

## **The Relationship between Morphometry and Hydrologic Properties of the Semenyih River Basin and Their Significance**

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**Abstract:** A study was carried out to evaluate the characteristics of surface landforms of the Semenyih River Basin. The study was based on quantitative measurements of land surface geometry such as topography, basin area, basin shape, slope angles, drainage patterns, stream lengths and stream frequency of the 36 sub catchments in the basin. Field observations showed that the study area generally consists of weathered rock, with a high permeability soil cover and dominated by sand particles. The bedrock in the Semenyih Basin is characterized by a large number of discontinuities due to the development of structures such as folds, joints and faults due to past tectonic events. The morphometry of drainage density and bifurcation ratio shows that the Semenyih Basin can be characterized as a homogenous rock, with high permeability and sparse vegetation and is dominated by high rates of infiltration and sub-surface flow. From the available hydrological data, it was interpreted that only 35% to 45% of the total rainfall was transformed into surface runoff and the rest (55% to 65%) as seepage into the ground after evaporation and interception. Five main tributaries, namely Sg. Lalang, Sg. Batangsi, Sg. Tekala, Sg. Rinching and Sg. Saringgit were identified as significantly contributing to the Semenyih River.