Monitoring of vegetation using multi-sensor temporal satellite data

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Abstract: The present study deals with the monitoring of vegetation using multi-sensor temporal satellite data in the Kangchup Chiru Reserved Forest of Manipur that lies between latitudes: 24˚49′ N - 24˚52′ N and longitudes 93˚47′ E - 93˚49′ E. The satellite data used are LANDSAT TM 7 (1988), IRS 1-C LISS III (1998) and IRS P6 LISS III (2008). NDVI (Normalized Difference Vegetation Index) of each year is analysed using Erdas Imagine to study vegetation and finally a composite image of all these NDVI images is produced to analyse the change pattern in the vegetation over the last 20 years (i.e. 1988—2008) of present study. This technique provides a faster means of visualization that makes interpretation easier when compared to other techniques. Advanced RGB clustering technique is used to classify the composite NDVI Image and six classes viz. absent (17.38%), constant (14.08%), gain since 1988 (16.68%), gain since 1998 (28.00%), loss since 1988 (9.61%) and missing in 1998 (14.24%) could be analysed and broadly studied using the Erdas Imagine software and finally a thematic map of the same is generated.

Keywords: Multi-sensor temporal satellite data, digital image processing, NDVI, remote sensing, vegetation monitoring