FAO/GEF PROJECT DOCUMENT

Project Title:	Green-Ag: Transforming Indian agriculture for global environmental benefits and the conservation of critical biodiversity and forest landscapes
FAO Project symbol:	637244
GEF Project ID:	9243
Recipient Country(ies):	India
Executing partners:	The Ministry of Agriculture & Farmers' Welfare (MoAFW); The Ministry of Environment, Forests, and Climate Change (MoEFCC)
Expected EOD (Starting Date):	1 June 2018
Expected NTE (End Date):	30 June 2025
Contribution to FAO's Strategic Framework:	Strategic Objective/Organizational Outcome: Strategic Objective 2: Make agriculture, forestry and fisheries more productive and sustainable Country Programming Framework(s) Output: Foster agricultural production and rural development; Enhance equitable, productive and sustainable natural resource management and utilisation
Contribution to GEF TF Focal Area Strategic Objectives and Programmes:	BD-3 Programme 7: Securing agriculture's future: sustainable use of plant and animal genetic resources BD-4 Programme 9: Managing the human-biodiversity interface LD-1 Programme 1: Agro-ecological intensification LD-1 Programme 2: Sustainable land management for climate-smart agriculture LD-3 Programme 4: Scaling-up sustainable land management through the landscape approach CCM-2 Programme 4: Promote conservation and enhancement of carbon stocks in forests and other land-uses, and support climate-smart agriculture SFM-1: Reduce the pressures on high-conservation-value forests by addressing the drivers of deforestation.
Environmental and Social Risk Classification	low risk **moderate risk** **x** high risk
Gender Marker[1]	**G0 x** G1 G2a G2b
Financing Plan: GEF/LDCF/SCCF allocation:	BD-3 Program 7: 8,652,922 BD-4 Program 9: 12,730,234 LD-1 Program 1: 909,075

[1] See Guidance Note on 'Gender Mainstreaming in project identification and formulation'.

	LD-1 Program 2: 1205053 LD-3 Program 4: 2,114,128 CCM-2 Program 4: 2,727,908 SFM-1: 5,219,396
Co-financing:	Target for overall co-finance as per approved PIF is: 494,121,358 USD State of Madhya Pradesh and Government of India (GoI): US$ 199.36 million State of Mizoram and GoI: US$ 61.93 million State of Odisha and GoI: US$ 131.16 million State of Rajasthan and GoI: US$ 193.53 million State of Uttarakhand and GoI: US$ 279.21 million FAO: US$ 3.5 million
Sub-total co-financing:	US$ 868.39 million
Total budget:	US$ 902.27 million

ACRONYMS

APC.....Agriculture Production Commissioner
APFAMGS.....Andhra Pradesh Farmer Managed Groundwater Systems
ATMA.....Agriculture Technology Management Agency
AWP/B.....Annual Work Plan and Budget
BD.....Biodiversity
BH.....Budget Holder
BMC.....Biodiversity Management Committee
CAU .....Central Agricultural University
CC .....Climate Change
CCM.....Climate Change Mitigation
CE .....Capacity Enhancement
Cos .....Community Organizers
CSO.....Civil Society Organization
DACFW .....Department of Agriculture, Cooperation, and Farmers' Welfare
DADF.....Department of Animal Husbandry, Dairying and Fisheries
DARE.....Department of Agricultural Research and Education
DC.....District Collector
DFO .....District Forest Officer
DPMU.....District Project Monitoring Unit
DST.....Department of Science and Technology
ENVIS.....National Environment Information System
EX-ACT.....Ex-Ante Carbon Balance Tool
FAO .....UN Food and Agriculture Organization
FFF.....Forest and Farm Facility
FFS.....Farmer Field School
FLO.....Funding Liaison Officer
FPIC.....Free Prior and Informed Consent
FSI .....Forest Survey of India
GEB .....Global Environmental Benefit
GEF.....Global Environment Facility
GoI .....Government of India
GP .....Gram Panchayat
HQ.....Headquarters
IFAD .....International Fund for Agricultural Development
IUCN.....International Union for Conservation of Nature

IWMP.....Integrated Watershed Management Programme

JICA .....Japan International Cooperation Agency

JPY.....Japanese Yen

KMT.....Knowledge Management Tool

KVK.....Krishi Vigyan Kendra (extension)

LD .....Land Degradation

LMP .....Landscape Management Plan

LTO.....Lead Technical Officer

MGNREGA .....Mahatma Gandhi National Rural Employment Guarantee Act

MoAFW .....Ministry of Agriculture and Farmer's Welfare

MoCF .....Ministry of Chemicals and Fertilizers

MoEFCC .....Ministry of Environment, Forest, and Climate Change

MoRD .....Ministry of Rural Development

MRV .....Measuring, Reporting and Verification

NBA .....National Biodiversity Authority

NBAGR .....National Bureau of Animal Genetic Resources

NBAII .....National Bureau of Agriculturally Important Insects

NBPGR .....National Bureau of Plant Genetic Resources

NBWL.....National Board for Wildlife

NCF.....National Commission on Farmers

NFC.....National Forest Commission

NFSA .....National Food Security Act

NGO .....Non-Governmental Organization

NICRA .....National Initiative on Climate-resilient Agriculture

NMGI.....National Mission of Green India

NP .....National Park

NPSC .....National Project Steering Committee

NRM .....Natural Resource Management

OP .....Operational Partner

PA .....Protected Area

PIR .....Project Implementation Review

PIU ..... Project Implementation Unit

PMU.....Project Management Unit

PPR P .....Project Progress Report

S-AWP/B .....State Annual Work Plan and Budget

SDG .....Sustainable Development Goals

SFM .....Sustainable Forest Management

SLM .....Sustainable Land Management

SPMU.....State Project Management Unit

SPACC.....Strategic Pilot on Adaptation to Climate Change

SSC .....State Steering Committee

UNDP.....United Nations Development Programme

UNEP .....United Nations Environment Programme

USD .....United States Dollar

WII .....Wildlife Institute of India

WLS .....Wildlife Sanctuary

WWF.....World Wildlife Fund

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Executive Project Summary

Agriculture is one of India's most important socioeconomic and landuse sectors. More than half of India's 1.3 billion population is engaged in agriculture and 80% of these are small and marginal farmers with less than one hectare of farmland per family making their livlihoods highlyvulnerable to the impacts of climate change. India is the world's highest producer of rain-fed agricultural products and the world's second-highest producer of farm outputs overall. Agriculture accounts for 17% of the nation's GDP and about 12% of its exports (2016-17). Agriculture is also one of India's dominant land uses with almost 46% of land considered to be under agriculture.

The challenges faced by India to feed a rapidly growing and increasingly prosperous population have been met by expanding agriculture production through rapid adoption of intensive "modern" production systems. However, a spectrum of agriculture still exists in India – as in most parts of the world – with different trade-offs between economic, social and environmental benefits. At one end of the continuum is an 'interventionist' approach, in which most aspects of production are controlled by technological interventions including soil tilling, application of mineral fertilizers for plant nutrition and the use of agrochemicals for pest and weed control , and at the other end of the spectrum are production systems that are considered more sustainable with low environmental impact predominantly in line with ecosystem approaches that are both productive and more sustainable. Between the two ends of this spectrum are a mix of traditional agriculture systems and low intensity "modern" agricultural systems judiciously applying external inputs (e.g. such as organic tea plantations).

India's agriculture sector needs to fully integrate environmental concerns in its policies, plans and programmes to ensure that the sector's negative environmental impacts are mitigated and positive contributions are enhanced. Environmental mainstreaming is important to the sector's own long-term sustainability, especially under the context of a changing climate. Mainstreaming environmental concerns into agriculture sector is also important to fulfil the sector's commitment to the nation's environmental targets and to meet India's wider obligations under international conventions, such as the UNCDB, UNFCCC, UNCCD as well as the Sustainable Development Goals. Furthermore, it is critical to ensure that investments in other sectors, such as the country's protected area system, are not undermined by agricultural sector policies, plans and investments, causing net economic loss to the country. For instance, the GoI has also been investing heavily to boost agricultural production around protected areas, which can result in different sector initiatives working against each other. If these different streams of GOI's investments are misaligned, then it will lead to net economic, productivity and environment loss to the country (i.e. conservation investments being negated by opposing agriculture investments).

This project aims to mainstream biodiversity, climate change, and sustainable land management objectives and practices into the Indian agricultural sector. Its overall objective to "*catalyse transformative change of India's agricultural sector to support achievement of national and global environmental benefits and conservation of critical biodiversity and forest landscapes*". The project seeks to harmonize priorities and investments between India's agricultural and environmental sectors so that national and global environmental benefits can be fully realized without compromising India's ability to provide and develop rural livelihoods and meet its food and nutrition security and social (particularly gender) goals. The project will support greater coherence between GoI policies, investments, and institutions concerned with conservation and agricultural production at landscape level so that they are mutually compatible and at the same time resilient to impacts of climate change.

The project will be delivered through the following four Outcomes under two Project Components.
Component 1: Strengthening the enabling framework and institutional structures to mainstream BD, SLM, CCM and SFM policies, priorities and practices into India's agricultural sector

- Outcome 1.1. National and state level institutional, policy and programme frameworks strengthened to integrate environmental priorities into the agriculture sector to enhance delivery of global environmental benefits (GEB) and resilience across landscapes of highest conservation concern
- Outcome 1.2. Cross-sectoral knowledge management and decision-making systems at national and state levels to support development and implementation of agro-ecological approaches at landscape levels that deliver global environmental benefits as well as socioeconomic benefits enhanced

Component 2: Improved agricultural and conservation practices demonstrating sustainable production, resilient livelihood advancements, habitat improvements, and delivery of tangible BD, LD, CCM, and SFM benefits

- Outcome 2.1 – Institutional frameworks, mechanisms and capacities at District and Village levels to support decision-making and stakeholder participation in Green Landscape planning and management strengthened, with Green Landscape Management Plans developed and under implementation for target landscapes
- Outcome 2.2 - Households and communities able and incentivized to engage in agro-ecological practices that deliver meaningful GEB at the landscape level in target high conservation priority landscapes

Harmonized multi-sectoral approaches to mainstreaming environmental and resilience considerations into agriculture and landuse will be implemented at five landscapes in five States of India: in i) Madhya Pradesh, ii) Mizoram, iii) Odisha, iv) Rajasthan and v) Uttarakhand. The landscapes selected in these States are anchored around at least one protected area that has significant biodiversity of global importance, as well as value for LD, CCM and SFM, and provides key ecosystem services. Within these ecologically important "Green Landscapes" GEF's incremental investment will serve to catalyse the alignment of the much larger government, donor and private sector investments to promote and incentivize wide adoption of new agroecological practices to reverse the negative impacts of current unsustainable agriculture and land use policies, plans and practices, to maximize multiple global environmental benefits (biodiversity, sustainable land management, greenhouse gas emission reduction, and maintenance of high conservation value forests).

The long-term aim of this project is to replicate the Green Landscape approach nationally, and around other protected areas and critical landscapes. By doing this, the GoI will help to ensure long term integrity of existing protected areas and secure critical ecosystem services that underpin sustainable agriculture. This approach would make protected areas, surrounding agro-ecosystems and associated landscapes more resilient to climate change impacts. The project is also expected to help secure buffer zones and corridors around and between protected areas. Healthy, functioning ecosystem services, including better water provision and soil fertility, will also provide positive incentives for communities, and help ensure long-term sustainability of agriculture.

The project will achieve multiple global environmental benefits (biodiversity, sustainable land management, high conservation value forest management, and greenhouse gas emission reduction) in five landscapes with mixed landuse systems totalling 1,800,000 hectares. This will include:

1. Institutionalization of intersectoral mechanisms (agricultural and allied sectors, forestry and natural resources management, and economic development) at the national and five States to facilitate continued mainstreaming of environmental concerns and priorities related to resilience into the agriculture sector beyond project end. This will include one national platform and one platforms each in Madhya Pradesh, Mizoram, Odisha, Rajasthan, and Uttarakhand.
2. At least six key national and state level agricultural programmes (missions) will have been strengthened with results based environmental indicators integrated in their policy and planning frameworks (or through revised guidelines and other tools based on project support). Key missions that will be targeted for strengthening include the National Mission on Sustainable Agriculture;

National Livestock Mission; National Food Security Mission; National Initiative on Climate-resilient Agriculture, National Mission for Horticulture and Rashtriya Krishi Vikas Yojana

3. At reduction in the threat index from baseline (as measured through Green Landscape monitoring programme) at key sites of high biodiversity importance will be demonstrated at five target Green Landscapes (Rajasthan: 277,930 (grassland and orans); Mizoram: 13,725 (*Jhum*); Madhya Pradesh: 18,000 ha (ravines) and the following areas of High Value Forests: *Madhya Pradesh (*35,000 ha); Mizoram (50,000 ha), Odisha (175,000 ha), Uttarakhand (90,000 ha) (target to be set at project inception for each landscape)

4. At least 104,070 hectares of farms will be under sustainable land and water management (including organic farming and agrobiodiversity conservation) (Madhya Pradesh: 9,000; Mizoram: 13,725; Odisha: 34,200 Rajasthan: 34,145; Uttarakhand: 13,000)

5. 49,906,455 tCo2eq Greenhouse gas emission reduction (tCO2eq newly sequestered or avoided) will be achieved through improved agroecosystems management, including climate resilience issues (Annex 5 of full project document)

SECTION 1 – PROJECT RATIONALE

1.1 Project Context

1. The Republic of India's territory covers more than 3 million km^2. The country is comprised of 29 States and 7 Union Territories. The nation has the world's seventh largest economy, with an annual GDP of over US$ 2 trillion. India is home to almost 17% of the world's human population, living on 2.4% of the Earth's land surface area. India is the world's largest democracy with over 1.3 billion people. An estimated 200 million Indians live below the poverty line. The nation is highly diverse in terms of culture, climate, and ecology.

2. Agriculture is at the core of Indian society. More than 50% of India's people are engaged in this sector. India's national development agenda, as outlined in "India Three Year Action Agenda 2017-18 to 2019-20"[2], has noted that small and marginal farmers constitute nearly 80% of all Indian farmers, and 90% of them are engaged in rain-fed agriculture. Approximately 55% of India's croplands are rain-fed. Over 70% of individual farmland holdings are less than one hectare.

3. Agriculture is a dominant land use category in India. Over 141 million hectares (around 46% of the country) is considered to be under agriculture[3].

4. India is the largest producer of milk, pulses and spices in the world. It also has the world's largest areas under cultivation for rice and cotton. India has nearly 20% of the globe's domestic livestock, with over 300 million heads of cattle. India is now the world's highest producer of rain-fed agriculture and the world's second-highest producer of farm outputs overall. Agriculture accounts for 17% of the nation's GDP and about 12% of its exports (2016-17).

5. It has been estimated that the annual food grain production needs to grow to 330 million tonnes by 2050[4]. To promote productivity, the GoI invests substantially. During the fiscal year 2008 to 2009 alone, the Government of India invested over US$ 40 billion in agriculture[5]. Private-sector investments during that same year totalled nearly US$ 80 billion.

1.2 Agriculture and Environment

6. Globally, increasing food production to meet the needs of rapidly growing and increasingly prosperous populations has been one of the most important challenges for humanity, especially in the past 50 years. India has met this challenge largely through significant investments into expanding areas under "modern" intensive production systems. However, a spectrum of farming systems still exists in the country, each with different social, economic and environmental benefits and costs. Such a spectrum of agriculture has been described by FAO's "Save and Grow" as "at one end of the continuum is an interventionist approach, in which most aspects of production are controlled by technological interventions such as soil tilling, protective or curative pest and weed control with agrochemicals, and the application of mineral fertilizers for plant nutrition. At the other end are production systems that take a predominantly ecosystem approach and are both productive and more sustainable. These agro-ecological systems are generally characterized by minimal disturbance of the natural environment, plant nutrition from organic and non-organic sources, and the use of both natural and managed biodiversity to produce food, raw materials and other ecosystem services. Crop production based on

[2] http://niti.gov.in/writereaddata/files/Final_VNR_report.pdf
[3] http://eands.dacnet.nic.in/PDF/Glance-2016.pdf
[4] FICCI Grant Thornton Report: Transforming Agriculture Through Mechanisation; http://gtw3.grantthornton.in/assets/Transforming_Agriculture_Through_Mechanisation.pdf
[5] Includes investments through the Ministry of Agriculture and productive investments through Rural Development, agricultural inputs subsidies through Ministry Chemicals and fertilizers, Ministry of Water Resources, and subsidized credit through NARBARD guarantees.

an ecosystem approach sustains the health of farmland already in use, and can regenerate land left in poor condition by past misuse"[6].

7. From the environmental perspective, intensive "modern" agriculture using high yielding varieties, with use of high levels of chemicals and water are often marked by low biodiversity (including low agrobiodiversity), and/or have low contribution or even negative impacts on wildlife and biodiversity values within the landscape. Inappropriate and over use of agrochemicals in such agriculture often leads to pollution of soil, water bodies and catchment systems, and may contribute to higher greenhouse gas emissions. In short, these areas have low or negative impacts on biodiversity, unsustainably utilize land and water resources, and contribute significantly to greenhouse gas emissions.

8. In the middle of this spectrum, there is a mix of traditional agriculture systems that have incorporated external inputs, or low intensity "modern" agriculture with judicious use of external inputs. These can be better than intensive agriculture in terms of sustainable land management and lower greenhouse gas emissions, but can have less positive contributions to global environmental benefits (such as biodiversity conservation) than low input traditional agriculture.

9. At the opposite end of the spectrum, largely low external input traditional agriculture systems can be more environmentally friendly with high value for biodiversity conservation (particularly agrobiodiversity) and low greenhouse gas emission than other systems. However, traditional agriculture can also have significant negative environmental impacts if they expand into natural ecosystems (encroachment) and over use natural resources (such as overgrazing by livestock).

10. Some key negative impacts of the agriculture sector in India to environmental values (particularly global environmental values) include:

    - *Loss of agrobiodiversity*: India is one of the 12 Vavilov global centres of crop diversity. Over centuries of farming practices, Indian farmers have developed several locally adapted varieties of crops and domestic animals. The nation has more than 10,000 landraces of rice. Approximately 800 useful and harvested or collected species of cereals, millets, grain legumes (pulses), vegetables, fruits, nuts, oilseeds, sugar-yielding plants, fibre crops, forage/ fodder crops, spices, condiments, plantation crops, medicinal and aromatic plants, ornamental plants, and agro-forestry species have been recorded in the country. India is a primary centre of diversity for species such as black gram, moth bean, pigeon pea, some cucurbits, tree cotton, capsularis jute, jackfruit, banana, mango, large cardamom, black pepper, several minor millets, and many medicinal plants. Over 34 native breeds of cattle, 12 breeds of buffaloes, 21 breeds of goats, 39 breeds of sheep, and 15 breeds of chicken have also been recorded in the country. In addition, more than 900 species of wild relatives of domesticated crops have been recorded in India. In many places farmer varieties have been replaced by modern varieties of crops. India's National Biodiversity Action Plan noted that loss of habitats and over-exploitation have led to the depletion of genetic diversity of several animals and cultivated plants.

    - *Negative impacts on land and water*: The agriculture sector is the major land and water user in India. The Indian Council for Agricultural Research (ICAR) and the National Academy of Agricultural Sciences estimate that 71% of India's cultivated fields or 100 MHa of croplands are moving towards conditions that would no longer support farming. Degradation of India's land includes water and wind erosion (94 MHa), soil acidity (17.93 MHa), soil alkalinity/ sodicity (3.71 MHa), soil salinity (2.73 MHa), and water logging (0.91 MHa). Land degradation linked to agricultural activities result in the loss of nearly 5.3 billion tons (Gt) of soil per year. Nationally, approximately 29% of those eroded soils are deposited in the sea and 10% contribute to reservoir siltation. Land degradation is resulting in the severe loss of soil productivity. Removing or burning

[6] http://www.fao.org/ag/save-and-grow/en/2/index.html

of crop residues, reduced manuring, intensive cropping, imbalanced and excessive applications of fertilizers and pesticides, and sub-plough soil compaction result in a decline in soil fertility in many areas. Excessive tillage contributes to declining soil organic matter and erosion. Agriculture places huge demands upon India's limited water resources. A 2010 study by the World Bank found that ground water extraction in India's agricultural sector has profound ecological and social impacts. India is the world's largest consumer of ground water. Extensive irrigation schemes are resulting in declining quality and quantity of both ground and surface water resources. The nation accounts for nearly one-fourth of annual global groundwater extraction. Increasingly extensive and intensive groundwater irrigation has significantly drawn down water tables throughout much of the country. From 2002 to 2008, groundwater levels in north-western India fell about 2 m despite normal to above-average rainfall. This represents a loss of about 109 km^3 of groundwater, twice the capacity of the Upper Wainganga Reservoir (India's largest surface water reservoir). The national average consumption of fertilizers has remained stable (144 kg per ha in 2011-12), but very high variability has been observed in fertilizer consumption amongst the States. India's 5th National Report to the Convention on Biological Diversity (2014) notes "Agricultural intensification leading to loss of habitat heterogeneity, effects of agrochemicals on wild species and pollution and eutrophication due to agricultural runoff also threaten both species and the habitats they occur in." In many parts of the country, the amount of agro-chemical use has increased dramatically. Increasing and improper use of agrochemicals – including fertilizers, herbicides and pesticides are polluting soil, water, negatively impacting wildlife and contributing to increased greenhouse gas emissions. Chemical runoff from farms are a major source of water pollution, impacting coastal and freshwater ecosystems.

- *Loss and degradation of natural ecosystems and wild species*: India is renowned for globally significant biodiversity. India has four of the world's 34 global biodiversity hotspots and encompasses 15 of WWF's global 200 eco-regions. Current estimates show that India has at least 45,000 plant species and 91,000 animal species, including 60,000 insect species and 3,000 fish species. These species represent a significant percentage of the world's total diversity, including 14% of all avian species, 12% of all fish species, over 8% of all mammalian species, and 8% of all reptilian species. Endemism is extremely high. There are 4,045 endemic plant species, 156 endemic reptilian species, 110 endemic amphibian species, and 69 endemic bird species. India conserves hundreds of globally threatened species. These include the Bengal tiger (*Panthera tigris tigris*), Asian elephant (*Elephas maximus*), Indian rhinoceros (*Rhinoceros unicornis*), Sarus crane (*Antigone antigone*), clouded leopard (*Neofelis nebulosa*), Gangetic dolphin (*Platanista gangetica*), black-necked crane (*Grus nigricollis*), and Great Indian bustard (*Ardeotis nigriceps*). India's 5th National Report to the Convention on Biological Diversity (2014) has also noted, "Land use change, especially the expansion and intensification of agriculture, is creating pressure on habitats in some regions of the country through loss and fragmentation of forests, grasslands, scrublands, wetlands and other habitats." It has noted that "pressures of livestock grazing in forests and grasslands are severe." It has also noted that overgrazing is reducing available habitat for wild species, generating human-wildlife conflicts, and is increasing rates of desertification and land degradation.
- *Forest degradation and loss*: Total forest cover is estimated to be 80 million hectares (MHa) or 25% of India's national territory (FAO, 2013). The GoI has a stated goal of achieving 33% forest coverage (National Forest Policy, 1988). Commercial forestry is a relatively small contributor to overall GDP. India currently generates less than 2% of overall GDP from domestic forestry. In fact, India imports approximately US$ 1 billion worth of raw logs annually. Forest and forest products are extremely important to the nation's population. The GoI estimates that more than 300 million residents rely upon forests and forest lands for products such as for fuel-wood, fodder and NTFP. An even greater number of residents rely upon forests for ecosystem services. Although forest quality has generally diminished, overall forest cover is increasing. Since 2013, forests have

expanded by 377,500 ha (India State of Forest Report, 2015). Approximately 75% of India's forest areas are estimated to be negatively affected by grazing.

- *Threats to Protected Areas (PA) and connectivity between them*: India's protected area system is world-renowned. The nation's protected areas support a host of globally significant species. The protected area regime offers some of the best examples of India's remaining intact ecosystems, including forests. These protected areas provide substantial ecosystem services, including SFM, CCM and SLM. India's first legally designated protected area was established in 1936. The current terrestrial protected area network covers approximately 160,000 km^2 or 5% of the country. The network is comprised of 733 individual protected areas. India has four categories of protected areas: national parks, wildlife sanctuaries, conservation reserves, and community reserves. India's protected areas are often a mix of protected and productive landscapes impacted by agriculture, forest use and other natural resource use both inside and outside of PA boundaries. Agricultural interests or productive forests surround nearly all the nation's protected areas. Activities both inside and outside protected area borders often include farming, grazing, forestry, or the collection of Non-Timber Forest Products (NTFP). These can have negative impacts on PA biodiversity, and landuse conversions such as from forests to agriculture, or changes in local agriculture practices from agroforestry to more intensive agriculture can reduce landscape level linkages between protected areas, thereby reducing mobility of wildlife and dispersal of plants. Expansion of agriculture into wildlife habitats or adoption of crops that are more attractive to wildlife can also lead to, or exacerbate human-wildlife conflicts.
- *Greenhouse gas emission*: India's First Biennial Update Report to the United Nations Framework Convention on Climate Change (2015)[7] (see Table 1 below) has noted that the agriculture sector is an important contributor of greenhouse gases. The agriculture sector was the largest emitter of CH_4 and N_2O. The sector is the third largest source of greenhouse gases emissions (energy sector was the largest contributor at 2,136,841.24 giga gram CO2 equivalent; Industrial Processes and Product Use was the second highest contributor at 171,502.87).

Table 1: India's national greenhouse gas inventories (in gigagram) of anthropogenic emissions by sources and removals by agriculture section of GHGs not controlled by the Montreal Protocol for the year 2010

	CH_4	**N_2O**	**CO2 equivalent**
Agriculture total	**14612.78**	**268.70**	**390165.14**
a. Enteric Fermentation	10,811.12		227,033.52
b. Manure Management	130.60	0.08	2,768.11
c. Rice Cultivation	3,398.47		71,367.95
d. Agricultural Soils		261.55	81,080.50
e. Field Burning of Agricultural Residues	272.59	7.07	7,915.06

[7] http://unfccc.int/resource/docs/natc/indbur1.pdf

1.3 Project's Strategic Considerations

11. India's agriculture sector needs to fully integrate environmental concerns into its policies, plans and programmes. Firstly, comprehensive incorporation of environmental concerns will directly benefit the agriculture sector, especially in the context of a changing climate. Issues such as sustainable land and water management, pollution abatement, maintenance of agrobiodiversity and pollinators are as much concerns for sustainable agriculture as they are environmental issues. Secondly, the agriculture sector has committed to national environmental targets and has an obligation to ensure that the country's commitments to international conventions and the Sustainable Development Goals are met. Unless the negative environmental impacts of agriculture are mitigated, good health and wellbeing of local people will not be sustained.

12. Furthermore, integration of environmental concerns will ensure that financial investments by the government into other sectors, especially in the environmental sector, are not directly undermined. For example, the GoI and other partners invest significantly in protected area management. However, at the same time the GoI also invests significantly to boost agricultural production around such areas by promoting modern intensive systems that replace lower impact traditional farming systems. Thus, these different streams of Government's investments are often misaligned and incompatible with each other leading to agricultural and environmental activities acting at cross-purposes in such areas, leading to net economic loss to the country and wasted financing.

13. This project is supporting is the harmonization of India's agricultural and environmental sector priorities and investments so that the achievements of national and global environmental benefits can be fully realized without compromising India's ability to meet its food and nutrition needs while also strengthening rural livelihoods. Achieving this will require much greater coherence between GoI policies, investments, and institutions concerned with conservation and agricultural production at scales that are compatible with ecosystem management.

14. Whilst the project recognizes that mainstreaming environmental concerns into the agriculture sector requires transformation of all types of farming systems (intensive modern agriculture to traditional systems), the most urgent need is to prevent losses of global environmental benefits at currently low intensity agriculture landscapes (traditional agriculture areas), particularly those located in ecologically important areas such as near protected areas. The majority of such areas support rain-fed agriculture. At the local level, the project's activities are focused on supporting activities in such landscapes, because GEF support in reversing the negative impacts of agriculture and maintaining good existing agriculture practices in such landscapes will lead to greater delivery of a variety of global environmental benefits including biodiversity, sustainable land management, greenhouse gas emission reduction, and maintenance of high conservation value forests, than can be achieved by targeting investments at more degraded 'high intensity modern agriculture' areas. Thus, the project's approach is considered cost effective. Secondly, such traditional agriculture areas generally have poorer farming communities and the project will seek to ensure an equitable focus on building local capacities and ensuring benefits to these farmers. Thirdly, project experiences from such areas will also have greater potential for replication around the country, as most agriculture in India is rain-fed.

15. This project will, therefore, use agriculture as the primary entry point to promote a multi-sectoral approach to ensure that the GoI's agriculture's policies, plans, and investments are able to maintain and enhance positive environmental services whilst mitigating negative environmental impacts, without compromising productivity and socioeconomic benefits, particularly across "Green Landscapes" (see Box 1 below for definitions).

Box 1: Defining Green Landscapes

India's National Wildlife Action Plan (2017-2031) has defined a landscape as 'a large tract of land constituted by a mosaic of interacting land uses with people and the impacts of their activities as the cornerstone of its management'.

The landscape approach deals with large-scale processes in an integrated and multidisciplinary manner, combining natural resource management with environmental and livelihood considerations. The landscape approach also factors in human activities and their institutions, viewing them as an integral part of the system rather than as external agents. This approach recognizes that the root causes of problems may not be site-specific and that a development agenda requires multi-stakeholder interventions to negotiate and implement actions (FAO 2012).

"Green Landscapes" are considered to be areas of high ecological sensitivity or biodiversity richness where land use practices such as agro-ecological approaches are being promoted and adopted to enhance agricultural productivity and long-term sustainability, socio-economic benefits while maximizing environmental benefits (especially global environment benefits).

FAO has identified 10 key elements, derived from the general principles articulated for agroecology. As projects, programmes and policies are developed to support agroecology, different elements may come to play in various configurations, with a strong blend between ecological and socio-economic elements. The 10 elements are: Efficiency, Balance, Diversity, Recycling, Synergies, Co-creation of knowledge, Human and social value, Circular economy, Culture and food traditions and Land and natural resources governance. See Annex 1 for more details.

16. The project will work at five States (Madhya Pradesh, Mizoram, Odisha, Rajasthan and Uttarakhand) but will also support lesson sharing nationally. Five Green Landscapes have been selected for their high ecological importance (including global environmental values, as indicated by the presence of at least one nationally recognized protected area that supports globally threatened species) and to represent a range of different ecosystems. Although agriculture in these selected landscapes is largely traditional and rain-fed, many farmers in these regions are increasingly adopting unsustainable agriculture and land use practices that are resulting in the loss of these landscapes' global environmental values, including the loss of agrobiodiversity, as well as the loss and degradation of natural habitats acting as ecological corridors between protected areas, and the degradation of high conservation value forests.

17. The ultimate aim of this project across these Green Landscapes is to ensure that farmers have the capacities and incentives to maintain and/or adopt ecologically friendly agriculture and land use practices (including ecosystem management) and work together to maintain and enhance global environmental benefits at a wider landscape level through maintenance of agrobiodiversity and soil and water productivity and other ecosystem services, while at the same time ensuring sustainability of agricultural production and improving opportunities for rural livelihoods development.

18. In the long-term, the project aims to replicate the Green Landscape approach nationally around existing protected areas. By doing this, the GoI will help to ensure long term integrity of existing protected areas and other important ecosystems outside protected areas, and secure the critical ecosystem services that underpin sustainable agriculture. It will also help secure buffer zones and corridors around and between protected areas. This approach would make protected areas and associated landscapes more resilient to climate change as well.

19. Agriculture practiced in the targeted areas is predominantly rain-fed. Climate change has important implications for agriculture and may cause, for instance, reduction in agricultural productivity and forest-based income as a result of droughts and loss of topsoil during intense rainfall events or floods. Smallholder farmers depending on crops and livestock have already started to take action to reduce the climate risks to crop and livestock production due to the shocks. At the same time, their access to information, resources, technologies and services that help them to adjust their production systems and increase climate resilience is still limited. The project interventions focusing on sustainable management of natural resources, ecosystem management, measures to promote climate change mitigation will consider the future impacts of climate change so as to enhance the resilience.

1.4 Policy and Institutional Context

20. India's current national development priorities are outlined in "India Three Year Action Agenda 2017-18 to 2019-20". The Agenda's overarching objective is to eliminate poverty in all its dimensions such that every citizen has access to a minimum standard of food, education, health, clothing, shelter, transportation and energy, and doubling farmers' income by 2022. The Agenda recognizes the need to balance agriculture productivity with resource use efficiency and to conserve resources. It states "Enhancing agricultural productivity requires of efficiently using inputs, introducing new technologies and shifting from low to high value commodities. We need to expand the scope of irrigation to increase crop intensity, improve access to irrigation, enhance the seed replacement rate and encourage the balanced use of fertilizers. Precision farming and related new technologies, that allow highly efficient farming and conserve resources, must be spread through appropriate policy interventions". The Agenda also stresses the need for effective environment, forest and water resources management.

Box 2: Some Key Mechanisms to Increase Farmers' Incomes in India

Key mechanisms to double farmers' income, as summarized in India's Voluntary National Review Report on Implementation of SDGs[8], include multipronged approach that involves:

- Improved farm productivity
- Reforms in water and agriculture input related policies
- Integrated farming system approach
- Better access to markets and prices
- Special measures for crop diversification

21. India has a diverse set of government institutions and policies relevant to agriculture and environment management at the National and State levels. The national government has fifty-six Ministries. Two ministries are primarily responsible for key issues related to the environment and the agriculture sectors: The Ministry of Agriculture and Farmer's Welfare (MoAFW) and the Ministry of Environment, Forest, and Climate Change (MoEFCC). Some additional environment related projects are also implemented by the Ministry of Water Resources, River Development and Ganga Rejuvenation and Ministry of Rural Development's Department of Land Resources (please see baseline section of this document).

22. The Ministry of Agriculture and Farmer's Welfare (MoAFW) is the apex organization for all agriculture related activities in the country. The MoAFW oversees the agricultural sector, including production, market, and policy aspects. MoAFW is organized around three departments:

[8] http://niti.gov.in/writereaddata/files/Final_VNR_report.pdf

- Department of Agriculture Cooperation, and Farmers' Welfare (DACFW): This Department has 27 Divisions and has five attached offices and twenty-one subordinate offices spread across the country for coordination with state level agencies and implementation of Central Sector Schemes. These include National Missions on Agricultural Extension and Technology (annual funding about US$450 million including most of the funding for Agricultural Technology Management Agency—ATMA at District Level), Sustainable Agriculture, Seeds, Horticulture, Mountain States, Pulses, Oil Seeds; the Department of Plant Protection, Quarantine and Storage (with Integrated Pest Management, Plant Quarantine, and Desert Locust Control); pricing policies for selected agricultural crops; and the special Central Assistance Scheme to States for Agriculture (Rashtriya Krishi Vikas Yojana—RKVY) including funding (annual average US$1.1 billion for 2013-2017) for States to control and spend in response to local changes and demands from agro-climatic conditions, natural resources, rainfed areas and other issues of direct relevance to this Green Agriculture Project. The National Commission on Farmers (NCF) recommends policies, programmes, and measures for agricultural development. The Government of India's official focal point for the United Nations (and other multilateral and bilateral international) agencies' activities in agriculture is the Division of International Cooperation in DACFW.
- Department of Animal Husbandry, Dairying and Fisheries (DADF): The Department is responsible for matters relating to livestock production, preservation, and protection from disease and improvement of livestock and dairy development. The Department oversees matters relating to the Delhi Milk Scheme and the National Dairy Development Board. The Department also looks after all matters pertaining to fishing and fisheries (inland and marine). The Department advises State Governments/Union Territories in the formulation of related policies and programmes.
- Department of Agricultural Research and Education (DARE): DARE is India's international cooperation nodal agency for agricultural research and education. The Department coordinates and promotes agriculture research and education nationally. DARE has two autonomous bodies under administrative control: The Central Agricultural University (CAU) and the Indian Council of Agricultural Research (ICAR). ICAR is India's premier research organisation. ICAR represents one of the largest national agricultural research systems in the world. ICAR has 97 ICAR institutes, 53 Agricultural Universities, 6 Bureaus, 18 National Research Centres, 25 Project Directorates, and 89 All India Coordinated Research Projects (part of the mandate of the ICAR) spread across the country. ICAR is responsible for research and technology support to extension services through Krishi Vigyan Kendras (KVKs) located in each of India's 600+ districts. Each KVK has one representative, on Agricultural Technology Management Agencies (ATMA) under the District Collector as Chair.

23. The legal framework for agriculture is complex. Agriculture is a "State subject" per the Constitution of India. Most financial resources come from Central (i.e. National) Government, but are controlled, administered, released and accounted for by the States. State governments and District administration handle practical policy implementation. The framework includes the: Destructive Insects and Pests Act, 1914, Agriculture Produce (Grading and Marking) Act (1937), The Essential Commodities Act, (1955), Fertilizer Control Order (1957), National Cooperative Development Corporation (NCDC) Act, 1962, Seeds Act (1966), Insecticides Act (1968), Coconut Development Board Act, (CDB) Act. 5 (1979), Consumer Protection Act (1986), Protection of Plant Varieties and Farmers' Rights Act (2001), National Seed Policy (2002), and Food Safety and Standards Act (2006), and the National Food Security Act (2013). The Cattle Trespass Act (1871, amended 1921) allows state governments to control damage caused by livestock.

24. Each State has its own Agriculture Marketing Board and Horticulture Department. The national government determines policy directives, financial support, subsidies and even extension services via

specific National Missions and Schemes of DACFW with technical advice through State Agricultural Universities and Krishi Vigyan Kendras (KVKs).

25. Although large national investments largely determine the direction of agriculture nationally, States have the autonomy to determine their own priorities. For instance, the Government of Sikkim adopted the Sikkim Organic Mission. This policy states that the entire farming sector of Sikkim will be converted to organic production. This policy is now a sort of filter determining how and where national level missions and actions will be applied at the State level.

26. The Ministry of Environment, Forest, and Climate Change (MoEFCC): MoEFCC oversees issues such as forestry, biodiversity conservation, protected-areas management, and pollution abatement. The MoEFCC's broad tasks are: conservation and survey of flora, fauna, forests and wildlife; prevention and control of pollution; afforestation and regeneration of degraded areas; protection of the environment; and, ensuring the welfare of animals. The MoEFCC has an Environment Wing, Forests Wing and Wildlife Wing. There are currently 40 divisions within the MoEFCC. Those most relevant to achieving this project's objective include:

    - Department of Forest (DoF): Responsible for most protected area management and the conservation of forest reserves. The National Forest Commission (NFC) reviews and assesses forest policies. The Forestry Department is responsible for nearly 22% of the country's land area. Forests are generally administered by State Forest Departments working with the national authority.
    - The Wildlife Institute of India (WII): The WII is responsible for most issues related to research and study of biodiversity. The institute is mandated by the Government of India to carry out research on various aspects of Wild Life conservation, conduct training programmes for capacity building of Wild Life managers, build up repository of knowledge of Wild Life and provide technical and advisory services to the State and Central Governments in the country.
    - National Biodiversity Authority (NBA): The NBA was established in 2003 to implement India's Biological Diversity Act, 2002. The NBA advises the national government on issues related to biodiversity conservation, use, benefit sharing and the identification/management of areas of biodiversity importance. The NBA works through State Biodiversity Boards (SBB) and village level Biodiversity Management Committees (BMC). The BMCs are responsible for promoting conservation, sustainable use, monitoring/inventory biodiversity, and preservation of habitat. There are 29 SBB's established and nearly 38,000 BMC's. Each BMC is to be composed of 7 members with at least 2 women representatives, 2 scheduled cast representatives, and 1 Forest Officer.
    - The National Board for Wildlife (NBWL): The NBWL supports issues related to the biodiversity conservation. The NBWL is linked to State Wildlife Advisory Boards. State boards advice the state governments regarding the selection and administration of areas to be declared as Sanctuaries, National Parks, and Closed Areas.

27. Key acts and policies covering wildlife conservation and protected areas are the Wildlife (Protection) Act (1972) and the Biological Diversity Act (2002). Forests are regulated by the Forest Act (1927), the Forest Conservation Act (1980), the National Forest Policy (1988), and the Scheduled Tribes and other Traditional Dwellers Recognition of Forest Rights Act (2006). The Environment Protection Act (1986) governs pollution abatement. In addition, the MoEFCC is guided by several policies, including: The National Conservation Strategy and Policy Statement on Environment and Development (1992), the National Forest Policy (1988), the Policy Statement for Abatement of Pollution (1992) and the National Environmental Policy (2006).

28. Before 1972 "Forest" and "Wildlife" came under State lists. Now, most environmental issues are addressed at the Central level. The protected area system is under primarily national jurisdiction. In 1976, the 42nd Constitutional Amendment Act brought forests under the Concurrent (National) List. Although each State and the national government may make laws on these subjects, if there is a conflict, the national law prevails.

29. In most States, the Department of Forest is responsible for environment, forest conservation and wildlife protection. This reflects the fact that these issues remain under the primary jurisdiction of the national government and the specialised Indian Forest Service. The State level Forest Department will usually consist of a well-established, hierarchal and comprehensive system of Guards, Foresters, Range Officers, Conservators of Forests, and ultimately the Principal Chief Conservator of Forests. Protected Area Officers report to the Chief Wildlife Warden (also a Forest Officer) in every state. In the five States where the project will work, the following are the environment, forestry and climate change related government departments:

    - Mizoram: Department of Environment and Forests and Climate Change
    - Uttarakhand: Forest Department
    - Odisha: Department of Forest and Environment
    - Madhya Pradesh: Forest Department, Department of Housing and Environment
    - Rajasthan: Environment Department, Forest Department

30. The Ministry of Rural Development (MoRD) manages the development of rural India. MoRD has two departments: Department of Rural Development and Department of Land Resources. Related programmes include the Integrated Watershed Management Programme. The National Rural Employment Guarantee System is a cash-for-work programme that constructs rural public works such as soil and water conservation structures. The Department of Land Resources in the Ministry of Rural Development has the task of ensuring optimum utilization and sustainable productivity of rain fed/degraded lands. One of its major goals is to facilitate effective land use system based on the efficient Land Information System (LIS) and Land Resources Management System (LRMS) with the aim of bringing in a digitized land titling system.

31. The Ministry of Chemicals and Fertilizers (MoCF) is responsible for the production and distribution of fertilizers. The MCF has three departments: Department of Chemicals and Petrochemicals, Department of Fertilizers, and Department of Pharmaceuticals.

32. District and Village Level: For administrative purposes, States are divided into Districts. Each District is administered by a District Collector or Commissioner (DC). The DC is from the Indian Administrative Service. At the District Level, the DC controls and coordinates all government programmes except the police force. The Collector's informed support is essential for the delivery of GEBs at the district, village, and community levels. There are over 700 Districts nationwide. The District Collectors exert substantial authority regarding how best to prioritize and apply National and State level agricultural policies and associated investments at the District level. District Collectors and their supporting institutions essentially provide the implementation mechanism to the National and State level agricultural decision-making process.

33. The 73rd Amendment to the Constitution in 1992 formalised the Panchayati Raj System. The intent was to create greater participation in local government and more effective implementation of rural development programmes. The Panchayati Raj system is a three-tier system. There are elected bodies in the district (*Zilla Panchayat*), sub-district (*Mandal or Taluka Panchayats*), and village (*Gram Panchayats*) levels. The *Gram Panchayat* is considered the cornerstone of local self-governance in India. A *Gram Panchayat* may be a single village or a cluster of villages. There are nearly 250,000 Gram Panchayats in India. This project will be focusing a substantial amount of attention at both the District and *Gram Panchayat* level. In Mizoram institutions at this level are the Village Councils.

These are both critical to making tangible, on-the-ground improvements in terms of delivering GEBs at high conservation priority landscapes.

1.5 Baseline initiatives

34. Under the baseline, the GoI invests significant resources in agriculture development and environmental conservation. Annex 2[9] presents key Central Government Ministries and their planned investments related to this project.

35. In the agriculture sector, several programmes funded by the Central Government through the Ministry of Agriculture and Farmers Welfare; the Ministry of Chemicals and Fertilizers', Department of Fertilizers; and the Ministry of Consumer Affairs, Food and Public Distribution, Department of Food and Public Distribution are the most relevant baseline investments.

36. The total annual budget for the Ministry of Agriculture and Farmers Welfare at the Central level for 2017-2018 was 418,550,000,000 rupees or approximately 6540 million USD[10]. Of these, investments that can be considered to directly contribute to this project's objective were around 12% of the budget. They included programmes to improve livestock health, protection of plant varieties, promote soil and water conservation as shown in Table 2 below.

Table 2: The Ministry of Agriculture and Farmers Welfare Related Baseline Investments

MoAFW's budget items	**Budgeted Amount in '000 USD**
Rashtriya Gokul Mission (dairy related)	29,230.8
Support to State Co-operative Dairy Federations	153.8
Livestock Census and Integrated Sample Survey	5,261.5
Livestock Health and Disease Control	45,964.6
National Livestock Mission	47,692.3
Protection of Plant Varieties and Farmers Rights Authority	538.5
Autonomous Bodies	
National Institute of Plant Health Management	1,027.7
National Institute of Agricultural Extension Management (MANAGE)	923.1
National Food Security Mission	264,615.4
National Project on Organic Farming	153.8
Organic Value Chain Development for North East Region	15,384.6

[9] http://indiabudget.nic.in/vol2.asp?pageid=1

[10] Exchange rate used for conversion 1 USD=64 Indian Rupees

MoAFW's budget items	Budgeted Amount in '000 USD
National Project on Soil Health and Fertility	69,538.5
Rainfed Area Development and Climate Change	34,307.7
Paramparagat Krishi Vikas Yojana	53,846.2
National Project on Agro- Forestry	15,384.6
Sub - Mission on Agriculture Extension	140,307.7
Soil and Water Conservation	3,463.1
Agricultural Extension	35,770.8
Natural Resource Management Institutes including Agro Forestry Research	25,796.9
Climate Resilient Agriculture Initiative	7,692.3

37. For the same year, though, the government has budgeted approximately 10,937 million USD for fertilizer subsidies through the Ministry of Chemicals and Fertilizers', Department of Fertilizers, as illustrated below. This is more than one and half times the budget of the Ministry of Agriculture and Farmer Welfare (Table 3)!

Table 3: The Ministry of Chemicals and Fertilizers Baseline Investments

Budget Items	Budgeted Amount in '000 USD
Payment for Indigenous Urea	5,692,307.7
Payment for Urea Freight Subsidy	461,538.5
Payment for Import of Urea	2,153,846.2
Recovery	(651,076.9)
Sub Total	7,656,615.4
Nutrient Based Subsidy	
Payment for Indigenous P and K Fertilizers	1,894,923.1
Payment for Imported P and K Fertilizers	1,215,384.6
Payment for City Compost	2,307.7
Sub Total- Nutrient Based Subsidy	3,112,615.4

Budget Items	Budgeted Amount in '000 USD
Total	10,769,230.8

38. The government also budgeted approximately USD 22678 million USD to buy and subsidize food - especially for the poor. These are budgeted under the Ministry of Consumer Affairs, Food and Public Distribution's two budget items as shown in Table 4 below.

Table 4: The Ministry of Consumer Affairs, Food and Public Distribution's Baseline Investments Relevant to this Project

Budget Items	Budgeted Amount in '000 USD
Food Subsidy to Food Corporation of India under National Food Security Act.	16,482,862
Food Subsidy for Decentralized Procurement of Food grains under NFSA	5,846,154
Total	22,329,015

39. For the environment sector, the Ministry of Environment, Forests and Climate Change is the focal Ministry for the country's environment sector. Its total budget for 2017-2018 of 2,675.42 crores is significantly less than the investments in the country's agriculture sector.

40. In addition to MoEFCC, the Ministry of Water Resources, River Development and Ganga Rejuvenation and Ministry of Rural Development's Department of Land Resources also implement programmes that have direct relevance to environmental management.

41. The total budget of the Ministry of Water Resources, River Development and Ganga Rejuvenation proposed for 2017-18 was 6,887 crores or 1,076 million USD. Of this, the Ministry's budget also includes several programmes that relate to watershed management, such as National River Conservation Programme, groundwater management and regulation, and river basin management. Some of this Ministry's investments that are potentially linked to supporting environmental objectives are presented in Table 5 below.

Table 5: Ministry of Water Resources, River Development and Ganga Rejuvenation's Environment Related Investments

Budget Items	Budgeted Amount in '000 USD
Central Soil and Material Research Station	2,384.6
Net National River Conservation Programme	38,461.5
National Ganga Plan	346,153.8
National Water Mission	2,307.7

Budget Items	Budgeted Amount in '000 USD
River Basin Management	30,769.2
New and Renewable Energy	346,153.8
Ecology and Environment	45,692.3
Total	778,769.2

42. The Ministry of Rural Development's Department of Land Resources also has programmes related to integrated watershed management, for which 2,150.47 crores rupees has been budgeted for 2017-8.

43. In addition to Central government's investments into agriculture and environment related fields, each State, several donors, NGOs and local communities also invest significant resources. However, there is no mechanism in the country to quantify such investments. Annex 2 presents some additional information on baseline investments in the country.

1.6 Barriers to Achieving Project Objectives

44. The project aims to catalyse transformative change in India's agricultural sector to support delivery of national and global environmental benefits and enhanced conservation of critical biodiversity and forest landscapes. Overall government investment provides a promising baseline for the incremental GEF investment to mainstream these environmental concerns into the agriculture sector. As noted under section 1.5, the Ministry of Agriculture and Farmers Welfare (MoAFW) is investing significant resources in promoting modern intensive agriculture. However, it also invests resources through several Missions that incorporate environmental concerns, such as the National Mission Sustainable Agriculture and the Agroforestry Mission. The GoI investment in the agriculture sector also includes direct investments in supporting subsidies through other ministries linked to provision/ supply of fertilizers. Therefore, transformation of the agriculture sector requires the MoAFW and other ministries to review their plans and programmes and work strategically to bring about alignment of their plans and programmes to support environmental conservation, and to adapt or modify those programmes that contribute to loss or degradation of global environmental values. However, several barriers prevent the achievement of the project's aims.

Barrier 1: Agriculture and environmental policies, investments and institutions are not sufficiently and strategically aligned to maximize multiple environmental (particularly global environmental) and socioeconomic benefits

45. Currently, there are no structures or mechanisms for different government ministries concerned with agriculture and environment (including cross cutting ministries such as finance) to work together to discuss priorities, cross-sectoral impacts, and alignment of their priorities, plans and programmes. The GoI does not have a specific programme in place to strategically align environmental and agricultural priorities and investments to integrate environmental sensitivity or multiple global environmental concerns. The Ministry of Agriculture and Farmers Welfare's programmes are also not strategically aligned to complement each other in high priority ecological areas (such as near protected areas) to reduce cross sectoral negative impacts There is no strategic vision for stronger alignment within the agriculture sector's own investments or to align with other environmental or development investments to maximize environmental and socioeconomic benefits. Current agriculture programmes primarily focus at supporting changes at farm and community level – and they rarely consider wider landscape impacts of their investments.

46. There is no formal system in place to facilitate dialogue and institutional coordination over agricultural and environmental decision-making at different levels, and especially at the landscape level. The agriculture and environment sectors exist in largely separate silos in terms of jurisdictional boundaries and programming. For instance, India's agricultural institutions, policies and investments are typically focused upon increasing short-term profitability and production with relatively little regard for issues related to environmental conservation (and most of the agriculture sector is not adequately aware of the importance of environment/biodiversity or the critical value of ecosystem services). Conversely, environmental policies and agencies tend to not be concerned with agricultural issues or the importance of food security and nutrition needs for the country's growing, increasingly urbanized population.

47. Current government policies, investments and subsidies still overwhelmingly favour agricultural production, with price supports and market demand driving selection and production of key agricultural commodities, which ultimately results in a narrow range of crops that require significant inputs being produced. The existing policy and system for allocating investments does not prioritize those landscapes of high ecological concern and/or incentivize the adoption of agricultural practices that would promote delivery of multiple global environmental benefits across these landscapes. For instance, there is an absence of a specific land use designation that would support the integration of the environmental, social and economic dimensions of agriculture to promote more sustainable agriculture, and there is a lack of a common formal national-level strategic vision or programme that integrates agriculture and environmental goals and priorities in a consistent way within a wider framework of sustainable agriculture and natural resources management. A reflection of this is that PA management plans do not address improvements to agriculture as a priority in and around these areas despite unsustainable agriculture production being a primary threat to PA integrity.

Barrier 2: Limited mechanisms, tools, data-sharing systems and 'best practice' models for more informed decision-making

48. At present, there are few and/or inadequate systems and mechanisms, tools and incentives available to decision-makers and practitioners to address more holistic landscape-level conservation, climate change mitigation, resilience and agricultural production priorities. For instance, agricultural agencies lack the tools to identify and prioritize where conservation-orientated agriculture is most needed, and there are no existing mechanisms to identify and implement opportunities to better align resource use in productive landscape with the PAs conservation priorities[11]. Despite both agricultural and environmental authorities having extensive databases, knowledge management systems and data collection initiatives, relevant agricultural and environmental data/information is not linked effectively (reflecting 'silos') and there is no mechanism or programme to facilitate such sharing and exchange, e.g. data on wildlife use/movements are not considered by agricultural agencies, and agricultural data (such as soil health, production figures) are not used to inform conservation decision-making such as zoning. These also hinder the government's ability to capture and upscale 'best' sustainable agricultural practices and embed them within institutional frameworks. In other words, local good practices do not feed back into higher-level policy development.

49. Improved agricultural practices are crucial to reduce greenhouse gas emission and to promote resilience in agriculture sectors. In order to adapt agriculture to increasing effects of climate variability and change, there is a need to transform traditional agricultural practices to more climate resilient

[11] This includes: safeguarding corridor and buffer habitats for critically endangered wide-ranging species; helping to reduce human-wildlife conflict; coordinating sustainable use of shared resources; generating economies of scale through cooperative management of interdependent landscapes; and/or maintaining the ecosystem services upon which both the productive and protected landscapes rely.

supported by knowledge development and learning regarding climate resilient agriculture best practices. The National Mission on Sustainable Agriculture under the National Action Plan on Climate Change aims to make Indian agriculture more resilient to climate change through developing new varieties of thermal resistant crops, new credit and insurance mechanisms and by improving productivity of rain-fed agriculture.

50. Similarly, National Initiative on Climate Resilient Agriculture (NICRA) [12] aims to enable farmers to cope with climate variability through land, water, crop, and livestock management in vulnerable districts of India. This initiative aims to achieve resilience through strategic research and technology demonstration through participatory evaluation of location specific interventions in vulnerable districts. However, this work is constrained by limited downscaled information on climate vulnerabilities that could inform and facilitate improved resilience planning at the local level.

Barrier 3: Agriculture and environmental sector support structures and services are not sufficient or enabled to build the farmer capacity required to jointly sustain production, enhance resilience, improve livelihoods and deliver wider GEBs across critical landscapes

51. At present there are constraints to the delivery and promotion of conservation-oriented agriculture at the local level through the District-level authorities and the uptake and applicability by the farming communities themselves. There is particularly limited understanding and capacities of local decision makers to develop strategic partnerships, vision and capacity to support a landscape-level approach to sustainable agriculture and integrated natural resources management. Despite a very extensive and well-financed GoI framework to deliver conservation, development and agriculture extension services at the local level, it lacks a clear mandate and human capacity to promote the adoption of sustainable agriculture, and/or integrate global environmental benefit objectives at the farm and wider landscape level. Agricultural extension services focus almost exclusively on (and success is measured by) agricultural production with little consideration of climate change, environmental or long-term socio-economic resilience. Local government officials and other decision makers have limited understanding of the cumulative impact of their work on global environmental issues (including climate change and resilience) at wider landscape levels. Related to this, there is no strategic, landscape-level farmer capacity development programme in place to support more sustainable production, increased economic viability, and improved income generation underpinned by conservation of ecosystem services

52. Particular weaknesses are the low technical capacity of the rural extension services and absence of appropriate models to promote sustainable agriculture and integrated natural resources management to maximize global environmental benefits. The extension services are not equipped or lack trained individuals with the relevant knowledge and experience or the extension services are not structured to guide and incentivise farmers to access and adopt sustainable agro-ecological practices[13] which would deliver landscape level GEB, particularly those associated with reducing threats to PAs. Agriculture extension services tend to focus at a very local level and not on generating integrated landscape-level impacts, or distinguish between landscapes of higher or lower ecological value. The situation is not helped by a shortage of transferable, replicable models of integrated landscape management that could be promoted by the extension services in India to deliver both productive value (for example food, employment) and multiple environmental benefits (biodiversity conservation, greenhouse gas

[12] http://www.nicra-icar.in/nicrarevised/images/Books/NICRA%20Climate%20Resilient%20Agriculture%20Brochure.pdf

[13] Such as integrated pest management or diversified production based on local agro-biodiversity, monitor GEB impacts, measure soil organic matter, or assess land erosion rates relevant to on-going agricultural practices

emission reduction, sustainable land management and conservation of high conservation value forests) at a scale needed to deliver meaningful environmental benefits.

53. There is is limited understanding of the potential benefits for the integration of resilience into measures to achievesustainable agriculture and natural resources management. Information and capacities on integration are not readily available to local communities. The potential benefits are generally unrealised because of limited transfer of such knowledge and understanding to relevant decision-makers. This constrains technical capacity in both government institutions and local communities to design and implement a comprehensive, integrated approach to climate change risks.

54. Adoption of sustainable and climate-resilient livelihood activities is also hindered by weak linkages in value chains for commodities that are underpinned by ecosystem goods and services. There is often limited access to potential markets for many of these commodities, which also reduces the economic viability of such livelihoods.

Barrier 4: Limited awareness among farmer communities of value of environment and opportunities connected with agro-ecological practices, and poor incentives and programmes to encourage and support farmers and local communities to adopt sustainable agriculture and integrated natural resources management at scale to ensure multiple benefits

55. Although the strong link between farming and natural resources management is well recognized in India, the current system of capacity building and provision of agriculture-related incentives does not adequately stress and promote these inter-linkages, especially at the local level. Community and farmer level training tends to follow a more traditional "classroom" type model that does not promote experiential learning. Since these capacity building activities are not guided by any higher-level landscape management objectives, they do not provide tools and options for examining farm and landscape interactions that would deliver long term sustainability of agriculture and, resilience and maintenance of ecosystem services. This means communities and farmers have poor understanding of the ecological/ environmental value and critical importance of their surroundings, particularly the value of PAs or other areas of high conservation value. Farmers also have limited access to tools and models available to strengthen more cooperative approaches to bolster their ability to negotiate, agree on best practices, achieve economies of scale, or improve their collective capacity to conserve shared natural resources. Most private sector and government purchase programmes of agricultural products do not distinguish between ecologically sensitive products and those produced through environmentally unfriendly practices.

1.7 The GEF Alternative

56. This project will overcome the barriers mentioned above through implementation of two project components, each of which has a number of Outcomes and Outputs.

57. The project will deliver four Outcomes under two Project Components. They include:

- *Component 1: Strengthening the enabling framework and institutional structures to mainstream BD, SLM, CCM and SFM policies, priorities and practices into India's agricultural sector*

- Outcome 1.1. National and state level institutional, policy and programme frameworks strengthened to integrate environmental priorities into the agriculture sector to enhance delivery of global environmental benefits (GEB) and resilience across landscapes of highest conservation concern

- Outcome 1.2. Cross-sectoral knowledge management and decision-making systems at national and state levels to support development and implementation of agro-ecological approaches at landscape levels that deliver global environmental benefits as well as socioeconomic benefits enhanced
- *Component 2: Improved agricultural and conservation practices demonstrating sustainable production, resilient livelihood advancements, habitat improvements and delivery of tangible BD, LD, CCM, and SFM benefits*
- Outcome 2.1 – Institutional frameworks, mechanisms and capacities at District and Village levels to support decision-making and stakeholder participation in Green Landscape planning and management strengthened, with Green Landscape Management Plans developed and under implementation for target landscapes
- Outcome 2.2 - Households and communities able and incentivized to engage in agro-ecological practices that deliver meaningful GEB at the landscape level in target high conservation priority landscapes.

1.7.1 Project's Theory of Change

58. The GoI recognizes that to ensure future sustainability of agriculture to meet India's long-term food and nutrition requirements, and to achieve social and gender goals in rural areas, while contributing to the country's global environmental commitments, it needs to undertake greater efforts to mainstream environmental concerns into agriculture policies, plans and investments, and harmonise the country's agricultural and environmental sectors. Achieving this will require greater coherence between GoI policies, investments and institutions concerned with agricultural production and conservation, particularly in the face of changing climate and at the landscape scale where ecosystem management is most effective.

59. This project seeks to address these needs, which this is reflected in its overall objective to "*catalyse transformative change of India's agricultural sector to support achievement of national and global environmental benefits and conservation of critical biodiversity and forest landscapes*". To address this, the project's strategy, based on its Theory of Change, seeks to overcome the four barriers identified above through the delivery of four interlinked project outcomes, organised under two components. These are:

Component 1: Strengthening the enabling framework and institutional structures to mainstream BD, SLM, CCM and SFM policies, priorities and practices into India's agricultural sector

- Outcome 1.1. National and state level institutional, policy and programme frameworks strengthened to integrate environmental priorities into the agriculture sector to enhance delivery of global environmental benefits (GEB) across landscapes of highest conservation concern
- Outcome 1.2. Cross-sectoral knowledge management and decision-making systems at national and state levels to support development and implementation of agro-ecological approaches at landscape levels that deliver global environmental benefits as well as socioeconomic benefits enhanced

Component 2: Improved agricultural and conservation practices demonstrating sustainable production, livelihood advancements, habitat improvements and delivery of tangible BD, LD, CCM, and SFM benefits

- Outcome 2.1 – Institutional frameworks, mechanisms and capacities at District and Village levels to support decision-making and stakeholder participation in Green Landscape planning and management strengthened, with Green Landscape Management Plans developed and under implementation for target landscapes

- Outcome 2.2 - Households and communities able and incentivized to engage in agro-ecological practices that deliver meaningful GEB at the landscape level in target high conservation priority landscapes.

60. A total of 17 Outputs will contribute to the achievement of the above Outcomes (see section 4.7 of the document).

61. The central hypothesis for this GEF initiative is that the agriculture sector can be reorientated towards more sustainable practices incorporating environmental priorities, particularly in landscapes of high ecological value, through realignment of agricultural policy and investments at the national and state scales and through building capacity and developing and facilitating incentives for farming communities at the local level to adopt agro-ecological practices, including climate resilient ones. It is assumed that the increasing demand for responsibly sourced farm products and improved access to the market opportunities, combined with greater knowledge of the negative impacts on livelihoods of unsustainable agricultural practices and realigned and supportive government policies and investments, will stimulate behavioural change at the farm and community levels towards more sustainable agriculture and land uses in high value conservation landscapes.

62. To achieve this, the project's first Component, which addresses the first two barriers, largely targets the key national and state level processes and institutions, helping to strengthen the enabling environment leading to better integration of environmental priorities in the agriculture sector and stronger alignment of associated investments that are directed at landscapes of significant importance for biodiversity and ecosystem services, as well as of agriculture value. Allied to this, the project seeks to strengthen national and state institutional capacity and systems for evidence-based decision-making (particularly spatial analysis systems and georeferenced and climate data) in support of agroecological approaches that can deliver multiple livelihood, food security and global environmental benefits at landscape level. The project's approach includes a focus on raising awareness of the importance of high conservation landscapes to agriculture through a communication strategy and outreach materials including targeted policy briefs, and Policy Dialogues' established to inform and facilitate discussion of priority issues related to agriculture, environment and development, linked to the establishment of a national and five state level inter-sectoral (agricultural and allied sectors, forestry and natural resources management, and economic development) coordinating committees to help facilitate cross-sectoral support to mainstream environmental priorities into the agriculture sector. Particularly important as a tool for achieving successful mainstreaming will be the development and adoption of national and state level "Green Landscape" mainstreaming strategies developed to promote environmental protection as part of broader sustainable agriculture and natural resource management, that will include analysis and strategic re-direction and prioritization of agricultural initiatives and investments to encourage agricultural practices that deliver GEBs at the landscapes of highest ecological value. Progress towards delivery of GEBs and social and economic impacts (e.g. farmer income, food security) will be assessed through a specific Green Landscape monitoring programme.

63. The second Component, which aims to overcome the third and fourth barriers, focuses on building institutional capacity and structures at a more local level in the project target areas, particularly through the District and Gram Panchayat/Village Council decision-making processes, with the establishment of new, or co-opting of existing, governance structures combined with local capacity building in governance skills to empower farming communities and other local land users to fully participate in Green Landscape planning and management. In the process this will generate high local ownership for sustainable agriculture and the project results improving the likelihood for the sustainability of the project results. The increased local capacity and empowerment will help support the development of agreed Community based natural resources management plans that will set out a common, shared agricultural, environmental and development priorities in the target landscapes. In parallel with these efforts, the project will build the practical knowledge and skills of individual farmers, households and communities in target areas to enable them to implement new agro-ecological farming practices

including climate resilient ones. As important, in order to overcome the understandable aversion to risk/inertia of some farmers to change in the target areas, the project will develop measures to incentivise and encourage the wide adoption of the new more sustainable farming practices and land uses, particularly through better identification and linkage to markets (so increasing the economic opportunities for those who adopt the new practices), leading to widespread behavioural change across target high ecological value landscapes.

64. Support to participatory, community-based land-use planning in targeted areas and landscapes based on an analysis of vulnerability to climate change impacts and adaptation and mitigation capacity.

65. Identification and promotion of lessons learned, based on collation and analysis of the project's results and experiences of developing and testing a range of innovative approaches to sustainable agriculture and climate resilience covering a range of ecosystems, land use types and scales (local to landscape), is an another key element of the project's strategy, which will support catalysis and upscaling to other areas of India with high value landscapes.

66. Achievement of the project outcomes will eventually lead to the project's final desired (long-term) GEB and socio-economic impacts, which, in terms of meeting GEF BD, LD, CCM and SFM, as well as socio-economic, impacts, can be formulated as:

- Multiple GEB delivered across agricultural landscape in India, including:
    - Reduced deforestation and forest degradation due to agriculture encroachment and unsustainable extraction of production forest resources, with increased land cover through sustainable management of forests and maintenance of high value conservation forests;
    - Reduced land and water degradation due to unsustainable agriculture practices such as overgrazing and from improper agrochemical use, with improved soil quality and reduced erosion from agricultural lands through sustainable land and water management;
    - Reduced human-wildlife conflicts and illegal hunting negatively impacting wildlife populations, particularly in and around PAs;
    - Reduced wildlife-livestock competition and reduced disease spread between domestic animals and wildlife;
    - Greater control over inappropriate introduction of invasive alien species (IAS) to agricultural areas;
    - Improved *in-situ* conservation of agro-biodiversity in all five project target landscapes; and
    - Reduced GHG emissions resulting from agricultural practices and increased capture of GHG by agriculture land managed through more sustainable agro-ecological practices (e.g. agro-forestry).
    - Enhanced resilience of ecosystems to climate variability and change

In terms of the socio-economic impacts, the project's expected impacts are:

- Agricultural communities in India with increased farm productivity and food security, livelihood resilience to climate change with sustainable and socially inclusive sources of income and food from sustainable agriculture and other land uses in Green Landscapes, and increased social capital through farmers/land users working together on shared landscape level aims.

67. It should be noted that the project's strong focus on empowering women should also lead to long term changes in women's status and their access to benefits in the target communities.

68. There are a number of intermediate stages/states in the Theory of Change between the project's four immediate Outcomes and its final desired (long-term) impacts, including two medium-term outcomes

(not considered achievable in the project's lifetime) and longer-term intermediate states (changes in state only achievable through the actions of many others and over a longer time period). Over the medium term (so not considered achievable in the project's lifetime) the project is expected to contribute to two further outcomes: (i) national, state, and district level decision-making systems and processes in place and ready to direct agricultural policy, planning, programmes and investments to incentivize the adoption of agro-ecological practices across high priority landscapes, focused upon high ecological value landscapes associated with protected areas; and (ii) farmers and other land users across the 5 target States incentivized and with capacity to adopt improved agricultural techniques that can deliver GEBs at landscape level as well as social and economic benefits. Two intermediate states can also be identified, namely: (i) national, state and district level agricultural and environmental policy, programme and investment frameworks fully realigned to delivery national and global environmental benefits (GEBs) across landscapes of highest ecological value; and (ii) widespread adoption and application of agricultural (agro-ecological) and improved natural resources management practices in India that deliver meaningful GEBs at the landscape level and that are economically and socially beneficial to farmers.

69. There are also a number of assumptions (where the project has no control, or influence) and drivers (over which the project or its partners may have a certain level of control) that operate over different scales and at different points along the causal chain in the Theory of Change that may impede or promote the likelihood of achieving the Project's desired long-term impacts. The assumptions that need to hold are that:

(at the local and District levels)

- Locally appropriate solutions to adopt agro-ecological practices that deliver meaningful GEBs at the landscape level are acceptable to extension service advisors and they are willing to promote these;
- Groups of farmers are willing to work together to generate cumulative GEB at the landscape level;
- Markets for products from agro-ecological land use are maintained and are accessible by target communities (prices for products do not crash and markets remain supportive in the long-term);
- Farmers are able (financially, socially) and can be convinced to shift from unsustainable to more sustainable practices that may or may not increase production value (need to overcome inertia and risk-aversion to the adoption of new practices);
- Economic and social rewards from adoption of agro-ecological practices are judged higher and risks judged lower than those associated with 'business as usual' practices by farmers and other natural resource users;
- Unsettled land-use and land-tenure issues in or near protected areas and across landscape of high conservation value do not reduce the legitimacy of policy initiatives or enforcement in those areas; (and at the national and state levels)
- Relevant national, state and district sector agencies are willing to continue to cooperate and coordinate to develop 'Green Agriculture Landscape' approaches and programmes;
- Government (national, state and district) and donor commitment to support locally appropriate conservation agriculture is maintained in the face of other development priorities; and
- Future climate change events do not make conditions for the continued existence of conservation-orientated agriculture in India impossible (e.g. increased frequency of extreme temperature and rainfall events caused by CC do not lead to shifts and loss of agroecosystems including forests and/or unmanageable pest/disease infestations).

70. There are also a number of impact drivers that make progress along the causal chain more likely. These include:

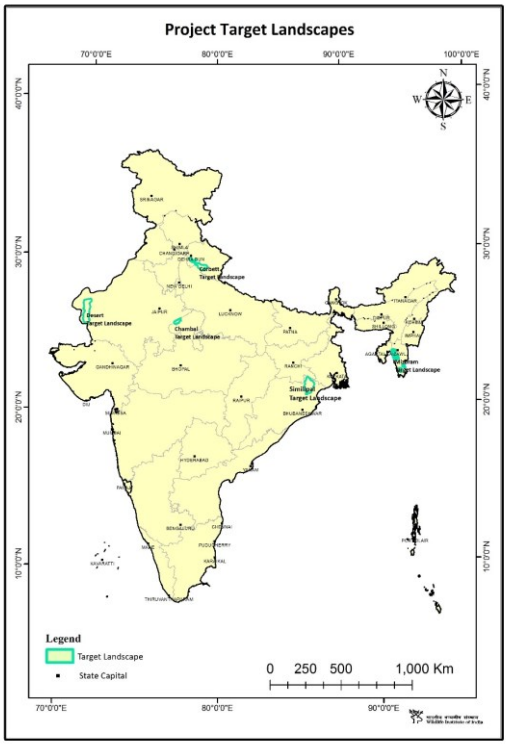
- Increasing demand for sustainably sourced (certified) agricultural products among Asian consumers;
- Increasing international finance being directed to more sustainable agriculture production systems that have wider benefits such as CCM, e.g. GCF, REDD+;
- Population growth and changes in diet driving need for increased efficiency and productively of agricultural production in India;
- Increasing awareness of the negative impacts of unsustainable agricultural practices (e.g. soil erosion) among farmers, other land users and the general public forcing people to consider change;
- The Paris Agreement (COP21), to which India is a signatory, recognizes the importance of moving to sustainable (and climate smart) agriculture as part of the international response to climate change.

71. The Theory of Change, showing the causal relationships between the project's Outputs (goods and services delivered by the project) and immediate project Outcomes (changes resulting from the use of project outputs by key stakeholders), medium-term outcomes and longer-term intermediate stages and states and the project's ultimate desired impact, as well as the drivers and assumptions, is depicted graphically in Annex 3.

1.7.2 Project Landscapes

72. Figure 1 presents the locations of five landscapes selected for this project, and tables below summarize key information from the project sites. Annex 4 presents more details on the five Green Landscapes selected for this project.

Figure 1: Location of selected priority landscapes in India



73. The landscapes have been selected to represent different agroecosystems of India as noted in Table 6 below. They range from hot and arid Rajasthan desert area to wet and evergreen areas of Mizoram. The common theme amongst all the sites is the presence of at least one protected area of global importance. In fact three of the proposed sites include Tiger Reserves (Dampa, Similipal and Rajaji/Corbett) and the Odisha and Uttarakhand sites also overlap with Elephant Reserves of India. Farmers' at all five landscapes depend mostly on rain-fed agriculture and maintain significant agrobiodiversity on their farms.

Table 6: Key Land Use in Project Supported Green Landscapes (hectares)

Class\Region	Chambal Landscape, Madhya Pradesh	Dampa Landscape, Mizoram	Similipal Landscape, Odisha	Desert National Park Landscape, Rajasthan	Rajaji Corbett Landscape, Uttarakhand
Agriculture	19400	1886.069	155535	161221	45108.77
		Shifting Agriculture (*Jhum*) 14710			
Forest	*Anogeissus pendula*: 614	(Bamboo) 41471	Bamboo: 5881	Plantations: 1701	*Pinus roxburghii*, Pine mixed:11664.60
	Degraded: 4399	18402	Sal: 79922	-	8172

Class\Region	Chambal Landscape, Madhya Pradesh	Dampa Landscape, Mizoram	Similipal Landscape, Odisha	Desert National Park Landscape, Rajasthan	Rajaji Corbett Landscape, Uttarakhand
	Dry deciduous: 26048	Evergreen, Semi-evergreen: 51804	Sal mixed dry deciduous: 205500 Sal mixed moist deciduous: 35689 Semi-evergreen: 8937	-	Dry deciduous: 36828 Eucalyptus: 24 Himalayan moist temperate: 1516 Mixed plantations: 1129 Sal mixed moist deciduous: 88331 Sal: 79865 Sub alpine: 46.45 Teak: 472 Temperate coniferous: 54
	Teak mixed Moist deciduous: 7710	Moist deciduous: 12245	Moist deciduous: 7023	-	Moist deciduous: 0.1
Grassland	*Boswellia*, *Zizyphus*: 3453	-	4967.36	115680	10361
Orchards	-	-	11873	-	5
Others	-	Barren Land: 3463	-	Barren Land 289717	unclassified, River bed, Barren land: 14011
Scrub	32698	-	31120	102899	15590.43
Settlement	193	518	2476	2738	1363
Water body	3468	1172	5812	128	10156
	97982	**145670**	**556900**	**674083**	**324696**
Key Global biodiversity significance	Critically endangered Gharial (*Gavialis gangeticus*), the critically endangered Red-crowned Roofed Turtle (*Batagur kachuga*) and globally endangered Ganges River Dolphin (*Platanista gangetica*); Important Bird Area	Important Tiger habitat (Dampa Tiger Reserve)	Important Tiger habitat (Simlipal Tiger Reserve) and Asian Elephant Habitat (include part of Elephant Reserve). The landscape is also UNESCO Man and Bioshere Reserve	The largest population of critically endangered Great Indian Bustard (*Ardeotis nigriceps*) in the world	Important Tiger habitat (Corbett and Rajaji Tiger Reserve) and Asian Elephant Habitat (includes part of elephant reserve)

Table 7: Selected Socioeconomic Information from Five Green Landscapes

Target Landscape Information	Chambal Landscape, Madhya Pradesh	Dampa Landscape, Mizoram	Similipal Landscape, Odisha	Desert National Park Landscape, Rajasthan	Rajaji Corbett Landscape, Uttarakhand	Total
Districts	Morena, Sheopur	Lunglei, and Mamit	Mayurbhanj	Barmer and Jaisalmer	Almora and Pauri Garhwal	9
Number of Villages	93	50	1,461	81	1,071	2756
Population	102,141	44,274	795,804	68,734	235,528	1,246,481
Total HH	16,163	16,578	170,365	11,912	49,331	264,349
Key ethnic groups	Sahariya tribe, Yadav, Bairagi the Dalits and Tribal communities like Meos and the Bhils	Hmar, Paihte, Pawi/lai, Mara and other tribes such as Bru (Tuikuk) and Chakma	Birhors, Hill Khadias and Ujias, indigenous ethnic groups (Santhal, Kolha, Bhomji, Bhuiyan, Bathudi, Kharia, Gond)	Minas, the Mevs, the Banjaras, and the Bhils (one of the oldest tribes in India,). Others include the Gadia Lohars, the Kalbelias, and the Garasias	Hindu castes like Brahmins, Kshatriya/Rajputs and Tribal groups like Jaunsaris, Jadhs, Marchas of Chamoli and Van Gujars	Over 30
Dominate Agricultural Production	Rice, Wheat, Legumes and Livestock	Rice, maize, ginger, mustard and potatoes	Wheat, pearl millet, Wild mustard, Khejri	Pearl Millet, Wheat, Gram Oilseeds and Guar	Almora grows Mandua (finger millet), pulses, oilseeds, potato Pauri Garhwal, grows wheat, mustard, barley, paddy, maize, Mandua (finger millet) and Jhangora (coarse millets), pepper, ginger, turmeric and sugar cane	Diverse systems

1.7.3 Project Objective, Outcomes and Outputs

74. To contribute to the project objective "*catalyse transformative change of India's agricultural sector to support achievement of national and global environmental benefits and conservation of critical biodiversity and forest landscapes*", the project will work to achieve four Outcomes under two project components. The following indicators have been presented in the project's results framework (section 4.7 of this document) to a ssess the project's contribution to the Project Objective:

- Institutionalization of intersectoral mechanisms (agricultural and allied sectors, forestry and natural resources management, and economic development) at the National Level and as well as in the five States to facilitate continued mainstreaming of environmental concerns into the agriculture sector beyond project end. This will include one national platform and one platforms each in Madhya Pradesh, Mizoram, Odisha, Rajasthan and Uttarakhand.

- In addition, at least six key national and state level agricultural programmes (missions) will have been strengthened with results based environmental indicators integrated in their policy and planning frameworks (or through revised guidelines and other tools based on project support). Key missions that will be targeted for strengthening include:

  1. National Mission on Sustainable Agriculture
  2. National Initiative on Climate-resilient Agriculture
  3. National Livestock Mission
  4. National Food Security Mission
  5. National Mission for Horticulture
  6. Rashtriya Krishi Vikas Yojana

- At least 10 community led initiatives to support conservation of globally important species such as the tigers, elephants and the Great Indian Bustard. Such initiatives could include community led actions such as community anti-poaching patrolling, community led communication/ awareness activities, habitat and species monitoring activities. These will be strongly linked to Tiger Reserve and Elephant reserve management plans in at four landscapes that the project will be working.
- A reduction in the threat index from baseline established at year 1 of the project (as measured through Green Landscape monitoring programme) at key sites of high biodiversity importance will be demonstrated at five target Green Landscapes – with landscape specific targets set at project's year 1(Rajasthan: [14]277930(grassland and orans); Mizoram: 13725 (*Jhum*); Madhya Pradesh: 18000ha (ravines) and the following areas of High Value Forests:

[14] The exact formulation of the threat index is still being discussed by the partners, but will be confirmed by the project's inception meeting (first Steering Committee meeting) and full baseline data for the index will be determined in the first three months of implementation as part of the project's M&E activities. The index is to be based on a composite of different threat indicators relevant to the key sites of high biodiversity importance in five target Green Landscapes' Area, and will rely upon data from already existing monitoring schemes and data sources from the five states. A brief list of some of the information sources and monitoring initiatives collecting data related to protected area management, biodiversity conservation, climate change, agriculture and SFM is given in the draft ProDoc (paragraphs 97-100). Data points being considered include threats scores from Protected Area Management Effectiveness (PAME) assessments, such as the GEF Management Effectiveness Tracking Tool (METT) assessments for individual Pas and BirdLife International's Important Bird and Biodiversity Area (IBA) monitoring protocol, as well as results collected from other relevant monitoring approaches such as the SMART (Spatial Monitoring and

- **Table 8: Targets for effective conservation and management of high conservation value (HCV) forests in selected States**

• **States**	• **HCV (ha)**
• Madhya Pradesh	• 35,000
• Mizoram	• 50,000
• Odisha	• 1,75,000
• Uttarakhand	• 90,000

- At least 104,070 Hectares of farms will be under sustainable land and water management (including organic farming and agrobiodiversity conservation) (Madhya Pradesh: 9,000; Mizoram: 13,725; Odisha: 34,200 Rajasthan:34,145; Uttarakhand: 13,000)
- 49,906,455 tCO2eq Greenhouse gas emission reduction (tCO2eq newly sequestered or avoided[15]) through improved agroecosystems management in five Green Landscape. (Annex 5)

75. The first two indicators will be largely contributed by Component 1 of this project and the last two indicators will be contributed by Component 2 of this project. Additional details on the project Components, Outcomes and Outputs are presented below.

Component 1: Strengthening the enabling framework and institutional structures to mainstream BD, SLM, CCM and SFM policies, priorities and practices into India's agricultural sector

76. Two Outcomes are planned under this Component. The first Outcome will strengthen national and state level policy, institutional and programme frameworks, and the second Outcome will focus on cross-sectoral knowledge management and decision-making systems at the national and state levels.

Outcome 1.1. National and state level institutional, policy and programme frameworks strengthened to integrate environmental priorities and resilience into the agriculture sector to enhance delivery of global environmental benefits (GEB) across landscapes of highest conservation concern

77. Under this Outcome, at least 12 new policy recommendations (at least two per State and two at the national level) are expected to be developed and approved by multi-stakeholder platforms of policy makers to strengthen agroecological approach in agriculture and allied sectors at the national and State

Reporting Tool) developed by a consortium of conservation organizations. A number of global and regional level databases are also being assessed as information sources, including data layers from FAO's online Earth Observation tool[14], and other satellite-based mapping programmes tracking changes in vegetation, agriculture and other land use.

[15] Carbon benefits from the project are estimated based on lifetime direct as well as indirect GHG emissions avoided over the default time horizon of 20 years under the IPCC guideline and the guidance of the GEF Tracking Tools. For this project, the durations of implementation phase and the capitalization phase are defined as 6 years and 14 years, respectively. The carbon benefits are calculated using EX-Ante Carbon Balance Tool (EX-ACT) Version 7.1.8g.

levels to achieve multiple global environmental benefits, as well as to achieve sustainable food production and resilient local livelihoods.

78. The project incorporates climate resilience considerations into established or on-going programs, policies or management strategies and all of the practices and technologies to be implemented to achieve biodiversity conservation, sustainable land management, climate change mitigation and sustainable forest management. These measures should be resilienent to future shocks and capable of preventing and reducing the impacts of climate extremes and adapting to these shocks in a timely, efficient and sustainable manner. Additionally, the interventions will integrate elements to protect, restore and improve livelihoods of most vulnerable communities to the threats that impact agriculture, food and nutrition. [16]

79. In addition, one national and five State plans (in Madhya Pradesh, Mizoram, Odisha, Rajasthan and Uttarakhand) are expected to be endorsed by multi- stakeholders (with committed finance, and institutional arrangements) to continue Green Landscape approach at five landscapes and expand beyond project targeted landscapes. These plans are meant to serve both as exit strategies for this project, as well as expansion/ scale up strategies of the Green Landscape approach.

1.1.1 National and state level inter-sectoral (agricultural and allied sectors, forestry and natural resources management, and economic development) coordinating committees established and institutionalized to facilitate cross-sectoral support to mainstream environmental priorities in the agriculture sector (target: 1 national, 5 state level)

80. Under this Output, the project will support the establishment of multi-sectoral bodies at the National level as well as in the five target States. Details on these are presented later in this document under the Implementation Arrangements.

81. These committees will bring together government institutions working in agriculture and allied sectors, forestry and natural resources management, and economic development. The National and the State Level Committees will act as the Project's Steering Committees at the National and State levels, respectively. They will work together to guide overall project implementation in each State, and to work together to bring convergence between various government policies, plans and investments to promote five key principles[17] of sustainable food and agriculture, with a special focus to the achievement of global environmental values. Key principles of sustainable agriculture include:

    - Improving efficiency in the use of resources
    - Undertaking direct action to conserve, protect and enhance natural resources
    - Protecting and improving rural livelihoods, equity and social well-being
    - Enhancing resilience of people, communities and ecosystems
    - Ensuring responsible and effective governance mechanisms for sustainable agriculture

82. These intersectoral committees will promote information exchanges amongst their agencies and they will facilitate the adoption of policy improvements related to the nexus between agriculture, environment and development considering also the climate change context. State Steering Committee representatives will be invited to the National Steering Committee meetings to ensure strong linkages between national and State level work, and to expose national policy makers to the experiences and

[16] FAO. 2013. *Resilient livelihoods – Disaster Risk Reduction for Food and Nutrition Security Framework Programme*. Rome. 91pp. (available at http://www.fao.org/3/a-i3270e.pdf)

[17] http://www.fao.org/sustainability/background/principle-1/en/

lessons from the five States. It is expected that these bodies will continue to function beyond the lifetime of this project as important policy guidance bodies, which is reflected in the project's Objective level indicator "Institutionalization of intersectoral mechanisms (agricultural and allied sectors, forestry and natural resources management, and economic development) at national and five States to facilitate mainstreaming of environmental concerns into the agriculture sector beyond project end".

83. National and State multi-sectoral bodies will convene annual or bi-annual meetings to consider and reflect on formal briefings and resource materials summarizing project results, impacts, best practices, and recommended actions. They will also review the project's annual work plans and budgets and ensure strong coherence between five states' work plans. In addition, members of these Committees will guide the development or refinement of policies and plans to integrate environmental concerns into agriculture and allied sectors. It is expected that most members of these committees will also participate in the National and State level policy dialogues, which are described under Output 1.1.2.

1.1.2 'Policy Dialogues' established to inform and facilitate discussion of priority issues related to agriculture, environment, including climate change and development, including gender issues, at national and state levels, including options to shift current investments in agricultural development to support more environmentally sustainable practices (target: 1 national, 5 state dialogues)

84. Whilst the Project's Steering Committees at the national and State levels will primarily provide policy guidance for project implementation, the project will support additional platforms that will bring together members of these committees and other senior policy makers (experts from the government, academia, the private sector, non-governmental organizations and farmer representatives) to prioritize, analyse and discuss priority issues and concerns related to mainstreaming of environmental concerns in the agriculture sector.

85. The dialogues may be built around key themes identified by FAO's Sustainability Assessment of Food and Agriculture Systems[18]. The project will also take into consideration FAO`s Strategy on Climate Change and FAO Policy on Gender Equality as formulated in the context of Attaining Food Security Goals in Agriculture and Rural Development and ensure that such dialogues include gender and social equity issues.

86. These dialogues will be facilitated by project-funded experts. Dialogue participants will assess the wider policy context for agriculture, environment and development in their respective States and at the national level and prioritize key issues driving unsustainability in agriculture. Participants of these dialogues will identify and prioritize critical issues at the national level and each of the States that are in need of in-depth analyses for informed decision making. Upon request from dialogue participants, the project will commission analyses and studies to other relevant experts and or think tanks. These reports are intended to be used as policy briefs on options to shift current investments/ policies/ programmes driving unsustainability in agriculture to more sustainable practices, based on national and international experiences.

