sup>14</sup> A logical next step would be to provide support for added-value processing of the regenerated bamboo resource. Given the time frame of the project, both regeneration and added-value processing cannot be achieved within 4 years. This will be recommended as a follow-on activity to be continued by the State Government post-project.

<sup>15</sup> Single bamboo stand

<sup>16</sup> Average estimated on the basis of rehabilitation of 14,500 hectares of degraded bamboo forest.

<sup>17</sup> Estimate based on an FAO Global Resources assessment study (FAO/INBAR, Bamboo thematic study report 2000) on average bamboo mass per hectare depending on local ecological and regeneration capabilities and natural conditions.

present critical pressure on the regional/ local forests from uncontrolled grazing by at least 20%. This is expected to save at least 10,000 hectares of forest land currently under severe pressure of uncontrolled cattle grazing. An estimated 100 trees<sup>18</sup> per hectare of forest land would be saved from uncontrolled grazing by the ever increasing livestock population.

- Income from sale of bamboo: It is estimated that by the project end the area would generate revenues of about INR 15 million through the sale of the bamboo culms (estimated at a nominal rate of INR 8.00 for 1.5 to 2.00 million culms of bamboo produced through community rehabilitation and protection). It is estimated that about 700 families in the 100 villages identified for the project activity would benefit collectively as end users of sustainably harvested bamboo. This will not only help with meeting socio-economic needs, but also help maintain, in the long run, the traditional skills of “Basod” families (families/ individuals whose livelihood for generations has depended on bamboo based product making and its sale).

74. In addition to the above immediate impacts, the project could also have further impacts on enhancing livelihoods, while also maintaining ecosystem services as follows. Following the successful demonstration of sustainable management and harvest of the local bamboo resource by the local pro-poor tribal communities, further support for added value processing and marketing of bamboo-based, eco-friendly products can be promoted as a continuation of the foundation laid by the project. Further, the successful promotion and implementation of community-led sustainable management of forests for enhanced carbon sequestration could provide a potential model for furthering the dual goals of sustainable community development and climate change mitigation espoused by the Clean Development Mechanism (CDM), and generating an additional (carbon) revenue stream for communities.

*Output 2.2 Plantations are established on degraded community and forest lands to improve the provisioning of ecosystem services to meet local fuelwood needs.*

75. Forests in the project area are under severe fragmentation pressure due to extraction of fuelwood to meet daily energy needs of surrounding villages. To reduce instances of illicit felling, and commercial exploitation by head loaders, 200 hectares of degraded forest and community land will be mobilized for fuelwood plantations (5 hectares for each of 40 village-level JFMCs in the project districts). These will be community-based models (led by JFMCs) of intensively co-managed, short rotation bio energy plantations grown on degraded, fallow, wasteland (forests as well as non-forest land) in and around approximately 40 villages in the four project districts. JFMCs will be entrusted with the responsibility of managing these plantations, and will be provided with expertise from the Forest Department, and research institutions.

76. The plantations will be developed so that they not only have no negative impact on biodiversity, but also directly contribute by providing connecting corridors of native vegetation between fragmented wildlife habitats. In addition, they will provide a renewable source of energy. Selection of a variety of local tree species will be guided by the following criteria: fast growing, native to the region, suitable to low rainfall areas, able to grow rapidly in higher rainfall areas.

77. The emphasis will be on short rotation times for fuelwood production to meet community energy requirements. Fuelwood species shown to have fast growth rates (around 10 - 15 tons per hectare per annum) would be planted. The Low Rainfall Energy Improvement Group (LREIG) will concentrate on species that have grown well in trials and plantations across dry land conditions of the project districts and can give high value wood for energy requirements.

78. Seedlings will be planted and maintained with the participation of 200 landless, destitute families, of which about 40% will be women. Plantations will be harvested to raise second rotation plantations.

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<sup>18</sup> This is the estimated ratio of tree cover per ha of natural forest land which is usually damaged due to the pressure of meeting grazing/ fodder requirements of livestock from surrounding villages.

The 200 hectares are expected to generate approximately 0.8 million INR from sale of fuelwood. A Participatory Benefit Sharing Agreement (PBSA) will be in place whereby participating families will receive at least 45% of the share of returns.

79. The main impacts of this output may be summarized as follows:

- 200 hectares of degraded lands<sup>19</sup> planted with fast growing tree species could sequester some 133,200 tons of CO<sub>2</sub> per annum<sup>20</sup>
- Mobilization of community based organizations (JFMCs) to form cooperatives for managing sustainable energy plantations on highly degraded land with 400-600 mm of rainfall<sup>21</sup>
- Diversification of income sources by generating demand for labor, providing other income-earning opportunities associated with goods and services required by such plantation activities; it is expected that about 15% of the existing head loaders in the respective villages will substitute their existing practice with income derived from plantations
- The energy plantations may deliver a withdrawal of at least 40% of the pressure on the surrounding forests of the four project district sites by the end of its implementation phase. Therefore, it is expected to give rise to a situation where at least the growing serial damage to the natural forests in those regions would be directly reduced. As a conservative estimate, the activity is expected to protect at least 1 to 1.5 million trees from damage.
- By reducing fuel wood extraction pressures in bamboo areas, degraded bamboo forests areas are expected to regenerate by at least 35% from their present state

*Output 2.3 Plantations are established on degraded community and forest lands to improve the provisioning of ecosystem services to meet local fodder needs.*

80. Another driver of degradation of forest and pasture lands is the increasing grazing pressures from a growing livestock population. Only 20% of community lands are estimated to be grassland, of which almost 80% has been encroached through land use change and/ or is degraded due to overgrazing<sup>22</sup>. As pastures are degraded, livestock is left to graze in forests. Government programs have been implemented in the last fifteen years to address these pressures. However, the emphasis has been on productivity enhancement approaches that promote conversion of native range to “exotic” grasses/ forbs (artificial pastures). A more appropriate strategy would be to support optimization of fodder production/ use through rotational or planned grazing systems.

81. Over approximately 200 hectares of degraded lands in the project districts, the project will promote revival of pasture lands through a number of low cost, durable, replicable, and cost-effective technologies that are adapted to the conditions prevailing in the project area. It will include support for improved planting stock and seeds, building on local knowledge and technologies as well as existing national/ international good practice. This will enable the management of community/forest lands for multiple goals: meeting fodder needs of livestock, curtailing degradation of fragile lands, biodiversity conservation, and carbon sequestration<sup>23</sup>.

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<sup>19</sup> Based on information collected under the PDF-B studies, this is less than 2% of the area currently sown with crops annually.

<sup>20</sup> 600-700 tons of CO<sub>2</sub> is estimated to be annually sequestered from 1 hectare of afforestation where fast growing tree species are planted in ideal ecological conditions (FAO estimation).

<sup>21</sup> This is the average rainfall pattern in the four project districts.

<sup>22</sup> For example, grass yield is less than 300 kg/ha.

<sup>23</sup> Grazing lands are estimated to contain 10-30% of the world's soil organic carbon (Schuman et al, 2002). Within rangeland grazing systems, soil carbon content responds to a wide range of management and environmental factors including grazing, fire, fertilization, soil erosion, and annual climate factors. Because rangelands are a significant repository for soil C and globally occupy a vast area, improved rangeland management strategies could greatly increase soil C sequestration as well as improving their productivity and other environmental benefits.

82. Selected JFMCs will be actively involved in the demonstrations. The project will help these JFMCs in mobilizing households into self-help groups for managing fodder plantation activities; identifying sites in consultation with the villagers, line agency and other specialists; and develop local capacity to manage the fodder plantations. A Participatory Benefit Sharing Agreement will be in place to ensure that communities benefit from the returns generated from better management of degraded common property pasture lands.

83. The economic and financial viability of the activity rests on the fact that current yields from degraded pasture lands are extremely low in the project area. Under the project, fodder yields would increase significantly due to improved inputs and system of rotational grazing. Annual incremental gross margins are estimated to increase by about INR 1,000 per household for fodder productivity investments, which is a significant increase over current household income levels (60% of families fall below the INR 1,500/ month poverty line). The project would also increase the average incomes of those above the poverty line, cushioning their vulnerability. The main impacts of this output may be summarized as follows:

- The average fodder yield of degraded land will be increased by 50–75%
- Of the forest areas facing pressure for livestock grazing and/ or fodder collection, at least 30–40% of this area faces decreased pressure
- Perennial vegetation cover will be increased by 25-40% on degraded lands
- Soil erosion is anticipated to decrease by 30–40%
- The average per capita income is expected to increase by at least 20% as a result of fodder plantations and its indirect benefits
- At least half the households where the project is operating directly benefit in some way from the fodder production component.

*Output 2.4 Small and Medium Enterprises (SMEs) based on sustainable harvest of other NTFPs are promoted*

84. Through this output the project will involve JFMC's in 100 villages in the development of business plans for SMEs that undertake value-added processing of various sustainably harvested biological resources. The focus will be on locally available resources that have been found to be viable during the project development phase such as *Amla*, *Bel*, medicinal and aromatic plants, *lac*, sustainable wild honey collection and processing, bamboo handicrafts and such. The SMEs are expected to augment year-round income of participating households, while also ensuring sustainable use of the resource.

85. As a means to further diversify local income sources, other SMEs that are not necessarily based on biological resources will also be explored, such as tailoring, animal husbandry, floriculture, hosiery, and community flour/ spice mills. The intention of the non-bio resource SME is to promote the interests of the community for such practices which indirectly may lessen the pressure on the local natural and forest resources, but this will be funded through co financing. However, Bio resource SME will be funded cent per cent by the project fund.

86. The 100 JFMCs to be involved in the development of the SME business plans (25 from each of the 4 project districts) will be identified through a consultative and evaluative process based on the following minimum criteria. Clustering of JFMCs will be considered, when this is found to be beneficial in terms of realizing economies of scale.

- Local availability and potential for sustainable harvest of NTFPs and/or medicinal and aromatic plant species that the local community is traditionally using for meeting socio-economic needs
- Interest of community groups in developing SMEs based on NTFPs



- Interest of community groups in developing other, non-NTFP based, SMEs such as hosiery, tailoring, community flour/spice mill, repair shop (electronic/ motor/ cycle) for supporting poor family groups to increase their house hold income
- Ability of the JFMCs to handle the various integrated sub-activities of the project initiative (from needs identification and capacity building to SME business plan preparation and implementation) and to emerge as producer cooperatives
- Adequate representation of pro-poor landless families of the villages in the JFMCs so that benefits of SME development can improve the livelihood security of the primary target group i.e., pro-poor landless or marginal tribal and rural families below the poverty line

87. Business plan development will take place through a multi-stakeholder consultation process involving the selected JFMCs, Forest Department Staff, as well as the support of able and competent agencies and experts. Business plan preparation will be preceded by a thorough mapping and assessment of potential NTFP resources likely to qualify for enterprise development at the block/ village level. The availability, collection/ harvesting practices, and marketing of such resources, including assessment of the supply chain at least up to the state level, will need to be ascertained by the externally hired competent consulting organizations. The assessment will provide documented justification for SMEs being proposed under the project.

88. Further, the business plan will take into account the local environment and local knowledge. Emphasis will be on exploring technological options that can be easily managed in the local environment. The viable and bankable business plans will secure both forward and backward linkages and would meet financial, environmental and social feasibility criteria. The business plans will also identify associated risk factors.

89. As part of business plan development, the capacity building needs of the JFMC clusters for running the SMEs will be identified. Potential civil society (NGO) partners at the local, district or state level that can provide long term handholding support to the community will also be identified, and their capacity building needs will be identified.

90. Of the 100 SME business plans that are developed under the project, 40 business plans will be operationalized by the project and developed as sustainable community based enterprises. Business plans will be scrutinized and vetted by a Review Committee (state-level) prior to approval of grants for operationalization. The state level committee will approve a 100% grant to viable business plans. Technical support will be provided to:

- Train identified community groups (on a cluster basis) to acquire entrepreneurship skills to execute the business plans
- Train identified civil society organizations that are to provide long term hand-holding support to these community-based enterprises
- GEF grant will support the 40 SME's found most viable out of the 100 selected for the business plan preparation. Those SME's that are found to have possibilities to function effectively out of the remaining 60 SME's will be assisted in linking up with local banks to obtain loans for continuing/ expanding their enterprise in an amount that may be equal to what was provided under the project through GEF. This may assist in leveraging further institutional finance, apart from the grant made available by GEF in the project for possible convergence with some other existing development schemes and/ or local financial institutions in the target area.
- Link-up with evolving certification processes to assess possibilities for obtaining eco-friendly certification of products generated by SMEs.

91. The main impacts of this output may be summarized as follows:

- 100 SME business plans preparation and development in the four districts results in a well documented community based interests for the understanding and promotion of locale specific strategies in the region.

- Enhanced capacity of community stakeholders (reaching out to at least 1000 representatives) for promoting livelihood security through sustainable natural resource-based enterprises.
- Incomes are increased for those involved in the 40 SMEs that are operationalized by the project.
- At least 10% of households within the target groups benefit from the curtailment of distress migration as a result of their involvement in SMEs.
- At least 20% of participants in the preparation of SME business plans and their execution are women, providing them with further opportunities for directly being involved in better livelihood options.
- The additional 60 SME business plans, which reflect the development interests of communities, provide a robust basis for local administrations (Panchayati Raj Institutions) to support community development through their existing schemes.
- By the end of the project, it is expected that at least 25% of the SMEs operationalized under the project are linked up with local banking institutions for obtaining loans for further expansion.
- JFMC's that prove their capacity in managing SMEs would have increased opportunity to institutionalize themselves as a co-operative for the rural and tribal poor.

*Output 2.5 Home gardens are promoted among landless farmers to meet subsistence needs*

92. Under this output, groups of landless, poor tribal families would be identified for promoting home garden-based conservation. The emphasis will be on tree and bamboo species that are useful for meeting household energy needs, have medicinal value for traditional remedies and support to the village medicine men, and can help meet household nutritional requirements. This, in turn, will reduce ecosystem degradation pressures, as well as help reverse the process of micro-ecological and micro-climatic degradation through community-driven in-situ conservation of native species and their revival.

93. Species would be selected largely on the basis of climatic and ecological suitability to specific site conditions, environmental management objectives, and socio-economic requirements. A detailed afforestation model (covering technical silvicultural prescriptions, growth targets, financial and economic rates of return, and environmental benefits) would be prepared during the first year. These models will draw on the government's existing guidelines for protection of forests, past experience under the National Afforestation Program, and previous forestry projects undertaken in the four project districts.

94. Interested landless families will be engaged in establishing their own home gardens in their backyard (Badi) that are representative of locally found viable species of flora which have immense significance but have lost their importance due to ecological fragmentation. Participating families will receive seedlings and technical support necessary for them to fulfill their role in managing the home gardens in their own land (backyard land- Badi). This will help develop a promising new sector in the household economy in a small but significant way.

95. To ensure that this activity can be sustained post-project and to reduce dependency on external support, the project will help establish a Home Garden Farming Fund (HGFF) comprised of 10% of the returns from the final harvest. Financial support for replicating this activity will be partially covered by the HGFF, partially by development funds available to the relevant JFMC, which is the primary CBO for the project, and partially through voluntary labor contributions by participants. The main impacts of this output may be summarized as follows:

- An estimated 600 hectares of private land areas through individual home gardens may be covered in the four project districts for reviving local species that enhance ecosystem health, are resistant to observed variations in local weather, and also generate benefits for landless communities (fuel wood, fodder, medical plants, fruit).
- Over the long term, increase in household incomes from returns from home gardens by at least 10%

- Practitioners of traditional medicine (vaid/ hakeem) recognize the home gardens and the associated families for their constant supply of medicinal herbs, in turn helping in preserving traditional knowledge

*Output 2.6 Improved management of water resources at the level of micro/ milli watersheds, with particular emphasis on community mobilization in support of soil and water conservation structures and approaches that are adapted to climate change*

96. Based on successful experiences in other parts of Madhya Pradesh or India, the project will pilot integrated soil and water conservation measures in the 4 identified micro/ milli watersheds. Watershed activities will cover 3000 hectares of forest and non-forest land (900 hectares each in the project districts of Betul, Chhindwara, Umaria and 300 hectares in Sidhi; at least 12 villages in each district), and will address locale specific needs for improving water use practices at the village level. Each year 300 ha of land would be treated in each district (in Sidhi 75 ha.) through watershed management activities. Activities to be promoted include physical works for soil and water conservation (such as low cost percolation tanks, small farm ponds, and earthen check dams) and the formation of water user groups (WUGs) under the institutional umbrella of the JFMC in each target village. Community based information on observed changes in land and water management practices relating to increasing variations and changes in local weather will be gathered and used to inform the development of the pilot measures.

