ISSN 1831 - 9793
JRC 64878 – EUR 23298

MARS Bulletin

Crop Monitoring in Europe

Vol. 19, No. 6
Issued: 17 May 2011

Period of analysis: 1st March to 10th May 2011

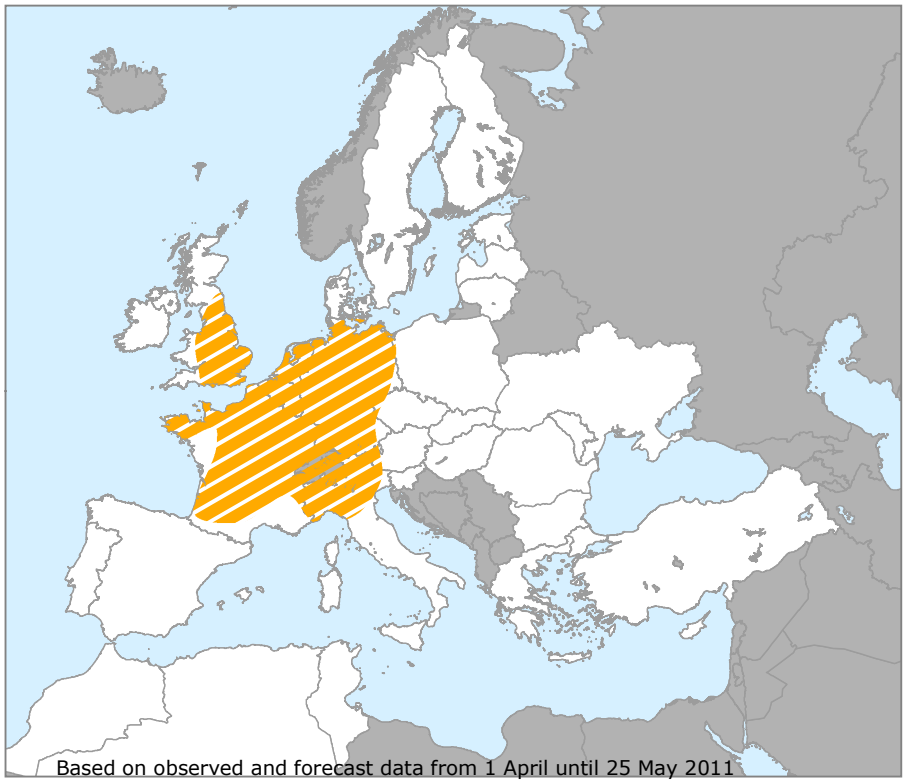
DRY SPELL HITS WESTERN EUROPE JEOPARDISING YIELD POTENTIAL

Contents

Crops	Yield t/ha				
	2010	2011	Avg 5yrs	%11/10	%11/5yrs
TOTAL CEREALS	4.96	**5.00**	4.93	+0.8	+1.5
Total Wheat	5.27	**5.39**	5.26	+2.2	+2.4
soft wheat	5.53	**5.63**	5.54	+1.9	+1.8
durum wheat	3.15	**3.19**	3.11	+1.3	+2.7
Total Barley	4.32	**4.33**	4.31	+0.1	+0.5
spring barley	3.69	**3.78**	3.74	+2.6	+1.3
winter barley	5.20	**5.17**	5.16	-0.7	+0.1
Grain maize	6.99	**6.71**	6.70	-3.9	+0.2
Other cereals	2.86	**2.87**	3.29	+0.4	+1.4
Rape seed	2.97	**2.97**	3.02	+0.1	-1.5
Potato	28.1	**30.4**	28.4	+8.2	+7.2
Sugar beets	68.0	**66.7**	66.2	-2.0	+0.7
Sunflower	1.85	**1.79**	1.73	-3.4	+3.5

Note: Yields are forecast for crops with more than 10000 ha per country; figures are rounded to 100 kg
Sources: 2006-2010 data come from EUROSTAT Eurobase (last update: 06/04/2011) and EES (last update: 14/04/2011)
2011 yields come from MARS CROP YIELD FORECASTING SYSTEM (CGMS output up to 30/04/2011)

AREAS OF CONCERN



Critical soil moisture

Data source: MARS crop yield forecasting system 17.05.2011

Highlight

Western Europe experienced two prevailing events — warm temperatures in April leading to a large GDD (growing degree days) surplus and accelerating crop development and a pronounced dry spell from March onwards leading to critical soil moisture values in the United Kingdom, the Benelux countries, France, Germany and northern Italy. Rainfall is now urgently needed to avoid any further reduction of yield potential. By contrast, the Mediterranean countries received beneficial rainfall during this period and the temperatures were quite favourable, especially in March. Winter crop yields look promising at this stage. The countries around the Black Sea reported a rather cold period and, in general, a water surplus. Crop development is normal or slightly delayed and soil moisture conditions are good throughout these countries.

At EU27 level, the yield prospects for cereals are currently comparable to both last season and the five-year average. Total cereal production is estimated at 269.6 Mt (3.5 % below the average for the last five years). This forecast could be subject to further sharp downward revision if the weather conditions do not improve.

I. Agrometeorological overview

Western Europe experienced two prevailing events — warm temperatures in April leading to a large GDD surplus and accelerating crop development and a pronounced dry spell from March onwards leading to critical soil moisture values in the United Kingdom, the Benelux countries, France, Germany and northern Italy. Rainfall is now urgently needed to avoid any further reduction of yield potential. The countries around the Black Sea reported a rather cold period and, in general, a water surplus. Crop development is normal or slightly delayed and soil moisture conditions are good throughout these countries.

At the time of writing this second bulletin of 2011, spring has now started all across Europe. The last snow melted in the first days of April, as confirmed by remote sensing observations.

March brought seasonal temperatures for most of Europe, with two sharp frosts around 7-8 and 20-22 March. A warmer than usual area developed in western and eastern Europe (France, Germany, the Czech Republic, Poland, Romania and Ukraine). The warm weather continued in April with maximum temperatures peaking unusually high in Sweden, Finland, Germany, the United Kingdom, the Benelux countries and northern Italy.

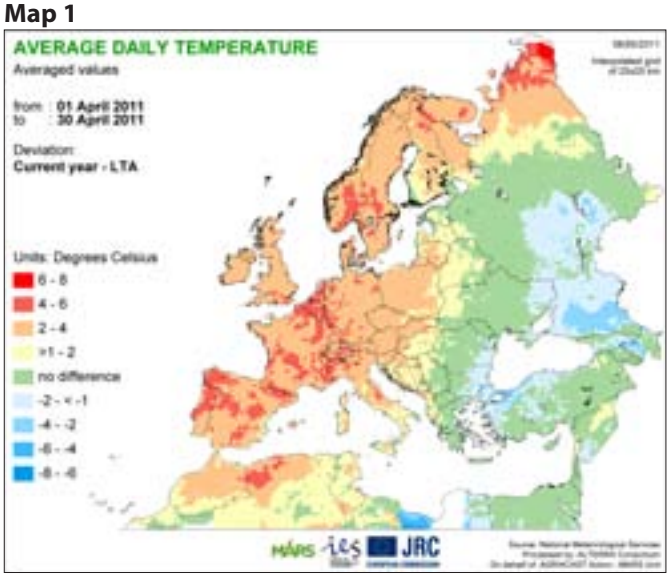
This is clear from **Map 1** showing the average daily values in April compared with the long-term average (LTA). Two distinct zones are easily recognisable — western Europe with warmer than normal temperatures and the countries around the Black Sea with normal or milder conditions in April. As a consequence, accumulated temperature values (T_{sum}) also show a gradient across Europe. **Map 2** shows T_{sum} from March until the end of April against the long-term average in absolute values. Mainly due to the warm April, cumulated temperatures since the beginning of March show a surplus of more than 20 % in France, the Benelux countries, the UK and Germany and a surplus above 40 % for Sweden and Finland. As a consequence, crop growth in these countries was accelerated. The countries around the Black Sea (Ukraine, Romania, Bulgaria, Greece and Turkey) have accumulated a moderate deficit and crop growth is partially delayed. In general, the crop cycle is advanced where T_{sum} is clearly above the LTA and delayed where T_{sum} accumulation is below it.

At the beginning of May a cold spell intersected the continent from Poland to Turkey, leading to some late frosts in central Europe. This can be seen in **Map 3** showing the accumulated temperatures and **Map 4** with the minimum temperatures indicating late frosts with a potentially negative impact on young maize seedlings. This frost was even accompanied by some snowfall in Poland.

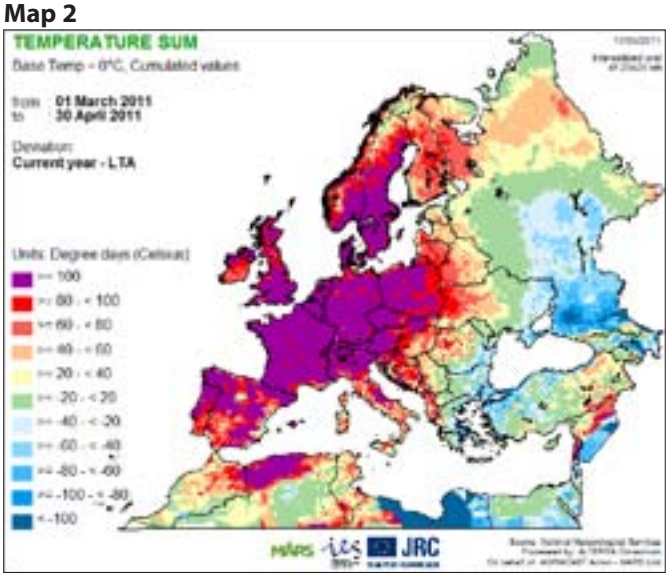
Precipitation was scarce in western Europe (the UK, Ireland, the Benelux countries, France and Germany), with the driest March on record in some parts. This dry spell intersecting western Europe continued in April, becoming more and more pronounced in France, the UK and northern Italy, whereas the situation in Germany did not worsen, at least in the eastern part of the country. **Map 5** shows the cumulated rainfall for the last two months compared with the LTA in absolute values. The pronounced water deficit is clearly shown, as is the surplus of rainfall in countries like Spain, Portugal or central and southern Italy and also in the Maghreb region. Absolute cumulated rainfall values from 1 March until 14 May are plotted in **Map 6**, showing record lows for the East of England where less than 20 mm was received. The extreme dry spell is also confirmed when comparing the cumulated precipitation for April with all the years between 1975 and 2010 and ranking them from the driest to the wettest period (see **Map 7**). For the UK the rainfall amounts constitute one of the driest periods in the database. The same holds for the Netherlands, large parts of France and northern Italy.

Translating the weather information into crop-specific soil moisture, critical soil moisture values (below the 2 standard deviation) for soft wheat are found in France, the UK, the Benelux countries, Germany and northern Italy (see **Map 8**). **Maps in the second part of this bulletin** display the current soil moisture values compared with the LTA for soft wheat

Map 1

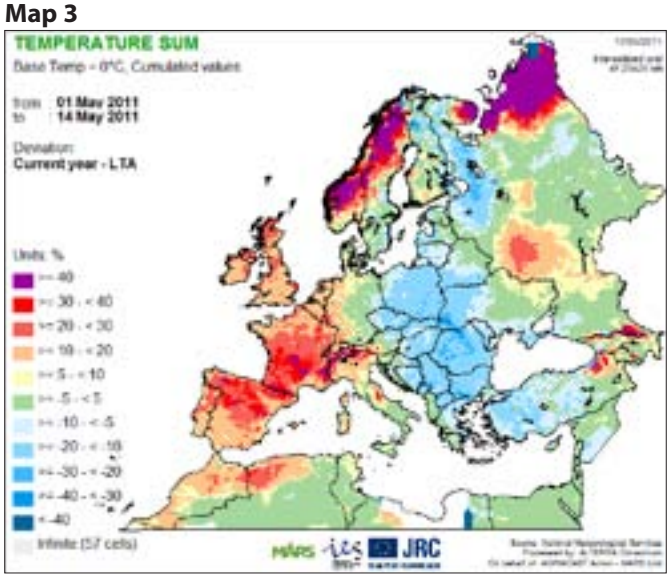


Map 2

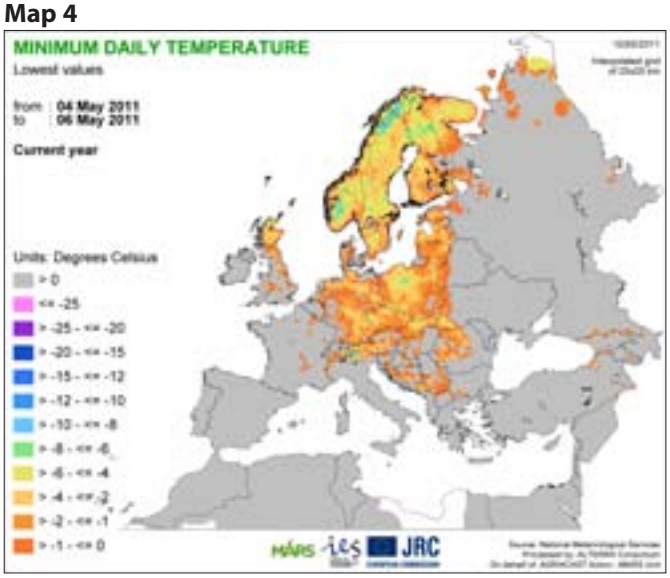


and rapeseed, confirming the alarming situation in the western European countries. Here rainfall is indispensable to ensure proper grain-filling in the coming weeks, otherwise the current yield forecasts will be revised downward sharply. The development stages and status are shown in the crop atlas maps.

