

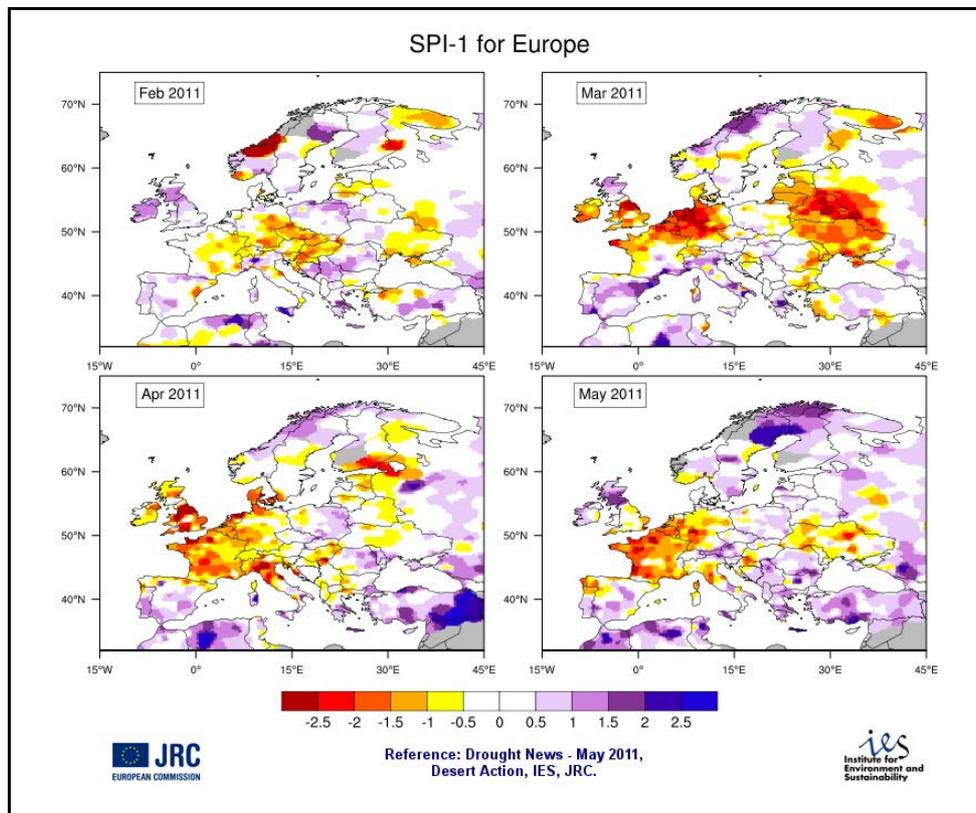
European Drought Observatory (EDO)

Drought News May 2011

The standardized precipitation index for 1-month rainfall totals (SPI-1) (Figure 1, left) in May shows that the **drought conditions of April continued over much of France and Germany** with a strengthening of the negative SPI-1 in many areas. Over *England* and *northern parts of Italy*, however, the rainfall deficit became less severe.

The SPI-3 (Figure 1, center), for 3 month rainfall accumulations, which is important for agriculture, shows that accumulated rainfall deficit in the 3 months to May was more severe than in the 3 months to April. In particular **western Germany**, the **Netherlands**, **Belgium** and **northwest France** have received considerably less rainfall than is climatologically expected over this period. The drought conditions that have existed over the **Ukraine**, **Belarus** and the **Baltic countries** since March have persisted into May.

Additionally, the SPI-12 (Figure 1, right) shows a persistent shortage of 12-month rainfall over **northern England**, **Wales**, **central-southern England**, **Denmark**, **northern Germany**, **central parts of the Ukraine** and the **western half of France** with the affected areas spreading eastwards from there during May. Rainfall shortages over this extended period may lead to **impacts on reservoir storage levels** in these regions.



