



Multisource detection of drought events at the European scale

S. Niemeyer, G. Laguardia, B. Kurnik, S. Rossi

European Commission, DG Joint Research Centre, Institute for Environment and Sustainability (stefan.niemeyer@jrc.it)

The Joint Research Centre of the European Commission (JRC) produces daily maps of soil moisture and its anomaly at the European scale from simulations with the LISFLOOD model within the European Flood Alert System (EFAS). As soil moisture is a key variable for detecting and monitoring drought events, soil moisture anomalies can serve as an integrated drought indicator.

Results of this modeling approach for drought detection and monitoring are compared with two independent sources of data suitable for drought monitoring, i.e. the soil moisture estimates from radar remote sensing, and the fAPAR (Fraction of absorbed photosynthetic active radiation) estimates obtained from optical remote sensing.

Estimates of the soil moisture content for different soil layers are produced by the Microwave Remote Sensing Group of the University of Vienna from backscatter measurements acquired with scatterometers onboard the satellites ERS-1 and ERS-2 (1991 to present) and the three MetOp satellites (from 2006) and processed through a change detection and modelling approach.

The fAPAR maps are produced by the MGVI algorithm developed at JRC for the European Space Agency (ESA) Medium Resolution Imaging Spectroradiometer (MERIS) sensor and operationally provided by ESA as the MERIS primary L2 land surface product. fAPAR is widely recognized as an important indicator of the state of the vegetation and therefore it is an effective drought detection tool.

The evaluation and comparison of information from different sources is carried out in

view of the integration of different methodologies for multisource drought detection in order to improve an effective and operational monitoring and forecasting of drought events at the European scale.