97. Soil and water conservation (SWC) measures will differ for ridges and valleys for maximum conservation, harvesting and impoundment of rainwater and for mitigation of soil erosion. On cultivable lands, bamboo plantations and SWC measures to be promoted include contour bunds, farm bunds, gully plugs and spillways for surplus water flow. In addition, farm ponds are another means to store rainwater, which can be used for critical and protective irrigation for standing crops. Measures such as continuous contour trenches, stone bunds, pit plantation, gully plugs and loose boulder structures will be implemented on private, common and public wastelands and forest lands. The Village Development Committee (VDC) along with other village institutions will be responsible for planning, execution, supervision and maintenance of different structures.

98. The formation of WUGs is necessary in order to utilize incremental water resources in a productive manner, reduce water losses, diversify and increase output. The intervention will target poor rain-fed, marginal and small farmers. The project will also put in place systems whereby landless farmers too can benefit from watershed management structures (for example, landless farmers could be given the right to undertake pisciculture in farm ponds by paying in a modest fee into the WUG). The main impacts of this output may be summarized as follows:

- Revival of at least 20% of farmlands that are laying fallow or unused due to lack of irrigation
- Rejuvenation and or renovation of existing community based watershed structures in 40 villages
- At least 10 new watershed structures identified based on local needs and available project resources, and built
- At least 10% rise in farm productivity of marginal and pro-poor tribal farmers due to the proposed watershed interventions
- At least 25 Water User Groups (WUGs) created in each of the four project districts
- Knowledge gathered on locally initiated adaptation measures relating to observed changes in local weather patterns.

*Output 2.7 Rain fed agricultural practices are strengthened with people-friendly, cost-effective, climate-resilient technologies that can improve returns within the constraints of local agro ecological conditions*

99. Through this output, the project will curtail degradation processes being observed on agricultural land, reduce extensification pressures, and improve food security by enhancing the rain fed agriculture practices of small and marginal farmers in selected clusters of villages that are confronted with agrarian

resource degradation. Approximately 30 farmers SHGs will be formed based on their existing land holding, agrarian practices, socio-economic status and the nature of cultivable land on which improved rain fed farming practices are to take place. Demonstrations will be undertaken in farmers' fields twice a year over a three year period<sup>24</sup>. Local specialists and service delivery agencies from agricultural extension centers will provide extension support as well as specialized inputs. The criteria for the selection of villages and farmers would be as follows:

- Farmers that rely on rain-fed agriculture as their primary source of livelihood
- Farmers whose fields usually remain uncultivated and unused after one cropping cycle
- Farmers who belong to Scheduled Cast and/ or Scheduled Tribes (SC/ STs) and are below the poverty line
- Farmers with land holdings that are not more than 2 to 5 hectares

100. Support will be provided for building on traditional practices by adopting improved crops, cultivation practices, and technologies to improve soil fertility, diversify production, and generate better incomes. Capacities for climate change scenario planning that are to be developed under Outcome 1 will be tapped to ensure that specific emphasis is placed on the issue of climate change, including variability, by identifying crops, cultivation techniques and technologies that help farmers adapt to the impact of rainfall aberrations. Considering the geo-climatic and agriculture production situation of the project area, there are a few options available, such as

- Better time management of the cropping cycle by utilizing the fallow period for promoting ecologically viable options that can improve returns<sup>25</sup>
- Crop intensification (enhancing per unit production)
- Identification of crop varieties<sup>26</sup> that need lesser water, can survive extreme weather conditions, and mature within a short time span; provide better value; as well as inclusion of varieties of pulses that can be managed under dry land or rain-fed conditions and are a protein rich food<sup>27</sup>
- Integration of agro-forestry practices
- Lowering the costs of input through better nutrient management

101. The project will support farmers in seed selection, distribution, and treatment; seed banks<sup>28</sup>; preparation and sowing for improved crop productivity; and impart associated training and skills development. Training will be designed by taking into account needs identified by farmers. In addition, resources will also be allocated to improved livestock management<sup>29</sup> by promoting indigenous livestock breeds that are better suited to local climatic conditions. Support will be provided for an Information Centre at the cluster level, Animal Trade Fairs (promotion of indigenous breeds), measures for increasing animal productivity and poultry based activities, revolving funds for addressing financing needs.

102. The main impacts of this output may be summarized as follows:

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<sup>24</sup> Demonstrations will be planned on at least 0.2 hectares of land of each farmer.

<sup>25</sup> Considering the vast areas of agricultural fallows, which are not cultivated or under cultivated, land remains un- or under-utilized for a significant time period in the existing cropping cycle adopted in the project area.

<sup>26</sup> The project will draw on the expertise of ICRISAT, an agency supporting rain fed farming in India, for selection of crops and seeds.

<sup>27</sup> Participatory exercises conducted with the most deprived groups of studied villages for analyzing food security revealed severe under-nutrition (particularly protein) in almost all age groups.

<sup>28</sup> Farmers involved in rain-fed agriculture face problems of storing seeds. Effective seed storage is required for ensuring timely availability of seeds, availability of low cost seeds, seed availability to more and more farmers, access to other crop seeds, and freedom from moneylenders.

<sup>29</sup> In recent years there has been some replacement for exotic breeds that are not suited to local conditions.

- Recognition of the challenges faced at the field-level by rain fed farming in the project area and focusing the attention of supporting resource agencies at the local and state levels for improving food security, and agricultural production in ways that help maintain ecosystem function and services.
- At least 20% increase in the use of fallow farmlands to enhance livelihoods and reduce extensification pressures.
- Organic and traditional innovations for rain fed farming increased by at least 30%
- On farm productivity increased by at least 15% through use of improved seed varieties
- Agro forestry practices increase the minimum household earning in the long run by at least 30%
- On farm integration of agro-forestry practices is expected to reduce the natural resource dependency on near by forests by farmer groups by at least 20% (particularly by reducing unsustainable and uncontrolled grazing of livestock)
- Improvements in soil fertility by at least 5%
- Better soil and water conservation lead to reduced erosion of top soil by at least 10% and improved soil-water retention.
- Knowledge gathered on locally initiated adaptation measures relating to observed changes in local weather patterns.

**Outcome 3: Capacities for adaptive management, learning and replication of project lessons are developed**

103. So that the policy changes and experience generated through demonstrations in the micro-catchments are analyzed, internalized and applied to other micro-catchments within Madhya Pradesh, this outcome will focus on establishing a community-based monitoring and evaluation system; documenting project lessons and experiences; and furthering the dialogue with key stakeholders to replicate the project's sustainable land and ecosystem management approach.

*Output 3.1 Community-based system for monitoring and assessment of impacts, as well as external evaluations of the project*

104. The project's effectiveness will be monitored and evaluated throughout its course against set performance indicators. Adaptive management will be employed to provide a basis for learning lessons and adjusting the project to maximize its effectiveness. Project monitoring and evaluation will follow the UNDP/GEF quality guidelines as described in detail in the project's M&E Plan and M&E Budget.

105. The proposed project monitoring and evaluation (M&E) system will monitor project progress and track the impact on the ecosystem and peoples' livelihoods. Results will be made available to project decision makers, beneficiaries, partner institutions (government and non-government institutions and universities) and civil society in general. More specifically, the M&E system will:

- Track changes (Signs of Change or Science of Change) towards the project development and global environmental objectives, outputs and inputs, and make changes in the project if necessary during implementation, hence providing a basis for decision-making and innovativeness
- Promote accountability for resource use against objectives
- Provide and receive feedback from stakeholders

106. The actual monitoring of impacts of modified land use practices on rain-fed farms, community pasture lands, adjoining forests, home gardens, fuelwood and fodder plantations, will be undertaken by community representatives. Community Based Impact Assessment (CBIA) and other techniques will be employed, while also incorporating indigenous knowledge on impact monitoring. As with other demonstrations, M&E groups will be formed under the institutional umbrella of the JFMCs. Participants will be trained in documenting and mapping village level natural resources and their status and collecting data on change realized as a result of project interventions. Technical advice and guidance will be provided by external competent support agencies. Measurement of impact indicators related to global

benefits (impact indicators are identified at the level of the project objective) will be undertaken through subcontracts to qualified institutions.

107. In line with GEF and UNDP policy independent, external, mid-term and final evaluations of the project will be conducted. In terms of ecological evaluation, the project would envisage an annual ecological performance audit, to be carried out by an independent organization in collaboration with regional environment and natural resources protection agencies. Results from the audit will be fed back to the project and to the local authorities via an audit report, in order that the identified recommendations and environmental mitigation and/or enhancement measures can be considered and adopted by the project moving forward. Moreover, the audit process will also include parallel (mainly on-the-job) training, awareness and capacity-building in sustainable natural resource management for both project beneficiaries and regulatory authorities, such that in time the awareness and capacity to identify and address environmental issues is mainstreamed within both the project communities and regional natural resources protection agencies alike.

*Output 3.2 Documentation of lessons learned and preparation of information dissemination products which are geared to different audiences and are available in local languages.*

108. The Sustainable Land and Ecosystem Management Programme (of which this project forms a part) addresses the issue of institutional coordination, and outreach and scaling up of SLEM solutions through an MSP titled “Policy and Institutional Reform for Mainstreaming and Upscaling SLEM in India” that is to be established within the MoEF. This is to serve as the node for the management, outreach and M&E functions of the Program. Lessons learned under this project in Madhya Pradesh will be fed into this system for replication in other parts of the country.

109. To facilitate the dissemination and replication of best practices, the project will dedicate resources to compiling lessons learned on the main elements of the project strategy – integrated management of natural resource at the watershed level covering rain-fed farming, livestock management, fuelwood and fodder plantations, conservation and sustainable use of bamboo areas within forests, SMEs based on NTFPs, soil and water conservation structures – into guidelines, tools, and methodologies. These will be geared to the different audiences and translated in local languages as appropriate.

110. A replication plan will be developed and agreed on by the Steering Committee of the project. It will identify other micro-catchments and villages for application of project lessons and instruments, in 5 and 10 year increments, following project closure.

### 2.3 Project Indicators

111. The indicators and their baseline and target values are presented in the [project's logical framework](#) (with baseline and targets for indicators as well as sources of verification) and key indicators are summarized here.

**Table 10. Summary of indicators**

Objective/Outcomes	Indicators
Objective: To promote community-driven sustainable land and ecosystem management at the landscape level through integration of watershed management, joint forest management, and sustainable livelihoods development so as to balance ecological and livelihood needs.	Climate-resilient, SLEM is demonstrated on 3,000 hectares of forest/non-forest land and 14,500 hectares of degraded bamboo areas within forest lands for further replication in other areas Increase in proportion of project participants who are living above the poverty line from 3% to 30%
Outcome 1 Creation of an enabling environment for climate-resilient, sustainable land and ecosystem management	At least 5 sectoral policies (agriculture, animal husbandry, forest, watershed, and tribal welfare) incorporate SLEM guidelines and biodiversity conservation priorities At least 2,000 JFMC members trained in climate-resilient SLEM

Objective/Outcomes	Indicators
	Strategic plan to institutionalize integrated service provision for climate-resilient SLEM
Outcome 2: Community-driven, climate-resilient approaches for sustainable land and ecosystem management are demonstrated in 4 micro-catchments	<p>Approx. 14,500 ha of degraded bamboo forests rehabilitated through community based participatory arrangement thereby enhancing connectivity between relatively undisturbed forest tracts that harbor globally significant biodiversity</p> <p>Increase in earnings of about 700 families from involvement in sustainable management of degraded bamboo areas</p> <p>200 hectares of degraded lands each for energy and fodder planted with fast growing tree/grass species suited to the local environment</p> <p>Increase in average per capita income by at least 20% over the baseline as a result of fodder plantations and its indirect benefits</p> <p>100 SME business plans based on sustainable harvest and added-value processing of local NTFPs</p> <p>40 SME business plans operationalized</p> <p>At least 20% of participants in SMEs are women</p> <p>3,000 hectares of land with improved/new SWC</p> <p>Increase in farm productivity of marginal and pro-poor tribal farmers by 10% over the baseline due to proposed watershed interventions</p> <p>Increase in the use of fallow farmlands by at least 20% over the baseline to enhance livelihoods and reduce extensification pressures</p> <p>Increase in on farm productivity by at least 15% over the baseline through use of improved seed varieties</p>
Outcome 3: Capacities for adaptive management, learning and replication of project lessons are developed	<p>Local level monitoring mechanisms set up in each project site (CBIA)</p> <p>Learning on best practices and models disseminated within and outside the project villages</p> <p>Replication plan</p>

## 2.4 Project Risks and Assumptions

112. Based on discussions during the PDF-B, as well as the results of the full Social Assessment carried out in randomly sampled villages in the target districts, the following risks were identified. Means to mitigate these risks were also discussed and integrated into the project strategy.

**Table 11. Risks and Mitigation**

Project Outcome	Risk	Rating	Mitigation Strategy
Outcome 2	Participation of marginalized groups, who are the primary target group of the project, is weak due to a fear that their access to natural resources is going to be restricted in ways that reduce the income they can derive.	Medium	To mitigate this risk, the project will develop the capacity of marginalized groups, village leaders and the community to take concerted action on priority community-based initiatives for the use of their local natural resources (Output 1.2), and demonstrate the income-generating potential of sustainable land, forestry, and agricultural practices (Outputs 2.1 to 2.4). Fair and equitable benefit sharing mechanisms will be instituted. For instance, adequate representation of pro-poor landless families of the villages will be ensured in the JFMCs and other SHGs constituted under the project for generating livelihood benefits. The project will ensure that decisions about access rights to resources and attendant impact on livelihoods will be made at the level of the community, through Territorial/ Local Committees. These will be formed for each of the four microcatchment/ watersheds where demonstration activities are to take place. These

Project Outcome	Risk	Rating	Mitigation Strategy
			Territorial Committees will guide demonstration activities in each microcatchment and will primarily consist of block and district level representatives from the concerned government departments, representative of the local self governance structure or the Panchayat, and representatives from the JFMCs. The men and women small-holders who are the beneficiaries or would be impacted by the project will have the major representation at this level. Reduced dependency on common lands and other natural resources will be offset by alternative income-generating activities based on sustainable resource use (Outputs 2.1 to 2.4).
Outcome 2	Climate change including variability has adverse impacts on food security and ecosystem services.	Medium	To mitigate this risk, the project will be designed to strengthen land-use planning processes making them climate change sensitive. Capacity will be developed at the State level for climate related scenario planning (Output 1.1). All demonstration interventions will be assessed for their climate-resilience. Capacities for climate change scenario planning that are to be developed under Output 1.1 will be tapped to ensure that proposed soil and water conservation measures and structures will be better suited to expected climate variability (for example, structures may need to be designed with better capacity for increased runoff and sediment from heavier rainstorms) (Output 2.6), and identifying crops, cultivation techniques and technologies that help farmers adapt to the impact of rainfall aberrations (Output 2.7).
Outcome 1	Sectoral departments are not open to integrating climate-resilient SLEM principles in their work.	Low	To ensure buy-in, sectoral department representatives will be included in the Project Steering Committee. District/ block/ village level staff from these departments will be involved in relevant demonstration and capacity building activities (Output 1.2 on capacity building).
Outcomes 1, 2, and 3	Stated cofinancing commitments do not materialize.	Low	The State government has dedicated resources to the project from its budgetary allocation for the current financial planning period, and this has been committed to in a cofinancing letter. Departments providing cofinancing will be part of the Project Steering Committee and will be closely engaged in project implementation. The Steering Committee chair will be vested with the responsibility for holding Steering Committee members accountable for commitments.

## 2.5 Expected global, national and local benefits

113. Project design was informed by a social assessment (SA) undertaken through field visits, and a review of existing impacts of various projects in the districts, stakeholder workshops, and bilateral consultations with pro-environment agencies and CSOs. The SA was carried out in the tribal/rural communities based on a random sampling approach. Key findings and recommendations are summarized below.



114. Global environmental benefits: The project will have a sustained positive impact on the ecology and natural resources in the dry land areas of the four project districts in the state of Madhya Pradesh. It will also have beneficial effects on areas further downstream from the target watersheds where the project will operate. By demonstrating climate-resilient and sustainable land and ecosystem management approaches that can be integrated into the local livelihood system, the project will help reverse land degradation in upland areas, reduce risks to downstream lands and infrastructure, control flooding, improve sustainability of community water harvesting structures, increase agricultural productivity in low-lying areas, improve water quality, and protect local forest and biodiversity resources. Additionally, in the long term, the project will enhance carbon sequestration. A broader range of livelihood options for the tribal/rural poor will be strategically built, thereby reducing pressure to over-exploit natural and common property resources and providing stronger incentives for communities to manage their forest, pastoral and agricultural resources in a sustainable manner.

