

Expert lecture on “Hydrological analysis methods and techniques for Mahanadi basin”

Date: 21/07/2023 (1430 h)

Venue: Committee room

An expert lecture on “Hydrological analysis methods and techniques for Mahanadi basin” was organized at Committee Room, ICAR-IIWM, Bhubaneswar under the chairmanship of Dr. Arjamadutta Sarangi, Director, ICAR-IIWM, Bhubaneswar. The lecture was delivered by **Dr. Chandranath Chatterjee**, Professor, Dept. of Agriculture and Food Engineering, IIT, Kharagpur and the PI of the CRP-Water theme of IIT, Kharagpur. The expert lecture was attended by the scientists and project staff of the ICAR-IIWM, Bhubaneswar.

At the outset Dr. Arjamadutta Sarangi, Director, ICAR-IIWM, Bhubaneswar welcomed Dr. Chatterjee and all the participants present for the lecture. Dr. Susanta Kumar Jena, Principal Scientist introduced expert lecturer. Further, Dr. Chandranath Chatterjee presented and discussed about sustainable surface water resources plan for *Mahanadi* and upper *Krishna* basins using high resolution geo-spatial database. While addressing the plan he gave brief insight in to the study area, motivation and research gap, methodology adopted for detection of small water bodies, proposed bottom-up water resources planning, improved SWAT model, detection of small water bodies using AI/ML coupled GEE model, and identification of potential rainwater harvesting sites. At the end he presented the results showing HSI is the most accurate method for detecting small water bodies, ML models (RF and SVM) performed better in cases with increased vegetation cover or soil moisture, SAR method outperformed all other methods in cases of high cloud cover, coarser resolution of the GSW water layer limits its application, developed thematic maps including rainwater harvesting (RWH) potential zones map. After the lecture a fruitful interaction between expert and participants occurred on scientific aspects of surface water resources plan. The Director appreciated the lecture and provided his concluding remarks. The expert lecture ended with vote of thanks by Dr. Jena.