87. These Dialogues will lead to formulation of policy recommendations to be considered by the agriculture and other relevant sectors to support mainstreaming of environmental concerns into the agriculture sector. In addition to providing important information and analyses to decision makers on relevant issues, the Dialogues are expected to be a mechanism to cement inter-sectoral partnerships

[18] http://www.fao.org/3/a-i3957e.pdf

and to raise awareness and capacities of key policy makers on environment-agriculture-development nexus. It is expected that at least 110 senior policy makers at National and State levels will participate in these dialogues and benefit from increased awareness on issues and policy options related to sustainable agriculture and global environmental benefits.

88. It is expected that analyses from the dialogues above, combined with field experiences of the project will contribute to integration of Green Landscape approach into National and State Development Plans/ development visions and sectoral plans, so that these plans include support actions, including funding for maintaining and expanding Green Landscape activities. By the end of the project, several national agriculture related policies/plans and State agriculture policies and plans are expected to integrate environmental concerns. At the national level, the project will work with MoAFW to identify and better incorporate indicators and monitoring related to the achievement of GEBs within the nation's agricultural policy framework.

89. Some possible key issues these dialogues could examine include:

- *Input subsidies versus outcome based support for agriculture sustainability:* The GoI currently invests billions of dollars annually on inputs such as fertilizers, water, fuel, seeds, and pest control. These investments promote increases in agricultural production, but often also lead to perverse environmental outcomes. These incentive measures take many forms from subsidies to purchase guarantee programmes. The project will enable the GoI to address this issue by supporting assessment of current subsidies and the redirection of these to incentives *outcome based subsidies*. Current government subsidies to farmers are mostly based upon inputs (e.g., total amount of urea distributed). Studies could examine potential for adoption of an outcome-based approach to subsidies. Outcome-based subsidies related to soil health (e.g., a 1% increase in soil organic matter), water table levels (e.g., a sustained 50-cm rise at the crucial juncture after wet season harvest), or tree cover (e.g., a 5% increase) would drive the sorts of effort and innovation that are urgently needed for these outcomes. This may include facilitating and incentivizing groundwater management committees for increasing groundwater levels in 1m increments; community forestry and grazing organizations for achieving biodiversity targets for sustainable forest management in grazed areas (e.g., populations of targeted species); and, farmers and pastoralists for achieving or maintaining sustainability certification (e.g., with components for biodiversity-smart, climate-smart, pollinator friendly, or organic production). These interventions could increase subsidy effectiveness, reduce subsidy costs, and/or increase the value to the recipients for the same cost. Incentives would be designed to encourage farmers to coordinate through institutions such as BMCs to strengthen communities, achieve the desired scale of outcomes, enhance community assets, and deliver GEBs.

- *Direct Payments to Support Green Landscape Conservation Strategies*: Under the existing policy framework, subsidy payments are not made directly to farmers. There are potential benefits of policy changes to transition the payments of subsidies and entitlements away from payments to inputs producers instead to direct payments, including asset-based support, to intended beneficiaries (e.g., smallholder farmers). For example, the Mahatma Gandhi National Rural Employment Guarantee Act has demonstrated many benefits of the direct payment scheme on a large scale, and there are numerous benefits to shift other payments to a similar system (e.g., increased efficiencies, reduced leakages, improved transparency and accountability, faster payments to beneficiaries, reduced opportunities for beneficiary fraud, reduced opportunities for benefit-related exploitation). Such a transition takes advantage of trends in governmental programmes (e.g., death and disability insurance schemes) that increasingly rely on direct debits and payments to individual bank accounts rather than routing payments through intermediaries. For instance, the National Department of Agriculture, Cooperation and Farmers Welfare provides Rs.

50,000/ha for 3 years to subsidize individual farmers to transition from non-organic to organic production. This could be harnessed and applied to Green Landscapes through capacity and awareness improvements. Under the Pradhan Mantri Krishi Vikas Yojana, organic farming is promoted through cluster approach and Participatory Guarantee System (PGS) of certification. The financial assistance could be given to clusters of different sub components for mobilization of farmers, for organic seeds, to harvesting biological nitrogen. These studies will include strong considerations of gender and social equity issues. The government is also promoting direct e-transfer of support to households and linking of such schemes to adoption of agroecological approaches could also be considered.

- *Incentivizing stronger environmental and social considerations in agriculture – such as through social protection programmes:* Several government programmes also have a direct bearing on local production. This includes social safety net programmes such as the Mid-Day Meals Scheme, Integrated Child Development Services (ICDS), Public Distribution Systems (PDS) and goods to support GoI operations such as cantonments, state hospitals, tribal schools and social welfare schools. The Central Government spends billions of dollars annually on such programmes. Mostly, the Central Government is responsible for procurement, storage, transportation and bulk allocation. The State Governments are responsible for distributing these food and other items to consumers through a network of "fair price shops". The current system focuses on a few high yielding crop varieties that are transported and distributed across the country. Often, purchases for these programmes are guaranteed by contract with individual farmers. With GoI purchase guaranteed, these contracts serve as strong encouragement for farmers to produce certain crops in a specified, sustainable manner, but often this acts as an incentive to convert biodiverse agricultural systems to monocrops. Farmers would have a strong market incentive for more sustainable practices if these purchase programmes undertook additional criteria for purchasing agrobiodiversity products or environmentally friendly products, and the demand would help to reinforce sustainable local farmer practices that also yield additional environmental benefits. GoI leading the charge on local procurement would improve the supply efficiency of safety net programmes, reduce post-harvest losses, reduce transportation emissions, and incentivize production that is harmonized with environmental, agricultural, and social objectives.

1.1.3 Policy briefs, advocacy and awareness-raising materials developed to inform discussions and decision making on priority issues related to agriculture, environment and development (target: 10 national policy briefs, 15 state briefs)

90. The project will support the development of different types of policy briefs. They will be:

- built on issues identified by national and state dialogues as priority issues and will include lessons from around India and from other parts of the world (Output 1.1.2)
- built specifically on lessons and experiences of this project
- jointly developed with other GEF and/or other projects/ programmes as appropriate
- aimed primarily to promote strong environmental mainstreaming into agriculture and related programmes and investments.

91. The project will also develop other advocacy and awareness raising materials aimed at multiple stakeholders- and these may be linked to addressing key threats or overcoming key barriers to promoting Green Landscape planning or plan implementation. At the State level, some potential issues that the project could cover include options to mitigate human wildlife conflict in a sustainable and cost-effective way. In some States, particularly Odisha and Madhya Pradesh, policy options to promote sustainable energy alternatives to firewood from natural forests could be of strong relevance. State specific issues' analyses will also be supported – such as options to promote environment friendly sand/soil mining (such as in Madhya Pradesh); documentation of successful initiatives on

sustainable *jhum* in other parts of Northeast India as well as agrobiodiversity value of traditional *jhum* plots in Mizoram; policy options to address *Akhand Shikaar* in Odisha; study on linkages between indigenous technical knowledge and biodiversity in Odisha; and environmentally/GIB friendly locust control measures in Rajasthan.

1.1.4 "Green Landscape" mainstreaming strategies developed to promote environmental protection as part of broader sustainable agriculture and natural resource management, including strategic re-direction and prioritization of agricultural initiatives and investments to encourage agricultural practices that deliver GEBs at the landscapes of highest ecological value (target: 1 national and 5 state level)

92. Under this Output, the primary aim is to emplace plans and commitments in all five States and at the national level to:

- continue the project' work in the five Green Landscapes; and
- scale up Green Landscape approach in the five States and at the national level to other States

93. The project will provide directions for tweaking policy to ensure consistency across different PA landscapes and actively encourage experience sharing aiming at larger scaling-up of successful interventions. The project will support five State level plans and one national plan to institutionalize Green Landscape programme. These will outline the financial and technical support required to sustain and amplify conservation aspects in agricultural programmes as well as production aspects in conservation programmes. The project will support rapid assessments and prioritize critical landscapes for scaling up of "Green Landscape" approach (i.e. that most urgently require mainstreaming of conservation within agricultural practices) beyond the five targeted landscapes. Priority locations for replication may be indicated, inter alia, by the presence of protected areas, globally significant species, key biodiversity areas, biodiversity hotspots, Globally Important Agricultural Heritage Sites, high conservation value forests, Ramsar sites, Important Bird Areas, locations that are critical to the recovery of IUCN Red-list species. These assessments will help identify agriculture's impacts on global environmental issues such as globally important biodiversity, land degradation, and greenhouse gas emissions. In addition, these strategies will address important factors affecting livelihoods, production, food security, and gender. In general, each replication strategy will cover the following issues:

- Defining priority landscapes, which includes delineation of boundaries and characteristics of ecosystems, and landuse
- Identifying and estimating various resources available in the landscape
- Assessing demands and carrying capacity of the landscape
- Identify current conservation threats and opportunities emphasizing achievement of local, national and GEBs
- Indicate local ecosystem services for conservation and production
- Describe general land use planning objectives
- Prioritize and describe preferred sustainable agriculture and resilience approaches
- Prioritize and describe preferred conservation approaches
- Identify extension services and capacity development priorities for agriculture and conservation sectors
- Implementation, monitoring and reporting responsibilities

94. The project will ensure secure funding resources from the GoI and other sources to continue Green Landscape work at the five sites and their scale up from existing government missions and other

sources. This will include financing for the continuation of monitoring, capacity building, and institutional support.

Outcome 1.2. Cross-sectoral knowledge management and decision-making systems at national and state levels to support development and implementation of agro-ecological approaches at landscape levels that deliver global environmental benefits as well as socioeconomic benefits enhanced

95. Three Outputs will be produced under this Outcome to ensure strong knowledge management and decision support system to implement and scale up Green Landscape approach. At the end of the project, it is expected that:

- At least seven protected areas in five target landscapes will have institutionalized threat reduction monitoring protocols and indicators (such as hunting, encroachment) into their management plans and will be using them to monitor impacts of Green Landscape on their global environmental values.

- At least 30 stories (including national and State level) will have been published in newspapers and other media on Green Landscape approach, highlighting the importance of agroecological approaches in the agriculture sector for multiple environmental and socio-economic benefits – to raise the profile of the project's work and to increase demand from other stakeholders to replicate this approach.

- At least 20 local plans (including Gram Panchayat/ Village Council/ Community level/ NGOs) will have been developed in five landscapes based on spatial decision support systems.

- At least 12 lessons learnt reports will have been published on different themes (environmental, economic, social) documenting lessons learnt. Priority will be given to issues that capitalize learning lessons from across all landscapes.

Details on each of the three Outputs under this Outcome are presented below.

1.2.1 – Spatial decision support system and tools, and compilation of existing land use information from international, national and state level sources (satellite and other existing GIS database), developed and institutionalized, and users trained in their use (target: 1 national level system)

96. The project will build its activities on existing information and knowledge and ensure that relevant information and knowledge is easily available to stakeholders to develop and implement Green Landscape plans and their sub-plans (such as community based natural resources management plans). Existing information from international, national and state levels will be compiled and will be made available in easily usable formats, such as online maps. These will show the locations of critical habitats, current protected areas, community managed forests and other ecosystems, key degraded areas, locations of government and community infrastructures (such as extension offices/ road networks, major market centres, areas of tourism/ cultural interests). These can help in site level planning for biodiversity conservation (including agrobiodiversity), sustainable land and water resource management, and sustainable forest management. These will inform the development and refinement of landscape level management plans, and as the plans are implemented, these maps will also include georeferenced tags to show locations of project activities and other related actions on the ground by other stakeholders. This can help avoid duplication of efforts. In addition, videos of local activities may also be linked to the maps to illustrate local actions and successes.

1.2.2 – Green Landscape monitoring programme (monitoring system and protocols) to assess the health/status of the target Green Landscapes and evaluate progress towards delivery of GEBs and social and economic impacts (e.g. farmer income, food security) established and implemented, with relevant individuals equipped and trained in its use (target: 1 national and 5 state programmes)

97. The project will support national and State level nodal agencies to establish a comprehensive monitoring programme (monitoring system and protocols) to assess and monitor overall health / status of the target Green Landscapes. Relevant issues to be monitored will be based on this project's results framework and other priority issues based on discussions with project stakeholders. For example, the project will monitor human-wildlife conflicts and natural resources conflicts, as these issues will be relevant for effective landscape management. This will be done in partnerships with relevant agencies/ research organizations/ universities. The project will help generate system-wide indicators to assist the GoI to evaluate progress towards delivery of GEBs, as well as impacts on farmers' livelihoods (e.g., income, food security, capabilities) and gender and social inclusion issues. The monitoring system is expected to increase both the efficiency and effectiveness of decision-making, including the allocation of resources provided by the GoI and directed towards the conservation of priority landscapes; and ensure adaptive evidence-based decision-making linked to work planned under Component 2.

98. The monitoring programme will be built on the existing monitoring work being undertaken by different environment related and agriculture related agencies (by linking appropriate methods at different geographic scales). For example, The Wildlife Institute of India, the State Forest Departments and National Biodiversity Authority monitor various aspects related to protected area management, biodiversity conservation, climate change, and SFM. The Wildlife Institute of India (WII)'s Environmental Information System (ENVIS) Centre for Wildlife and Protected Areas provides important information on the PA system in the country. The Forest Survey of India (FSI) is responsible for conducting forest surveys and information is published in State Forest Reports. The National Biodiversity Authority has information pertaining to the status of biodiversity, including agro-biodiversity hotspots across the country. Similarly, for agriculture, the Space Application Centre (SAC), ICAR institutions, including KVKs, State Government laboratories and State Agriculture Universities also monitor different aspects of agriculture. Institutions such as the Space Application Centre (SAC) of the Indian Space Research Organization (ISRO) under the Department of Space also have useful satellite based monitoring programme that could be linked to Green Landscape monitoring.

99. At the national level, the consolidated, comprehensive monitoring protocol will be collated by the Natural Resource Management Division of the Department of Agriculture, Cooperation and Farmers Welfare (DACFW), under the MoAFW. This will include a description of the indicators, costs, and monitoring methodologies.

100. The monitoring programme will also be very closely linked with and benefit from FAO's global experience and tools. Some potential tools of interest for this project include the following:

- Ex-Ante Carbon-balance Tool (EX-ACT): State of the art appraisal system development by FAO to provide estimates of the impact of agriculture and forestry development projects, programmes and policies on the carbon-balance. The EX-ACT tool is now branching out to also monitor value-chains and other issues related to the intersection of CCM and agricultural production and sustainable forest management. The FAO EX-ACT team has extensive experience working in India, including providing training on tool usage to GoI agencies.

- Collect Earth: A suite of software tools developed by FAO's Forestry Department in collaboration with Google to improve land-use monitoring and analysis using publicly available satellite imagery and data.

- Socio-economic and Gender Analysis (SEAGA): An approach elaborated by the Food and Agriculture Organization (FAO) in partnership with the International Labour Organization (ILO), the World Bank and the United Nations Development Programme (UNDP) to develop the capacity of development specialists and humanitarian Officers to incorporate socio-economic and gender analysis into development initiatives and rehabilitation interventions.

101. The monitoring programme will also have special emphasis on monitoring community involvement in free prior informed consent to project actions. The project will ensure that participatory monitoring and evaluation of all community agreements are undertaken on continuing basis throughout the life of the project.

1.2.3 –Communication strategy and plan designed and implemented (including development of an information management platform) to facilitate knowledge sharing, mainstreaming and replication of lessons learned and 'best practices' for Green Landscapes (target: 1 national and 5 state platforms and communication strategies/plans)

102. A major focus of this Output will be on generating and sharing knowledge within the five project States, between States involved in this project and with other stakeholders nationally and internationally. Information will be shared through existing government, FAO and GEF portals, as well as through organization of special seminars, workshops, events, and audio-visual materials. Publication of relevant posters, articles and reports will be supported – including publications in relevant State languages.

103. The project's communications team, working closely with the NRM Division of DACFW, will be responsible for the initial design and operationalization of a knowledge management plan and communication strategy and programme. The strategy will be discussed with the five project supported States and finalized. This will include identifying key stakeholders and target audiences, identifying their communication needs, and designing appropriate communication mechanisms to enable them to access and utilize knowledge generated. The communications team will work with project technical staff to develop knowledge management approach that is relevant, appealing and useful for Green Landscape stakeholders, including local extension agencies. The team will be tasked with assisting extension services to support relevant portions of Green Landscape programme implementation, particularly those related to knowledge management. This will help facilitate the mainstreaming of best-practices with national, state, district and village level policies and investments. By project close, the extension system will have mainstreamed the project initiated communications and capacity building programme. This will include making certain that it is adequately financed, staffed, and equipped.

104. The project's communications strategy will ensure the following:

- *Project Progress Reporting and Updates*: The communications team will ensure that the target audiences are regularly receiving information they require. The project's annual report will collate information generated via the monitoring programme noted in an earlier Output. The annual report will assist decision-makers at all levels understand the ramifications of investments in agricultural production incentives. The report will highlight lessons learned. The report will present and summarize findings, including presenting options for how decision-making at national, state, district, and village level may be improved to incentivize the adoption of agricultural practices that

will deliver GEB benefits. The reports will be distributed to all participating States, Districts, and Villages, including those identified in the national Green Landscape Assessment as priorities for programme expansion. Documented lessons learned and other relevant information about project achievements will also be shared with local communities (including indigenous communities) using relevant media.

- *Media Outreach*: The media is a very important stakeholder in India, in terms of both conservation and agriculture. The project's communication team will design and implement a comprehensive programme to make certain project efforts are effectively covered on national and state level media. This will include both traditional media (e.g., print, television) and social media (e.g., Facebook). One of the key mechanisms that the project will promote will be web-based knowledge sharing and learning on a continuous basis across and between different levels. This platform will promote sharing "best practices" for Green Landscapes, and for practitioners from each landscape to place queries. The NRM Division of DACFW, MoAFW will host this. The team will build upon and incorporate, as appropriate, existing electronic knowledge and capacity building tools such as:
    - "Farmers' Portal" (a national government website that provides a 'one stop shop for farmers'), "Digital India" (a flagship government programme designed to promote e-Governance),
    - "Kisan Call Centres" (a national toll-free call in number that links farmers with national agricultural specialists), and
    - "Digital Green" (an NGO that links technology and social organizations to improve agriculture, health and nutrition).
- Thematic project's lessons learnt reports: The project will also commission specific analyses and reports on environmental, social and economic aspects of the project. One such example is economic valuation of ecosystem services provided by farmers by adopting on-farm agroecological approaches.

- Obtaining and disseminating technical and other knowledge available from national centres of excellence to Green Landscape stakeholders- such as on plant, animal, fish genetic resources, legal provisions on registering intellectual property rights on farmer varieties.

- Ensuring that local communities have all relevant information on their rights, responsibilities and obligations. This will include their right to Free Prior Informed Consent to project supported activities. The project will design a participatory communication plan and carry out iterative discussions through which project information will be disclosed in a transparent way and will, document Indigenous Peoples' needs that are to be included into the project, and agree on a feedback and complaints mechanism.

Component 2: Empowering and incentivizing households and communities to adopt agro-ecological practices across landscapes

105. Under this Component two Outcomes are planned, with a total of ten Outputs (five outputs per Outcome). The Component will focus on activities on the ground at each of the five Green Landscapes.

Outcome 2.1 – Institutional frameworks, mechanisms and capacities at District and Village levels to support decision-making and stakeholder participation in Green Landscape planning and management strengthened, with Green Landscape Management Plans developed and under implementation for target landscapes

106. By the end of the project, following will be achieved under this Outcome:

- Five Green Landscape management plans promoting agroecological approaches, with clear environmental targets and sustainable livelihoods, gender and social inclusion considerations included, and synergistic to protected areas management plans within the landscape endorsed and under implementation covering at least 1,800,000 ha.

- At least 25 agencies in eight district level using Green Landscape plans to realign multi-sectoral investments in project areas, especially the government's agriculture sector investment in 8 districts.

These results will be achieved through the following five Outputs:

2.1.1 Inter-sectoral institutional framework and mechanisms at district, inter-district and sub-district (District and Gram Panchayat/ Village Council) levels established (target: 8 mechanisms)

107. Under this Output, inter-sectoral coordination mechanisms and capacities will be built at inter-district (where more than one district is involved in the Green Landscape), District and sub-district levels to support Green Landscape management. The aim is to enable stakeholders to develop integrated Green Landscape plans, implement joint (inter-sectoral) activities and monitor progress, achievements and document and share lessons learnt.

108. At the District level, the project will work with the Technical Support Group that is envisioned by the National Biodiversity Board to support India's National Biodiversity Act 2000 implementation. The District Collector / Magistrate[19] chairs the TSG and members of this include staff from forestry, agriculture, rural development (i.e. it is inter-sectoral in nature). Alternatively, the project may work with expanded Agricultural Technology Management Agency (ATMA) at the District level. Presently, the ATMA serves as a platform for integrating extension programmes across line departments such as animal husbandry, fisheries, forestry, horticulture, and agriculture. By including other development sector, this platform could play the inter-sectoral advisory role envisaged by the project.

109. At each of the five landscapes, the State Nodal Agency will establish a Green Landscape Implementation Unit. This Unit will work closely with the District Collectors/ Magistrates, other technical agencies, NGOs and other stakeholders to support planning, implementation and monitoring of Green Landscape level activities in line with the project's results framework. Gram Panchayat or Village Council Level Support Units will also be established in each of the Gram Panchayat or Village Council (in Mizoram) that fall within the five Green Landscapes. Each of these will be chaired by the elected head of the Gram Panchayat or Village Council, and its members will include the Village Secretary, representatives of Biodiversity Management Committees, representative of the TSG, and a representative of the National Park/Wildlife Sanctuary. Each Gram Panchayat or Village Council Level Support Units be supported by project recruited Community Resource Person (CRP). The Support Unit will play a critical role in project implementation. It will facilitate synergy between local development plans and project activities. The Support Unit will meet every quarter to review the implementation of the VC-level Green Landscape Management Plans.

[19] In Mizoram, the heads of districts are called Deputy Commissioners, in Uttarakhand they are called District Magistrates and in other States they are called District Collectors. The District Collector or District Magistrate or the Deputy Commissioner is the most senior civil servant at the district level, and they have the primary role to ensure coordinated approach to district development.

110. At the local level, the project will strengthen Biodiversity Management Committees (BMCs) (or Eco-Development Committees or other community institutions) and community natural resources management group to develop and implement local natural resources management plans. The Biodiversity Management Committees will serve as platforms for discussion on Green Landscape management and conservation at the GP/VC level and provide information services to Green Landscape stakeholders. Their composition, roles and responsibilities are described later in this document. BMCs will be supported to document local indigenous knowledge and their use in community natural resources management plans.

111. The project will gather field data (performance indicators) by project monitoring farmers, NGOs, research institutions and/or extension staff on good practices plots and control plots using monitoring sheets for each climate resilient good practice. The good practices will compare vis a vis the standard practice across the criterions of agro-ecological suitability; increased resilience of livelihoods and environmental benefits. Findings will be reported to upscale the adoption of the good practices

2.1.2 – Key local decision-makers from each target Gram Panchayat/Village Council trained in Green Landscape governance through Field schools to enable members to make collective, evidence-based and empowered in Green Landscape governance for areas within their responsibility (target: Madhya Pradesh – 60; Mizoram – 60; Odisha – 150; Rajasthan – 20; Uttarakhand – 200)

112. Field Schools on Green Landscape Governance will be organized in each Gram Panchayat/ Village Council levels for their members as well as representatives of BMCs/ Eco-development committees and others to help them make rational, collective, evidence-based, empowered choices in Green Landscape governance for areas that fall within their Gram Panchayats/ Village Councils and to work across landscapes through partnerships with other Gram Panchayats/ Village Councils. Representatives of community institutions in the landscape will meet regularly throughout the year, to discover and develop an understanding of the landscape and its functions during the different seasons. They will also be given training on climate change issues and how changing climate is likely to impact local ecosystems and livelihoods. These field schools will engage participants in a discovery learning process to develop deeper understanding of their landscape—such as characteristics and importance of ecosystems within the landscapes, and assessing demand and carrying capacity of the landscape. Based on the improved understanding of the landscape, the community institutions are expected to contribute effectively in the implementation of Green Landscape Management Plans and develop supportive local policies for their implementation.

2.1.3 – District level technical and extension staff from different government sectors trained in Green Landscape approaches and issues to enable them to support local communities and farmers to implement agro-ecological practices (target: at least 80 individuals)

113. Technical capacity building of district technical/ extension staff from different government line departments will be supported by the project so that they able to mainstream project's objectives in their own work and support communities and farmers to implement environment compatible agriculture and management of natural resources. The GLIU will undertake/ or commission capacity needs assessment and design and implement appropriate capacity building actions. Such capacity building work will complement and build on existing capacity building activities in each landscape, district and at the State level.

114. The project will work closely with the network of government extension services in each district within the Green Landscapes, especially the Agricultural Technology Management Agency (ATMA). ATMA leads the preparation of district level Strategic Research and Extension Plan (SREP), using the Participatory Rural Appraisal (PRA). By project close, up to over 80 government extension staff from

relevant line department located at various levels will be trained. These training will include exposure to best international principles and practices on sustainable agriculture, landscape management and the resultant delivery of GEBs – including greenhouse gas emission reduction from land use and land use change.

115. One key topic of training in most of the landscapes will be the ToT for Animal Health Extension Officers, who in turn will train locally selected village level animal health support workers (*Prani Mitras/ Pashu Sakhis*[20]). These are members of local communities who are trained on basic livestock management skill. By the end of the project, 186 *Prani Mitras/ Pashu Sakhis* in Madhya Pradesh; 2,500 in Odisha; 82 in Rajasthan and 100 in Uttarakhand will be have been trained. They will assist farmers/ herders to register their domestic animals with the local government livestock office, benefit from government supported animal insurance scheme, vaccinate their animals as well undertake deworming. Farmers will also be encouraged to use mobile phone based tools / applications learn about appropriate schedules for vaccinations and deworming, and avail the services from government veterinary services.

2.1.4 - Green Landscape Assessments undertaken, with social (including gender), economic (including valuation of key ecosystem services), institutional, biophysical aspects of target areas identified, priority locations and actions agreed, and sequence of activities programmed (target: 5 assessment reports)

116. In the first year of the project, the GLIU will lead/ commission environmental and socioeconomic assessments of each of the five Green Landscapes, with support from the TSGs and State/ National PMUs.

117. Based on these assessments, and stakeholder consultation (including TSGs and, national and local experts), highest priority locations within each landscape will be identified to commence project activities. These will be areas that have an urgent need to address threats to global environmental values and and/or areas where there are opportunities to expand/ build on the current baseline of work to maximize GEBs. Once such sites have been identified, detailed consultations will be held with local leaders and communities (including women and youth) to assess their interest and ability to work with the project. Decisions will be made with the full participation of local communities (including men and women) and will be done based on full prior informed consent of local communities. This assessment will also examine potential issues related to boundary finalization of the Green Landscapes. These assessments will also help identify existing human-wildlife conflicts and any inter and intra-community natural resources use conflicts.

118. The assessments and local community consultations will feed into the development of the Preliminary Green Landscape Management Plans. These plans will be a combination of land use plans- highlighting geographic areas in need of restoration and other management work. One of the key groups who will be targeted by the project for support will be forest dwellers who have been relocated to fringe areas of Protected Areas, in addition to working with communities that have clearly demarcated land entitlements. In line with FPIC guidance, the project will ensure that landscape assessments also identify the Indigenous Peoples and any special concerns and their representatives; document geographic and demographic information through participatory mapping; and their current livelihoods and natural resources dependency.

[20] Prani Mitra/ Pashu Sakhi are locally trained resource persons who provide village-based extension service and preventative health care services to reduce livestock mortality and morbidity. Usually, they themselves are livestock keepers. They provide doorstep service to local farmers and their services are particularly accessible to women. They also facilitate village level learning and discussion platforms for improved livestock management. The Pashu Sakhi model is targeted at empowering rural poor women to take lead in livestock health and productivity enhancement.

119. These plans will include the final agreed Green Landscape boundaries and mechanisms for effective planning, implementation and monitoring of the landscape health (including human wellbeing, with strong focus on gender and social inclusion issues). In addition, the Green Landscape Plans will utilize national spatial information tool to ensure that land and resource use is appropriately situated to maximize production without undermining global environmental benefits. The plans will also include a section on financing and ways to leverage various financial mechanisms to incentivize actors to change current unsustainable practices (see Output 2.1.5 on convergence plans). These plans will guide annual project work plan and budget development for the eight districts, where the five landscapes fall. In landscapes where more than one district is involved, the project will also support the sharing of plans between districts and their harmonization.

120. These Green Landscape Plans will be initially developed for 3 years, but will be updated regularly (annually). By the end of year 4 of the project, final Green Landscape Management Plans will be developed, which will feed into Output 1.1.4 "Green Landscape" mainstreaming strategies. These will provide models to replicate to other high priority landscapes within the States and nationally, and will also serve as the exit strategy for the project.

2.1.5 - District level 'convergence plans' that align government programmes and investments with Green Landscape management objectives and which incentivize agro-ecological approaches at landscape levels produced (target: 8 convergence plans)

121. Each TSG will ensure that work plans and investments planned by its member organizations are fully in line with the Green Landscape plans. To ensure clear alignment, each TSG will be supported to develop "Convergence Plans", which will align resources/ missions/ other project funds available to the District and its line agencies. A key national mission that is operational in the five landscapes is the Agroforestry Mission, which has significant convergence with this project's objective. An important element of each plan will be the identification of how government support programmes at the district level beyond agriculture investments can also be realigned to provide incentives for more agro-ecological productions. Examples of these include possibility to use the National Employment Guarantee Scheme to support natural resources management activities, and instituting purchase of local farmer varieties of crops within school feeding programme ("midday meals").[21] One of the objectives of this project supported activity will be to incorporate the idea of results based (outcome based) approach into the government's implementation of its missions/ programmes at the local level.

Outcome 2.2 - Households and communities able and incentivized to engage in agro-ecological practices that deliver meaningful GEBs at the landscape level in target high conservation priority landscapes

122. Under this Outcome, the project will capitalize on the policy support to incentivize households and communities to undertake sustainable agriculture and integrated landscape management. By the end of the project, the expected results of this Outcome include:

- Significant numbers of households will have adopted sustainable agricultural practices on their farms including agrobiodiversity conservation measures (Rajasthan: 3162 households; Odisha:37500; Uttarakhand: 14,700; Mizoram: 5,490; Madhya Pradesh:7500); of which at least

[21] GoI currently investing considerably on Sustainable Agriculture through the following national missions: NMSA, NFSM, RKVY, PPKVY, MIDH, PMKSY, Deen Dayal Antyodaya Yojana (DAY-NRLM). GoI making considerable efforts to build resilience to climate change through 8 National Missions, which include: the National Solar Mission, National Mission on Enhanced Energy Efficiency, National Mission on Sustainable Habitat, National Water Mission, National Mission for Sustaining the Himalayan Eco-system, National Mission for a Green India, National Mission for Sustainable Agriculture, and National Mission on Strategic Knowledge for Climate Change. Many of these missions are working at the proposed Green Landscapes, and ensuring strong convergence between different Missions is considered critical to achieving the project objective.

30% show increased incomes from improved market linkages for their sustainably produced products.

- Number of households implementing improved livestock management – including nutrition and fodder management (e.g. community fodder banks) –contributing to conservation of global environmental values 8000 Madhya Pradesh, 22,500 in Odisha, 6000 in Rajasthan, and 10,000 in Uttarakhand
- At least 40,000 women (Rajasthan: 3,000; Odisha: 12,000; Uttarakhand: 19,000; Mizoram: 2,000 and Madhya Pradesh: 4,000) participating in and benefitting from female cohort specific Green-Ag (agro-ecological) Farmer Field Schools
- Number of new value chains and associated business plans developed for landscape products, linked to agro-ecological farming and sustainable natural resources management in target areas, and under implementation

123. These will be achieved through combination of the following five Outputs.

2.2.1 – Farmers trained through FFS on sustainable agriculture, with modules adapted to the specific needs of farmers near PAs and other high ecological value areas, including on management of livestock

124. The Farmer Field Schools (FFS) model has been highly effective in many parts of the world to build farmer skills to improve production and sustainability. The project will build upon and expand this model for the purposes of building local capacities to engage in and support sustainable agriculture, GHG emission reduction, and conservation practices at the landscape level. The capacity-building benefits of FFS implementations will be cross-sectoral. The project will support different types of farmer field schools. They include the following:

- **FFS in Livestock Management**: These will be organized in Madhya Pradesh, Odisha, Rajasthan and Uttarakhand Green Landscapes, as high livestock pressure on natural ecosystems is a major threat to global environmental values at these sites. The project will support curriculum development on sustainable livestock management, which will be used to implement a Training of Trainers to facilitate FFS on livestock management. It is expected that through these FFS, local livestock keepers will be aware of the importance of maintaining quality indigenous livestock. This is expected to lead to improved quality of indigenous livestock (and including healthier animals) and more profitability for local farmers by keeping traditional breeds of animals through better value chain development. Healthier animals will also ensure that there are less risks of disease transfers between domestic and wild animals. *Prani Mitras/ Pashu Sakhis* trained by the project will also be linked to these schools as well.

- **Farmers Field School on Sustainable Agriculture:** These will be organized in all five Green Landscapes. These will focus on priority issues such as *in-situ* agrobiodiversity conservation, organic farming/ or reduced input farming, integrated pest management, sustainable land and water management, and agroforestry. As with Livestock FFS, firstly ToT will be organized at the national level for a group of facilitators to implement these schools. They will train district level facilitators (who will include government extension agents and possibly some BMC members). These facilitators will work with groups of farmers at priority sites (the sites will be prioritized based on links to achievements of GEBs).

125. These field schools will ensure that there is strong participation of women, poorer farmers, youths and that these also include issues of occupational health and prevention of child labour.

2.2.2 – Local stakeholders trained on accessing available incentives to adopt sustainable practices and livelihood options, including certification schemes and Green Value Chain development to promote market linkages for income generation (target: to be determined)

126. The project will work to combine multiple incentives from existing public and private investments to support farmers and communities adopt sustainable agriculture and natural resources management practices. These will include provision of technical support, capacity building, and accessing government subsidies and finance. The "convergence plans" developed at the district level will be one mechanism through with government investments will be used as incentives to support implementation of Green Landscape activities.

127. The project will ensure that efforts to encourage farmers to shift from resources intensive crops to low-input alternative crops not only make ecological sense, but also business sense. Therefore, the project will ensure that farmer capacities are also built on developing green value chains linked to adoption of sustainable agricultural and natural resources practices. The project will support generation of additional incomes to farmers by value addition to their farm products and sustainably harvested natural products (such as non-timber forest products). Support will include promotion of processing, market analysis and marketing (such as branding) initiatives. These will be complemented by project activities to also increase demands for such products by consumers through awareness raising (such as to local supermarkets, restaurants) and linking to programmes such as government funded school children feeding programmes ("midday meals").

128. Certification of the products being organic and/or produced with strong environmental considerations is expected to be important to give the products from Green Landscapes a competitive advantage and market visibility. One issue the project will consider is to promote participatory guarantee system[22]. The government has already introduced this system in four of the five States that this project is working in (except Mizoram) and there is great potential to expand this in the five Green Landscapes. The project will support activities to create value-added products through training of households in making products from livestock with significant involvement of women. Making value added product (ghee) from milk by registering for Geographical Indication (GI) tag.

129. The project will assess the potential to promote new Farm Producer Organizations (FPOs), or use existing FPOs to promote green agriculture and natural resources products. The project will support capacity building of FPOs, as needed. It is expected that by the end of the project, at least 15 farmers groups will be supported for such initiatives. Women and poor/ marginalized groups of farmers will be given priority to support such production and marketing initiatives. FAO's guidance on developing gender sensitive value chains[23] and developing value chains[24] will serve as guiding documents for women's involvement in decision making and equitable benefit sharing.

130. Communities will be encouraged to grow locally available medicinal plants, as they have both ecological benefits and have commercial value. In Madhya Pradesh, Green Landscape several non-timber forest products (NTFP) such as *Guggal* (*Commiphora wightii*) of high commercial value are found in the landscape, as well as Ashwagandha (*Withania somnifera*), and aloe vera. Rajasthan has a rich diversity of medicinal plants, such as Shankhpushpi (*Convolvulus pluricaulis*) and *Guggal* (*Commiphora wightii*). The National Medicinal Plant Board has identified medicinal plant species for cultivation, including the following: *Asparagus racemosus*, *Cassia angustifolia*, *Chlorophytum borivilianum* and *Tinosporea cordifolia*. In Odisha, local communities collect non-timber forest

[22] http://www.fao.org/3/a-i5907e.pdf#page=162 and http://pgsindia-ncof.gov.in/
[23] http://www.fao.org/3/a-i6462e.pdf
[24] http://www.fao.org/3/a-i3953e.pdf

produce like *saal* leaf, sabai grass, and honey, which have significant demand and well-established and inclusive marketing channels. It also has a wide range of medicinal plants (*Anchchu* [*Morinda tinctoria*], Agni Jahar [*Clausena excavata*]) that have been commercially utilized at different scales for the preparation of medicinal formulations and therapeutic uses. The landscape is famous for its production of tussar silk – which is based on sustainable use of forests – and thus the project will also support local communities to develop sustainable silk production and marketing by working with relevant government initiatives. In Mizoram, the project will support better linkages between growers of local varieties of crops and fruit to local value addition and improved marketing strategy through formation of clusters and farmer groups.

131. The marketing strategy will be built taking advantage of the unique ecological feature of the landscape (e.g., 'Product from Chambal'). Value chain development will ensure strong women's participation in decision making, as well as equitable sharing of costs and benefits by different actors in the value chain. Similipal area is locally famous for its production of fresh vegetables. By developing and promoting the "Similipal" label of organic crops/ vegetables, the project will assist local communities to add value to their products and market them effectively. In Uttarakhand, there is great potential to promote organic milk production and marketing (such as through women's dairy cooperative), fruits and vegetable production and value addition through cottage cheese (paneer) production. There is also potential to promote off-season vegetables, and organic honey from the landscape. The project will complement efforts of the Uttarakhand Organic Commodity Board to facilitate certification, cultivation and marketing of these organic products. A certain share of the produce is even exported after proper certification by the appropriate agencies. The products will take advantage of the GI tag of the locality and marketing strategies and infrastructure will be developed with handholding support during the initial years.

132. Selected communities will be supported to develop and promote ecotourism linked to local conservation and sustainable agriculture production. Ecotourism could generate significant local employment and incentivizes communities to contribute positively towards conservation. An example could include tourism package that includes meals made from traditional crops and recipes and even bird watching tours in villages. This will be linked to value chain development and field schools noted above. In Madhya Pradesh, the Chambal region is famous for its unique ravine habitat as well as riverine ecosystems. The river is already a popular tourist destination where tourists take a boat rides to primarily observe birds, dolphins, muggers and gharials. There is tremendous scope to develop these ravines as an adventure tourism destination, if developed with local communities as major stakeholders. There are also some sites of cultural interest in the area and these along with riverine and ravine tourist could potentially be developed as a tourist package that is linked to local livelihoods. The project will support market feasibility studies to promote locally run eco-tourism enterprises. Similarly, Similipal has a rich natural and cultural heritage. There is substantial tourism within the Tiger Reserve and Eco-development Committees (EDCs) are being involved in the some of the tourism initiatives. However, there is scope to develop rural tourism that involves communities and showcases rural culture and agrobiodiversity products. The project will work with the government, NGOs and the private sector to promote community based tourism activities to incentivize sustainable natural resources management and conservation of agrobiodiversity/ and adoption of good agriculture practices. In areas where there are high livestock related damages to crops, tourism related to wildlife viewing may partly compensate for such losses. In Rajasthan, Jaisalmer is one of the most important tourist destinations of Western Rajasthan. About 25,000,000 Indian tourists and 75 thousand foreign tourists visit Jaisalmer every year. Villagers are not fully aware of the tourism potential of the desert landscape. An ecotourism package that includes both rural and natural aspects could be developed. Ecotourism has high potential for increasing the income and generating employment in this area as well as increasing awareness about the Desert National Park. The project will ensure that local

manpower and resources are used as a priority to promote ecotourism and to implement other activities to increase local ownership in the project

2.2.3 – Wider community level awareness-raising campaigns to ensure wider stakeholder support for Green Landscape management and other land users and to ensure inter-community learning (targets, for both eco-clubs and information platforms: Madhya Pradesh – 50; Mizoram – 50; Odisha – 50; Rajasthan – 50; Uttarakhand – 50

133. The project's communication strategy developed under Output 1.2.3 will also include specific sub-strategies for the five landscapes, so that landscape specific communication materials are developed and implemented. In addition, there will be two specific communication and awareness raising activities – first targeted at the children and the youth through school-based eco-clubs; and to wider community members through Green Landscape Information Platforms. These activities will also ensure strong focus on including issues of addressing GHG emission reduction and enhancing resilience in context of climate change through local actions. The GLIPs will serve as a platform for discussion on Green Landscape management and conservation at the GP level. The GLIPs will also serve as information centres that provide services to a range of Green Landscape stakeholders. It will be equipped with an internet-connected computer, and audio-visual equipment, and staffed with a Community Organizer. The GLIP will: (i) create and maintain a reliable and easily accessible Green Landscape database on protected area and biodiversity information, hydrological and meteorological data, local knowledge, including soils and livestock; (ii) make available to farmers literature on GEB friendly agricultural practices; (iii) provide farmers with easy access to extension services and other support agencies, and provide weather forecasts, market price data, and technical information; (iv) make available tools to support decision making at the farm level on topics such as crop selection when the start of the monsoon is delayed; (v) support the use of ICT tools by farmers, including mobile phone based information and advice systems; and (vi) strengthen informal networks and extends the networks to socio-economically weak and disadvantaged groups within the farming community ; (vii) manages custom machine hiring services and community seed multiplication units. Eventually the GLIP will be managed by the local BMC or the Farmer Producer Organisations established through the project.

134. The project will work with local schools and other educational institutions as well as local youth groups (such as Young Mizo Association in Mizoram) within the landscape to promote effective mobilization of the youths to promote Green Landscape conservation. Eco-clubs/ eco-volunteers will be supported to undertake ecosystem assessments/ biodiversity monitoring and implement community awareness campaigns. Some of these clubs may be supported with equipment to undertake basic soil tests, for example.

135. Green Landscape Information Platforms will be supported in each *Gram Panchayat* / Village Council level. Existing government infrastructure such as the Panchayat Bhawan will be used for these. These will be used for information sharing of for showcasing project work (particularly highlighting community/ farm level achievements) to highlight local innovations and successful actions. It could also potentially be a hub for communities to meet and discuss matters of common interest and develop plans. These will be linked to *Gram Panchayat* Support Units and will involve youth clubs, local NGOs in their establishment and operation.

2.2.4 – Community based natural resources management plans designed and under implementation in target Green Landscapes, including community grassland/ ravines/forests/watershed management

136. Under this Output, farmers/ pastoralists will be supported to adopt natural resources management practices on their communal resources (forests, grasslands, wetlands). The project will work with government line departments, extension agencies and others (such as NGOs) to support community level work. These will include ravine management in Madhya Pradesh, participatory forest and *jhum* (slash and burn) agriculture management in Mizoram, grasslands/ forest management in Rajasthan, and sub/micro watershed management in Odisha and Uttarakhand. Given that at least 70% of the household's in the landscape directly depend on agriculture and natural resources for their livelihoods, at least 185,000 households would be involved in "improved land management practices for BD, LD, CCM, and SFM benefits.

137. **In Madhya Pradesh, the project will support ravine management plan development and their implementation:** The project will complement government initiatives on ravines management to ensure that their actions achieve global environmental benefits. The project will work closely with TSG, GPSU and BMCs to identify high priority ravine areas in need of urgent action. It is expected that at least 18,000 ha of ravine areas will be brought under effective soil and water conservation measures, with the aim of also enhancing biodiversity conservation and sustainable forest management. The project will engage existing community institutions to manage ravine ecosystems or help to institute new organizations, as required. These will include activities such as plantations of bamboo and other indigenous grasses, establishing small water management structures, and management of invasive species such as *Prosopis juliflora*. Interventions will be prioritized based on ravine land capability classification and livelihood considerations. Ecotourism (ravine and archaeological) will also be linked to these management plans for selected sites. The project will also support innovative approaches to address human wildlife conflicts in the area – and it is expected that there will be at least 40% reduction in human wildlife conflicts because of project interventions.

138. **In Mizoram**, **Participatory village land use plans' development and implementation will be supported in** 50 villages in high conservation priority areas. They will be supported to develop detailed land use plans. These plans will include sustainable *Jhum* management (rotational agriculture)– including siting of agricultural plots to minimize land degradation/ negative impacts to biodiversity, identification and management plans for village forests and other areas of conservation/ sustainable land management importance. One of the priority areas where villagers will be supported to develop land use plans will be in the Dampa-Thorangtlang forest corridor. Connectivity between these two protected areas is under threat from land use conversion. This corridor is critical for the movement of species between these protected areas. Communities will be supported to develop plans that maintain forest connectivity between the two protected areas. Communities will also be trained through FFS to adopt *jhum* practices that are ecologically sustainable and deliver GEBs. The project will help to scale up FAO's recent work on introducing adapted Sloping Land Agriculture Technology (SALT) in Mizoram (labelled "MiSALT"). This is an adapted approach that is specific to the steep slopes of Mizoram. It combines locally useful native bamboo species and other economically important plants as well as use of plant materials removed during creating of *Jhum* plots to create contour bunds or barriers to minimize soil erosion. Nitrogen fixing species are also planted on bunds to help increase soil fertility. The overall objective of MiSALT is to reduce soil erosion, maximize retention of soil fertility and moisture, and to enhance biodiversity conservation values of agricultural plots. This approach builds on traditional method called "*changkham*", which mostly used dead plant materials as erosion barriers. On farm water harvesting and its efficient use will also be promoted. Farmers will also be encouraged to maintain and enhance the cultivation of indigenous varieties of crops (local legumes, tubers) and raising indigenous breeds of animals and poultry. The project will work with local communities and agriculture research and extension agencies to improve the quality of indigenous crops through better seed production, storage and other agronomic practices.

139. **In Odisha,** the Green Landscape lies in watersheds of three rivers: the Budhabalanga, Salandi and Baitarani out of which the former two emerge from the Similipal Protected Area and the latter one has tributaries flowing from Similipal. These rivers flow through the Districts of Mayurbhanj, Balasore and Bhadrak to the Bay of Bengal. The project will work closely with TSG, GPSU and BMCs to identify high priority micro watersheds in need of urgent support, where global environmental values can be protected and enhanced in line with project objectives. Fifteen micro-watershed management plans and implementation will be supported. These plans will promote sustainable agricultural practices, sustainable forest management and other biodiversity conservation work, water resources protection, sustainable land management as well as sustainable livestock management. The project will also work with local communities and other stakeholders to support actions to mitigate human-wildlife conflict.

140. **In Rajasthan, Community Grasslands' Management will be supported:** At the end of the project with 100% communities in DNP will have in place community grassland management plans under implementation (totalling around 160,400 Ha), and at least 70% communities outside DNP that fall inside the Green Landscape will have similar plans under implementation (approximately 113,530 Ha). The plans will include issues such as rotational grazing, removal of invasive species, management of traditional forests called *Orans*, traditional grazing areas (*Gauchars*), and revival of water harvesting structures called *Khadins* and *tanka*s. It has been shown that if communities allow extremely limited use of degraded grasslands for two to three years, the grasslands can regenerate naturally. Therefore, communities will be encouraged to develop rotational use plans for their "community grasslands". Sand dune management will be promoted and their misuse and actions to halt their movement (shifting) will be supported as necessary. Communities may opt to establish a green/shelter belt of indigenous trees to stop the movement of sand dunes where relevant. Species such as Phog (*Calligonum polygonoides*), which are good sand binders and that grow naturally on sand dunes will be promoted. Special consideration will be given to regenerate economically important indigenous plants, especially medicinal plants. Although the non-native plant *Prosopis juliflora* is considered an invasive, many communities use them for firewood and fodder (particularly their seeds). Where considered necessary, the project will assist in the removal of these trees. In some locations, nomadic tribes are engaged in animal husbandry, particularly the Raikas/Rabaris (with camel, sheep, and goats) and the Gujjars (with buffalo and sheep). Their needs will also be incorporated in the grassland management plans. The project will support sharing of community grassland management plans with nearby communities so that they are in sync with each other and so that communities can learn from each other. The project will ensure that such plans are geared towards achieving local economic benefits and global environmental benefits. The project will institute a system of rewards to the communities that are judged to be the best in implementing their grassland management plans. The project will support monitoring mechanism to assess communities' implementation of their management plans through the Green Landscape Management Committee.

141. **In Uttarakhand**, the project will initially focus on Ramganga watershed. The project will support the development of watershed management plan to promote sustainable agricultural, sustainable forest management and other biodiversity conservation work, water resources protection, sustainable land management as well as sustainable livestock management. The project will also work with local communities and other stakeholders to support actions to mitigate human-wildlife conflict. The project will support to organic farming and other actions to help improving water and soil quality. Green value chains will be promoted to enhance productivity as well as profitability to incentivize farmers to continue environment friendly agriculture and land management activities. The project will also work in Rajaji– Corbett Corridor. Here the priority will be on helping communities adopt livestock-based farming with improved fodder production using native species and agro-forestry systems that are also biodiversity friendly.

142. **Sustainable forest management as a cross cutting focus:** The project will identify and conserve high-conservation-value forested landscapes within all five landscapes. Forested landscapes will be prioritized—particularly those under threat from unsustainable agricultural practices. SFM activities will differ by location, but will include participatory approaches to strengthen institutions for integrating forest considerations into community-based landscape management; the integration of communities into broader land-use planning; capacity-building for coppicing, including improved species selection for community growth of fuel-wood plots; and improved management of dedicated fodder crops to reduce over harvesting of forest resources. The project will improve mechanisms for monitoring forest loss, forest degradation, and land-use change. SFM monitoring will strengthen ground-up feedback to improve evidence-based decision-making and policy adjustments at national, state, and district levels. Many forests in the landscapes also have spiritual values and other use values to local communities. In Mizoram, many communities have traditionally had forests close to settlements declared as "Village Safety Reserves" or "Village Supply Reserves". The project will support community land management that will include improved management of "Village Safety Reserves", which are traditionally demarcated by Village Chiefs for water supply and to protect the village from fires. In addition, the project will also support the management of Village Supply Reserves. These are established to supply forest products to the villagers. Here, harvesting of trees, bamboos and collection of other forest produce for household use are permitted. In many villages, this traditional management of forests through the creation of Safety Reserve and Supply Reserve has been under decline. The project will work with Village Chiefs and other decision makers to revive this tradition. The project will also assist communities and households to undertake actions for rapid rehabilitation of abandoned *Jhum* plots with fast growing native plant and fodder species. Community discussions and plans will be supported to prevent harvesting of globally important species of plants and animals from forests. In Odisha, the project will assist the Forest Department and local communities in the sustainable management of forests in the target landscape. Activities on sustainable forest management will include actions under the micro-watersheds selected for this project, as well as some high conservation value forests outside these selected micro-watersheds. Illustrative actions will include supporting approaches for accelerated preparation of management plans for community managed forests, which will identify conservation and sustainable use priorities and schedule of actions. Activities under this will also be linked to value chain development noted below. In Uttarakhand, the project will support and/or revive *Van Panchayats* (Forest Councils), where present. *Van Panchayats* are some of the oldest traditional community institutions for forest management in Uttarakhand. Sustainable forest management at all sites will be linked both to sustainable communities based natural resources management discussed earlier in this section, but will also be linked to sustainable livestock management (reducing overgrazing in forests or overharvesting of fodder species) and developing green value chains of sustainable produced products from forests (including non-timber forest products, honey, silkworms, and medicinal plants. The ravine management plan for Madhya Pradesh, the microwatershed plans for Odisha and the two sites in Uttarakhand will include SFM actions. SFM activities in Rajasthan and Mizoram will all be included within their grassland management plans and community land use plans. SFM in Madhya Pradesh will also be carried out particularly in the district of Sheopur that has an important forest corridor linking the Kuno Palpur Wildlife Sanctuary to the landscape.

2.2.5 – On-farm sustainable agriculture measures, including livestock management, to improve productivity and profits while reducing threats to GEBs identified, designed and promoted (target: various but to be determined)

143. The main aim under this output is to promote the maintenance and enhancement of biodiverse local agriculture systems that promote sustainable land and water management, as well as greenhouse gas emission reduction and global biodiversity conservation (whilst enhancing resilience of production systems). The project will support the GoI and farmers to validate, adapt and implement appropriate

practices designed to prove that the adoption of sustainable farming techniques is ecologically, economically and socially beneficial. Primarily through the implementation of Farmers Field Schools, the project will ensure that farmers implement appropriate land and water management regimes in their farms to restore, maintain and enhance productivity; increase vegetative cover using native species through agroforestry practices; maintain on-farm diversity (including agrobiodiversity); reduce greenhouse gas emissions; undertake integrated pest management; use organic fertilizers and ensure that pollution from agrochemicals is mitigated. In addition, farmers will ensure that they do not farm in ecologically sensitive areas and, in particular case in Mizoram (where *jhum* is prevalent) that the use of fire does not lead to forest fires. The project will build on FAO's global experience on climate smart practices to assist farmers to adopt practices such as improved tillage, alternative cropping patterns, better agricultural land management, and reduction or alteration of chemical inputs. Conversion of current agriculture lands with particularly low fertility to agroforestry systems will be encouraged –especially, deep-rooted locally adapted vegetation that are better suited for soil stabilization, land reclamation and for economic benefits will be promoted (such as local fruit trees that can help local women farmers to produce products for sale, but at the same time these can be of high biodiversity importance as well – especially for pollinators and bats). Some key focus of the project will be to:

- *Promote organic farming and certification, including participatory guarantee scheme:* As noted in the baseline, in many States, organic production is being championed by policy makers. Landscape conservation plans will identify opportunities to support organic production by farmers as a mechanism to enhance ecosystem services and promote CCM. This may include linking farmers to existing government subsidies and market support measures. The project will also strengthen value chains for organic production that yields significant conservation benefits. Some of the villages in target Green Landscapes (for example, in Odisha) have already indicated their interest to adopt organic or more environmentally friendly agriculture practices. The project will build on local interests. There is strong potential to promote organic vegetable, and spice production in many States to market to rapidly growing urban centres as well as for tourism enterprises. One of the mechanisms that the project will support is the Participatory Guarantee System. Around 6626 farmer groups have already been involved in this System in India. Several of the project districts already have farmer groups involved in this system and the project will build on the work of these groups.[25] Some farmers from the project districts are also members of the Organic Farming Association of India (OFAI)[26], and the project will examine lessons learnt by these farmers and build project activities based on practical lessons.

[25] http://pgsindia-ncof.gov.in/LGList.aspx.

State	Number of Participatory Guarantee System
Madhya Pradesh Total	1006 (none in project districts)
Mizoram	none in the State
Odisha	528
1. Mayurbhanj	1. 68
Rajasthan	420
1. Barmer	18
2. Jaisalmer	22
Uttarakhand	528
1. Almora	68
2. Pauri Garhwal	39

[26] http://ofai.org/organisation/membership-details/

ID	Name	Address	Effective from	Membership Expiry
Madhya Pradesh, Morena	Neela Hardikar	C/o Surendra Jain, Dharmshala Oli, Morena district, MP 476001	2/9/2009	2/6/2019

- *Promote local traditional varieties of crops for in-situ conservation (agrobiodiversity conservation)*: Three of the five landscapes fall within agrobiodiversity hotspots identified by the GOI[27]. Farmers at the Green Landscape level will be encouraged to pursue conservation and production of agro-biodiversity crops. Many of these traditional species, varieties, breeds, and associated practices evolved with the associated ecosystems are often better adapted to local conditions, require fewer inputs to generate high-value production, and increase biodiversity benefits. The project will work with local communities and agriculture research and extension agencies to improve the quality of indigenous crops through better seed production, storage and other agronomic practices. Community seed banks will be supported, if required. The project will support better linkages between growers of local varieties of crops to local value addition and strengthened marketing strategy through the formation of clusters and farmer groups. The project will also support purchase of such products through the Public Distribution System – and link to local school feeding programmes. Annual production of agrobiodiversity related crops in the Green Landscape will be monitored through annual surveys undertaken by the Department of Agriculture and those farmers that make a special contribution to agrobiodiversity conservation will be awarded annually. Farmers will also be encouraged to register Intellectual Property Rights (IPR) of landraces they own as provided by extant legislation. Additionally, orientation/training programmes on Protection Plant Varieties and Farmers' Rights could be undertaken to improve farmer awareness on IPR jointly with Protection of Plant Varieties and Farmers' Rights Authority (PPV&FRA) and the project will work with the Authority to confer recognition to farmers who serve as good examples of conservators of traditional varieties in the five Green Landscapes.
- *Greenhouse gases emission reduction practices*: mitigation-focused management practices in agriculture, such as: reduced CH_4 emissions from rice from better water management such as alternate wetting and drying; reduced CO_2 emissions from burning of crop residues; reduced NO_x emissions from fertilizers through integrated nutrient management, such as urea deep placement (UDP), whereby urea briquettes placed near roots can reduce urea use 50-60% and significantly increase yields, and; increased soil organic matter (and soil organic carbon) from reduced tillage and improved residue and manure management.

144. Livestock Management to reduce threats to global environmental values (avoid land degradation, reduce greenhouse gas emission, and threats to ecosystems and species of global importance) will also be a key priority for most of the Green Landscapes. This issue will be a major part of the project's support in the Green Landscapes in Madhya Pradesh, Odisha, Rajasthan and Uttarakhand. As high and rapidly increasing livestock population is a key issue for sustainable Green Landscape management in these landscapes, the project will support farmers to improve productivity and profits from their animals so that they have incentives to keep fewer animals and greater profits. Through the FFS on livestock and by working with relevant government initiatives (through Output 2.1), the project will support the following actions:

Madhya Pradesh, Morena	P P Singh Kirar	Devandra Patwari Ki Gali, Vivekanand Colony, Morena Ganeshpura	11/8/2010	11/7/2011
Odisha Mayurbhanj	DULAL	Convent Road Baripada P O, Mayurbhanj District 757001, Orissa	3/17/2007	3/15/2008
Uttarakhand Almora	Dev Singh	Post Bag # 3, Ranikhet, Almora District, Almora Taluk, Uttarakhand 263645	25-Mar-10	3/24/2011
Uttarakhand Almora	Tulsi Chilwal	Post Bag # 3, Ranikhet, Almora District, Almora Taluk, Uttarakhand 263645	25-Mar-10	3/24/2011

[27] http://www.plantauthority.gov.in/hotspots.htm. The GOI has identified 22 agrobiodiversity hotspots. North-Eastern Hills hotspot include all districts of Mizoram, as well as Manipur, Nagaland, Tripura and the adjoining Cachar and North Cachar districts of Assam. The Chotanagpur hotspot include Mayurbanjh district of Odisha. Arid Western hotspot includes parts of Jaisalmer

- *Community-managed Grazing Regimes (linked to the Livestock Field School and Pashu Sakhis/* Prani Mitras): The project will work with communities to identify and implement models that create incentives to shift away from open-access grazing towards managed regimes that support GEB delivery. Using these as a basis, community dialogues will be supported so that households involved in animal husbandry develop appropriate management plans for their animals. By the end of the project, through Livestock Field Schools, it is expected that there will be:

    - Increased farmers/ herders' awareness on the significance of maintaining quality indigenous livestock varieties based on local ecosystems' carrying capacities and on-farm fodder production (13,600 households in Madhya Pradesh, 37,500 households in Odisha, 10,400 in Rajasthan and in 12,500 households Uttarakhand)

    - Improved nutrition and fodder management strategy for livestock: The project will support feed inventory at district and landscape level and examine options to promote appropriate feed to reduce pressure on natural ecosystems. Community fodder banks will be established/ strengthened and furthermore, households will be encouraged to implement alternate fodder and nutrient management for their livestock -including promotion of stall feeding. In areas of DNP in Rajasthan, where communities can harvest grass from within the protected area, a "fodder bank" could be piloted, whereby grass (such as *Sewan* grass) collected from the wild would be stored to supply fodder. In addition, farmers will be assisted in growing appropriate fodder species on their farms through agroforestry practices, and plans will be supported procure feed / fodder from other areas in the State or outside to decrease pressures on local ecosystems. It is expected that by the end of the project at least 8,000 households in Madhya Pradesh; 22,500 households in Odisha, 6,000 households in Rajasthan and in 10,000 households in Uttarakhand will have implemented improved fodder and nutrition management for their livestock.

    - With help from community animal health workers (Pashu Sakhi/ Prani Mitras), the project will support actions to improve health of livestock to reduce threats of disease transmissions to wildlife. By the end of the project at least 50% of households with livestock in project villages will be undertaking regular deworming and vaccination of livestock (by largely working with existing government initiatives, and improving communication on these through Prani Mitras/ Pashu Sakhis). Project related results from the above-mentioned activities are summarized below.

Table 9: Project's Targets related to livestock management

Green Landscape States	No. of households' awareness raised on maintaining quality indigenous Livestock and local carrying capacities	No of households implementing improved nutrition and fodder management strategy	Number of Prani Mitra/ Pashu Sakhis trained to assist farmers/ herders
Madhya Pradesh	13,600	8,000	186
Mizoram	0	0	0
Odisha	37,500	22,500	2,500

Rajasthan	10,400	6,000	82
Uttarakhand	12,500	10,000	1,000
Total	74,000	46,500	3,768

- Incentives for local animal varieties and market linkages: For farmers/ herders keeping traditional breeds of domestic animals of high quality, special support may be instituted for such "heritage farmers" to provide the seeds of traditional breeds for artificial insemination to other domestic animals. Some ideas of such support could be in the form of a grant for pregnant animals. Community organizations, such as cooperatives/ Livestock Breeders Associations/ Farmer Producers Organizations, will be supported to link them to market opportunities. In Rajasthan (Jaisalmer), for example, *Tharparkar* breed of cows could be promoted, which are good milk yielder, and with lower water requirements than other cow breeds and buffaloes and on indigenous breed of *Badri* cows in Uttarakhand. The project will encourage livestock development suited to the particular landscape, viz. camels and sheep in Rajasthan while being mindful of livestock that are detrimental to the specific landscape, e.g. goats. In Rajasthan, local breeds of camels are on decline, and farmers could be incentivized to keep camels and benefit from sale of their milk. In Mizoram, local varieties of pigs are already in much demand but have limited availability in big markets such as the State capital Aizwal.

Table 10: Summary of Global Environmental Benefits Planned to be delivered through this Project

Dimensions of global environmental benefits	**Project's direct contributions to global environmental benefits**	**Project's indirect contributions**
Global biodiversity conservation benefits	• Five Green Landscape management plans under implementation covering 1,800,000 ha of high value biodiversity conservation landscapes showing biodiversity conservation improvements resulting from more sustainable agricultural and SFM practices (in hectares) • 350000 Hectares of high conservation value forestlands newly under SFM. • In-situ agrobiodiversity conservation in all five landscapes-104,070 ha land where farmers are newly utilizing and conserving on-farm agro-diversity (five farmer varieties of wheat, at least nine rice, two millet etc.) • Community based natural resources management of grasslands, forests, watersheds lead to maintenance of ecosystem connectivity and sustainable use of natural resources in at least three landscapes (Odisha, Uttarakhand and Mizoram) to allow animal movement • Reduced threats to at least seven protected areas from agriculture and local livelihoods related activities (such as from hunting)	• Mainstreaming of global biodiversity concerns into agriculture plans and programmes at district level that will positively influence additional 8,760,103 ha. • Long term institutional and individual capacities in place to mainstream global environmental concerns into agriculture and landscape management plans (at central, State, District and local levels • Decreased antipathy towards protected areas by instituting human-wildlife conflict mitigation measures • Replication of Green Landscape approach at multiple sites across the country for high global environment value landscapes • The project's work to maintain wildlife corridors between

	• Sustainable agricultural land management lead to reduced threats to biodiversity from agrochemicals • Reduced human wildlife and natural resources conflicts: Increased community awareness and engagement leads to reduced incidences of wildlife poaching and retaliation against wildlife for crop depredation and no encroachment into protected areas • Improved livestock management reduces wildlife - livestock competition and reduces disease spread from domestic animals to wildlife. Human-wildlife conflict is a serious problem in India. This includes both humans interfering with wildlife habitat, poaching, and wildlife harming farm production. There are a great number of tools that have been developed to help farmers alleviate conflicts with wildlife. These tools, including innovative production models, can help to increase profits and improve wildlife habitat. The project will capture these lessons, tailor them for the unique situation of each location, and help to build farmer capacity required to implement production approaches that lower the rate and impact of human/wildlife conflict. The issue of human wildlife conflict mitigation will be mainstreamed into the community based natural resources management plans, as well as in the promotion of appropriate crops on the farm (those that are less attractive to wildlife).	protected areas will also help in resilience of wildlife species by allowing better movement and promoting gene flow between sites.
Sustainable land management benefits	• Effective soil and water conservation management on farm covering 91718 ha • Restoration of degraded lands covering 750,000 ha hectares • Increased land cover through sustainable management of forests, grasslands and other communal areas – leading to reduced soil erosion • Improved soil quality and reduced erosion from agricultural lands through sustainable land and water management • Reduced soil and water pollution from judicious agrochemical use or conversion to organic farming • Removal of invasive plant species	
Sustainable Forest Management	• Maintenance of high value conservation forests (no encroachment or conversion) • Maintenance of indigenous species of plants Restoration of forests through assisted natural regeneration	
Greenhouse gas emission reduction benefits	• 49,906,455 tCO2eq Greenhouse gas emission reduction (tCO2eq newly sequestered or avoided) will be achieved through combined efforts of forest loss and degradation avoidance, grassland management, agriculture land and livestock management	

1.7.4 Project Risks and Proposed Mitigation Measures

The table below summarizes key identified risks and their mitigation measures.

Table 11: Risks and Risk Mitigation Measures

Description of Risk	Impact/Probability Rating (Low: 1 to High: 5)	Mitigation and Contingency Measures
The current level of commitment and interest to work on multi-sectoral approach to sustainable agriculture diminishes.	Impact: 3 Probability: 3	This project is designed with the full support of both primary Ministries (MoAFW and MoEFCC). During project design, extensive meetings were held at both the national and state levels with responsible representatives. At the national level, there has been highlevel of commitment to this project and general project design, and is expected to continue throughout implementation. This will be delivered through an approach that continues to be highly inclusive and facilitates full engagement by multi-sectoral stakeholders, particularly through the link to local institutional structures developed under Output 2.1.1. At the district level, the District Collectors have the primary task to ensure that all development work is implemented in multi-sectoral way, so the risk is considered low at local levels. The project will support district level agencies to work together to develop "convergence plans" under Outcome 2.1, that will tie together resources from different government agencies to achieve landscape management objectives. Multi-sectoral approach to sustainable agriculture will be further aided by the project facilitated/ supported dialogues on agriculture, environment and development at the national and State levels. These dialogues are expected to generate and sustain long term interest to continue multi-sectoral approach to sustainable agriculture.
Unsettled land-use and land-tenure issues in or near protected areas may reduce the legitimacy of policy initiatives or enforcement in those areas.	Impact: 3 Probability: 3	The project will set in place a high degree of community engagement in planning, notably under Outputs 2.1.1 and 2.1.2; focus on incentives for win-win solutions, minimizing reliance on enforcement, and exclusion; and, help to clarify transitional (medium-term) land-use and land-tenure arrangements, including dispute-resolution mechanisms, even as long-term aims are negotiated.
Human-Wildlife Conflict, as well as (Competing demands for	Impact: 2 Probability: 4	Human-wildlife conflict is an issue at all the of the target locations. This includes poaching, livestock (and in rare cases human) predation by carnivores, crop raiding by herbivores, and property damage by species such as elephants. The project is

Description of Risk	Impact/Probability Rating (Low: 1 to High: 5)	Mitigation and Contingency Measures
resources between between communities)		designed with these conflicts in mind. The project will work with wildlife conservation staff, agricultural agencies, extension services, national and international experts, and local farmers to generate innovative practices designed to alleviate these issues. The Green Landscape strategies (Output 1.1.4) and Community based natural resources management plans (Output 2.2.4) will highlight the challenges and solutions. Capacity building and subsequent target implementation pilots will help demonstrate to farmers that it is possible to have a profitable, productive agricultural operation, whilst lowering the risks of wildlife conflict, and delivering for long-term GEB benefits. The Green Landscape approach will ensure that inter and intra-community resource use conflicts are also addressed through landscape level planning. The BMCs, GPSU/VCSU, and TSGs will all play roles in mediating and mitigating any resource use conflicts between communities and within communities.
Government financial support for continuing programming will be insufficient	Impact: 3 Probability: 2	The Government of India has substantial resources. The risk is associated with the need to re-direct this financing towards support for more sustainable agricultural practices. Again, the level of risk is low based upon existing government's strong willingness and desire to redirect financing based upon project-demonstrated improvements. However, execution will depend upon sustained political support. This will be addressed by fully engaging key decision-makers throughout the project's design and implementation fabric, and supported by the national and state level inter-sectoral coordinating committees established through Output 1.1.1
Land users return to unsustainable practices due to collapse or volatility of prices for agricultural commodities produced under agro-ecological farming systems	Impact: 4 Probability: 3	The project will be structured to support income diversification to reduce the influence of commodity price fluctuations; increase incentives for sustainable land management (e.g., linking to government programmes such as rural employment guarantee scheme); and, community and government engagement for improved clarity on limitations on appropriate/ permissible land uses, particularly within protected areas and surrounding buffer zones.
Community-level inertia or resistance to change (e.g., perception that changes in subsidies or	Impact: 4 Probability: 2	At local levels, this project will use a highly participatory process that strengthens or establishes local institutions to ensure that local initiatives are locally driven and reflect good governance (e.g., inclusion, representation, transparency, consistency,

Description of Risk	Impact/Probability Rating (Low: 1 to High: 5)	Mitigation and Contingency Measures
payment methods will result in reduced benefits, harms, risks)		effectiveness, accountability, and dispute resolution), delivered through Outputs 2.1.1 and 2.1.2. In recognition of the short time-horizons in which many intended beneficiaries need to see benefits, special efforts will be made for each initiative to identify market and other financial opportunities for short-term benefits that transition to medium- and long-term benefits, along with identification and promotion of incentives to encourage farmers and land users to adopt new more sustainable practices. Extensive, proactive community wide communications will increase awareness and attempt to address concerns before and during the programme's initiatives under Output 2.2.3. The project has also emphasized free prior informed consent of local communities and development and implementation of a grievance mechanism. These are also expected to ensure that project implements actions that benefit communities. These are expected to ensure strong community buy-in into proposed project actions.
Resistance from private-sector interests that potentially stand to lose revenues	Impact: 2 Probability: 2	As with other constituent-based risks, the first line of mitigation is inclusion (promoted through Outputs 2.2.1 and 2.2.2). Identified private sector stakeholders will be included when possible and appropriate (at different levels) to lessen such risks and identify opportunities for growth. Identification and development of value chains have been identified as one of the main crosscutting issues of this project, such that proactive efforts are being made to identify opportunities to build and strengthen the full length of affected value chains (and even creating additional value chains). Local institutions will provide a basis for private-sector stakeholders to interact and negotiate directly with communities (which comprise the programme's primary constituency).
Climate Variability and Change	Impact: 4 Probability: 5 (over longer-term)	Climate change and projected impacts are one of the primary motivations for this project. The project directs significant resources toward greenhouse gas emission reduction, and several actions promoted by the project are expected to help facilitate adaptation and increase resilience of local populations and natural and agricultural resources to climate variability and the expected longer-term impacts of climate change, resulting in substantial co-benefits for mitigation and adaptation. For example, in-situ conservation of agrobiodiversity could provide genetic resources for more climate-adapted crops in the future. In addition, the project's work to maintain wildlife corridors between protected areas will also help in the adaptation

Description of Risk	Impact/Probability Rating (Low: 1 to High: 5)	Mitigation and Contingency Measures
		andresilience of wildlife species by facilitating movement and promoting gene flow between sites. Identification and prioritization of practices and technologies will take into consideration of the future impacts of climate change so as to achieve sustainability and resuilience in the longer term perspective.

145. The project has been ranked as medium risk based on FAO's environmental and social safeguard policy. The reasons the project is rated medium risk are related to the presence of indigenous communities in the five Green Landscapes and the project's work locations including areas close to protected areas. In line with FAO's policy, draft Environment and Social Risk Management Plan has been prepared and is attached as Annex 6 to this project.

1.7.5 Stakeholder consultation and engagement

146. FAO and Government of India staff conducted several missions to potential project States and Districts. This included field investigations to potential field locations. Detailed discussions were held with government staff, including representatives of MoAFW and MoEFCC, farmers, protected area administrators, community forestry groups, wildlife biologists, and other stakeholders at the state, district and field level. These discussions revolved around the potential project design, perceived conservation challenges, and the appropriateness and scale of site selection. Annex 7 presents some of the key consultations organized during the project preparation phase to seek advice and opinions of stakeholders on the project design.

147. The principle of stakeholder inclusion is fully integrated within the initial project design and was carried forward through the project preparation. This includes tools such as intersectoral working groups at all levels and FFS models with gender specific cohorts, as well as the implementation of Free, Prior and Informed Consent. The project will promote the participation of a wide range of relevant stakeholders including government agencies, civil society (e.g., NGOs, self-help groups, and producers' groups), the private sector, relevant financial institutions (e.g., National Bank for Agricultural and Rural Development—NABARD), women, indigenous peoples (scheduled tribes), and identified vulnerable groups (e.g., scheduled castes).

148. Participatory processes will include: (i) regular meeting of the PSC and advisory committees, (ii) multi-stakeholder consultation workshops at national and state levels, (iii) direct consultations with stakeholders via individual and focus-group meetings, and (iv) the implementation of the Free, Prior and Informed Consent process throughout the project. A grievance process will be incorporated into the project's management plan and structure.

Stakeholders

Table 12: National Stakeholders

Stakeholder	Relevance
National Government	
Ministry of Environment Forest and Climate Change	MoEFCC is responsible for the administration of the protected areas of India and for planning, promoting, coordinating, and overseeing the implementation of environmental and forestry programs and policies. MoEFCC also administers and supervises the Indian Forest Service (IFS). MoEFCC will play a key role in the project as a member of the Project Steering Committee and, as host ministry of India's GEF Operational Focal Point, will facilitate coordination with GEF Secretariat and with other projects in India's GEF portfolio.
The Ministry of Agriculture and Farmer Welfare	The Ministry of Agriculture and Farmers' Welfare (formerly the Ministry of Agriculture) formulates and administers the rules, regulations, and laws related to agriculture at the Federal level in India. The ministry comprises three departments: (i) DACFW, which is responsible for agricultural policy-making and programs, (ii) Department of Agriculture Research and Education (DARE), which oversees the Indian Council of Agricultural Research (ICAR), and (iii) Department of Animal Husbandry, Dairying and Fisheries (DAHDF). As the nodal GoI agency for this project, DACFW will oversee the project's design, implementation, and coordination. As a key member of the Project Steering Committee, DACFW will support impact and progress monitoring, information dissemination, mainstreaming, and national replication/ up-scaling of project successes. The project will also coordinate closely with DARE and DAHDF for implementation of various project components.
Department of Economic Affairs (DEA), Ministry of Finance	The Ministry of Finance is the political focal point of GEF projects. The Multilateral Institutions Division in the DEA coordinates the GEF investments. The GEF agency FAO will have to sign a grant agreement with DEA for project implementation.
Controller Aid Accounts & Audit Division (CAA&A)	CAA&A Division is housed within the DEA. The GEF funds will routed through the CAA&A.
National Biodiversity Authority (NBA),	The National Biodiversity Authority (NBA) was established in 2003 to implement India's Biological Diversity Act (2002). The NBA which, is an autonomous body that performs facilitative, regulatory and advisory function for Government of India on issue of conservation, sustainable use of biological resource and fair equitable sharing of benefits of use. It is also the authority under which Biodiversity Management Committees (BMCs) are set up. The project will work with BMCs in around 460 Gram Panchayats (GP) and 40 village councils (VCs)
National Tiger Conservation Authority (NTCA)	The NTCA is a statutory body for Tiger conservation in the country. The project will work in 4 Tiger Reserves.
Ministry of Rural Development (MORD)	The MORD oversees the (i) Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) for providing wage employment, and (ii) Integrated Watershed Management Programme (IWMP) for improving the productivity of the land. The IWMP is critical element of the Green Landscape Management, while the Project will work with the MORD to advocate for activities of soils and water conservation in the Green Landscape under the MGNREGS.
Ministry of Women and Child Development (MOWCD)	MOWCD implements the Integrated Child Development Services (ICDS) providing a package of services comprising supplementary nutrition, immunization, health check-up and referral services, pre-school non-formal education. The project will work with MOWCD to advocate for sourcing

Stakeholder	Relevance
	locally grown produce, particularly traditional coarse cereals in the ICDS feeding programmes. This would incentivize farmers to grow local landraces and provide them remunerative prices.
Ministry of Human Resource Development (MHRD)	The Mid Day Meals (MDM) Scheme is run under the Department of School Education and Literacy in this ministry. The MDM programme supplies free lunches on working days for children in primary and upper primary classes in government, government aided, local body, Education Guarantee Scheme, and alternate innovative education centres, Madrassa and Maqtabs supported under Sarva Shiksha Abhiyan, and National Child Labour Project schools run by the ministry of labour. The project will work with MHRD to advocate for sourcing locally grown produce, particularly traditional coarse cereals in the MDM feeding programmes. This would incentivize farmers to grow local landraces and provide them remunerative prices.
Ministry of Panchayati Raj (MOPR)	MOPR is focused on decentralized and participatory local self-government through Panchayati Raj Institutions (PRIs). The project will work in 460 GPs in the Green Landscape
Ministry of Consumer Affairs, Food and Public distribution	The Department of Food and Public Distribution is responsible for the procurement, storage and distribution of food grains in the country. It allots the food grains for the ICDS and MDM apart from a number of other welfare schemes. The project will work with the Ministry to advocate procurement of traditional coarse cereals from the Green Landscape particularly for the ICDS and MDM programmes in the Green Landscape.
Ministry of Tribal Affairs	Responsible for overall policy, planning and coordination of programmes for development of Schedule Tribes and schedule areas. The Project will work with MOTA for development of the Schedule tribes in the 5th and 6th schedule areas in Odisha and Mizoram Green Landscape, respectively. MoTA also implements the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. Given that over 1 million ha of land has been handed over to forest dwellers under the Forest Rights Act (FRA) 2006, this Ministry's involvement in project is considered very important.
Ministry of Tourism	Responsible for the formulation of national policies and programmes and for the co-ordination of activities of various Central Government Agencies, State Governments/UTs and the Private Sector for the development and promotion of tourism in the country. The protected areas Desert National Park and Corbett Tiger Reserve are already important sites of tourism. The other protected areas including the Similipal Biosphere Reserves have high potential for tourism. The project will work to make these areas of high conservation value sites of responsible tourism which encourages sustainable development.
Niti Ayog (National Institution for Transforming India)	NITI Aayog is the premier policy 'Think Tank' of the Government of India, providing both directional and policy inputs. It is responsible for designing strategic and long term policies and programmes for the Government of India. It also provides relevant technical advice to the Centre and States. The NITI Aayog is an important a member of the National Project Steering Committee
Department of Science & Technology (DST), Ministry of Science & Technology	The Green landscape sites are areas of high biodiversity and reservoirs of ecological goods and services under threat of Climate Change. The Climate Change division in the DST is an important member of the National Project Steering Committee.
Ministry of Ayush	The Green landscapes are areas of high medicinal plant biodiversity. The Ministry of an important member of the National Project Steering Committee.
Protection of Plant Varieties & Farmers' Rights Authority (PPV & FRA)	The PPV & FRA is responsible for establishing of an effective system for protection of plant varieties, the rights of farmers and plant breeders for their contributions towards conserving, improving and making available plant genetic resources for the development of the new plant varieties. The project aims at conserving and protecting high agro-biodiversity sites in its Green landscape. The PPV & FRA is an important member of the National Project Steering Committee and also the National Project Monitoring Committee.

Stakeholder	Relevance
National Bureau of Plant Genetic Resources- (NBPGR)	Responsible for management and promote sustainable use of plant genetic and genomic resources of agri-horticultural crop and carry out related research. The project aims at conserving and protecting high agro-biodiversity sites in its Green landscape. The NBPGR can support the project in tracking the agrobiodiversity in the project site. It is an important member of the National Project Steering Committee.
ICAR	The Indian Council of Agricultural Research (ICAR) is an autonomous organisation under the Department of Agricultural Research and Education (DARE), the Ministry of Agriculture and Farmers Welfare, Government of India. The project will work with research and extension wing in the district level- the Krishi Vigyan Kendras in the research and dissemination of knowledge in the Green landscape.
Donors and other International Development Agencies	
UNDP	The project will explore potential partnerships with UNDP projects in the Green Landscape to look for synergies and co-financing arrangements for better community outreach and maximizing impact.
IFAD	The IFAD funded Odisha Particularly Vulnerable Tribal Groups Empowerment and Livelihoods Improvement Programme (OPELIP), Integrated Livelihoods Support Project (Uttarakhand), and the Mitigating Poverty in Western Rajasthan Project have an overlap with the project Green Landscapes. The project will look to co- finance with IFAD to enhance the project interventions and outcomes.
World Bank	The World Bank has a number of relevant projects in the Green landscape across various project States. Both being Implemented by World bank and some as loans. In Odisha, it is engaged in creating business models for marginalized Tribal Communities. It currently working on watershed development with the Government of Uttarakhand. It is also working in Rajasthan on an Agriculture competitiveness project. The Bank is also associated with projects on land degradation, ecosystem services and biodiversity conservation and rural livelihood. The project will look to co- finance with the World Bank to enhance the project interventions and outcomes.
JICA	JICA has many Forestry and Biodiversity related intervention in the Project States. They also currently have a project on the capacity building of Forest and Wildlife management staff in the country. The project will look to co- finance with JICA to align the project capacity building activities to enhance the project interventions and outcomes.
GIZ	The Project on Human Wildlife Conflict being implemented by GIZ is very relevant for this project. The project will look to co- finance with GIZ to enhance the project interventions and outcomes on Human wildlife conflict to enhance conservation efforts in the Green Landscape
USAID	The ForestPlus – Sustainable Forest and Climate Adaptation project of USAID is relevant for this project. The project will look to co- finance with USAID to enhance the project interventions and outcomes on Sustainable Forest management
National Bank for Agriculture And Rural Development (NABARD)	NABARD is an apex Development Bank authorized for providing and regulating credit and other facilities for the promotion and development of agriculture, small-scale industries, cottage and village industries, handicrafts and other rural crafts and other allied economic activities in rural areas with a view to promote integrated rural development and prosperity and for matters connected therewith. The Pradhan Mantri Krishi Sinchai Yojana (PMKSY) - Per Drop More Crop is funded by NABARD. The project will look to co- finance with NABARD to enhance the project interventions and outcomes.
Civil Society: NGOs, Academic and Scientific Organizations, Community Groups, Media	

Stakeholder	Relevance
CARE India	CARE has worked with marginalised communities on livelihood programmes to promote microfinance, Self Help Groups, capacity building and small businesses. It has also worked on fostering linkages between community collectives and financial institutions to promote sustainable livelihoods. It has presence in the project states of Rajasthan, Madhya Pradesh, Uttarakhand and Odisha. The project will try to tap their presence and effective community outreach in capacity building.
digitalGREEN	Digital Green is a not-for-profit international development organization that uses an innovative digital platform for community engagement to improve lives of rural communities. The project may draw on their technical expertise in digital media for dissemination to farmers.
Indian Grameen Services (IGS)	IGS has worked with tribal and forest dweller households through creation of productive livelihood assets and leveraging MGNREGS funds for INRM works. They have presence in the project States of Madhya Pradesh, Rajasthan and Odisha. The project will draw on their expertise in INRM works.
Professional Assistance for Development Action (PRADAN)	PRADAN worked on the focal areas of promotion of Self-Help Groups, forest-based livelihood, Natural Resource Management and Livestock development in project States of Rajasthan, MP and Odisha. The project will draw on the expertise in capacity building.
Self Employed Women's Association (SEWA)	SEWA has supported women's efforts in achieving full employment and self-reliance through self-governance. It has created several cooperatives and producers' groups, thereby forging market linkages and enhancing their bargaining position. The project will draw on their strategies for women's participation.
Revitalizing Rainfed Agriculture Network (RRA)	A network of civil society organizations, research institutions and universities that has emerged based on the collective understanding that agricultural policies designed for relatively secure and well-endowed parts of the country have been indiscriminately extended to rainfed areas. The project will draw upon their expertise to design project intervention.
Academic and Scientific Organizations	
Wildlife Institute of India (WII)	WII is an autonomous institution under the Ministry of Environment Forest and Climate change. It is the premier institution for expertise in Wildlife conservation in the country. WII has carried out wildlife research in areas of study like biodiversity, endangered species, wildlife policy, wildlife management, wildlife forensics, spatial modelling, eco-development, Habitat Ecology and Climate Change. They have contributed in the design of strategies in Protected Areas management in the country. They have contributed to the project landscape delineation and LULC classification of the 5 project sites in the project preparation phase. This project will further work to use their expertise in enhancing benefits to wildlife conservation in the associated Protected Areas in the Project landscape
International Centre for Research in Agroforestry (ICRAF)	Non-profit organization whose goal is to help mitigate tropical deforestation, land depletion and rural poverty through improved agroforestry systems. The organization currently has a project in Rajasthan. The project will draw upon their expertise in agroforestry management.
G. B. Pant National Institute of Himalayan Environment and Sustainable Development (GBPNIHESD)	GBPNIHESD is a focal agency to advance scientific knowledge, to evolve integrated management strategies, demonstrate their efficacy for conservation of natural resources, and to advocate environmentally sound development in the entire Indian Himalayan Region (IHR). It is one of the Centre of Excellence under the MoEF&CC. The project will collaborate with the Institute for their expertise in the Himalayan range projects sites in Uttarakhand and Mizoram.