115. National/ local benefits: The project will strengthen the tribal and rural residents, village leaders and community to take concerted action on priority community-based initiatives for the use of their local natural resources; and demonstrate the income-generating potential of sustainable land, forestry, and agricultural practices. Specific benefits and positive impacts include: (i) reduced dependency on the forests and pasturelands; (ii) increased agricultural productivity leading to increased food security and reduced poverty; and (iii) increased participation and empowerment of women and vulnerable and marginalized groups due to a greater sensitivity to the participation constraints of these social groups.

## *2.6 Country Ownership: Country Eligibility and Country Driven-ness*

### 2.6.1 Country Eligibility

116. India ratified the UNCCD on 17 December 1996, is party to the UNCBD since 18 February 1994, and has ratified the UNFCCC on 1 November 1993 and the Kyoto Protocol on 26 August 2002. India has also effectively fulfilled various assessment and reporting requirements under these Conventions. It is, therefore, eligible to receive funding from the GEF. It is also eligible to receive development assistance from the World Bank and UNDP.

### 2.6.2 Country Driven-ness

117. Environmental protection is an integral part of the constitutional, legislative, policy and programming foundation of the GOI, as highlighted in [Section 1.4](#). There is recognition of the adverse impacts of land and ecosystem degradation on the sustainable development trajectory of the country. Chapter 5 of the National Action Programme to Combat Desertification (2001) notes that “the process of desertification is impacting every aspect - loss of agricultural productivity, loss of natural resources (forests and vegetative cover, biodiversity, soil changes), socio-economic conditions (economic losses, problems of sustenance, decline in quality of life), etc.” This recognition is also being supported by various policies and programmes by the GOI ranging from social sector and community development programmes, to conservation of land resources and eco-restoration of degraded lands. Further, GOI recognizes the importance of (a) shifting from sectoral to integrated watershed management approaches, and (b) moving to more decentralized governance systems that are underpinned by greater community and NGO involvement in decision-making and implementation, in successfully addressing the drivers of land and ecosystem degradation.

118. To translate this momentum into a more systematic national approach, the GOI has been engaged with the GEF and its Agencies (World Bank, UNDP and FAO) in the development of the Sustainable Land and Ecosystem Management (SLEM) Partnership. This project in the Central and Eastern Highlands of Madhya Pradesh has been prioritized by the GOI as a critical component of the SLEM partnership insofar as it focuses on an area of the country where degradation of ecosystems has a significant impact on both the long term well-being of poor, marginalized sections of society, and also compromises the

production of ecosystem goods and services that extend far beyond the State of Madhya Pradesh because the area constitutes parts of the upper catchments of 5 principal river systems.

119. The Government of Madhya Pradesh is committed to aligning its various sectoral efforts at the State-level that have a bearing on sustainable land and ecosystem management with the integrated strategy being proposed under this GEF project (see [section on project strategy](#)), and with the SLEM partnership more broadly. This is reflected in the financial support being provided by the State government from its own budgetary resources.

## *2.7 Sustainability*

120. Institutional sustainability: To ensure that project activities are continued and benefits sustained beyond the time frame of this GEF funded project it will be important that the project approach and strategy be internalized by state-level and local institutions. Therefore, the project will rely on the existing institutional structure for implementing project activities and delivering outputs. Staff from the relevant sectoral departments covering all administrative levels – Block, District, and State – will be key partners in implementing the project strategy. An equally important element of this institutional structure is local government, socio-environmental NGOs and community based organizations, which will also be tapped for organizing, promoting, monitoring and assessing implementation. The project will also capitalize on existing coordination mechanisms, particularly those which were established by the MPFD under the project development stage, including public-private-civil society partnerships, to implement sustainable land management.

121. Social sustainability: The project targets poor, marginalized social groups. These are the primary agents of change in terms of promoting a paradigm shift towards climate-resilient, sustainable land and ecosystem management. If project benefits are to be sustained, these groups must become champions of the project strategy. The project will, therefore, dedicate significant resources on capacity building efforts to overcome barriers to adoption which currently prevent communities from moving to improved practices. To further enhance social acceptance, all capacity building activities will be implemented on the basis of a training-of-trainers approach, as community-to-community trainers are likely to receive greater acceptance. There is the risk of capture of power by the elite, which will be mitigated by developing transparent and inclusive arrangements for power sharing within local bodies responsible for sustainable land use planning process in villages. CBO's will be strengthened and forest governance mechanisms will be improved, creating incentives for heads of CBO's to be more responsive to the concerns of their members and local government authorities.

122. Financial sustainability: The preliminary analysis of the returns to land under existing (mostly degrading) and improved technologies which would help address land degradation indicates that from a tribal community point of view, improved practices will often yield greater returns per hectare than the current degrading practices. In addition, support with diversifying the income base for communities (income from fodder and fuel plantations, NTFP-based SMEs, regeneration of degraded bamboo areas) will contribute to greater economic diversification. The capacity building efforts of the project will be designed to overcome barriers to adoption which currently prevent the pro-poor families from moving to these improved practices. Once adopted it is expected that the underprivileged community will continue to apply them to see greater profitability while at the same time generating environmental benefits.

123. During the life of the project, emphasis will be placed on developing additional sources of funding from local government mechanisms for reaching the poor with entitlement-based schemes such as the NREGS (National Rural Employment Guarantee Scheme) and also involving international sources for watershed, community based forest management practices and carbon services on the one hand and indigenous and organic products on the other.

## 2.8 Replicability

124. It is expected that the integrated and cross-sectoral approach to land and ecosystem management promoted by the project can be replicated in other parts of the State with similar fragmenting systems, and eventually throughout the dry lands. To some extent replication will be driven by spontaneous adoption and replication, by individuals and communities, of practices that are seen as viable and effective by them. Training of the local community in applying these practices will support the permanence of these competencies in the rural communities. The participatory methodologies adopted for field trials in partnership with communities will also support autonomy and continuity of the process. Further, the adaptation of technologies to local realities via experimentation by the beneficiaries themselves will also help sustain spontaneous adoption and replication.

125. In addition to this, the project will further support uptake and replication of project lessons and experiences as follows:

126. Step 1: Knowledge management and dissemination. Knowledge management and dissemination is one of the main building blocks for replication. The project will produce methodological and technical tools in the form of user-friendly guides and manuals, and will promote their disseminating through the replication/ dissemination mechanism established under the overall SLEM Programme (SLEM Policy and Institutional MSP led by the World Bank).

127. Step 2: Drafting of a Replication Strategy and Budget by the Project Coordinator that specifies the locus for replication within Madhya Pradesh (other micro watersheds) and the associated budgetary implications.

### **PART A.3 Management Arrangements**

128. The project will be executed following established UNDP national execution (NEX) procedures. The Executing Agency will be the Madhya Pradesh Forest Department. The Executing Agency will appoint a National Project Director, and will hire, with GEF funding, a Project Coordinator and an Administrative and Financial Assistant. A summary of the roles and responsibilities of the National Project Director, the Project Coordinator, and the Administrative and Financial Assistant are provided below (detailed TORs for the Project Coordinator and Assistant are in [Part D.3](#)).

129. The National Project Director will be a high-level government official with primary responsibility for overall implementation of the Project. This responsibility includes representing and furthering project objectives at high decision making levels within the GOI. The National Project Director also takes the primary responsibility for representing the Project to co-financiers, as well as for ensuring that the required government support to reach the milestones of the project is available.

130. The Project Coordinator will assume overall responsibility for the successful implementation of project activities and the achievement of planned project outputs. S/he will work closely with the national and international experts hired under the project, as well as the Project Assistant, and will report to the National Project Director (assigned by the Madhya Pradesh Forest Department) and to the UNDP Country Office. The Project Coordinator will be responsible for ensuring that the project is implemented in close coordination and collaboration with all relevant government institutions, local communities and NGOs, as well as with other related relevant projects in the project area.

131. The Administrative and Financial Assistant will provide assistance to the Project Coordinator in the implementation of day-to-day project activities. S/he is responsible for all administrative (contractual, organizational and logistical) and accounting (disbursements, record-keeping, cash management) matters related to the project.

132. The Executing Agency will establish a Project Steering Committee (PSC) to give advice and guide project implementation, chaired by the National Project Director. The PSC will consist of representatives of all key stakeholders and will ensure the inclusion of community level interests. Potential PSC

participants will be UNDP, MPFD, Department of Agriculture, Department of Animal Husbandry, RGMWM, MFPP, SPS (NGO), and Universities and Research Institutes.

133. The PSC will monitor the project's implementation, provide guidance and advice, and facilitate communication, cooperation, and coordination among stakeholders and other project partners. Annual Monitoring will occur through the Steering Committee Meetings (SCM). This is the highest policy-level meeting of the parties directly involved in the implementation of the project. The project will be subject to Steering Committee Meetings at least every 6 months. The first such meeting will be held within the first 6 months of the start of full implementation. At the initial stage of project implementation, the PSC may, if deemed advantageous, wish to meet more frequently to build common understanding and to ensure that the project is initiated properly.

134. In addition to this state-level PSC, Territorial/ Local Committees will be formed for each of the four microcatchment/ watersheds where demonstration activities are to take place. These Territorial Committees will guide demonstration activities in each microcatchment and will primarily consist of block and district level representatives from the concerned government departments, representative of the local self governance structure or the Panchayat, and representatives from the JFMCs. The men and women small-holders who are the beneficiaries or would be impacted by the project will have the major representation at this level.

135. The project will hire short term national and international experts for specific project assignments (see [Part D.3](#) for indicative scope of the assignment of key experts/ consultants). Project activities will be contracted out on a competitive basis through tenders.

136. The UNDP-CO will be an active partner in the project's implementation. It will draw on its knowledge networks to provide best practice methodologies to the project team as deemed necessary. It will support implementation by maintaining the project budget and project expenditures, contracting project personnel, experts and subcontractors, undertaking procurement, and providing other assistance upon request of the National Executing Agency. The UNDP-CO will also monitor the project's implementation and achievement of the project outcomes and outputs, and will ensure the proper use of UNDP/GEF funds. Financial transactions, reporting and auditing will be carried out in compliance with national regulations and established UNDP rules and procedures for national project execution.

137. In order to accord proper acknowledgement to the GEF for providing funding, a GEF logo will appear on all relevant GEF project publications, including among others, project hardware purchased with GEF funds. Any citation on publications regarding this project funded by the GEF will also accord proper acknowledgment to GEF. The UNDP logo will be more prominent (and separated from the GEF logo if possible), as UN visibility is important for security purposes.

#### **PART A.4      Monitoring and Evaluation Plan and Budget**

138. Project monitoring and evaluation will be conducted in accordance with established UNDP and GEF procedures by the project team and the UNDP Country Office (UNDP-CO), with support from UNDP-GEF. The Logical Framework Matrix provides performance and impact indicators for project implementation along with their corresponding means of verification. These will form the basis on which the project's impacts will be monitored and evaluated.

139. The following sections outline the principle components of the Monitoring and Evaluation Plan and indicative cost estimates related to M&E activities. The project's Monitoring and Evaluation Plan will be presented and finalized at the Project's Inception Workshop following a collective fine-tuning of indicators, means of verification, and the full definition of M&E responsibilities.

##### Project Inception Phase

140. A Project Inception Workshop will be conducted with the full project team, relevant government counterparts, co-financing partners, the UNDP-CO and representation from the UNDP-GEF Regional

Coordinating Unit, as well as UNDP-GEF (HQs) as appropriate. A key objective of this Inception Workshop will be to assist the project team to understand and take ownership of the project's goals and objectives, as well as to finalize preparation of the project's first annual work plan on the basis of the project's logframe matrix. This will include reviewing the logframe (indicators, means of verification, assumptions), imparting additional detail as needed, and, on the basis of this exercise, finalizing the Annual Work Plan (AWP) with precise and measurable performance indicators, and in a manner consistent with the expected outcomes for the project. More specifically, the Inception Workshop will:

- Introduce project staff to the UNDP-GEF expanded team which will support the project during its implementation, namely the CO and responsible Regional Coordinating Unit staff
- Detail the roles, support services and complementary responsibilities of UNDP-CO and RCU staff vis à vis the project team
- Ensure that all parties understand their roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms (Terms of Reference for project staff and decision-making structures will be discussed again, as needed, in order to clarify for all, each party's responsibilities during the project's implementation phase).
- Provide a detailed overview of UNDP-GEF reporting and monitoring and evaluation (M&E) requirements, with particular emphasis on the Annual Project Implementation Reviews (PIRs) and related documentation, the Annual Project Report (APR), Tripartite Review Meetings, as well as mid-term and final evaluations
- Inform the project team about UNDP's project related budgetary planning, budget reviews, and mandatory budget re-phasing
- Fine-tune the progress and performance/impact indicators of the project in consultation with the full project team with support from UNDP-CO and assisted by the UNDP-GEF Regional Coordinating Unit. Specific targets for the first year implementation progress indicators together with their means of verification will be developed at this Workshop. These will be used to assess whether implementation is proceeding at the intended pace and in the right direction and will form part of the Annual Work Plan. The local implementing agencies will also take part in the Inception Workshop in which a common vision of overall project goals will be established. Targets and indicators for subsequent years would be defined annually as part of the internal evaluation and planning processes undertaken by the project team.
- Develop a detailed schedule of project reviews meetings in consultation with project implementation partners and stakeholder representatives and incorporate it in the Project Inception Report. Such a schedule will include: (i) tentative time frames for Tripartite Reviews, Steering Committee Meetings, (or relevant advisory and/or coordination mechanisms) and (ii) project related Monitoring and Evaluation activities.

#### Day to day monitoring of implementation progress

141. This will be the responsibility of the Project Coordinator, assisted by experts as deemed necessary, based on the project's Annual Work Plan. The Project Team will inform the UNDP-CO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely fashion.

142. Measurement of impact indicators related to global benefits will occur according to the schedules defined in the Inception Workshop, using impact indicators identified in the logframe (impact indicators are identified at the level of the project objective). The measurement of these will be undertaken through subcontracts to relevant institutions.

#### Periodic monitoring of implementation progress

143. This will be undertaken by the UNDP-CO through quarterly meetings with the MPFD, or more frequently as deemed necessary. This will allow parties to take stock and to troubleshoot any problems pertaining to the project in a timely fashion to ensure smooth implementation of project activities.

144. The UNDP Country Office will conduct yearly visits to field sites based on an agreed upon schedule to be detailed in the project's Inception Report / Annual Work Plan to assess first hand project progress. When feasible, a member of the Steering Committee will also participate in this annual field visit. A Field Visit Report will be prepared by the CO and circulated no less than one month after the visit to the project team, all SC members, and UNDP-GEF.

#### Annual Monitoring

145. Annual Monitoring will occur through the Steering Committee Meetings (SCM). This is the highest policy-level meeting of the parties directly involved in the implementation of the project. The project will be subject to Steering Committee Meetings at least every 6 months. The first such meeting will be held within the first 6 months of the start of full implementation.

146. The Project Coordinator in consultation with the CO will prepare a UNDP/GEF PIR/APR and submit it to UNDP-CO at least two weeks prior to the Annual Steering Committee Meeting for review and comments. The PIR/APR will be used as one of the basic documents for discussions in the TPR meeting. The Project Coordinator will present the PIR/APR to the Steering Committee, highlighting policy issues and recommendations for the decision of the SCM participants.

147. In the last month of project operations, a Terminal Tripartite Review (TTR) will be held. The Project Coordinator will be responsible for preparing the Terminal Report and submitting it to the UNDP-CO and the UNDP-GEF Regional Coordinating Unit. It shall be prepared in draft at least two months in advance of the TTR in order to allow time for review, and will serve as the basis for discussions in the TTR. The terminal tripartite review considers the implementation of the project as a whole, paying particular attention to whether the project has achieved its stated objectives and contributed to the broader environmental objective. It decides whether any actions are still necessary, particularly in relation to sustainability of project results, and acts as a vehicle through which lessons learnt can be captured to feed into other projects under implementation of formulation.

#### Monitoring Reports to be generated by the project

148. The Project Coordinator in conjunction with the UNDP-GEF extended team will be responsible for the preparation and submission of the following reports that form part of the monitoring process.

(a) Inception Report (IR)

149. A Project Inception Report will be prepared immediately following the Inception Workshop. It will include a detailed First Year/ Annual Work Plan detailing the activities and progress indicators that will guide implementation during the first year of the project. This Work Plan would include the dates of specific field visits, support missions from the UNDP-CO or the Regional Coordinating Unit (RCU) or consultants, as well as timing of meetings of the project's decision making structures. The Report will also include the detailed project budget for the first full year of implementation, prepared on the basis of the Annual Work Plan, and including any monitoring and evaluation requirements to effectively measure project performance during the first 12 months.

