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Current state of development of the European Drought Observatory

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The Joint Research Centre of the European Commission (JRC) is developing the prototype of the European Drought Observatory (EDO) for drought forecasting, detection, and monitoring in Europe.
EDO is conceived as a web-based information system (http://edo.jrc.ec.europa.eu), integrating information from various sources and disciplines relevant to monitor and detect droughts throughout Europe.

The prototype is currently performing the pre-operational production of drought indices using meteorological information, modelled hydrological parameters, and remote sensing data.
In particular, the Standardized Precipitation Index (SPI) shows the general precipitation status according to the historical average in the predefined period. SPI in monthly step is calculated for the 1, 3, 6, 9 and 12 months averaging periods. Soil moisture estimations are produced daily by the LISFLOOD hydrological model, along with their anomalies and seven days forecasts. Two satellite remote sensing drought indicators are produced: Normalized Difference Water Index (NDWI) and Fraction of Absorbed Photosynthetic Active Radiation (fAPAR) anomalies. NDWI 10-day composites are obtained daily from Moderate Resolution Imaging Spectroradiometer (MODIS) data, while fAPAR anomalies are calculated from 10-day composites delivered by the European Space Agency (ESA) and estimated from Medium Resolution Imaging Spectrometer Instrument (MERIS) data.

All these drought indicators are made available online for visualization and querying by means of a map viewer based on University of Minnesota MapServer and Oracle. The tool generates maps of the different indicators and provides functionalities to browse the maps, query the data, produce graphs, and output the maps in various formats.