Stakeholder	Relevance
Central Arid Zone Research Institute (CAZRI), Jodhpur	Responsible for undertaking basic and applied research on sustainable farming systems in the arid ecosystem. It acts as repository of information on the state of natural resources and desertification processes. It also aims to develop livestock-based farming systems and range management practices for the chronically drought-affected areas, and generating and transferring location-specific technologies. The project will tap upon the institute's expertise in desert biodiversity and livestock management in the Rajasthan project site located in the Thar desert.
Indian Council of Forestry Research and Education (ICFRE), Dehradun	An apex body in the national forestry research system, has been undertaking the holistic development of forestry research through need based planning, promoting, conducting and coordinating research, education and extension covering all aspects of forestry. The project will tap their expertise in designing capacity building intervention on sustainable forest management for communities and forestry officials.
Forest Survey of India (FSI)	Government agency for conducting forest surveys and studies. Organization periodically monitors the changing situation of land and forest resources and present the data for national planning; conservation and management of environmental preservation and implementation of social forestry projects. The project will utilize their expertise in tracking the sustainable forest management in the Green Landscape
Indian Institute of Forest Management (IIFM), Bhopal	National Institute of education in forestry sector, aiming at balanced development, conservation and utilization of a forest based ecological system in India, consistent with the economic and social development of the nation. An International Centre for Community Forestry (ICCF) has been set up at IIFM to promote Sustainable Forest Management. The project will tap their expertise in designing capacity building intervention on sustainable forest management for communities and forestry officials.
Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad	Responsible for carrying out the research for improvement of rainfed areas through resource management. The project will draw upon their expertise in the Climate Resilient Agriculture under the National Initiative for Climate Resilient agriculture (NICRA) project.
ICAR- Indian Institute of Soil and Water Conservation (IISWC) Dehradun	The institute is mandated to research for management of land degradation in a primary production systems and rehabilitation of degraded lands in different agro-ecological regions of the country. It co-ordinates research network for developing location-specific technologies in the area of soil and water conservation. It is the centre for training in research methodologies and updated technology in soil and water conservation and watershed management. The project will tap on their expertise on watershed management intervention in the project sites of Uttarakhand and Odisha.
ICAR-Indian Grassland and Fodder Research Institute (IGFRI), Jhansi	Premier R&D institution in South Asia for sustainable agriculture through quality forage production for improved animal productivity. The project sites in Rajasthan, Uttarakhand, Madhya Pradesh, and Odisha have a population dependent on livelihood from livestock. The project may utilize the Institute's expertise in fodder management.
ICAR- Central Sheep and Wool Research Institute	Basic and applied research on sheep husbandry. Dissemination of technologies for sheep productivity enhancement and management. The project will utilize their expertise in the Rajasthan site where sheep keeping communities reside.
Indian Agricultural Research Institute (IARI)	Premier national Institute for agricultural research, education and extension. The project will utilise their expertise in the capacity building of agriculture extension Officers and staff in the Green Landscape.
Indira Gandhi National Forest Academy (IGFNA), Dehradun	The primary mandate of the Academy is to impart knowledge and skills to the professional foresters and help them to develop competence for managing the country forest and wildlife resources on a sustainable basis. The project will collaborate with the Academy on capacity building interventions for forest and wildlife management officials in the Green Landscape. The project will also work towards institutionalizing the capacity building package in IGFNA for training Officers working in similar landscapes across the country.

Stakeholder	Relevance
National Afforestation and Eco-Development Board (NAEB), New Delhi	Responsible for promoting afforestation, tree planting, ecological restoration and eco-development activities in the country, with special attention to the degraded forest areas and lands adjoining the forest areas, national parks, sanctuaries and other protected areas as well as the ecologically fragile areas like the Western Himalayas, Aravallis, and the Western Ghats. The project will collaborate with the Board in the forested and degraded forest areas within the Green Landscape on the GEF focal areas of CCM, SFM and LD.
National Centre for Organic Farming	Responsible for promotion of organic farming in the country through technical capacity building of all the stakeholders including human resource development, transfer of technology, promotion and production of quality organic and biological inputs. The project will collaborate with the Centre to enhance organic farming and advocate organic certification in the Green landscape.
Indian Institute of Soil Science	Responsible for enhancing soil productivity with minimum environmental degradation. The project will tap on their expertise on land degradation in the projects of Madhya Pradesh and Rajasthan.
ICAR-Vivekananda Parvatiya Krishi Anusandhan Sansthan, Almora	ICAR-Vivekananda Parvatiya Krishi Anusandhan Sansthan (VPKAS), Almora, Uttarakhand, India is a premier institute of Indian Council of Agriculture Research engaged in hill agricultural research for North-Western Himalayan region of India. The project will draw on their expertise for the project site of Uttarakhand.

Table 13: State, District and Site Level Stakeholders: Rajasthan

Stakeholder	Relevance
State Government	
Rajasthan Forest Department	State agency responsible for wildlife conservation and forest management. It is also the Nodal Agency for this project in the State. It is a member of the State Steering Committee (SSC).
Rajasthan Agriculture Department	State agency responsible for agriculture development. It is a member of the State Steering Committee (SSC).
Directorate of Horticulture	State agency responsible for horticulture development. It is a member of the State Steering Committee (SSC).
Department of Animal Husbandry	State agency responsible for Animal Husbandry development. It is a member of the State Steering Committee (SSC).
Rural Development and Panchayat Raj Department	State agency for rural development and panchayati raj or local self- governance. The project will work with the IWMP and MGNREGA in the Green Landscape for soil and water conservation. The project will also work with this department in 14 GPs in the two project districts of Barmer and Jaisalmer within the Green Landscape. The department is a member of the State Steering Committee (SSC).
Commissionerate of Watershed Development and Soil Conservation	Agency responsible for supervision and monitoring of all watershed development work including, IWMP (Integrated Watershed Management Projects). It is under the ministry of rural development and Panchayati Raj. The project will work with this agency to implement the watershed management interventions in the Green Landscape.
Rajasthan State Biodiversity Board	Nodal state agency responsible for biodiversity conservation. The State Biodiversity Boards are responsible for providing guidance and technical support to the Biodiversity Management Committees. The project will work with the BMCs in the target GPs to strengthen their capacity to deliver their mandate to conservation, sustainable use and documentation of biological diversity. The SBBs are mandated to formulate TSGs to guide BMCs in their activities at the district level.

Stakeholder	Relevance
Department of Women and Child Development	State agency under which the ICDS programme is implemented. The project will work with the Women and Child Development Department in the State Green Landscape site to advocate for sourcing locally grown produce, particularly traditional coarse cereals in the ICDS feeding programmes. This would incentivize farmers to grow local landraces and provide them remunerative prices. The department is also a member of the State Steering Committee (SSC).
Food and Civil Supplies Department	The Food and Civil Supplies Department is responsible for the procurement, storage and distribution of food grains in the State. It allots the food grains for the ICDS and MDM apart from a number of other welfare schemes. The project will work with the Department to advocate procurement of traditional coarse cereals from the Green Landscape particularly for the ICDS and MDM programmes in the Green Landscape.
Social Justice and Empowerment Department	State agency for the welfare of minorities, SC and ST communities. The department is a member of the State Steering Committee (SSC).
District Government (including PA management) – Jaisalmer and Barmer	
District Administration (District Collectorate)	The office of the Collector (also known as Deputy Commissioner or Deputy Magistrate) is the nodal agency for all administrative function in the District level. The District Agriculture Officer, District Horticulture Officer, the District Animal Husbandry Officer, the District Social Welfare Officer, the Block Development Officers, District Agriculture Extension Officer, function under the directive and supervision of the District Collector (DC). The project will work with the DC's office. The DC is the Chairman of the TSG.
Office of Park Director Desert National Park (DCF)	The project will work with the Park Director of the Desert National Park (Protected Area). A representative of the Protected Area is a member of the DPMU.
Office of Divisional Forest Officer	Nodal Officer for forest management in the Forest Divisional level. Divisional Forest Officers (DFO) of territorial Forest Divisions are the Nodal Officers the State Biodiversity Board and oversee the activities related to BMCs. The project will be working with the DFOs of the relevant Forest divisions within the Green Landscape.
ATMA	ATMA serves as a platform for integrating extension programmes across line departments such as animal husbandry, fisheries, forestry, horticulture, and agriculture. By including other development sector, this platform could play the inter-sectoral advisory role envisaged by the project. The project will work closely with the network of government extension services in each district within the Green Landscapes, especially the Agricultural Technology Management Agency (ATMA). The ATMA platform group can be used as TSG at District level, chaired by District Collector.
KVK (Danta- Barmer, and Pokaran- Jaisalmer)	*Krishi Vigyan Kendra* (KVK) or District Level Farm Science Centres focus on training, technology assessment, refinement and demonstration of technologies / products. KVKs consists of one Programme Co-Ordinator, who is being assisted by six Subject Matter Specialists (Crop Production, Plant protection, Soil science, Fishery science, Home science and Extension Education). The project will work with the KVKs for setting up frontline demonstrations of innovative sustainable agricultural practices.
Civil Society: NGOs, Academic and Scientific Organizations, Community Groups, Media	
Wildlife Institute of India (WII)	WII is an autonomous institution under the Ministry of Environment Forest and Climate change. It is the premier institution for expertise in Wildlife conservation in the country. WII has carried out wildlife research in areas of study like biodiversity, endangered species, wildlife policy, wildlife management, wildlife forensics, spatial modelling, eco-development, Habitat Ecology and Climate Change. They have contributed in the design of strategies in Protected Areas management in the country. This project will further work to use their expertise in enhancing benefits to wildlife

Stakeholder	Relevance
	conservation in the associated Protected Area Desert National Park in the Rajasthan project landscape.
ICAR-Indian Grassland and Fodder Research Institute (IGFRI), Jhansi	Premier R&D institution in South Asia for sustainable agriculture through quality forage production for improved animal productivity. The project sites in Rajasthan, Uttarakhand, Madhya Pradesh, and Odisha have a population dependent on livelihood from livestock. The project may utilize the Institute's expertise in fodder management.
ICAR- Central Sheep and Wool Research Institute, Bikaner	Basic and applied research on sheep husbandry. Dissemination of technologies for sheep productivity enhancement and management. The project will utilize their expertise in the Rajasthan site where sheep keeping communities reside.
Central Arid Zone Research Institute (CAZRI), Jodhpur	Responsible for undertaking basic and applied research on sustainable farming systems in the arid ecosystem. It acts as repository of information on the state of natural resources and desertification processes. It also aims to develop livestock-based farming systems and range management practices for the chronically drought-affected areas, and generating and transferring location-specific technologies. The project will tap upon the institute's expertise in desert biodiversity and livestock management in the Rajasthan project site located in the Thar desert.
Arid Forest Research Institute (AFRI), Jodhpur	AFRI is a premier research institute under the Indian Council for Forestry Research and Education (ICFRE). Its mandate is on forestry research for conservation of biodiversity and enhancement of bio-productivity in with special emphasis on arid and semi-arid regions, which includes Rajasthan. The project will aim to work with the institute in the Green Landscape Field School to enhance JFM and medicinal plants output.
Central Institute for Research on Goats (CIRG), Makhdoom, Uttar Pradesh	CIRG is a premier research Institute of Indian Council of Agricultural Research (ICAR). The institute has experience in development of higher bio-mass producing fodder system (Guar+ Lobia + Sunhemp) for goats under rain fed conditions and *Morus alba* based cost-effective agro-forestry system for sustainable goat husbandry in semi-arid and rain fed areas. It has also developed package of practices and dynamic health calendar for goat farmers. The project will utilize their expertise in the Rajasthan site where goat rearing communities reside.
Thar Integrated Social Development Society (TISDS)	Grassroots organization working on social and sustainable development of Jaisalmer district in the Thar desert. Their focal are is to safeguard and promote the dying traditional water harvesting systems in Jaisalmer district by building local awareness and informed public participation. The project will tap into their experience in effective outreach to the local community in the Green Landscape.
KRAPAVIS	Organization focused on the development of ecology and agriculture/livestock. They are experienced in research and documentation of traditional forest and land management mechanism like *Orans*, and *Gauchars* in Rajasthan. The project will draw on their expertise in the design of intervention of the project.
Society for Upliftment of Rural Economy	The KVK Barmer is under the administration of this NGO which has been recognized for its work on community led action on Mitigation and Adaptation to Climate Change with respect to Water Resources, Land Use, Land Use Change and Forestry. The project will collaborate with the Danta, Barmer KVK.
INTACH	INTACH Natural Heritage division advocates the sustainable use of natural resources, undertakes projects on eco-restoration, and conservation and creation of environmental assets. They have also contributed to the documentation of *Orans* and *Gauchars*. The project will tap into their expertise in community forest management.
Swami Keshwanand Rajasthan Agricultural University, Bikaner	The Directorate of Research of Jaisalmer district is under the jurisdiction of this University. The KVK Jaisalmer is under the Jurisdiction of this University. The University is an important member of the SSC.

Stakeholder	Relevance
Self Help Groups (SHG)	The project will work with Self Help Groups to enhance the financial capacity building.
Local Universities, schools	The project will work with local academic institutions on awareness raising and, as necessary, in landscape monitoring activities

Table 14: State, District and Site Level Stakeholders: Madhya Pradesh

Stakeholder	Relevance
State Government	
Farmer Welfare and Agriculture Department	State agency responsible for farmer welfare and agriculture development. It is also the Nodal GEF Agency for this project in the State. It is also an important member of the State Steering Committee (SSC).
Animal Husbandry Department	State agency responsible for Animal Husbandry development. It is also an important member of the State Steering Committee (SSC).
Forest Department	State agency responsible for wildlife conservation and forest management. It is also an important member of the State Steering Committee (SSC).
Horticulture and Food Processing Department	State agency responsible for horticulture development. It is also an important member of the State Steering Committee (SSC).
Housing and Environment Department	The main works carried out under the Environment Department mainly relates to land management, development planning and management, Development of Biological Resources, Control of Pollution, Environmental Upgradation, Capital Project and works related to capital area.
Panchayat and Rural Development Department	State agency for rural development and panchayati raj or local self- governance. The project will work with the IWMP and MGNREGA in the Green Landscape for soil and water conservation. Further, the Mid-Day-Meal Programme is being implemented under the administrative control of Panchayat Raj Department in Madhya Pradesh. The project will work with the department in the Green Landscape to advocate for sourcing locally grown produce, particularly traditional coarse cereals in the MDM feeding programmes. This would incentivize farmers to grow local landraces and provide them remunerative prices. The Project will work in 34 GPs in the two project districts of Morena and Sheopur within the Green Landscape. The department is a member of the State Steering Committee (SSC).
Madhya Pradesh State Biodiversity Board, Bhopal	Nodal state agency responsible for biodiversity conservation. The State Biodiversity Boards are responsible for providing guidance and technical support to the Biodiversity Management Committees for preparing People's Biodiversity Registers. The project will work with the BMCs in the target GPs to strengthen their capacity to deliver their mandate to conservation, sustainable use and documentation of biological diversity.
Women and Child Development Department	State agency under which the ICDS programme is implemented. The project will work with MOWCD. The project will work with the Women and Child Development Department in the State Green Landscape site to advocate for sourcing locally grown produce, particularly traditional coarse cereals in the ICDS feeding programmes. This would incentivize farmers to grow local landraces and provide them remunerative prices. The department is also a member of the State Steering Committee (SSC).
Food, Civil Supplies and Consumer	The Food, Civil Supplies and Consumer Protection Department is responsible for the procurement, storage and distribution of food grains in the State. It allots the food grains for the ICDS and MDM apart from a number of other welfare schemes. The project will work with the Department to advocate

Stakeholder	Relevance
Protection Department	procurement of traditional coarse cereals from the Green Landscape particularly for the ICDS and MDM programmes in the Green Landscape.
Water Resources Department	Nodal agency for irrigation, and water resource development. The Green Landscape in Madhya Pradesh includes the National Chambal Sanctuary Protected Area which is an important water resource for the region. The project may work with this department development alternate irrigation for the Green Landscape so reduce the incidence of water pumping from the river for agriculture.
District Government (including PA management): Morena and Sheopur	
District Administration (District Collectorate)	The office of the Collector (also known as Deputy Commissioner or Deputy Magistrate) is the nodal agency for all administrative function in the District level. The District Agriculture Officer, District Horticulture Officer, the District Animal Husbandry Officer, the District Social Welfare Officer, the Block Development Officers, District Agriculture Extension Officer, function under the directive and supervision of the District Collector (DC). The project will work with the DC's office. It is an essential part of the District Project Monitoring Unit (DPMU). The DC is the Chairman of the DPMU. A representative of the District collectors Office is also a member of the Gram Panchyat Project Support Unit (GPPSU).
Office of the Superintendent, National Chambal Sanctuary (DFO Morena)	The project will work with the Officer in-charge of the management of the National Chambal Sanctuary (Protected Area). A representative of the Protected Area is an important member of the DPMU
Officer of Divisional Forest Officer	Nodal Officer for forest management in the Forest Divisional level. Divisional Forest Officers (DFO) of territorial Forest Divisions are the Nodal Officers the State Biodiversity Board and oversee the activities related to BMCs. The project will be working with the DFOs of the relevant Forest divisions within the Green Landscape.
KVK s (Baroda –Sheopur and Morena)	Krishi Vigyan Kendra or District Level Farm Science Centres focus on training, technology assessment, refinement and demonstration of technologies / products. KVKs consists of one Programme Co-Ordinator, who is being assisted by six Subject Matter Specialists (Crop Production, Plant protection, Soil science, Fishery science, Home science and Extension Education). The project will tap into the local agricultural knowledge depository of KVKs and use its extension arm in the implementation of the project.
Civil Society: NGOs, Academic and Scientific Organizations, Community Groups, Media	
Wildlife Institute of India (WII)	WII is an autonomous institution under the Ministry of Environment Forest and Climate change. It is the premier institution for expertise in Wildlife conservation in the country. WII has carried out wildlife research in areas of study like biodiversity, endangered species, wildlife policy, wildlife management, wildlife forensics, spatial modelling, eco-development, Habitat Ecology and Climate Change. They have contributed in the design of strategies in Protected Areas management in the country. This project will further work to use their expertise in enhancing benefits to wildlife conservation in the associated Protected Area National Chambal Sanctuary in the Madhya Pradesh project landscape
ICAR-Indian Grassland and Fodder Research Institute (IGFRI), Jhansi	Premier R&D institution in South Asia for sustainable agriculture through quality forage production for improved animal productivity. The project sites in Rajasthan, Uttarakhand, Madhya Pradesh, and Odisha have a population dependent on livelihood from livestock. The project may utilize the Institute's expertise in fodder management.
Indian Institute of Soil Science	Responsible for enhancing soil productivity with minimum environmental degradation. The project will tap on their expertise on land degradation in the projects of Madhya Pradesh and Rajasthan.

Stakeholder	Relevance
Krapavis	Organization for the development of ecology and agriculture/livestock. It has experience with capacity building the local community INRM. The project will tap into their expertise in the design of project interventions.
Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior	The Directorate of Research of Sheopur and Morena district is under the jurisdiction of this University. The KVKs in the relevant districts are under the Jurisdiction of this University. The University is an important member of the DPMU for both the districts of Barmer and Jaisalmer
Farmers	The project will work with agriculturalist and animal keepers in the Green Landscape to build their capacity to practice climate resilient and sustainable methods of production to improve their livelihood, while at the same time enhancing and conserving the indigenous and wild biodiversity in the Green Landscapes.
Women Groups	The project will work with women groups to mobilize women beneficiaries.
Self Help Groups (SHG)	The project will work with Self Help Groups to enhance the financial capacity building.
Gram Panchayat	The Gram Panchayats will play a critical role in project implementation. The Village –level Green Landscape Management Plans developed by the Gram Sabhas in each habitation will be consolidated at the GP level. The head of the GP will be the Chair of the Gram Panchayat Project Support Unit (GPPSU)
Biodiversity Management Committees	BMCs are currently only entrusted with the task of preparing People's Biodiversity Registers. The project will work to strengthen their capacity to deliver their mandate of conservation, sustainable use and documentation of biological diversity.

Table 15: State, District and Site Level Stakeholders: Odisha

Stakeholder	Relevance
State Government	
Department of Agriculture and Farmer Empowerment	State agency responsible for farmer welfare and agriculture development. It is also the Nodal GEF Agency for this project in the State. The department constitutes the directorates Horticulture, Soil Conservation and Watershed Development Mission which are very relevant for the project. It is also an important member of the State Steering Committee (SSC).
Department of Forest and Environment	State agency responsible for wildlife conservation and forest management. It is also an important member of the State Steering Committee (SSC).
Fisheries and Animal Resources Development Department	State agency responsible for Animal Husbandry and Fisheries development. It is also an important member of the State Steering Committee (SSC).
Department of Panchayat Raj	State agency for rural development and panchayati raj or local self- governance. The project will work with the IWMP and MGNREGA in the Green Landscape for soil and water conservation. Further, the Mid-Day-Meal Programme is being implemented under the administrative control of Panchayat Raj Department in the State. The project will work with the department in the Green Landscape to advocate for sourcing locally grown produce, particularly traditional coarse cereals in the MDM feeding programmes. This would incentivize farmers to grow local landraces and provide them remunerative

Stakeholder	Relevance
	prices. The Project will work in 34 GPs in the project district of Mayurbhanj within the Green Landscape. The department is a member of the State Steering Committee (SSC).
Women and Child Development Department	State agency under which the ICDS programme is implemented. The project will work with MOWCD. The project will work with the Women and Child Development Department in the State Green Landscape site to advocate for sourcing locally grown produce, particularly traditional coarse cereals in the ICDS feeding programmes. This would incentivize farmers to grow local landraces and provide them remunerative prices. The department is also a member of the State Steering Committee (SSC).
Food Supplies and Consumer Welfare Department	The Food Supplies and Consumer Welfare Department is responsible for the procurement, storage and distribution of food grains in the State. It allots the food grains for the ICDS and MDM apart from a number of other welfare schemes. The project will work with the Department to advocate procurement of traditional coarse cereals from the Green Landscape particularly for the ICDS and MDM programmes in the Green Landscape.
State Biodiversity Board Odisha	Nodal state agency responsible for biodiversity conservation. The State Biodiversity Boards are responsible for providing guidance and technical support to the Biodiversity Management Committees for preparing People's Biodiversity Registers. The project will work with the BMCs in the target GPs to strengthen their capacity to deliver their mandate to conservation, sustainable use and documentation of biological diversity.
ST & SC Development, Minorities and Backward Classes Welfare Department	State agency for the welfare of minorities, SC and ST communities. The Green Landscape in the State is in a high Scheduled Tribe inhabited area and is administered under the 5th Schedule of the Constitution of India. The department is a member of the State Steering Committee (SSC).
District Government (including PA management) – Mayurbhanj District	
District Administration (District Collectorate)	The office of the Collector (also known as Deputy Commissioner or Deputy Magistrate) is the nodal agency for all administrative function in the District level. The District Agriculture Officer, District Horticulture Officer, the District Animal Husbandry Officer, the District Social Welfare Officer, the Block Development Officers, District Agriculture Extension Officer., function under the directive and supervision of the District Collector (DC). The project will work with the DC's office. It is an essential part of the District Project Monitoring Unit (DPMU). The DC is the Chairman of the DPMU. A representative of the District collectors Office is also a member of the Gram Panchyat Project Support Unit (GPPSU).
Office of Field Director Similipal Tiger Reserve (DCF)	The project will work with the office Field Director Similipal Tiger Reserve, who is also in charge of the Similipal Biosphere Reserve. A representative of the Protected Area is an important member of the DPMU as well as the GPPSU.
Divisional Forest Officer Mayurbhanj	Nodal Officer for forest management in the Forest Divisional level. Divisional Forest Officers (DFO) of territorial Forest Divisions are the Nodal Officers the State Biodiversity Board and oversee the activities related to BMCs. The project will be working with the DFOs of the relevant Forest divisions within the Green Landscape.
KVK (Jashipur and Shyamakhunta)	Krishi Vigyan Kendra or District Level Farm Science Centres focus on training, technology assessment, refinement and demonstration of technologies / products. KVKs consists of one Programme Co-Ordinator, who is being assisted by six Subject Matter Specialists (Crop Production, Plant protection, Soil science, Fishery science, Home science and Extension Education). The project will tap into the local

Stakeholder	Relevance
	agricultural knowledge depository of KVKs and use its extension arm in the implementation of the project.
Integrated Tribal Development Agency (ITDA)	Nodal Officer for Tribal Areas development in the pilot site. The project will work in an area with very high tribal population, which is protected under the under the 5th Schedule of the Constitution of India. The ITDA 's office works along with the District Administration in the Green Landscape in Odisha.
Civil Society: NGOs, Academic and Scientific Organizations, Community Groups, Media	
Wildlife Institute of India (WII)	WII is an autonomous institution under the Ministry of Environment Forest and Climate change. It is the premier institution for expertise in Wildlife conservation in the country. WII has carried out wildlife research in areas of study like biodiversity, endangered species, wildlife policy, wildlife management, wildlife forensics, spatial modelling, eco-development, Habitat Ecology and Climate Change. They have contributed in the design of strategies in Protected Areas management in the country. This project will further work to use their expertise in enhancing benefits to wildlife conservation in the associated Protected Area in the Similipal Biosphere Reserve in the Odisha project landscape
Indian Institute of Forest Management (IIFM), Bhopal	National Institute of education in forestry sector, aiming at balanced development, conservation and utilization of a forest based ecological system in India, consistent with the economic and social development of the nation. An International Centre for Community Forestry (ICCF) has been set up at IIFM to promote Sustainable Forest Management. The project will tap their expertise in designing capacity building intervention on sustainable forest management for communities and forestry officials.
ICAR- Indian Institute of Soil and Water Conservation (IISWC) Dehradun	The institute is mandated to research for management of land degradation in a primary production systems and rehabilitation of degraded lands in different agro-ecological regions of the country. It co-ordinates research network for developing location-specific technologies in the area of soil and water conservation. It is the centre for training in research methodologies and updated technology in soil and water conservation and watershed management. The project will tap on their expertise on watershed management intervention in the project sites of Uttarakhand and Odisha.
Vasundhara	A research and policy advocacy group that works on environment conservation and sustainable livelihood issues. Works on NTFP and the implementation of the Forest Rights Act, among forest dwellers. Actively works in the project site. The project will draw up on their knowledge base on NTFP management in the Green Landscape.
Gram Swaraj	Focuses on sustainable use and management of natural resources, Food security and access to secured livelihood opportunities, Options for appropriate family and community infrastructure and sources of energy and strong self-governing people's institutions with equal participation of men and women. The project will tap their experience with the local community to design the interventions for the Green Landscape in the State.
SPAR (Society for Participatory Action Reflection)	SPAR works with poor and marginalized people through participatory approach and engaged in capacity building of the rural poor through formation and strengthening of People's Organization. The project will draw on their experience in capacity building of the local community.
CREFTDA (Centre for Regional Education, Forest and Tourism Development Agency)	CREFTDA has been undertaking People centred governance project in 2 panchayats (Mananda, Baunsanali) of Jashipur Block since April 2012. They aim towards increasing community participation in decision making processes like pallisabha and gram sabha. And in strengthening local self-governance towards the development of the villages. The project will tap their expertise on local self-governance in the design of the intervention for the project.
STRD (Society for Tribal Research and Development)	Active in areas of child care, education, health and welfare, and community development. They support the Park management in creating awareness on the evils of Akhand Shikar. The project will utilize their experience in creating awareness on conservation to design the interventions for the capacity building in the project.

Stakeholder	Relevance
Odisha Rural Development and Marketing Society (ORMAS) Bhubaneswar	District Supply and Marketing Society, Mayurbhanj, the district unit of Odisha Rural Development and Marketing Society (ORMAS) Bhubaneswar, which is an apex state level marketing organization under administrative control of Panchayati Raj Department, Government of Odisha. It provides non-credit inputs like procurement/purchase of raw material and sale of erstwhile IRDP/DWCRA/ TRYSEM products. It also engages in market promotion and facilitating marketing of SGSY and SHG products. Collector (District Magistrate) is the Chairperson and Project Director, DRDA is the Vice Chairperson of the DSMS. A development professional is Chief Executive of DSMS, deputed by ORMAS, Bhubaneswar. The project will benefit from the work of this society. The project may align it interventions to enhance the market linkages through the work of this society within the Green Landscape.
Similipal Studies Centre, North Odisha University	Special Centre in the North Odisha University for research on Similipal Biosphere Reserve. The project will utilize the knowledge base in this Centre to inform the design in the intervention of the Green Landscape.
Orissa University of Agriculture and Technology (OUAT)	State Agriculture University of Odisha. It is also an important member of the State Steering Committee (SSC).
Farmers	The project will work with agriculturalist and animal keepers in the Green Landscape to build their capacity to practice climate resilient and sustainable methods of production to improve their livelihood, while at the same time enhancing and conserving the indigenous and wild biodiversity in the Green Landscapes.
Women Groups	The project will work with women groups to mobilize women beneficiaries.
Self Help Groups (SHG)	The project will work with Self Help Groups to enhance the financial capacity building.
Gram Panchayat	The Gram Panchayats will play a critical role in project implementation. The Village –level Green Landscape Management Plans developed by the Gram Sabhas in each habitation will be consolidated at the GP level. The head of the GP will be the Chair of the Gram Panchayat Project Support Unit (GPPSU)
Biodiversity Management Committees	BMCs are currently only entrusted with the task of preparing People's Biodiversity Registers. The project will work to strengthen their capacity to deliver their mandate of conservation, sustainable use and documentation of biological diversity.
Private Sector	
Chetna Organic	Works with small and marginal farmers towards improving their livelihood options and making farming a sustainable and profitable occupation. In Odisha works mostly in the South-Western districts. The project will look to tap on the expertise of Chetna Organic to create market linkages.

Table 16: State, District and Site Level Stakeholders: Mizoram

Stakeholder	Relevance
State Government	
Agriculture Department	State agency responsible for agriculture development. It is also the Nodal GEF Agency for this project in the State. It is also an important member of the State Steering Committee (SSC).

Stakeholder	Relevance
Animal Husbandry and Veterinary Department	State agency responsible for Animal Husbandry development. It is also an important member of the State Steering Committee (SSC).
Environment and Forest Department	State agency responsible for wildlife conservation, forest management and Climate Change. It is also an important member of the State Steering Committee (SSC).
Horticulture Department	State agency responsible for horticulture development. It is also an important member of the State Steering Committee (SSC).
Department of Rural Development	State agency for rural development. The project will work with the IWMP and MGNREGA in the Green Landscape for soil and water conservation which is under the administration of this department. The department is a member of the State Steering Committee (SSC).
Local Administration Department	State Agency for the effective functioning of the Village councils (VCs) through empowerment and providing of professional support system, ensuring participatory local self-government through VCs. The Project will work in VCs in the three project districts of Mamit within the Green Landscape. The department is a member of the State Steering Committee (SSC).
Directorate of School Education	Nodal State Agency for the implementation of the Mid-Day Meals Scheme. The project will work with the department in the Green Landscape to advocate for sourcing locally grown produce, particularly traditional coarse cereals in the MDM feeding programmes. This would incentivize farmers to grow local landraces and provide them remunerative prices.
Social Welfare Department	State agency under which the ICDS programme is implemented. The project will work with MOWCD. The project will work with the Women and Child Development Department in the State Green Landscape site to advocate for sourcing locally grown produce, particularly traditional coarse cereals in the ICDS feeding programmes. This would incentivize farmers to grow local landraces and provide them remunerative prices. The department is also a member of the State Steering Committee (SSC).
Department of Food, Civil supplies and Consumer Affairs	The Department of Food, Civil Supplies and Consumer Affairs is responsible for the procurement, storage and distribution of food grains in the State. It allots the food grains for the ICDS and MDM apart from a number of other welfare schemes. The project will work with the Department to advocate procurement of traditional coarse cereals from the Green Landscape particularly for the ICDS and MDM programmes in the Green Landscape.
Soil and Water Conservation Department	State Agency for the conservation of Soil and Water. Responsible for prevention of soil erosion from agricultural land and conservation of in sites moisture and use of degraded land through integrated farming system to improve the living standard of rural people. They are also in charge of improvement of cash crop programme (Coffee, Rubber, Broom). The project will work with the department to improve its soil and water conservation efforts in the Green landscape and also in making the existing cash crop plantations agro-ecologically sustainable.
District Government (including PA management): Mamit and Lunglei.	
District Administration	The office of the Collector (also known as Deputy Commissioner or Deputy Magistrate) is the nodal agency for all administrative function in the District level. The District Agriculture Officer, District Horticulture Officer, the District Animal Husbandry Officer, the District Social Welfare Officer, the Block Development Officers, District Agriculture Extension Officer, function under the directive and supervision of the District Collector (DC). The project will work with the DC's office. It is an essential part of the District Project Monitoring Unit (DPMU). The DC is the Chairman of the DPMU.
Office of Park Director Dampa and Thorangtlang (DCF)	The project will work with the office in-charge of the management Thorangtlang Wild Life Sanctuary, and the Dampa Tiger Reserve (Protected Area). A representative of the Protected Area are important members of the DPMU in their respective Districts.

Stakeholder	Relevance
Divisional Forest Officers of relevant Districts	Nodal Officer for forest management in the Forest Divisional level. Divisional Forest Officers (DFO) of territorial Forest Divisions (Lawngtlai, Mamit, and Aizawl- Thorangtlang) are the Nodal Officers the State Biodiversity Board and oversee the activities related to BMCs. The project will be working with the DFOs of the relevant Forest divisions within the Green Landscape.
KVK (chhung-Lawngtlai, Hnathial- Lunglei, and Lengpui-Mamit)	Krishi Vigyan Kendra or District Level Farm Science Centres focus on training, technology assessment, refinement and demonstration of technologies / products. KVKs consists of one Programme Co-Ordinator, who is being assisted by six Subject Matter Specialists (Crop Production, Plant protection, Soil science, Fishery science, Home science and Extension Education). The project will tap into the local agricultural knowledge depository of KVKs and use its extension arm in the implementation of the project.
Civil Society: NGOs, Academic and Scientific Organizations, Community Groups, Media	
Wildlife Institute of India (WII)	WII is an autonomous institution under the Ministry of Environment Forest and Climate change. It is the premier institution for expertise in Wildlife conservation in the country. WII has carried out wildlife research in areas of study like biodiversity, endangered species, wildlife policy, wildlife management, wildlife forensics, spatial modelling, eco-development, Habitat Ecology and Climate Change. They have contributed in the design of strategies in Protected Areas management in the country. This project will further work to use their expertise in enhancing benefits to wildlife conservation in the associated Protected Area Dampa Tiger Reserve and Thorangtlang Wildlife Sanctuary in the Mizoram project landscape
G. B. Pant National Institute of Himalayan Environment and Sustainable Development (GBPNIHESD)	GBPNIHESD is a focal agency to advance scientific knowledge, to evolve integrated management strategies, demonstrate their efficacy for conservation of natural resources, and to advocate environmentally sound development in the entire Indian Himalayan Region (IHR). It is one of the Centre of Excellence under the MoEF&CC. The project will collaborate with the Institute for their expertise in the Himalayan range projects sites in Uttarakhand and Mizoram.
North East Initiative Development Agency (NEIDA)	NEIDA engages with community institutions and grassroots Non-Governmental Organizations for the implementation of different development projects, with focus on Livestock, Agriculture and Horticulture and Forest based Livelihoods. The project will tap upon their experience to design the interventions on engaging community institutions in the Green landscape in the state.
Young Mizo Association (YMA)	YMA is the largest and most comprehensive non-profit, secular and nongovernmental organisation of the Mizo people. They have been recognized by the MoEFCC a number of times for their work in forest and environmental protection. The project will utilize the organization to design improved community participation in the Green Landscape.
Mizoram University (MZU)	It is a central University situated in Aizawl. The School of Earth Sciences and Natural Resources Management in MZU includes the Forestry (Agro Forestry) department, the Horticulture, Aromatic and Medicinal plants department, the Environmental Sciences department and the Extension Education and Rural Development department. They have undertaken a number of research of areas relevant to the project. The project will work with the university in the design of project interventions
Farmers	The project will work with agriculturalist and animal keepers in the Green Landscape to build their capacity to practice climate resilient and sustainable methods of production to improve their livelihood, while at the same time enhancing and conserving the indigenous and wild biodiversity in the Green Landscapes.
Women Groups	The project will work with women groups to mobilize women beneficiaries.
Self Help Groups (SHG)	The project will work with Self Help Groups to enhance the financial capacity building.

Stakeholder	Relevance
Village Councils	The Village Councils will play a critical role in project implementation. The Village –level Green Landscape Management Plans developed in each habitation will be consolidated at the Village Council level. The head of the VC will be the Chair of the Village Council Project Support Unit (GPPSU)
Biodiversity Management Committees	BMCs are currently only entrusted with the task of preparing People's Biodiversity Registers. The project will work to strengthen their capacity to deliver their mandate of conservation, sustainable use and documentation of biological diversity.

Table 17: State, District and Site Level Stakeholders: Uttarakhand

Stakeholder (Entity)	Relevance
State Government	
Agriculture Department	State agency responsible for farmer welfare and agriculture development. It is also the Nodal GEF Agency for this project in the State. It is also an important member of the State Steering Committee (SSC).
Forest Department	State agency responsible for wildlife conservation and forest management. It is also an important member of the State Steering Committee (SSC).
Department of Animal Husbandry	State agency responsible for Animal Husbandry development. It is also an important member of the State Steering Committee (SSC).
State Horticulture Department	State agency responsible for horticulture development. It is also an important member of the State Steering Committee (SSC).
Dairy Department	State department for dairy development. The project will work with the department better market linkages and processing of dairy products from the Green Landscape.
Department of Panchayati Raj	State agency for panchayati raj or local self- governance. The Project will work in 265 GPs in the two project districts of Pauri Garhwal and Almora within the Green Landscape. The department is a member of the State Steering Committee (SSC).
Watershed Management Directorate	WMD is the nodal agency for coordination, monitoring and implementation of integrated watershed development programmes in the state including the, IWMP (Integrated Watershed Management Projects). And the watershed development component in PMKSY (Pradhan Mantri Krishi Sinchai Yojana). The project will align its activities of watershed management with existing activities in the Directorate.
Department of Rural Development	State agency for rural development. The project will work with MGNREGA in the Green Landscape for soil and water conservation. The department is a member of the State Steering Committee (SSC).
Food and Civil Supplies Department	The Food and Civil Supplies Department is responsible for the procurement, storage and distribution of food grains in the State. It allots the food grains for the ICDS and MDM apart from a number of other welfare schemes. The project will work with the Department to advocate procurement of traditional coarse cereals from the Green Landscape particularly for the ICDS and MDM programmes in the Green Landscape.
Women Empowerment and Child Development	Nodal agency that implements the Integrated Child Development Services (ICDS). The project will work with MOWCD. The project will work with the Women and Child Development Department in the State Green Landscape site to advocate for sourcing locally grown produce,

Stakeholder (Entity)	Relevance
	particularly traditional coarse cereals in the ICDS feeding programmes. This would incentivize farmers to grow local landraces and provide them remunerative prices
Department for School Education	Nodal agency that implements the Midday meals scheme. The project will work with the department in the Green Landscape to advocate for sourcing locally grown produce, particularly traditional coarse cereals in the MDM feeding programmes. This would incentivize farmers to grow local landraces and provide them remunerative prices.
Department Social Welfare	Nodal agency for the welfare of tribal and women. The project will be working with a few tribal population in the green Landscape. The project will work to the feeding programme under this department in Tribal school are locally sourced from the Green Landscape
Uttarakhand Biodiversity Board	Nodal state agency responsible for biodiversity conservation. The State Biodiversity Boards are responsible for providing guidance and technical support to the Biodiversity Management Committees for preparing People's Biodiversity Registers. The project will work with the BMCs in the target GPs to strengthen their capacity to deliver their mandate to conservation, sustainable use and documentation of biological diversity.
Department for School Education	Nodal agencies in charge of the Midday meals scheme
District Government (including PA management): Almora, Dehradun, Nainital, Pauri Garhwal and Haridwar	
Wildlife Institute of India (WII)	WII is an autonomous institution under the Ministry of Environment Forest and Climate change. It is the premier institution for expertise in Wildlife conservation in the country. WII has carried out wildlife research in areas of study like biodiversity, endangered species, wildlife policy, wildlife management, wildlife forensics, spatial modelling, eco-development, Habitat Ecology and Climate Change. They have contributed in the design of strategies in Protected Areas management in the country. This project will further work to use their expertise in enhancing benefits to wildlife conservation in the associated Protected Area in the Rajaji and Corbett Tiger Reserves in the Uttarakhand project landscape
G. B. Pant National Institute of Himalayan Environment and Sustainable Development (GBPNIHESD)	GBPNIHESD is a focal agency to advance scientific knowledge, to evolve integrated management strategies, demonstrate their efficacy for conservation of natural resources, and to advocate environmentally sound development in the entire Indian Himalayan Region (IHR). It is one of the Centre of Excellence under the MoEF&CC. The project will collaborate with the Institute for their expertise in the Himalayan range projects sites in Uttarakhand and Mizoram.
ICAR- Indian Institute of Soil and Water Conservation (IISWC) Dehradun	The institute is mandated to research for management of land degradation in a primary production systems and rehabilitation of degraded lands in different agro-ecological regions of the country. It co-ordinates research network for developing location-specific technologies in the area of soil and water conservation. It is the centre for training in research methodologies and updated technology in soil and water conservation and watershed management. The project will tap on their expertise on watershed management intervention in the project sites of Uttarakhand and Odisha.
ICAR-Vivekananda Parvatiya Krishi Anusandhan Sansthan, Almora	ICAR-Vivekananda Parvatiya Krishi Anusandhan Sansthan (VPKAS), Almora, Uttarakhand, India is a premier institute of Indian Council of Agriculture Research engaged in hill agricultural research for North-Western Himalayan region of India. The project will draw on their expertise for the project site of Uttarakhand.
ICAR-Indian Grassland and Fodder Research Institute (IGFRI), Jhansi	Premier R&D institution in South Asia for sustainable agriculture through quality forage production for improved animal productivity. The project sites in Rajasthan, Uttarakhand, Madhya Pradesh, and Odisha have a population dependent on livelihood from livestock. The project may utilize the Institute's expertise in fodder management.
District Administration	The office of the Collector (also known as Deputy Commissioner or Deputy Magistrate) is the nodal agency for all administrative function in the District level. The District Agriculture Officer, District Horticulture Officer, the District Animal Husbandry Officer, the District Social Welfare

Stakeholder (Entity)	Relevance
	Officer, the Block Development Officers, District Agriculture Extension Officer, function under the directive and supervision of the District Collector (DC). The project will work with the DC's office. It is an essential part of the District Project Monitoring Unit (DPMU). The DC is the Chairman of the DPMU. A representative of the District collectors Office is also a member of the Gram Panchyat Project Support Unit (GPPSU).
Office of Park Director Corbett Tiger Reserve and Rajaji Tiger Reserve (DCF)	Nodal offices in charge of the management of the Corbett Tiger Reserve and the Rajaji Tiger Reserve in the Green Landscape. Representatives of the Protected Areas in the Green Landscape are important members of the DPMUs
Office of Divisional Forest Officer	Nodal Officer for forest management in the Forest Divisional level. Divisional Forest Officers (DFO) of territorial Forest Divisions are the Nodal Officers the State Biodiversity Board and oversee the activities related to BMCs. The project will be working with the DFOs of the relevant Forest divisions within the Green Landscape.
KVK (Ranikhet-Almora and Chipalghat- Pauri Garhwal)	Krishi Vigyan Kendra or District level Farm Science Centres focus on training, technology assessment, refinement and demonstration of technologies / products. KVKs consists of one Programme Co-Ordinator, who is being assisted by six Subject Matter Specialists (Crop Production, Plant protection, Soil science, Fishery science, Home science and Extension Education). The project will tap into the local agricultural knowledge depository of KVKs and use its extension arm in the implementation of the project.
Civil Society: NGOs, Academic and Scientific Organizations, Community Groups, Media	
The Corbett Foundation	TCF works on protection of wild species and their habitats, and works in prime Bengal Tiger habitats in the Green Landscape. The Project will tap into their knowledge base and use their expertise in the design of capacity building interventions.
CHEA (Central Himalayan Environment Association)	CHEA is focused on integrating rural livelihoods and sustainable conservation practices to reduce the environmental, economic, and social vulnerabilities of the mountain people. They have worked mostly in Almora district of the target Landscape with communities in helping them with fodder management and livelihood improvement. The project will work with the organization in the design of interventions for capacity building in fodder management.
Govind Ballabh Pant University of Agriculture and Technology, Pantnagar	GBPUAT is a leading State Agriculture University in India and is situated in the District of Nainital, Uttarakhand. KVK Almora was established in Almora District under this university. The project will work with the associated KVK. The University is an important member of the SSC.
Uttarakhand University of Horticulture and Forestry, Bharsar	UUHF is the State University for horticulture and Forestry. The KVK in Pauri Garhwal District is under its supervision. The project will work with the associated KVK in project implementation.
Kumaon University, Nainital	State Agriculture University in the District of Almora. The University is an important member of the SSC.
Farmers	The project will work with agriculturalist and animal keepers in the Green Landscape to build their capacity to practice climate resilient and sustainable methods of production to improve their livelihood, while at the same time enhancing and conserving the indigenous and wild biodiversity in the Green Landscapes.
Women Groups	The project will work with women groups to mobilize women beneficiaries.
Self Help Groups (SHG)	The project will work with Self Help Groups to enhance the financial capacity building.

Stakeholder (Entity)	Relevance
Gram Panchayat	The Gram Panchayats will play a critical role in project implementation. The Village –level Green Landscape Management Plans developed by the Gram Sabhas in each habitation will be consolidated at the GP level. The head of the GP will be the Chair of the Gram Panchayat Project Support Unit (GPPSU)
Biodiversity Management Committees	BMCs are currently only entrusted with the task of preparing People's Biodiversity Registers. The project will work to strengthen their capacity to deliver their mandate of conservation, sustainable use and documentation of biological diversity.

1.7.6 Stakeholder engagement

149. Key stakeholder involvement has been noted in the description of project Outcomes and Outputs earlier in this document and is also summarized under the project's Implementation Arrangements section. The project will ensure strong stakeholders' involvement throughout project implementation.

150. The project was designed through stakeholders' involvement – and several consultation meetings and workshops were organized during its preparation phase.

1.7.7 Grievance Mechanisms

151. In line with FAO's corporate commitment under the Accountability to Affected Populations (AAP) framework[28] to ensure target communities have access to provide feedback and complaints**,** the project will ensure that formalized feedback system is established and that the project's target communities are aware of it. This will additional to any feedback and complaints procedures already in place in the country by the Government of India.

152. While feedback from beneficiaries could be general and will always provide useful information to management, a complaint is an expression of dissatisfaction and represents an urgent call for action.

- Feedback can include day to day observations, or minor issues in the implementation of activities. Feedback can be both positive and negative, and may not necessarily call for immediate response or action; however, any information provided by the beneficiaries is valuable and can be used to make important adjustments in programming and will result in a better quality of interventions. Stakeholder feedback will be a critical component of ensuring Free Prior Informed Consent by target communities during all parts of project implementation. All project staff and partners involved in this project are expected to actively engage with stakeholders and seek their feedback. Formal mechanisms for feedback will be through regular monitoring of project activities. Obtaining and responding to stakeholder feedback will be key part of the project's monitoring and evaluation framework.
- Complaint: Humanitarian Accountability Partnership defines a complaint as "a specific grievance of anyone who has been negatively affected by an organization's action or who believes that an organization has failed to meet a stated commitment."[29] These may include issues such as poor

[28] FAO has globally adopted seven AAP commitments, applicable in both emergency and development programmes: http://www.fao.org/fileadmin/user_upload/emergencies/docs/Guidance%20Note%20Accountability.pdf

[29] HAP (2010b) The 2010 HAP Standard in Accountability and Quality Management. Geneva: HAP. http://www.hapinternational.org/pool/files/2010-hap-standard-in-accountability.pdf

quality of interventions, misappropriation of project resources, and exploitation and abuse-including sexual exploitation. Serious allegations will be handled, and appropriate actions taken by FAO Ethics Office or Office of Inspector General (OIG) in FAO HQ, following specific set of procedures developed for highly sensitive and confidential cases.

To enable effective and efficient management of feedback and complaints, FAO India will:

1) Communicate accountability commitments to the affected population, including their rights to complain as and when needed- through brochures, posters, awareness raising events.
2) Actively seek beneficiary feedback at all events, workshops, training.
3) Assess beneficiaries' preference on feedback systems and adapt accordingly through formal and informal consultations.
4) Train project staff on handling beneficiary feedback and complaints.
5) Systematically document all feedback and identify trends in beneficiary complaints.
6) Create response mechanisms for complaints –including telephone number of assigned staff at FAO India to receive complaints, and or email. If the beneficiaries wish, they can also contact FAO Regional Office or HQ.
7) Report and take action on feedback, complaints and allegations received through the Compliance Unit, technical teams, and management, OIG or Ethics Office.

153. The timeframe for managing feedback including giving appropriate response to the complaints raised by beneficiaries will vary based on the nature and magnitude of the reported problem. Response may not be necessary for routine feedback, or in some cases can be given instantly. Feedback will always be reviewed and continuous efforts to improve program will be undertaken, including reduction or prevention of similar occurrences of negative events.

1.7.8 Disclosure

Information Regarding Disclosure Release (Date, Location, and Language)

154. To be finalized at Project Inception.

Responses to Disclosure that Warranted Proposal Mitigation and Specific Resulting Changes

155. To be finalized at Project Inception.

1.8 Lessons Learned

156. This project builds on lessons from around the world and lessons were also gleaned and applied from the following similar projects and programmes from India.

157. The project builds on ten principles identified as being key to for a landscape approach to reconciling agriculture, conservation, and other competing land uses[30]. The principles include:

- Continuous learning and adaptation
- Common concern entry point
- Multiple scales
- Multifunctionality
- Multiple stakeholders
- Negotiated and transparent change logic
- Clarification of rights and responsibilities
- Participatory and user-friendly monitoring
- Resilience
- Strengthened stakeholder capacity.

158. The project also builds on lessons from other FAO-GEF projects such as Kagera Transboundary Agro-ecosystem Management Project. Key lessons the project identified include the importance and multiple benefits of integrated approaches based on the three dimensions (economic, social and environmental) that contribute to key sustainability criteria: productivity and food security; conservation and efficient use of resources; human and ecosystem resilience (capacity to adapt to change); and good governance/equity. Many similar projects have shown the benefits of direct action with land users that encourage them to take ownership of land resource planning; such involvement increases the sustainability of local landscapes and develops the capacity of local actors to manage and monitor impacts. The project design has also followed some key recommendations made by a study that examined lessons from FAO's watershed management projects[31].

[30] http://www.pnas.org/content/110/21/8349.full

[31] Watershed management in action Lessons learned from FAO field projects, *forthcoming*

Box 3: Lessons learnt from FAO's Watershed Management Projects

Enabling environment

- Review policies and laws in relevant sectors such as water, agriculture, forestry, and rural development, during project formulation and/or assessment. Promote safeguarding of legitimate tenure rights.
- Promote dialogue among and within institutions and sectors to support horizontal and vertical integration. Establish mechanisms for inter-ministerial collaboration and coordination and for systematic upward communication of locally tested integrated solutions.
- Build capacity of both individuals and organizations, based on assessed needs. Strengthen skills in leadership, strategic and integrated planning and the fostering of a territorial vision among stakeholders. Foster establishment of formal watershed management training programmes, incorporating up-to-date research findings and tools.
- Support global and regional knowledge sharing and exchange. Join forces with development partners engaged in watershed management or other integrated landscape approaches as well as with universities and research centres.
- Plan and budget for communication and documentation of results, case studies, success stories and lessons learned. Present the experiences and results of watershed management interventions in national and global discussion fora, including technical conferences.
- Seek finance for integrated activities in watersheds from multiple sources, and develop new financing mechanisms that can overcome the shortfalls of sector-based approaches. Encourage resource partners to support long-term watershed management programmes in preference to short-term projects.

Watershed selection

- It is imperative to choose the watershed as the basic management unit for the coordinated management of multiple natural resources. A nested approach makes it possible to analyse spatial relationships over a sufficiently large area while concentrating interventions in a core demonstration area.
- Previous experiences can help identify which watershed sizes and scales are best for upscaling and replication. In small projects focused on demonstrating the watershed management approach, field activities are best concentrated in one watershed. In larger projects, the number and size of watersheds will depend on the available human and financial resources.
- Appropriate criteria for selecting watersheds include representativeness, visibility and accessibility; evidence of watershed degradation and physical restoration potential; diversity in land use pattern, products and problems to be addressed; demonstrated interest of stakeholders; demonstrated commitment and support from government line agencies and local entities; and the need for protection of high-value areas downstream.

Engaging watershed stakeholders

- A careful and inclusive stakeholder analysis is required early in the project.
- Identify target beneficiaries based on transparent criteria, distinguishing clearly between direct and indirect beneficiaries. Identify specific actions for each group of beneficiaries under each relevant output.
- Foster inclusion of young people as key project beneficiaries.
- Engage field facilitators or community mobilizers to ensure continuous engagement of local populations.
- Involve students from local universities in field activities for mutual benefits and to cultivate future watershed management champions and leaders.
- Where the socio-political environment is conducive to a formalized governance structure, watershed management committees (WMCs) may be established to foster multistakeholder participation. They should be a product of stakeholder negotiation and should build on existing structures, and their specific mandate and functions should be respected.

Watershed assessment

- A multidisciplinary assessment of the watershed situation and trends is required for understanding of the main issues at stake, establishment of a baseline and adaptation of solutions to the local context.
- Involve technical staff of decentralized government offices in the assessment exercise to foster their ownership of the collaborative process. External technical experts, if needed, should be selected based on practical field experience rather than academic qualifications.
- The time frame for the assessment phase should be short enough to leave sufficient time for subsequent planning and implementation. To keep the watershed assessment short, consult existing documentation from ongoing or previous programmes and projects in the area.
- Collect only those data needed for the design of possible solutions. Focus the assessment on water and the key degrading influences in the watershed. Analyse existing land, water and forest tenure systems to identify drivers or obstacles to investment in watersheds.

- To ensure inclusiveness, use participatory mapping and analysis tools. Incorporate new tools for assessing the value of ecosystem services and the costs of loss and damage, and modern geospatial tools for speed and cost effectiveness.
- To build the trust and engagement of watershed populations, identify a few "no-regret" actions for early implementation. Have the assessment validated by the watershed stakeholders.

Identifying options and setting priorities

- Develop different scenarios of future land use and land management options based on the information and data collected during the assessment.
- Involve watershed stakeholders in problem analysis, identification of options and delineation of potential areas for interventions. Raise their awareness of alternative land use options that could be more favourable than current practices.
- Focus on the articulated priorities of local stakeholders and on those problems or land-use conflicts that need an urgent solution. Plan a mix of short-, medium- and long-term interventions and environment- and development-focused interventions. For physical conservation measures, accent bio-engineering soil and water conservation measures whenever viable. Collective benefits should be preferred over individual benefits. Assess the economic and institutional feasibility and the environmental and social risks of the proposed solutions. Identify local organizations that can ensure continuity after the project ends.

The watershed management plan

- The watershed management plan should focus on water to facilitate coherent interventions.
- Harmonize the watershed management plan with existing municipal or communal development plans and establish synergies with sectoral programmes and plans of relevant technical line agencies. In some countries, it may be more effective to enrich existing local development plans than to develop new watershed management plans. A watershed management plan should only be prepared if human and financial resources are available for its implementation.
- The plan should rely as much as possible on tables, diagrams and maps, with the narrative sections kept as short as possible.
- Organize a high-level workshop for formal validation of the plan by all concerned technical agencies. Distribute the final validated plan to all stakeholders.
- Regardless of its vision, scope and quality, the plan will need periodic adjustments.

Implementation

- Implementation of the watershed management plan requires a medium- to long-term perspective and engagement. The plan is usually implemented by sector and through annual work plans. Each intervention must be targeted to the needs of specific beneficiary group(s).
- A coherent approach to the provision of inputs and the contributions expected from beneficiaries across development interventions is desirable. Where possible, develop incentives and mechanisms to compensate for the provision of ecosystem services in upper parts of the watershed.
- Effective procurement procedures are required to ensure timely provision of inputs.

Monitoring

- Prepare a monitoring and evaluation plan to organize regular data collection, processing and analysis. Monitor not only outputs (for evaluation of project performance), but also the multiple processes in the watershed. Combine scientific monitoring of complex interactions with participatory monitoring of some easy-to-measure biophysical parameters by local communities.
- Strengthen monitoring capacities and skills at all levels. Foster a transition from short-term project-led monitoring to long-term stakeholder-led monitoring.
- Develop a set of SMART (specific, measurable, achievable, relevant and time bound) indicators that will make it possible to establish the watershed baseline and set project targets. Include indicators of performance changes in organizations involved in watershed management and indicators of changes in the environment resulting from project action.
- Use monitoring as the basis for knowledge management, learning and communication of project experiences and achievements.
- A general watershed management monitoring framework would be useful to improve the understanding of interactions, synergies and trade-offs within watersheds.

159. Each share thematic and/or geographical similarities with the proposed India Green-Ag Project.

- The World Bank/ GEF project "Biodiversity Conservation and Rural Livelihoods Improvement" (2009-2015; GEF financing: USD 11.83M; GEF ID: 2444), which developed and promoted models of conservation at the landscape scale through enhanced capacity and institution-building for mainstreaming biodiversity conservation outcomes. The primary objective of the project was to engage local communities in conserving biodiversity while also addressing local livelihood issues. The project looked at selected landscapes that included protected areas as also biodiversity around them. BCRLIP was based on the lessons learned from the earlier India Eco-Development Project that focussed only on protected areas, but widened the scope by supporting the landscapes around the selected PAs. The project looked at biodiversity. The project did not apply ecosystem-based strategies, agro-ecological approaches, and/or link with higher level policies and missions that incentivize agricultural practices.
- The World Bank-UNDP-FAO programme "Sustainable Land and Ecosystem Management (SLEM)", (2009-2015; GEF financing: USD 27.28M; GEF ID: 3268) promoted sustainable land management, biodiversity conservation and use, and maintenance of ecosystems' capacities to deliver goods and services in the context of climate change. This programme provided some valuable lessons in terms of improved agricultural practices related to SLM.
- WWF-India began promoting landscape conservation approximately fifteen years ago. WWF-India recognizes that PA exclusive conservation is not suitably effective. The programme strives to encompass landscapes represented PA's connected through Reserve Forests and human dominated areas. The landscape approach has been a positive step towards establishing large, safe and sustainable habitat for biodiversity. The approach includes strategies for land use change, livelihoods and development policies across the landscape. The programme focuses upon large species with extensive habitat demands (e.g., tigers, elephants, Snow leopard, and rhino). Landscape and forest conservation priorities are integrated into state development plans and policy advocacy undertaken for forest, species and habitat conservation. A similar approach at a larger scale is proposed for this project.
- The Kailash Sacred Landscape Conservation and Development Initiative (KSLCDI) is a collaborative programme being implemented across China, India, and Nepal. This is managed by the International Centre for Integrated Mountain Development (ICIMOD). The Kailash Sacred Landscape (KSL) covers an area of about 31,000 sq. km. This includes the remote, south western portion of China's Tibet Autonomous Region (TAR), adjacent districts in Nepal's far western region, and the north-eastern flank of the state of Uttarakhand in India. The landscape includes several national protected areas. The initiative involves a range of local and national research and development institutions working in different capacities in various regions of the three countries. The programme aims to "achieve long-term conservation of ecosystems, habitats and biodiversity, while encouraging sustainable development, enhancing the resilience of communities in the landscape, and safeguarding cultural linkages among local populations". The programme has made progress regarding how best to identify large landscapes and work to improve NRM in complex political environments.
- The Wildlife Conservation Society (WCS) – India Programme worked on tiger conservation since 1980s. The Malenad-Mysore Tiger Landscape (MMTL) in the Western Ghats is one of the largest and longest running tiger monitoring and conservation programmes in the world. This landscape extends over 30,000 sq. kms of deciduous and evergreen forests and includes fourteen PA's. The programme provides lessons in terms of how to link large landscape conservation with monitoring and promotion of conservation of meta-populations of large carnivores.

160. The project will apply a host of good practices developed by FAO, GoI, CSO's and others. FAO is particularly well-suited to support the implementation of this initiative and brings to both the design and implementation process a proven portfolio of relevant good practices.

- *Sustainable Agriculture Policy:* FAO has worked in many countries to support the generation of a Common Vision on Sustainable Agriculture. FAO also maintains an extensive support system to improve laws and policies related to improving agricultural systems. This includes the both the FAOLEX and the AgroecologyLEX.

- *Monitoring and Decision-Support:* As noted, the project will draw upon both national and international monitoring and decision-support tools. These include: EX-ACT, Forestry Resources Assessment (FRA), Global Forest Information Service (GFIS), Open Foris, Gleam, CCAFS-Climate, Earth Collect, and FAO-STAT.

- *Farm Extension:* The project will build upon the existing Farmer Field Schools (FFS) models in India. The project will also build upon international extension tools such as the Forest and Farm Facility (FFF).

- *Knowledge Management*: FAO has extensive experience with the design and implementation of effective knowledge management hubs. This includes the creation of a "Pastoralists Knowledge Hub" programme for herding families in the Gobi to the generation of the TerrAfrica Knowledge Platform on SLM covering dozens of African countries.

- *Sustainable Forest Management:* As the UN's centre of expertise for forestry, FAO is leading the *Global Forest Resources Assessment 2015* and administers the Forest and Landscape Restoration Mechanism. FAO is also the secretariat for the Organic Research Centres Alliance (ORCA) and, as convener of the Commission on Genetic Resources for Food and Agriculture, prepares the *State of the World's Biodiversity for Food and Agriculture*. Thus, FAO is very strongly positioned to guide the technical elements of the proposed project.

- *Shifting Agriculture:* FAO has recently completed a survey identifying good practices across the region related to shifting agriculture (*jhum*). ("Shifting Cultivation Livelihood and Food Security"). This was completed in coordination with the International Work Group for Indigenous Affairs and the Asia Indigenous Peoples Pact. This work will serve as a good foundation for developing sustainable *jhum* in the Mizoram region.

- *Market Analysis and Development (MA&D):* FFF has developed a package of materials to support the implementation of the Market Analysis and Development (MA&D) approach. The Field Facilitator Guidelines (FFG) assist field facilitators and entrepreneurs to implement the various phases and steps of the MA&D approach. The Manual helps the project management teams to plan the development of tree and forest product enterprises using the MA&D approach. Uses a landscape planning

- *Climate Smart Agriculture:* FAO is well positioned to provide support for programming designed to facilitate convergence between agriculture and conservation, which is one of FAO's five strategic objectives (Strategic Objective 2). FAO is a global leader in SLM and CSA expertise and project support. This will include application of tools such as FAO-Adapt.

1.9 Alignment and strategic fit

161. The project is well aligned with national and State level development priorities. They are summarized below.

1.9.1 Alignment with national development goals and policies

162 . India is also a signatory to several United Nations Conventions, which are listed in the table below:

Table 18: Relevant International Agreements Ratified by India

Convention/Agreement	Ratified
Convention on Biological Diversity	1994
Nagoya Protocol on Access and Benefit Sharing	2012
Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)	1976

Framework Convention on Climate Change	1993
Kyoto Protocol to the United Nations Framework Convention on Climate Change	2002
Cartagena Protocol on Biosafety to the Convention on Biological Diversity	2003
Convention to Wetlands of International Importance especially as Waterfowl Habitats [Ramsar]	1981
World Heritage Convention on Nature and Culture Sites under UNESCO	1977
United Nations Convention to Combat Desertification	1996

Biodiversity Conservation

163 India shows a strong and sustained commitment to upholding the Convention on Biological Diversity (CBD). The Indian National Biodiversity Action Plan (NBAP) identifies threats to and constraints in biodiversity conservation and sets out the necessary actions to address them. The project is designed to respond directly to NBAP priorities. Examples include the following:

- Section 3.1 states that solutions must be found to address habitat fragmentation, degradation, and loss.
- Section 4.1 focuses upon strengthening and integration of *in situ*, on farm and *ex situ* conservation. The NBAP calls for conservation of national bio-geographic zones, critical ecological systems and genetic resources through *in situ*, on farm and *ex situ* efforts.
- Section 5.1 directs attention towards the need to identify hotspots of agro-biodiversity under different agro-ecozones and cropping systems and promote on farm conservation; provide economically feasible and socially acceptable incentives such as value addition and direct market access in the face of replacement by other economically remunerative cultivars; and, develop mutually supportive linkages and increased coherence between *in situ*, on farms and *ex situ* conservation programmes.
- Section 5.9 identifies the need to build national capacities for biodiversity conservation and appropriate use of new technologies.

164 The project will contribute directly the several NBSAP National Biodiversity Targets for 2020. These include: measures are adopted for sustainable management of agriculture, forestry and fisheries; genetic diversity of cultivated plants, farm livestock, and their wild relatives, including other socio-economically as well as culturally valuable species, is maintained; strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity; and, a significant proportion of the country's population, especially the youth, is aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.

Climate Change

165 The proposed project is consistent with India's National Action Plan on Climate Change (NAPCC) in general, and specifically with the following National Missions under the NAPCC and the corresponding State Action Plans for Climate Change (SAPCCs). The National Mission on Sustainable Agriculture (NMSA) by its emphasis on key dimensions of water-use efficiency (water-pumping emissions), nutrient management (CH_4 for NH_3 production; NOx emissions), and livelihood diversification (reduced deforestation and land degradation). The National Mission for a Green India (NMGI) by linking mitigation objectives with extensive co-benefits for adaptation, biodiversity conservation, sustainable land management, and livelihood improvement. Specifically, this proposed project will contribute to the following NMGI targets: (i) increasing forest/tree cover to the extent of 5 MHa and improving the quality of forest/ tree cover on another 5 MHa of forest/ non-forest lands, (ii) improving the ecosystem and provisioning services of forests and other ecosystems, and (iii) increasing forest-based livelihood income of about 3 million households. The National Water Mission, through initiatives aimed at water conservation and water use efficiencies (water-pumping emissions). The National Mission on Strategic Knowledge for Climate Change (NMSKCC), by integrating critical aspects of knowledge management into programming and strengthening the policy-

related linkages between climate change, biodiversity conservation, and sustainable management of land and forests.

166 The project will support the associated Green India Mission (GIM) that reflects the Government of India's 12th Five Year Plan (2012-2017) priorities. This will be achieved by pursing: (i) significantly reduced rate of decline in NDVI in buffer zones of targeted biospheres; and (ii) halted decline in NDVI in the core zones of targeted biospheres.

Land Degradation

167 The proposed project is aligned with India's current draft National Action Programme (NAP) to Combat Desertification, Land Degradation and Drought of 2015-2030. The document recommends adoption of sustainable land management practices, diversification of high value agriculture for food and nutritional security, focus on small and marginal farmers, regions lagging, such as dryland/ rain-fed areas and Eastern India and empowerment of women in the agricultural sector. With about 32% of its land affected by land degradation, India is strongly committed to implementing the UNCCD. India actively participates in international events on desertification and is currently the Chair of the UNCCD Regional Implementation Annex for the Asia and the Pacific region. This proposed project is aligned with those efforts and initiatives, which include several of the aforementioned programmes and: National Initiative on Climate-resilient Agriculture (NICRA), Integrated Watershed Management Programme (IWMP), National Water Policy, National Watershed Development Project in Rainfed Areas (NWDPRA), the National Programme on Organic Production (NPOP), National Mission for Sustaining the Himalayan Ecosystem (NMSHE), National Mission for Integrated Development of Horticulture (NMIDH), National Livestock Mission (NLM), Watershed Development in Shifting Cultivation Areas (WDSCA), and Integrated Nutrient Management (Soils).

Sustainable Forest Management

168 India strongly supports SFM. This project will be very helpful and in line with the National Submission on Agro-Forestry. The Forest Conservation Act (1980, amended 1988) reduced forest conversion rates from about 150,000 ha per year to around 30,000 ha per year, which helped increase forest cover in India from about 64 MHa in 1981 to about 69 MHa in 2011. The National Forest Policy (1988) has further built on those successes to strengthen conservation of natural heritage by preserving remaining natural forests and associated genetic resources. The National Forest Policy aims to increase forest cover through afforestation, elimination of clear-cutting, agroforestry, substitutions for commercial and fuel woods, improved forest inventories, prioritization of wildlife corridors, and significant national investments. This policy established the Joint Forest Management Programme. Additional programming includes the National Afforestation Programme, the National Agroforestry Policy, the National Guidelines on Joint Forest Management (1990), the National Conservation Strategy, the Policy Statement on Environment and Development (1992), the Compensatory Afforestation Fund Management Planning Authority (CAMPA, 2009), the National Bamboo Mission, and the National Green India Mission. The Forest Rights Act (2006) provides tenurial security for sustainable production in and around forests, community-based forest management, and prioritized conservation of critical wildlife habitats. These acts and policies are also supported by numerous specialized institutions, such as the Arid Forestry Research Institute (AFRI), Central Arid Zone Research Institute (CAZRI), Central Forestry Establishment Board, Forest Survey of India, Botanical Survey of India, Indian Council of Forestry Research and Education (ICFRE), and Indian Institute of Forest Management (IIFM).

169 As an example of GoI's continuing commitment to SFM, the Steering Committee for India's 12th Five-year Plan (2013-2017) emphasized the importance of joint forest management (JFM): "JFM also needs to be evolved into a higher platform 'JFM Plus' where the livelihood promotion of the communities, especially women Self Help Groups (SHGs) formed for such activities, gets increased importance in the conservation and development of forests. To achieve this, JFM Committees are required to be adequately and strategically revitalized and empowered." Forest management responsibilities also extend to the state level. This proposed project is aligned with these national and state initiatives and priorities, including strong support for aligning JFM, sustainable use, and conservation objectives.

Agricultural Priorities

170 The project aligns with the National Mission for Sustainable Agriculture, including priorities related to Rainfed Area Development, On Farm Water Management, Soil Health Management, Climate Change and Sustainable Agriculture - Monitoring, Modelling and Networking (CCSAMMN). The project is consistent with the imperatives and strategies in the National Mission for Integrated Development of Horticulture (NMIDH), the National Initiative on Climate-resilient Agriculture (NICRA), the National Agro-forestry Policy, the National Water Policy, the Integrated Watershed Management Programme (IWMP), the National Watershed Development Project in Rainfed Areas (NWDPRA), the National Programme on Organic Production (NPOP), National Livestock Mission (NLM), the Watershed Development in Shifting Cultivation Areas (WDSCA) as well as the Integrated Nutrient Management (Soils). The project will contribute to meeting the target under the National Rural Livelihoods Mission to cover 70 million rural poor households, across 600 districts, through self-managed Self Help Groups (SHGs) and federated institutions and support them for livelihoods collectives.

1.9.2 Alignment with State priorities

171 The five project supported States have also articulated several development priorities that are relevant to this project. They are summarized below.

- **Madhya Pradesh:** This project will support several priorities identified in Madhya Pradesh's Vision 2018 Document (2013-2018), which sets out State's priorities for development and good governance. It is mainly aligned with the following key missions:

Mission 1: Expand the outreach of agriculture technology and irrigation to the remotest farms and consolidate the gains in the sector by promoting farm-level diversification and value addition, which has identified several activities that are in line with this project's objectives, including:

- Production and productivity shall be enhanced through better soil health management, strengthening the network for timely availability of inputs, modernizing the extension services and by widespread small farm mechanization.
- The Agriculture Marketing Board shall play a bigger role in facilitating the linkage of farmers directly and through Farmer Producer Organizations (FPOs).
- Conservation and propagation of indigenous breeds will be encouraged through induction of quality indigenous bulls to expand coverage under natural service.

Mission 17 Strive for a balance between developmental priorities and sustainable use of natural resources, which has identified several activities that are in line with this project's objective, including

- Protection of all major rivers and water bodies in the state shall be taken up.
- Rivers and water bodies to have zoning laws, by creating core and buffer zones to ensure protection from encroachments and water pollution.
- The nascent agro forestry initiative to promote production of timber, fuel wood and fodder on farmers' land shall be expanded.
- The social forestry initiative shall be strengthened to reclaim and protect fallow lands and open spaces.
- Expand tree cover and protect wildlife.
- Focus on increasing tree density of degraded forest areas.
- Increase tree cover in non-forest areas, including wastelands, ravines, canal sides and abandoned mining sites.

Mission 5 – Empower women to become equal partner in the socio-economic development of the state.

The project is also aligned with the tristate management plan for the National Chambal Sanctuary, particularly these key objectives under the plan:

- To look into the entire gamut of issues related to the conservation of gharials in the National Chambal Sanctuary
- To devise an institutional framework covering the action at the Centre-State level with the objective of ensuring proper coordination among all stakeholders in implanting the conservation programmes and actions for gharials
- To achieve better coordination between the three states and the centre for more concerted conservation initiatives.

- **Mizoram:** This project's objective and planned Outcomes and Outputs are in line with Mizoram's New Economic Development Policy. The policy identifies the need to promote sustainable agriculture practices such as organic farming – and has proposed implementing Organic and Traceable certification system in the State to give the State a market advantage.[32] It also proposes promotion of integrated farming systems that can enhance agricultural productivity and land use efficiency. The Policy also highlights the State's flagship programme of New Land Use Policy (NLUP) that aims to change current methods of unsustainable cultivation practices to new approaches to lead to economic development of the people, and to ameliorating the problem of environmental threats. The policy has also noted the need to promote sustainable resources management – for example, it has highlighted the need to address indiscriminate harvesting of bamboo that can cause environmental damage by supporting guided harvesting regime.

- **Odisha:** Odisha's 12th Plan Approach paper states that the state aims at broad-based and inclusive overall growth above 9% and above 4% growth in the agriculture sector. Agriculture, infrastructure and human development sectors (i.e., health, education, clean drinking water, sanitation, food security, and tribal and women development) are priority sectors.

  Greater efforts directed to improve agriculture and allied sectors are planned. This will include raising farm productivity through site-specific interventions, new technologies, affordable credit and other measures. Remunerative prices to farmers through appropriate market interventions will be focused on. Facilities for better storage and post-harvesting will be promoted. Irrigation will be augmented through check dams, deep borewells, mega lift projects and revival of traditional water bodies will be promoted on over 2 lakh ha land in first 3 years. More than 22% outlay for agriculture and allied sectors including irrigation and flood control is expected.

  There will be continued efforts to reduce regional, social and gender disparities with special attention to enhance welfare of ST, SC and women. Greater focus will be on depressed tribal dominated districts. District specific will be strengthened through decentralised planning at district and sub-district levels.

  The Vision Document-2036 in the centenary year of the birth of Odisha is aimed at ensuring the holistic development of Odisha. The document is being prepared according to the Sustainable Development Goals (SDG) set by the United Nations. Poverty eradication, infrastructure boost, providing quality healthcare services and education for all are some of the thrust sectors of the document.

  A management plan for the Similipal Tiger Reserve has been prepared for the period of 10 years from 2013-14 to 2022-23. The plan addresses issues relating to the protection of the tiger reserve; provision of site-specific habitat inputs for a viable population of the tigers, co-predators and prey animals without distorting the natural prey- predator ecological cycle in the habitat; delineation of dispersal pathways and corridors and ensuring that adjoining forest divisions have forestry operations compatible to tiger conservation. In addition, the plan also ensures the agricultural, livelihood, development and other interests of the people living in tiger bearing forests or tiger reserve.

[32] https://planning.mizoram.gov.in/uploads/attachments/288b1038294e96de117e720b57ebc742/new-economic-development-policy-nedp-.pdf

- **Rajasthan:** Rajasthan's overall development priorities are being presented in "Rajasthan Vision 2020- the way forward". The current State five-year plan ends in 2017. This project is well aligned with several priorities identified in the current State Plan, including:
    - Conservation of natural and cultural heritage and handicrafts and promotion of tourism;
    - Expansion of people's capabilities and enable them to access opportunities;
    - Enhancing farm productivity and income through crop - livestock integrated production system

  The project is also aligned with several "thrust areas" identified in the Plan, particularly:
    - Developing indigenous safeguards in agriculture for scanty, uncertain and fluctuating rainfall affecting agriculture in particular and economy in general;
    - encouragement to Animal Husbandry through conservation of indigenous breed, shift from veterinary health care to breed improvement, livestock extension services and promotion of livestock based industry
    - Improving quality of land and water;
    - Value addition to the agriculture through structural, financial, marketing and technological interventions; Enhancing participatory planning by empowering Panchayati Raj Institutions;

  The project is also well aligned with the Desert National Park management plan. The project is well aligned with all key objectives of the management plans, which include the following:
    - To maintain and improve the fragile and unique desert ecosystem in its natural form for times to come.
    - To protect the rare, threatened and endangered elements of flora and fauna of the desert.
    - To increase the population of Great Indian Bustard by securing the breeding areas and enriching its habitat.
    - To promote eco-development and ecotourism to achieve the overall development of the villagers.
- **Uttarakhand:** This project is well aligned with several priorities identified in Uttarakhand Vision 2022 Towards Robust Growth and Inclusive Development. For example, the project fits well under its focus on promoting a green economy by focusing on sectors where the state has a competitive advantage – where agriculture and tourism have been highlighted. The Vision has also emphasised the need to promote mixed forestry and for the State to position itself as a national leader in organic farming. The target for the State is to have 50% of the area under cultivation under organic production by 2022 and to institute an organic certification scheme. · The Vision also notes the need to foster agriculture research suited to local conditions and to upscale watershed development programme in the State.

  A comprehensive management plan has been developed for the Corbett Tiger Reserve Core, Buffer and connecting Corridor. A management plan for Rajaji National Park also exists.

1.9.3 Alignment with GEF focal areas

172 *The Case for an Integrated GEF Approach:* The nature of the challenges faced requires that this project takes an integrated, ecosystem-based approach. The project is not concerned with only one aspect of conservation. This is a landscape level project that will integrate productive and protected lands. The project will cover forested areas where SFM will be a critical element in the maintenance of ecosystem services. This includes areas where communities rely upon forest products for fodder and fuelwood as well as areas that are dominated by shifting agriculture. Likewise, the project will cover highly degraded landscapes. These are areas where grazing and intensive agriculture have taken their toll and resulted in the loss of soil, fertility, and even extensive degradation of aquatic wildlife habitat. Climate change mitigation will be an important element of the project approach and the Green Landscape programme. Current agricultural practices too often contribute to CC through the over-use of fertilizers, emphasis upon high emission crops, livestock management techniques, and of course forest management approaches. Finally, biodiversity is essential to this project. India is a centre for

agro-biodiversity and these crops are vitally important, particularly for the extremely rural, small holder farmers who are often associated with these marginally productive landscapes. Agro-biodiversity is also an often overlooked – but are quickly emerging as economic opportunity for rural families. These crops are generally well adapted to local conditions and they are now sought after by high-end retailers in metropolitan areas. Each of the project areas is selected because of its association with globally significant wildlife. This includes tigers, elephants, Gangetic dolphins, clouded leopards, and the Great Indian Bustard. These are some of the world's finest examples of conservation areas and they are under threat from agriculture. At the same time, as climate change and other factors impact protected area integrity, it is increasingly important that wildlife have access to areas beyond the protected area boundaries. This includes buffer and corridor habitat. This creates an increasing opportunity for human-wildlife conflict. This project will assist policy makers, extension Officers, private stakeholders and farmers to identify, incorporate, and address these issues in an integrated, ecosystem based manner.

173 *Fit with GEF Biodiversity Priorities:* The project will benefit protected areas in the way envisioned under Programme 9 of the GEF-6 Biodiversity Strategy. The project will assist the Government of India to prioritize investments in agriculture to deliver global environmental benefits at locations of highest conservation value. India's protected areas regimes provide habitat for the greatest concentrations of the nation's remaining globally significant biodiversity. The project's target protected each house important flagship and indicator species such as tigers, Great Indian Bustard, elephant, and the Gangetic dolphin. Hundreds of thousands of people live around protected areas. These people are largely engaged in agriculture, both within and outside of protected areas.

174 BD-4, Programme 9 thinking captures this situation perfectly: "Protected areas are the conservation community's most successful management response to conserve and sustainably use biodiversity. However, protected areas do not exist as isolated islands of tranquillity where evolutionary processes continue uninterrupted by humans. Rather, protected areas are often located in mixed-use landscapes and seascapes where natural resources are managed or exploited — at times unsustainably — to satisfy human needs for food, water, wood, energy, and minerals. These resource users often unintentionally degrade biodiversity within and outside protected areas. In addition, production landscapes and seascapes also provide habitat for globally significant biodiversity. Managing the human-biodiversity interface requires additional and innovative approaches that help maintain the integrity of the protected area estate while ensuring persistence of biodiversity in more expansive geographies."

175 Agriculture is the main threat to the ecological integrity of these protected areas and associated biodiversity. There are also significant impacts in terms of SFM, LD, and CCM. As noted, current agricultural policies do not typically distinguish whether they are targeting locations of high conservation value or not. Protected areas are an indicator of high conservation value landscapes. By shifting current unsustainable agricultural practices to more environmentally friendly practices, India's protected area regime and associated globally significant biodiversity will benefit greatly. There are nearly 2.5 million hectares of protected areas within the five demonstration sites initially selected for this project. At least 1.8 million of these hectares will benefit from conservation improvements advanced by the project. This does not include surrounding buffer zones and the additional protected areas that will benefit from project upscaling once the GLCS is in place and other high conservation value landscapes are prioritized for agro-ecological production.

176 *Fit with GEF Land Degradation Priorities:* During the project period, ecosystem-based agricultural enhancements will positively affect millions of hectares of currently degraded, high-conservation-value areas. This will be amplified as lessons learned and policy improvements are mainstreamed to positively impact SLM within the agricultural sector nationally. This will result in a substantial reduction in the use of synthetic pesticides, herbicides, and fertilizers. Such inputs are largely responsible for losses of soil productivity, pose various threats to biodiversity, and are often net contributors to climate change. CSA and SLM models will promote more judicious water use, improving both the quality and quantity of surface and ground water. The project will support the implementation of sustainable forest management as part of an effort to conserve the ecosystems upon which both productive and protected landscapes depend.

177 *Fit with GEF SFM Priorities:* While forests and the ecosystem services they provide are critical to sustainable agriculture, including pollinators and water provisioning, agriculture is a primary driver of forest loss and degradation in India. As the GEF-6 programming directions state: "The expansion of agriculture is the main driver of forest loss worldwide. The actors involved range from small-scale farmers to large companies." This is clearly the case in India. The situation is evinced at the Mizoram site where shifting agriculture takes place. Forest and grassland degradation is also notable in Rajasthan where severe overgrazing both within and outside of the protected area harms forest health and reduces biodiversity value. Likewise, the protected area regime of Odisha is subject to widespread grazing impacts. The GoI estimates that this region has lost upwards of 25% of its forest cover to unsustainable agricultural practices. The northern arc of the Chambal River includes a band of riparian forest designated as an Alliance for Zero Extinction site and a Key Biodiversity Area, yet the area faces significant threats from the surrounding productive agricultural landscape and disjointed landscape management approaches. There are also indirect impacts to forest health resulting from over-harvest by local agriculturalists. This includes fodder production, fuel-wood consumption. The project, through its investments in generating sustainable flows of forest ecosystem services, including sustaining livelihoods of forest dependent people, will directly result in improving the quality of degraded forests and bringing a larger area under sustainable forest management practices.

178 Aligning with GEF-6 priorities, the project will take an integrated and landscape level approach to improving forest management. The project will promote an enabling environment for integrated planning. Under Component 1, the national Green Landscape Conservation Strategy will prioritize forested landscapes for integration with broader conservation efforts at national, state, and district levels. This will include the identification and monitoring of high value forests at both national and state levels. Under Component 2, the project will build capacity for SFM within local communities, further allying project effort with GEF priorities. For instance, participatory Farmer Field Schools will strategically improve land-user capacities to adopt forest-beneficial practices. This will cover tools and approaches such as: management of forests for ecosystem services; improved community-based livestock management; coppicing, including improved species selection for community growth of fuel-wood, plots; improved management of dedicated fodder crops to reduce forest forage; and, local alternatives to reduce the rate of timber and wood use for fencing, including live fencing and communal herding/ corralling.

179 The project will improve mechanisms for monitoring forest loss, forest degradation, and land-use change and integrate these. SFM monitoring will strengthen ground-up feedback to improve evidence-based decision-making and policy adjustments at national, state, and district levels. As noted in these responses, the project will mainstream consideration of gender issues and vulnerable groups into the proposed landscape approach to forest management, highlighting the links between ecological and social vulnerabilities.

180 *Fit with GEF CCM Priorities:* The project is fully aligned with CCM-2 Programme 4 to achieve relevant CCM global environmental benefits relevant to both enhancement of carbon stocks in forests and the support for climate smart agriculture. Interventions will generate critical benefits for climate change mitigation, biodiversity conservation and ecosystem health. The project will promote and foster accelerated adoption of innovative and management practices for GHG emission reduction and carbon sequestration through improved soil management practices, fertilization methods and precision agriculture measures. Mitigation-focused management practices in agriculture will reduce CH_4 emissions from rice, reduce CO_2 emissions from burning of crop residues, and reduce NOx emissions from fertilizers. Mitigation-focused management practices in LULUCF will be achieved through better forest management across multiple scales, supporting efforts to diversity livelihoods and build capacity for SFM.

181 Demonstrations and upscaling of ecological restoration of degraded landscapes including community forests and rangelands will deliver tangible sequestration benefits. Proposed policy reforms will develop incentives to innovate mitigation practices in forest, agriculture and land management. This includes subsidy shifts to incentivize activities that build SOC. The project will strengthen accounting and MRV. This will be accomplished through improved monitoring and adoption of innovative tools such as FAO's Collect Earth suite for improved analysis and use of satellite data for LULUCF policies, management, and MRV. A key project element will be working to maintain crop and animal

genetic diversity. The protection of Crop Wild Relatives will be advanced through innovative approaches such as Farmer Field Schools at high conservation priority landscapes with particular emphasis upon women cohorts.

182 Preliminary estimates from FAO's Ex-Ante Carbon-balance Tool (ExACT) indicate that this proposed project will avoid or sequester 26.9 Mt of CO_{2eq} over the seven-year project period and a 20-year capitalization period. This will be accomplished through a variety of interventions. More precise figures for CCM benefits have been determined. These will be further refined during implementation once stakeholder consultations have clarified site-specific interventions. This will include figures for benefits derived during the seven-year project cycle and estimates for long-term post-project benefits.

183 The project's global environmental and adaptation benefits related to the BD, SFM, LD, and CCM will be generated using an integrated, ecosystem-based approach. At the national level, unsustainable agriculture is a major contributor to environmental degradation. The project will result in the re-orientation of investment in the agriculture sector to be strategically aligned with the achievement of global conservation objectives at priority landscapes both within and proximate to the nation's uniquely valuable system of protected areas. As noted, these policy adaptations will be amplified and mainstreamed with India's agricultural policy framework at national, state, and district levels to positively impact the national agricultural landscape. New institutional frameworks will be in place at the national, state, and local levels to better coordinate strategic approaches integrate conservation more fully within the agriculture. As the first concerted effort to mainstream the achievement of global conservation benefits fully within the national agricultural policy framework, the project will generate a transformative shift in the way agricultural initiatives are funded, practiced, and monitored. Agricultural decision-makers will have the tools required to address key drivers of threats to biodiversity in areas of highest priority. This will positively impact the conservation of hundreds of thousands of hectares of priority landscapes across India. The impacts will be focused on delivery of BD, CCM, LD, and SFM as the productive agricultural sector becomes more fully engaged in directing agricultural support services towards ensuring that agriculture actively promotes long-term conservation.

184 The project's field-level efforts will work across five target landscapes. Each of these locations represents a unique ecosystem that hosts a wide array of globally significant species. The project intends to improve the farming practices of thousands of farm households at each location. A preliminary assessment indicates that each site will require a different set of tools: Rajasthan dry land agriculture and grazing and Great Bustard conservation; Chambal areas land degradation and freshwater ecosystems; Mizoram shifting agriculture, forestry and related GEBs including Clouded leopard habitat; Odisha cultivation, including rice production, with elephant and tiger habitat conservation; and, Uttarakhand SFM and Himalayan agriculture to improve conservation of tiger, elephants and other species associated with Corbett and Rajaji. Again, details regarding these targeted landscapes, sustainable agriculture interventions, strategic monitoring and baseline information will be further detailed during the implementation phase.

185 As noted, the project will use a participatory, strategic, and informed approach. This will be guided in large part by local priorities. The project will closely work with communities and farmers in each of the selected sites for interventions to promote the application of climate smart agricultural practices.

