

Construction of New Forest Roads in Malaysia Using a GIS-Based Decision Support System

ABSTRACT

This paper describes how a Geographical Information System (GIS)-based Decision Support System (DSS) was applied in selecting the most compatible block or compartment to construct a new forest road for a sustainable timber harvesting purposes. The study area was located in Gunong Stong Permanent Forest Reserve, Kelantan, Malaysia between latitude 5o00' N and 5o25' N and longitude 101o20' E and 102o05' E. Four criteria have been considered in this paper which is timber volume (m³), slope (degree), ground condition and distance from the primary and secondary forest road that previously exists (m). ArcView and ArcMap softwares were used to evaluate all the criteria using remote sensing and field data. Results indicated that the best block that fulfill all the criteria chosen for the new forest road construction is Block Nos. 9 and 11.

Keyword: Geogrpahic information system, Decision support system, Forest harvesting, Forest road, Road construction