

Brussels, 4th August 2010

Crop yield forecasts for 2010

This Memorandum provides additional information, maps and graphs related to the [IP/10/1027](#) on the forecast of crops production. During the agricultural season, the European Commission's Joint Research Centre (JRC) regularly issues forecasts for the main crop yields and produces analyses of the impact of weather conditions on crop production. These are based on methodologies using satellite remote sensing and mathematical models which simulate crop growth.

The models and methodology in use have been conceived, experimentally developed and operationally implemented within the JRC. The crop yield forecasts, analyses and full description of the methodology are available at the following web addresses:

<http://mars.jrc.ec.europa.eu/mars/About-us/AGRI4CAST>;

<http://mars.jrc.ec.europa.eu/mars/About-us/AGRI4CAST/MARS-Bulletins-for-Europe>.

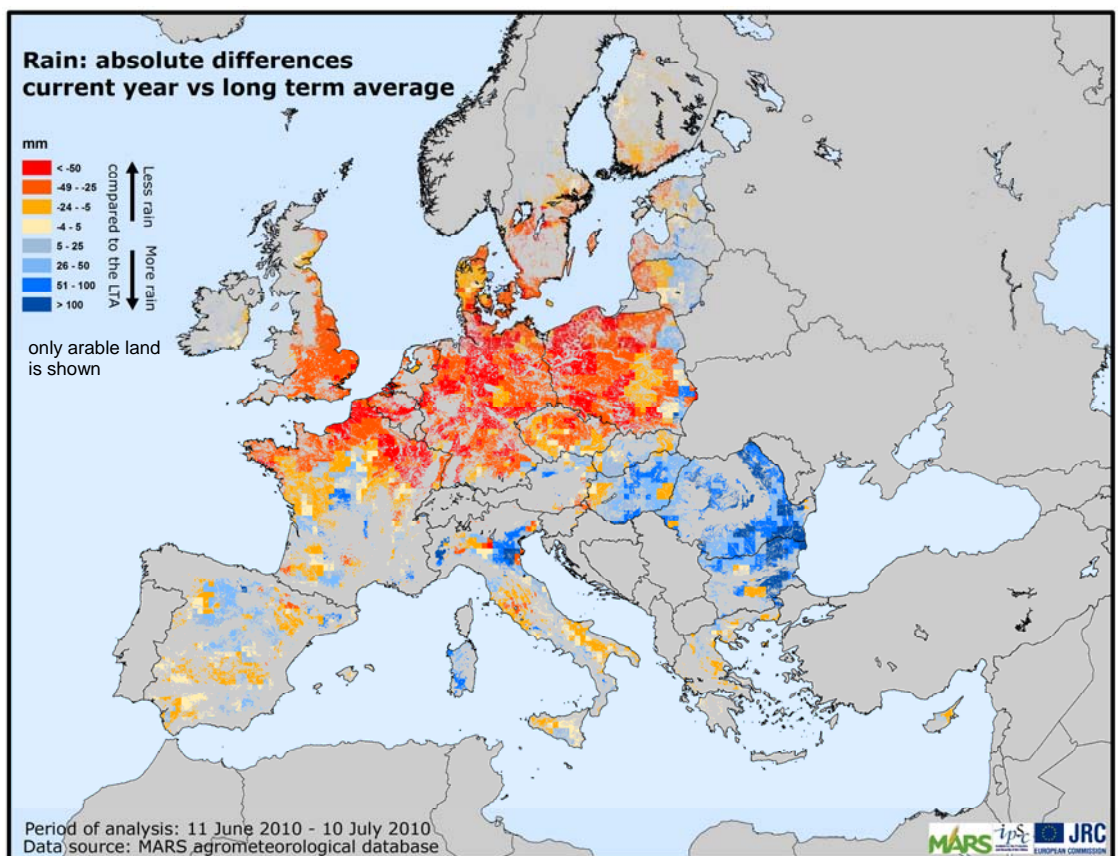
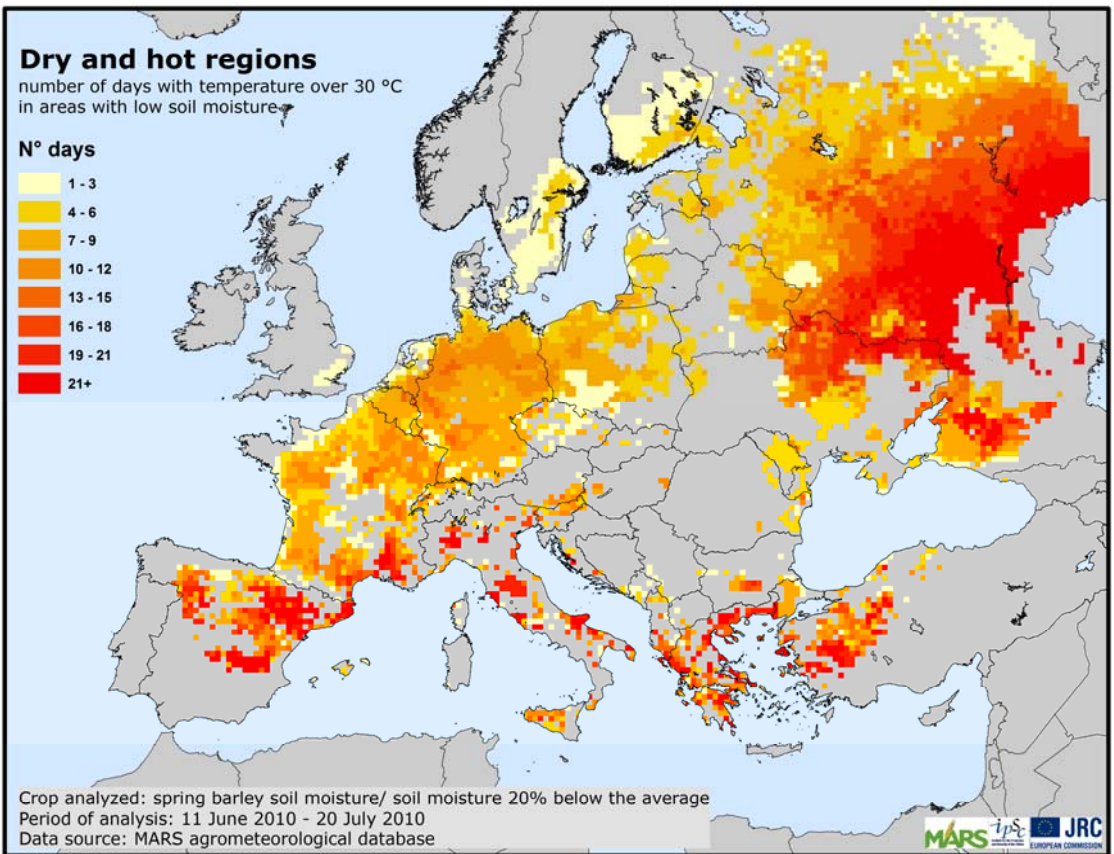
EU 27 (as of the 10 th of July 2010)					
CROPS	Yield (t/ha)				
	2009*	2010	Avg 5yrs	%10/09	%10/5yrs
TOTAL CEREALS	5.1	5.1	4.9	+0.7	+5.0
Total Wheat	5.4	5.3	5.2	-1.5	+2.2
<i>soft wheat</i>	5.7	5.6	5.5	-1.3	+1.7
<i>durum wheat</i>	3.1	3.0	3.0	-3.9	+0.3
Total Barley	4.5	4.4	4.2	-0.5	+4.4
<i>spring barley</i>	3.8	3.8	3.7	+0.4	+4.3
<i>winter barley</i>	5.4	5.3	5.1	-1.2	+3.7
Grain maize	6.9	7.2	6.7	+5.3	+7.7
Other cereals	3.7	3.7	3.3	-0.1	+4.4
SUNFLOWER	1.7	1.8	1.7	+6.0	+7.2
RAPSEED	3.3	3.0	3.1	-8.9	-2.4
POTATO	30.0	30.1	28.2	+0.3	+6.8
SUGAR BEET	71.0	65.6	64.2	-7.5	+2.3

Note: Yields are forecasted for crops with more than 10000 ha per country; figures are rounded to 100 kg

