

## **ICAR-IISS, Bhopal conducted NICRA sponsored training programme on “Agricultural System Modelling to Assess Climate Change Impact in Soils and Crops” during 16-25 January, 2018**

A training programme sponsored by National Innovations on Climate Resilient Agriculture (NICRA), ICAR-CRIDA Hyderabad on **“Agricultural System Modelling to Assess Climate Change Impact on Soils and Crops”** was organized at ICAR-IISS Bhopal during 16-25 January 2018. The programme was inaugurated by Dr. Ramabhau T Patil, Ex Director ICAR-CIPHET Ludhiana and Member, Empowered Committee, NASF ICAR in presence of the Director, ICAR-IISS, Bhopal, Dr. Ashok K. Patra and other dignitaries. Participants from different ICAR Institutes and SAUs took part in this 10-day long training programme which ended on 25<sup>th</sup> January 2018. Programme Director, Dr. Monoranjan Mohanty Sr Scientist and PI-NICRA, ICAR-IISS Bhopal outlined the importance of agricultural systems modelling in natural resource management and climate change adaptation and mitigation studies.



During the course of the training programme, the trainees were exposed to introduction of crop simulation modelling; minimum dataset and information requirements of the agricultural system models; parameterization and validation of simulation models; simulating water and nutrient limiting production systems; modelling soil organic carbon dynamics in crops and cropping systems; geospatial techniques and modelling in natural resource management and climate data downloading information. Some of the topics of presentations are given below.

History of agricultural system Modelling
Modelling potential plant growth process and introduction to APSIM
Getting participant ready for modeling exercise (Installation of APSIM Model)
Getting APSIM ready for simulation part-I (Preparation of weather file)
Getting APSIM ready for simulation part-II (Preparation of soil file and others essential files)
Simulating water, nitrogen balance, approaches using APSIM model
Greenhouse gas analysis
Soil organic C pools and dynamics in agricultural system
DNDC Model : a biogeo-chemical model for getting emission

Simulating cropping system approaches using APSIM Model
Minimum Data Sets (MDS) for crop Simulation Modelling
Sampling Procedures of Plants for calibration and validation of Crop Simulation Models
Laboratory analysis for soil carbon and soil physical properties
Soil spectroscopy using MIR to estimate soil organic carbon
Geospatial modeling and application in natural resource management
Remote sensing and GIS application in natural resource management
An over view of CropSyst model and its calibration
Etc etc

In the valedictory function, twenty trainees received certificates from the Chief Guest Mr. Lokendra Thakkar, GM, Environmental Planning and Coordination Organisation (EPCO), Bhopal and Guest of Honour Prof. (Dr.) Bhagwan Singh Chaudhary, Chair, Geophysics Department from KUK, Kurukshetra Haryana. Both the guests emphasized the importance of modelling in natural resource management and climate change adaptation and mitigation studies in agriculture. They advised the trainees to use the experience and learning gained from this training programme for their future research endeavour. The trainees got an opportunity to work with a number of crop simulation and carbon models including APSIM, DSSAT and DNDC etc. which are helpful in addressing the adaptive and mitigation measures for the farming community in the context of climate change.



The meeting was concluded by a vote of thanks by Dr. Nishant K Sinha, Co-PI NICRA and Programme Coordinator of the training programme.

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