

## PROCEEDINGS OF THE INSTITUTE LEVEL SEMINAR OF HIMALAYAN FOREST RESEARCH INSTITUTE, SHIMLA HELD ON 02.12.2020

In the series of monthly seminar, a presentation on the topic “**Conservation and Management of Forest Soils for Improving the Ecosystem Health in North- Western Himalaya**” under the theme **Biodiversity Conservation and Ecological Security** was made by **Dushyant Kumar, Technical Officer**, Division of Forest Ecology and Climate Change on 02 December, 2020. The Scientists, Forest Officers and Technical Officers of the institute were present during the presentation and Research/ Project staff were connected virtually through Google Meet.

**Dr. S. S. Samant, Director**, HFRI chaired the proceedings of monthly research seminar. At the outset, **Dr. R.K. Verma, Group Coordinator Research (Link Officer)** welcomed the Director and all the participants and apprised about the overview of the topic and requested all the participants to actively participate in the discussion and give valuable suggestions at the end of the presentation.

In his presentation, **Dushyant Kumar, Technical Officer** initially briefed about the soils in general and highlighted the significance of soils for the ecosystem and sustainability of life. He also elaborated the various processes and phenomena for pedogenesis and provided information about the Soil Taxonomy. Further, the speaker spoke about forests Soils, its key characteristics at length and explained the different factors causing degradation of forest soils. He emphasised upon the seamless relationship between the forests and soils as coupled ecosystems. During the presentation, the presenter also highlighted the research carried out on forest soils in North- Western Himalayas at global, national, organization and institution level.

In the end, the presenter tried to identify the research gaps in the field of forest soils, its conservation and management and reiterated the prospective research needs in this field. He also explored the possibility of collaborative research with other research institutes/ organizations doing work on similar lines.

During the course of discussion, **Dr. S. S. Samant, Director**, appreciated the presentation and asked from the presenter to explain the forest types of Himachal Pradesh and prevailing soils in these forest types. The presenters provided information about the bountiful forest wealth of the State and explained that forest soils show considerable variability on the basis of different vegetation types.

**Sh. Pitamber Singh Negi, Scientist- C** inquired about rating of different parameters in the forest soils and added that there should be a comprehensive inventory of range of different physio- chemical properties of forest soils in case of agricultural soils.

The Presenter apprised that currently an All India Coordinated Research Project (AICRP-22) titled “**Preparation of Forest Soil Health Cards Under Different Forest Vegetations in all the Forest Divisions of India**” is going on and all the ICFRE institutes are participating in this project. He further informed that under this project, twelve comprehensive parameters of forest soils viz., pH, EC, Organic Carbon, Available Nitrogen ( AVN), Available Phosphorus, Exchangeable Potassium( K), Available Sulphur ( S) Zinc (Zn), Boron (B), Iron (Fe), Manganese (Mn) and Copper (Cu) will be estimated. This project will generate division wise valuable database about the forest soils and help in long term management of the soils.

**Dr. Ashwani Kumar, Chief Technical Officer**, raised the query about the physical properties of soil and specifically asked about of soil colour. In response, **Dushyant Kumar** said that soil colour is one of the important properties of soil and it is affected by the drainage conditions of soils. He further informed that different soil colours are assessed with the help of Munsell Colour Chart.

**Sh. Kuldesh Kumar, Technical Officer**, cited the reference of ongoing project “Monitoring and Evaluation of Plantations Carried Out Under CAMPA in Himachal Pradesh” and asked about the sandy loamy soils as mentioned in the plantation journal by the field functionaries. In connection with this query, **Dr. R.K. Verma, Scientist –G and Head, Forest Ecology and Climate Change Division** said that sandy loamy is one of the textural class of soils and the texture of the soil can be estimated on the basis of particle analysis and it depends upon the relative size of building blocks of soil i.e. sand, silt and clay constituents. He said that soil texture is an important property of soil and it influences water and nutrient holding capacity, drainage of the soil. The exact assessment of soil texture is based on standard protocols and it can be roughly estimated in the field by Feel Method.

**Outcomes of the seminar were as follow:**

**A. Identification of research needs:** As a result of discussion, it was agreed that in future research must revolve around;

- I. Forest type-wise exhaustive evaluation of soil characteristics and functions.
- II. Long Term Studies to understand the effects of climate change on soil properties and its functions.
- III. Studies on the ecosystems services mediated by mountain soils.
- IV. Digital modelling of existing soil types in different forest types in Himachal Pradesh and Union territory of Jammu and Kashmir.

**B. Formulation of future strategies/ road map:** It was decided that the institute needs to work on following topics:

- I. Assessment of spatio-temporal variability of mountain soils.
- II. Studies on the effect of different vegetation types in soil formation and functioning. Studies on the ecosystems services mediated by mountain soils.
- III. Devising suitable strategies for addressing the problems of mountain soils and restoration of degraded soils.

**C. Networking research options identified:**

MOEF&CC, DST, ICFRE, SFDs, IISS, IIS&WC, Department of Science & Technology

In the end, **Dr. R.K. Verma, GCR (Link Officer)** thanked **Dr. S.S. Samant, Director HFRI**, the Forest Officers, Scientists, Technical Officers & Staff and all the Research/ Project Staff for their active participation and inputs for making the seminar successful.

## Glimpses of the Seminar



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