* Source

EUROSTAT New Cronos and EES: last update 08/07/2010

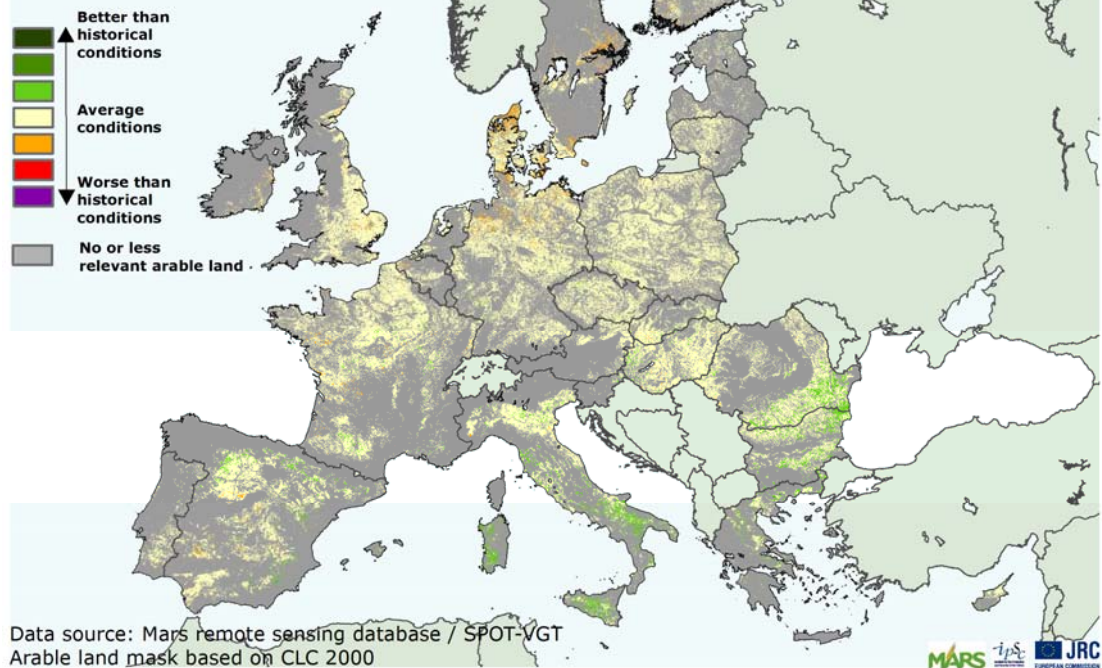
(EUROSTAT FILES: 15 AND 24 June 2010 - DG AGRI AREAS : 19/07/2010)



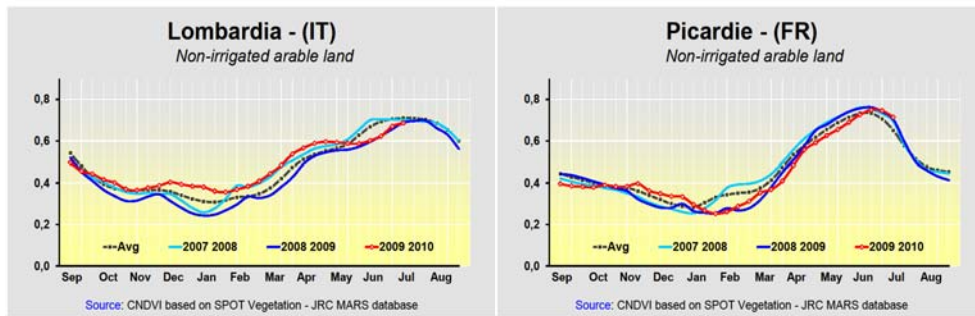
Potential NDVI evolution for the growing season

Average scenario vs historical conditions

Average Scenario given by sum of:
Current season data: 1 Oct 2009 - 10 July 2010
Long term average data: 11 July - 30 September

