

DRAINAGE MORPHOMETRIC ANALYSIS OF KADAVANAR RIVER BASIN USING GIS TECHNIQUES, DINDIGUL DISTRICT, TAMIL NADU, INDIA

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Abstract

Geographical Information System (GIS) technique is an effective tool to determine the morphometric characteristics. The study was carried out to analyze the morphometric characteristics of Kadavanar River basin using geo-processing techniques. This technique is found relevant for the extraction of river basin and its drainage networks. The extracted drainage network was categorized according to Strahler's classification, and it reveals that the terrain exhibits dendritic to the sub-dendritic drainage pattern. The Kadavanar drainage basin is sprawled over an area of 2254.65 km². The study area was designated as seventh-order basin and lower order streams mostly dominate the basin with the drainage density value varies between 1.37 and 1.92. The elongation ratio of the basin is 0.82 indicating that the study area is elongated with very low relief and steep slopes. The drainage texture of the basin is 7.02 and 14.26 falls under fine drainage texture. Hence, from the study, it can be concluded that remote sensing data coupled with geo-processing techniques prove to be a competent tool in a morphometric analysis, and the data can be used for basin management and other hydrological studies in the future.

Keywords: Morphometric, Drainage characteristic, Kadavanar basin, GIS.