

## ABSTRACT

**MANAUIS, KIMBERLY A.** University of the Philippines Diliman, October 2019. **Performance of Vegetation Index-Temperature-based Drought Indices in Detecting Agricultural Drought in the Philippines.**

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Agricultural drought is a natural hazard associated with lack of soil moisture content in crops resulting in production loss. In monitoring agricultural drought, the Normalized Difference Vegetation Index and Land Surface Temperature (NDVI-LST) triangular relationship are widely employed in deriving drought metrics. In this study, the performance of agricultural drought indices, particularly Temperature Vegetation Dryness Index (TVDI), Vegetation-Temperature Condition Index (VTCI), Vegetation Condition Index (VCI), Temperature Condition Index (TCI) and Vegetation Health Index (VHI) were evaluated in detecting drought phenomenon in the Philippines. The spatio-temporal variation of the NDVI-LST based drought indices will be compared with soil moisture pattern. Accuracy assessment of the indices for agricultural drought detection will be made for five provinces with differences in humidity conditions. Lastly, correlation maps between the NDVI-LST based drought indices and precipitation-based drought index, particularly Standardized Precipitation Index (SPI) at four different time scales (1,3,6 and 12), will be obtained.

Keywords: Agricultural Drought Monitoring, Normalized Difference Vegetation Index, Land Surface Temperature