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Estimation of Land Use Land Cover Change Relationship with Normalized Difference Vegetation Index (NDVI) Different Method and Land Surface Temperature (LST)

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Abstract: Accurate and continuous satellite images are being used for various global change studies like climate change, hydrological modeling, ecology studies and environmental modeling. Remote sensing and geographic information system helps to analyze satellite images to extract information about land use land cover estimation, runoff calculation and hydrological modeling. In present study satellite images were used for land cover classification using maximum likelihood classification to get land use land cover maps. Land use land cover maps of 2002 and 2015 were used for change detection analysis. Transition matrix was used for identifying the land cover change between 2002 and 2015. Highest increase in agriculture area with 9.14% and decrease of forest area with 6.18% was observed. These changes were analyzed using Normalized Difference Vegetation Index(NDVI) and Land Surface Temperature(LST) to study the vegetation impact on these two parameters. Analysis of NDVI shows different values for agriculture and forest cover with changing vegetation cover. Dense forest and sparse forest cover resulted in increasing LST temperatures. Results indicate that land cover change has significant influence on NDVI and LST for forest and agriculture classes.

***Keywords*:** LULC, Land Surface Temperature, Normalized Vegetation Index, maximum likelihood classification, accuracy assessment