



## Three Days Training Programme On Safeguarding Himalayan Ecosystems through Climate Resilient Strategies and Approaches (Dated: 10-12 December, 2025)

ICFRE-Himalayan Forest Research Institute, Shimla, in collaboration with Centre of Excellence for Sustainable Land Development (CoESLM), Dehradun organised three days training programme on '**Safeguarding Himalayan Ecosystem through Climate Resilient Strategies and Approaches**' from 10-12 December, 2025. The training programme saw presence of 24 officers including Agriculture Development Officers (ADOs), Horticulture Development Officers (HDOs), Forest Range Officers (FROs), Subject Matter Specialist (SMS), Veterinary Officers, Horticulture Extension Officers (HEOs) from the state of Himachal Pradesh and Union Territory of Jammu & Kashmir. Apart from that representatives of local bodies, members of Village Development Committee (VDCs), progressive farmers and members of Non-governmental organization (NGOs) also attended the training programme. **Dr. Sanjay Sood**, IFS, Principal Chief Conservator of Forests and Head of Forest Force (PCCF & HoFF), Himachal Pradesh Forest Department presided over inaugural session of the training programme on dated 10-12-2025 and **Dr. Rajesh Sharma**, Director, CoE-SLM graced the occasion as special guest.

### Inaugural Session

In the beginning, **Dr. Manisha Thapliyal**, Director, ICFRE-HFRI extended cordial welcome to the dignitaries and participating officers from different line departments. She briefly highlighted the research and extension activities of institute. Addressing the participants she told that Hon'ble Prime Minister of India proclaimed establishment of CoE-SLM during 14<sup>th</sup> session of the Conference of the Parties to UNCCD in 2019 for developing the scientific approach and facilitate induction of technology on land degradation issues. She added that CoE-SLM is working as a nodal agency to engage and enable parties at national and sub-national levels for addressing land degradation related issues and achieve land degradation neutrality (LDN) since its inception from May, 2023. She further said that three days training programme at HFRI is also a part of multiple activities of CoESLM initiated to address the land degradation issues across the country. **Dr. Manisha** also shed light on ecological, social, cultural and spiritual significance of Himalaya and emerging threats to its sensitive ecosystems due to climate change and anthropogenic activities. She told that purpose of training programme is to bring together stakeholders from different spheres for developing in-depth understanding about Himalayan ecosystems, challenges, analysing knowledge gaps and develop better synergy for protection of natural asset.

Then, **Dr. R.K. Verma**, Scientist-G and course coordinator presented the overview of training programme and briefly explained agenda drawn up for three days schedule.

He apprised participants that training module embraced knowledge sharing on diverse aspects of Himalayan ecosystems, contemporary concerns, and resilient measures for moderating climate change induced impacts in fragile Himalayan region. He added that eminent scientists, academicians from institutes of repute like University of Horticulture and Forestry, Nauni, Solan, ICAR-Indian Institute of Soil and Water Conservation, Research Centre, Chandigarh, Himachal Pradesh Council for Science, Technology and Environment (HIMCOSTE), and professionals from CoESLM, Dehradun, Himachal Pradesh State Forest Department, Himalayan Research Group (HRG), etc., would share their vast knowledge and wide experiences with the participants and additionally an exposure visit had also been planned for providing tangible insights on practices of Sustainable land management and viable strategies for safeguarding Himalayan ecosystems.

After that, **Dr. Rajesh Sharma**, Director of the CoESLM, Dehradun, shared his views with the gathering. He explicated discussed the central role of CoESLM for providing technical support, capacity-building opportunities, and practical solutions for stakeholders, government agencies, local communities, NGOs, etc., to address land degradation related issues and achieve land degradation neutrality (LDN). Furthermore, he highlighted multiple concerns in Himalayan context including ecological degradation, changing weather patterns, habitat fragmentation, bio-diversity loss, water scarcity, landslides and other meteorological disasters. He emphasised that information/data sharing from different line departments working at regional levels is essential to support ongoing initiatives on sustainable and productive land use systems. Elucidating the theme of training programme, he added that it has been decided after thoughtful discussions and aligns with the regional perspective. He said that the purpose of such trainings is to develop synergy and build cross-sectorial connect amongst departments/stakeholders for protection of ecosystems which are at stake. He also shared that CoESLM is simultaneously collaborating similar trainings on themes including Mangrove ecosystems, Saline soils, Rangelands, etc., at other institutes of ICFRE.