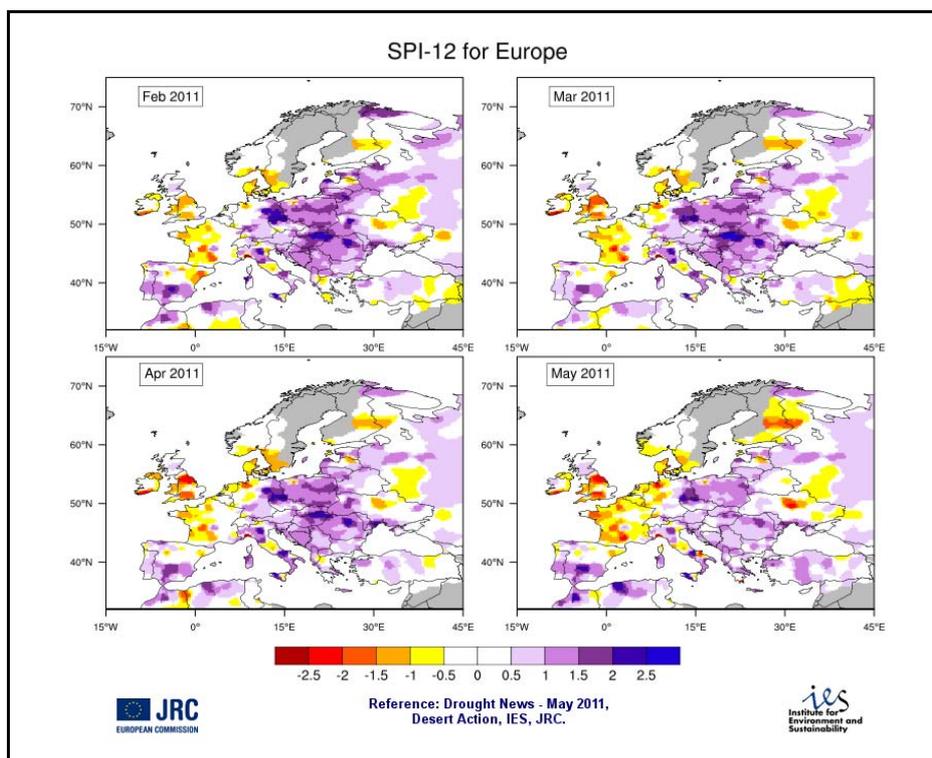
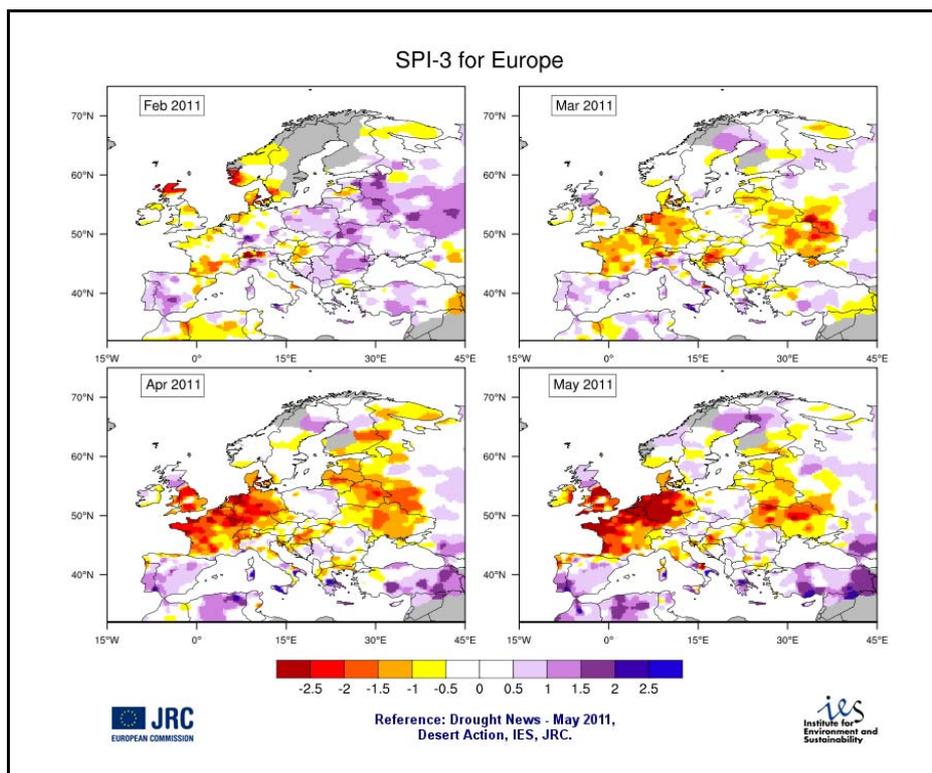