186 Please refer to the project's Results Framework for more specifics regarding the indicators.

Aichi Targets

187 Summary of anticipated contributions to Aichi Targets.

Table 19: Aichi Targets and India Green Ag Project Contributions

Aichi Strategic Goal	Project Contribution/Alignment
Goal A: Address the underlying causes of biodiversity loss by mainstream biodiversity across government and society	Aichi Target 1: Stakeholder awareness of the values of biodiversity and potential steps for conservation and sustainable use will be built through the project's capacity building, training, and awareness activities. Aichi Target 2: The project will assist stakeholders with target achievement by integrating biodiversity within national and local agricultural development and conservation plans. Aichi Target 3: The project is specifically designed to improve existing agricultural subsidies that negatively impact biodiversity conservation. Aichi Target 4: The strategic approaches set in place through project action will increase the sustainability of existing agricultural production methods
Goal B: Reduce the direct pressures on biodiversity and promote sustainable use	Aichi Target 5: The project will help reduce the loss of natural habitats through improved planning, use, and conservation of forests. Aichi Target 7: The project is designed to direct agriculture towards ensuring conservation of biodiversity Aichi Target 8: The project will assist farmers to change practices and reduce amounts of chemical inputs used across the priority productive landscapes
Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity.	Aichi Target 13: Agrobiodiversity conservation will be instrumental to project success
Goal D: Enhance the implementation through participatory planning, knowledge management and capacity building.	Aichi Target 14: The project is designed to help maintain and restore the ecosystem services upon which the local stakeholders depend. This will include fully taking into account the needs of women and indigenous/local communities. Aichi Target 15: The project will build climate change resilience and mitigation by improving the integrity of currently degraded ecosystem services
Goal E: Enhance the benefits to all from biodiversity and ecosystem services	Aichi Target 18: Traditional knowledge will be an important element of improved agricultural practices across priority landscapes

1.9.4 Alignment with FAO Country Programming Framework and FAO Strategic Framework

188 The Food and Agricultural Organization of the United Nations (FAO) has enjoyed a valuable partnership with India since 1948. FAO continues playing a catalytic role in India's progress in the areas of crops, livestock, fisheries, food security, and natural resources management.

FAO India's Country Programming Framework (CPF)

189 The Green Ag project outputs will contribute towards FAO India's Country Programming Framework (CPF) priority area two: 'effective natural resource management and community resilience'. The government of India's priorities serves as the primary driver for the FAO's programme in India. The

CPF represents a confluence of India's development goals and the FAO's Strategic Framework. The CPF was prepared with a strong involvement of national stakeholders, including the private sector and civil society. The CPF is motivated by FAO's own vision and key corporate principles that promote sustainability in production systems and balance the social, economic and environmental dimensions of sustainable food and agriculture.

190 The CPF advocates for FAO India to play a catalytic role in contributing to the three main priorities below:

(i) Stronger food and nutrition security systems and agricultural productivity and increased farm incomes, rural households have improved livelihood options and greater access to a nutritionally adequate food basket at household level;
(ii) Effective natural resource management and community resilience, focussing primarily on strengthening management of natural resources that are under threat and making communities more resilient to climate change and disaster risks; and,
(iii) Enhanced social inclusion, skilling and employability in the agriculture sector, people vulnerable to social, economic and environmental exclusion, especially women, tribal and marginalised farmers have increased opportunities for productive employment through jobs and entrepreneurship for sustainable livelihoods in the agriculture sector.

173. FAO India will play a critical role in the achievement of the country strategic priorities and outcomes as detailed in the UNSDF for 2018 – 2022. The UNSDF is aligned to the UN Sustainable Development Goals (SDGs). The SDF highlights FAO's priorities and role in India. The SDF contains the work of all UN entities in India and has been developed in partnership with the Government of India and other partners both within the UN and outside. There is a high level of interdependence among each priority area. Results of one priority area require inputs from other priority areas. Cross cutting issues such as governance, capacity building, gender, data and information sharing will be addressed as integral parts for each of the priority areas. FAO will use its comparative advantage as a specialised agency of the United Nations and use the knowledge it has gained over the years in designing and implementing programmes in India.

FAO Regional Office for Asia and the Pacific (RAP) Priorities

174. FAO's work in India is also guided by the priorities outlined by the FAO Regional Office for Asia and the Pacific (RAP). These priorities include to:

- Strengthen food and nutritional security,
- Foster agricultural production and rural development,
- Enhance equitable, productive and sustainable natural resource management and utilisation,
- Improve capacity to respond to food and agricultural threats and emergencies, and
- Coping with the impact of climate change on food and agriculture.

FAO Strategic Objective 2 (SO2)

175. FAO's vision is "A world free from hunger and malnutrition where food and agriculture contribute to improving the living standards of all, especially the poorest, in an economically, socially and environmentally sustainable manner". The three Global Goals of Members are: eradication of hunger, food insecurity and malnutrition, progressively ensuring a world in which people at all times have sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life; elimination of poverty and the driving forward of economic and social progress for all, with increased food production, enhanced rural development and sustainable livelihoods; and, sustainable management and utilization of natural resources, including land, water, air, climate and genetic resources for the benefit of present and future generations.

176. FAO is dedicated to supporting the 2030 Agenda for Sustainable Development. The FAO's strategic framework is designed to support achievement of the Agenda's Sustainable Development Goals and associated targets.

177. This project fits most directly with FAO's Strategic Objective 2: Make agriculture, forestry and fisheries more productive and sustainable. Under this objective, FAO will focus on building a stronger dialogue and integration within and across sectors and stakeholders to sustainably increase production and productivity, address climate change, biodiversity and environmental degradation in agriculture, forestry and fisheries in the context of nutrition and gender-sensitive food systems.

SECTION 2 – INNOVATIVENESS, POTENTIAL FOR SCALING UP AND SUSTAINABILITY

2.1 Innovativeness

178. The project is innovative in several ways, which are described below.

- *Multi-sectoral approach to mainstreaming:* Firstly, this is the first GEF funded project in India that will work from the national to local levels to mainstream environmental concerns into the agriculture sector. To ensure that the sector has access to necessary technical support, as well as continuous strong cross sectoral advocacy to integrate environmental concerns into its policies, plans and actions, strong inter-sectoral approach has been embedded in its implementation arrangements at all levels. The environment and other development sectors will also play crucial roles to support strengthening and implementation of the agriculture sector's environmental commitments. The involvement of the development sector is considered critical in this project, as the agriculture sector responds strongly to demands and incentives from these sectors. Therefore, although the primary focus of the project is to mainstream environmental concerns in the agriculture sector, it will also help mainstream environmental concerns and priorities in other development sectors by mobilizing their incentives (such as the rural employment guarantee scheme) that are linked to the agriculture sector. Therefore, the project is supporting the development of "convergence plans" at local levels to ensure strong coherence between different sector's plans and investments – so that they are aligned to landscape management objectives. The project will mobilize incentives and programmes from all relevant sectors to incentivize sustainable agriculture and natural resources practices.
- The project *builds on/ mobilizes both agriculture and environment sector's institutional arrangements* – for example, it proposes to use TSG and BMCs as some key institutional approach for environmental mainstreaming into the agriculture sector. These institutional arrangements derive from India's Biodiversity Act, 2002.
- The project's approach of promoting environmental considerations into the agriculture sector at *landscape level* also add an innovative dimension to the project. Many projects have focused on farm-level "greening" but it is critical for the agriculture planners, promoters, and farmers to understand and take on- board farm and wider landscape interactions. Whilst pollution from agriculture, and encroachment of farming into natural ecosystems are well understood threats to the environment, there are also additional impacts of agriculture that are related to its placement in landscape. For example, an organic farm or a farm conserving agrobiodiversity on its own may be considered more environmentally friendly. However, if its location interferes with connectivity between protected areas and is preventing wildlife movement between protected areas, then its impact will still not be positive in the perspective of ensuring global environmental benefits. Therefore, landscape level approach is a critical additional dimension for the agriculture sector to consider ensuring that its impacts are overall positive to global environmental values, ecosystem services, livelihoods and long-term resilience of these to climate change.
- The project aims to enhance *multiple global environmental benefits* at critical landscapes through mainstreaming activities in the agriculture sector. This focus on working at critical landscapes to maximize GEBs through the agriculture sector –especially to ensure that investments in environmental sector in such landscapes are not negated by the agriculture sector- adds a strong economic perspective to this project. The project aims to build economic case for this to be scaled up – and thus is an innovative approach to this mainstreaming effort.
- The project's work in *five different States and five agroecologically distinct landscapes* is expected to generate some common lessons that can provide stronger framework for national replication of the idea.
- Use of innovative tools and approaches – such as Collect Earth, promotion of dialogue platforms at National and State levels to discuss and prioritise issues on agriculture, environment and development to promote sustainable agriculture policies and practices; and embedding outcome

based planning over input based planning in agriculture are some additional innovative aspects of this project.

179. In summary, the proposed project will be designed to be highly innovative in its focus on integrated approach to mainstream global environmental concerns into agriculture policies, programmes, capacity building and critical landscape management. This will include creating an improved management regime designed for maintaining ecosystem services at scale. The project will work to achieve multiple environmental benefits in more unified way to deliver greater cumulative impact. This will be a "first" in regard to the strategic convergence within the agricultural sector to achieve BD, LD, SFM, and CCM benefits while simultaneously improving livelihoods and food security. This will be done through community-based approach designed to address past challenges related to disconnect between "good policy" and "poor implementation".

2.2 Potential for Scaling Up

180. The project will support the development of One National and five State Level Green Landscape Replication Strategies. These strategies are partly project exit strategy and are primarily about scaling up the Green Landscape idea in the five States and nationally. This idea for Green Landscape replication has been included as one of the indicators in the project's results framework under Outcome 1.1 "Number of national and State plans to continue Green Landscape approach at five landscapes and expand beyond project targeted landscapes endorsed by multi- stakeholders and with financing committed". Replication and catalysis will also be promoted through the project's communication, outreach and awareness-raising activities under Outputs 1.2.3 and 2.2.3. There will be formal, structured lesson learning undertaken as part of the project, particularly in the final year, the results from which will feed into the replication plan/activities.

181. The project will support the development of Green Landscape scale up plans in all five States it will operate. These States have several national level protected areas, around which the Green Landscape idea could be replicated. In the five States where the project will be working, there are 122 protected areas as noted in the table below, and there are at least 764 protected areas nationally, including the 122 in the five States.

Protected area designation	**Madhya Pradesh**	**Mizoram**	**Odisha**	**Rajasthan**	**Uttarakhand**	**Total**
National Parks	9	2	2	5	6	24
Wildlife Sanctuaries	25	8	19	25	7	84
Conservation Reserves				10	4	14
Community reserves						0
Total	34	10	21	40	17	122

182. In addition, they have several RAMSAR sites and Biosphere Reserves (designated under the Man and Biosphere programme of UNESCO) where the idea could be further replicated. Similarly, the idea of "Green Landscape" could also be easily replicated as ""Blue Seascapes" around to marine protected areas and other ecologically important coastal/ marine areas of India.

2.3 Sustainability

2.3.1 Environmental, Social and Economic Sustainability

183. The project will aim to achieve sustainability at all levels. The project will be designed to remove the key barriers to degradation vulnerabilities. Rehabilitation and agricultural improvements will rely on conserving biodiversity and natural ecological functionality. The persistence of these improvements will be enhanced through a hand-over strategy to be carried out as a phased transition that will be completed well prior to project close and endorsed by the project's steering committee. Institutional sustainability will be integral to the project's success. One of the fundamental aspects of this project's

design is that it will positively affect institutions at national, state, district, and local levels. Direct capacity-building will take place through training programmes designed to be launched during project implementation and carried forward post-project by strengthened institutions.

184. Institutional sustainability is being addressed through various project activities and outputs. National and State level inter-sectoral coordinating committees (created under Output 1.1.1) are expected to be formally integrated into existing government institutional structures. Towards the final years of the project, their possible institutional homes and operational modalities will be assessed and finalized. Project institutional structures at the district, and village levels under Output 2.1.1 are already envisaged under India's Biodiversity Act (2000) (such as Technical Support Group and Biodiversity Management Committee) and are thus will be sustained beyond project end. The Gram Panchayat or Village Council Support Units are also building on existing local governance structures and will continue beyond project end.

185. In terms of financial sustainability, the GOI's significant investments are expected to continue in agriculture, environment and development at local levels. The successful demonstration of Green Landscape management through convergence planning between different streams and sources of government finance to achieve socioeconomic and environmental goals (Output 2.1.5) is expected to create and sustain local demand, and impetus to continue coordinated approach to local planning and implementation. The project will support 'sustainability and exit strategies' (combined with a 'replication strategies' to promote the results and pilots to other states, and tied with the project's communication plan under Output 1.2.3), which will be developed in the final 18 months of the project. These would be endorsed by the national and State PSCs to ensure ownership and buy-in and thus ensure sustainability of project support institutional structures and actions.

186. The project's strong focus on gender equity and on ensuring free prior informed consent are also expected to strengthen social sustainability. Successful delivery of the project activities at the local level through activities under Outcome 2.2, particularly through the capacity building aimed at farmers to support them in adopting and implementing sustainable agriculture (Output 2.2.1), improving their on-farm agro-ecological farming practices (Output 2.2.5), and developing connections with existing and new markets to improve income generation (Output 2.2.2) are all expected to contribute to embedding project results at the local community level and thus increasing the likelihood of socio-economic sustainability. However, this assumes that there is a continued and stable market and premium/incentives for the farmers' agro-ecological products (this risk to sustainability is identified in the project's Theory of Change). Sustainability would be further enhanced through the adoption and successful implementation of the community based natural resource management plans (Output 2.2.4), which would be agreed and endorsed by local institutions and communities.

2.3.2 Gender Equality

187. Annex 8 of this document presents a summary of gender issues and an outline of gender strategy that will be used to develop a full strategy during project implementation for all States and for the national level work.

188. The FAO and the GoI at all levels are dedicated to ensuring that issues of gender are fully incorporated within project design and implementation. The Government of India and FAO are both fully dedicated to improving the status of women and through their involvement in decision making and participating in project activities. The project integrates gender related issues consistently throughout the proposed approach.

189. Women in rural India face several challenges. Women, and particularly women headed households often lack equitable access to decision-making, and capacity building opportunities. They are not equitably represented in the institutions and processes of knowledge generation and dissemination in relation to agriculture, biodiversity, land development and forest management. Women are often excluded from financial decision making in the household, community and in the other local bodies.

Women are the custodian of indigenous knowledge but are not part of knowledge management system. Under-representation of women in decision-making at the household and community levels

190. Women often have added responsibilities in farming communities. The work load for women in rural India is frequently very physically demanding and difficult. Women have multiple responsibilities in the household, including collection and maintenance of fuel, fodder and water. Women too often face low levels of literacy/education, poor health and nutritional levels. They have few options for gainful employment and few options of livelihood beyond agriculture. The responsibility and work load on rural women often increases due to large scale out-migration of men due seeking employment and livelihood opportunities in the region.

191. Although women face many challenges, there is not a meaningful and directed investment in improving their quality of life. There are very few extension services organized around women's needs and even fewer female agriculture extension workers.

192. The project will work to address these issues. This project is designed and will be implemented with gender related issues consistently embedded and reflected throughout the proposed approach. This will include, but not be limited to, following steps.

193. All project related, and relevant government policies, programmes and schemes will formally recognize and embed objectives related to improving the quality of life for rural women. All Green Landscape Conservation Strategies and other policy improvements under Component 1 will fully incorporate gender empowerment objectives.

194. Data collection and monitoring programmes under all project components will include gender disaggregated data. All project monitoring information will seek gender disaggregates data. As project will also espouse the principles of free prior informed consent in its implementation, the project will ensure that women are also involved in making decisions related to project activities planning and implementation,

195. Communications and knowledge management tools will have specific materials that will be relevant to women's empowerment. The project will use the knowledge management tool to facilitate the development of networks of women contributing to project objectives organized across all five target landscapes. The project will support this through a network of female cohorts established unit through Farmer Field Schools.

196. The guidelines for the establishment and operations of all implementation units will require minimum female representation. The project will also be implemented in such a way to make certain GoI mandated two female membership requirements for BMC is upheld and meaningfully implemented.

197. As noted under Component 2, the Farmer Field Schools and other ground-level interventions will be designed with gender specific functions and cohorts. These will serve as a tool to make certain women are full participants in developed strategies and investments. This will include establishment of gender specific capacity building and female cohorts throughout all of Component 2 activities.

198. Training and extension programmes will be tailored specifically to women's needs as defined and supported by women. This will likely include enhanced income of women in agriculture; participation in higher links of the green value chain; and, identification of gender specific production improvements. This will be augmented by funding and support for women exclusive sustainable agriculture initiatives under Component 2 of this project.

2.3.3 Indigenous Peoples

199. India is culturally an extremely highly diverse nation. All the Districts and Green Landscapes where the project will work have a diversity of ethnic and caste communities as noted earlier in this document. The phrase "indigenous peoples" is not formally used in India. India's Constitution has recognized special groups of people as "Scheduled Tribes" –and a 2011 Supreme Court ruling has equated these as indigenous people of India. However, in addition to these Scheduled Tribes, the

Indian Constitution also recognizes the North-Eastern States of India as "Scheduled Six" areas. Madhya Pradesh 46, Mizoram 15, Odisha 62, Rajasthan has 12 ST, Uttarakhand has 5 tribal communities listed as scheduled tribes[33]. Of the project related districts, Mayurbanjh of Odisha and Seopur in Madhya Pradesh are considered Scheduled Five Area. Mizoram falls entirely under Schedule Six.

200. Both FAO and the Government of India place a high value upon the unique cultural and environmental contribution and needs of indigenous peoples. Both FAO and the GoI are very sensitive to these issues. This is reflected in the Government of India's programmes specifically designed to support indigenous peoples, as well as FAO's own policies.

201. In the first six months of the project implementation, a detailed landscape assessments will be undertaken, which will help determine priority geographic locations and priority activities to be implemented at these locations to help achieve this project's objective. Such planning will be done in a very participatory way and final plans and proposed actions will be based on full free, prior and informed consent by the relevant communities – including women and youths of the targeted locations. FPIC will be embedded in all aspects of project implementation throughout the life of the project, as per FAO's Policy on Indigenous and Tribal Peoples[34] and FAO's Manual on FPIC[35]. FPIC steps 1 to 4[36] will be implemented during the first six months of the project implementation. FPIC steps 5 and 6[37] will be embedded in the project implementation, particularly in monitoring and evaluation, and in the closure phases. Local communities will be made aware on the requirement for the project to obtain FPIC for planned activities, and if they feel this is not being sought, they will be made aware on the project's grievance mechanism.

2.4 Human Rights Based Approaches (HRBA) including Right to Food, Decent Work, Accountability to Affected Populations

202. This project will contribute directly to the FAO's voluntary guideline on Right to Food Guidelines (2004), particularly Guideline 2: Economic development policies; 2.5 States should pursue inclusive, non-discriminatory and sound economic, agriculture, fisheries, forestry, land-use, and, as appropriate, land-reform policies, all of which will permit farmers, fishers, foresters and other food producers, particularly women, to earn a fair return from their labour, capital and management, and encourage conservation and sustainable management of natural resources, including in marginal areas. Component/ Outcome 1 of this project primarily deals with strengthening the enabling environment (institutions and policies) to support sustainable agriculture that will enable inclusive approaches.

203. In addition, the project, through its Outcome/ Component 2 will also contribute directly to 2.6: Where poverty and hunger are predominantly rural, States should focus on sustainable agricultural and rural development through measures to improve access to land, water, appropriate and affordable technologies, productive and financial resources, enhance the productivity of poor rural communities, promote the participation of the poor in economic policy decisions, share the benefits of productivity gains, conserve and protect natural resources, and invest in rural infrastructure, education and research. States should adopt policies that create conditions that encourage stable employment, especially in rural areas, including off-farm jobs.

204. **Decent employment:** The project's overall support of sustainable and diversified agriculture, and natural resources management at selected locations are expected to lead to safer (through less or judicious use of agrochemicals), improve productivity and generate additional employment. Specific

[33] http://www.tribal.gov.in/ST/LatestListofScheduledtribes.pdf
[34] FAO Policy on Indigenous and Tribal Peoples, 2010: http://www.fao.org/docrep/013/i1857e/i1857e00.pdf
[35] FAO FPIC Manual, 2016: http://www.fao.org/3/a-i6190e.pdf
[36] FPIC step 1: Identify the Indigenous Peoples' concerns and their representatives; FPIC step 2: Document geographic and demographic information through participatory mapping; FPIC step 3: Design a participatory communication plan and carry out iterative discussions through which project information will be disclosed in a transparent way; and FPIC step 4: Reach consent, document Indigenous Peoples' needs that are to be included into the project, and agree on a feedback and complaints mechanism.
[37] FPIC step 5: Conduct participatory monitoring and evaluation of the agreement, and FPIC step 6: Document lessons learned and disclose information about project achievements

examples of new employment generated by the project include Pashu Sakhis/ Prani Mitras under Output 2.3; and through the creation of new value chains for sustainably produced agriculture and non-timber forest products through Output 2.3. Under this Output, the project will also facilitate the creation of new Producers Organizations. In addition, sustainable natural resources management will contribute to strengthening local livelihoods (for example, in Odisha, the silk producers depending on the collection of silkworm cocoons from the wild will be able to sustain and expand their production). Special consideration to poor and valuable, especially indigenous communities will be given by the project in ensuring decent employment.

2.5 Capacity Development

205. As noted in FAO's Capacity Development Strategy, this project addresses all three dimensions of capacity building: *individual capacities* (e.g. Knowledge, skills and competencies), *organizational capacities* (e.g. performance of organizations, cross-sectoral, multi-stakeholder coordination / collaboration mechanisms) as well the *enabling environment* (e.g. sound regulatory and policy frameworks, institutional linkages and enhanced political commitment and will).

206. The project is undertaking capacity building at the National, State, district, sub-district and community, and individual farmer levels. Examples of all three dimensions of capacity building in this Component/ Outcome include the following:
    - *Individual capacities:* Involvement of National and State policy makers in National and State dialogues are expected to build their awareness and capacities to engage effectively in multi-stakeholder negotiations and on priority issues related to agriculture, environment and development. Several trainings are aimed at technical staff, in developing community level technical extension workers, and in strengthening individual farmer's capacities through farmer field schools.
    - *Institutional capacities:* Institutionalization of multi-stakeholder bodies will aid organizational performances by ensuring resources/ knowledge sharing and building on each other's' work (particularly National and State Steering Committees) and of the TSG. Community natural resources management groups, farmers' groups to promote green value chains.
    - *Enabling environment:* the above-mentioned capacities are ultimately aimed at strengthening the enabling environment to promote and replicate Green Landscape approach *at all levels.*

207. Annex 9 of this document presents draft outline of this project's capacity building strategy.

SECTION 3 – INSTITUTIONAL AND IMPLEMENTATION ARRANGEMENTS

3.1 Institutional Arrangements

208. This project is planned to be implemented in the five project States using FAO's Operational Partners Implementation Modality (OPIM), based on fiduciary assessments and development of appropriate risk mitigation plans. OPIM modality is "implementation of projects/programmes involving the transfer of funds to Operational Partners for implementation of program/project components on the basis jointly defined and shared program/project goals where FAO retains overall accountability to the Resource Partner[38] and the Government for proper management of funds, technical quality and results achieved." Prior to confirmation of the use of this modality, an independent assessment by a qualified audit firm will assess the proposed partners' processes and mechanisms for Funds Flow, Organizational Structure and Staffing, Accounting Policies and Procedures, Internal Audit, Financial Audit, Reporting and Monitoring, and information Systems and Procurement. Based on the assessment, the partner's capacity will be classified into one of the following categories: high risk, significant risk, medium risk and low risk. Appropriate mitigation plan for fiduciary risks will have to be developed for partners based on risk assessment, which will need to be included as part of project implementation plan.

209. About 85 percent of the GEF funds will be routed to State Partners through the OPIM mechanism to implement project activities as outlined in the full project document. As discussed with the Ministry of Agriculture and Farmers Welfare, FAO will help recruit and manage the national project implementation unit to provide technical support to the Ministry to implement the project. In either case- whether the execution is through OPIM or direct execution – the approval of National Project Steering Committee (NPSC) will be compulsory for each and every expenditure item. This will be ensured through the approval process of Annual Work Plan and Budget (AWPB). Similarly, the CAAA will be provided with full set of expenditure statements made under the project.

- Central-level: FAO India will sign a Grant Agreement with the Department of Economic Affairs, Ministry of Finance, which is the Government of India (GoI) Political Focal Point and a Government Cooperative Programme (GCP) agreement with the Ministry of Agriculture and Farmers Welfare (MoAFW). This will be an umbrella agreement that includes all the five agreements that FAO will sign with the Operational Partner (OP) in each state.
- State-level: FAO will sign an agreement with the Operational Partner (OP) in each State using the OPIM modality, following a capacity assessment of the potential POA. Disbursement of funds to the OPs will be in accordance with the Rules 237 (ii) and 238 (3) of the Government of India's General Financial Rules (GFR), Chapter 10, Budgeting and Accounting of Externally Aided Projects.

210. The OP will not be encouraged to enter into a sub-contract.

211. The details on the endorsement mechanism for the Annual Work Plan and Budget (AWPB), and the fund flow has been described in Annex 7.

3.1.1 Roles and responsibilities of main institutions

212. The Ministry of Agriculture and Farmers Welfare (MoAFW) is the lead Executing Agency of this project at the national level. The Ministry's Natural Resources Management (NRM) Division under the Department of Agriculture, Cooperation and Farmers' Welfare (DACFW) will be the lead unit for this project's implementation. The project will support the establishment of a National Project Management Unit (NPMU) to support the NRM Division.

213. The Ministry of Environment, Forest and Climate Change, which hosts the GEF Operational Focal Point for India, and has overall responsibility to ensure that portfolio of GEF projects are well coordinated will also play critical role in overall project implementation.

[38] a funding entity which provides funding to FAO for projects/programmes. For this project, the Global Environment Facility (GEF) is the resource partner.

214. *Ministry of Finance (CAAA):* The Ministry of Finance is the political focal point of GEF projects in the country. The Multilateral Institutions Division in the Department of Economic Affairs (DEA) located in the Ministry of Finance coordinates the GEF investments. FAO, as the GEF agency, will sign a grant agreement with DEA for project implementation. The Ministry has direct management responsibilities for a national system of protected areas, and thus has a direct stake in promoting sustainable Green Landscape approach.

215. The project will be implemented using FAO's Operational Partners Implementation Modality (OPIM) modality in the five project States. The State government has identified "nodal agencies" to lead the project implementation in each of these, which are called Operational Partners.

216. *Operational Partners:* The project will have an Operational Partner in each of the five project states—Rajasthan, Odisha, Uttarakhand, Mizoram, and Madhya Pradesh. Nodal Departments for the project in each state have been designated by the office of the Chief Secretary of each State. They, in turn, will -nominate the Operational Partner for the day-to-day project management. The following are the nodal agencies for this project in each of the five States:

Table 20: Project Nodal Agencies in Five Project States

State	Nodal Agencies
Madhya Pradesh	Directorate of Farmer Welfare and Agriculture Development
Mizoram	Directorate of Agriculture
Odisha	Department of Agriculture and Farmers Empowerment/ IMAGE
Rajasthan	Directorate of Agriculture
Uttarakhand	Watershed Management Directorate

3.1.2 Project GEF Implementation Agency Roles and Responsibilities

217. The Food and Agriculture Organization (FAO) of the United Nations is this project's GEF Implementing Agency. FAO's primary roles in the project as a GEF Implementing Agency[39] summarized in the table below. These services will be funded from the GEF agency fee it receives for this project, in consonance with the GEF's operational policies and procedures for GEF Implementing Agencies. Any additional technical or project management services provided by FAO, if requested by the government, will be funded through project budget.

Table 21: Summary of GEF Implementing Roles and FAO Approach to fulfilling those roles

GEF Implementing Agency Roles	Summary of FAO approach for its IA role
Mount at least one supervision mission per year, including briefing operational focal points on project progress	FAO will nominate Lead Technical Officer (LTO) for this project from its Asia Pacific Regional Office with project-relevant background. LTO or his/ her nominee will mount at least one mission per year to supervise the project.

[39] https://www.thegef.org/sites/default/files/council-meeting-documents/C.39.9_Fees_and_Project_Management_Costs%2C_October_20%2C_2010_4.pdf

GEF Implementing Agency Roles	Summary of FAO approach for its IA role
	In addition, a dedicated *technical* Funding Liaison Officer (FLO) will be also be associated with this project from the FAO GEF Coordination Unit (the Unit is based in FAO's Headquarters in Rome, Italy). She/he will also undertake supervision missions as necessary. FAO's Country Office in India (FAOIN) will also have a supervisory role for this project. The head of this office will be the Budget Holder (BH).
Provide technical guidance, as necessary, for project implementation.	The LTO, FLO and FAOIN will provide technical guidance as necessary. A committee composed of the LTO, LTO and BH, with other relevant FAO Officers is called FAO's "Project Task Force". As this project, will be implemented through OPIM modality, the PTF will also include designated national Officers/experts from the government. This Task Force will meet regularly (usually virtually).
As necessary, include technical consultants during supervision missions to advise government officials on technical matters and provide technical assistance for the project as needed.	The LTO, FLO and BH and/or his/her designate from the Country Office will provide technical support. The LTO has an additional task of clearing TORs of technical consultants and their reports to ensure high technical quality.
Oversee the preparation of annual project implementation reports for submission to the GEF Secretariat.	The LTO, FLO and BH all have roles in supporting this process and will also provide their ratings on project's annual implementation, as well as its overall progress since project start.
Undertake the mid-term review, including possible project restructuring. Send a copy to the GEF Secretariat.	The BH will commission the mid-term review, in consultation with the LTO, FLO, and FAO's Office of Evaluation (OED) as well as with the Government of India.
Project completion and evaluation: Oversee the preparation of the Project Completion Report/Independent Terminal Evaluation, submit the report to the GEFEO and send a copy to the GEF Secretariat.	FAO's OED will commission the final/ terminal evaluation in consultation with project executing agencies at national and State levels and the PTF.
Prepare project closing documents	BH will lead this, in partnership with the executing agencies
In addition, FAO will also play important role in financial management of the project, such as: Pay advances to the executing entity and review financial reports. Monitor and review project expenditure reports. Prepare periodic revisions to reflect changes in annual expense category budgets. Prepare the financial closure of the project for submission to the GEF	• Finance staff from FAO's Country Office in India, Regional Office and FAO Headquarters will play a role in this. • FAO's GEF Coordination Unit (based in FAO HQ, Rome) will also have a *financial* Funding Liaison Officer (FLO) who deals exclusively on finance/ budget issues. She/he will also support the project.

218. The above summarized FAO specific roles and responsibilities are described in further detail below.

The FAO Representative in India, will be the Budget Holder (BH) and responsible for the management of the GEF resources and all aspects of the Operational Partners Agreementthat will be signed between FAO and the State Nodal Agencies. As a first step in project start-up, the FAO Representation in India will establish an interdisciplinary Project Task Force within FAO to guide the implementation of the project. The BH, working with the Project Task Force and the related government agencies, will be responsible for ensuring timely operational, administrative and financial management of the project. The BH (supported by FAO staff and/ or consultants) will be responsible for: periodic monitoring of project progress, and oversight of financial management, procurement and project progress and financial reporting. Final approval of the use of GEF resources rests with the BH, as outlined in the FAO's rules and procedures. The FAO Representative's responsibilities will primarily be to:

- be responsible for the management of project resources and all aspects as per execution agreements between FAO and the executing partners;
- represent FAO in National Steering Committee and in State Steering Committees as appropriate
- authorize the disbursement project's GEF resources based on satisfactory reporting on project progress and statement of expenditures
- ensure compliance with FAO's standards and policies
- review financial reports provided and supervise the financial management and use of resources, including clearance of Budget Revisions in consultation with the FAO LTO, the CBC/GEF Coordination Unit and the Investment Centre Division Budget Group
- conduct procurement activities as required and in agreement with the government, based on the assessment of internal procurement capacity;
- monitor all areas of work and suggest corrective measures as required;
- submit to the GEF Coordination Unit, the CBC Budget Group and the LTO six-monthly financial reports on the use of GEF resources (due 31 July and 31 January) that show the amount budgeted for the year, amount expended since the beginning of the year, including un-liquidated obligations (commitments) including details of project expenditures on an output-by-output basis, reported in line with project budget lines as set out in the project budget included in the Project Document;
- ensure that project partners record and provide information on co-financing contributed during the year for inclusion in the PIR;
- be accountable for safeguarding resources from inappropriate use, loss, or damage;
- be responsible for addressing recommendations from oversight offices, such as Audit and Evaluation; and
- establish a multi-disciplinary FAO Project Task Force to support the project
- Ensure timely progress reporting as required by FAO and GEF
- Support mid-term review and final evaluation missions

- review progress reports submitted by the Operational Partners and ensure compliance with the agreed deliverables in the detailed workplans, including technical quality of the work performed;
- review and certify both Requests for Funds and Financial Reports against progress reports and the Operational Partner Agreements' (OPA) requirements on eligibility of expenditures and advise the BH on next instalment of funds;
- advice to the OPs on the preparation of documents, workplans and reports ensuring compliance with FAO requirements;
- monitor and implement agreed risk mitigation and assurance plans which will include spot checks and audits. Based on findings and recommendation, ensure follow up on remedial actions by OPs;
- manage contracts and monitor the work and quality of deliverables of the services provided by the Third Party Service Provider (Audit, spot-check, monitoring Agent activities etc.);

- ensure that OPs maintain records of supporting documents for each financial transaction to be made available to potential Resource Partners' verification missions;
- review and advise the BH on any proposed revisions of approved plans and budgets of the project component implemented by the OPs;
- prepare financial and narrative consolidated reports for submission to GEF;
- prepare amendments to the Operational Partners Agreement, as required;
- represent FAO in the National Steering Committee and in State Steering Committees as appropriate;
- ensure that project partners record and provide information on co-financing for inclusion in the PIR;

The FAO Lead Technical Officer, the LTO will ensure the application of FAO technical standards and policies during project implementation. S/he will provide technical advice and backstopping to the project and support the Budget Holder in responding to requests from the government for guidance on specific technical issues during project execution, in consultation with other relevant FAO technical Officers worldwide, as necessary. The LTO will:

- review and give no-objection to TORs for technical consultancies and contracts to be performed under the project and to CVs and technical proposals short-listed by the project team for key project positions, goods, minor works, and services to be financed by GEF resources;
- Review and clear final technical products of the project financed by GEF resources
- review and approve project progress reports submitted by the project teams to the Budget Holder;
- support the Budget Holder in reviewing, revising and giving no-objection to AWP/B submitted by the government and to be approved by the Project Steering Committees at State and the national levels;
- contribute to the preparation of the annual Project Implementation Review report, to be submitted for clearance and completion by the GEF Coordination (CBC) which will subsequently submit the PIR to the GEF Secretariat and Evaluation Office as part of the Annual Monitoring Review report of the FAO-GEF portfolio.
- field annual (or as needed) project supervision missions;
- review and revise TORs for the midterm evaluation, participate in review mission, including the midterm workshop with all key project stakeholders, development of an eventual agreed adjustment plan in project execution approach, and supervise its implementation supported by the FAO Project Task Manager.

The Headquarter (HQ) Technical Officer is a member of the PTF. The HQ Officer will be identified, if such expertise is not available at the Asia Pacific Regional Office, within the relevant technical expertise that will complement technical capacities of the LTO - within FAO technical departments. The HQ Technical Officer will provide effective functional advice to the LTO to ensure adherence to FAO corporate technical standards during project implementation, in particular:

- Supports the LTO in monitoring and reporting on implementation of environmental and social commitment plans for moderate projects, in particular the implementation of FPIC.
- Provides technical backstopping for the project work plan.
- May be requested to support the LTO and PTF for implementation and monitoring.
- Supports the LTO and BH in providing inputs to the TOR of the Final Evaluation as requested by OED.

The GEF Coordination Unit (CBC) hosts the two Funding Liaison Officers for this project (on technical and one financial). The Unit will review and approve project progress reports, implementation reviews and financial reports and budget revisions. The GEF Coordination Unit will review and clear the annual Project Implementation Reviews (PIR) and undertake supervision missions as necessary. The PIRs will be included in the FAO GEF Annual Monitoring Review submitted to GEF by the GEF Coordination Unit. The GEF Coordination Unit will also participate in

the mid-term and final evaluations and recommend corrective actions in the project implementation strategy as needed. The GEF Coordination Unit will, in collaboration with the FAO Finance Division, request transfer of project funds from the GEF Trustee based on four monthly projections of funds needed. The FLOs will maintain corporate relations with resource partners throughout the project cycle. During Implementation, she/he submits progress reports to resource partners and supports budget holders as required in all areas of operations, including budget revisions.

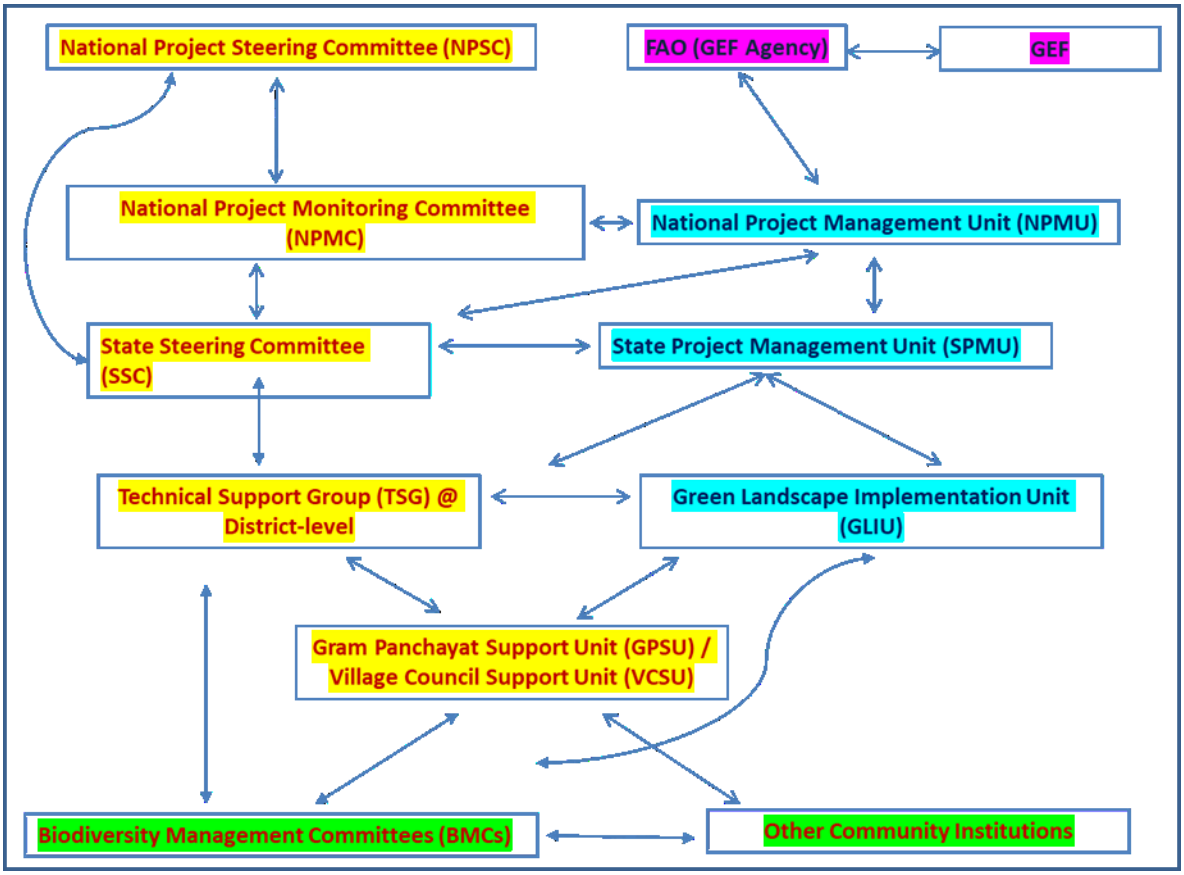
The FAO Finance Division will clear budget revisions, provide annual Financial Reports to the GEF Trustee and, in collaboration with the GEF Coordination Unit, call for project funds on a six-monthly basis from the GEF Trustee.

Project Task Force: FAO's project task force is a management body established for each of FAO field projects/programme. The PTF consists of representatives of FAO units which areas of specialization are covered by the project and which have an active role to play in the project development and implementation. Members of the PTF are designated by their respective units from among staff capacitated and experienced so as to respond to the project needs. The PTF members constitute the right skill mix for the project; they pool their experience and expertise to work as a team mandated with ensuring that the project is formulated and implemented in a coherent and consistent manner and complies with the Organization's goals and policies as well as with the provision of adequate levels of technical, operational and administrative support throughout the project cycle. The PTF is established by the Budget Holder, who is the PTF Chairperson. **As this project is being implemented using OPIM modality** the PTF will be constituted in collaboration with the relevant national authority and will include designated national Officers/experts. The LTO and FLOs will be members of this Task Force, as well as relevant FAO Headquarters Technical Officers, as appropriate.

3.1.3 National and State Project Implementation Arrangements

219. The project's overall implementation arrangement is summarized in the diagram below.

Figure 2: Project Implementation Arrangements



220. As illustrated by the colour codes above the project has primarily three types of institutions involved in the overall project implementation— yellow coloured bodies are primarily composed of government institutions that provide Policy Guidance and Coordination between multiple sectors, the green coloured "institutions" are primarily community institutions, and the blue coloured "institutions" are project financed project implementation teams.

Table 22: Project Policy Guidance and Coordination committees in brief

Project Policy Guidance and Coordination	Primary Responsibility
National Project Steering Committee (NPSC)	Provides overall guidance and strategic leadership to create synergies for a multi-sectoral coordination in project implementation; and facilitates 'mainstreaming' of relevant project findings and recommendations in National policy. The Project will work towards institutionalizing the NPSC as the 'National Green Landscape Coordination Unit (NGLCU), which will be responsible for the development of a national strategy and action plan that could eventually lead to the formulation of a National Green Landscape Policy.
National Project Monitoring Committee (NPMC)	Monitors project implementation and is responsible for providing general oversight in the project execution.
State Steering Committee (SSC)	Provides overall guidance to the State Project Management Unit (SPMU) in project implementation; and facilitates mainstreaming of relevant project findings and recommendations into state policy.

Project Policy Guidance and Coordination	Primary Responsibility
	The Project will work towards institutionalizing the SSC, in each state, as the 'State Green Landscape Management Unit' (SGLIU), which will provide strategic leadership to create synergies for a multi-sectoral coordination in managing Green Landscapes within the state and be responsible for the development of a state strategy and action plan, which could eventually lead to the formulation of a State Green Landscape Policy.
Technical Support Group (TSG) District	Under the leadership of the District Collector, monitor project implementation at the field-level and will be responsible for providing general oversight in the project execution. The TSG will provide strategic leadership towards the management of Green Landscapes within the district. The TSG could potentially be established by the State Biodiversity Board (as mandated by the National Biodiversity Authority) or could be the ATMA platform.
Gram Panchayat /Village Council Project Support Unit (GP-PSU)	Plays a critical role in project implementation. Facilitates synergy between GP development plans and project activities.

221. Biodiversity Management Committees (BMCs) will be the key community institutions at the ground-level. The project will work with the BMCs to strengthen their capacity to deliver the mandate of conservation, sustainable use and documentation of biological diversity. The BMCs will work in close coordination with the local governing bodies, such as *Gram Panchayats* (GPs) /Village Councils and other community natural resource management institutions.

Table 23: Project community institutions in brief

Community Institutions	Primary Responsibilities
Biodiversity Management Committees (BMCs)	BMCs are legally designated bodies under the Biological Diversity Act 2000. They support conservation, sustainable use and documentation of biological diversity in the GPs of the Green Landscape. BMCs within the Green Landscape will be supported by the TSG/ATMA platform established in each district. The BMCs will design, implement, monitor and evaluate the Green Landscape Management Plan (GLMP) in a Green Landscape.

222. Project implementation will be primarily supported by the National Project Management Unit (NPMU), State Project Management Unit (SPMU) and Green Landscape Implementation Unit (GLIU).

Table 24: Project Implementation Units

Project Implementation Units	Primary Responsibilities
National Project Management Unit (NPMU)	Established by the FAO. Provides technical assistance and ensures effective implementation of project components and coordinates all monitoring and reporting tasks at national-level.

Project Implementation Units	Primary Responsibilities
State Project Management Unit (SPMU)	Established by the Operational Partner (OP) in each state. Works in close coordination with the NPMU for effective implementation of project components and coordinates all monitoring and reporting tasks at state-level.
Green Landscape Implementation Unit (GLIU)	Established by the Operational Partner (OP) in the landscape. The GLIU will be responsible for the day-to-day project implementation in the landscape. GLIU works in close coordination with the SPMU for effective implementation of project components and coordinates all monitoring and reporting tasks at state-level.

223. *National Project Steering Committee (NPSC):* The NPSC will provide overall guidance and strategic leadership to create synergies for multi-sectoral coordination during project implementation; and facilitate 'mainstreaming' of relevant project findings and recommendations into a national policies, strategies and action plans. The Secretary, Department of Agriculture, Cooperation and Farmers' Welfare (DACFW), the Ministry of Agriculture and Farmers Welfare (MoAFW) will chair the National Project Steering Committee (NPSC). The Secretary, DACFW, MoAFW will be the Convener and the Joint Secretary (NRM&RFS), DACFW will act as Secretary to this Committee. The NPSC will meet at least once a year and the meeting locations may be in one of the five project States, as well as in Delhi.

224. The FAO's India Representative will be a special invitee to the NPSC. Additionally, state and district representatives from the project will be invited as and when required. The NPSC may also invite relevant experts/professionals as and when required. The National Project Management Unit (NPMU) will act as secretariat to the NSC and be responsible for logistical arrangements related to the holding of such meetings.

225. The NPSC will:

- Endorse the project annual work plan and budget;
- Review and comment on technical quality of project outputs;
- Provide strategic leadership to create synergies for a multi-sectoral coordination to address Biodiversity, Land Degradation, Climate Change Mitigation, and Sustainable Forest Management issues in project implementation; and
- Facilitate 'mainstreaming' of relevant project findings and recommendations in National policy.

Table 25: National Project Steering Committee (NPSC)

S.N.	Name and Designation	Status
1	Secretary, Department of Agriculture, Cooperation and Farmers' Welfare (DACFW) the Ministry of Agriculture and Farmers' Welfare (MoAFW)	Chair
2	Additional Secretary (NRM), DACFW, MoAFW	Member
3	FAO Representative in India	Member
4	Chair Person Protection of Plant Varieties and Farmers Rights Authority (PPV&FRA), MoAFW	Member
5	Director, National Bureau of Plant Genetic Resources, ICAR	Member
6	Joint Secretary (IC & Nodal GEF Project), MoEFCC	Member

S.N.	Name and Designation	Status
7	Joint Secretary (NRLM), MoRD	Member
8	Joint Secretary (Medicinal Plantation-Ayush), Ministry of Ayush	Member
9	Joint Secretary (IWMP), Department of Land Resource, MoRD	Member
10	Joint Secretary (Climate Change), Department of Science and Technology	Member
11	Deputy Director General (NRM), ICAR	Member
12	Animal Husbandry Commissioner, Department of Animal Husbandry	Member
13	Advisor (Agri.), NITI Ayog	Member
14	Chair of the State Steering Committee (SSC) or his representative from the States of Madhya Pradesh, Mizoram, Odisha, Rajasthan, and Uttarakhand	Member
15	Joint Secretary (NRM&RFS), DACFW, MoAFW	Member Secretary
16	Representative of National Biodiversity Board	Member
17	Deputy Director General, Wildlife, Department of Forest	Member
18	Director, National Bureau of Animal Genetic Resources	Member

226. The NPMU Team Leader will be the Secretary to the PSC. The NPMU will provide periodic updates to NSC members on project progress in all the five landscapes. In addition, case studies (both project and other relevant experiences) and findings from Green landscape impact, monitoring, and lessons captured will be shared.

227. Each NPSC member will assume the role of a Focal Point for the project in their respective departments/agencies. As the project's Focal Point in their respective agencies, they will (i) will represent respective ministries and see how best to align activities, (ii) ensure two-way exchanges of information and knowledge between their ministry and the project, (iii) facilitate coordination and links between project activities and the work plan of their ministries, and (iv) facilitate the provision of co-financing to the project.

228. The Project will work towards institutionalizing the NPSC as the 'National Green Landscape Management Unit' (NGLIU). The NGLMC will provide overall guidance and strategic leadership to create synergies for a multi-sectoral coordination for the development of a national strategy and action plan that could eventually lead to the formulation of a National Green Landscape Policy to identify and manage Green Landscapes across the country for an expanded Green Landscape conservation program. This will include relevant national level policy directives to harmonize environmental and the agriculture sector programming at identified Green Landscapes, e.g., promotion of transboundary cooperation between protected and productive landscapes. Further, the NGLMC will collate and integrate state conservation strategies within the national strategy.

229. *National Project Monitoring Committee* (NPMC): The National Project Monitoring Committee (NPMC) will monitor project implementation and provide general oversight in the project execution. It will be chaired by the Joint Secretary (NRM&RFS), DACFW, MoAFW. The Joint Secretary (NRM&RFS), MoAFW will be the Convener and the Additional Commissioner (NRM), DACFW will act as Secretary. The NPMC will meet twice in a year to review the six-monthly reports, with one meeting at the end of the calendar year focusing on work plans and progress of the project and one meeting primarily focusing on policy and strategy issues. As the project gains momentum, it is expected, however, that policy and strategy issues will feature on the agenda of both meetings.

230. The NPSC may invite relevant experts/ professionals as and when required. The NPMC will meet twice in a year, with one meeting at the end of the calendar year focusing on work plans and progress of the project and one meeting primarily focusing on policy and strategy issues. As the project gains momentum, it is expected, however, that policy and strategy issues will feature on the agenda of both meetings. The National Project Management Unit (NPMU) will act as secretariat to the NPMC and be responsible for logistical arrangements related to the holding of such meetings. The NPMU will provide periodic updates to NPMC members on project progress in all the five landscapes. Also, case studies (both project and other relevant experiences) and findings from Green landscape impact, monitoring, and lessons captured will be shared.

231. The NPMC will:

- Review the project and state specific annual work plans and budgets;
- Review and comment on national and state specific technical progress reports related to project implementation;
- Ensure timely availability and effectiveness of co-financing support;
- Provide policy guidance to NPMU;
- Ensure synergy in project implementation between various Government departments, donors, private sector interventions, and project stakeholders;
- Facilitate policy dialogue and advocacy on project learning and outcomes; and
- Ensure sustainability of key project outcomes, including up-scaling and replication.

232. The composition of the NPMC will be as follows:

Table 26: National Project Monitoring Committee (NPMC)

S.N.	Name and Designation	Status
1	Joint Secretary (NRM&RFS), DACFW, MoAFW	Chair
2	Representative of MoEFCC dealing with GEF Project	Member
3	FAO Representative	Member
4	Dr. V.P. Singh, Expert (Agroforestry/Agronomy)	Member
5	Shri. V.R. Khare, PCCF (Retd.), Govt of MP	Member
6	ADG (Soil/Agronomy), ICAR	Member
7	Additional Commissioner (RFS), DACFW	Member
8	Representative of Director General, PVFRA, DACFW, MoAFW	Member
9	Additional Commissioner (NRM), DACFW, MoAFW	Member Secretary

233. *State Steering Committees (SSC):* Five (5) State Steering Committees (SSC) will be established at the 5 project States to guide project implementation. Each SSC will be chaired by the Chief Secretary of the State or his/ her designate. Chief Secretary of the nodal department will be the Convener and the Project Nodal Officer will act as Member Secretary. The SSC will be responsible for providing overall execution oversight of the Project and will ensure that all inputs and processes required for the implementation of project activities agreed upon under the GEF project document are adequately prepared and carried out.

234. *District Project Monitoring Unit (DPMU):* The project will be supported by 8 DPMUs—one per project district: One each in Odisha and Uttarakhand; two each in Madhya Pradesh, Rajasthan and Mizoram. The District Project Monitoring Unit (DPMU) will be established in the District Collectorate under the leadership of the District Collector. This Unit will monitor project

implementation at the field-level and will be responsible for providing general oversight in the project execution.

State level:

235. **State Steering Committee (SSC)**: The SSC will be responsible for providing oversight of the Project at the state-level and will ensure that all inputs and processes required for the implementation of project activities agreed upon under the GEF project document are adequately prepared and carried out. The SSC will facilitate inter-sectoral coordination, ensure the mobilization of co-finance, and support any conflict resolution as necessary. This committee will provide overall guidance to the State Project Management Unit (SPMU) in project implementation; and facilitate mainstreaming of relevant project findings and recommendations into state policy.

236. Proposed members of the SSC are presented below and the Committee can invite additional members/ observers as required. The Committee will be chaired by the Chief Secretary or his/her designate.

Table 27: Proposed members of State Steering Committee (SSC)

S.N.	Name and Designation	Status
1	Chief Secretary	Chair
2	Agriculture Production Commissioner (where present)	Member
3	Secretary, Department of Agriculture and Farmers' Empowerment	Member
4	Secretary, Department of Forests and Environment	Member
5	Secretary, Department of Animal Husbandry	Member
6	Secretary, Department of Horticulture	Member
7	Secretary, Department of Women Empowerment and Child Welfare, Minorities and Backward Classes Welfare (or similar institution in States where not applicable)	Member
8	Secretary, Department of Scheduled Tribe and Scheduled Castes Development (if present)	Member
9	Secretary, Department of Rural Development	Member
10	Secretary, Department of Finance	Member
11	Chairperson, State Biodiversity Board (SBB)	Member
12	Vice Chancellor, State Agriculture Universities (SAUs)	Member
13	Expert on project related issues drawn from the state and other parts of the country	Member
14	Representative from NPMU	Member
15	FAO Representative	Member
16	State Project Nodal Officer[40]/ Project Director	Member Secretary

[40] The Project Nodal Officer in each state is appointed by the Chief Secretary of the particular State Government.

S.N.	Name and Designation	Status
17	District Collector	Member
18	State Technical Coordinator	Observers
	Others as decided by the Committee	

237. The SSC will:

- Provide overall guidance to the State Project Management Unit (SPMU) in project execution. It will also have the responsibility for endorsing the State Annual Work Plan and Budget (S-AWP/B) and the State Annual Project Report (S-APR) from the previous year's technical activities.
- Ensure all project outputs are as outlined in GEF approved Project Document;
- Ensure synergy in project implementation between various government departments, donors, private sector interventions, and project stakeholders;
- Review, amend if appropriate, and approve the draft State Annual Work Plan and Budget of the project for submission to FAO; and
- Facilitate the "mainstreaming" of relevant project findings and recommendations into state policies, plans and strategies.
- Appraise the project on any proposed government plans, policies, investments that might be relevant to the project and facilitate sharing of relevant good practices from other parts of the State
- Meet at least twice yearly (or more as decided by the Committee)
- Support management responses' preparation for independent midterm review and final evaluation of the project
- District Collector represents the TSG the district to the SSC
- Facilitate coordination and linkages of project activities with the national level work and sharing / learning with other states involved in this project

238. The membership of the SSC will be 10 - 12 members of the rank of Secretary. State Steering Committee (SSC) members will (i) provide support to project activities relevant to their departments, (ii) ensure two-way exchange of information and knowledge between their department/agency and the project, (iii) facilitate coordination and links between the project activities and the work plan of their department, (iv) better network across Departments and Ministries, and (v) facilitate the provision of co-financing to the project.

239. The State Project Management Unit will act as Secretariat to the SSC and will be responsible for logistical arrangements related to the holding of such meetings, circulating the meeting agenda and sharing final meeting minutes.

240. **Technical Support Group (TSG) at District-level:** The TSGs will provide multi-sectoral and strategic leadership towards the management of Green Landscapes within each of the project districts. They will facilitate the creation of synergies for a multi-sectoral coordination in managing Green Landscapes. This will include dovetailing existing resources (line departments, KVKs, Universities/ Academic Institutions, CSOs/NGOs, PRIs, government and donor funded programs) with project resources; ensuring synergy between different districts within the landscape; and coordinating with local self-governing bodies and BMCs to facilitate landscape planning and management. The TSG will meet quarterly.

241. Depending on the context, some Districts may opt to use existing Agricultural Technology Management Agency (ATMA) platform can also be used as the TSG. ATMA operates through the Sub-Mission on Agriculture Extension (SMAE) under the National Mission for Agriculture Extension

and Technology (NMAET) and is meant to promote decentralized farmer-driven and farmer accountable extension system at the district level. Presently, ATMA at the district level serves as a platform for integrating extension programs across line departments such as animal husbandry, fisheries, forestry, horticulture, and agriculture. It links research (Zonal Research Stations and KVKs) and extension units (line departments) in a district and invites farmer participation in decision-making.

242. The District Collector will chair the TSG. The District Collector will represent the TSG in the State Steering Committee. The Green Landscape Implementation Unit (GLIU) will act as Secretariat to the TSG and be responsible for providing TSG members with all required documents in advance of TSG meetings, including the quarterly implementation reports, draft quarterly action plan and budget. The GLIU will prepare written minutes of all TSG meetings and be responsible for logistical arrangements related to the holding of such meetings

243. The composition of the TSG will be as follows:

Table 28: Technical Support Group (TSG) composition

S.N.	Name and Designation	Status
1	District Collector cum Magistrate	Chair
2	Department of Agriculture and Farmers' Empowerment	Member
3	Department of Forests/ Director/Representative of the National Park/Wildlife Sanctuary;	Member
4	Department of Animal Husbandry	Member
5	Department of Horticulture	Member
6	Department of Women Empowerment and Child Welfare, Minorities and Backward Classes Welfare	Member
7	Department of Scheduled Tribe and Scheduled Castes Development	Member
8	Department of Rural Development	Member
9	*Krishi Vigyan Kendra* (KVK)	Member
10	NABARD	Member
11	Representatives from relevant educational and research institutions	Member
12	Representative Gram Panchayat heads from different ecoregions	Members
13	SPMU Representative	Member
14	State Project Nodal Officer/ Project Director or their representative	Member
15	Team Leader	Observer

244. TSG will support project activity implementation in the Green Landscape that falls within the district. This Group will monitor project implementation at the field-level, and provide general oversight in the project execution. Specifically, it will:

- Guide BMCs in their activities and ensure coordination between BMCs within their district so that their plans and activities are based on landscape level priorities. The TSG will also organize the annual meeting of all relevant BMCs within its district to promote learning and

sharing between BMCs and to present on the BMCs performance. Landscape level gathering of BMCs may also be jointly organized by the TSG within the target landscape.

- Monitor project implementation;
- Provide overall guidance to the Green Landscape Implementation Unit (GLIU) in project implementation;
- Ensure all project outputs are in consonance with the S-AWP&B;
- Dovetail project activities with ongoing schemes and programs in the district;
- Ensure synergy in project implementation between various Government departments, donors, private sector interventions, and project stakeholders; and
- Facilitate the "mainstreaming" of relevant project findings and recommendations into state policy.

245. ***Gram Panchayat (GP)* / or Village Council (VC) Support Unit**: The *Gram Panchayat/ or* Village Council Support Unit will play a critical role in project implementation. A *Gram Panchayat (*Village Council) Support Unit (GPSU) will be established to facilitate synergy between GP development plans and project activities. The GPSU will be chaired by the GP *Sarpanch/Pradhan/Mukhiya* or Village head. The, Village Secretary and representative of the BMC will be the members. The local Community Resource Person[41] (CRP) will provide secretarial assistance to the GPSU. The GPSU will meet every quarter to review the implementation of the GP-level Green Landscape Management Plans.

Table 29: Gram Panchayat (Village Council) Project Support Unit

Name and Designation	Status
Head of GP/Village Council	Chair
Village Secretary	Convenor
Representative of BMCs	Member
Representative of TSG	Advisor
Representative of the National Park/Wildlife Sanctuary	Advisor
Community Resource Person (CRP)	Advisor

a. Community institutions

246. **Biodiversity Management Committees (BMCs)**: BMCs within the Green Landscape will be supported by the TSG established in the district. The BMCs will support, monitor and evaluate the Green Landscape Management Plan (GLMP) in their areas. BMCs are legally designated bodies under the Biological Diversity Act 2000. These are established in each state of the local bodies (e.g. *Zilla Parishad, Block Panchayats, and Gram Panchayats*) with the support of State Biodiversity Board (SBBs). The BMC consists of a Chairperson and not more than six persons nominated by the local political body. One third of the BMC members are women and at least 18% should belong to the Schedule Castes/Scheduled Tribes, if present in the area. The BMC members must be residents in the geographical limits of the local body and be on its voters' list.

[41] Community Resource Persons (CRPs) will be assigned the responsibility of project implementation at GP-level. Depending on the size of GP, one or two community organizers will be assigned the responsibility of coordinating project implementation in a GP.

247. The project will strengthen existing BMCs and support local bodies and SBBs to establish new ones as necessary. The project will work with the BMCs to strengthen their capacity to deliver the mandate of conservation, sustainable use and documentation of biological diversity. The BMCs will work in close coordination with the local governing bodies, such as *Gram Panchayats* (GPs) and Village Councils. The BMC members will be trained on Green Landscape Governance. The BMCs will work closely with the local governing bodies in the implementation, monitoring, and evaluation of their plans. The BMCs will develop *gram Panchayat*, the village council-level Green Landscape Management Plans.

248. The BMCs will participate in the annual meetings organized by the TSG for learning and sharing. Landscape level gathering of BMCs may also be jointly organized by TSGs – particularly in landscapes which fall in more than one district.

249. BMCs will work with existing and new community natural resource management institutions.

b. Project Implementation Units

250. **National Project Management Unit**: The Natural Resources Management (NRM) Division of the Department of Agriculture, Cooperation and Farmers' Welfare (DACFW), the Ministry of Agriculture and Farmers Welfare (MoAFW) will set up a National Project Management Unit (NPMU) responsible for the day-to-day project operation. The NPMU will consist of a National Technical Coordinator, Finance Officer, Accountant, and Administrative Assistant to support the technical team. The NPMU staff will be supported by the FAO Technical Support Services and FAO India in project implementation and supervision, including: (i) technical support service, supervision, and monitoring of the project; and (ii) preparation of the annual Project Implementation Review (PIR).

251. The primary responsibility of the NPMU will be to ensure the effective implementation of project components detailed out in the project document. The NPMU will:

- Prepare and coordinate the implementation of the Annual Work Plans and Budget (AWP/B);
- Implement a system to monitor project outputs and outcomes and perform all monitoring and reporting tasks as described in the project document;
- Design, implementation strategies;
- Build implementation capacity of the State Project Management Units (SPMUs) and Green Landscape Implementation Units (GLIUs);
- Maintain quarterly/six monthly financial records (including support documentation) submitted by the Operational Partners for verification by FAO and external auditors and ensuring compliance with the monitoring and financial reporting requirements of the Operational Partners Implementation Modality (OPIM) agreement;
- Prepare and submit for approval by the FAO disbursement requests and corresponding justification of expenditures based on an updated AWP/B;
- Act as secretariat for the National Project Monitoring Committee and National Project Steering Committee; and
- Handle all day-to-day project issues and requirements and ensure a high degree of national, state and local inter-institutional collaboration.

252. Key positions and responsibilities for the NPMU are listed below.

Table 30: Key NPMU personnel and their responsibilities

S. No.	Position Responsibilities
1	National Technical Coordinator • This will be funded by the project • Overall NPMU management • Represent the project in all meetings and fora as required • Ensure strong coordination/ learning and sharing between project states

S. No.	Position Responsibilities
	• Report to the NPSC, NPMU, and the NRM division of the Ministry of Agriculture and Farmers Welfare • Mobilize co-finance resources • Adhere to all reporting requirements of the MoAFW, GEF, and FAO • Coordinate with the National Project Directors (SPDs) • Monitor NPMU • Coordinate the preparation and implementation of the Annual Work Plans and Budget (AWP/B) • Implement project developed monitoring and evaluation system to monitor project outputs and outcomes • Act as a secretary to the NPSC and NPMU • Mobilize technical expertise as and when required • Ensure strong technical quality assurance of project's reports outputs and outcomes based on global, national and state-level best practices • Ensure strong linkages between the different technical components and technical reports of the project • Coordinate with FAO Lead Technical Officer (LTO), other National Experts • Coordinate preparation of the Project Implementation Report, midterm and final evaluation reports • Facilitate national-level and Green Landscape planning and document lessons learnt • Coordinates policy analysis at national-level
2	Budget and Finance Officer (Project financed) • Prepare and provide financial reports as per FAO requirements • Monitor and guide NPMUs in hiring consultancy services and for the limited acquisition of equipment necessary to provide the services, ensuring procurement processes comply with the OPIM agreement; • Maintain accounting and financial controls, including adequate support documentation, filing systems for verification by FAO and external auditors and ensure compliance with all FAO monitoring and financial reporting requirements; • Work closely with the SPDs and STCs to ensure smooth and timely fund flow to the NPMUs • Supervise the Accountant in the NPMU • Facilitate spot checks as required under the OPIM agreement • Ensure smooth and timely implementation of project activities in support of the results-based work plan, through operational and administrative procedures according to FAO rules and standards; • Maintain inter-departmental linkages with FAO units for donor liaison, Finance, Human Resources, and other units as required; • Be responsible for results achieved within her/his area of work and ensure issues affecting project delivery and success are brought to the attention of higher level authorities through the BH in a timely manner, • Undertake day-to-day management of the project budget, including the monitoring of cash availability, budget preparation and budget revisions to be reviewed by the Project Coordinator; • Ensure the accurate recording of all data relevant for financial and results-based monitoring; • Ensure that relevant reports on expenditures, forecasts, progress against work plans, project closure, are prepared and submitted in accordance with FAO and GEF defined procedures and reporting formats, schedules and communications channels, as required; • In consultation with the FAO Evaluation Office, the LTU, and the FAO-GEF Coordination Unit, support the organization of the mid-term and final evaluations, and provide inputs regarding project budgetary matters; • manage contracts and monitor the work and quality of deliverables of the services provided by the Third Party Service Provider (especially financial Audit, spot-check, monitoring Agent activities etc.); • Build capacities of OPIM partners on FAO related forms, formats, processes etc. • ensure that OPs maintain records of supporting documents for each financial transaction to be made available to potential Resource Partners' verification missions; • review and advise the BH on any proposed revisions of approved plans and budgets of the project component implemented by the OPs; • prepare financial and narrative consolidated reports for submission to GEF;

S. No.	Position Responsibilities
	• prepare amendments to the Operational Partners Agreement, as required;
3	ADMINISTRATION AND OPERATIONS OFFICER • Support preparation of all documentation needed to hire consultancy services and for the limited acquisition of equipment necessary to provide the services, ensuring procurement processes comply with the OPIM agreement • Assist in the maintenance of accounting and financial controls, including adequate support documentation, filing systems for verification by FAO and external auditors and ensure compliance with all FAO monitoring and financial reporting requirements as established in the OPIM agreement between FAO and OP; • Ensure smooth and timely implementation of project activities in support of the results-based work plan, through operational and administrative procedures according to FAO rules and standards; • Coordinate the project operational arrangements through contractual agreements with key project partners; • Arrange the operations needed for signing and executing Letters of Agreement (LoA) with relevant project partners; • Maintain inter-departmental linkages with FAO units for donor liaison, Finance, Human Resources, and other units as required; • Execute accurate and timely actions on all operational requirements for personnel-related matters, equipment and material procurement, and field disbursements; • Participate and represent the project in collaborative meetings with project partners and the Project Steering Committee, as required; • Be responsible for results achieved within her/his area of work and ensure issues affecting project delivery and success are brought to the attention of higher level authorities through the BH in a timely manner, • In line with OPIM assist the BH to review progress reports submitted by the Operational Partners and ensure compliance with the agreed deliverables in the detailed workplans related to procurements etc. • Support management of contracts and monitor the work and quality of deliverables of the services provided by the Third Party Service Provider
4	Administrative Assistant (Project financed) • Assist with overall project administration as required.
5	National Communication Officer (Project financed) • Document and disseminate lessons learnt, including case studies (both project and other relevant experiences) and findings from Green landscape impact, monitoring, and lessons captured will be shared • Prepare periodic updates to NPSC members on project progress in the Green Landscape within the state • Facilitate knowledge sharing at the national level, between project states, and with other stakeholders nationally and internationally through dissemination of information using existing government portals as well as through organization of special seminars, workshops, events, and audio-visual material • Coordinate publication of relevant posters, articles, and reports in English and respective state languages
6	FFS Expert (Project financed) • Facilitate FFS Curriculum Development Workshops and capacity building; • Integrate technical inputs on livestock, agriculture, natural resource management, landscape governance working closely with other project experts. In particular, work with the Master Trainers to try out a range of practical learning exercises and experiments to demystify technical topics/ subjects; • Provide backstopping to FFS implemention;

S. No.	Position Responsibilities
	• Coordinate development of FFS monitoring and impact indicators formats, design FFS protocols, tools, and methods; • Provide relevant technical guidance to the project as outlined in Outcome 2
7	Participatory Natural Resource Management Expert (project financed) • Provide relevant technical guidance to the project as outlined in Outcome 2 • Provide technical support in the design and implementation of Field Schools on Landscape Governance • Agrobiodiversity • Output 2.3
8	Gender and Free, Prior Informed Consent (FPIC) Expert (project financed) *On Gender issues, the Expert will:* a) Undertake and support Gender Analysis: A gender analysis will be conducted in relation to the sectors of intervention (e.g., a gender perspective in forest resources management; gender roles in biodiversity conservation; gender roles in rainfed agriculture; gender roles in tribal communities). The gender analysis should be part of the situational analysis. b) Develop overall Gender Strategy: The gender analysis should inform the drafting of the gender strategy, which will be the roadmap for mainstreaming gender concerns and gender equality throughout all projects and across components. c) Ensure Gender-sensitive planning: The planning will define objectives, outcomes and outputs and activities in terms of how they will contribute to addressing women and men's different needs taking into account existing social and gender inequalities and discrimination. d) Ensure Gender-sensitive methodology: The participation of women in all components of the programme, including the programming and M&E process, shall be ensured taking into account the specific socio-cultural context in which each project is implemented. Proactive measures shall be taken to overcome barriers to participation and access to benefits. e) Ensure Gender sensitive Budget: Sufficient budget shall be earmarked to fund all of the above and measures targeted at women. f) Ensure Gender-disaggregated data: The programme will collect data disaggregated by sex and/or gender, including baseline data. The M&E methodology shall be designed so that it can properly capture the gender dimension of the programme. g) Build capacities of Gender specialist at each landscape: Each project shall recruit a gender specialist in charge of gender mainstreaming within the project. A senior gender specialist should be in charge of coordinating the activities at the level of the programme so to ensure coordination, monitoring and reporting. h) Build Capacity: Sensitization and capacity development activities will be planned for the programme's team and partners to conduct gender analysis and mainstream gender. Capacity development and leadership trainings for women programme i) Ensure strong Partnerships: Gender-sensitive partner organizations shall be chosen to support the implementation of the projects. j) Incorporate Gender indicators: Gender sensitive indicators will be used to measure how the outputs of the programmes have affected women and men, and how women and men have contributed to addressing the issues and achieving the expected outcomes, and to what extent the programme has equitably addressed both women's and men's needs. k) Ensure Lessons from the programme will be used to provide policy recommendations and areas where further research and interventions may be needed. Undertake advocacy activities the importance of gender mainstreaming as a critical tool for promoting sustainable agricultural practices and promoting the livelihoods of marginal farmers.

S. No.	Position Responsibilities
	On Indigenous Peoples' issues: 1. Ensure that the project is designed and implemented as per FAO's FPIC manual (http://www.fao.org/3/a-i6190e.pdf) and the FAO Policy on Indigenous and Tribal Peoples (http://www.fao.org/docrep/013/i1857e/i1857e00.pdf). 2. Design a plan (workplan and budget) for the implementation of Free, Prior and Informed Consent throughout the project, to be included in the project wokrplan. 3. In consultation with FAO's Indigenous Peoples Team, ensure the implementation of the six FPIC steps: • Identify the Indigenous Peoples' concerned and their respective representatives (step 1). • Document geographic and demographic information through participatory mapping (step 2). • Design a participatory communication plan and carry out iterative discussions over which project information will be disclosed in a transparent way (step 3). • Reach Consent and document Indigenous Peoples' needs that are to be included into the project, and agree on a feedback and complaints mechanism (step 4). • Conduct participatory monitoring and evaluation of the agreement (step 5). • Document lessons learned and disclose information about project achievements (step 6). 4. In consultation with FAO's Indigenous Peoples Team, compile and regularly update a report to document the progress and outcome of each step of the FPIC process. •
9	Animal Husbandry Expert (project financed) • Provide relevant technical guidance to the project as outlined in Outcome 2
10	Community Institutions/Rural Livelihoods Expert (Project financed) • Provide relevant technical guidance to the project as outlined in Outcome 2
11	Green Value Chain Expert (project financed) • Provide relevant technical guidance to the project as outlined in Outcome 2
12	Ecotourism Expert (project financed) • Provide relevant technical guidance to the project as outlined in Outcome 2
13	National Dialogue Facilitator (project financed) • Provide relevant technical guidance to the project as outlined in Outcome 1

253. **State Project Management Unit:** The Operational Partner (OP) in each state will set up the State Project Management Unit (SPMU). The SPMU will be responsible for the day-to-day project management in the state. The SPMU will consist of a State Project Director[42], State Technical Coordinator[43], a Communication Officer, a Finance Officer, accountant, and an administrative assistant. State Project Management Unit (SPMU) will be established by the Department of Agriculture and Farmers' Empowerment. This Unit will work in close coordination with the NPMU for effective implementation of project components and coordinates all monitoring and reporting tasks at state-level.

[42] State Project Director will be co-financed by the state.
[43] State Technical Coordinator will be financed by the project.

254. The primary responsibility of the SPMU will be to ensure the effective implementation of project components detailed out in the project document. The SPMU will:

- Prepare and coordinate the implementation of the State Annual Work Plans and Budget (S-AWP/B) in close coordination with the Green Landscape Implementation Unit (GLIU);
- Implement a system to monitor project outputs and outcomes and perform all monitoring and reporting tasks;
- Prepare and obtain approval from FAO for all documentation needed to hire consultancy services and for the limited acquisition of equipment necessary to provide the services, ensuring procurement processes comply with the OPIM agreement;
- Prepare all documentation for recruiting, monitoring and administering GLIU;
- Maintain accounting and financial controls, including adequate support documentation, filing systems for verification by FAO and external auditors and ensure compliance with all FAO monitoring and financial reporting requirements as established in the OPIM agreement between FAO and OP;
- Design, implementation strategies;
- Build implementation capacity of the GLIUs;
- Train GLIU staff on (a) FFS methodology and effective extension, (b) FFS Implementation Protocols (c) Monitoring FFS and (d) Enabling Environment (i.e. incentive systems for adoption of GEB friendly agricultural practices);
- Orient the GLIU and TSG members of Green Landscape Management strategies, Decision Support Tool, and Knowledge Management Tool;
- Prepare and submit for approval by the FAO Project Task Manager/FAOR disbursement requests and corresponding justification of expenditures based on an updated AWP/B;
- Act as a secretariat of the State Steering Committee; and
- The SPMU will provide periodic updates to SSC members on project progress in the Green Landscape within the state. Also, case studies (both project and other relevant experiences) and findings from Green landscape impact, monitoring, and lessons captured will be shared.
- Handle all day-to-day project issues (in the state) and requirements and ensure a high degree of state and local inter-institutional collaboration.

255. Key positions and responsibilities for the SPMU are listed below.

Table 31: Key SPMU personnel and their responsibilities

S. No.	Position and key Responsibilities
1	State Project Director (SPD) (Cofinanced by State) • Overall SPMU management • Represent the project in all meetings and fora as required • Ensure strong coordination/ learning and sharing between project states • Report to the State Steering Committee and the NRM division of the Ministry of Agriculture and Farmers Welfare • Mobilize co-finance resources • Adhere to all reporting requirements of the State, MoAFW, GEF, and FAO • Coordinate with the District Collector and the Technical Support Group (TSG) • Monitor GLIU • Coordinate the preparation and implementation of the State Annual Work Plans and Budget (S-AWP/B) • Implement project developed monitoring and evaluation system to monitor project outputs and outcomes

S. No.	Position and key Responsibilities
	• Act as a secretary to the State Steering Committee
2	State Technical Coordinator (project financed) • Compliment the technical skills of the State Nodal Agency to meet the project objective in the particular state (Agrobiodiversity/ grassland management/ livestock expert) • Represent the project in all meetings and fora, as assigned • Assist the SPD in overall SPMU management • Mobilize technical expertise as and when required • Ensure strong technical quality assurance of project's reports outputs and outcomes based on global, national and state-level best practices • Ensure strong linkages between the different technical components and technical reports of the project • Coordinate with FAO Lead Technical Officer (LTO), other National Experts • Prepare Project Implementation Report, mid-term and final evaluation reports • Facilitate landscape-level planning and document lessons learnt • Coordinate with the District Collectors and the Technical Support Groups (TSGs) • Monitor GLIU • Support the preparation and implementation of the State Annual Work Plans and Budget (S-AWP/B) • Support implementation of project developed monitoring and evaluation system to monitor project outputs and outcomes • Facilitates capacity building for the project • Prepare all documentation for recruiting, monitoring and administering GLIU • Liaise with SBBs for coordination with BMCs and TSG • Coordinate policy analysis at state-level
3	Communication Officer (project financed) • Document and disseminate lessons learnt, including case studies (both project and other relevant experiences) and findings from Green landscape impact, monitoring, and lessons captured will be shared • Prepare periodic updates to SSC members on project progress in the Green Landscape within the state • Facilitate knowledge sharing within states, between project states, and with other stakeholders nationally and internationally through dissemination of information using existing government portals as well as through organization of special seminars, workshops, events, and audio-visual material • Coordinate publication of relevant posters, articles, and reports in English and respective state languages
4	Finance Officer • Prepare and provide financial reports as per FAO requirements • Prepare and obtain approval from FAO for all documentation needed to hire consultancy services and for the limited acquisition of equipment necessary to provide the services, ensuring procurement processes comply with the OPIM agreement; • Maintain accounting and financial controls, including adequate support documentation, filing systems for verification by FAO and external auditors and ensure compliance with all FAO monitoring and financial reporting requirements as established in the OPIM agreement between FAO and OP; • Work closely with the SPD to ensure smooth and timely fund flow to the GLIUs • Supervise the Accountant in the SPMU, Finance Officer and Accountant at the landscape-level • Facilitate spot checks as required under the OPIM agreement
5	Accountant (project financed)

S. No.	Position and key Responsibilities
	• Support the Finance Officer in the preparation of financial reports as per FAO requirements • Support preparation of all documentation needed to hire consultancy services and for the limited acquisition of equipment necessary to provide the services, ensuring procurement processes comply with the OPIM agreement • Assist in the maintenance of accounting and financial controls, including adequate support documentation, filing systems for verification by FAO and external auditors and ensure compliance with all FAO monitoring and financial reporting requirements as established in the OPIM agreement between FAO and OP; • Work closely with the Finance Officer and Accountant at the landscape-level
6	Administrative Assistant (project financed) • Assist with overall project administration as required.

256. **Green Landscape Implementation Unit**: The Operational Partner (i.e. The SPMU) will establish Green Landscape Implementation Unit (GLIU) at the landscape level. The GLIU will be responsible for the day-to-day project implementation in the landscape.

257. The primary responsibility of the GLIU will be to implement the project activities as per the project components detailed out in the project document and the State Annual Work Plan and Budget (S-AWP/B). The GLIU will:

- prepare and coordinate the implementation of the S-AWP/B;
- implement a system to monitor project outputs and outcomes and perform all monitoring and reporting tasks;
- mobilize, engage and build capacities of local communities in the project Green Landscape;
- design variety of knowledge products catering to multiple stakeholders;
- document good practices and lessons learnt;
- maintain accounts, including adequate support documentation, filing systems for verification by the OP and external auditors and ensure compliance with all OP monitoring and financial reporting requirements as established in the Letter of Agreement between OP and GLIU;
- prepare and submit for approval by the State Project Director/ State Technical Coordinator disbursement requests and corresponding justification of expenditures based on Quarterly Work Plans and Budget;
- act as secretariat to the TSG; and
- handle all day-to-day project issues and requirements and ensure a high degree of inter-institutional collaboration at the landscape-level.

258. Team Leader who will ensure that plans and programmes of the GLIU and in sync with each other. This GLIU will also host most of the technical experts outlined in the table below. The expert team in the GLIU will focus on conceptualizing implementation strategies, designing a variety of knowledge products catering to multiple stakeholders, and documenting good practices and lessons learnt. The community organizers will interface with the community stakeholders and undertake outreach activities.

259. Green Landscape Implementation Unit (GLIU): Recruited by the state nodal agency. Designs and implements project activities to achieve targets presented in the project document and the State Annual Work Plan and Budget (S-AWP/B).

Table 32: Key GLIU personnel and their responsibilities

	Main roles and responsibilities
1	Team Leader project financed) - One position in the landscape • Compliment the technical skills of the other District-level experts to meet the project objective in the particular state (Capacity Development) • Operationalize the Free, Prior Informed Consent (FPIC) for the landscape • Report to the District Collectors in the landscape • Represent the project in all meetings and fora, as assigned • Overall GLIU management • Mobilize technical expertise as and when required • Ensure strong technical quality assurance of project's reports outputs and outcomes based on global, national and state-level best practices • Ensure strong linkages between the different technical components and technical reports of the project • Coordinate with the State Project Director, State Technical Coordinator, and other National Experts • Prepare a landscape-level Project Implementation Report, midterm and final evaluation reports • Coordinate Landscape and district-level planning and document lessons learnt • Coordinate with the District Collectors, TSG, and BMCs • Support the preparation and implementation of the State Annual Work Plans and Budget (S-AWP/B) • Support implementation of project developed monitoring and evaluation system to monitor project outputs and outcomes • Facilitates capacity building for the project
2	Finance Officer -One per landscape • Prepare and provide financial reports as per SPMU and FAO requirements • Prepare and obtain approval from SPMU for all documentation needed to hire consultancy services and for the limited acquisition of equipment necessary to provide the services, ensuring procurement processes comply with the OPIM agreement; • Maintain accounting and financial controls, including adequate support documentation, filing systems for verification by SPMU and external auditors and ensure compliance with all FAO monitoring and financial reporting requirements as established in the OPIM agreement between FAO and OP; • Work closely with the SPD and State Finance Officer to ensure smooth and timely fund flow to the GLIUs • Supervise the Project Accountant at the landscape-level • Facilitate spot checks as required under the OPIM agreement
3	District Support Officer (project financed) One per district • Work with the Team Leader and the District Collector to ensure effective planning and project implementation • Report to the District Collector • Represent the project in all meetings and fora, as assigned • Mobilize technical expertise as and when required • Ensure strong technical quality assurance of project's reports outputs and outcomes based on global, national and state-level best practices • Coordinate with the State Technical Coordinator, Team Leader and other Technical Experts • Prepare district-level Project Implementation Report, midterm and final evaluation reports • Coordinate district-level planning and document lessons learnt • Coordinate with the District Collector, TSG, and BMCs • Support the preparation and implementation of the State Annual Work Plans and Budget (S-AWP/B) • Support implementation of project developed monitoring and evaluation system to monitor project outputs and outcomes • Facilitate capacity building for the project at the district-level • Liaise with the BMCs and farmers' groups to respond to emerging community needs
4	Administrate Assistant (project financed) • Data entry and provide administration support to GLIU

	Main roles and responsibilities
5	Accountant (project financed) • Support the Finance Officer in the preparation of financial reports as per SPMU requirements • Support preparation of all documentation needed to hire consultancy services and for the limited acquisition of equipment necessary to provide the services, ensuring procurement processes comply with the OPIM agreement • Assist in the maintenance of accounting and financial controls, including adequate support documentation, filing systems for verification by SPMU and external auditors and ensure compliance with all FAO monitoring and financial reporting requirements as established in the OPIM agreement between FAO and OP; • Work closely with the Finance Officer and Accountant at the state-level
6	FFS Expert • Facilitate FFS Curriculum Development Workshops and capacity building; • Integrate technical inputs on livestock, agriculture, natural resource management, landscape governance working closely with other project experts. In particular, work with the Master Trainers to try out a range of practical learning exercises and experiments to demystify technical topics/ subjects; • Provide backstopping to FFS implemention; • Coordinate development of FFS monitoring and impact indicators formats, design FFS protocols, tools, and methods; • Provide relevant technical guidance to the project as outlined in Outcome 2
7	Participatory Natural Resource Management Expert One for the landscape • Provide relevant technical guidance to the project as outlined in Outcome 2 • Provide technical support in the design and implementation of Field Schools on Landscape Governance • Agrobiodiversity
8	Animal Husbandry Expert: Provide relevant technical guidance to the project as outlined in Outcome 2
9	Community Institutions/Rural Livelihoods Expert: Provide relevant technical guidance to the project as outlined in Outcome 2
10	Green Value Chain Expert: Provide relevant technical guidance to the project as outlined in Outcome 2
11	Gender Expert: Provide relevant technical guidance to the project as outlined in Outcome 2

3.2 Coordination with other initiatives

With other GEF projects operational in India

260. Adequate coordination with GEF funded projects operational in India will be ensured through:

- The project team's representation in meetings coordinated by the GEF OFP's Office in India annually between all GEF projects
- FAO's internal coordination mechanism to ensure coordination with FAO-GEF projects (such as through the PTF)
- Special events and meetings organized by this GEF project to share lessons – especially targeting ongoing GEF projects

261. The proposed project is designed to enhance and generate synergies with India's current portfolio of GEF investments. This will include the creation of bi-annual meetings between managers of all relevant GEF projects facilitated through the proposed project management and implementation team. The project will also organize formal, annual progress reporting seminars. These seminars will be used as a tool to inform stakeholders of project progress and intended future activities. This will serve as a mechanism to enhance replication and further galvanize cooperation.

262. The project will work particularly closely with the following programmes:

Table 33: Most Relevant Recent GEF Programming

Project Title	Project Objectives and Activities
Mainstreaming Conservation and Sustainable Use of Medicinal Plant Diversity in Three Indian States GEF 4 GEF: US$ 4,935,000 UNDP	This project strengthened the long-term conservation and sustainable use of India's medicinal plant diversity, particularly of its globally significant species. The project mainstreamed conservation and sustainable use objectives into forest management policy and practice at the national, state, and local level in three Indian states: Arunachal Pradesh, Chhattisgarh, and Uttarakhand. The project worked with at least 400 medicinal plant species, including at least 80 globally significant species, several of which are critically endangered.
Integrated Management of Wetland Biodiversity and Ecosystem Services for Water and Food Security GEF 5 GEF: US$ 4,246,575 UNEP	Enhanced management effectiveness of wetlands of national and global importance through strengthening their management partnership, economic case and mainstreaming at landscape level
Mainstreaming Agrobiodiversity Conservation and Utilization in Agricultural Sector to Ensure Ecosystem Services and Reduce Vulnerability GEF 5 GEF: US$ 3,196,347 UNEP	The project aims to mainstream the conservation and use of agricultural biodiversity for resilient agriculture and sustainable production to improve livelihoods, access, and benefit-sharing. The project's primary components include: (i) adaptive management for conservation and use of crop agrobiodiversity fore resilient agriculture and sustainable production, (ii) strategies and policies for sustainable conservation and use of crop diversity, and (iii) institutional frameworks and capacity development. The project will operate in four agro-ecoregions: (i) the western Himalayas, (ii) the Northeast and the eastern Himalayas, (iii) the western arid and semi-arid region (Rajasthan and Gujarat), and (iv) the central region (Madhya Pradesh and Maharashtra). The GEF6 Green Ag project will ensure strong coordination with this project on conservation/ promotion of agrobiodiversity in all five Green Landscapes.
Developing an Effective Multiple Use Management Framework for Conserving Biodiversity in the Mountain Landscape of the High Ranges, Western Ghats GEF 5 GEF: US$ 6,363,600 UNDP	This project is working to protect biodiversity of the high-range mountainous landscape of the southern portion of the Western Ghats from existing and emerging threats by building a collaborative governance framework for multiple-use management.

