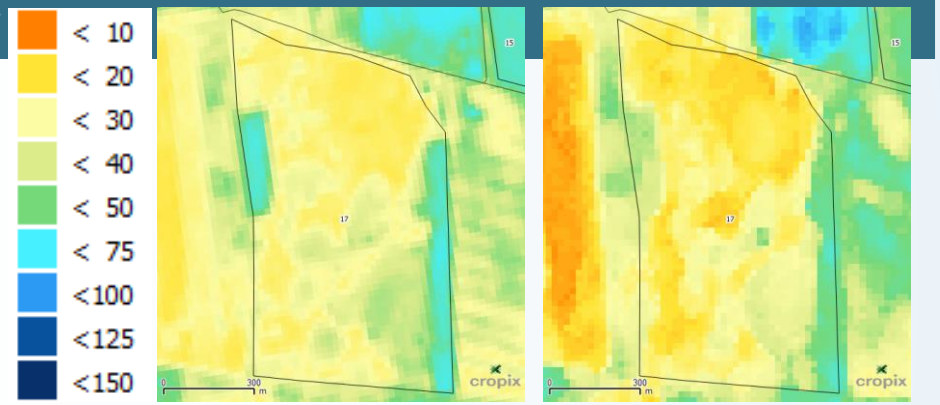
EO services contributing to SDGs

Drought monitoring in Germany

- User: Governmental institutions or crop Insurance.
- Challenge/Needs: Detect the deviation in plant humidity from baseline.
- Initiative: Mitigation and compensation for drought events.
- Results: Low basic risk, due to regular and constant measurement.
- Service Provider: cropix based on Sentinel-1 SAR data.

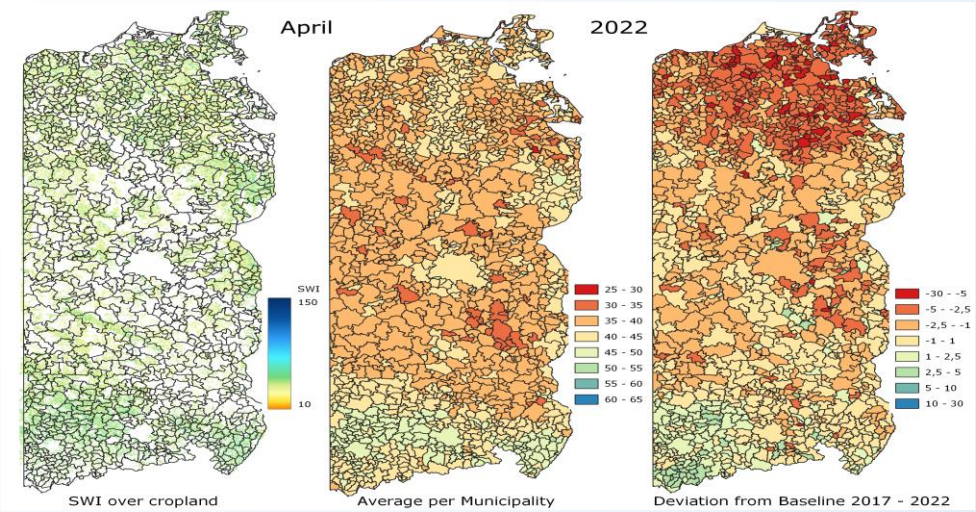
Target 2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.
Target 6.4: By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.
Indicator 6.4.2.: Water stress



Sentinel-2 NDWI 2019-07-19 Sentinel-1 SWI 2019-07-18

SAR Water Index (SWI) derived from Sentinel-1 SAR data

- Sentinel-1 acquires data on regular basis with a repetition of 12 days (20x20 m).
- Independent from atmospheric disturbances and daylight.
- Constant observation angle, energy and geometry. Ideal for time-series monitoring.
- SWI indicates the humidity and water stress of cropland.
- SWI was calibrated against optical NDWI (Gao) and shows high correlation.
- Data of the past 7 years is available to derive a baseline.



The lower 3 maps from eastern Germany show: Left SWI on cropland only.
Center: Mean value of SWI per Municipality.
Right: Deviation of the mean value per Municipality from the baseline 2017-2022.

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