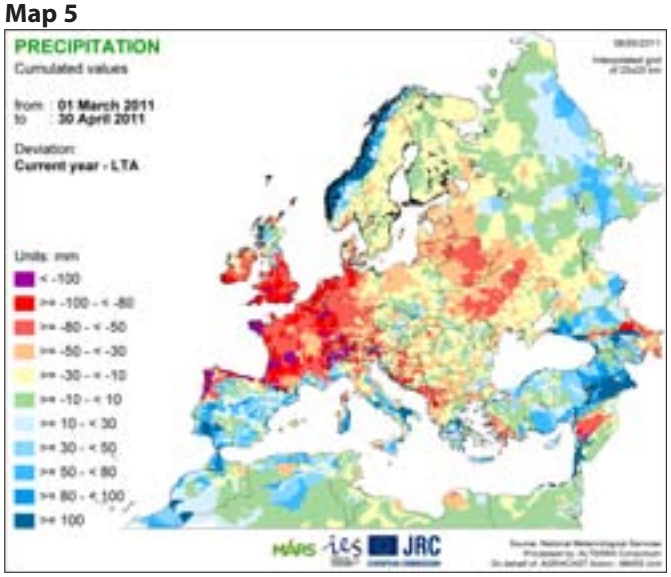
Map 3



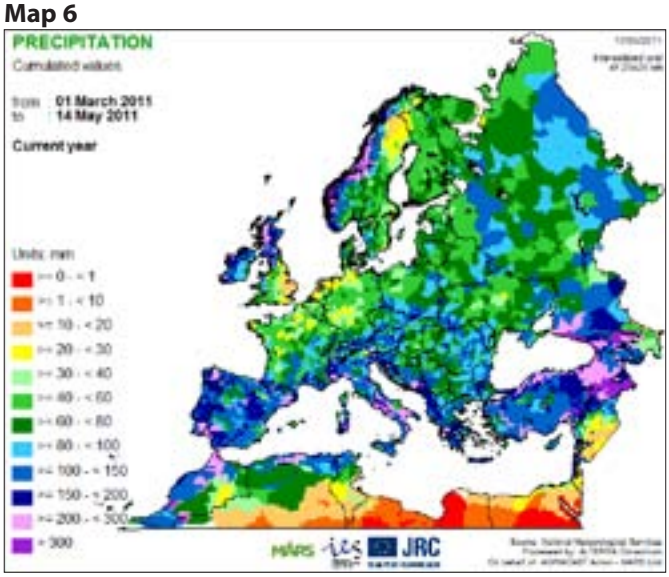
Map 4



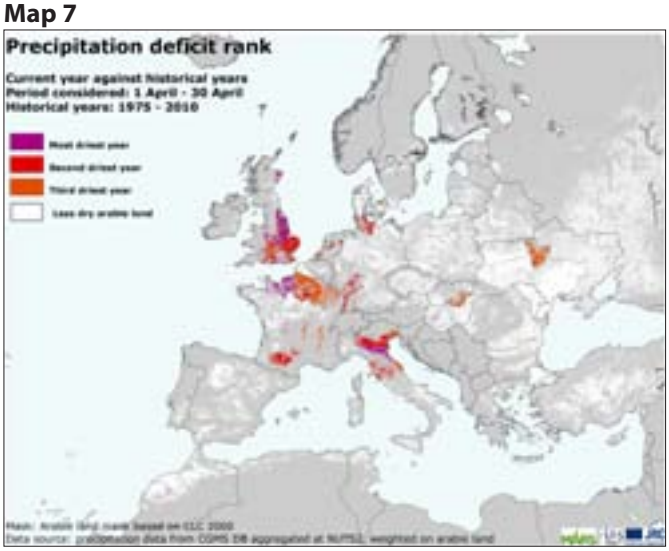
Map 5



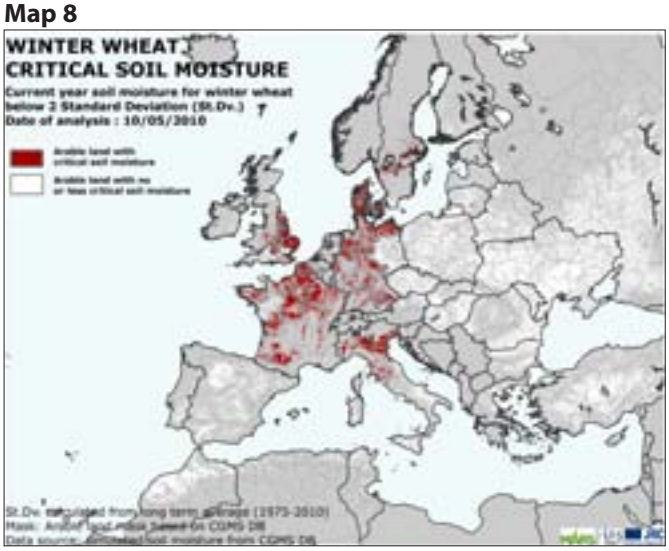
Map 6



Map 7



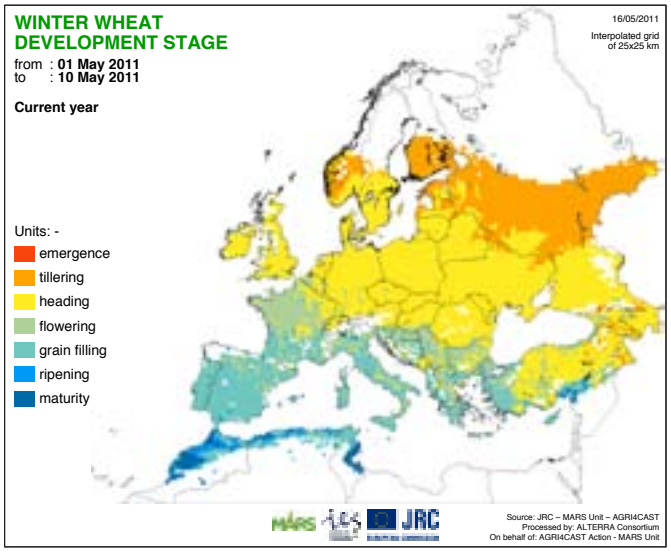
Map 8

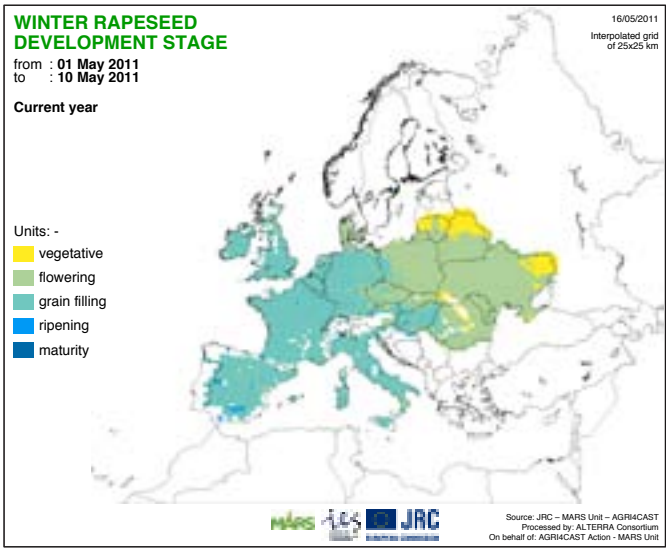


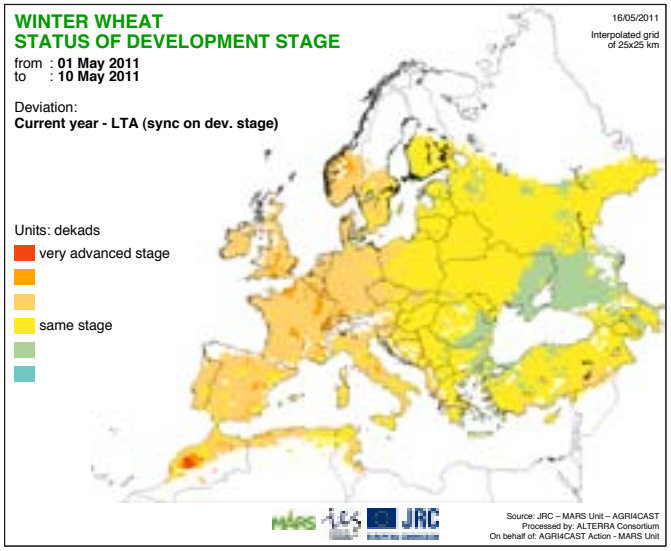
II. Crop Monitoring in Europe

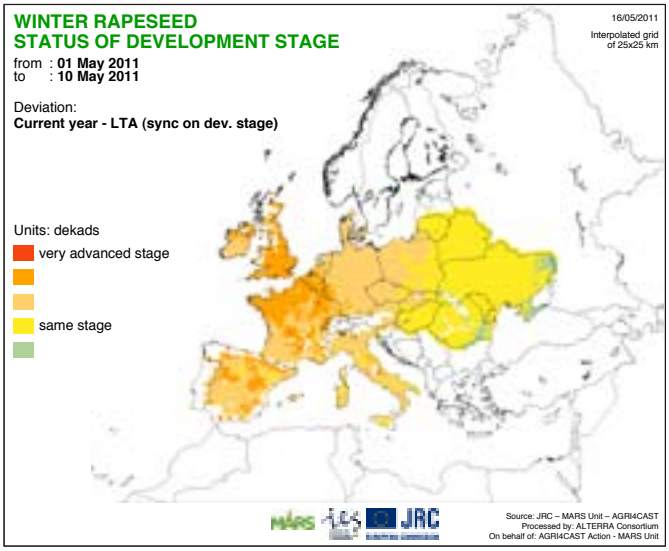
1. Crop atlas maps

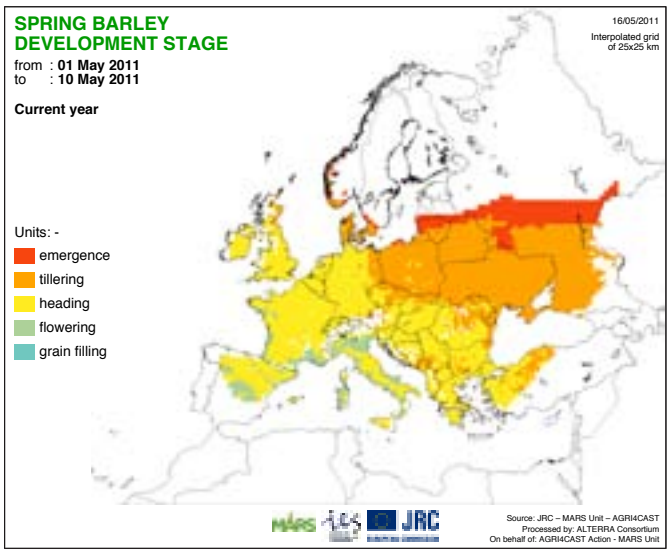
Crop development stage

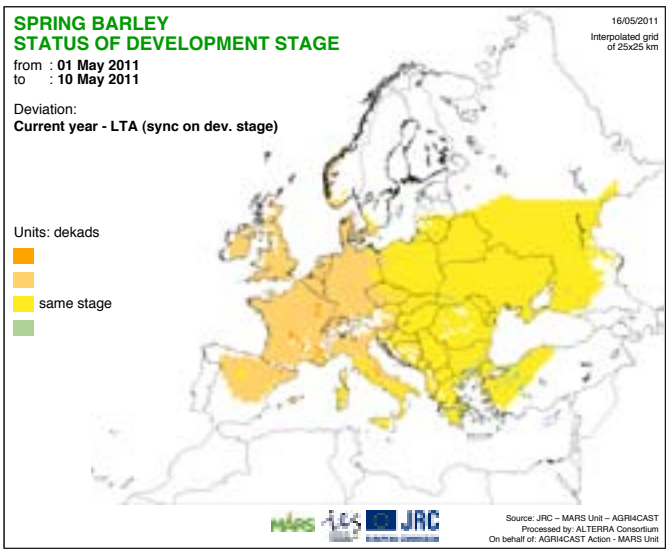




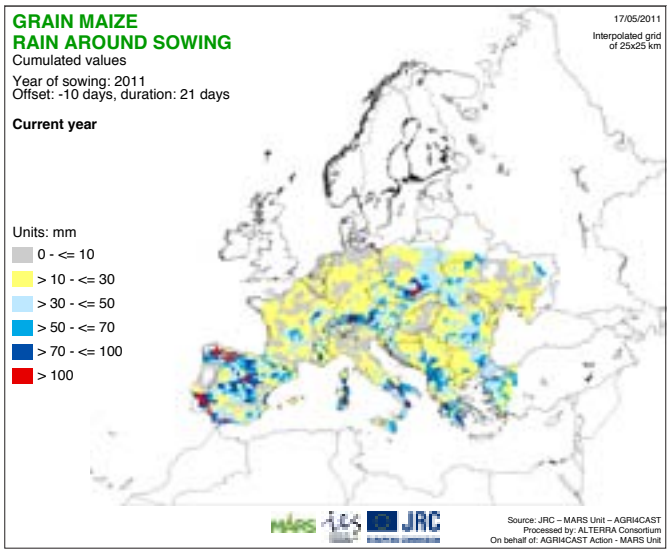


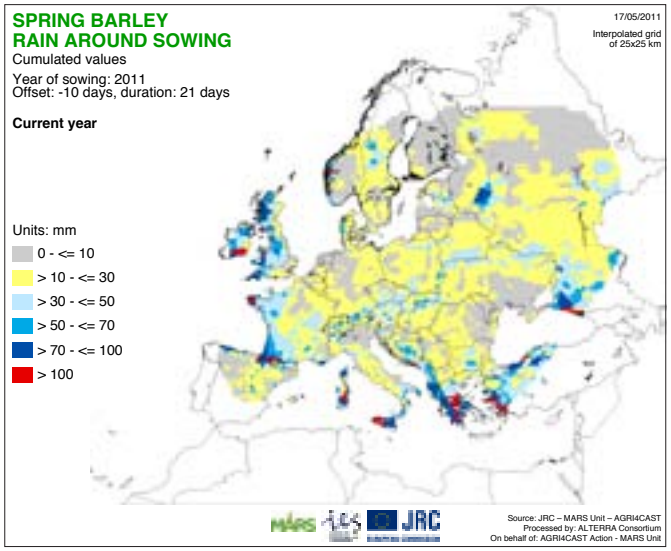


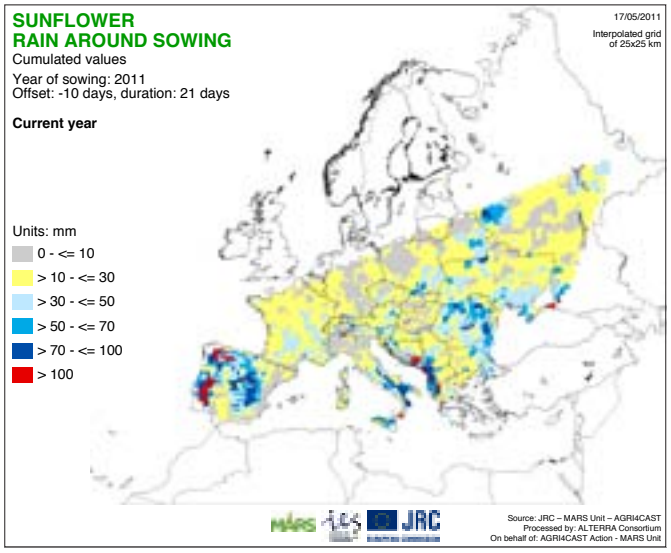




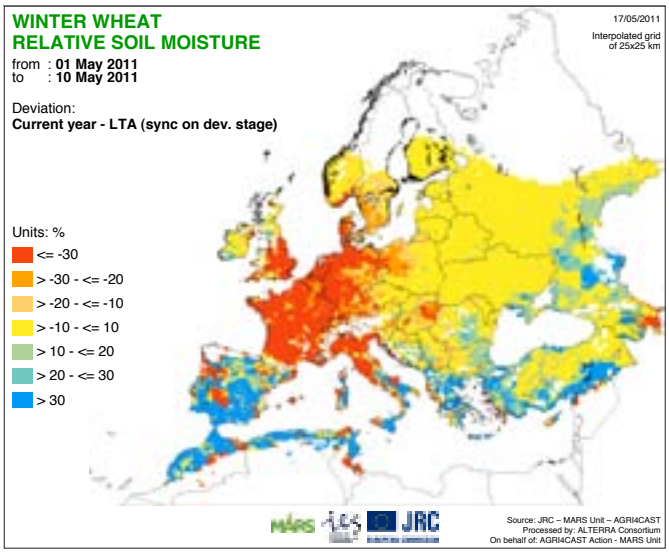
Rain around sowing

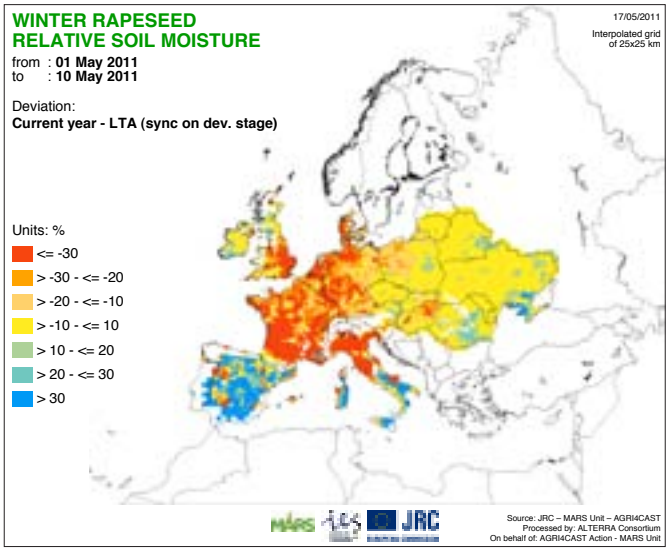


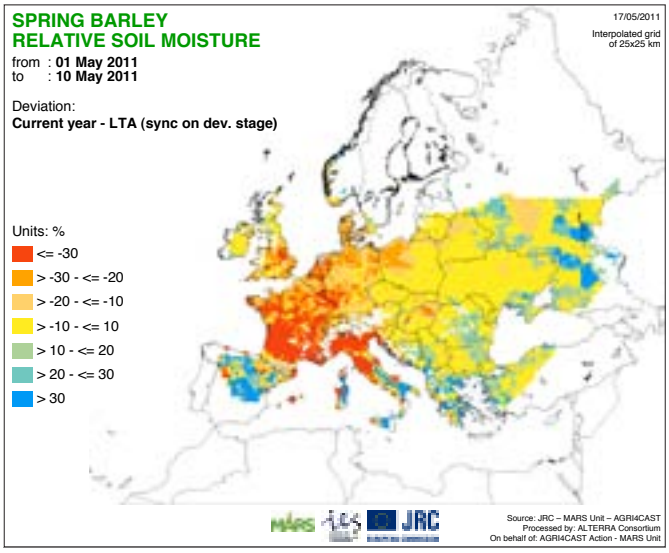




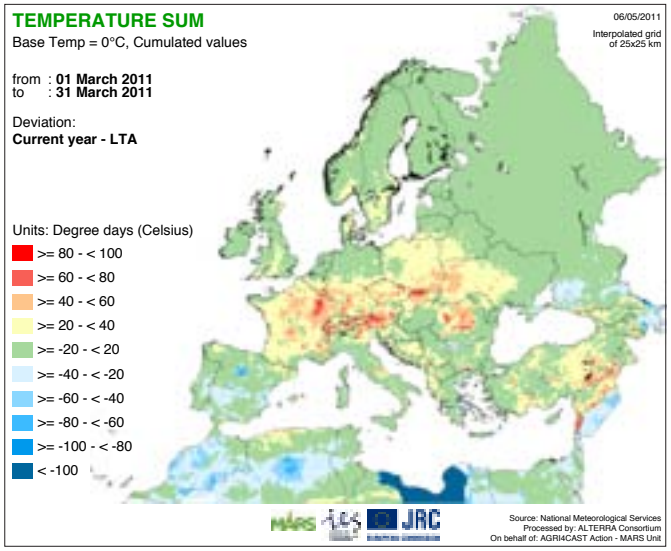
Relative soil moisture

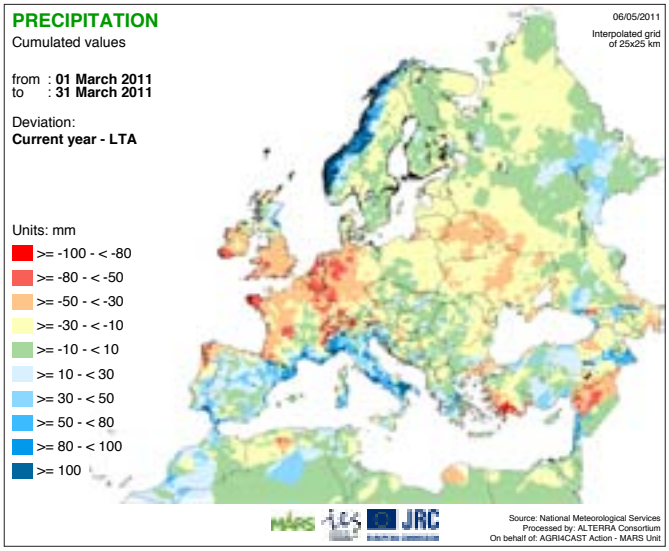


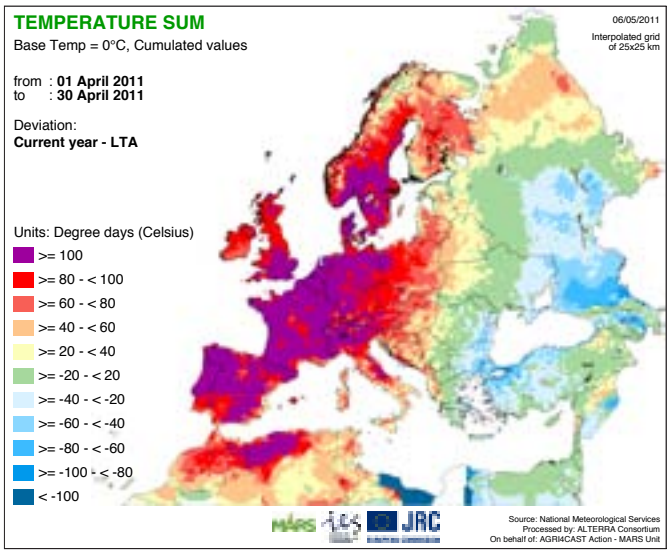


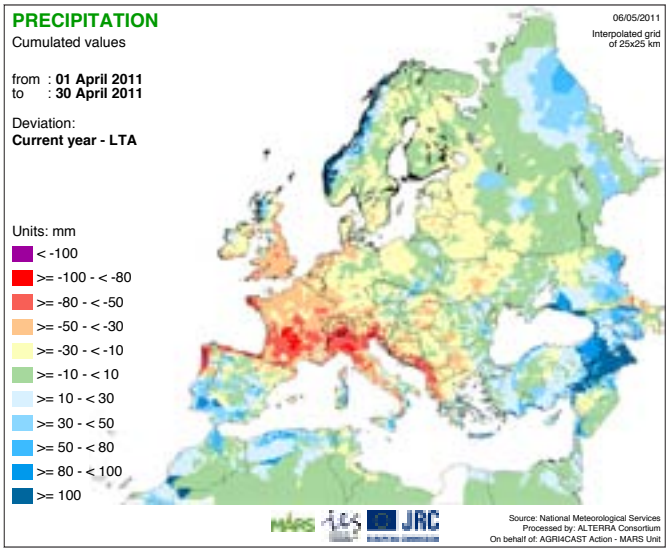


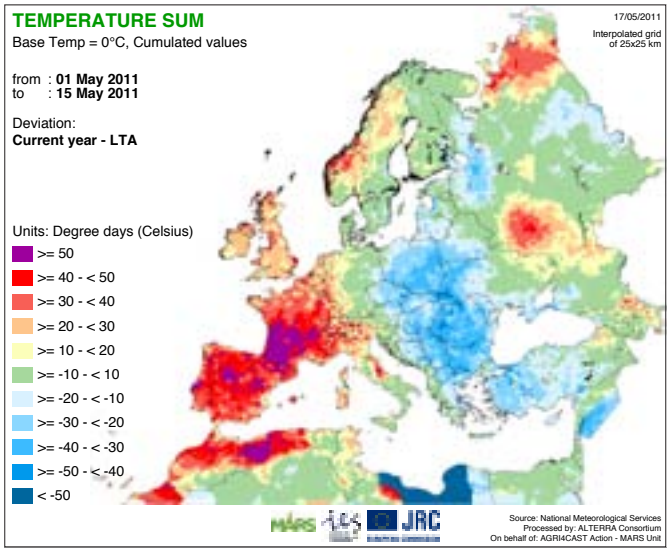
Temperature and rainfall

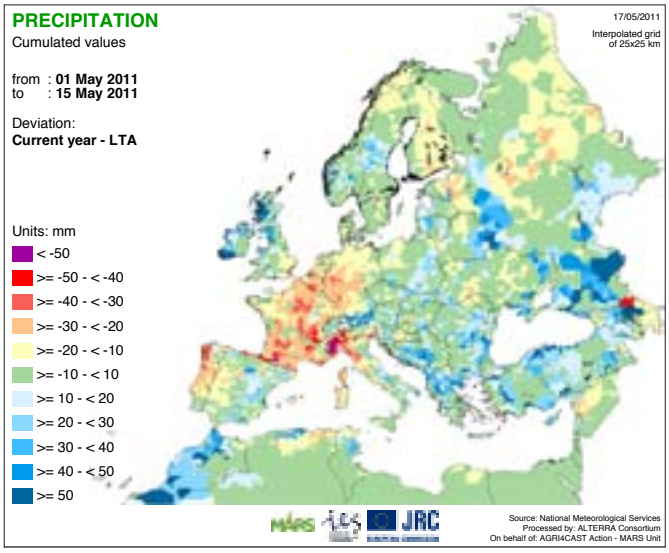






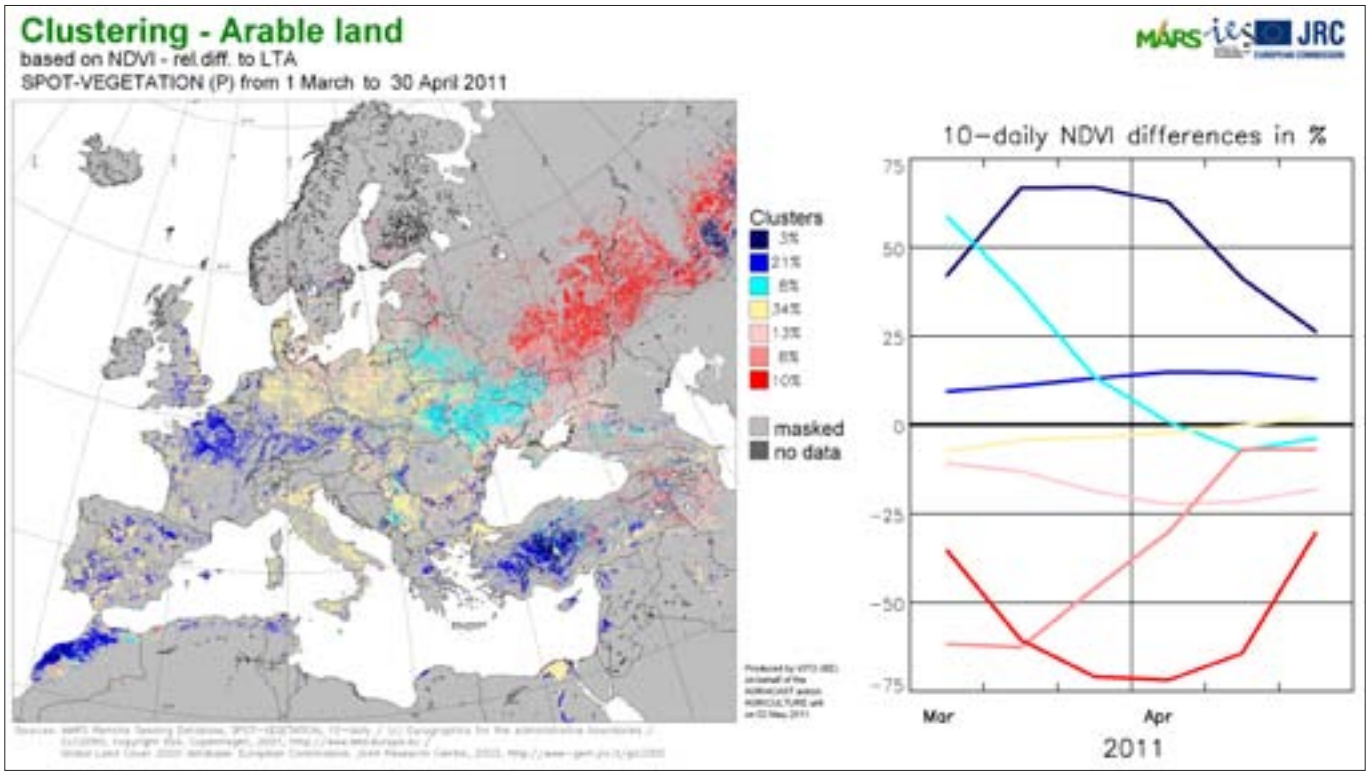






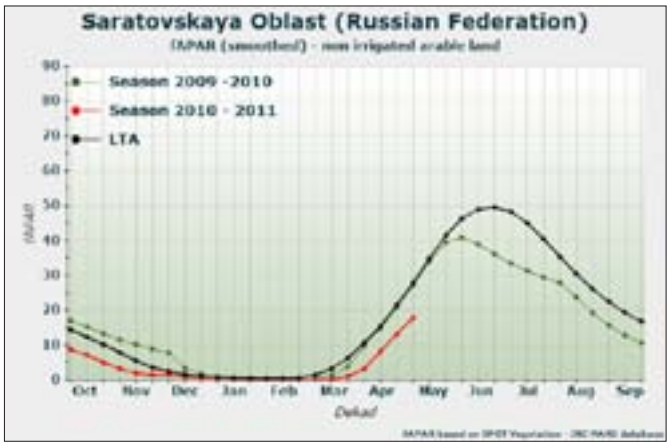
2. Remote sensing – Spot vegetation images analysis

Good to very good vegetation development across the Mediterranean basin; NDVI values below the average in Spain and southern France; good development in the Maghreb region.

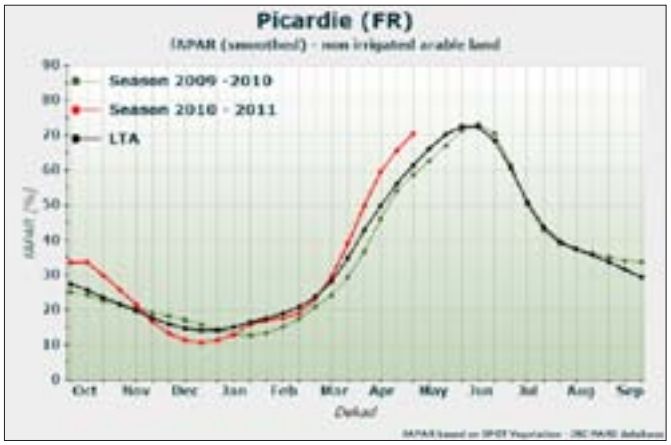


The map displays the Normalised Difference Vegetation Index (NDVI) values at the end of February for the current season against the long-term average (LTA) values for the same period. The difference is expressed in relative terms. In **Spain** the vegetation conditions are below the average. In Andalucía the reduced vegetation coverage is probably related to a change in land use for some arable land, from winter to spring crops, due to the unfavourable sowing conditions in autumn. In Aragón (see NDVI profile) and Cataluña the scarcity of winter precipitation affected the canopy growth. Similar meteorological conditions in southern **France** are responsible for slightly lower than average biomass development. An example is provided by the NDVI profile of Midi-Pyrénées. In central and northern regions the spring growth has not yet started. **Italy** faces, as usual in this period, a split situation. In the main northern agricultural districts the crops are just emerging from winter dormancy while in the main durum wheat regions (Puglia and Sicilia) they have already entered into the stem elongation phase. The NDVI signal is definitely performing better than average. Good yields can be expected for the current season. The NDVI profile of Sicilia is given as an example.