Project Title	Project Objectives and Activities
Integrated SLEM Approaches for Reducing Land Degradation and Desertification GEF 5 GEF: US$4, 900,000 World Bank	To scale up sustainable land and ecosystem management practices in selected semi-arid areas and to improve the monitoring of land degradation and desertification. Land users adopting sustainable land management practices as a result of the project; Streamlining of reporting on national indicators on land use/land use change. At least five States start using the online database/MIS built through the project; Establishing a national knowledge exchange platform (community of practice) with at least 10 SLEM best practices disseminated using the knowledge platform
India Ecosystems Service Improvement Project GEF 5 GEF: US$ 24,000,000 World Bank	To strengthen the institutional capacity of the Department of Forestry and community organizations. Components and activities include: to enhance forest ecosystem services and improve the livelihoods of forest dependent communities in Central Indian Highlands; Strengthening capacity and skills of government institutions for effective delivery of forestry and land management programmes; Improving forest quality and productivity; and, scaling up of integrated sustainable land and ecosystem management (SLEM) approaches for reducing land degradation and desertification.
Developing an Effective Multiple Use Management Framework for Conserving Biodiversity in the Mountain Landscape of the High Ranges, Western Ghats GEF5 GEF: US$ 6,275,000 UNDP	The project will put in place a cross-sectoral land use management framework, and compliance monitoring and enforcement system to ensure that development in production sectors such as tea, cardamom and tourism is congruent with biodiversity conservation needs – to achieve the long-term goal of conserving globally significant biological diversity in the High Ranges of the Western Ghats.
Securing Livelihoods, Conservation, Sustainable Use and Restoration of High Range Himalayan Ecosystems (SECURE)Himalayas GEF6 GEF$ 11,544,192 UNDP	The project's objective is "To promote the sustainable management of alpine pastures and forests in the high range Himalayan ecosystems that secures conservation of globally significant wildlife, including endangered snow leopard and their habitats, ensure sustainable livelihoods and community socio-economic benefits"

Other relevant projects

- The Rajasthan Forestry and Biodiversity Project (Phase II; 2011-2019; JICA funding: JPY 15,749M, USD ~134.8M) contributes to the environmental conservation and economic development of Rajasthan by enhancing the forest area, improving livelihood opportunities of forest-dependent people, and conserving biodiversity through a joint forest management approach. The project's major components include (i) poverty alleviation and livelihood improvement, (ii) afforestation, (iii) agroforestry, (iv) water conservation, (v) biodiversity conservation, (vi) capacity-building, training, and research, and (vii) community mobilization. The project covers 650 villages (340 desert, 250 non-

desert, and 60 around wildlife sanctuaries) in 15 districts (10 desert, 5 non-desert) and within 2 km of seven wildlife sanctuaries throughout Rajasthan (Keoladeo, Kumbhalgarh, Fulwari Ki Nal, Raoli Todgarh, Sitamata, Bassi, and Jaisamand).

3.3 Risk Management

263. Please see the Table in Section 1.6.3.

3.4 Financial Management

Table below presents a summary of total budget allocation by State.

Table 34: Consolidated Budget by States and the National PMU

Budget level	State	Total GEF Grant (US $)
National level	National PMU	5,033,807
National level Total		**5,033,807**
State level	Mizoram	4,251,887
	Madhya Pradesh	5,912,303
	Odisha	7,978,402
	Rajasthan	4,455,523
	Uttarakhand	5,926,794
State level Total		**28,524,909**
Grand Total		**33,558,716**

A more detailed budget and workplan are presented later in the document.

3.4.1 Financial planning

264. Please refer to Section 4.8 of this document.

3.4.2 Financial management and reporting

265. **Financial Records**. FAO shall maintain a separate account in United States dollars for the project's GEF resources showing all income and expenditures. Expenditures incurred in a currency other than United States dollars shall be converted into United States dollars at the United Nations operational rate of exchange on the date of the transaction. FAO will administer the project in line with its regulations, rules and directives.

266. **Financial Reports.** The BH shall prepare six-monthly project expenditure accounts and final accounts for the project, showing amount budgeted for the year, amount expended since the beginning of the year, and separately, the un-liquidated obligations as follows:

- Details of project expenditures on a component-by-component and output-by-output basis, reported in line with project budget codes as set out in the project document, as at 30 June and 31 December each year.
- Final accounts on completion of the project on a component-by-component and output-by-output basis, reported in line with project budget codes as set out in the project document.
- A final statement of account in line with FAO Oracle project budget codes, reflecting actual final expenditures under the project, when all obligations have been liquidated.

267. The BH will submit the above financial reports for review and monitoring by the LTO and the FAO GEF Coordination Unit. Financial reports for submission to the donor (GEF) will be prepared in accordance with the provisions in the GEF Financial Procedures Agreement and submitted by the FAO Finance Division.

268. **Budget Revisions**. Semi-annual budget revisions will be prepared by the BH in accordance with FAO standard guidelines and procedures.

269. **Responsibility for Cost Overruns**. The BH is authorized to enter into commitments or incur expenditures up to a maximum of 20 percent over and above the annual amount foreseen in the project budget under any budget sub-line provided the total cost of the annual budget is not exceeded.

270. Any cost overrun (expenditure in excess of the budgeted amount) on a specific budget sub-line over and above the 20 percent flexibility should be discussed with the GEF Coordination Unit with a view to ascertaining whether it will involve a major change in project scope or design. If it is deemed to be a minor change, the BH shall prepare a budget revision in accordance with FAO standard procedures. If it involves a major change in the project's objectives or scope, a budget revision and justification should be prepared by the BH for discussion with the GEF Secretariat.

271. Savings in one budget sub-line may not be applied to overruns of more than 20 percent in other sub-lines even if the total cost remains unchanged, unless this is specifically authorized by the GEF Coordination Unit upon presentation of the request. In such a case, a revision to the project document amending the budget will be prepared by the BH.

272. Under no circumstances can expenditures exceed the approved total project budget or be approved beyond the NTE date of the project. **Any over-expenditure is the responsibility of the BH.**

273. **Audit**. The project shall be subject to the internal and external auditing procedures provided for in FAO financial regulations, rules and directives and in keeping with the Financial Procedures Agreement between the GEF Trustee and FAO.

274. The audit regime at FAO consists of an external audit provided by the Auditor-General (or persons exercising an equivalent function) of a member nation appointed by the Governing Bodies of the Organization and reporting directly to them, and an internal audit function headed by the FAO Inspector-General who reports directly to the Director-General. This function operates as an integral part of the Organization under policies established by senior management, and furthermore has a reporting line to the governing bodies. Both functions are required under the Basic Texts of FAO which establish a framework for the terms of reference of each. Internal audits of imprest accounts, records, bank reconciliation and asset verification take place at FAO field and liaison offices on a cyclical basis.

275. **Procurement.** Careful procurement planning is necessary for securing goods, services and works in a timely manner, on a "Best Value for Money" basis. It requires analysis of needs and constraints, including forecast of the reasonable timeframe required to execute the procurement process. Procurement and delivery of inputs in technical cooperation projects will follow FAO's rules and regulations for the procurement of supplies, equipment and services (i.e. Manual Sections 502 and 507). *Manual Section 502*: "Procurement of Goods, Works and Services" establishes the principles and procedures that apply to procurement of all goods, works and services on behalf of the Organization, in all offices and in all locations, with the exception of the procurement actions described in Procurement Not Governed by Manual Section 502. *Manual Section 507* establishes the principles and rules that govern the use of Letters of Agreement (LoA) by FAO for the timely acquisition of services from eligible entities in a transparent and impartial manner, taking into consideration economy and efficiency to achieve an optimum combination of expected whole life costs and benefits.

276. As per the guidance in FAO's Project Cycle Guide, the BH will draw up an annual procurement plan for major items, which will be the basis of requests for procurement actions during implementation. The first procurement plan will be prepared at the time of project start-up, if not sooner, in close consultation with the CTA/NPC and LTU. The plan will include a description of the goods, works, or services to be procured, estimated budget and source of funding, schedule of procurement activities and proposed method of procurement. In situations where exact information is not yet available, the procurement plan should at least contain reasonable projections that will be corrected as information becomes available.

277. The procurement plan shall be updated every 12 months and submitted to FAO BH and LTO for clearance, together with the AWP/B and annual financial statement of expenditures report for the next instalment of funds.

278. The BH, in close collaboration with the CTA/NPC, the LTO and the Budget and Operations Officer will procure the equipment and services provided for in the detailed budget in Appendix 3, in line with the AWO and Budget and in accordance with FAO's rules and regulations.

SECTION 4 – MONITORING, REPORTING AND EVALUATION

4.1. Oversight

279. Project oversight will be carried out by the Project Steering Committees at National and State levels (PSC), the Project Task Force, and the FAO GEF Coordination Unit. Oversight will ensure that: (i) project outputs are produced in accordance with the project results framework and leading to the achievement of project outcomes; (ii) project outcomes are leading to the achievement of the project objective; (iii) risks are continuously identified and monitored and appropriate mitigation strategies are applied (iv) agreed project global environmental benefits/adaptation benefits are being delivered; and (v) adaptive management is being undertaken.

4.2 Project Implementation Monitoring

280. Project monitoring will be carried out in accordance with the established FAO, GEF and GOI procedures. Project performance will be monitored using the project results matrix, including indicators (baseline and targets) and annual work plans and budgets. Detailed M&E plan, which builds on the results matrix and defines specific requirements for each indicator (data collection methods, frequency, responsibilities for data collection and analysis) will also be developed during project inception.

281. As outlined in the project implementation arrangements, the PSCs, TSGs, BMCs and even community level organizations will all monitor various aspects of project implementation, progress and threats. Activity level monitoring by communities/ BMCs will feed into output level monitoring at the Landscape/ district levels by the TSG, DPMU. At the State level, monitoring will be more at the Outcome level. At the national level, both Outcome and Objective level monitoring will the focus. The NPMU, SPMU and GLIU will support monitoring of project activities.

4.3 Reporting

282. Specific reports that will be prepared under the M&E programme are: (i) Project inception report; (ii) Annual Work Plan and Budget (AWP/B); (iii) Project Progress Reports (PPRs); (iv) annual Project Implementation Review (PIR); (v) Technical Reports; (vi) co-financing reports; and (vii) Terminal Report. In addition, assessment of the GEF Monitoring Evaluation Tracking Tools against the baseline (completed during project preparation) will be required at midterm and final project evaluation.

283. **Project Inception Report.** The National PMU will prepare a draft project inception report in consultation with the LTO, BH, FLO and other project partners. Elements of this report should be discussed during the Project Inception Workshop and the report subsequently finalized. The report will include a narrative on the institutional roles and responsibilities and coordinating action of project partners, progress to date on project establishment and start-up activities and an update of any changed external conditions that may affect project implementation. It will also include a detailed first year AWP/B, a detailed project monitoring plan. The draft inception report will be circulated to the PSC for review and comments before its finalization, no later than one month after project start-up. The report should be cleared by the FAO BH, LTO and the FAO GEF Coordination Unit and uploaded in FPMIS by the BH. Furthermore, each of the State level inception reports will set annual targets for all the results planned for the State, in order to provide a trajectory/road map for implementation and management. Similar tagets will also be set for the national level programme activities and a consolidated project level detailed plan will be developed.

284. **Results-based Annual Work Plan and Budget (AWP/B).** The draft of the first AWP/B will be prepared by the PMU in consultation with State PMUs/ District PMUs. The FAO Project Task Force and reviewed at the project Inception Workshop. The Inception Workshop (IW) inputs will be incorporated and the PMU will submit a final draft AWP/B within two weeks of the IW to the BH. For subsequent AWP/B, the PMU will organize a project progress review and planning meeting for its review. Once comments have been incorporated, the BH will circulate the AWP/B to the LTO and the GEF Coordination Unit for comments/clearance prior to uploading in FPMIS by the BH. The AWP/B must be linked to the project's Results Framework indicators so that the project's work is contributing to the achievement of the indicators. The AWP/B should include detailed activities to be implemented to achieve the project outputs and output targets and divided into monthly timeframes and targets and milestone dates for output indicators to be achieved during the year. A detailed project budget for the activities to be implemented during the year should also be included together with all monitoring and supervision activities required during the year. The AWP/B should be approved by the Project Steering Committee and uploaded on the FPMIS by the BH. The National PMU may, in consultation with State and District PMUs institute monthly reporting to it from the States. The OP in each state will prepare an Annual Work Plan and Budget (AWPB) in consultation with the NPMU. After technical clearance from FAO PMU, the OP will submit the AWPB to the State Steering Committee (SSC). After obtaining SSC's endorsement, OP will submit the endorsed AWPB to the National Project Monitoring Unit (NPMU). The NPMU will prepare a consolidated AWPB (which includes AWPB of all OPs and that of the FAO PMU) and submit it to the NPMU. NPMU reviews and submits the consolidated AWPB to the National Project Steering Committee (NPSC) for approval. The OP representatives will be invited as project participants to provide requisite clarifications to the NPSC. After NPSC's endorsement, FAO will initiate the process of operationalizing the consolidated AWPB. After NPSC's approval, FAO will undertake disbursement of funds for project implementation to the OPs under Rules 237 (ii) and 238 (3) of the Government of India's General Financial Rules (GFR), Chapter 10, Budgeting and Accounting of Externally Aided Projects. Figure 2 illustrates the AWPB process.

285. **Half Yearly Project Progress Reports (PPR):** Six monthly PPRs will be prepared by the PMU based on the systematic monitoring of output and outcome indicators identified in the project's Results Framework and submitted to FAO in a format provided by FAO. The purpose of the PPR is to identify constraints, problems or bottlenecks that impede timely implementation and to take appropriate remedial action in a timely manner. They will also report on projects risks and implementation of the risk mitigation plan. The Budget Holder has the responsibility to coordinate the preparation and finalization of the PPR, in consultation with the PMU, LTO and the FLO. After LTO, BH and FLO clearance, the FLO will ensure that project progress reports are uploaded in FPMIS in a timely manner.

286. **Annual Project Implementation Review (PIR**): The BH (in collaboration with the PMU and the LTO) will prepare an annual PIR covering the period July (the previous year) through June (current year) to be submitted to the CBC GEF Funding Liaison Officer (FLO) for review and approval **no later than (check each year with GEF Unit but roughly end June/early July each year)**. The FAO GEF Coordination Unit will submit the PIR to the GEF Secretariat and GEF Evaluation Office as part of the Annual Monitoring Review report of the FAO-GEF portfolio. PIRs will be uploaded on the FPMIS by the CBC GEF Coordination Unit.

287. Key milestones for the PIR process:

- **Early July**: the LTOs submit the draft PIRs (after consultations with BHs, project teams) to the GEF Coordination Unit (faogef@fao.org , copying respective GEF Unit Officer) for initial review;
- **Mid July**: GEF Unit responsible Officers review main elements of PIR and discuss with LTO as required;
- **Early/mid-August**: GEF Coordination Unit prepares and finalizes the FAO Summary Tables and sends to the GEF Secretariat by (date is communicated each year by the GEF Secretariat through the FAO GEF Unit;
- **September/October**: PIRs are finalized. PIRs carefully and thoroughly reviewed by the GEF Coordination Unit and discussed with the LTOs for final review and clearance;

- **Mid November:** (date to be confirmed by the GEF): the GEF Coordination Unit submits the final PIR reports -cleared by the LTU and approved by the GEF Unit- to the GEF Secretariat and the GEF Independent Evaluation Office.

288. **Technical Reports:** Technical reports will be prepared by national, international consultants (partner organizations under LOAs) as part of project outputs and to document and share project outcomes and lessons learned. The drafts of any technical reports must be submitted by the PMU to the BH who will share it with the LTO. The LTO will be responsible for ensuring appropriate technical review and clearance of said report. The BH will upload the final cleared reports onto the FPMIS. Copies of the technical reports will be distributed to project partners and the Project Steering Committee as appropriate.

289. **Co-financing Reports:** The BH, with support from the PMU, will be responsible for collecting the required information and reporting on co-financing as indicated in the Project Document/CEO Request. The PMU will compile the information received from the executing partners and transmit it in a timely manner to the LTO and BH. The report, which covers the period 1 July through 30 June, is to be submitted on or before 31 July and will be incorporated into the annual PIR. The format and tables to report on co-financing can be found in the PIR.

290. **GEF Tracking Tools**: Following the GEF policies and procedures, the relevant tracking tools for full sized projects will be submitted at three moments: (i) with the project document at CEO endorsement; (ii) at the project's mid-term review/evaluation; and (iii) with the project's terminal evaluation or completion report. The TT will be uploaded in FPMIS by the GEF Unit. The TTs are developed by the Project Design Specialist, in close collaboration with the FAO Project Task Force. They are filled in by the PMU and made available for the mid-term review an again for the final evaluation.

291. **Terminal Report:** Within two months before the end date of the project, and one month before the Final Evaluation, the PMU will submit to the BH and LTO a draft Terminal Report. The main purpose of the Terminal Report is to give guidance at ministerial or senior government level on the policy decisions required for the follow-up of the project, and to provide the donor with information on how the funds were utilized. The Terminal Report is accordingly a concise account of the main products, results, conclusions and recommendations of the project, without unnecessary background, narrative or technical details. The target readership consists of persons who are not necessarily technical specialists but who need to understand the policy implications of technical findings and needs for insuring sustainability of project results.

4.4 Evaluation

292. A Mid-Term Review will be undertaken at project mid-term to review progress and effectiveness of implementation in terms of achieving the project objectives, outcomes and outputs. Findings and recommendations of this review/evaluation will be instrumental for bringing improvement in the overall project design and execution strategy for the remaining period of the project's term. FAO will arrange for the mid-term review/evaluation in consultation with the project partners. The evaluation will, *inter alia:*

- Review the effectiveness, efficiency and timeliness of project implementation;
- Analyse effectiveness of partnership arrangements;
- Identify issues requiring decisions and remedial actions;
- Propose any mid-course corrections and/or adjustments to the implementation strategy as necessary; and
- Highlight technical achievements and lessons learned derived from project design, implementation and management.

293. An independent Final Evaluation (FE) will be carried out three months prior to the terminal review meeting of the project partners. The FE will aim to identify the project impacts and sustainability of project results and the degree of achievement of long-term results. This evaluation will also have the purpose of indicating future actions needed to sustain project results and disseminate products and best-practices within the country and to neighbouring countries.

4.5 M&E Plan

The table below presents an overview of the M&E plan. This will be detailed during project inception, especially for each of the 5 States.

Table 35: Project's M&E Activities and Budget

Type of M&E Activity	Responsible Parties	Time-frame	Budgeted costs USD	Corresponding budget Item number (see section 4.8)
Inception Workshops: At national, State and pilot sites level	PMU, FAO Project Task Manager (PTM) supported by the FAO LTO, BH, and the GEF Coordination Unit	Within two months of project start up	36,923	33
Project Inception Report	PMU, FAO PTM cleared by FAO LTO, and the GEF Coordination Unit	Immediately after workshop	Covered under PMU responsibilities. Estimated at 2000 USD	Included in 33
Field based impact monitoring	PMU and relevant line agencies.	Continually	Total= 538,462 USD. This includes the following: • LoA /Develop Monitoring System & Protocols = 288,462 • LoA /Establish (includes training/capacity building) Green Landscape monitoring system at GP, district, and landscape levels = 250,000 Monitoring budget will also include field visit budget noted below.	79, 80

Type of M&E Activity	Responsible Parties	Time-frame	Budgeted costs USD	Corresponding budget Item number (see section 4.8)
Supervision visits and rating of progress in PPRs and PIRs	PMU, FAO LTO and GEF Coordination Unit	Annual or as required	The visits of the FAO and the GEF Coordination Unit will be paid by GEF agency fee. The visits of the PMU will be paid from the project travel budget At least 30% of Green Landscape site visits & local travel budget =443,077	30% of 99
Project Progress Reports	PMU, with inputs from project partners	Six-monthly	Covered under PMU responsibilities, valued at 12000 USD	52 to 62, 68, 69
Project Implementation Review report	PMU supported by FAO PTM, LTO, and project partners and cleared and submitted by the GEF Coordination Unit to the GEF Secretariat	Annual	Covered under PMU/PTM responsibilities. Estimated at 6000 USD	52 to 62, 68, 69
Co-financing Reports	PMU	Annual	Covered under PMU responsibilities, estimated at 6000 USD	
Technical reports	PMU	As appropriate	Studies on various technical subjects Total USD 175,000	75, 84 to 97
Mid-term Review	External Consultant, FAO independent evaluation unit in consultation with the project team including the GEF Coordination Unit and other partners	Conducted and completed during project months 23 and 24	Total USD 109,231 composed of two budget items Including: • Mid-term evaluation USD 100,000 • Mid-term review workshop meeting USD 9,231	29 and 81

Type of M&E Activity	Responsible Parties	Time-frame	Budgeted costs USD	Corresponding budget Item number (see section 4.8)
Final evaluation	External Consultant, FAO independent evaluation unit in consultation with the project team including the GEF Coordination Unit and other partners	Conducted and completed during project months 45 and 46	Total 111,231 composed of two budget items • End term evaluation USD 100,000 • Final evaluation workshops 11,231	18 and 76
Terminal Report	PMU, TCSR (formatting)	Completed by project month 47	Total = 16,615 • To be covered by staff cost. Estimated at 12,000 USD. • Final dissemination workshop = USD 4,615	17, 52 to 62, 68, 69
Total Budget			1,429,388	

4.6 Communication

294. The capture and management of knowledge is fundamentally important to this project. Output 1.2 is designed for this purpose and will be supported by a professional communications team. Information will be fed into the national monitoring programme, the tool-box, and inform adaptation of national and state level Green Landscape Conservation Strategies and related programming. The project will generate a specific strategy to make certain lessons are captured and disseminated effectively. This will include generating management templates, training materials, and other educational resources. The project will initiate an annual lessons-learned workshop to share advances with associated stakeholders, projects, and government agencies. The project's technical team will be tasked with working to make certain best international principles and practices are reflected in all project activities and outcomes. This site will serve as a knowledge repository and function as an organic monitoring, assessment, and reporting tool. The site will provide stakeholders with information regarding best practices and the results of on-going/implemented project activity.

4.7 Project's Strategic Results Framework

Green-Ag: Transforming Indian agriculture for global environmental benefits and the conservation of critical biodiversity and forest landscapes

Project strategy	Indicators	Baseline	End of project	Means of Verification	Assumptions
Project Objective: *To catalyse transformative change of India's agricultural sector to support achievement of national and global environmental benefits and conservation of critical biodiversity and forest landscapes*	O1. Institutionalization of intersectoral mechanisms (agricultural and allied sectors, forestry and natural resources management, and economic development) at national and five States to facilitate mainstreaming of environmental concerns into the agriculture sector beyond project end	0	One National Five States	Government notifications	GOI will continue to prioritize environmental concerns along with increased productivity in the agriculture sector Different government agencies understand and prioritize the need to be involved in cross-sectoral approach to promote environmental mainstreaming in the agriculture sector Current missions will continue throughout the lifetime of the project
	O2. Number of key national and state level agricultural programmes (missions) with results based environmental indicators integrated in their policy and planning frameworks (or through revised guidelines and other tools based on project support)	0	At least six national missions: 1. National Mission on Sustainable Agriculture 2. National Livestock Mission 3. National Food Security Mission 4. National Mission for Horticulture 5. Rashtriya Krishi Vikas Yojana 6. National Initiative on Climate-resilient Agriculture	Government reports	

	O3. Number of community initiatives to support conservation of globally important species such as the tigers, elephants and the Great Indian Bustard	To be determined at inception phase	At least 10 community led initiatives	Project reports	
	O4. Reduction in threat index (as measured through Green Landscape monitoring programme) at key sites of high biodiversity importance within five target Green Landscapes' Production landscape Areas • Rajasthan: 277,930 ha (grassland and orans) • Mizoram: 13,725 ha (*Jhum*) • Madhya Pradesh: 18,000 ha (ravines) *High Value Forests:* Madhya Pradesh 35,000 Mizoram 50,000 Odisha 175,000 Uttarakhand 90,000	Site specific composite threat reduction index to be developed at year 1 of the project and baseline determined.	Site specific target to be set at project 's year 1	Project reports	
	O5. Hectares of farms under sustainable land and water management (including organic farming and	6693 ha	104,070 ha	Community records	

	agrobiodiversity conservation) in target landscapes		• Madhya Pradesh: 9,000 ha • Mizoram: 13,725 ha • Odisha: 34,200 ha • Rajasthan: 34,145 ha • Uttarakhand: 13,000 ha		
	O6. Greenhouse gas emission reduction (tCO2eq newly sequestered or avoided) through improved agroecosystems management in five Green Landscapes	29,102,502 tCO_2 eq	-49,906,455 tCO_2eq	Project report/ (EX-ACT calculations)	
Outcomes	Indicators	Baseline	End of project		
Outcome 1.1. National and state level institutional, policy and programme frameworks strengthened to integrate environmental priorities ***and resilience*** into the agriculture sector to enhance delivery of global environmental benefits (GEB) across	1. Number of new policy recommendations approved by multi-stakeholder platforms of policy makers to strengthen agroecological approach in agriculture and allied sectors at national and State levels	0	12 (at least 2 per State and two at the national level)	Project report	
	2. Number of national and State plans to continue Green Landscape approach at five landscapes and expand beyond project targeted landscapes endorsed by	0	Six (one national and five State)	Government notifications	

landscapes of highest conservation concern	multi- stakeholders and with financing committed				
Outcome 1.2. Cross-sectoral knowledge management and decision-making systems at national and state levels to support development and implementation of agro-ecological approaches at landscape levels that deliver global environmental benefits as well as socioeconomic benefits enhanced	3. Number of protected areas in five target landscapes with threat landscape level reduction monitoring protocols and indicators (such as hunting, encroachment) integrated into protected area management and monitoring in five target landscapes	0	Seven (Desert National Park, Corbett, Rajaji, Similipal, Chambal, Dampa and Thoratlang)	Protected areas management plans	
	4. Number of stories published in newspapers and other media reports on Green Landscape approach, highlighting the importance of agroecological approaches in the agriculture sector for multiple benefits (within the 5 states and at the national level)	0	At least 30 including national and State level	Project reports documenting stories	
	5. Number of local plans (including Gram Panchayat/ Village Council/ Community level) developed based on spatial decision support systems in five landscapes	0	At least 20	Government / community/ NGO plans	
	6.Number of lessons learnt reports published on different themes (environmental, economic, social) documenting relevant lessons learnt	0	12		

Outcome 2.1 – Institutional frameworks, mechanisms and capacities at District and Village levels to support decision-making and stakeholder participation in Green Landscape planning and management strengthened, with Green Landscape Management Plans developed and under implementation for target landscapes	7.Number of Green Landscape management plans promoting agroecological approaches, with clear environmental targets and sustainable livelihoods, gender and social inclusion considerations included, and synergistic to protected areas management plans within the landscape endorsed and under implementation by stakeholders	0	5 plans covering at least 1,800,000 ha	Project report	
	8. Number of district level agencies using Green Landscape plans to realign multi-sectoral investments in project areas	0	25 (at least five in each Landscape)	TSG minutes	
	9. Amount of Government's agriculture sector investment at district levels realigned to support objectives of Green Landscape plans in five landscapes per annum	0	To be decided at project start	TSG minutes	
Outcome 2.2 - Households and communities able and incentivized to engage in agro-ecological practices	10. Number of households that have adopted sustainable agriculture practices on their farms, including	0	• Rajasthan: 3,162 • Odisha:37,500	Project report	

that deliver meaningful GEB at the landscape level in target high conservation priority landscapes	agrobiodiversity conservation measures		• Uttarakhand: 14,700 • Mizoram: 5,490 • Madhya Pradesh: 7,500		
	11. Number households involved in community natural resources management plans development and implementation in line with overall Green Landscape management objective/s	0	185,000	Project report	
	12. Number of new value chains and associated business plans developed for landscape products, linked to agro-ecological farming and sustainable natural resources management in target areas, and under implementation	0	At least 20 value chains	Project reports/ FPO registration reports	
	13. Number of households implementing improved livestock	0	Madhya Pradesh: 8,000 Odisha: 22,500	Project reports	

	management – including nutrition and fodder management (e.g. community fodder banks) –contributing to conservation of global environmental values		Rajasthan 6,000 Uttarakhand 10,000		
	14. Number of women participating in and benefitting from female cohort specific Green-Ag (agro-ecological) Farmer Field Schools	0	40,000 females: • Rajasthan: 3,000 • Odisha: 12,000 • Uttarakhand: 19,000 • Mizoram: 2,000 • Madhya Pradesh: 4,000	Project reports	

Project Outputs

1.1.1 National and state level inter-sectoral (agricultural and allied sectors, forestry and natural resources management, and economic development) coordinating committees established and institutionalized to facilitate cross-sectoral support to mainstream environmental priorities in the agriculture sector (target: 1 national, 5 state level)

1.1.2 'Policy Dialogues' established to inform and facilitate discussion of priority issues related to agriculture, environment *including climate change* and development, including gender issues, at national and state levels, including options to shift current investments in agricultural development to support more environmentally sustainable practices (target: 1 national, 5 state dialogues)

1.1.3 Policy briefs, advocacy and awareness-raising materials developed to inform discussions and decision making on priority issues related to agriculture, environment and development (target: 10 national policy briefs, 15 state briefs)

1.1.4 “Green Landscape” mainstreaming strategies developed to promote environmental protection as part of broader sustainable agriculture and natural resource management, including strategic re-direction and prioritization of agricultural initiatives and investments to encourage agricultural practices that deliver GEBs at the landscapes of highest ecological value (target: 1 national and 5 state level)

1.2.1 – Spatial decision support system and tools, and compilation of existing land use information from international, national and state level sources (satellite imageries and other existing GIS database), developed and institutionalized, and users trained in their use (target: 1 national level system)

1.2.2 – Green Landscape monitoring programme (monitoring system and protocols) to assess the health/status of the target Green Landscapes and evaluate progress towards delivery of GEBs and social and economic impacts (e.g. farmer income, food security) established and implemented, with relevant individuals equipped and trained in its use (target: 1 national and 5 state programmes)

1.2.3 –Communication strategy and plan designed and implemented (including development of an information management platform) to facilitate knowledge sharing, mainstreaming and replication of lessons learned and ‘best practices’ for Green Landscapes (target: 1 national and 5 state platforms and communication strategies/plans) Output

2.1.1 Inter-sectoral institutional framework and mechanisms at district, inter-district and sub-district (District and Gram Panchayat/ Village Council) levels established (target: 8 mechanisms)

2.1.2 – Key local decision-makers from each target Gram Panchayat/Village Council trained in Green Landscape governance through Field schools to enable members to make collective, evidence-based and empowered in Green Landscape governance for areas within their responsibility (target: Madhya Pradesh – 60; Mizoram – 60; Odisha – 150; Rajasthan – 20; Uttarakhand – 200)

2.1.3 – District level technical and extension staff from different government sectors trained in Green Landscape approaches and issues to enable them to support local communities and farmers to implement agro-ecological practices (target: at least 80 individuals)

2.1.4 - Green Landscape Assessments undertaken, with social (including gender), economic (including valuation of key ecosystem services), institutional, biophysical aspects of target areas identified, priority locations and actions agreed, and sequence of activities programmed (target: 5 assessment reports

2.1.5 - District level ‘convergence plans’ that align government programmes and investments with Green Landscape management objectives and which incentivize agro-ecological approaches at landscape levels produced (target: 8 convergence plans)

Output 2.2.1 – Farmers trained through FFS on sustainable agriculture, with modules adapted to the specific needs of farmers near PAs and other high ecological value areas, including on management of livestock

Output 2.2.2 – Local stakeholders trained on accessing available incentives to adopt sustainable practices and livelihood options, including Green Value Chain development to promote market linkages for income generation (target: to be determined)

Output 2.2.3 – Wider community level awareness-raising campaigns to ensure wider stakeholder support for Green Landscape management and other land users and to ensure inter-community learning (targets, for both eco-clubs and information platforms: Madhya Pradesh – 50; Mizoram – 50; Odisha – 50; Rajasthan – 50; Uttarakhand – 50

Output 2.2.4 – Community based natural resources management plans designed and under implementation in target Green Landscapes, including community grassland/ ravines/forests/watershed management (number to be determined in year 1)

Output 2.2.5 – On-farm agro-ecological management measures, including livestock management, to improve productivity and profits while reducing threats to GEBs identified, designed and promoted (target: various but to be determined)

4.8 Project Budget and Work Plan

Table 36: Year wise Summary Budget

Consolidated Budget										
Item No	**Expenses Account**	**Costs description**	**Sum of USD costs Y1**	**Sum of USD costs Y2**	**Sum of USD costs Y3**	**Sum of USD costs Y4**	**Sum of USD costs Y5**	**Sum of USD costs Y6**	**Sum of USD costs Y7**	**Sum of Total USD costs**
1	**5023 Training**	Annual Work Plan & Budget Meetings	8,846	8,846	8,846	8,846	8,846	8,846	-	53,077
2		Capacity development of NPMU on gender and FPIC issues	1,538	-	-	-	-	-	-	1,538
3		Capacity development of State level project implementation units on incorporating gender and FPIC issues	8,000	8,000	8,000	8,000	8,000	-	-	40,000
4		Capacity Development of District & Sub-district groups	3,385	-	3,385	-	3,385	-	-	10,154
5		Capacity development on gender and FPIC	17,538	-	-	-	-	-	-	17,538
6		Capacity development on Green Value Chains	17,308	17,308	17,308	-	-	-	-	51,923
7		CD workshop on Ecotourism	-	19,846	-	-	-	-	-	19,846
8		CD workshop on GL Gov	-	20,000	-	-	-	-	-	20,000
9		CD workshop on Green Ag	-	20,000	-	-	-	-	-	20,000
10		CD workshop on Livestock Management	-	20,000	-	-	-	-	-	20,000
11		Community trainings on Ecotourism	-	-	15,385	15,385	15,385	15,385	-	61,538

Consolidated Budget										
Item No	**Expenses Account**	**Costs description**	**Sum of USD costs Y1**	**Sum of USD costs Y2**	**Sum of USD costs Y3**	**Sum of USD costs Y4**	**Sum of USD costs Y5**	**Sum of USD costs Y6**	**Sum of USD costs Y7**	**Sum of Total USD costs**
12		Develop Grassland Management Plans inside DNP	-	-	15,385	15,385	15,385	15,385	-	61,538
13		Develop Grassland Management Plans outside DNP	-	-	15,385	15,385	15,385	15,385	-	61,538
14		FFS - Capacity development on GL Gov	-	250,000	-	-	-	-	-	250,000
15		FFS - Capacity development on Green Ag	-	300,000	-	-	-	-	-	300,000
16		FFS - Capacity development on Livestock Management	-	250,000	-	-	-	-	-	250,000
17		Final Dissemination workshop	-	-	-	-	-	-	4,615	4,615
18		Final Evaluation workshop/meetings	-	-	-	-	-	11,231	-	11,231
19		GP Support Group meetings	-	17,108	17,108	17,108	17,108	17,108	-	85,538
20		Green Landscape Implementation Support	-	866,982	866,982	866,982	866,982	832,952	-	4,300,881
21		Implement FFS on GL Gov	-	-	147,692	264,615	341,538	-	-	753,846
22		Implement FFS on Green Ag	-	129,231	506,154	906,154	1,196,923	1,538,462	-	4,276,923
23		Implement FFS on Livestock Management	-	129,231	536,923	967,692	1,375,385	1,784,615	-	4,793,846
24		International consultant on FPIC/Gender issues	3,000	-	-	-	-	-	-	3,000
25		International travel	2,308	-	-	-	-	-	-	2,308

Consolidated Budget										
Item No	**Expenses Account**	**Costs description**	**Sum of USD costs Y1**	**Sum of USD costs Y2**	**Sum of USD costs Y3**	**Sum of USD costs Y4**	**Sum of USD costs Y5**	**Sum of USD costs Y6**	**Sum of USD costs Y7**	**Sum of Total USD costs**
26		Knowledge sharing b/w sites	-	-	-	27,500	-	27,500	-	55,000
27		Knowledge sharing intra-state	-	-	-	11,538	-	11,538	-	23,077
28		Knowledge sharing nationally & internationally	-	-	-	100,000	20,000	100,000	20,000	240,000
29		Mid-term Review Workshop meetings	-	-	9,231	-	-	-	-	9,231
30		National Dialogue on agriculture environment & development	-	-	6,154	-	-	-	-	6,154
31		National Project Monitoring Committee (NPMC) meetings	615	615	615	615	615	615	615	4,308
32		National Project Steering Committee (NPSC) meetings	615	615	615	615	615	615	615	4,308
33		Project Inception Workshops	36,923	-	-	-	-	-	-	36,923
34		School Eco-clubs	-	23,077	23,077	23,077	23,077	23,077	-	115,385
35		State Dialogue on agriculture environment & development	25,000	50,000	50,000	50,000	50,000	50,000	-	275,000
36		State Steering Committee (SSC) Meetings	38,154	38,154	38,154	38,154	38,154	38,154	-	228,923
37		Strengthen /establish value chains	-	-	-	40,000	60,000	-	-	100,000
5023 Training Total			**163,231**	**2,169,013**	**2,286,398**	**3,377,052**	**4,056,782**	**4,490,867**	**25,846**	**16,569,189**
38		GLIU - Accountant	36,923	40,615	44,677	49,145	54,059	59,465	-	284,884

Consolidated Budget										
Item No	**Expenses Account**	**Costs description**	**Sum of USD costs Y1**	**Sum of USD costs Y2**	**Sum of USD costs Y3**	**Sum of USD costs Y4**	**Sum of USD costs Y5**	**Sum of USD costs Y6**	**Sum of USD costs Y7**	**Sum of Total USD costs**
39	**5570 Consultants**	GLIU - Animal Husbandry Expert	55,385	60,923	67,015	73,717	81,089	89,197	-	427,326
40		GLIU - Community Institutions Expert	55,385	60,923	67,015	73,717	81,089	89,197	-	427,326
41		GLIU - Community Resource Persons (CRPs)	341,538	341,538	341,538	341,538	341,538	341,538	-	2,049,231
42		GLIU - District Support Officer	88,615	97,477	107,225	117,947	129,742	142,716	-	683,722
43		GLIU - Executive Assistant/DTP	20,308	22,338	24,572	27,030	29,732	32,706	-	156,686
44		GLIU - FFS Expert	55,385	58,486	64,335	70,768	77,845	85,630	-	412,448
45		GLIU - Gender Expert	55,385	60,923	67,015	73,717	81,089	89,197	-	427,326
46		GLIU - GL Team Leader/NRM Expert	69,231	76,154	83,769	92,146	101,361	111,497	-	534,158
47		GLIU - MIS Expert	27,692	30,462	33,508	36,858	40,544	44,599	-	213,663
48		GLIU - Office Assistant	9,231	10,154	11,169	12,286	13,515	14,866	-	71,221
49		Intl expert FFS	-	60,000	-	-	-	-	-	60,000
50		Intl expert Green Landscapes Management/Governance	-	60,000	-	-	-	-	-	60,000
51		Intl expert Sustainable Forest Management	-	60,000	-	-	-	-	-	60,000
52		NPMU - Accountant	18,462	20,308	22,338	24,572	27,030	29,732	32,706	175,148
53		NPMU - Animal Husbandry Expert	31,154	45,692	50,262	55,288	36,490	33,449	29,435	281,769
54		NPMU - Communications Officer	31,154	45,692	50,262	55,288	36,490	33,449	29,435	281,769
55		NPMU - Ecotourism Expert	-	7,692	19,231	19,231	19,231	-	-	65,385
56		NPMU - FFS Expert	31,154	45,692	50,262	55,288	36,490	33,449	29,435	281,769

Consolidated Budget										
Item No	**Expenses Account**	**Costs description**	**Sum of USD costs Y1**	**Sum of USD costs Y2**	**Sum of USD costs Y3**	**Sum of USD costs Y4**	**Sum of USD costs Y5**	**Sum of USD costs Y6**	**Sum of USD costs Y7**	**Sum of Total USD costs**
57		NPMU - Gender and FPIC Expert	31,154	45,692	50,262	55,288	36,490	33,449	29,435	281,769
58		NPMU - Green Value Chain Expert	-	23,077	23,077	23,077	9,231	-	-	78,462
59		NPMU - National Dialogue Facilitator	13,846	13,846	27,692	-	-	-	-	55,385
60		NPMU - Office Assistant	9,231	10,154	11,169	12,286	13,515	14,866	16,353	87,574
61		NPMU - Participatory NRM Expert	31,154	45,692	50,262	55,288	36,490	33,449	29,435	281,769
62		NPMU - Project M&E Expert	31,154	41,538	45,692	50,262	55,288	60,816	66,898	351,648
63		SPMU - Accountant	40,615	43,754	47,206	51,004	55,181	59,776	-	297,536
64		SPMU - Communications Officer	59,077	64,985	71,483	78,631	86,495	95,144	-	455,814
65		SPMU - Executive Assistant/DTP	32,308	31,688	34,857	38,343	42,177	46,395	-	225,769
66		SPMU - Office Assistant	11,077	12,185	13,403	14,743	16,218	17,839	-	85,465
67		SPMU - State Technical Coordinator	108,769	119,646	131,611	144,772	159,249	175,174	-	839,221
5570 Consultants Total			**1,295,385**	**1,657,328**	**1,610,907**	**1,702,229**	**1,697,665**	**1,767,598**	**263,133**	**9,994,245**
68	**5011 Salaries General**	NPMU – Project Associate (G5-50% GEF, 50% Agency fee)	33,000	36,300	39,930	43,923	48,315	53,147	58,462	313,077
5011 Salaries General Total			**33,000**	**36,300**	**39,930**	**43,923**	**48,315**	**53,147**	**58,462**	**313,077**
69	**5012 Salaries Professional**	NPMU - National Technical Coordinator (NOB)	96,008	105,609	116,170	127,787	140,565	154,622	170,084	910,844
5012 NPMU – National Technical Coordinator			**96,008**	**105,609**	**116,170**	**127,787**	**140,565**	**154,622**	**170,084**	**910,844**

Consolidated Budget										
Item No	**Expenses Account**	**Costs description**	**Sum of USD costs Y1**	**Sum of USD costs Y2**	**Sum of USD costs Y3**	**Sum of USD costs Y4**	**Sum of USD costs Y5**	**Sum of USD costs Y6**	**Sum of USD costs Y7**	**Sum of Total USD costs**
70	**5650 Contracts**	Annual Audits (including travel and DSA)	22,000	22,000	22,000	22,000	22,000	22,000	-	132,000
71		Contracts for reprinting of materials	-	16,923	16,923	16,923	16,923	16,923	1,538	86,154
72		Convergence and Planning Workshops with TSG	7,692	-	-	-	-	-	-	7,692
73		Decision Support System	61,538	-	-	-	-	-	-	61,538
74		Design and Printing of publications & awareness materials	-	28,462	28,462	28,462	28,462	28,462	2,308	144,615
75		Documentation of successful initiatives on sustainable jhum in other parts of Northeast India	-	5,000	-	-	-	-	-	5,000
76		End term evaluation	-	-	-	-	-	-	100,000	100,000
77		Green Landscape Information Platform	-	153,846	241,538	241,538	180,000	106,154	-	923,077
78		Independent assessment FPIC by project	-	-	15,385	-	-	-	-	15,385
79		LoA /Develop Monitoring System & Protocols	288,462	-	-	-	-	-	-	288,462
80		LoA /Establish (includes training/capacity development) Green Landscape monitoring system at GP, district, and landscape levels	250,000	-	-	-	-	-	-	250,000
81		Mid term evaluation	-	-	100,000	-	-	-	-	100,000

Consolidated Budget										
Item No	**Expenses Account**	**Costs description**	**Sum of USD costs Y1**	**Sum of USD costs Y2**	**Sum of USD costs Y3**	**Sum of USD costs Y4**	**Sum of USD costs Y5**	**Sum of USD costs Y6**	**Sum of USD costs Y7**	**Sum of Total USD costs**
82		Social/Gender,BD & Capacity Assessment to identify High Priority Areas	500,000	-	-	-	-	-	-	500,000
83		Spatial decision support systems and tools/updating	65,129	-	9,304	-	9,304	-	9,304	93,041
84		Studies on addressing Akhand Shikar	-	5,000	-	-	-	-	-	5,000
85		Studies on agrobiodiversity value of jhum plots	-	5,000	-	-	-	-	-	5,000
86		Studies on environment friendly sand mining in Chambal	-	5,000	-	-	-	-	-	5,000
87		Studies on environmentally/GIB friendly Locust control measures	-	5,000	-	-	-	-	-	5,000
88		Studies on Green Value Chains	25,000	-	-	-	-	-	-	25,000
89		Studies on human-wildlife conflict	15,000	5,000	-	-	-	-	-	20,000
90		Studies on incentives for environment friendly agriculture	-	15,000	-	-	-	-	-	15,000
91		Studies on incentives for reviving agrobiology	5,000	-	-	-	-	-	-	5,000
92		Studies on linkages between ITK and BD Conservation	5,000	-	-	-	-	-	-	5,000

Consolidated Budget										
Item No	**Expenses Account**	**Costs description**	**Sum of USD costs Y1**	**Sum of USD costs Y2**	**Sum of USD costs Y3**	**Sum of USD costs Y4**	**Sum of USD costs Y5**	**Sum of USD costs Y6**	**Sum of USD costs Y7**	**Sum of Total USD costs**
93		Studies on local procurement for Social safety net programs	-	25,000	-	-	-	-	-	25,000
94		Studies on optimal Ravine Management	5,000	-	-	-	-	-	-	5,000
95		Studies on Sustainable Energy Alternatives	10,000	5,000	-	-	-	-	-	15,000
96		Studies on wildlife trade in the landscape	5,000	-	-	-	-	-	-	5,000
97		Studies to support/provide inputs to National dialogue	-	-	25,000	-	-	5,000	-	30,000
98		Third party Monitoring Agent services	92,000	-	-	-	-	-	-	92,000
5650 Contracts Total			**1,356,821**	**296,231**	**458,612**	**308,923**	**256,689**	**178,538**	**113,150**	**2,968,964**
99	**5900 Travel**	Green Landscape site visits & local travel	240,000	240,000	240,000	240,000	240,000	240,000	36,923	1,476,923
100		Inter-state travel	-	-	-	9,615	-	9,615	-	19,231
101		Local travel	1,154	1,154	1,154	1,154	1,154	1,154	1,154	8,077
102		Monitoring Visits (team of 2, 2 visits per year)	17,000	17,000	17,000	17,000	17,000	17,000	-	102,000
103		National-level workshops/ seminars	12,308	12,308	12,308	12,308	12,308	12,308	3,077	76,923
104		Travel for international consultants	-	120,000	-	-	-	-	-	120,000
5900 Travel Total			**270,462**	**390,462**	**270,462**	**280,077**	**270,462**	**280,077**	**41,154**	**1,803,154**
105	**6000 Expendable procurement**	Communication	7,754	7,754	7,754	7,754	7,754	7,754	1,846	48,369
106		Miscellaneous	11,077	11,077	11,077	11,077	11,077	11,077	1,846	68,308
106		Printer cartridges	11,446	11,446	11,446	11,446	11,446	11,446	2,215	70,892
107		Stationery	10,338	10,338	10,338	10,338	10,338	10,338	1,477	63,508

Consolidated Budget										
Item No	**Expenses Account**	**Costs description**	**Sum of USD costs Y1**	**Sum of USD costs Y2**	**Sum of USD costs Y3**	**Sum of USD costs Y4**	**Sum of USD costs Y5**	**Sum of USD costs Y6**	**Sum of USD costs Y7**	**Sum of Total USD costs**
6000 Expendable procurement Total			**40,615**	**40,615**	**40,615**	**40,615**	**40,615**	**40,615**	**7,385**	**251,077**
108	**6100 Non-expendable procurement**	Computers/laptops	72,538	-	-	33,462	-	-	-	106,000
109		Laser Printers	16,154	-	-	16,154	-	-	-	32,308
109		LCD projectors	1,538	-	-	1,538	-	-	-	3,077
110		Office Furniture	47,692	-	-	-	-	-	-	47,692
6100 Non-expendable procurement Total			**137,923**	**-**	**-**	**51,154**	**-**	**-**	**-**	**189,077**
111	**6300 GOE budget**	Miscellaneous including contingencies	42,308	42,308	42,308	42,308	42,308	42,308	4,615	258,462
112		Office Rent	36,923	38,769	40,708	42,743	44,880	47,124	49,480	300,628
6300 GOE budget Total			**79,231**	**81,077**	**83,015**	**85,051**	**87,188**	**89,432**	**54,096**	**559,090**
Grand Total			**3,472,675**	**4,776,635**	**4,906,109**	**6,016,810**	**6,598,282**	**7,054,896**	**733,309**	**33,558,716**

Table 37: Work Plan

	State	(No)	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	Y7 Q1	Y7 Q2	Y7 Q3	Y7 Q4
Component 1: India's agricultural sector mainstreaming BD, SLM, CCM and SFM across target landscapes																													
Outcome 1.1: State Institutional and policy frameworks strengthened to support Green Landscapes management, better integration of agricultural and conservation concerns, and deliver GEBs																													
Output 1.1.1: National and state level inter-sectoral coordinating committees established and institutionalized to facilitate cross sectoral support to mainstream environmental priorities in agriculture sector																													
Activity 1.1: National Project Monitoring Committee Meetings	NPMU	28																											

	State	(No)	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	Y7 Q1	Y7 Q2	Y7 Q3	Y7 Q4
Activity 1.2: National Steering Committee Meetings	NPMU	14																											
Activity 1.3: Project Inception Workshops	NPMU	1																											
Activity 1.4: State Steering Committee (SSC) Meeting	MP	12																											
	OD	12																											
	UK	12																											
	MZ	12																											
	RJ	12																											
Output 1.1.2: 'Policy Dialogues' established to inform and facilitate discussion of priority issues related to agriculture, environment and development																													
Activity 2.1: National dialogue on agriculture environment and development	NPMU	1																											
Activity 2.2: State dialogue on agriculture environment and development	MP	11																											
	OD	11																											
	UK	11																											
	MZ	11																											
	RJ	11																											
Output 1.1.3: Policy briefs, advocacy and awareness-raising materials developed to inform discussions and decision making on priority issues related to agriculture, environment and development																													
Activity 3.1: Discussion paper on devleopment of National Green Landscape Mission	NPMU	1																											

	State	(No)	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	Y7 Q1	Y7 Q2	Y7 Q3	Y7 Q4
Activity 3.2: Studies to support/provide inputs to National dialogue	NPMU	5																												
Activity 3.3: Project Inception Workshops	MP	2																												
	OD	2																												
	UK	2																												
	MZ	2																												
	RJ	2																												
Activity 3.4: Studies on Green Value Chains	MP	1																												
	OD	1																												
	UK	1																												
	MZ	1																												
	RJ	1																												
Activity 3.5: Studies on local procurement for Social safety net programs	MP	1																												
	OD	1																												
	UK	1																												
	MZ	1																												
	RJ	1																												
Activity 3.6: Studies on human-wildlife conflict	MP	1																												
	OD	1																												
	UK	1																												
	RJ	1																												
Activity 3.7: Studies on incentives for environment friendly agriculture	MP	1																												
	OD	1																												
	RJ	1																												
	MP	1																												

	State	(No)	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	Y7 Q1	Y7 Q2	Y7 Q3	Y7 Q4
Activity 3.8: Studies on Sustainable Energy Alternatives	OD	1																												
	UK	1																												
Activity 3.9: Studies on environment friendly sand mining in Chambal	MP	1																												
Activity 3.10: Studies on optimal Ravine Management	MP	1																												
Activity 3.11: Studies on successful initiatives on sustainable *jhum* in other parts of the Northeast India	MZ	1																												
Activity 3.12: Studies on agrobiodiversity value of *jhum* plots	MZ	1																												
Activity 3.13: Studies on wildlife trade in landscape	MZ	1																												
Activity 3.14: Studies on addressing Akhand Shikhar	OD	1																												
Activity 3.15: Studies on linkages between ITK and BD Conservation	OD	1																												
Activity 3.16: Studies on Environmentally/GIB friendly Locust control measures	RJ	1																												

	State	(No)	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	Y7 Q1	Y7 Q2	Y7 Q3	Y7 Q4
Activity 3.17: Studies on incentives for reviving agrobiology	UK	1																											
Output 1.1.4: "Green Landscape" mainstreaming strategies developed to promote environmental protection as part of broader sustainable agriculture and natural resource management																													
Activity 4.1: Inclusion of GL in National Development Strategy	NPMU	12																											
Activity 4.2: National agricultural policies fully incorporate measurable indicators to conserve critical biodiversity and forest landscapes (e.g. NMSA)	NPMU	1																											
Activity 4.3: National Agriculture Sustainability Index	NPMU	5																											
Activity 4.4: National Green Landscape Assessments for upscaling	NPMU	11																											
Activity 4.5: Risk mitigation and assurance - Spot checks (MP, MZ, RJ and UK)	NPMU	24																											
Activity 4.6: Risk mitigation and assurance - Spot checks (OD)	NPMU	12																											

	State	(No)	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	Y7 Q1	Y7 Q2	Y7 Q3	Y7 Q4
Activity 4.7: Risk mitigation and assurance - Annual Audits	NPMU	30																											
Activity 4.8: Risk mitigation and assurance - Monitoring visits	NPMU	60																											
Activity 4.9: Risk mitigation and assurance - Third party monitoring	NPMU	60																											
Activity 4.10: Green Landscape Management Strategies and Action Plans	MP	5																											
	OD	5																											
	UK	5																											
	MZ	5																											
	RJ	5																											
Activity 4.11: Inclusion of Green Landscape in State's Development plan/ Vision Doc	MP	1																											
	OD	1																											
	UK	1																											
	MZ	1																											
	RJ	1																											
Activity 4.12: State Green Landscape Assessments for upscaling	MP	1																											
	OD	1																											
	UK	1																											
	MZ	1																											
	RJ	1																											
Outcome 1.2: Decision-Support and Knowledge Management tools inform State, and District level conservation and agriculture policy choices																													

	State	(No)	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	Y7 Q1	Y7 Q2	Y7 Q3	Y7 Q4
Output 1.2.1: Spatial decision support system and tools, and compilation of existing land use information from international, national and state level sources , developed and institutionalized, and users trained in their use																													
Activity 1.1: Spatial decision support systems and tools/updating	NPMU	1																											
Output 1.2.2: Green Landscape monitoring programme (monitoring system and protocols) to assess the health/status of the target Green Landscapes and evaluate progress towards delivery of GEBs and social and economic impacts established and implemented																													
Activity 2.1: Develop National monitoring system and protocols for Green Landscape	NPMU	1																											
Activity 2.2: Develop monitoring system and protocols (including grassland index and carrying capacity)	MP	1																											
	OD	1																											
	UK	1																											
	MZ	1																											
	RJ	1																											
Activity 2.3: Establish (includes training/capacity building) Green Landscape monitoring system at GP, district, and landscape levels	MP	1																											
	OD	1																											
	UK	1																											
	MZ	1																											
	RJ	1																											
Output 1.2.3: Communication strategy and plan designed and implemented																													

	State	(No)	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	Y7 Q1	Y7 Q2	Y7 Q3	Y7 Q4
Activity 3.1: Conservation agriculture “best practices” captured and disseminated	NPMU																												
Activity 3.2: Document lessons learnt from Field Schools approach and strategies of mainstreaming	NPMU																												
Activity 3.3: Establish Communication Teams at State level	MP	1																											
	OD	1																											
	UK	1																											
	MZ	1																											
	RJ	1																											
Activity 3.4: Knowledge and communication products	NPMU	14																											
Activity 3.5: Konwledge Exchange Platform for Project Agencies & Personnel	NPMU	1																											
Activity 3.6: Knowledge sharing between sites	MP	2																											
	NPMU	2																											
	OD	2																											
	UK	2																											
	MZ	2																											
	RJ	2																											
	MP	2																											

	State	(No)	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	Y7 Q1	Y7 Q2	Y7 Q3	Y7 Q4
Activity 3.7: Knowledge sharing intra-state	OD	2																											
	UK	2																											
	MZ	2																											
	RJ	2																											
Activity 3.8: Knowledge sharing nationally and internationally	MP	1																											
	NPMU	2																											
	OD	1																											
	UK	1																											
	MZ	1																											
	RJ	1																											
Component 2: Improved agricultural and conservation practices demonstrating sustainable production, livelihood advancements, habitat improvements and delivery of tangible BD, LD, CCM, and SFM benefits																													
Outcome 2.1: Institutional frameworks, mechanisms and capacities at District and Village levels to support decision-making and stakeholder participation in Green Landscape planning and management strengthened, with Green Landscape Management Plans																													
Output 2.1.1: Institutional frameworks, mechanisms and capacities at District and Village levels to support decision-making and stakeholder participation in Green Landscape planning and management strengthened																													
Activity 1.1: National level project monitoring and review lessons learnt	NPMU																												
Activity 1.2: Orientation on Project Implementation Structure, Roles and Responsibilities, Reporting requirements	NPMU	1																											

	State	(No)	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	Y7 Q1	Y7 Q2	Y7 Q3	Y7 Q4
Activity 1.3: Capacity Building of National level project implementation unit on incorporating gender and FPIC issues	NPMU	1																											
Activity 1.4: Capacity development on incorporating gender and FPIC issues	MP	1																											
	OD	1																											
	UK	1																											
	MZ	1																											
	RJ	1																											
Activity 1.5: Mid-term Review and Final Evaluation	NPMU	1																											
Activity 1.6: Technical Support Group (TSG) Meetings	MP	24																											
	OD	24																											
	UK	24																											
	MZ	24																											
	RJ	24																											
Activity 1.7: Biodiversity Management Committees (BMCs) Meetings	MP	7200																											
	OD	7200																											
	UK	7200																											
	MZ	7200																											
	RJ	7200																											
	MP	800																											
	OD	800																											

	State	(No)	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	Y7 Q1	Y7 Q2	Y7 Q3	Y7 Q4
Activity 1.8: Gram Panchayat Support Groups Meetings	UK	800																											
	MZ	800																											
	RJ	800																											
Activity 1.9: Capacity buiding of National level project implementation unit on incorporating gender and FPIC issues	NPMU	1																											
Activity 1.10: Local (district and local) stakeholder monitor and review lessons learnt	MP	2																											
	OD	2																											
	UK	2																											
	MZ	2																											
	RJ	2																											
Output 2.1.2: Key local decision-makers from each target Gram Panchayat/Village Council trained in Green Landscape governance through Field schools																													
Activity 2.1: Curriculum development support for Field Schools--Green Landscape Governance, livestock, and agri	NPMU	1																											
Activity 2.2: Capacity development on FFS in Green Landscape Governance	MP	1																											
	NPMU	1																											
	OD	1																											
	UK	1																											
	MZ	1																											
	RJ	1																											

	State	(No)	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	Y7 Q1	Y7 Q2	Y7 Q3	Y7 Q4
Activity 2.3: Capacity building of district and sub-district groups	MP	12																											
	OD	12																											
	UK	12																											
	MZ	12																											
	RJ	12																											
Activity 2.4: Curriculum development workshops on Green Landscape Governance	MP	1																											
	OD	1																											
	UK	1																											
	MZ	1																											
	RJ	1																											
Activity 2.5: Implement Field Schools on Green Landscape Governance	MP	60																											
	OD	60																											
	UK	60																											
	MZ	60																											
	RJ	60																											
Output 2.1.3: District level technical and extension staff from different government sectors trained in Green Landscape approaches																													
Activity 3.1: Technical backstopping to all Field Schools--Green landscape, livestock, agri	NPMU	150																											
Output 2.1.4: Green Landscape Assessments undertaken, with social, economic, institutional, biophysical aspects of target areas																													
Activity 4.1: Social and BD Assessment to identify High Priority Areas	MP	1																											
	OD	1																											
	UK	1																											
	MZ	1																											

	State	(No)	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	Y7 Q1	Y7 Q2	Y7 Q3	Y7 Q4
	RJ	1																												
Activity 4.2: Document local indigenous knowledge (Co-finance)	MP	1																												
	OD	1																												
	UK	1																												
	MZ	1																												
	RJ	1																												
Output 2.1.5: District level ‘’convergence plans’ that align government programmes and investments with Green Landscape management objectives and which incentivize agro-ecological approaches at landscape levels produced																														
Activity 5.1: Convergence and Planning Workshops with TSG	MP	1																												
	OD	1																												
	UK	1																												
	MZ	1																												
	RJ	1																												
Outcome 2.2: Capacity building program established with local communities engaging in agro-ecological production and conservation learning																														
Output 2.2.1: Farmers trained through FFS on sustainable agriculture, with modules adapted to the specific needs of farmers near PAs and other high ecological value areas, including on management of livestock																														
Activity 1.1: FFS on sustainable agriculture, including on management of livestock	NPMU	24																												
Activity 1.2: Curriculum development workshops on Green Agri	MP	1																												
	OD	1																												
	UK	1																												
	MZ	1																												
	RJ	1																												
Activity 1.3: Curriculum development	MP	1																												
	OD	1																												

	State	(No)	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	Y7 Q1	Y7 Q2	Y7 Q3	Y7 Q4
workshops on Livestock Management	UK	1																											
	MZ	1																											
	RJ	1																											
Activity 1.4: Capacity development on FFS in Green Agri	MP	1																											
	OD	1																											
	UK	1																											
	MZ	1																											
	RJ	1																											
Activity 1.5: Capacity development on FFS in Livestock Management	MP	1																											
	OD	1																											
	UK	1																											
	MZ	1																											
	RJ	1																											
Output 2.2.2: Local stakeholders trained in Green Value Chain development through FFS with Green Value Chains developed and promoted																													
Activity 2.1: Curriculum development support for Ecotourism linked to GL conservation	NPMU	1																											
Activity 2.2: Curriculum development support for Green Value Chains linked to agro-biodiversity	NPMU	1																											
Activity 2.3: Community members trained on ecotourism	MP	4																											
	OD	4																											
	UK	4																											

	State	(No)	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	Y7 Q1	Y7 Q2	Y7 Q3	Y7 Q4
	MZ	4																											
	RJ	4																											
Activity 2.4: Curriculum development workshops on Ecotourism	MP	1																											
	OD	1																											
	UK	1																											
	MZ	1																											
	RJ	1																											
Output 2.2.3: Wider community level awareness-raising campaigns to ensure wider stakeholder support for Green Landscape management																													
Activity 3.1: Ecoclubs and volunteers	MP	50																											
	OD	50																											
	UK	50																											
	MZ	50																											
	RJ	50																											
Activity 3.2: Green Landscape Information Platform	MP	90																											
	OD	90																											
	UK	90																											
	MZ	90																											
	RJ	90																											
Activity 3.3: Capacity development on Green Value Chains	MP	3																											
	OD	3																											
	UK	3																											
	MZ	3																											
	RJ	3																											
Output 2.2.4: Community based natural resources management plans designed and under implementation in target Green Landscapes, including community grassland/ ravines/forests/watershed management																													
	MP	6																											

	State	(No)	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	Y7 Q1	Y7 Q2	Y7 Q3	Y7 Q4
Activity 4.1: Green Landscape plans implementation support	OD	6																											
	UK	6																											
	MZ	6																											
	RJ	6																											
Activity 4.2: Strengthen/establish value chains	MP	5																											
	OD	5																											
	UK	5																											
	MZ	5																											
	RJ	5																											
Activity 4.3: Independent assessment FPIC by project	MP	1																											
	OD	1																											
	UK	1																											
	MZ	1																											
	RJ	1																											
Activity 4.4: Develop Grassland Management Plans inside DNP	RJ	40																											
Activity 4.5: Develop Grassland Management Plans outside DNP	RJ	40																											
Output 2.2.5: On-farm agro-ecological management measures, including livestock management, to improve productivity and profits while reducing threats to GEBs identified, designed and promoted																													
Activity 5.1: Provide technical backstopping for implementation of Green Landscape plans in project states	NPMU	5																											

	State	(No)	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4	Y4 Q1	Y4 Q2	Y4 Q3	Y4 Q4	Y5 Q1	Y5 Q2	Y5 Q3	Y5 Q4	Y6 Q1	Y6 Q2	Y6 Q3	Y6 Q4	Y7 Q1	Y7 Q2	Y7 Q3	Y7 Q4
Activity 5.2: Implement Field Schools on Green Agri	MP	750																											
	OD	750																											
	UK	750																											
	MZ	750																											
	RJ	750																											
Activity 5.3: Implement Field Schools on Livestock Management	MP	750																											
	OD	750																											
	UK	750																											
	MZ	750																											
	RJ	750																											

Annex 1: Ten Key Elements of Agroecology

10 Elements

Agroecology has been defined as "the use of ecological principles for the design of agricultural systems". It is increasingly recognized that agroecology also addresses, in an indivisible way, economic and social dimensions in the food system. Agroecology offers more than a "design framework for sustainable agroecosystems". Agroecological principles should suggest the general elements of a sustainable food system. In alignment with this approach, FAO has identified **10 key elements**, derived from the general principles articulated for agroecology. As projects, programmes and policies are developed to support agroecology, different elements may come to play in various configurations, with a strong blend between ecological and socio-economic elements.

Efficiency : Optimizing the use of natural resources within farming systems. Using inputs more efficiently means that fewer external resources are needed and the negative impacts of their use will be reduced. […]

Balance : Securing favourable soil conditions and self-regulation inside the food system. Natural ecosystems have the ability to self-regulate and attain a natural balance between pests, disease and natural enemies […]

Diversity : Maximising species and genetic resources across time and space within food systems. Diversify in a farming system is a condition of having different elements working in a harmonic way, each providing a specific ecological function [...]

Co-creation of knowledge : Local and traditional knowledge and innovation to create sustainable food systems based on local needs and local ecosystems. Agroecology is knowledge-intensive. It requires the development of both ecological literacy and [...]

Recycling : Reutilizing nutrients and biomass existing inside the farming system and increased use of renewable resources promoting a healthy food system. Agroecology is based on the principle that the flow and cycling of nutrients within [...]

Synergies : Designing food systems with an optimal crop/animal assemblage, while promoting ecological functions for self-regulation in foods system. Great strength can be drawn from building on synergies in food systems [...]

Human and social value : Building food systems based on the culture, identity, tradition, innovation and knowledge of local communities and livelihoods, favouring social dynamics which focus on women's and youth's role in agricultural development [...]

Circular economy : Local solutions and local markets creating virtuous cycles. Incomes (monetary and non-monetary) need to be fair and sufficient to sustain livelihoods, ensure food security and well-being [...]

Culture and food traditions : Healthy, diversified and culturally appropriate diets deliver good nutrition while assuring the health of ecosystems. Agriculture is a core part of the heritage of humankind. In this regard food traditions play a central role in society [...]

Land and natural resources governance : Recognizing and supporting smallholder food producers as sustainable managers and guardians of natural and genetic resources. To ensure a fair and inclusive food system, farmers and food producers need [...]

Annex 2: Baseline Investments and

Environment Sector Baseline

1. The potential MoEFCC investment is substantial, but the baseline supporting the achievement of conservation-oriented agriculture is extremely limited. The agencies responsible for environmental conservation, forestry, protected areas, at national, state and district level make significant investments for each of these sectors. However, these agencies invest very little directly into the work beyond the territorial boundaries of protected and forest areas. Even within these areas, the MoEFCC and associated agencies do not have the general legal authority to regulate or oversee agriculture.

2. The Integrated Development of Wildlife Habitats (IDWH) is a Centrally Sponsored Scheme launched during the 11th Plan period to provide technical and financial assistance to States/UTs for protection of wildlife habitat. The activities covered under the scheme include the staff development and capacity building, wildlife research and evaluation, anti-poaching activities, wildlife veterinary care, addressing man-animal conflicts and promoting ecotourism. The Scheme was modified in 2008-09 by including a new component, namely 'Recovery of Endangered Species' and 16 species have been identified for recovery viz. Snow Leopard, Bustard (including Floricans), Dolphin, Hangul, Nilgiri Tahr, Marine Turtles, Dugong, Edible Nest Swiftlet, Asian Wild Buffalo, Nicobar Megapode, Manipur Brow-antlered Deer, Vultures, Malabar Civet, Indian Rhinoceros, Asiatic Lion, Swamp Deer and Jerdon's Courser.

3. The Scheme includes 3 components for which assistance is provided to States.

Table A: Key Components of financing of protected areas in India

Component	Funding structure
Support to Protected Areas (National Parks, Wildlife Sanctuaries, Conservation Reserves and Community Reserves) All Protected Areas (PAs) in different states are eligible for assistance, except those areas which receive assistance under Project Tiger	100% Central Assistance for all non-recurring items, and 50% assistance for recurring items
Protection of Wildlife outside Protected Areas Many wildlife habitats fall outside the network of protected areas. Under this component, funds are granted against Biodiversity Plans prepared by the Chief Wildlife Wardens of the respective States. Priority is given to regions contiguous to the Protected Areas	100% Central Assistance for all non-recurring items, and 50% assistance for recurring items
Recovery Programme for critically endangered habitats and species 16 species have been identified for recovery under this component. These are snow leopard, bustard, dolphin, hangul, Nilgiri Tahr, marine turtles, dugongs, edible nest swiftlet, Asian wild buffalo, Nicobar Megapode, vultures, Malabar Civet,	100% Central Assistance for non-recurring and recurring items. During the 11th Plan, financial assistance was provided for 9 out of the 16 identified species.

Component	Funding structure
Indian rhino, Asiatic lion, Swamp deer, Jerdon's Courser and Brown-antlered deer. A scientific Recovery Plan is prepared by the Chief Wildlife Warden in each state	

4. The National Compensatory Afforestation Fund Management and Planning Authority (CAMPA) Advisory Council (NCAC) has also approved the funding support for recovery programme for :

- *Dugong with budget of ` 23.58 crore.*
- *Gangetic River Dolphin with budget of ` 23 Crore.*
- *Great Indian Bustard with ` 108.25 crore.*
- *Manipur Brow Antlered Deer with budgetary support of ` 99.95 crore.*
- *Wild Buffalo with ` 2 crore.*

5. The table below summarizes annual funding provided through CSS-IDWH.

Table B: Annual funds released to State/UT governments under CSS-IDWH

Year	The amount released (Rs. in crores)
2006-07	55.72
2007-08	64.00
2008-09	79.48
2009-10	73.57
2010-11	74.38
2011-12	68.74
2012-13	74.89
2013-14	66.78
2014-15	65.89
2015-16	61.21

Table C: Investment in different offices of MoEFCC

MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE	Million USD **358.08**
Relevant Attached/Subordinate Offices	
National Afforestation and Eco-Development Board	0.83

MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE	Million USD
	358.08
Forest Survey of India	3.75
Indira Gandhi National Forest Academy	5.87
State Forest Service and Rangers College	2.68
Wildlife Crime Control Bureau	1.54
Botanical Survey of India	11.28
Zoological Survey of India	9.22
Relevant Central Sector Schemes/Projects	
Environmental Knowledge and Capacity Building	
Forestry Training and Capacity Building	2.46
Eco-Task Force	3.08
Environment Protection, Management and Sustainable Development	
Climate Change Action Plan (Funded from NCEF[44])	7.23
National Adaptation Fund (Funded from NCEF)	15.08
National Mission on Himalayan Studies (Funded from NCEF)	2.54
Decision support System for Environmental Awareness, Policy, Planning and Outcome Evaluation	
Environmental Education, Awareness and Training	7.38
Environment Information Systems (ENVIS)	2.51
Centres of Excellence	3.31
R and D for Conservation and Development	2.00
Relevant Statutory and Regulatory Bodies	0.00
National Biodiversity Authority	2.77
National Tiger Conservation Authority	1.00
Relevant Autonomous Bodies	0.00
GB Pant Himalayan Institute of Environment and Development	2.77
Indian Council of Forestry Research and Education	25.11

[44] National Clean Energy Fund

MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE	Million USD
	358.08
Indian Institute of Forest Management	3.09
Wildlife Institute of India	4.08
Relevant Centrally Sponsored Schemes	
National Mission for a Green India (Funded From NCEF)	22.07
Green India Mission-National Afforestation Programme	15.08
Intensification of Forest Management	6.99
Integrated Development of Wildlife Habitats (Funded from NCEF)	73.08
Project Tiger	56.15
Project Elephant	3.08
Integrated Development of Wildlife Habitats	13.85
Conservation of Natural Resources and Ecosystems (Funded from NCEF)	15.38[45]
Biodiversity Conservation	3.38

Project Associated PA Baseline

Table D: Budgets related to key PAs in Green Landscapes

States	Project Associated Protected Area	Total Staff	Annual PA Budget (US$)
Rajasthan	Desert National Park (WLS)	117	600,000
Madhya Pradesh	Chambal National Wildlife Sanctuary	54	200,000
Mizoram	Dampa Tiger Reserve	184	689,000
	Thorangtlang WLS	18	51,150
Odisha	Similipal Tiger Reserve	1,465	5,500,000
Uttarakhand	Corbett Tiger Reserve	633	2,973,300
	Rajaji Tiger Reserve	296	3,590,400

[45] Total also includes - Conservation of Corals and Mangroves, and Conservation of Aquatic Ecosystems

States	Project Associated Protected Area	Total Staff	Annual PA Budget (US$)
Totals		2,767	1,36,03,850

The Agriculture Sector Baseline

6. The MoAFW investment is substantial. However, due to the persistent barriers, very little of the existing baseline is directed towards the achievement of conservation oriented agriculture.

7. GoI invests significantly to stimulate agricultural development. The national Government through the MoAFW spent approximately US$ 6.1 billion over 2015-16. This does not include the 2015-16 Union budget includes investments of approximately US$ 3.9 billion for the Rural Infrastructure Development Fund, US$ 231 million for the long-term rural credit fund, US$ 6.93 billion for the short-term cooperative rural credit finance fund, and US$ 3.85 billion for the short-term Regional Rural Bank (RRB) refinance fund. The 2015-16 target for agriculture credit investment is approximately US$ 130.9 billion.

8. GoI and private-industry partners recognize that some initiatives are financially and environmentally unsustainable. The 2014-15 Central Government budget allocated ₹72,970.3 crore (~$12.16 billion) in fertilizer subsidies. Natural gas prices account for about 80% of urea production costs for non-naphtha factories. (Roughly 80% of India's urea factories are gas-based.) In 2008, a spike in gas prices caused the Central Government's fertilizer budget to jump from ₹ 43,000 crore in 2007-08 to ₹99,500 crore in 2008-09 (~$7.17 billion and $16.58 billion, respectively) —a 214% jump. By end-March, 2015, the Central Government owed approximately ₹40,000 crore (~$6.67 billion) in arrears to fertilizer companies, about 75% of which to urea manufacturers.

National Agriculture Baseline Investments (Annual Investment/US$)

Table E: Key Baseline Investments in the Agriculture Sector

MINISTRY OF AGRICULTURE AND FARMERS WELFARE	Million USD
Department of Agriculture, Cooperation and Farmers Welfare	**6,129.31**
Relevant Central Sector Schemes/Projects	
Crop Insurance Scheme	2,036.93
Interest Subsidy for Short Term Credit to Farmers	2,095.25
Relevant Statutory and Regulatory Bodies	
Protection of Plant Varieties and Farmers Rights Authority	0.46
Relevant Autonomous Bodies	
National Institute of Plant Health Management	0.94
National Institute of Agricultural Extension Management (MANAGE)	0.92

MINISTRY OF AGRICULTURE AND FARMERS WELFARE	Million USD
Relevant Centrally Sponsored Schemes	
Pradhan Mantri Krishi Sinchai Yojana (PMKSY) - Per Drop More Crop	306.15
Rashtriya Krishi Vikas Yojna	546.15
National Food Security Mission	196.92
National Project on Organic Farming	0.08
Organic Value Chain Development for North East Region	15.38
National Project on Soil Health and Fertility	64.46
Rain-fed Area Development and Climate Change	29.23
Paramparagat Krishi Vikas Yojana	18.46
National Project on Agro- Forestry	7.69
National Mission on Horticulture	255.38
Sub- Mission on Seed and Planting Material	28.46
Sub- Mission on Plant Protection and Plant Quarantine	6.15
Sub - Mission on Agriculture Extension	90.85
Information Technology	5.85
Sub- Mission on Agriculture Mechanisation	57.38
Integrated Scheme on Agriculture Census and Statistics	28.92
Integrated Scheme on Agricultural Cooperation	20.00
Agriculture Marketing: Integrated Scheme on Agriculture Marketing	164.62
Department of Animal Husbandry, Dairying and Fisheries	**306.77**
Relevant Institutions	
Animal Health Institute	3.54
Small Livestock Institute	10.58
Relevant Centrally Sponsored Schemes	
National Dairy Plan/National Programme for Dairy Development	66.82
National Dairy Plan (EAP[46])[47]	60.00

[46] Externally Aided Project
[47] Budget Estimate 2017-18

MINISTRY OF AGRICULTURE AND FARMERS WELFARE	Million USD
National Programme for Dairy Development[48]	26.15
Dairy Entrepreneurship Development	36.92
Indigenous Breeds	10.00
Rashtriya Gokul Mission[49]	29.23
Support to State Co-operative Dairy Federations[50]	0.15
Livestock Census and Integrated Sample Survey	3.38
Livestock Health and Disease Control	37.76
National Livestock Mission	38.46
Department of Agricultural Research and Education	**959.69**
Relevant Central Sector Schemes/Projects	
Agricultural Extension	131.65
Agricultural Engineering	29.43
Natural Resource Management Institutes, including Agro Forestry Research	95.27
Climate Resilient Agriculture Initiative	10.85
Crop Science	212.00
Horticultural Science	81.36
National Agricultural Science Fund	5.38
Animal Science	126.65
Agricultural Universities and Institutions	111.76
Economic Statistics and Management	10.08
Relevant Autonomous Bodies	
ICAR Headquarters	51.11
Central Agricultural Universities	30.77
National Academy of Agricultural Sciences	0.23

[48] Budget estimate 2017-18
[49] Budget Estimate 2017-18
[50] Budget estimate 2017-18

9. The Central Plan Outlay of the MoEFCC for 2015-16 is approximately US$ 252 million. Total estimated funding for biodiversity conservation during 2013-2014 in India was approximately USD 1482.68 million spread across 23 Ministries and Departments, and over 77 schemes. There has been a steady increase in the budgetary allocation of MoEFCC since 1992 under all major heads. From an average annual outlay of US $ 96.55 million in 1992-1993, the outlay in 2013-2014 was US$ 477.59 million. The 11th Plan (2007-2012) approved budgetary outlay for MoEFCC was INR 100,000 million, whereas the 12th Plan (2012-2017) approved budgetary outlay for MoEFCC is INR 178,740 million, an increase of 78.74%.

10. GoI has marshalled extensive resources to address production and household income issues. This includes funding large-scale central programmes such as RKVY (the National Agriculture Development Programme; 2014/15 budget allocation: ₹9,864 crore ≈ $1.64 billion), the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA; 2014/15 budget allocation: ₹ 33,353 crore ≈ $5.60 billion) the National Food Security Act (NFSA; 2014/15 budget allocation: ₹ 102,000 crore ≈ $17 billion), and the Integrated Watershed Management Programme (IWMP; 2014/15 budget allocation: ₹3,464 crore ≈ $577M). The government also invests directly in more targeted missions, programmes, and initiatives.

11. Short descriptions of the most critically relevant programmes are listed below. Additional, relevant programmes are listed in the annexes. Not all will likely participate as direct partners or co-financiers, but alignment, convergence, and synergies will be sought wherever possible, particularly across MoAFW and MoEFCC programmes.

- National Mission for Sustainable Agriculture (NMSA). (2014/15 budget allocation: US$ 316M) As the primary baseline programme for the proposed programmatic approach, NMSA seeks to transform Indian agriculture into a climate-resilient production system through suitable adaptation and mitigation measures in the domain of crops and animal husbandry. NMSA has four primary programmatic areas: (i) rain-fed area development, (ii) soil health management, and (iii) climate change and sustainable agriculture—monitoring, modelling, and networking. The proposed GEF programme will align with all four of NMSA's primary programme areas. NMSA addresses these areas via research and development activities, absorption of improved technology and best practices, the creation of physical and financial infrastructure and institutional framework, facilitating access to information, and promoting capacity building. NMSA will execute the bulk of its current programmes between 2010 and 2017, targeting 35 MHa.
- National Mission for Integrated Development of Horticulture (NMIDH). (2014/15 budget allocation: US$ 367M) The main objectives of NMIDH are: (i) to provide holistic growth of the horticultural sector through regionally differentiated strategies that include research, technology promotion, extension, post-harvest management, processing, and marketing, in consonance with comparative advantages of each state/ region and its diverse agro-climatic features; (ii) to improve horticultural production, nutritional security, and income support to farm households; (iii) to establish convergence and synergy among multiple on-going and planned programmes for horticultural development; (iv) to promote, develop, and disseminate technologies through a seamless blend of traditional wisdom and modern scientific knowledge; and (v) to create opportunities for employment generation for skilled and unskilled persons, especially unemployed youth. NMIDH also aims to integrate multi-purpose tree species into the mission's elements to contribute, *inter alia*, to GHG sinks and livelihood diversification.
- National Livestock Mission. This mission was launched in 2014-15 to ensure quantitative and qualitative improvement in livestock production systems and capacity building of all stakeholders. The mission comprises four sub-missions on (i) holistic livestock development, (ii) fodder and feed development, (iii) porcine development in the northeast, and (iv) skill development, technology transfer, and extension. This mission is an important baseline for this project's biodiversity, LD, CCM, and SFM targets, given the contribution of livestock to India's GHG emissions, land and forest degradation, and land-use changes.

- Rashtriya Gokul Mission. (2014/15 budget allocation: US$ 25M) This mission develops, preserves, conserves, and promotes India's indigenous breeds, including 37 indigenous breeds of cattle. Indigenous cattle in India are robust, resilient, and particularly suited to the climates and environs of their respective regions. They have high heat tolerance, disease resistance, and hardiness despite sub-optimal grazing.
- Traditional Agriculture Development Programme (Paramparagat Krishi Vikas Pariyojana). (2015/16 budget allocation: US$ 50M) This initiative promotes (i) organic farming, (ii) eco-friendly forms of cultivation that reduce dependency on agro-chemicals and fertilizers, and (iii) more efficient and widespread utilization of locally available natural resources.
- National Mission for Green India (NMGI). (2014/15 budget allocation: US$ 13.3M) NMGI aims to address climate change by (i) enhancing carbon sinks in sustainably managed forests and ecosystems, (ii) enhancing the resilience and ability of vulnerable species/ ecosystems to adapt to the changing climate, and (iii) enabling adaptation of forest-dependent local communities in the face of climatic variability. There are three main objectives of the mission: (i) double the area under afforestation/ eco-restoration in India in 10 years (20 MHa), (ii) increase the GHG removal by India's forests to 6.35% of India's annual total GHG emissions by 2020, and (iii) enhance the resilience of forests/ ecosystems.
- National Initiative on Climate-resilient Agriculture (NICRA). (2014/15 budget allocation: US$ 16.7M) Initiated by ICAR in the 2010/11 budget cycle, NICRA aims to enhance the resilience of agricultural production to climate variability in vulnerable regions by (i) enhancing the climate resilience of Indian agriculture via improved production and risk management technologies, (ii) demonstrating site-specific technological packages on farmers' fields for adapting to current climate risks, and (iii) enhancing the capacity-building of scientists and other stakeholders in climate-resilient agricultural research and its applications. The project comprises (i) strategic research on adaptation and mitigation, (ii) demonstrations on farmers' fields of technologies to cope with current climate variability, (iii) sponsored and competitive research grants to fill critical research gaps, and (iv) capacity-building for various stakeholders.
- Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). This act aims to enhance the security of the livelihoods of the rural poor by guaranteeing 100 days of wage employment to a rural household whose adult members volunteer for manual work. In addition to generating employment, MGNREGA also works towards asset creation in rural areas, both for community benefit and individual livelihood support. MoAFW targets the agricultural sector with schemes and programmes that typically benefit individual farmers, though there are certain interventions that collectively benefit farming communities. Thus, MGNREGA has a high degree of convergence with agricultural initiatives and with the sorts of labour-intensive capital investments that will be supported by certain initiatives within this proposed GEF projects (e.g., earthworks for reduced erosion). MGNREGA also has a functional system for direct payments to rural households.
- National Bureau of Plant Genetic Resources (NBPGR). This institute manages the plant genetic resources of the country in collaboration with various institutions of the Indian Council of Agricultural Research (ICAR) and state agricultural universities.
- National Bureau of Animal Genetic Resources (NBAGR). This institute has the mandate of identification, evaluation, characterization, conservation, and utilization of livestock and poultry genetic resources of the country.
- National Bureau of Agriculturally Important Insects (NBAII). This institute acts as a nodal agency for collection, characterization, documentation, conservation, exchange, and utilization of agriculturally important insect resources for sustainable agriculture.
- National Biodiversity Authority (NBA). This statutory and independent body is responsible for the implementation of the National Biodiversity Act (2003).

- National Mission on Agricultural Extension and Technology. This mission consists of four sub-missions on agricultural extension, planting material, agricultural mechanization, plant protection, and plant quarantine.
- National Mission on Strategic Knowledge on Climate Change. As one of the eight national missions that form the core of the National Action Plan, the NMSKCC seeks to build a dynamic knowledge system that informs and supports national actions aimed at ecologically sustainable development.
- National Agro-forestry Policy and Sub-Mission: (US$ 250,000,000 annually): This is relatively new mission adopted in 2014. The mission provides supports the implementation of SFM on farm lands. This mission provides guidance on related MoAFW activities, specifically via policies that promote land-use systems that integrate trees and shrubs on farmlands and rural landscapes to enhance productivity, profitability, diversity, and ecosystem sustainability.

State and District Level Baseline

12. Although project site ecosystems vary greatly, each location share quite similar policy baseline. The proposed project sites offer opportunities to benefit from baseline governmental and non-governmental initiatives related to biodiversity conservation, agro-biodiversity, forestry, and other conservation issues. This includes initiatives involving the World Bank, IFAD, UNDP, UNEP, and others. The GoI is working with the GEF's Country Partnership Programme in Rajasthan via the Sustainable Land and Ecosystem Management (SLEM) project to reduce and reverse land degradation. JICA has entered Phase II of its support for Rajasthan's Forestry and Biodiversity Project (~$132.6M). In Uttarakhand, the World Bank initiated a loan ($121.2M) to support community-based management of micro-watersheds via the Uttarakhand Decentralized Watershed Development project (Phase II). IFAD is supporting the government of the State of Odisha through the Odisha Particularly Vulnerable Groups Empowerment and Livelihoods Improvement Programme (total cost $130.4M; IFAD load $51.2M). MoAFW, MoEFCC, associated state-level departments, and FAO have had multiple discussions with these various organizations to plan preliminarily for alignment and various forms of potential support and partnership.

