



Monitoring desertification in Tunisia using remote sensed data and land cover

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Desertification refers land degradation in arid, semi-arid area. Desertification results from various factors, including climatic fluctuations and human activities. To monitor desertification, various indicators using satellite remote sensing are widely used. Tunisia is typical area which suffers from desertification. Southern part of Tunisia is semi-arid and merges into the Sahara and these semi-arid area is expanding until these days. In this study, to monitor desertification in Tunisia Normalized Difference Vegetation Index (NDVI), Top Soil Grain Index (TGSI) and Land Surface Temperature (LST) are produced using land surface reflectance images of 2000 to 2013 with 500m spatial resolution. We compared the values of each indicator to confirm if they have similar tendency. The change rates were calculated and the tendency of each indicators were compared. The areas where show rapid change rate are selected, and compared with land cover change to find which the dominant land cover of those region was and to which land cover it changed. As a result NDVI and TGSI shows similar distribution pattern of values. During 2001-2013 NDVI has generally increased, but NDVI in barren land is even decreased. Land cover change between barren land and shrubland was frequent, and through this result we assumed that the central Tunisia which locates between desert and cropland would show rapidest change rate.