150. The Inception Report will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project related partners. In addition, a section will be included on progress to date on project establishment and start-up activities and an update of any changed external conditions that may effect project implementation.

151. When finalized the report will be circulated to project counterparts who will be given a period of one calendar month in which to respond with comments or queries. Prior to this circulation of the IR, the UNDP Country Office and UNDP-GEF's Regional Coordinating Unit will review the document.

(b) Annual Project Report (APR)

152. The APR is a UNDP requirement and part of UNDP's Country Office central oversight, monitoring and project management. It is a self-assessment report by project management to the CO and provides input to the country office reporting process, as well as forming a key input to the Tripartite Project Review. An APR will be prepared on an annual basis prior to the Tripartite Project Review, to reflect progress achieved in meeting the project's Annual Work Plan and assess performance of the project in contributing to intended outcomes through outputs and partnership work. The format of the APR is flexible but should include the following:

- An analysis of project performance over the reporting period, including outputs produced and, where possible, information on the status of the outcome
- The constraints experienced in the progress towards results and the reasons for these
- The three (at most) major constraints to achievement of results
- AWP, CAE and other expenditure reports (ERP generated)
- Lessons learned
- Clear recommendations for future orientation in addressing key problems in lack of progress

(c) Project Implementation Review (PIR)

153. The PIR is an annual monitoring process mandated by the GEF. It has become an essential management and monitoring tool for project teams and offers the main vehicle for extracting lessons from ongoing projects. Once the project has been under implementation for a year, a Project Implementation Report must be completed by the CO together with the project. The PIR can be prepared any time during the year (July-June) and ideally prior to the TPR. The PIR should then be discussed in the TPR so that the result would be a PIR that has been agreed upon by the project, the executing agency, UNDP CO and the concerned RC.

154. The individual PIRs are collected, reviewed and analyzed by the RCUs prior to sending them to the focal area clusters at the UNDP/GEF headquarters. The focal area clusters, supported by the UNDP/GEF M&E Unit, analyze the PIRs by focal area, theme and region for common issues/results and lessons. The UNDP-GEF Regional Technical Advisors and Principal Technical Advisors play a key role in this consolidating analysis.

155. The focal area PIRs are then discussed in the GEF Interagency Focal Area Task Forces in or around November each year and consolidated reports by focal area are collated by the GEF Independent M&E Unit based on the Task Force findings. The GEF M&E Unit provides the scope and content of the PIR. In light of the similarities of both APR and PIR, UNDP/GEF has prepared a harmonized format for reference.

(d) Quarterly Progress Reports

156. These are short reports providing important updates in project progress to the UNDP Country Office and the UNDP-GEF Regional Coordination Unit by the project team.

(d) Periodic Thematic Reports

157. As and when called for by UNDP, UNDP-GEF or the Implementing Partner, the project team will prepare specific Thematic Reports, focusing on specific issues or areas of activity. The request for a Thematic Report will be provided to the project team in written form by UNDP and will clearly state the issue or activities that need to be reported on. These reports can be used as a form of lessons learnt exercise, specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome



obstacles and difficulties encountered. UNDP is requested to minimize its requests for Thematic Reports, and when such are necessary will allow reasonable timeframes for their preparation by the project team.

(f) Project Terminal Report

158. During the last three months of the project, the project team will prepare the Project Terminal Report. This comprehensive report will summarize all activities, achievements and outputs of the Project, lessons learnt, objectives met (or not achieved), structures and systems implemented, etc. and will be the definitive statement of the Project's activities during its lifetime. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the Project's activities.

(g) Project Publications

159. Project Publications will form a key method of crystallizing and disseminating the results and achievements of the Project. The project will dedicate resources (Output 3.2) to compiling lessons learned on the main elements of the project strategy – integrated management of natural resource at the watershed level covering rain-fed farming, livestock management, fuelwood and fodder plantations, conservation and sustainable use of bamboo areas within forests, SMEs based on NTFPs, soil and water conservation structures – into guidelines, tools, and methodologies. These will be geared to the different audiences and translated in local languages as appropriate. The project team will determine if any of the Technical Reports merit formal publication, and will also (in consultation with UNDP, the government and other relevant stakeholder groups) plan and produce these Publications in a consistent and recognizable format.

### Independent Evaluations

160. Mid-term Evaluation: An independent Mid-Term Evaluation will be undertaken at the end of the second year of implementation. The Mid-Term Evaluation will determine progress being made towards the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF.

161. Final Evaluation: An independent Final Evaluation will take place three months prior to the terminal tripartite review meeting, and will focus on the same issues as the mid-term evaluation. The final evaluation will also look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation should also provide recommendations for follow-up activities. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF.

### Audit Clause

162. The Government will provide the UNDP Resident Representative with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of UNDP (including GEF) funds according to the established procedures set out in UNDP's Programming and Finance Manuals. The Audit will be conducted by the legally recognized auditor of the Government, or by a commercial auditor engaged by the Government.

### Learning and Knowledge Sharing



163. Results from the project will be disseminated within and beyond the project intervention zone through a number of existing information sharing networks and forums. In addition, the project will participate, as relevant and appropriate, in UNDP/GEF sponsored networks, organized for Senior Personnel working on projects that share common characteristics, which may be of benefit to project implementation though lessons learned. Through these electronic networks, the project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Identifying and analyzing lessons learned is an on-going process, and the need to communicate such lessons as one of the project's central contributions is a requirement to be delivered not less frequently than once every 12 months. UNDP/GEF shall provide a format and assist the project team in categorizing, documenting and reporting on lessons learned. Project resources under Output 3.2 have been allocated for these activities.

**Table 12. Indicative Monitoring and Evaluation Budget**

Type of M&E activity	Responsible Parties	Budget (US\$)	Time frame
Inception Workshop	Project Coordinator UNDP CO UNDP GEF	5,000	Within first 2 months of project start up
Inception Report	Project Team UNDP CO	None	Immediately following IW
Measurement of Means of Verification, baselines for Project Purpose Indicators	Project Coordinator will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members	50,000	Start, mid and end of project
Measurement of Means of Verification, baselines for Project Progress and Performance (measured on an annual basis)	Oversight by Project GEF Technical Advisor and Project Coordinator Measurements at local/ community level by trained personnel	50,000	Annually prior to APR/PIR and to the definition of annual work plans
APR and PIR	Project Team UNDP-CO UNDP-GEF	None	Annually
TPR and TPR report	Government Counterparts UNDP CO Project team UNDP-GEF Coordinating Unit Regional	None	Every year, upon receipt of APR
Steering Committee Meetings	Project Coordinator UNDP CO	20,000	Following Project IW and subsequently at least once a year
Periodic status reports	Project team	None	To be determined by Project team and UNDP CO
Mid-term External Evaluation	Project team UNDP- CO UNDP-GEF RCU External Consultants (i.e. evaluation team)	20,000	At the mid-point of project implementation.
Final External Evaluation	Project team, UNDP-CO	30,000	At the end of project implementation

Type of M&E activity	Responsible Parties	Budget (US\$)	Time frame
	UNDP-GEF Regional Coordinating Unit External Consultants (i.e. evaluation team)		
Terminal Report	Project team UNDP-CO External Consultant	None	At least one month before the end of the project
Lessons learned	Project team UNDP-GEF Regional Coordinating Unit (suggested formats for documenting best practices, etc)	22,000	Yearly
Audit	UNDP-CO Project team	8,000	Yearly
Visits to field sites (UNDP staff travel costs to be charged to IA fees)	UNDP Country Office UNDP-GEF RCU (as appropriate) Government representatives	None	Yearly
TOTAL COST (Excluding project team staff time and UNDP staff and travel expenses)		205,000	

## PART A.5 Budget and Cost Effectiveness

### 5.1 Budget

164. Total project financing amounts to US\$ 101,303,750.00, excluding preparatory costs. Of this, the GEF is requested to finance US\$ 5,763,000.00. Total co-financing amounts to US\$ 95,523,750.00.

#### Project costs

	Project Outcomes	Total	GEF	Cofinancing
		USD	USD	USD
Outcome 1	Creation of an enabling environment for climate-resilient, sustainable land and ecosystem management	7,281,500.00	850,000.00	6,431,500.00
Outcome 2	Community-driven, climate-resilient approaches for sustainable land and ecosystem management are demonstrated in 4 micro-catchments	76,355,645.00	3,300,000.00	73,055,645.00
Outcome 3	Capacities for adaptive management, learning and replication of project lessons are developed	9,997,225.00	1,088,000.00	8,909,225.00
	Project management	7,652,380.00	525,000.00	7,127,380.00
	TOTAL	101,286,750.00	5,763,000.00	95,523,750.00

#### Project management Budget/cost

Project management inputs	Estimated staff weeks	GEF (\$)	Other sources (\$)	Total (\$)
Locally recruited personnel*				
Project Coordinator	195 (\$ 495/wk)	96500	1,400,000	1496500
Project Assistant	194 (\$ 250/wk0)	48500	750,000	798,500

Project management inputs	Estimated staff weeks	GEF (\$)	Other sources (\$)	Total (\$)
Office facilities, equipment, vehicles and communications		125,000	2,250,000	2,375,000
Travel to project sites		160,000	1,750,000	1,910,000
Miscellaneous		95,000	1,350,000	1,445,000
<b>Total</b>		<b>525,000</b>	<b>7,500,000</b>	<b>8,025,000</b>

\* Local and international consultants in this table are those who are hired for functions related to the management of the project. Consultants who are hired to do a special task are referred to as consultants providing technical assistance, and the cost details of their services are provided in Table (c).

#### Consultants working for technical assistance components<sup>30</sup>

Component	Estimated person weeks	GEF (\$)	Other sources (\$)	Total (\$)
Personnel				
Local consultants	848 (495 /wk)	420,000	5,880,000	6,300,000
International consultants	86 (\$ 3200/wk)	275,000	3,850,000	4,125,000
<b>Total</b>		<b>695,000</b>	<b>9,730,000</b>	<b>10,425,000</b>

#### Co-financing Sources<sup>31</sup> (expand the table line items as necessary)

Name of co-financier (source)	Classification	Type	Amount (USD)	Status*
MPFD	State Government	Cash	32,157,500	
Minor Forest Produce Federation	State Government	Cash	2,500,000	
		In kind	1,550,000	
RGMWM	State Government	Cash	33,498,750	
Agriculture Department	State Government	Cash	15,960,000	
Animal Husbandry Department	State Government	Cash	9,857,500	
Sub-total co-financing		Cash and in-kind	95,523,750	

\* All above sources of cofinancing have been confirmed by a letter from the co financier, the State of Madhya Pradesh.

## 5.2 Cost-effectiveness

165. Sustainable Land and Ecosystem Management (SLEM) is cost effective because of the cross-cutting and multi-sectoral approach, reducing transaction costs and improving communication and influence. This SLEM project is dealing with both land management and biodiversity conservation as well as adaptation to climate change and will help increase understanding of how to optimize synergies between these GEF focal areas in order to sustain ecosystem services and improve livelihoods of local communities.

166. By feeding information and lessons learned into the national SLEM mechanism, especially by sharing lessons between projects, states and agencies, there is a real cost effective opportunity to widen the scope of the initial investment and support India in increasing its capacities and resources to continue approaches initiated under this project. As part of the analysis of cost-effectiveness of the project, lessons learnt from previous projects in the Asia-Pacific region with a similar thematic focus were gathered and analyzed from Project Implementation Reviews (PIRs). This analysis is summarized below together with

<sup>30</sup> For all national and international consultants hired for technical inputs, TORs are in ...

<sup>31</sup> [Refer to the paper on Cofinancing, GEF/C.206/Rev. 1](#)

an explanation of how the lessons learnt have been integrated into the design of the Madhya Pradesh SLEM project.

**Table 13. Lessons learned and impact on project design**

Lessons	Impact on project design
<p>Stakeholders' participation:            Effective coordination between government agencies is important            Projects can also play an important role to coordinate work of NGOs</p>	<p>Achieving better inter-sectoral coordination is a fundamental objective of the project. The idea is that so different sectoral approaches such as Joint Forest Management, watershed management, and sustainable agriculture should be coordinated at the village level to provide a package of interventions that can stem land and ecosystem degradation trends. The Project Steering Committee, at the State-level and micro/milli watershed level, will therefore have representation from all the sectors. This inter-sectoral approach has been followed during the project design phase and one of the indicators of this is the range of co financiers (from the different sectoral departments).</p>
<p>Local communities' involvement:            Community consultative groups should be established for each party to participate actively and to build co-operation within co-partners            Planning at the village level (called micro-planning) helps to take stock of the resources and plan steps to use them in a sustainable way            Proactive involvement of communities in biodiversity conservation is linked with collective economic incentives and social returns</p>	<p>The primary mode of operation of the project to demonstrate SLEM approaches is to work through SHGs, established under the institutional umbrella of the Joint Forest Management Committees (JFMCs). Each SHG will represent some common interest (e.g., SHG for undertaking bamboo rehabilitation, SHG for processing bamboo into baskets, SHG for other NTFPs, SHG for improvements in rain-fed agriculture, water user groups, and such). Planning of demonstration activities at the watershed level will be led by Territorial/ Local Committees that will favor representation of beneficiaries. Demonstration activities will be designed to generate livelihood benefits and ecological improvements.</p>
<p>Project Design related lessons:            Establish and activate an efficient conflict resolution process locally and nationally for any biodiversity management related programmatic initiative for its sustainability            A clear management structure and the roles/responsibilities of each member in the management scheme for the project            Identify a design for inter departmental coordination at all levels for effective implementation of projects            Recognize that advocacy and consensus building take a long time and should start from project design</p>	<p>The JFMCs and the SHGs will be the primary decision making and implementation bodies at the local level. Therefore, training in conflict resolution will form a fundamental part of capacity building activities for these CBOs, as well as for government staff.            Further, one of the primary goals of the Inception Workshop for the project will be to ensure that all parties understand their roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. Terms of Reference for project staff and decision-making structures will be discussed again, as needed, in order to clarify for all, each party's responsibilities during the project's implementation phase.            The project development phase of this project (funded through a GEF PDF-B grant) has been instrumental in building working relationships between sectoral departments, with NGOs (SPS), as well as with village level institutions in villages that were selected for conducting pre-feasibility assessments. These relationships have defined the project management structure and will be continued through implementation.</p>

## **PART A.6      Legal Context**

167. This document together with the CPAP signed by the Government and UNDP which is incorporated by reference constitute together the instrument envisaged in the [Supplemental Provisions](#) to the Project Document. Consistent with the above Supplemental Provisions, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

The implementing partner shall:

- a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- b) assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

168. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

169. The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

## **SECTION B: STRATEGIC RESULTS FRAMEWORK (SRF) AND GEF INCREMENT**

### **PART B.1: Incremental Cost Assessment**

#### Project background

170. Despite the thrust towards watershed development in the last decade in Madhya Pradesh, catchments continue to degrade and rates of soil erosion continue to be high with negative downstream externalities. Natural forests are degraded and fragmented<sup>32</sup>, and in urgent need of protection and regeneration, and ecosystem services and functions, such as soil and water retention are being lost at an accelerating rate, also affecting downstream states. Unsustainable land management practices, especially deforestation and overgrazing, have been both cause and consequence of the livelihoods crisis among tribal and rural communities living in and around forest areas.

171. In Madhya Pradesh around 10 million people are dependent on forests, with 41% of total villages in the state being located within 5 km of forest areas. The livelihood system consists of rain-fed agriculture, livestock rearing, and use of a wide variety of forest products. Since the 1970s, around 20% of the land area of the villages in the project area (districts of Betul, Chhindwara, Sidhi and Umaria) have been lost or rendered unproductive due to land degradation and erosion. Around 65% of the households in the villages have been affected; crop production has decreased by 25-30%; average household income reduced by 25%; and villages have experienced a 40% reduction in forest and grazing areas. Simultaneously, during this period, the human population has increased by 15-20% and cattle population by 50% placing added stress on an already overburdened fragile ecosystem. It is recognized that to address these problems it is necessary to focus on the direct and indirect drivers of land degradation and land-use change in the State.

#### Baseline scenario

172. Under the baseline (business-as-usual) scenario the above-described degradation trends are likely to continue as there remain persistent barriers to addressing direct and indirect drivers of land degradation, notably in terms of policy design and implementation and effective community engagement and ownership of integrated natural resource management. Over the next 5 years, the government of Madhya Pradesh (Departments of Agriculture, Horticulture, Animal Husbandry, Forests, and Rural Development) will undertake various activities in the project districts aimed at improving the livelihood system of the largely tribal residents of this area as well as undertake forest management. The baseline is made up of diverse interventions being undertaken by the different sectors to address one component or the other of the livelihood system, but these interventions are not coordinated at the village level to provide integrated support services to the rural population. The baseline is not effectively integrating different sectoral approaches such as Joint Forest Management, watershed management, and sustainable agriculture at the village level to provide a package of interventions that can stem land and ecosystem degradation trends. Nevertheless, the baseline forms an essential foundation upon which climate-resilient sustainable land and ecosystem management can be built. The baseline is summarized below for each project outcome<sup>33</sup>.