In the presidential address, **Dr. Sanjay Sood** elaborated significance of the Himalayas and enlightened participants about treasure-trove of floral/faunal wealth distributed across wide expanse of the Himalayas. He told that mosaic of Himalayan ecosystem provide myriad ecosystem services to mankind and sustain livelihoods of nearly one billion people of Asia. Besides, he reiterated that high altitude ecosystems are more vulnerable to impacts of climate change and rapid developmental activities in the region are making scenario from bad to worse. Dr. Sanjay Sood praised HFRI and Centre of Excellence for Sustainable Land Management (COESLM), Dehradun for jointly initiating a relevant training programme and involving diverse group of participants from different departments. He opined that learnings from the three days training programme will definitely add to the knowledge and skills of the professionals and other stakeholders.

### **Technical Session (10.12.25)**

In the technical session on day one, firstly **Dr. Sanjay Singh**, Scientist, COESLM interacted with participants virtually and gave interesting presentation on different pathways for achieving land degradation neutrality (LDN). In his presentation, he nicely explained the

concept of land degradation, linkages with the Sustainable development goals (SDGs) and discussed multifarious initiatives/activities of CoESLM taken up in this direction. Moreover, the expert illustrated socio-economic and environmental co-benefits of LDN, such as enhanced agricultural productivity, improved biodiversity, and climate resilience through carbon sequestration. Emphasising LDN as crucial pathway for combating desertification ensuring food security, and building climate-resilient ecosystem, the learned expert also outlined the existing gaps like innovative financing strategies, integrated policy frameworks, and effective monitoring tools to track LDN progress.

Thereafter, **Dr. Vaneet Jishtu**, Retired Scientist, ICFRE-HFRI gave an impressive presentation and provided detailed insights on kaleidoscopic biodiversity of Himalayas and also spotlighted the missing linkages/gaps in research related to floristics assessment of the region. Additionally, he apprised the participants on medicinal value of different native species present in the Himalayas and stressed the need of plantation of native species. Additionally, the expert shared that Western Himalayan Temperate Arboretum (WHTA), has been developed at Potter Hill, Shimla with the objective of ex situ conservation of temperate Himalayan native tree flora including endemic and endangered species. Dr. Jishtu asserted that such initiatives can be replicated for conservation of resilient native plant diversity in other parts of NW Himalayan region.

In continuation, **Dr.S.S.Randhawa**, Principal Scientific Officer (Retd.), HIMCOSTE interacted with the participants and shared a talk on climate change vulnerabilities, glacial melting, landslides and erratic rainfall in mountain regions. He also explained the role of Remote Sensing and GIS tools in resource management in Himalayas. Likewise, **Sh. Dinesh Paul**, DFO, Head Quarters, Himachal Pradesh Forest Department gave an informative talk on Institutional and policy Support for Mountain ecosystems. He mainly focussed on scope of conservation and selection of good practices and actions for protecting the Himalayan ecosystem based on both modern and traditional knowledge systems.

