GEF-8 PROJECT IDENTIFICATION FORM (PIF)

TABLE OF CONTENTS

General Project Information

Project Title

Accelerating Community-Led Actions for Ecosystem Resilience and Biodiversity Conservation Through Integrated Landscape Management (ACT)

Region	GEF Project ID
Asia	12066
Country(ies)	Type of Project
India	FSP
GEF Agency(ies):	GEF Agency ID
IUCN UNDP	IUCN PIMS 10361
Executing Partner	Executing Partner Type
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE – MOEFCC	Government
GEF Focal Area (s)	Submission Date
Multi Focal Area	9/15/2025

Project Sector (CCM Only)

AFOLU

Taxonomy

Influencing models, Transform policy and regulatory environments, Strengthen institutional capacity and decision-making, Demonstrate innovative approache, Convene multi-stakeholder alliances, Deploy innovative financial instruments, Stakeholders, Local Communities, Private Sector, Large corporations, SMEs, Financial intermediaries and market facilitators, Beneficiaries, Civil Society, Community Based Organization, Academia, Non-Governmental Organization, Type of Engagement, Information Dissemination, Consultation, Participation, Partnership, Communications, Behavior change, Education, Awareness Raising, Public Campaigns, Capacity, Knowledge and Research, Capacity Development, Knowledge Exchange, Learning, Theory of change, Adaptive management, Indicators to measure change, Innovation, Knowledge Generation, Gender Equality, Gender results areas, Participation and leadership, Access to benefits and services, Access and control over natural resources, Knowledge Generation and Exchange, Gender Mainstreaming, Sex-disaggregated indicators, Gender-sensitive indicators, Women groups, Focal Areas, Biodiversity, Protected Areas and Landscapes, Terrestrial Protected Areas, Community Based Natural Resource Mngt, Productive Landscapes, Mainstreaming, Forestry - Including HCVF and REDD+, Agriculture and agrobiodiversity, Species, Invasive Alien Species, Threatened Species, Biomes, Tropical Dry Forests, Financial and Accounting, Conservation Finance, Payment for Ecosystem Services, Forest, Land Degradation, Sustainable Land Management, Restoration and Rehabilitation of Degraded Lands, Integrated and Cross-sectoral approach, Community-Based Natural Resource Management, Sustainable Livelihoods, Income Generating Activities, Sustainable Forest, Sustainable Fire Management, Land Degradation Neutrality, Land Cover and Land cover change, Climate Change, Climate Change Adaptation, Disaster risk management, Livelihoods, Climate resilience, Climate Change Mitigation, Agriculture, Forestry, and Other Land Use, Financing, United Nations Framework Convention on Climate Change, Nationally Determined Contribution, Sustainable Development Goals

Type of Trust Fund	Project Duration (Months)
GET	60

GEF Project Grant: (a)	GEF Project Non-Grant: (b)
6,478,899.00	0.00
Agency Fee(s) Grant: (c)	Agency Fee(s) Non-Grant (d)
583,101.00	0.00
Total GEF Financing: (a+b+c+d)	Total Co-financing
7,062,000.00	50,960,000.00
PPG Amount: (e)	PPG Agency Fee(s): (f)
200,000.00	18,000.00
PPG total amount: (e+f)	Total GEF Resources: (a+b+c+d+e+f)
218,000.00	7,280,000.00
Project Tags	
CBIT: No NGI: No SGP: No Innovation: No Competitive Window: No	

Project Summary

Provide a brief summary description of the project, including: (i) what is the problem and issues to be addressed? (ii) what are the project objectives, and if the project is intended to be transformative, how will this be achieved? iii), how will this be achieved (approach to deliver on objectives), and (iv) what are the GEBs and/or adaptation benefits, and other key expected results. The purpose of the summary is to provide a short, coherent summary for readers. The explanation and justification of the project should be in section B “project description”.(max. 250 words, approximately 1/2 page)

The project aims to strengthen local co-governance and capacities to integrate ILM (integrated landscape management) solutions into forest restoration and biodiversity conservation in India, mainstreaming forest-fire mitigation alongside actions on other key drivers of degradation. Focusing on Jharkhand and Uttarakhand, it responds to compounding pressures - human-ignited fires, invasive alien species (e.g., lantana/snakeroot), encroachment and unsustainable extraction, and mining/linear infrastructure - now intensified by climate change. These threats have led to biodiversity loss and degradation, as well as depletion of carbon stocks, watershed services, and the livelihoods of over 275 million forest-dependent people in India.

The project will address these challenges by embedding ILM solutions into forest and biodiversity governance. First, it will institutionalize a cross-sectoral ILM architecture in each state. Participatory assessments and mapping will produce state ILM strategies that are mainstreamed into state instruments (e.g., State Biodiversity Strategy and Action Plans/SBSAPs, State Action Plan to Combat Desertification/SAPCDs, State Action Plans on Forest Fire Prevention, forest working plans, and decentralised development and conservation plans, community forest resource management plans) with budget tagging to drive a ≥25% increase (from PPG baselines) in ILM-aligned public spending. The national Early Warning System will also be linked to village ILM protocols via community communication hubs, drills and SOPs, converting alerts into coordinated, last-mile action. Second, the project will enable locally-driven ILM implementation: (i) at least 167,899 ha of critical PA landscapes adopt ILM strategies;

(ii) at least 300,000 ha of priority forests and production landscapes outside PAs are brought under improved management; and (iii) 2,500 households (~10,000 people; ≥50% women) become more resilient and gain nature-positive incomes. Community stewardship agreements, nurseries, and convergence finance (CAMPA, GIM, NRLM, CSR) will anchor the implementation of these landscape-level ILM models and contribute to Land Degradation Neutrality. It will also deliver carbon benefits of ~2.9 $MtCO_2e$ over 20 years (the target will be re-assessed and validated at PPG). Third, the project will facilitate systemic learning and adaptive management through knowledge documentation, multi-stakeholder workshops, and the development of five knowledge products. A national sustainability plan and policy guidance will be co-developed and endorsed by MoEFCC, while a national training curriculum on ILM based forest restoration and biodiversity conservation will be institutionalized for long-term capacity building.

By integrating scientific and traditional knowledge, fostering community ownership, and linking interventions to policy and financial mechanisms the project will reduce fire-related degradation, enhance ecosystem resilience, and ensure the sustainability and replication of fire-smart forest restoration models across India's vulnerable landscapes.

Indicative Project Overview

Project Objective

To strengthen integrated landscape management (ILM) for resilient forest management and biodiversity conservation, mainstreaming forest-fire mitigation and management, through local co-governance and capacities to address underlying drivers of biodiversity loss and degradation in critical ecosystems hosting globally significant biodiversity.

Project Components

Component 1. Improving Local Governance for ILM-based Forest Restoration and Biodiversity Conservation

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing ($)	Co-financing ($)
1,542,595.00	12,359,856.00

Outcome:

Outcome 1.1. Strengthened institutional frameworks and capacity to apply Integrated Landscape Management (ILM) that reduces biodiversity loss and degradation due to forest fire and other drivers through institutionalization of 'fire-smart' and other integrated solutions within ILM.

Indicators:

At least 10 state plans (SBSAPs, State Action Plan to combat desertification/SAPCDs, State Action Plans on Forest Fire Prevention, forest working plans, and decentralised development and conservation plans, community forest resource management plans) developed and/strengthened to institutionalize ILM (including forest 'fire-smart') actions.

25% increase (from baseline – TBD at the PPG) of annual state and sectoral budget allocated to ILM-aligned forest 'fire-smart' actions and other drivers of biodiversity loss and degradation

The National Early Warning System enhanced and linked to community ILM protocols and multi-sector response.

Output:

Output 1.1.1. Participatory landscape assessment and mapping conducted for developing state-level ILM strategies in Jharkhand and Uttarakhand, identifying detailed root causes / drivers (including fire regimes) of biodiversity loss and degradation, and high-risk zones in important forest, production landscapes, and other critical biodiversity areas.

Output 1.1.2. (Based on the results of Output 1.1.1.) State-level ILM strategies formulated for Jharkhand and Uttarakhand, mainstreaming 'fire-smart' solutions (defined to restore/maintain ecologically appropriate fire regimes) with explicit links to biodiversity outcomes.

Output 1.1.3. (Based on the results of Output 1.1.2) ILM strategies integrated into state instruments (SBSAPs, State Action Plans on Forest Fire Prevention, SAPCDs *State Action Plan to combat desertification,* forest working plans, CFR Community Forest Resource Management Plans, decentralised development and conservation plans), combining 'fire-smart' and other degradation driver-specific measures.

Output 1.1.4. Early warning system is enhanced through the creation of community communication hubs and capacity strengthening programs (protocols, joint drills, etc.) for ILM implementation (including forest fire mitigation and management).

Component 2. Enabling Community- Led ILM-based Forest Restoration and Biodiversity Conservation

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing ($)	Co-financing ($)
3,085,190.00	24,819,489.00

Outcome:

Outcome 2.1. Enhanced ecosystem and livelihood resilience in target landscapes through community-led ILM implementation that addresses forest fire and other drivers of biodiversity loss and degradation.

Indicators:

3 participatory ILM strategies adopted and implemented across 167,899 ha critical protected area (PA) landscapes by PA authorities, village-level governance mechanisms (Panchayats, Biodiversity Management Committees BMCs, Van Panchayats, etc.) and community stewardship.

200,000 ha of critical/degraded forests and 100,000 ha of production landscapes (outside PAs) brought under improved management through community-led implementation of ILM measures addressing biodiversity loss and degradation.

2,500 households (consisting of 10,000 people of which 50% are women) with improved incomes from nature- positive livelihoods.

Output:

Output 2.1.1. Participatory ILM strategies developed and implemented in the target landscapes. (Based on Output 1.1.2).

Output 2.1.2. Community conservation-restoration stewardship mechanisms established and financed via convergence with ILM strategies in the target landscapes.

Output 2.1.3. Key degraded landscapes brought under improved management through community-led implementation of ILM measures aligned with biodiversity outcomes.

Output 2.1.4. Nature-positive livelihoods strengthened and diversified through sustainable value chains (enterprises) and resource use.

Component 3. Project Knowledge Management & Monitoring (IUCN)

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing ($)	Co-financing ($)
524,482.00	

Outcome:

Outcome 3. Evidence-based decision-making and systemic learning facilitated, enabling replication of effective 'fire-smart' restoration-conservation models and traditional knowledge across India's vulnerable landscapes.

Indicators:

Five knowledge products (two featuring incorporation of traditional knowledge and practices) are developed and disseminated; and four exchange workshops arranged for knowledge sharing and policy dialogues.

One comprehensive sustainability plan developed through multi-stakeholder consultations, and a national policy guidance endorsed by MoEF&CC to enable the scale-up of 'fire-smart' forest restoration and biodiversity conservation models across states in India.

National training curriculum on 'fire-smart' forest restoration and biodiversity conservation institutionalized and applied across State Forest Training Academies, SIRDs, and national forestry institutions (IGNFA/FSI/NTCA).

Output:

Output 3.1. Knowledge products and learning exchanges developed to document and disseminate best practices.

Output 3.2. National sustainability plan and policy guidance co-developed with local stakeholders, detailing long-term funding strategies and convergence roadmaps (CAMPA, Green India Mission, NRLM, CSR, etc.) to support implementation and scale-up of 'fire-smart' forest restoration and biodiversity conservation actions.

Output 3.3. Training modules on 'fire-smart' forest restoration and biodiversity conservation developed, embedded into the curricula of relevant forestry and development training institutions, and disseminated for nationwide adoption.

Component 3. Project Knowledge Management & Monitoring (UNDP)

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing ($)	Co-financing ($)
833,002.00	11,340,655.00

Outcome:

Outcome 3.1. Evidence-based decision-making and systemic learning facilitated, enabling replication of effective ILM models and traditional knowledge across India's forest fire prone and critical ecosystems.

Indicators:

Five knowledge products (two featuring incorporation of traditional knowledge and practices) are developed and disseminated; and four exchange workshops arranged for knowledge sharing and policy dialogues.

One comprehensive sustainability plan developed through multi-stakeholder consultations, and a national policy guidance endorsed by MoEF&CC to enable the scale-up of ILM models that integrate fire-smart measures, as well as other integrated restoration-conservation measures, across states in India.

Training curriculum on "community led ILM models" (for forest fire prone and critical ecosystems to address biodiversity loss and degradation) institutionalized and applied across State Forest Training Academies, SIRDs, and national forestry institutions (IGNFA/FSI/NTCA).

Output:

Output 3.1.1. Knowledge of products and learning exchanges developed to document and disseminate best practices in forest fire prone and critical ecosystems.

Output 3.1.2. National roadmap for scale-up of community led ILM models and policy guidance co-developed with local stakeholders, detailing long-term funding strategies and convergence (CAMPA, Green India Mission, NRLM, CSR, etc.)

Output 3.1.3. Training modules on "community led ILM models" developed, embedded into the curricula of relevant forestry and development training institutions, and disseminated for nationwide adoption.

M&E

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing ($)	Co-financing ($)

92,556.00	

Outcome:

(IUCN)

Indicator:

Regular monitoring documented in PIR, MTR and TE reports

Output:

Output 3.4. Effective project implementation and adaptive management maintained through regular steering committee oversight, and project monitoring and evaluation.

M&E

Component Type	Trust Fund
Technical Assistance	GET
GEF Project Financing ($)	Co-financing ($)
92,555.00	

Outcome:

(UNDP)

Indicator:

Regular monitoring documented in PIR, MTR and TE reports

Output:

tput 3.4. Effective project implementation and adaptive management maintained through regular steering committee oversight, and project monitoring and evaluation.

Component Balances

Project Components	GEF Project Financing ($)	Co-financing ($)
Component 1. Improving Local Governance for ILM-based Forest Restoration and Biodiversity Conservation	1,542,595.00	12,359,856.00
Component 2. Enabling Community- Led ILM-based Forest Restoration and Biodiversity Conservation	3,085,190.00	24,819,489.00
Component 3. Project Knowledge Management & Monitoring (IUCN)	524,482.00	
Component 3. Project Knowledge Management & Monitoring (UNDP)	833,002.00	11,340,655.00
M&E	92,556.00	

M&E	92,555.00	
Subtotal	**6,170,380.00**	**48,520,000.00**
Project Management Cost	185,112.00	1,464,000.00
Project Management Cost	123,407.00	976,000.00
Total Project Cost ($)	**6,478,899.00**	**50,960,000.00**

Please provide justification

PROJECT OUTLINE

A. PROJECT RATIONALE

Briefly describe the current situation: the global environmental problems and/or climate vulnerabilities that the project will address, the key elements of the system, and underlying drivers of environmental change in the project context, such as population growth, economic development, climate change, sociocultural and political factors, including conflicts, or technological changes. Describe the objective of the project, and the justification for it. (Approximately 3-5 pages) see guidance here

A.1. Baseline Situational Analysis & Threats

India faces an escalating forest fire crisis, with 3.73 million hectares of forest area affected annually according to the India State of Forest Report,[1][1],[2][2] equivalent to 5% of the country's total forest cover. This environmental emergency shows distinct geographic concentration, with Odisha recording 51,968 fire incidents in 2021 alone,[3][3] Chhattisgarh losing 1,540 km² of forests to fires between 2019-2021,[4][4] and **Uttarakhand**'s (**the target geography of this project**) 2021 fires devastating 1,685 hectares of critical Himalayan oak forests.[5][5] Recent analyses identify **Jharkhand** (**the other target geography of this project**) as an emerging hotspot, where forest fires increased by 37% between 2019-2022, particularly affecting the Singhbum elephant corridor.[6][6] Nationwide, an analysis of ISRO's FAST 3.0 data reveal fire incidents now commence in February compared to the historic April-May onset. The year 2021 recorded 63,937 fires, indicating the highest since systematic monitoring began.[7][7] This expansion is most pronounced in central India's dry deciduous forests, where Madhya Pradesh has experienced 22% longer fire seasons[8][8] and Maharashtra shows a 143% intensification in fire radiative power since 2003.[9][9]

Fire is a natural ecological process in many Indian forest and savanna systems, and biodiversity often depends on fire occurring at appropriate seasons, frequencies, intensities, and spatial extents.[10][10] The concern (and the focus of this project) is not the presence of fire per se, but the documented shift toward altered fire regimes driven by human activities and climate stress (earlier seasonal onset, longer seasons, higher frequency and severity, and larger burned extents).[11][11] These regime changes are increasingly misaligned with ecological thresholds and recovery dynamics, with measurable consequences for species and habitats of global significance.[12][12]

A study in Global Ecology and Conservation[13][13] recorded a 20% decline in Hoolock gibbon populations in Northeast India due to post-fire canopy loss. Similarly, fire-induced habitat fragmentation in the Western Ghats has reduced endangered Lion-tailed Macaque (*Macaca silenus*) habitats by 15%.[14][14] The MoEFCC-FSI's 2021 report highlights that 87% of India's biodiversity hotspots are now fire-prone, with repeated burns associated with forest restoration with invasive species over native flora.[15][15] In Jharkhand, where nearly 30% of the state's area is under forest cover, forest fires are recurrent during the dry season. The Forest Survey of India (FSI) recorded over 2,500 fire alerts in 2021 alone, largely in Sal (*Shorea robusta*) and mixed deciduous forests. These fires exacerbate soil nutrient loss, reduce natural regeneration of Sal seedlings, and threaten critical habitats for elephants, sloth bears, and endemic medicinal plants. In sal-dominated mosaics of West Singhbhum, repeated late-dry-season burns, increased anthropogenic ignitions, and fine-fuel continuity along forest–farm edges have shortened fire-return intervals.[16][16] These changes are linked to sapling mortality, stalled sal recruitment, and fragmentation pressures within the Singhbhum elephant corridor, which signals a transition from ecologically tolerable surface fires to chronic degradation that erodes habitat quality and connectivity.[17][17] Meanwhile in Uttarakhand, fires are both more frequent and more ecologically disruptive due to the dominance of fire-prone chir pine (*Pinus roxburghii*) forests. In 2016, the state witnessed one of its worst fire seasons with over 1,900 incidents. Subsequent FSI assessments reveal that between 2017–2021, Uttarakhand consistently ranked among the top three fire-affected states in India. Fires here not only lead to biodiversity loss in oak (*Quercus spp.)* and rhododendron ecosystems but also degrade crucial watershed services for the Ganga basin, threatening water security downstream. In the mid-elevation pine-oak belt, frequent anthropogenic fires favor chir pine dominance and suppress oak (Quercus) regeneration, simplifying canopy structure and reducing litter moisture retention.[18][18] Biodiversity responses are frequency- and intensity-dependent: low-frequency, cool burns can maintain habitat heterogeneity, whereas high-frequency, late-season burns reduce tree diversity, slow post-fire recovery, and degrade niches for broadleaf-associated fauna and pollinators.[19][19]

These altered regimes also magnify carbon and livelihood risks by increasing biomass combustion, slowing biomass recovery, and destabilizing NTFP-dependent income systems.[20][20] In terms of carbon impact, the MoEFCC-FSI's 2022 report estimates that fires emit 0.5–1.2 million tons of CO_2 annually, potentially offsetting 12% of India's NDC carbon sink targets.[21][21] Peer-reviewed

research[22][22] reveals that degraded forests in Central India lose 50–70% of their carbon stocks after recurrent fires. Forest fires also bring negative impacts on livelihood; a 2022 study by Saha et al.[23][23], documents 40–60% income losses for tribal households in Odisha and Chhattisgarh due to depleted non-timber forest products (NTFPs), such as medicinal plants and mahua (*Madhuca longifolia*). Moreover, the rural households in fire-prone regions face increased food insecurity post-fires, as crops and fodder are destroyed. Such shocks will compel communities to intensify extraction of remaining forest products, expand into marginal lands, or adopt short-term coping strategies that undermine ecological sustainability. Over time, this erosion of livelihood security risks accelerating unsustainable harvesting, overdependence on fire-prone species, and even forest clearing for agriculture or fuelwood, thereby creating a feedback loop of degradation, deforestation, and increased vulnerability to future forest fires.

Besides forest fire, invasive alien species (IAS) are a primary non-fire driver of biodiversity loss in the project geographies. Across central India, *Lantana camara* invasion is associated with significantly lower tree species richness and total biomass carbon in invaded plots than in paired, uninvaded sites; effects extend to regeneration failures in multiple strata.[24][24] In the central Himalaya region (Kumaun), paired-plot analyses across oak (*Quercus leucotrichophora*), pine (*Pinus roxburghii*) and sal (*Shorea robusta*) forests show altered community composition and reduced regeneration where *Lantana* dominates.[25][25] National assessments/program documents also flag the scale of invasion; one synthesis estimated ~86,806 km^2 (≈38.8% of forest area) potentially affected by *Lantana* in India, with hotspots in protected and multiple-use forests.[26][26] Mechanistically, *Lantana* and *Chromolaena odorata* increase fine-fuel loads and continuity, elevating the probability and intensity of surface fires and complicating post-disturbance recovery; field work from northeast India also documents rising *Chromolaena* infestation in critical wildlife habitats over the past decade.[27][27] Together, these dynamics reduce native plant diversity, suppress tree recruitment, and lower aboveground carbon stocks in invaded stands. In both target landscapes, invasive thickets (e.g., Lantana/Ageratina) elevate fine-fuel loads and horizontal continuity, raising ignition probability and burn severity.[28][28]

Agricultural expansion and shortening fallows – another key driver of biodiversity loss and degradation in India - at the forest-farm interface interact with residue burning, open grazing, and cultivation on erodible slopes to degrade soils and habitats. In Uttarakhand, statewide USLE/RUSLE assessments indicate large areas classed as moderately severe (15-20 t ha^{-1} yr^{-1}), severe (20-40 t ha^{-1} yr^{-1}) and very severe (40-80 t ha^{-1} yr^{-1}) soil loss classes, with one statewide analysis estimating ≈6.7%, 8.8% and 32.7% of the state's area in those categories, respectively.[29][29] Residue burning contributes to nutrient and soil-organic-carbon loss and severe seasonal air pollution episodes, whereas alternative practices (mulching or in-situ incorporation) can raise SOC by double-digit percentages over time.[30][30] At national scale, satellite assessments in the Desertification and Land Degradation Atlas of India (ISRO/SAC, 2021) report ≈97.85 million ha (≈29.7% of India's area) undergoing land degradation in 2018-9, with eastern plateau states such as Jharkhand among high-affected states.[31][31] These pressures reduce infiltration, increase runoff and sediment delivery to streams, and lower soil moisture and carbon-conditions that, in turn, intensify late-season fire risk and impair ecosystem productivity.

