



AREA OF OPERATION AND R&D PRIORITIES OF THE REGIONAL CENTRES (RC)

GARHWAL REGIONAL CENTRE

[Area of operation: Central Himalayan State (Uttarakhand)]

R&D Priorities:

- Integrated NRM strategies for sustainable tourism
- Land based models using multipurpose species and community participation
- Technology demonstration and training

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HIMACHAL REGIONAL CENTRE

[Area of operation: Western Himalayan States (H.P.)]

R&D Priorities:

- Biodiversity studies in protected areas and *ex situ* maintenance of medicinal plants
- Carrying capacity assessment and ambient air quality monitoring
- Environment impact assessment/ strategic environmental assessment of hydropower and solid waste management
- Climate change vulnerability assessment

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SIKKIM REGIONAL CENTRE

[Area of operation: Eastern Himalayan States (Sikkim and West Bengal Hills)]

R&D Priorities:

- Biodiversity conservation studies in Khangchendzonga Landscape and other sensitive areas with a focus on human dimension
- Geo-environmental assessment of land hazards and mitigation strategies
- Human dimension studies in conservation areas
- Biotechnological applications for conservation of *Rhododendron* species

Contact:

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NORTH-EAST REGIONAL CENTRE

[Area of operation: Northern Himalayan States (Arunachal Pradesh, Meghalaya, Nagaland, Tripura, Manipur, Assam Hills and Mizoram)]

R&D Priorities:

- People-centered land use models for shifting cultivation areas
- Indigenous knowledge systems and natural resource management options for tribal communities
- Biodiversity conservation through community conserved areas
- Appropriate low-cost technologies for improved livelihood

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LADAKH REGIONAL CENTRE

[Area of operation: Ladakh, Jammu and Kashmir Union Territories]

R&D Priorities:

- Promote alternative livelihoods for climate change vulnerable cold-desert communities.
- Facilitate conservation of critical / important cold desert habitats and biodiversity
- Strengthen and establish approaches for addressing issues of water scarcity and foster climate smart communities in trans-Himalaya.

Contact:

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MOUNTAIN DIVISION REGIONAL CENTRE

[Area of operation: Policy and coordination for Indian Himalayan Region (IHR)]

R&D Priorities:

- Sustainable and integrated development of mountain ecosystems
- Highlighting mountain issues and bringing mountain regions in the main stream of development
- Fostering upstream and downstream linkages between regions through mutual dependence based policy and planning
- Recognition and awareness regarding dependence of non-mountain ecosystems on mountains
- Development of a framework of incentives for providers of ecosystem services

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- Database on air quality and aerosol climatology over Northwest Himalaya

Guidelines, Action Plans, and Policy Documents

- Action Plan for Himalaya
- Guidelines for Location Planning, Rain Water Harvesting, and Application of Green Road Concept in hills
- Action Plan for Siwalik Area Development
- Village Environment Action Plan (VEAP)
- Action Plan for Conservation of Biological Diversity of Indian Himalayan Region, Strategy and Action Plan for Wild Plant Diversity of Indian Himalaya under NBSAP
- Governance for Sustaining Himalayan Ecosystem (G-SHE)

Capacity Building and Awareness

- Capacity building of local inhabitants through promotion of ecotourism in Sikkim, establishment of Rural Technology Complex at HQs, trainings on hill-specific low cost technologies in NE region
- Application of State-of-the-Art approaches for (i) promotion of conservation education, (ii) harnessing religious sentiments for restoration of Badri Van (the ancient sacred forest of Badrinath shrine), (iii) Gender sensitization in NRM
- Strengthening of region specific R&D and Human Resource Development under IERP
- Creating awareness through Citizens' Science Programme
- Establishment of Community Conserved Areas in Arunachal Pradesh

Biodiversity Conservation and Biotechnological Applications

- Documentation on Himalayan Biodiversity with a specific focus on endemic species, sensitive habitats and ecosystems
- Promotion of Medical Plants Sector through comprehensive inventories, status assessment, population dynamics studies, and improvement of cultivation practices of high value species
- Development of approaches for multiplication and conservation of Himalayan threatened and High Value Plants including Himalayan Yew

