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Agriculture Drought Analysis using Remote Sensing based on NDVI-LST Feature Space

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***Abstract*:** Agriculture drought occurs due to rainfall deficiency and decreased level of residual soil moisture in cropping area and varies spatially with cropping pattern, available soil moisture and growing environment. In this study soil moisture index (SMI) value and crop growth is used to assess agricultural drought. The remote sensing (MODIS) data is used to estimate NDVI to analyse crop growth between 2010 and 2016. NDVI deviation values helps to identify crop growth at different stages and to define crop condition. SMI is calculated from the Landsat images using the NDVI-LST feature space. According to the SMI value below 0.2 indicates low or moderate moisture and above 0.2 refers to normal moisture condition. SMI for 2010 observed to be with 66% normal soil moisture, for 2016 it is only with 33% normal soil moisture. Integration of the crop condition classified image with SMI values helps to assess drought with four different classes like extreme drought, moderate drought, normal and no drought (better). For 2016 , extreme drought , moderate and normal and no drought area was 14, 26 and 59% .

***Keywords*:** Crop Condition, Normalized difference Vegetation index. Seasonal Max NDVI, Soil moisture index, Drought