The Effectiveness of Remote Sensing Techniques for Land use Classification in Kota Belud, Sabah

ABSTRACT

The objective of this study was to evaluate the effectiveness of remote sensing techniques in classifying land use types in Kota Belud, Sabah. Two classification techniques, unsupervised and supervised, were employed to ensure high accuracy of the land use data. Six land use types were classified, including paddy fields, bare land, water bodies, forest, urban areas, and oil palm plantations. This study found that the accuracy of land use classification for the years 1990, 2000, 2010, and 2020 was 94%, 86%, 98.30%, and 91.60%, respectively. These results suggest that the supervised classification method was more effective in accurately classifying land use types compared to the unsupervised classification method. The final maps generated by both classification methods showed significant changes in land use over time. For instance, the expansion of paddy fields was observed in the study area, particularly from 1990 to 2020. The conversion of forest areas and bare land to paddy cultivation was in line with the National Agro-Food Policy 2021-2030, which aims to make Kota Belud a paddy granary. Overall, the study highlights the importance of remote sensing techniques in monitoring land use changes. The results provide valuable insights for policymakers and land use planners in making informed decisions to manage land resources sustainably.