#### EXPOSURE VISIT (11.12.25)

The second day of the training programme was slated for exposure visit. Dr. R. K. Verma, Training coordinator, Sh. Shyam Sunder, Technical Assistant and Sh. Arun Kaushal coordinated the field visit. Firstly, the participants visited Krishi Vigyan Kendra (KVK), Kandaghat. Dr. Seema Thakur, Senior Scientist apprised the participants with on-going field activities of KVK and gave a power point presentation covering aspects like mass multiplication of clonal rootstocks and newly introduced cultivars of stone fruits. The participants also visited experimental fields at KVK to see the different agro-forestry models and natural resource management/conservation techniques suitable for Himalayan region. Subsequently, the trainees went to UHF, Nauni and learned academicians/scientists of alma mater interacted with participants and enlightened them about Climate Resilient Strategies, progressive interventions for effective land use, communities participation in managing land resources and viable approaches of safeguarding Himalayan ecosystems. Dr. Meenakshi Basoli, Scientist, Floriculture and Landscape Architecture at UHF Solan shared her views on sustainable cultivation practices for flowers and orchids applicable in mid-hill areas. Similarly, Dr. Ghanshyam Agrawal, Professor Soil and Water Conservation division provided insights about hydroponics,

management of soil and water resources, and precision farming. The participants also visited the experimental fields/demonstration areas showcasing research achievements and success stories.

### Technical Session (12.12.25)

On the concluding day, different resource persons shared their knowledge/experiences with the trainees on interesting topics and different strategies/approaches in place for addressing the ecological, environmental, hydrological, water shed management related problems in Himalayas. First of all, **Dr. Lal Singh**, delivered impactful talk on Livelihood Linkages in Himalayan Context Ecosystem Services and Socio-economic Benefits. He underscored the existing challenges in mountain agrobiodiversity and mainstreaming of mountain crops as functional food for nutritional and livelihood security. He talked at length about the Impact of Innovative Bund Cultivation, Agriculture Residue Silage and mushroom cultivation. He strongly emphasised on climate-resilient farming and community-led models for Himalayan region. In the series, **Dr. DR Bhardwaj**, Professor College of Forestry UHF, Nauni, discussed Agro-forestry as sustainable approach to balance environmental conservation with economic growths. He substantiated that it is effective for resilient ecosystems and ensuring long-term agricultural productivity without depleting natural resources. He apprised participants about different agro-forestry systems and bio-geographic zone specific suitable species.

Thereafter, **Dr. Pankaj Panwar**, Principal Scientist, ICAR- Soil and Water Conservation Institute, Chandigarh interacted with the participants and gave informative presentation on Soil and Water Conservation Techniques for Himalayan Ecosystems. He described about the Contour trenching, Check dams and Vegetative Barriers that enhances groundwater recharge, Improves moisture for vegetation and supports afforestation and slope stabilization and correlated the interventions with livelihood upliftment and productivity enhancement.

The last talk of the session was delivered by **Sh. Sanjeev Thakur**, Deputy Conservator of Forests(DCF), Integrated Development project (IDP), Solan. Emphasising the importance of Integrated Watershed Management in hilly areas like Himachal Pradesh, the expert described granular details of different components of watershed management, water conservation and its connection with community participation, ecological balance agricultural productivity, and disaster risk reduction. He also suggested developing coordination in planning, implementation, and monitoring for optimising natural resource use, improve water availability, and reduce soil erosion.

### Valedictory Session

**Dr. Manisha Thapliyal**, Director ICFRE- HFRI chaired proceedings of the Valedictory session. Interacting with the participants, Dr. Manisha reaffirmed that climate change has more pronounced impacts on vulnerable Himalayan ecosystems and there is urgent need to adopt integrated approaches/strategies for safeguarding Himalayan ecosystems. She appealed participants to apply the knowledge and experiences gained from training programme on ground and contribute significantly for protection of Himalayan



ecosystems. She praised the participants for their active participation and assessed positive gains/take aways from the training programme. All the participants expressed satisfaction the way training programme was organised, and knowledge shared by resources persons on various topics. The participants said that they interacted freely with experts and also exchanged ideas on their practical knowledge in respective fields. All together, participants expressed positive impression about the training programme. Finally, Director, HFRI felicitated participants with certificates. She also appreciated efforts done by the training coordinator and staff of Forest Ecology and Climate Change Division for the organising three days training programme successfully. Smt. Shilpa, Chief Technical Officer conducted the proceedings of three days of the training programme and presented cutomary vote of thanks

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## GLIMPSES .....