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<sup>32</sup> It is estimated that 143,000 ha of designated forest lands are threatened by encroachment.

<sup>33</sup> The systems boundary for the estimating baseline expenditures is as follows: (1) the temporal boundary is the 5 year time frame of the project; (2) the spatial boundary is the 4 project districts; (3) the thematic boundary includes expenditures in those sectors that the project hopes to influence through its demonstrations of climate-resilient sustainable land and ecosystem management and these are agriculture, horticulture, animal husbandry, forests, and watershed development that falls under the purview of the Rural Development Department. The baseline does not include expenditures on protected areas as this does not fall within the production landscape within which the

173. Enabling environment: Of the departmental budgets allocated to the above mentioned sectors, some resources will be set aside for training staff at the block and district levels as well as farmers for implementing sectoral activities. However, these efforts will not be geared to training in climate-resilient, sustainable land and ecosystem management approaches. The baseline investment is estimated at USD 8,077,025.

174. Village-level activities for sustainable land and ecosystem management: The bulk of sectoral department budgets (agriculture, horticulture, animal husbandry, forests, and watershed development) are allocated to pursuing sectoral objectives through activities at the village level. These efforts however, are not coordinated and are unlikely to effectively take into account impacts on ecosystem degradation and the compounding effects of climate change, including variability. The baseline investment is estimated at USD 105,512,725.

175. Activities for enhancing learning and replication: Under the sectoral department budgets, some resources will be allocated to monitoring and evaluation of village-level activities and to promote cross-community learning through farmer exposure visits, fairs, exhibitions, and the use of information technology to promote exchange. The baseline investment is estimated at USD 22,674,500.

#### Alternative strategy

176. While the government has taken positive steps towards sustainable management of forests and watersheds, it still faces many challenges to realizing sustainable management of land resources in the ecologically critical landscapes of Betul, Chhindwara, Sidhi and Umaria. There is a solid legislative and policy foundation in place for addressing drivers of land and ecosystem degradation. Likewise, initial steps have been taken to translate this framework into action through the above described programs and projects. However, on-the-ground impacts in terms of reversing direct drivers of land and ecosystem degradation are not being realized.

177. In the absence of a large and coordinated intervention, with incremental support from GEF, that builds on the vast experiences in integrated management of natural resources in the State, the livelihood system being practiced in forest fringe villages, which consists of (a) low productivity, rain fed, extensive agriculture; (b) uncontrolled grazing of livestock in forests; and (c) unsustainable exploitation of NTFPs, will continue to undermine ecosystem services. This will be further compounded by the effects of climate change and variability that are increasingly threatening traditional ways of life. In order to preserve the range of ecosystem services, the normative situation is to model a livelihood system where each component is sustainable over the long term and maximizes the accrual of economic benefits at the village-level. Furthermore, each component of the livelihood system should be adapted to increase its resilience to climate change and variation.

178. GEF support will be catalytic in mobilizing action by national stakeholders to overcome existing barriers and introduce new strategies and technologies that will halt land degradation, improve the condition of natural resources and increase the stability, integrity and productivity of the forest ecosystems. More importantly, building on the opportunities for community-based resource management offered by the Joint Forest Management Resolution of the Government of Madhya Pradesh, it will promote a participatory natural resource planning and management strategy, involving large scale community mobilization, strengthening of existing and new community institutions, and development of capacity (particularly among women) to enable community stakeholders to undertake planning and management of natural resources. It will enhance the capacity of Panchayat leaders, NGOs and CBOs (namely the Joint Forest Management Committees) to promote participatory natural resource management.

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project aims to bring about a change in practices to mainstream global environmental concerns of land degradation, biodiversity conservation and adaptation to climate change.

179. The GEF Alternative aims at making a paradigm shift in management of forests, watersheds and tribal welfare in the target project area. The aim is to engage and coordinate the different sectors at the village level/ micro-catchment level to promote a natural resource management system that balances ecological and livelihood needs as an integral part of the operation of these sectors. This integrated approach to address water, land and natural resource management would enhance the resource base and generate local as well as global benefits. The GEF investment is aimed at catalyzing a positive enabling environment to facilitate this paradigm shift, undertake demonstration activities in selected micro-catchments and promote learning and replication of project experiences. The Departments of Agriculture, Animal Husbandry (AH), Forests, the Madhya Pradesh Minor Forest Produce Federation (MFPF), and the Department for Rural Development (from the RGMWM) will mobilize their resources in the target districts to further the climate-resilient SLEM approaches being demonstrated by the project.

180. The three project outcomes are listed below. The IC matrix details the baseline expenditures, and the incremental cost of realizing each outcome, as well as how the incremental costs are to be shared by the GEF and different government departments.

- Outcome 1: Creation of an enabling environment for climate-resilient, sustainable land and ecosystem management
- Outcome 2: Community-driven, climate-resilient approaches for sustainable land and ecosystem management are demonstrated in 4 micro-catchments
- Outcome 3: Capacities for adaptive management, learning and replication of project lessons are developed

**IC matrix (in USD)**

Outcome	Cost type	Costs in USD		National Benefits	Global Benefits
Outcome 1: Creation of an enabling environment for climate-resilient, sustainable land and ecosystem management	Baseline	GoMP	8,077,025	Livelihood needs are being addressed but over the short-term; not taking into account long-term scenarios	Legal (JFM and watershed management) and market foundations for promoting SLEM are in place but are not being capitalized.
	Increment	GEF	850,000		
		Forest Dept	6,431,500		
		<b>Total</b>	<b>7,281,500</b>		
<b>Alternative</b>	<b>Total</b>	15,358,525	Sectoral policies and capacities on agriculture, horticulture, animal husbandry, forest, watershed management are better suited to sustaining natural resource dependent livelihoods of the largely tribal local populations over the long term	Ecosystem services are maintained, degradation trends are reduced, capacities to adapt to climate change are enhanced.	
Outcome 2: Community-driven, climate-resilient approaches for sustainable land and ecosystem management are demonstrated in 4 micro-catchments	Baseline	GoMP	105,512,725	Sectoral services are provided to improve different components of the livelihood system but do not take a long-term view and are not integrated at the microcatchment level	Certain land, soil and water conservation efforts are promoted to reduce land degradation
	Increment	GEF	3,300,000		
		Forest Dept	21,095,320		
		MFPF	3,321,000		
		RGMWM	27,468,975		
		Agric. Dept	13,087,200		
		AH Dept	8,083,150		



		<b>Total</b>	<b>76,355,645</b>		
	<b>Alternative</b>	<b>Total</b>	<b>181,868,370</b>	Improved sustainable land and ecosystem management approaches integrated into the livelihood system enhancing its income-generating capacity over the long term and enhancing resilience to climate change	Ecosystem health, function and resilience are enhanced in the 4 target micro-catchments
Outcome 3: Capacities for adaptive management, learning and replication of project lessons are developed	Baseline	GoMP	22,674,500	Some limited activities for promoting cross-community learning for sectoral approaches being promoted by the different departments	
	Increment	GEF	1,088,000		
		Forest Dept	2,572,600		
		MFPF	405,000		
		RGMWM	3,349,875		
		Agric. Dept	1,596,000		
		AH Dept	985,750		
		<b>Total</b>	<b>9,997,225</b>		
<b>Alternative</b>	<b>Total</b>	<b>32,671,725</b>	Farmers have easy access to SLEM techniques that can enhance their long-term livelihood prospects	Enhanced farmer uptake and replication of climate-resilient SLEM approaches which in turn helps secure ecosystem services	
Project management		GEF	525,000		
		GoMP	7,127,380		
		<b>Total</b>	<b>7,652,380</b>		

**Summary Incremental Cost Matrix (in USD)**

<b>Grand Totals</b>	Baseline		136,264,250
	Increment	GEF	5,763,000
		Non GEF	95,523,750
	<b>Alternative</b>		<b>237,551,000</b>

## PART B.2: Logical Framework

Project Goal	To promote sustainable land management and use of biodiversity, as well as maintain the capacity of ecosystems to deliver goods and services, while taking account of climate change (the project will contribute to this goal along with the other projects under the Sustainable Land and Ecosystem Management Programme)				
Project Strategy	Objectively verifiable indicators				
	Indicator	Baseline	Target	Source of Verification	Risks and Assumptions
Project objective: To promote community-driven sustainable land and ecosystem management at the landscape level through integration of watershed management, joint forest management, and sustainable livelihoods development so as to balance ecological and livelihood needs.	Hectares of land where climate-resilient, SLEM is demonstrated for further replication in other areas	0 hectares	3,000 hectares of non-forest land and 14,500 hectares of degraded bamboo areas within forest lands	Reports from community-based monitoring system; mid-term and final independent evaluations	Participation of marginalized groups, who are the primary target group of the project, is weak due to a fear that their access to natural resources is going to be restricted in ways that reduce the income they can derive.
	Overall decrease in trend and/or severity of land degradation as measured by % increase in NPP (Net Primary Productivity) and/ or RUE (Rain Use Efficiency) and associated loss of biodiversity and enhanced forest cover	Baseline to be measured in Y1	10% increase in NPP and land productivity over baseline at project demonstration sites	Field surveys	Climate change including variability has adverse impacts on food security and ecosystem services.  Sectoral departments are not open to integrating climate-resilient SLEM principles in their work.
	Reduced threats to forest habitats enhancing survival probabilities of threatened species	Baseline to be measured in Y1	Reduction in threats over baseline		Stated cofinancing commitments do not materialize.  (See below for details on <a href="#">risk rating and mitigation strategies</a> .)
	Improved forest cover in the project districts	Baseline to be measured in Y1	Improvement by 3-5% over baseline		

Project Strategy	Objectively verifiable indicators				
	Indicator	Baseline	Target	Source of Verification	Risks and Assumptions
	Enhanced carbon sequestration capacity in project demonstration sites	Baseline to be measured in Y1	10% increase of total system carbon at project demonstration sites	Field surveys	
	Change in proportion of project participants who are living above the poverty line	Approximately 3% of families in target districts/villages	30%	Socio-economic survey of beneficiary groups conducted as part of monitoring activities	
Outcome 1 Creation of an enabling environment for climate-resilient, sustainable land and ecosystem management	Number of sectoral policies that incorporate SLEM guidelines	Existing sectoral policies	Climate-resilient, biodiversity-friendly, SLEM guidelines integrated into State agriculture, animal husbandry, forest, watershed, and tribal welfare policies by Y5	Madhya Pradesh State Gazette	
	Number of government staff and CBO representatives trained in climate-resilient SLEM	Limited	2,000	Project reports; analysis of training evaluation forms	
	Strategic plan to institutionalize integrated service provision for climate-resilient SLEM	None	Plan developed and verified	Project Steering Committee Meeting Minutes	
Outcome 2: Community-driven, climate-resilient approaches for sustainable land and ecosystem management are demonstrated in 4 micro-catchments	Approx. 14,500 ha of degraded bamboo forests rehabilitated through community based participatory arrangement, thereby enhancing connectivity between relatively undisturbed forest tracts that harbor globally significant biodiversity	Highly degraded areas with only 15-20 culms per clump	25-35 culms per clump by Y5	Field Survey, photo documentation	

Project Strategy	Objectively verifiable indicators				Risks and Assumptions
	Indicator	Baseline	Target	Source of Verification	
	Increase in earnings of about 700 families from involvement in sustainable management of degraded bamboo areas	About 1000 INR per month/family	Increase by 60% by Y5	Socio-economic survey of beneficiary groups conducted as part of monitoring activities	
	Degraded lands planted with fast growing tree species suited to the local environment	0 hectares	200 hectares by Y5	Field Survey, photo documentation	
	% of existing head loaders in target villages who substitute their existing practice with income derived from plantations	0%	15% by Y5	Socio-economic survey of beneficiary groups conducted as part of monitoring activities	
	Reduction in fuelwood extraction pressures on surrounding forests attributable to fuelwood plantations	Baseline to be identified in Y1 for each demonstration site	Reduction by at least 40%	Survey conducted as part of monitoring activities	
	Increase in average fodder yields of degraded land	Baseline to be identified in Y1 for each demonstration site	50–75% by Y5	Field Survey, photo documentation	
	Hectares of forest facing pressure for livestock grazing and/ or fodder collection attributable to fodder plantations	Baseline to be identified in Y1 for each demonstration site	At least 30–40% of this area faces decreased pressure by Y5	Survey conducted as part of monitoring activities	
	Increase in perennial vegetation cover on degraded lands	Baseline to be identified in Y1 for each demonstration site	25-40% increase by Y5	Field Survey, photo documentation	
	Number of households in demonstration site directly benefiting from the fodder production component	No. of households in demonstration site measured in Y1	At least half of the households benefit	Socio-economic survey of beneficiary groups conducted as part of monitoring activities	

Project Strategy	Objectively verifiable indicators				Risks and Assumptions
	Indicator	Baseline	Target	Source of Verification	
	Change in average per capita income as a result of fodder plantations and its indirect benefits	Baseline to be identified in Y1 for participating families	Increase by at least 20% by Y5	Socio-economic survey of beneficiary groups conducted as part of monitoring activities	
	Number of SME business plans based on sustainable harvest and added-value processing of local NTFPs	0	100	Project Steering Committee meeting minutes	
	Number of SME business plans operationalized	0	40	Project Steering Committee meeting minutes	
	Number of persons with enhanced capacity to promote livelihood security through sustainable natural resource-based enterprises	0	1,000	Socio-economic survey of beneficiary groups conducted as part of monitoring activities	
	Curtailment of distress migration	No. of families affected measured in Y1	At least 10% of households no longer affected by distress migration by Y5	Socio-economic survey of beneficiary groups conducted as part of monitoring activities	
	Number of women participants in SMEs	0	At least 20% of participants are women	Socio-economic survey of beneficiary groups conducted as part of monitoring activities	
	Number of SMEs operationalized under the project that are linked up with local banking institutions for obtaining loans for further expansion	0	At least 25% by project end	Project Steering Committee meeting minutes	

Project Strategy	Objectively verifiable indicators				Risks and Assumptions
	Indicator	Baseline	Target	Source of Verification	
	Hectares of community land mobilized for reviving local species that enhance ecosystem health and also generate benefits for landless communities (fuelwood, fodder, medical plants, fruit)	0 hectares	600 hectares	Field Survey, photo documentation	
	Rejuvenation and or renovation of existing community based watershed structures in 40 villages	No. of structures in target villages measured in Y1	All structures deemed necessary and viable are rejuvenated by Y5	Field Survey, photo documentation	
	New watershed structures built based on local needs and available project resources	0	At least 10 by Y5	Field Survey, photo documentation	
	Revival of farmlands that are laying fallow or unused due to lack of water	Area to be measured in Y1	At least 20% of farmlands are revived	Field Survey, photo documentation	
	Increase in farm productivity of marginal and pro-poor tribal farmers due to proposed watershed interventions	Productivity measured in Y1	At least 10% increase by Y5	Field Survey, photo documentation	
	Water User Groups (WUGs) created in each of the four project districts	None	At least 25	Socio-economic survey of beneficiary groups conducted as part of monitoring activities	
	Increase in the use of fallow farmlands to enhance livelihoods and reduce extensification pressures	Area measured in Y1	At least 20% increase by Y5	Field Survey, photo documentation	
	Increase in organic and traditional innovations for rain fed farming	Current use measured in Y1	Increased by at least 30% by Y5	Field Survey, photo documentation	
	Change in on farm productivity through use of improved seed varieties	Farm productivity measured in Y1	Increase by at least 15% by Y5	Field Survey, photo documentation	

Project Strategy	Objectively verifiable indicators				
	Indicator	Baseline	Target	Source of Verification	Risks and Assumptions
	Reduction in natural resource dependency of farmers on near by forests attributable to integration of on farm agro-forestry practices	Extent of pressure imposed by farmers measured in Y1	Reduction of at least 20% by Y5	Survey conducted as part of monitoring activities	
	Improvements in soil fertility	Fertility on demonstration sites measured in Y1	Increase by at least 5%	Field Survey, photo documentation	
Outcome 3: Capacities for adaptive management, learning and replication of project lessons are developed	Local level monitoring mechanisms set up in each project site (CBIA)	None	Established in each demonstration site by end of Y2	Project Steering Committee meeting minutes	
	Learning on best practices and models disseminated within and outside the project villages	None	Documentation is available in local languages by Y5	Project Steering Committee meeting minutes	
	Replication plan	None	Agreement, by Y5, on watersheds/ villages where lessons can be replicated in 5 and 10 year increments after project closure	Project Steering Committee meeting minutes	
Outcomes	Outputs				
Outcome 1:Enabling environment	Output 1.1 State-level policies on forest, agriculture, animal husbandry, watershed management, tribal welfare reflect climate-resilient, sustainable land and ecosystem management principles				
	Output 1.2 Community-based organizations (JFMCs) and government staff are trained in promoting community-driven, climate-resilient, sustainable land and ecosystem management				
Outcome 2: Demonstrations	Output 2.1 Plans for rehabilitation and sustainable management of degraded bamboo areas in forest lands near target villages are developed and implemented.				
	Output 2.2 Plantations are established on degraded community and forest lands to support local fuelwood needs.				
	Output 2.3 Plantations are established on degraded community and forest lands to support local fodder needs.				
	Output 2.4 Small and Medium Enterprises (SMEs) based on sustainable harvest of other NTFPs are promoted				
	Output 2.5 Home gardens are promoted among landless families to meet subsistence needs				
	Output 2.6 Improved management of water resources at the level of micro/ milli watersheds, with particular emphasis on community mobilization in support of soil and water conservation structures and approaches				
	Output 2.7 Rain fed agricultural practices are strengthened with people-friendly, cost-effective, climate-resilient technologies that can improve returns within the constraints of local agro ecological conditions				
Outcome 3:Adaptive management, learning and replication	Output 3.1 Community-based system for monitoring and assessment of impacts, as well as external evaluations of the project				
	Output 3.2 Documentation of lessons learned and preparation of information dissemination products which are geared to different audiences and are available in local languages.				