Figure 1: Evolution of the Standardized Precipitation Index (SPI) from February to May 2011: (left) 1-month SPI, (center) 3-month SPI, (right) 12-month SPI. Values below -1.5 indicate a severe meteorological drought. Grey shading indicates areas with insufficient reliable data to compute the SPI.

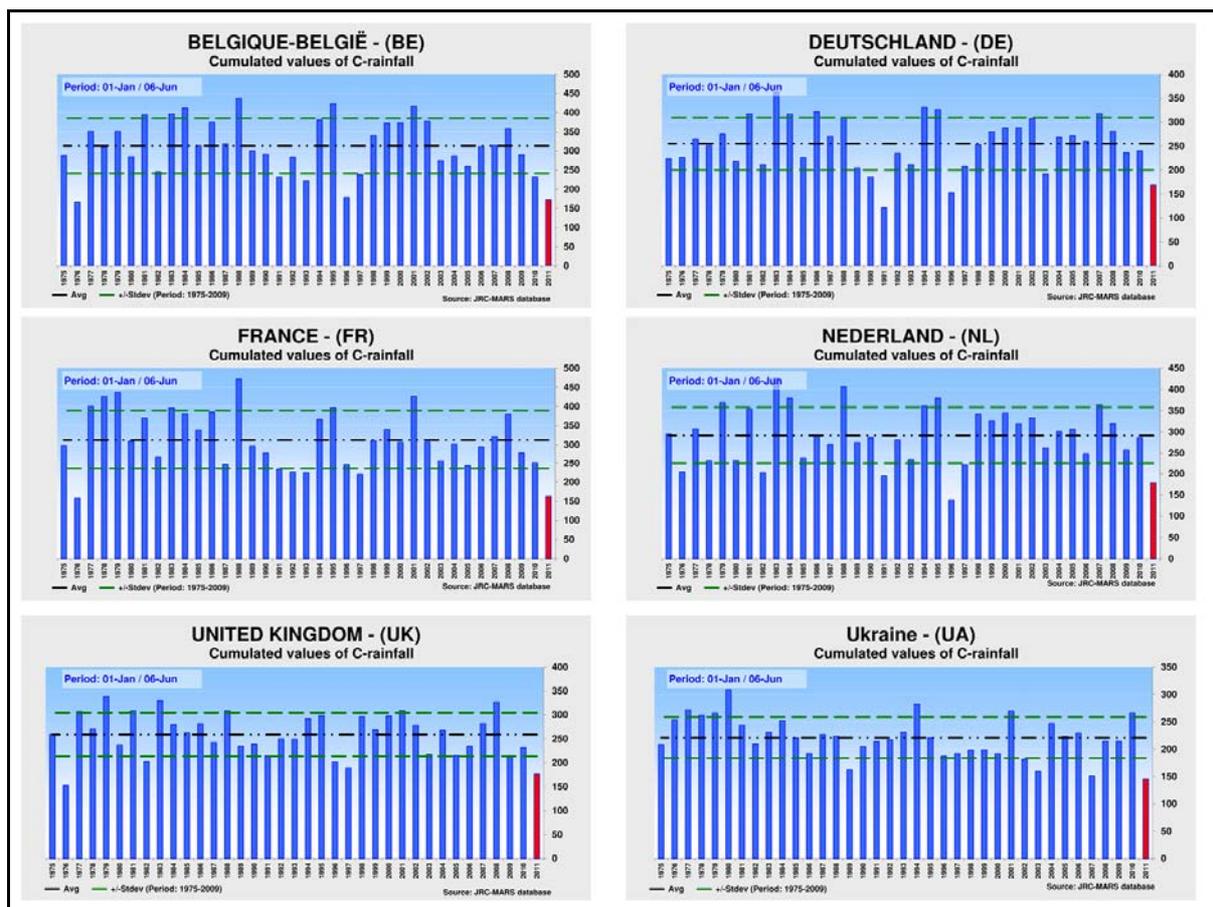


Figure 2: Accumulated rainfall for 1st of January to 6th of June for the years 1975 to 2011. 2011 is highlighted in red. Black dot-dashed line: Average rainfall 1975-2010, green dashed lines: One standard deviation above and below the average (1975-2010).

Figure 2 demonstrates that the **accumulated rainfall** for the period 1 January to 6 June for 2011 is comparable to historical minima for the following countries:

- o Belgium: comparable to 1996 and 1976 ;
- o Germany: comparable to 1996 ;
- o France: comparable to 1976 ;
- o The Netherlands: comparable to 1991, 1982, 1976 ;
- o The United Kingdom: comparable to 1997 ;
- o Ukraine: absolute minimum since 1975, comparable to 2007, 2003, 1989.

Overview on vegetation status

To evaluate the change in vegetation conditions during the month of May, a trend in green biomass anomaly was estimated using the images of the fraction of Absorbed Photosynthetically Active Radiation (fAPAR) between end of April and end of May (Figure 3). **Important negative trends in fAPAR anomaly were recorded in France, Belgium, the Netherlands, southeast England and Central-East Germany.**

This observation is confirmed when looking at the overall evolution of the fAPAR anomalies between the end of April and the end of May (Figure 4).

At the end of April, no severe impact on the vegetation cover was visible over most parts of *Western Europe*. However, during May, the 10-day fAPAR images showed abnormally low values in some EU countries. For **France**, the fAPAR anomalies (observed fAPAR compared with the 1997-2008 average) remained positive (healthy vegetation conditions) until the end of April, but the signal became increasingly negative during the month of May, especially in central parts of the country. Similar situations were observed for the **southeastern part of the UK, Belgium** and the **Netherlands**.

In *North Germany, North Italy*, and in several countries in *Western Europe*, early signs of drought impact on the vegetation cover were observed at the end of April. During May, the negative vegetation anomalies observed in *North Germany* spread over much of the country. While in *Ukraine, Poland* and in the *Baltic countries*, the situation seemed to be back to near normal or better vegetation conditions, even though locally negative fAPAR anomalies are still recorded. In *North Italy*, the vegetation conditions slightly improved towards the end of May, probably due to favourable rainfall during the month.

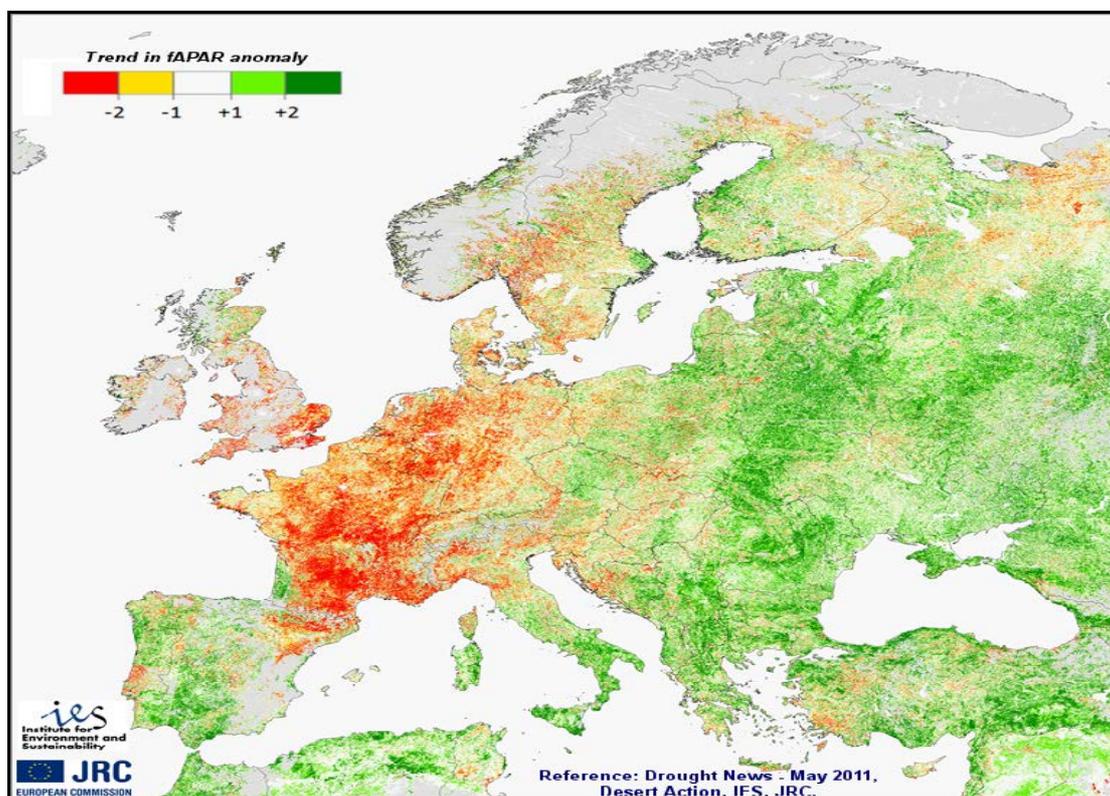


Figure 3: Difference between the fAPAR anomalies for the last 10-day period of May 2011 and last 10-day period of April 2011. Red indicates a negative trend in the fAPAR anomalies (i.e. deterioration of the vegetation health) and green indicates a positive trend in the fAPAR anomalies (i.e. improvement in the vegetation health).

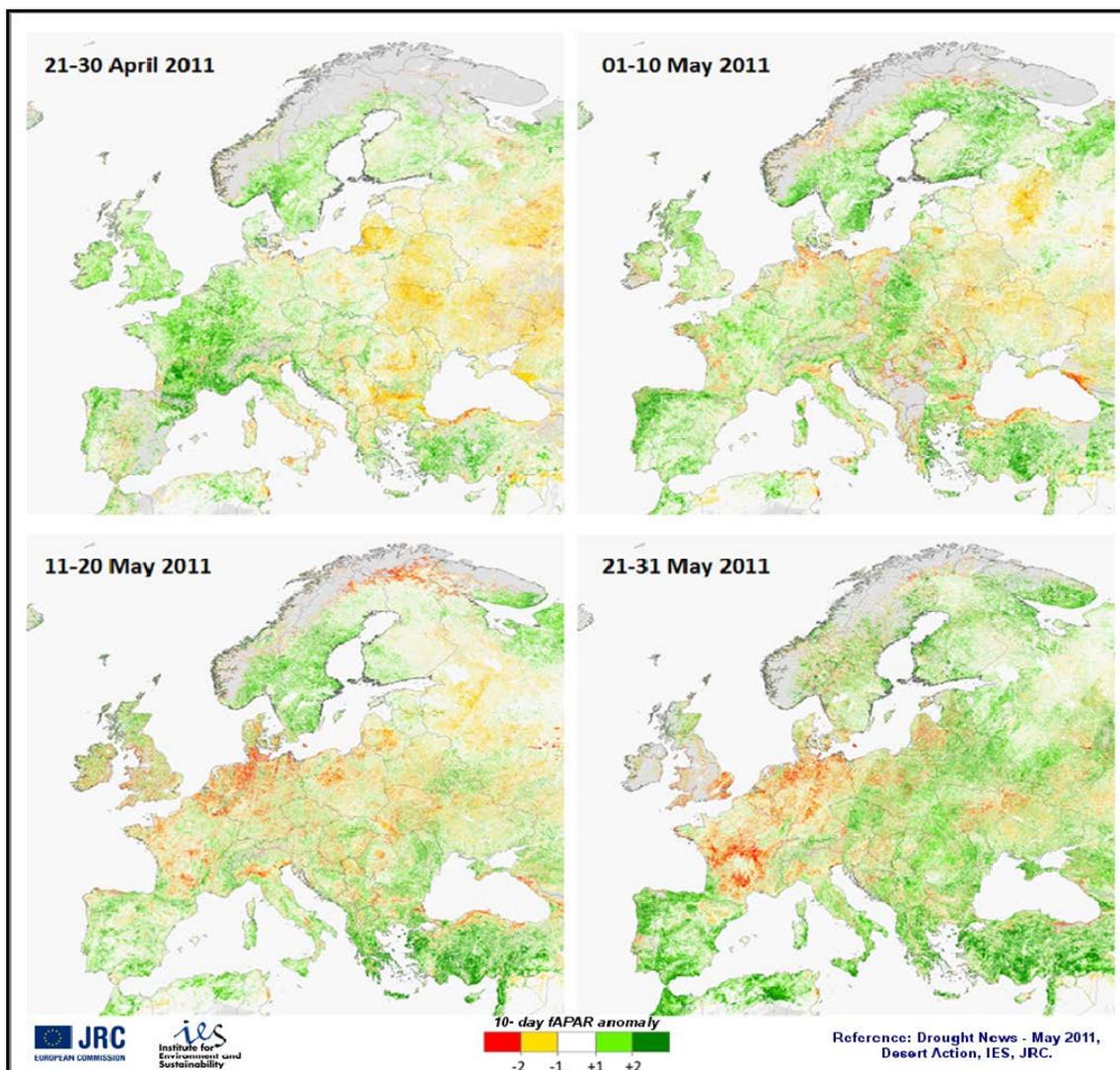


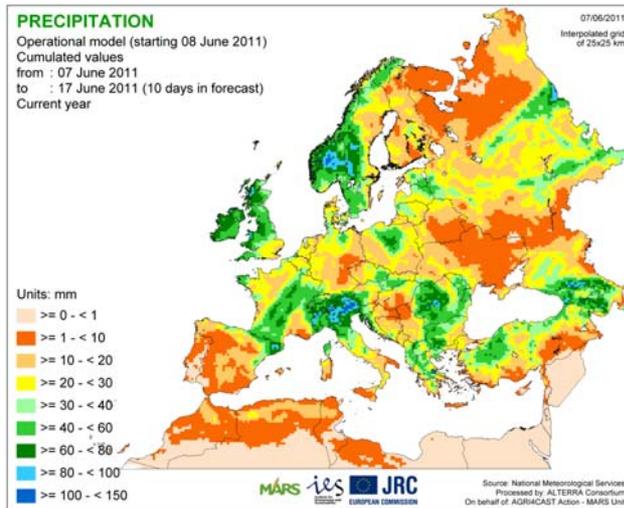
Figure 4: 10-day fAPAR anomaly for (top left) 21-30 April 2011, (top right) 01-10 May 2011, (low left) 11-20 May 2011, (low right) 21-31 May 2011. Green corresponds to positive anomalies (vegetation greener than normal), white to near-normal vegetation conditions and yellow and red to negative anomalies (vegetation less green than normal).

10-day weather forecast (7-17 June 2011)

Over the forthcoming 10 days, **rainfall is expected to mainly be concentrated in the Alpine region, France, the UK (except southeast England), southern Sweden and areas to the west and south of the Black Sea.** Significant localised rainfall is also expected in northern Germany and northern Poland. This rain will be particularly beneficial for *France* and the *UK*, alleviating the soil moisture deficit. This increased supply of water will permit the growth of crops and pastures to restart.

Unfortunately, others areas already suffering due to the rain shortage, are unlikely to receive significant extra water supplies. This will be the case for *central and eastern Germany, southeast England, Benelux* and the *Ukraine*. For *Ukraine* in particular,

considering the higher level of evapotranspiration there, the meteorological water deficit will be even more extended. Particular concern is therefore rising for these areas where the drought conditions are unlikely to be alleviated during the next 10 days.



Disclaimer

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