Spatio-Temporal Analysis of Drought Using NDVI Based Land Cover Classification

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Abstract: Drought is one of the main reasons behind the food insecurity situation witnessed in the twenty-first century. More than half of the twenty-first century witnessed, shortage in world grain production due to drought. Lower rainfall during monsoon season, building unviable large dams, wrong cropping patterns, water diversion for non-priority uses, neglect of local water systems and unaccountable water management by the State government leads to drought-like conditions in India. 2013, 2015 and 2016 were recorded as the worst drought years for Maharashtra which led to famine in Latur, Osmanabad, Nanded, Aurangabad, Jalna, Jalgaon and Dhule districts. The current study involves spatio-temporal analysis of drought using semi-automated NDVI based land Cover classification. The study has been carried out for the district of Pune in Maharashtra, India, using AWiFs dataset of Resourcesat-1. Analysis showed that the percentage of vegetation and water were recorded least for the months of March, April and May every year. Moreover the percentage of soil peaked highest in the years of major drought events, thus confirming the authenticity of semi- automated NDVI based land cover classification in analysing drought in a region.

Keywords: Drought, NDVI, Resourcesat-1