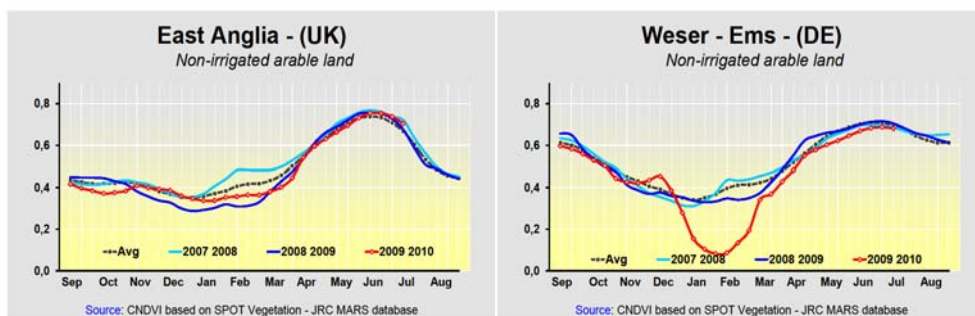


The map above displays the global biomass accumulation until the end of the growing season and, therefore, evaluates whether the on-going season is close to normal values or to an extreme event. The cumulated NDVI (normalized difference vegetation index - it provides a estimate of vegetation health and a means of monitoring changes in vegetation over time) values for the end of the season were computed using the observed NDVI values from 1st October 2009 to 10 July 2010, and adding historical average NDVI values from 11 July to 30 September. The NDVI cumulated values obtained were compared with the three historical series (minimum, maximum and average). The scenario displays an average year across the **Iberian Peninsula** mainly driven by a normal development of the spring crops biomass. In **northern Italy** the wet conditions probably slowed down the spring crops growth. A normal to slightly good development is foreseen, if normal conditions will occur. In **France** a seasonal canopy development is predicted. Probably in north-western regions crop development would be affected by the actual dry conditions. A similar scenario is visible in **Benelux** and **United Kingdom**. **Germany** faces a split situation. The eastern part has NDVI values slightly delayed but with values above the average probably due to the lasting high temperatures values in June. In North-West part probably, even if normal conditions will happen, seasonal cumulated biomass values will remain below the average. In **Central Europe** the current NDVI values range around the average and, if no prolonged negative event will occur, canopy development will range around normal development stages.



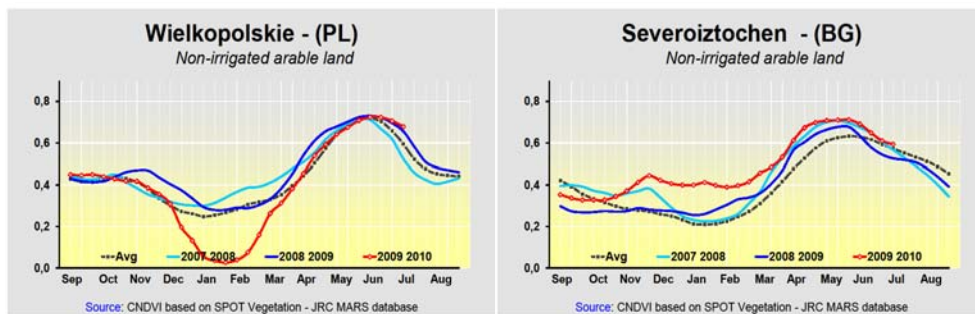
Lombardia profile: the NDVI signal was strongly reduced by rainy conditions in May and beginning of June. From mid June, thanks to the above the average temperatures, vegetation had a boost that partially recovered the previous delay.

Picardie profile: delayed development stages of end of May are still present, normal NDVI values



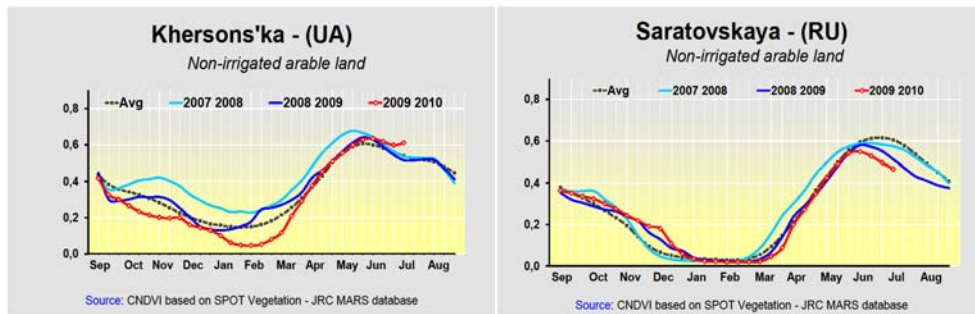
East Anglia profile: in spite of the lack of rain and recent water shortage the NDVI still exhibits average values, or even slightly above normal one. The high radiation values probably trigger vegetation development of new crops.

