

MARS

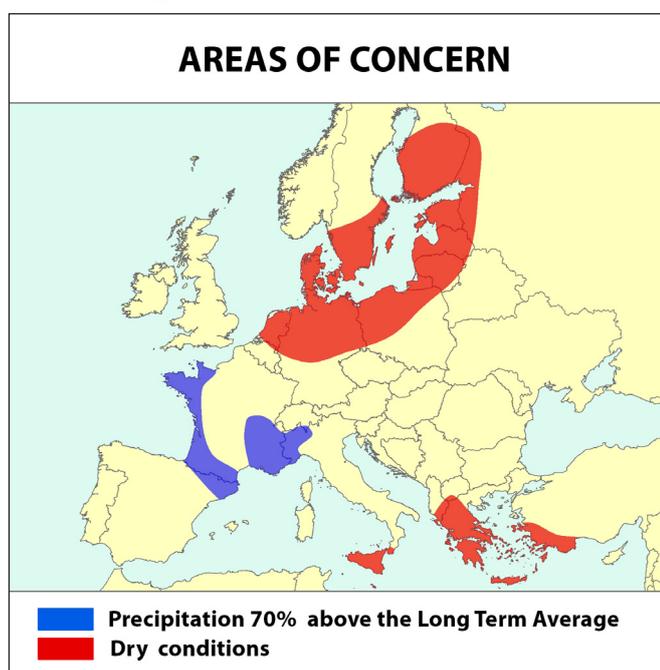
AGROMETEOROLOGICAL

Crop Monitoring in Europe

1st May to 31st May 2008

Vol. 16, No 3

Continuation of good yield potential but significant dry areas around the Baltic Sea, Germany and the Netherlands



The Agro-meteorological conditions have been generally positive. Europe experienced exceptionally high temperatures at the beginning of May in northern latitudes and at the end in southern Europe. As it regards precipitation an unseasonal amount coupled with unusual spatial distribution pattern was observed. Rain was very abundant in Iberian Peninsula and western Mediterranean, Ukraine and Russia and very scarce in northern latitudes and central and eastern Mediterranean.

The overall yield potential is good but has slightly been revised down for Germany, the Netherlands and the Baltic States due to dry conditions compared to our last bulletin. Favourable conditions in Spain, Portugal and Hungary did let us revise up the yield forecasts.

10th June 2008 CROPS	EU27 yield forecast (t/ha) from AGRI4CAST				
	2007	2008	Average 5 years	% 2008/07	% 2008/ Average
TOTAL CEREALS	4.5	5.0	4.7	+10.1	+5.8
<i>Soft wheat</i>	5.1	5.6	5.4	+10.6	+4.6
<i>Durum wheat</i>	2.8	2.9	2.7	+3.5	+7.1
Total wheat	4.8	5.3	5.0	+9.8	+5.6
<i>Spring barley</i>	3.8	4.0	3.7	+3.5	+7.1
<i>Winter barley</i>	4.8	5.2	5.0	+8.7	+5.3
Total barley	4.2	4.5	4.2	+5.7	+6.4
Grain maize	5.8	6.7	6.3	+15.4	+5.2
Other cereals (1)	3.2	3.5	3.2	+8.7	+5.8
Rape seed	2.8	2.9	3.0	+4.8	-2.0
Sunflower	1.5	1.6	1.6	+11.5	+0.2
Potato	26.4	28.1	26.9	+6.6	+4.7
Sugar beet	63.7	61.4	59.1	-3.7	+3.9

Yield figures are rounded to 100 kg
 (1) Sorghum, rye, maslin, oats, triticale, mixed grain other than maslin, millet, buckwheat
 Sources: 2007 yields come from EUROSTAT CHRONOS
 2008 yields come from MARS CROP YIELD FORECASTING SYSTEM

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AGRI4CAST crop yield forecasts at national level for EU-27: 10 June 2008

Country	TOTAL WHEAT (t/ha)					SOFT WHEAT (t/ha)					DURUM WHEAT (t/ha)				
	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs
EU-27	4.8	5.3	5.0	+9.8	+5.6	5.1	5.6	5.4	+10.6	+4.6	2.8	2.9	2.7	+3.5	+7.1
AT	4.8	5.1	5.0	+7.2	+2.3	4.9	5.2	5.1	+6.8	+2.6	3.5	4.1	4.2	+18.4	-3.4
BE	7.8	8.7	8.4	+10.7	+3.4	7.8	8.7	8.4	+10.7	+3.4	-	-	-	-	-
BG	2.2	3.3	3.0	+50.8	+11.9	2.2	3.3	3.0	+50.8	+12.0	-	-	-	-	-
CZ	4.9	4.8	4.9	-0.8	-0.8	4.9	4.8	4.9	-0.8	-0.8	-	-	-	-	-
DE	7.0	7.2	7.3	+3.7	-0.5	7.0	7.2	7.3	+3.7	-0.5	-	-	-	-	-
DK	6.6	7.0	7.0	+6.9	+0.2	6.6	7.0	7.0	+6.9	+0.2	-	-	-	-	-
EE	3.3	2.4	2.7	-25.8	-9.4	3.3	2.4	2.7	-25.8	-9.4	-	-	-	-	-
ES	3.5	3.2	2.8	-7.5	+14.6	3.8	3.6	3.2	-6.9	+13.3	2.5	2.4	2.2	-4.5	+7.4
FI	3.9	3.8	3.6	-4.3	+4.1	3.9	3.8	3.6	-4.3	+4.1	-	-	-	-	-
FR	6.2	7.2	6.8	+14.8	+5.8	6.4	7.4	7.0	+14.6	+5.8	4.3	4.8	4.6	+12.4	+4.9
GR	2.2	2.2	2.1	-0.8	+3.0	2.5	2.7	2.7	+7.6	-0.5	2.1	2.0	2.0	-4.2	-0.4
HU	3.6	4.2	4.0	+16.3	+5.0	3.6	4.2	4.0	+16.3	+5.0	-	-	-	-	-
IE	8.1	9.1	8.8	+12.5	+3.6	8.1	9.1	8.8	+12.5	+3.6	-	-	-	-	-
IT	3.4	3.6	3.4	+5.5	+4.7	4.9	5.1	5.1	+4.3	+0.4	2.7	2.9	2.8	+7.1	+4.5
LT	3.9	3.8	3.5	-2.2	+8.8	3.9	3.8	3.5	-2.2	+8.8	-	-	-	-	-
LU	5.6	6.0	6.1	+7.0	-1.9	5.6	6.0	6.1	7.0	-1.9	-	-	-	-	-
LV	3.6	3.5	3.1	-3.7	+10.0	3.6	3.5	3.1	-3.7	+10.0	-	-	-	-	-
NL	7.2	8.3	8.4	+14.5	-1.7	7.2	8.3	8.4	+14.5	-1.7	-	-	-	-	-
PL	3.9	4.0	3.8	2.2	+6.4	3.9	4.0	3.8	+2.2	+6.4	-	-	-	-	-
PT	2.2	1.8	1.6	-16.4	+13.0	2.2	1.8	1.6	-16.4	+13.0	-	-	-	-	-
RO	1.6	3.0	2.4	+90.2	+23.9	1.6	3.0	2.4	+90.2	+23.9	-	-	-	-	-
SE	6.3	6.3	5.9	+0.5	+6.3	6.3	6.3	5.9	+0.5	+6.3	-	-	-	-	-
SI	4.2	4.6	4.2	+9.3	+8.1	4.2	4.6	4.2	+9.3	+8.1	-	-	-	-	-
SK	3.8	3.9	4.0	+2.9	-0.2	3.8	3.9	4.0	+2.9	-0.2	-	-	-	-	-
UK	7.4	7.8	7.8	+6.5	+0.5	7.4	7.8	7.8	+6.5	+0.5	-	-	-	-	-

Note: Countries with areas below 10000 ha are not counted in

Country	TOTAL BARLEY (t/ha)					GRAIN MAIZE (t/ha)					RAPE SEED (t/ha)				
	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs
EU-27	4.2	4.5	4.2	+5.7	+6.4	5.8	6.7	6.3	+15.4	+5.2	2.8	2.9	3.0	+4.8	-2.0
AT	4.2	4.6	4.5	+10.6	+2.7	9.9	9.7	9.4	-1.9	+3.4	3.0	3.0	2.9	-0.1	3.8
BE	8.0	8.2	7.8	+2.1	+4.3	12.0	11.7	11.3	-2.3	+3.6	3.7	4.0	3.9	+5.6	+2.5
BG	2.3	3.2	2.6	+42.1	+21.2	1.5	4.2	3.9	+186.6	+6.5	1.7	2.0	1.7	+17.1	+20.2
CZ	3.8	4.0	4.1	+5.5	-1.1	6.8	6.7	6.5	-1.2	+3.6	3.1	3.2	2.8	+3.9	+12.7
DE	5.4	5.9	5.8	+9.0	2.1	9.5	9.0	8.6	-4.9	+4.1	3.4	3.5	3.6	+0.4	-3.6
DK	4.9	5.0	5.1	+0.7	-3.4	-	-	-	-	-	3.3	3.1	3.4	-7.4	-9.4
EE	2.6	2.1	2.3	-21.4	-10.0	-	-	-	-	-	1.8	1.6	1.6	-14.5	-0.6
ES	3.6	3.7	2.7	+3.2	+35.5	9.9	10.6	9.8	+6.8	+8.5	2.1	1.7	1.5	-16.1	+13.0
FI	3.7	3.3	3.4	-11.9	-3.6	-	-	-	-	-	1.3	1.2	1.2	-3.2	-0.4
FR	5.6	6.4	6.1	+14.8	+4.3	9.4	8.9	8.5	-5.6	+4.9	2.9	3.3	3.2	+14.9	+2.6
GR	2.3	2.3	2.3	+1.3	+0.7	8.9	9.2	8.9	+2.9	+2.4	-	-	-	-	-
HU	3.2	3.7	3.5	+14.6	+6.5	3.6	6.7	5.8	+87.3	+16.5	2.3	2.3	2.3	+3.5	+4.0
IE	6.7	7.0	6.7	+3.7	+4.2	-	-	-	-	-	-	-	-	-	-
IT	3.5	4.0	3.7	+13.6	+9.8	9.3	9.4	8.9	+0.6	+5.5	-	-	-	-	-
LT	2.7	2.4	2.6	-9.7	-9.1	-	-	-	-	-	1.8	1.8	1.7	+0.2	+4.6
LU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LV	2.4	2.0	2.2	-15.7	-7.1	-	-	-	-	-	2.1	1.8	1.8	-13.8	+2.5
NL	5.6	5.9	6.0	+5.7	-2.2	11.9	11.8	11.4	-1.0	+4.0	-	-	-	-	-
PL	3.2	3.2	3.1	-2.7	+2.8	6.6	5.7	5.5	-13.1	+4.3	2.7	2.8	2.6	+3.5	+7.6
PT	1.9	1.6	1.6	-13.6	+3.0	5.5	6.2	5.3	+12.4	+17.2	-	-	-	-	-
RO	1.5	2.3	2.2	+58.6	+4.7	1.6	3.2	3.3	+107.8	-3.6	1.0	1.2	1.4	+19.1	-9.1
SE	4.5	4.4	4.2	-1.7	+5.2	-	-	-	-	-	2.5	2.6	2.5	+1.6	+4.6
SI	3.7	3.9	3.6	+6.5	+8.2	7.5	7.9	7.1	+4.8	+10.9	-	-	-	-	-
SK	3.1	3.6	3.5	+14.1	+3.6	4.0	5.5	5.3	+38.3	+3.9	2.1	2.4	2.0	+16.4	+18.3
UK	5.8	5.9	5.9	+1.6	+0.6	-	-	-	-	-	3.1	3.2	3.2	1.6	-0.5

Note: Countries with areas below 10000 ha are not counted in

AGRI4CAST yield forecasts at national level for EU-27: 10 June 2008

Country	SUNFLOWER (t/ha)					SUGAR BEET (t/ha)					POTATO (t/ha)				
	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs
EU-27	1.5	1.6	1.6	+11.5	+0.2	63.7	61.4	59.1	-3.7	+3.9	26.4	28.1	26.9	+6.6	+4.7
AT	2.3	2.5	2.6	+12.1	-1.6	62.8	66.2	63.9	+5.4	+3.7	29.5	31.0	30.4	+5.1	+2.1
BE	-	-	-	-	-	69.3	69.6	69.8	+0.4	-0.4	47.0	46.1	43.9	-1.7	+5.2
BG	0.9	1.3	1.4	+39.4	-6.7	-	-	-	-	-	13.3	16.2	15.7	+21.4	+2.9
CZ	2.1	2.2	2.2	3.3	-1.6	53.3	53.8	50.7	+1.0	+6.0	25.7	25.4	24.0	-1.1	+6.2
DE	2.7	2.2	2.3	-15.7	-0.6	62.4	59.6	59.1	-4.5	+1.0	42.4	41.2	39.9	-2.7	+3.2
DK	-	-	-	-	-	57.2	56.8	57.5	-0.7	-1.2	39.4	38.3	38.6	-3.0	-0.9
EE	-	-	-	-	-	-	-	-	-	-	14.3	13.6	13.5	-5.2	+0.7
ES	1.2	1.2	1.0	-0.3	+19.3	72.3	74.0	69.3	+2.5	+6.8	28.2	29.9	27.3	+6.1	+9.7
FI	-	-	-	-	-	42.1	38.5	37.1	-8.5	+3.8	25.7	22.1	22.9	-14.0	-3.5
FR	2.7	2.4	2.4	-11.7	+0.3	82.2	80.5	79.3	-2.0	+1.5	42.5	42.6	42.1	+0.1	+1.1
GR	-	-	-	-	-	62.9	61.9	62.0	-1.6	-0.2	23.4	24.1	23.8	+3.1	+1.4
HU	2.0	2.2	2.2	+8.7	+2.4	41.2	48.9	47.7	+18.7	+2.6	20.5	23.6	23.1	+15.4	+2.4
IE	-	-	-	-	-	-	-	-	-	-	37.0	38.0	36.2	+2.6	+4.8
IT	2.2	2.2	2.1	-1.5	+5.1	54.1	51.6	48.2	-4.6	+7.0	25.7	26.2	24.5	+2.1	+7.2
LT	-	-	-	-	-	47.3	41.4	40.2	-12.5	+3.0	10.9	12.0	11.9	+9.4	+0.5
LU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LV	-	-	-	-	-	37.0	37.2	37.3	+0.6	-0.2	15.0	13.8	13.6	-7.9	+1.3
NL	-	-	-	-	-	67.2	65.1	64.6	-3.0	+0.8	43.8	44.2	42.8	1.0	+3.4
PL	-	-	-	-	-	51.3	46.8	44.1	-8.7	+6.1	20.7	18.6	18.2	-10.1	+2.3
PT	1.8	0.8	0.7	-54.5	+13.4	74.9	70.6	71.9	-5.7	-1.8	15.5	15.7	15.1	+1.4	+3.9
RO	0.7	1.2	1.3	+78.7	-7.2	25.4	31.1	26.5	+22.7	+17.6	13.5	15.3	14.2	+13.6	+8.1
SE	-	-	-	-	-	48.9	49.7	48.9	+1.7	+1.7	27.7	30.9	29.1	+11.6	+6.2
SI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SK	2.0	2.1	2.1	+3.3	+1.7	44.9	48.1	45.8	+7.3	+5.1	15.8	16.3	15.3	+3.0	+6.5
UK	-	-	-	-	-	58.3	55.8	57.0	-4.4	-2.2	40.4	42.2	42.0	+4.4	+0.4

