NDVI anomaly for drought monitoring in Danubian lowland from 2019 to 2022

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To identify drought risk during the growing season and reducing possible agricultural losses, effective drought monitoring is necessary. Knowing when and where vegetation growth is predominantly water-limited in this setting, as well as whether remote sensing-based drought indices can identify agricultural dry zones, is crucial. In our study we focused on maize crops in Danubian lowland in growing season (April to August) from 2019 to 2022. We analysis Normalized Difference Vegetation Index from MODIS (MOD13Q1.061 Terra Vegetation Indices 16 – Day Global 250m). We calculate monthly average of NDVI to estimate NDVI anomaly of crops for particular months. Monthly NDVI of crops were aggragate to hexagonal grids (5,1 km2) based on area weighted interpolation. The NDVI anomaly classification scheme, which contains mild drought, moderate drought, severe drought, and a very severe drought in descending order of severity, served as the model for the drought severity classification system that was used in our study. We found that overall, the most vulnerable months for maize are June (60,4 % of area). However August of 2022 were very specific cuz 91,5 % of all area were affected by long term drought.