Weser-Ems profile: not such good NDVI cumulated values. Water scarcity affected the new crops growth



Wielkopolskie profile: NDVI values are slightly above the historical ones with a normal development stage

Severoiztochen profiles: very good season. NDVI values are above the average for the whole development season. Good starting even for the summer crops.



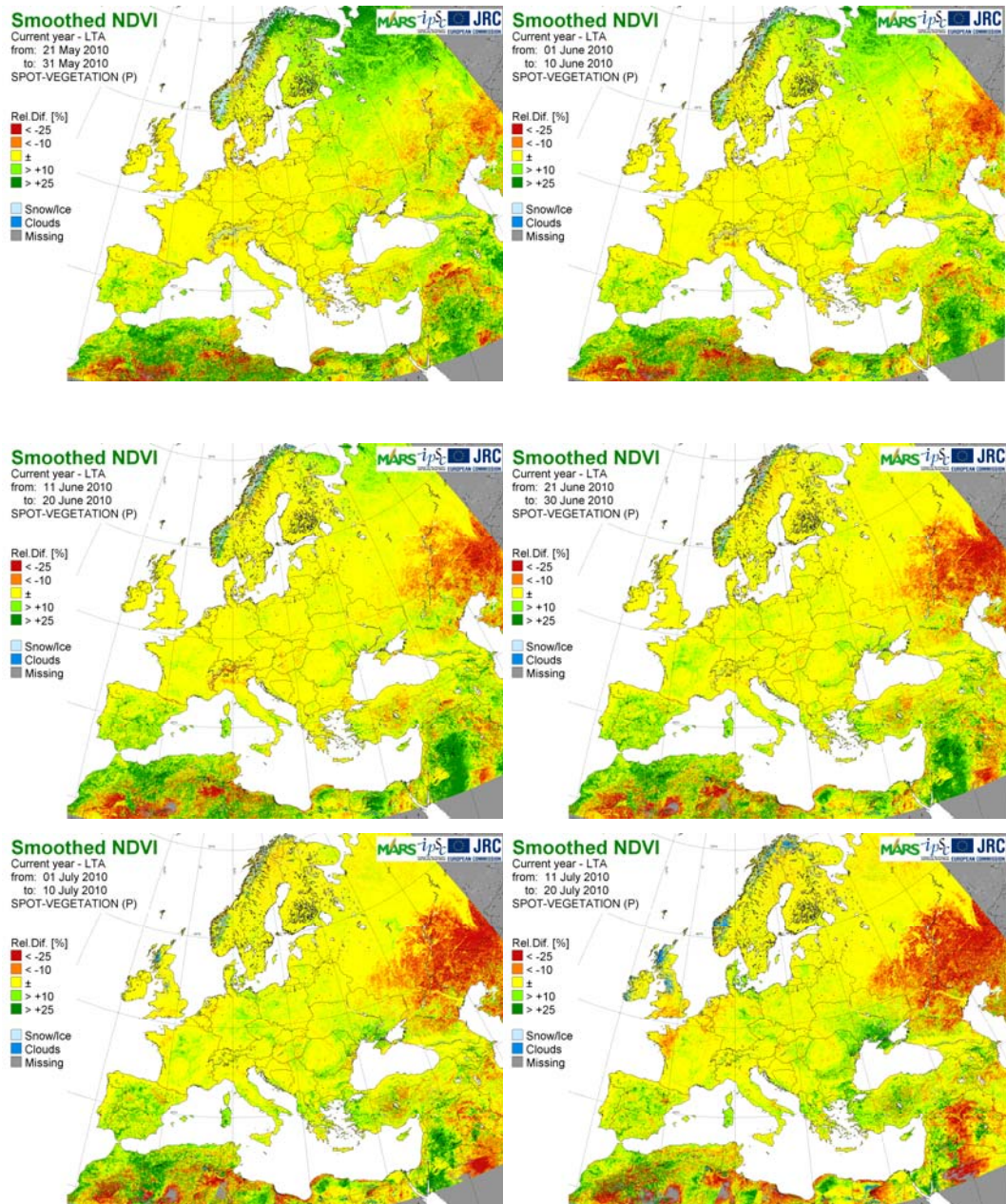
Khersons'ka profile: normal to slightly above the average biomass development. Wet conditions lowered the signal for the last decades

Saratovskaya profile: values ranges quite below the average cause of the hot and dry conditions of the last month

FOCUS on RUSSIA

NDVI evolution: 21 May 2010 – 20 July 2010.