Furthermore, forest encroachment and unsustainable extraction of fuelwood, fodder and NTFPs concentrate around forest-fringe settlements where clean-energy access remains uneven; NFHS-5 indicates that roughly 40–45% of Indian households still rely on solid/unclean cooking fuels, with wide rural-urban disparities.[32][32] In Jharkhand's Singhbhum-Saranda landscape, multi-decadal remote-sensing analyses attribute marked forest fragmentation to iron-ore mining and associated infrastructure, while Project Elephant's 2023 corridor atlas documents corridor pinch-points and obstruction risks in mineralized belts that are critical to wide-ranging fauna such as elephants.[33][33] Also, as reference from semi-arid region of India, *Prosopis juliflora* invasion is linked with grassland conversion, altered water balance and localized groundwater declines, underscoring the need for IAS control and restoration mosaics that balance ecological and livelihood outcomes.

The convergence of forest fires, IAS, and other unsustainable human activities are leading to severe ecological and socioeconomic threats, which can negatively impact the country's biodiversity conservation gains, as well as NDC (Nationally Determined Contribution) and land degradation neutrality targets. This condition is especially evident in the target sites of this proposed project, **Jharkhand and Uttarakhand**, driving severe biodiversity loss and degradation, as well as carbon emissions, and livelihood disruptions.

Jharkhand

Jharkhand records 800–1,200 annual forest fire incidents,[34][34] primarily concentrated in the Sal (*Shorea robusta*) forests. These fires are exacerbated by anthropogenic land-use changes, including the shortening of traditional jhum (shifting cultivation) cycles from 10–15 years to just 3–5 years, which reduces soil moisture and increases flammability.[35][35] Mining activities in the Jharia coal belt further degrade forest resilience, with over 150 illegal coal mines operating in fire-prone zones.[36][36] Additionally, traditional Mahua (*Madhuca longifolia*) flower collection, involving controlled burns, frequently escalates into uncontrolled wildfires. This has affected 30% of NTFP-dependent households.[37][37],[38][38] According to a study by Ahmand and Goparaju (2017)[39][39], the district-wise analysis of forest fire frequency data from 2005 to 2016 showed that Paschim Singhbhum accounted for 30.48% of all recorded incidents, followed by Palamu with 18.39% and Garhwa with 8.98%. These high forest fire-prone districts in Jharkhand include the Saranda Forest, renowned for its rich biodiversity and high-quality sal stands.

Beyond the impact of forest fires, there are also significant forest-structure and carbon losses in Lantana-invaded plots in central India (lower tree species richness and total biomass carbon relative to uninvaded sites).[40][40] This is with *Lantana camara* already present across ~13% of Jharkhand's geographical area (circa 2020) and projected to expand to 20–26% by 2050, and with a majority of Betla National Park mapped in high–critical invasion risk (>~75% of the park affected).[41][41] Moreover, state-wide land-degradation hotspots dominated by water erosion as mapped in ISRO's Desertification and Land Degradation Atlas now cover roughly 5.48 million ha, or about 68–69% of Jharkhand's total area.[42][42] Adding to this, detectable habitat fragmentation from open-cast mining and linear infrastructure in West Singhbhum over 1987–2021 reflected in dense forest shrinking from

18.23% to 9.16% of the landscape between 1997–2017, while scrub/blank expanded from 12.05% to 22.24% and built-up from 3.94% to 7.07%.[43]

Together, these pressures drive **measurable biodiversity decline** (i.e., suppressed sal regeneration, reduced NTFPs, and disrupted elephant movement) along with **chronic carbon losses** and **greater income volatility for Adivasi and forest-fringe households**.[44] Because these forests and ecosystems both sustain local livelihoods and anchor habitat for wide-ranging wildlife, continued degradation will compound species losses and erode watershed and corridor functions**. An integrated landscape management response is therefore essential: including but not limited to forest fire mitigation and management solutions;** targeted IAS control with assisted natural regeneration; regenerative agriculture and agroforestry; soil- and water-conservation on erodible slopes and farm–forest ecotones; community energy and fodder transitions to reduce fuelwood pressure; and ex-mine-site restoration paired with legally secured wildlife corridors.

Uttarakhand

Uttarakhand is currently facing a rapidly escalating forest fire crisis, with recorded incidents surging from 922 in 2002 to a staggering 41,600 in 2019. This fire crisis has led to changes in forest structure and ecosystem resilience.[45] Among others is the Chir Pine (*Pinus roxburghii*) forests, where the resin-rich litter and dry needles create highly combustible conditions that intensify fire behavior.[46],[47] Climate-related factors have amplified this threat; where pre-monsoon dry spells, elevated temperatures, and diminished rainfall create a perfect fire-ignition window, accounting for over half the variation in fire occurrences in Uttarakhand.[48],[49] Between November 2023 and June 2024, Uttarakhand experienced 11,256 forest fire incidents across 11 of its 13 districts, resulting in 180,890 ha of forest damage; this is one of the highest fire-impacted rates among Indian states.[50],[51]

Adding to this situation is the widespread invasion by *Lantana camara* and *Ageratina Adenophora*, which reshapes understories and suppresses regeneration across oak (*Quercus leucotrichophora*), pine, and sal forests. State-specific niche modelling identifies high-suitability invasion zones across the Rajaji-Corbett and Upper Ganga landscapes: areas where invasion pressure is expected to intensify under warming scenarios.[52] Plot studies from the western Himalaya show that invaded stands have significantly lower tree richness and impaired seedling/sapling recruitment, alongside reduced above-ground carbon relative to uninvaded plots.[53] National assessments corroborate the scale of *Lantana* spread (≈86,806 km²; ~39% of forest area potentially affected),[54] and experimental/observational work links dense *Lantana* thickets to elevated fine-fuel loads and greater fire susceptibility.[55]

Additionally, agriculture-forest interface degradation is also ongoing. Steep agricultural expansion on erodible hillslopes, residue burning and open grazing are accelerating soil loss and depleting soil organic carbon (SOC).[56][56] Statewide USLE/RUSLE applications indicate that roughly half of Uttarakhand exceeds the 11.2 t ha^{-1} yr^{-1} soil-loss tolerance, with severe classes (≥20–40 t ha^{-1} yr^{-1}) and very severe classes (≥40–80 t ha^{-1} yr^{-1}) concentrated in vulnerable sub-basins;[57][57] one analysis estimated ≈6.7%, 8.8% and 32.7% of the state's area in the 15–20, 20–40 and 40–80 t ha^{-1} yr^{-1} classes, respectively.[58][58] These erosion and SOC hotspots degrade riparian condition and reduce reservoir storage, undermining downstream water security for the Ganga basin.[59][59] In parallel, carbon-stock losses have been quantified across sal, pine and mixed forests during recent fire years, while chronic grazing and lopping further depress above-ground biomass and recovery potential.[60][60]

The ecological and livelihood consequences are severe. These drivers have fragmented important habitats, especially affecting valuable oak and Chir Pine stands that support diverse species and stabilize watersheds.[61][61],[62][62] Meanwhile, carbon stored in forest biomass is being released into the atmosphere, undermining Uttarakhand's capacity for carbon sequestration and contributing to broader climate change risks.[63][63] Additionally, impacts on local communities are tangible; forest fires erode the natural resource base essential for livelihoods, including fuelwood, fodder, and NTFPs, and disrupt ecosystem services that rural and tribal communities depend on.[64][64] An integrated landscape approach in Uttarakhand should therefore combine fire mitigation and management solutions; invasive-shrub suppression and native understory recovery in oak–pine systems; contour-based soil and water conservation on farm-forest ecotones; regulated grazing and community fuelwood transition; and corridor and springshed restoration to secure biodiversity, carbon and livelihood outcomes.

Underlying Drivers

To sum up the baseline situation above, the ongoing biodiversity loss and degradation stem from the country's (also the target states') limited capacities to address the following critical drivers:

1) **Invasive alien species (IAS) increasing flammability and suppressing recovery**: Dry-forest invasions by Lantana camara (and co-occurring Chromolaena odorata) are associated with lower tree species richness, reduced above-ground carbon, and impaired seedling/sapling recruitment compared with uninvaded plots. Mechanistically, these shrubs increase fine-fuel continuity and fire susceptibility, slowing post-disturbance regeneration. A national synthesis estimates approximately 86,806 km² (around 39% of forest area) potentially affected by Lantana, with hotspots in both protected and multiple-use forests.

2) **Agricultural expansion, shortened fallows, residue burning, and open grazing degrading soils and carbon:** At the forest–farm interface, shortening cycles (including Jhum/Kuruwa in tribal belts), residue burning, and grazing on erodible slopes accelerate soil erosion and soil-organic carbon (SOC) loss, reduce infiltration, and increase sediment delivery—conditions that also heighten late-season fire risk.

3) **Forest encroachment and unsustainable fuelwood/fodder/NTFP extraction near forest fringes:** Where clean-energy access remains uneven, continued reliance on solid fuels (roughly 40–45% of households nationally) concentrates biomass extraction pressure around forests, undermining regeneration and habitat quality—especially in sal-dominated mosaics and oak–rhododendron belts that provide key ecosystem services such as watershed regulation.

4) **Mining and linear infrastructure fragmenting habitats and corridors:** In Jharkhand's Singhbhum–Saranda, multi-decadal remote-sensing shows marked fragmentation from open-cast mining and linear intrusions, with dense forest shrinking from about 18% to about 9% of the landscape between 1997 and 2017, while scrub/blank and built-up areas expanded. Corridor atlases highlight pinch points in mineralized belts critical to wide-ranging fauna (for example, elephants), reducing connectivity and resilience.

5) **Climate variability and fire-weather as a risk amplifier (not the sole driver):** Warming, earlier fire-season onset, and more frequent extreme fire-weather days increase the probability that small ignitions in degraded/IAS-invaded areas become damaging fires—compounding the impacts above on biodiversity, carbon stocks, and rural livelihoods.

These intertwined drivers justify an integrated landscape management (ILM) response across forest and production landscapes: IAS control and assisted natural regeneration; fire-smart, climate-smart and soil-conserving agriculture and agroforestry; residue non-burn practices; slope and riparian soil-water conservation; regulated grazing; sustainable community resource extraction; and restoration in mining-affected blocks with legally secured wildlife corridors.

The persistence of these underlying drivers, and the capacity to implement an integrated landscape management (ILM) response across forest and production landscapes, will determine the trajectory of India's (Jharkhand and Uttarakhand's in particular) ecosystems, carbon stocks, and rural livelihoods. How effectively these drivers are addressed, or left unchecked, will shape future socio-ecological outcomes, as described in the following future scenarios.

Business-as-Usual Scenario (BAU)

Without GEF support, fire remains a visible symptom while the root drivers worsen. Invasive shrubs (e.g., Lantana/Ageratina) continue to expand into sal, oak and pine mosaics; shortened fallows, residue burning and open grazing intensify soil loss and depress soil organic carbon; encroachment and heavy fuelwood dependence persist around forest fringes; and mining/linear intrusions further fragment habitats and corridors. Climate-amplified dry spells raise the probability that small ignitions in degraded, fuel-loaded understories become damaging fires. Expected inter-immediate outcomes: increasing IAS cover in priority blocks; more area shifting into severe/very-severe erosion classes; stagnant or declining SOC; continued corridor pinch-points; rising burn severity near forest–farm ecotones; and livelihood stress pushing households toward unsustainable extraction. Expected long-term impacts: accelerated biodiversity loss, erosion of carbon sinks, and mounting shortfalls against NDC and land-degradation neutrality targets.

Best-Case Scenario (transformational ILM)

State systems and community institutions adopt ILM at scale across forest and production landscapes. IAS control and assisted natural regeneration are sustained; residue non-burn practices and climate-smart/agroforestry models take hold along forest edges; slope and riparian soil-water conservation is mainstreamed into working plans and village development plans; clean-energy and fodder transitions reduce pressure on nearby forests; and mining-affected blocks undergo ecological restoration with legally secured wildlife corridors. Early-warning and community prevention/response are integrated, but fire is only one part of a broader resilience strategy. Expected inter-immediate outcomes: measurable reductions in IAS cover across high-risk polygons; a step-down in the share of land in severe erosion classes; SOC increases on treated farms; year-on-year decline in encroachment alerts and residue-burn hotspots; restored corridor functionality; and diversified, fire-safe value chains raising household incomes. Expected long-term impacts: resilient forests, habitats and other production ecosystems, strengthened carbon stocks, and durable livelihood gains aligned with NDC/LDN trajectories.

Realistic Scenario (pragmatic ILM scale-up)

Progress is uneven but meaningful. Priority forests, habitats and other production ecosystems receive sustained IAS suppression and ANR; residue non-burn and agroforestry spread through targeted incentives; contour/terrace repair, vegetative bunds and recharge structures are installed on the most erodible slopes; village energy/fodder interventions reduce local extraction pressure; and corridor management is piloted where mining/linear pressures are acute. Early-warning and community fire prevention operate in selected blocks; state instruments (SBSAPs, SAPCDs, State Fire-Prevention Plans, forest working plans, decentralized/community resource plans) are updated in phases; and co-financing is aligned (CAMPA, Green India Mission, NRLM, CSR). Expected inter-immediate outcomes: partial but clear reductions in IAS cover in treated areas; a shift of high-risk sub-basins out of very-severe erosion classes; modest SOC gains on participating farms; fewer residue-burn events in targeted landscapes and villages stabilization of burn severity near treated forest-farm interfaces; and incremental improvements in corridor permeability. Expected long-term impacts: Biodiversity losses slow and begin to reverse in project landscapes, while hotspots outside the program footprint still require further investment in capacity, governance, and cross-sector coordination to lock in gains.

The realistic scenario is the most attainable pathway and can be realized through this project with GEF investment. By **mainstreaming ILM solutions into forest restoration and biodiversity conservation**, the project intends to enhance ecosystem resilience, strengthen community-based landscape management, and reduce the vulnerability of both livelihoods and critical habitats. Achieving this scenario, however, requires confronting the deep-rooted structural and institutional barriers that have long hindered effective biodiversity and landscape governance in India. Effectively addressing the complex interplay of threats and root causes driving biodiversity loss and degradation is critical for safeguarding India's ecologically sensitive landscapes. This escalating crisis demands urgent integration of ILM strategies into ecosystem restoration frameworks, which depends on addressing the planning, capacity, and livelihood barriers that perpetuate vulnerability:

Barriers

- **Barrier 1: Constrained governance and planning for ILM implementation:** Existing biodiversity and restoration programs rarely operationalize one cross-sector ILM strategy linking forest and production landscapes; instead, guidance is fragmented across instruments (SBSAPs, fire plans, SAPCDs, working plans) and applied unevenly. India's national reporting under the CBD highlights the need for coherent, cross-sector mainstreaming and uneven subnational capacities to natural resource management plans.[65][65] For example, in fire-prone states, such as in Jharkhand and Uttarakhand, species choices and silvicultural prescriptions can inadvertently raise flammability (e.g., resinous, slow-decomposing pine litter that maintains elevated surface fuels), underscoring the need for e.g., fire-smart ILM rather than single-threat programs.[66][66]
- **Barrier 2: Gap in cross-sector coordination at the land uses (e.g., forest-farm-mining-infrastructure) interface**: Agriculture, rural development, energy, mining and transport agencies typically plan and budget in parallel, sustaining practices that degrade edges and corridors (e.g., residue-burning hotspots, biomass extraction near forests) and creating corridor pinch-points from linear infrastructure. The Government of India's corridor atlas documents ~150 elephant corridors and widespread risks from roads, rail, and power lines.[67][67] For example, in West Singhbhum (Jharkhand), multi-decadal remote sensing shows detectable forest fragmentation tied to open-cast mining and linear intrusions, reinforcing the need to align mining regulation, reclamation, and corridor conservation under an ILM umbrella.[68][68] Another example, reviews of crop-residue burning trace the problem to policy and market incentives, indicating durable change needs agriculture-forestry-rural development convergence.[69][69]
- **Barrier 3: Limited implementation of community co-governance and inclusion:** Institutions such as Gram Panchayats, Van Panchayats, and BMCs are often confined to operational tasks, with restricted roles in joint planning, decision-making and benefit sharing, despite their centrality to ILM implementation. Empirical work on Uttarakhand's Van Panchayats shows low women's representation in leadership and deliberation, weakening uptake of practices that depend on daily resource stewards.[70][70] Broader syntheses on gender and local forest governance show that women's effective

participation improves conservation outcomes, yet remains inconsistent in practice.[71][71] Moreover, local communities and tribal people, women and youth, despite being primary users of forest and water resources, are under-represented in governance and value chains. This weakens social legitimacy and lowers adoption of ILM practices.

- **Barrier 4: Technical and financing gaps for ILM practices**: Sub-national level personnel (especially at the village level) and communities lack sustained capacity and financing to implement ILM-based forest restoration and biodiversity conservation at scale. Moreover, early-warning system is not consistently linked to last-mile community protocols.
- **Barrier 5: Limited recognition and use of traditional knowledge in ILM formulation and implementation**: Across many parts of India, despite the rich repository of traditional ecological knowledge related to sustainable landscape management and forest stewardship, this knowledge remains significantly underutilized in formal management mechanisms and decisions. Although communities (tribal groups) often harnessed nuanced knowledge for sustainable forest and ecosystem maintenance over generations, their insights have been largely marginalized in forest institutional planning and management frameworks. Consequently, the potential of traditional knowledge to contribute to ILM design and implementation, biodiversity conservation, and effective early warning system remains largely unrealized.
- **Barrier 6: Lack of integration of ILM solutions in local livelihood practices**: Many tribal households in India rely on critical forest species and lac host trees for their non-timber forest product (NTFP)-based incomes, yet they often lack adequate training in sustainable and biodiversity-responsive harvesting procedures. Livelihood options remain narrowly concentrated on seasonal collection of products such as mahua flowers, tendu leaves, amla, tamarind, and cashew, with limited diversification towards e.g., fire-resilient species or alternative forest-based activities. Traditional practices, such as the manual collection of mahua flowers, persist despite the introduction of collection nets, largely due to limited awareness of their proper use and uncertainties regarding their durability, transportability, and effectiveness. Moreover, communities rarely benefit from improved collection techniques, livelihood diversification, or value addition, with most NTFPs sold in raw form at low market prices. These constraints reduce both the resilience of rural livelihoods and the integration of ILM practices into forest-based and non-forest-based economies, thereby perpetuating vulnerability to recurring forest fires and other drivers.

A.2. Project's Approach & Baseline Investments

As previously mentioned, the key to effectively tackle forest fire-induced degradation is to address the barriers above. In this regard, this proposed project (ACT4FIRE) and its interventions aim to support the Government of India to overcome those barriers and facilitate fire-resilient conservation and restoration of important ecosystems and biodiversity in forest-fire vulnerable landscapes. To achieve this the project will pursue the following approaches:

1. Strengthening local institutional mechanisms and capacity to integrate ILM solutions in ecosystem and biodiversity restoration and conservation programs/actions.
2. Facilitating locally led ILM actions and solutions for ecosystem and biodiversity restoration and conservation to enhance ecological and livelihood resilience.
3. Enhancing knowledge sharing and learning to optimize durability and scape of impacts beyond the project's geography.

The project's activities are designed to promote meaningful engagement and participation of all relevant stakeholders (the details will be explored in Part B), ranging from government entities, CSOs/NGOs, private sector, research institutions and most importantly, local communities. The project will align with the relevant government policies and programs, and build on the baseline and ongoing investments, both GEF and non-GEF, and on lessons learned from previous projects related to forest-fire in the country and region.

Government's policies and commitments:

Enabling government policies/action plans:

- **National Forest Policy, 1988:** The policy sets the national goal of attaining one-third of land under forest/tree cover; in mountainous regions, the target is two-thirds cover to preserve fragile ecosystems. It champions community involvement in forest protection and regeneration, particularly among tribal and forest-fringe communities. It supports

benefit-sharing schemes and local village-level management. This led to the institutionalization of Joint Forest Management (JFM) in the 1990s under which local committees co-manage forests alongside government agencies.