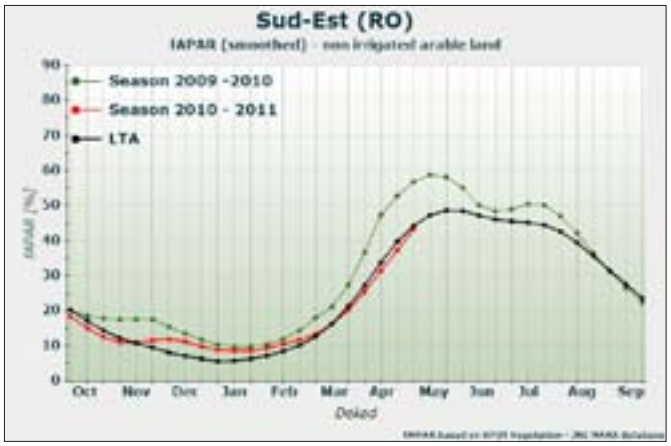
In **Germany** the NDVI map shows a reduction in biomass development. This could be driven by the low winter temperature coupled with cloud-free observations that negatively affect the current year's NDVI signal. The NDVI graph of Sachsen-Anhalt explains the general trend across all the main agricultural regions. In the **United Kingdom** the dry and cold winter cannot have affected the crops thanks to the sufficient snow coverage. The NDVI profile of Essex, influenced by the cloud-free satellite observation, shows that the spring regrowth of vegetation has not yet started. So far this year **Greece** is enjoying good biomass development although the rain rate during winter was below the average. The NDVI graph for Kentriki Makedonia highlights good canopy status for the ongoing season while the winter crop phenological cycle in Thessalia is slightly more advanced. On the southern **Black Sea** coast the mild winter temperatures gave vegetation a boost at the start of the season. The NDVI profile of the Yougoiztochen (BG) region describes the early development of the winter crops. Even better conditions with very advanced stages of development could be observed in the main **Turkish** agricultural regions. The **Maghreb** countries are facing another exceptional year. With NDVI values greatly above the average very good yields for winter crops can be expected. One of the main regions for winter crops is Centre (MA): the related NDVI graph highlights the current season's outstanding performance.


Saratovskaya Oblast (Russian Federation)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad

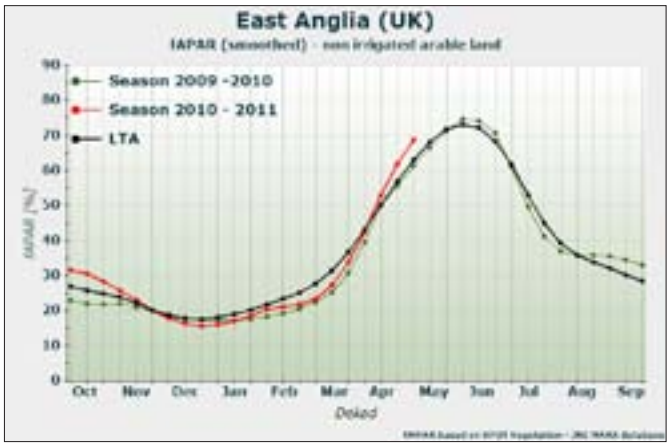

Schleswig-Holstein (DE)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad

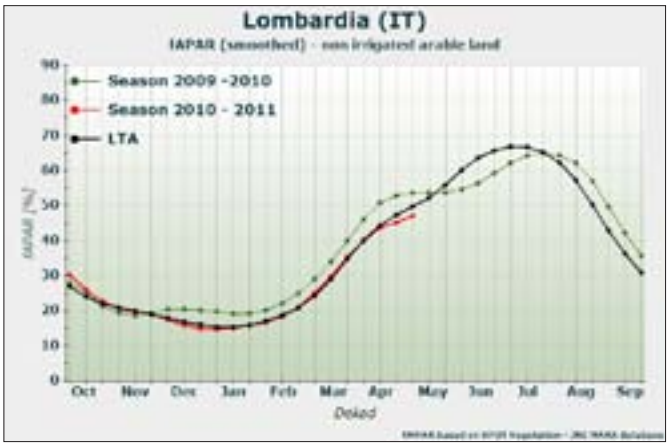

Picardie (FR)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad


Luhans'ka (Ukraine)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad


Sud-Est (RO)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad


Kirikkale (TR)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad


East Anglia (UK)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad


Lombardia (IT)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad

III. Crop yield forecast at EU-27 level *

AGRI4CAST crop yield forecasts at national level for EU-27 (17 May 2011)