State Environment Baseline (Annual Investment/US$)

Table F: Environment Baseline Investments

State	Target Districts	KVK Officers	No. of Forest divisions	Dept. of Forest Officers*	State Ag Extension Officers	State Horticulture Department	State Livestock Department
Rajasthan	Barmer	6	3	165	50	15	15
	Jaisalmer	2					
Madhya Pradesh	Morena	8	3	102	469	102	102
	Sheopur	1					
Mizoram	Lunglei	5	5	363	542	94	94
	Mamit	5					
Odisha	Mayurbhanj (2 KVKs)	9	4	1,465	144	34	34
Uttarakhand	Almora	7	7	1,817	117	25	25

State	Target Districts	KVK Officers	No. of Forest divisions	Dept. of Forest Officers*	State Ag Extension Officers	State Horticulture Department	State Livestock Department
	Pauri Garhwal	5					

* Dept. of Forest Officers—includes rangers, foresters, and forest guards

International Agency Baseline

13. India's international agencies' baseline is immense and complicated. Many bilateral/ multilateral agencies make sizeable contributions to India's environment, rural development, and agricultural initiatives. Following are a few most closely aligned with this project.

- The World Bank investment programme for agricultural and allied sectors in India has an estimated value of approximately US$ 3.33 billion (active projects) and US$ 510 million (in pipeline) including both grants and loans. The bulk of this effort focuses upon increasing productivity. Key Bank contributions to environmental protection and biodiversity conservation focus on developing effective systems and institutions to enable more efficient environmental management and reduced degradation of resources, including management of: (i) coasts, (ii) industrial pollution, and (iii) natural resources (particularly water), ecosystems, and biodiversity. Key Bank projects such as Integrated Coastal Zone Management and Sustainable Livelihoods and Adaptation to Climate Change focus on innovative approaches and strengthened systems.
- IFAD has been present in India since 1979. India is the largest recipient of IFAD's assistance with a permanent seat on the Executive Board. So far, 30 loans have been disbursed, covering investments of US$ 876 million, and US$ 2.5 billion have been mobilized for projects. The present IFAD portfolio includes 10 projects with a total lending of US$ 455 million, directly affecting approximately 9 million rural poor people
- Odisha Particularly Vulnerable Tribal Groups Empowerment and Livelihoods Improvement Programme (OPELIP): The overall goal of the programme is to achieve better living conditions and to reduce poverty for the most vulnerable in Odisha's heavily forested Eastern Ghats and Northern Plateau regions. Tribal populations living in the target area derive their livelihood from shifting cultivation, rainfed agriculture and from gathering Non-Timber Forest Products (NTFPs). Farming practices are basic, and mostly include growing rainfed rice and millet. Many tribal people are landless. The programme aims to improve the livelihoods and food and nutrition security for over 62,000 households. The programme objectives are to:
    - Build the capacity of target households
    - Secure entitlements to land and forest
    - Improve agricultural practices
    - Promote income-generating microenterprises
    - Ensure access to services such as education and health
    - Improve community infrastructure
- UNDP supports GoI in meeting national development objectives and commitments under multilateral environmental agreements. Key areas of intervention are climate change (mitigation and adaptation), sustainable natural resource management (conserving biodiversity and addressing land degradation), and integrated chemical management (phasing out of ozone depleting substances and reducing persistent organic pollutants). Recent and current projects total around US$ 45 million (funded variously by AusAid, UNDP internal funds, and the GEF).

- The Japan International Cooperation Agency (JICA) is the official bilateral development assistance coordinating agency for the government of Japan. It is chartered with assisting economic and social growth in developing countries and promoting international cooperation. JICA finances numerous projects in India, including: Capacity Development for Forest Management and Personnel Training Project, Odisha Forestry Sector Development Project, Rajasthan Forestry and Biodiversity Project, Rajasthan Forestry Development Project, and the Afforestation and Pasture Development Project along Indira Gandhi Canal Area. JICA's recent investments in the natural resources management sectors in India totalled approximately US$ 2.2 billion. The JICA-supported Rajasthan Forestry and Biodiversity Project (Phase 2) is an important baseline project.
- FAO assisted GoI in designing and implementing policies and practices that reduced pesticide consumption in India by over 870 thousand tons between 1990 and 2012 (estimated savings of US $26 billion) while also maintaining historical trends in increased grain production. FAO has led the design and implementation of Farmer Field Schools in India. Their IPM FFS proved that Indian farmers served by the GOI extension programme could explicitly conserve biodiversity at the species and ecosystem levels in their production fields, securing higher yields with dramatically lower pesticide loads and reduced health and environmental risks. Then the APFAMGS programmes proved with replicated results that Indian farmers in FFS groups at landscape level could reduce overuse of groundwater by reducing water demand once members of their own communities collected and shared practical data on groundwater recharge and likely supply for dry season crops. Reducing groundwater extraction while improving crop production showed how Indian farmers could deliver GEBs at landscape scale. Finally, the recently completed SPACC/SLM project proved that FFS-style groups could help farmers adapt to climate change at local community level. These programmes, approaches and results will be drawn upon and newly applied with farmers in and around Protected Areas to raise incomes, reduce environmental threats, and empower farmers through understanding and conservation of biodiversity in Green Landscapes for this project.

  FAO India has initiated a technical co-operation programme (TCP) to support the Forest Survey of India to upgrade its forest assessment and monitoring practices. Through this TCP project FAO will introduce internationally tested tools and technologies for preparing better plans and programmes for mainstreaming biodiversity in forest and production landscapes. These would include codes of practice for SFM, integrated forest fire management strategies, revisions to the reforestation strategy to incorporate SFM options such as local species/NTFP producing species. The new systems will feed into this proposed project.

  FAO-India supports progress in the areas of forestry, natural resource management (e.g., land, waterways, forests, crops, and genetic diversity), food security, and the integration of conservation in productive landscapes. FAO-India played a critical role in the forestry and biodiversity conservation sectors by helping GoI set up the Wildlife Institute of India (WII) in 1982 and the Forest Survey of India (FSI) in 1981. FAO India developed and supported the implementation of "Smarter Smallholders", a GEF-funded project designed to promote community-based climate adaptation in groundwater-irrigated agriculture in Telangana and Andhra Pradesh. That project showed the benefits of smallholders working cooperatively to improve ground water management by applying innovative tools such as community operated weather stations, crop water budgeting, soil monitoring, crop monitoring, and better cropping patterns to achieve water conservation goals. Similar approaches can be applied to work with groups of farmers on larger landscapes to achieve convergence between a wider variety of objectives, including BD, SLM, SFM, and CCM. FAO-India has initiated a programme to support FSI in updating its forest monitoring and assessment methodologies and capabilities and has supported WII to build capacities of PA managers of UNESCO World Natural Heritage sites in the Asia Pacific Region.

Civil Society Baseline

14. Numerous CSOs work across the agriculture and natural resource management sectors, offering a rich array of potential execution partners.

- BAIF Development Research Foundation helps provide sustainable livelihoods for the rural poor through climate-resilient agriculture, management of natural resources, livestock development, watershed development, and mixed systems of agriculture, horticulture, forestry, and livestock management.
- Professional Assistance for Development Action (PRADAN) promotes the livelihoods of rural poor people via social-behavioural, technical, and managerial initiatives. PRADAN promotes self-help groups (SHGs), forest-based livelihoods, natural resource management, livestock development, and micro-enterprises.
- The Centre for Sustainable Agriculture (CSA) in Hyderabad is a professional resource organization that establishes models of sustainable agriculture in partnership with NGOs, CSOs, and policy-makers to scale up successes. CSA's work on various aspects of land-use management, including sustainable production, green enterprises, and farmers' institutions.
- The Nature Conservation Foundation (NCF) improves the knowledge and conservation of India's unique and ecologically diverse wildlife heritage, in part, by conducting research on resource uses and related effects on wildlife and ecosystems. NCF uses this knowledge in collaboration with local communities to design locally appropriate conservation strategies.
- International Centre for Integrated Mountain Development (ICIMOD): The Kailash Sacred Landscape (KSL) covering an area of about 31,000 sq. km, includes the remote, south western portion of China's Tibet Autonomous Region (TAR), adjacent districts in Nepal's far western region, and the north-eastern flank of the state of Uttarakhand in India. It is a biologically and culturally diverse, and an environmentally fragile landscape. The landscape includes several national protected areas and since it transcends three countries, enhanced regional cooperation is critical for long-term sustainability. The Kailash Sacred Landscape Conservation and Development Initiative (KSLCDI) is a collaborative programme being implemented across China, India, and Nepal and is managed by the International Centre for Integrated Mountain Development (ICIMOD) that serves as the project's regional Programme Management Unit (PMU). The initiative involves a range of local and national research and development institutions working in different capacities in various regions of the three countries. The programme aims," to achieve long-term conservation of ecosystems, habitats and biodiversity, while encouraging sustainable development, enhancing the resilience of communities in the landscape, and safeguarding cultural linkages among local populations".
- The Wildlife Conservation Society, India's Malenad-Mysore Tiger Landscape: The Wildlife Conservation Society's (WCS) mission is to save wildlife and wild lands. The focus of its work is to have 'working models' of conservation on ground through long-term commitment to threatened species at specific sites and landscapes. The WCS – India Programme has been engaged in protecting India's flagship species, the tiger, since 1980s in partnership with government and non-government partners. The Malenad-Mysore Tiger Landscape (MMTL) in the Western Ghats is one of the largest and longest running tiger monitoring and conservation programmes in the world. This landscape encompasses 14 Protected Areas including four Tiger Reserves and extends over 30,000 sq. kms of deciduous and evergreen forests. The core sites include the well-known Nagarahole and Bandipur National Parks, Bhadra Wildlife Sanctuary, Dandeli-Anshi National Park, Kudremukh National Park, Biligiri Rangaswamy Temple Wildlife Sanctuary and Cauvery Wildlife Sanctuary.
- IUCN India's Sustainable Agriscapes for the Future project in Munger, Bihar This project has been developed based on IUCN's call for action," highlighting the need for conservation and agriculture sectors to collaborate to find long-term sustainable solutions to food security and preservation of biodiversity". The agriscape methodology is based the leanings of IUCN's work done in Lao PDR where rural communities and agriculture derive vital ecosystem services from biodiverse areas surrounding what are called 'farmscapes'. IUCN India country office is initiating a project with ITC Ltd. on 'Sustainable Agriscapes for the Future', which incorporates 'ecological and biodiversity concerns and supports livelihood improvements', through the development of an Agriscape plan which will support implementation on the ground and enable its replication in other

landscapes. The learning from this project will be developed in the form of a decision support toolbox, which can be used to enhance the sustainability of agriculture in various parts of the country. This entails studying the agro-ecosystems and surrounding ecosystems, from a large landscape perspective, to analyse their biodiversity, as well as trends of ecosystem services, enabling the programme to design suitable ecosystem-based interventions to promote crop productivity, while ensuring the sustainability of various ecosystems.

- WWF India works with varied groups of individuals and institutions across different sections of society. These alliances strive to address the common goal of conserving biodiversity, sustainably using natural resources and maintaining ecosystems and ecosystem services for the survival of wildlife and people depending on them. Specifically, relevant for this project is the fact that WWF-India has provided inputs in developing the 'Guidelines for the State Action Plan for Resident Bustard Recovery Programme'. It has played an important role in raising awareness about the declining populations and highlighting the importance of implementing a focused bustard conservation programme at the national level. WWF-India, is undertaking initiatives towards conservation of GIB in and around the Desert National Park.

  In early 2000, WWF-India realized that approaches to conservation being promoted at the time were no longer effective, and new strategies towards safeguarding the populations of India's wildlife and its habitats needed to be designed. In 2002-03, the landscape approach to conservation was adopted by WWF-India to revolutionize the overall conservation strategy to one that harmonized the needs of wildlife with the needs of local communities. The new approach represented a paradigm shift in focus from one that was selective in its focus only on Protected Areas to one that encompassed vast regions represented by a string of Protected Areas connected through Reserve Forests and human dominated areas. The landscape approach has been hailed as a comprehensive driving force towards a large, safe and sustainable habitat for wildlife and includes long-term conservation focus with strategies for land use change, livelihoods and development policies across the landscape.

  Key conservation strategies in landscapes are based on the following:

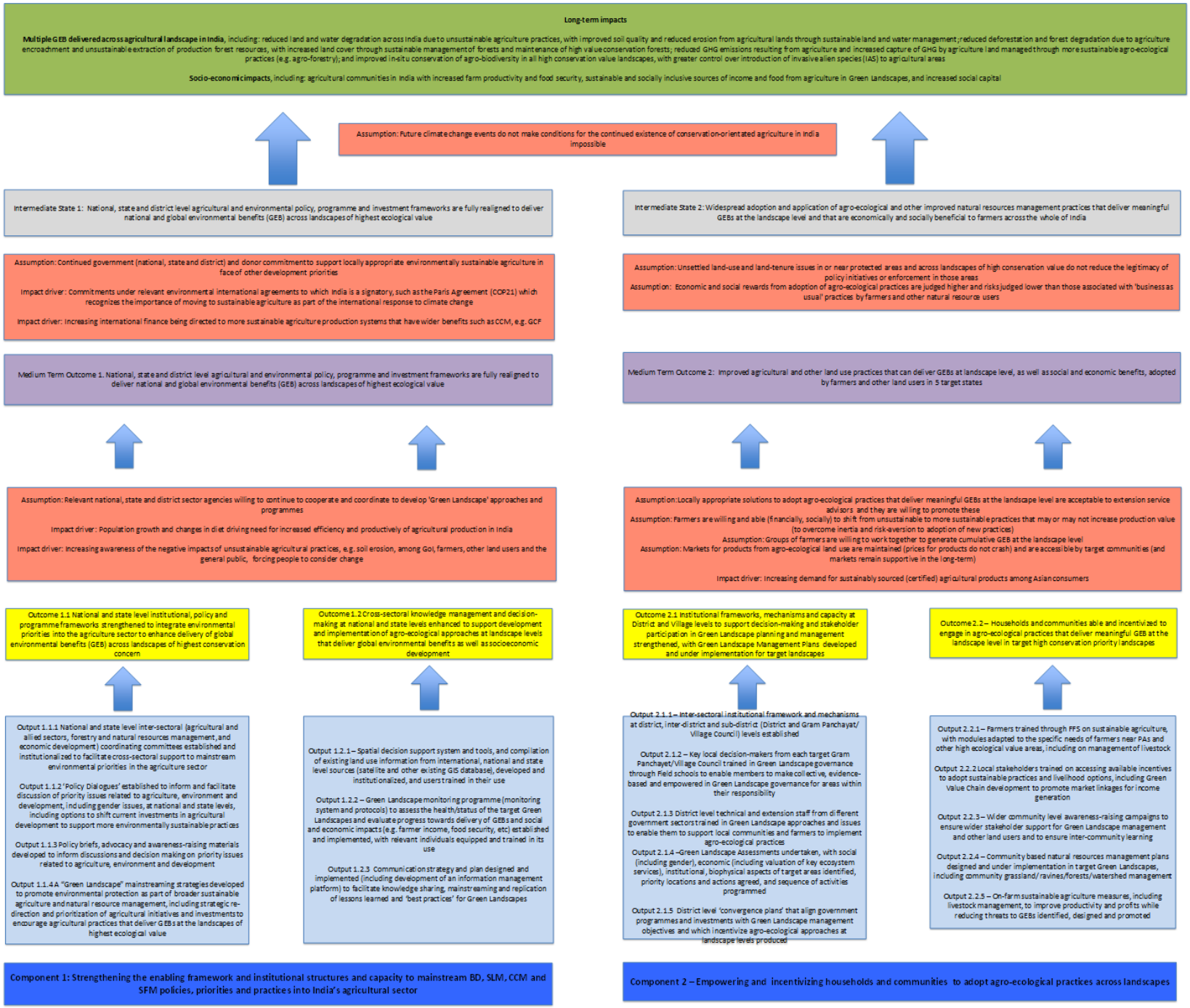
  - Tiger populations in priority landscapes are conserved for posterity
  - Elephant populations and their habitats are secured in Terai Arc Landscape, North Bank Landscape, Kaziranga Karbi Anglong Landscape and Western Ghats Nilgiris Landscape
  - Distribution of rhinos in North Bank Landscape, Kaziranga Karbi Anglong Landscape and Terai Arc Landscape is expanded to ensure long term survival
  - Conserve populations and habitats of red panda, snow leopard and Nilgiri tahr
  - Innovative and scalable models of community based conservation, sustainable livelihoods, and institutional partnerships are established in all landscapes
  - Landscape and forest conservation priorities are integrated into state development plans and policy advocacy undertaken for forest, species and habitat conservation

- Wildlife Trust of India (WTI) is a leading Indian nature conservation organization committed to the service of nature. Its mission is to conserve wildlife and its habitat and to work for the welfare of individual wild animals, in partnership with communities and governments. WTI's team of 150 dedicated professionals work towards achieving its vision of a secure natural heritage of India, in six priority landscapes, knit holistically together by nine key strategies.
- Ashoka Trust for Research in Ecology and the Environment (ATREE) is a research institution in the areas of biodiversity conservation and sustainable development. Its focus is on applied science through research, education and action that influence policy and practice on conservation of nature, management of natural resources, and sustainable development.
- The Corbett Foundation (TCF) works towards a harmonious coexistence between human beings and wildlife across important wildlife habitats in India, namely Corbett Tiger Reserve

(Uttarakhand), Kanha and Bandhavgarh Tiger Reserves (Madhya Pradesh), Kaziranga Tiger Reserve (Assam), and around the Greater Rann of Kutch (Gujarat). The Foundation has implemented its programmes in over 400 villages in Corbett, Kutch, Kanha, Bandhavgarh and Kaziranga in the last two decades. Local communities and wildlife share natural ecosystems and this often gives rise to conflict. The health and wellbeing of local communities are directly linked to their willingness to participate in wildlife conservation efforts towards maintaining healthy ecosystems. TCF has adopted a multipronged strategy to help in creating a future where wildlife and human beings live in harmony; thus, laying thrust on the following initiatives: Reducing Man-Animal Conflict; Providing Sustainable Livelihoods; Providing Healthcare to Forest-dependent Communities; Promoting Environmental Awareness; Promoting Renewable Energy; Promoting Integrated Watershed Management and Treating Domestic Livestock.

Annex 3: Project's Theory of Change

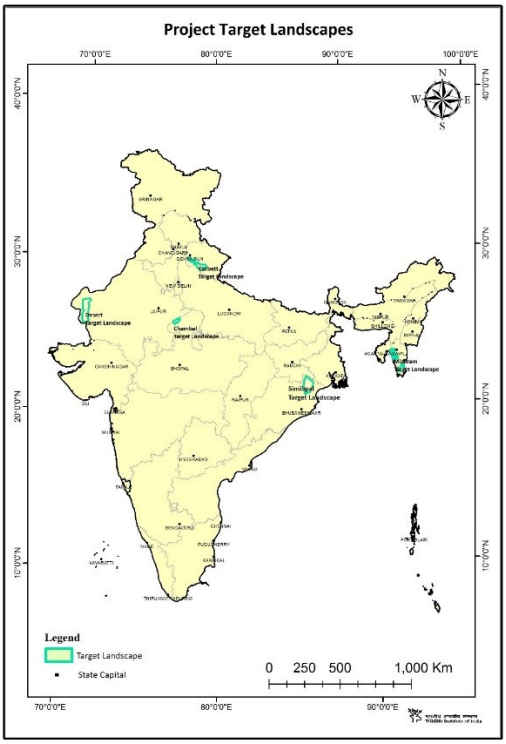
The diagram below presents key links between the projects's Outputs and their linkages to Project Outcomes. The diagram also presents how the project's Outcomes will lead to medium and long term changes. The area shaded in the diagram represents project Outputs and Outcomes that the project will deliver. These will provide the foundation for longer term changes in catalysing transformative changes in India's agriculture.


Long-term impacts
Multiple GEB delivered across agricultural landscape in India, including: reduced land and water degradation across India due to unsustainable agriculture practices, with improved soil quality and reduced erosion from agricultural lands through sustainable land and water management; reduced deforestation and forest degradation due to agriculture encroachment and unsustainable extraction of production forest resources, with increased land cover through sustainable management of forests and maintenance of high value conservation forests; reduced GHG emissions resulting from agriculture and increased capture of GHG by agriculture land managed through more sustainable agro-ecological practices (e.g. agro-forestry); and improved in-situ conservation of agro-biodiversity in all high conservation value landscapes, with greater control over introduction of invasive alien species (IAS) to agricultural areas
Socio-economic impacts, including: agricultural communities in India with increased farm productivity and food security, sustainable and socially inclusive sources of income and food from agriculture in Green Landscapes, and increased social capital
Assumption: Future climate change events do not make conditions for the continued existence of conservation-orientated agriculture in India impossible
Intermediate State 1: National, state and district level agricultural and environmental policy, programme and investment frameworks are fully realigned to deliver national and global environmental benefits (GEB) across landscapes of highest ecological value
Intermediate State 2: Widespread adoption and application of agro-ecological and other improved natural resources management practices that deliver meaningful GEBs at the landscape level and that are economically and socially beneficial to farmers across the whole of India
Assumption: Continued government (national, state and district) and donor commitment to support locally appropriate environmentally sustainable agriculture in face of other development priorities
Impact driver: Commitments under relevant environmental international agreements to which India is a signatory, such as the Paris Agreement (COP21) which recognizes the importance of moving to sustainable agriculture as part of the international response to climate change
Impact driver: Increasing international finance being directed to more sustainable agriculture production systems that have wider benefits such as CCM, e.g. GCF
Assumption: Unsettled land-use and land-tenure issues in or near protected areas and across landscapes of high conservation value do not reduce the legitimacy of policy initiatives or enforcement in those areas
Assumption: Economic and social rewards from adoption of agro-ecological practices are judged higher and risks judged lower than those associated with 'business as usual' practices by farmers and other natural resource users
Medium Term Outcome 1. National, state and district level agricultural and environmental policy, programme and investment frameworks are fully realigned to deliver national and global environmental benefits (GEB) across landscapes of highest ecological value
Medium Term Outcome 2: Improved agricultural and other land use practices that can deliver GEBs at landscape level, as well as social and economic benefits, adopted by farmers and other land users in 5 target states
Assumption: Relevant national, state and district sector agencies willing to continue to cooperate and coordinate to develop 'Green Landscape' approaches and programmes
Impact driver: Population growth and changes in diet driving need for increased efficiency and productively of agricultural production in India
Impact driver: Increasing awareness of the negative impacts of unsustainable agricultural practices, e.g. soil erosion, among GoI, farmers, other land users and the general public, forcing people to consider change
Assumption: Locally appropriate solutions to adopt agro-ecological practices that deliver meaningful GEBs at the landscape level are acceptable to extension service advisors and they are willing to promote these
Assumption: Farmers are willing and able (financially, socially) to shift from unsustainable to more sustainable practices that may or may not increase production value (to overcome inertia and risk-aversion to adoption of new practices)
Assumption: Groups of farmers are willing to work together to generate cumulative GEB at the landscape level
Assumption: Markets for products from agro-ecological land use are maintained (prices for products do not crash) and are accessible by target communities (and markets remain supportive in the long-term)
Impact driver: Increasing demand for sustainably sourced (certified) agricultural products among Asian consumers
Outcome 1.1 National and state level institutional, policy and programme frameworks strengthened to integrate environmental priorities into the agriculture sector to enhance delivery of global environmental benefits (GEB) across landscapes of highest conservation concern
Outcome 1.2 Cross-sectoral knowledge management and decision-making at national and state levels enhanced to support development and implementation of agro-ecological approaches at landscape levels that deliver global environmental benefits as well as socioeconomic development
Outcome 2.1 Institutional frameworks, mechanisms and capacity at District and Village levels to support decision-making and stakeholder participation in Green Landscape planning and management strengthened, with Green Landscape Management Plans developed and under implementation for target landscapes
Outcome 2.2 – Households and communities able and incentivized to engage in agro-ecological practices that deliver meaningful GEB at the landscape level in target high conservation priority landscapes
Output 1.1.1 National and state level inter-sectoral (agricultural and allied sectors, forestry and natural resources management, and economic development) coordinating committees established and institutionalized to facilitate cross-sectoral support to mainstream environmental priorities in the agriculture sector
Output 1.1.2 'Policy Dialogues' established to inform and facilitate discussion of priority issues related to agriculture, environment and development, including gender issues, at national and state levels, including options to shift current investments in agricultural development to support more environmentally sustainable practices
Output 1.1.3 Policy briefs, advocacy and awareness-raising materials developed to inform discussions and decision making on priority issues related to agriculture, environment and development
Output 1.1.4 A "Green Landscape" mainstreaming strategies developed to promote environmental protection as part of broader sustainable agriculture and natural resource management, including strategic re-direction and prioritization of agricultural initiatives and investments to encourage agricultural practices that deliver GEBs at the landscapes of highest ecological value
Output 1.2.1 – Spatial decision support system and tools, and compilation of existing land use information from international, national and state level sources (satellite and other existing GIS database), developed and institutionalized, and users trained in their use
Output 1.2.2 – Green Landscape monitoring programme (monitoring system and protocols) to assess the health/status of the target Green Landscapes and evaluate progress towards delivery of GEBs and social and economic impacts (e.g. farmer income, food security, etc) established and implemented, with relevant individuals equipped and trained in its use
Output 1.2.3 Communication strategy and plan designed and implemented (including development of an information management platform) to facilitate knowledge sharing, mainstreaming and replication of lessons learned and 'best practices' for Green Landscapes
Output 2.1.1 – Inter-sectoral institutional framework and mechanisms at district, inter-district and sub-district (District and Gram Panchayat/ Village Council) levels established
Output 2.1.2 – Key local decision-makers from each target Gram Panchayet/Village Council trained in Green Landscape governance through Field schools to enable members to make collective, evidence-based and empowered in Green Landscape governance for areas within their responsibility
Output 2.1.3 District level technical and extension staff from different government sectors trained in Green Landscape approaches and issues to enable them to support local communities and farmers to implement agro-ecological practices
Output 2.1.4 –Green Landscape Assessments undertaken, with social (including gender), economic (including valuation of key ecosystem services), institutional, biophysical aspects of target areas identified, priority locations and actions agreed, and sequence of activities programmed
Output 2.1.5 District level 'convergence plans' that align government programmes and investments with Green Landscape management objectives and which incentivize agro-ecological approaches at landscape levels produced
Output 2.2.1 – Farmers trained through FFS on sustainable agriculture, with modules adapted to the specific needs of farmers near PAs and other high ecological value areas, including on management of livestock
Output 2.2.2 Local stakeholders trained on accessing available incentives to adopt sustainable practices and livelihood options, including Green Value Chain development to promote market linkages for income generation
Output 2.2.3 – Wider community level awareness-raising campaigns to ensure wider stakeholder support for Green Landscape management and other land users and to ensure inter-community learning
Output 2.2.4 – Community based natural resources management plans designed and under implementation in target Green Landscapes, including community grassland/ravines/forests/watershed management
Output 2.2.5 – On-farm sustainable agriculture measures, including livestock management, to improve productivity and profits while reducing threats to GEBs identified, designed and promoted
Component 1: Strengthening the enabling framework and institutional structures and capacity to mainstream BD, SLM, CCM and SFM policies, priorities and practices into India's agricultural sector
Component 2 – Empowering and incentivizing households and communities to adopt agro-ecological practices across landscapes

Annex 4:Information on Five Project Green Landscapes

1. The project targets high-conservation-value areas in five states: Rajasthan, Odisha, Uttarakhand, Mizoram, and Madhya Pradesh. The sites are anchored around 7 protected areas. The selected landscapes include four Tiger Reserves (Dampa in Mizoram, Similipal in Odisha, and Corbett and Rajaji in Uttarakhand)[51]. These landscapes were delineated with technical support by the Wildlife Institute of India.

Figure 1: Location of selected priority landscapes in India



2. These five landscapes encompass parts of or fall fully within eight districts. Each state represents values that directly correspond to the GoI's conservation priorities and the ability to secure and deliver global environmental benefits (BD, LD, SFM, and CCM). Each location presents unique habitats, globally significant species, agro-ecological systems and associated conservation challenges. Represented agricultural practices include dry land, rain-fed, irrigated, upland, grazing, and shifting cultivation. At each site, the project will work in productive agriculture and forest landscapes associated with a protected area system. These are globally significant protected areas threatened by un-sustainable agriculture production methods. By catalysing a shift from non-sustainable to sustainable production practices in these landscapes, the project will help ensure the long-term ecological integrity of the protected area while delivering GEBs at a scale commensurate with GEF investment.

Project Site 1: Target "Green Landscape" in Madhya Pradesh

3. The project's target landscape (97982 ha) in Madhya Pradesh includes parts of Sheopur, and Morena districts. The project's associated protected area is the National Chambal Sanctuary that includes an important part of the Chambal River. The Sanctuary's area is 134,475 ha, and includes a buffer zone of approximately 400,000 hectares. The Sanctuary falls in three States, but the project will only focus its activities in Madhya Pradesh.

[51] http://wiienvis.nic.in/Database/trd_8222.aspx

Figure 2: Chambal Green Landscape

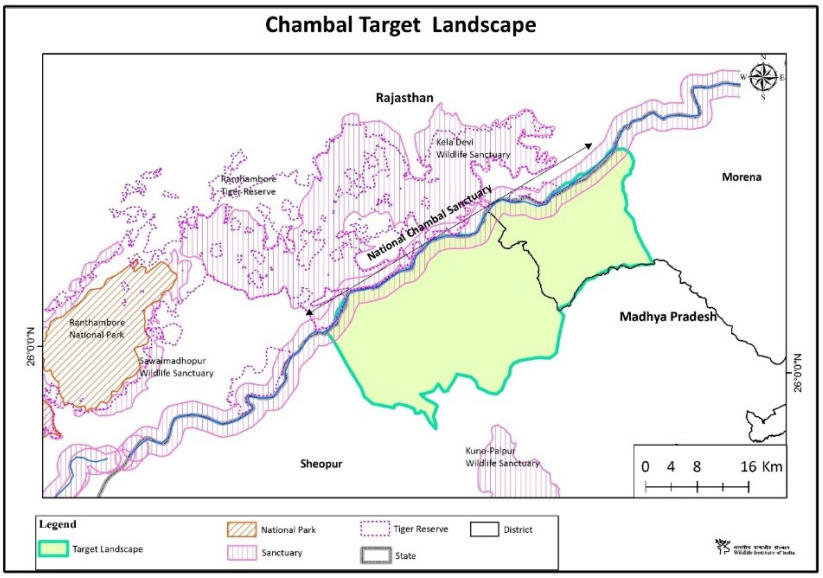


Figure 3: Land Use in Chambal Target Landscape

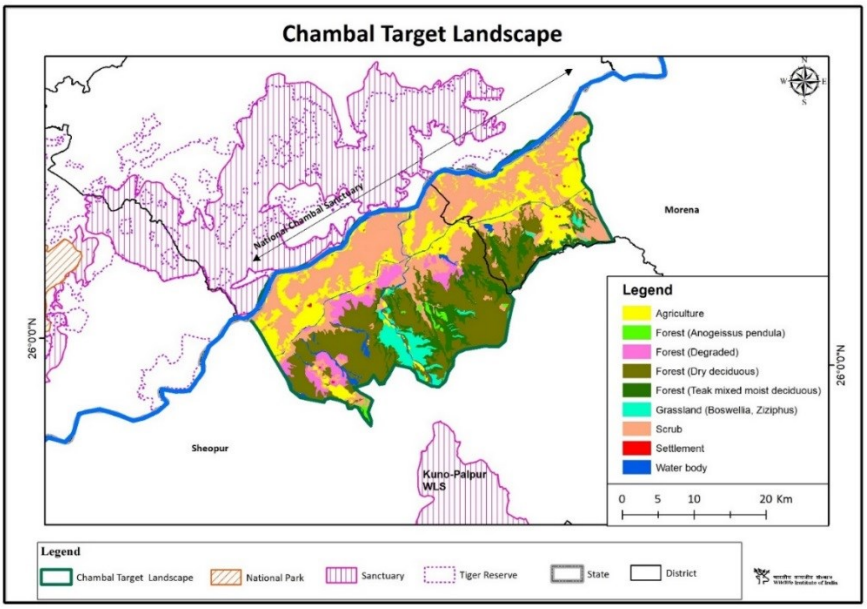


Table A: Land use details in the Chambal target landscape

Class	Description	Approximate Area in (ha.)
Agriculture	Agricultural land near the Chambal River in Morena and Sheopur districts	19400
Forest (*Anogeissus pendula*)	*Anogeissus pendula* are available in small patches Sheopur within project landscape	614

Class	Description	Approximate Area in (ha.)
Forest (Degraded)	Forest degraded exist in Sheopur	4399
Forest (Dry deciduous)	Dry deciduous distributed in south east and the south west area of the project site	26048
Forest (Teak mixed moist deciduous)	Teak mixed moist deciduous distributed in south east and south west area on the project site	7710
Grassland (*Boswellia*, *Zizyphus*)	Grassland are distributed in south east and the south west area of the project site	3453
Scrub	Scrubs are found almost in all of the landscape	32698
Settlement	Morena and Sheopur districts	193
Water body	Streams and others	3468
	Total Area	**97982**

4. The notable feature of the landscape is the deeply eroded gullies (ravines) that have developed in the alluvium-derived soils through centuries of severe land degradation caused by indiscriminate land-use practices and surface run-off mismanagement. Deforestation, overgrazing and ill-considered tillage practices have contributed to wind and water erosion. This susceptibility is in part due to the intensity and concentration of rainfall during the monsoon and in part due to the erodibility of the deep, alluvial soils found in this region.

Global environmental values

5. Madhya Pradesh has several globally threatened plants and animals. For example, it has Critically Endangered plant species - *Commiphora wightii* and several globally threatened animal species including Endangered *Clarias magur* (Wagur); *Tor khudree*; and Vulnerable Eodiaptomus shihi, Hipposideros durgadasi and Nilssonia leithii. Several medicinal plant species are also found in Madhya Pradesh such as *Aegle marmelos, Azadirachta indica, Bixa orellana, Butea monosperma, Asparagus racemosus, Argemone mexicana, Buchanania lanzan, Aloe barbadensis, Acorus calamus, Cassia tora, Curculigo orchioides, Curcuma longa, Embelia ribes, Clitoria ternatea, Mangifera indica, Cassia fistula, Evolvulus alsinoides*.

6. The National Chambal Sanctuary hosts several globally significant species, including the critically endangered Gharial (*Gavialis gangeticus*), the critically endangered Red-crowned Roofed Turtle (*Batagur kachuga*) and globally endangered Ganges River Dolphin (*Platanista gangetica*). Other large threatened species of the sanctuary include Indian Mugger Crocodile (*Crocodylus palustris* also known as the Indian Marsh Crocodile) and the Smooth-coated Otter (*Lutrogale perspicillata*). The National Chambal Sanctuary is also listed as an important bird area (IBA) and is a proposed Ramsar site. At least 320 resident and migratory bird species have been recorded from the sanctuary. It is one of the last remnants nesting ground for Indian skimmer *(Rynchops albicollis*) and small Indian Pratincole (*Glareola lactea*). Vegetation of the Chambal region encompasses mainly two types of forests viz. Tropical dry deciduous forest and Tropical ravine thorn forest. Tropical dry deciduous forest dominantly shows trees such as *Anogessius latifolia, Anogessius pendula, Boswellia serrata, Acacia spp, Zizyphus spps. Lannea coromandelica,* and *Tectona grandis*. While Tropical ravine thorn forest shows *Acacia sps, Zizyphus spp., Prosopis cineraria*,

Mimosa spp., *Flacourtia indica, and Commiphora wightii*. Many *Ficus bengalensis* trees, which is the Madhya Pradesh's State's tree, are found in Morena District.

7. Important agrobiodiversity resources from this area include: Gundli - Little millet (*Panicum sumatrense*), Jautri -Wheat (*Triticum aestivum*), and many varieties of Pigeonpea (*Cajanus cajan*) such as Jhunki rahar, Jhunku rahar, Kataksa raharr, Katki rahar, Lal Tur.

Local communities and livelihoods

8. At least 93 villages are located in the Green Landscape, with a population of around 102,141 people. Predominant local livelihoods here are a mix of rain-fed agriculture and semi-nomadic grazing of livestock. The region has high numbers of domestic animals – including cattle, goats, sheep and camels. Communities also fish in the river. Medicinal plants constitute one of the most important groups of wild plants in terms of their contribution to the economy and well-being of farm households. Many people are also involved in small businesses and many poorer people also work as daily wage labourers. Poultry farming is also a source of livelihoods for many families in the landscape.

9. Madhya Pradesh has the largest population of scheduled tribes in all of India's States and Union Territories. There is high ethnic and caste diversity in the State, and in the proposed landscape. Main communities found in the landscape include the Sahariya tribe, Yadav, Bairagi and the Dalits, and Tribal communities like Meos and the Bhils. Historically, the Chambal area was notorious for bands of armed bandits (dacoits) who inhabited the ravines. Therefore, this region had been considered "lawless" for long periods of history.

10. Population density of Morena district is the highest in the State at 394 persons per sq. km, (the State average density of 236/ sq. km) but Sheopur district has population density of 104 persons per sq. km. Between 2001 and 2011 population growth in both districts was around 23% (the average State population growth was around 20% for this period). The overall literacy rate of Morena district is 72%, but Sheopur District is 58.02% on average. However, female literacy rates of both these districts are 57.6 % and 44.5% respectively – which illustrates low women empowerment in these districts. The male to female ratios in these districts are 840 females per 1000 males (Morena) and 901 females per 1000 males in Sheopur (the State average is 918 females per 1000 males), which are also indicators of preference for male offspring in traditional communities.

Table B: Some socioeconomic information about the target landscape.

Districts included in the Green Landscape in Madhya Pradesh	Number of Villages in target landscape	Population in target landscape	Dominate Agricultural Production
Morena	33	48,463	Rice, Wheat, Legumes and Livestock
Sheopur	60	53,678	Rice, Wheat, Legumes and Livestock
Total	93	102,141	

Project Site 2: Target "Green Landscape" in Mizoram

11. The Green Landscape falls in two districts: Lunglei, and Mamit and includes two protected areas: Dampa Tiger Reserve, and Thorangtlang Wildlife Sanctuary (see map below). Dampa is the largest protected area in Mizoram occupying 4.68% of its geographical area.

Figure 4: Target Landscape

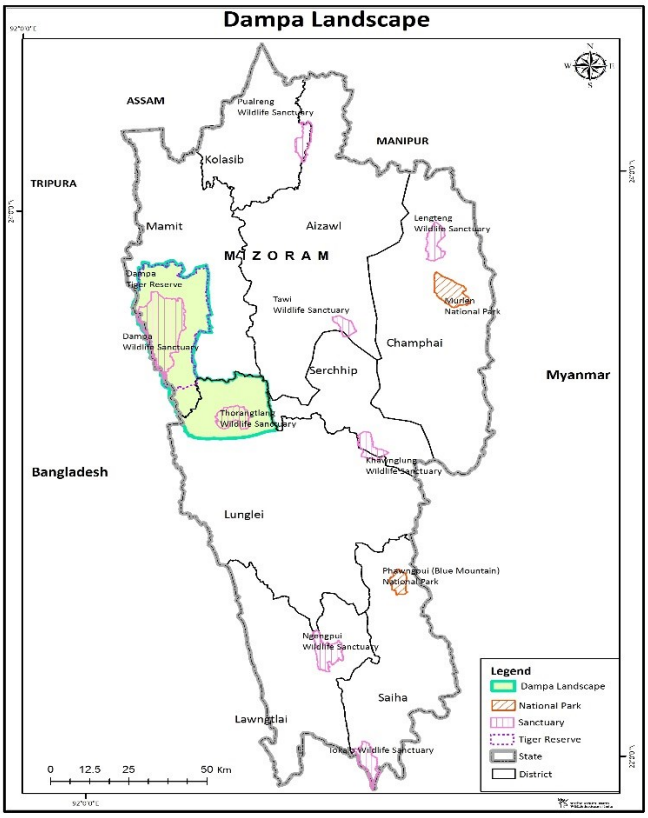


Figure 5: Land Use in the Target Landscape

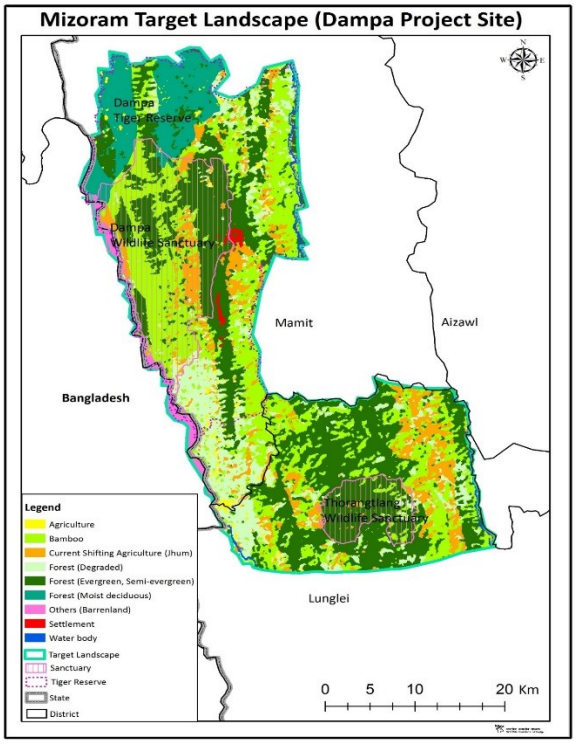


Table C: Land use in the target Green Landscape

Class	Description	Area in (ha.)
Agriculture	Agriculture patches available outside of Dampa Wildlife sanctuary and the Thorantlang Wildlife sanctuary	1886.069
Bamboo	Bamboo is distributed, entire landscape	41471.14
Current Shifting Agriculture (*Jhum*)	*Jhum* are found nearly outside of PAs and few areas of Dampa WLS	14710.06
Forest (Degraded)	Degraded forest found outside of Dampa Wildlife sanctuary and the Thorantlang Wildlife sanctuary	18401.69
Forest (Evergreen, Semi-evergreen)	Are distributed in the entire landscape	51803.56
Forest (Moist deciduous)	Moist deciduous forests are found only northern portion of Dampa Tiger reserve	12245.07
Others (Barren land)	Barren land found north to south along the west boundary of target landscape	3462.68
Settlement		517.9779

Water body	Rivers and streams	1172.056
	Total Area	**145670.30**

Global environmental values

12. Mizoram falls in the global biodiversity hotspot located in the North-Eastern India. Several globally important species exist in the Dampa Tiger Reserve and Thoratlang Wildlife Sanctuary. They include critically endangered Royal Bengal Tiger (*Panthera tigris tigris*); Leopard (*Panthera pardus*); Dhole (*Cuon alpinus*) Clouded leopard (*Neofelis nebulosi*); Fishing cat (*Prionailurus viverrinus*) and the Gaur (*Bos gaurus*). Dampa is also an Important Bird Area (IBAs), with a high diversity of bird species recorded here (237 species). Out of the 15 primate species recorded in India, eight species can be found in Dampa. They include Western Hoolock Gibbon (Hoolock hoolock), which is one of the world's 25 most endangered primate species; rare Stump-tailed Macaque (*Macaca arctoides*), Northern Pig-tailed Macaque (*Macaca leonine*) and Phayre's or Spectacled Leaf Monkey (*Trachypithecus phayrei*) (endemic to Mizoram, Tripura and couple of the southern districts of Assam). More than 2,358 plant species have been recorded from Mizoram. The State has particularly high diversity of Orchids (251 species), 35 bamboo species (including 20 species indigenous to the State). It also has some globally threatened plants such as Endangered *Dalbergia congesta* and *Paphiopedilum spicerianum*; and Vulnerable: *Eleiotis rottlerin*; *Paphiopedilum villosum*; and *Rhynchosia heyne*. Dampa is extremely important for amphibians and reptiles. Twenty species of amphibians, mainly frogs, and 43 species of reptiles, including 16 species of lizards are reported from this site.

13. The landscape notable agrobiodiversity includes diversity of Cowpea (*Vigna unguiculata*). Some key locally adapted varieties include Hlawit; Behlawilaihawl; Furbehlawi; and Hlawivapual. The area also has a crop called Khaun (Hodgsonia heteroclite) which has high quantity of edible oil (~70%) in its kernel. Wild relatives of the cultivated crops, such as *Artocarpus chama, Citrus indica, C. medica, Camellia caudata, and species of Alpinia, Ammomum, Cajanus, Cinnamomum, Cissus, Colocasia, Curcuma, Garcinia*, Ipomoea, Musa, Piper, Saccharum, Zingiber have also been conserved by traditional farmers in the State. Mizoram's State's Animal Serow (*Capricornis thar) and State Tree* Iron wood (*Mesua ferrea)* can also be found in the proposed landscape.

Local communities and livelihoods

14. Mizoram is a mountainous state situated between Bangladesh and Myanmar. The territory is sparsely populated compared to rest of India. The average population density per square kilometres is 52 persons, which is the third lowest in the whole country (only Arunachal Pradesh and Andaman and Nicobar Islands have lower population densities). Mamit district has the lowest population density in Mizoram with 29 persons per sq. km; and even Lunglei district's average population density of 36 persons per sq. km is lower than the State average.

15. The Green Landscape includes 50 villages, with a total population of 44,274 persons. Key ethnic groups here include the Hmar, Paihte, Pawi/lai, Mara and other sub-tribes/clans, and other tribes such as Bru (Tuikuk) and Chakma. Between 2001 and 2011, the population in Mamit grew by 37.6 % whilst in Lunglei it grew only by 17.6%. The average literacy rates of 85% and 89% respectively for Mamit and Lunglei are lower than the state average of 91%. Female literacy rates for the districts stands at 80% and 86% respectively for Mamit and Lunglei districts, which are also lower than the state level average of 89 %. The sex ratio of Mamit and Lunglei districts stand at for every 1000 males 927 and 947 females, respectively in Mamit and Lunglei districts (State level average is 970 females per 1000 males).

16. Slash and burn agriculture (*jhum*) is the mainstay of the people. Rice, maize, ginger, mustard and potatoes are the chief crops. Timber and bamboo are among the important forest products. A substantial population are government employees. Land in Mizoram is predominantly owned by the State and managed by the local community through democratically elected Village Councils.

Project Site 3: Target "Green Landscape" in Odisha

17. The project's target landscape falls in Mayurbhanj district. The UNESCO recognised Similipal Man and Biosphere Reserve (556,900 ha) will be the target "Green Landscape" for this project. The Biosphere Reserve includes the Similipal National Park, Similipal Wildlife Sanctuary and the transitional zone. The combination of Similipal National Park, the Similipal Wildlife Sanctuary, and additional Reserved Forest area in the Transition zone constitutes the Similipal Tiger Reserve.

Figure 6: Similipal Target Landscape

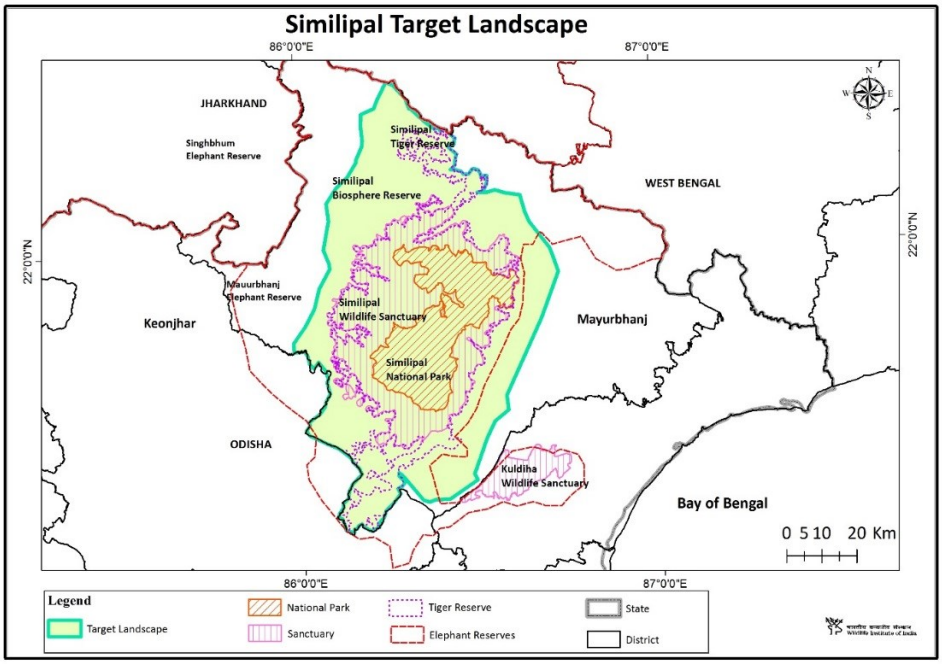


Figure 7: Land Use in Similipal Biosphere Reserve

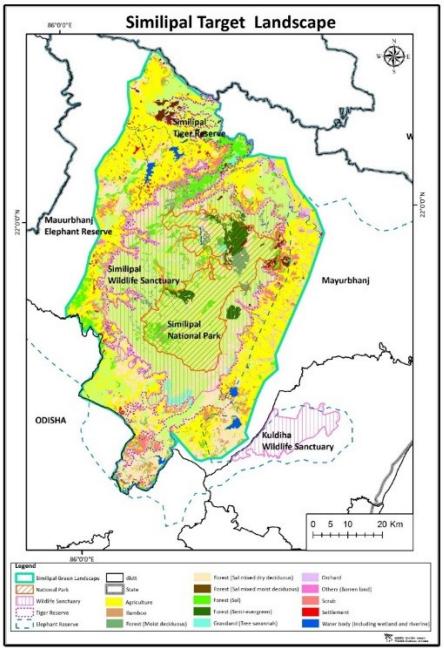


Table D: Land use in the target Green Landscape

Class	Description	Area in (ha.)
Agriculture	Agriculture land outside of national park/WLS	155,535.00
Bamboo	Bamboo is distributed in WLS and Tiger reserve	5,881.14
Forest (Moist deciduous)	Distributed within NP/WLS	7,023.36
Forest (Sal)	Exists in NP/WLS and some areas of buffer	79,922.06
Forest (Sal mixed dry deciduous)	Well distributed in within NP/WLS	205,500.20
Forest (Sal mixed moist deciduous)	Well distributed in within NP/WLS/buffer	35,689.43
Forest (Semi-evergreen)	Only NP and few patches in WLS	8,937.01
Grassland (Tree savannah)	NP/WLS and some are of buffer	4,967.36
Orchard	Mainly in buffer areas	11,872.65
Others (Barren land)	NP and buffer area	2,163.46
Scrub	Well distributed in WLS and buffer	31,119.82
Settlement	Outside of NP/WLS	2,476.20

Water body (including wetland and riverine)	NP/WLS and buffer	5,812.31
	Total Area	**556,900.00**

Global environmental values

18. The landscape hosts a diversity of wildlife, including sizable populations of charismatic mega-fauna that are globally threatened, especially of the Royal Bengal Tiger (*Panthera tigris tigris*) and the Asian elephant (Elephas maximus). Similipal is the only home of the unique melanistic tiger ("black tiger"). The protected area and surrounding landscapes provide habitat for nearly 100 tigers and 500 wild elephants. The landscape is the home of 50% tiger and 25% elephants of the state of Odisha. Over 21 amphibian species, 62 reptile species, 362 bird species and 55 mammal species have been recorded from this area. Gaur *(Bos gaurus*); Chousingha (*Tetracerus quadricornis*); Mugger crocodile (*Crocodylus palustris*) and Malabar Trogon (*Harpactes fasciatus*) are some other notable fauna found in this landscape. Other globally threatened animals found in Odisha that potentially exist in the landscape include Critically Endangered: *Barkudia insularis, Geckoella jeyporensis and Vulnerable: Geochelone elegans, Holothuria fuscogilva and Ophiophagus hannah*. Odisha's State Animal is the Sambhar *Rusa unicolor,* which are found in the Green Landscape.

19. The Similipal landscape represents diverse tropical forests of India and the protected area is one of the most intact forest complexes in the country. It has northern tropical mixed deciduous forest, northern tropical semi-evergreen forest, mixed deciduous hill forest, as well as various gradations of Sal (*Shorea robusta*) forests. Around 1286 flowering plant species have been recorded from Similipal forests, including 94 orchid species, including two species endemic to Similipal (*Eria meghaseniensi*s and *Bulophyllum panigrahianum*) Some globally threatened plant species found in Odisha include Endangered: *Dalbergia congestio*n and Vulnerable: *Cayratia Pedata Diospyro candolleana, Eleiotis rattler Polypleurum filifolium* and *Rhynchosia hyena*.

20. This region also has notable diversity of rice indigenous rice varieties (e.g. Rupapatia, Kantakarpura, Kalamkati, Janjalijata, Sarubhojana).

Local communities and livelihoods

21. The total population in the target landscape is around 795,804 persons. The Mayurbhanj district has a population density of 242 persons per sq. km as against the State average of 270. Between 2001 and 2011 census, the population in the district showed grew by 13% (State average population growth was 14% in the period). The average literacy rate in the district is 63 %, which is lower than the Odessa State average of 73.5%. Average female literacy rate for the district of 52.7% is also lower than Odisha's average female literacy rate of 64.4%. The sex ratio of the district at 1006 females to 1000 males is, however, better than the State average of 979 females per 1000 males.

22. There are at least 1,461 villages in the target landscape. Over 56 percent of the total population of the district are traditional indigenous ethnic "tribal" communities, and exceed 70% in in blocks such as Udala, Khunta, Bijatala, Jamda, and Baripada Blocks. Some ethnic groups such as Birhors, Hill Khadias and Ujias consider Similipal area as their original homes. The other main indigenous ethnic "tribes" found in the landscape include the Santhal, Kolha, Bhomji, Bhuiyan, Bathudi, Kharia, Gond, Mankadias, pauri- Bhyuyan, Mahalis, Sounti, and Saharas. Their major concentration is in the Suliapada and Morada Blocks of the district. Mayurbhanj has been declared as "Scheduled district". Of the State Given the ethnic diversity, Similipal area has a great repository of indigenous knowledge on biodiversity conservation, ethnobotany and other traditional ecological knowledge.

23. The main sources of people's livelihoods in the landscape are agriculture, fishery, small scale businesses, and manual labour. Most of the families here are smallholder farmers who practice crop farming, livestock raising and agroforestry. Some of these tribes, namely Kharias, Mankadias and Saharas are forest dwellers. They are nomadic food-gatherers and hunters concentrated in the hilly area of Similipal in Panchapirha sub-division particularly in Jashipur Block. The Lodha tribal community depends on agriculture, raising silk cocoons, selling firewood and rope making for their livelihood. Collection and sale of Non-Timber Forest Products (NTFP) is also important for many local communities. They include wild leafy vegetables, seeds, wild sap and gums, honey and wild fruit. A notable product from this area tussar silk52. Rearing of tussar silkworms has been an important source of income for many tribal and other disadvantaged communities in the landscape. Silkworms are reared on plants such as Asan (Terminalia elliptica), Arjun (Terminalia arjuna) and Sal (Shorea robusta). Tussar culture in Mayurbhanj is, however declining because of changes in climatic conditions, indiscriminate felling of the host trees, inadequate seed supply, lack of post cocoon facilities and inadequate market support. Nearly 4000 families are engaged in tussar culture in this district. Out of these about 80% families reside in the buffer area of the Tiger Reserve.

Project Site 4: Target "Green Landscape" in Rajasthan

24. The project's target landscape in Rajasthan includes parts of Jaisalmer and Barmer districts. The total area of the landscape is around 674,082 hectares, which includes the Desert National Park[53] (316,200 ha).

[52] http://www.csb.gov.in/silk-sericulture/silk/tasar-silk/

[53] Although referred to as "National" Park, this area is legally classified as a wildlife sanctuary.

Figure 8: Proposed "Green Landscape" in Rajasthan

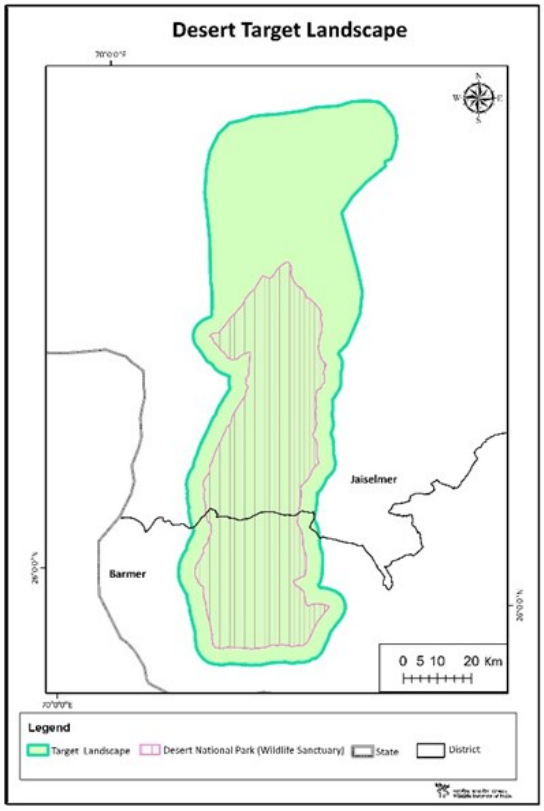


Figure 9: Land Use in Desert Target Landscape

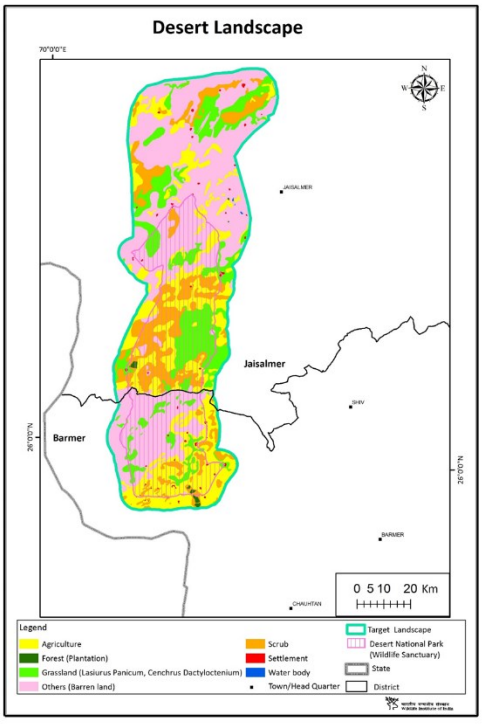


Table E: Land-use details in the target landscape

Class	Description	Area in (ha.)
Agriculture	Inside the Desert National Park and outside area	161220.98
Forest (Plantation)		1700.51
Grassland (*Lasiurus Panicum, Cenchrus Dactyloctenium*)	Grassland is well found in the entire landscape	115679.74
Others (Barren land)	Barren land is distributed in the entire landscape	289716.94
Scrub	Scrub is distributed almost entire landscape	102899.01
Settlement	Settlements are distributed in the national park and outside of the national park	2737.61
Water body	Only few areas of waterbody available in outside of desert national park within study site in Jaisalmer Distt	127.67
	Total Area	674082.47

Table F: Land and Land use in Target Landscape

Districts that encompass the target landscape	Total District Area (Ha)	Target Landscape Area within each district	Key land use within target landscape		
			Agricultural Area	Forest Area	Grasslands
Barmer	2,838,700	173,529	63,973	952	18044
Jaisalmer	3,840,100	500,553	94,537	652	98500
Total		674,082	158510		117544

Global Environmental Values

25. The Green Landscape in Rajasthan is representative of India's hot arid regions. Hot, arid regions constitute 10% of India's land area (or around 31 million hectares). Over 90% of India's hot, arid area falls in northwestern India, where this landscape is located. This region is characterized by seasonal high velocity winds, huge shifting and rolling sand dunes; high diurnal and seasonal temperature variations; scarce rainfall, and intense solar radiation. Annually, the area receives

between 100 to 500 mm of rainfall: 90% of which falls between July and September. The region has sandy soils with high water infiltration rate, low fertility, and low humus content.

26. Despite the seemingly hostile conditions for life, hot, arid regions of India are very important from the global environmental perspective – particularly for their important biodiversity. At least 60 mammal species, 8 amphibian species, and 51 reptile species have been recorded from this region. They include several endemic reptile species, such as the Laungwala Toad-headed Agama Bufoniceps laungwalansis, and the Sindh Awl-headed Snake *Lytorhynchus paradoxus*. Other notable reptile species found here include the Indian Spiny-tailed Lizard Uromastyx hardwickii Dwarf Gecko *Tropiocolotes persicus euphorbiacola*, Persian Gecko *Hemidactylus persicus*, Desert Monitor *Varanus griseus* and Saw-scaled Viper *Echis carinatus sochureki*. Important mammal species of the area include Chinkara *Gazella bennetti*, Desert Fox *Vulpes,* Indian Fox *Vulpes bengalensis*, Desert *Cat Felis silvestris*, Hairy-footed Gerbil *Gerbillus gleadowi*, Desert hare *Lepus nigrricollis diagnosis* and Long-eared hedgehog *Hemeichinus arts*. More than 100 bird species have been recorded (especially from the Desert National Park) including the critically endangered Great Indian Bustard (GIB) (locally called Godawan) and the migrant Houbara Bustard *Chlamydotis maqueeni*. The GIB has been extirpated from 90% of its former range and is now principally confined to Rajasthan. Only 89 were recorded during winter surveys in 2012. Other birds of significance include the endangered Oriental White-backed vulture Gyps bengalensis and Long-billed *Gyps indicus*, Stoliczka's Bushchat *Saxicola macrorhyncha*, and Green Munia *Amandava formosa*. The Great Indian Bustard is Rajsthan's State Bird. The Green Landscape also hosts Rajasthan's State Animal -Camel (*Gazella bennettii)* and State Tree Khejri (*Prosopis cineraria)*.

27. Despite harsh climatic conditions, the landscape has one of the richest plant diversity among the deserts of the world. One hundred and sixty-eight plant species belonging to 48 families have been reported from this area. Tree species include *Commiphora wightii, Ammannie desertorum, Acacia spp., Dipcadi erythraem, Enneatogon, Ephedra foliata, Glossonema varians, Helitropium rariflorum, Limeum indicum, Tecomella undulata brachystachyus Moringa concanensis, Rhynchosia schimpari, Seddera latifolia, Sesuvium sesuvioides, Tephrosia falciformis, Tribulus rajasthanensis and Ziziphus truncate*. About one fourth of the total plant species found in this landscape are used as food, fodder, and medicine. Sewan grass (*Lasiurus sindicus*) is an important local grass that is highly valued as a fodder.

28. The region is also rich in agrobiodiversity, and the table below presents some examples of local varieties of crops that are particularly notable:

- Wheat (*Triticum aestivum*): *Kharchiya* - Salt Tolerance and *Kathia* - Terminal heat tolerance
- Pearl millet (*Pennisatum glaucum*): *Sulkhania* and *Jakhrana*- Long panicle, high quality fodder; and *Chadi* - drought tolerance.
- Wild mustard (*Brassica tournifortii*): Tolerant to Powdery mildew and drought
- Khejri (*Prosopis cineraria*): Multi-purpose tree for vegetable and fodder; highly adapted to desert conditions.

Local Communities and Livelihoods

29. The Thar Desert, where the landscape is located, is one of the most densely populated deserts in the world - the 2011 census showed that India's hot, arid region had 27.12 million people, with a population density of 129 persons per square km (compared to 3 to 6 in other deserts around the world). The 2011 Census data show that the average population density of Jaisalmer and Barmer districts are 17 and 92 persons per sq. km respectively, while it is 200 for the entire State. However, these districts had the second highest population growth in the State between the 2001 and 2011 census at approximately 32% increase in that period. This is compared to the population growth 21% for the entire State for that period.

Table G: Some socioeconomic information about the target landscape

Districts included in the Green Landscape in Rajasthan	Number of Villages in target landscape	Population in target landscape	Key ethnic groups	Dominate Agricultural Production
Barmer	28	25,351	Minas, the Mevs, the Banjaras, and the Bhils (one of the oldest tribes in India,). Others include the Gadia Lohars, the Kalbelias, and the Garasias	Livestock (Sheep, goat and Cattle), Pearl Millet, Wheat, Gram Oilseeds and Guar
Jaisalmer	53	43,383	Same as above	Livestock (Sheep, goat and Cattle), Pearl Millet, Wheat, Gram Oilseeds and Guar
Total	81	68,734		

30. As indicated in the Table above, the Green Landscape includes 81 villages, with a population of at least 68,734 people. Many people live in sparsely populated distantly located hamlets called dhani among the sand dunes, where there are no basic facilities like roads, transportation or communication facilities, health, potable water supply, and electricity. The difficult geographical terrain makes provision of basic services extremely expensive for the government.

31. Village society is very traditional - it is common to find the settlements segregated based on caste. Women's status in most villages is quite low: with an average of only 40% female literacy rate in the two districts where the landscape falls, whilst the State average female literacy rate of 52% and 65% for the whole nation. The sex ratio of the project districts is among the lowest in the state of Rajasthan: for 1000 men, Jaisalmer has 849 women and Barmer has 900 women. The overall adult literacy rate in the landscape averages 57% as against the Rajasthan State-level average of 67% and the National-level average of 74%.

32. Local income is dependent on agriculture, livestock, tourism, and small businesses. Some are also involved in production of local handicrafts, as well as the collection and sale of medicinal plants. The predominant livelihoods of local communities are animal husbandry and cropping. Agriculture here is a mix of rain-fed cultivation and semi-nomadic grazing of livestock. The region has high numbers of domestic animals – including cattle, goats, sheep and camels. The table below illustrates the high domestic animals' population in the target landscape.

Table H: Major livestock types and their population in the target landscape

	Total Livestock in Districts		Estimated Total Livestock in Target Landscape
	Barmer	Jaisalmer	
Goats	2,228,415	1,132,856	283,889
Sheep	1,370,969	1,291,243	252,119

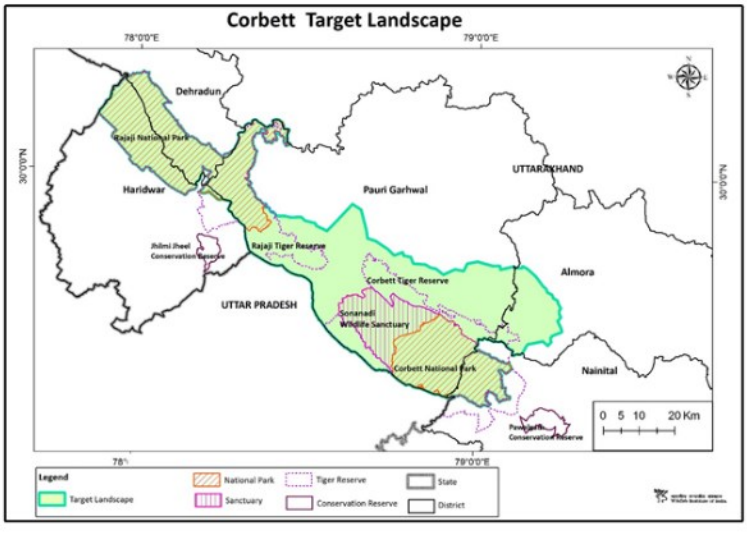
	Total Livestock in Districts		Estimated Total Livestock in Target Landscape
	Barmer	Jaisalmer	
Cattle	63,8031	356,707	85,499
Buffalo	156,812	2,653	9,932
Camels	58,698	38,980	8,669
Donkeys	21,308	10,610	2,686
Horse	1,767	728	203

Project Site 5: Target "Green Landscape" in Uttarakhand

33. The Green Landscape identified for Uttarakhand falls into five districts: Nainital, Pauri Garhwal, Almora, Dehradun, and Haridwar. However, the project's primary actions will focus on parts of the landscape that fall within the districts of Almora and Pauri Garhwal.

34. The project will target two productive agricultural and forest landscapes associated with Corbett Tiger Reserve and Rajaji Tiger Reserve. The first is the upland area of the Ramganga river watershed. This is the foothills of the Himalaya and an area dominated by terraced agriculture interspersed with forested and grazing lands. The Ramganga is the major river feeding into Corbett. The second area will be the corridor between Corbett and Rajaji protected areas. This is a major corridor for wildlife between the two protected areas, particularly elephants and tigers. Figure 1 below presents the area of the landscape with the locations of the two protected areas.

Figure 10: Target Landscape



35. The landscape is mostly forested, and has a diversity of forest types (see Figure 2 and Table 1).

Figure 11: Land Use Target Landscape

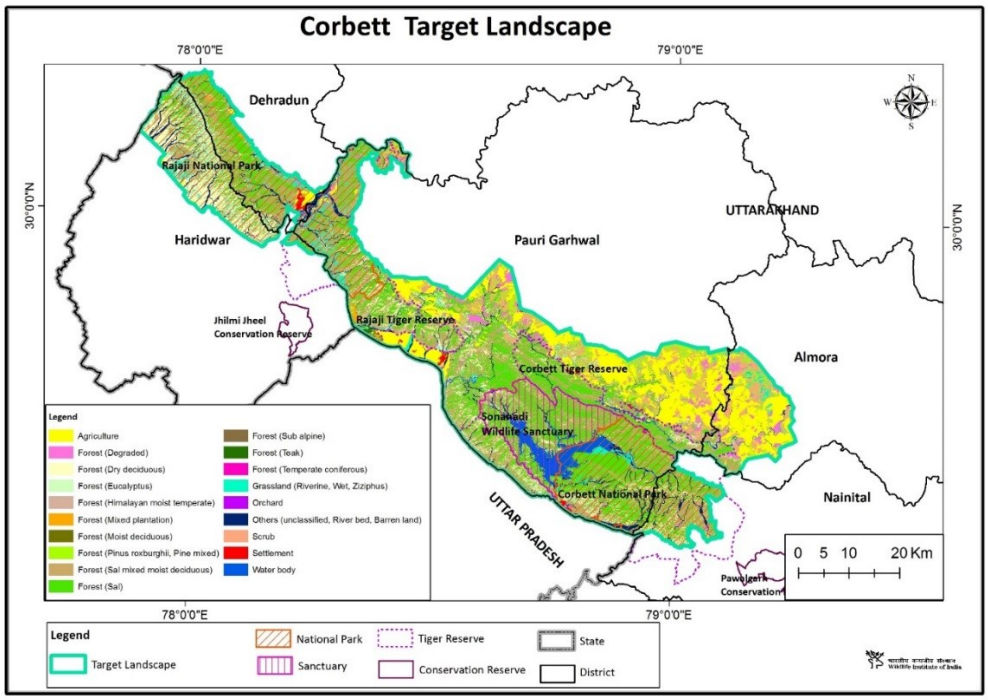


Table I: Land-use in the target Green Landscape

Class	Description	Area in (ha.)
Agriculture	Agriculture outside of Rajaji/Corbett Tiger Reserve and PAs	45108.77
Forest (Degraded)	Degraded forest patches are outside of Rajaji/Corbett Tiger reserve and PAs, only a few areas within the Rajaji national park	8171.92
Forest (Dry deciduous)	Distributed widely in the landscape	36828.12
Forest (Eucalyptus)	Eucalyptus are distributed within Rajaji tiger reserve	23.84
Forest (Himalayan moist temperate)	Himalayan moist temperate distributed outside PAs and within landscape Distt Almora and Pauri Garhwal	1516.22
Forest (Mixed plantation)	Mixed plantation occurs adjoining Rajaji TR and a few patches in Corbett National Park along with south east boundary	1129.15
Forest (Moist deciduous)	Distributed upper most north east adjacent boundary of the Rajaji national park	0.09
Forest (*Pinus roxburghii*, Pine mixed)	Forest available within landscape, Distt Almora and Pauri, outside of PAs	11664.60

Class	Description	Area in (ha.)
Forest (Sal mixed moist deciduous)	Sal mixed moist occurs entire PAs and within the landscape	88330.82
Forest (Sal)	Sal forest distributed entire PAs and within the landscape, except north east landscape in Almora Distt	79864.65
Forest (Sub alpine)	Sub alpine distributed outside PAs and within landscape Almora and Pauri Distt	46.45
Forest (Teak)	Teak distributed Sothern boundary of the Rajaji Tiger reserve and Corbett NP	471.45
Forest (Temperate coniferous)	Temperate coniferous occurs few patches of Pauri distt within the landscape	53.54
Grassland (Riverine, Wet, *Ziziphu*s)	Grassland distributed in the entire landscape	10361.07
Orchard	Orchard distribution shown in the southern boundary of Corbett national park	4.68
Others (unclassified, River bed, Barren land)	Along with rivers/major tributary	14010.46
Scrub	Scrubs are outside of PAs/Tiger reserve	15590.43
Settlement	Settlement outside of PAs/Tiger reserves	1362.96
Water body	Water bodies exist throughout the landscape	10156.43
	Total Area	**324695.64**

Global environmental values

36. Uttarakhand has several of globally threatened plant species, such as

- Critically Endangered: *Gentiana kurroo, Lilium polyphyllum, Nardostachys jatamansi*
- *Endangered: Aconitum heterophyllum Angelica glauca Cypripedium elegans, Stephensoniella brevipedunculata*
- Vulnerable: *Sewardiella tuberifera, Cypripedium cordigerum, Aconitum violaceum*

37. The State also hosts several globally threatened animal species, including:

- Endangered: *Clarias magur* (Wagur), *Tor putitora* (Putitor Mahseer), the Bengal tiger (*Panthera tigris tigris*), *Elephas maximus, Manis crassicaudata*
- Vulnerable: *Bangana almorae, Barilius dimorphicus, Ophiophagus hannah, Schizothorax richardsonii, Melursus ursinus*

38. Corbett National Park was the first Tiger Reserve in India established in 1936 and is one of the largest national parks in India. Corbett is one of the best-preserved parks with 164 tigers and over 600 elephants. The recent survey reveals that Corbett has the highest density of tiger population in the country at 20/100sq km. More than 600 species of trees, shrubs, herbs, bamboos, grasses, climbers and ferns have been identified in the Park. Rajaji National Park was established in 1986. Together, these two protected areas and the Himalayan foothill landscape surrounding them provide habitat for some India's finest forests and biodiversity. Corbett is one of the India's most crucial Gharial (*Gavialis gangeticus*) breeding sites. It has approximately 20% of the wild adult Gharial population of the world which is stable and breeding successfully. With approximately 550 recorded bird species, this landscape is one of the Important Bird Areas (IBAs). The forest types are essentially Northern Tropical Moist Deciduous and Northern Tropical Dry Deciduous. Corbett Tiger Reserve is covered predominantly (975%) with sal (*Shorea robusta*) forests. Rajaji is home to avian species that are found in forested foothills and open grassland. Its location in a transition zone between temperate western Himalaya and central Himalaya enhances the species diversity and consequently the viewing prospects. Rajaji's has recorded 400 bird species. Corbett and Rajaji National Parks are part of the ongoing Terai Arc Landscape initiative led by WWF India since 2000. Parts of the landscape host Uttarakhand's State Animal -Musk Deer (*Moschus chrysogaster),* State Bird – the Himalayan Monal (*Lophophorus impejanus*) and the State tree - Burans (*Rhododendron arboretum).*

39. The area also has high agrobiodiversity – including diversity of wheat (*Triticum aestivum*) (Naphal-Tank, Lakha, Dhavati, Hansy- Awnless), rice (*Oryza sativa*) (Dehradun Basmati, Hansraj- Basmati, Bindli-Thapachini and Jolia), soybean (Glycine soja) and Rajmash (*Phaseolus vulgaris*). Uttarakhand's indigenous cow - Badri- has become the state's first ever cattle breed to get certified by the National Bureau of Animal Genetic Resources (NBAGR) in Karnal as indigenous breed. The petite Badri cow is found only in the hill districts and was earlier known as the pahadi cow.

Local communities and livelihoods

40. The Green Landscape includes 232 villages in Almora with a total population of 54,135; and 839 villages in Pauri Garhwal with a total population of 181,393. The Pauri Garhwal and Almora district has a population density of 129 and 198 persons per sq. km respectively as against the State average of 189. The census shows decline in total population for both Districts by approximately - 1% between the census of 2011 and 2001, as against the State population growth by 0.8%. The average literacy rate for the district are 82% and 80% respectively for Pauri Garhwal and Almora, as against the state average of 79%. The female literacy rate for the district stands at 72.6% and 70% respectively for Pauri Garhwal and Almora as against the state level average of 70 %. The sex ratio of Pauri Garhwal and Almora district are among the highest in the country and stand at 1103 and 1139 females per 1000 males, respectively, as against the State level average of 979 females per 1000 males.

41. Local communities are a mix of Hindu castes like Brahmins, Kshatriya/Rajputs and Tribal groups like Jaunsaris, Jadhs, Marchas of Chamoli and Van Gujars. The inhabitants of Almora district, which fall in the Kumaon hills are commonly known as the Kumaoni. The social structure is based on the extended family system, the eldest male member being the head of the family. Women are respected in society, but they usually confine themselves to household activities. No religious ceremony is considered complete without the wife joining the husband. Women also work in the fields and forests alongside the men.

42. In the upper Ramganga watershed the main local occupation is terrace farming and cattle rearing. Agriculture is mainly dominated by female members of the families, as there is high male migration to big cities across the country, in search for better income. Farmers in Almora district grow wheat, rice, barley, maize, Mandua (finger millet), pulses, oilseeds, potato and raise livestock (cattle and goat). In Pauri Garhwal, farmers also grow wheat, mustard, barley, paddy, maize, Mandua (finger millet) and Jhangora (coarse millets), pepper, ginger, turmeric and sugar cane and also raise

livestock (Cattle, goat and sheep). One of the major concerns in this region is the increasing out-migration of people from the villages. In the Ramganga watershed alone, there is 30% of out migration due to several reasons. Small land holdings, coupled with the remoteness of the villages, and extensive crop damage by wildlife are making agriculture economically less attractive, compared to employment and educational opportunities in the rapidly growing cities in the State and outside the State (such as in Delhi). Whilst the 2001 population census showed that most young men are migrating out of their villages for employment, the 2011 census showed that whole families were migrating out of villages for better educational and employment opportunities.

43. There is now significant and increasing tourism around protected areas – especially around Corbett National Park. During 2014-15, the park was visited by 2, 45,873 tourists which was a 16 percent increase from 2013-14. This sector provides employment opportunities as well as markets for local agriculture products.

Table J: Summary of Target Sites: States, PA's, Districts and General Land Area

State	Associated Protected Area	Target Districts	Total District Area (Ha)	Target Landscape Area (Ha)	Target Landscape Area	Agricultural Area[54]	Forest Area [55]
Rajasthan	Desert National Park (WLS)	Barmer	2,838,700	674,082	173,529	63,973	952
		Jaisalmer	3,840,100		500,553	94,537	652
Madhya Pradesh	National Chambal Wildlife Sanctuary	Morena	498,900	97,982	30,579	9,219	6,554
		Sheopur	660,600		67,403	10,435	32,183
Mizoram	Dampa Tiger Reserve	Mamit	302,500	145,670	101,289	11186	86,576
	Thorangtlang WLS	Lunglei	453,600		44,382	5,410	37,345
Odisha	Similipal Tiger Reserve	Mayurbhanj	1,041,800	56,6900	566,900	155,082	343,594
Uttarakhand	Corbett Tiger Reserve	Almora	313,900	324,696	26,798	11,595	8,635
		Nainital	425,100		15,914	-	14,157
		Pauri Garhwal	532,900		224,250	32,151	157,539

[54] Including area under *jhum* cultivation
[55] Including area under naturally growing Bamboo

State	Associated Protected Area	Target Districts	Total District Area (Ha)	Target Landscape Area (Ha)	Target Landscape Area	Agricultural Area[54]	Forest Area [55]
	Rajaji Tiger Reserve	Haridwar	236,000		30,990	-	25,824
		Dehradun	308,800		26,744	-	21,947
Subtotals			11,452,900	1,809,330	1,809,331	393,588	735,958

Food and nutrition situation at selected sites

44. India's National Nutrition Strategy[56] has identified districts where there is high prevalence of child undernutrition (prevalence of stunting for children below five years) and women with low BMI and using anemia prevalence in children, adolescent girls and women. Based on these, programmes have been under implementation in priority districts to address these issues. Of the nine districts that the project landscapes fall under, only two districts are not considered to have major nutritional issues amongst its populations. Table below summarizes key programmes being implemented in the districts related to nutrition by the government.

	Integrated Child Development Services Scheme High Burden Districts	National Health Mission High Priority Districts	Systems Strengthening and Nutrition Improvement Project Districts
Morena, Madhya Pradesh	Yes		Yes
Sheopur, Madhya Pradesh	Yes		Yes
Lunglei, Mizoram		Yes	
Mamit, Mizoram		Yes	
Mayurbanjh, Odisha	No	No	No
Barmer, Rajasthan	Yes	Yes	Yes
Jaisalmer, Rajasthan		Yes	
Almora, Uttarakhand	No	No	No

[56] http://niti.gov.in/writereaddata/files/document_publication/Nutrition_Strategy_Booklet.pdf

	Integrated Child Development Services Scheme High Burden Districts	National Health Mission High Priority Districts	Systems Strengthening and Nutrition Improvement Project Districts
Pauri Garawal, Uttarakhand	Yes	Yes	

Key threats to global environmental values from the agriculture sector

- On the environment front, the Agenda calls for improving the effectiveness of afforestation programs; removing restrictions on forest product markets; avoiding negative impacts of projects such as road, power lines and rail projects on forests, so that such projects can "go ahead without cutting off migration corridors that are essential to prevent species from going extinct", and invasive species control. For Northeast India, the Agenda notes that "Current policies provide road access and subsidies for halting the burning of trees and shifting cultivation (*jhum*) and often are conditional on conversion to oil palm and other monocultures, thus in effect subsidizing these activities. This is encouraging deforestation and reducing species richness. The policies subsidising palm oil cultivation should be reversed."

- The Agenda has noted that "Minimum Support Prices (MSPs) have distorted cropping patterns due to their use in certain commodities in selected regions. There has been an excessive focus on the procurement of wheat, rice and sugarcane at the expense of other crops such as pulses, oilseed and coarse grains. These distortions have led to the depletion of water resources, soil degradation and deterioration in water quality in the North-west." It also notes "The Rashtriya Gokul Mission for increasing productivity of indigenous cows was launched in 2015-16. Based on the results of the program, a similar exercise for buffalos may be considered."

- This project will address threats to environmental values from unsustainable agricultural production practices; with an additional focus on examining these threats at a landscape level with the view of restoring, maintaining and/or enhancing global environmental values. Unsustainable agriculture currently threatens India's ability to reach biodiversity conservation, sustainable land management, climate change mitigation, and sustainable forest management objectives. The WWF estimates that agriculture now directly threatens 12 of India's 15 most important eco-regions. The IUCN's Redlist database shows that that agriculture threatens at least 84 of India's red-listed species, including 11 critically endangered species, 41 endangered species, and 32 vulnerable species.

- Negative impacts of unsustainable agricultural practices are most acute in and round critical ecological value areas, such as protected areas. India's national system of protected areas (PAs) and their surrounding landscapes house most of the nation's remaining globally significant biodiversity and store significant carbon. The Government invests significantly in PA conservation. However, the GoI concurrently also invests significantly to boost agricultural production. These different streams of GoI's investments are often incompatible with each other- leading to agricultural activities in such areas being in direct conflict with conservation objectives. This means government's own investments in two different sectors when misaligned leads to net loss to the country.

- If current trends of misaligned investments in agriculture and the environment continue, India's investments in conservation will be negated as protected areas and associated wildlife, forests and other ecosystems come under increasing pressure from agricultural practices. Current key threats posed by agriculture sector to global environmental values and their impacts include the following, especially at the five selected landscapes:

- Agriculture encroachment into natural ecosystems, causing deforestation and other land use changes: For example, in Mizoram, shortened cycles of slash and burn agriculture (*jhum*) has led to the conversion of forestland to degraded agricultural fallows of poor ecological values. Although Mizoram has significant forest cover spread over 90.38% of its geographical area, deforestation rates are significantly higher due to *jhum* cultivation and forest degradation caused by other anthropogenic pressures. Due to this, majority of forests in the State are classified under the open and medium dense forest category, while only 1% is classified under the high dense forest category with the canopy cover more than 40%. In 2010, the Mizoram Remote Sensing Application Centre (MRSAC) identified that more than 20% of Mizoram is "degraded" from unsustainable *jhum*. In Odisha, too. Agricultural expansion has been one of the key drivers of deforestation. The GoI figures estimate that the forest cover of the Similipal Biosphere Reserve has reduced by 970.8 km2 (23.6% of the total forest) especially between 1930 and 1975. Over 20% of forest lands within the biosphere reserve was encroached for agriculture activities since 1995. Furthermore, the GoI also notes that forest fires by NTFP collectors, timber smugglers, poachers and grazers is of major concern in this landscape. Between the years 1991–2000, around 100 square kilometres of forest was affected by fire. In Mizoram, too, fires escaping from *jhum* cause damage to additional areas of forests beyond cultivated areas.

- Unsustainable agriculture practices causing land and water degradation:

  Threats to natural ecosystems from high grazing pressure from unsustainable livestock numbers: This issue is of highest relevance in three of the five project landscapes –in Rajasthan, Madhya Pradesh and Odisha. In Odisha, for example, one estimate suggests that over 50,000 livestock illegally graze inside Similipal Tiger Reserve. In Rajasthan, livestock disturb nesting sites of globally important bird species (such as the Great Indian Bustard); risk transfer of diseases such as foot and mouth, anthrax, and canine distemper to wild animals; and cause soil erosion and greenhouse gas emissions.

45. Replacement or of traditional varieties of crops and animals: Traditionally agricultural communities recognized the significance of agrobiodiversity and nurtured it. This is also the case in landscapes in and around protected areas where lower intensity agriculture is being practiced. Farmers in India are moving away from the use of traditional crop varieties, livestock breeds, and practices with associated losses of globally significant species and genetic diversity. This is done in part via adoption of monocropping of higher-yielding "modern" varieties. Crops such as cotton, rice, and maize are replacing traditional crops such as finger millet, black gram, and pigeon pea. Changes in agriculture systems from traditional multicropping, combined with agroforestry to "modern" monocropping and or introduction of new crops are impacting biodiversity, sustainable land management and maintenance of soil carbon. India's indigenous breeds are being lost at an alarming rate with approximately 10 indigenous cattle breeds, 4 breeds of buffalo, 8 sheep breeds, 6 goat breeds, 4 camel breeds, 6 horse breeds, and 14 poultry breeds estimated to be in rapid decline. The wealth of agrobiodiversity is in often in the custody of tribal and rural communities scattered in remote, mountainous and inaccessible regions, which are invariably poor and economically marginalized. With high yielding varieties of crops replacing native 'landraces' – local varieties - including rice - that have developed naturally through adaptation to their local environments are being rapidly lost. In Odisha, the Government has encouraged farmers to replace traditional rice with high yielding varieties or with other crops. In Mizoram, too, many farmers have replaced their traditional shifting agriculture crops with more profitable introduced crops. In Rajasthan, changes in agricultural practices in and around sensitive habitats, such as from bustard–friendly traditional monsoonal crops (e.g.Sorghum, millet) to cash crops (such as sugarcane, grapes, cotton, horticulture) has been considered a major concern for GIB conservation. Guar (*Cyamopsis tetragonoloba*) has almost completely replaced other traditional crops in this area, as well as causing disappearance of Sewan grasslands from most villages. In Uttarakhand, part of the decline and loss of agrobiodiversity can be attributed to the fact that in watersheds like upper Ramganga River, many farmers are migrating out of their villages, leading to abandoned farmlands. Farm abandonment has led to not only the loss of agrobiodiversity but has also led to the spread of

invasive species such as Lantana, Parthenium, Ageratum, and Cassia tora – which are not conducive to local biodiversity, including pollinators. Invasive species have also spread inside the protected areas. Traditional breeds of domestic animals: such as Tharparkar cattle Rajasthan and Badri cows in Uttarakhand are also under threat of being replaced by hybrids or introduced breeds. There has also been a gradual erosion and loss of traditional practices such as indigenous systems designed to harvest surface water runoff from agriculture (khadin) in Rajasthan.