Note: Countries with areas below 10000 ha are not counted in

AGRI4CAST yield forecasts at national level for Black Sea, Maghreb: 10 June 2008

Country	WHEAT (t/ha)					BARLEY (t/ha)					GRAIN MAIZE (t/ha)				
	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs
DZ	1.2	1.3	1.3	+11.0	+1.0	1.3	1.5	1.5	+11.3	+1.3	-	-	2.6	-	-
MA	0.8	0.9	1.4	+11.2	-38.3	0.6	0.6	0.8	-3.2	-28.2	0.5	0.9	0.8	+68.6	+7.9
MD	0.4	2.0	2.3	+443.2	-12.3	0.7	1.4	1.6	+116.7	-11.8	2.3	2.7	2.9	+18.6	-8.8
TR	2.1	2.2	2.3	+4.8	-3.3	2.4	2.4	2.5	+1.3	-4.5	5.9	6.0	6.2	+0.7	-3.2
UA	2.0	2.4	2.5	+19.8	-4.5	1.5	1.8	2.1	+17.0	-14.1	3.3	4.2	3.9	+26.9	+7.8

Country	RAPE SEED (t/ha)					SUNFLOWER (t/ha)				
	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs
UA	1.0	1.1	1.2	+11.3	-8.9	1.0	1.0	1.0	+7.4	+1.6

Source: "2007" from EUROSTAT, last update 2008-06-03; "Avg5yrs" from FAO statistics 2001-2006

Abstract

The 3rd 2008 printed MARS Bulletin (Vol. 16, No 3) covers meteorological analysis and crop yield forecasts for the period 1 to 31 May 2008.

Previous related analysis available:

—Climatic updates, 20/04/2008 to 25/05/2008, (CU2008/3)

—Complete Bulletin, 11/04/2008 to 30/04/2008 (Vol. 16, No 2)

Next printed issue

Vol. 16, No 4: 1 June - 30 June 2008 analysis and forecasts.

Contributions

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MARS stands for Monitoring Agriculture with Remote Sensing.

Technical note:

The long-term average used within this bulletin as a reference is based on an archive of data covering 1975–2007.

The CNDVI is an unmixing normalised vegetation index on the base of Corine land cover 2000 for arable land or grassland.

Disclaimer:

The geographic borders are purely a graphical representation and are only intended to be indicative. These boundaries do not necessarily reflect the official EC position.

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2.1. Temperature and evapotranspiration

Initially, northern and western Europe were exceptionally warm, and more seasonal conditions followed. However, as a whole, there were seasonal cumulated active temperatures, except in the central EU and the British Isles. Anomalous high temperatures also occurred in Greece, southern Italy and the Maghreb, and sporadic frost in northeastern latitudes.

In general there were seasonal values for cumulated active temperatures in May. Only in the central EU (the Benelux countries, the British Isles, northern France and western Germany) were higher-than-seasonal values recorded. These were mainly because of the particular synoptic circulation since the last dekad of April: the Azorean anticyclone deeply affected the continent, pushing African air masses over the European territories. Therefore, in the Benelux countries, France and the British Isles the maximum daily temperatures during the first dekad were 4–6 °C above the seasonal values, although they remained below 30 °C. However, on average the highest maximum temperatures since 1975 were recorded in Ireland, Finland, Sweden and the United Kingdom in May.

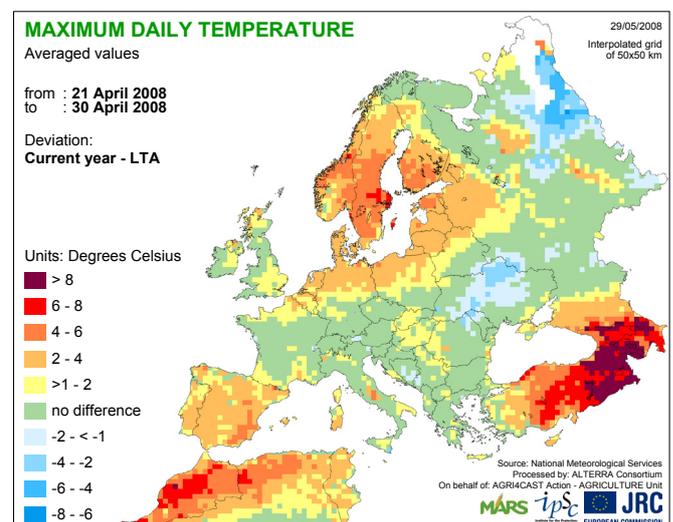
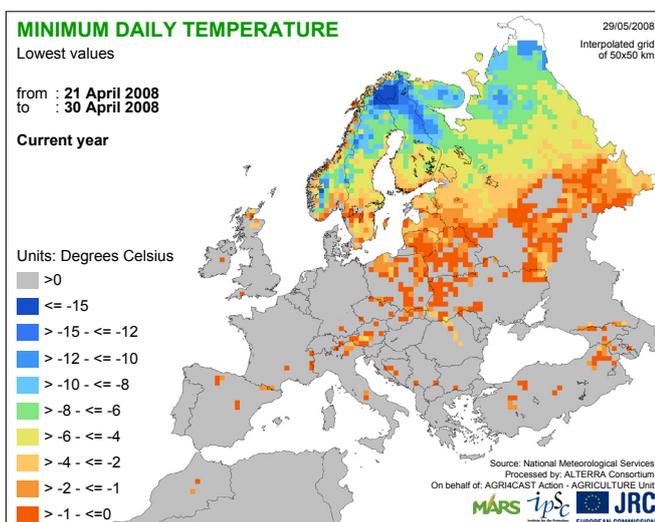
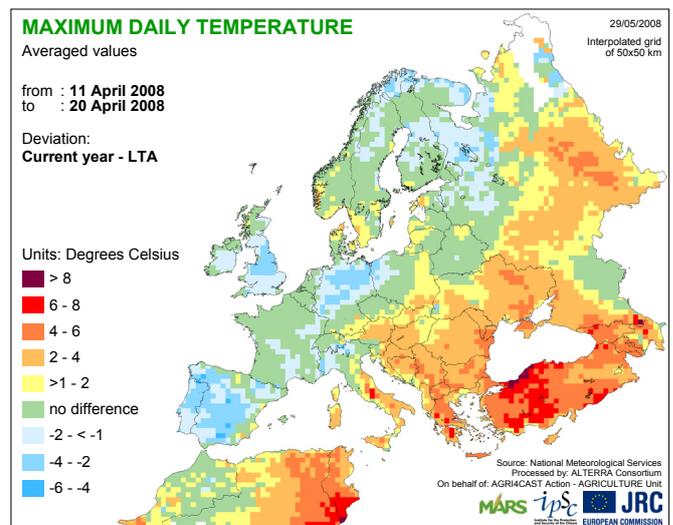
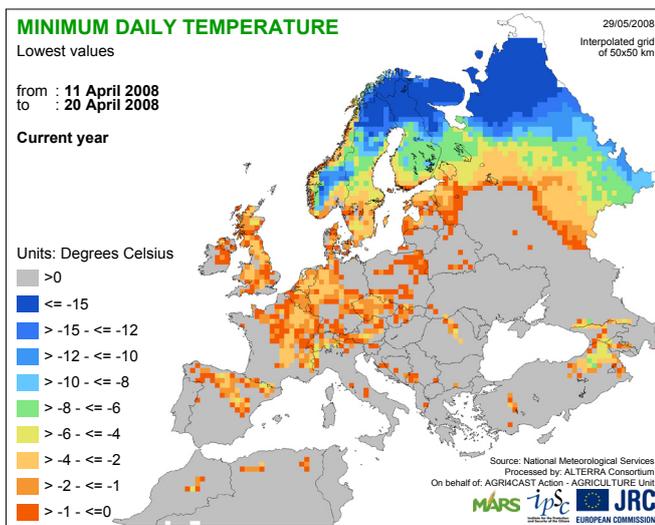
In the following days the warm flux moved eastwards causing a significant drop of temperatures to below seasonal values in the western EU and high temperatures in the central and eastern Mediterranean, the Balkans and Tunisia.

Therefore, during the last dekad of May, in Greece, southern Italy, Tunisia and Turkey the maximum daily temperatures were 6–7 °C above the long-term average and rose above 32 °C in a number of places (e.g.: 38.4 °C in Thessalia and Dytiki Makedonia; 35.7 °C in Campania and Sicily; 35.4 °C in Severozapaden; 35.2 °C in south-west Romania while in the Iberian peninsula the maximum temperatures were 6–7 °C below the seasonal values.

Considering the reproductive stages of development of the winter crops (ripening, grain filling, milky maturity), the high temperatures that occurred in the abovementioned areas created evident heat stress conditions with possible reduction of the crops' potential.

In the extreme north-eastern areas of Europe, a few days with minimum temperatures below 0 °C were still recorded at the start of May.

Evapotranspiration, since strongly influenced by the thermal course and by the intensity of solar radiation, showed significant differences with the long-term average: higher cumulated values were recorded in the Benelux countries, Denmark, Germany and the British Isles, as well as in Greece and Turkey; lower-than-seasonal values were recorded in the Iberian peninsula and in eastern countries.



2.2. Rain and climatic water balance

Rainfall was unseasonal in amount and unusual in spatial distribution. It was very abundant in the Iberian peninsula, the western Mediterranean, Russia and Ukraine, but very scarce in northern latitudes and the central and eastern Mediterranean.

The particular synoptic circulation which characterised the month caused an unusual distribution of rain, with relatively dry conditions in the north and quite wet ones in the western EU and Italy.

As a whole, many areas presented large quantitative anomalies for cumulated rain values as compared to the long-term average: the largest surplus (+ 60/+ 200 %) occurred in northern and eastern Spain (Navarra, Valenciana, Cantabria, Aragon, Cataluña, Basque country, Castilla y Leon, Asturias), Italy (Sardinia, Tuscany, Piedmont, Lazio), southern and western France (Corse, Provence, Languedoc-Roussillon, Bretagne, Normandie, Limousine), Portugal (Algarve) and southern UK (Kent, Essex, Dorset). These water supplies were particularly beneficial in those areas where rain shortages occurred in the previous months (e.g.: Spain, Portugal) or in general in the southern regions, where the

advanced stages of crop development were associated with high levels of water requirements.

On the other hand, the largest deficit (– 100/– 50 %) occurred in Greece (Kentriki Ellada, Voreia Ellada, Attica), Germany (Baden, Bayern, Brandenburg, Hamburg, Hessen, Niedersachsen, Sachsen, Thüringen), Italy (south-east and Sicily), the UK (north-east, Yorkshire, Scotland, Northern Ireland), the Netherlands, Denmark, Bulgaria (south), the Baltics, Finland (Ita-Suomi) and Poland (north-west).

In this case, negative impacts might have occurred in those districts associated with light soils (Denmark, northern Germany, Poland and Finland), because of the presence of very sensitive stages of development both for winter and summer crops. In fact, in order to maintain the crops' potential, it is crucial to provide an appropriate water supply. The situation could be even more relevant considering that no significant rains were forecast for the next 10 days.

In general, the rains were more concentrated but persistent (moderate intensity) during the first and third dekads of May.

3. Campaign analysis at country level

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France: wet to over-wet conditions

The soil moisture was replenished in most of the territory and was favourable for crop development, with good yield potential. The soft wheat is forecast at a slightly higher level than in the last bulletin, at 7.4 t/ha: this was 5.8 % higher than the five-year average. The durum wheat yield is stable, at 4.8 t/ha (+ 12.4 % compared with 2007, + 4.9 % compared with the average). Winter barley yield progresses, with 6.6 t/ha (+ 15.1 % compared with 2007 and + 4.3 % compared with the average). Spring barley also has a good yield potential with 5.9 t/ha (+ 2.9 % compared with the average, and + 13.7 % compared with last year). Rapeseed yield increases slightly with 3.3 t/ha (+ 2.6 % compared with the average, and + 14.9 % compared with 2007). Summer crops at the beginning of their cycle have good potential: maize (8.9 t/ha, + 4.9 % compared with the average), potato (42.6 t/ha, + 1.1 %) and sugar beet (80.5 t/ha, + 1.5 %).

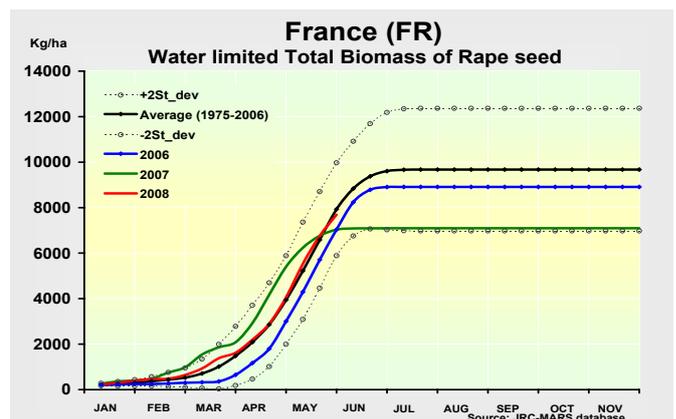
Most of the country experienced a warm period with higher minimum and maximum (25–28 °C) temperatures during the first half of the month. After a few days of dropping below seasonal levels (with minima of 2–5 °C) the temperatures remained slightly higher or close to the average during the last dekad. Most of the crops' development was slightly boosted during the first part of May and then reached normal growth.