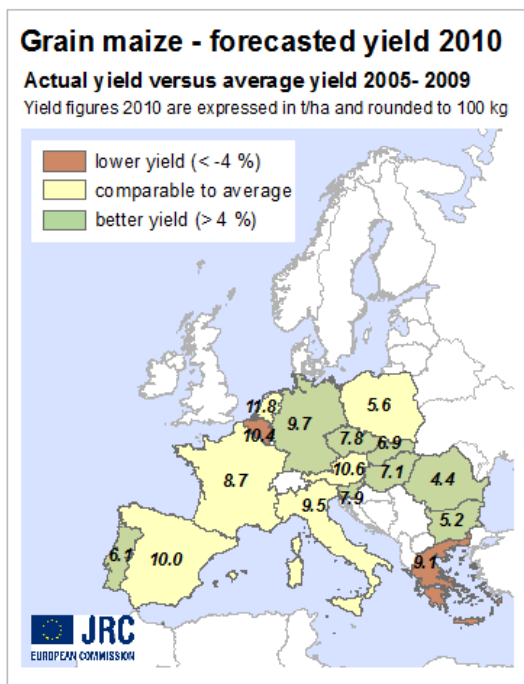
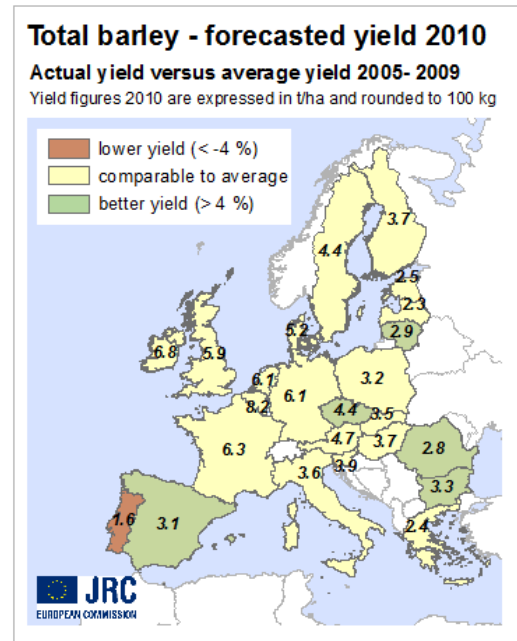
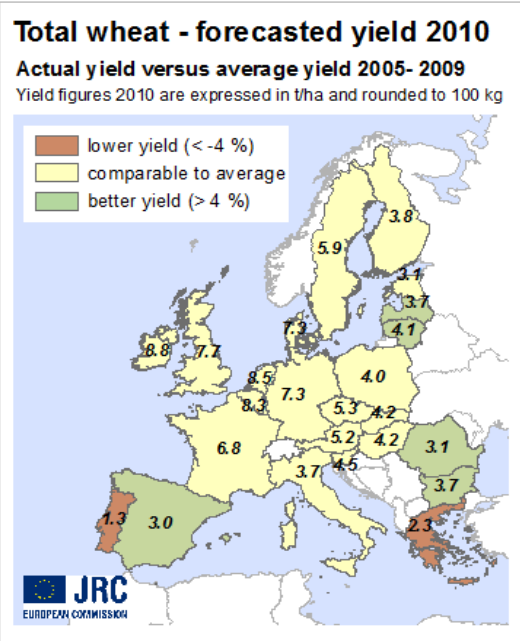
Data source: MARS remote sensing database \ Spot Vegetation



The 6 maps above display the percentage differences between decadal NDVI values of this season against the long term average (1998 – 2008) ones. The maps highlight the worsening of the canopy conditions across Russian plains. The values are clearly below the long term average (1998-2008). The scarcity of rain and high temperatures are the causes of the vegetation collapse

Analysis of crop yield by crop type and country for the EU27

Total wheat (soft and durum varieties), total barley (winter and spring varieties), grain maize



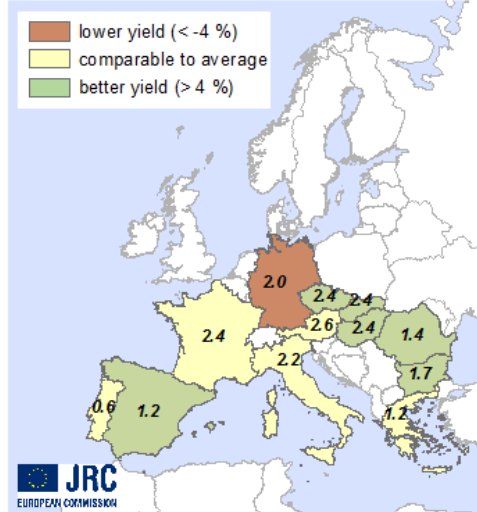
Analysis of crop yield by crop type and country for the EU27

Sunflower and sugar beet, rapeseed and potatoes

Sunflower - forecasted yield 2010

Actual yield versus average yield 2005- 2009

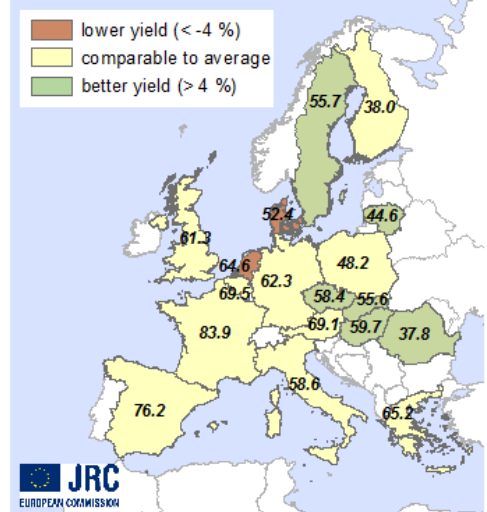
Yield figures 2010 are expressed in t/ha and rounded to 100 kg



Sugar beets - forecasted yield 2010

Actual yield versus average yield 2005- 2009

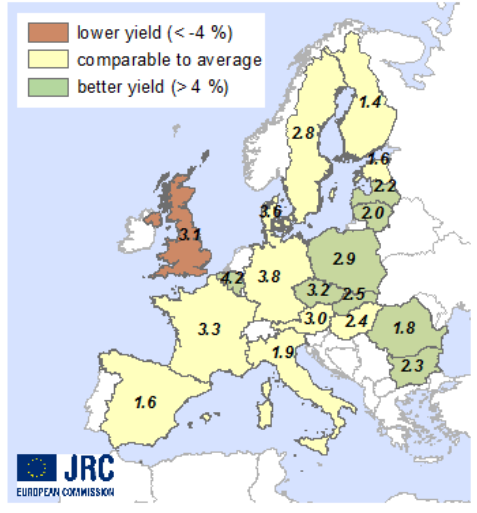
Yield figures 2010 are expressed in t/ha and rounded to 100 kg



Rapeseed - forecasted yield 2010

Actual yield versus average yield 2005- 2009

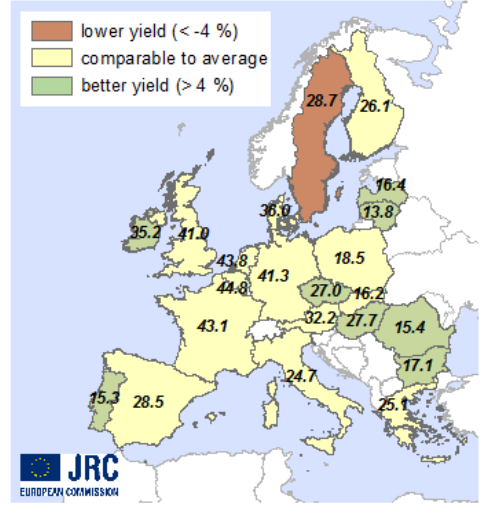
Yield figures 2010 are expressed in t/ha and rounded to 100 kg



Potato - forecasted yield 2010

Actual yield versus average yield 2005- 2009

Yield figures 2010 are expressed in t/ha and rounded to 100 kg

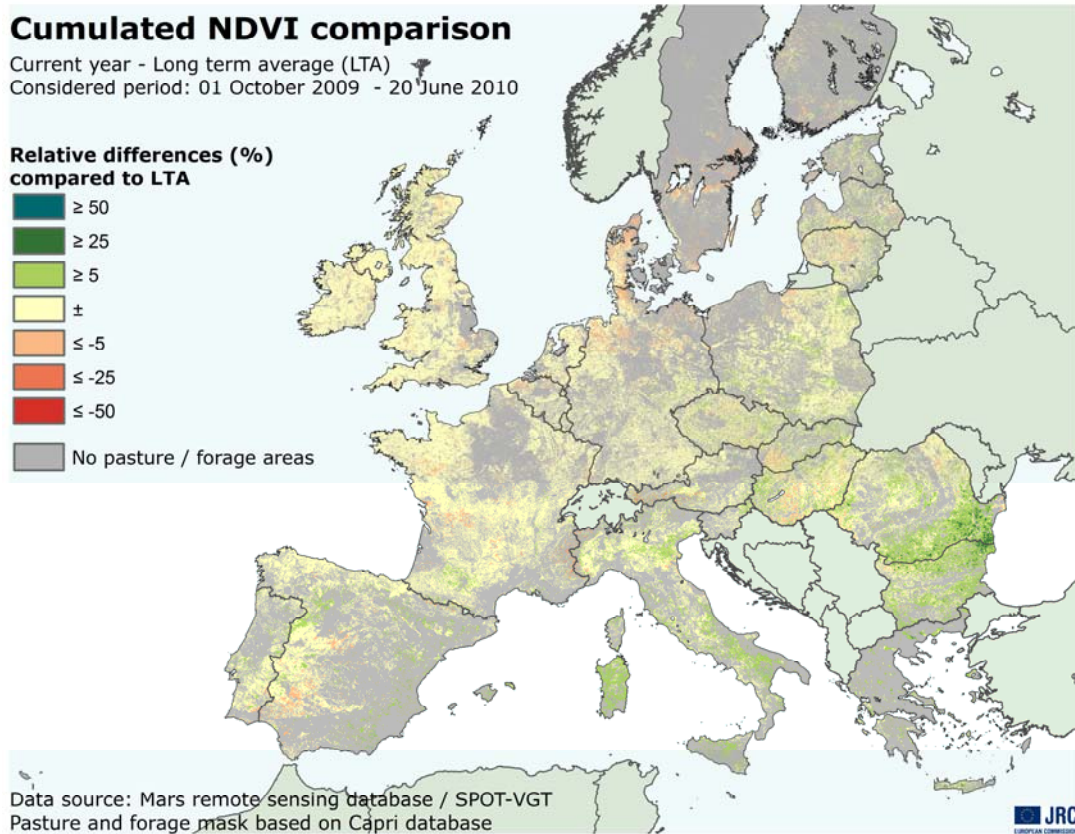
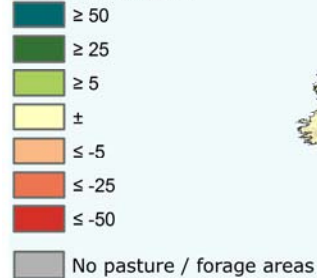


Analysis of pastures and forage crops for the EU27

Cumulated NDVI comparison

Current year - Long term average (LTA)
Considered period: 01 October 2009 - 20 June 2010

Relative differences (%) compared to LTA



Data source: Mars remote sensing database / SPOT-VGT
Pasture and forage mask based on Capri database

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The comparison map of the current cumulated NDVI (values until second decade of June) with the long term average (LTA, data from 1989 until 2009) highlights variations that range from -25% to +25%. Central and Eastern countries as well as Italy and Eastern Spain show high values of biomass availability compared with the LTA values. However, some areas of northern Germany, Denmark, Ireland and United Kingdom show low values because of a delay in development and drought conditions. Also, Southern Spain (Dehesa areas) exhibits low cumulated NDVI values underlining unfavourable conditions.