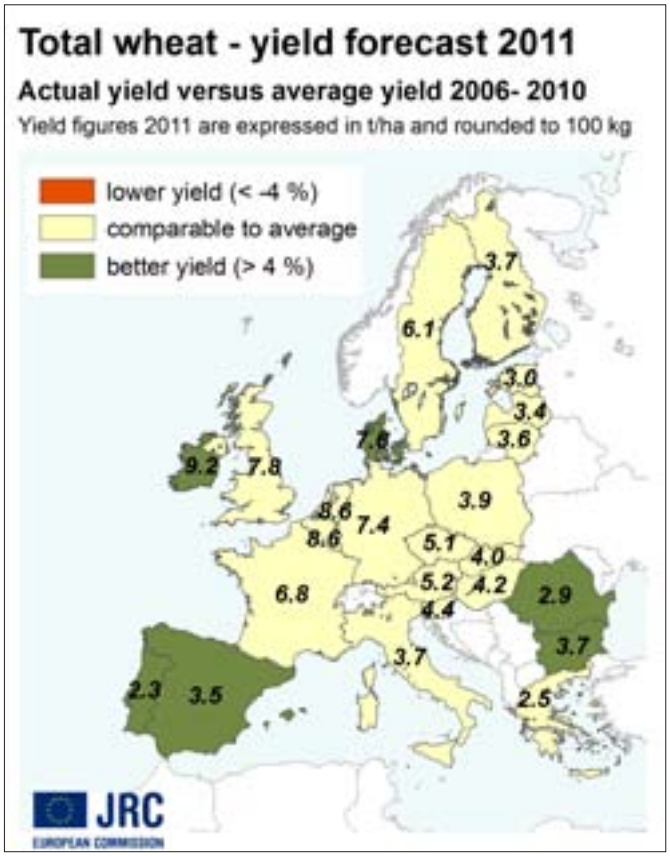
Country	TOTAL WHEAT (t/ha)					SOFT WHEAT (t/ha)					DURUM WHEAT (t/ha)				
	2010	2011	Avg 5yrs	%11/10	%11/ 5yrs	2010	2011	Avg 5yrs	%11/ 10	%11/5yrs	2010	2011	Avg 5yrs	%11/ 10	%11/ 5yrs
EU27	5.27	**5.39**	5.26	+2.2	+2.4	5.53	**5.63**	5.54	+1.9	+1.8	3.15	**3.19**	3.11	+1.3	+2.7
AT	5.01	**5.16**	5.06	+3.1	+2.0	5.04	**5.20**	5.10	+3.2	+1.9	4.50	**4.53**	4.37	+0.6	+3.7
BE	9.35	**8.62**	8.68	-7.9	-0.7	9.35	**8.62**	8.68	-7.9	-0.7	-	**-**	-	-	-
BG	3.25	**3.66**	3.26	+12.6	+12.4	3.25	**3.66**	3.26	+12.6	+12.4	-	**-**	-	-	-
CY	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
CZ	4.99	**5.09**	5.09	+2.0	+0.1	4.99	**5.09**	5.09	+2.0	+0.1	-	**-**	-	-	-
DE	7.23	**7.42**	7.46	+2.7	-0.5	7.24	**7.43**	7.47	+2.6	-0.5	5.35	**5.36**	5.48	+0.1	-2.3
DK	6.61	**7.64**	7.21	+15.5	+5.8	6.61	**7.64**	7.21	+15.5	+5.8	-	**-**	-	-	-
EE	2.71	**3.02**	2.96	+11.3	+1.9	2.71	**3.02**	2.96	+11.3	+1.9	-	**-**	-	-	-
ES	3.01	**3.49**	3.08	+15.8	+13.1	3.37	**3.74**	3.31	+11.1	+13.1	1.95	**2.70**	2.47	+38.6	+9.3
FI	3.43	**3.66**	3.71	+6.7	-1.3	3.43	**3.66**	3.71	+6.7	-1.3	-	**-**	-	-	-
FR	7.04	**6.80**	6.92	-3.3	-1.7	7.24	**6.98**	7.11	-3.6	-1.9	5.06	**4.96**	4.81	-1.9	+3.2
GR	2.59	**2.53**	2.54	-2.3	-0.2	2.91	**2.80**	2.79	-3.9	+0.3	2.49	**2.44**	2.45	-2.1	-0.5
HU	3.72	**4.20**	4.05	+12.9	+3.9	3.73	**4.21**	4.05	+12.8	+3.9	3.32	**3.75**	3.82	+12.9	-1.9
IE	8.75	**9.24**	8.71	+5.6	+6.1	8.75	**9.24**	8.71	+5.6	+6.1	-	**-**	-	-	-
IT	3.70	**3.66**	3.65	-1.1	+0.4	5.16	**5.08**	5.19	-1.6	-2.1	3.04	**2.90**	2.97	-4.7	-2.5
LT	3.31	**3.61**	3.61	+9.1	+0.0	3.31	**3.61**	3.61	+9.1	+0.0	-	**-**	-	-	-
LU	5.96	**6.17**	6.15	+3.5	+0.3	5.96	**6.17**	6.15	+3.5	+0.3	-	**-**	-	-	-
LV	3.28	**3.42**	3.43	+4.2	-0.3	3.28	**3.42**	3.43	+4.2	-0.3	-	**-**	-	-	-
MT	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
NL	8.91	**8.55**	8.52	-4.0	+0.4	8.91	**8.55**	8.52	-4.0	+0.4	-	**-**	-	-	-
PL	3.94	**3.89**	3.87	-1.2	+0.5	3.94	**3.89**	3.87	-1.2	+0.5	-	**-**	-	-	-
PT	2.75	**2.30**	2.19	-16.3	+5.0	2.75	**2.30**	2.19	-16.3	+5.0	-	**-**	-	-	-
RO	2.80	**2.88**	2.58	+2.9	+11.6	2.80	**2.88**	2.58	+2.9	+11.6	-	**-**	-	-	-
SE	5.40	**6.08**	5.86	+12.7	+3.8	5.40	**6.08**	5.86	+12.7	+3.8	-	**-**	-	-	-
SI	4.80	**4.36**	4.33	-9.1	+0.8	4.80	**4.36**	4.33	-9.1	+0.8	-	**-**	-	-	-
SK	3.47	**4.05**	4.01	+16.8	+1.0	3.46	**4.03**	4.00	+16.6	+0.8	3.58	**4.31**	4.33	+20.4	-0.3
UK	8.05	**7.84**	7.89	-2.6	-0.7	8.05	**7.84**	7.89	-2.6	-0.7	-	**-**	-	-	-

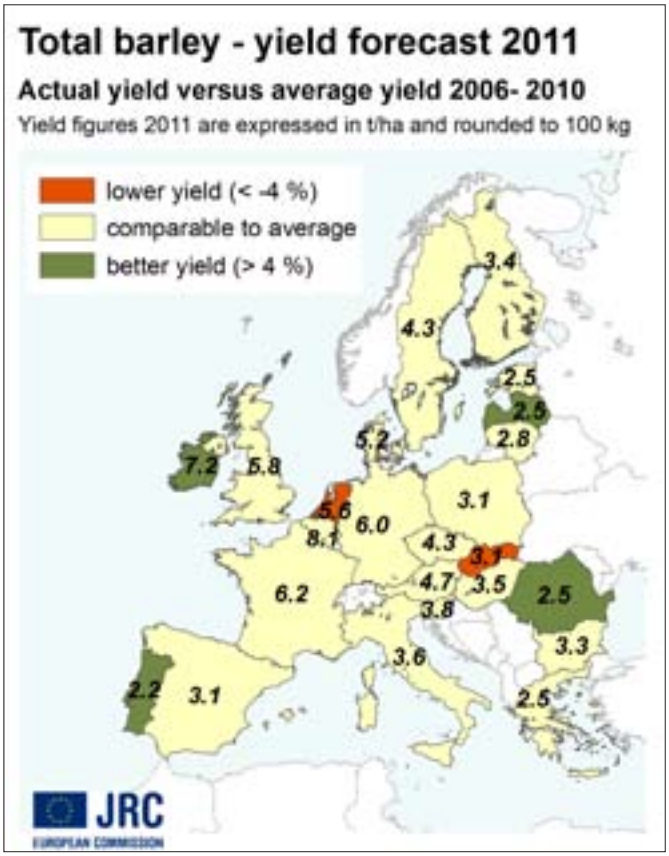
Country	TOTAL BARLEY (t/ha)					GRAIN MAIZE (t/ha)					RAPE SEED (t/ha)				
	2010	2011	Avg 5yrs	%11/10	%11/ 5yrs	2010	2011	Avg 5yrs	%11/10	%11/ 5yrs	2010	2011	Avg 5yrs	%11/10	%11/ 5yrs
EU27	4.32	**4.33**	4.31	+0.1	+0.5	6.99	**6.71**	6.70	-3.9	+0.2	2.97	**2.97**	3.02	+0.1	-1.5
AT	4.50	**4.67**	4.58	+3.7	+2.0	9.28	**10.42**	10.02	+12.3	+4.0	3.17	**3.01**	3.10	-4.9	-2.6
BE	8.25	**8.06**	8.17	-2.3	-1.3	12.12	**12.03**	11.67	-0.7	+3.1	4.54	**3.96**	4.00	-12.8	-0.9
BG	3.41	**3.30**	3.21	-3.2	+2.9	4.37	**4.38**	3.73	+0.3	+17.4	2.50	**2.45**	2.17	-1.8	+13.3
CY	1.77	**1.10**	1.26	-37.7	-12.5	-	**-**	-	-	-	-	**-**	-	-	-
CZ	4.08	**4.28**	4.12	+5.0	+3.9	6.71	**7.96**	7.21	+18.6	+10.3	2.83	**3.03**	3.00	+7.2	+1.0
DE	6.30	**6.02**	6.05	-4.4	-0.5	8.79	**9.63**	9.17	+9.5	+5.1	3.90	**3.86**	3.82	-1.1	+0.9
DK	5.12	**5.21**	5.07	+1.7	+2.7	-	**-**	-	-	-	3.48	**3.73**	3.57	+7.2	+4.5
EE	2.41	**2.51**	2.49	+4.2	+1.0	-	**-**	-	-	-	1.32	**1.49**	1.51	+12.7	-1.8
ES	2.84	**3.06**	2.94	+7.8	+3.9	9.92	**10.04**	9.94	+1.2	+0.9	1.81	**1.94**	1.74	+7.1	+11.5
FI	3.07	**3.45**	3.45	+12.3	+0.0	-	**-**	-	-	-	1.13	**1.37**	1.37	+21.2	-0.4
FR	6.38	**6.20**	6.36	-2.9	-2.5	8.92	**8.53**	9.04	-4.4	-5.7	3.27	**3.14**	3.24	-4.1	-3.2
GR	2.84	**2.46**	2.42	-13.5	+1.6	10.18	**10.04**	9.92	-1.5	+1.2	-	**-**	-	-	-
HU	3.37	**3.51**	3.60	+4.3	-2.3	6.63	**6.83**	6.21	+3.0	+10.0	2.16	**2.37**	2.32	+9.6	+1.9
IE	7.01	**7.24**	6.74	+3.2	+7.4	-	**-**	-	-	-	-	**-**	-	-	-
IT	3.62	**3.61**	3.64	-0.2	-0.8	9.11	**9.20**	9.11	+1.0	+0.9	2.48	**2.14**	2.10	-13.7	+1.9
LT	2.69	**2.75**	2.66	+2.4	+3.6	-	**-**	-	-	-	1.65	**1.77**	1.75	+7.4	+1.0
LU	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
LV	2.80	**2.53**	2.38	-9.5	+6.4	-	**-**	-	-	-	2.13	**2.04**	2.06	-4.3	-1.0
MT	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
NL	5.56	**5.64**	6.00	+1.4	-6.0	9.74	**11.91**	11.05	+22.3	+7.8	-	**-**	-	-	-
PL	3.15	**3.13**	3.08	-0.7	+1.6	5.75	**5.70**	5.70	-0.8	+0.0	2.70	**2.72**	2.77	+0.9	-1.5
PT	1.59	**2.15**	2.02	+35.4	+6.7	6.49	**6.63**	6.03	+2.2	+9.9	-	**-**	-	-	-
RO	2.54	**2.54**	2.33	+0.0	+8.9	4.06	**3.46**	3.20	-14.8	+8.2	1.83	**1.67**	1.52	-8.7	+9.8
SE	3.97	**4.31**	4.19	+8.5	+3.0	-	**-**	-	-	-	2.55	**2.89**	2.69	+13.2	+7.4
SI	4.30	**3.83**	3.82	-10.9	+0.4	8.54	**7.92**	7.63	-7.3	+3.7	-	**-**	-	-	-
SK	2.72	**3.09**	3.39	+13.4	-8.8	5.49	**6.28**	6.04	+14.4	+3.9	1.97	**2.34**	2.21	+18.5	+5.6
UK	6.00	**5.81**	5.87	-3.3	-1.1	-	**-**	-	-	-	3.50	**3.22**	3.25	-8.1	-0.9

* Note: Yields are forecast for crops with more than 10000 ha per country; figures are rounded to 100 kg
Sources: 2006-2010 data come from EUROSTAT Eurobase (last update: 06/04/2011) and EES (last update: 14/04/2011)
2011 yields come from MARS CROP YIELD FORECASTING SYSTEM (CGMS output up to 30/04/2011)

Country	SUNFLOWER (t/ha)					SUGAR BEET (t/ha)					POTATO (t/ha)				
	2010	2011	Avg 5yrs	%11/10	%11/ 5yrs	2010	2011	Avg 5yrs	%11/10	%11/ 5yrs	2010	2011	Avg 5yrs	%11/10	%11/ 5yrs
EU27	1.85	**1.79**	1.73	-3.4	+3.5	68.01	**66.66**	66.17	-2.0	+0.7	28.13	**30.44**	28.39	+8.2	+7.2
AT	2.62	**2.62**	2.60	+0.0	+0.6	69.84	**68.83**	67.62	-1.4	+1.8	30.57	**32.49**	31.12	+6.3	+4.4
BE	-	**-**	-	-	-	82.70	**77.87**	75.28	-5.8	+3.4	44.73	**46.92**	44.22	+4.9	+6.1
BG	2.10	**1.68**	1.61	-20.0	+4.6	-	**-**	-	-	-	15.60	**17.64**	15.44	+13.0	+14.2
CY	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
CZ	2.11	**2.31**	2.25	+9.3	+2.4	54.36	**58.31**	54.85	+7.3	+6.3	24.56	**26.58**	25.07	+8.2	+6.0
DE	2.11	**2.16**	2.21	+2.4	-2.4	65.01	**65.94**	63.01	+1.4	+4.7	39.98	**42.31**	41.39	+5.8	+2.2
DK	-	**-**	-	-	-	60.10	**58.57**	56.64	-2.5	+3.4	35.22	**40.94**	38.67	+16.2	+5.8
EE	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
ES	1.27	**1.12**	1.14	-12.0	-2.0	76.74	**81.42**	76.28	+6.1	+6.7	29.54	**30.76**	28.80	+4.1	+6.8
FI	-	**-**	-	-	-	37.13	**37.12**	38.24	+0.0	-2.9	26.15	**25.65**	25.30	-1.9	+1.4
FR	2.38	**2.42**	2.41	+1.7	+0.6	83.23	**79.18**	85.37	-4.9	-7.3	39.80	**41.28**	42.55	+3.7	-3.0
GR	1.72	**1.22**	1.28	-29.0	-4.5	81.25	**67.79**	70.72	-16.6	-4.1	26.89	**25.96**	25.27	-3.5	+2.7
HU	1.97	**2.45**	2.25	+24.3	+8.6	-	**-**	-	-	-	21.73	**25.78**	24.24	+18.7	+6.4
IE	-	**-**	-	-	-	-	**-**	-	-	-	30.62	**33.03**	31.44	+7.9	+5.0
IT	2.12	**2.20**	2.20	+3.7	+0.1	60.05	**56.43**	55.70	-6.0	+1.3	22.99	**25.28**	24.52	+10.0	+3.1
LT	-	**-**	-	-	-	-	**-**	-	-	-	12.99	**12.64**	12.17	-2.7	+3.9
LU	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
LV	-	**-**	-	-	-	-	**-**	-	-	-	16.03	**15.98**	15.84	-0.3	+0.9
MT	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
NL	-	**-**	-	-	-	74.37	**69.80**	71.73	-6.1	-2.7	43.59	**44.60**	43.94	+2.3	+1.5
PL	-	**-**	-	-	-	49.13	**48.19**	48.98	-1.9	-1.6	17.86	**18.18**	18.66	+1.8	-2.6
PT	0.55	**0.63**	0.61	+14.4	+2.8	-	**-**	-	-	-	13.06	**14.61**	14.60	+11.9	+0.0
RO	1.57	**1.38**	1.33	-11.8	+4.4	39.07	**35.16**	33.39	-10.0	+5.3	13.46	**14.59**	14.35	+8.4	+1.7
SE	-	**-**	-	-	-	52.08	**55.72**	53.67	+7.0	+3.8	30.08	**29.91**	29.81	-0.6	+0.3
SI	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
SK	1.81	**2.26**	2.15	+24.9	+5.4	54.52	**55.43**	53.26	+1.7	+4.1	11.45	**16.60**	15.43	+45.0	+7.5
UK	-	**-**	-	-	-	72.86	**65.88**	64.33	-9.6	+2.4	42.90	**43.10**	42.14	+0.5	+2.3

Note: Yields are forecast for crops with more than 10000 ha per country; figures are rounded to 100 kg
Sources: 2006-2010 data come from EUROSTAT Eurobase (last update: 06/04/2011) and EES (last update: 14/04/2011)
2011 yields come from MARS CROP YIELD FORECASTING SYSTEM (CGMS output up to 30/04/2011)





IV. Crop yield forecast at country level (EU-27) *

FRANCE — March and April dry and hot diminishing the yield potential of winter crops

FRANCE					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	7.2	**7**	7.1	-3.6	-1.9
durum wheat	5.1	**5**	4.8	-1.9	+3.2
winter barley	6.5	**6.2**	6.5	-4.1	-3.8
spring barley	6.1	**6.1**	6.1	+1.1	+1.0
grain maize	8.9	**8.5**	9	-4.4	-5.7
turnips (rape)	3.3	**3.1**	3.2	-4.1	-3.2
sunflower	2.4	**2.4**	2.4	+1.7	+0.6
sugar beets	83.2	**79.2**	85.4	-4.9	-7.3
potato	39.8	**41.3**	42.6	+3.7	-3.0

Winter crops are at an advanced stage of development and starting to suffer from the persistent drought. The climatic water balance — particularly in the northern half of the country — is negative. Farmers started to irrigate earlier than usual to compensate for the severe water deficit. For spring crops, the conditions around sowing were, on the whole, favourable. Nevertheless, the lack of water is leading to inhomogeneous emergence in many places and hampers efficient use of chemicals.

