

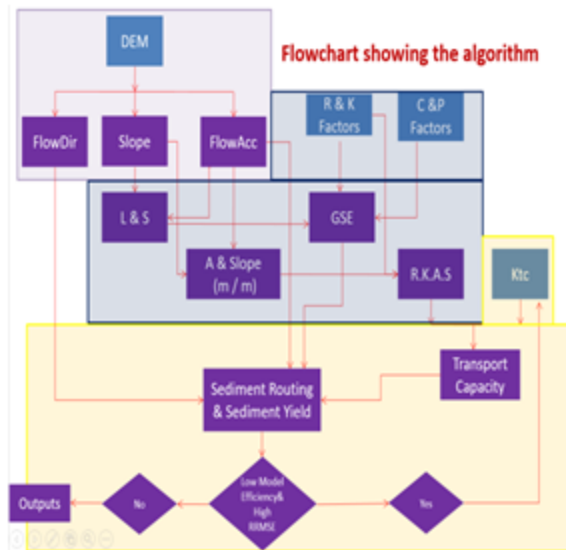
# TDP: Development of Hydrological Modelling Framework Using Open Source Tools To Estimate Surface Runoff and Sediment Yield

**OBJECTIVE:** Development of Distributed Hydrological Modelling Framework Using Open Source Tools.

**Sub objectives :** 1) Surface Runoff estimation using Remote sensing data, 2) Development of spatially distributed sediment transport coupled soil erosion model to estimate sediment yield at basin scale, 3) Development of hydrological modelling framework using open source tools and standards to integrate surface runoff and sediment yield models. 4) Validation of developed framework/tool on basin scale.

## METHODOLOGY

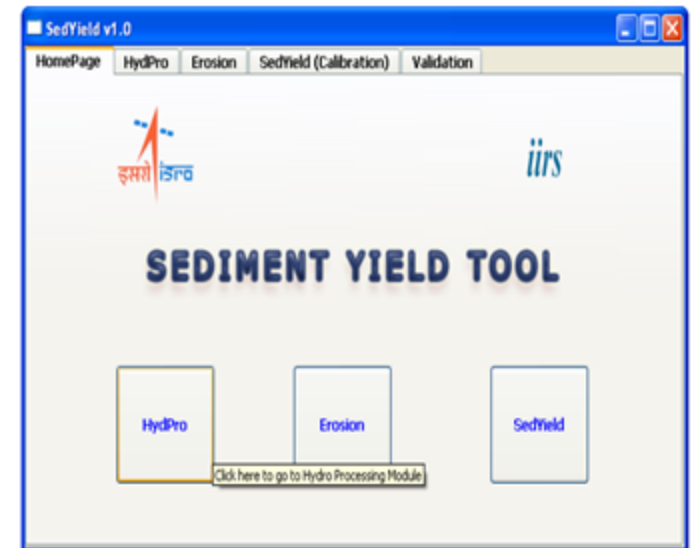
Flowchart of Methodology followed in development of SedYield Tool



Flowchart of Methodology followed Developing Tool based on Modified MMF model (Morgan-Duzant version-2008)



Screen shot of developed SedYield Tool



**OUTPUT :** 1) Tool has been developed in for soil loss and sediment yield estimation based on two approach (RUSLE and Modified MMF), 2) The tool has been developed in IDL (interactive data language) Python programming language. 3) Developed tools are tested and evaluated on watershed scale and catchment scale.

**Publication :** Application of GIS Coupled Modified MMF Model to Estimate Sediment Yield on a Watershed Scale. Journal of Hydrologic Engineering, ASCE, (Accepted for Special Issue), doi. 10.1061/(ASCE)HE.1943-5584.0001063.