After a dry beginning precipitation started to increase from the second dekad of May and at the end of the month rainfall was much higher than normal (> 30 %) all over the country. In May, most of the territory received more than 100 mm,

with around 150 mm in Bretagne, Normandie, Aquitaine and Provence and up to 200 mm in Auvergne. Only the north-eastern quarter received less rainfall, particularly Franche Comté and Alsace.

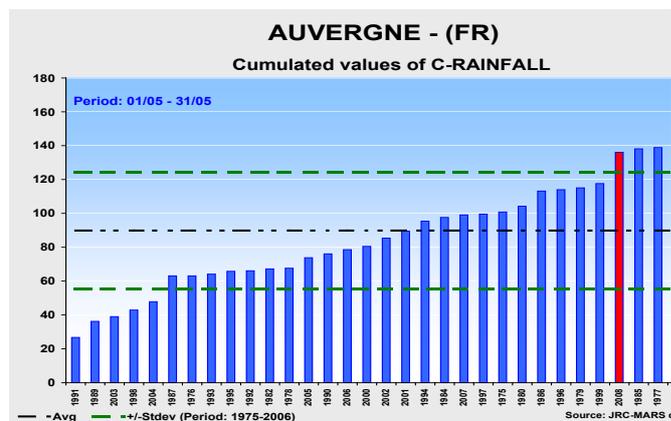
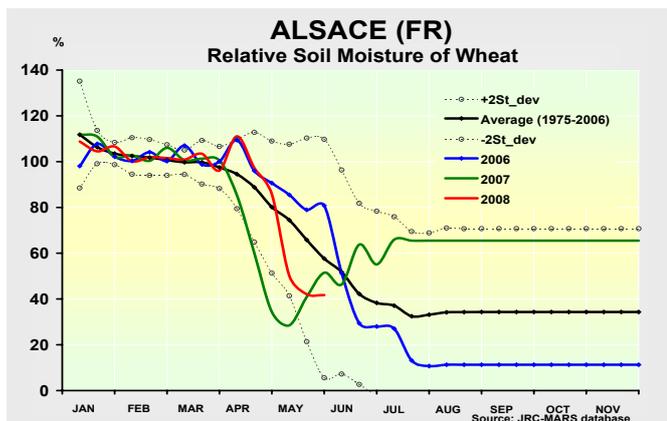
The country experienced punctually heavy precipitation, with around 40 mm/day in Auvergne, 50 mm in Hautes Alpes and as much as 70 mm in Pays Loire. It had a limited impact on overall production.

At the end of the month, winter cereals and rapeseed were at a slightly higher than anticipated grain-filling stage and could benefit from high soil moisture and no excessive temperature. Further abundant rainfalls could lead to over-wet conditions that are suboptimal for crops. For Languedoc Roussillon crops that were below normal condition, the soil moisture was replenished at the end of May. The late grain



maize sowing, particularly during the last dekad of May, could have been hindered by the continuous rainy days. This abundant precipitation benefited the spring and summer crops that were grown under good conditions.

However the wet conditions were favourable for pest development and further precipitation, particularly in the western area, could lead to an over-wet situation.



Benelux: drought stress in the Netherlands, normal for Belgium

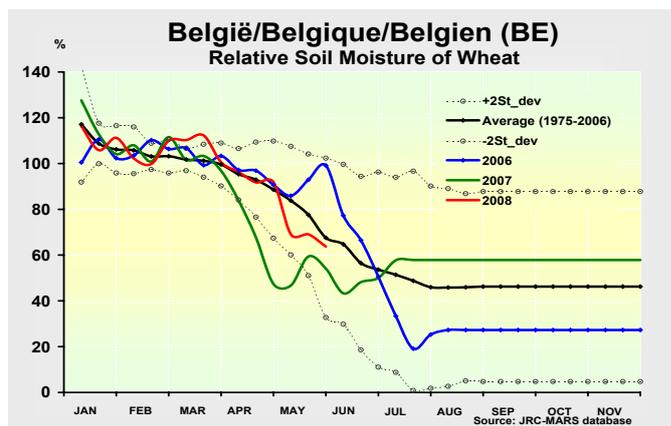
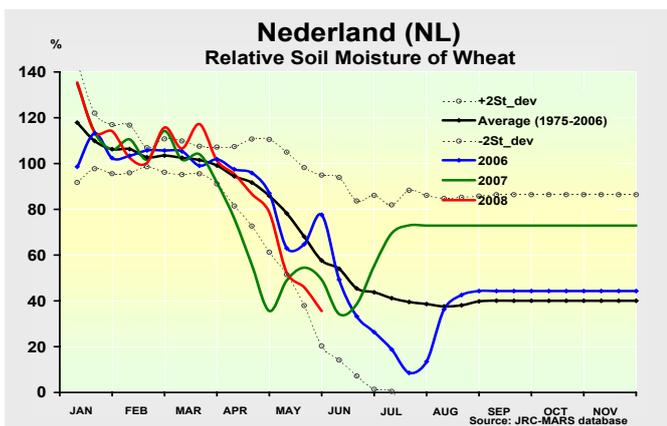
The picture is contrasting, with normal conditions for Belgium and Luxembourg and a dry situation in the Netherlands. Soft wheat forecasts increased for Belgium, with 8.7 t/ha (+ 3.4 % compared with the average) but fell for the Netherlands, with 8.3 t/ha (- 1.7 % of the average), and for Luxembourg, with 6.0 t/ha (- 1.9 % of the average). In Belgium, winter barley progressed slightly, with 8.2 t/ha (+ 2.1 % of 2007, + 4.3 % of the average). Summer crops have an initial good potential for maize (11.7 t/ha in Belgium, 11.8 t/ha in the Netherlands), potato (46.2 t/ha in Belgium, 44.2 t/ha in the Netherlands) and sugar beet (69.6 t/ha for Belgium, 65.1 t/ha for the Netherlands), close to higher than average.

average for a few days. As a result the crops were boosted and reached a slightly anticipated stage from flowering to grain filling for the winter cereals.

The Benelux countries experienced a generally warmer May, with higher minima and maxima throughout the period except for around 20 May, when the value dropped below

The first half of the month was very dry in all three countries. Beneficial precipitation was recorded in the middle and at the end of May that was sufficient to replenish the soil moisture in Belgium. On the other hand, in the Netherlands the rains were insufficient to replenish the low initial soil moisture from April: the winter, and to a less extent spring, crops suffered from these dry conditions and reduced their yield potential.

Summer crops at an initial stage and a stage with low water demand should not have been hampered in their development. However further rainfalls are needed to maintain the new crop potential and limit the stress for the winter and spring crops.



Germany: dry conditions reduced crops potential

The winter and spring crops suffered from dry conditions at the stage when water is demanded. Yield potentials are expected to drop, particularly in the northern area. Wheat is forecast at a lower level than in the last bulletin, at 7.2 t/ha (a - 0.2 t reduction), admittedly better than the last bad year (+ 3.7 %) but - 0.5 % below the average. The winter barley yield is down, at 6.3 t/ha (+ 2.1 %

compared with the average, + 9.2 % compared with 2007). Spring barley is foreseen at 4.7 t/ha, close to the average (- 0.7 %), and higher than last year (+ 10.8 %). The rapeseed forecast is kept relatively low, with 3.5 t/ha (+ 0.4 % of last year, - 3.6 % of the average). The summer crop, being in its initial phase, still has a good yield potential, including maize (9.0 t/ha, + 4.1 % average),

potato (41.2 t/ha, + 3.2 % average) and sugar beet (59.6 t/ha, + 1 % average).

The country experienced one of the driest months of May for the last 32 years and recorded a deficit of 30–50 mm. The monthly rainfall was much lower than normal (below 30 %) for most of the country. Western areas (mainly Nordrhein-Westfalen) received significant rain in the middle and at the end of May that relieved the drought conditions.

The crops in the northern and eastern areas were the most affected by this dry spell due to their sandy soil with a low water-holding capacity (from Niedersachsen, Schleswig-Holstein, Mecklenburg-Vorpommern to Brandenburg).

Winter crops (rapeseed and wheat-barley), being at a water-demanding stage (respectively grain filling and flowering), suffered from this deficit and their yield potential was significantly reduced.

The spring crops (barley at heading) started to experience suboptimal soil moisture and required further rainfalls to maintain the yield expectation.

The summer crops (grain maize, potato, sugar beet) could end up with good conditions. The late sowing and the soil moisture were sufficient for crop installation but further precipitation is once again needed for an optimal development.

Significant rainfalls are forecast for the coming days and should partially relieve stress on the crops except in the north, where the situation should remain dry and increase the probability of a suboptimal yield.

The temperature progressed during the first part of the month with higher maxima than average. After a drop of the minima in mid-May, the temperature continued to increase during the last dekad and reached higher-than-seasonal values. This slightly boosted the crop towards a more water-demanding stage, increasing the stress for winter and spring crops in particular.

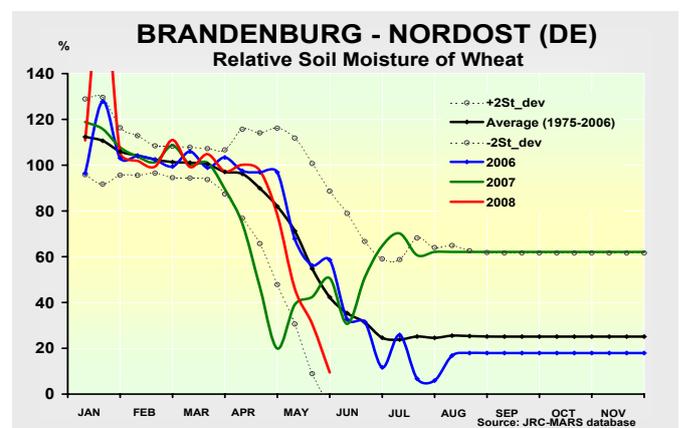
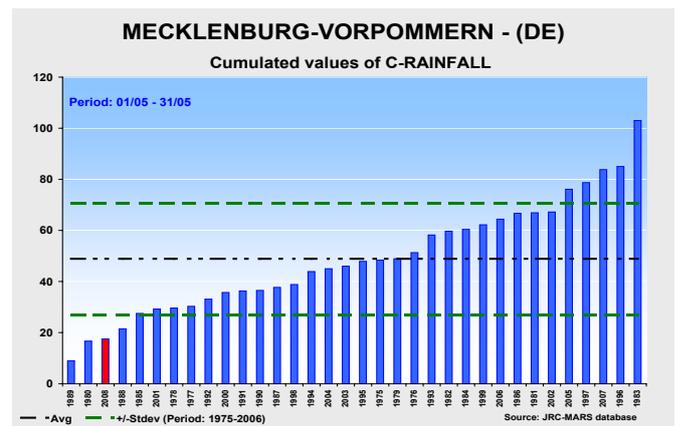
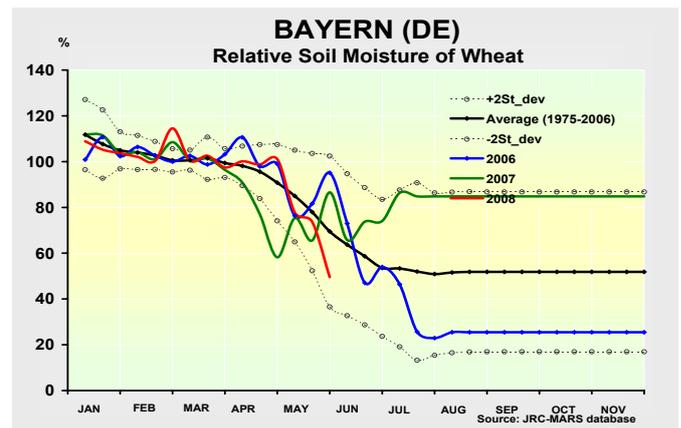
Some days with more than 30 °C were recorded, mainly in the eastern and central areas. In conjunction with the water stress, these extreme temperatures may have hindered the crop development and contributed to a lower yield expectation.

UK, Ireland: exceptionally warm but favourable solar radiation

In UK the yields forecasts are revised slightly downward, to 7.8 t/ha for soft wheat (+ 0.5 % compared to the five-year average), 6.5 t/ha for winter barley (+ 0.8 %), 3.2 t/ha for rapeseed (– 0.5 %), 5.5 t/ha for spring barley (– 0.1 %), 42.2 t/ha for potato and 55.8 t/ha for sugar beet (– 2.2 %).

In Ireland the yield forecasts are revised slightly upward: soft wheat is forecast at 9.1 t/ha (+ 3.6 % compared to the five-year average and + 12.5 % compared to the previous year), winter barley at 8.0 t/ha (+ 2.5 %), spring barley at 6.9 t/ha (+ 4.1 %) and potato at 38 t/ha (+ 4.8 %).

The month started with a reasonable increase in temperatures, both for minimum and maximum daily values. In mid-May, the maximum values in many areas even climbed above the



normal range of variation and were 8–10 °C above the long-term average (e.g.: 26.2 °C in West Midlands and Shropshire, 26.0 °C in Kent, 25.9 °C in East Anglia, 22.4 °C in southern and eastern Ireland).

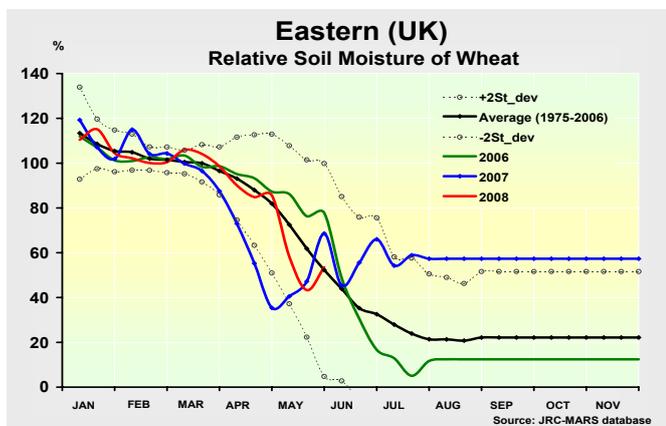
In the middle of the month cold air irrupted and a significant drop in temperatures occurred, with values now largely below the seasonal values. In the last part of the month more seasonal conditions returned.

However, at the end of the month a moderated surplus of the active temperature sum, estimable at 50–80 GDD, was recorded (+ 20/+ 25 % as compared to the long-term average) in the British Isles.