France faced a substantial **rainfall deficit** from 1 March to 10 May with the second lowest on record since 1975. Cumulated rainfall is far below the lower limit of the normal range of variation in most regions, with values slightly above the record lows of 1996 and/or 1997. Nevertheless, the situation along a NE/SW axis from Alsace and Rhône-Alpes to Midi-Pyrénées is a little better but still below the lowest seasonal values. In the south, the cumulated rainfall in the Méditerranée region is in the normal range of values but differs across the region: from above the long-term average in Provence-Alpes-Côte-d'Azur to slightly below the LTA in Languedoc-Roussillon and slightly below the lower limit of the seasonal range of variation in Midi-Pyrénées. The water deficit at regional level ranged from 72.8 % in Nord-Pas-de-Calais to 14.4 % in the Méditerranée region (with the Bassin Parisien, Est and Ouest regions in between with a deficit of around 65 % and a 53 % deficit in the Centre-Est region).

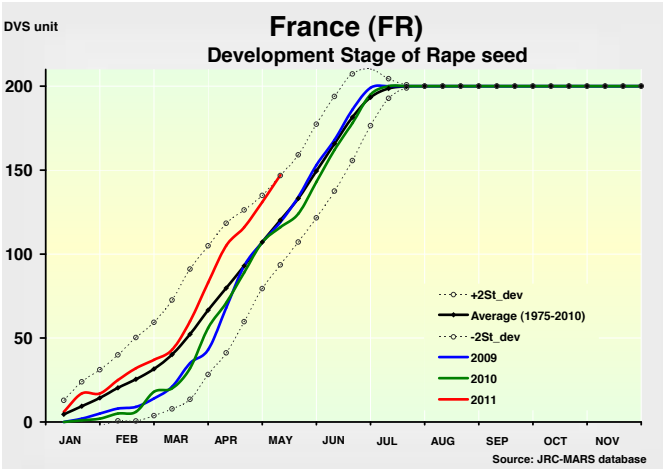
At the same time, **maximum temperatures** were much higher than usual during this period, particularly in April when values were mostly close to — or above — the upper limit of the seasonal range of variation. This situation is observed everywhere, except in the southern part of the country where the highest temperatures were recorded only during the first ten days of April. As a consequence, the cumulated active temperature shows a surplus in comparison with the LTA and the climatic water balance is extremely low.

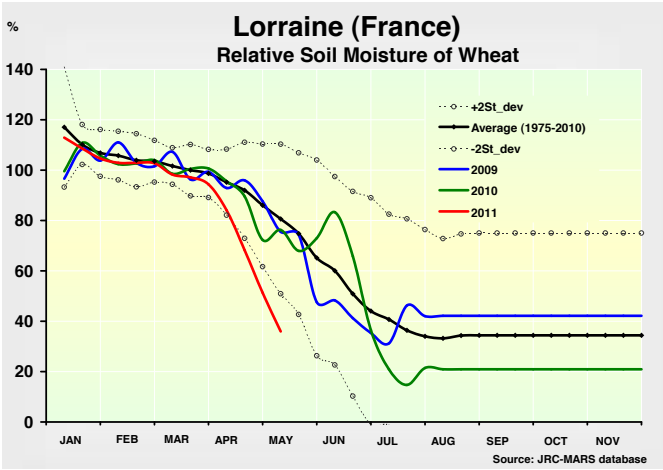
At the end of April, **winter crops** were at their maximum growth capability with substantial biomass accumulation. This was the result of both the accessibility of soil water to the plants, which generally had a well developed root system, and a relatively high leaf area index. Furthermore, the weather conditions during this period generally limited the development of pests and diseases. But the **persistent drought** in early May started to have a negative impact on the growth potential, even in the Mediterranean part of the country where the water deficit is smaller. Furthermore, the climatic conditions are not favourable at all, since cereals are at a critical stage of their development. In particular, the severe water deficit limits the efficient uptake of nutrients by the plants, particularly during the grain-filling (southern half of the country), heading (North-East) and flowering (elsewhere) stages of development. Apart from Languedoc-Roussillon and Provence-Alpes-Côte-d'Azur in the south (where mainly durum wheat is concerned), winter cereals development is in advance of the LTA (by up to 20 days in Lorraine and Champagne-Ardenne). **Rapeseed**, which is at the grain-filling stage practically everywhere, is really affected by the water deficit, particularly in the northern half of the country.

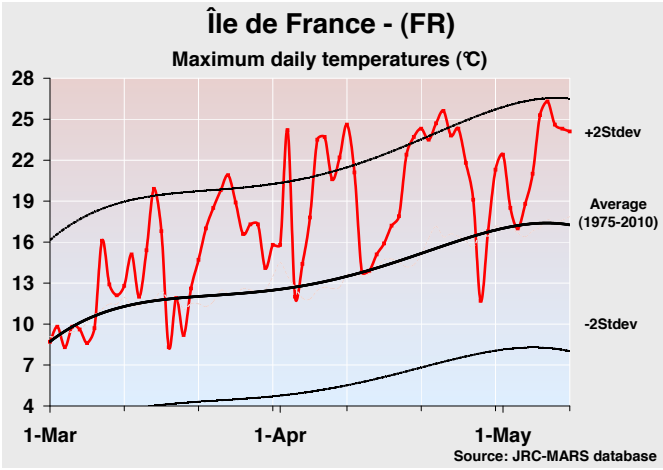
Spring barley — mostly at the heading development stage, except in the south where it is flowering already — seems to have gained some benefit from the rainfall at the end of April but is still affected by the very low soil moisture level. For the other spring crops — **grain maize, sugar beet, potato and sunflower** — conditions were generally favourable for early sowing (not later than mid-March). In fact, sowing took place from early March to the end of April, depending on the crop varieties and location. Until 15 March, the relative soil moisture was sufficient and the high temperatures during the night allowed good germination and homogeneous emergence. For sowing of late varieties, the lack of water hampered the emergence of seedlings. The water shortage also limits the efficiency of chemicals (pre- and post-emergence), which is a problem. At the other extreme, an excess of water led to reports of problems locally with **grain maize** (mainly in Champagne-Ardenne, the Rhône Valley and Provence-Alpes-Côte-d'Azur). In the north-eastern part of the country, the emergence of **sunflower** was frequently inhomogeneous, but the rain at the end of April improved the situation. For **sugar beet** the persistent drought hampers use of chemicals and farmers have started to proceed with mechanical weed control.

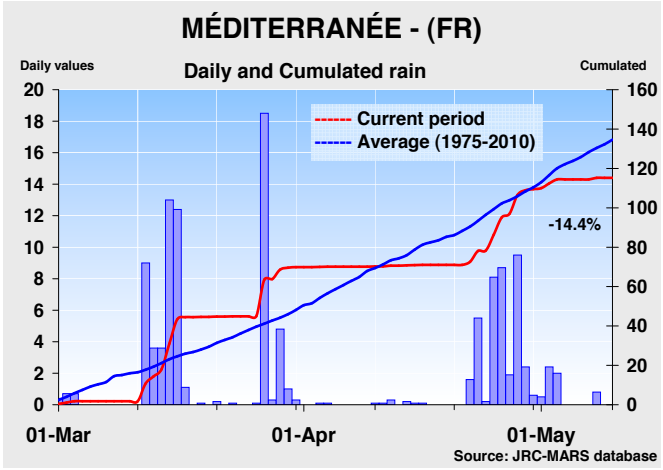
The yields were estimated using scenario analysis except for sunflower, potato, sugar beet and grain maize (for which trends were used).

* Note: Crops are taken into account only when acreage is > 10.000 ha
Sources: 2006-2010 data come from EUROSTAT Eurobase (last update: 06/04/2011) and EES (last update: 14/04/2011)
2011 yields come from MCYFS (CGMS output up to 30/04/2011).









GERMANY — Very unfavourable conditions except in the east: soft wheat forecast currently average

GERMANY					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	7.2	**7.4**	7.5	+2.6	-0.5
durum wheat	5.4	**5.4**	5.5	+0.1	-2.3
winter barley	6.7	**6.4**	6.5	-4.4	-1.8
spring barley	5	**4.9**	4.8	-1.0	+2.9
grain maize	8.8	**9.6**	9.2	+9.5	+5.1
turnips (rape)	3.9	**3.9**	3.8	-1.1	+0.9
sunflower	2.1	**2.2**	2.2	+2.4	-2.4
sugar beets	65	**65.9**	63	+1.4	+4.7
potato	40	**42.3**	41.4	+5.8	+2.2

A pronounced rainfall deficit in the western part of the country predominated the months of March and April. Temperature sums were well above average, leading to a general advance of crop development. Yields are forecast as average, but sharp declines are possible if unfavourable conditions persist. It is already unlikely that above-average yields will be obtained for winter crops.

Germany received scarce rainfall in March. As a consequence, the over-wet soils in the north of the country dried off. The dry weather continued in April and May, leading to an overall rainfall deficit with a clear gradient from west (drier) to east (wetter). Niedersachsen accumulated a deficit equivalent to 70 %, whereas Brandenburg on the same latitude accumulated a deficit of around 40 %. Between 15 and 21 May rainfall was forecast for the north-western part of the country (Niedersachsen), where it is most needed on the sandy soils. A comparable water deficit occurred in 2007 when crops were even more advanced and so were hit at a more demanding and sensitive stage than in 2011.

In March temperatures fluctuated around the long-term average, but with some harsh frosts at the beginning of the month that possibly had an impact on rapeseed. April was unusually warm (temperatures up to 28°C), leading to a surplus of accumulated temperature and accelerating crop development. At the beginning of May a cold spell intersected the country with night frosts that, locally, could have affected winter wheat at a sensitive stage. In general, cumulated solar radiation levels are high.

Winter wheat is at the heading stage across the country and around 10 days in advance, as the cold spell in May slowed down crop development. In Mecklenburg-Vorpommern, Brandenburg and Sachsen-Anhalt crop development is close to average. Soil moisture has reached critical levels almost everywhere, with the exceptions of Brandenburg, Sachsen,

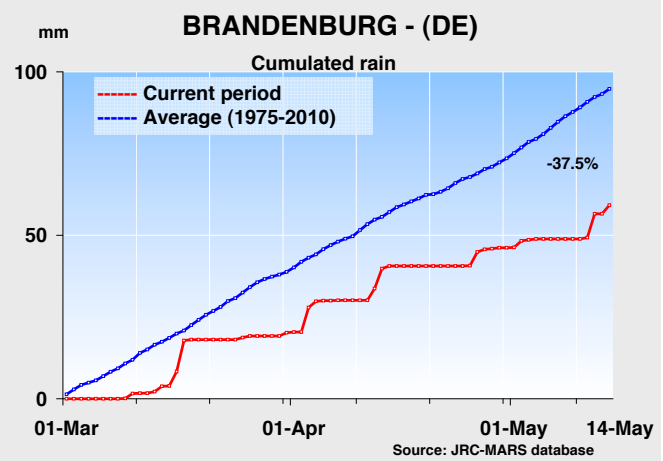
Sachsen-Anhalt, Sachsen and Thüringen. Rain will be indispensable for the grain-filling period to guarantee an average yield level. Currently soft wheat is forecast at average level, but if unfavourable conditions persist a sharp decline in yields is possible. Winter barley is advanced in the growth cycle compared with winter wheat, which was more affected by the dry spell and is forecast at below the five-year average.

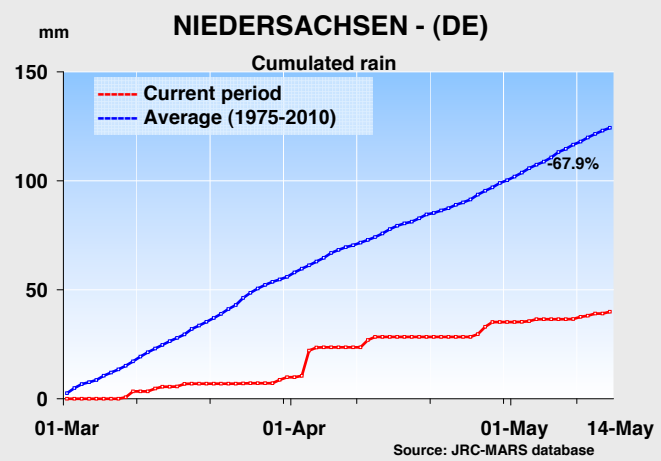
Rapeseed has entered grain-filling and at this sensitive stage water supply is urgently needed. The crops are 10 days in advance. Leaf area development in general was not optimal.

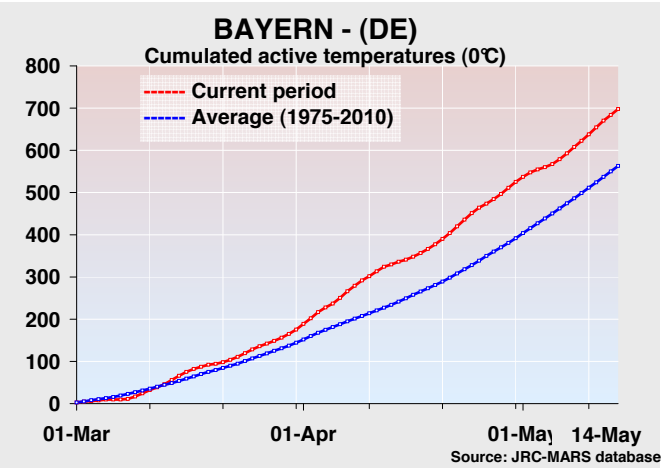
The yield (storage organs) is still simulated on average, but the crops did experience unfavourable conditions during the winter. The current forecast is kept at average level, but the next few weeks will be crucial in determining the final yield.

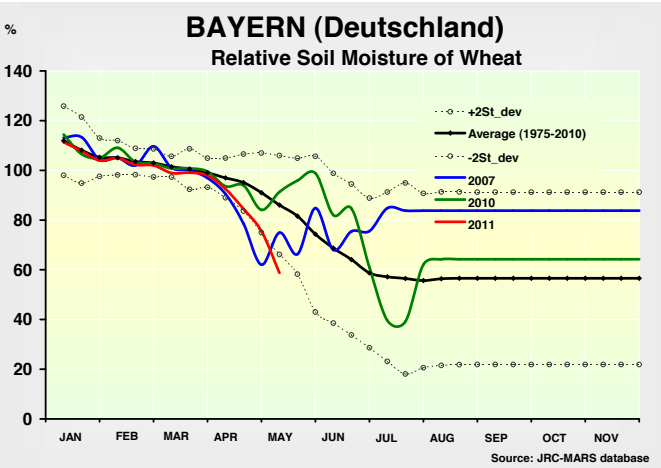
Summer crops were sown and emerged under dry conditions. However, their yield potential should not be reduced if water supply returns to average in the next few weeks.

Spring barley is now at the heading stage and, in the east, at the tilling stage with an advance of 10 days.









UNITED KINGDOM — Extremely dry conditions persisted in March and April jeopardising yield potential.

UNITED KINGDOM					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	8.1	**7.8**	7.9	-2.6	-0.7
winter barley	6.7	**6.6**	6.5	-2.0	+0.7
spring barley	5.6	**5.3**	5.4	-3.9	-1.8
sugar beets	72.9	**65.9**	64.3	-9.6	+2.4
potato	42.9	**43.1**	42.1	+0.5	+2.3

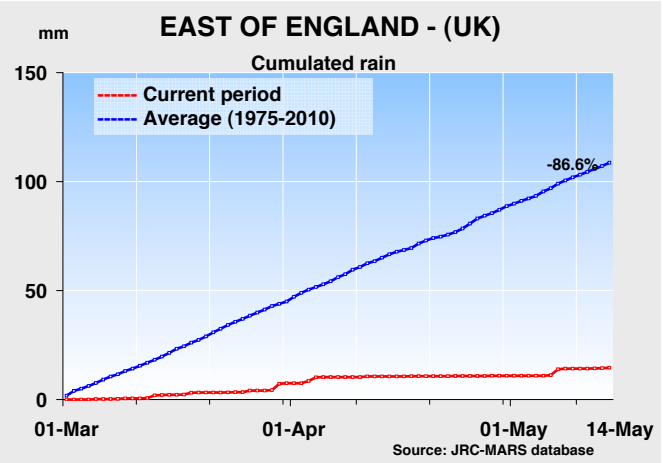
The dry spell is starting to have an effect: worrying soil moisture values in the main producing regions are leading to below-average canopy development for rapeseed and diminishing the prospects for soft wheat.

