



Novel EO data for improved agricultural drought impact forecasting in the Pannonian basin

INTRODUCTION:

- Pannonian basin
 - sheltered with relatively **low levels of precipitation** (< 600 mm/year)
 - surrounding mountains are the key water source
- Several **drought episodes** in the last decades and **Increased frequency and intensity** of dry spells and heat waves under climate change
- Need to **increase** the **capacity** of the relevant **stakeholders** to manage drought events and their impacts

OBJECTIVES:

- Develop and validate **novel EO-based products** dedicated to characterise Drought processes in the Pannonian basin.
- Foster **new scientific results**, where space technology may provide a valuable input.
- **promote** the use of advanced EO datasets for Drought Early Warning and **facilitating access** through a professional project web site.
- Develop a **Roadmap** identifying additional science priorities.

Consortium



CzechGlobe



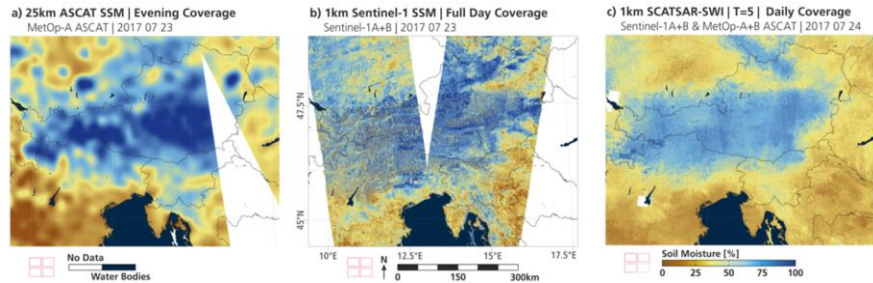
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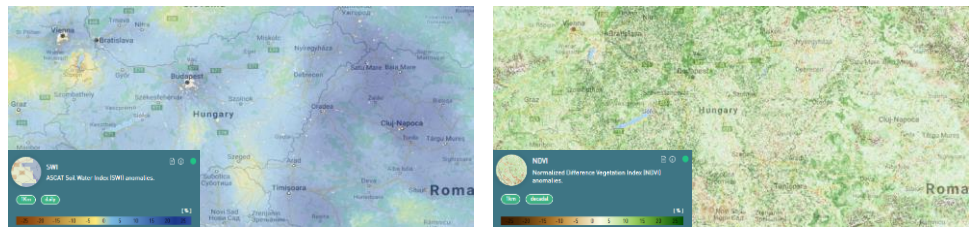


DryPan Development and Validation of different products

- **SCATSAR-SWI**: combines advantages of Sentinel-1 and ASCAT

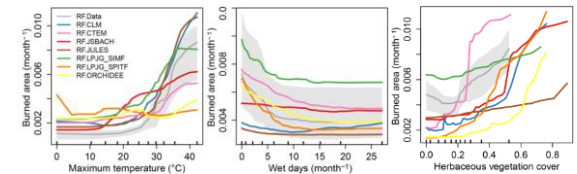


- **Forecast anomalies**:
 - Soil Water Index (SWI) and Normalized Difference Vegetation Index (NDVI) states and anomalies from past and current SWI and NDVI values (1 km) using machine learning approaches



- **Forecasts of crop yields**

- **Drought characterisation**:
 - **Meteorological drought**: compute standard drought indices, evapotranspiration and evaporative stress index from meteorological reanalysis and forecasting data (ALEXI model)
 - **Agricultural drought**: develop and validate drought indicators from EO time series of soil moisture (SSM) and vegetation (NDVI)
- **Compound events**
 - Identify past (meteo, land surface, agricultural, or compound) drought events
 - Identify thresholds and responses between meteorological drivers, vegetation-related modulators, and drought impacts in soil moisture and vegetation



- **Promote** the use of the developed EO-based estimates and forecasts of agricultural drought
- **Contribute** to drought early warning systems
- **Disseminate** results through:
 - DriDanube droughtwatch.eu portal
 - [Intersucho.cz](http://intersucho.cz) portal

- **Scientific Roadmap:**
 - Analysis and potential of project results
 - Identify required work
 - Identify observational gaps
 - Scientific agenda
 - Plan operational activities

