

## ABSTRACT

The Vegetation Index analysis is the commonly used factor for the retrieval of Vegetation canopy biophysical properties. Several studies have investigated the Spatial Scale dependencies between wetness, greenness and dryness and the relationship between Terrain analysis and Tasseled Cap Transformation but doesn't give detail analysis on the plant's growth and wealth. To improve these factors this paper, analyze the spatial scale dependencies of Vegetation Index (Slope Based) such as NDVI, RVI, SAVI, TVI. Our result show strong spatial scale dependencies of NDVI over heterogeneous surface, indicating that NDVI values at different resolution may not be comparable. The nonlinearity of NDVI over partially vegetated surfaces becomes prominent with darker soil backgrounds and with presence of shadow. Thus, the NDVI may not be suitable to infer vegetation fraction because of its nonlinearity and scale effects. We found that the Soiled Adjusted Vegetation Index (SAVI), a scale-invariant index based on linear spectral mixing of red and near-infrared reflectance, is a more suitable and robust approach for retrieval of vegetation fraction with remote sensing data, particularly over heterogeneous surfaces. With the Scale factor between -1 to +1 scale the vegetation type is analyzed and give report on Dead plants (-1 to 0), Unhealthy plants (0 to 0.33), Moderately plants (0.33 to 0.66) and Very Healthy plants (0.66 to 1). Overall, with the help of NDVI, RVI, SAVI, TVI the Vegetation is analyzed.