ICAR Indian Institute of Soil Science Celebrated "World Environment Day 2020"

Massive anthropogenic activities have posed a serious threat to its environment through release of toxic wastes in the biosphere. This has posed serious threat to the quality of environment, biodiversity on the earth and sustainability of agriculture. To create consciousness in the society on importance of conserving natural resources, UN observes 5th June as **World Environment Day**. The Theme for this year World Environment Day was **Biodiversity**. To commemorate the day, ICAR Indian Institute of Soil Science organized a Webinar on "**Soil Pollution – Threat to Soil Biodiversity**" with the aim of creating awareness on the need for sincere effort to conserve soil and its biodiversity through prevention of pollution as well as mitigation of its impact. Dr S K Chaudhari, DDG (NRM) was the Chief Guest of the Function. Dr A K Patra, Director of ICAR-IISS, Dr. Tapan Chakrabarti, Retired Scientist-H, CSIR-NEERI, Nagpur, Dr. Natesan Manickam, Senior Principal Scientist, CSIR- Indian Institute of Toxicology Research, Lucknow, Dr. B. Ramakrishnan, Principal Scientist, ICAR-IARI, New Delhi, Dr. J.K. Saha, Head, Division of Environmental Soil Science, ICAR-IISS, Bhopal, all project coordinators, HODs and scientists of the institute participated in the program.

In his address to the participants, Chief Guest of the programme Dr. S. K. Chaudhari DDG (NRM) expressed concerns on degradation of environmental quality due to polluted effluents and hazardous wastes being generated from urban and industrial activities in the country and highlighted the need for more comprehensive research at ICAR to address various issues on soil pollution.

Dr. A.K. Patra interlinked soil degradation and biodiversity decline as a result of anthropogenic and industrial activities. Importance of soil biodiversity has been realized across the world and its decline is really a major concern for everyone on earth. He emphasized the need to protect our soil biodiversity by maintaining soil healthy which is a prime factor for attaining healthy food, clean air and water for the human well being.

There were four key note presentations. Dr Saha made a presentation on "Threat of Soil Pollution to Sustainability of Agroecosystem Biodiversity and Human Health. He outlined the background of genesis of World Environment day and the objectives framed by UN. He presented overall scenario of soil pollution activities in the country and case studies on remediation approach to tackle soil pollution worldwide. He stressed the need for strengthening research at ICAR on Soil pollution issues and developing Soil Protection Policy at National level.

Dr Tapan Chakrabarti presented on "Biodiversity and Habitat Protection in India". He focused his presentation on various reasons for biodiversity loss and the need for protection of different ecosystem components for environmental sustainability. Dr Natesan Manickam, presented on "Persistent organic pollutant (POP) residues: Solution for safeguarding the future". Pesticide effects on human heath, water quality and soil biodiversity were the focal points of his presentation. He

highlighted specific case studies wherein he highlighted the major pesticide (Hexachlorocyclohexane, Endosulfan and organophosphates) entry path and its behavior in the environment; and also bioremediation technique adopted by IITR to degrade HCH contaminated land in Lucknow using microbes and enzymes.

Dr. Ramakrishnan presented on “The promises of microbial diversity against the perils of environmental pollution”. He highlighted the importance of soil microbes and its diversity in agroecosystem. Species richness/diversity has tremendous impact on ecosystem buffering capacity and has productivity performance enhancing effect. More diverse microbial communities are more efficient in sustaining ecological functions.

A panel discussion was also held after the presentations involving Project Coordinators & Heads of the Divisions of the institute. Several important points were raised in this session such as soil pollution and soil biodiversity loss linkage and their interaction with soil process in the natural ecosystem; Multi species interaction on soil pollution and their influence on ecosystem function viz-a-viz controlling food chain contamination; Determining tolerable pollutant loading rate in different habitat and identifying the most vulnerable species for biodiversity loss.

Considering the objectives, key note presentation and inputs from the participants, the following points were emerged (1) Above and below ground biodiversity changes due to soil pollution to be linked with ecosystem function (2) Assessment of soil biodiversity loss in response to soil pollutants (3) Soil biodiversity based solution to the soil pollution (4) Nanotechnology based soil pollution remediation and soil biodiversity protection (5) Agricultural management practices on soil pollution and their linkage with soil biodiversity loss (5) Collaborative research with different stakeholders, Government policies and research funding on soil pollution to protect soil biodiversity and ecosystem function. Webinar was concluded with a vision “To protect our natural resource soil, we need to protect our soil biodiversity from the soil pollution”.