

Quantitative Geomorfik index Determining Tectonic Influence on Plembutan Watershed , Playen District, Gunungkidul District, Yogyakarta

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Abstract

The role of quantitative geomorphology in studying dominant geological processes in Plembutan Drainage Basin, Playen District, Gunungkidul Regency, Yogyakarta Special Province, was important. The research area is part of Playen, Paliyan, and Wonosari District, Gunungkidul Regency, located about \pm 40 kms Southeast of Yogyakarta. Physiographically, this area is a part of a Southern Mountains Zone. Especially Wonosari Plateau, represent the part of Oyo Drainage Basin.

The study aims is to know condition of geology of research district, knowing stadia river and prove tectonic which have been happened ini Plembutan Drainage basin using geomorphic quantitative indices analyse method with some parameters such as elevation, stream length and total area. It based on hypsometric curve, drainage basin asymmetry and stream-length gradient index (SL).

From the calculation three indices, the hypsometric curve got the stadia river in study area are young stadia and there is one of sub drainage basin which is Karangduwet sub drainage basin has mature stadia. From the calculation of assimetry factor got AF is 57,66, the mean of magnitude T-index is from 0,078 – 0,304 and stream length gradient index anomaly show low resistance rock (under 500). Those three indices suggest that Plembutan drainage basin was influenced by tectonics which is indicated by uplifting at the southwest area. The evidences of tectonics influenced in study area can be seen as geomorphic indices, where in the study area were seen as asymmetry basin and the geological structures.

Keyword : drainage basin, geomorphic indices, tectonic