

SWOT Early Adopter – IIT Delhi Current Progress and Future Steps

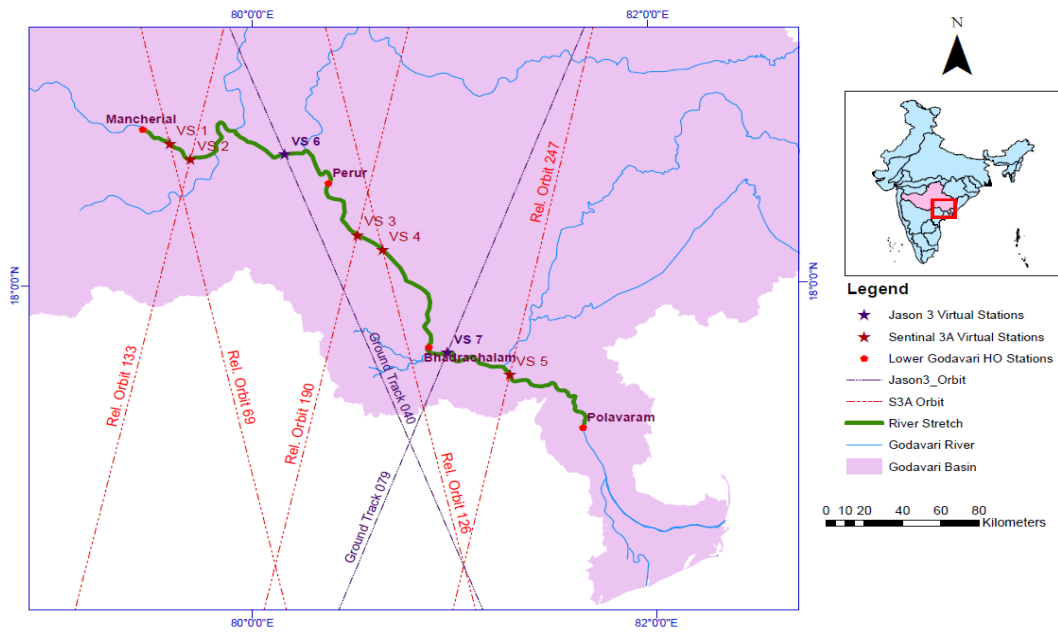


Figure 1: Study area and Jason 3 and Sentinel 3A virtual stations

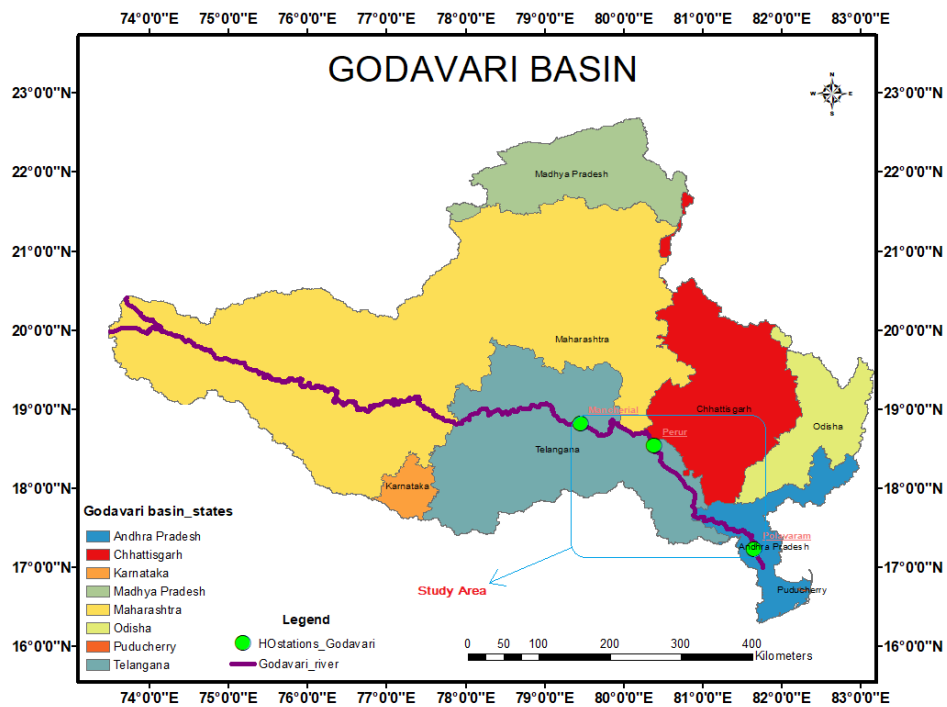


Figure 2. Study Area for the Modelling studies

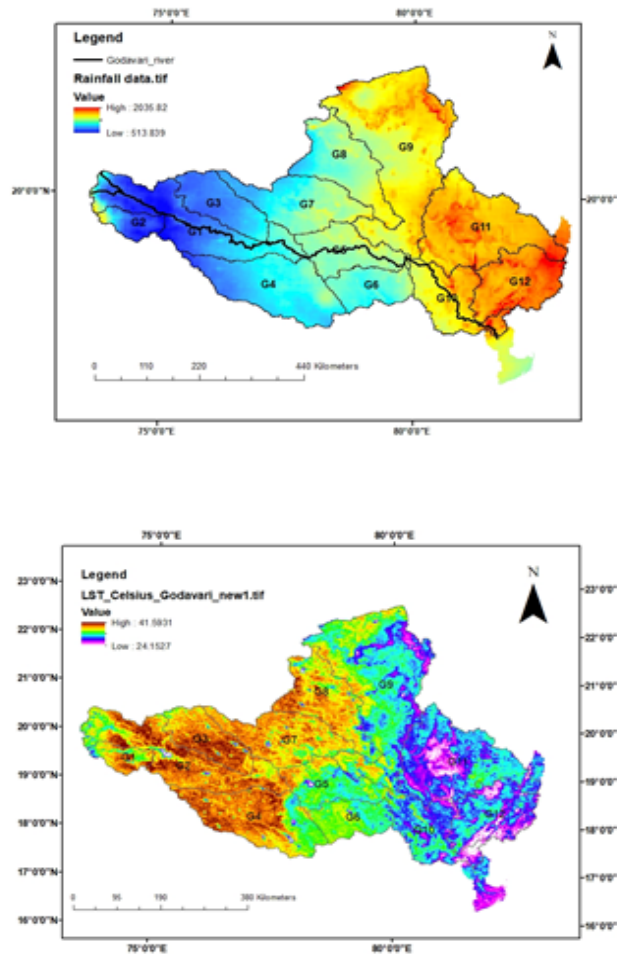


Figure 3. Hydrological characteristics of the Godavari Basin

Current Progress

- River Mask from Optical Satellites(Landsat 7, 8 and Sentinel 2) and SAR imagery satellites (Sentinel 1)
- 7 virtual stations identified in the study reach from Sentinel 3A and Jason 3 satellites as shown in Figure 1.
- Hydrological and Hydraulic model are setup using MIKE software for the study area as shown in Figure 2.
- Detailed Hydrological analysis of the basin has been carried out. Some of the characteristics are shown in Figure 3.

Future Steps

- Input files are being prepared for running the CNES SWOT River Obs Simulator over the river basins to generate SWOT like river elevations for assimilation in hydraulic/hydrologic models.
- The various data assimilation techniques such as Ensemble Kalman Filter, Ensemble Transform Kalman Filter method and Particle Filter Method are being tested for the Multi-mission satellite data for improving the modelling of flood in Godavari River.