

**Assessment of flood susceptibility analysis using analytical Hierarchy process
(ahp) in Kota Belud area, Sabah, Malaysia**

ABSTRACT

This study aims to assess the flood susceptibility analysis using a Geographical Information System (GIS) based-heuristic analysis, namely the Analytical Hierarchy Process (AHP) model. Eight relevant physical parameters have been selected, namely, drainage density, drainage proximity, elevation, slope angle, slope curvature, land use, soil type, and topography wetness index. The relative importance of these factors has been compared in the pairwise matrix to gain weight values during the process of the Analytical Hierarchy Process (AHP). The flood susceptibility zones have been mapped according to their weightage value. Finally, the flood susceptibility map was prepared and classified into six classes as very low, low, moderate, high, and very high susceptibility using the natural break classification method. The accuracy of the flood susceptibility model was validated using the Area Under the Curve (AUC) analysis. The AUC for success rate was estimated at 82.13%