

## **Measurements and Modeling of Evapotranspiration and other Hydrological Processes in Lesser Himalayas**

### **Abstract:**

The project proposal aims at understanding of the Hydro-climatic processes in the lesser Himalayan region. The project focus on monitoring evapotranspiration (ET) by using the latest available technology of eddy covariance tower and ET modelling for lesser Himalayan region. The ET estimated using the energy balance method from the flux tower will be compared with the ET estimated by using the other methods like Penman-Monteith equation, remote sensing/SEBAL, and Pan Evaporimeter and further parameterization will be undertaken. The catchment response to the various hydro-climatic forcing within the lesser Himalayan catchment will be evaluated by the water balance studies. The interplay between various water balance components will be studied through the hydrological modelling using Soil and Water Assessment Tool (SWAT) and Variable Infiltration Capacity (VIC) Model. This modelling exercise is envisaged to demonstrate the improved model performance by incorporating the observed hydro-climatic parameters and processes leading to a better assessment of climate-hydrological interactions in the lesser Himalayan catchment and future hydrological response under changing climate. A small Himalayan hilly watershed Hinval up to Jijli in the upper Ganga basin in the state of Uttarakhand is proposed for the study.