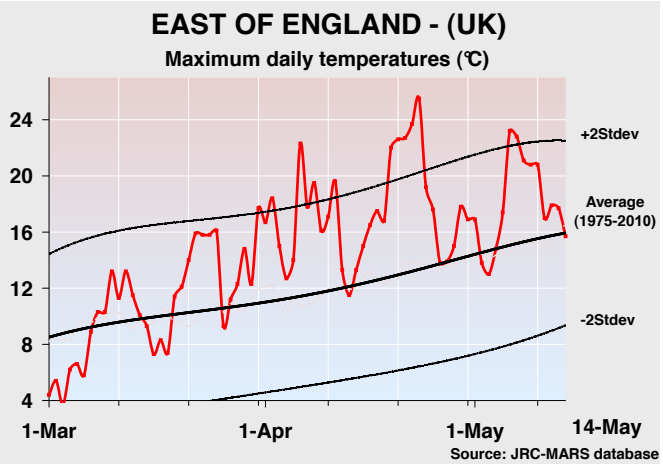
During the last two months the main agricultural areas received a severely reduced amount of precipitation, leading to a deficit in cumulated values of about 80 %. This meant absolute cumulated rainfall values in the order of 10 mm for the last two months. The first half of May remained dry in south-east and eastern England and most of Yorkshire and the Humber region.

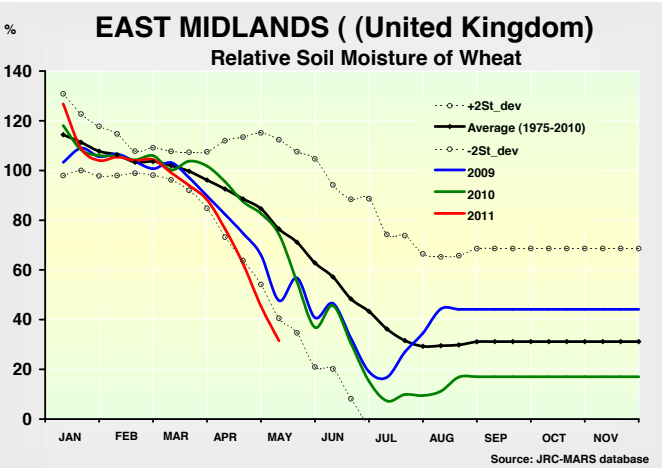
The long dry spell was accompanied by very mild temperatures at the beginning of April and a generally warmer month than usual, whereas in March temperatures had been below the long-term average.

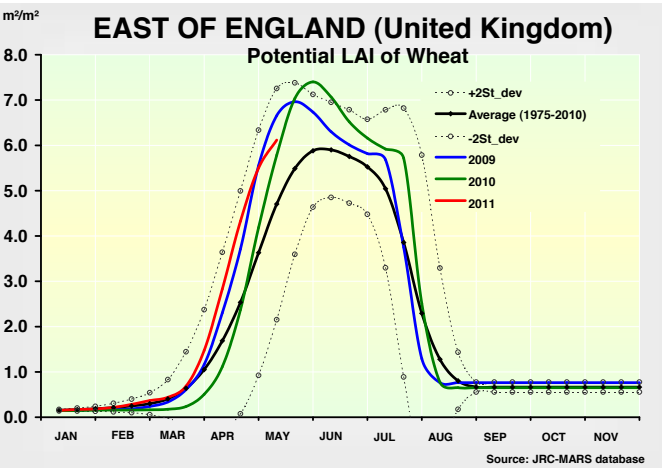
Cumulated temperatures remained close to or below average all over the country during March, but the exceptionally high temperatures during the first half of April pushed the thermal sum significantly above the LTA. This, in conjunction with high irradiance levels, took the soil moisture down to low values, causing water stress to the crops. The forecast for the period from 15 to 23 May was for no rain in the main producing areas in eastern England, further deteriorating the situation.

Winter wheat is at the heading and, in some local spots, flowering stage according to the simulation. In general, a 10 days advance is observed, due to the high temperatures in April. The reduction of soil moisture in large areas of the major soft wheat producing regions is worrying. The crop growth simulation indicates good canopy development and, so far, above-average biomass accumulation. Currently winter wheat is forecast at slightly below average, but there is room for a further sharp reduction if no rain is received in the next few weeks. Rapeseed development was accelerated from April onwards and is now at the grain-filling stage all over the country with an advance of almost 20 days. The crops benefited from the absence of rain during flowering, but now rainfall is indispensable in order to guarantee sufficient water to support the grain-filling stage. Canopy development is below average, showing signs of drought stress. The forecast is clearly below last year and also below the five-year average. A sharp decline is possible here too in the next forecast.









ITALY — Wet conditions persist in the south, but dry in the north.

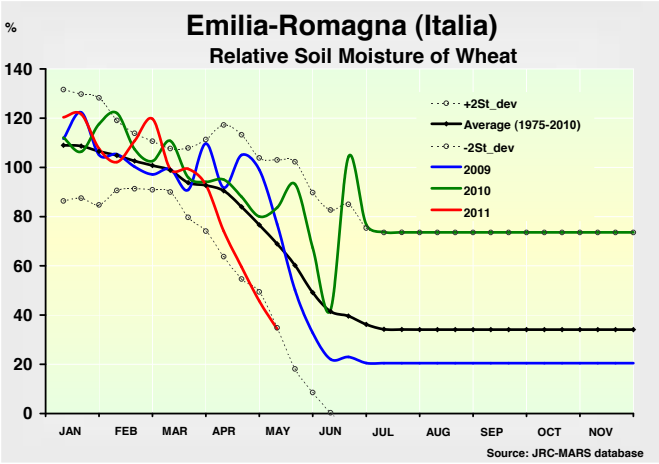
ITALY					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	5.2	**5.1**	5.2	-1.6	-2.1
durum wheat	3.0	**2.9**	3.0	-4.7	-2.5
grain maize	9.1	**9.2**	9.1	+1.0	+0.9
rapeseed	2.5	**2.1**	2.1	-13.7	+1.9
sunflower	2.1	**2.2**	2.2	+3.7	+0.1
sugar beets	60.0	**56.4**	55.7	-6.0	+1.3
potato	23.0	**25.3**	24.5	+10.0	+3.1

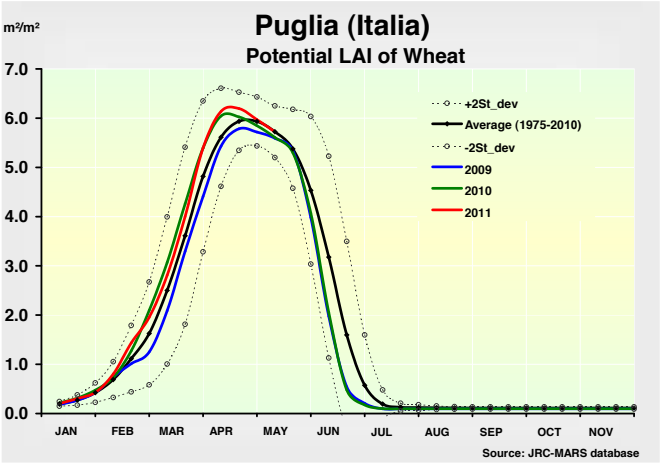
Two different climatic patterns were observed in the peninsula: dry and warm in the north but still humid in the south.

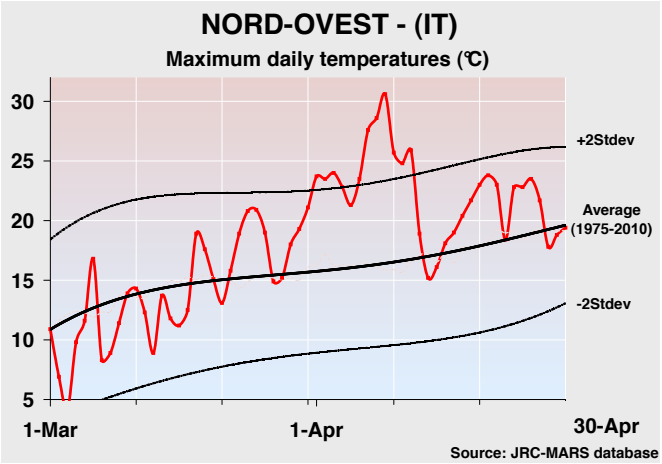
During the last two months the northern part of the country received a low amount of precipitation and this led to a deficit in cumulated values of about 15 %. However, thanks to the rainy week in mid-March, the drought in that area is less pronounced than in other Member States. By contrast, in central and southern regions the period covered by this analysis was marked by well distributed rainfall which led to wetter conditions than average (58.6 % above). Cumulated temperatures remained close to or below the average during March all over the country, while the exceptionally high temperatures recorded during the first half of April (when the daily maximum climbed to 30°C) pushed the thermal sum significantly above the LTA. This, combined with high irradiance levels in the north-west and north-east, took the soil moisture down to low values which might have caused water stress to the crops.

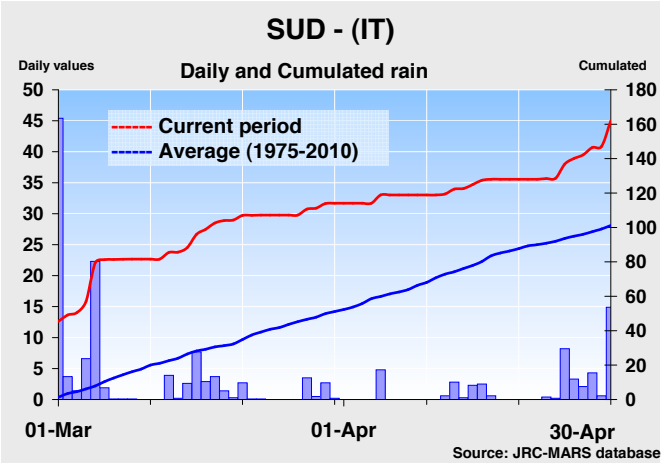
However, the rain expected in the next few days could stop the fall in the soil water content. On the other hand, in central and southern regions the radiative levels were often below average, preventing optimal crop development and reducing the potential yield of winter crops.

Winter wheat is at the flowering stage across most of the peninsula, apart from some isolated areas where the crop has already entered the grain-filling stage. In general, a slight advance is reported, due to the high temperatures in April. The fall in soil moisture in large areas of the major soft wheat producing regions is worrying, especially in light soils where the crops have already started to suffer from a water shortage, inducing premature senescence of green leaves. Thanks to mild but wet conditions, durum wheat shows optimal development in Sicily and Apulia, but in central areas conditions seem less positive, probably due to the low radiation values. Moreover, parts of these areas were exposed to negative conditions at sowing, delaying operations or even forcing re-sowing. Rapeseed benefited from the absence of heavy rainfall during flowering, but in the next few days rainfall is now really necessary in order to guarantee sufficient water to support the grain-filling stage. Maize was sown on time, seizing the opportunity offered by the good accessibility of the fields. However, now the young seedlings seem to be having difficulties emerging because of a crust formed on the surface of some soils. At any rate, if conditions get better in the next few weeks, no limitations should be seen in maize development.









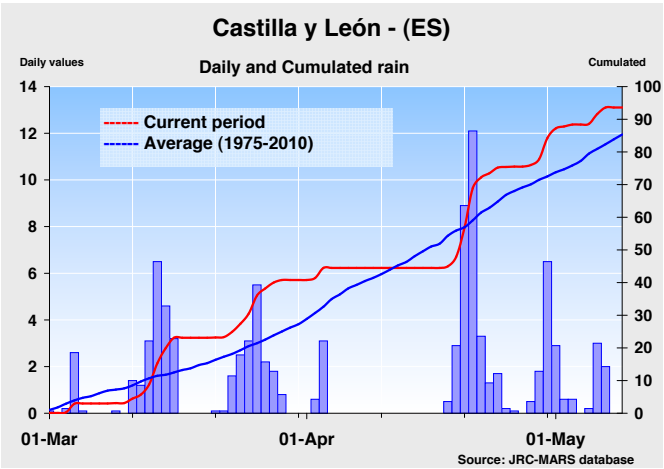
SPAIN — Rainfall and temperatures above average; good expectations for winter cereals yield.

SPAIN					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	3.4	**3.7**	3.3	+11.1	+13.1
durum wheat	2.0	**2.7**	2.5	+38.6	+9.3
winter barley	2.3	**3.0**	2.6	+29.5	+13.8
spring barley	2.9	**3.1**	3.0	+4.6	+1.7
grain maize	9.9	**10.0**	9.9	+1.2	+0.9
turnips (rape)	1.8	**1.9**	1.7	+7.1	+11.5
sunflower	1.3	**1.1**	1.1	-12.0	-2.0
sugar beets	76.7	**81.4**	76.3	+6.1	+6.7
potato	29.5	**30.8**	28.8	+4.1	+6.8

The rainfall during March and April, combined with temperatures higher than seasonal values, pushed up the winter cereals forecasts. Conditions were favourable for sowing and emergence of spring crops.

Rainfall accumulation and temperatures during March and April indicate a favourable season for winter cereals. Rainfall accumulation, especially in central and southern regions, was 40 % higher than the seasonal values and distributed over the entire period. The absence of heavy rains also favoured sowing of spring cereals, creating positive conditions for emergence.

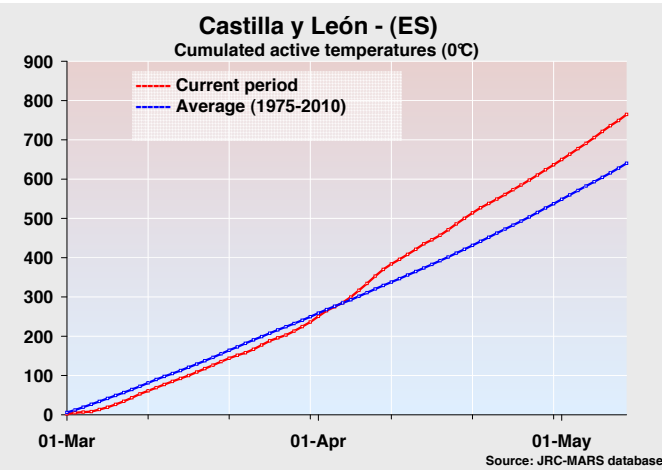
Temperatures warmer than average in the last ten days of April boosted the development of winter crops, which also put the crop development stage about one week in advance. However, the current scenario could favour development of weeds or diseases if no treatment is applied.

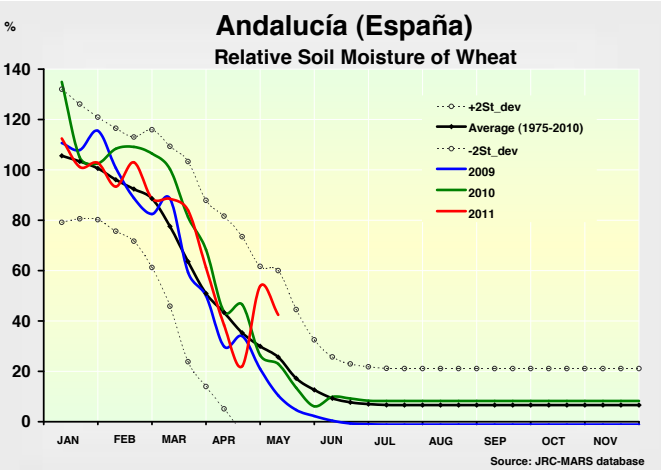


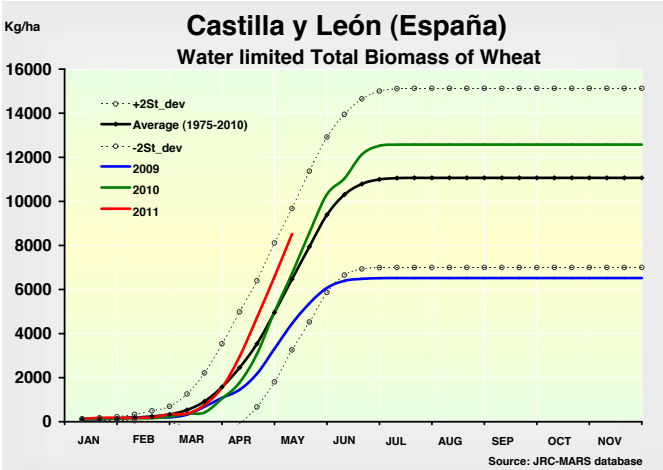
The climatic conditions in Spain over the last two months — a critical period for winter cereals — improved biomass production against the seasonal values. More specifically, in Castilla y León, temperatures during April favoured earlier development of leaf area than in the previous years, with expectations of total biomass production higher than the long-term average.

In Andalucía and Castilla La Mancha, the leaf area index of wheat at anthesis was higher than the seasonal values. Currently, durum wheat has entered the grain-filling stage and the estimated relative soil moisture suggests that water reserves are currently larger than in the average year. Spring crops (sunflower, grain maize and sugar beet) have been sown without any incident and have reached emergence in favourable conditions.