- Development of microbial inoculants for improved plant performance in the colder regions
- Exploration and conservation of microbial diversity from extreme conditions
- Development of conventional and/or biotechnological methods for propagation of high value plants (e.g., multipurpose trees, endemic medicinal plants, bamboos, plantation crops) of IHR
- Conservation and management of pollinators for sustainable agriculture
- Transboundary landscape initiatives for biodiversity conservation and promoting regional cooperation

Indigenous Knowledge Documentation and Database

- IKS of selected tribal communities and development of a digital IKS library

INITIATIVES

- Himalayan Research Fellowships: *Promoting science culture by creation of dedicated future researchers*
- Himalayan Young Researchers' Forum: *Connecting researchers to bring transformation in research culture across Himalaya*
- Himalayan Research Mentors' Forum: *Shaping research and nurturing young minds in the Himalaya*
- Himalayan Popular Lecture Series: *Admiring actions & opinions for sustainable development of IHR*
- Himalayan Peoples' Representatives Meet: *Policy advocacy on sustainable development of the Indian Himalayan Region*
- Himalayan Students' Nature Awareness Campaign: *Facilitating development of a culture of creative nature based learning*
- Himalayan Farmers' Livelihood Enhancement Drive: *Empowering communities through new opportunities and skill*
- Mountains Environmental Policies Repository: *Creating an environment for mutual learning and experience sharing*

For further details please contact

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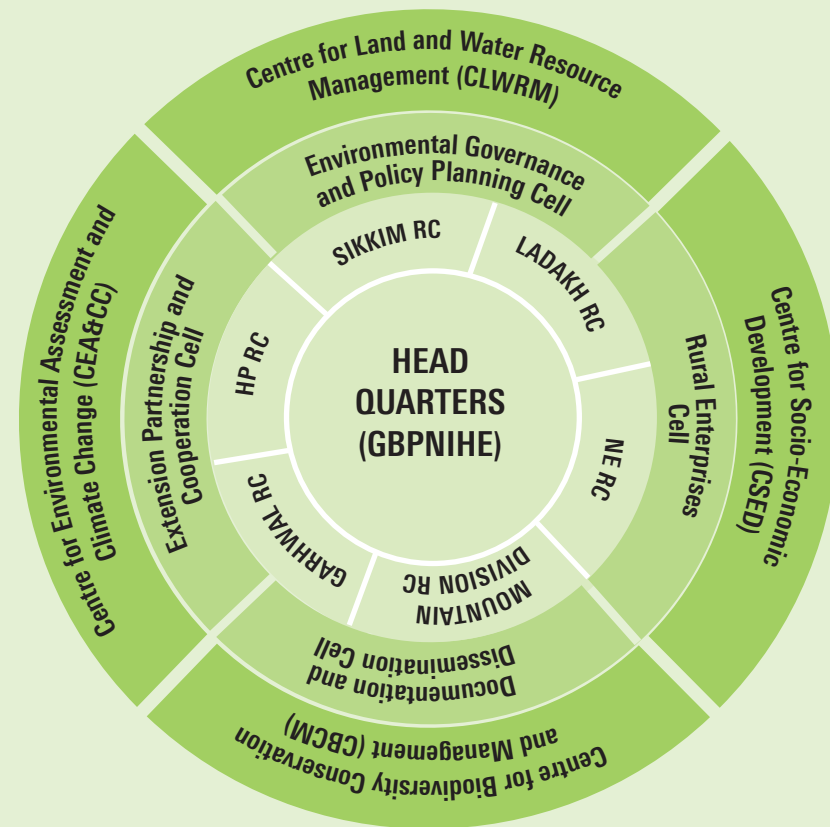
Institute Profile

