

Flood Susceptibility Analysis using Multi-Criteria Evaluation Model: A Case Study in Kota Kinabalu, Sabah

ABSTRACT

This study focused on the Flood Susceptibility Analysis (FSA) of the Kota Kinabalu area, Sabah by using Multi Criteria Evaluation Model (MCE). The study area had been affected by flood throughout the years. The aims of this study are to determine the flood susceptibility level of the study area and to identify the contributing factors that leads to the flood disaster. Thus, a few mitigation measures can be recommended. The contibuting factors that leads to flood disaster had been identified through desk studies and fieldwork. The data were obtained and digitized using ArcGIS software and the thematic maps were produced. The factors that contributing to flood disaster such as slope gradient, elevation, topographic curvature, flow accumulation and drainage distance were retrieved from the topographic database, whereas the land use, rainfall and soil types from various agencies. Several areas are considered as susceptible, such as areas of Taman Kingfisher, Kg. Bantayan, Menggatal area, and Kg. Tebobon. To avoid or minimize the flood disasters, the Flood Susceptibility Level Map can be used in future development planning and a few structural control can be implemented such as the reconstruction of drainage in the study area and a warning system. This study can be used as a resource for consulting, planning agencies and local governments in managing risk, land-use zoning and remediation efforts to mitigate risks.