#### Risk rating and mitigation strategies:

Participation of marginalized groups, who are the primary target group of the project, is weak due to a fear that their access to natural resources is going to be restricted in ways that reduce the income they can derive. This risk is rated as medium. To mitigate this risk, the project will develop the capacity of marginalized groups, village leaders and the community to take concerted action on priority community-based initiatives for the use of their local natural resources, and demonstrate the income-generating potential of sustainable land, forestry, and agricultural practices. Fair and equitable benefit sharing mechanisms will be instituted. The project will ensure that decisions about access rights to resources and attendant impact on livelihoods will be made at the level of the community, rather than by government officials. Reduced dependency on common lands and other natural resources will be offset by alternative income-generating activities based on sustainable resource use.

Climate change including variability has adverse impacts on food security and ecosystem services. This risk is rated as medium. To mitigate this risk, the project will be designed to strengthen land-use planning processes making them climate change sensitive. All demonstration interventions will be assessed for their climate-resilience. Capacity will also be developed at the State level for climate related scenario planning.

Sectoral departments are not open to integrating climate-resilient SLEM principles in their work. This risk is rated as low. To ensure buy-in, sectoral department representatives will be included in the Project Steering Committee. District/ block/ village level staff from these departments will be involved in relevant demonstration and capacity building activities.

Stated cofinancing commitments do not materialize. This risk is rated as low. The State government has dedicated resources to the project from its budgetary allocation for the current financial planning period, and this has been committed to in a cofinancing letter.



## SECTION C: TOTAL BUDGET AND WORK PLAN (UNDP ATLAS)

Award ID	00057324
Award Title:	PIMS 3512 MFA FSP: Integrated Land and Ecosystem Management to Combat Land Degradation and Deforestation in Madhya Pradesh
Business Unit:	IND10
Project Title:	PIMS 3512 MFA FSP: Integrated Land and Ecosystem Management to Combat Land Degradation and Deforestation in Madhya Pradesh
Implementing Partner (Executing Agency)	National Implementation

GEF Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Account Code	ATLAS Description	Budget	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Amount Total (USD)	See Budget Note:
Outcome 1: Creation of an enabling environment for climate-resilient, SLEM	MPFD	62000	GEF	71600	Travel		40,000	30,000	25,000	20,000	10,000	125,000	1
				71300	Local Consultants		20,000	20,000	20,000	20,000	20,000	100,000	2
				72100	Contractual services		300,000	150,000	75,000	50,000	25,000	600,000	3
				74500	Miscellaneous		5,000	5,000	5,000	5,000	5,000	25,000	4
					Sub-total GEF		<b>365,000</b>	<b>205,000</b>	<b>125,000</b>	<b>95,000</b>	<b>60,000</b>	850,000	
					Total Outcome 1		<b>365,000</b>	<b>205,000</b>	<b>125,000</b>	<b>95,000</b>	<b>60,000</b>	850,000	
Outcome 2: Community-driven, climate-resilient approaches for SLEM demonstrated in 4 micro-catchments	MPFD	62000	GEF	71200	International Consultants		75,000	75,000	75,000	25,000	25,000	275,000	5
				71300	Local Consultants		20,000	20,000	20,000	10,000	5,000	75,000	6
				72100	Contractual services		1,000,000	700,000	400,000	300,000	350,000	2,750,000	7
				71600	Travel		20,000	20,000	20,000	20,000	20,000	100,000	8
					Material and supplies		25,000	25,000	25,000			75,000	9
				74500	Miscellaneous		5,000	5,000	5,000	5,000	5,000	25,000	10
					Sub-total GEF		<b>1,145,000</b>	<b>845,000</b>	<b>545,000</b>	<b>360,000</b>	<b>405,000</b>	3,300,000	
	Total Outcome 2		<b>1,145,000</b>	<b>845,000</b>	<b>545,000</b>	<b>360,000</b>	<b>405,000</b>	3,300,000					
Outcome 3: Capacities for adaptive management,	MPFD	62000	GEF	71600	Travel		25,000	25,000	25,000	25,000	25,000	125,000	11
				71300	Local Consultants		25,000	25,000	20,000	15,000	15,000	100,000	12
				72100	Contractual services		325,000	175,000	175,000	75,000	75,000	825,000	13
				74500	Miscellaneous		10,000	10,000	10,000	5,000	3,000	38,000	14

learning and replication of project lessons are developed					Sub-total GEF	385,000	235,000	230,000	120,000	118,000	1,088,000	
					Total Outcome 3	385,000	235,000	230,000	120,000	120,000	1,088,000	
Project management costs	MPFD	62000	GEF	71200	Local Consultants	30,000	30,000	30,000	30,000	25,000	145,000	15
				71300	Travel	40,000	30,000	30,000	30,000	30,000	160,000	16
				71600	Office Supplies	25,000	25,000	25,000	25,000	25,000	125,000	17
				72500	Miscellaneous	25,000	25,000	25,000	10,000	10,000	95,000	18
					Sub-total GEF	120,000	110,000	110,000	95,000	90,000	525,000	
	Total Management	120,000	110,000	110,000	95,000	90,000	525,000					
PROJECT TOTAL						2,015,000	1,395,000	1,010,000	670,000	673,000	5,763,000	
Budget	Detailed costing and explanation											
1	Travel in outcome 1 involves the consultants travelling to various places for meeting the stakeholders and specialists in the SLEM issues, travel to meetings organized by the project and local consultations within the state.											
2	The consultants (about 4 consultants for 50 weeks each) will undertake review of various policies that are in force in the state and at the federal government towards SLEM and revise them for the successful implementation of the same and also propose addressing policy requirements, if any. 2 – 3 consultants will be hired to address various issues such as agriculture, forestry, animal husbandry, watershed management and climate change related policies and programmes that help achieve SLEM programmes efficiently.											
3	Contractual services will be hired for organizing meetings, training programmes for community preparation of documents, publication of documents etc, on community driven SLEM programme											
4	Miscellaneous expenses include local help, photocopying etc.											
5	International consultants (4 consultants of 23 wks each) are primarily hired to capture the climate resilience patterns SLEM programme development for the 4 micro catchments. The work involves development of watershed programmes, cropping patterns, biodiversity conservation (forestry), energy utilization issues within the system and soil and water conservation issues.											
6	Local consultants will primarily (4 consultants for 38 wk each) be working closely with international consultants on the issues of agriculture, watershed development, soil and water conservation and biodiversity conservation. The consultants will develop plans for rehabilitation and sustainable management of degraded bamboo areas in forest lands near target villages, develop plans for management of water resources at the level of micro/ milli watersheds, with particular emphasis on community mobilization in support of soil and water conservation structures and approaches, develop rain fed agricultural practices, strengthened with people-friendly, cost-effective, climate-resilient technologies that can improve returns within the constraints of local agro											
7	Contractual services are involved to establish plantations on degraded community and forest lands to support local fuelwood needs; develop small and Medium Enterprises (SMEs) based on sustainable harvest of other NTFPs are promoted, interact with various stakeholders, facilitate the development of pilot programmes for demonstration in consultation with the project Management unit, international and national consultants, etc.											
8	Travel involved here are primarily local, travel for international and national consultants, community participation in the project and other field travel related in 4 districts.											
9	Four micro catchments will have four local offices for managing the day to day work. For managing this, we need to have a separate computers, fax, telephone and internet devices. Generally the state government offices at the local level are not equipped with electronic communications systems. Therefore, these equipments are necessary. In addition field equipments such as water meters, and other laboratory equipments are necessary for											

10	Miscellaneous involves people's participation, local food expenses for local people and any other sundry expenses during the meetings.
11	Travel in outcome involves the consultants travelling to various places for consulting the stakeholders for replication of SLEM issues, travel to meetings organized by the project and local consultations within the state.
12	Local consultants will be (4 consultants for 50 wk each) involved in developing replication models using communities for monitoring and assessment of impacts, as well as external evaluations of the project
13	Contractual services are involved to develop programmes, interact with various stakeholders, facilitate the development of pilot programmes for demonstration in consultation with the project Management unit, international and national consultants, etc.
14	Miscellaneous involves people's participation, local food expenses for local people and any other sundry expenses during the meetings.
15	Local consultants will be involved in the project management unit for coordination work, finance and administrative support.
16	Cost involves travel to project sites, monitoring visits and other necessary travel for the projects day-to-day work. In total there will be project manager, finance support and administrative support staff working towards implementation of the project such as project and financial reporting, recruiting etc.
17	Office supply includes computer, printer electronic accessories such as cartridges and other consumables.
18	Miscellaneous expenses at PMU involve cost sharing of watch and ward, local labor when necessary and messengers among other things.

## **SECTION D: ADDITIONAL INFORMATION**

<b>PART D.1:</b>	<b>OTHER AGREEMENTS</b>	<b>68</b>
<b>PART D.2:</b>	<b>SELECTION OF DEMONSTRATION SITES WITHIN THE FOUR PROJECT DISTRICTS</b>	<b>69</b>
<b>PART D.3:</b>	<b>TERMS OF REFERENCES FOR KEY PROJECT STAFF AND CONSULTANTS</b>	<b>70</b>
<b>PART D.4:</b>	<b>STAKEHOLDER INVOLVEMENT PLAN</b>	<b>78</b>
<b>PART D.5:</b>	<b>BOTANICAL NAMES OF LOCAL TREE AND SHRUB SPECIES AND PRODUCTS</b>	<b>80</b>
<b>PART D.6:</b>	<b>RESPONSE TO STAP COMMENTS OF 31 JULY 2008</b>	<b>81</b>
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**PART D.1: Other agreements**

GEF OFP Letter of Endorsement

Co-financing Letter from the State of Madhya Pradesh

## **PART D.2: Selection of demonstration sites within the four project districts**

181. During the PDF-B phase the project team, through consultations, has developed the following criteria for selection of villages in the four project districts:

- The villages should fall within the watershed area of each of the four project districts. Four watershed areas would be identified in the four project districts.
- The villages so identified should have nearby degraded bamboo forest compartments within the watershed, and the degraded bamboo areas, once rejuvenated and under sustainable management, should provide better connectivity between relatively undisturbed forest tracts that provide refuge to globally significant biodiversity.
- The project would focus on villages as a cluster intensification drive for its implementation strategy to bring maximum visible impact of the project outcomes.
- The villages would be selected from one or two closely located blocks of the project districts so that they are developed as a group cluster to initiate the project activities.
- The villages so selected should have as far as possible the potential to integrate all the eight major project activity components and its service delivery as envisaged for the project.
- The cluster of villages selected in each of the four project districts should have high population of BPL families, pro-poor families of landless and or marginal farmers of tribal origin depending on forests and natural resources for their livelihood and socio-economic well being.
- The villages should have a functional Joint Forest Management Committee (JFMC) which is to become the village level Community Based Organization (CBO) for the project implementation phase.
- The villages should have the least affiliation to development activities, remotely located in the district block (s).
- The villages should as a cluster have high indicators of land and natural resource degradation to address the project activities and its outcomes. A front end field based assessment of natural resources, villages and consultation by the Implementing Agency (IA) along with the district level agencies, civil society organizations and community stakeholders would identify the clusters of villages where land degradation emerges as the most serious long term concern.

182. Some suggestive revenue blocks in the four project districts from where the villages may be identified for the project implementation are as follows:

District	Revenue Blocks
District Betul	Bhimpur (West Betul Forest Division) Chicholi (West Betul Forest Division) Amla (North Betul Forest Division)
District Chindwara	Harrai (West Chindwara Forest Division) Bichua (West Chindwara Forest Division)
District Umaria	Maanpur (Umaria Forest Division) Ghunguti (Umaria Forest Division)
District Sidhi	Chitrangi (East Sidhi Forest Division) Majhouli (West Sidhi Forest Division) Kusumi (West Sidhi Forest Division)

183. To obtain consent and ensure willingness of villagers to collaborate in project activities the following basic principles will be adhered to:

- Consent and willingness of the villagers for their participation be obtained in advance.
- Area for grazing is set aside so that no difficulty is faced by villagers to graze their cattle. This issue was prominently raised in Umaria where there was a fear of losing grazing area.
- Fodder and other NTFP if possible may be grown along with the bamboo plantations.

- Proper share in forest produce/bamboo will be given to villagers under the government agreement.
- Alternatives for Nistar to be provided.

### **PART D.3: Terms of References for key project staff and consultants**

**Duration:** Project Coordinator  
5 years, full-time

**Location:** Based in Bhopal; duty travel in India

Scope of the assignment:

The Project Coordinator assumes overall responsibility for the successful implementation of project activities and the achievement of planned project outputs. He/she reports to the National Project Director assigned by the MPFD, and the UNDP Country Office.

Duties and responsibilities:

Supervise and coordinate the project to ensure its results are in accordance with the Project Document and the rules and procedures established in the UNDP Programming Manual;  
Assume primary responsibility for daily project management - both organizational and substantive matters – budgeting, planning and general monitoring of the project;  
Ensure adequate information flow, discussions and feedback among the various stakeholders of the project;  
Ensure that participatory methodologies employed by the project are particularly sensitive to women’s participation;  
Ensure adherence to the project’s work plan, prepare revisions of the work plan, if required;  
Assume overall responsibility for the proper handling of logistics related to project workshops and events;  
Prepare GEF quarterly project progress reports, as well as any other reports requested by the Executing Agency and UNDP;  
Prepare, and agree with UNDP on, terms of reference for national and international consultants and subcontractors;  
Guide the work of consultants and subcontractors and oversee compliance with the agreed work plan;  
Maintain regular contact with UNDP Country Office and the National Project Director on project implementation issues of their respective competence;  
Monitor the expenditures, commitments and balance of funds under the project budget lines, and draft project budget revisions;  
Assume overall responsibility for the meeting financial delivery targets set out in the agreed annual work plans, reporting on project funds and related record keeping;  
Liaise with project partners to ensure their co-financing contributions are provided within the agreed terms;  
Ensure collection of relevant data necessary to monitor progress against indicators specified in the logframe;  
Assume overall responsibility for reporting on project progress vis-à-vis indicators in the logframe;  
Undertake any other actions related to the project as requested by UNDP or the National Project Director.

Expected Results:

Successful delivery of all project outputs and milestones, as indicated in the project logical framework.

Qualifications and skills:

University degree in the field of environment protection and management, sustainable human development or related field  
Outstanding communication, project management and organizational skills  
At least 8 years of experience in development cooperation and project management  
Familiarity with the working environment and professional standards of international non-profit organizations  
Working experience with GOI institutions involved in sustainable land management  
Experience in working with NGOs and civil society, and with participatory approaches  
Proficiency in English and Hindi  
Computer literacy

Terms and conditions for provision of the services:

The Project Coordinator reports to UNDP and to the National Project Director at MPFD  
Citizen of India

The Project Coordinator cannot be employed elsewhere during the entire course of the project

Administrative and Financial Assistant

**Duration:** 5 years, full-time

**Location:** Based in Bhopal; duty travel in India

Scope of assignment:

The Administrative and Financial Assistant provides assistance to the Project Coordinator in the implementation of day-to-day project activities. He/she is responsible for all administrative (contractual, organizational and logistical) and all accounting (disbursements, record-keeping, cash management) matters under the project.