THE INSTITUTE

G.B. Pant National Institute of Himalayan Environment (GBPNIHE) [formerly G.B. Pant Institute of Himalayan Environment and Development (GBPNIHE)] was established in 1988-89, during the birth centenary year of Bharat Ratna Pt. Govind Ballabh Pant, as an autonomous Institute of the Ministry of Environment, Forest & climate change (MoEF&CC), Govt. of India, which has been identified as a focal agency to advance scientific knowledge, evolve integrated management strategies, demonstrate their efficacy for conservation of natural resources, and ensure environmentally sound development in the entire Indian Himalayan Region (IHR). The Institute attempts to maintain a balance of intricate linkages between socio-cultural, ecological, economic and physical systems that could lead to sustainability in the IHR. To achieve this, the Institute follows a multidisciplinary and holistic approach in all its Research and Development programmes with emphasis on interlinking natural and social sciences. In this effort, particular attention is given to the preservation of fragile mountain ecosystems, indigenous knowledge systems, and sustainable use of natural resources. A conscious effort is made to ensure participation of local inhabitants for long-term acceptance and success of various programmes. Training, environmental education and awareness of different stakeholders are essential components of all the R&D programmes of the Institute. The Institute functions in a decentralized manner with its HQs at Kosi-Katarmal, Almora, Uttarakhand and six Regional Centres, namely - Garhwal Regional Centre at Srinagar-Garhwal (Uttarakhand), Himachal Regional Centre at Mohal – Kullu (Himachal Pradesh), Sikkim Regional Centre at Pangthang – Gangtok (Sikkim), North-East Regional Centre at Itanagar (Arunachal Pradesh), Ladakh Regional Centre at Leh (Ladakh) and Mountain Division Regional Centre at MoEF&CC, Indira Paryavaran Bhawan (New Delhi).

OBJECTIVES

- ❖ To undertake in-depth research and development studies on environmental problems of the Indian Himalayan Region (IHR).
- ❖ To identify and strengthen the local knowledge of the environment and contribute towards strengthening researches of regional relevance amongst the Scientific Institutions, Universities, NGOs, and Voluntary agencies working in the Himalayan region, through interactive networking.
- ❖ To evolve and demonstrate suitable technological packages and delivery systems for sustainable development of the region in harmony with local perceptions.



CENTRES OF EMINENCE

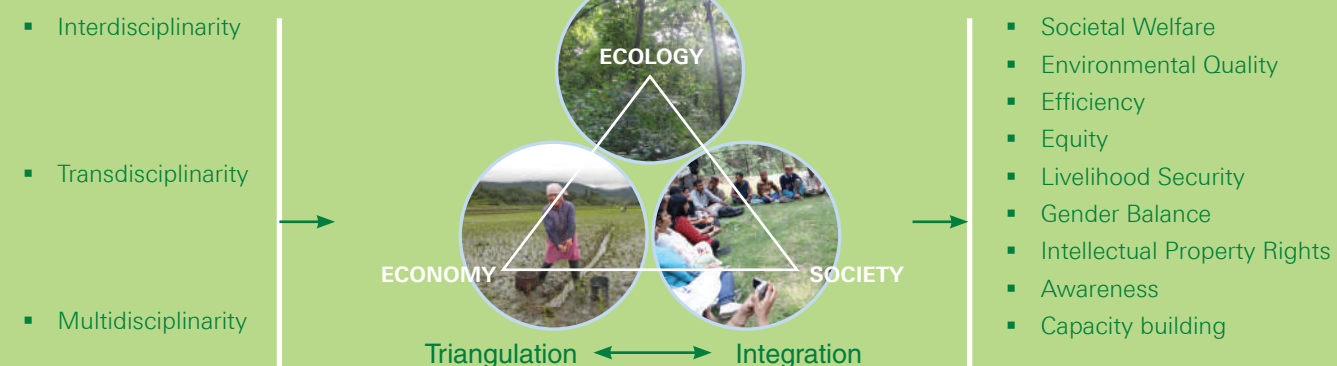
The R&D programmes of the Institute have been reoriented into four Centres of Eminence and six Regional Centres based on stakeholder needs.

- Centre for Land and Water Resource Management (CLWRM)**
 - To work on integrated management and sustainable use of goods and services in a watershed along with advancement of science-based solutions for conservation and access to resources.
 - Focal areas of activities** – Land and Soil Management; Water Sustainability; Glacier System and Climate; Geo-hazard Assessment.
- Centre for Socio-Economic Development (CSED)**
 - To promote activities that lead to ecological and economic security, and sustainable development in the Indian Himalayan Region (IHR).
 - Focal areas of activities** – Poverty, Out-migration, Natural Resource Management for Sustainable Livelihood, Technology Development and Demonstration.
- Centre for Biodiversity Conservation and Management (CBCM)**
 - To assess and monitor biodiversity using state-of-art methodology, and transform data and information into knowledge that supports sustainable management of biodiversity.