- **National Wildlife Action Plan (2017–2031):** Encourages landscape-level biodiversity conservation, corridor restoration, and human-wildlife coexistence strategies.
- **Nationally Determined Contribution (NDC):** The Government of India is committed to creating 2.5-3 billion tons of additional carbon sink by 2030, with forest fire prevention listed as one of the key strategies.
- **Land Degradation Neutrality (LDN):** India's LDN target to restore 26 million hectares of degraded land by 2030.
- **National Afforestation Programme (NAP):** Focuses on restoration of degraded forest lands through participatory mechanisms (JFMCs/Van Panchayats).
- **National REDD+ Strategy (2018):** Focuses on reducing emissions from deforestation and forest degradation while enhancing biodiversity co-benefits and community participation.
- **National Action Programme to Combat Desertification (NAPCD) (UNCCD) (2024):** Targets restoration of degraded land and sustainable land management; ILM can directly contribute to India's LDN targets.
- **National Biodiversity Strategy Action Plan (NBSAP):** mainstreams biodiversity across sectors and planning instruments. This includes integrated land/sea-use planning, ecosystem restoration, control of invasive alien species (IAS), and expansion/management of area-based conservation (including corridors and OECMs). The 2014 NBAP Addendum (12 National Biodiversity Targets) embeds targets on halting habitat degradation/fragmentation and managing working landscapes sustainably; India's updated NBSAP (2024) keeps these pillars and explicitly flags integrated land/sea planning and restoration as priority targets aligned to the KM-GBF.
- **Jharkhand's State Biodiversity Strategy Action Plan**: emphasizes biodiversity inventory and monitoring, in-situ/ecosystem restoration, sustainable use/NTFPs, community institutions (BMCs, PBRs), awareness, and legal/management measures - i.e., the ingredients needed to knit forests-farms-mined areas into a single landscape planning frame. In practice this aligns with ILM by coupling degraded-land restoration and soil-water conservation with community co-governance and sustainable value chains in a mining-affected, forest-fringe context.
- **Uttarakhand's State Biodiversity Strategy Action Pla**n: the SBSAP is being updated to align with India's NBSAP; the process and recent Board documents highlight: (i) habitat/corridor conservation across Himalayan forest-pasture-river systems; (ii) ecosystem restoration and financing (e.g., under SECURE Himalaya landscapes); (iii) strengthening ABS, BMCs & PBRs; and (iv) mainstreaming biodiversity into state sectoral plans, together forming the backbone for ILM that addresses fire, IAS, erosion/desertification, and development pressures.
- **National Forest Fire Action Plan:** Formulated by the Forest Protection Division of MoEFCC,in April 2018; its **o**bjectives include: 1) Minimizing forest fire incidences and restoring forest productivity; 2) Institutionalizing partnerships with forest-fringe communities; 3) Developing fire danger rating and forecasting systems; 4) Leveraging modern technologies (e.g., GPS, GIS, remote sensing).
- **Jharkhand's State Forest Fire Action Plan:** The state utilizes Jharkhand CAMPA, set up in 2009, to fund forest conservation, compensatory afforestation, ecosystem services, and capacity building. Jharkhand is addressing environmental fire-prone hazards such as the Jharia underground coal mine fire, with a revised Jharia Master Plan (₹5,940 crore) focusing on fire control and community-based forest rehabilitation.
- **Uttarakhand's State Forest Fire Action Plan**: The state government has issued orders to appoint district-level nodal officers and hold pre-fire season preparedness reviews in sensitive forest districts. Implementation of the Sheetalakhet model (originally from Almora), promoting community participation via Forest Fire Management Committees and self-help groups, is being replicated statewide. State innovations include revival of fire lines (firebreaks), development of an integrated command-and-control center and launch of a Forest Fire Uttarakhand mobile app for alerts involving community stakeholders. To reduce fuel load and engage communities, the government increased pine-needle collection rates and compensation (from ₹3/kg to ₹10/kg) and hired 4,500 fire watchers at ₹11,000/month. Restoration of fire lines (400 km) that had lapsed due to past restrictions has commenced in response to rising fire incidents.
- **Forest Rights Act:** FRA rights-holders can have access to restoration-linked livelihood activities by including them in the Community Forest Resource Management plans (developing nurseries, plantations of endemic species, eco-restoration of the degraded sites). It also provides a legal basis for community monitoring and governance, including that of forest fire management.
- National Action Plan to Combat Desertification, 2023

-

<u>Existing government programs:</u>

1. Centrally Sponsored Scheme

(i) Forest Fire Prevention & Management: Governed by the Forest Protection Division, MoEFCC, this scheme supports State/UT governments in managing all stages of forest fire-prevention, preparedness, suppression, and post-fire restoration. Key components include:

- Development of fire danger forecasting systems using modern tech (remote sensing, GIS, GPS)
- Creation and maintenance of fire lines, firefighting infrastructure, and engagement of fire watchers
- Capacity building, community awareness, and incentives for local participation
- Funds distribution via Central sector (e.g., research, database, forecasting) and State sector (field action items)
- Special funding ratios: e.g., Uttarakhand receives 90% central share due to its special category status.

(ii) Forest Fire Alerts via FS: The Forest Survey of India (FSI) provides near real-time forest fire alerts using satellite data (MODIS, VIIRS) to state forest departments and registered users through SMS and email.

(**iii) National Natural Resources Management System (NNRMS):** This initiative supports forest fire surveillance, mapping, and data management via remote sensing and regional processing centers across India.

(iv) Social Forestry & Joint Forest Management Programs (MoEFCC): The Joint Forest Management (JFM) program came into implementation in 1990. The programs allow the state forest departments and local communities to take part in management of degraded or deforested forests together.

(v) National Mission for a Green India or 'Green India Mission' (MoEFCC): The Green India Mission (GIM) is one the eight missions outlined under the National Action Plan on Climate Change (NAPCC). It aims at "protecting, restoring and enhancing India's diminishing forest cover and responding to climate change" by increasing green cover across India by five million hectares (mha) and improve the quality of existing green cover on another five mha, while improving ecosystem services like carbon sequestration, hydrological services and biodiversity and provisioning services like fuel, fodder, and timber and non- timber forest produces (NTFPs). The mission is also charged with increasing forest-based livelihood incomes for about three million households.

(vi) National Mission for Sustainable Agriculture (NMSA) (Ministry of Agriculture): a centrally sponsored mission under the National Action Plan on Climate Change that aims to make Indian agriculture more productive, sustainable, and climate-resilient, with a special focus on rainfed areas.

2. Jharkhand state: The Cabinet Committee on Economic Affairs, has approved the Revised Jharia Master Plan (JMP) for addressing issues related to fire, land subsidence, and the rehabilitation of affected families in the Jharia Coalfield. The total financial outlay for the implementation of the revised plan is Rs.5,940.47 crore. The phase-wise approach shall ensure that handling of fire and subsidence and rehabilitation of the affected families will be done on priority-basis from the most vulnerable sites. The Revised JMP lays a much stronger emphasis on sustainable livelihood generation for families being resettled under the plan. Targeted skill development programs are to be undertaken, and income-generating opportunities will be created to ensure economic self-reliance of the rehabilitated families.

3. Uttarakhand State: In Uttarakhand, the Forest Department has adopted a multi-pronged approach to forest fire management that integrates technology, planning, ecological restoration, and community participation. The Uttarakhand Forest Fire Reporting & Monitoring App enables real-time uploading of field data, volunteer coordination, and rapid notification of stakeholders during fire incidents. Complementing this, the Department publishes annual State-Level Forest Fire Management Plans, field manuals on fire control protocols, and official directives, all accessible through its website (forest.uk.gov.in). On the ground, traditional fire lines are being revived, with nearly 400 km of colonial-era firebreaks restored to prevent fire spread. Innovative measures such as eco-friendly pine-needle check dams further contribute by repurposing flammable pine litter into soil and water conservation structures, simultaneously reducing fuel loads. At the community level, Gram Panchayat Forest Fire Prevention Committees are being established, engaging local leaders, youth groups, and women's collectives, with financial incentives of up to ₹30,000 per cluster to strengthen grassroots fire prevention efforts

4. CAMPA-based Afforestation and Restoration: Jharkhand utilizes its Compensatory Afforestation Fund Management and Planning Authority (CAMPA) for funding forest restoration, ecosystem services, and capacity building.

5. Mahatma Gandhi National Rural Employment Guarantee Scheme (MG-NREGA) (Ministry of Rural Development): The Mahatma Gandhi National Rural Employment Guarantee Scheme has evolved as a major program for regeneration of natural resources in the rural part of India. While this program guarantees 100 days of unskilled job per year for every rural household, it also has played crucial role in creating individual and community level rural assets. These assets are largely constructed to re-

generate local natural resources. The 2022-23 budgetary allocation for MGNREGA was maintained at the same Rs.73,000 crore level, even though the previous year's revised estimates were 25% higher at Rs. 98,000 crores.

-

Ongoing GEF-investment: (i) Promotion of Sustainable Food Systems in India through Transforming Rice-Wheat Systems (FOLUR India) - GEF ID 10480 (FAO, MoAFW) - focusing on ILM's smart agriculture and agroforestry; (ii) Sustainable Management and Restoration of Degraded Landscapes for Achieving LDN in India - GEF ID 10876 (UNDP, MoEFCC) - focusing on land degradation neutrality, soil-water conservation and restoration monitoring, and co-finance convergence for ILM restoration blocks; (iii) Strengthening Conservation and Resilience of Globally-Significant Wild Cat Landscapes - GEF ID 10235 (UNDP & WWF-US, MoEFCC) - focusing on corridor/connectivity strategies; (iv) Enhancing the conservation and sustainable use of biodiversity to meet India's commitment to the Kunming-Montreal Global Biodiversity Framework targets by 2030 (UNDP & MoEFCC), focusing on PA restoration, improved management and financing, as well as OECM creation and financing; (v) BIOFIN (UNDP) focusing on biodiversity financing.

Other Non-GEF Investments: i) Integrated Tiger Habitat Conservation Programme (ITHCP) (KfW and IUCN) focusing on tiger conservation, recovery and habitat management across 8 South Asian countries; (ii) Satoyama Initiative focusing on the implementation of the integrated management of socio-ecological production landscapes and seascapes.

---

[1] Forest Survey of India. (2022). India State of Forest Report. Ministry of Environment, Forest and Climate Change, Government of India.

[2] Bahugunaand VKA, Upadhyay A. Forest fires in India: Policy initiatives for community participation. Int. Forestry Review. 2002; 4(2):122–7. Crossref

[3] Forest Survey of India. (2022). Technical Report 118: Forest Fire Monitoring System.

[4] Forest Survey of India. (2022). India State of Forest Report. Ministry of Environment, Forest and Climate Change, Government of India.

[5] Uttarakhand Forest Department. (2022). Annual forest fire damage assessment report 2021 (Report No. UFD/FIRE/2022-03). Government of Uttarakhand.

[6] Jharkhand Space Applications Centre. (2023). Forest Fire Atlas of Jharkhand 2019-2022.

[7] Forest Survey of India. (2022). India State of Forest Report. Ministry of Environment, Forest and Climate Change, Government of India.

[8] Srivastava, A., et al. (2023). 'Changing fire regimes in central Indian forests.' Journal of Environmental Management, 45(3), 112-125.

[9] Vadrevu, K.P., et al. (2022). 'Trends in fire radiative power across Indian states.' Remote Sensing of Environment, 271, 112893.

[10] He, T., Lamont, B. B., & Pausas, J. G. (2019). Fire as a key driver of Earth's biodiversity. Biological Reviews, 94(6), 1983–2010.; Kelly, L. T., et al. (2020). Fire and biodiversity in the Anthropocene. Science, 370(6519).

[11] Qayyum, A., et al. (2023). Escalating fire-weather danger and lengthening pre-monsoon fire season across India. Communications Earth & Environment, 4, 360.

[12] Qayyum, A., et al. (2023). Escalating fire-weather danger and lengthening pre-monsoon fire season across India. Communications Earth & Environment, 4, 360.; Fulé, P. Z., Garkoti, S. C., & Semwal, R. L. (2021). Frequent burning in chir pine forests, Uttarakhand, India. Fire Ecology, 17, 20.

[13] Gopalakrishnan, R., Sarma, K., & Krishnamurthy, R. (2020). Impacts of recurrent fires on Hoolock gibbon populations in Northeast India. Global Ecology and Conservation, 24, e01328.

[14] Singh, M., Kumara, H. N., & Sharma, A. K. (2021). Habitat fragmentation of Lion-tailed Macaques (Macaca silenus) in fire-affected Western Ghats. Journal of Threatened Taxa, 13(8), 19287–19294.

[15] Forest Survey of India. (2021). India State of Forest Report. Ministry of Environment, Forest and Climate Change, Government of India.

[16] Ahmad, F., & Goparaju, L. (2017). Forest fire patterns and hotspots in Jharkhand, India (2005–2016). Spatial Information Research, 25(6), 941–951.; Forest Survey of India (2019–2023).

[17] Forest Survey of India (2019–2023). State of Forest Reports / Fire alert dashboards. Dehradun: FSI. https://fsi.nic.in; MoEFCC & Project Elephant/Wildlife Trust of India (2023). Right of Passage: Elephant Corridors of India (2nd ed.). New Delhi.

[18] Singh, R. D., Gumber, S., Ram, J., & Sundriyal, R. C. (2023). Chir pine forest and pre-monsoon drought determine spatial and temporal patterns of fires in Uttarakhand Himalaya. Tropical Ecology, 64(2), 241–258.; Das, A., et al. (2021). Expansion of pine into mid-elevation Himalayan oak forests: patterns and drivers in a multiple-use landscape. Forest Ecology and Management, 497, 119491.

[19] Kelly, L. T., et al. (2020). Fire and biodiversity in the Anthropocene. Science, 370(6519), eabb0355.; Das, A., et al. (2021). Expansion of pine into mid-elevation Himalayan oak forests: patterns and drivers in a multiple-use landscape. Forest Ecology and Management, 497, 119491.

[20] Singh, S., et al. (2024). Forest fire frequency reduces above-ground carbon stocks in Western Himalaya. Frontiers in Forests and Global Change, 7, 1370738.; MoEFCC & World Bank (2018). Strengthening Forest Fire Management in India. Washington, DC: World Bank.

[21] Forest Survey of India. (2022). India State of Forest Report. Ministry of Environment, Forest and Climate Change, Government of India.

[22] Reddy, C. S., Jha, C. S., & Dadhwal, V. K. (2023). Carbon stock depletion in recurrently burned Central Indian forests. Nature Sustainability, 6(4), 456–468

[23] Saha, D., Nayak, P. K., & Fischer, H. W. (2022). Fire-induced livelihood vulnerabilities in tribal India: Evidence from NTFP-dependent communities. Ecological Economics, 195, 107382.

[24] Frontiers in Forests and Global Change (2025). 'Invasive shrub (Lantana camara) alters the tree community structure and ecosystem carbon in tropical dry deciduous forests of Madhya Pradesh, India.'

[25] Plant Ecology (2024). 'Assessing the influence of Lantana camara on vegetation attributes and soil properties across disturbance gradients in the Kumaun Himalaya, India.'

[26] National CAMPA (MoEFCC) concept note: 'Mapping, Monitoring and Management of Lantana camara' (2022) — cites national estimate of ~86,806 km² (≈38.8%) forest invaded.

[27] Evidence for fire facilitation: Environmental Science and Pollution Research (2024) 'Sustainable energy generation potential of Lantana camara' (notes increased fire-risk via added combustible biomass), and Berry et al. (2011) 'The invasive weed Lantana camara increases fire risk in dry rainforest; for Chromolaena spread in NE India: Environmental Conservation (Cambridge).

[28] Sharma, G. P., & Raghubanshi, A. S. (2011). How Lantana camara invasion alters fire regimes and vegetation structure in India. Current Science, 100(4), 482–488.; Negi, P. S., et al. (2019). Spread and biomass of Lantana camara in Western Himalaya: implications for fire risk and restoration. Tropical Ecology, 60(4), 548–560

[29] Mahapatra, S.K. et al. (2018). 'Assessment of soil erosion in the fragile Himalayan ecosystem of Uttarakhand, India using USLE and GIS for sustainable productivity.' Current Science, 115(1):108–121. JSTOR; state-scale modeling support: https://www.sciencedirect.com/science/article/pii/S2666765721000107

[30] IARI (2012) 'Crop Residues Management with Regenerative agriculture'; MDPI (2019) 'Crop Residue Burning in India: Policy Challenges and Potential Solutions'; BHU review (2021) on SOC increases with residue incorporation.

[31] ISRO–SAC Desertification and Land Degradation Atlas of India (2021): ≈97.85 Mha (~29.7%) degraded; state-wise maps indicate high affected areas in Jharkhand. Portal/press notes: https://vedas.sac.gov.in/en/Desertification_Status_Mapping_%28DSM%29_Atlas.html ; https://pib.gov.in/PressReleasePage.aspx?PRID=1897010 ; synthesis with state list: https://ruralindiaonline.org/en/library/resource/desertification-and-land-degradation-atlas-of-india/

[32] National Family Health Survey (NFHS-5, 2019–21), MoHFW: ~58–59% households using clean fuel nationally (hence ~41–42% using solid/unclean fuels). Fact-sheet/report: https://www.dhsprogram.com/pubs/pdf/OF43/India_National_Fact_Sheet.pdf ; https://www.mohfw.gov.in/sites/default/files/NFHS-5_Phase-II_0.pdf

[33] Mining-linked fragmentation in West Singhbhum: Remote Sensing Applications: Society and Environment (2024) 'Forest fragmentation and forest cover dynamics: Mining induced changes in West Singhbhum District of Jharkhand; Corridors: Project Elephant, MoEFCC (2023) 'Elephant Corridors of India 2023.' https://moef.gov.in/uploads/2023/11/PE-Elephant-Corridor-of-India-2023.pdf ; PIB summary: https://pib.gov.in/PressReleseDetailm.aspx?PRID=1948084

[34] Forest Survey of India. (2023). India State of Forest Report. Ministry of Environment, Forest and Climate Change, Government of India.

[35] Alajangi, S., Prasad, N. S. R., & Baruah, A. (2021). Monitoring and changing pattern of shifting cultivation and reclamation in hilly regions using Geospatial Technology. In Modern Cartography Series (Vol. 10, pp. 465-495). Academic Press.

[36] https://lacuna.org.uk/food-and-health/indias-burning-coal-city-jharia/

[37] World Bank (2022): https://www.worldbank.org/en/news/feature/2022/12/07/preventing-forest-fires-one-flower-at-a-time

[38] Ahmad, F., & Goparaju, L. (2017). Geospatial assessment of forest fires in Jharkhand (India). Indian Journal of Science and Technology, 10(21), 1–7.

[39] Ibid.

[40] Gurung, R., et al. (2025). Invasive shrub (Lantana camara) alters tree community structure and ecosystem carbon in tropical dry deciduous forests of Madhya Pradesh, India. *Frontiers in Forests and Global Change, 8*, 1412130. https://doi.org/10.3389/ffgc.2025.1412130

[41] Vaidya, B. G., Ghosh, B. G., Rahaman, S. M., Khatun, M., Garai, S., & Kumar, A. (2022). Modelling potential risk zones of *Lantana camara* invasion and response to climate change in eastern India (Jharkhand). *Ecological Processes, 11*, 10. (13% current GCA invaded; projected 20–26% by 2050; Betla NP high–critical risk).

[42] ISRO–SAC (2021). *Desertification and Land Degradation Atlas of India*. ISRO, Ahmedabad; Chatterjee, A., & Kumar, U. (2020). Desertification in Jharkhand: A review based on ISRO's Atlas. *Macro Management & Public Policies, 2(2)*, 27–33. (≈5.48 million ha; ≈68–69% of Jharkhand degraded).

[43] Bist, N. S., et al. (2021). Land-use/land-cover dynamics in West Singhbhum, Jharkhand (1997–2017). *IOSR Journal of Engineering, 11(5)*, 44–52. (Dense forest ↓18.23%→9.16%; scrub/blank ↑12.05%→22.24%; built-up ↑3.94%→7.07%).

[44] World Bank. (2006). Forest-dependent people in India: Policy and issues.

[45] Negi, A. K., Khanduri, P., & Singh, S. P. (2019). Forest fire in Uttarakhand: Causes, consequences and management strategies. *G.B. Pant National Institute of Himalayan Environment*.

[46] Rawat, R. (2019, May 4). Is pine the real villain in the Uttarakhand forest fire saga? *Carbon Copy*.

[47] Singh, H. (2021). Fire ecology and Chir Pine forests of Uttarakhand Himalaya. *Journal of Forestry Research, 32*(5), 1925–1938.

[48] Negi, A. K., Khanduri, P., & Singh, S. P. (2023). Climate variability and forest fire dynamics in the Indian Himalaya. *Frontiers in Forests and Global Change, 7*, 1352265.

[49] Khanduri, P., Negi, A. K., & Singh, S. P. (2023). Forest fire incidence in the Himalayan region: Climatic correlates and management perspectives. *Fire Ecology, 19*(2), 177.

[50] Bhatt, M. (2024, June 7). *Uttarakhand sees 74% rise in forest fires; worst hit in country*. The Tribune.

[51] Choudhary, S. (2024, August 5). *Uttarakhand forests burn while fire guards face outstanding salaries and lack of resources*. Mongabay-India.

[52] Singh, A., et al. (2020). Distribution modelling of Lantana camara in the Rajaji–Corbett corridor (MaxEnt). bioRxiv 2020.12.31.424957.

[53] Negi, G. C. S., Rawal, R. S., et al. (2024). Assessing the influence of Lantana camara on vegetation attributes and regeneration in Kumaun Himalaya. Plant Ecology.

[54] National CAMPA (MoEFCC). (2022). Mapping, Monitoring and Management of Lantana camara (concept note): cites ≈86,806 km² (~39% of forest area) potentially affected.

[55] Fensham, R. J., et al. (2011). The invasive weed Lantana camara increases fire risk by altering fuel beds. Weed Research, 51, 525–533.

[56] Indian Agricultural Research Institute (2012). Crop Residues Management with Regenerative agriculture; Jethva, H., et al. (2019). Crop residue burning in India—policy challenges. International Journal of Environmental Research and Public Health, 16, 832.

[57] Mahapatra, S. K., et al. (2018). Assessment of soil erosion in Uttarakhand using USLE & GIS. Current Science, 115(1), 108–121. https://doi.org/10.18520/cs/v115/i1/108-121.

[58] George, J., et al. (2021). Geospatial modelling of soil-erosion risk in Uttarakhand using RUSLE. Spatial Information Research, 29, 753–768.

[59] Mahapatra, S. K., et al. (2018); Bansal, R., et al. (2024). Evaluating soil erosion and sedimentation impacts in Himalayan catchments. In Recent Advances in Hydrology. Springer.

[60] Bhatt, V. K., et al. (2024). Loss of carbon stock in Uttarakhand due to unprecedented forest fires. Frontiers in Forests & Global Change, 7, 1352265. https://doi.org/10.3389/ffgc.2024.1352265; Bhat, J. A., & Chakravarty, S. (2021). Fuelwood extraction and forest degradation. Agroforestry Systems, 95, 2025–2038.

[61] Rawat, R. (2019, May 4). Is pine the real villain in the Uttarakhand Forest fire saga? *Carbon Copy*.

[62] Choudhary, S. (2024, August 5). *Uttarakhand forests burn while fire guards face outstanding salaries and lack of resources*. Mongabay-India.

[63] Singh, S., Negi, A. K., & Khanduri, P. (2024). Forest fire disaster events in Himalayan state Uttarakhand: An analytical study. *ResearchGate Preprint*.

[64] Ibid,

[65]Ministry of Environment, Forest and Climate Change (MoEFCC). (2018). India: Sixth National Report to the Convention on Biological Diversity. Highlights mainstreaming needs and uneven subnational capacities.

[66]FSI/MoEFCC. (2019–2023). State of Forest Reports & fire vulnerability notes; plus studies on Pinus roxburghii needle-litter flammability and fuel accumulation in the western Himalaya (e.g., Dobhal, S. et al., 2023 review on Uttarakhand forest fires).

[67]Project Elephant, MoEFCC. (2023). Elephant Corridors of India 2023. Documents ~150 corridors and risks from linear infrastructure (roads, rail, power).

[68]Choudhary, A., et al. (2024). Mapping mining-induced forest fragmentation in West Singhbhum (1987–2021). Journal of Cleaner Production, 421, 139964. https://doi.org/10.1016/j.jclepro.2023.139964.

[69]Jethva, H., et al. (2019). Crop residue burning in India—policy challenges. International Journal of Environmental Research and Public Health, 16, 832; IARI (2012). Crop Residues Management with Regenerative agriculture.

[70]Empirical analyses of Van Panchayats in Uttarakhand (2010s–2020s) show low women's leadership/participation in decision-making; see also:

[71]Agarwal, B. (2009). Gender and forest conservation: Impact of women's participation in community forestry. Ecological Economics, 68(11), 2785–2799; Leisher, C., et al. (2016). Does women's participation boost conservation outcomes? Oryx, 50(1), 37–46.

B. PROJECT DESCRIPTION

Project description

This section asks for a theory of change as part of a joined-up description of the project as a whole. The project description is expected to cover the key elements of good project design in an integrated way. It is also expected to meet the GEF's policy requirements on gender, stakeholders, private sector, and knowledge management and learning (see section D). This section should be a narrative that reads like a joined-up story and not independent elements that answer the guiding questions contained in the PIF guidance document. (Approximately 3-5 pages) see guidance here

Project Description

This proposed project aims to "strengthen local co-governance and capacities to integrate 'fire-smart' (biodiversity-friendly) solutions/interventions in forest restoration and biodiversity conservation actions." After consultations with the Forest Protection Division of the MoEFCC (Ministry of Environment, Forest and Climate Change, the project has selected Jharkhand and Uttarakhand as the two target states for implementation (please see Annex C – Project locations for the landscape maps).

The landscape-level interventions will be targeted in West Singhbhum District (Jharkhand), Nainital and Almora districts (Uttarakhand). The specific landscapes in these two States will be identified during the PPG through extensions consultation with the relevant government and other stakeholders using the following specific objective criteria: (1) Significant presence of critical/degraded forests and key biodiversity areas (KBAs) under deforestation and degradation threats, (2) High vulnerability to forest fire risks and other drivers, (3) Potential to contribute to the achievement of the GEB targets, (4) baseline of the existing investments, partners and capacities supporting ILM implementation, (5) Presence of tribal and other marginalized groups, and (6) Presence of women-led CBOs (community-based organizations). The project therefore positions Integrated Landscape Management (ILM) as the focus, which mainstreams fire-smart measures while addressing the broader drivers of biodiversity loss and degradation across forests and production landscapes.

Jharkhand: Jharkhand, and specifically West Singhbhum District, holds a wide range of biodiversity. Numerous IUCN Red List species are found in forested regions such as Saranda, Dalma, and the surrounding moist deciduous sal forests. These include several mammals, birds, and invertebrates that are classified under various threatened categories. Key threatened species recorded or commonly associated with West Singhbhum district are: Asian Elephant (*Elephas maximus*) – Endangered, Indian Pangolin (*Manis crassicaudata*) – Endangered, Sloth Bear (*Melursus ursinus*) – Vulnerable, Leopard (*Panthera pardus*) – Vulnerable , and Bison (*Gaur, Bos gaurus*) – Vulnerable. Several rare and threatened butterfly and bird species, some listed under India's Wildlife Protection Act and overlapping IUCN Red List status, have been documented in the Saranda and Koina forest tracts. Saranda records show over 277 bird species recorded in the division. Among these, vultures and other scavengers of conservation concern have been noted in Jharkhand more broadly (e.g., white-rumped vulture and related species historically recorded in the state / region). For example vulture species and butterflies such as the Leopard Lacewing (Cethosia cyane) are of conservation. Notable flora (species of conservation interest recorded from Saranda forest division) include the *Shorea robusta* (Sal), *Bulbophyllum crassipes* — an orchid species, *Costus speciosus*, *Hedychium coronarium*, *Ziziphus rugosa.*

However, these ecologically significant areas are highly vulnerable to biodiversity loss and degradation, impacted by a convergence of drivers: invasive shrubs (e.g., Lantana, Chromolaena) that suppress regeneration and elevate fuel beds; agricultural expansion with shortened fallows, residue burning and open grazing that accelerate soil loss and reduce soil organic carbon at the forest-farm interface; encroachment and heavy local biomass extraction that degrade understories; and mining/linear infrastructure that fragments habitats and tightens elephant corridor pinch-points. Climate-amplified dry spells increase the probability that small ignitions in degraded, fuel-loaded understories become damaging fires, further eroding biodiversity and carbon stocks. The biodiversity and connectivity impacts are already evident. National mapping and corridor assessments point to measurable fragmentation and loss of habitat connectivity for wide-ranging species, including documented pressures on elephant corridors in Jharkhand, which are further compounded by fire-induced habitat degradation and land-use change.[1][72] Lastly, Jharkhand presents strong potential for community-led solutions. The state has a substantial tribal and forest-dependent population whose livelihoods and customary governance (for example, Van Panchayats and community stewardship systems) are tightly linked to local forests. This social fabric creates an opportunity to co-design ILM interventions that integrate traditional ecological knowledge, strengthen local stewardship, and deliver both biodiversity and livelihood benefits at scale.

Uttarakhand: The hill regions of Uttarakhand are home to diverse ecosystems ranging from subtropical pine and oak forests to temperate fir and alpine meadows, supporting rich biodiversity. The area harbors key mammal species such as the leopard (Panthera pardus), Himalayan black bear, goral, barking deer, jungle cat and leopard cat etc. Avifauna includes the Himalayan monal, Chir pheasant, whistling thrush, and various laughing thrushes and minivets. The forests are equally rich in plant life, with prominent species like banj oak, deodar, rhododendron and chir pine, along with valuable medicinal herbs such as Jatamansi (Nardostachys jatamansi), Kutki (Picrorhiza kurrooa), Brahmi, Ashwagandha etc which are extensively used in traditional healing practices.

Uttarakhand's extensive important forests - Chir pine (Pinus roxburghii) and mixed broadleaf stands - dominate much of the middle-elevation landscapes. These forests provide critical watershed services and support both biodiversity and local livelihoods. However, they are facing increasingly degradation threats by recurrent human-ignited burning and changing climate conditions inducing forest fires. The most recent national monitoring and reporting underscores the scale of the

current crisis. The FSI (2023) data indicates that Uttarakhand was among the worst-affected states in the 2023 fire season, with satellite-detected fire counts and estimates of fire-affected areas substantially higher than in previous years. These extensive fire impacts are already degrading forest structure, reducing carbon stocks, and threatening key habitat types in the state. Additionally, biodiversity loss and degradation are also led by non-fire drivers: invasive shrubs (Lantana, Ageratina) alter understories and suppress oak/pine/sal regeneration; steep-slope cultivation, residue burning and open grazing drive severe to very severe erosion and SOC decline; and encroachment/biomass extraction around forest fringes depress recovery. However, despite these crises, Uttarakhand offers strong potential for community-led solutions for ILM implementation. Longstanding forest-dependent livelihoods, customary practices for controlled burning and grazing management, and active local institutions (e.g., village councils, user groups and forest dependent communities) create an enabling social capital to co-design and scale ILM approaches. Strengthening these community systems and linking traditional ecological knowledge will produce durable outcomes that both reduce biodiversity loss-degradation risks and sustain livelihoods.

Recognizing the threats - barriers (as described in part A) and opportunities to tackle biodiversity loss and degradation through ILM, the project's interventions are mainly focused on Jharkhand (West Singhbhum) and Uttarakhand (Nainital & Almora). A state-led ILM approach as well as landscape-level demonstrations, maximize GEF leverage by aligning forest and production-land interventions under one strategy: mainstreaming fire-smart measures within a wider package that also addresses IAS, soil-water degradation at forest-farm interfaces, encroachment/biomass extraction pressures, and fragmentation from mining and linear infrastructure. This is designed to secure durable biodiversity outcomes, restore ecosystem functions (including watershed and corridor integrity), and reduce livelihood vulnerability. The project aims to facilitate (i) 167,899 ha of terrestrial protected areas (PAs) under improved management effectiveness, (ii) 300,000 ha of critical forest and production landscapes outside PA under improved management to benefit biodiversity, (iii) carbon mitigation of over 2.9 million tons CO2e (20-year estimate) (mitigation target will be validated at the PPG) and (iv) at least 10,000 individuals (50% are women) across 2,500 households directly benefiting from improved ecological management and livelihood. To achieve this, the project's interventions are grounded on collaborative governance and integration of ILM approaches forest and biodiversity governance, as outlined in the project's theory of change (ToC) statement and as shown in *Diagram 1* below.

IF the project

- **strengthens policy and planning by formulating state-level ILM strategies from participatory landscape assessments and integrating them into key state instruments (SBSAPs, SAPCDs, State Fire Plans, forest working plans, community resource plans), and**
- **operationalizes risk reduction by linking the National Early Warning System to village-level ILM protocols (communication hubs, roles, joint drills) so alerts trigger prevention and first response, and**
- **enables community co-governance and implementation through stewardship mechanisms that adopt ILM solutions, and**
- **builds resilient livelihoods via nature-positive value chains, regenerative agriculture and agroforestry, and clean energy/fodder transitions that reduce extraction pressure, and**
- **codifies learning through KM products, a national scale-up roadmap/policy guidance, and institutionalized curricula on community-led ILM,**

THEN forests and production landscapes in the two states will achieve measurable gains in biodiversity condition, connectivity, and carbon stocks, with lower burn severity and degradation risk at forest-farm interfaces, and households will realize more stable, nature-positive incomes.

BECAUSE this multi-lever ILM pathway acts on root drivers (fire regimes, IAS, erosion/desertification, expansion to frontiers, encroachment, fragmentation), aligns plans and budgets across sectors, anchors implementation in local co-governance, and locks in replication through state/national training systems, the project will facilitate resilience that persists beyond the project footprint.

The project's ToC is broken down into 3 key causal pathways:

1. **Causal Pathway 1: Strengthening local governance and planning to enable ILM-based forest restoration and biodiversity conservation: The project will move beyond single-threat planning by formulating state-level ILM**

strategies for Jharkhand and Uttarakhand, grounded in participatory landscape assessments that map high-risk zones. These ILM strategies will then be embedded in at least 10 state instruments, including SBSAPs, SAPCDs, State Action Plans on Forest Fire Prevention, forest working plans, and community resource plans, so that fire-smart measures are implemented alongside actions on IAS control, soil- and water-conservation, encroachment management, and corridor/springshed restoration. The project will also link the National Early Warning System (EWS) to village-level ILM protocols (communication hubs, roles, joint drills) and advocate a ≥25% increase (from PPG baselines) in ILM-aligned state/sectoral budget lines. These steps address fragmented governance and planning and close cross-sector gaps by aligning agriculture, rural development, mining, energy and infrastructure actions with ILM priorities. By implementing these interventions, the project addresses Barrier 1 (constrained governance and planning) and Barrier 2 (cross-sector coordination gaps), while laying the policy/finance foundation to overcome Barrier 4 (technical/financing gaps) and recognize Barrier 5 (traditional knowledge) in formal plans.

2. **Causal Pathway 2: Facilitating participatory implementation of ILM-based restoration-conservation in critical landscapes: The project will co-develop and implement participatory ILM strategies with PA authorities and village-level institutions (e.g., Gram/Van Panchayats, BMCs), applying them across 167,899 ha of critical PA landscapes and bringing 300,000 ha of critical/degraded forests and production landscapes outside PAs under improved management. The on-ground, landscape-level ILM interventions will tackle compounded drivers to biodiversity loss and degradation. To reduce local extraction pressure and raise incomes, the project will strengthen nature-positive livelihoods such as NTFP value-addition, regenerative agriculture and agroforestry, clean-energy/fodder transitions, and context-appropriate ecotourism, which will benefit at least 2,500 households (~10,000 people, ≥50% women). Inclusive processes will formalize co-governance roles and benefit-sharing, strengthen women's leadership and youth participation, and establish community monitoring mechanisms that recognize adoption of ILM practices. By implementing these interventions, the project addresses Barrier 3 (limited co-governance and inclusion), Barrier 4 (technical/financing gaps for ILM practices), Barrier 5 (limited use of traditional knowledge), and Barrier 6 (weak livelihood integration with ILM), while also reducing on-the-ground risks linked to Barrier 2.**

3. **Causal Pathway 3: Enabling systemic learning and exchange to facilitate adaptive implementation and sustainability: To lock in scale and sustainability, the project will produce knowledge products (policy briefs, field manuals, case studies) and convene multi-stakeholder exchanges/workshops, while developing a national roadmap/policy guidance (endorsed by MoEFCC) for ILM scale-up by government agencies, CSOs/NGOs, and other stakeholders beyond the project area (i.e., national and state levels). This will include documenting traditional ecological knowledge to ensure that lessons from local communities are recognized and shared by multi-stakeholders. A training curriculum on community-led ILM will be institutionalized across State Forest Training Academies, SIRDs and national bodies (IGNFA/FSI/NTCA), so good practice becomes standard practice. The learning framework under this project will also feed into an adaptive management process of the project, allowing project strategies to be continually refined based on on-ground feedback and evolving climate and socio-economic conditions. By embedding these mechanisms into state-level policy processes and institutional structures, the project will ensure that knowledge continues to inform decision-making, long after project completion. By implementing these interventions, the project addresses Barrier 1 (planning coherence), Barrier 3 (inclusion and co-governance capacity), Barrier 4 (practice/financing gaps) through standardized training and convergence guidance, Barrier 5 (traditional knowledge) via documentation and curricula, and Barrier 6 (livelihood integration) by scaling market-ready, nature-positive models.**

Project resilience: The project is designed to drive systemic change by adopting holistic and multi-faceted ILM approaches in forest restoration and biodiversity conservation to ensure replication, and resilience to future changes. It builds on existing programs and capacities[2][73], using transformational levers to deliver large-scale, lasting impacts. At its core is an inclusive, participatory approach that engages tribal and local communities, government agencies, the private sector, and civil society in co-designing and implementing fire mitigation measures. This approach fosters shared ownership, strengthens social capital, and embeds resilience into local and state-level decision-making.

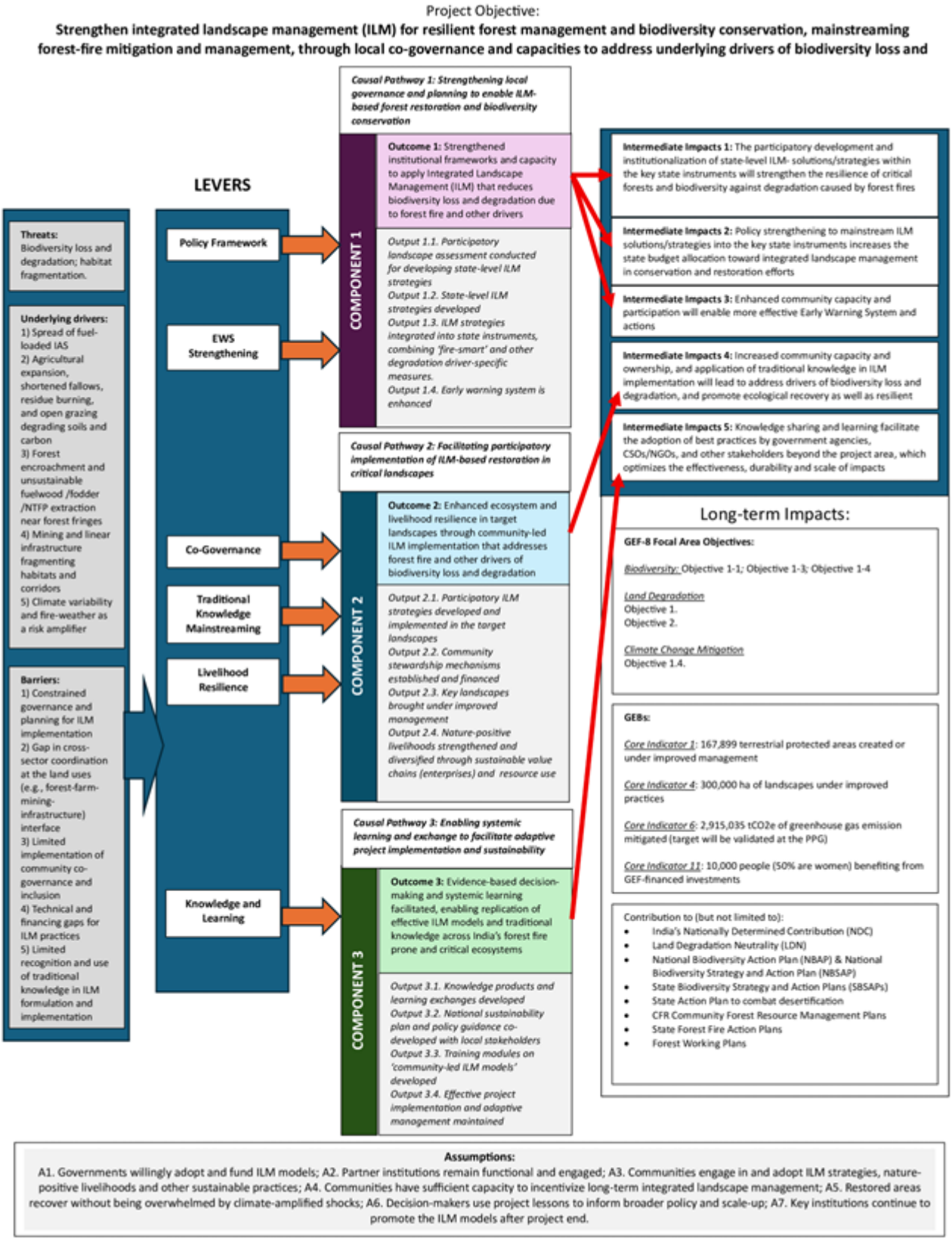
The project is designed to systematically strengthen the enabling conditions for sustainable forest restoration by addressing the underlying drivers and barriers associated with biodiversity loss and degradation. The project's causal pathways focus on transforming governance frameworks, building adaptive capacity, and fostering inclusive decision-making to create systems resilient to evolving climatic and socioeconomic pressures. The GEF's investment will serve as a catalyst to amplify India's existing social capital, facilitating the co-creation and scaling of innovative ILM approaches. This will be achieved through establishing robust knowledge exchange networks and targeted capacity-building initiatives that promote continuous learning among all stakeholders. These interventions are designed to remain responsive to changing conditions while creating replicable models for long-term impact. One of the important elements of the project's approach is equitable governance. Gender-responsive planning and inclusive participatory processes will ensure women and marginalized groups actively contribute to and benefit from fire management solutions. By embedding these principles throughout implementation, this project will not only deliver measurable ecological and livelihood improvements in target landscapes but also provide adaptable blueprints for broader replication across India's vulnerable, biodiverse regions and internationally.

---

[1] Ministry of Environment, Forest and Climate Change. (2023). *Elephant Corridors of India 2023*. Government of India.

[2] Outlined in Part A, and in "Coordination and Cooperation with Ongoing Initiatives and Projects" section

Diagram 1: Project Theory of Change



Component 1. Improving Local Governance for ILM-based Forest Restoration and Biodiversity Conservation

Outcome 1.1. Strengthened institutional frameworks and capacity to apply Integrated Landscape Management (ILM) that reduces biodiversity loss and degradation due to forest fire and other drivers through institutionalization of 'fire-smart' and other integrated solutions within ILM.

Indicators:

- *At least 10 state plans (SBSAPs, State Action Plan to combat desertification/SAPCDs, State Action Plans on Forest Fire Prevention, forest working plans, and decentralised development and conservation plans, community forest resource management plans) developed and/strengthened to institutionalize ILM (including forest 'fire-smart') actions.*
- *25% increase (from baseline – TBD at the PPG) of annual state and sectoral budget allocated to ILM-aligned forest 'fire-smart' actions and other drivers of biodiversity loss and degradation*
- *The National Early Warning System enhanced and linked to community ILM protocols and multi-sector response.*

Under Outcome 1.1, the project will move beyond single-threat planning and facilitate a state-led, cross-sectoral ILM architecture in Jharkhand and Uttarakhand that aligns forest and production-land actions. A multi-stakeholder Working Group will be notified in each state, co-chaired by the Forest Department and the state environment/planning or finance department, and including agriculture, rural development, mining, energy, disaster management, infrastructure and PA authorities alongside Gram/Van Panchayats, BMCs, civil society and research institutions. These Working Groups will guide assessments, set cross-sector priorities and budget tagging, validate the ILM strategies, and drive their insertion into state instruments. The Working Group will also provide the mechanism for linking the National Early Warning System (EWS) to community protocols. This convergence platform directly targets Barrier 1 (constrained governance and planning) and Barrier 2 (cross-sector coordination), while creating the policy and finance conditions for scaled ILM adoption and implementation.

Building on that governance platform, the project will complete participatory landscape assessment and mapping in both states. These synthesize scientific analysis and traditional ecological knowledge to locate high-risk zones and potential interventions across fire regime metrics (seasonality, burn severity), invasive alien species distribution, erosion and soil-organic-carbon risk at forest-farm ecotones, encroachment fronts, corridor and springshed condition, and mining/linear infrastructure footprints. Structured consultations and workshops with PA managers, Van/Gram Panchayats, user groups, women and youth will ensure feedback loops from communities into planning, so that the ILM strategies reflect local realities as well as ecological priorities. Using these assessments, each state will formulate cross-sector ILM strategies that mainstream fire-smart measures alongside actions to tackle other drivers of biodiversity loss and degradation. The strategies will define spatial rules (including species/stocking choices that avoid high-flammability regimes), roles and SOPs across departments, incentives and finance linkages (CAMPA, Green India Mission, NRLM, CSR) with explicit ILM budget tagging, and requirements for inclusion and benefit-sharing that embed women's leadership and traditional knowledge in day-to-day practice. The project will then mainstream these strategies into the key state instruments (SBSAPs, SAPCDs, State Action Plans on Forest Fire Prevention, forest working plans, CFR/community resource plans, and decentralized development and conservation plans), accompanied by technical annexes and monitoring indicators (e.g., IAS cover, erosion risk/SOC, corridor functionality, burn severity, adoption metrics).

The project will also establish village-level community ILM communication hubs to improve the early warning systems and coordination. Each hub will be equipped with mobile-based alert systems, clear forest fire reporting protocols, and noticeboards to keep the community informed and engaged in fire risk management efforts. Although designed around fire management, the same hubs and protocols will schedule and coordinate ILM operations such as IAS monitoring, encroachment alerts and corridor blockage reporting. The project will provide capacity-building with training-of-trainers (ToT) programs designed for community volunteers, particularly targeting youth and women. These trainings will focus on forest fire and other drivers' detection, real-time reporting, and low-cost first-response measures using accessible mobile applications and simple tools, empowering communities to act swiftly and effectively. And to reinforce preparedness and strengthen trust between local community members and forest officials, mock drills and awareness campaigns will be organized in fire-prone villages. These activities will

test community readiness, foster collaboration, and help establish a shared understanding of roles and responsibilities in times of crisis.

The main outputs under Outcome 1 comprise of:

- **Output 1.1.1.** Participatory landscape assessment and mapping conducted for developing state-level ILM strategies in Jharkhand and Uttarakhand, identifying detailed root causes / drivers (including fire regimes) of biodiversity loss and degradation, and high-risk zones in important forest, production landscapes, and other critical biodiversity areas.
- **Output 1.1.2.** (Based on the results of Output 1.1.1.) State-level ILM strategies formulated for Jharkhand and Uttarakhand, mainstreaming 'fire-smart' solutions (defined to restore/maintain ecologically appropriate fire regimes) with explicit links to biodiversity outcomes.
- **Output 1.1.3.** (Based on the results of Output 1.1.2) ILM strategies integrated into state instruments (SBSAPs, State Action Plans on Forest Fire Prevention, SAPCDs *State Action Plan to combat desertification,* forest working plans, CFR Community Forest Resource Management Plans, decentralised development and conservation plans), combining 'fire-smart' and other degradation driver-specific measures.
- **Output 1.1.4.** Early warning system is enhanced through the creation of community communication hubs and capacity strengthening programs (protocols, joint drills, etc.) for ILM implementation (including forest fire mitigation and management).

Component 2. Enabling Community-Led ILM-based Forest Restoration and Biodiversity Restoration

Outcome 2.1. Enhanced ecosystem and livelihood resilience in target landscapes through community-led ILM implementation that addresses forest fire and other drivers of biodiversity loss and degradation.

-

Indicators:

- *3 participatory ILM strategies adopted and implemented across 167,899 ha critical protected area (PA) landscapes by PA authorities, village-level governance mechanisms (Panchayats, Biodiversity Management Committees BMCs, Van Panchayats, etc.) and community stewardship.*
- *200,000 ha of critical/degraded forests and 100,000 ha of production landscapes (outside PAs) brought under improved management through community-led implementation of ILM measures addressing biodiversity loss and degradation.*
- *2,500 households (consisting of 10,000 people of which 50% are women) with improved incomes from nature- positive livelihoods.*

Outcome 2.1 addresses the on-the-ground dimensions of the barriers: strengthening government-community collaboration (Barrier 2), embedding traditional ecological knowledge in ILM design and operations (Barrier 5), reducing technical/financing gaps (Barrier 4), and integrating ILM into livelihood practices (Barrier 6).

At the landscape level implementation, the project will enable community-driven ILM implementation through integrated, biodiversity-friendly and fire-smart restoration-conservation and livelihood measures:

- **Fuel-load management using ecological methods**, such as selective removal of invasive fire-prone species (*Lantana*, *Eupatorium*), enrichment planting with native broadleaf species (e.g., *Quercus*, *Bauhinia*, *Myrica*, *Terminalia*), and promoting mixed-species mosaics that reduce flammability and enhance habitat quality.
- **Creation of bio-buffers and green firebreaks** using native grass belts, fodder banks, and less-flammable shrubs (e.g., *Carissa*, *Dodonaea*, *Rhus*), which both interrupt fire paths and provide habitat and fodder for wildlife and livestock.
- **Community-managed fire lines** reinforced with green cover, organic mulching, and moisture retention features to minimize soil exposure and erosion
- **Sustainable fuel and fiber alternatives**, including pine-needle briquettes, biomass pellets, and resin waste recycling, reducing forest extraction pressures while generating circular-economy livelihoods.
- **Fire-resilient livelihood systems**, such as agroforestry with, beekeeping, non-timber forest produce value chains, and silvi-pasture systems that maintain ground cover and prevent invasive spread.
- **Community-based early warning and response** through Van Panchayats and JFMCs equipped with mobile-based alerts, local fire squads, and village contingency funds, ensuring biodiversity-friendly suppression actions that avoid unnecessary damage to wildlife habitats.

Under this outcome, the project will translate the state ILM strategies into community-led action across 167,899 ha of critical PA landscapes and 300,000 ha of the critical/degraded forests and production landscapes outside PAs. Building on Output 1.1.2, participatory ILM strategies will be finalized with PA authorities and village institutions (Gram/Van Panchayats, BMCs), using landscape assessments to produce GIS-based micro-zonation that identifies restoration and conservation priorities: compartments with high IAS pressure, steep farm-forest ecotones with severe erosion/SOC loss, riparian/springshed recharge zones, corridor pinch-points, and fire-exposed understories. These plans will be validated in Gram Sabhas and PA forums and aligned with forest working plans, village micro-plans, and other statutory instruments so ILM solutions are embedded in the government's sectoral planning architecture (Output 2.1.1).

Inthe target landscapes, the project will constitute and formalize local stewardship structures, such as Van Panchayat sub-committees, fire-watch groups, women's SHGs and user associations, with clear protocols on roles, decision-making, monitoring, and equitable benefit-sharing. The project will assess at the PPG the feasibility of establishing OECM-stewardship mechanisms. Convergence financing will be mobilized through CAMPA, Green India Mission, NRLM and CSR to capitalize community restoration and conservation funds. This stewardship and financing frame ensures communities co-govern and co-invest in ILM measures (Output 2.1.2). The ILM measures will combine nature-based approaches that address the full driver set while contributing to Land Degradation Neutrality, including but not limited to: IAS suppression followed by assisted natural regeneration and enrichment planting with native species; soil-and-water-conservation on erodible slopes; springshed and riparian restoration to stabilize baseflows; strategic fuel-breaks and targeted understory fuel management near settlements and ecotones; regulated grazing and seasonal closures to allow recovery; and corridor rehabilitation in mining-affected or linearly fragmented blocks. On production lands, the project will promote regenerative agriculture and agroforestry systems at forest–farm interfaces to rebuild soils, cut erosion, and lower fire risk while diversifying incomes. The project will facilitate a shift from residue burning to mulching/cover crops with minimum tillage, stabilize slopes with contour/terrace bunding and rainwater harvesting, and adopt diversified intercropping. Field edges and terrace risers will add agroforestry and silvopasture (fodder banks, fruit/native trees) to reduce open grazing in forests, while invasive biomass and pine needles are converted to compost/biochar and briquettes rather than burned. Together these measures raise soil organic carbon and on-farm biomass, reduce fine-fuel loads at forest edges, and strengthen nature-positive value chains).

To track progress and adaptively manage interventions, the project will establish a participatory monitoring system using both community-based tools and digital dashboards. This will include integration of this monitoring system with Van Agni portal of FSI and NDMA/SDMA. This system will capture key ecological indicators, including vegetation recovery, wildlife usage, and fire occurrences, allowing communities and authorities to make informed decisions. Community-managed nurseries will also be established to ensure a reliable, local supply of native and fire-resilient planting material. These nurseries will not only support restoration activities but also create livelihood opportunities, especially for women and youth.

Livelihood diversification will be anchored in nature-positive value chains that reinforce ILM. The project will identify nature-positive opportunities suited to each landscape such as: NTFP value addition (e.g., tamarind, amla, mahua products) with quality and storage upgrades; apiculture linked to native flowering; sustainable fodder systems and silvopasture on degraded commons; diversified agroforestry products; ecotourism where appropriate and community-led; and micro-enterprises such as pine-needle briquettes, Tussar silk, nurseries and composting/biomass utilization that reduce open burning. Producer groups/SHGs and, where feasible, FPOs will be supported with business planning, certification/eco-labelling, branding, and market linkages to reliable off-takers. The project will also explore access pathways to carbon finance, PES and biodiversity-friendly procurement to reward stewardship. These interventions are designed to benefit at least 2,500 households (~10,000 people, ≥50% women) and to lower extraction pressure near forests, while promoting ecosystem recovery and income security (Output 2.1.4).

The main outputs under Outcome 2 comprise of:

- **Output 2.1.1.** Participatory ILM strategies developed and implemented in the target landscapes. (Based on Output 1.1.2).
- **Output 2.1.2.** Community conservation-restoration stewardship mechanisms established and financed via convergence with ILM strategies in the target landscapes.
- **Output 2.1.3.** Key degraded landscapes brought under improved management through community-led implementation of ILM measures aligned with biodiversity outcomes.
- **Output 2.1.4.** Nature-positive livelihoods strengthened and diversified through sustainable value chains (enterprises) and resource use.

Component 3. Project Knowledge Management & Monitoring

Outcome 3.1. Evidence-based decision-making and systemic learning facilitated, enabling replication of effective ILM models and traditional knowledge across India's forest fire prone and critical ecosystems.

Indicators:

- *Five knowledge products (two featuring incorporation of traditional knowledge and practices) are developed and disseminated; and four exchange workshops arranged for knowledge sharing and policy dialogues.*
- *One comprehensive sustainability plan developed through multi-stakeholder consultations, and a national policy guidance endorsed by MoEF&CC to enable the scale-up of ILM models that integrate fire-smart measures, as well as other integrated restoration-conservation measures, across states in India.*
- *Training curriculum on "community led ILM models" (for forest fire prone and critical ecosystems to address biodiversity loss and degradation) institutionalized and applied across State Forest Training Academies, SIRDs, and national forestry institutions (IGNFA/FSI/NTCA).*
- *Regular monitoring documented in PIR, MTR and TE reports.*

The project's outcome 3 will contribute to addressing all project's barriers previously identified in Part 1. To achieve this, the project will document lessons from the project implementation, particularly the application of traditional knowledge and practices in ILM-based restoration and biodiversity conservation solutions. It will then develop at least five knowledge products to ensure that knowledge generated through the project is accessible, actionable, and widely disseminated. At least two of these five

knowledge products will focus on traditional knowledge. These will include policy briefs, toolkits, training manuals, digital stories, case studies, and short videos, each tailored to the needs of specific audiences such as local communities, Forest Department staff, policymakers, and technical agencies. The project will also facilitate cross-learning and the sharing of best practices by convening four multi-stakeholder learning exchange workshops at the national and state levels. These events will bring together stakeholders from forest fire-vulnerable states such as Uttarakhand, Jharkhand, Odisha, and Chhattisgarh, providing a platform to reflect on lessons learned, highlight innovative models, and encourage horizontal learning across geographies with similar fire risk profiles.

Furthermore, the project will facilitate participatory development of the project's sustainability framework (Sustainability and Replication Plan) that is locally grounded and nationally relevant, ensuring that all stakeholders have a shared vision for maintaining and scaling ILM interventions beyond the life of the project. And to ensure continuity and long-term financial sustainability, the project will map existing and potential funding sources. This will include identifying opportunities for convergence with public financing streams such as CAMPA (Compensatory Afforestation Fund Management and Planning Authority), the Green India Mission, State Compensatory Afforestation Plans, and private sector CSR investments. A National Sustainability Plan and policy guidance will be co-developed with local stakeholders, detailing long-term funding strategies and convergence roadmaps to support implementation and scale-up of ILM-based forest restoration and biodiversity conservation actions. By embedding these strategies into the key national and state-level policy processes, the plan will serve as a roadmap for long-term impact, policy uptake, and geographic replication. Additionally, the project will develop and institutionalize a training curriculum on community-led ILM that will be adopted by State Forest Training Academies, State Institutes of Rural Development and national forestry institutions (IGNFA/FSI/NTCA), and disseminated for nationwide adoption.

Through participatory dialogues, sharing and adoption by key stakeholders, these outputs together will ensure that knowledge products, policy guidance, training curricula, and sustainability frameworks are institutionalized in practice. This will create pathways for replication, scaling, and long-term resilience well beyond the project's target geography and implementation period.

The main outputs under Outcome 3 comprise of:

- **Output 3.1.1.** Knowledge of products and learning exchanges developed to document and disseminate best practices in forest fire prone and critical ecosystems.
- **Output 3.1.2.** National roadmap for scale-up of community led ILM models and policy guidance co-developed with local stakeholders, detailing long-term funding strategies and convergence (CAMPA, Green India Mission, NRLM, CSR, etc.)
- **Output 3.1.3.** Training modules on "community-led ILM models" developed, embedded into the curricula of relevant forestry and development training institutions, and disseminated for nationwide adoption.

M&E: The project will ensure strong governance and strategic oversight throughout the project's lifecycle. A multi-tiered Project Steering Committee (PSC) will be established, comprising representatives from the Ministry of Environment, Forest and Climate Change (MoEF&CC), State Forest Departments (SFDs), UNDP, IUCN, civil society organizations, and technical experts. Complementing this, State-level Working Groups will be constituted to provide localized guidance and technical inputs, ensuring that implementation remains context-specific and responsive to on-ground realities.

A robust, results-based Monitoring, Evaluation, and Learning (MEL) framework will be developed and operationalized to track progress, inform adaptive management, and ensure alignment with GEF core indicators, national commitments, and project-specific targets. Targeted capacity-building efforts will be undertaken for field teams and community-based organizations to enable effective implementation of the MEL framework at the project's landscape level. These trainings will focus on participatory monitoring, data collection methodologies, and outcome tracking tools, empowering local actors to take an active role in measuring progress and generating evidence for decision-making. Lastly, the project will undertake biannual project performance

reviews, mid-term review and terminal evaluation to assess progress against project's outcomes, which will help refine strategies, reallocate resources where needed, and ensure the project remains aligned with its intended outcomes.

The main output under the M&E component comprises of:

- Output 3.1.4. Effective project implementation and adaptive management maintained through regular steering committee oversight, and project monitoring and evaluation.

Social & Environmental Safeguards: The project will ensure that all activities are carried out in a socially inclusive, gender-responsive, and environmentally responsible manner, in alignment with IUCN's safeguard policies, UNDP's Social and Environmental Standards (SES), and the GEF's safeguard requirements. It is committed to upholding the rights, interests, and meaningful participation of Tribal Peoples and Local Communities (TPLCs), with particular attention to the inclusion of women, while working to avoid or mitigate any potential negative impacts. During the Project Preparation Grant (PPG) phase, SES risks will be reassessed, and appropriate safeguard instruments will be developed, including the Environmental and Social Management Framework (ESMF), Grievance Redress Mechanism (GRM) framework, Gender Action Plan (GAP), Stakeholder Engagement Plan (SEP), and an Indigenous Peoples Plan (IPP) or TPLC Plan, as applicable.

As part of the project design, activities related to SES will be integrated into outputs that are expected to trigger SES requirements. The specific activities and corresponding safeguards will be identified and defined in detail during the development of the full project document package at the PPG phase.

Incremental cost reasoning:

Outcome 1.1. Strengthened institutional frameworks and capacity to apply Integrated Landscape Management (ILM) that reduces biodiversity loss and degradation due to forest fire and other drivers through institutionalization of 'fire-smart' and other integrated solutions within ILM.	Under BAU, planning remains siloed (fire, desertification, forestry, livelihoods) and EWS alerts rarely translate into community-driven actions; budgets are not aligned to cross-sector ILM. The project's incremental investment creates a state-led ILM architecture in Jharkhand and Uttarakhand: participatory landscape assessments produce ILM risk/opportunity maps; single, cross-sector ILM strategies are formulated and then embedded in ≥10 state instruments (SBSAPs, SAPCDs, State Fire Plans, forest working plans, CFR/community plans, decentralized development plans) with budget tagging that delivers a ≥25% increase (from PPG baselines) in ILM-aligned spending. The National EWS is linked to village ILM protocols through communication hubs, drills and SOPs. These increments generate global environmental benefits (GEBs) by improving policy coherence and financing for actions that avoid and reduce land degradation, lower burn severity and fragmentation, protect critical habitats and corridors, and avoid/mitigate GHG emissions (target to be estimated at PPG).
Outcome 2.1. Enhanced ecosystem and livelihood resilience in target landscapes through community-led ILM implementation that addresses forest fire and other drivers of biodiversity loss and degradation.	BAU would see continued biodiversity loss and degradation at forest-farm interfaces, IAS spread, erosion/SOC loss, encroachment pressure and fire risks, with limited nature-positive livelihood alternatives. The project finances the translation of state ILM strategies into operations: 3 participatory ILM strategies adopted across 167,899 ha of critical PA landscapes; 300,000 ha of priority forests/production landscapes outside PAs brought under improved management; and 2,500 households (~10,000 people; ≥50% women) benefiting from nature-positive livelihoods. Incremental activities include IAS suppression and assisted natural regeneration, soil- and water-conservation/bio-engineering on erodible slopes and riparian zones, springshed and corridor restoration (including mining-affected blocks), regulated grazing, and strategic fuel-management near settlements. On production landscapes the project scales regenerative agriculture and diversified, fire-resilient agroforestry/silvopasture that restore SOC and contribute to LDN. Community stewardship mechanisms and convergence funds (CAMPA, GIM, NRLM, CSR) enable performance-linked delivery.
Outcome 3. Evidence-based decision-making and systemic learning facilitated, enabling	Currently, knowledge management is fragmented and does not support systemic adoption of ILM-based approaches. Incremental costs cover development and dissemination of five knowledge products, four exchange workshops, a sustainability plan, a national policy

replication of effective ILM models and traditional knowledge across India's forest fire prone and critical ecosystems.	guidance with MoEFCC endorsement, and institutionalization of a national training curriculum. These interventions will create lasting capacity, policy uptake, and replication potential that generate global environmental benefits beyond the project sites.

Gender Equality & Women Empowerment: The project design will prioritize increasing women's representation across all tiers of planning and implementation, from participation in Van Panchayats and fire-watch groups to leadership roles in stewardship structures and restoration initiatives. It will promote the meaningful participation of women in all project consultations, decision-making processes, and knowledge exchanges. Dedicated support will be provided to facilitate women-led livelihoods, particularly those linked to nature-positive value chains, to promote financial independence and enhance agency. Additionally, gender-responsive training programs and capacity-building activities will be delivered to strengthen the skills of both women and men in areas such as fire prevention, restoration, and sustainable livelihoods. Gender considerations will also be embedded across project communication, knowledge management, replication strategies, and the monitoring and evaluation framework. This will ensure that project impacts are equitable, inclusive, and responsive to the differentiated needs, roles, and contributions of women and men.

The project will undertake a comprehensive gender analysis during the PPG phase and develop a Gender Action Plan (GAP) to guide the Project Management Unit (PMU) and all implementing partners. The plan will establish clear targets for gender equality and women's empowerment, such as ensuring balanced representation of women in project decision-making bodies, guaranteeing that women receive an equitable share of project benefits, and integrating gender perspectives into landscape management plans. It will also promote gender awareness throughout project implementation and ensure equal employment opportunities within the project management office, as well as among consultants and service providers engaged by the project.

Stakeholder and Private Sector Engagement: Meaningful stakeholder engagement will be at the heart of the project's design and implementation, recognizing that collaboration among diverse actors is essential to effectively address the complex and multi-dimensional challenges of forest fire management and landscape restoration. From the outset, the project will establish inclusive and representative coordination mechanisms, including a multi-tiered Project Steering Committee and State-level Working Groups, bringing together key stakeholders such as government entities (national, state and village levels), civil society organizations, technical experts, private sector representatives and community representatives. These platforms will ensure strategic oversight, foster shared ownership, and facilitate transparent decision-making throughout the project lifecycle.

The project will also conduct extensive consultations with local stakeholders - including Van Panchayats, forest-dependent communities, Gram Sabhas, and women's self-help groups - ensuring their voices are reflected in the planning, implementation, and monitoring of all project activities. Participatory landscape assessments and mapping, and the development of ILM strategies will be carried out in close collaboration with local actors, combining scientific expertise with traditional knowledge and lived experiences. This bottom-up approach will not only enhance the relevance and effectiveness of interventions but also build long-term trust and legitimacy among communities. And to promote cross-sectoral learning and coordination, the project will organize multi-stakeholder workshops at both the national and landscape levels, fostering dialogue and knowledge exchange between different states and institutional actors. It will also partner with academic and research institutions to institutionalize learnings and support evidence-based decision-making. Furthermore, the project will actively engage stakeholders in monitoring and evaluation processes, including through participatory tools and community-led data collection. Regular performance reviews, third-party evaluations, and feedback loops will ensure continuous learning and allow for timely course correction based on stakeholder input. By embedding stakeholder engagement across all components - from planning and governance to implementation and knowledge dissemination - the project will foster collaboration, transparency, and shared responsibility, ultimately increasing the likelihood of achieving sustained and transformative outcomes.

A. Table: Stakeholder Engagement

Stakeholders	Project Implementation Role
Ministry of Environment, Forest and Climate Change (MoEFCC)	The Ministry of Environment, Forest and Climate Change (MoEFCC), through its Forest Protection Division, will serve as the executing nodal agency for the project. The Division is responsible for planning, coordination, and implementation of national forest, conservation and landscape management policies, including the NBSAP, National Action Plan on Forest Fires and so on. It will oversee and guide the implementation of project in close collaboration with state forest departments, local governance institutions, and community stakeholders, ensuring alignment with national priorities and strengthening of relevant national and sub-national instruments.
Sectoral Ministries/ Departments	National Disaster Management Authority, Ministry of Agriculture, Ministry of Mines, Ministry of Tribal Affairs, Ministry of Panchayati Raj, Ministry of Rural Development, Ministry of Ayush, NITI Aayog etc. will be important stakeholders. Their engagement will be critical for integrating ILM measures into ongoing programmes, development plans, enhancing livelihood resilience and supporting biodiversity conservation. These institutions will also play a key role in aligning national priorities with the strengthening and implementation of ILM solutions.
State Forest Department	The State Forest Departments are responsible for forest protection, landscape management, fire prevention, and biodiversity conservation, and act as the key interface between national and state-level programs. Their role in the project will include representation in steering and working groups, leading implementation at the landscape level, organizing consultations and participatory workshops, training workshops, enabling stakeholder participation and interaction, facilitating community engagement, strengthening adoption and implementation of ILM measures, and supporting monitoring and reporting systems.
State governments, municipal and district level government bodies (corporations, agencies, etc.)	Department of Scheduled Tribe, Scheduled Caste, Minority and Backward Class Welfare, Department of Labour, Employment, Training and Skill Development, State Rural Livelihood Mission, State Livelihood Promotion Society (JSLPS), State Disaster Management Authorities (SDMAs), District Disaster Management Authorities (DDMAs), State Medicinal Plant Boards, JHARCRAFT, JHAMFCOFED,
Research, academic training institutions and universities	The project will work with Institutes like Forest Survey of India, Botanical Survey of India (BSI), National Institute for Disaster Management (NIDM), Indian Institute of Forest Management (IIFM), ICFRE-Centre for Excellence, Indian Institute of Natural Resins and Gums (IINRG), State Forest Training Institutes, National University of Study and Research in Law (NUSRL), National Institute of Secondary Agriculture, Rural Self Employment Training Institutes etc
Traditional Institutions	Traditional village institutions such as the Munda-Manikis in Jharkhand play an important role in local governance and community decision-making. Their involvement as stakeholders in ILM design will strengthen village-level planning, ensure community participation, and support effective implementation of ILM measures.
Women's organizations	Women Welfare Organizations in project landscapes will provide training, advisory services and oversight to strengthen the participation in women in decision making, and their ability to be involved in planning and sharing benefits.
Local Communities	Local communities like the Biodiversity Management Committees, Joint Forest Management Committees, Gram Panchayat, Eco-development committees, Self Help Groups, Van Panchayats etc. will be engaged in project implementation.
NGOs	There are several NGOs in the country working on ILM through community engagement, natural resource management, and promotion of sustainable livelihoods. These NGOs (e.g. FES, PHIA, Aarohi, Chirag, Himmotthan Society etc) will be engaged in design and implementation of the project, including in community mobilization, implementation of ILM solutions/models, training and capacity building, communication, public awareness etc.
Private Sectors	Industrial town of Jamshedpur is 114 km from West Singhbhum district in Jharkhand. Engagement of private sector through CSR investments, and companies such as Firetech that provide fire prevention and management technologies, and Tata Steel that is involved in the mining industry, can provide critical financial and technical support to complement community-based ILM implementation and can contribute technical innovations to strengthen the implementation of the State Forest Fire Action Plan. At the PPG, the project will identify other companies that can support the implementation of other ILM and nature-positive livelihood interventions.
International development partners	International development agencies that support initiatives towards environment and conservation will be important stakeholders/partners for providing substantive inputs and guidance. The project will complement and build on lessons of work done by these agencies. Organizations such as Firefly (Spain) and Vallfirest can bring in global expertise, technology, and training support to strengthen forest fire

	prevention and management efforts. Other development partners that support implementation of the ILM approaches will also be identified at the PPG.
IUCN and UNDP	IUCN with UNDP as GEF implementing agencies will oversee the successful design and implementation of the project providing oversight, technical coordination and monitoring.

Please refer to Annex I. Preliminary Stakeholder Engagement Plan for detail consultations conducted at PIF stage, as well as stakeholder mapping and their roles in the project.

Knowledge management: In order to embed project learnings into long-term institutional processes, the project will collaborate closely with leading academic institutions and thematic networks, such as the Indian Institute of Forest Management (IIFM), Forest Survey of India (FSI), the cell of the Inspector General of Forests (IGF) and State Forest Training Academies. These partnerships will support the integration of ILM practices and community-based approaches into formal capacity-building curricula and forest management training programs, helping to institutionalize and scale the project's core innovations.

Policy Strengthening: The project shifts state and national frameworks from single-threat programs to a single, cross-sector ILM approach that embeds fire-smart measures alongside actions on IAS control, soil- and water-conservation, regenerative agriculture and agroforestry on production lands, regulated grazing/encroachment management, and corridor/springshed restoration. In each target state, participatory assessments culminate in a state ILM strategy that is then inserted into at least ten instruments (SBSAPs, SAPCDs [desertification plans], State Action Plans on Forest Fire Prevention, forest working plans, CFR/community forest resource plans, and decentralised development & conservation plans) with budget-tagging and spending targets sufficient to deliver a ≥25% increase (from PPG baselines) in ILM-aligned allocations. The national Early Warning System is hard-wired to village ILM protocols through communication hubs and SOPs, converting alerts into coordinated, last-mile action.

At the national level, the project produces a MoEFCC-endorsed roadmap and policy guidance for ILM scale-up, with convergence pathways to CAMPA, Green India Mission, NRLM and CSR finance, and implementation guidance relevant to agriculture, rural development, mining and infrastructure agencies. Traditional ecological knowledge and inclusive co-governance requirements (women's and tribal participation, benefit-sharing) will be mainstreamed into the roadmap and guidance. Together, these measures improve policy coherence, align budgets with ILM priorities, and establish durable governance and financing structures that sustain biodiversity-friendly forest management and reduce fire- and non-fire drivers of biodiversity loss and degradation well beyond the project's lifetime.

Innovation and Scale-Up: The project introduces several innovative ILM approaches that can be scaled nationally. First, it operationalizes the application of ILM approaches/strategies and financing in forest restoration and biodiversity conservation as well as community livelihoods. Second, it leverages participatory landscape-level ILM planning and co-governance mechanisms, enabling communities, local governance bodies, and protected area authorities to actively manage forest restoration-conservation. Third, it integrates knowledge management and capacity building through the development of a national training curriculum, knowledge products, and multi-stakeholder workshops, creating pathways for replication across multiple states. The combination of locally grounded sustainability plans, national policy guidance, and institutionalized training ensures that proven approaches can be scaled across India's critical landscapes. Additionally, the project engages the private sector in value addition, market linkages, and green finance mechanisms, creating innovative, incentive-based nature-positive models that promote long-term adoption and replication of ILM-based forest restoration and biodiversity conservation practices beyond the project area.

[1] Forest Survey of India. (2023). *India State of Forest Report 2023: Volume II*. Ministry of Environment, Forest & Climate Change.

[2] Ministry of Environment, Forest and Climate Change. (2023). *Elephant Corridors of India 2023*. Government of India.

[3] Outlined in Part A, and in "Coordination and Cooperation with Ongoing Initiatives and Projects" section

Coordination and Cooperation with Ongoing Initiatives and Project.

Does the GEF Agency expect to play an execution role on this project?

If so, please describe that role here. Also, please add a short explanation to describe cooperation with ongoing initiatives and projects, including potential for co-location and/or sharing of expertise/staffing

No, the GEF agencies will not be playing execution roles.

This project will be implemented by the Forest Protection Division of the Ministry of Environment, Forest and Climate Change, supported by two GEF agencies: IUCN (lead) and UNDP. Selecting UNDP and IUCN together is intentional and complementary. UNDP brings long-standing policy integration and systems capacity with MoEFCC and states (NBSAP formulation, NDMA's National Forest Fire Programme, SAPCCs, risk-informed planning, Van Panchayats/JFM support, BIOFIN, and upcoming GEF GBFF/OECM projects), enabling cross-sector governance, financing convergence, and scalable, state-owned delivery. IUCN contributes globally recognized technical leadership on protected and conserved areas (IUCN categories, Green List standard and certification), OECM recognition, restoration science, invasive-species management, and Protected Planet/WDPA data stewardship; plus in-country experience on forest landscape restoration and "sustainable agriscapes." Together, this co-implementation bridges policy and finance (UNDP) with ecosystem science and standards (IUCN), which is precisely what ILM across PAs and production landscapes requires to deliver BD-1, LD-1/2 and CCM-1.4 outcomes.

The potential execution support from IUCN and UNDP will be assessed during the PPG phase, following a detailed evaluation and the completion of the HACT micro-assessment of the Implementing Partner. During this phase, the project will explore all available options, including the possibility of third-party support, to determine if execution support is required.

Planned cooperation with other relevant GEF-financed projects and other initiatives: The project strategy has a strong emphasis on building upon baseline activities implemented by project partners, as well as on establishing new and strengthening existing partnerships to ensure the sustainability of the results achieved. The project will connect and collaborate with (e.g., potential implementation partners, co-financing) and build on the lessons of a range of related initiatives. Some of the key related initiatives where partnerships will be fostered are listed below (more initiatives will be explored during the PPG):

Other initiatives	Main partner(s)	Intersections with project outputs
Ongoing GEF-initiatives: (i) Promotion of Sustainable Food Systems in India through Transforming Rice-Wheat Systems (FOLUR India) - GEF ID 10480 (FAO, MoAFW); (ii) Sustainable Management and Restoration of Degraded Landscapes for Achieving LDN in India - GEF ID 10876 (UNDP, MoEFCC); (iii) Strengthening Conservation and Resilience of Globally-Significant Wild Cat Landscapes - GEF ID 10235 (UNDP & WWF-US, MoEFCC); (iv) Enhancing the conservation and sustainable use of biodiversity to meet India's commitment to the Kunming-Montreal Global Biodiversity Framework targets by 2030 – OECM Project (UNDP & MoEFCC); (v) BIOFIN	MoAFW, MoEFCC, FAO, UNDP, WWF-US	The project will systematically build on and align with ongoing GEF investments by adopting proven approaches, tools and lessons from (i) FOLUR India on conservation-agriculture and diversified agroforestry at forest-farm interfaces; (ii) the LDN India program on "avoid-reduce-restore" approaches, soil- and water-conservation, restoration monitoring, and convergence of public/CSR finance for restoration blocks; (iii) the Wild Cat Landscapes initiative on corridor/connectivity planning and human-wildlife coexistence protocols; (iv) OECM Project on scaling up the establishment of conservation reserves and restoration; (v) BIOFIN on finance solutions, CSR analyses, and expenditure tracking methodologies; (vi) ITHCP on ILM corridor rehabilitation, human-wildlife conflict management and community co-governance; (vii) Satoyama Initiative on strengthening important landscape mosaic stewardship and nature-positive livelihoods.

Ongoing non-GEF initiatives: i) Integrated Tiger Habitat Conservation Programme (ITHCP) (KfW and IUCN); (ii) Satoyama Initiative.		Where feasible, the project will reuse technical standards and indicators, share spatial layers and M&E dashboards, synchronize training contents and so on, ensuring coherence with national/state priorities and avoiding duplication. This coordination will be formalized through MoEFCC and state Working Groups so that community-led ILM plans in Jharkhand and Uttarakhand leverage established methods, partnerships and finance pathways, accelerating scale and impact.
Forest Fire Prevention & Management (MoEFCC) Central scheme covering prevention, preparedness, suppression, post-fire restoration, fire lines, firefighting infra, watchers, forecasting systems	MoEFCC – Forest Protection Division; State/UT Forest Departments	• Output 1.1.2 & 1.1.3: Project-developed ILM strategies will complement state-level fire prevention plans and integrate into SBSAPs. • Output 1.1.4: Community hubs and early warning capacity directly enhance MoEFCC's fire forecasting and preparedness mechanisms. • Output 2.1.3: Community-led restoration supports rehabilitation priorities.
Forest Fire Alerts (FSI) Near real-time satellite-based alerts via MODIS/VIIRS, SMS/email to state forest depts	Forest Survey of India (MoEFCC)	• Output 1.1.4: Project will strengthen the usability of early warning alerts at the community level through communication hubs and training. • Output 3.1.1: Knowledge products will document best practices on translating FSI alerts into community-responsive action.
National Natural Resources Management System (NNRMS) Remote sensing, forest fire surveillance, mapping, and regional data processing	Dept. of Space; ISRO; MoEFCC	• Output 1.1.1: Participatory ILM assessments can integrate NNRMS geospatial datasets to identify high-risk fire zones. • Output 3.1.1: Lessons will be documented on blending participatory mapping with remote sensing for fire-smart planning.
Social Forestry & Joint Forest Management Programs Green India Mission	MoEFCC	<u>Social Forestry & Joint Mission</u> • Output 2.1.2 & 2.1.3: Leverage JFM/Van Panchayat institutions and existing landscape-level ILM strategies to formalize stewardship agreements and co-finance ILM restoration-conservation blocks (ANR, native enrichment, fuel-breaks). • Output 1.1.3 & 3.1.3: Integrate JFM provisions into state ILM instruments (SBSAPs/working plans and so on) and embed community co-governance modules in training curricula. <u>GIM:</u> • Output 1.1.2 & 1.1.3: Align ILM strategies and budget-tagging with GIM workplans so species choice, silviculture, and springshed/recharge measures are fire-smart and biodiversity-positive. • Output 2.1.3 & 3.1.2: Channel GIM funds to priority ILM restoration-conservation blocks (PA buffers/forest–farm edges) and document convergence pathways in the National Roadmap for scale-up.
National Mission for Sustainable Agriculture (NMSA)	MoA	• Output 2.1.4 & 2.1.3: Coordinate with NMSA (Rainfed Area Development, Soil Health Management, Sub-Mission on Agroforestry) to scale regenerative agriculture (residue non-burn, mulching, minimum tillage), diversified agroforestry/silvopasture, and micro-watershed/soil-moisture conservation along forest–farm interfaces; channel NMSA/PMKSY incentives to ILM restoration blocks. • Output 1.1.1 & 1.1.3 (and 3.1.3): Use Soil Health Card and irrigation/CSA datasets in participatory ILM assessments, and mainstream NMSA convergence (schemes, extension,

		FPO/SHG platforms) into state ILM instruments and training curricula for field cadres.
Jharkhand Revised Jharia Master Plan (JMP) Large-scale resettlement & fire/subsidence mitigation with livelihood emphasis (₹5,940 cr)	State Govt. of Jharkhand	• Output 2.1.4: nature-positive livelihood pilots (NTFPs, enterprises) can align with JMP's skill-development and income-generation focus for resettled families. • Output 2.2: Community stewardship mechanisms may serve as models for rehabilitated communities.
Uttarakhand Forest Fire Management System Mobile app, state fire mgmt. plans, revival of fire lines, pine-needle check dams, Panchayat fire committees, financial incentives	Uttarakhand Forest Department; Gram Panchayats	• Output 1.1.2 & 1.1.3: State-level ILM strategies will reinforce Uttarakhand's fire mgmt. plans. • Output 2.1.3: Project-led restoration in fire-affected areas complements fire line revival and pine-needle removal. • Output 2.1.4: Fire-smart, nature-positive value chains (e.g., pine needle use) align with community-based incentive schemes. • Output 3.1: Knowledge products will capture community-based innovations (e.g., pine-needle check dams).
CAMPA and MG-NREGA	State CAMPAs; State Forest Departments; Ministry of Rural Development	• Output 2.1.1 & 2.1.3: CAMPA and MG-NREGA funds can co-finance participatory ILM-based restoration-conservation in degraded areas. • Output 2.1.2: Project-supported stewardship groups could access CAMPA and MG-NREGA resources for implementing ILM-based restoration-conservation activities. • Output 3.1.2: Sustainability plan will explore CAMPA and MG-NREGA as a long-term financing mechanism.

Core Indicators

Indicator 1 Terrestrial protected areas created or under improved management

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
167899	0	0	0

Indicator 1.1 Terrestrial Protected Areas Newly created

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
0	0	0	0

Name of the Protected Area	WDPA ID	IUCN Category	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)

Indicator 1.2 Terrestrial Protected Areas Under improved Management effectiveness

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)
167899	0	0	0

Name of the Protected Area	WDPA ID	IUCN Category	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)	METT score (Baseline at CEO Endorsement)	METT score (Achieved at MTR)	METT score (Achieved at TE)

Binsar Wildlife Sanctuary		Protected area with sustainable use of natural resources	4,559.00						
Jim Corbett National Park		National Park	131,854.00						
West Singhbhum Sarada Wildlife Reserve		Protected area with sustainable use of natural resources	31,486.00						

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
300000	0	0	0

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
200,000.00			

Indicator 4.2 Area of landscapes under third-party certification incorporating biodiversity considerations

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Type/Name of Third Party Certification

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
100,000.00			

Indicator 4.4 Area of High Conservation Value or other forest loss avoided

Disaggregation Type	Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 4.5 Terrestrial OECMs supported

Name of the OECMs	WDPA-ID	Total Ha (Expected at PIF)	Total Ha (Expected at CEO Endorsement)	Total Ha (Achieved at MTR)	Total Ha (Achieved at TE)

Documents (Document(s) that justifies the HCVF)

Title

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)	2915035	0	0	0
Expected metric tons of CO_2e (indirect)	0	0	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)	2,915,035			
Expected metric tons of CO_2e (indirect)				
Anticipated start year of accounting	2027			
Duration of accounting	20			

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO_2e (direct)				
Expected metric tons of CO_2e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)

Indicator 11 People benefiting from GEF-financed investments

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female	5,000			
Male	5,000			
Total	**10,000**	**0**	0	**0**

Explain the methodological approach and underlying logic to justify target levels for Core and Sub-Indicators (max. 250 words, approximately 1/2 page)

Core Indicator 1: The project will facilitate improved management of three high priority protected areas (PAs) across the states of Jharkhand and Uttarakhand, selected for their significant forest cover, biodiversity importance, and high vulnerability to forest fires. The targeted PAs are:

- West Singhbhum Saranda Wildlife Sanctuary , Jharkhand (Area: ~314.86 km²): This expansive reserve is a vital biodiversity corridor within the Chota Nagpur Plateau, known for its dense sal (Shorea robusta) forests, which are a key natural habitat for the Asian elephant and other endangered species. Its selection reflects the coexistence of high-value biodiversity with acute pressure from degradation. The landscape lies on expanding agriculture/mining frontiers; forest-fringe communities depend heavily on fuelwood, fodder, and NTFPs, and seasonal practices - such as leaf-litter burning for mahua/tendu collection, which regularly ignite fires. A dense canopy, dry understory, and accumulated biomass create high fuel loads that intensify burns and threaten habitat connectivity. The project will enhance the management of this PA by focusing on implementation of integrated landscape management, pairing fire-smart interventions with invasive-species control, soil- and water-conservation, and livelihood diversification to curb biodiversity loss and degradation.

- Jim Corbett National Park, Uttarakhand (Area: 1,318.54 km²): As India's oldest national park and a critical component of the Terai Arc Landscape, Corbett is a global biodiversity hotspot. It boasts some of the highest densities of Bengal tigers and Asian elephants and encompasses diverse ecosystems from grasslands to dense moist deciduous forests. However, the national park is facing recurrent fires on the park's northern chir pine (Pinus roxburghii) slopes, pressure at agriculture/infrastructure frontiers, and biomass extraction/encroachment along forest fringes. These threats erode habitat integrity, disrupt corridor connectivity and escalate human-wildlife conflict. To address this condition, the project will implement integrated landscape management that pairs fire-smart fuel and understory management with IAS control, soil- and water-conservation on erosion-prone edges, corridor and riparian restoration, and community co-governance/EWS linkages to safeguard biodiversity while reducing degradation risks.

- Binsar Wildlife Sanctuary, Uttarakhand (Area: 45.59 km²): Situated in the Kumaon Himalayas, Binsar is a biodiversity-rich haven known for its dense oak-rhododendron forests, which are crucial for water recharge and habitat for species like the leopard and Himalayan black bear. Despite its smaller size, it faces a disproportionately high fire threat. The sanctuary is surrounded by villages, and the dry summer months render the oak leaf litter highly combustible. Recurrent fires here not only degrade this unique mid-elevation ecosystem but also threaten the watershed services vital for downstream communities. Additionally, IAS especially Ageratina adenophora (and locally Lantana) are spreading through mid-elevation oak belts, altering understory structure, depressing native regeneration, and shifting soils. Livestock grazing, lopping and fuelwood/fodder extraction also reduce sapling survival and oak recruitment and also alter bird population. The project's improved management practices for this PA will focus on ILM solutions that combine fire-smart fuel and understory management, IAS control, soil- and water-conservation on slopes and riparian edges, and community co-governance with EWS linkages, safeguarding biodiversity while stabilizing recharge and reducing degradation.

Across these three ecologically significant yet highly vulnerable PAs, the project will target management improvements across 167,899 ha of critical PA landscapes. Key interventions will focus on the participatory implementation of ILM-based restoration and conservation strategies, directly addressing the drivers of biodiversity loss and degradation in each location to enhance ecosystem and community resilience.

Core Indicator 4: The project will improve the management of 200,000 ha of critical/degraded forests and 100,000 ha of critical production landscapes outside PA to enhance biodiversity and ecosystem resilience. This will be achieved through the implementation of integrated landscape management for ecological restoration and sustainable use. The project's improved management approach will follow participatory micro-zonation and the landscape-level ILM strategies/models to prioritize areas for avoidance-reduction-restoration actions. Interventions will include invasive-species suppression followed by assisted natural regeneration and enrichment with native species; soil- and water-conservation/bio-engineering on erodible slopes and riparian zones (contour/terrace repair, vegetative barriers, gully plugs, farm ponds, buffers); regenerative agriculture on farmlands (residue non-burn options, minimum tillage, cover crops/green manures, contour farming) and diversified, fire-resilient agroforestry/silvopasture to rebuild soil organic carbon; springshed and corridor restoration (including mining-affected compartments); and regulated grazing with strategic fuel management near settlements and ecotones.

Core Indicator 6: the carbon balance equals to a GHG emission mitigation of 2,915,035 tCO2e (20-year estimates). The project's mitigation target was calculated using FAO's Ex-Ante Carbon-balance Tool (Ex-ACT) v.9, with detailed calculation is provided in Annex IIb. The mitigation estimates were derived from the following:

- Improved management through ILM implementation facilitated by the project across 25% of the target PA landscapes (core indicator 1), which equals to 41,975 ha. Improved management in the remaining PA landscapes will be done through government's co-financing.
- Improved management through ILM implementation facilitated by the project across 25% of the critical/degraded forest landscapes (core indicator 4.1), which equals to 50,000. Improved management in the remaining PA landscapes will be done through multi-parties' co-financing and scale-up planning. Moreover, due to the absence of the baseline information on the production landscapes, the current carbon estimate does not take into account the mitigation potential of these areas.

At the PPG, the project will re-assess carbon mitigation potential, especially once the baseline information on the target production landscapes has been obtained.

Core Indicator 11: the target for direct beneficiaries (10,000 individuals - 50% are women) is derived from community members benefiting from interventions under the project's Component 2.

Key Risks

	Rating	Explanation of risk and mitigation measures
CONTEXT		
Climate	Moderate	Risk: Increased climate variability (such as raising temperatures, erratic rainfalls, droughts risks) escalates forest-fires in the target states and landscapes, which might undermine the project's implementation and impacts, especially ILM-based ecological restoration. Assessment: During the PPG phase, the project will conduct a 'climate and disaster risk' screening. The results of the screening will be further validated during the field/landscape level consultations. Mitigation: the project will develop mitigation actions to address this risk at the PPG, based on the results of climate and risk screening and landscape consultations. These mitigation actions will be incorporate in the design of the project's interventions, as well as relevant SES (Social-Environmental Safeguard) documents.
Environmental and Social	Moderate	Risk: The overall SES risk rating is moderate. This is on the basis that potential environmental and social impacts that are less adverse and fewer in number than those of high-risk projects. Typically, these impacts are site specific, their extent can be determined with a reasonable degree of certainty, few if any of them are irreversible, and mitigation measures could be readily designed and implemented to successfully address these concerns. Moderate-

		level risks are highlighted around: · the potential for access restrictions to result from restoration activities and improved PA management plans · the presence of Scheduled Tribes (triggering the Standard on Indigenous Peoples) · the effective identification of and engagement with vulnerable groups · community health and safety in relation to the potential for Human-Wildlife Conflict, and inter-community conflict over preferential treatment or the instigation of fire-prevention policies · occupation health and safety, in particular relating to fire prevention and fire management activities · the impact of the project upon gender relations, including the role of women as beneficiaries Assessment: During the PPG, the project will carry out a capacity gap analysis of duty-bearers; undertake a gender and social baseline; map stakeholders and vulnerable groups; and prepare preliminary ecological and habitat baselines, together with climate and disaster risk screening. During implementation, screening of all sub-projects will further analyze impacts, with specific attention to critical habitats, cultural heritage, and Tribal/Indigenous Peoples' rights and tenure considerations. Mitigation: Management will be anchored in an ESMP that operationalizes a Stakeholder Engagement Plan, Gender Action Plan, and a Tribal Peoples Planning Framework with FPIC protocols, supported by a culturally appropriate, accessible GRM. Biodiversity and climate risks will be addressed through an avoidance–minimization–restoration hierarchy, climate-resilient design specifications, early-warning linkages, and monitoring of key biodiversity and water-risk indicators. Participation and inclusion will be strengthened through inclusive governance arrangements, women's representation and safety measures, targeted capacity building for government and rightsholders, and transparent information disclosure and accountability mechanisms throughout the project cycle.
Political and Governance	Low	Risk: Limited government buy-in and support might delay the integration of the ILM frameworks into important government planning essential for long-term impact and scale-up. Assessment: During the PPG phase, the project will conduct further multi-stakeholder meetings with key officials in relevant ministries and departments, complemented by a thorough review of recent policy documents and budget allocations to understand current priorities. This will be paired with a stakeholder mapping and analysis to identify both potential champions and opponents. Mitigation: The project will ensure the implementation of the Stakeholder Engagement Plan, which is developed based on the results of the stakeholder mapping and analysis.
INNOVATION		
Institutional and Policy	Low	Risk: Inflexible or contradictory national strategies and policies might create legal and operational barriers that prevent the effective adoption of ILM models. Assessment: At PPG, the project will conduct detailed policy and regulatory review, mapping all pertinent national and state strategies across forestry, climate, and agriculture to identify any potential contradictions or gaps that could hinder the project's community-based approach. This will include an assessment of the level of decentralization and flexibility currently

		permitted within the forest management policy framework. Mitigation: The project will be intentionally designed to integrate into and help harmonize conflicting policies, positioning itself as a practical test case for resolving broader strategic inconsistencies. Throughout implementation, the project will foster continuous engagement with policymakers and proactively address regulatory hurdles. Additionally, the project will pilot its approaches in a few discrete districts first to generate proof of concept and build a compelling evidence base before seeking wider policy influence.
Technological	Moderate	Risk: Technical interventions are designed based on flawed or incomplete data, which might lead to the misallocation of resources and the failure of improved management, restoration and conservation efforts. Assessment: At PPG phase, the project will conduct a primary baseline study to fill critical data gaps regarding forest cover, fire history, carbon stocks, and socio-economic factors. This will be supplemented by ground-truthing exercises to validate existing data and a thorough evaluation of the available remote sensing resources to ensure they are fit for purpose. Mitigation: An adaptive management framework will be core to the project's design, featuring a dedicated plan and budget for monitoring and learning that allows for real-time course correction. To maintain credibility, all projections for carbon and biodiversity benefits will be based on conservative, evidence-backed estimates. Furthermore, partnerships with reputable national research institutions will be forged to embed scientific rigor into every stage of the project's technical design and ongoing evaluation.
Financial and Business Model	Moderate	Risk: Macroeconomic volatility, including high inflation or recession might jeopardize government co-financing commitments. Assessment: At PPG, the project will assess fiscal stability will involve analyzing state and national budget trends over the past five years for the environment and forestry sectors. All government co-financing pledges will be meticulously clarified, quantified, and documented in writing to establish a firm baseline. Mitigation: Financing sources will be diversified by securing commitments from multiple agencies, not only governments (but also private sector, NGOs/CSOs), thereby avoiding over-reliance on a single entity. The project budget will incorporate built-in flexibility to allow for necessary reallocations in response to inflation or currency fluctuation, and a phased implementation approach will be adopted so that initial successes can be used to demonstrate value and advocate for continued funding even in a constrained fiscal environment.
EXECUTION		
Capacity	Moderate	Risk: Limited administrative capacity at all levels might cause critical implementation delays and prevent local institutions from sustaining project gains. Assessment: At PPG, the project will undertake institutional capacity assessment of Executing Agency (MoEFCC), evaluating their administrative, financial, and technical strengths and weaknesses. Mitigation: To build EA's capacity, the project will include a comprehensive and budgeted capacity-building program aimed at strengthening the capacity and systems of EA.

		Administrative and reporting requirements will be streamlined to the greatest extent possible to reduce the burden on local partners.
Fiduciary	Moderate	Risk: Cumbersome procurement rules and weak financial controls in partner institutions might lead to significant implementation delays and the potential for misuse of funds. Assessment: At the PPG, the project will conduct fiduciary risk assessment of proposed EA, including audits of their past financial management systems. A parallel analysis will map government procurement processes in detail to identify the specific procedural bottlenecks that could cause delays. Mitigation: A tiered financial management approach will be implemented, applying tailored levels of oversight to each partner based on their assessed risk profile, with dedicated support provided to those needing to strengthen their systems. To navigate complex procurement rules efficiently, a dedicated procurement specialist will be hired within the Project Management Unit to expedite processes and ensure compliance.
Stakeholder	Moderate	Risk: The exclusion of marginalized groups or the capture of benefits by local elites might create social conflict and undermines the broad community ownership required for success. Assessment: At the PPG, the project will conduct stakeholder mapping and analysis to understand existing dynamics and identify marginalized groups. This will be grounded in participatory and inclusive consultation during the PPG using participatory rural appraisal techniques to capture community needs and traditional knowledge. Mitigation: Inclusion will be formalized through implementation of the Stakeholder Engagement Plan, which ensures the representative participation of women, youth, and marginalized groups in all project committees and activities. A robust, accessible, and well-publicized Grievance Redress Mechanism will be established from the very beginning to provide a fair and trusted channel for resolving any conflicts that may arise.
Other		
Overall Risk Rating	Moderate	The above key risks was identified and determined through a triangulated process combining (i) a desk review of preliminary secondary sources, including government reports, NGO/CSO publications and journals - used to inform PIF development; (ii) multi-stakeholder consultations conducted during PIF preparation with government agencies, local communities, civil society organizations and technical experts; and (iii) lessons learned from previous GEF projects in India with comparable contexts and delivery modalities. Each identified risk was screened against the project's theory of change and delivery arrangements, then assessed for likelihood and potential impact on outcomes, with consideration of existing country systems and institutional capacity (i.e., based on various HACT assessments conducted on MoEFCC by UNDP). Given the preliminary nature of evidence at the PIF stage, the rating reflects a conservative estimate that will be validated and, if necessary, recalibrated during the PPG through targeted assessments and updated consultations

C. ALIGNMENT WITH GEF-8 PROGRAMMING STRATEGIES AND COUNTRY/REGIONAL PRIORITIES

Describe how the proposed interventions are aligned with GEF- 8 programming strategies and country and regional priorities, including how these country strategies and plans relate to the multilateral environmental agreements.

Confirm if any country policies that might contradict with intended outcomes of the project have been identified, and how the project will address this.

For projects aiming to generate biodiversity benefits (regardless of what the source of the resources is - i.e., BD, CC or LD), please identify which of the 23 targets of the Kunming-Montreal Global Biodiversity Framework the project contributes to and explain how. (max. 500 words, approximately 1 page)

This project is a multi-focal-area project and intends to access Biodiversity (BD), Land Degradation (LD), and Climate Change (CC) STAR allocations, utilizing a full flexibility under GEF-8, to implement activities that will contribute to BD, LD, and CC focal area objectives. The specific contributions are outlined in the table below.

Project Outcomes & Outputs	Contribution to National/State Priorities	Contribution to GEF-8 Focal Area Objectives
Outcome 1.1. Strengthened institutional frameworks and capacity to apply Integrated Landscape Management (ILM) that reduces biodiversity loss and degradation due to forest fire and other drivers through institutionalization of 'fire-smart' and other integrated solutions within ILM. • Output 1.1.1–1.1.4	• Aligns with National Forest Policy 1988 (JFM/co-governance) and India's NBSAP/NBAP by mainstreaming ILM across forests and production lands (fire-smart, IAS control, SWC, regenerative agriculture / agroforestry, corridor & springshed restoration). • Advances NDC and the national 26 Mha LDN ambition by aligning ILM priorities and budget-tagging in state instruments (≥10 plans) and increasing ILM-aligned spending (≥25% from PPG baselines). • Strengthens NAPFF and state fire strategies by hard-wiring the National EWS to village ILM protocols (communication hubs, roles, joint drills) for last-mile prevention/response. • Supports SBSAPs / SAPCDs / forest working plans/ decentralized development and conservation plans / community plans in Jharkhand & Uttarakhand by inserting one cross-sector ILM strategy and monitoring clauses (IAS cover, erosion/SOC proxies, burn severity, corridor status, adoption).	BD-1-3 Objective: Outcome 1 strengthens state planning frameworks to integrate ILM solutions into forest restoration and biodiversity conservation models. ILM solutions, comprising of mainstream biodiversity-positive, fire-smart measures and actions on IAS, SWC, regenerative agriculture/agroforestry, and connectivity will be mainstreamed into state instruments (SBSAPs, State Action Plan to combat desertification/SAPCDs, State Action Plans on Forest Fire Prevention, forest working plans, and decentralised development and conservation plans, community forest resource management plans), leading to improved habitat integrity and ecosystem services. BD-1-4 Objective: Outcome 1 mainstreams biodiversity-friendly ILM solutions into state instruments and budgetary allocations. This ensures that biodiversity conservation priorities are designed and financed to address multi-drivers of biodiversity loss and degradation. LD-1 Objective: By improving early warning systems, building community capacity, and promoting ILM solutions, Outcome 1 contributes to reducing the incidence and spread of forest fires and tackle other drivers of biodiversity loss and degradation. This prevents soil erosion, maintains forest cover, and reduces degradation in high-risk landscapes. LD-2 Objective: The project will enable targeted, ILM-based restoration of degraded landscapes (forest and production landscapes), ensuring that recovery efforts prioritize ecologically vulnerable areas and biodiversity-rich zones, reversing degradation trends and advancing the national LDN targets. CCM-1-4: Objective: Outcome 1 promotes Nature-based Solutions (NbS) – in India's context, Ecosystem-based Approaches (EbAs), by embedding ILM guidance and finance pathways, enabling avoided emissions from reduced burn severity and enhanced sequestration via restoration/agroforestry.
Outcome 2.1. Enhanced ecosystem and livelihood resilience in target landscapes through community-led ILM implementation that addresses forest fire and other drivers of biodiversity loss and degradation. • Output 2.1.1–2.1.4	• Advances LDN (26 Mha by 2030) via avoid-reduce-restore actions in forests and production lands (regenerative agriculture, residue non-burn, cover crops, contour farming; diversified agroforestry / silvopasture). • Contributes to implementation of National Forest Policy 1988 through co-governance (Gram / Van Panchayats, BMCs), equity / benefit-sharing and women / youth leadership in ILM delivery. • Strengthens SBSAP / SAPCD / decentralized development and conservation plan / forest working plans / community plans in Jharkhand & Uttarakhand.	BD 1-1: Outcome 2 will improve management of 167,899 ha critical PA landscapes. Key interventions will focus on the participatory implementation of ILM-based restoration and conservation strategies. BD-1-3: Outcome 2 restores ecosystem integrity by bringing 300,000 ha of critical forest and production landscapes outside PA and 167,899 ha of PA landscapes under improved management. Locally-led ILM interventions, such as IAS suppression and ANR, native enrichment, fuel management, corridor / springshed restoration, and ILM-aligned governance, will facilitate recovery of high-value habitats and ecosystem services and strengthening connectivity. BD-1-4: Outcome 2 mainstream biodiversity-friendly, ILM practices into PA and non-PA management, village governance (Van Panchayats), and community nature-positive livelihood systems, ensuring biodiversity conservation becomes a core principle in forest, agriculture, and rural development sectors. Integration of traditional knowledge and community

		stewardship agreements institutionalizes biodiversity management into decision-making and financing mechanisms. LD-1: By institutionalizing participatory ILM strategies, Outcome 2 prevents further land degradation through practices such as IAS suppression and ANR, native enrichment, fuel management, corridor / springshed restoration, and ILM-aligned governance, controlled grazing, biomass management, silvi-pasture systems, and soil-moisture conservation measures. These community-led ILM approaches stabilize soils, maintain forest and habitat productivity, and reduce further degradation. LD-2: Outcome 2 directly reverses degradation by restoring degraded forest and production landscapes through community nurseries, native replanting, regenerative agriculture and agroforestry, soil restoration measures and so on. These interventions improve vegetation cover, soil fertility, and water retention, enabling long-term recovery of degraded forest ecosystems while enhancing household resilience. CCM-1.4: Outcome 2 advances NbS/EbAs by combining ecosystem restoration with nature-positive livelihood solutions that mitigate GHG emission. Preventing recurrent fires and degradation avoids significant GHG emissions, while restored forests and production landscapes, as well as fire-resilient agroforestry systems enhance carbon sequestration. At the same time, nature-positive value chains (NTFPs, agroforestry, eco-certified products) demonstrate scalable NbS that deliver mitigation, adaptation, and biodiversity co-benefits while strengthening local economies. Overall, these improved landscape management interventions will mitigate at least 2.9M tCO2e.
Outcome 3. Evidence-based decision-making and systemic learning facilitated, enabling replication of effective ILM models and traditional knowledge across India's forest fire prone and critical ecosystems. • Output 3.1.1–3.1.3	• Contributes to National Forest Fire Action Plan through knowledge-sharing, research, and innovation on fire drivers and impacts. • Strengthens NBSAP & SBSAPs by providing evidence-based fire-smart models for mainstreamingin biodiversity planning. • Strengthens State Action Plan to combat desertification /SAPCDs, forest working plans, and decentralized development and conservation plans, community forest resource management plans. • Supports Jharkhand CAMPA and Uttarakhand community-based approaches by offering tested models for replication.	BD-1-3: Outcome 3 captures and disseminates evidence from locally-led implementation of ILM models and traditional practices, translating them into national training curricula, policy briefs, and case studies. This enables replication of proven approaches to restore degraded, fire-affected ecosystems at scale. BD-1-4: By embedding ILM modules into State and National Forestry Training Academies, SIRDs, and IGNFA/FSI/NTCA, and so on, Outcome 3 ensures that biodiversity-positive practices are mainstreamed, nation-wide, into the forestry, disaster management, and rural development sectors. The national policy guidance and sustainability plan endorsed by MoEFCC institutionalizes biodiversity-friendly ILM strategies in state and national planning. LD-1: Outcome 3 facilitates uptake of ILM practices by consolidating field lessons into accessible knowledge products and training curricula. This accelerates adoption of community-driven similar approaches that prevent degradation in critical forest and production landscapes. LD-2: Outcome 3 provides pathways for scaling ILM-based restoration of degraded forests and production landscapes beyond the project sites. This enables institutionalized, long-term recovery of degraded lands across multiple vulnerable states. CCM-1.4: Outcome 3 strengthens the evidence base and institutional uptake of NbS/EbAs, demonstrating how ILM-based forest restoration and biodiversity conservation reduces GHG emissions from biomass burning while enhancing carbon sequestration in restored forests.

D. POLICY REQUIREMENTS

Gender Equality and Women's Empowerment:

We confirm that gender dimensions relevant to the project have been addressed as per GEF Policy and are clearly articulated in the Project Description (Section B).

Yes

Stakeholder Engagement

We confirm that key stakeholders were consulted during PIF development as required per GEF policy, their relevant roles to project outcomes and plan to develop a Stakeholder Engagement Plan before CEO endorsement has been clearly articulated in the Project Description (Section B).

Yes

Were the following stakeholders consulted during project identification phase:

Indigenous Peoples and Local Communities:

Civil Society Organizations: Yes

Private Sector: Yes

Provide a brief summary and list of names and dates of consultations

*Please kindly **see Annex I.** Preliminary Stakeholder Engagement Plan for the summary of PIF consultations.*

(Please upload to the portal documents tab any stakeholder engagement plan or assessments that have been done during the PIF development phase.)

Private Sector

Will there be private sector engagement in the project?

Yes

And if so, has its role been described and justified in the section B project description?

Yes

Environmental and Social Safeguard (ESS) Risks

We confirm that we have provided indicative information regarding Environmental and Social risks associated with the proposed project or program and any measures to address such risks and impacts (this information should be presented in Annex D).

Overall Project/Program Risk Classification

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate			

E. OTHER REQUIREMENTS

Knowledge management

We confirm that an approach to Knowledge Management and Learning has been clearly described in the Project Description (Section B)

Yes

ANNEX A: FINANCING TABLES

GEF Financing Table

Indicative Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	Grant / Non-Grant	GEF Project Grant($)	Agency Fee($)	Total GEF Financing ($)
IUCN	GET	India	Biodiversity	BD STAR Allocation: BD-1	Grant	1,206,155.00	108,554.00	1,314,709.00
UNDP	GET	India	Biodiversity	BD STAR Allocation: BD-1	Grant	819,738.00	73,776.00	893,514.00
IUCN	GET	India	Climate Change	CC STAR Allocation: CCM-1-4	Grant	1,121,483.00	100,934.00	1,222,417.00
UNDP	GET	India	Climate Change	CC STAR Allocation: CCM-1-4	Grant	762,193.00	68,597.00	830,790.00
IUCN	GET	India	Land Degradation	LD STAR Allocation: LD-1	Grant	917,821.00	82,604.00	1,000,425.00
UNDP	GET	India	Land Degradation	LD STAR Allocation: LD-1	Grant	623,778.00	56,140.00	679,918.00
IUCN	GET	India	Land Degradation	LD STAR Allocation: LD-2	Grant	611,880.00	55,069.00	666,949.00
UNDP	GET	India	Land Degradation	LD STAR Allocation: LD-2	Grant	415,851.00	37,427.00	453,278.00
Total GEF Resources ($)						**6,478,899.00**	**583,101.00**	**7,062,000.00**

Project Preparation Grant (PPG)

Is Project Preparation Grant requested?

true

PPG Amount ($)

200000

PPG Agency Fee ($)

18000

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	Grant / Non-Grant	PPG($)	Agency Fee($)	Total PPG Funding($)
IUCN	GET	India	Biodiversity	BD STAR Allocation: BD-1	Grant	46,904.00	4,221.00	51,125.00
UNDP	GET	India	Biodiversity	BD STAR Allocation: BD-1	Grant	15,635.00	1,407.00	17,042.00
IUCN	GET	India	Climate Change	CC STAR Allocation: CCM-1-4	Grant	43,611.00	3,925.00	47,536.00
UNDP	GET	India	Climate Change	CC STAR Allocation: CCM-1-4	Grant	14,537.00	1,308.00	15,845.00
IUCN	GET	India	Land Degradation	LD STAR Allocation: LD-1	Grant	35,691.00	3,212.00	38,903.00
UNDP	GET	India	Land Degradation	LD STAR Allocation: LD-4	Grant	11,897.00	1,071.00	12,968.00
IUCN	GET	India	Land Degradation	LD STAR Allocation: LD-2	Grant	23,794.00	2,142.00	25,936.00
UNDP	GET	India	Land Degradation	LD STAR Allocation: LD-2	Grant	7,931.00	714.00	8,645.00
Total PPG Amount ($)						**200,000.00**	**18,000.00**	**218,000.00**

Please provide justification

Sources of Funds for Country Star Allocation

GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Sources of Funds	Total($)
IUCN	GET	India	Biodiversity	BD STAR Allocation	1,365,834.00
IUCN	GET	India	Climate Change	CC STAR Allocation	1,269,953.00
IUCN	GET	India	Land Degradation	LD STAR Allocation	1,732,213.00
UNDP	GET	India	Biodiversity	BD STAR Allocation	910,556.00
UNDP	GET	India	Climate Change	CC STAR Allocation	846,635.00

UNDP	GET	India	Land Degradation	LD STAR Allocation	1,154,809.00
Total GEF Resources					**7,280,000.00**

Indicative Focal Area Elements

Programming Directions	Trust Fund	GEF Project Financing($)	Co-financing($)
BD-1-1	GET	709,063.00	8026200
CCM-1-4	GET	1,883,676.00	2548000
LD-1	GET	1,541,599.00	15288000
BD-1-3	GET	607,768.00	6879600
BD-1-4	GET	709,062.00	8026200
LD-2	GET	1,027,731.00	10192000
Total Project Cost		**6,478,899.00**	**50,960,000.00**

Indicative Co-financing

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Recipient Country Government	MoEFCC (and other relevant ministries to be identified at PPG)	Public Investment	Recurrent expenditures	19000000
Recipient Country Government	MoEFCC (and other relevant ministries to be identified at PPG)	In-kind	Recurrent expenditures	1000000
Recipient Country Government	National Disaster Management Authority	Public Investment	Recurrent expenditures	10000000
Recipient Country Government	Jharkhand State	Public Investment	Recurrent expenditures	9200000
Recipient Country Government	Jharkhand State	In-kind	Recurrent expenditures	1000000
Recipient Country Government	Uttarakhand State	Public Investment	Recurrent expenditures	9360000
Recipient Country Government	Uttarakhand State	In-kind	Recurrent expenditures	1000000

GEF Agency	IUCN	In-kind	Recurrent expenditures	200000
GEF Agency	UNDP	In-kind	Recurrent expenditures	200000
Total Co-financing				**50,960,000.00**

Describe how any "Investment Mobilized" was identified

The total co-financing is equal to $50.96 million, demonstrating ownership and commitment from key partners. This significant leveraging of resources is anchored by substantial public investment from the national and state governments of India.

- The national Government of India will provide direct financial support through the Ministry of Environment, Forest and Climate Change (MoEFCC) and the National Disaster Management Authority (NDMA), mobilizing $29 million in public investment.
- The state governments of Jharkhand and Uttarakhand have committed $19.56 million in public investment and $2 million in-kind contributions, such as staff time and the use of state facilities. This state-level co-financing is essential for effective ground-level implementation and ensures that 'fire-smart' strategies are integrated into state-level forest restoration and biodiversity conservation efforts.
- Complementing these government resources, the GEF Agencies (IUCN and UNDP) will contribute $400,000 in-kind through technical assistance, project development expertise, and advisory services.

ANNEX B: ENDORSEMENTS

GEF Agency(ies) Certification

GEF Agency Type	Name	Date	Project Contact Person	Phone	Email

Record of Endorsement of GEF Operational Focal Point (s) on Behalf of the Government(s):

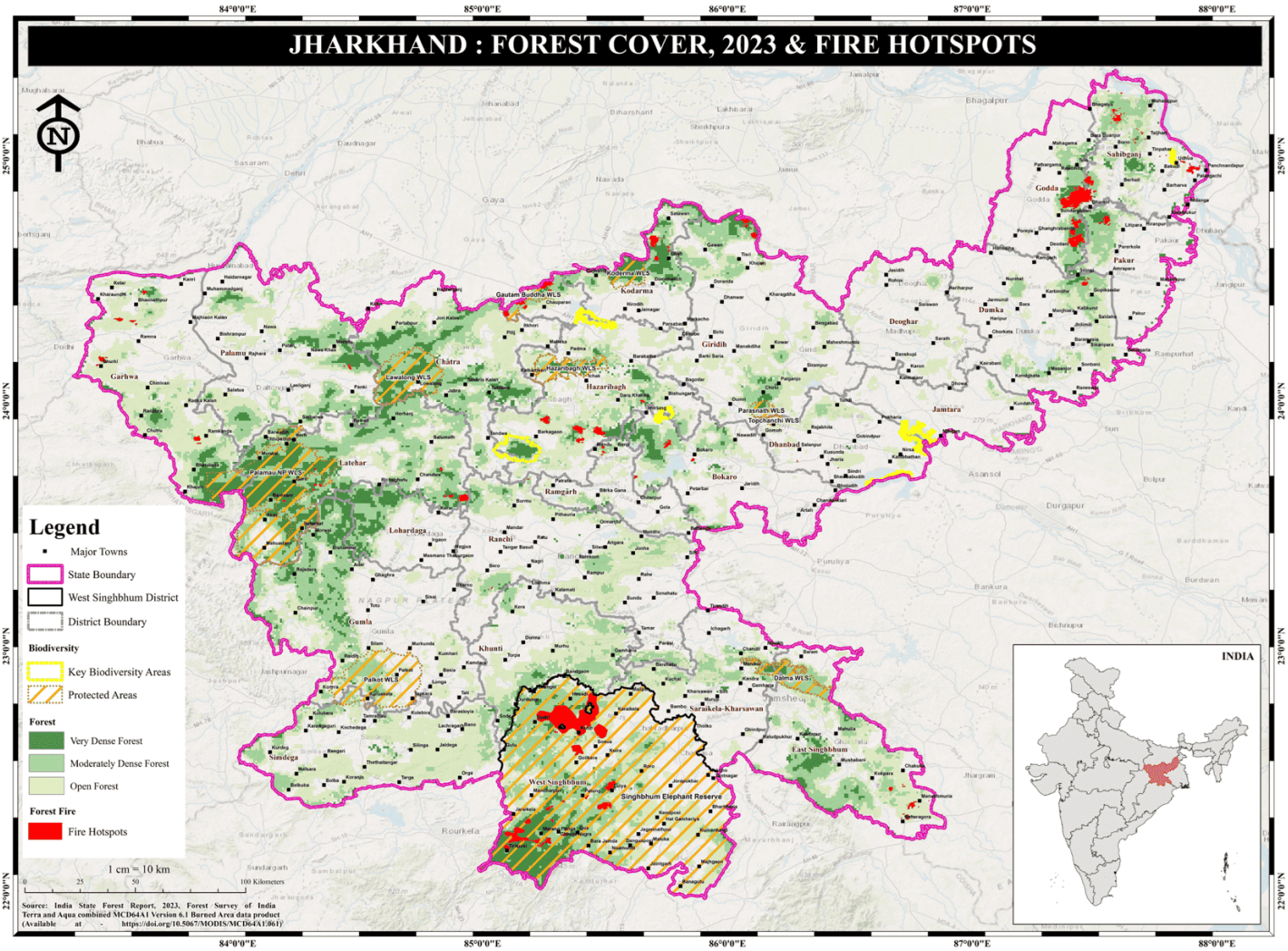
Name	Position	Ministry	Date (MM/DD/YYYY)
Rajat Agarwal	Joint Secretary and GEF-OFP India	Ministry of Environment, Forest & Climate Change	12/3/2025

ANNEX C: PROJECT LOCATION

Please provide geo-referenced information and map where the project interventions will take place

GeoName	District	Central Coordinates
Country: India (1269750) **State/s: Uttarakhand (1444366)**	Almora	79.496185, 29.713817
Country: India (1269750) **State/s: Uttarakhand (1444366)**	Nainital	79.451014, 29.349523

Country: India (1269750) **State/s: Jharkhand (1444365)**	West Singhbhum	85.487831, 22.465273
Country: India (1269750) **State/s: Uttarakhand (1444366)**	Corbett NP, Almora	79.082199, 29.596259
Country: India (1269750) **State/s: Uttarakhand (1444366)**	Binsar WLS, Almora	79.745475, 29.694802
Country: India (1269750) **State/s: Uttarakhand (1444366)**	Corbett NP, Nainital	79.025780, 29.498808
Country: India (1269750) **State/s: Uttarakhand (1444366)**	Nandhaur WLS, Nainital	79.861804, 29.114134
Country: India (1269750) **State/s: Jharkhand (1444365)**	West Singhbhum Reserve, West Singhbhum	85.361451, 22.427029



As we were unable to upload, Uttarakhand map in this section, kindly note that it is uploaded in the Roadmap Documents section

ANNEX D: ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREEN AND RATING

(PIF level) Attach agency safeguard screen form including rating of risk types and overall risk rating.

Title
GEF ID 12066_Annex III_Preliminary ESMS Screening_4 December 2025

ANNEX E: RIO MARKERS

Climate Change Mitigation	Climate Change Adaptation	Biodiversity	Land Degradation
Principal Objective 2	Significant Objective 1	Principal Objective 2	Principal Objective 2

ANNEX F: TAXONOMY WORKSHEET

Level 1	Level 2	Level 3	Level 4
Influencing models			
	Transform policy and regulatory environments		
	Strengthen institutional capacity and decision-making		
	Convene multi-stakeholder alliances		
	Demonstrate innovative approaches		
	Deploy innovative financial instruments		
Stakeholders			
	Local People		
	Private Sector		
		Capital providers	
		Financial intermediaries and market facilitators	
		Large corporations	
		SMEs	
		Individuals/Entrepreneurs	
		Non-Grant Pilot	
		Project Reflow	
	Beneficiaries		
	Local Communities		
	Civil Society		
		Community Based Organization	
		Non-Governmental Organization	
		Academia	
		Trade Unions and Workers Unions	
	Type of Engagement		
		Information Dissemination	
		Partnership	
		Consultation	
		Participation	
	Communications		
		Awareness Raising	
		Education	
		Public Campaigns	
		Behavior Change	

Capacity, Knowledge and Research

Enabling Activities
Capacity Development
Knowledge Generation and Exchange
Targeted Research
Learning

Theory of Change
Adaptive Management
Indicators to Measure Change

Innovation
Knowledge and Learning

Knowledge Management
Innovation
Capacity Development
Learning

Stakeholder Engagement Plan

Gender Equality

Gender Mainstreaming

Beneficiaries
Women groups
Sex-disaggregated indicators
Gender-sensitive indicators

Gender results areas

Access and control over natural resources
Participation and leadership
Access to benefits and services
Capacity development
Awareness raising
Knowledge generation

Focal Areas/Theme

Integrated Programs

Commodity Supply Chains ([1]74Good Growth Partnership)

Sustainable Commodities Production
Deforestation-free Sourcing
Financial Screening Tools
High Conservation Value Forests
High Carbon Stocks Forests
Soybean Supply Chain
Oil Palm Supply Chain
Beef Supply Chain
Smallholder Farmers
Adaptive Management

Food Security in Sub-Sahara Africa

Resilience (climate and shocks)
Sustainable Production Systems
Agroecosystems
Land and Soil Health
Diversified Farming
Integrated Land and Water Management
Smallholder Farming
Small and Medium Enterprises
Crop Genetic Diversity
Food Value Chains
Gender Dimensions
Multi-stakeholder Platforms

Food Systems, Land Use and Restoration

Sustainable Food Systems
Landscape Restoration
Sustainable Commodity Production
Comprehensive Land Use Planning
Integrated Landscapes
Food Value Chains

			Deforestation-free Sourcing
			Smallholder Farmers
		Sustainable Cities	
			Integrated urban planning
			Urban sustainability framework
			Transport and Mobility
			Buildings
			Municipal waste management
			Green space
			Urban Biodiversity
			Urban Food Systems
			Energy efficiency
			Municipal Financing
			Global Platform for Sustainable Cities
			Urban Resilience
	Biodiversity		
		Protected Areas and Landscapes	
			Terrestrial Protected Areas
			Coastal and Marine Protected Areas
			Productive Landscapes
			Productive Seascapes
			Community Based Natural Resource Management
		Mainstreaming	
			Extractive Industries (oil, gas, mining)
			Forestry (Including HCVF and REDD+)
			Tourism
			Agriculture & agrobiodiversity
			Fisheries
			Infrastructure
			Certification (National Standards)
			Certification (International Standards)
		Species	
			Illegal Wildlife Trade
			Threatened Species
			Wildlife for Sustainable Development
			Crop Wild Relatives
			Plant Genetic Resources
			Animal Genetic Resources
			Livestock Wild Relatives
			Invasive Alien Species (IAS)
		Biomes	
			Mangroves
			Coral Reefs
			Sea Grasses
			Wetlands
			Rivers
			Lakes
			Tropical Rain Forests
			Tropical Dry Forests
			Temperate Forests
			Grasslands
			Paramo
			Desert
		Financial and Accounting	
			Payment for Ecosystem Services
			Natural Capital Assessment and Accounting
			Conservation Trust Funds
			Conservation Finance
		Supplementary Protocol to the CBD	
			Biosafety
			Access to Genetic Resources Benefit Sharing
Forests			
	Forest and Landscape Restoration		
			REDD/REDD+
	Forest		
			Amazon
			Congo
			Drylands

Land Degradation

Sustainable Land Management
- Restoration and Rehabilitation of Degraded Lands
- Ecosystem Approach
  - Integrated and Cross-sectoral approach
- Community-Based NRM
- Sustainable Livelihoods
- Income Generating Activities
- Sustainable Agriculture
  - Sustainable Pasture Management
  - Sustainable Forest/Woodland Management
- Improved Soil and Water Management Techniques
- Sustainable Fire Management
  - Drought Mitigation/Early Warning

Land Degradation Neutrality
- Land Productivity
  - Land Cover and Land cover change
  - Carbon stocks above or below ground

Food Security

International Waters

Ship

Coastal

Freshwater
- Aquifer
- River Basin
- Lake Basin

Learning

Fisheries

Persistent toxic substances

SIDS : Small Island Dev States

Targeted Research

Pollution
- Persistent toxic substances
- Plastics
- Nutrient pollution from all sectors except wastewater
- Nutrient pollution from Wastewater

Transboundary Diagnostic Analysis and Strategic Action Plan preparation

Strategic Action Plan Implementation

Areas Beyond National Jurisdiction

Large Marine Ecosystems

Private Sector

Aquaculture

Marine Protected Area

Biomes
- Mangrove
- Coral Reefs
- Seagrasses
- Polar Ecosystems
- Constructed Wetlands

Chemicals and Waste

Mercury

Artisanal and Scale Gold Mining

Coal Fired Power Plants

Coal Fired Industrial Boilers

Cement

Non-Ferrous Metals Production

Ozone

Persistent Organic Pollutants

Unintentional Persistent Organic Pollutants

Sound Management of chemicals and Waste

Waste Management
- Hazardous Waste Management
- Industrial Waste
- e-Waste

Emissions

Disposal
New Persistent Organic Pollutants
Polychlorinated Biphenyls
Plastics
Eco-Efficiency
Pesticides
DDT - Vector Management
DDT - Other
Industrial Emissions
Open Burning
Best Available Technology / Best Environmental Practices
Green Chemistry

Climate Change

Climate Change Adaptation

Climate Finance
Least Developed Countries
Small Island Developing States
Disaster Risk Management
Sea-level rise
Climate Resilience
Climate information
Ecosystem-based Adaptation
Adaptation Tech Transfer
National Adaptation Programme of Action
National Adaptation Plan
Mainstreaming Adaptation
Private Sector
Innovation
Complementarity
Community-based Adaptation
livelihoods

Climate Change Mitigation

Agriculture, Forestry, and other Land Use
Energy Efficiency
Sustainable Urban Systems and Transport
Technology Transfer
Renewable Energy
Financing
Enabling Activities

Technology Transfer

Poznan Strategic Programme on Technology Transfer

Climate Technology Centre & Network (CTCN)

Endogenous technology
Technology Needs Assessment
Adaptation Tech Transfer

United Nations Framework on Climate Change

Nationally Determined Contribution
Sustainable Development Goals

Climate Finance (Rio Markers)

Climate Change Mitigation 1
Climate Change Mitigation 2
Climate Change Adaptation 1
Climate Change Adaptation 2