Duties and responsibilities:

Provide general administrative support to ensure the smooth running of the project management unit

Project logistical support to the Project Coordinator and project consultants in conducting different project activities (trainings, workshops, stakeholder consultations, arrangements of study tour, etc.)

During the visits of international experts, bear the responsibility for their visa support, transportation, hotel accommodation etc

Organize control of budget expenditures by preparing payment documents, and compiling financial reports

Maintain the project's disbursement ledger and journal

Keep files with project documents, expert reports

Control the usage of non expendable equipment (record keeping, drawing up regular inventories)

Keep regular contact with project experts and consultants to inform them about the project details and changes

Provide English translation as required

Draft correspondence and documents; finalize correspondence of administrative nature; edit reports and other documents for correctness of form and content

Arrange duty travel

Act on telephone inquiries, fax, post and e-mail transmissions, and co-ordinate appointments

Perform any other administrative/financial duties as requested by the Project Coordinator

Organize and coordinate the procurement of services and goods under the project

Expected Results:

Successful operation of project office

Qualifications and skills:

University degree

Fluency in written and spoken English

Outstanding time-management, organizational and inter-personal skills

At least 2-year experience in office administration, preferably within UNDP projects

Excellent computer literacy

Terms and conditions for provision of the services:

The Administrative and Financial Assistant reports to the Project Coordinator and works under his/her direct supervision

Citizen of India

The Administrative and Financial Assistant cannot be employed elsewhere during the entire course of the project

National and international experts

The project will recruit national and international experts to complete defined tasks in support of the project objective and outcomes. Expertise will be required in review of various policies that are in force in the state and at the federal government towards SLEM; develop capture the climate resilience SLEM programme development for the micro catchments; develop plans for rehabilitation and sustainable management of degraded bamboo areas in forest lands near target villages, develop plans for management of water resources at the level of micro/ milli watersheds, with particular emphasis on community mobilization in support of soil and water conservation



structures and approaches, develop rain fed agricultural practices, strengthened with people-friendly, cost-effective, climate-resilient technologies that can improve returns within the constraints of local agro ecological condition Detailed TORs will be developed by the Project Coordinator, in consultation with the NPD and UNDP. Most experts will undertake missions/ field trips as necessary.

### **Specialist Consultants:**

#### **1. Climate Change Adaptation Consultant/Specialist**

The inclusion of this specialist in the team will ensure that climate change adaptation concerns are mainstreamed in the planned activities of the project. The work on Climate Change Adaptation is one of project outcome design areas. The climate change adaptation specialist/consultant will support the project implementation partner and their associated agencies, as well as other stakeholders, in the efficient, effective, and high quality delivery of project implementation services in the climate change adaptation activities.

The consultant for Climate Change Adaptation works under the overall guidance and supervision of the UNDP/MPFD Project Coordinator. The geographic scope of work is Madhya Pradesh, in the project districts of Betul, Chindwara, Umaria and Sidhi. S/he will be based in the Project Management Unit (PMU) at Bhopal. This scope is dynamic in nature and subject to change, as imposed by changes in demand. As needed, s/he will also provide support to the development, implementation and/or evaluation of the climate change adaptation project activities in the focal districts of Madhya Pradesh. The Consultant/ Specialist will be responsible for advising proponents of project on the most suitable sources of activities, policy change measures etc.

#### **Duties and Responsibilities**

##### **1. Project Activity Identification and Development**

Within the state to identify issues pertaining to the Climate Change Adaptation thematic area, through all stages of the project and programming cycle of the particular source of fund (GEF), and in accordance with the UNDP-GEF Programming Manuals, the Consultant/ Specialist is responsible for:

The identification and development of project activity ideas \within the overall strategic priorities for the project identified by UNDP and MPFD, in line with the global strategic priorities articulated by GEF;

Drawing on UNDP guidance and other local experiences in the field of climate change adaptation (such as Adaptation Policy Framework, livelihood strategies etc), provide a comprehensive picture of the vulnerability of the ecological, and socio-economic livelihood system to current and projected climate change in the 4 target project districts.

Assess each project outcome/ output/ activity and devise a strategy for how climate-resilience should be embedded in the project.

Lead the necessary stakeholder consultations needed to gain approval of this strategy.

Providing timely and quality information and technical advice on CC policy change issues etc. for the project staff with regards to Climate Change mitigation project development processes and requirements and provide necessary support;

Design, preparation and result based outcomes of project outcomes and expectations

Identification and sourcing of technical expertise and support including assisting with the preparation of TORs, identification and evaluation of experts and reviewing reports;

Identification and liaison with potential and actual co-financing agencies and institutions.

##### **2. Project Implementation Oversight and Support**

1. Inception, contracting and start up of projects including establishment of indicators, benchmarks and work plans;
2. Supervising implementation, monitoring, troubleshooting and adaptive management. This includes monitoring the development and implementation of the UNDP climate change mitigation outcomes
3. Reviewing the present policy scenario for CC in the national. Regional context for further amendments and its process.

##### **3. Strengthening Project Office and Executing Agency partner capacities to manage project activities:**

1. Contribute to the preparation of Community of Practice outcomes;
2. Supporting the preparation and delivery of training courses ;
3. Responding to queries on project progress, impacts and lessons;

4. Strategic planning, partnerships and liaison with other agencies and partners:
  1. Establishing and maintaining contact with other like minded institutions to seek strategic partnerships, synergies, coordination and
  2. Contribution to strategic planning and cross-cluster coordination, including participation, as applicable, in team meetings and strategic planning exercises;
  3. Contribute to formulating CC mitigation strategic work dealing with the future programming of GEF
  4. Keeping the rest of the Project Team(s) informed of trends and issues within their focal area and region/sub-region.

5. Generating, managing and stimulating the uptake of knowledge:

Within his/her related field of expertise, contributing globally and regionally to one or more of the following, in accordance with his/her agreed annual work plan;

Peer reviewing, commenting on, and seeking to improve the technical quality of project outcomes;

Evaluating, capturing, synthesizing lessons and stimulating the uptake of best practices and knowledge, including the development and championing of resource kits and other knowledge materials;

Facilitating, tracking, and assisting in monitoring and adaptive management of a small set of strategic activities

#### Knowledge Management and Learning

Promotes knowledge management in UNDP/MPFD and a learning environment in the office through leadership and personal example;

In-depth practical knowledge of inter-disciplinary development issues;

Actively works towards continuing personal learning and development in one or more Practice Areas, acts on learning plan and applies newly acquired skills;

Seeks and applies knowledge, information, and best practices from within and outside of UNDP.

Review climate change related documents, including the policy draft Guidelines, and become acquainted with the target Regional Department's mitigation and adaptation priorities, and ongoing programs relevant to the Project design.

Carry out ongoing desktop research to review and assess existing literature/information on climate change impact and adaptation, and review efforts at the regional, country and sectoral levels to identify gaps that can be supported by UNDP/MPFD.

Conduct a stock-taking of target climate change documentation

#### Development and Operational Effectiveness

Ability to lead strategic planning, change processes, results-based management and reporting;

Ability to lead formulation, oversight of implementation, monitoring and evaluation of development projects;

Ability to apply development theory to the specific country context to identify creative, practical approaches to overcome challenging situations.

Builds strong relationships with clients, focuses on impact and results for the client and responds positively to feedback;

Consistently approaches work with energy and a positive, constructive attitude;

Demonstrates openness to change and ability to manage complexities;

Ability to lead effectively, mentoring as well as conflict resolution skills;

Demonstrates strong oral and written communication skills;

Proven networking, team-building, organizational and communication skills.

#### Required Skills and Experience

Master's degree in Environmental Sciences, Environmental Economics, Environmental Management, related to climate change or a closely-related field;

7 years of professional experience in providing development assistance of which at least 5 years formulation and implementation of CC adaptation/mitigation activities in combination with knowledge on economic and financial analysis, institutional, regulatory and policy frameworks;

At least 5 years experience in the field in developing countries in Climate Change Mitigation; recent and relevant experience with working in India/Central India in the areas of sustainable energy and climate change strongly preferred;

Extensive experience with project development, implementation and management (in-depth knowledge of and experience in applying log frame methodologies is an asset);

Experience in the policy development processes associated with environment and sustainable development issues;

Previous experience with GEF, Climate Change Mitigation and with carbon finance mechanisms in particular specific project origination experience for carbon projects will be highly desirable;  
Skills in facilitation and coordination, entrepreneurial spirit and demonstrated ability to work in an independent manner;  
Fluency in English/Hindi is required

## 2. Agriculture Specialist

### Detailed Tasks/ Scope of Work

Project activities has planned a design for dry land agriculture intervention drawn for each project district. The Agriculture Specialist will work directly with the Project Coordinator in the formulation of the dry land agriculture project outcomes.

Tasks will include:

- a) Preparation and Editing of the agriculture Implementation Plan. Consultant/ Specialist will take overall responsibility for preparation and execution of the AWP. In this role; the consultant/specialist  
Act as the specialist for the dry land agriculture intervention plan;  
Identify key stakeholders and organize necessary meetings and workshops to engage them in the project planning and preparation  
Work closely with MPFD/PMU project team members to ensure alignment of the project implementation design with departmental strategy and programs  
Develop an annotated outline for the project activity;  
Gather, review, and analyze all relevant information related to agriculture required for preparation of the AWP;  
Coordinate the activities and inputs of the dry land agriculture design of implementation

Support MPFD Project Team to formulate strategic framework for the Agriculture interventions. This includes formulating a methodology to allow for the incorporation of specific inputs.

During activity design formulation, through a review of such activities and reports, help identify operational entry points for the incorporation & mainstreaming of complementary and stand-alone adaptation interventions (pilots and studies) in existing and future sustainability of the project.

Identify key areas of support for adaptation interventions including; incorporating vulnerabilities risks into dry land agriculture systems; adjusting sector strategies for dry land agriculture realities; screening of investment projects; and incorporating social dimensions.

Identify policy options/mechanisms to be implemented within UNDP, MPFD, possibilities with the private sector, and at the community level/NGOs (i) for agriculture based pro-poor investment; and, (ii) to reduce vulnerability to climate change impacts on dry land agriculture systems ensuring food security and livelihoods in the four project districts.

Develop specific measures for the component on Farming Systems Technologies and Practices

Design implementation arrangements for Farming Systems Technologies and Practices component

Participate in consultative meetings at the provincial and central level

Provide costing of the Farming Systems Technologies and Practices component

Identify prospective beneficiaries and service providers in the proposed program

Conduct institutional analysis of the service providers likely to be involved in the proposed program

Develop specific measures for improving the income of farmers and the poor in the program component

Design implementation arrangements

Participate in consultative meetings at the provincial and central level

Provide feedback to costing estimates of all consultants

Identify prospective beneficiaries and service providers in the proposed program

Conduct economic and financial analysis of proposed intervention

Help designing the program monitoring and evaluation system for the program

Assist in the impact analysis of the program

### Stakeholder Consultations

Conduct field visits, in coordination with MPFD, and coordinate and lead inter-agency stakeholder consultations with relevant government, multilateral development banks, donor, and civil society stakeholders, to identify entry points for such agriculture priorities (National/State Agriculture Policy and Program)

Advise on the status of target activities: Adaptation Plans; priority needs based on country/sectoral impacts; existing sectoral risk assessments & availability of relevant downscaled models; in-country adaptation research capacity/existing adaptation research;

Help identify, in dialogue with stakeholders and key departments, appropriate interventions/adaptation tools, policies, and practices for dry land agriculture consideration.

Describe in general terms the agricultural system(s) of the main agroecological zones or project areas

Determine the major agricultural activities of men and women, with reference to field crops, livestock, farm forestry, processing, marketing, storage, and income-generating activities

Identify constraints and barriers faced by men and women in carrying out their activities

Ascertain the extent to which available technology and agricultural research responds to the needs of men and women farmers

Assess how current agricultural extension services meet the needs of men and women farmers, including the focus of extension for women as farm managers or partners

Identify the technical, logistical, and attitudinal constraints facing the extension service in supporting men and women farmers

Identify the nature and extent of training needed by men and women agricultural extension agents (or other rural agents) to improve their support for farmers, especially women farmers

If appropriate, work with extension staff to plan pilot interventions to improve services for both men and women farmers and to monitor and evaluate their success

Prepare a descriptive and analytical report on the main findings, suggesting appropriate options and recommendations

Identify major farming systems in the project area, the role played by men and women, and the factors influencing those roles

Assess the ability of agricultural support services to meet the needs of men and women farmers

Identify problems in providing services to underserved clients, most often women

Identify innovative approaches already used in organizing delivery systems, the relevance of messages, staff training, and input supply

Recommend potential interventions to raise the productivity of both men and women farmers in the context of the agricultural project in a sustainable manner

#### Professional & Technical Requirements

##### Essential Qualifications

Adept at leading high-level multi-stakeholder consultative sessions on strategy development

Well-versed with various agriculture development, and risk management & adaptation institutional & frameworks and strategies, planning approaches, policy reforms, portfolio at risk and screening methodologies, current dry land agriculture research

Familiarity with international stakeholders, agriculture focal points, international NGOs, & research institutes

Familiar with project design, management and administration requirements in project implementation institutions

##### Academic Qualifications

Post Graduate degree (or equivalent combination of academic training and experience) in Agriculture, business planning, environmental science/natural sciences, or relevant discipline.

### **3. Animal Husbandry/ Livestock Specialist**

#### Objectives

The consultant's responsibilities will include, but not be limited to the following:

To act in lieu of the draft Economic Development and Poverty Reduction Strategy

Work with the two prospective partners identified as UNDP and MPFD to develop a scalable project using participatory enquiry techniques. The scope of the project should be decided in consultation with the Project Team and will be encouraged to encompass an integrated rural development approach that develops all areas of community capital and uses supportive infrastructure such as credit unions and government ministries for the development of livestock measures and or animal husbandry in dry land / semi arid regions of Madhya Pradesh.

Collect relevant data to support the proposed idea through participatory and empirical means

Develop a draft of the core of a partnership proposal using the provided project document strategy.

To have field knowledge of at least working for 7-10 years on efficient increase of socio-economic up scaling through livestock and or animal husbandry interventions in the dry land / semi arid regions of India.

To involve stakeholders in forming village/community groups for animal husbandry, improving livestock health, population etc as productive assets.

To introduce and successfully promote the indigenous variety of livestock for the pro-poor community as a livelihood sustenance strategy.

#### **4. Water Management and Irrigation Specialist**

Working with the local partners to improve the water resources and delivery systems by undertaking reconstruction and rehabilitation of irrigation, water harvesting, main drainage systems, and installation of drainage and salinity areas; improving and optimizing on-farm water management including proper storage of water, efficient irrigation techniques and systems, and crop selection.

Proven record in water management and irrigation, particularly in small and medium scale systems in India. Background in agricultural engineering, farming systems, or related discipline.

Responsibilities

As the International Farming Systems and Commercial Agriculture Specialist:

1. Develop specific measures for water management and irrigation in the Dry Land Farming Systems Technologies and Practices component
2. Design implementation arrangements for water management and irrigation in the Farming Systems Technologies and Practices component
3. Participate in consultative meetings at the state and stakeholder level
4. Provide costing of the water management and irrigation in the Farming Systems Technologies and Practices component
5. Identify prospective beneficiaries and service providers in the proposed program
6. Conduct institutional analysis of the service providers likely to be involved in the proposed program

#### **5. SME/Enterprise Development Specialist**

The project partners UNDP/MPFD are looking to hire an individual consultant with experience in incorporating SMEs into a project design at village/JFMC/district level supply chain as well as integrating them into the broader regional supply chains. This individual will finalize the design of the Program and coordinate its implementation. The assignment is for up to two years, subject to satisfactory performance during the initial period (first six months) and approval of the Program by the client.

The Program aims to increase the development impact of UNDP-GEF/MPFD project by maximizing its local content in developing/improving the SME's' ability to meet pro-poor livelihood requirements as well as to diversify the local economic activities. Additionally, the Program will be designed to also engage with other stakeholder partners and interest groups for such goods and services in the region to identify additional markets for the local businesses to diversify their livelihood base. The consultant/specialist will need to also liaise with NGOs and other institutions engaged in development to assess potential project management, technical, and financial partnering possibilities.

To prepare a detailed Action plan for respective cluster(s) giving overall direction to the component becoming itself sustaining and growth-oriented in the long run. Proven record in enterprise development including agribusiness sector in India. Background in management, business, economics, or related discipline.

Defining long-term and short-term goals and objectives attuned to overall project objectives as indicated in log frame (which will be shared with the selected agencies later) and providing operational and financial benchmarks.