46. In addition to agriculture related threats, there are several other key threats to global environmental values in the Green Landscapes. They include the following:

- Deforestation: In addition to conversion of forests to agriculture, additional pressures are affecting forests in most landscapes. These also impact local livelihoods. In Odisha, for example, indiscriminate felling of the host trees that are important for tussar silkworms also negatively impact households that collect silkworms from the forests. In the Odisha Green Landscape, as most communities still depend on firewood for their daily energy needs, there is also considerable harvesting of firewood from natural forests. A significant percentage of the population is dependent on the forest for firewood; taking out an estimated 22000 tons of firewood from the buffer zones of protected areas alone annually. This, along with other pressures, has resulted in a decrease in the closed forest area (as percent of total forest area) from 77 per cent during 1972–75 to 30 per cent by 1996. Fuel wood consumption is estimated at 270 million tons (Mt) annually In Rajasthan, loss of tree cover- decline in traditional management of sacred groves (locally called Orans) from overexploitation due to the breakdown of community institutions that used to manage them. India's REDD+ states that forests neutralize about 11% of India's GHG emissions with forest loss and degradation associated with unsustainable impacting CCM.

- Human-Wildlife Conflict: Across India, crop raiding by wild animals and increasing encounters between humans and carnivores is a serious and growing concern. Crop raiding by wild boar, monkeys and deer species inflict heavy economic and social damages. Human-wildlife conflict in India can be very intense, particularly when it involves large carnivores such as tiger, leopards, and wild dogs (dhole). In Madhya Pradesh, villages, in the lower Chambal valley reported crop damage by wild animals, including nilgai (Boselaphus tragocamelus), Blackbuck (Antelope cervicpara), wild boar (Sus scrofa), Indian gazelle (Gazella gazella), Indian porcupine (Hystrix indica) and Sambar (Rusa unicolor). In Odisha, the government's focus on biodiversity conservation has had some positive impacts – such as conservation of elephants. However, this has also contributed to increased human wildlife conflict – in some areas, where wild elephants cause regular damage to crops and villagers' properties and assets. Here, between the years 1990-2000 at least 219 cases were recorded where people were killed by wild animals in the area (including by tigers). In Uttarakhand, settlement relocation from protected area into a landscape that has been used by elephants to move for foraging has caused human wildlife conflict – especially where farmers have started growing sugar canes, which are very attractive to the elephants. In addition, fruit tree plantations also attract monkeys and other wildlife. A study by the Wildlife Institute of India in 2010 recorded that 88% of the total villagers reported crop raiding by wild animals, many livestock losses by tiger and leopard attacks as well.

- Hunting/ poaching of wildlife/ wild plants: Wild animals have been a part of local diets for many rural populations in India. In Mizoram and Odisha, wildlife hunting has been traditionally practiced by many communities as a source of nutrition, and as a cultural practice. Hunting is an important rite of passage for men in many communities in Mizoram. In Odisha, annual traditional hunting "ceremony" called Akhand Shikaar is practiced in April, where (traditionally) men from tribal communities hunted wild animals every day for five to seven days. In Mizoram, with new roads and increased number of vehicles, people can now access previously remote areas. Thus, there has been an increase in hunting in some areas as well as in the cross - border poaching of wildlife (from Myanmar and Bangladesh). Illegal trade of wild orchids and overharvesting of medicinal plants is also of concern in some parts of the landscape. In Odisha, elephants have also been poached for ivory in the area in the recent past. In Rajasthan, poaching of wild animals, leading to their

population decline: such as of the Spiny tailed lizard, Partridge and Sandgrouse. Incidents of poaching of the Great Indian Bustard and the McQueen's Bustard have also been reported from Jaisalmer. In Madhya Pradesh, overfishing and turtle poaching from the Sanctuary using methods such as the gill nets, baited hook-lines and dynamites have been reported. Fishing also reduces food availability for wild animals in the protected area.

- Tourism related pressures: Around the Corbett National Park in Uttarakhand, Inadequate planning for increasing numbers of tourists in and around protected areas are causing increased waste production and littering, soil pollution, noise pollution. Land in the buffer zone is being sold at high prices for the development of tourism and there are subsequently less people involved in agriculture.

- Invasive species: Past introduction of Prosopis juliflora to "green" the desert has led to its establishment in many thousand hectares of land in Rajasthan and in Madhya Pradesh, replacing native vegetation.

- Unsustainable use of natural resources: In Madhya Pradesh, quarrying and sand mining and removal from beaches along the Chambal River has accelerated over the past two decades. Sandbanks, sand bars and sand pits are important nesting and breeding sites, in the National Chambal Sanctuary for gharial, mugger, nine freshwater turtle species, and ground nesting birds like the Indian skimmer, black-bellied tern, little tern, small pratincole and thick knee. Sand mining has become one of the most serious threats to the survival of these globally important species.

Annex 5: ExAct Calculations to Estimate GHG Emission Reduction

Direct and Indirect GHG Emission in the Green agriculture landcape

	Baseline	Direct	Direct ha	Indirect	Indirect ha
Madhya Pradesh	17,862,335	6,833,926	62,000	2,050,181	18,600
Mizoram	-395,581	4,746,711	63,725	1,424,013	19,118
Odisha	2,146,880	9,354,291	209,200	2,806,285	62,760
Rajasthan	3,613,594	18,282,733	312,075	5,484,818	93,623
Uttarakhand	5,875,273	10,688,794	103,000	3,206,638	30,900
TOTAL	**29,102,502**	**49,906,455**	**750,000**	**14,971,935**	**225,000**

QUANTIFYING CARBON BENEFITS (State of Madhya Pradesh)

Four land, forest and livestock management regimes are considered to generate carbon benefits through the project. All activities will be included in the community landscape management plans. The narrative of these intervention scenarios are as follows:

1) **Sustainable forest management:** The overall landscape has approximately 38,800 ha of forest, of which total of 35,000 ha will be supported by the project. This includes severely degraded 4,000 ha of tropical shrubland, approximately 24,000 ha of moderately degraded tropical dry forest, and 7,000 ha of moderately degraded tropical moist deciduous forest. The project will support the communities to improve the status of the forests and implement sustainable forest management regimes through assisted natural regeneration, reforestation with indigenous tree species and improved forest fire management.

2) **Ravine management:** This mitigation activity aims that 55% of the high priority ravine areas will be under community led ravine management. The notable feature of the landscape is the deeply eroded gullies (ravines) that have developed in the alluvium-derived soils through centuries of land degradation caused by indiscriminate land-use practices and surface run-off mismanagement. Deforestation, overgrazing and ill-considered tillage practices have contributed to wind and water erosion. Under this project, total of 18,000 ha of degraded ravine areas will be converted into grasslands (6,300 ha), horticulture and medicinal trees (6,200 ha) and annual crops such as millet, pulses and oil seeds (5,500 ha).

3) **Sustainable agriculture land management:** The main project interventions related to carbon benefit are to improve the nutrient, water and manure management in three indigenous crops areas: (i) 3,700 ha of pearl millet, soybean and pigeon pea; (ii) 4,450 ha of mustard, wheat, chickpea and sesame; and (iii) 850 ha of vegetables and spices. These sites will also use organic fertilizers and low tillage techniques. Through Farmers' Field Schools and project's technical and financial back-stopping, the project aims to improve the soil fertility and agrobiodiversity of the target areas.

4) **Livestock management**: The latest National Census (2012) figures have shown an average decrease in livestock population in the country by 3.33% as against the previous census (2007)[57]. However, in the project target districts, the number of livestock, particularly cattle, buffaloes and poultry, has been increasing and, therefore, contributing to increased GHG emissions, land degradation and water pollution. The project aims to increase the productivity of livestock while addressing the GHG emission impacts by stabilizing the livestock population. The project aims to decrease the overall population of livestock to 87% of the baseline through improved feeding practices, dietary additives, vaccinations, and with improved indigenous breeds.

[57] Islam, M. M., Anjum, S., Modi, R. J., & Wadhwani, K. N. (2016). Scenario of livestock and poultry in india and their contribution to national economy. *International Journal of Science, Environment and Technology*, *5*(3), 956-65.

Direct lifetime GHG emissions avoided

In the GEF Tracking Tool for Climate Change Mitigation projects, direct lifetime GHG emissions avoided are the emissions reductions attributable to the investments made during the project's supervised implementation period, totaled over the respective lifetime of the investments. The following variables and assumptions are used for the calculation. The EXACT results file is available:

Variable	Value	Unit	Note
Lifetime length for direct GHG emission avoided	20	year	6-year implementation phase and 14-year capitalization phase
Continent	Asia (Indian Subcontinent)	-	EX-ACT default type
Climate and moisture regime	Tropical, Dry	-	EX-ACT data
Dominant regional soil type	HAC	-	EX-ACT data
Total area for GHG emissions calculation	62,000	ha	Project target total
Target benefit tropical shrubland area through ANR	4,000	ha	Project target: from large to moderate degradation *
Target benefit tropical dry forest area through ANR	24,000	ha	Project target: from moderate to low degradation *
Target benefit tropical moist deciduous forest area through ANR	7,000	ha	Project target: from moderate to low degradation *
Target benefit ravine area through grasses	6,300	ha	Project target: from other land to grassland
Target benefit ravine area through tree crops	6,200	ha	Project target: from other land to perennial/tree crops
Target benefit ravine area through annual crops	5,500	ha	Project target: from other land to annual crops
Target benefit area through introduction of indigenous grains	3,700	ha	Project target: from residue burned to introduction of nutrient, water and manure management, and no tillage regimen
Target benefit area through introduction of indigenous wheat	4,450	ha	Project target: from residue burned to introduction of nutrient, water and manure management, and no tillage regimen
Target benefit area through introduction of indigenous vegetable and spices	850	ha	Project target: from residue burned to introduction of nutrient, water and manure management, and no tillage regimen (default season crop)

Forest degradation levels *	70/50/30	%	Tier 2: large, moderate and low

The following variables and assumptions are used for the livestock in the EX-ACT calculations.

Direct	Scenario				
	Baseline	Change[58]	Without	Change	With
Cattle	191,572	104%	198,561	90%	172,415
Buffalo	380,534	108%	411,274	90%	342,481
Sheep	10,898	57%	6,168	57%	6,168
Goat	142,406	98%	140,167	80%	113,925
Camel	183	38%	69	45%	82
Pig	5,906	49%	2,891	49%	2,894
Poultry	38,946	102%	39,611	90%	35,051
Total	770,445		798,743		673,016

The estimated value of direct lifetime GHG emission avoided during 20 years (6 years of implementation phase and 14 years of capitalization phase) are as follows:

Management regime	Area(ha)	Direct lifetime GHG emission avoided (tCO_2eq)
Sustainable forest management	35,000	2,538,976
Ravine management	18,000	1,312,689
Sustainable agriculture land management	9,000	415,859
Livestock management	-	2,566,402
Total	**62,000**	**6,833,926**

[58] India Livestock Census 2003 and 2012

The direct lifetime GHG emission mitigation potential from the project is estimated as **6,833,926 tCO_2eq**, which is equivalent to about **5.5 tCO_2eq per hectare per year** in the considered biome and time frame.

Table below provides the details of the direct lifetime GHG fluxes as calculated with the EX-ACT during 20 years of project lifetime:

Project Name	*Madhya Pradesh_GEF*	Climate	*Tropical (Dry)*				Duration of the Project (Years)	*20*		
Continent	*Asia (Indian Subcontinent)*	Regional Soil Type	*HAC Soils*				Total area (ha)	*62000*		
Components of the project	**Gross fluxes**			**Share per GHG of the Balance**					**Result per year**		
	Without	**With**	**Balance**	**All GHG in tCO2eq**					**Without**	**With**	**Balance**
	All GHG in tCO2eq			**CO_2**			**N_2O**	**CH_4**			
	Positive = source / negative = sink			**Biomass**	**Soil**	**Other**					
Land use changes											
Deforestation	0	0	0	0	0		0	0	0	0	0
Afforestation	0	0	0	0	0		0	0	0	0	0
Other LUC	0	-3,78,888	-3,78,888	-2,16,043	-1,62,846		0	0	0	-18,944	-18,944
Agriculture											
Annual	57,454	-3,58,404	-4,15,859	0	-3,79,610		1,058	-37,307	2,873	-17,920	-20,793
Perennial	0	-7,09,962	-7,09,962	-6,75,180	-34,782		0	0	0	-35,498	-35,498
Rice	0	0	0	0	0		0	0	0	0	0
Grassland & Livestocks											
Grassland	0	-2,23,839	-2,23,839	0	-2,23,839		0	0	0	-11,192	-11,192
Livestocks	1,78,04,881	1,52,38,479	-25,66,402				-3,31,003	-22,35,399	8,90,244	7,61,924	-1,28,320
Degradation & Management	0	-25,38,976	-25,38,976	-21,24,459	-4,14,517		0	0	0	-1,26,949	-1,26,949
Coastal wetlands	0	0	0	0	0		0	0	0	0	0
Inputs & Investments	0	0	0			0	0	0	0	0	0
Fishery & Aquaculture	0	0	0			0	0	0	0	0	0
Total	1,78,62,335	1,10,28,409	**-68,33,926**	-30,15,682	-12,15,594	0	-3,29,945	-22,72,706	8,93,117	5,51,420	-3,41,696
Per hectare	288	178	-110	-48.6	-19.6	0.0	-5.3	-36.7			
Per hectare per year	14.4	8.9	-5.5	-2.4	-1.0	0.0	-0.3	-1.8	14.4	8.9	-5.5

Consequential (indirect) lifetime GHG emission avoided

According to the Guidelines for Greenhouse Gas Emissions Accounting and Reporting for GEF Projects (GEF/C.48/Inf.09, 7 May 2015), indirect emissions reductions are re-defined as "consequential emissions". Consequential GHG emission reductions are those projected emissions that could result from a broader adoption of the outcomes of a GEF project plus longer-term emission reductions from behavioural change. Broader adoption of a GEF project proceeds through several processes including sustaining, mainstreaming, replication, scaling-up and market change. Consequential emission reductions are typically achieved after GEF project closure and occur outside of the project logical framework (Results Matrix).

To date there is little reliable baseline information of the project sites, both qualitative and quantitative, available to calculate the consequential lifetime GHG emissions avoided. During the early implementation period, the project will conduct necessary baseline surveys.

Based on the initial consultations with the target provinces, the consequential potential is assumed to replicate the project activities, such as sustainable forest and ravine management, in equivalent to 30% of direct project target areas that are not covered by the project interventions. Based on this assumption, the total coverage of consequential potential benefit area for the carbon calculation is 18,090 ha.

For the estimation of consequential GHG emissions avoided during 20 years (6 years of implementation phase and 14 years of capitalization phase), the following variables and assumptions are used for the calculation:

Variable	Value	Unit	Note
Lifetime length for direct GHG emission avoided	20	year	6-year implementation phase and 14-year capitalization phase
Continent	Asia (Indian Subcontinent)	-	EX-ACT default type
Climate and moisture regime	Tropical, Dry	-	EX-ACT data
Dominant regional soil type	HAC	-	EX-ACT data
Total area for GHG emissions calculation	18,600	ha	Project target total
Target benefit tropical shrubland area through ANR	1,200	ha	Project target: from large to moderate degradation *
Target benefit tropical dry forest area through ANR	7,200	ha	Project target: from moderate to low degradation *
Target benefit tropical moist deciduous forest area through ANR	2,100	ha	Project target: from moderate to low degradation *
Target benefit ravine area through grasses	1,890	ha	Project target: from other land to grassland
Target benefit ravine area through tree crops	1,860	ha	Project target: from other land to perennial/tree crops
Target benefit ravine area through annual crops	1,620	ha	Project target: from other land to annual crops

Variable	Value	Unit	Note
Target benefit area through introduction of indigenous grains	1,110	ha	Project target: from residue burned to introduction of nutrient, water and manure management, and no tillage regimen
Target benefit area through introduction of indigenous wheat	1,335	ha	Project target: from residue burned to introduction of nutrient, water and manure management, and no tillage regimen
Target benefit area through introduction of indigenous vegetable and spices	255	ha	Project target: from residue burned to introduction of nutrient, water and manure management, and no tillage regimen (default season crop)
Forest degradation levels *	70/50/30	%	Tier 2: large, moderate and low

The following variables and assumptions are used for the livestock in the EX-ACT calculations.

Indirect	Scenario				
	Baseline	Change[59]	Without	Change	With
Cattle	57,472	104%	59,568	90%	51,724
Buffalo	114,160	108%	123,382	90%	102,744
Sheep	3,270	57%	1,850	57%	1,850
Goat	42,722	98%	42,050	80%	34,177
Camel	55	38%	21	45%	25
Pig	1,772	49%	867	49%	868
Poultry	11,684	102%	11,883	90%	10,515
Total	231,134		239,623		201,905

The estimated value of direct lifetime GHG emission avoided during 20 years (6 years of implementation phase and 14 years of capitalization phase) are as follows;

Management regime	Area(ha)	Consequential lifetime GHG emission avoided (tCO_2eq)
Sustainable forest management	10,500	761,692

[59] India Livestock Census 2003 and 2012

Management regime	Area(ha)	Consequential lifetime GHG emission avoided (tCO_2eq)
Ravine management	5400	393,807
Sustainable agriculture land management	2,700	124,758
Livestock management	-	769,924
Total	**18,600**	**2,050,181**

The estimated value of lifetime indirect GHG emission avoided during 20 years is estimated as **2,050,181 tCO_2eq**, which is equivalent to **5.5 tCO_2eq per hectare per year** in the considered biome and time frame.

Table below provides the details of the consequential GHG fluxes as calculated with the EX-ACT during 20 years of project lifetime:

Project Name	Madhya Pradesh_GEF	Climate	Tropical (Dry)	Duration of the Project (Years)	20
Continent	Asia (Indian Subcontinent)	Regional Soil Type	HAC Soils	Total area (ha)	18600

Components of the project	Gross fluxes Without	With	Balance	Share per GHG of the Balance All GHG in tCO2eq CO_2 Biomass	Soil	Other	N_2O	CH_4	Result per year Without	With	Balance
	All GHG in tCO2eq Positive = source / negative = sink										
Land use changes											
Deforestation	0	0	0	0	0		0	0	0	0	0
Afforestation	0	0	0	0	0		0	0	0	0	0
Other LUC	0	-1,13,667	-1,13,667	-64,813	-48,854		0	0	0	-5,683	-5,683
Agriculture											
Annual	17,236	-1,07,521	-1,24,758	0	-1,13,883		317	-11,192	862	-5,376	-6,238
Perennial	0	-2,12,989	-2,12,989	-2,02,554	-10,435		0	0	0	-10,649	-10,649
Rice	0	0	0	0	0		0	0	0	0	0
Grassland & Livestocks											
Grassland	0	-67,152	-67,152	0	-67,152		0	0	0	-3,358	-3,358
Livestocks	53,41,468	45,71,544	-7,69,924				-99,302	-6,70,622	2,67,073	2,28,577	-38,496
Degradation & Management	0	-7,61,693	-7,61,693	-6,37,338	-1,24,355		0	0	0	-38,085	-38,085
Coastal wetlands	0	0	0	0	0		0	0	0	0	0
Inputs & Investments	0	0	0			0	0	0	0	0	0
Fishery & Aquaculture	0	0	0			0	0	0	0	0	0
Total	53,58,704	33,08,523	**-20,50,181**	-9,04,705	-3,64,678	0	-98,984	-6,81,814	2,67,935	1,65,426	-1,02,509
Per hectare	288	178	-110	-48.6	-19.6	0.0	-5.3	-36.7			
Per hectare per year	14.4	8.9	-5.5	-2.4	-1.0	0.0	-0.3	-1.8	14.4	8.9	-5.5

QUANTIFYING CARBON BENEFITS (State of Mizoram)

Two land and forest management regimes are considered to generate carbon benefits through the project. All activities will be included in the community landscape management plans. The narrative of these intervention scenarios are as follows:

1) **Sustainable forest management:** The overall landscape has approximately 82,450 ha of forest, of which total of 50,000 ha will be supported by the project. This includes degraded 25,000 ha of tropical rain forest, approximately 10,000 ha of degraded tropical moist deciduous forest, and 15,000 ha of moderately degraded tropical shrubland. The degraded 25,000 ha of tropical rain forest is further sub-categorized into: (i) 15,000 ha of forest without fire occurrence and (ii) 10,000 ha of target areas in which the project aims to reduce the wild fire occurrences from 2% to 1%. In addition, through the project intervention, the wild fire in the shrubland will be better controlled from 4% occurrence to 2%. The project will support the communities to improve the status of the target areas and implement sustainable forest management regimes through assisted natural regeneration and improved forest fire management based on the community landscape management plans.

2) **Sustainable agriculture land management:** Shifting cultivation, known as *jhum*, is widely practiced in the project target area (13,725 ha: 2,745 ha is the cultivated area and 10,980 ha is being set aside by 5,490 HH). On average, the community follows 5 year cycle of *jhum* which has been putting major stress on the land as the forest does not have sufficient time to regenerate before it is again burned and used for cultivation. The project aims to extend the *jhum* cycle to 10 years (1,647 ha) and introduce settled cultivation (1,098 ha) applying FAO's recent work on sloping land agriculture technology (SALT). The SALT (MiSALT for Mizoram implementation) will be an adapted approach that is specific to the steeper slopes of Mizoram that combines locally native species of bamboo, economically important plants as well as the plant materials removed from creating new *jhum* plots to establish contour bunds or barriers to minimize soil erosion. By extending the *jhum* cycle, the project also aims to maintain approximately 1,098 ha of regenerated forest within the target areas.

Direct lifetime GHG emissions avoided

In the GEF Tracking Tool for Climate Change Mitigation projects, direct lifetime GHG emissions avoided are the emissions reductions attributable to the investments made during the project's supervised implementation period, totaled over the respective lifetime of the investments. The following variables and assumptions are used for the calculation. The EX-ACT results file is available:

Variable	Value	Unit	Note
Lifetime length for direct GHG emission avoided	20	year	6-year implementation phase and 14-year capitalization phase
Continent	Asia (Indian Subcontinent)	-	EX-ACT default type
Climate and moisture regime	Tropical, Wet	-	EX-ACT data

Variable	Value	Unit	Note
Dominant regional soil type	LAC	-	EX-ACT data
Total area for GHG emissions calculation	63,725	ha	Project target total
Target benefit tropical shrubland area through ANR and fire management	15,000	ha	Project target: from moderate to low degradation; 4% to 2% fire occurrence
Target benefit tropical moist deciduous forest area through ANR and fire management	10,000	ha	Project target: from low to very low degradation; 2% to 1% fire occurrence
Target benefit tropical rain forest area through ANR and fire management	10,000	ha	Project target: from low to very low degradation; 2% to 1% fire occurrence
Target benefit tropical rain forest area through ANR	15,000	ha	Project target: from low to very low degradation
Target benefit abandoned *jhum* area	10,980/9,982	ha	Project target (with/without project): from annual crop to set aside land; no fire use
Target benefit new *jhum* area	2,745/1,098	ha	Project target (with/without project): from set aside to annual crop land; fire used
Target benefit new *jhum* area (MiSALT)	0/1,647	ha	Project target (with/without project): from annual crop to tree crop land; no fire use
Target benefit area through introduction of longer *jhum* cycle	0/1,098	ha	Project target (with/without project): from set aside to regenerated tropical moist deciduous forest; no fire use

The estimated value of direct lifetime GHG emission avoided during 20 years (6 years of implementation phase and 14 years of capitalization phase) are as follows:

Management regime	Area(ha)	Direct lifetime GHG emission avoided (tCO_2eq)
Sustainable forest management	50,000	3,267,450
Sustainable agriculture land management	13,725	1,479,260
Total	**63,725**	**4,746,711**

The direct lifetime GHG emission mitigation potential from the project is estimated as **4,746,711 tCO_2eq**, which is equivalent to about **3.7 tCO_2eq per hectare per year** in the considered biome and time frame.

Table below provides the details of the direct lifetime GHG fluxes as calculated with the EX-ACT during 20 years of project lifetime:

Project Name	*Mizoram_GEF*			Climate	*Tropical (Wet)*				Duration of the Project (Years)		*20*
Continent	*Asia (Indian subcontinent)*			Regional Soil Type	*LAC Soils*				Total area (ha)		*63725*
Components of the project	**Gross fluxes**				**Share per GHG of the Balance**				**Result per year**		
	Without	**With**	**Balance**		**All GHG in tCO2eq**				**Without**	**With**	**Balance**
	All GHG in tCO2eq				**CO_2**			**N_2O** / **CH_4**			
	Positive = source / negative = sink				**Biomass**	**Soil**	**Other**				
Land use changes											
Deforestation	0	0	0		0	0		0 / 0	0	0	0
Afforestation	0	-378 935	-378 935		-341 976	-36 959		0 / 0	0	-18 947	-18 947
Other LUC	-515 128	-675 644	-160 516		-30 195	-125 249		-3 960 / -1 112	-25 756	-33 782	-8 026
Agriculture											
Annual	-127 041	-50 816	76 225		0	78 117		-1 893 / 0	-6 352	-2 541	3 811
Perennial	0	-1 016 034	-1 016 034		-996 435	-19 599		0 / 0	0	-50 802	-50 802
Rice	0	0	0		0	0		0 / 0	0	0	0
Grassland & Livestocks											
Grassland	0	0	0		0	0		0 / 0	0	0	0
Livestocks	0	0	0					0 / 0	0	0	0
Degradation & Management	246 589	-3 020 861	-3 267 450		-2 558 596	-607 750		-26 245 / -74 859	12 329	-151 043	-163 373
Coastal wetlands	0	0	0		0	0		0 / 0	0	0	0
Inputs & Investments	0	0	0				0	0 / 0	0	0	0
Fishery & Aquaculture	0	0	0				0	0 / 0	0	0	0
Total	-395 581	-5 142 291	**-4 746 711**		-3 927 203	-711 440	0	-32 097 / -75 971	-19 779	-257 115	-237 336
Per hectare	-6	-81	-74		-61.6	-11.2	0.0	-0.5 / -1.2			
Per hectare per year	-0.3	-4.0	-3.7		-3.1	-0.6	0.0	0.0 / -0.1	-0.3	-4.0	-3.7

Consequential (indirect) lifetime GHG emission avoided

According to the Guidelines for Greenhouse Gas Emissions Accounting and Reporting for GEF Projects (GEF/C.48/Inf.09, 7 May 2015), indirect emissions reductions are re-defined as "consequential emissions". Consequential GHG emission reductions are those projected emissions that could result from a broader adoption of the outcomes of a GEF project plus longer-term emission reductions from behavioural change. Broader adoption of a GEF project proceeds through several processes including sustaining, mainstreaming, replication, scaling-up and market change. Consequential emission reductions are typically achieved after GEF project closure and occur outside of the project logical framework (Results Matrix).

To date there is little reliable baseline information of the project sites, both qualitative and quantitative, available to calculate the consequential lifetime GHG emissions avoided. During the early implementation period, the project will conduct necessary baseline surveys.

Based on the initial consultations with the target provinces, the consequential potential is assumed to replicate the project activities, such as sustainable forest and ravine management, in equivalent to 30% of direct project target areas that are not covered by the project interventions. Based on this assumption, the total coverage of consequential potential benefit area for the carbon calculation is 19,118 ha.

For the estimation of consequential GHG emissions avoided during 20 years (6 years of implementation phase and 14 years of capitalization phase), the following variables and assumptions are used for the calculation:

Variable	Value	Unit	Note
Lifetime length for direct GHG emission avoided	20	year	6-year implementation phase and 14-year capitalization phase
Continent	Asia (Indian Subcontinent)	-	EX-ACT default type
Climate and moisture regime	Tropical, Wet	-	EX-ACT data
Dominant regional soil type	LAC	-	EX-ACT data
Total area for GHG emissions calculation	19,118	ha	Project target total
Target benefit tropical shrubland area through ANR and fire management	4,500	ha	Project target: from moderate to low degradation; 4% to 2% fire occurrence
Target benefit tropical moist deciduous forest area through ANR and fire management	3,000	ha	Project target: from low to very low degradation; 2% to 1% fire occurrence
Target benefit tropical rain forest area through ANR and fire management	3,000	ha	Project target: from low to very low degradation; 2% to 1% fire occurrence
Target benefit tropical rain forest area through ANR	4,500	ha	Project target: from low to very low degradation

Variable	Value	Unit	Note
Target benefit abandoned *jhum* area	3,294/2,966	ha	Project target (with/without project): from annual crop to set aside land; no fire use
Target benefit new *jhum* area	824/329	ha	Project target (with/without project): from set aside to annual crop land; fire used
Target benefit new *jhum* area (MiSALT)	0/494	ha	Project target (with/without project): from annual crop to tree crop land; no fire use
Target benefit area through introduction of longer *jhum* cycle	329	ha	Project target (with/without project): from set aside to regenerated tropical moist deciduous forest; no fire use

The estimated value of direct lifetime GHG emission avoided during 20 years (6 years of implementation phase and 14 years of capitalization phase) are as follows;

Management regime	Area(ha)	Consequential lifetime GHG emission avoided (tCO_2eq)
Sustainable forest management	15,000	980,235
Sustainable agriculture land management	4,118	443,778
Total	**19,118**	**1,424,013**

The estimated value of lifetime indirect GHG emission avoided during 20 years is estimated as **1,424,013 tCO_2eq**, which is equivalent to **3.7 tCO_2eq per hectare per year** in the considered biome and time frame.

Table below provides the details of the consequential GHG fluxes as calculated with the EX-ACT during 20 years of project lifetime:

Project Name	*Mizoram_GEF*	Climate	*Tropical (Wet)*	Duration of the Project (Years)	*20*
Continent	*Asia (Indian subcontinent)*	Regional Soil Type	*LAC Soils*	Total area (ha)	*19117.5*

Components of the project	Gross fluxes Without	Gross fluxes With	Balance	Share per GHG of the Balance All GHG in tCO2eq CO_2 Biomass	CO_2 Soil	CO_2 Other	N_2O	CH_4	Result per year Without	Result per year With	Balance
	All GHG in tCO2eq Positive = source / negative = sink										
Land use changes											
Deforestation	0	0	0	0	0		0	0	0	0	0
Afforestation	0	-113 681	-113 681	-102 593	-11 088		0	0	0	-5 684	-5 684
Other LUC	-154 538	-202 693	-48 155	-9 059	-37 575		-1 188	-334	-7 727	-10 135	-2 408
Agriculture											
Annual	-38 112	-15 245	22 867	0	23 435		-568	0	-1 906	-762	1 143
Perennial	0	-304 810	-304 810	-298 931	-5 880		0	0	0	-15 241	-15 241
Rice	0	0	0	0	0		0	0	0	0	0
Grassland & Livestocks											
Grassland	0	0	0	0	0		0	0	0	0	0
Livestocks	0	0	0				0	0	0	0	0
Degradation & Management	73 977	-906 258	-980 235	-767 579	-182 325		-7 873	-22 458	3 699	-45 313	-49 012
Coastal wetlands	0	0	0	0	0		0	0	0	0	0
Inputs & Investments	0	0	0			0	0	0	0	0	0
Fishery & Aquaculture	0	0	0			0	0	0	0	0	0
Total	-118 674	-1 542 687	**-1 424 013**	-1 178 161	-213 432	0	-9 629	-22 791	-5 934	-77 134	-71 201
Per hectare	-6	-81	-74	-61.6	-11.2	0.0	-0.5	-1.2			
Per hectare per year	-0.3	-4.0	-3.7	-3.1	-0.6	0.0	0.0	-0.1	-0.3	-4.0	-3.7

QUANTIFYING CARBON BENEFITS (State of Odisha)

Three land, forest and livestock management regimes are considered to generate carbon benefits through the project. All activities will be included in the community landscape management plans. The narrative of these intervention scenarios are as follows:

1) **Sustainable forest management:** The overall landscape has approximately 337,072 ha of forest, of which total of 175,000 ha will be supported by the project. This includes degraded 2,000 ha of tropical rain forest, approximately 90,000 ha of degraded tropical moist deciduous forest, and 83,000 ha of degraded tropical dry forest. All the forests in the project areas are suffering from slight degradation. The project will support the communities to improve the status of the forests and implement sustainable forest management regimes through assisted natural regeneration and reforestation with indigenous tree species where applicable.

2) **Sustainable agriculture land management:** The main project interventions related to carbon benefit are to improve the nutrient, water and manure management in three indigenous crops areas: (i) 19,080 ha of rainfed rice and other cereals; (ii) 6,355 ha of pulses and oil seeds; and (iii) 2,965 ha of vegetables and spices. These sites will also use organic fertilizers and mostly no tillage techniques. Residues are exported in both with and without project scenarios, except for vegetables and spices where residues are assumed to be retained. Through Farmers' Field Schools and project's technical and financial back-stopping, the project aims support 37,500 HH to improve the soil fertility and agrobiodiversity of the target areas.

   In addition, the project will support the target communities to conserve, document and promote indigenous traditional forms of flooded rice techniques in 5,800 ha in the project landscape. It will ensure sustainable reduced methane emissions through interventions in the irrigation system to intermittently flood rather than continuously flooded, with non-flooded preseason more than 30 days but less than 80 days. Straw will be used for compost instead of being exported.

3) **Livestock management**: The latest National Census (2012) figures have shown an average decrease in livestock population in the country by 3.33% as against the previous census (2007)[60]. However, in the project target districts, the number of livestock, particularly goat and sheep, has been increasing and, therefore, contributing to increased GHG emissions, land degradation and water pollution. The project aims to increase the productivity of livestock while addressing the GHG emission impacts by stabilizing the livestock population with improved genetic quality of indigenous breeds and the nutritional quality of fodder and feed. The project aims to decrease the overall population of livestock to 85% of the baseline.

[60] Islam, M. M., Anjum, S., Modi, R. J., & Wadhwani, K. N. (2016). Scenario of livestock and poultry in india and their contribution to national economy. *International Journal of Science, Environment and Technology*, *5*(3), 956-65.

Direct lifetime GHG emissions avoided

In the GEF Tracking Tool for Climate Change Mitigation projects, direct lifetime GHG emissions avoided are the emissions reductions attributable to the investments made during the project's supervised implementation period, totaled over the respective lifetime of the investments. The following variables and assumptions are used for the calculation. The EXACT results file is available:

Variable	Value	Unit	Note
Lifetime length for direct GHG emission avoided	20	year	6-year implementation phase and 14-year capitalization phase
Continent	Asia (Indian Subcontinent)	-	EX-ACT default type
Climate and moisture regime	Tropical, Moist	-	EX-ACT data
Dominant regional soil type	LAC	-	EX-ACT data
Total area for GHG emissions calculation	209,200	ha	Project target total
Target benefit tropical rain forest area through ANR	2,000	ha	Project target: from low to very low degradation
Target benefit tropical moist deciduous forest area through ANR	90,000	ha	Project target: from low to very low degradation
Target benefit tropical dry forest area through ANR	83,000	ha	Project target: from low to very low degradation
Target benefit area through introduction of indigenous grains	19,080	ha	Project target: introduction of nutrient, water and manure management; residues will continued to be exported
Target benefit area through introduction of indigenous beans and pulses	6,355	ha	Project target: introduction of nutrient, water and manure management; residues will continued to be exported
Target benefit area through introduction of indigenous vegetable and spices	2,965	ha	Project target: introduction of nutrient, water and manure management; no tillage and residue retention to be continued
Target benefit area through introduction of indigenous variety of rice	5,800	ha	Project target: introduction of intermittently flooded regimen, non-flooded preseason more than 30 days but less than 80 days, and straw will be used for compost instead of being exported

The following variables and assumptions are used for the livestock in the EX-ACT calculations.

Direct	Scenario				
	Baseline	Change[61]	Without	Change	With
Cattle	58 686	89%	52 111	85%	49 883
Buffalo	1 001	54%	541	50%	501
Pig	1 743	31%	532	31%	532
Goat	79 947	165%	131 821	85%	67 955
Sheep	20 555	175%	35 914	90%	18 499
Poultry	187 403	95%	177 479	85%	159 293
Total	349 336		398 398		296 663

The estimated value of direct lifetime GHG emission avoided during 20 years (6 years of implementation phase and 14 years of capitalization phase) are as follows:

Management regime	Area(ha)	Direct lifetime GHG emission avoided (tCO_2eq)
Sustainable forest management	175,000	7,490,114
Sustainable agriculture land management	34,200	1,427,336
Livestock management	-	436,841
Total	**209,200**	**9,354,291**

The direct lifetime GHG emission mitigation potential from the project is estimated as **9,354,291 tCO_2eq**, which is equivalent to about **2.2 tCO_2eq per hectare per year** in the considered biome and time frame.

Table below provides the details of the direct lifetime GHG fluxes as calculated with the EX-ACT during 20 years of project lifetime:

[61] India Livestock Census 2003 and 2012

Project Name	*Odisha GEF*	Climate	*Tropical (Moist)*	Duration of the Project (Years)	*20*
Continent	*Asia (Indian subcontinent)*	Dominant Regional Soil Type	*LAC Soils*	Total area (ha)	*209200*

Components of the project	Gross fluxes Without	Gross fluxes With	Balance	Share per GHG of the Balance All GHG in tCO2eq CO_2 Biomass	CO_2 Soil	CO_2 Other	N_2O	CH_4	Result per year Without	Result per year With	Balance
	All GHG in tCO2eq Positive = source / negative = sink										
Land use changes											
Deforestation	0	0	0	0	0		0	0	0	0	0
Afforestation	0	0	0	0	0		0	0	0	0	0
Other LUC	0	0	0	0	0		0	0	0	0	0
Agriculture											
Annual	-37 502	-1 349 230	-1 311 729	0	-1 311 729		0	0	-1 875	-67 462	-65 586
Perennial	0	0	0	0	0		0	0	0	0	0
Rice	384 540	268 932	-115 608	0	0		0	-115 608	19 227	13 447	-5 780
Grassland & Livestocks											
Grassland	0	0	0	0	0		0	0	0	0	0
Livestocks	1 799 842	1 363 001	-436 841				-223 745	-213 096	89 992	68 150	-21 842
Degradation & Management	0	-7 490 114	-7 490 114	-6 208 385	-1 281 729		0	0	0	-374 506	-374 506
Coastal wetlands	0	0	0	0	0		0	0	0	0	0
Inputs & Investments	0	0	0			0	0	0	0	0	0
Fishery & Aquaculture	0	0	0			0	0	0	0	0	0
Total	2 146 880	-7 207 411	**-9 354 291**	-6 208 385	-2 593 458	0	-223 745	-328 704	107 344	-360 371	-467 715
Per hectare	10	-34	-45	-29.7	-12.4	0.0	-1.1	-1.6			
Per hectare per year	0.5	-1.7	-2.2	-1.5	-0.6	0.0	-0.1	-0.1	0.5	-1.7	-2.2

Consequential (indirect) lifetime GHG emission avoided

According to the Guidelines for Greenhouse Gas Emissions Accounting and Reporting for GEF Projects (GEF/C.48/Inf.09, 7 May 2015), indirect emissions reductions are re-defined as "consequential emissions". Consequential GHG emission reductions are those projected emissions that could result from a broader adoption of the outcomes of a GEF project plus longer-term emission reductions from behavioural change. Broader adoption of a GEF project proceeds through several processes including sustaining, mainstreaming, replication, scaling-up and market change. Consequential emission reductions are typically achieved after GEF project closure and occur outside of the project logical framework (Results Matrix).

To date there is little reliable baseline information of the project sites, both qualitative and quantitative, available to calculate the consequential lifetime GHG emissions avoided. During the early implementation period, the project will conduct necessary baseline surveys.

Based on the initial consultations with the target provinces, the consequential potential is assumed to replicate the project activities, such as sustainable forest and ravine management, in equivalent to 30% of direct project target areas that are not covered by the project interventions. Based on this assumption, the total coverage of consequential potential benefit area for the carbon calculation is 62,760 ha.

For the estimation of consequential GHG emissions avoided during 20 years (6 years of implementation phase and 14 years of capitalization phase), the following variables and assumptions are used for the calculation:

Variable	Value	Unit	Note
Lifetime length for direct GHG emission avoided	20	year	6-year implementation phase and 14-year capitalization phase
Continent	Asia (Indian Subcontinent)	-	EX-ACT default type
Climate and moisture regime	Tropical, Moist	-	EX-ACT data
Dominant regional soil type	LAC	-	EX-ACT data
Total area for GHG emissions calculation	62,760	ha	Project target total
Target benefit tropical rain forest area through ANR	600	ha	Project target: from low to very low degradation
Target benefit tropical moist deciduous forest area through ANR	27,000	ha	Project target: from low to very low degradation
Target benefit tropical dry forest area through ANR	24,900	ha	Project target: from low to very low degradation
Target benefit area through introduction of indigenous grains	5,724	ha	Project target: introduction of nutrient, water and manure management; residues will continued to be exported
Target benefit area through introduction of indigenous beans and pulses	1,906	ha	Project target: introduction of nutrient, water and manure management; residues will continued to be exported

Variable	Value	Unit	Note
Target benefit area through introduction of indigenous vegetable and spices	890	ha	Project target: introduction of nutrient, water and manure management; no tillage and residue retention to be continued
Target benefit area through introduction of indigenous variety of rice	1,740	ha	Project target: introduction of intermittently flooded regimen, non-flooded preseason more than 30 days but less than 80 days, and straw will be used for compost instead of being exported

The following variables and assumptions are used for the livestock in the EX-ACT calculations.

Indirect	Scenario				
	Baseline	Change[62]	Without	Change	With
Cattle	17 606	89%	15 633	85%	14 965
Buffalo	300	54%	162	50%	150
Pig	523	31%	160	31%	160
Goat	23 984	165%	39 546	85%	20 386
Sheep	6 166	175%	10 774	90%	5 550
Poultry	56 221	95%	53 244	85%	47 788
Total	104 801		119 519		88 999

The estimated value of direct lifetime GHG emission avoided during 20 years (6 years of implementation phase and 14 years of capitalization phase) are as follows;

Management regime	Area(ha)	Consequential lifetime GHG emission avoided (tCO_2eq)
Sustainable forest management	52,500	2,247,034
Sustainable agriculture land management	10,260	428,201
Livestock management	-	131,050

[62] India Livestock Census 2003 and 2012

Management regime	Area(ha)	Consequential lifetime GHG emission avoided (tCO_2eq)
Total	**62,760**	**2,806,285**

The estimated value of lifetime indirect GHG emission avoided during 20 years is estimated as **2,806,285 tCO_2eq**, which is equivalent to **2.2 tCO_2eq per hectare per year** in the considered biome and time frame.

Table below provides the details of the consequential GHG fluxes as calculated with the EX-ACT during 20 years of project lifetime:

Project Name	*Odisha GEF*	Climate	*Tropical (Moist)*			Duration of the Project (Years)		*20*		
Continent	*Asia (Indian subcontinent)*	Climate Regional Soil Type	*LAC Soils*					Total area (ha)		*62760*
Components of the project	**Gross fluxes**			**Share per GHG of the Balance**					**Result per year**		
	Without	**With**	**Balance**	**All GHG in tCO2eq**					**Without**	**With**	**Balance**
	All GHG in tCO2eq			**CO_2**			**N_2O**	**CH_4**			
	Positive = source / negative = sink			**Biomass**	**Soil**	**Other**					
Land use changes											
Deforestation	0	0	0	0	0		0	0	0	0	0
Afforestation	0	0	0	0	0		0	0	0	0	0
Other LUC	0	0	0	0	0		0	0	0	0	0
Agriculture											
Annual	-11 251	-404 769	-393 519	0	-393 519		0	0	-563	-20 238	-19 676
Perennial	0	0	0	0	0		0	0	0	0	0
Rice	115 362	80 680	-34 682	0	0		0	-34 682	5 768	4 034	-1 734
Grassland & Livestocks											
Grassland	0	0	0	0	0		0	0	0	0	0
Livestocks	539 949	408 899	-131 050				-67 123	-63 927	26 997	20 445	-6 553
Degradation & Management	0	-2 247 034	-2 247 034	-1 862 515	-384 519		0	0	0	-112 352	-112 352
Coastal wetlands	0	0	0	0	0		0	0	0	0	0
Inputs & Investments	0	0	0			0	0	0	0	0	0
Fishery & Aquaculture	0	0	0			0	0	0	0	0	0
Total	644 061	-2 162 224	**-2 806 285**	-1 862 515	-778 037	0	-67 123	-98 609	32 203	-108 111	-140 314
Per hectare	10	-34	-45	-29.7	-12.4	0.0	-1.1	-1.6			
Per hectare per year	0.5	-1.7	-2.2	-1.5	-0.6	0.0	-0.1	-0.1	0.5	-1.7	-2.2

QUANTIFYING CARBON BENEFITS (State of Rajasthan)

Four land, forest and livestock management regimes are considered to generate carbon benefits through the project. All activities will be included in the community landscape management plans. The narrative of these intervention scenarios are as follows:

1) **Sustainable forest management:** The project aims to encourage the traditional forest/scared groves (*Oran*) management targeting 4,000 ha of traditional sacred groves (tropical steppe) that are currently largely degraded. In the absence of the project the state is expected to degrade to extreme level. Project activities will include ANR, reforestation with indigenous tree species and protection from animal grazing, and controlled fuelwood collection to improve the degradation level to moderate.

2) **Sustainable agriculture land management:** The project will target 3,162 HH working on 34,145 ha of agricultural land through Farmers' Field Schools. Based on the available data of the current cropping pattern in the landscape, it is assumed that the households will adopt Good Agricultural Practices (GAP) and grow indigenous crops such as millets and pulses in 31,645 ha, and wheat, barley and gram in 2,500 ha of agricultural land. The with-project scenario will be in lieu of the non-indigenous hybrids or poor quality breeds of indigenous crops currently grown in the absence of GAP. It is assumed that in both with and without project scenarios, the residue will be exported for livestock fodder. With project nutrient management, water management and **manure** management practices will be applied.

3) **Grassland management:** The project will carry out several mitigation activities within Thar Desert region in Rajasthan which hosts 1,590,900 ha of extensive grassland which is essential for its habitats for critical biodiversity such as the Great Indian bustard and blackbuck antelope. The grassland is used by the indigenous people for grazing, and in recent years for seasonal agriculture of millet and the cash crop guar. In these areas, unsustainable cultivation in competition with overgrazing, particularly by domestic animals like goat and sheep, has severely degraded the grassland ecosystem. The project will intervene on 105,550 ha of severely degraded grassland within the Wildlife Sanctuary area to improve the condition without input management. The project also aims to moderately improve the degraded grassland outside the Wildlife Sanctuary (68,530 ha). This will primarily be through an increase of vegetation cover and an associated reduction in erosion and water runoff. Improved pasture management through rotational grazing, restoration/ rehabilitation with suitable palatable and drought tolerant indigenous species such as leguminous will be implemented over the target degraded grassland.

   In addition, approximately 99,850 ha of the barren land will employ strategies and activities such as planting indigenous grasses and trees of this grassland biome, and reviving traditional water and soil conservation structures. These activities aim to regenerate grassland vegetation in the degraded barren land.

4) **Livestock management**: The latest National Census (2012) figures have shown an average decrease in livestock population in the country by 3.33% as against the previous census (2007)[63]. However, in the project target districts, the number of livestock, particularly goat and sheep, has been increasing and, therefore, contributing to increased GHG emissions, land degradation and water pollution. The project aims to increase the productivity of livestock while addressing the GHG emission impacts by stabilizing the livestock population with improved genetic quality of indigenous breeds and the nutritional quality of fodder and feed. The project aims to decrease the overall population of livestock to 83% of the baseline.

Direct lifetime GHG emissions avoided

In the GEF Tracking Tool for Climate Change Mitigation projects, direct lifetime GHG emissions avoided are the emissions reductions attributable to the investments made during the project's supervised implementation period, totaled over the respective lifetime of the investments. The following variables and assumptions are used for the calculation. The EX-ACT results file is available:

Variable	Value	Unit	Note
Lifetime length for direct GHG emission avoided	20	year	6-year implementation phase and 14-year capitalization phase
Continent	Asia (Indian Subcontinent)	-	EX-ACT default type
Climate and moisture regime	Warm Temperate, Dry	-	EX-ACT data
Dominant regional soil type	HAC	-	EX-ACT data
Total area for GHG emissions calculation	312,075	ha	Project target total
Target benefit subtropical stepp area through ANR	4,000	ha	Project target: from large to moderate degradation
Target benefit area through introduction of indigenous grains	31,645	ha	Project target: introduction of agronomic practices, nutrient, water and manure management; residue is assumed to be exported in both with/without project scenarios
Target benefit area through introduction of indigenous wheat	2,500	ha	Project target: introduction of agronomic practices, nutrient, water and manure management; residue is assumed to be exported in both with/without project scenarios
Target benefit grassland inside DNP area through ANR	105,550	ha	Project target: from severely degraded to improved without input management

[63] Islam, M. M., Anjum, S., Modi, R. J., & Wadhwani, K. N. (2016). Scenario of livestock and poultry in India and their contribution to national economy. *International Journal of Science, Environment and Technology*, *5*(3), 956-65.

Variable	Value	Unit	Note
Target benefit grassland outside DNP area through ANR	68,530	ha	Project target: from severe to moderate degradation
Target benefit barrenland area through traditional land management	99,850	ha	Project target: introduction of nutrient, water and manure management; residues will continued to be exported

The following variables and assumptions are used for the livestock in the EX-ACT calculations.

Direct	Scenario				
	Baseline	Change[64]	Without	Change	With
Cattle	52,810	123%	64,828	90%	47,529
Buffalo	6,861	125%	8,549	90%	6,175
Sheep	121,043	90%	109,317	85%	102,887
Goat	188,552	129%	243,034	80%	150,841
Camel	4,607	70%	3,239	70%	3,239
Pig	82	65%	54	65%	54
Poultry	1,859	130%	2,410	90%	1,674
Total	375,814		431,431		312,398

The estimated value of direct lifetime GHG emission avoided during 20 years (6 years of implementation phase and 14 years of capitalization phase) are as follows:

Management regime	Area(ha)	Direct lifetime GHG emission avoided (tCO_2eq)
Sustainable forest management	4,000	455,687
Sustainable agriculture land management	34,145	9,500,587
Grassland management	273,930	7,529,340
Livestock management	-	797,119
Total	**312,075**	**18,282,733**

64 India Livestock Census 2003 and 2012

The direct lifetime GHG emission mitigation potential from the project is estimated as **18,282,733 tCO_2eq**, which is equivalent to about **2.9 tCO_2eq per hectare per year** in the considered biome and time frame.

Table below provides the details of the direct lifetime GHG fluxes as calculated with the EX-ACT during 20 years of project lifetime:

Project Name	*Rajasthan GEF*	Climate	*Warm Temperate (Dry)*	Duration of the Project (Years)	*20*
Continent	*Asia (Indian subcontinent)*	Dominant Regional Soil Type	*HAC Soils*	Total area (ha)	*312075*

Components of the project	Gross fluxes Without	Gross fluxes With	Balance	Share per GHG of the Balance CO_2 Biomass	CO_2 Soil	CO_2 Other	N_2O	CH_4	Result per year Without	Result per year With	Balance
	All GHG in tCO2eq			All GHG in tCO2eq							
	Positive = source / negative = sink										
Land use changes											
Deforestation	0	0	0	0	0		0	0	0	0	0
Afforestation	0	0	0	0	0		0	0	0	0	0
Other LUC	0	-86,06,671	-86,06,671	-6,83,540	-79,23,131		0	0	0	-4,30,334	-4,30,334
Agriculture											
Annual	0	-8,93,916	-8,93,916	0	-8,93,916		0	0	0	-44,696	-44,696
Perennial	0	0	0	0	0		0	0	0	0	0
Rice	0	0	0	0	0		0	0	0	0	0
Grassland & Livestocks											
Grassland	0	-75,29,340	-75,29,340	0	-75,29,340		0	0	0	-3,76,467	-3,76,467
Livestocks	33,85,751	25,88,632	-7,97,119				-2,98,854	-4,98,265	1,69,288	1,29,432	-39,856
Degradation & Management	2,27,844	-2,27,844	-4,55,687	-3,60,941	-94,747		0	0	11,392	-11,392	-22,784
Coastal wetlands	0	0	0	0	0		0	0	0	0	0
Inputs & Investments	0	0	0			0	0	0	0	0	0
Fishery & Aquaculture	0	0	0			0	0	0	0	0	0
Total	36,13,594	-1,46,69,139	**-1,82,82,733**	-10,44,481	-1,64,41,134	0	-2,98,854	-4,98,265	1,80,680	-7,33,457	-9,14,137
Per hectare	12	-47	-59	-3.3	-52.7	0.0	-1.0	-1.6			
Per hectare per year	0.6	-2.4	-2.9	-0.2	-2.6	0.0	0.0	-0.1	0.6	-2.4	-2.9

Consequential (indirect) lifetime GHG emission avoided

According to the Guidelines for Greenhouse Gas Emissions Accounting and Reporting for GEF Projects (GEF/C.48/Inf.09, 7 May 2015), indirect emissions reductions are re-defined as "consequential emissions". Consequential GHG emission reductions are those projected emissions that could result from a broader adoption of the outcomes of a GEF project plus longer-term emission reductions from behavioral change. Broader adoption of a GEF project proceeds through several processes including sustaining, mainstreaming, replication, scaling-up and market change. Consequential emission reductions are typically achieved after GEF project closure and occur outside of the project logical framework (Results Matrix).

To date there is little reliable baseline information of the project sites, both qualitative and quantitative, available to calculate the consequential lifetime GHG emissions avoided. During the early implementation period, the project will conduct necessary baseline surveys.

Based on the initial consultations with the target provinces, the consequential potential is assumed to replicate the project activities, such as sustainable forest and ravine management, in equivalent to 30% of direct project target areas that are not covered by the project interventions. Based on this assumption, the total coverage of consequential potential benefit area for the carbon calculation is 86,352 ha.

For the estimation of consequential GHG emissions avoided during 20 years (6 years of implementation phase and 14 years of capitalization phase), the following variables and assumptions are used for the calculation:

Variable	Value	Unit	Note
Lifetime length for direct GHG emission avoided	20	year	6-year implementation phase and 14-year capitalization phase
Continent	Asia (Indian Subcontinent)	-	EX-ACT default type
Climate and moisture regime	Warm Temperate, Dry	-	EX-ACT data
Dominant regional soil type	HAC	-	EX-ACT data
Total area for GHG emissions calculation	93622.5	ha	Project target total
Target benefit subtropical stepp area through ANR	1,200	ha	Project target: from large to moderate degradation
Target benefit area through introduction of indigenous grains	9493.5	ha	Project target: introduction of agronomic practices, nutrient, water and manure management; residue is assumed to be exported in both with/without project scenarios
Target benefit area through introduction of indigenous wheat	750	ha	Project target: introduction of agronomic practices, nutrient, water and manure management; residue is

Variable	Value	Unit	Note
			assumed to be exported in both with/without project scenarios
Target benefit grassland inside DNP area through ANR	31,590	ha	Project target: from severely degraded to improved without input management
Target benefit grassland outside DNP area through ANR	14,610	ha	Project target: from severe to moderate degradation
Target benefit barrenland area through traditional land management	29,955	ha	Project target: introduction of nutrient, water and manure management; residues will continued to be exported

The following variables and assumptions are used for the livestock in the EX-ACT calculations.

Indirect	Scenario				
	Baseline	Change[65]	Without	Change	With
Cattle	15,843	123%	19,448	90%	14,259
Buffalo	2,058	125%	2,565	90%	1,852
Sheep	36,313	90%	32,795	85%	30,866
Goat	56,565	129%	72,910	80%	45,252
Camel	1,382	70%	972	70%	972
Pig	25	65%	16	65%	16
Poultry	558	130%	723	90%	502
Total	112,744		129,429		93,719

The estimated value of direct lifetime GHG emission avoided during 20 years (6 years of implementation phase and 14 years of capitalization phase) are as follows;

Management regime	Area(ha)	Consequential lifetime GHG emission avoided (tCO_2eq)
Sustainable forest management	1,200	136,706
Sustainable agriculture land management	10,243.5	2,850,176
Grassland management	82,179	2,258,802

[65] India Livestock Census 2003 and 2012

Management regime	Area(ha)	Consequential lifetime GHG emission avoided (tCO_2eq)
Livestock management	-	239,134
Total	**93,622.5**	**5,484,818**

The estimated value of lifetime indirect GHG emission avoided during 20 years is estimated as **5,484,818 tCO_2eq**, which is equivalent to **2.9 tCO_2eq per hectare per year** in the considered biome and time frame.

Table below provides the details of the consequential GHG fluxes as calculated with the EX-ACT during 20 years of project lifetime:

Project Name	*Rajasthan GEF*	Climate	*Warm Temperate (Dry)*	Duration of the Project (Years)	*20*
Continent	*Asia (Indian subcontinent)*	Dominant Regional Soil Type	*HAC Soils*	Total area (ha)	*93622.5*

Components of the project	Gross fluxes Without	Gross fluxes With	Balance	Share per GHG of the Balance All GHG in tCO_2eq CO_2 Biomass	CO_2 Soil	CO_2 Other	N_2O	CH_4	Result per year Without	Result per year With	Balance
	All GHG in tCO_2eq Positive = source / negative = sink										
Land use changes											
Deforestation	0	0	0	0	0		0	0	0	0	0
Afforestation	0	0	0	0	0		0	0	0	0	0
Other LUC	0	-25,82,001	-25,82,001	-2,05,062	-23,76,939		0	0	0	-1,29,100	-1,29,100
Agriculture											
Annual	0	-2,68,175	-2,68,175	0	-2,68,175		0	0	0	-13,409	-13,409
Perennial	0	0	0	0	0		0	0	0	0	0
Rice	0	0	0	0	0		0	0	0	0	0
Grassland & Livestocks											
Grassland	0	-22,58,802	-22,58,802	0	-22,58,802		0	0	0	-1,12,940	-1,12,940
Livestocks	10,15,720	7,76,587	-2,39,134				-89,656	-1,49,478	50,786	38,829	-11,957
Degradation & Management	68,353	-68,353	-1,36,706	-1,08,282	-28,424		0	0	3,418	-3,418	-6,835
Coastal wetlands	0	0	0	0	0		0	0	0	0	0
Inputs & Investments	0	0	0			0	0	0	0	0	0
Fishery & Aquaculture	0	0	0			0	0	0	0	0	0
Total	10,84,073	-44,00,744	**-54,84,818**	-3,13,344	-49,32,340	0	-89,656	-1,49,478	54,204	-2,20,037	-2,74,241
Per hectare	12	-47	-59	-3.3	-52.7	0.0	-1.0	-1.6			
Per hectare per year	0.6	-2.4	-2.9	-0.2	-2.6	0.0	0.0	-0.1	0.6	-2.4	-2.9

QUANTIFYING CARBON BENEFITS (State of Uttarakhand)

Three land, forest and livestock management regimes are considered to generate carbon benefits through the project. All activities will be included in the community landscape management plans. The narrative of these intervention scenarios are as follows:

1) **Sustainable forest management:** The project will assist the Department of Forest and Environment Department and local communities in sustainable management of high conservation value forest (total 90,000 ha) in the target landscape. The restoration activities will be carried out around the Corbett and Rajaji Tiger Reserves and the lower watershed region of the Ramganga River. This landscape is a habitat of globally significant species including tigers and elephants. Forest fire occurrences, illegal logging, and fuelwood collection and grazing by domestic livestock have significantly degraded the forests. Illustrative actions will include accelerated preparation of management plans for community managed forests, which will identify conservation and sustainable use of resources, assisted natural regeneration, forest fire control, reforestation of indigenous tree species, control of illegal logging, control of illegal collection of fuelwood, and grazing of domestic livestock. It is assumed that SFM actions will be implemented in 17,000 ha of moderately degraded sub-tropical mountain forests (Himalayan moist temperate, *Pinus roxburghii*, sub alpine, temperate coniferous); about 62,000 ha of moderately degraded sub-tropical humid forest (Moist deciduous, Sal, Teak); and 11,000 ha of moderately degraded sub-tropical dry forest (dry deciduous, eucalyptus).

2) **Sustainable agriculture land management:** The project will support 14,700 HH working on 13,000 ha of agricultural land through Farmers' Field Schools. Based on the available data of the current cropping pattern in the landscape, it is assumed that the target households will adopt Good Agricultural Practices (GAP) and grow indigenous crops of millets, gram, and maize in 6,500 ha, and wheat, barley and oilseeds in 5,650 ha of agricultural land. This with-project scenario will be in lieu of the non-indigenous hybrids or poor quality breeds of indigenous crops currently grown.in absence of GAP. It is assumed that the project will encourage post-harvest residue retention instead of exporting it to increase the nutrient quality of the soil. The project will also apply nutrient, water and manure management practices.

   The project will also target flooded rice cultivation in 850 ha of the project area. Through the project, the farmers will adopt a new water management by keeping the rice fields intermittently flooded instead of continuously flooding. The preseason non flooded will remain >80 days and post-harvest straw burning practice will be replaced with making of compost for fertilization.

5) **Livestock management**: The latest National Census (2012) figures have shown an average decrease in livestock population in the country by 3.33% as against the previous census (2007)[66]. However, in the project target districts, the number of livestock, particularly goat and sheep, has been increasing and, therefore, contributing to increased GHG emissions, land degradation and water pollution. The project aims to increase the productivity of livestock

[66] Islam, M. M., Anjum, S., Modi, R. J., & Wadhwani, K. N. (2016). Scenario of livestock and poultry in India and their contribution to national economy. *International Journal of Science, Environment and Technology*, *5*(3), 956-65.

while addressing the GHG emission impacts by stabilizing the livestock population with improved genetic quality of indigenous breeds and the nutritional quality of fodder and feed. The project aims to decrease the overall population of livestock to 89% of the baseline.

Direct lifetime GHG emissions avoided

In the GEF Tracking Tool for Climate Change Mitigation projects, direct lifetime GHG emissions avoided are the emissions reductions attributable to the investments made during the project's supervised implementation period, totaled over the respective lifetime of the investments. The following variables and assumptions are used for the calculation. The EX-ACT results file is available:

Variable	Value	Unit	Note
Lifetime length for direct GHG emission avoided	20	year	6-year implementation phase and 14-year capitalization phase
Continent	Asia (Indian Subcontinent)	-	EX-ACT default type
Climate and moisture regime	Warm Temperate, Moist	-	EX-ACT data
Dominant regional soil type	HAC	-	EX-ACT data
Total area for GHG emissions calculation	103,000	ha	Project target total
Target benefit subtropical mountain forest	17,000	ha	Project target: from moderate to low degradation; fire occurrence from 2% to 1%
Target benefit subtropical humid forest	62,000	ha	Project target: from moderate to low degradation
Target benefit subtropical dry forest	11,000	ha	Project target: from moderate to low degradation; fire occurrence from 2% to 1%
Target benefit area through introduction of indigenous grains	6,500	ha	Project target: introduction of agronomic practices, nutrient, water and manure management; residue will retained (with project) instead of being exported
Target benefit area through introduction of indigenous wheat	5,650	ha	Project target: introduction of agronomic practices, nutrient, water and manure management; residue will retained (with project) instead of being exported
Target benefit area through introduction of indigenous variety of rice	850	ha	Project target: introduction of intermittently flooded regimen, non-flooded preseason less than 80 days, and straw will be used for compost instead of being burnt

The following variables and assumptions are used for the livestock in the EX-ACT calculations.

Direct	Scenario				
	Baseline	Change[67]	Without	Change	With
Cattle	29,323	92%	26,871	90%	26,390
Buffalo	4,976	80%	4,003	80%	4,003
Sheep	2,242	125%	2,795	90%	2,018
Goat	18,603	118%	21,961	80%	14,883
Pig	76	60%	46	55%	42
Poultry	9,613	234%	22,492	110%	10,575
Total	64,833		78,169		57,911

The estimated value of direct lifetime GHG emission avoided during 20 years (6 years of implementation phase and 14 years of capitalization phase) are as follows:

Management regime	Area(ha)	Direct lifetime GHG emission avoided (tCO_2eq)
Sustainable forest management	90,000	10,054,845
Sustainable agriculture land management	13,000	583,901
Livestock management	-	50,048
Total	**103,000**	**10,688,794**

The direct lifetime GHG emission mitigation potential from the project is estimated as **10,688,794 tCO_2eq**, which is equivalent to about **5.2 tCO_2eq per hectare per year** in the considered biome and time frame.

Table below provides the details of the direct lifetime GHG fluxes as calculated with the EX-ACT during 20 years of project lifetime:

[67] India Livestock Census 2003 and 2012

Project Name	*Uttarakhand GEF*	Climate	*Warm Temperate (Moist)*	Duration of the Project (Years)	*20*
Continent	*Asia (Indian subcontinent)*	Dominant Regional Soil Type	*HAC Soils*	Total area (ha)	*103000*

Components of the project	Gross fluxes Without	Gross fluxes With	Balance	Share per GHG of the Balance All GHG in tCO2eq CO_2 Biomass	CO_2 Soil	CO_2 Other	N_2O	CH_4	Result per year Without	Result per year With	Balance
	All GHG in tCO2eq Positive = source / negative = sink										
Land use changes											
Deforestation	0	0	0	0	0		0	0	0	0	0
Afforestation	0	0	0	0	0		0	0	0	0	0
Other LUC	0	0	0	0	0		0	0	0	0	0
Agriculture											
Annual	0	-561,341	-561,341	0	-576,275		14,934	0	0	-28,067	-28,067
Perennial	0	0	0	0	0		0	0	0	0	0
Rice	62,964	40,404	-22,560	0	0		-1,326	-21,234	3,148	2,020	-1,128
Grassland & Livestocks											
Grassland	0	0	0	0	0		0	0	0	0	0
Livestocks	719,395	669,347	-50,048				-22,756	-27,292	35,970	33,467	-2,502
Degradation & Management	5,092,914	-4,961,931	-10,054,845	-7,560,096	-2,468,400		-10,471	-15,879	254,646	-248,097	-502,742
Coastal wetlands	0	0	0	0	0		0	0	0	0	0
Inputs & Investments	0	0	0			0	0	0	0	0	0
Fishery & Aquaculture	0	0	0			0	0	0	0	0	0
Total	5,875,273	-4,813,521	**-10,688,794**	-7,560,096	-3,044,675	0	-19,619	-64,405	293,764	-240,676	-534,440
Per hectare	57	-47	-104	-73.4	-29.6	0.0	-0.2	-0.6			
Per hectare per year	2.9	-2.3	-5.2	-3.7	-1.5	0.0	0.0	0.0	2.9	-2.3	-5.2

Consequential (indirect) lifetime GHG emission avoided

According to the Guidelines for Greenhouse Gas Emissions Accounting and Reporting for GEF Projects (GEF/C.48/Inf.09, 7 May 2015), indirect emissions reductions are re-defined as "consequential emissions". Consequential GHG emission reductions are those projected emissions that could result from a broader adoption of the outcomes of a GEF project plus longer-term emission reductions from behavioral change. Broader adoption of a GEF project proceeds through several processes including sustaining, mainstreaming, replication, scaling-up and market change. Consequential emission reductions are typically achieved after GEF project closure and occur outside of the project logical framework (Results Matrix).

To date there is little reliable baseline information of the project sites, both qualitative and quantitative, available to calculate the consequential lifetime GHG emissions avoided. During the early implementation period, the project will conduct necessary baseline surveys.

Based on the initial consultations with the target provinces, the consequential potential is assumed to replicate the project activities, such as sustainable forest and ravine management, in equivalent to 30% of direct project target areas that are not covered by the project interventions. Based on this assumption, the total coverage of consequential potential benefit area for the carbon calculation is 30,900 ha.

For the estimation of consequential GHG emissions avoided during 20 years (6 years of implementation phase and 14 years of capitalization phase), the following variables and assumptions are used for the calculation:

Variable	Value	Unit	Note
Lifetime length for direct GHG emission avoided	20	year	6-year implementation phase and 14-year capitalization phase
Continent	Asia (Indian Subcontinent)	-	EX-ACT default type
Climate and moisture regime	Warm Temperate, Moist	-	EX-ACT data
Dominant regional soil type	HAC	-	EX-ACT data
Total area for GHG emissions calculation	30,900	ha	Project target total
Target benefit subtropical mountain forest	5,100	ha	Project target: from moderate to low degradation; fire occurrence from 2% to 1%
Target benefit subtropical humid forest	18,600	ha	Project target: from moderate to low degradation
Target benefit subtropical dry forest	3,300	ha	Project target: from moderate to low degradation; fire occurrence from 2% to 1%
Target benefit area through introduction of indigenous grains	1,950	ha	Project target: introduction of agronomic practices, nutrient, water and manure management; residue will retained (with project) instead of being exported
Target benefit area through introduction of indigenous wheat	1,695	ha	Project target: introduction of agronomic practices, nutrient, water and manure management; residue will retained (with project) instead of being exported
Target benefit area through introduction of indigenous variety of rice	255	ha	Project target: introduction of intermittently flooded regimen, non-flooded preseason less than 80 days, and straw will be used for compost instead of being burnt

The following variables and assumptions are used for the livestock in the EX-ACT calculations.

Indirect	Scenario				
	Baseline	Change [68]	Without	Change	With
Cattle	8,797	123%	8,061	90%	7,917
Buffalo	1,493	125%	1,201	90%	1,201
Sheep	673	90%	838	85%	605
Goat	5,581	129%	6,588	80%	4,465
Pig	23	65%	14	65%	13
Poultry	2,884	130%	6,748	90%	3,172
Total	19,450		23,451		17,373

The estimated value of direct lifetime GHG emission avoided during 20 years (6 years of implementation phase and 14 years of capitalization phase) are as follows;

Management regime	Area(ha)	Consequential lifetime GHG emission avoided (tCO_2eq)
Sustainable forest management	27,000	3,016,454
Sustainable agriculture land management	3,900	175,170
Livestock management	-	15,014
Total	**30,900**	**3,206,638**

The estimated value of lifetime indirect GHG emission avoided during 20 years is estimated as **3,206,638 tCO_2eq**, which is equivalent to **5.2 tCO_2eq per hectare per year** in the considered biome and time frame.

Table below provides the details of the consequential GHG fluxes as calculated with the EX-ACT during 20 years of project lifetime:

[68] India Livestock Census 2003 and 2012

Project Name	*Uttarakhand GEF*	Climate	*Warm Temperate (Moist)*	Duration of the Project (Years)	*20*
Continent	*Asia (Indian subcontinent)*	Climate / Regional Soil Type	*HAC Soils*	Total area (ha)	*30900*

Components of the project	Gross fluxes Without	Gross fluxes With	Balance	Share per GHG of the Balance All GHG in tCO2eq CO_2 Biomass	CO_2 Soil	CO_2 Other	N_2O	CH_4	Result per year Without	Result per year With	Balance
	All GHG in tCO2eq Positive = source / negative = sink										
Land use changes											
Deforestation	0	0	0	0	0		0	0	0	0	0
Afforestation	0	0	0	0	0		0	0	0	0	0
Other LUC	0	0	0	0	0		0	0	0	0	0
Agriculture											
Annual	0	-168,402	-168,402	0	-172,882		4,480	0	0	-8,420	-8,420
Perennial	0	0	0	0	0		0	0	0	0	0
Rice	18,889	12,121	-6,768	0	0		-398	-6,370	944	606	-338
Grassland & Livestocks											
Grassland	0	0	0	0	0		0	0	0	0	0
Livestocks	215,818	200,804	-15,014				-6,827	-8,188	10,791	10,040	-751
Degradation & Management	1,527,874	-1,488,579	-3,016,454	-2,268,029	-740,520		-3,141	-4,764	76,394	-74,429	-150,823
Coastal wetlands	0	0	0	0	0		0	0	0	0	0
Inputs & Investments	0	0	0			0	0	0	0	0	0
Fishery & Aquaculture	0	0	0			0	0	0	0	0	0
Total	1,762,582	-1,444,056	**-3,206,638**	-2,268,029	-913,402	0	-5,886	-19,321	88,129	-72,203	-160,332
Per hectare	57	-47	-104	-73.4	-29.6	0.0	-0.2	-0.6			
Per hectare per year	2.9	-2.3	-5.2	-3.7	-1.5	0.0	0.0	0.0	2.9	-2.3	-5.2

Annex 6: Environmental and Social Risk Management Plan

Risk identified	Risk Classification	Risk Description in the project	Mitigation Action (s)	Indicators	Progress on mitigation action
Presence of indigenous peoples in the project area	Moderate	The project will work in five landscapes, all of which have presence of indigenous communities, as outlined in Table 38: Selected Socioeconomic Information from Five Green Landscapes and further discussed in Annex and section 2.3.3 Indigenous Peoples. .	1. National PMU will include a dedicated staff on Gender and FPIC. The TOR of this staff is listed under Table 30 of the full project document. 2. The budget for FPIC and gender orientation from NMPU to State PMUs has been included to ensure continuous support and backstopping from the national expert. This has been included under training budget entitled "Capacity building of State level project implementation units on incorporating gender and FPIC issues" 3. The full project document's Section 2.3.3 has noted "In the first six months of the project implementation, detailed landscape assessments will be undertaken, which will help determine priority geographic locations and priority activities to be implemented at these locations to help achieve this project's objective. Such planning will be done in very participatory way and final plans and proposed actions will be based on full free prior consent by the relevant communities – including women and youths of the target locations. FPIC will be embedded in all aspects of project implementation throughout the life of the project. Local communities will be made aware on the requirement for the project to obtain FPIC for planned activities, and if they feel this is not being sought, they will be made	1. Project reports – including FPIC report 2. Grievances recorded by FAO India 3. Participation of agencies related to indigenous community empowerment and development in	*To be completed during project implementation*

			aware on the project's grievance mechanism." 4. Several FPIC steps have been included in the project document under different outputs to emphasize different steps of FPIC (for example under paragraph 87; 90; 103) 5. In addition, all communities, including indigenous communities, will be made aware on grievance mechanism as outlined under the project's 1.7.7 Grievance Mechanisms. 6. Government agencies related to indigenous communities' development and empowerment (such as Secretary, Department of Women Empowerment and Child Welfare, Minorities and Backward Classes Welfare and Secretary, Department of Scheduled Tribe and Scheduled Castes Development) have been included in State Steering Committees of the project to ensure that all government agencies take this concern as an important issue. 7. Role of project personnel clearly notes their leadership to ensure FPIC (see Table 30: Key NPMU personnel and their responsibilities, which includes Gender and FPIC expert and Table 32: Key GLIU personnel and their responsibilities) 8. Inclusion of FAO's Indigenous Peoples team in the project task force	steering committee meetings and recording of any issues raised in meeting minutes 4. Recruitment of qualified personnel and their TORs 5. Technical assistance to recruitment of FPIC expert, to organisation of FPIC capacity building, to FPIC implementation	

			9. Independent assessment of how the project is using FPIC will also be commissioned in year 3 of the project – please refer to project budget "Independedent assessment of use of FPIC by project"		
Proximity of project locations to protected areas	Moderate	The project landscapes have at least one protected area included within the landscape.	1. The project is designed to reduce threats to protected areas, and this is noted in the results framework indicator "3. Number of protected areas in five target landscapes with threat landscape level reduction monitoring protocols and indicators (such as hunting, encroachment) integrated into protected area management and monitoring in five target landscapes" under Outcome 1.2. Cross-sectoral knowledge management and decision-making systems at national and state levels to support development and implementation of agro-ecological approaches at landscape levels that deliver global environmental benefits as well as socioeconomic benefits enhanced	1. Monitoring reports	To be reported during project implementation through six monthly and annual reports, as well as during mid-term review and final evaluation

Annex 7: Annual Work Plan and Budget (AWPB) and Fund Flow Arrangements

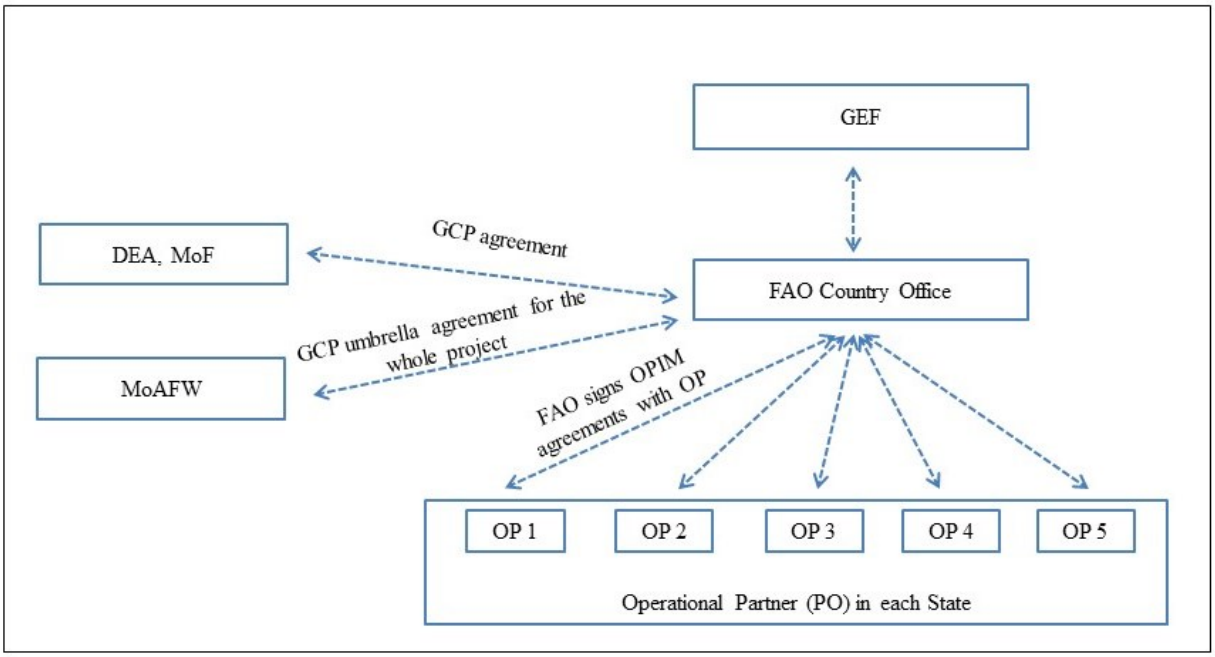
I. Contractual Arrangements

1. FAO proposes to use two fund flow modalities for project implementation. They are: (a) Operational Partnership Implementation Modality (OPIM—FAO's equivalent to National Execution); and (b) Direct Executed Projects (DEX). Larger portion of the funds will be routed through the OPIM mechanism directly to State Partners. FAO will retain only certain portion using DEX mechanism for providing technical support and quality assurance in project implementation, for which a National Project Management Unit (NPMU) will be set up in FAO. In both the cases –execution through OPIM and direct execution – the approval of National Project Steering Committee (NPSC) will be mandatory for each and every expenditure item. This will be ensured through the approval process of Annual Work Plan and Budget (AWPB). Similarly, the Controller of Aid, Accounts and Audit (CAAA) will be provided with full set of expenditure statements for expenses made under the project.

2. Central-level: FAO India will sign a Grant Agreement with the Department of Economic Affairs, Ministry of Finance, which is Government of India's (GoI) political focal point and a Government Cooperative Programme (GCP) agreement with the Ministry of Agriculture and Farmers Welfare (MoAFW). The GCP will be an umbrella agreement that includes all the five agreements that FAO will sign with the Operational Partner (OP) in each state.

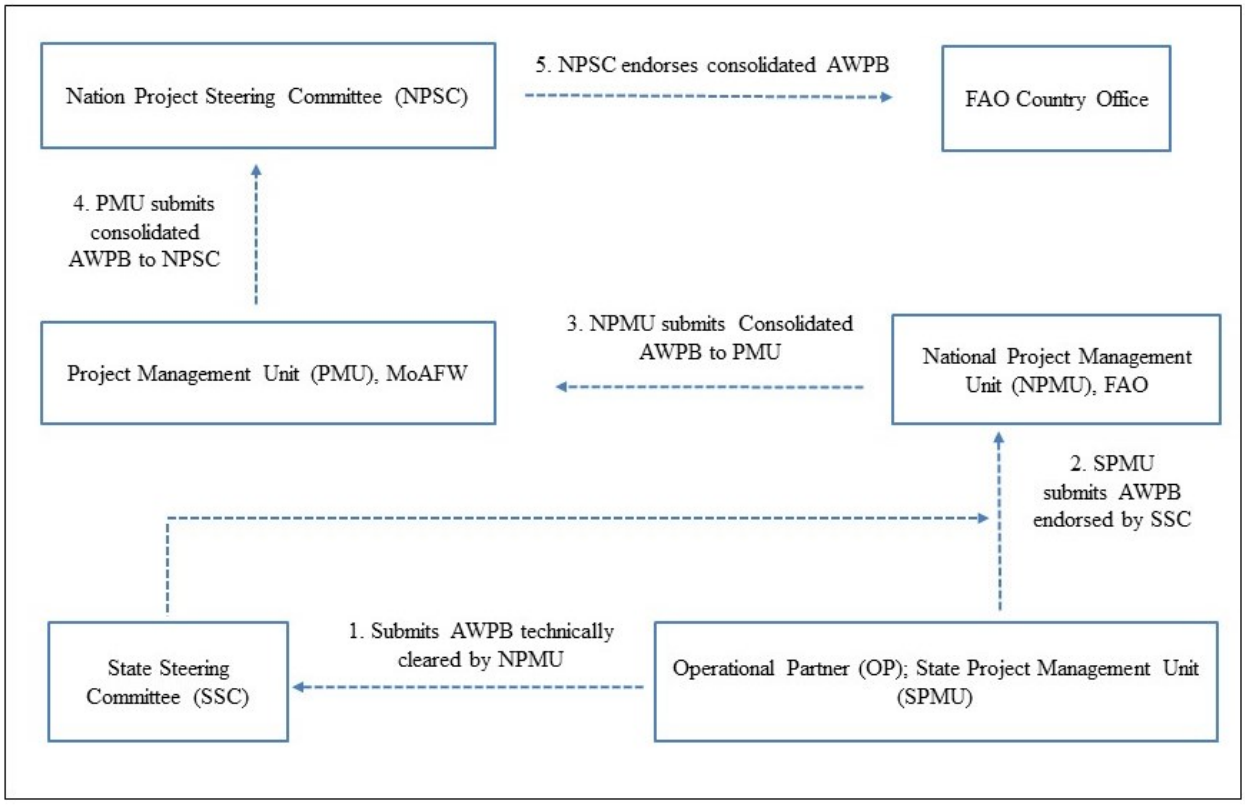
3. State-level: FAO will sign an Operational Partner (OP) agreement with the Operational Partner (OP) in each state using the OPIM modality, following a capacity assessment of the potential OP. Disbursement of funds to the OPs will be in accordance with the Rules 237 (ii) and 238 (3) of the Government of India's General Financial Rules (GFR), Chapter 10, Budgeting and Accounting of Externally Aided Projects.

4. The OPs will not be encouraged to undertake further sub-contracting.



II. Annual Work Plan and Budget (AWPB)

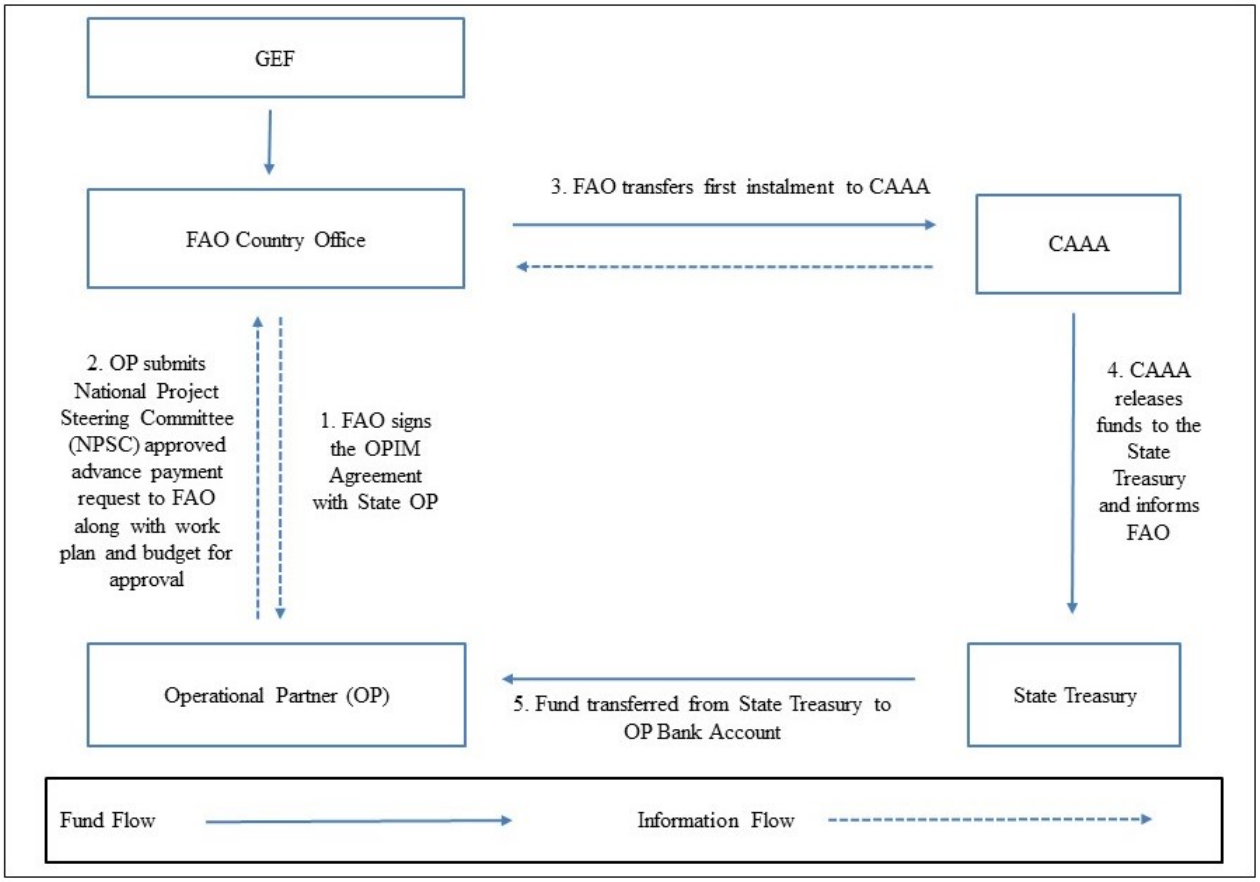
1. The OP in each state will prepare an Annual Work Plan and Budget (AWPB) in consultation with the NPMU.
2. After technical clearance from NPMU, each OP will submit the AWPB to the State Steering Committee (SSC).
3. After obtaining SSC's endorsement, each OP will submit the endorsed AWPB to the Monitoring Unit (PMU) in the MoAFW.
4. NPMU will prepare a consolidated AWPB (which includes AWPB of all OPs and that of the FAO PMU) and submit it to the PMU in MoAFW.
5. PMU reviews and submits the consolidated AWPB to the National Project Steering Committee (NPSC) for approval.
6. For seeking NPSC's endorsement, the OP representatives will be invited as project participants to provide requisite clarifications to the NPSC.
7. After NPSC's approval, FAO makes arrangements for the disbursement of funds for project implementation to the OPs under Rules 237 (ii) and 238 (3) of the Government of India's General Financial Rules (GFR), Chapter 10, Budgeting and Accounting of Externally Aided Projects.



IV. Fund Flow

1. The OP for each state submits work plan and budget, a narrative report and expenditure statements with supporting documents for FAO's endorsement in line with the AWPB approved by NPSC.

2. OP submits FAO approved advance payment request to FAO through Controller of Aid Accounts and Audit (CAAA). The CAAA works out the USD equivalent of INR and endorses OP payment request. FAO releases payment to CAAA, which disburses the funds to the concerned State Treasury. Upon the receipt of funds, the State Treasury releases funds to the concerned OP.



