RAINFALL-RUNOFF MODELLING OF NAULA HIMALAYAN WATERSHED USING SOIL AND WATER ASSESSMENT TOOL (SWAT)

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Abstract: This study is based on Soil and Water Assessment Tool (SWAT) Model integrates with the GIS information database to modelling the rainfall-runoff of Naula watershed of Uttarakhand. SWAT is a physically based model which has been developed to estimate the runoff from Naula watershed. The watershed area has been delineated using the DEM and then divided into seven sub-watersheds. For preparation of LULC map of Landsat-8 image has been used and the soil map was collected from NBSS&LUP Nagpur.Rainfall, runoff, temperature of min and max and relative humidity data of 33 years (1980-2012) of monthlywere used for SWAT simulation to find out the runoff. The coefficient of determination (R^2), p-factor, r-factor and efficiency (NS) was 0.90, 1.14, 0.68 and 0.68 for calibration period and 0.17, 0.12, 0.64 and 0.42 for validation period respectively for the estimation of runoff of Naula watershed.

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