Preparing a Developmental Module defining strategic intervention at desired levels and in particular the following:

The target segment / player needing intervention

Areas of intervention

Appropriate agency through which these interventions would be carried out

Time schedule for various interventions

Responsibilities

Collaboration as the International Value Chain Specialist:

1. Develop specific measures for improving value chain linkages in Bio/ Non-Bio resource based SME systems
2. Design implementation arrangements for value chain linkages component
3. Participate in consultative meetings at the State and stakeholder level
4. Provide costing of the value chain linkages component
5. Identify prospective beneficiaries and service providers in the proposed program
6. Conduct institutional analysis of the service providers likely to be involved in the proposed program
7. Operational design for the SME during the implementation phase of the project.

SME Development: determine the level and type of technical assistance needed in the areas of cultivation, supply chain development and management, and Bio/Non-Bio systems management, identify appropriate technical assistance sources and assist in the preparation of terms of reference for the procurement and mobilization process.

SME Marketing: analyze prevailing market systems for gaps that effect efficiencies and product quality based on intimate knowledge of end- user consumer preferences and SME needs for livelihood strategies; provide technical assistance to business enterprises on ways to improve market access and producer links for broader, mutually beneficial ties.

Bio/Non-Bio resource Processing: identify and develop programs and business plans to make available appropriate processing and value adding technologies to assist the community based enterprises and SME's involved in processing, storage, industrial transformation and other pathways by which value may be added to basic commodities and products.

Small and Medium Enterprises: assess the policy and regulatory environment affecting small businesses at the village/district level; formulate implementing strategies for effective networking of SMEs; establish mechanisms for strengthening public-private sector partnerships, assess the business and investment environment in target geographical regions and determine their strengths and opportunities for private sector and SME development.

Value Chain Linkages: help producers, processors, exporters and other participants in various segments of the value chain identify and understand opportunities for integration that will improve their competitiveness and benefits, develop strategies for ongoing relationships with markets and ways to address constraints/opportunities.

## PART D.4: Stakeholder Involvement Plan

184. The project has been prepared with the full involvement of the beneficiaries and stakeholders described in [Section 1.6](#). During the preparation phase (funded partly through a PDF-B grant), various stakeholder forums were organized by the Madhya Pradesh Forest Department involving potential interested parties and partners, whose work and knowledge is relevant to the project areas. These discussions have helped define the project strategy. This process of participation will be continued and expanded during implementation (see Table below).

**Table 14. Stakeholder roles in the project and engagement plan**

Stakeholder	Type	Role in project
Forest Department	Government	National Executing Agency of the project Overall control of project implementation Member Project Steering Committee (State-level) Ensure integration of climate-resilient SLEM approaches into departmental policies and programs through approval of policy guidelines and modification of programs Provide leadership on furthering sustainable NTFP harvest and extraction as a sustainable livelihood diversification strategy Provide leadership on integration of agroforestry, as well as fuelwood and forestry plantations on communal lands as a means to alleviate extraction pressures on forest lands Ensure that committed cofinancing is provided in a timely manner
Agriculture Department	Government	Member Project Steering Committee (State-level) Ensure that committed cofinancing is provided in a timely manner Ensure integration of climate-resilient SLEM approaches into departmental policies and programs through approval of policy guidelines and modification of programs Provide leadership on project activities aimed at strengthening rain-fed agriculture through climate resilient and SLEM approaches District/ block/ village level staff to participate in relevant demonstration and capacity building activities
Horticulture Department	Government	Member Project Steering Committee (State-level) Ensure that committed cofinancing is provided in a timely manner Ensure integration of climate-resilient SLEM approaches into departmental policies and programs through approval of policy guidelines and modification of programs Provide leadership on project activities aimed at strengthening agroforestry and home gardens on communal lands, working primarily with landless farmers District/ block/ village level staff to participate in relevant demonstration and capacity building activities
Animal Husbandry Department	Government	Member Project Steering Committee (State-level) Ensure that committed cofinancing is provided in a timely manner Ensure integration of climate-resilient SLEM approaches into departmental policies and programs through approval of policy guidelines and modification of programs Provide leadership on project activities aimed at improving resilience and sustainability of the livestock component of the local agricultural system District/ block/ village level staff to participate in relevant demonstration and capacity building activities
Rural Development (RGMWM)	Government	Member Project Steering Committee (State-level) Ensure that committed cofinancing is provided in a timely manner Ensure integration of climate-resilient SLEM approaches into departmental policies and programs through approval of policy

Stakeholder	Type	Role in project
		<p>guidelines and modification of programs</p> <p>Provide leadership on project activities related to soil and water conservation in the 4 micro watersheds, by drawing on lessons learned from their experience with furthering the objectives of the RGMWM District/ block/ village level staff to participate in relevant demonstration and capacity building activities</p>
Madhya Pradesh Minor Forest Produce Cooperative Federation (MFPPF)	Government	<p>Member Project Steering Committee (State-level)</p> <p>Ensure that committed cofinancing is provided in a timely manner</p> <p>Provide leadership on project activities aimed at establishing value-added SMEs based on sustainably harvested NTFPs, drawing on their experience with coordination, collection, and processing of Tendu leaves, Sal Seed, &amp; Kullu Gum and other non-nationalized NTFP through Primary Forest Produce Co-operative Societies</p> <p>District/ block/ village level staff to participate in relevant demonstration and capacity building activities</p>
District Administrations	Government	<p>Represented on Project Steering Committee (micro-catchment level)</p> <p>Ensure integration of climate-resilient SLEM approaches into district administration programs</p>
Panchayats	Local self administration	<p>Represented on Project Steering Committee (micro-catchment level)</p> <p>Ensure integration of climate-resilient SLEM approaches into village-level programs and activities</p>
Local communities in the target districts (through JFMCs)		<p>Represented on Project Steering Committee (micro-catchment level)</p> <p>Direct beneficiaries of project activities</p> <p>Particular emphasis will be placed on ensuring successful participation of women through the application of gender-focused participatory methodologies</p>
Samaaj Pragati Sahyog	NGO	<p>Member Project Steering Committee (State-level)</p> <p>Provide guidance based on their over ten years of experience with carrying out a large number of projects in the remote, tribal dry lands of India, primarily centered around watershed development, but also covering allied areas such as sustainable agriculture, forestry, land rights, low-cost housing, women's empowerment, health care, sanitation and renewable energy.</p>
Central Arid Zone Research Institute	Research organization	<p>Member Project Steering Committee (State-level)</p> <p>Provide guidance based on their over 50 years of experience with carrying out a large number of projects in the remote, tribal dry lands of India, primarily centered around dry land development, watershed programmes, sustainable agriculture, forestry, etc</p>



**PART D.5: Botanical names of local tree and shrub species and products**

Achar	<i>Buchanania latifolia</i>
Aonla	<i>Phyllanthus emblica</i>
Arjun	<i>Terminalia arjuna</i>
Baheda	<i>Terminalia belerica</i>
Bhirra (or Girya)	<i>Chloroxy/on swietenia</i>
Bija Sal	<i>Pterocarpus marsupium</i>
Dhawara	<i>Anogeissus latifolia</i>
Dudhi	<i>Wrightia tinctoria</i>
Gum Kullu	<i>Sterculia urens</i>
Haldu	<i>Adina cordifoli</i>
Harra	<i>Tenninalia chebula</i>
Kari	<i>Murraya koenigii</i>
Kasai	<i>Brdelia retusa</i>
Kekad	<i>Garuga pinntita</i>
Khair	<i>Acacia catechu</i>
Khamer	<i>Gmelina Arborea</i>
Kusum	<i>Schleicher trijuga</i>
Lac cultivation on Palas	Lac is a natural resin secretion and protective covering of tiny lac insects <i>Kerria lacca</i> . Palas is one of the major commercial lac host trees in India.
Lendia	<i>Legarstroemis parviflora</i>
Mahua	<i>Madhuca longfolia</i>
Moyan	<i>Lannea grandis</i>
Musli	<i>Chlorophytum borivilianum</i>
Palas	<i>Butea frondosa</i>
Saja	<i>Tenninalia tomentosa</i>
Sal	<i>Shorea robusta</i>
Salai	<i>Boswellia serrata</i>
Shisham or rosewood	<i>Soymida febrifugo</i>
Siris	<i>Albizzia ordoratissima</i>
Teak	<i>Tactonce grandis</i>
Tendu	<i>Diaspyros tomentosa</i>
Tendu Patta	Leaves from the Tendu tree
Tinsa	<i>Ougeinia dalbergioides</i>

**PART D.6: Response to STAP comments of 31 July 2008**

STAP Comment	Response	Reference Document in
<p>3. The proposal rightfully identifies a number of areas where investments should deliver Global Environmental Benefits (GEBs) in, for example, protecting ecosystem services such as water-holding capacity of catchments, soil carbon fixation, agricultural productivity. Yet, none of these beneficial impacts are reflected in the project framework at Part 1, Section A. The list of Expected Outputs is dominated by what are essentially project activities and processes - not outputs. The proposers are recommended to consult the GEF-4 Strategic Plan for Land Degradation, which lists a number of Expected Impacts for GEF projects in the LD focal area, and then identify some key indicators such as soil carbon or total system carbon, land productivity, change in community livelihood status that could be incorporated into the Project Framework and that will then form the basis for project-level monitoring and tracking of impacts.</p>	<p>Indicators of project impact have been identified at the project objective level in the Logical Framework Matrix. Indicators have been drawn from the GEF-4 Strategic Plan for Land Degradation.</p>	<p><a href="#">Logical Framework Analysis</a></p>
<p>4. The proposal aims to strengthen the capacity of local stakeholders with the aim to form forest committees. Besides increasing the stakeholders' capacity to prioritize community-based initiatives, perhaps the project could also focus on strengthening the stakeholders' knowledge on forest legislation, and other policies that affect their ownership, such as usufruct rights, customary rights, etc. Note – The proposal does not specify what are the property rights of the forest in the project area. Therefore, it is not entirely clear what could be the negotiating position of community based organizations when the time comes to negotiate "benefit-sharing" with the State Forest Department.</p>	<p>According to the JFM Resolution, local stakeholders have usufruct rights. The training programme under Output 1.2 will cover all government policies that provide the framework for undertaking activities geared to sustainable use of forest and land resources.</p>	<p><a href="#">JFM Resolution</a> Para 63</p>
<p>5. It appears that overgrazing is a main driver of land degradation. However, the proposal does not detail sufficiently how overgrazing will be addressed through sustainable land and ecosystem management. These activities could be clarified further.</p>	<p>The issue of overgrazing will be addressed in multiple ways primarily through increased fodder availability from rehabilitation of degraded bamboo forest areas (Output 2.1), fodder plantations on degraded lands (Output 2.3), and improved livestock management and on farm integration of agro-forestry practices that are expected to reduce unsustainable and uncontrolled grazing of livestock (Output 2.7).</p>	<p>Outputs 2.1, 2.3 and Output 2.7</p>

<p>6. The project will need to consider carefully what techniques to use to successfully ensure the participation of women. There are several gender focused participatory methodologies that have been developed by international research organizations, and others, including UNDP.</p>	<p>The issue of gender participation is addressed throughout the project. The project has identified this as a success criterion for several outputs. In addition, the TORs of the Project Coordinator as well as the Stakeholder Participation Plan make explicit mention of gender participation.</p>	<p>See impact bullets listed under Outputs 2.1 to 2.7 <a href="#">TORs</a> for the Project Coordinator Stakeholder Involvement Plan in <a href="#">Part D4</a></p>
<p>7. Related to Point 1 above, it is not clear from the proposal whether project staff are aware, or will be made aware, of the methodological difficulties of measuring, monitoring, and verifying the amount of sequestered carbon in soils. UNDP could take this into consideration before implementing the project.</p>	<p>UNDP will ensure that Project Staff have access to best practice in carbon measurement by tapping into its knowledge networks as well as the UNEP/GEF project on measuring carbon benefits. This has been clarified under UNDP-COs role in the Management Arrangements section.</p>	<p>Management Arrangements section</p>



GOVERNMENT OF MADHYA PRADESH  
DEPARTMENT OF FOREST, MANTRALAYA  
VALLABH BHAWAN, BHOPAL

No.:/UNDP/2007/...F-383/2005/10-2

Dated: 26-11-07

To,  
The Secretary,  
Government of India,  
Ministry of Environment & Forests  
Paryavaran Bhawan,  
CGO Complex, Lodhi Road  
New Delhi-110003

**Sub: GOI-UNDP-GEF project "Integrated Land Use Management to Combat Land Degradation and Deforestation in Madhya Pradesh"- Co-financing commitment of GoMP**

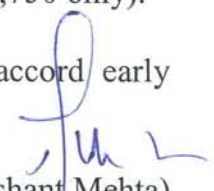
Dear Sir,

Government of Madhya Pradesh has received a project from the Global Environment Facility (GEF)- United Nation Development Program (UNDP) as titled above. The project had been prepared in consultation with the State Government and we are committed to implement it at the earliest. The total budget for the project from GEF as a grant would be Rupees Twenty Three Crore Forty Two Lakh only (INR 23.42 Crore only) or US Dollar Five Million Eight Hundred and Fifty Five Thousand only (USD 5.855 Million only) for five years of project implementation. The project co-financing requirement from GEF as a GoMP commitment is for INR 70.26 Crore (Rupees Seventy Crore Twenty Six Lakh only) or US Dollar Seventeen Million Five Hundred and Sixty Five only (USD 17.565 Million only) for the five year project implementation period.

2. The GoMP is agreeable to co-financing of the project over the five year implementation period as both cash and kind contribution in the four project districts of Betul, Chindwara, Umaria and Sidhi in Madhya Pradesh.

**The total contribution (in-cash and in-kind both) of GoMP as project co-financing** would be Rupees Three Hundred Eighty Two Crore Nine Lakh and Fifty Thousand only (Rs. 382.095 Crore only) or US Ninety Five Million Five Hundred Twenty Three Thousand Seven Hundred and Fifty Dollars only (USD 95,523,750 only).

We hope and trust that the Ministry of Environment and Forests will accord early approval to the project.

  
(Prashant Mehta)  
Principal Secretary  
Govt. of Madhya Pradesh  
Department of Forests

No.:/UNDP/2007/.....

F3-33/2005/102

Dated:.....

Copy to:

1. Dr. K.S. Murali, Program Officer, Sustainable Environment and Energy Division, UNDP, 55 Lodhi Estate, New Delhi 110003
2. Shri V.R. Khare, Principal Chief Conservator of Forests, Madhya Pradesh, Bhopal

sd-

(Prashant Mehta)  
Principal Secretary  
Govt. of Madhya Pradesh  
Department of Forests





सत्यमेव जयते

D. O. No. 4 (2)/6/ 2005 - IC & SD.I



भारत सरकार  
पर्यावरण एवं वन मंत्रालय  
GOVERNMENT OF INDIA  
MINISTRY OF ENVIRONMENT & FORESTS  
30<sup>th</sup> April 2009

To: Mr Yannick Glemarec  
GEF Executive Coordinator  
UNDP, New York

Subject: Endorsement for "Integrated Land and Ecosystem Management to Combat Land Degradation and Deforestation in Madhya Pradesh"

This is in continuation to our letter dated: 29<sup>th</sup> May 2008. In my capacity as GEF Operational Focal Point for India, I confirm that the above project proposal (a) is in accordance with the government's national priorities and the commitments made by India under the relevant global environmental conventions and (b) has been discussed with relevant stakeholders, including the global environmental convention focal points, in accordance with GEF's policy on public involvement.

Accordingly, I am please to endorse this Full Size Project (FSP), which has been prepared as a part of 'Sustainable Land and Ecosystem Management (SLEM) Programmatic Approach' with the support of UNDP for GEF CEO endorsement. If approved, the proposal will be implemented by State Government of Madhya Pradesh and other stakeholders.

I understand that the total GEF financing being requested for this project is USD 5.763 million from USD 30 million allocated for SLEM, which is exclusive of the agency fee (10 %) to UNDP for project cycle management services associated with this project.

(Hem Pande)  
Joint Secretary

& GEF Operational Focal Point India

Copy to:

- Mr Prashant Mehta, Additional Chief Secretary to the Government of Madhya Pradesh, Bhopal
- Ms Kavita Prasad, Director and GEF Political Focal Point India, Department of Economic Affairs, Government of India, New Delhi
- Ms Adriana Damianova, Lead Environmental Specialist and Task Team Leader, Social, Environment and Water Resources Management Unit, World Bank, Washington
- Dr. Anna Tengberg, Regional Technical Advisor, UNDP, Bangkok
- Dr Preeti Soni, Assistant Country Director, Energy and Environment Unit, UNDP, New Delhi



जहाँ है हरियाली।  
वहाँ है ख़राहाली।।