Annex 8: Relevant Stakeholder Meetings/ Consultations/ Workshops

Table on Stakeholder Involvement in GEF 6 Project

1. Rajasthan

1.1 State Level Consultations

No.	Name of the Consultation/Purpose and Location/Venue	Date	Number of Participants and Key Participants
1	Jaipur : Meetings	18-25 September 2016	**Total: 5** Principal Scientist, CAZRI Jodhpur; Head, CAZRI RRS Jodhpur; PCCF; Addl. PCCF; Krapavis
2	Rajasthan State Inception Workshop State Institute for Agriculture Management, Jaipur, Rajasthan	19 September 2016	**Total: 44** Principal Scientist CAZRI, Jodhpur; Head CAZRI RRS Jodhpur; Agroforestry and Gender Scientist World Agroforestry Centre, Delhi; Jt PDm RFBP, Rajashtan Forest Deptt.; Vice Chancellor Agriculture University, Jodhpur; Director ICAR Central Sheep and Wool Res. Instt.; Addl. Div. Agr. Depatt. Of Agri. Rajasthan; Joint D. Agriculture M & E Jaipur; Jt. D (Ext) JPR Deptt. Of Agri.; Addl DAg. Rajput Ag. Dept. GoR, Jaipur; Dy Director of Agri Seed, Agriculture Deptt GoR, Jaipur; Add. Director, Agriculture Deptt; Joint Dir (Adm) Agriculture; Deputy Director Agriculture, Agriculture Deptt; ARO (Agro) Agri Deptt; AO (PP) Dy D Ag (Ext) ZP Jaipur; D Dag Ex Govt; A R O (Agronomy) Dy Dag (Ext) ZP Jaipur; S O Planning Deptt Sectt Jaipur; SMS (Hort) K V K Chomu; Dy Director Agril and PC Agri. RACP, Durgapur, Jaipur; Asstt Dag (State) Jaipur Dy Dag Jaipur; Joint Director Agriculture Bikomer Agriculture Deptt.; Scientist (PP) KVu, Bar; Assistant Director, Agricultue (Plant Protection) Joint Officer (Extn) Jaipur Division, Jaipur; Conservator of Forests, Forest Deptt; Agriculture Research Officer, (Agronomy) Agri Deptt; Addl DAg Ext Agri Deptt; Joint Director Agri W D S C Jaipur Soil and Water Conservation Deptt; AOS Agri Deptt; APS Agri Deptt; Director RAU; Jt Director DOA; Director, SIAM; Jt Secy (RD) Rural Development Deptt; Director Agriculture Agri. Dept. Govt of Rajasthan; Joint Secy Ministry of Environment and Forest and IC; Addl. Commr. Min. of Agriculutre & FLW; FAO Representative FAO; AFAOR FAO; FAO Consultants FAO; FAO Consultant – Economist FAO/ICRISAT, FAO Research Associate FAO.
3	Rajasthan State Consultation	15th November, 2017	**Total: 22** Ashok Jain, Chief Secretary; A. K Goel, PCCF, HoEF; G. V. Reddy, APCCF & CWLW; Praveen Kumar, Head Div. SIS CAZRI, Jodhpur; Prof. Balraj Singh VC, Agriculture University, Jodhpur; Ramavtar Meena, D. D. (T), ICDS, Jaipur; Alka Bhargawa, JS, DACFW; Vikas Bhale, Commissioner of Agriculture; Mohit Kumar, Secretary (RD); S. R. Banjara, Additional Director, Watershed; Ajitasw Sharma, Secretary, AH; J. C. Mohanty, A.C.S. SJED; Neelkamal Darbari, Principal Secretary, Agriculture; B. L. Verma, D.D., WASC, Jaipur; R. S. Narwal, D.D. Agriculture, Ext., ZP, Jaisalmer; K. L. Verma D.D., Agriculture, Ext., ZP, Barmer; Dr. Sharad Godha, Add. Director, Agriculture; Suresh Gautam, Add. Director, Agriculture (Reg); Dinesh Sharma, JSF (EXP-1) FD; S. K. Hudda, JD (ATC) HQ; B. L. Sharma ADATC; V. K. Garg, ARO (Agri); J. N. Yadav, ARO (Agri)

1.2 District and Community Level Consultations

No.	Name of the Consultation/Purpose and Location/Venue	Date	Number of Participants and Key Participants
1	**Field mission by FAO Team** [Participation in State Inception Workshop on Green Agriculture, Participation in the Civil Society, Government Officials and Academia Workshops in Jaisalmer and Barmer, Visit Desert National Park (DNP), Visit and Interact with communities adjoining and within the DNP] **Rajasthan: Jaisalmer, Barmer**	18-25 September 2016	**Total: 10** Programme Coordinator, KVK Barmer; Dy. Director Agriculture, Jaisalmer; DDA Ext. Barmer; Director Extn. Edu. Agriculture University Jodhpur; Prof. (Agro) KVK Jaisalmer; Dy. CF, Director DNP; DFO Jaisalmer; DFO Barmer; Forest Guard (Van Rakshak) DNP; Asst. Forester DNP
2	CSO Workshop **Jaisalmer**	22 September 2016	**Total: 100** INTACH, Jodhpur; Tourism, Jodhpur/ Jaisalmer; Vill. Sohakor, District. Jaisalmer; Sodakor, District. Jaisalmer; CECOEDECON, Jaisalmer; Bharti Foundation, Jaisalmer/ Jodhpur; Vill. Bhadariya, District. Jaisalmer; Bhadariya, District. Jaisalmer; Danisodakor, District. Jaisalmer; Modardi, District. Jaisalmer; Devicot, District. Jaisalmer; Bhati-sodacor, District. Jaisalmer ; Vill. Dahisar, Jaisalmer; Chadan, District. Jaisalmer; Sodakor, District. Jaisalmer; Chaandhan, District. Jaisalmer; Vill. Baytoo, Distt Barmer; GVNML, Distt Barmer; Loonada, Distt Barmer; GRAVIS, Jaisalmer; Vill. Kanor, Jaisalmer; Vill. Delasar, Jaisalmer; Dhaisar, District Jaisalmer; Panawdaa, Jaisalmer; LPPS, Jaisalmer; Poonamnagar, Jaisalmer; Vill. Salknda, Jaisalmer; Vill. Thaiyat, Jaisalmer; URMUL, Jaisalmer; Delasar, Jaisalmer; Vill. Delasar, Distt. Jaisalmer; Madhopura, Jaisalmer; FORT PALACE MUSEUM, Jaisalmer; SEWA Ahmedabad; V/P. Lathi, Distt. Jaisalmer; Pokran, Jaisalmer; Vill. Devikot, Distt. Jaisalmer, Jaisalmer; Achala, Jaisalmer; Chaandhan, Jaisalmer; KVK Jaisalmer, Jaisalmer; Deputy Director, Agriculture, Distt. Jaisalmer; Assistant Director, Horticulture/ Agr. ; KRAPAVIS, Jaisalmer; KVK, Jaisalmer; KRAPAVIS, Alwar, Jaisalmer; KRAPAVIS, Alwar; Aalamsar, Distt. Jaisalmer, Jaisalmer; KRAPAVIS Sunawda, Jaisalmer; Loharki, Jaisalmer; ICRISAT, Hyderabad; FAO Consultant; Member IUCN, Udaipur; APCCF, Forest Department Jaipur; Head, CAZRI, Jaisalmer; Director KVK, Jaisalmer; GRAVIS, Jodhapur; Samkara, Jaisalmer; Rewat Singh ki Dhani, Jaisalmer; Vill. Bharwa, Jaisalmer; Karma ki Dhani, Jaisalmer; Rewat Singh ki Dhani, Jaisalmer; FAO, New Delhi; Deputy Director, Agriculture Deptt., Jaisalmer; Assitant Director, Horticluture/ Agri Deptt., Jaisalmer; Manager, Rajasthan State Mines and Mineral , Jaisalmer; DGM, Rajasthan State Mines and Mineral , Jaisalmer; RFO, Forest Deptt. Jaisalmer; DNP/FD, Jaisalmer; ACF, Forest Department, Jaisalmer; DCF, IGNP Jaisalmer; Scientist , Jaisalmer; Fruit Scientist CAZRI, Jaisalmer; CAZRI, Jaisalmer; Agro-forestry Scientist, Jaisalmer; DFO, DNP, Jaisalmer; APCCF, Forest Department Jaipur; Head, CAZRI, Jaisalmer; KRAPAVIS; KVK Jaisalmer; Member IUCN, Udaipur; INTACH Jodhpur
3			**Total 43**

No.	Name of the Consultation/Purpose and Location/Venue	Date	Number of Participants and Key Participants
	CSO Workshop Barmer	23 September 2016	Dhara Sansthan, Barmer; PHED, Barmer; Basix-IGS, Barmer; Azim Prem ji Foundation, Barmer; Disha RCDSSS, Ajmer; GRAVIS, Barmer; KRAPAVIS, Barmer; KVK, Danta Barmer; Horticulture, Barmer; KVK, Danta Barmer; Dabur India. Ltd., Barmer; AAO Horticulture Deptt, Barmer; F.R.O., Forest Deptt. Barmer; KVK, Barmer; Mahila Mandal Barmer Agor (MMBA); Director KVK, Barmer; FAO Consultant; ICRISAT, FAO; FAO Research Asso.; BAIF; Director, Agriculture University, Jodhpur; Deputy Director, Agriculture Department, Barmer; Dy. CF/DFO Forest Department, Barmer; APCCF, Forest Department Jaipur; KRAPAVIS; AGM, Liquid Colloids Ltd. Jodhpur; KRAPAVIS, Alwar; KRAPAVIS; Netarau, Barmer; Barmer; World Vision India, Barmer; INTACH, Barmer; FAO

2 Uttarakhand

2.1 State Level Consultations

No.	Name of the Consultation/Purpose and Location/Venue	Date	Number of Participants and Key Participants
1	Meetings **Dehradun, Uttarakhand**	21-22 August 2016	**Total: 9** Chief Secretary, Uttarakhand; Former Cheif Secretary, Uttarakhand; Additional Cheif Secretary, Uttarakhand; Additional Secretary, Agriculture; Nodal Officer; Joint Director, Agroforestry Research Centre, Pant University; PCCF, Uttarkahand; CEO Bio-diversity Board, Uttarakhand; CEO CAMPA, Uttarkahand
2	Meetings **Dehradun, Uttarakhand**	17-29 October 2016	**Total: 21** Chief Secretary; Additional Chief Secretary; Secretary, Women Empowerment and Child Development; Addl. Secretary, Dept. of Energy; Addl. Chief Conservator of Forests; Head Scientist, Centre for Aromatic Plants (CAP). Selaqui; Scientist E, CAP, Selaqui; Scientist C, CAP, Selaqui; Director Horticulture; Additional Director Agriculture ; Jt. Director Agriculture; MD, Uttarakhand Organic Commoditiy Board; Sr. Program Manager, Uttarakhand Organic Commoditiy Board (Govt. of Uttarakhand); Chairman, Uttarakhand Biodiversity Board ; Member, Uttarakhand Biodiversity Board; Dean, College of Basic Science and Humanities, G B Pant University of Agri. andTech., Pantnagar; Director Research, G B Pant University of Agri. andTech., Pantnagar; Director, Extension Education, G B Pant University of Agri. andTech., Pantnagar; Jt. Director, Agroforestry, G B Pant University of Agri. andTech., Pantnagar; Member, State Biodiversity Advisory Board
3	Uttarakhand State Inception Workshop	27 October 2016	**Total: 27**

No.	Name of the Consultation/Purpose and Location/Venue	Date	Number of Participants and Key Participants
	Room No 101, Sachivalaya, **Dehradun**		Sr. Scientist DCFR, Bhintal; Scientist F Wildlife Instt of India; Director RTR Dehradun Forest; Member Sect. Uttarakhand Biodiversity Board UBB; NC - FAO Delhi FAO, Delhi; Scientist, ICRISAT, Hyderabad ICRISAT; FAO Research Associate FAO, Delhi; Additional Director Agriculture; CEO SARQ; Director Horticulture, PCCF/MD UA for Dev Corporation; SIC & HOD CAP, CAP; AS (POWER); GEF Consultant, MoEFCC; Director UOV & VSAL Uttarakhand; Deputy Director, Corbett Tiger Reserve UKFD; Head, Forest Products Division FRI; Add. Secy. Soil Director, Tribal Welfare Govt of Uttarakhand; Consultant FAO, Delhi; ADO SMPB, Uttarakhand; Add. Sectry, Horticulture, Govt. of UK & CEO SMPB; FAO Advisor, UN FAO; Dir(IC) MoEFCC GOI; Head, N & E IISWC; Deputy Secretary Rural Development Department; J Scientists USAC
4	Meetings, **Dehradun, Uttarakhand**	14 November 2016	**Total: 8** Director, WII; Scientists, WII; Members of UNDP Biofin project
5	Meetings Wildlife Institute of India, **Dehradun**	13 December 2016	**Total: 10** Director, WII; Scientists, WII;
6	Meetings Wildlife Institute of India, **Dehradun**	11-13 January 2017	**Total: 12** Director, WII; Dean , WII; Principal Investigator, Tiger Project; Principal Investigator, National Chambal Sanctuary; Principal Investigator (Social), Uttarakhand; Principal Investigator, Corbett TR and Rajaji TR and Corridor; Principal Investigator; Director Extn. Edu. Agriculture University Jodhpur; GIS Expert; Principal Investigator, Desert National Park and GIBs; Research WII; Research Scholar WII
7	Meetings Wildlife Institute of India, **Dehradun**	10-14 April 2017	**Total: 4** Director, WII; GIS Expert; Principal Investigator, Desert National Park and GIBs; GIS Expert Researcher
8	List of participants in the meeting of GEF-6 in the meeting hall of Chief Secretary, Govt. of Uttarakhand	23rd November, 2017	**Total: 23** Mr. Utpal Singh, Chief Secretary; Mrs. Radha Raturi, Principal Secretary, Finance, Govt. of Uttarakhand; Mrs. Manisha Panwar, Principal Secretary, Watershed Department, Govt. of Uttarakhand; Mr. D. Senthil Pandiyan, Secretary, Agriculture, Govt. of Uttarakhand; Mrs. Neena Grewal, Project Director, UDWDP-II, WMD, Dehradun; Mr. Gauri Shankar, Director, Agriculture, Uttarakhand; Mr. Bhauwan Chandra, CCF, Shiwalik; Dr. Rakesh Shah, Chairman, Uttarakhand Biodiversity Board; Mr. B. M. Misra, Addl. Secretary, Animal Husbandry. Govt. of Uttarakhand; Mr. Manoj Chandran, Chief Conservator of Forersts, HQ; Dr. B. S. Negi, Director, Horticulture, Uttarakhand; Dr. K. K. Joshi, Additional Director, Deptt. of Animal Husbandry; Dr. S. Rawat, Joint Director, Planning, Deptt. of Animal Husbandry; Mr. S. C. Singh, Joint Director, Agriculture, Planning; Dr. D. S. Rawat, Deputy Director, Planning, Watershed Management Directorate, Dehradun; Mr. G. R. Natiyal, Deputy Director, Social Welfare Department, Govt. of Uttarakhand; Mr. Devendra Singh, Chief

No.	Name of the Consultation/Purpose and Location/Venue	Date	Number of Participants and Key Participants
			Agriculture Officer, Pauri; Ms. Soniya Bharti, Under Secretary, Watershed Deptt., Govt. of Uttarakhand; Dr. Subhash Chandra Tripathi, Additional Statistical Officer, Watershed Management Directorate, Dehradun; Mr. Sohan Singh Rawat, Watershed Management Directorate, Dehradun; Mr. Shyam Khadka, FAO Representative in India; Ms. Seema Bhatt, FAO, New Delhi; Dr. Konda Reddy, FAO, New Delhi

2.2 District and Community Level Consultations

No.	Name of the Consultation/Purpose and Location/Venue	Date	Number of Participants and Key Participants
1	Field mission by FAO Team (- Visit the Corbett Park; - Visit and interact with communities adjoining and within the Corbett Park; - Participate in the Civil Society stakeholders workshop at Nainital; - Visit Pantnagar and interact with GBPUAT faculty; - Participate in the State Inception workshop on Green Agriculture; - Follow up discussions in Delhi) **Corbett Tiger Reserve (Uttarakhand)**	17-29 October 2016	**Total:11** Deputy Director- CTR; Chief Agriculture Officer (Nainital District); Agriculture and Soil Conservation (Nainital District) (Govt. of Uttarakhand); District Development Manager (Nainital), NABARD; Deputy Director; Programme Officers- Wildlife, Awareness (The Corbett Foundation); Executive Director Incharge [Central Himalayan Environment Association (CHEA)]
2	CSO Workshop, **Nainital, Uttarakhand**	20 October 2016	**Total: 57**

No.	Name of the Consultation/Purpose and Location/Venue	Date	Number of Participants and Key Participants
			NGOs- Founder Member, Grass Root, Ranikhet; Mitra, Haldwani; Purchase Manager, Sarg Vikas Samiti, Nainital; Social Expert, Lok Chetna Manch; Deputy Director, The Corbett Foundation, Dhikoli, Ramnagar; APM, CHEA, Tarikhet; Director, Vimarsh Nainital; Director, Grass Root, Ranikhet; Director, Vimarsh, Nainital; Sr. Project Manager, CHEA, Pithoragarh; President, Anamika Films Development Society, Nainital; Field worker, Sarg Vikas Samiti Farmers- Village Khurpatal, Nainital; Village Bhedia, Bhimtal; Bajol, Tarikhet; Bahena, Tarikhet; Mahtolia Gaon, P.O. Paharpani, NTL; Village Mahtolia Gaon, Dhari. Farmer Cooperative- Village Mahtolia Gaon, Dhari; Village Selalekh, Dhari; Village Majuli, Dhari; Village Jalna Neel Pahari, Dhari Academics- Research Scholar, Dept of Forest and Environment Science, Kumaun University, Nainital Mission Team- Consultants, FAO; Research Associate, FAO; FAO, Rome, Italy; Consultant, FAO, USA; ICRISAT, Hyderabad, India; Economist, FAO, Rome, Italy. Adventure and Rescue- Snout Adventures, Mallital, Nainital; Outdoor Educator, Climbing and Rooping Society, Nainital; Sheela Hotel, Nainital; CIT, AGWS, NTMC, Nainital Social Development- Social Expert, SE, ADB, VEAP, Lower mall, Almora; Social Entrepreneur, Village Naukuchiyatal, Bhimtal; Organizing Team- CHEA, Nainital- Office Manager, Project Manager, Sr. Project Manager, Accountant, ED In-charge Tour Operator- Travel Garage, Nainital ; YTDO, Nainital Hotelier- Ayar Jungle Camp, Nainital; The Canphor Tree, Naukuchiyatal

3. Madhya Pradesh

3.1 State Level Consultations

No.	Name of the Consultation/Purpose and Location/Venue	Date	Number of Participants and Key Participants
1	Meeting, **Bhopal**	3- 10 November 2016	**Total: 7** Director Research Services, Gwalior; Rajmata Vijayaraj Scindhia Krishi Vishwa Vidhya, Gwalior 474004, M P, India; Director Extension Services, Gwalior; Rajmata Vijayaraj Scindhia Krishi Vishwa Vidhya, Gwalior 474004, M P, India; Dy. GM, NABARD, Baripada; MD, MP state Seed and Farm Development Corp. / Member, Ecotourism board; JDA, Directorate Agriculture, Soil and Water conservation; PCCF (Retd); Dept. of Women and Child Development
2	Madhya Pradesh State Inception Workshop Darbar Hall, Hotel Jehan Numa Palace, **Bhopal**	09 November 2016	**Total: 35** Joint Secretary (NRM) Min of Agriculture and Farmers Welfare; Joint Director Mahaila Shashakham; Asstt. Grade III Mahaila Shashakham; Scientist CEEMPSO; A.D.A. Agriculture Department; Director Agriculture Department; Joint Director Agriculture Department; E.E. Energy Department; S.E. WRD; D.R.S. R V S K V V Gwalior; Joint Director M P State Agriculture Mktg; Joint Director Agriculture Department; PCCF (Retd) Forest Deptt; Principal Secretary (Agriculture) ; MPSEED, MPSEED; Director ICDS, WCD; D D Horticulture Horticulture and Food Processing Department; Sr. Horticulture Development Officer Directorate ; J D A Directorate of F. W& AD; Deputy Director Directorate of FW&AD; Deputy Director DAG (RKVY); D D Ag Agriculture Department; NGO Consultant Agriculture ; Joint Director Agriculture; J D A Bhopal Agriculture; J D (Ag. Engg.) Agriculture Engineering; D D A Agriculture; A D A Agriculture; Principal Scientist; Business Standard; Dy P D Agriculture Department
3	Meeting, **Bhopal**	4 - 7 September, 2017	**Total: 4** Principal Secretary, Madhya Pradesh; Commissioner and Director of Agriculture; Additional Director, Agriculture; Deputy Director, Agriculture
4	Meeting, **Bhopal**	3 – 4 October , 2017	**Total: 4** Commissioner and Director, Farmer Welfare and Agriculture Development; Additional Director, Agriculture; Deputy Director Agriculture and Nodal Officer, Green Agriculture Project; Deputy Director Planning, Agriculture
5	State Consultation, **Bhopal**	26-27 October, 2017	**Total: 4** DoA: Director Agriculture, Additional Director, Joint Director, Dy. Director

3.2 District and Community Level Consultations

No.	Name of the Consultation/Purpose and Location/Venue	Date	Number of Participants and Key Participants
1	Field mission by FAO Team, **Chambal valley in the districts of Morena, Bhind** (Madhya Pradesh)	3- 10 November 2016	**Total: 15** DC Morena; CCF Gwalior; DFO Morena; DD Agriculture, Morena (MP); Ex-Scientist - G; Superintendent, NCS Deori; PRO Morena; WII Researchers; Independent Researcher; SDO (Forest) Bhind (MP); ACF Bhind, NCS (MP); SDO (Ag) Bhind; SADO; Barahi Ghat inCharge
2	Meeting with officials of line departments, KVK, Research Institutes/SAU & CSOs Workshop **Morena**, Madhya Pradesh	5 November 2016	**Total: 115** Scientist, Agriculture Extension, KVK-Morena; Senior Scientist, ZARS, Morena; Scientist (Agronomy), ZARS Morena; Krishi Sanstha, Gwalior; Lecturer (Biodiversity) ; Atal Bihari Vajpayee Hindu University, Bhopal; Senior scientist, College of Agriculture, Gwalior; Head, KVK- Bhind; College of Agriculture RVSKVV, Gwalior; Scientist- Horticulture, Directorate of extension Services, RVSKVV (State Agriculture University); Plant Breeder (Soyabean Project), ZARS,Morena; ADR -ZARS, RVSKVV, Morena; Professor & HOD, Deptt. of soil science RVSKVV,Gwalior; Director Research RVSKVV (State Agriculture University), Gwalior; Deputy Director, Agriculture Deptt., Morena; B.sc. Agriculture, Jiwaji University; Student Biodiversity, Atal Bihari Vajpayee University, Bhopal; S.D.O. Agriculture Deptt. Morena; S.&.A.O. Agriculture Deptt, Morena; Retired Senior Geo-hydrologist, Gwalior Scientist Pl. Pamo, ZARS Morena; Rural Sociologist, Independent consultant; Senior Scientist and Head, KVK Gwalior; Scientist , ZARS, Morena; R.A.E.O. Agriculture Deptt.; Scientist (Ag. Eco),Directorate of Research services,RVSKVV,Gwalior; Morena Jila Khadi Avam Gramodhyog Sangh, Morena; Scientist (Plant Protection), KVK Morena; Agro-Forester Rural Development; Senior Scientist, ZARS,Morena; Scientist(Food and Nutrition), KVK Morena; Soil Science and Agriculture Chemistry,KVK Morena; Senior Scientist,ZARS Morena; Senior Scientist, KVK Sheopur; Secretary,Watershad Committee, Run Dhan Jageer; Secretary,Water shade committee,Shimrauda Ahir; Senior scientist and Head, KVK Morena; PRO Morena; Farmer, Village- Karari; Krishi Mitra,Village-Ganj (Rampur), Distt. Morena; Farmer, Vill. Sakatpur (Jaura), Distt. Morena; Trainer, Village-Sunder Nagar, Distt. Morena; Woman worker, Village-Sunder Nagar, Distt. Morena; Animator, Village-Sunderpur, Distt. Morena; Farmer, Village-Sunderpur, Distt. Morena; Secretary, Watershad Commitee –Sabalgarh; Farmer, Vill.-Pacher, Block Sabalgarh, Distt. Morena; Farmer, Village-Pacher,Sabalgarh; Farmer, Village-Baraitha, Distt. Morena; Herder, Village-Mayana, Batevara, Distt. Morena; Farmer, Village-Digwar, Distt. Morena; Herder, Village-Maithana, Distt. Morena; Herder,Village-Digwar, Distt. Morena; Farmer, Sabalgarh, Distt. Morena; Village-Pacher, Sabalgarh; Community animator, Village-Sherpur, Distt. Morena; Farmer, Village-Pacher,Sabalgarh; Farmer, Village-Sherpur, Distt. Morena; Village-Sherpur, Block –Jaura; Herder, Village-Ghurai Basai, Block –Jaura, Morena; Herder, Village-Ghurai Basai, Block –Jaura, Morena; Hydro-agro Forestry Rural Development Sansthan, Sabalgarh, Gwalior (Hfard) NGO Gwalior; Krishi mitra,Village-Imaliya, Distt. Morena; Member SHG, Ghurai-Basai, Distt. Morena; President, Mahila Madal, Sherpur, Morena; Member, Mahila Madal, Sherpur, Morena; Member SHG, Sherpur, Distt. Morena; Animal Rearer, Vill. Bamur Basai; Mahila Mandal Jaddegapura, Distt. Morena; Mahila Mandal Bamur Basai, Distt. Morena; Director, Samarpad Sansthan, Gwalior; NGO, Gwalior; VIRAT, Gwalior;

No.	Name of the Consultation/Purpose and Location/Venue	Date	Number of Participants and Key Participants
			VIRAT,Gwalior; Gautam Budh Samaj Kalyan Samiti, Village-Mehgaon, Distt. Bhind; SHG, Village-Mehgaon, Distt. Bhind; NGO Social Activist, Village-Mehgaon, Distt. Bhind; Village-Manikpura, Distt. Bhind; SHG member, Surajpura, Bhind Dist.; Farmer, Village-Kathwa Sukal, Bhind Dist.; Farmer, Village-Manakpur, Manikpura Bhind Dist; Community leader, Village-Mehgaon, Distt. Bhind; Panch, Village-Mehgaon; Panch, village –Gudawali, Bhind Dist; KVK Morena; KRAPAVIS ; KRAPAVIS Morena; SHG member, Shantinagar, Bhind Dist.; Farmer, Village-Silayatha, Bhind Dist; Farmer, Morena; Driver, Gwalior; Murar, Gwalior; Farmer, Village. Manden, Distt. Morena; Animator, Village-Mehgaon, Distt. Bhind; KRAPAVIS Alwar; SHG member, Village –Kanhari, Bhind Dist.; SHG member, Village – Kanhari, Bhind Dist.; Scientist (Horticulture) KVK- Morena; Senior Scientist and Principal KVK Morena; FAO Consultant; ICRISAT,Hyderabaad, FAO Consultant; FAO Consultant; FAO Consultant(Agriculture); Director, VIRAT Gwalior; FAO New Delhi; FAO Consultant; Farmer, Vill. Mundrawaja, Distt. Morena; Farmer, Vill. Manjeetpura, Distt. Morena; Servodaya sant Lallu dada jan seva samiti ; Ater, Distt. Bhind; Shanti Development, Vill. Ater, Distt. Bhind; Wheat Grass, Morena; KRAPAVIS Alwar; GKSSS (Gopal Kiran Siksha Sakriti Samiti), Gwalior ; Shri Om Rajshri Samaj Kalyan Samiti, Bhind; Krishi Paristhitiki Avam Gramin Vikas Samiti, Gwalior; Sujagrati Samaj Sevi Sansthan, Morena
3	District Level Consultation (- Held district consultations on the GEF-6 Green Ag Project in Morena and Sheopur districts; - Met with the Principal Secretary Agriculture, Director Agriculture, and Additional Director Agriculture to update them on State summary—landscape and proposed interventions in the state; discussed co-financing; and upcoming OPIM assessment) **Morena, Sheopur-** Madhya Pradesh	4 - 7 September 2017	**Total: 23** **Morena** District Collector; Deputy Director Agriculture; Asst. Dir. Animal Husbandry; Asst. Dir. Horticulture; Divisional Forest Officer; Dept of Tribal Welfare; District Project Officer, ICDS; Assitant Field Officer, Mahila Vikas. **Sheopur** District Collector; Deputy Director Agriculture; Divisional Forest Officer; Deputy Director Agriculture; Asst. Dir. Agriculture; Deputy Director, Animal Husbandry; Senior Scientist, KVK; Asst. Dir. Fisheries; Scientist, KVK; SHDO, Vijaipur; Block Coordinator, Jan Abhiyan Parishad; Jan Abhiyan Parishad; A.O., Tribal Welfare; SLP SPD; Dist. Coordinator, NFSM

4. Odisha

4.1 State Level Consultations

No.	Name of the Consultation/Purpose and Location/Venue	Date	Number of Participants and Key Participants
1	Meeting Bhubaneswar	16- 24 November 2016	**Total: 14**
			Director, IMAGE, Siripur, Unit 8; Assistant Director, IMAGE; Nodal Officer, Climate Change Knowledge Network in Indian Agriculture, GoO; Principal Secretary (Forest and Environment); PCCF (Forest), PCCF Chambers, 1st Floor, Aranya Bhawan, Chandra Shakarpur; PCCF (Wildlife) 5th Floor, Prakruti Bhawan, BTA Apartment, Neelakant Nagar, Nayapalli; Director, SCST Research and Traning Institute, CRPF Square, Bhubaneswar; Assistant Director SCST, Tribal Welfare; Chief Commisioner cum Director, Watershed Development Mission; Manager GIS, Watershed Mission, Bhubaneswar; Manager (Agri and Horti), Bhubaneswar; Prof. Amar Naik, XIMB University; Ph.D Scholar, Sustainable Agriculture, XIMB; Asst. Prof., NISWASS
2	Odisha State Inception Workshop IMAGE Conference Hall, Bhubaneswar	23 November 2016	**Total: 60**
			RDC Central Zone, Odisha; Commissioner-cum-Director of Agriculture and Food Production, Odisha; GM,OSAM Board; NRRI, Cuttack; Niali; AAO, Kaptipada ,O/o DAO, Udala; Agronomist(SMU) O/o DA & FP(O), BBSR; Deputy Director, IMAGE, BBSR; Deputy Director of Agril. Sugarcane; DAO Rairangpur; XIMB, Bhubaneswar; Dean of Research & EE , OUAT, BBSR; Deputy Director, Similipal Tiger Reserve; DAO, Bangriposi; Sr Asst. Prof, OUAT; MS. OD Board; Sr. Scientist and Head, KVK, Mayurbhanj-1; Sr. Scientist and Head, KVK, Mayurbhanj-II; FAOR; JDA Engg., DA & FP; Addl. Director of Agriculture, DA & FP; FAO Mission Members; Deputy Director, IMAGE; DDA, Cotton, DA & FP(O); J.D.E, DDE, OUAT, BBSR; President, OES; FMS, RKVY Cell, DA & FP(O); FAO Mission Member (ICRISAT, Hyderabad); FAO, ROME; DDA(P.P); Thermatic Experts , PR Dept.; BBSR; AAO, O/o DA & FP(O), BBSR; Pr. Scientist , NRRI, Cuttack; Addl. Director of Fisheries; DA & FP; AAE, O/o DA & FP(O); AEA(Plan), DA & FP(O); Prof. and Head, Deptt. of Soil Scheme, OUAT, Bhubaneswar; Rice Breeder, OUAT, BBSR; Director, SW; Jt. Secy. P.R. Deptt.; Deputy Director, Agriculture, Mayurbhanj; Deputy Director, Directorate of AH & VS, Cuttack; Assistant Professor, OUAT; DAO, Jashipur; DAO, Karanjia; J.D.H , Directorate of Horticulture; Vice Chancellor, OUAT; Director, IMAGE, Bhubaneswar; Deputy Director, IMAGE, Bhubaneswar; O/o Agronomist, MI & WU, Bhubaneswar; Assistant Director, IMAGE, Bhubaneswar; FAO Mission Members; AAO, O/o DA & FP, Odisha; Deputy Directors, IMAGE, Bhubaneswar
3	Meetings, Bhubaneswar	21 September 2017	**Total:**
			IAS, and Director of employment cum CEO, Odisha Skill Development Authority, Bhubaneswar; Regional Director, Regional Center of Organic Farming, Govt of India, Bhubaneswar; Members from Vasundhara, NGO, Bhubaneswar
4	State Consultation, IMAGE, Bhubaneswar	22 September 2017	**Total: 18**
			Agriculture and other line departments

No.	Name of the Consultation/Purpose and Location/Venue	Date	Number of Participants and Key Participants
5	Meeting, Bhubaneswar	13 November 2017	**Total: 3**
			Principal Secretary, Agriculture; Director IMAGE, DoA; Deputy Director, IMAGE

4.2 District and Community Level Consultations

No.	Name of the Consultation/Purpose and Location/Venue	Date	Number of Participants and Key Participants
1	Field mission by FAO Team Baripada, Similipal National Park, Jashipur in the State of Odisha	16- 24 November 2016	**Total: 15**
			DC, Mayurbhanj, Odisha; Deputy Director, Similipal Tiger reserve; Director, Centre for Simlipal Studies, North Odisha University; DVO; DD Horticulture, Baripada; Deputy Director of Agriculture, Baripada, Dist- Mayurbhanja, Mayurbhanja; Agronomist; Deputy Director, Soil and Water Conservation, Baripada; Soil and Watershed development, Baripada; Project Administrator - Integrated Tribal Development Authority; Chief Executive, District Supply and Marketing Society, Odisha Rural Development and Marketing Society (ORMAS), Baripada; AGM (DD), NABARD, Mayurbhanj; Gram Swaraj; Vasundhara
2	CSO Workshop Jashipur, Mayurbhanj	20th November 2016	**Total: 60**
			Representative from CSOs namely CYSD, Landesa, Spar, Pradan, CREFTDA, RCDC,OJM, ONS, IGS, Sambandh, Gramswaraj, Vasundhara and farmers from different villages namely Badapahada, Genteisahi, Mandam, Ramasahi, Khejuri, Tangurusahi, Balarampur, Makabadi, Bareipani, Nuana, Bangiriposhi, Astakumar, Godsimlipal, Lanjighasara, Billapagha, Saharpat, Badakashira, Khejuri,Sanakashira Gopinathpur; FAO Mission members.
3	District Level Consultation Baripada, Mayurbhanj	20 September 2017	**Total: 30**
			Collector and District Magistrate, Mayurbhanj; Director, IMAGE; DDA PD, ATMA; CD L/O, Mayurbhanj; DDH Baripada; SDN Baripada; PPO O/o DDA M/R, Baripada; DSWO; District Fishery Officer; SSSH, KVK, Mayurbhanj; Scientist (Agro-energy); ADA (Input) o/o DDA M/R; AAU D/O DAO, Baripada; AVP- Head NRM IGS; ACF Rairangpur; AAO (DD O/o DAO); PD; SS & H, KVK; AAO; KS Dunduna SP; KS Padagad GP; DD Simlipal; DA ITDA Baripada; Agronomist O/o DDA Mayurbhanj; Programme Specialist, FAO; Sarpanch; Sarpanch; Kochilaghati GoP- PS

5 Mizoram

5.1 State Level Consultations

No.	Name of the Consultation/Purpose and Location/Venue	Date	Number of Participants and Key Participants
1	Meetings Aizawl, Mizoram	28 November-8 December 2016	**Total: 16** Director Agriculture (Crop Husbandry); Technical Officer to Director; Agriculture Secretary; PCCF & PS to CM; Addl, PCCF, Govt. of Mizoram; ACF, Legal Cell, PCCF Officer; WPO (North), Nodal officer for climate Change, Dept of EF &CC (transferred); Nodal officer for climate Change, Dept of EF &CC (new in charge); Chief Wildlife Warden; Director of Agriculture (R&E); Jt. Director of Agriculture (R&E); SMS (Animal Science), KVK Lunglei, Mizoram; Instructor, Directorate of Agriculture (R&E); Prof.,Dept of Public Administration, MU; Head, Dept of Political Science; Dept of Public Administration, MU
2	Mizoram State Inception Workshop AIJAL Club, Tuilkual South, Aizawl	07 December 2016	**Total: 31** DFO(A)&NO(CC) EF&CC; WPO EF&CC; LO LADC; CF(WF) EF&CC; Addl. Commissioner MoAFW; AEO Agriculture; DD (P&M) Agriculture; DD (Veg) Horticulture; Programme Coordinator UNDP; FAOR FAO; Director RD ; ASCO S &WC; D.O. (Soil) S&WC, Lawngtlai; Jt. Director Agriculture; DD (Agro) Agriculture; Expert, FAO Agriculture; Consultant, FAO Biodiversity; GEF Expert FAO; SO Cum SA Agriculture; ASSO Agriculture; Scientist - C ARCBR, Aizawl; Director ARCBR; DAO, Lawngtlai Agriculture; CWW, Mizoram EF&CC; Project Director DRDA, Lawngtlai; Dy. Director A.H.& Vety; NUNV- Admin & Management Associate ILO; IFS, PCCF EF&CC; Programme Associate FAO; Horticulture Specialist FAO; Director Agriculture
3	Meetings (To present the Mizoram State summary of the GEF 6 project to the State and District Government officials and to initiate discussions on the selected landscape, implementation and funding mechanism.) Aizawl, Mizoram	27 August–1 September 2017	**Total: 4** Director Agriculture; Jt. Director Agriculture; DAO Lunglei; DAO Mamit
4	The Mizoram State and District Level Consultations Chief secretary's Conference Hall, Mizoram Secretariat, Aizawl, Mizoram	29 August 2017	**Total: 22** Chief Secretary; Director Agriculture; Jt. Director Agriculture; DC Mamit ; DC Lunglei ; DFO Aizawl and Nodal Officer Climate Change ; APCCF Aizawl ; DD Agriculture ; AMFU Fin. Sec.; SMS; AEO; GEN SECRETARY AMFU; DAO Lunglei, DAO Mamit; DD AH& VETY; SECY AH & VETY; Members of FAO UN & FAO UN, ROME

5.2 District and Community Level Consultations

No.	Name of the Consultation/Purpose and Location/Venue	Date	Number of Participants and Key Participants
1	Field mission by FAO Team Lawngtlai	28 November-8 December 2016	**Total: 23**
			SMS (Horticulture), Serchhip District; SMS (Home Science) KVK, Lawngtlai; Deputy Commissioner Lawngtlai; PD, DRDA Lawngtlai; Dy. Conservator of Forest, Chimtuipui Wildlife Division; Scientist Agronomy, KVK Lawngtlai; Scientist Home Science, KVK Lawngtlai; Scientist Plant Protection, KVK Lawngtlai; Scientist Agricultural Extension, KVK Lawngtlai; Farm Manager, KVK Lawngtlai; Scientist Animal Science, KVK Lawngtlai; Programme Coordinator, KVK Lawngtlai; Deputy Ranger (PBMNP); Forester; Tourist guide; Range Officer (Ngengpui); Forester (Ngengpui); Conservator of Forests (wildlife);Director, Dampa Tiger Reserve; Assistant Conservator of Forest, Dampa Tiger Reserve; YLA President; VCP Sentotfiang; Village Secretary; VCP, Thatlang
2	CSO Workshop Sangau	02 December 2016	**Total: 43**
			Secretary YLA Sangau-II; Secretary LWA Sangau-II; President LWA Sangau-II; Secretary SHG Naomi; VCP, Sangau-III; Asst.Secy YLA; VCP, Sangau-IV; President, YLA, Sangau-IV; VCP, Sangau-I; L.W.A.President, Sangau -I; LWA, Secy, Sangau-I; Secy, YLA, Thaltlang; VCP, Thaltlang; Secy, LWA, Thaltlang; President, LWA, Thaltlang; Chairman, Zion SHG; Secy, Zion SHG; LWA President Sangau-IV; President, Kumtluang SHG; Secy, Kumtluang SHG; VCP, Sentetfiang; Secy, Sentetfiang; President, LWA, Sentetfiang; Secy, VC Sangau-I; Secy, Solomon SHG; President Solomon SHG; President YLA Sangau-I; President, Sub Hqrs, YLA Sangau; VC; President YLA, Sangau II; Secy, YLA Sangau-I; Secy, YLA Sangau-III; President, YLA, Sangau-III; President LWA Sentetfiang, Sangau –II; Secy, Sangau-IV; Secy, Sentetfiang; Secy, YLA Sub Hqrs Sangau-I; President, LWA Sub Hqrs ; Secy, LWA, Sub Hqrs

6. National Consultation Workshop for India Green Agriculture Project

No.	Name of the Consultation/Purpose and Location/Venue	Date	Number of Participants and Key Participants
1	National Consultation Workshop for India Green Agriculture Project, Krishi Bhawan, New Delhi	24th October 2017	**Total: 41**
			Joint Secretary, Ministry of Agriculture and Farmers Welfare; GEF Focal Point, MoEF&CC; Additional Commissioner, Ministry of Agriculture and Farmers Welfare; FAOR; FAO Team; WFP Representative and Country Director; MoAFW (Horticulture); Director (PESA), Ministry of Panchayati Raj; Sustainable Agriculture, WWF-India Secretariat; SPO, EEF, WWF-India Secretariat; Regional Representative, Bioversity International; Consultant Ex Chairperson PPVFRA, Biodiversity International; Director (AH&F), PUSA; GM, NABARD; Director, National Bureau of Plant Genetic Resources, Pusa; Principal Scientist, National Bureau of Plant Genetic Resources; Joint Director; Dy. Director Agriculture; Agriculture Department, MP; Director Agriculture, Uttarakhand; (Delegated) Uttarakhand; Chief Wildlife Warden Rajasthan; Commissioner Agriculture Rajasthan; Dy. Director Agriculture; Additional Director (Agriculture); Director (Agriculture), SMS SC Mizoram Secretariat Government of Mizoram; Nodal Officer, Director Image, Odisha; STA-NRM; Team from DACFW Krishi Bhawan
2	National Project Steering Committee Meeting, Krishi Bhawan, New Delhi	9th November, 2017	**Total:25**
			S.K. Pattanayak Secretary, Department of Agriculture, Cooperation and Farmers' Welfare (DACFW) Ministry of Agriculture and Farmers' Welfare (MoAFW); Mr. Shyam Khadka FAO Representative in India; Dr. Alka Bhargava, Joint Secretary (NRM&RFS), DACFW, MoAFW; Dr. J. P. Mishra Advisor (Agri.), NITI Ayog; Mr. Rakesh Kumar, Director, MoEFCC; Dr. S K Dhyani Principal Scientist (NRM), ICAR; Dr. Suresh S Honnappagol Animal Husbandry Commissioner, Department of Animal Husbandry; Ms. Shomita Biswas, CEO (Medicinal Plantation-Ayush), Ministry of Ayush; Mr. Amit Kumar, Director (IWMP), Department of Land Resource, MoRD; Dr. R C Aggarwal, Registrar General, Protection of Plant Varieties and Farmers Rights Authority (PPV&FRA), MoAFW; Dr. Kuldeep Singh, Director, ICAR, National Bureau of Plant Genetic Resources; Dr. Manish Kumar, Soil Survey Officer, SLUSI, Min. DAC; Mr. R. L. Meena, Sr. Soil Survey Officer, SLUSI, Min. DAC; Mr. Aharwal's, Joint Director, MP; Mr. S K Hudda, Joint Director Agriculture (ATC), Commissionerate of Agriculture, Rajasthan; Mr. J N Yadav, ARDATC, Commissionerate of Agriculture, Rajasthan; Mrs. Neena Grewal, Project Director, Uttarakhand Decentralized Watershed Development Project Phase-II (GRAMYA); Mr. C Lalengzauva, Deputy Director from Department of Agriculture; Mr. RAS Patel, Asst. Commissioner (NRM), Ms. Sunita Bhardwaj, Sr. Statistical Officer (NRM); Mr. Narendra Kumar Saros, Sr. Technical Assistant (NRM); Mr. Konda Reddy, FAO India; Mr. Sameer Karki, FAO India; Ms. Jirlyne Kathrapi, FAO India; Ms. Shambhavi Sharma, FAO India

Annex 9: Outline of Strategies for Gender and Social Inclusion

The Situation of Women India

1. While India has had an impressive record of growth in recent decades, gender equality indicators provide continuing cause for concern. According to the gender inequality index (GII, 2016) of the United Nations Development Programme, India's performance lags behind that of other countries in the region, - it is ranked 125 of 159 countries. The ratio of maternal mortality is 174 against every 100,000 live births. Only 12.2 per cent of Parliament seats are held by women. Of all women above the age of 15, only 26.8 per cent are part of India's labour force — compared to 79.1 per cent men. Several other summary indicators of women's position underline the pervasiveness of gender inequality and the need for efforts in all sectors to enhance women's rights and opportunities and decrease disparities.

Women (India) Held Back by Persistent Inequality

- 79% of women vs. 63% of men continue to be engaged in agriculture. (2009–2010, National Sample Survey [NSS], 66th round)
- Women account for only 18.6% wage employment in the non-agriculture sector. (2009–2010, NSS 66th round)
- Average wages for women workers are 68% of those of men in rural areas, 57% in urban areas (casual labourers, the largest category). (2007–2008, NSS 64th round)
- Women hold only 12.4% of cultivated holdings, accounting for 9.9% of cultivated area held by individuals. (2005–2006, Agricultural Census)
- Women own less than one-third of deposits in commercial banks. (2010, Reserve Bank of India, Basic Statistical Returns)
- 55% of adult women are literate compared with 78% of men. (2005–2006, National Family Health Survey-3)
- Only 34% of rural households and 81% of urban households have access to a toilet facility. (2007–2008, District Level Household Survey [DLHS-3])
- Biomass (firewood, chips, and dung) remains the primary source of energy for cooking for 85% of rural households. (2007–2008, NSS 64th round)

2. The tribal population of the country, as per 2011 census, is 10.43 crore, constituting 8.6% of the total population. 89.97% of them live in rural areas and 10.03% in urban areas. In two out the three programme areas - Drylands (including the Ravines region) and High variability precipitation - tribal population account for more than 20% of the total population. Forty-seven percent of rural tribal populations live under the national poverty line. 89 million tribal people, who often are the poorest and most marginalized groups, depend for their livelihoods on forests, which are being severely affected by the compounded effects of degradation and depletion of forests resources and climate change, particularly women who depend on fuel, fodder and food from forests.

3. Constraints to women's economic emancipation and returns reduce the quality of life of women and their families but also hold back progress toward national goals for poverty reduction and inclusive growth. Gender inequalities are even more pervasive in rural areas. Women account for about 30 per cent of the agricultural labour force, and 79 per cent of all workers in rural areas. Furthermore, official statistics do not capture the invisible yet key contribution of women's unpaid labour on family farms. Yet, only 12.78 per cent of landholders are women, according to the latest Agricultural Census data. In terms of land area, 10.45% (2-4 hectares), 8.49 per cent (4-10 hectares) and 6.78 per cent (<10 hectares) of landholders in the categories of semi/medium, medium and large holders are women, whereas 38.56 per cent of women hold less than 2 hectares of land. Even when land formally belongs to a woman, her actual control over it may be limited. Also widespread are customs and traditional practices that prevent rural women from inheriting or acquiring land and other property, especially those from scheduled castes and tribes.[69]

4. Rural women also have limited access to other productive resources and services, including water, agricultural extension services, technological inputs, knowledge of value addition techniques, training and finance, including formal sources of credit. Due lack of collaterals, women own only

69 Committee on the Elimination of Discrimination against Women, Concluding observations on the combined fourth and fifth periodic reports of India, CEDAW/C/IND/CO/4-5, 18 July 2014.

11 per cent of total deposit accounts and 19 per cent of borrowing accounts in scheduled banks[70]. Group-based lending and microfinance have increased women's access to credit, but the amounts remain small and do not cover needs related to lifecycle events or entrepreneurship, including of those who women whose enterprises are ready to expand beyond the capacity of the microfinance available to them.

5. Women are often subsumed within the household and thus excluded from social benefits under major government interventions. Moreover, rural women and women living in remote areas have difficulties in accessing health and other social services. Gender inequalities are further exacerbated when they are compounded by other social differences, including age, ethnicity, caste, and class, which all play an important role in shaping different people's relative status and position within communities and society. Dalit women and women from scheduled tribes face multiple barriers in accessing justice, due to legal illiteracy, lack of awareness of their rights, and limited accessibility of legal aid as well as health services. In the agricultural sector, these social differences are likely to determine who has access to what, how and why. A recent study[71] has estimated the cost of inter-caste differences in productivity output indicating that 64% of lower castes' poorer outputs can be attributed to the effects of caste discrimination. Social differences are also likely to increase the vulnerability of marginalized groups in case of livelihood and climatic shocks.

6. Female-headed households (14% of households in 2005–2006) are also more likely to be economically vulnerable than male-headed households (women household heads tend to be older and less educated than male household heads, and less educated than the average woman)[72.] The category of "single women"—widowed, divorced, separated, and never-married women—has received less attention to date than female-headed households, but these women also face particular constraints. While some single women may be heads of households, others are not and there is growing awareness of the ambiguous and precarious position of widowed and divorced women who may live within families but remain responsible for maintaining themselves and their children.

Government Commitments

7. With its emphasis on women as agents of development rather than a vulnerable group, the 11th Five Year Plan reflected an important shift in approach and in recognition of women's current and potential contributions to development. Input documents for the 12th Five Year Plan also reflect this approach. The central government's commitment to inclusive growth and the rights-based strategy pursued in key areas (rural livelihoods, education, and food security) also have the potential to improve outcomes for women. Legislation or policy statements in many sectors include commitments to strengthening women's rights and opportunities. Some examples of GoI's legislations, policies and programmes to support gender equity are given below:

   - The central government has promulgated a range of legislative measures to strengthen women's rights. These include:

     - the Hindu Succession Amendment Act, 2005 (established new rights for women to inherit agricultural land and strengthened the rights of daughters as heirs to joint family property);

     - the Protection of Women from Domestic Violence Act, 2005;

     - the Protection of Women Against Sexual Harassment at the Work Place Bill, 2010

8. India is also a signatory to the International Labour Organization's labour standards conventions, including conventions barring discrimination against women in employment and wages, and has

[70] Planning Commission. 2010. Mid Term Appraisal of Eleventh Five Year Plan. Chapter on Women's Agency, para. 11.48. www.planningcommission.gov.in/plans/mta/11th_mta/MTA.html

[71] Thorat, S. and Sabharwal, N. S., 2013, Farm Productivity, Income and Input Use: Does Caste Identity Matter?, New Delhi: Indian Institute of Dalit Studies.

[72] Kishor, S. and K. Gupta. 2009. Gender Equality and Women's Empowerment in India. National Family Health Survey (NFHS-3), 2005–2006. Ministry of Health and Family Welfare. www.rchiips.org/NFHS/sub_report.shtml

national legislation on minimum wages, equal remuneration, and maternity leave. These and other measures foundation for rights, but government documents also emphasize the importance of greater awareness of the rights outlined among the public (both women and men) and among government officials.

- High priority has been given to ensuring women's representation in decision making, by both central and state governments.

9. Since the 73rd and 74th Constitutional Amendments of 1992 that established rural and urban local bodies, a one-third reservation for women has applied to local decision making. This has resulted in a significant increase in the representation of women and in their opportunities to influence decisions that affect their communities and their lives. Implementation is through state legislation, and several states have increased the reservation from one-third to 50% for either rural or urban local bodies or both. States adopting the 50% reservation include, for rural governments, Bihar, Karnataka, Madhya Pradesh, West Bengal, and Uttarakhand; for urban local governments, Andhra Pradesh, Kerala, and Tripura; and for both, Maharashtra. A constitutional amendment to extend the 50% reservation nationwide is also in process. These are important steps toward increasing women's influence on decisions affecting their communities and their lives. Studies have found that increased exposure to women politicians has had a positive impact on community attitudes toward women in public office, and that women's participation results in more attention to the issues they prioritize. This also includes participation in community level decision-making bodies, for instance forest use groups where women's participation has provide to improve substantially their standing within communities and households but also conservation outcomes.

10. At the same time, additional measures are required to achieve effective participation by elected women throughout the country, such as training to achieve better awareness of the functions of local bodies and support for networking among elected women.

- National policies aim to strengthen women's access to skill training for employment.

11. The National Policy on Skill Development, 2009 aims to increase women's participation in vocational training to at least 30% by 2012 through counteracting discrimination as well as proactive measures such as scholarships, transport, and loans. The policy promotes both vocational training in fields employing women and women's participation in non-traditional areas.

- National policies show a commitment to increasing women's employment opportunities and wages.

12. This commitment is evident in the National Rural Employment Guarantee Act, 2005, which provides the basis for the national flagship programme in support of rural livelihoods, the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). The Act calls for 33% participation by women and for the use of minimum wage rates in payments to all workers (i.e., equal wage rates for women and men). The programme has been found to provide major benefits to women by enabling them to access wage employment at the minimum wage where wage employment opportunities were otherwise very limited for women and wage practices biased against them.

- Antipoverty, housing, and resettlement schemes have been identified as having a role in securing women's property rights.

13. The 11th Five Year Plan emphasizes the importance of property and land rights to women's economic empowerment and security. It states that the Eleventh Plan will carry out a range of initiatives to enhance women's land access. It will ensure direct transfers to them through land reforms, anti-poverty programmes, and resettlement schemes. It will include individual or group titles to women in all government land transfers. In case of displacement, a gender sensitive rehabilitation policy that includes equitable allocation of land to women will be devised. The Eleventh Plan will also ensure the rights of poor, landless, and tribal women over forest land, commons, and other resources. The plan also makes a commitment to ensuring that housing provided by government during the plan period will be either solely or half in the name of a woman.

- New flagship programmes to strengthen livelihoods for the rural and urban poor give a prominent role to self-help groups and to women.

14. Both the National Rural Livelihoods Mission (NRLM) launched in 2011 and the National Urban Livelihoods Mission proposed later that year promote the formation and strengthening of Self-Help Groups (SHGs), with the aim of involving a member of every poor household, preferably a woman. The missions seek to reach the poor with sufficient support, including training and access to credit, to enable them to access wage employment or undertake self-employment. The outreach to women is an important recognition of their role and livelihood needs. There is also growing recognition that SHGs and microcredit cannot on their own overcome women's poverty and disempowerment. As pointed out in the input documents for the 12th Five Year Plan, many women's SHGs (particularly among the poorest communities, scheduled castes, scheduled tribes, and single women) have few skills or assets and limited ability to absorb credit and therefore face considerable difficulty in establishing economic enterprises. This underlines the need to address structural factors such as illiteracy, lack of investment, and poor creditworthiness as part of livelihood strategies.

    - A target of at least one-third participation by women as programme beneficiaries has been set for all sectors.

15. The 11th Five Year Plan requires that "at least 33% of the direct and indirect beneficiaries of all government schemes are women and girl children." This commitment is also made by a number of states in state-level five-year plans for the same period. It has also been specifically stated in key schemes. For example, MGNREGS, the national flagship programme in support of rural livelihoods, sets a minimum target of 33% participation by women and mandates equal pay for women and men. This approach has been shown to provide major benefits to women by enabling access to wage employment at minimum wage in rural areas where wage employment opportunities are otherwise limited for women and wage practices are biased against them. Another example is the 30% target for women's participation set by the National Policy on Skill Development, 2009, which also outlines a strategy to achieve this target that includes scholarships, transport and loans for women, and steps to counter discrimination.

    - More systematic and coordinated approaches to gender issues and women's empowerment are being pursued.

16. Policies or legislation in several sectors include provisions in support of gender equality or women's participation. The formulation of such provisions reflects an increased awareness among decision makers of the need for specific protections or targets to enable women to participate or benefit equitably.

17. The 11th Five Year Plan also promotes more systematic attention to gender equality and women's interests across government. Toward this end, the plan promotes "gender budgeting," which it described as a strategy to "assess the gender differential impact of the budget and take forward the translation of gender commitments to budgetary allocations." Ministries and departments in all sectors are called on to establish gender budgeting cells to review public expenditure, collect sex disaggregated data, and conduct gender analysis, drawing on the guidance and tools developed by the Ministry of Women and Child Development.

18. Another major strategy aimed at making government more effective in reaching and serving women is the National Mission for the Empowerment of Women launched in March 2010. The mission emphasizes intersectoral convergence at all levels of government to increase awareness and access to government schemes and programmes.

    - The 2000 National Agriculture Policy is the overarching framework for gender in agriculture. The policy prioritizes the role of women in agriculture and in the development agenda of the sector. 30% of funds under various major schemes/programmes and development interventions are to be earmarked for women and focus is given on formation of women Self Help Groups (SHGs), capacity building interventions, access to micro credit and information and

representation in decision making bodies at various levels. Relevant programmes/schemes under the Ministry of Agriculture include for instance[73]:

- The National Horticulture Mission (NHM), which is being implemented in 18 States and 3 UTs, includes 30 percent of women beneficiaries.
- The National Food Security Mission (NFSM), which targets rice, wheat and pulses, sets aside 33% of the total allocation to marginal farmers, including women farmers.
- The Scheme on 'Strengthening and Modernization of Pest Management Approach India' provides assistance to women organizations for opening mass production units of biocontrol agents/bio-pesticides and to purchase of laboratory equipment for setting up biocontrol laboratories.
- The National Watershed Development Project for Rainfed Areas (NWDPRA) benefits women through formation of Self Help Groups and Users Groups for natural resource management.

- The 2007 National Policy for Farmers envisages specific measures aimed at women's empowerment: (i) equitable access to land, water and livestock; (ii) better access to inputs and services, science and technology, implements, credit and support services like crèches, child care centres, nutrition, health and training; (iii) support to women's participation in farming groups; (iv) women's involvement in conservation and development of bio-resources.
- The 2001 National Rural Livelihoods Mission (NRLM) of the Ministry of Rural Development (MoRD), focuses on livelihood enhancement and diversification and increased access to financial services for the rural poor. NRLM is the largest government programme working exclusively with rural women, aiming to mobilise over 7 Crore (70 million) rural poor households, across 600 districts, 6000 blocks, 2.5 lakh *Gram Panchayats* and 6 lakh villages in the country through self-managed Self Help Groups (SHGs) and federated institutions. According to website[74], the mission needs further strengthening and financial support – there is the possibility of building synergies with the programme.
- The National Mission for Green India of the Ministry of Forest, Environment and Climate Change (MoEFCC) acknowledges 'the crucial role of women in forest conservation, its sustainable use and equitable benefit sharing' and aims to promote a greater role for women in planning and implementing the mission interventions including by engaging more women in decision making at various levels.
- The 2013 National Food Security Act recognizes women's role as custodians of household food security.

19. The programme adopts social inclusion as one of the principles for implementation. This means taking into account the existing inequalities and social barriers that different people experience into programme formulation and implementation and design interventions that support the participation of marginalized groups and target them specifically with measures aimed at strengthening their livelihoods.

    - The National Mission for Green India of the MoEFCC recognizes the influences and potential that the forests and other natural ecosystems have on climate adaptation/mitigation, and food, water, environmental and livelihood security of tribal and forest dwellers in the context of climate change.
    - The Scheduled Caste Sub-Plan (SCSP) under the Scheduled Castes Development Bureau of the Ministry of Social Justice and Empowerment, is the umbrella strategy that ensures targeted financial support for programmes aimed at the benefit of Scheduled Castes. Under the strategy,

[73] For a complete list of initiatives, see Department of Agriculture and Cooperation, the Ministry Of Agriculture, Annual Report 2012-2013, http://agricoop.nic.in/Annualreport2013-14/artp13-14ENG.pdf

[74] http://aajeevika.gov.in/index.html

States/UTs are required to formulate and implement Special Component Plan (SCP) for Scheduled Castes and earmark resources. At present 27 States/UTs having sizeable SC population are implementing Schedules Caste Sub-Plan.

- The Multi-sectoral Development Programme (MsDP) of the Ministry of Minority Affairs aims at improving the socio-economic conditions of minorities. The projects include provision of better infrastructure for education, skill development, health, sanitation, pucca housing, roads, drinking water, as well as creation of income generating opportunities.

Role of Women in Conservation

20. While conservation agencies working in developing countries are increasingly recognising and analysing the links between poverty and conservation so to ensure that conservation activities do not disadvantage or undermine poor, vulnerable or marginalised people who are dependent upon or live adjacent to natural resources, this is not yet the case in India, where explicit articulation, emphases, and the necessary specific enabling frameworks on women's roles in biodiversity conservation programmes are still very limited. Relatively few conservation organisations have proactively promoted a consideration of gender or the empowerment of women in their programmes.

21. The exclusion – or lack of participation – of women in decision making over conservation and natural resource management can have implications for conservation outcomes because of their different roles and relationships with natural resources and their different knowledge of biodiversity. For example, in many countries women are often the prime collectors of herbs, spices and medicinal plants because they are responsible for their families' health and for preparing meals. Women are also custodians of traditional seeds and species and possess a sophisticated knowledge of biodiversity.

22. However, gender issues are often overlooked or little addressed in biodiversity conservation and natural resource management (NRM) efforts, even within those that are focused on community-driven efforts. Yet key factors influencing conservation management such as human-wildlife conflicts, unsustainable and illegal trade, tenure rights, poverty, and food and livelihood security all have significant gender dimensions. If these are not addressed, they may considerably limit the effectiveness of the management measures adopted and exacerbate pre-existing gender inequalities. Taking gender issues into account in respect to natural resource management and biodiversity conservation involves addressing needs, priorities, knowledge and understanding of both women and men, and ensuring that both are actively involved in decisions-making in a way that leads to reconciling goals of gender equality and sustainable conservation and NRM. Women and men play important and complementary roles in the use, management and conservation of natural resources at the local level. Recognizing and analysing these so to address gender inequalities is, therefore, as essential in achieving sustainability objectives as it is in advancing equal rights for women and men.

23. Many projects do try to take a 'gender sensitive' approach – including women in meetings, holding separate meetings, collecting gender disaggregated data and so on – but such activities are often based on limited analysis and understanding. Women are often excluded from decision making structures which, at all levels, tend to be dominated by men. Other major constraints include women's workloads and time and income poverty, which translated into lack of time or resources to invest in conservation and are forced to prioritise according to short-term needs. Women's levels of education or awareness, often caused by limited access to information, can also be a major constraint.

24. Gender mainstreaming may further face challenges in many research and conservation organizations in which there remains a cultural divide between social scientists, advocating for inclusion, and natural scientists, some of whom view gender as a confusing and distracting concept in wildlife conservation. Coupled with a lack of institutional expertise on gender, this leads to a gap between discourse and implementation. Gender mainstreaming activities may be included as add-

ons to existing programmes, without being fully integrated or budgeted, limiting the success of such interventions.

25. In addition, tackling gender issues within biodiversity conservation and NRM is complicated by the pervasiveness of gender inequalities. Gender roles and norms which influence conservation and NRM are rooted in social structures, such as family, schooling and the community, in ways not immediately perceived to be related to conservation and NRM. Gender inequalities are magnified by complex issues such as development, poverty, and family planning. Addressing the wide range of gender issues in conservation and NRM is therefore a complicated process requiring linkages that are oftentimes not envisioned in conservation related projects.

Opportunities (overall)

26. Substantial commitments to gender equality have been made at the international and national levels, notably within the framework of the Sustainable Development Goals, particularly SDG 5 on gender equality. International institutions, conservation agencies, national governments, and donors are increasingly including gender equality and women's empowerment in their corporate policies and initiatives, which fosters an increase in financial, technical and human resources dedicated to gender mainstreaming and to the promotion of women's and girls' rights. This presents a substantial opportunity for Protected Area (PA) managers and biodiversity conservation practitioners to access comprehensive guidelines and training modules as well as funding, by addressing gender equality in their activities. Additionally, the Convention on Biological Diversity (CBD) has in place the 2015 to 2020 Gender Plan of Action that provides comprehensive guidance for integration of gender concerns into biodiversity conservation related programming.

Opportunities - specific gender and social equity entry points from NBAP 2014:

27. India's National Biodiversity Action Plan (NBAP, 2014) provides several entry points for integration of gender and equity concerns into programming. These include the National Biodiversity Target (NBT) 8 which states: "By 2020, ecosystem services, especially those relating to water, human health, livelihoods and well-being, are enumerated and measures to safeguard them are identified, taking into account the needs of women and local communities, particularly the poor and vulnerable sections." Likewise, NBT Target 14 states: "By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable."

28. The NBAP also provides gender and equity entry points in specific action items including for example on 'Building of national capacities for biodiversity conservation and appropriate use of new technologies' and that include: "151 - Strengthen participatory appraisal techniques and encourage formation of local institutional structures for planning and management of natural resources for ensuring participation of women;" "160 - Design and implement awareness programmes, particularly for rural women, and also benefit from their wisdom. Women's organizations such as women's councils and *mahila mandals* could be used for this purpose."

Opportunities - specific community inclusion entry points from NBAP 2014:

29. Similar to the above, the NBAP 2014 also provides multiple entry points for inclusion of communities (and therefore men, women children, and the poor and/or marginalised into conservation agendas. These include, *in situ* conservation, for example, with the following action points:

    - ……in particular, participation of local communities, concerned public agencies, and other stakeholders, who have direct and tangible stake in protection and conservation of wildlife, to harmonize ecological and physical features with needs of socioeconomic development;
    - Promote site-specific eco-development programmes in fringe areas of PAs, to restore livelihoods and access to forest produce by local communities, owing to access restrictions in PAs;

- Strengthen the protection of areas of high endemism of genetic resources (biodiversity hotspots), while providing alternative livelihoods and access to resources to local communities who may be affected thereby;
- Integrate conservation and wise use of wetlands and river basins involving all stakeholders, in particular local communities, to ensure maintenance of hydrological regimes and conservation of biodiversity; and
- Consider particular unique wetlands as entities of incomparable values, in developing strategies for their protection and formulate conservation and prudent use strategies for the identified wetlands with participation of local communities and other stakeholders.

30. Other action points under the NBAP relating to communities' inclusion in on-farm conservation include for example:

- Develop appropriate models for on-farm conservation of livestock herds maintained by different institutions and local communities.
- Promote best practices based on traditional sustainable uses of biodiversity and devise mechanisms for providing benefits to local communities;
- Build and regularly update a database on NTFPs, monitor and rationalize use of NTFPs ensuring their sustainable availability to local communities;
- Promote reclamation of wasteland and degraded forest land through formulation and adoption of multi-stakeholder partnerships involving the land owning agency, local communities, and investors;
- Promote sustainable tourism through adoption of best practice norms for tourism facilities and conservation of natural resources while encouraging multi-stakeholder partnerships favouring local communities;
- Strengthen systems for documentation, application and protection of biodiversity associated traditional knowledge, providing adequate protection to these knowledge systems while encouraging benefits to communities;
- Revive and revitalize sustainable traditional practices and other folk uses of components of biodiversity and associated benefits to local communities with a view to promoting and strengthening traditional knowledge and practices; and
- Harmonise provisions concerning disclosure of source of biological material and associated knowledge used in the inventions under the Patents Act, Protection of Plant Varieties and Farmers'
- Rights Act, and Biological Diversity Act, to ensure sharing of benefits by the communities holding traditional knowledge, from such use.

What the Project will do

31. Recognizing the above, the Project will take the necessary steps to better understand how changes in gender relations affect natural resource management, and how natural resource management impacts on social dynamics, including gender relations. The Project also recognizes that available global evidence suggests that projects are more efficient and effective in achieving conservation goals if a gender-responsive approach is employed, and that more attention needs to be given to gender in order to ensure that conservation activities do not disadvantage or undermine poor, vulnerable or marginalised people.

32. The Project will fully leverage the above entry points included in the NBAP 2014 as part of its gender mainstreaming strategy, which will be in line with CBD's 2015 to 2020 Gender Plan of Action.

33. The programme will ensure attention to gender equality and social inclusiveness throughout formulation, design, implementation in order to: 1) ensure that women and men benefit equally from programme outcomes; 2) design and implement proactive measures to overcome existing gender and social inequalities that hamper equal participation and access to benefits; 3) improve the livelihood and resilience to shocks of marginalized groups'.

34. The programme's approach to gender is based on an understanding of gender as a social construction, which is constructed differently across place and time and in dynamic relationship with other social differences, including, age, caste, social status, religion, and ethnicity. Such social differences shape and are shaped by women and men's access to and use of productive resources and will need to be taken into account in the formulation and implementation of the programme. The approach is thus informed by the recognition of the multidimensional nature of the role played by rural women in food systems and household members' well-being, as well in natural resource management and conservation.

35. Gender equality is central to FAO's mandate to reduce poverty and achieve food security for all by raising levels of nutrition, improving agricultural productivity and natural resource management, and improving the lives of rural women and men worldwide. In 2012 FAO articulated its commitment to advancing gender equality in the Policy on Gender Equality, which focuses on achieving specific targets to advance equality of voice, agency and access to resources and services between women and men.

36. The Policy has a Minimum Standard, which requires that 'a gender analysis is incorporated in the formulation of all field programmes and projects, and gender-related issues are taken into account in project approval and implementation processes,' based on the acknowledgment that failure to recognize the different roles of women and men can undermine the achievement of enhanced livelihoods, agricultural productivity and sustainable management of natural resources. Since, heterogeneity of society and gender is a very important element when working in the field, a thorough research of all the dimensions that should be included during the implementation phase of the project at all the sites, on the basis of which the final implementation design will be formulated.

37. At the minimum, the programme shall undertake the following:

    a) Gender Analysis: A gender analysis will be conducted in relation to the sectors of intervention (e.g., a gender perspective in forest resources management; gender roles in biodiversity conservation; gender roles in rainfed agriculture; gender roles in tribal communities). The gender analysis should be part of the situational analysis.

    b) Gender Strategy: The gender analysis should inform the drafting of the gender strategy, which will be the roadmap for mainstreaming gender concerns and gender equality throughout all projects and across components. The factor that the women in rural areas already have two to three shifts of work every day will be taken into account. The strategy will be designed in a way that the contribution anticipated from women will not be an extra burden of workload for them rather it will facilitate their burden of work.

    c) Gender-sensitive planning: The planning will define objectives, outcomes and outputs and activities in terms of how they will contribute to addressing women and men's different needs taking into account existing social and gender inequalities and discrimination.

    d) Gender-sensitive methodology: The participation of women in all components of the programme, including the programming and M&E process, shall be ensured taking into account the specific socio-cultural context in which each project is implemented. Proactive measures shall be taken to overcome barriers to participation and access to benefits. Extra time for a thorough research will be provided for covering all possible elements for helping women achieve their maximum capacity of conservation of landscapes as well as not increasing their workload.

e) Budget: Sufficient budget shall be earmarked to fund all of the above and measures targeted at women.

f) Gender-disaggregated data: The programme will collect data disaggregated by sex and/or gender, including baseline data.

g) Gender specialist: Each project shall recruit a gender specialist in charge of gender mainstreaming within the project. A senior gender specialist should be in charge of coordinating the activities at the level of the programme so to ensure coordination, monitoring and reporting.

h) Capacity development: Sensitization and capacity development activities will be planned for the programme's team and partners to conduct gender analysis and mainstream gender. So that by the time the project is completed not just the landscape but even the women are in a better situation than before and will be able to contribute significantly during and after the project duration.

i) Partnerships: Gender-sensitive partner organizations shall be chosen to support the implementation of the projects.

j) M&E: The M&E methodology shall be designed so that it can properly capture the gender dimension of the programme.

k) Gender indicators: Gender sensitive indicators will be used to measure how the outputs of the programmes have affected women and men, and how women and men have contributed to addressing the issues and achieving the expected outcomes, and to what extent the programme has equitably addressed both women's and men's needs.

l) Policy: Lessons from the programme will be used to provide policy recommendations and areas where further research and interventions may be needed.

m) Advocacy: Advocacy activities will be organized on the importance of gender mainstreaming as a critical tool for promoting sustainable agricultural practices and promoting the livelihoods of marginal farmers.

n) Any major policy interventions that result from the project will be gender sensitive.

Annex 10: Project's Capacity Building Strategy Outline

I. Background

1. This preliminary Capacity Enhancement Strategy (CES) for India Green-AG project aims to enhance the quality of the project proposal through applying effective and systemic human and institutional Capacity Enhancement (CE) approaches[75] to enable and empower country-stakeholders.

2. FAO GEF Project Formulation Guidelines recognize that effective, robust and systemic CE approaches are essential to enhance the impact and sustainability of GEF project results through strengthening country-ownership and leadership of the development process. Effective CE needs promote project interventions that address all three CE dimensions interdependently and systematically. This includes strengthening *individual capacities* (e.g. knowledge, skills and competencies), *organizational capacities* (e.g. performance of organizations, cross-sectoral, multi-stakeholder coordination / collaboration mechanisms) as well the *enabling environment* (e.g. sound regulatory and policy frameworks, institutional linkages and enhanced political commitment and will). Methodologically, capacities across the three dimensions are jointly assessed with country stakeholders. On the basis of the assessment, appropriate CE interventions are designed, results identified and tracked jointly.

3. This Strategy will guide more detailed capacity development strategy that will be developed during project implementation. Actions during project implementation will include (a) comprehensive and participatory capacity assessment with stakeholder validations at state, district, and landscape level, (b) based on the findings refinement of CE interventions with budgeting, (c) alignment with the Green-Ag India results framework including clearly formulated CE results (d) completing a stakeholder analysis to identify key "change agents" to be enabled and empowered for more sustainable project implementation.

II. Integrating effective CE approaches into Green-AG India:

4. In accordance with FAO's GEF Project Formulation Guidelines, effective CE practices needs to address:

    - three CE dimensions (individual, organizational, enabling environment) are addressed interdependently and systematically to move beyond individual trainings alone, in order to address also organizational and institutional capacity needs
    - functional capacities such as *Policy and Normative* (i.e. the capacity to formulate and implement policies and to lead policy and legislative reforms, *Knowledge* (i.e. the capacity to create, access and exchange information and knowledge), *Partnering* (i.e. the capacity to initiate and sustain networks, alliances and partnerships) and *Implementation* (i.e. the capacity to manage (planning, implementing, monitoring and evaluating) complementary technical capacities
    - Sustainability considerations after project completion have been specifically addressed

5. In terms of process, robust CE integration means that the:

    - project team has a dedicated national expert with specific CE tasks in the TORs that include facilitating capacity assessments
    - project applies the CE principles of joint stakeholder assessment, design, identification and tracking of CE to deepen country-ownership namely:
        i. Joint-Assessment: project preparation phase capacity assessment (i.e. participatory, inclusive, self-assessment, multi-stakeholder, starting with strengths and what is functioning well) addressing the three CD dimensions across national, state,

[75] See FAO Corporate Strategy http://www.fao.org/capacity-development/en/

district, and landscape) complementing technical baseline assessments to generate a CE baseline

ii. Joint-Design: the envisioned CE intervention modalities include a mix of most contextualized CE intervention modalities across the three CE dimensions with clearly defined budgets

iii. Joint Tracking: identifying the baseline within stakeholder capacity assessments, defining envisioned and dedicated results within the project results framework

- project planning includes a CE risk analysis as well as stakeholder analysis
- the project preparation phase enables and empowers national experts to apply skills through training and coaching to assess, design and track CE
- a dedicated and collaboratively developed CE strategy enriches the ProDoc based on findings from capacity assessments and baseline studies
- project implementation team is envisioned to include a dedicated CE expert
- FAO's Capacity Development unit provides methodological backstopping (one CE Officer) to the formulation process

III. Proposed needs-based CE Interventions for Green-Ag India

6. Following CE interventions have been identified across the three CE dimensions at different administrative levels. Noteworthy, that these will be further sharpened based on the comprehensive assessment at state, district and sub-district level. Furthermore, during the final project preparation phase, budget estimations will be provided as well as alignment with the results framework. The following tables present the capacity assessment across the three CE dimensions at various levels.

A. Enabling Environment

Administrative Level	Identified CE Strengths	Identified CE Needs	Proposed CE activities / interventions	Sustainability
National	Existing robust legal and policy framework	- More effective implementation of existing laws and policies - Environment and Agricultural sector policies, investments, institutions, programs, and monitoring mechanisms are not aligned with each other - Very few examples of large scale initiatives linking agricultural production with delivery of GEBs	Establish National Project Steering Committee (NPSC[76]). The NPSC will provide overall guidance and strategic leadership to create synergies for multi-sectoral coordination in project implementation; and facilitate 'mainstreaming' of relevant project findings and recommendations into a national strategy and action plan, which could eventually lead to formulation of a national policy. National Dialogue on Agriculture, Environment and Development that will identify policy options to support alignment of sectoral policies to build synergies to achieve GEBs and sustainable agriculture production	The Project will work towards institutionalizing the NPSC as the 'National Green Landscape Coordination Committee' (NGLCC), which will be responsible for the development of a national strategy and action plan that could eventually lead to formulation of a National Green Landscape Policy.
State	- Existing robust legal and policy framework - Increasing number of initiatives for promoting	- More effective implementation of existing laws and policies - Agriculture and Environmental extension services are not synchronized to address farmer capacity	Establish State Steering Committee (SSC) in all the project states. The SSCs will provide overall guidance to the State Project Management Unit (SPMU) in project implementation; and facilitate mainstreaming of relevant project findings and recommendations into a state strategy and action plan, which could eventually lead to formulation of a state policy.	The Project will work towards institutionalizing the SSC, in each state, as the 'State Green Landscape Coordination Committee' (SGLCC), which will provide strategic leadership to create synergies for multi-sectoral coordination in managing Green Landscapes within the state and be responsible for the development of a state strategy and action plan, which could

[76] Detailed composition to be added.

Administrative Level	Identified CE Strengths	Identified CE Needs	Proposed CE activities / interventions	Sustainability
	farmer collectives	required to deliver GEBs	State Dialogue on Agriculture, Environment and Development that will identify policy options to support alignment of sectoral policies to build synergies to achieve GEBs and sustainable agriculture production	eventually lead to formulation of a State Green Landscape Policy.
District	- Existing robust administrative framework - Strong coordination by Collector	Insufficient cross-sectoral approaches to planning and management	Work with inter-sectoral government committee such as Technical Support Group or ATMA in each project district. Under the District Collector, will support the design, implementation, monitoring and evaluation of the Green Landscape Management Plan (GLMP) and a Convergence Plan.	The TSG and ATMA are government supported institutional mechanisms that are expected to be continued beyond project end.
Landscape		Landscapes are not recognized as defined eco-regional entities in the current administrative framework	Establish a Green Landscape Implementation Unit (GLIU) in each of the Green Landscapes.	GLIU support Gram Panchayat/ Village Councils/ Biodiversity Management Committees (BMCs)/ Eco Development Committees and other community institutions within the green. Both District level mechanism noted above and GLIU will support fostering of a sense of "landscape" amongst them. This is expected to lead to formation of a suitable landscape management mechanism appropriate for each of the five sites.

Administrative Level	Identified CE Strengths	Identified CE Needs	Proposed CE activities / interventions	Sustainability
Gram Panchayats[77] (GPs) / Village Councils	Enabling administrative environment and subsequent presence of local self-governance institutions	- Insufficient/ineffective comprehension of cross-sectoral approaches to planning and management - Isolation from neighboring and other GPs	- A Gram Panchayat/ Village Council Project Support Unit (GPSU/ VCSU) will be established to facilitate synergy between local development plans and project activities. The GP-PSU will be chaired by the GP Sarpanch/Pradhan/Mukhiya or Village Council Chief. The Village Secretary and representative of the BMC will be the members. - The project will strengthen existing BMCs / eco development committees and support local bodies and SBBs to establish new ones, if not present in the GPs of the project Green Landscapes. - Green Landscape Learning Centers will be established in each GP - Improved networking among GPs	BMCs are legally designated bodies under the Biological Diversity Act 2000. .

B. Organizational Capacities

Administrative Level	Identified CE Strengths	Identified CE Needs	Proposed CE activities / interventions	Sustainability
National	Existence of relevant ministries and	Environment and Agricultural ministries work in silos,	National Project Steering Committee (NPSC) members will (i) technically	The Project will work towards institutionalizing the NPSC as the

[77] Gram Panchayats are the cornerstone of the local self-government organization in India of the Panchayati Raj System at the village. They form firt and foundational rung of local self-government.

Administrative Level	Identified CE Strengths	Identified CE Needs	Proposed CE activities / interventions	Sustainability
	associated departments to support the implementation of all national mandates	resulting in lack of inter-sectoral coordination	oversee activities in their respective ministries, (ii) ensure a fluid two-way exchange of information and knowledge between their ministry and the project, (iii) facilitate coordination and links between the project activities and the work plan of their ministries, and (iv) facilitate the provision of co-financing to the project.	'National Green Landscape Coordination Committee' (NGLCC), which will be responsible for the development of a national strategy and action plan that could eventually lead to formulation of a National Green Landscape Policy.
State	Existence of relevant departments to support the implementation of all state mandates	- Environment and Agricultural state departments work in silos, resulting in lack of inter-sectoral coordination - While personal networks among and between IAS and IFS senior officials in States operate in an ad-hoc basis to lubricate and catalyze inter-Ministerial coordination/ cooperation, this is fragile and not sustainable	State Steering Committee (SSC) members will (i) technically oversee activities in their respective departments, (ii) ensure a fluid two-way exchange of information and knowledge between their department/agency and the project, (iii) facilitate coordination and links between the project activities and the work plan of their department, (iv) better network across Departments and Ministries, and (v) facilitate the provision of co-financing to the project.	The Project will work towards institutionalizing the SSC, in each state, as the 'State Green Landscape Coordination Committee' (SGLCC), which will provide strategic leadership to create synergies for a multi-sectoral coordination in managing Green Landscapes within the state and be responsible for the formulation of a state strategy and action plan, which could eventually lead to a State Green Landscape Policy.

Administrative Level	Identified CE Strengths	Identified CE Needs	Proposed CE activities / interventions	Sustainability
District	Existing of a robust administrative framework	Inadequate comprehension of and support for cross-sectoral approaches to planning and management	The TSG will: (i) monitor project implementation at the field-level; (ii) responsible for providing general oversight in the project execution; (iii) dovetail project activities with ongoing schemes and programs in the district; and (iv) ensure synergy between districts of the landscape.	See above
Landscape		Landscapes are not recognized as defined eco-regional entities in the current administrative framework	The GLIU will develop a realistic Green Landscape Management Plan (GLMP) engaging key stakeholders—local communities, government, private and other stakeholders; design supportive mechanisms for implementation of the plan; and implement, monitor, and evaluate achievement on various aspects of the landscape management plan.	
Gram Panchayats (GPs) / Village Councils	Enabling legal and administrative environment and subsequent presence of local self-governance institutions	Expanding the scope of community level institutions and building their capacity for the same.	- Currently, the role of BMCs is restricted to preparation of People's Biodiversity Registers. The project will work with the BMCs to strengthen their capacity to deliver their mandate of conservation, sustainable use and documentation of biological diversity.	BMCs are legally designated bodies under the Biological Diversity Act 2000.

Administrative Level	Identified CE Strengths	Identified CE Needs	Proposed CE activities / interventions	Sustainability
			- information centres that provide services to a range of Green Landscape stakeholders.	

C. Individual Capacities

Administrative Level	Identified Strengths	Identified Needs	Proposed CD activities / interventions	Sustainability
National	Ability to coordinate and lead the cross-sectoral process	- Orientation to Green Landscape management that will deliver relevant GEBs - Regular updates on the Green Landscape management process	- Provide periodic updates to NSC members on project progress in all the five landscapes; case studies—both project and other relevant experiences; and findings from Green landscape impact, monitoring, and lessons captured - Initiate policy dialogues on relevant issues	The Project will work towards institutionalizing the NPSC as the 'National Green Landscape Coordination Committee' (NGLCC), which will be responsible for the development of a national strategy and action plan, which could eventually lead to formulation of a National Green Landscape Policy.
State	Ability to coordinate and lead the cross-sectoral process	- Orientation to Green Landscape management that will deliver relevant GEBs - Regular updates on the Green Landscape management process	Provide periodic updates to SSC members on project progress in the landscape within the state; case studies—both project and other relevant experiences; and findings from Green landscape impact, monitoring, and lessons captured - Initiate policy dialogues on relevant issues	The Project will work towards institutionalizing the SSC, in each state, as the 'State Green Landscape Coordination Committee' (SGLCC), which will provide strategic leadership to create synergies for a multi-sectoral coordination in managing Green Landscapes within the state and be responsible for the development of a state strategy and action plan, which

Administrative Level	Identified Strengths	Identified Needs	Proposed CD activities / interventions	Sustainability
				could eventually lead to formulation of a State Green Landscape Policy.
District	The District Collectors have the administrative power and enabling environment to coordinate landscape level planning and management	- Orientation to Green Landscape management that will deliver relevant GEBs - Regular updates on the Green Landscape management process - Strengthen Extension workers capacity to effectively engage communities and link activities to performance management	- Several trainings geared towards district technical peoples under Outputs 2.1 and 2.2. In addition, key decision makers will also be involved in national/ international learning events through Output 1.2	.
Landscape		- Awareness of the impact of production oriented agricultural practices on the ecosystem and personal health - Awareness of ecosystem services provided by the conservation landscape	- See Output 2.2 and 2.3	GLMC will have representation from all the Biodiversity Management Committees (BMCs) within the Green Landscape and will be supported by the Green Landscape Coordination Unit (GLCU) established in each district.

Administrative Level	Identified Strengths	Identified Needs	Proposed CD activities / interventions	Sustainability
		- Capacity for collective ecosystem management		
Gram Panchayat (GP)	Ability to coordinate and lead the cross-sectoral process	- Orientation and regular updates on the process -	- Output 2.1, 2.2 and 2.3	
Local Communities	- Increased recognition that excessive application of chemical inputs (e.g. fertilizers and pesticides) does not necessarily lead to improved production - Increasing awareness among consumers for environmentally safe products / food	- Improve knowledge and capacities on "set of green agricultural practices" - Improve awareness on the importance of soil health to improve productivity - Improve knowledge on how to produce sustainable agricultural inputs (nutrient management + pest and disease management) - Address misconceptions that sustainable agriculture is labor intensive and leads to loss of productivity	- Outputs 2.2 and 2.3	

IV. Capacity Enhancement (CE) Risk Analysis

CE Risk	Strategy to Overcome the Risk within Project
(Low / Unsustained) Political Will and Government commitment	Sensitize relevant stakeholders (incl. at highest level) on the landscape approach Sensitize and evidenced-based policy dialogue with decision-makers that improved agricultural practices help delivery of international targets
Farmers properly incentivized	Align project activities with ongoing programs (government or projects) such as sustainable agricultural intensification, soil management, water conservation etc.
Inclusive and meaningful stakeholder participation, particularly most vulnerable	Enable participation of farmers (particularly marginalized participating in individual or organizational / institutional learning opportunities to help re-direct agricultural production inputs from conventional to sustainable practices Create multi-sectoral spaces for dialogue
Effective and sustainable Capacity Enhancement interventions (individual, organizational / institutional, enabling environment)	Apply international best practices (including from FAO) on CE practices during the project design to maximize country ownership as well as jointly assess, design and monitor CE results.
Sustainability of Project Results	Align project-established institutional mechanisms with national systems (e.g. community institutions) Align with national programs (e.g. local procurement for school feeding)