In this context, the yield expectations have been revised upwards. Durum wheat yield is set at up to 2.7 t/ha, 9 % more than the last five years, while soft wheat is expected to increase by 13 % this year against the same period. For both crops, the absence of long heat waves in the next few months will be critical to maintain these expectations. Winter barley and turnip forecasts are also higher than in recent years – by 13.8 % and 11.5 % respectively. In the case of spring barley, the positive conditions observed in Castilla y León have pushed the expected yield up to 3.1 t/ha, but this positive trend should be confirmed in the next three weeks. Other crops (sunflower, sugar beet, potato and grain maize) are already at the emergence/vegetative stage and the forecasts are based on trends in historical series.







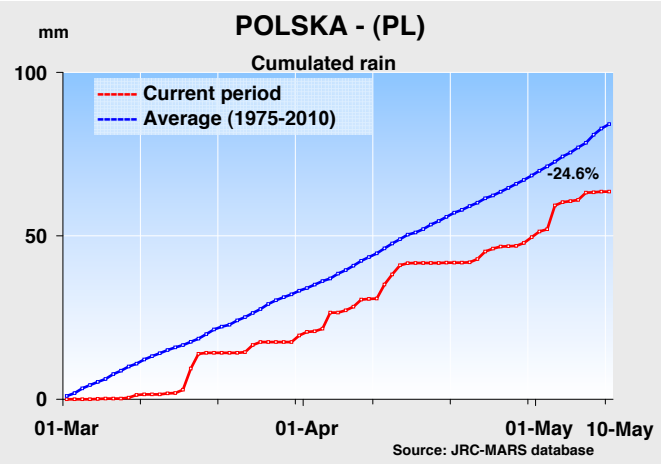
POLAND — Dry in the west; late frosts in early May.

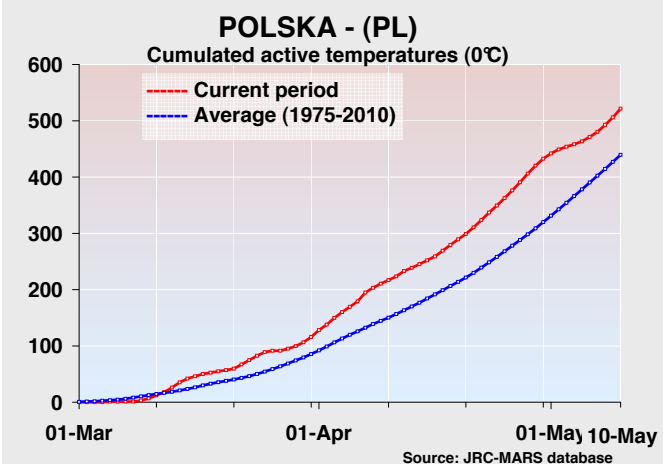
POLAND					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	3.9	**3.9**	3.9	-1.2	+0.5
winter barley	3.9	**3.8**	3.8	-1.9	+0.0
spring barley	3.0	**3.0**	2.9	+0.4	+1.7
grain maize	5.8	**5.7**	5.7	-0.8	+0.0
rapeseed	2.7	**2.7**	2.8	+0.9	-1.5
sugar beets	49.1	**48.2**	49.0	-1.9	-1.6
potato	17.9	**18.2**	18.7	+1.8	-2.6

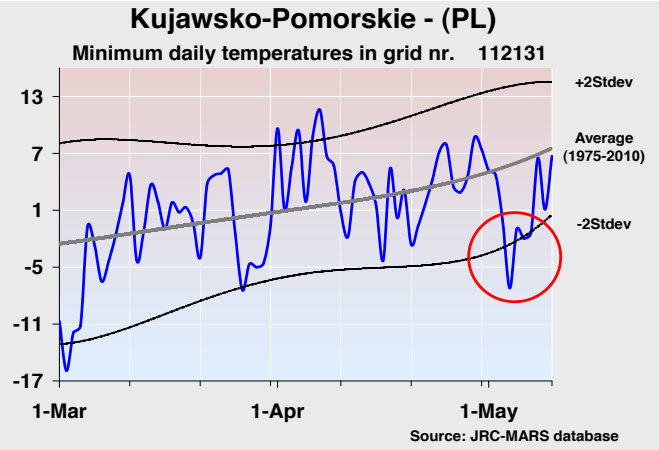
Good conditions for spring sowing but long period with scarce rainfall and frosts during oilseed rape flowering do not allow optimistic yield expectations.

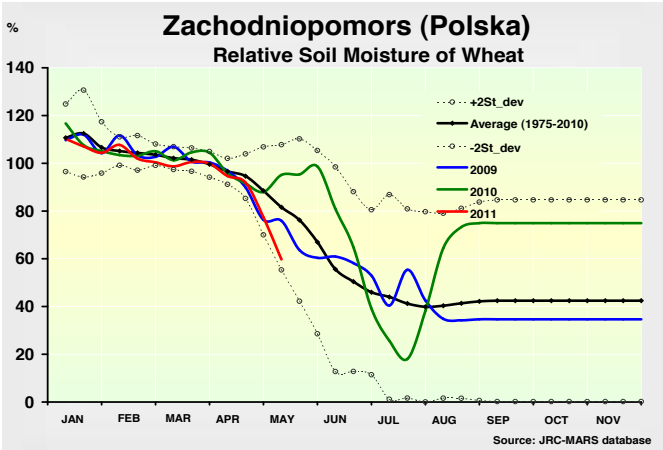
Temperatures recorded were seasonal in March, but higher than usual in April. In the north-western part of the country, the maximum average daily temperature exceeded the LTA value by over 4°C. Cumulated active temperatures (Tbase = 0°C) in March were also slightly higher than usual. In April, north-western Poland was at least 80 GDD warmer than usual, with eastern areas over 40 GDD warmer. The last ten days of April were very warm but were followed by a very cold start to May all over the country. In some areas of Kujawsko-Pomorskie minimum temperatures fell to below -7°C and could have injured young seedlings of sugar beet and early sown grain maize and made re-sowing necessary. This could also have had an impact on the yield of oilseed rape, which was just flowering. This negative effect could have been intensified by the continuous rainfall deficit recorded in the period covered by this analysis. Since 1 March large areas in western and north-western Poland (Zachodniopomorskie, Wielkopolskie and Kujawsko-Pomorskie) recorded scarce precipitation, in April almost two times lower than usual. The cumulative water balance (CWB) for the whole country showed a deficit of 40 mm compared with the average value.

After delays in March caused by the long winter, the development stage of winter crops accelerated in April. By the end of April crops were about one week in advance on the average year. The cold spell in May then slowed down crop growth. Sugar beet development is slightly advanced in the west of Poland and at the same stage as usual in the centre and the east. Soil water supplies for winter wheat were mostly in the average seasonal range, but in the western areas water deficits were observed in the light soils. In Zachodnio-Pomorskie relative soil moisture under oilseed rape was decreasing perilously and was lower than the LTA and than in the last two years by the end of the period.









BENELUX COUNTRIES

BELGIUM — Urgent need for water.

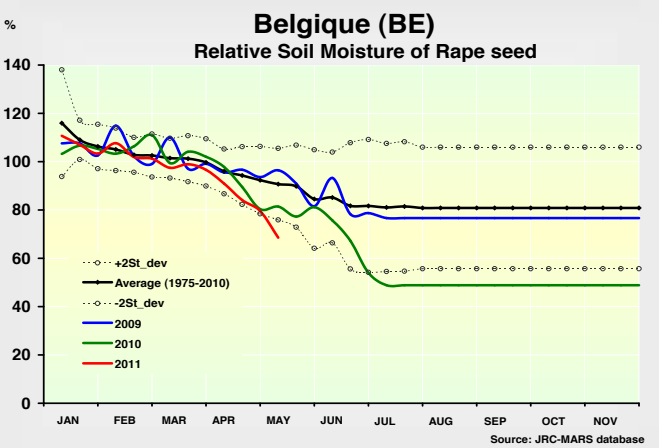
BELGIUM					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	9.4	**8.6**	8.7	-7.9	-0.7
winter barley	8.2	**8.1**	8.2	-2.3	-1.3
grain maize	12.1	**12**	11.7	-0.7	+3.1
sugar beets	82.7	**77.9**	75.3	-5.8	+3.4
potato	44.7	**46.9**	44.2	+4.9	+6.1

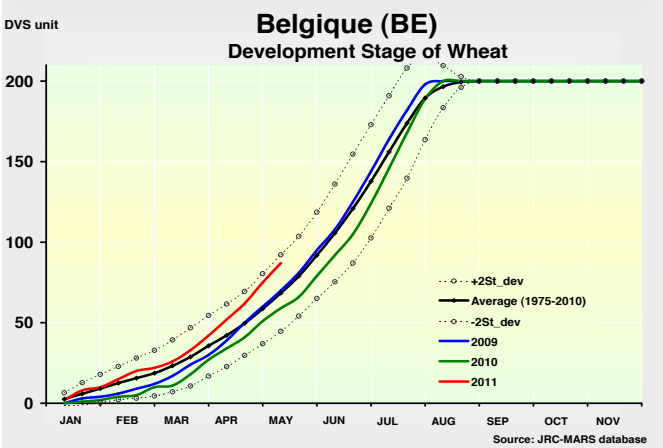
Lowest cumulated rainfall value (from 1 March to 10 May) and highest cumulated maximum temperature since 1975. Surplus cumulated active temperatures boosted growth of winter crops, but the relative soil moisture is extremely low. Some beneficial rain around spring crop sowing in March.

From 1 March for seven consecutive ten-day periods rain was really scarce, leading to the lowest cumulated value for this period since 1975. Temperatures were also very high, breaking the record set in 2007. The water deficit is estimated at 72.0 % at national level, the most critical situation being in the province of Hainaut (deficit of 77.8 %). At the same time, the cumulated active temperature is very high, 31 % above the long-term average. Some rain fell in mid-March and early April, but not enough to replenish the soil water reserves.

Up to the end of April the relative soil moisture decreased steadily, ending at a level below the lower limit of the normal range of variation by 10 May. This picture is valid for all provinces from east (Liège) to west (Namur/Hainaut/West Vlaanderen). The weather conditions until the end of April boosted the growth of winter crops, despite the drought. In particular, thanks to their deeper root system than spring crops, winter crops still have access to soil water, while benefiting at the same time from the positive cumulated active temperature. However, the persistent drought during the first ten days of May will now have a negative impact on biomass accumulation. In terms of development stage, these weather conditions have brought winter crop development forward by 15 days for cereals and 20 days for rapeseed. Water is now extremely urgently needed for winter crops, since they are at a crucial stage of their development (heading/flowering for cereals and grain-filling for rapeseed). The water deficit is making nutrient uptake by the plants inefficient for the moment and, furthermore, making efficient pest and weed control difficult for farmers. For spring crops – grain maize, sugar beet and potato — the rain in March and early April was beneficial around sowing. For late sowing (from 11 April onwards), on the contrary, the drought could have hampered the emergence and development of plants.

Scenario analyses were used to forecast the yield of winter crops and spring barley. On the other hand, for the early stages of development of the other spring crops, only trends were used to forecast crop yields.





THE NETHERLANDS — Driest period since 1975.

THE NETHERLANDS					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	8.9	**8.6**	8.5	-4.0	+0.4
spring barley	5.6	**5.6**	6	+1.4	-6.0
grain maize	9.7	**11.9**	11	+22.3	+7.8
sugar beets	74.4	**69.8**	71.7	-6.1	-2.7
potato	43.6	**44.6**	43.9	+2.3	+1.5

Relative soil moisture for both winter and spring cereals is at a very critical point for cereals. Despite good growth, due to a favourable cumulated active temperature, the water deficit is the main issue. Without significant rain, cereal yields will be low. The lack of rain is also having a negative impact on spring crops, since use of plant-protection products is limited or less efficient.

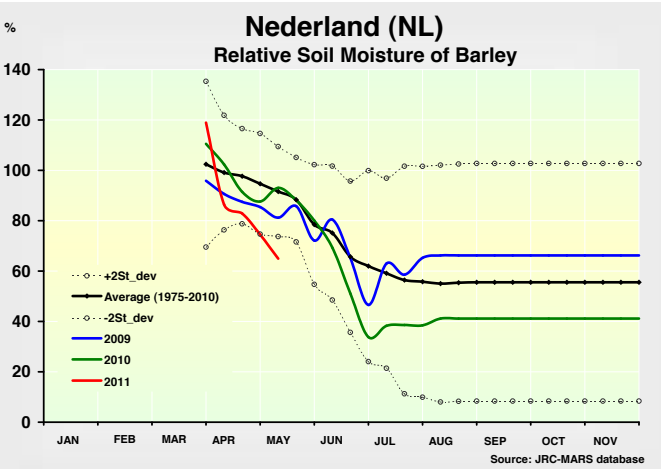
From 1 March to 10 May, the Netherlands endured a long period of drought with little rain and maximum temperatures very high. The average cumulated maximum temperature (15.07°C against 15.39°C for the upper limit of the normal range of variation) is just below the record set in 2007 (15.39°C). Temperatures were particularly high in April (first and last ten days) and in the first ten days of May, with a six-day period of temperatures above the highest seasonal values. Moreover, night-time temperatures were also higher than usual during the first ten days of May. As for rainfall, the number of days with significant rainfall (> 5 mm) was five at most (for seven ten-day periods). The cumulated value for the country during this period was 25.90 mm, far below the lower limit (77 mm) of the range of variation (since 1975). Over this period, the water deficit was estimated at 74 % in Limburg and 79 % in Zuid-Holland.

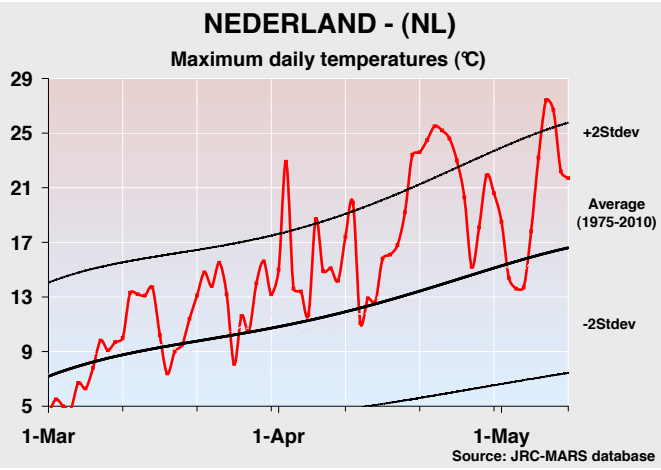
As a result, the climatic water balance is extremely low and the cumulated active temperature shows a surplus of 27 % for the whole country.

Winter wheat is at the heading stage in most parts of the country, but some fields in Limburg are already at the flowering stage. Both cereals are slightly in advance of the long-term average. The relative soil moisture is at a similarly low level as in 2007 for soft wheat, but with a ten-day delay. For barley it is even a little lower. In terms of biomass accumulation, the situation is similar to the picture in 2009.

For spring crop sowing — grain maize, sugar beet and potato — only very little rain fell in March and April but it has been beneficial for both early and late sowing. Grain maize is still at the emergence stage. Sugar beet is mostly at the vegetative stage but still emerging in the provinces of Overijssel and Noord-Holland. Potato is at the vegetative stage, slightly in advance of the long-term average. Competition with weeds at this stage could be a problem, since use of chemicals is difficult due to the lack of water.

Yield estimates for cereals were produced after a scenario analysis. For the other crops, only trends were used at this stage.



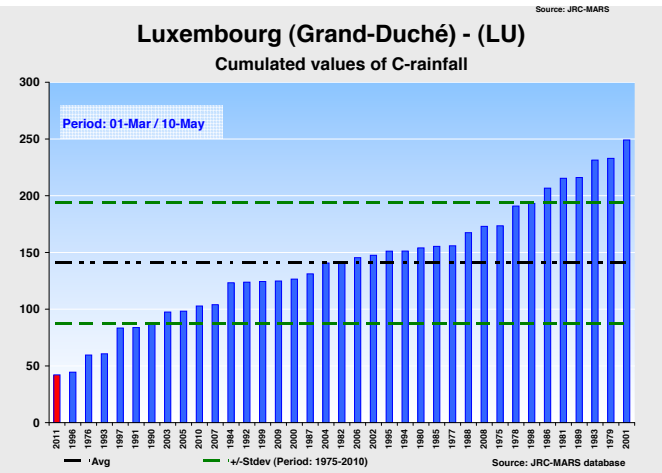


LUXEMBOURG — Historical record drought.

LUXEMBOURG					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	6	**6.2**	6.2	+3.5	+0.3

The lack of significant rain for seven consecutive ten-day periods led to a historically low cumulated rainfall value. At the same time, temperatures were very high, particularly in April when values were very often above the upper limit of the normal range of variation (even minimum temperatures were above this limit during the first ten days of April).

Soft wheat growth was boosted by the cumulated active temperature surplus — estimated at 45 % higher than the LTA at the end of April. Soft wheat is at the heading stage of development (flowering in the central part of the country), with an advance of about 15 days. There is now a definite need for water, due to the very low level of relative soil moisture. Without rain soon, the yield estimates (based on scenario analysis) will be adversely affected.