- Focal areas of activities** – Collaborative and Multidisciplinary Research on Biodiversity (i.e. long-term ecological research sites; database; landscape level studies), Ecosystem Services, and Biotechnological Applications.
- Centre for Environmental Assessment and Climate Change (CEA&CC)**
 - To assess and monitor physical, biological and socio-economic environmental attributes of development in IHR, design robust measures for climate change mitigation and securing community and ecosystem resilience with appropriate adaptation strategy to cope up with climate change risks.
 - Focal areas of activities** – Assessment of Environment Parameters, Impact of CC on Resources, Critical Ecosystem, and Development of Knowledge-base to Combat CC.



Approach to Sustainability



SUPPORT FACILITIES

- Library & Information Centre
- Rural Technology Complex
- Glacier Study Centre
- Nature Interpretation & Learning Centre
- Environmental Information System (ENVIS) Centre on Himalayan Ecology
- Integrated Eco-development Research Programme (IERP)
- Arboretum & Plant Nurseries
- Remote Sensing and Geographical Information System (RS & GIS) Laboratory
- Modeling and Statistical Analysis Laboratory
- Multi-location Automatic Weather Monitoring Stations
- Global Positioning System (GPS) Reference Stations
- Sophisticated Tissue Culture Laboratory
- Water Analysis Laboratory
- Soil and Plant Analyses Laboratory
- Central Instrumentation Laboratory
- Internet Laboratory
- Documentation Cell
- National Mission on Himalayan studies, (P.M.U.)
- International Centre for Integrated Mountain Development, (ICIMOD)
- Intellectual Property Resource (IPR) Cell
- Herbal Gardens
- Greenhouses and Polyhouses
- Project Formulation and Consultancy
- Training, Workshop, & Seminar Facility

RESEARCH & DEVELOPMENT PRIORITIES

Research

- Watershed services (management and land use policy)
- Rural energy options
- Ecological and economic viability of Himalayan farming systems
- Conservation and sustainable use of biodiversity
- Protected area management - issues and solutions
- Ecosystem services valuation and incentive mechanisms
- Climate change impact, mitigation, and adaptation
- SEA / EIA specific to the Himalayan region
- Disaster mitigation and management (database development and knowledge products)
- Environmental management of urban areas
- Sustainable tourism
- Entrepreneurship and self employment in the Himalaya
- Indigenous knowledge, traditional lifestyle, architecture, and health care practices
- Migration (socio-economic and cultural implications)

- Biotechnological interventions for environmental rehabilitation
- Resource material on mountain ecology and environment
- Capacity building, technology transfer and adoption

Developmental Options/ Programmes/ Plans

- Sustainable natural resource management
- Propagation packages of high value plants
- Integrated Eco-development Research Programme (IERP) for IHR
- Mountain specific development policies

Demonstration and Dissemination

- Eco-restoration and conservation models
- Livelihood options
- Capacity building and skill development
- Networking
- Publication/Documentation

MAJOR ACHIEVEMENTS

Restoration and Rehabilitation of watershed services

- Development and demonstration of Sloping Watershed Environmental Engineering Technology (SWEET) package for rehabilitation of degraded lands in Himalaya.
- Demonstration of Integrated Watershed Management in Central and Eastern Himalaya focusing on agro-forestry models and low cost technologies.
- Application of Spring Sanctuary Concept in catchment area protection in Uttarakhand and Sikkim Himalaya
- Development of Sacred Landscape Model for eco-restoration

Impact Assessment and Mitigation

- Database on glacier retreat, flow and suspended sediment patterns in Central Himalaya, and analysis of climate variability
- SEA - EIA and EMP of hydropower projects
- Solid Waste Management for Valley of Flowers (Uttarakhand) and Himachal Pradesh
- Demonstration of Mountain Risk Engineering Techniques for slope stabilization and geo-environmental hazard assessment in Uttarakhand & Sikkim