Those thermal conditions slightly the accelerated

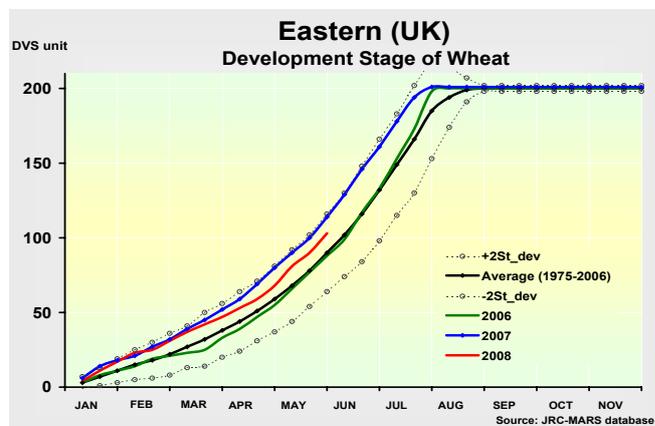
development of the winter crops, but at the end of May advanced stages were still present. At the same time, the spring crops faced good conditions during the beginning stages.

The amount of rain was lower in Ireland (– 20/30 %, on average 40–45 mm compared to the seasonal 60 mm), but



followed a normal distribution (three main rainy periods). More seasonal quantity was recorded in UK.

The reduced rains in Ireland permitted a larger amount of solar radiation, which probably positively influenced the active crops (winter, spring and pasture).



Italy: abundant rainfalls except in Sicily, moderate yield expectations for cereals

The yield forecast for soft wheat is 5.1 t/ha (+ 0.4 % compared with the five-year average; + 4.3 % compared with 2007); 2.9 t/ha for durum wheat (+ 4.5 % compared with the five-year average; + 7.1 % compared with 2007); 4.0 t/ha for barley (+ 9.8 % compared with the five-year average, + 13.6 % compared with 2007). For grain maize the expected yield is 9.4 t/ha (+ 5.5 % compared with the five-year average and + 0.6 % compared with 2007). The yield forecast for sunflower is 2.2 t/ha (– 1.5 % compared with 2007 and + 5.1 % compared with the five-year average). Sugar beet is expected to reach 51.6 t/ha (– 4.6 % compared with last year and + 7 % compared with the five-year average). The forecast for potato crop is 26.2 t/ha (+ 2.1 % compared with last year and + 7.2 % compared with the five-year average).

Maximum and minimum temperatures all over the country were mild and within the average. During May the precipitation was abundant and above average, especially in Sardinia, Tuscany, Lombardy, Piedmont and Lazio, which might have caused lodging, particularly in the northern valleys.

On the other hand, conditions were still dry in Sicily (which is not exceptional), inherited from the dryness of April; the rainfalls during May were still below average, and the relative soil moisture had not yet completely recovered.

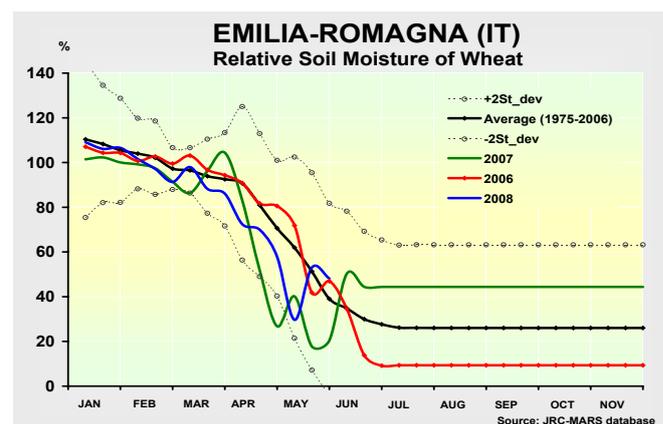
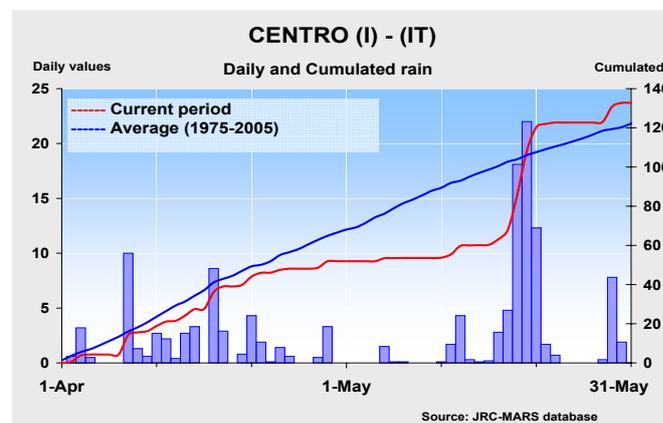
Due to the water scarcity in Sicily and Apulia, durum wheat is slightly lower than average, which could be affected by water stress. On the contrary, sunflower started with good water reservoirs: currently, the simulated yield is at an average amount.

At the end of May, the development stage of sugar beet was advanced compared to the average; the yield formation stage is starting positively thanks to the abundant precipitation in the most heavily cultivated areas.

The potato is in tuber formation stage, more advanced in

the southern regions of Italy where it is usually sown earlier than in the north. Grain maize is in the vegetative stage, with good potential yield conditions.

Barley is starting the grain-filling phase. Only in Sardinia has barley recovered the relative soil moisture values thanks to the recent rainfalls; good potential yield is simulated for this crop.



Spain: intense rain, mild temperatures benefited most crops

The diffuse precipitation that affected most of central Spain during May improved the overall expectations for the outcome of the agricultural season. The estimated yield of soft wheat is 3.6 t/ha, lower than in 2007 but still 13.3 % above the five-year average. Durum wheat is estimated at 2.4 t/ha (+ 7.4 % compared with the five-year average). The estimate for winter barley is 3.0 t/ha (– 5.8 % on 2007 and + 13 % on the five-year average). The expected yield of grain maize is 10.6 t/ha. Spring barley is still in the vegetative stage and expectations are for 3.9 t/ha. There are also improved estimates for sunflower, with 1.2 t/ha, rapeseed (1.8 t/ha, + 13 %), sugar beet (74.1 t/ha, + 7 %) and potato (29.9 t/ha, + 10 %)

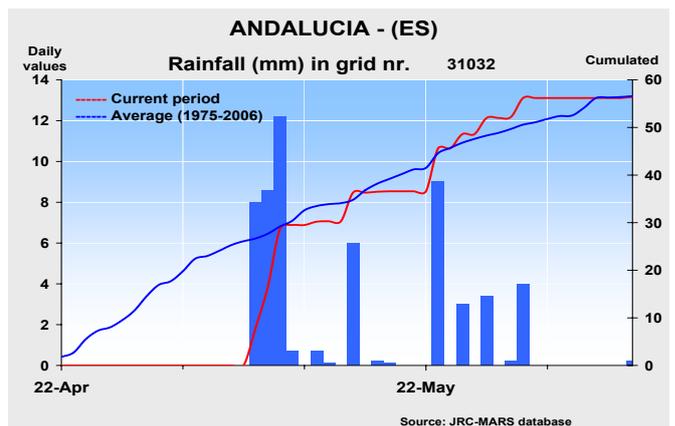
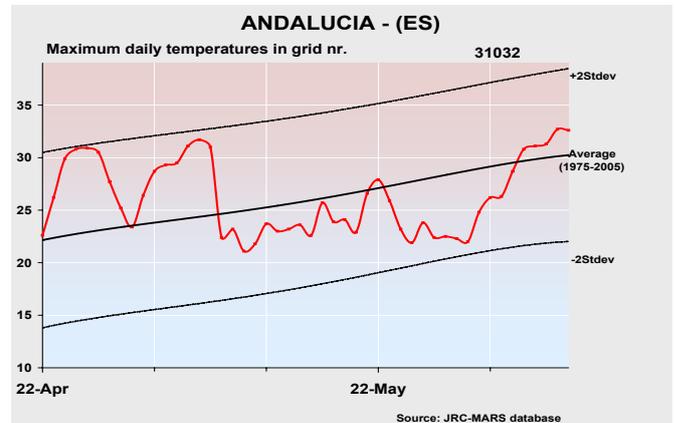
During May there was a generalised improvement in the overall climatic situation, allowing a full recovery from the dry conditions that affected the country for the entire winter and early spring. There was abundant and well-distributed precipitation in the central agricultural areas as well as in the Ebro valley. There was also relief in the south-east and coastal Mediterranean areas.

Cumulated rainfall since mid-April exceeded 100 mm in Castilla y Leon and 50 mm in Andalucía, with an improvement of over 30 % on the long-term average over most of the country. In some cases rainfall even exceeded the exceptional levels of 2007.

The two heat waves that had hit the eastern part of the Iberian peninsula during the second dekad of April were followed by a similar event in early May. Temperatures, however, returned to within the norm for the rest of the month.

Durum wheat reached the maturing phases early in Andalucía while in the central and northern regions (Aragon) soft wheat and winter barley are still flowering and ripening

and should take full advantage of the improved conditions. Spring crops started their cycle in the mild temperatures of April and are at present in the vegetative stage, benefiting from the May rains. Grain maize has almost reached the maximum level of LAI and is more than 30 % above the long-term average in the main cultivation areas of Andalucía.



Portugal: May rains improved yield expectations

As a result of the late rain, the yield estimate for soft wheat is now 1.8 t/ha (+ 13 % on the five-year average, but still – 16 % with respect to 2007). Reporting a similar trend, winter barley is estimated at around 1.61 t/ha (+ 3 % on the five-year average and – 14 % on 2007).

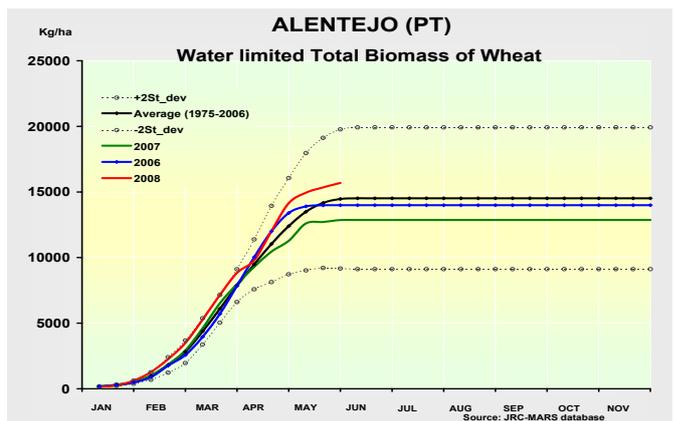
Spring crops are still in the vegetative stage, with the potential yield still subject to major fluctuations. The estimated yield is 6.2 t/ha for grain maize, 0.84 t/ha for sunflower, 15.7 t/ha for potato and 70.6 t/ha for sugar beet.

Most of the country, from north to south, experienced high temperatures during the first week of May. This event was followed by a generalised drop in temperatures, especially in their maximum levels, and this condition remains.

Precipitation in April had largely made up for the winter deficits and this positive trend continued during May. The cumulated rain, from late April to the present, exceeded 60 mm in the main agricultural areas of Alentejo, converging on the 2007 levels.

Wheat has reached maturity over most of the cultivation areas at the normal time and there is also an estimated increase of potential biomass with respect to the norm.

Spring crops such as grain maize and potato show a relative delay in vegetative development but should benefit from the current meteorological trend.



Greece: May was characterised by dry and warm weather

A dry spell combined with a heat wave in late May could affect the final yield of winter cereals reducing expectations which are, however, still positive compared to 2007. The forecast for durum wheat is updated to 2.01 t/ha, the same level as the five-year average. The estimate for soft wheat is 2.69 t/ha (+ 7.6 % on 2007 and comparable to the five-year average). Winter barley is forecast at 2.33 t/ha. Spring crops are still in the early stages of development and yield estimates are only indicative. The forecast is 9.16 t/ha for grain maize, 24.1 t/ha for potato and 62 t/ha for sugar beet.

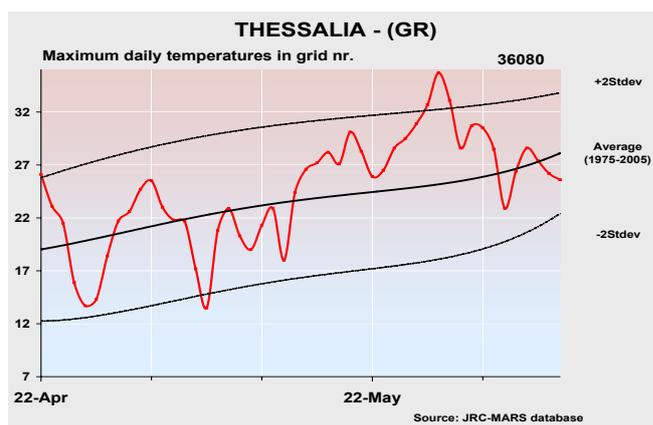
The positive climatic trend reported in April was followed in May by a significant reduction in precipitation over most of the agricultural areas of north-eastern and central Greece. The deficit in the climatic water balance exceeded 40 mm, with a reduction of over 30 % on the long-term average.

Temperatures remained within the norm in north-eastern Anatoliki Makedonia. Elsewhere, from Dytiki Makedonia to Thessalia, dry conditions were coupled with a heat wave during the last dekad of May, with maximum temperatures exceeding 36 °C.

The majority of the wheat is cultivated in the north-east and even though it is reaching the grain-filling stage it may have

partly avoided the heat wave and thus reduced the damage. The same cannot be said for barley, which is planted more to the west and might have been negatively affected by these conditions.

Major damage is to be excluded for the most important spring crops (grain maize, sunflower, potato and sugar beet) as these are still in the vegetative stage and for the most part cultivated under irrigation.



Denmark, Sweden and Finland: anomalous dry and warm conditions

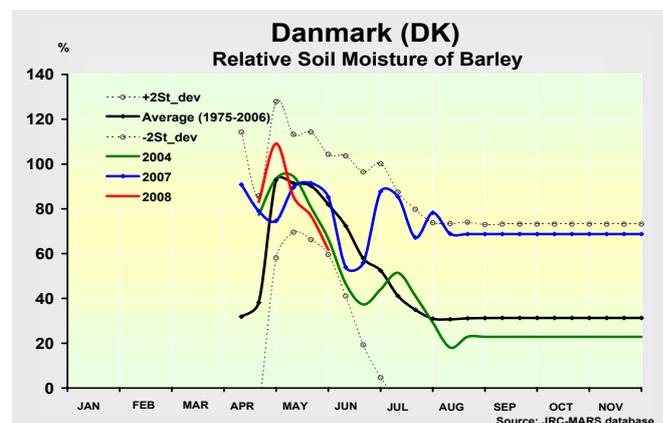
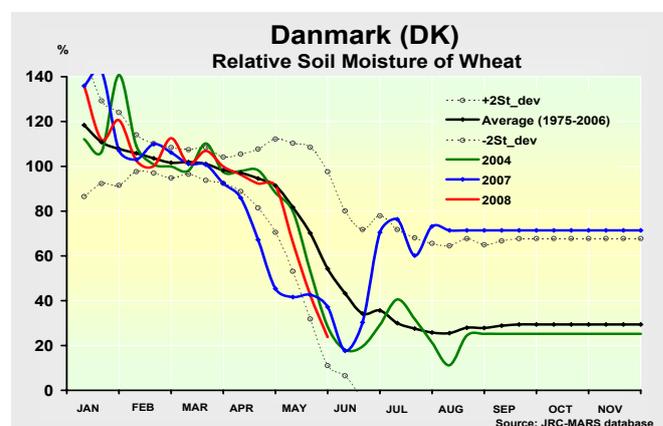
For Denmark, yield forecasts are 7.01 t/ha for soft wheat (+ 6.9 % compared to the previous year), 3.08 t/ha for rapeseed (- 7.4 %), 4.8 t/ha for spring barley (- 2.2 %), 5.6 t/ha for winter barley (+ 9.8 %), 38.3 t/ha for potato (- 3.0 %) and 56.81 t/ha for sugar beet (- 0.7 %).

For Sweden, yield forecasts are 6.29 t/ha for soft wheat (+ 0.5 % compared to the previous year), 2.58 t/ha for rapeseed (+ 1.6 %), 4.38 t/ha for spring barley (- 1.8 %), 5.38 t/ha for winter barley (+ 1.0 %), 30.89 t/ha for potato (+ 11.6 %) and 49.74 t/ha for sugar beet.

For Finland, yield forecasts are 3.76 t/ha for soft wheat (- 4.3 % compared to the previous year), 1.27 t/ha for rapeseed (- 3.2 %), 3.28 t/ha for spring barley (- 11.9 %), 22.11 t/ha for potato (- 14.0 %) and 38.48 t/ha for sugar beet (- 8.5 %).

Following a mild April, May also started with temperatures significantly higher than average. In many places the maximum daily values reached as much as 26– 27 °C in Denmark (equivalent to 6– 7 °C above the seasonal values). In the second dekad an eruption of colder air occurred and the temperatures returned closer to the seasonal average. But in Denmark and Sweden a new warm wave arrived in the last part of the month and the temperatures again jumped above seasonal values.

On the other hand, in Finland the temperatures continued dropping even in the last part of the month. Therefore, at the end of the month the monthly cumulated active temperatures presented a large surplus in Denmark and Sweden, of around 40–50 GDD (+ 15 %/+ 30 %), and a slight



deficit in Finland, of around 20–30 GDD (- 10 %), which partially compensated for the surplus cumulated in the previous periods.

Those thermal conditions boosted crop development and evapotranspiration and consequently the consumption of water by the crops. On average the winter crops presented stages that were one to two weeks more advanced than the long-term average. Similar conditions occurred in 1989 and 2002.

Rainfall also had an anomalous course, being particularly scarce. In the whole month only a few millimetres of rain (10–15 mm in Denmark and 18–20 mm in Sweden and

Finland) were recorded in two to three rainy days.

This caused consistent reductions of soil moisture coupled with higher-than-seasonal water consumption (higher values of evapotranspiration and advanced stages of development) and might have determined water stress conditions, also taking into account the light soils (limited soil water capacity and retention) present in Denmark, southern Sweden and Finland. The impacts of this possible water stress on yield will be evident in the next months.

Estonia, Latvia, Lithuania: very low climatic water balance

For Estonia the forecast yields are 2.4 t/ha (– 21.4 % compared with previous year) for soft wheat and 2.1 t/ha (– 6.8 %) for barley (total).

The figures for Latvia are 3.5 t/ha (– 3.7 % compared with 2007) for soft wheat and 2.0 t/ha (– 15.7 %) for barley (total) and for Lithuania 3.8 t/ha (– 2.2 %) for soft wheat and 2.4 t/ha (– 9.7 %) for total barley.

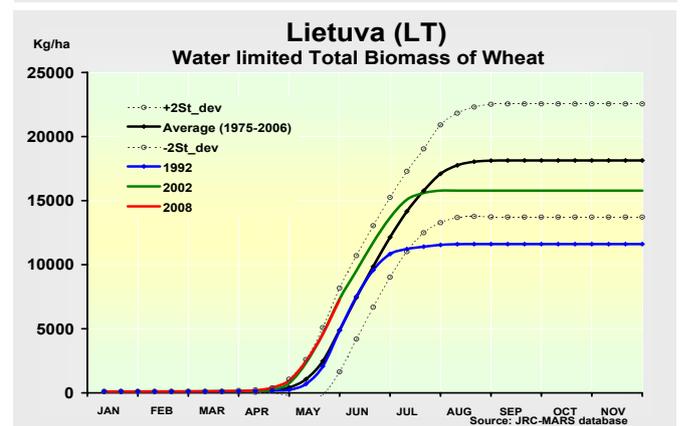
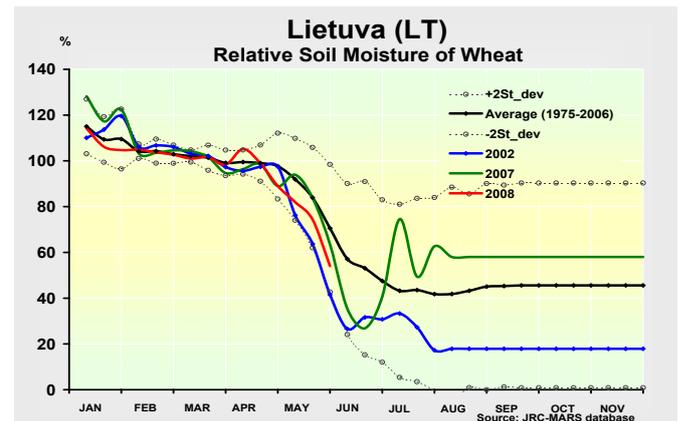
The cumulated rain from the beginning of May to 4 June was below the long-term average (< – 30 %), especially in the western half of the Baltic States. The average daily temperature was close to normal.

The global radiation was higher than the long-term average for the seashore zone and close to normal for the other areas. The climatic water balance was one standard deviation below the long-term average.

The development of winter wheat was slightly advanced in the areas close to the Baltic Sea and close to the normal level in the rest of the country.

The relative soil moisture for winter wheat is very low and the situation is similar to that of 2002 and 1993 — years with yields lower than the trend but not exceptionally low.

The growth of spring crops may be affected by the dry weather, but it is too early to evaluate the impact with the available data.



Poland: average season for winter crops, moderate so far for summer crops

A good season is simulated for winter crops: 4.00 t/ha for soft wheat (+ 2.2 % compared to 2007), 3.89 t/ha for winter barely (+ 2.1 %) and 2.76 t/ha for rapeseed (+ 3.5 %). Although higher than the five-year average, forecasts for spring and summer crops are lower than last year: 3.05 t/ha for spring barley (– 3.2 %), 5.73 t/ha for grain maize (– 13.1 %), 18.61 t/ha for potato (– 10.1 %), and 46.79 t/ha for sugar beet (– 8.7 %).

In eastern regions (Podlaskie, Mazowieckie, Lubelskie, Swietokrzyskie, Podkarpackie) the wet conditions recorded in recent months are still persisting, whereas cumulated active temperatures decreased noticeably because of the low daily maxima.

These conditions have slightly lowered the summer crop potential because of the reduced evapotranspirative demand. The opposite situation occurred in western and southern regions, which were characterised by dry and

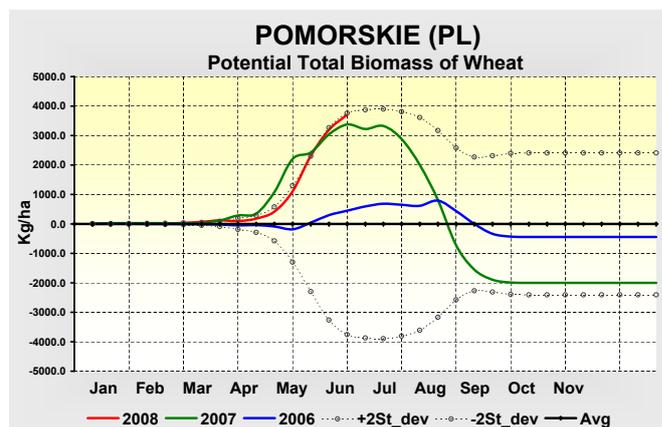
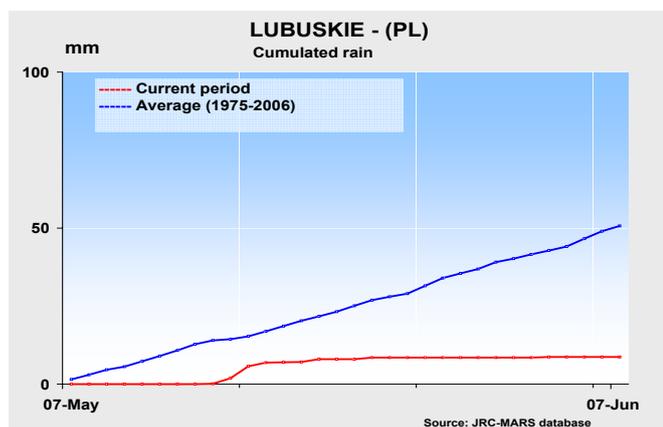
sunny days. In some areas, this could have led to short periods of water stress.

Winter wheat is completing the stem elongation phase in the north-eastern regions, but has already started the flowering stage in the south-western part of the country. The significant advance in development simulated until the end of May is now reduced to one dekad; the potential yield biomass is showing a positive trend.

Spring barley is now in the mid-stem elongation phase according to the long-term average.

The one-dekad advance simulated for rapeseed has been shortened in almost all regions; the crop is benefiting from a good canopy development.

Sugar beet and potato are reaching the mid-vegetative phase according to the average.



Czech Republic and Slovakia: favourable year, especially for Slovakia

Except for soft wheat (4.8 t/ha, – 0.8 % compared to the five-year average), spring barley (3.8 t/ha, – 5.1 %) and sunflower (2.2 t/ha, – 1.6 %), the Czech Republic is experiencing a good season: forecasts are 4.6 t/ha for winter barley (+ 8.3 % compared to the average), 3.2 t/ha for rapeseed (+ 12.7 %), 6.7 t/ha for maize (+ 3.6 %), 25.4 t/ha for potato (+ 6.2 %), and 53.8 t/ha for sugar beet (+ 6.0 %).

The situation is even better for Slovakia: with the exception of soft wheat (3.9 t/ha, – 0.2 %), forecasts are higher than the five-year average: 3.7 t/ha for winter barley (+ 10.8 %), 2.4 t/ha for rapeseed (+ 18.3 %), 3.6 t/ha for spring barley (+ 2.8 %), 5.5 t/ha for grain maize (+ 3.9 %), 16.3 t/ha for potato (+ 6.5 %), 48.1 t/ha for sugar beet (+ 5.1 %) and 2.1 t/ha for sunflower (+ 1.7 %).

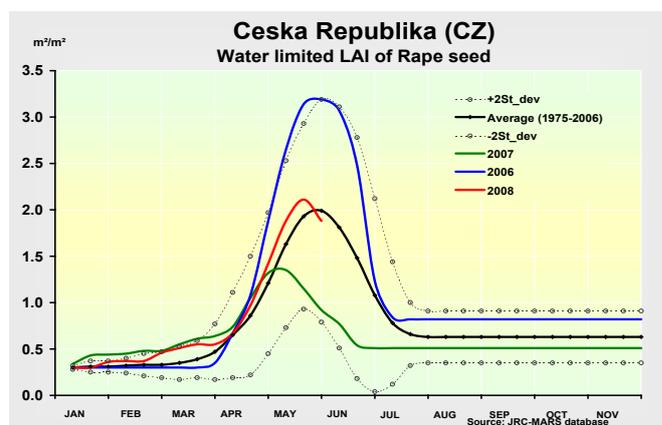
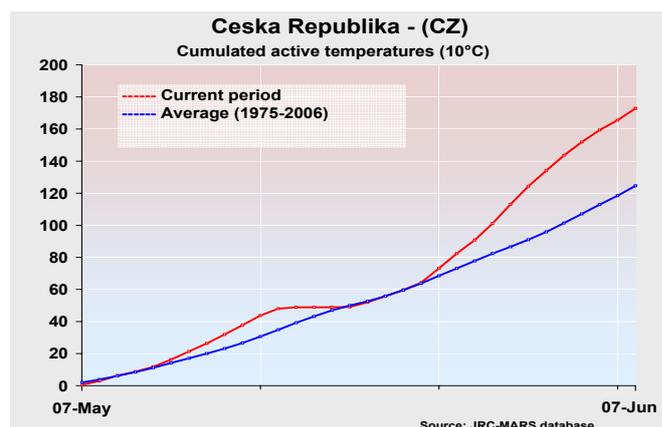
Higher-than-average temperatures have pushed the accumulation of thermal time for summer crops in the last month to values which are now 40 % higher than the average in the Czech Republic.

This value is reduced to about 20 % in Slovakia, where the concentration of precipitation into a few events led to satisfactory irradiative levels although the potential evapotranspiration values are only slightly above the average. Average values for the same variables are simulated in the Czech Republic, although good conditions were recorded in the first half of May. Cumulated rainfall values are close to the average and slightly lower respectively in the Czech Republic and Slovakia.

Winter wheat is completing the flowering stage with a one-week advance compared to the average. Precipitation allowed satisfactory soil moisture values, supporting a good canopy development, especially in Slovakia. Simulated total biomass is slightly higher than the average, mainly because

of the advance in development caused by the warm first part of the season.

Rapeseed has reached the mid grain-filling stage a few days in advance of the average and under average soil moisture conditions. Spring barley entered into the second half of the stem-elongation phase according to the average.



Austria: good yield simulation for spring and summer crops

Yield forecasts are 5.18 t/ha for soft wheat (+ 6.8 % compared to 2007), 4.09 t/ha for durum wheat (+ 18.4 %), 5.48 t/ha for winter barley (– 3.4 %), 2.98 t/ha for rapeseed (– 0.1 %), 4.12 t/ha for spring barley (+ 25.7 %), 9.74 t/ha for grain maize (– 1.9 %), 31.01 t/ha for potato (+ 5.1 %), 66.22 t/ha for sugar beet (+ 5.4 %) and

2.52 t/ha for sunflower (+ 12.1 %).

Cumulated rainfall values are slightly above the average in the period examined, although precipitation was concentrated into a few events (18–20 May and 1–4 June). This led to satisfactory irradiance levels in the second dekad of May.

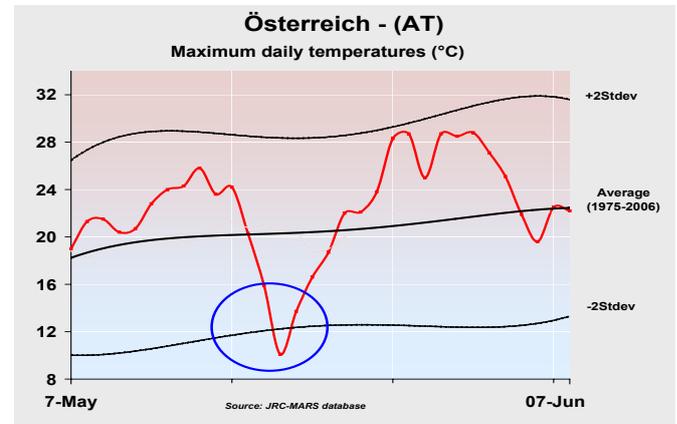
High temperatures were recorded during the whole period, especially if night minimum temperatures are considered. Biomass accumulation rates of winter crops should not have suffered from an increase in respiration. Although an abrupt temperature fall occurred in conjunction with heavy winds verified between the second and the third dekads of May, cumulated temperatures are now 10 % higher than average values.

Winter wheat is completing the flowering stage with a one-dekad advance compared to the long-term average under average water availability conditions. The shortening of the vegetative phase because of the warm March and April has slightly penalised the canopy development, without seriously compromising the crop potential for the reproductive phase. Simulated biomass is still within the average.

Rapeseed is in the second part of the grain-filling period, with about a one-week advance with respect to the average. For this crop too, precipitation was enough to completely satisfy the transpirative demand. Compared to what is

simulated for winter cereals, models show an unsatisfying formation of the canopy for rapeseed. Simulated biomass, which was higher than the average in the first part of the season, crossed the long-term average series in mid-May.

Spring barley reached the second part of the stem elongation phase according to the average under optimal conditions.



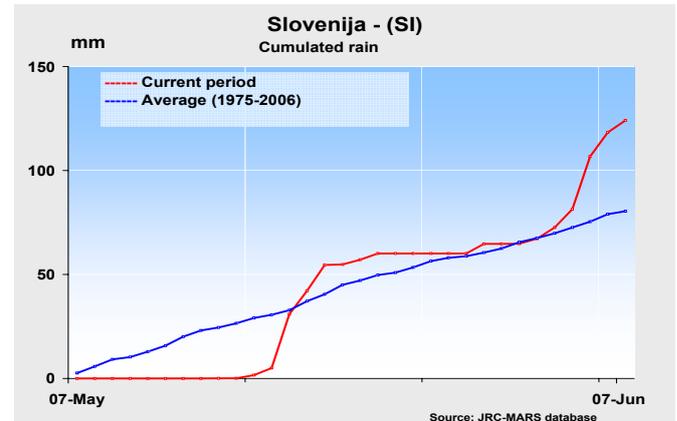
Slovenia: young maize could have suffered from excess of water

Forecasts are 4.55 t/ha for soft wheat (+ 9.3 % compared to 2007), 3.90 t/ha for barley (+ 6.5 %) and 7.90 t/ha for maize (+ 4.8 %).

The first two dekads of May were characterised by dry and warm conditions, without creating problems of insufficient water availability because of the water reserves accumulated in the soil profiles in the previous period. The soil moisture was brought back to average values by the abundant precipitation that occurred in the third dekad of May.

The one-dekad advance in development, simulated for winter wheat from the start of the season, is maintained. The shortening of the vegetative phase has helped to prevent the crop from fully developing the canopy. Rapeseed has suffered the same limitations to leaf area expansion, although the impact on the biomass accumulation rate is in this case negligible. Spring barley is entering the flowering stage according to the average. Optimal conditions are

simulated for this first part of the maize cycle, although in some areas the young plants could have suffered from the daily precipitation that occurred during the emergence and post-emergence phases.



Hungary: good season depicted

Yields are forecast to be higher than both the five-year average and those recorded in 2007, at 4.2 t/ha for soft wheat (+ 5.0 % compared to the average), 3.9 t/ha for winter barley (+ 4.9 %), 2.3 t/ha for rapeseed (+ 4.0 %), 3.4 t/ha for spring barley (+ 7.1 %), 6.7 t/ha for grain maize (+ 16.5 %), 23.6 t/ha for potato (+ 2.4 %), 48.9 t/ha for sugar beet (+ 2.6 %) and 2.2 t/ha for sunflower (+ 2.4 %).

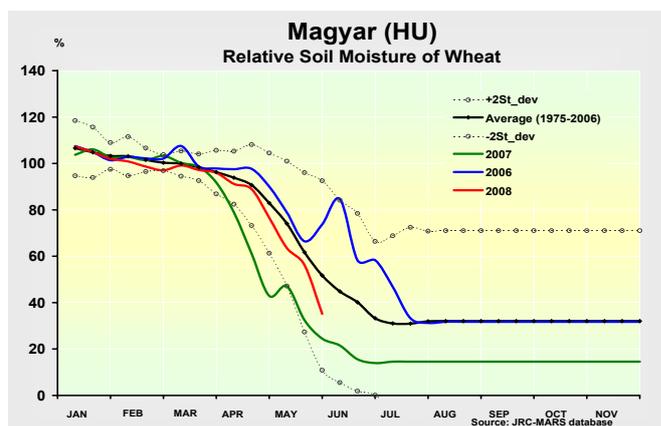
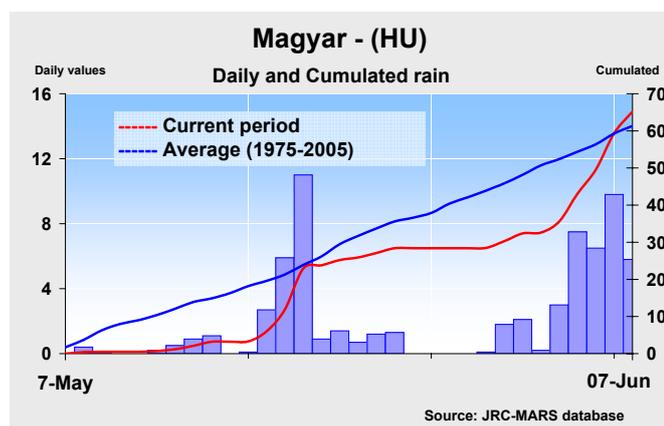
Following the trend already discussed for the previous months, the last three dekads were characterised by temperatures slightly above the average. This has further increased the advance in development simulated for most of the crops.

Despite the frequent rainfall events recorded since mid-May in particular, cumulated radiation during the examined period is higher than the average.

Winter crops are maintaining the advance in development simulated since they were sown, especially in the western regions.

Winter wheat is entering the grain-filling phase with a 10-day advance compared to the average. The advance in development is reduced to one week for rapeseed. While models are simulating a satisfactory canopy development for cereals, the value of the maximum leaf area index simulated for rapeseed is 20 % lower with respect to the average.

Soil moisture is decreasing for most of the region x crop combinations because of the high evapotranspirative demand and the low intensity of the rainfall recorded. A good potential is simulated for the first part of the maize cycle.



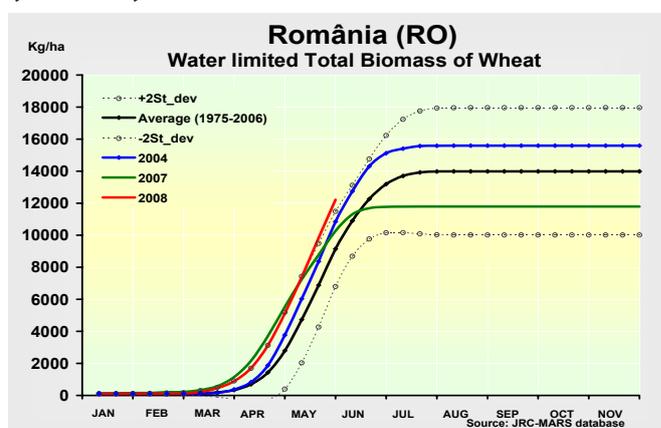
Romania: high expectations for winter crops

The forecast yields are 3.0 t/ha (+ 90.2 % compared with the yield of 2007) for total wheat, 2.3 t/ha (+ 58.6 %) for barley (total) and 1.2 t/ha (+ 19.1 %) for turnips (rape).

The agricultural areas in eastern and south-eastern Romania received about 50 mm of cumulated rain during the period under consideration (close to the expected level), although some central areas were much wetter (75 mm). For the main agricultural areas the climatic water balance was below the normal level ($< -15\%$ of the long-term average), but the soil water reserves from the previous period sustained growth in the period under consideration.

The development stage of winter crops was anticipated in comparison with the long-term average but to a lesser extent than in the previous year. For spring crops, the development was close to normal (only a slight anticipation for spring barley). The leaf area index of winter crops reached the maximum about two weeks earlier. The relative

soil moisture remained close to the long-term average. The simulated water-limited total biomass and grain filling for winter wheat and rapeseed are very high, but the vegetation cycle is not yet finished.



Bulgaria: high level of total biomass for winter crops

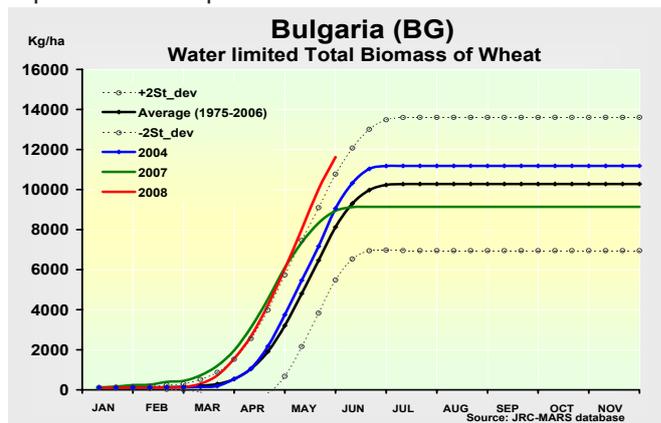
The forecast yields are 3.3 t/ha (50.8 % compared to the previous year) for soft wheat, 3.2 t/ha (42.1 %) for barley (total) and 2.0 t/ha (17.1 %) for rapeseed.

The thermal resources for the period under consideration were close to normal. For most of the country the spatial distribution of rainfall was rather heterogeneous, but in south-eastern Bulgaria the lower-than-normal level of precipitation and higher level of solar radiation reduced the climatic water balance ($< -20\%$ of the long-term average).

For all crops, development is anticipated, soil moisture is very low and leaf area index, water-limited total biomass and weight of storage organs are very high.

For winter wheat there are strong expectations of a good yield since no heat anomaly is forecast for the last period of

grain filling. The future of the maize and sunflower crops will depend on the improvement of the soil moisture.



BLACK SEA AREA

Turkey: weather conditions improved but not the yield

The return of rain and temperatures to seasonal averages during May is not yet reflected in the yield estimates, which are still affected by the weather of the previous months. The updated forecast for wheat is 2.18 t/ha (– 3 % on the five-year average) while barley is forecast at 2.41 t/ha. Maize is still in the vegetative stage and is forecast at 5.96 t/ha.

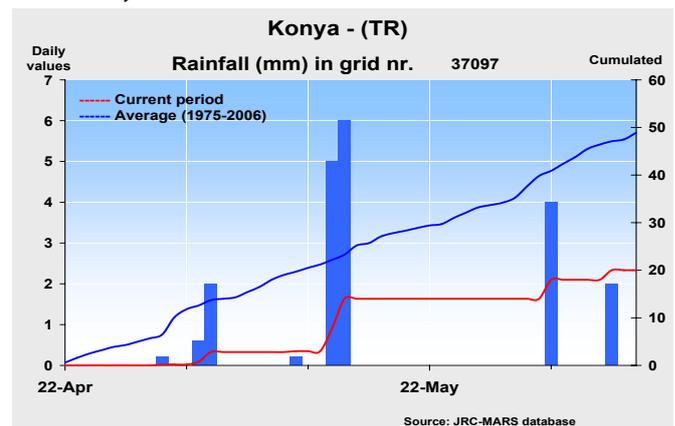
After a prolonged dry period in the main cereal production areas of central Anatolia (Antalya, Konya and Ankara) precipitation events in the first half of May allowed a recovery of soil moisture. The average deficit is still in the order of 30 % and even exceeds this level in some areas.

Temperatures, which had reported extreme maximums around mid-April, returned to within seasonal averages in May. Weather conditions also showed some improvement in the western regions and in the Aegean inland. These areas experienced occasional rain showers at the end of May but these were not sufficient to make up for the cumulated soil moisture deficit.

In the Black Sea coastal regions, conditions remained favourable, with sufficient rainfall and moderate temperatures. Winter wheat is now in the flowering and grain-filling phases almost everywhere in the central

highlands. What had appeared to be an acceleration of the development cycle did not materialise and the phenological development has converged to its normal timing.

The potential leaf area index has reached its peak and is estimated to be higher than average. The maize production areas of Bati Marmara received sufficient precipitation in early May but have been rather dry since. This spring crops are, however, in the early stages of development and considering the availability of irrigation they should not be affected by the climatic trend.



Ukraine: low water balance in south-western areas

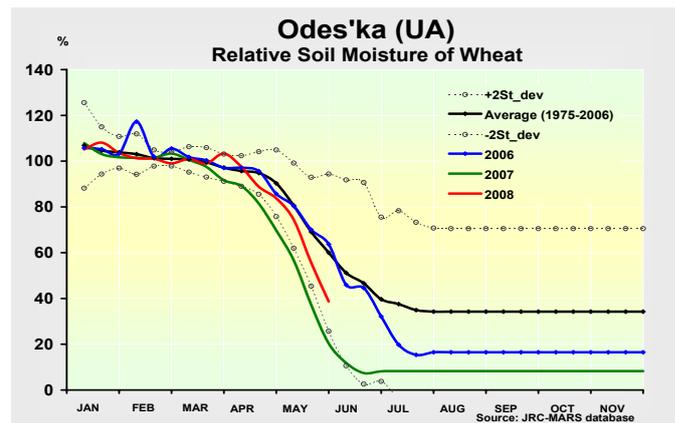
The forecast yields are 2.4 t/ha for wheat, 1.8 t/ha for barley, 1.1 t/ha for oil seed rape and 4.2 t/ha for maize.

The cumulated rain from beginning of May until 4 June was below the long-term average (< – 30 %) for most agricultural areas of Ukraine, excepting a limited central area where the level of precipitation was above normal.

Thermal resources in north-eastern Ukraine were with – 60 degree days below the long-term average (– 12 %), but the situation was normal in other areas. The climatic water balance for the agricultural areas in western Ukraine was quite low (< – 20 % of the long-term average), and some of these areas were already subject to drier weather. In the eastern areas the climatic water balance was close to normal. The global radiation was lower than normal (< – 15 % of the long-term average) in eastern Ukraine.

The water-limited biomass of winter crops was still above the long-term average, due to anticipated development. The simulated relative soil moisture in the south-western

areas is very low but it is above the previous year's level. The rainy weather mentioned for the central areas of Ukraine postponed the sowing of the spring crops but also permitted good germination.



Moldavia: anticipated development for winter crops

The forecast yield for wheat is 2.0 t/ha.

The cumulated rain from the beginning of May until 4 June was below the long-term average (< 30 %) for southern Moldavia, but in the north of the country the level of precipitation was close to normal.

Thermal conditions were close to normal as well. The climatic water balance was mainly influenced by cumulated rain for this period.

The description of the situation of winter crops from the end of April remained mainly valid for May: anticipated development, high simulated biomass and high total water consumption.

The maximum leaf area index was achieved about two weeks in advance. Due to the precipitation at the end of April, the simulated relative soil moisture remained close to the long-term level in May.

EASTERN COUNTRIES

Belarus: anticipated development of winter crops

The forecast yield for wheat is 2.8 t/ha.

The cumulated rain for the period under consideration was above the long-term average (+ 30 %), excepting the central areas, where the level of precipitation was close to normal. The thermal resources were close to normal, except northern Belarus, where this indicator was with about – 60 degree days lower than the long-term average (– 12 %).

The climatic water balance was above normal level (< – 20 % of the long-term average).

The development, biomass and total water consumption of winter cereals remained high. For the time being, the yield expectations are close to average.

Russia: favourable conditions for winter and summer crop

The period under analysis is the period of winter crop flowering and the end of summer crop sowing campaign.

May 2008 was slightly colder than normal everywhere except the near Urals region, where the air temperature was close to normal. However, in general air temperature was favourable both for winter crop development and summer crop sowing.

The amount of precipitation was higher than normal practically everywhere. Only in north-western Russia was the weather drier than normal.

Agrometeorological conditions during the winter and spring led to favourable soil moisture content everywhere, except north-western regions where soil moisture content was lower than normal.

The CGMS winter wheat growth simulation results demonstrate that the situation at the end of May 2008 was better than normal in the main part of European Russia, especially in the Central and Central-Chernozemic regions. The simulated crop biomass is lower than normal only in north-western regions.

Based on an analysis of all crop growth indicators one can conclude that agrometeorological conditions were in general good for winter crops in the 2008 season. The agrometeorological situation for spring crops was unfavourable in north-western regions due to a low amount of precipitation in May. The yield of winter cereals is expected to be close to the previous, good year or slightly higher. The yield of spring crops in the European part of Russia is likely to be close to normal.

MAGHREB

Maghreb: yield expectations are still negative in Morocco, favourable season for Algeria and Tunisia

The yield forecast for wheat in Morocco is 0.89 t/ha, 38 % down on the five-year average but 11 % higher than in 2007. Barley is estimated at 0.6 t/ha, the same level as in 2007 and – 25 % on the five-year average.

In Algeria, the wheat and barley forecasts improved to 1.31 t/ha and 1.48 t/ha respectively.

In Tunisia the wheat forecast is 1.70 t/ha, essentially stable with respect to 2007 but a reduction of 6 % on the five-year average. Barley is estimated at 0.94 t/ha (+ 2 % on the five-year average).

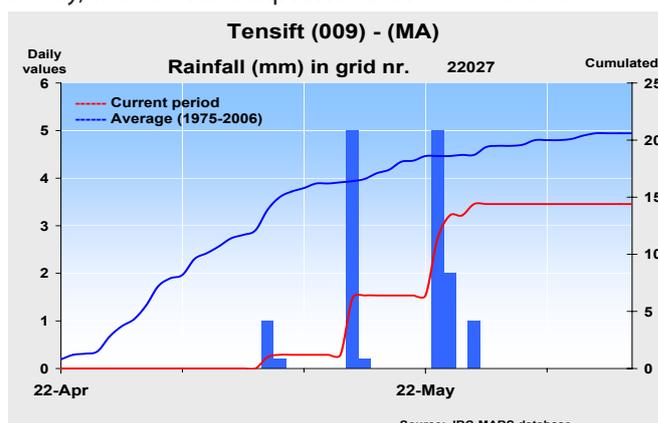
In the main cereal production regions of central and western Morocco, the water deficit that had characterised the month of April was partly supplemented but some rain fell at the beginning of May. The cumulated precipitation in this period exceeded that of 2007 by over 10 % but remained largely below the long-term average. The timing and distribution of these events was such that it provided a partial recovery of productivity for wheat and barley.

Temperatures were within normal levels for the period. Currently, in full harvest, there appears to be an improvement on 2007 but it is still a negative year for Morocco. In the cereal-producing areas of eastern Algeria, the season was

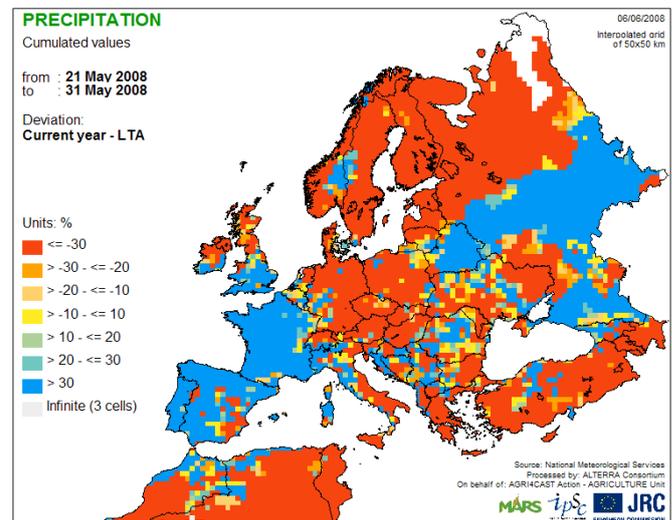
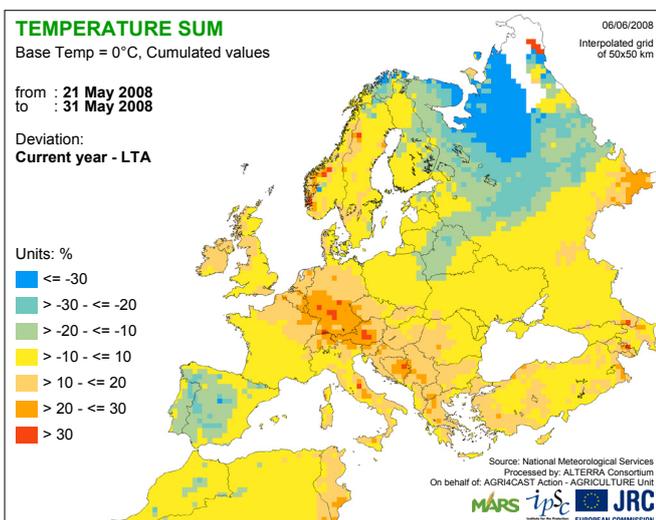
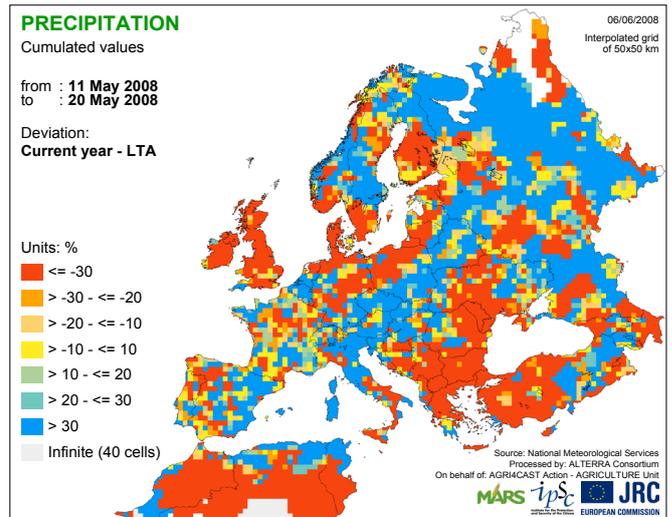
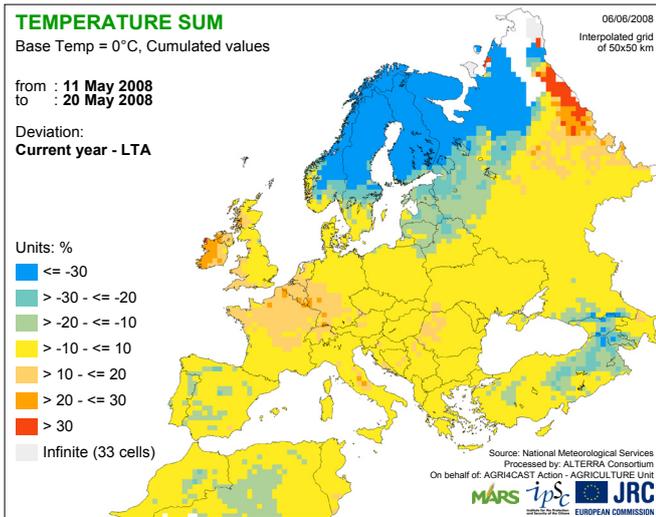
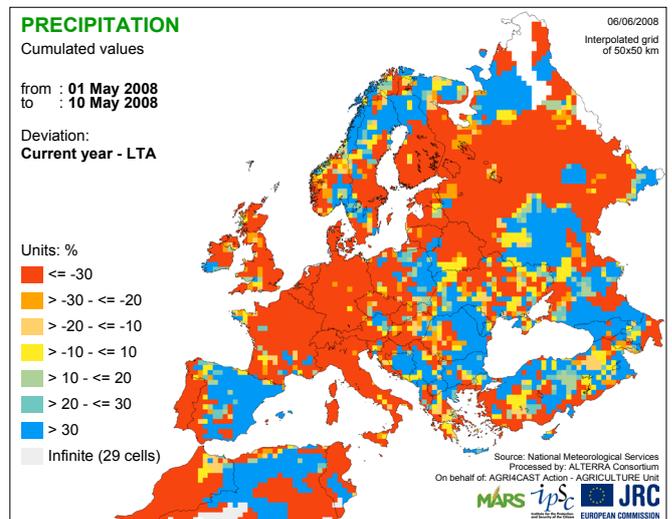
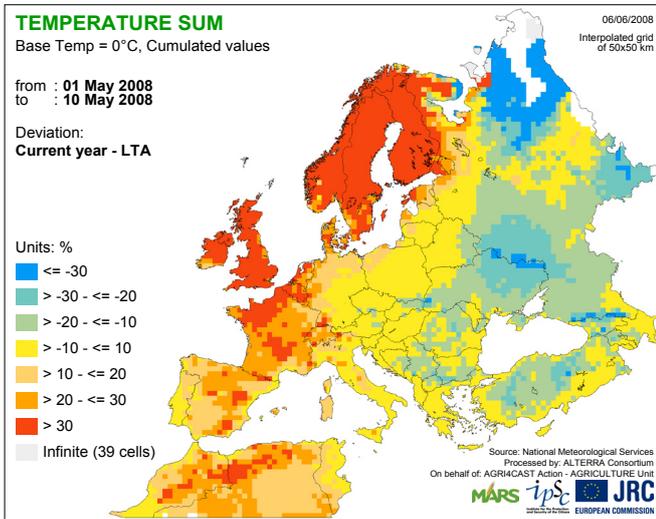
characterised by rain in early spring followed by a relatively dry period during the first half of May.

Limited precipitation and mild temperatures at the end of May in the coastal areas coincided with the start of the harvesting period and had limited impact on the final outcome of the season.

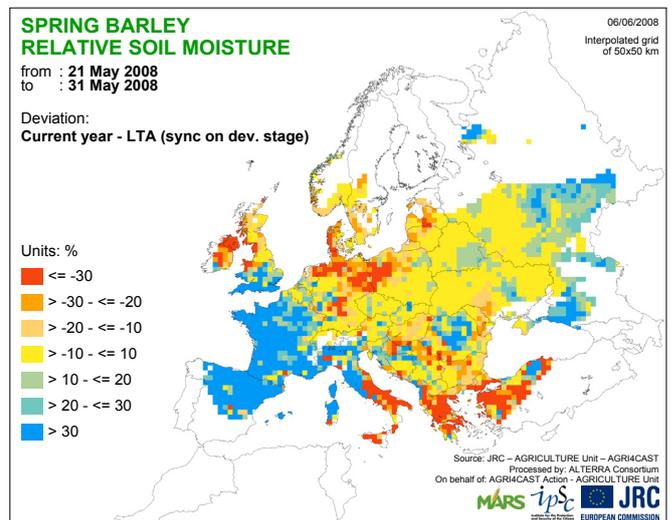
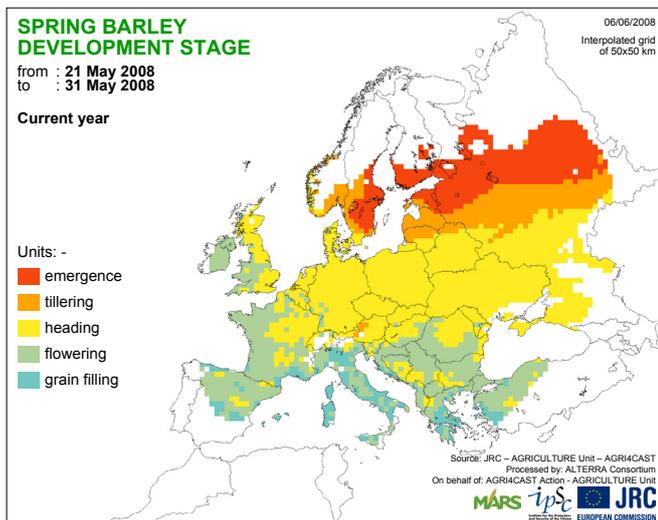
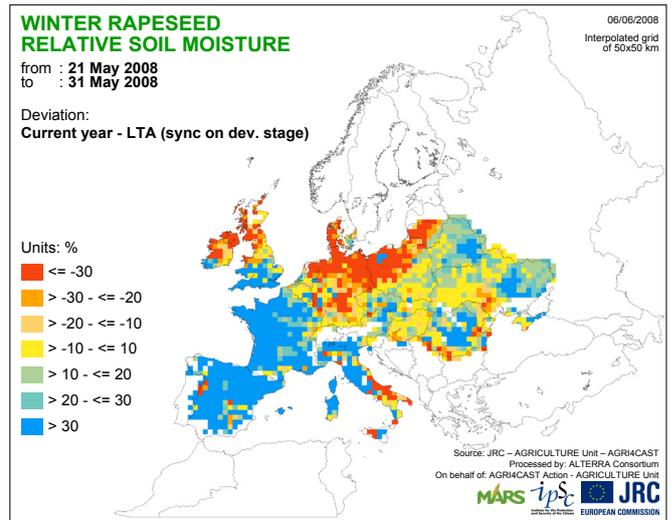
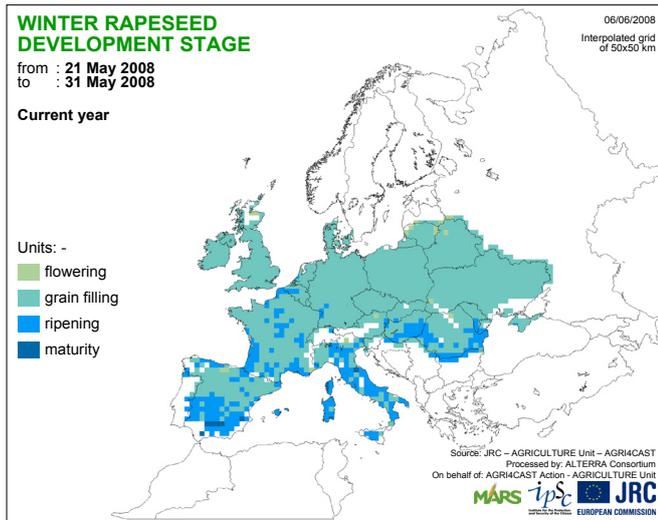
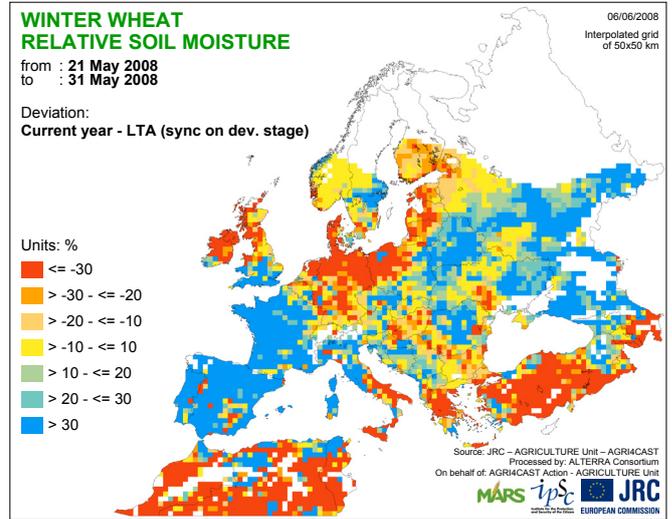
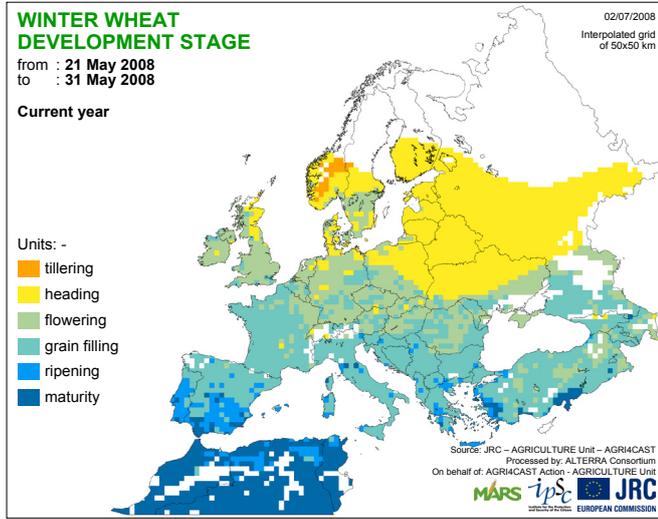
The harvest of cereals is expected to provide an average production. Similar conditions are reported over northern Tunisia and, regardless of a couple of heat waves at the end of May, the harvest is expected to be within the norm.



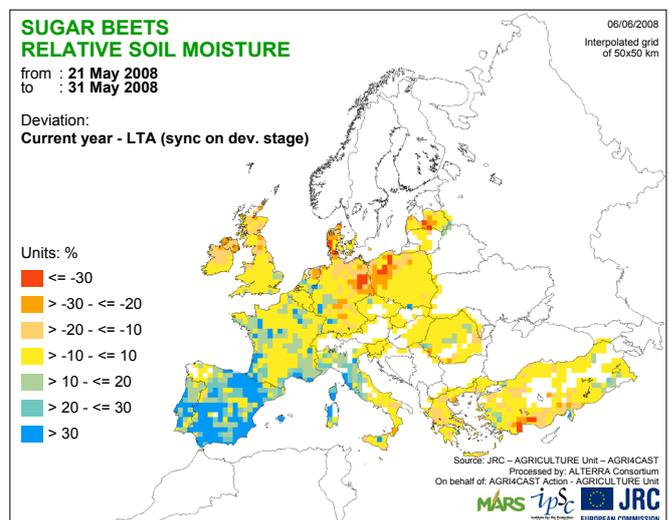
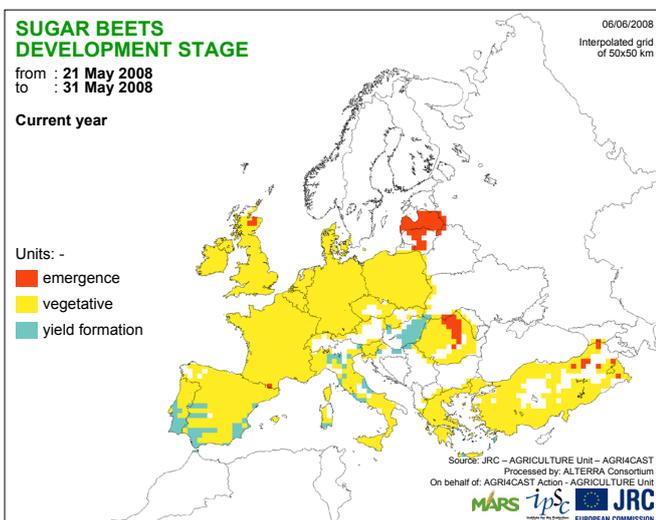
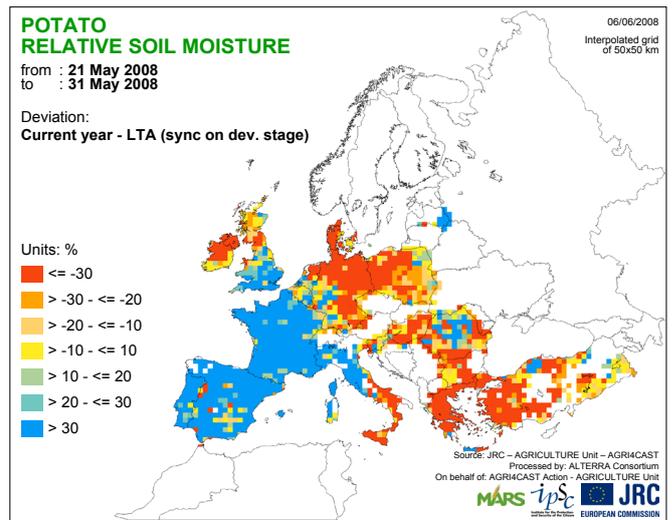
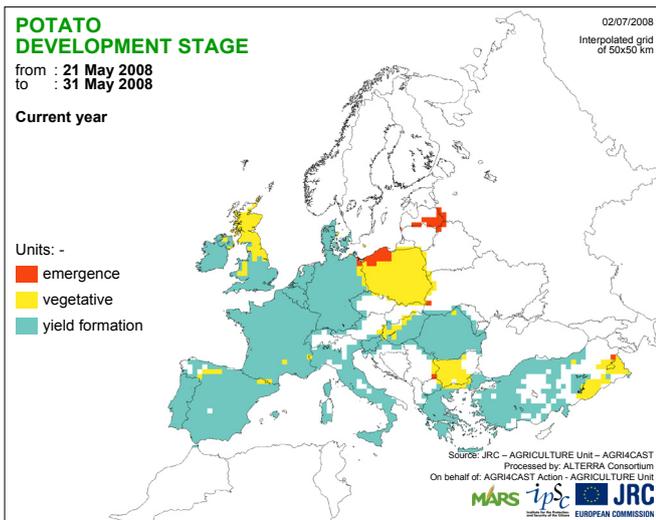
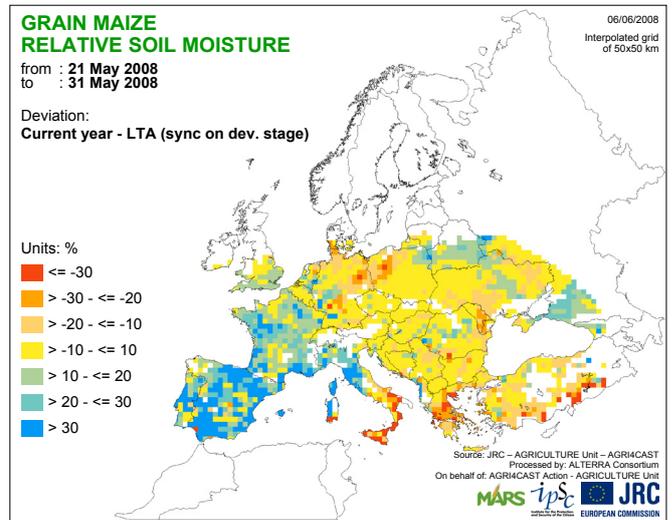
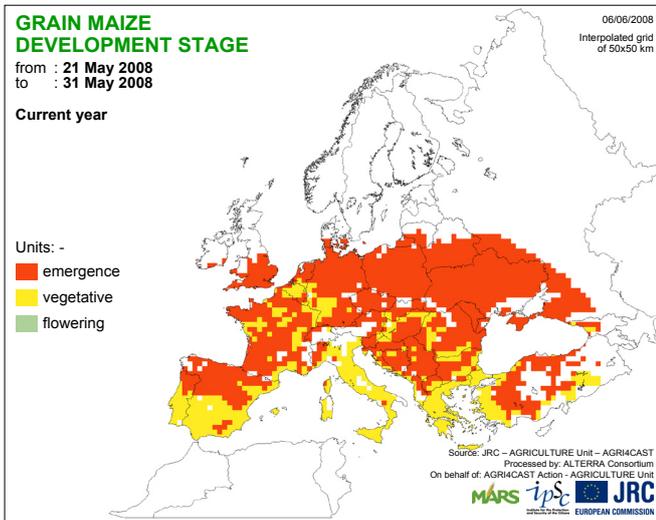
3.1. Temperature and Precipitations - 2008 compared with Long Term Average -



3.2. Crop development stage and soil moisture - wheat, rapeseed, barley -



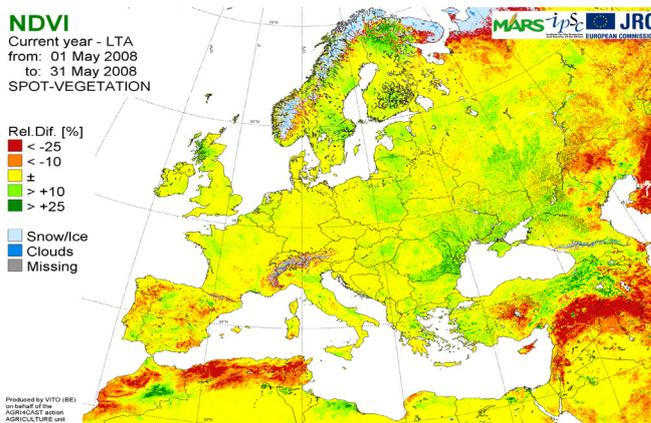
3.3. Crop development stage and soil moisture - maize, potato, sugar beet -



4. Satellite analysis: SPOT Vegetation

Favourable conditions in eastern Europe

The normalised differences vegetation index (NDVI) map shows relative differences in per cent between NDVI in 2008 and the long-term average (1998–2007) for the month of May. Wide parts of Europe are characterised by a normal development of the NDVI around the long-term average. An extensive period of rain, especially in the second part of May in Spain, northern Italy and Portugal, pushed the NDVI slightly below the average, while north European (e.g. the UK) and east European (e.g. Hungary, Poland and Romania) countries are still continuing to exhibit slightly better than usual NDVI values due to less rainfall and favourable conditions.



This favourable behaviour is confirmed by the NDVI profiles of non-irrigated arable land in the main production areas of these countries. The NDVI in Romania has reached its maximum. In particular, the eastern and southern parts are characterised by an anticipated start combined with a maximum well above the average as well as the two previous years. This allows good yield expectations (see the profile of Sud). A similar situation can be found in Hungary. The Del-Alfold profile exhibits NDVI slightly above the previous years. The NDVI profiles of Greece are approaching the end of the season. Thessalia displays an anticipated start which was then accompanied by a higher-than-average NDVI maximum. An analogous situation was observed in 2007, suggesting comparable yield expectations.

The NDVI values of the United Kingdom are just at the beginning of the maximum earlier in the season. They range

between the values of the two previous years, but are well above the average, as shown for East Anglia. This allows potential yield.

The favourable start of the season in Germany was followed by dry conditions in the north. Particularly for sandy soils as in Nordost Brandenburg (see profile), this results in early decreasing NDVI and thus possible diminishing yield expectations. On the other hand, Spain, France, northern Italy and Portugal experienced extensive rainfalls during the last decades. The NDVI exhibits average values. But in some regions, it caused a slightly anticipated NDVI decrease, which can be superimposed by lower NDVI due to clouds (see the profiles of Andalucia and Centre).

Almost the end of the crop season has been reached in Morocco. The profiles exhibit a well-developed maximum but with a shorter-than-usual crop cycle (see Tensift).