NORTHERN EUROPE

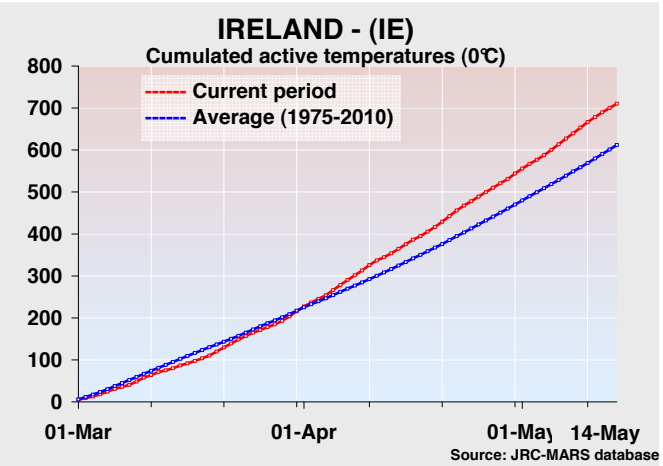
IRELAND — Good conditions so far, with beneficial rains at the beginning of May.

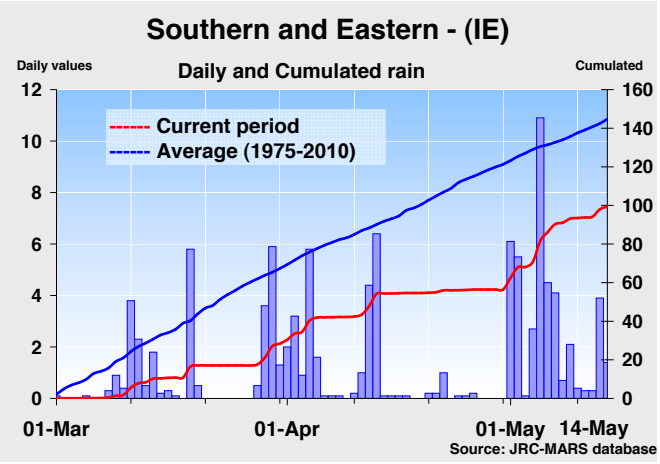
IRELAND					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	8.8	**9.2**	8.7	+5.6	+6.1
winter barley	8.6	**8.6**	8.2	+0.0	+4.6
spring barley	6.7	**6.9**	6.5	+3.3	+5.8
potato	30.6	**33**	31.4	+7.9	+5.0

Winter crop growth accelerated moderately during an especially warm April, combined with a lack of water, but rain returned in May, balancing soil moisture.

March was rather dry but less pronounced than in the United Kingdom. Normal temperature accumulation and radiation levels were observed over this month. The first half of March was colder than usual (especially the maximum temperatures), while crop development was average. This picture changed at the beginning of April, when temperatures became exceptionally warm and water supply scarce leading to a fall in soil moisture values. Only half of the expected rainfall was observed at country level. May brought back seasonal temperatures and beneficial rainfall replenishing soil moisture. The overall rainfall since the beginning of May is nevertheless still one third below the average.

The favourable conditions in spring, with temperatures and radiation slightly below the average, moderately accelerated crop growth and development of winter crops. Winter wheat is heading across the country and, so far, canopy development is close to the average. Soft wheat yields are forecast to be clearly above last year and the five-year average.





DENMARK — Warm spring accelerated growth but water deficit could have an impact on yield.

DENMARK					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	6.6	**7.6**	7.2	+15.5	+5.8
winter barley	5.5	**5.8**	5.7	+5.9	+1.6
spring barley	5.0	**5.0**	4.9	+0.7	+3.1
turnips (rape)	3.5	**3.7**	3.6	+7.2	+4.5
sugar beets	60.1	**58.6**	56.6	-2.5	+3.4
potato	35.2	**40.9**	38.7	+16.2	+5.8

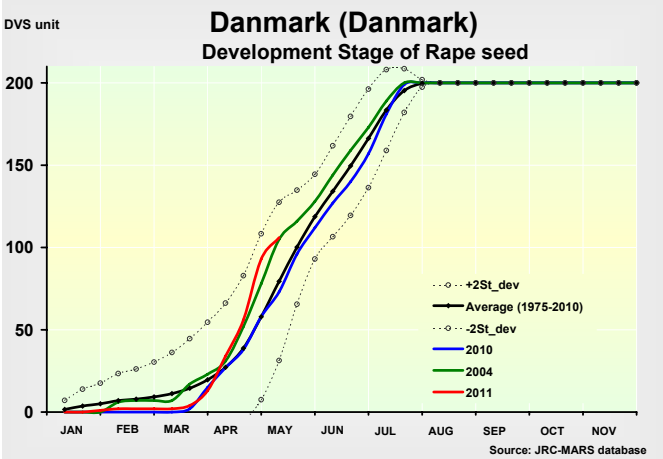
Winter crop growth accelerated strongly during an especially warm April but the lack of water could have caused some damage to plants ill-prepared after the harsh winter.

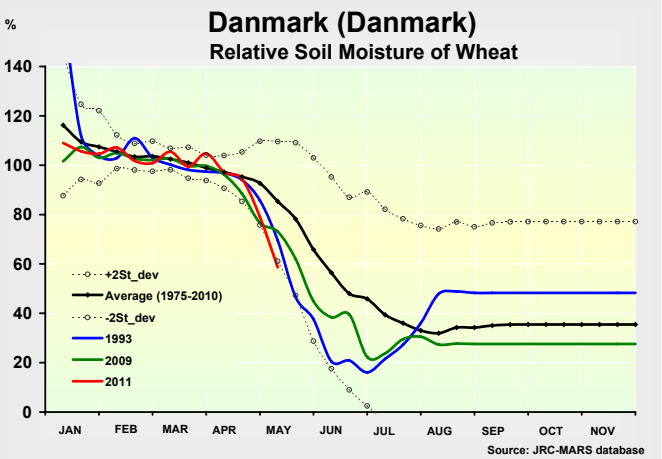
The cold wet winter was followed by a particularly dry hot spring in which the cumulated active temperatures not only closed the gap from the long-term average, but also have now climbed above it. April was marked by high temperatures, high solar radiation and high evapotranspiration (especially in Syddanmark).

Precipitation has been low, leaving the climatic water balance in deficit. However, the situation might not be as critical as in other parts of north-western Europe. Unlike April, the first week of May was colder than average which could bring some change in the crop growing conditions.

The favourable conditions (temperatures and radiation) in spring have strongly accelerated crop growth and development of winter crops. As a consequence, development stage curves have moved from below average to above and the leaf area index is generally well above average. Such conditions may point to potentially good yields for winter crops.

However, these will depend heavily on whether there is enough precipitation in May. It must be added that the dry conditions may have caused more damage than expected, since the plants might not have come out of the harsh winter unscathed and, thus, would have been ill-prepared to withstand this exceptional month of April. On the positive side, the dry conditions observed during rapeseed flowering may be favourable for optimal pollination. Overall, winter yields have been revised upwards slightly since the previous forecast which was based on the trend. For summer crops, the forecast is still based on the trend.





SWEDEN — Potentially good year after warm spring might be hampered by water stress.

SWEDEN					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	5.4	**6.1**	5.9	+12.7	+3.8
winter barley	4.6	**5.2**	5.2	+12.3	+0.6
spring barley	3.9	**4.3**	4.1	+8.7	+3.0
turnips (rape)	2.6	**2.9**	2.7	+13.2	+7.4
sugar beets	52.1	**55.7**	53.7	+7.0	+3.8
potato	30.1	**29.9**	29.8	-0.6	+0.3

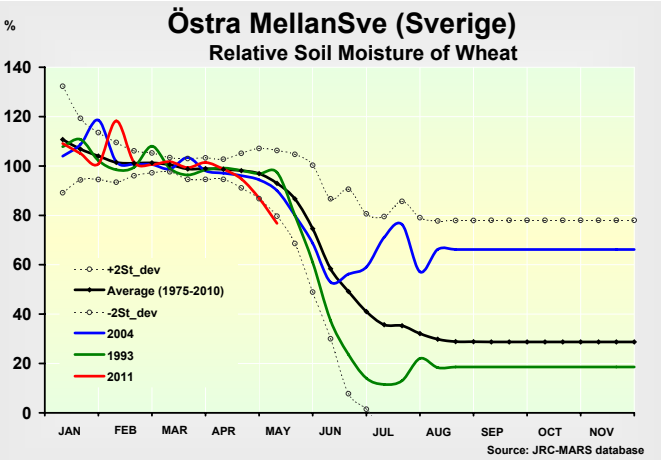
Favourable conditions in terms of radiation and temperatures suggest a potentially good impact on winter crops, yet lack of water could cause significant stress which might jeopardise a good harvest.

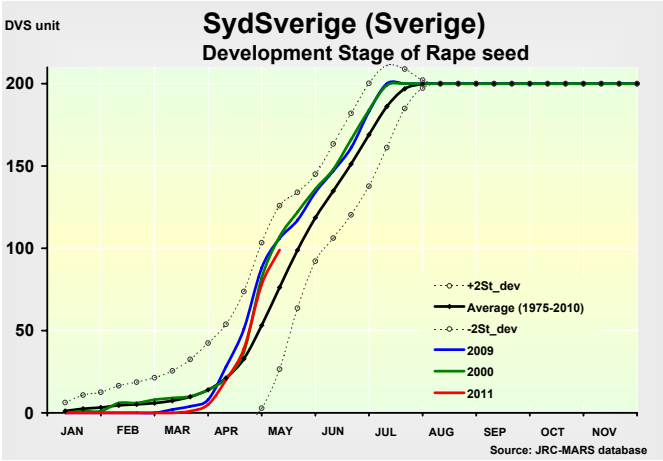
The cold wet winter was followed by a particularly dry warm spring in which the cumulated active temperature curves shifted from below the long-term average to above it. Cumulated solar radiation since March is higher than normal. Accordingly, precipitation has remained low in most agricultural regions (especially in Östra Mellansverige), with the gap between average and current cumulated rain curves widening sharply after the first week of April.

The first week of May was much colder than the month of April and also than the LTA for the equivalent period. Sub-zero temperatures have even been recorded in Småland Med Öarna and Östra Mellansverige, which could result in some frost damage.

Overall, the higher than normal temperatures and global solar radiation since March have accelerated the growth and development of winter crops. Winter wheat is at the heading stage, slightly in advance of the LTA. Rapeseed is reaching flowering around a week ahead of the normal schedule. Although these conditions generally point to a good potential harvest, there is uncertainty about whether this will materialise, for several reasons.

The first is the low water availability reflected in the relative soil moisture curves. While coming rains could restore the situation, the damage caused by the dry conditions could actually be more severe than expected because winter crops may have been ill-prepared to withstand these conditions after the harsh winter. The cold wave at the beginning of May might have caused some frost damage in some areas. Overall, yields have been revised upwards slightly for winter crops. Conditions for the establishment of summer crops seem favourable, but the forecast for them is still based on the trend in previous years.





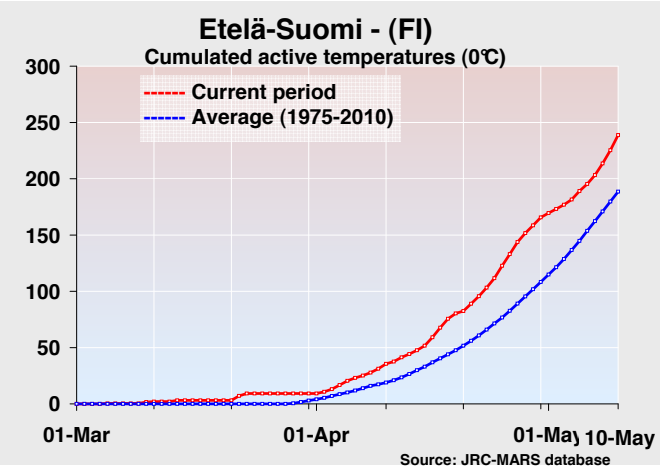
FINLAND — Warmer and drier than usual.

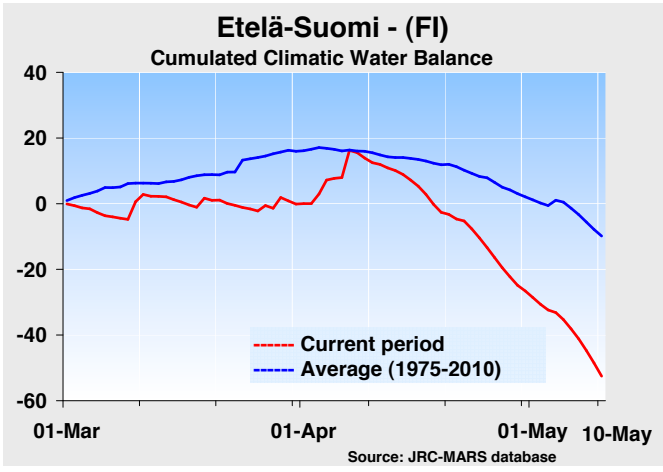
FINLAND					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	3.4	**3.7**	3.7	+6.7	-1.3
spring barley	3.1	**3.4**	3.4	+12.3	+0.0
sugar beets	37.1	**37.1**	38.2	+0.0	-2.9
potato	26.2	**25.6**	25.3	-1.9	+1.4

The seasonal weather in winter and March was followed by a warm, very dry April, creating good conditions for spring sowing.

Cumulated active temperatures in Finland in March were average, but since the beginning of April they have been higher than usual. The surplus over the LTA increased from the south-west, where the values stayed slightly above the seasonal level, to the north of the country (surplus of over 40 GDD). Such thermal conditions led to slow snow melting in April. Precipitation in March was average but in April and early May it was significantly lower than usual. In Etelä-Suomi towards the end of the period the climatic water deficit was over 40 mm higher than usual.

The development stage of winter wheat is close to the average year, whereas soil moisture in Etelä Suomi is slightly below the seasonal value. Spring crop sowing started without any problems with access to the fields.





BALTIC COUNTRIES

LITHUANIA — Mild dry spring

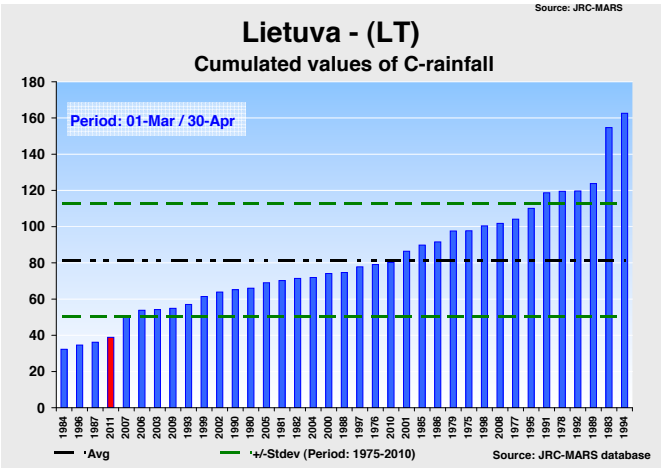
LITHUANIA	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	3.3	**3.6**	3.6	+9.1	+0.0
winter barley	2.5	**3**	3.1	+21.0	-3.9
spring barley	2.7	**2.7**	2.6	+1.5	+3.9
turnips (rape)	1.6	**1.8**	1.8	+7.4	+1.0
sugar beets	47.2	**43.8**	43.5	-7.2	+0.8
potato	13	**12.6**	12.2	-2.7	+3.9

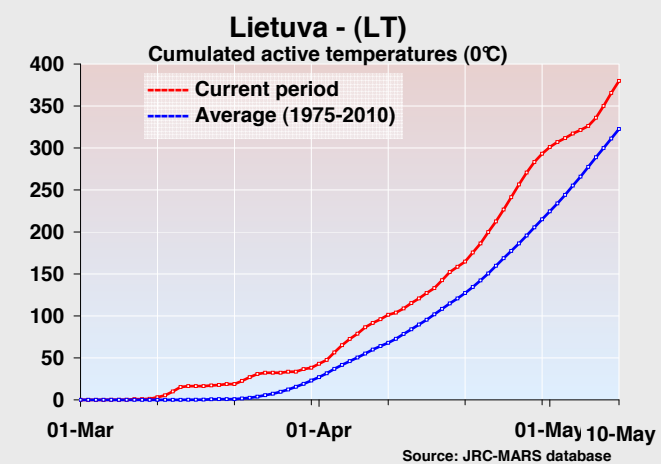
Scarce rainfall and slowly decreasing soil water supplies for winter crops, seasonal development of winter crops. Good conditions for spring crop sowing.

Cumulated active temperatures (Tbase = 0 °C) in March were slightly above the average value, whereas April was warmer than usual (> 30 GDD), especially in central Lithuania. Between the end of April and the beginning of May big temperature fluctuations were recorded, but within the normal range of variation.

The country received cumulated precipitation significantly (50 %) below the seasonal value. This has led to a very low climatic water balance value. This period is the driest since 1996 and one of the driest on record in the database since 1975.

By the end of April winter wheat had started heading in most areas and development was close to the seasonal course. