Potential of Normalized Difference Vegetation Index for Mapping of Soft Clay Area in Paddy Fields of Kedah, Malaysia

ABSTRACT

Mapping of soft clay area in the paddy field environment using remote sensing technique was a quick way to get the soft clay location in order to arrange the best way to improve the quality of soil. However, in situ soft clay area observation was expensive and labor intensive. Remote sensing based vegetation index had the potential for rapidly estimating soft clay area over large area. This study examined the use of Normalized Difference Vegetation Index (NDVI) to estimate soft clay areas in the paddy cultivation area of Kedah, Malaysia. Ground-based data were collected from the study area during fieldwork activity and NDVI index produced from Landsat 8 data. The analysis of Kappa statistic showed that the NDVI in the period of before paddy planting had the highest accuracy value with the overall classification accuracy (85%) and kappa coefficient (0.84). Total area of the soft clay from the highest was showed in the period of before paddy planting (1.856,97 ha) followed by after paddy planting (656,73 ha) and harvest (401.85 ha) periods, respectively. As whole, the study concluded that NDVI was a good indicator of soft clay area estimation in paddy cultivation area.