

# Proposal for Establishment of a Centre of Excellence for Forest Landscape Restoration



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## 1. Introduction

Forest landscapes, despite their crucial role in providing invaluable ecosystem services, are being increasingly threatened by multiple stressors ranging from climate change and fire to the spread of invasive species. According to the IPBES assessment of 2018, land degradation, especially deforestation, forest degradation, and the burning of peatlands has contributed to annual CO<sub>2</sub> emissions to the tune of 3.6 -4.4 billion tonnes between 2000 to 2009 and has compromised the wellbeing of 1.3-3.2 billion people living in developing and underdeveloped countries. Reversing the degradation of forest ecosystems and regaining their functionality and productivity are therefore vital for sustaining current and future human wellbeing.

Globally, interest in halting forest degradation and restoring forest landscapes has been increasing, particularly with the Global Restoration Initiative (Bonn Challenge) and other regional initiatives mobilizing political support to commence restoration on 350 million ha by 2030. Forest and Landscape Restoration (FLR) approach underlying Bonn challenge gives equal emphasis to both human livelihoods and biodiversity conservation. It is estimated that only 2% of the land with restoration potential is currently under restoration activities globally. The UN Decade of Ecosystem Restoration (2021-2030), the crucial decade for achieving Sustainable Development Goals as well, therefore aims to massively upscale the restoration of degraded ecosystems to achieve the global goals of bolstering livelihoods and combating climate change and biodiversity depletion.

Managing and restoring degraded forests relies on technical, financial, and social inputs. There are major challenges including site-specific requirements of FLR, the issue of scale and time and cost considerations. Presently management tactics lack proper institutional monitoring and legal frameworks, hindering restoration efforts. Significant capacity building needs are also evident, especially at local level for designing, implementing and managing FLR initiatives in tropical countries with large extent of degraded forest lands.

## 2. Rationale for the proposal

### 2.1. Forest Landscape restoration- Challenges for India

India- a megadiverse country, is also the second-most populous nation in the world, with a large section of its population highly dependent on the services provided by natural ecosystems. There is tremendous anthropogenic pressure on India's diverse forest landscapes, ranging from high altitude montane forests to coastal mangroves. Along with China, India harbours a majority of the degraded land (490 million ha) in Asia. Around 1.6 million hectares of forests are lost in the country annually, a loss often compounded by recurrent forest fires in the recent decades. India is the second most vulnerable country in the global south to forest fires and the Forest Survey of India estimates that 36 per cent of its forest cover falls under extreme, very high, high, and moderate forest fire-prone zones.

Coal-based energy generation is another important driver of forest land degradation as well as GHG emissions in the country. India is presently the world's second-largest coal producer and despite a strong push for renewable energy sources, the country's coal demand is expected to rise by 63% from current levels by 2030, contributing to further deforestation.

### 2.2. Forest Landscape Restoration- Opportunities for India

Recognising the urgent need for restoration of degraded landscapes for ensuring ecological and livelihood security, India has spearheaded commendable initiatives both nationally and internationally for land restoration. The country joined the Bonn Challenge in 2015 with a pledge to restore 13 million hectares of degraded and deforested land by 2020 and an additional 8 million hectares by 2030. This target was increased to 26 million hectares by 2030 during the United Nations Convention to Combat Desertification (UNCCD) COP in 2019 in New Delhi. In the Delhi Declaration, 2019 India has committed to Land Degradation Neutrality (LDN) targets to ensure food and nutritional security, reduce biodiversity and ecosystem services loss, and to enhance climate change adaptation and mitigation. India has also committed to the creation of a carbon sink of 2.5-3 billion tonnes of carbon dioxide equivalent through additional forest and tree cover by 2030 as one of its nationally determined contributions.

In the United Nations Framework Convention on Climate Change (UNFCCC) COP-27 meeting at Glasgow, India made the historic announcement to achieve net-zero emissions by 2070 and announced the 'Panchamrut' strategy whose targets include expanding renewable energy generation to cover 50% of energy requirements and reduction in carbon emissions by 1 billion tonnes by 2030. India has committed to phase down coal, and the impending closure of many coal mines and restoration of mine voids in accordance with the 'mine closure framework' focusing on communities, environmental reclamation, and land repurposing presents immense opportunities for greening our degraded lands. Revival of forest landscapes will also provide green employment opportunities for socially and ecologically vulnerable forest dependent communities, thereby catalysing the achievement of multiple SDGs synergistically.

### *2.3. Why a Centre of Excellence for Forest Landscape Restoration at IIFM?*

Notwithstanding the strong and conducive policy environment in the country, meeting our restoration targets would require addressing multiple knowledge and skill gaps, along with building multi-stakeholder collaborations and partnerships. Taking stock of the restoration needs of different regions of the country through remote sensing and spatial and information technology applications, in tandem with the existing forest related spatial databases for the country itself is an ambitious endeavour. For a country as diverse as India, restoration programmes should acknowledge the wide range of extant forest ecosystems and diverse practices such as agroforestry and Farmer Managed Natural Regeneration for crafting place-based solutions. Effective restoration should be inclusive and is to be envisioned and implemented in collaboration with local communities to serve local livelihood needs.

Competing land uses, driven by the ever-increasing resource needs for economic growth and urbanisation and fragmented and conflicting interest groups are other major challenges that must be tackled. Intersectoral collaboration (between forestry, agriculture, mining, infrastructure etc) is therefore essential to formulate successful restoration interventions. Adequate financing for the restoration of degraded lands is another constraint, and involvement of corporate and industrial sectors is crucial considering their extreme dependence on forests

and other natural resources and capacity to provide the much needed financial impetus to scale up restoration. Many of the global calls to restoration action identify capacity development also as critical for implementing and scaling-up restoration activities to meet global targets.

Considering the pressing research, policy and practice needs for addressing the above challenges, a Centre of Excellence for Forest Landscape Restoration (CEFLR) is proposed at the Indian Institute of Forest Management, Bhopal to serve as a nodal 'go-to' centre to for restoration solutions to accelerate the country's transition to land degradation neutrality and to reconcile ecological and developmental imperatives using the toolkit of FLR.

### 3. Objectives of the Proposed Centre

Taking advantage of the unique multidisciplinary expertise available at IIFM spanning multiple facets of FLR from forestry and ecosystem management to community development and sustainable finance, the Centre shall

- i. Engage in knowledge generation and dissemination to devise innovative restoration strategies for forest land degraded by various drivers such as fires, mining, invasive species etc in diverse geographies of the country.
- ii. Act as a repository for scientific and management information related to FLR.
- iii. Create a platform for intersectoral partnerships for developing comprehensive FLR solutions.
- iv. Contribute to policy discourses and design of governance mechanisms around ecological restoration.

### 4. Proposed Activities of the Centre

**4.1. Research projects:** The Centre shall engage in developing and implementing research projects and collaborate with suitable partners for knowledge generation on FLR. The research projects will cover ecological, social, economic, institutional and financing angles of FLR and will involve long term engagement of researchers, given the significant time requirement to assess the improvement in forest ecosystem health and productivity and resultant socio-economic impacts from restoration. The proximity of IIFM to the Central Indian

forest landscapes, harbouring important wildlife habitats and facing severe developmental pressure, would allow the setting up of pilots for demonstrating FLR strategies as well as study plots for long term monitoring of restoration success in ecological and socio-economic dimensions.

**4.2. Capacity building:** The Centre in collaboration with other relevant organizations at the national and international level shall engage in capacity building of key stakeholders including

- a) Officials and frontline staff of forest department and other line departments including agriculture, industry, tribal affairs etc (on planning and implementation of restoration projects)
- b) Local community members and local self-government institutions and Joint Forest Management/ Eco-development/ Community Forest Right Committees (on planning, implementing and managing FLR projects for meeting livelihood and other socioeconomic needs and on localising SDGs using FLR approaches)
- c) Mining and infrastructure sector (on mine closure, reclamation and restoration and environment management plans)
- d) Corporate Social Responsibility (CSR) functionaries (on good restoration practices to evolve appropriate corporate funding support mechanisms)
- e) Financing institutions (on good restoration practices to support decision making related to funding requests)
- f) Researchers and professionals (for building a pool of trained human resources to support upscaling of FLR)

**4.3. Policy advice and advocacy:** The centre will act as a think-tank on FLR contributing to India's policy and legal frameworks at national and state levels and to align the country's restoration targets and pathways with international commitments. The centre shall also work on formulating strategies for converging different sectoral policies and programmes for catalysing restoration efforts.

**4.4. Developing guidelines, standards and frameworks for effective FLR in India:** The Centre shall contribute towards development of National FLR guidelines and other standards in alignment with the ['Principles of Ecosystem Restoration for](#)

[the UN Decade on Ecosystem Restoration](#)’ and the [‘Society for Ecological Restoration’s International Standards for the Practice of Ecological Restoration’](#) while customizing these standards to suit the social-ecological heterogeneity and complexity of the country.

**4.5. Consultancy:** The Centre shall take up consultancy for monitoring and evaluation of restoration projects in response to demand from stakeholders

**4.6. Visiting fellowships/ Practitioners-in-residence programme:** The Centre shall invite eminent practitioners and resource managers who have pioneered ground level FLR interventions to share their experiences and contribute to its research and training agenda for duration of 3-6 months under various fellowship programmes.

**4.7. Workshops/conferences:** The Centre shall organize workshops/conferences at regular intervals in collaboration with national and international agencies for dissemination of information to stakeholders on FLR.

**4.8. Short term courses/ e-courses:** The Centre shall organise short term courses (physical and virtual modes) for various stakeholders including line departments of state governments, industries and others to develop professionals in the areas FLR.

**4.9. Lectures/ webinar/ panel discussion series:** The Centre shall organise regular lectures, panels and webinars involving in-house experts and invited speakers to stimulate discussion around topics relevant to FLR.

**4.10. Information databases:** The Centre shall collate information from different states and forest types on the extent and intensity of degradation to create open access databases for the benefit of larger scientist community and decision makers. Spatial data bases with granularity to distinguish degrading versus degraded lands at sub-state levels shall be curated to estimate restoration potential in lines of global restoration potential maps and in collaboration with other national agencies such as the National Remote Sensing Centre.

**4.11. Science-policy-practice networks:** The Centre shall develop an online network of research-policy-practice community with national and international participation for knowledge sharing and co-producing sustainable restoration solutions,



**4.12. Innovation and entrepreneurship hub:** An innovation hub shall be convened involving innovators, entrepreneurs, and academia to collaborate and develop their ideas for cost effective FLR solutions and bring them to impact to promote restoration as a green entrepreneurship opportunity. Larger public participation be encouraged through 'social enterprise challenges' for restoration.

**4.13. Documentation and dissemination of best practices:** The Centre shall engage in documentation and dissemination of best practices of FLR including creation of short videos on success stories.

**4.14. Technical Reports/Newsletter/ Pamphlets:** The Centre shall bring out various publications highlighting the principles, best practices, and success stories of FLR for knowledge dissemination.

## **5. Administrative set up of the Centre**

The CEFLR will be coordinated by an IIFM faculty member from the Ecosystem and Environment Management or Technical Forestry disciplines and will be guided by an advisory body headed by Director, IIFM and external experts from relevant sectors. Faculty members from other areas including Sociology and Community Development, Information Technology and Quantitative Techniques, Economics, Communication and Extension and Financial and Strategic management will be co-opted based on the research and training needs. Project based personnel, and consultants will be appointed to carry out the work as required for various activities.

## 6. Budgetary requirement

Sl. No.	Particulars	Description	Units	Year 1
<b>A</b>	<b>Manpower</b>			
1	Junior Research Fellow	@ Rs.31000 + HRA (1st & 2nd year); Rs.35000 + HRA (3rd - 5th year)	2	8,64,000
2	Senior Project Associate	@ Rs.42000 + HRA (1 <sup>st</sup> & 2 <sup>nd</sup> year) Rs.49000 + HRA (3rd - 5th year)	1	5,88,000
3	Project Scientist-II	@ Rs.67000 + HRA (1st & 2nd year); Rs.78000 + HRA (3rd - 5th year)	1	9,36,000
4	Technical Assistant / Data Entry Operator / Office Assistant	@ Rs.30000 + HRA (1st & 2nd year); Rs.35000 + HRA (3rd - 5th year)	1	4,20,000
5	Field Assistants	@ Rs.20000 + HRA (1st & 2nd year); Rs.25000 + HRA (3rd - 5th year)	2	5,52,000
	<b>Sub Total</b>			<b>33,60,000</b>
<b>B</b>	<b>Travel/TA &amp; DA for PIs and Project Staff</b>			
1	Travel & TA/DA	IIFM HQ to Field sites by PIs and Project Personnel		8,00,000
	<b>Sub Total</b>			<b>8,00,000</b>
<b>C</b>	<b>Infrastructure</b> Improvement of existing building			<b>1,00,00,000</b>
<b>D</b>	<b>Equipment/Fixtures/Vehicles</b>			
1	Creation of partitions/cubicles/cupboards/ Air-conditioners/ electrical fittings/lighting and furniture			70,00,000
2	electronic Display boards/smart classroom facilities, etc.			25,00,000
3	Vehicle for field work	@ 18,00,000	1	18,00,000
	<b>Sub Total</b>			<b>1,13,00,000</b>
<b>E</b>	<b>Data Processing and Networking</b>			
1	Desktop computers	@ Rs.1,50,000 per unit	5	7,50,000
2	Laptop computers	@ Rs.1,00,000 per unit	1	1,00,000
3	Printer & Scanner	@ 50,000	2	1,00,000
4	Procurement of RS maps and softwares			5,00,000
	<b>Sub Total</b>			<b>14,50,000</b>
<b>E</b>	<b>Preparation of Report</b>			
1	'Preparation of Technical Report (Half yearly/ Annually) / Newsletters / Brochures			3,00,000
	<b>Sub Total</b>			<b>3,00,000</b>
<b>F</b>	<b>Training, Capacity Building and Awareness</b>			
1	Training, Capacity Building and Awareness			10,00,000
	<b>Sub Total</b>			<b>10,00,000</b>
	<b>Total [A+B+C+D+E+F]</b>			<b>2,82,10,000</b>
<b>G</b>	<b>Contingencies for miscellaneous expenses @ 2%</b>			<b>3,64,200</b>
	<b>GRAND TOTAL</b>			<b>2,85,74,200</b>



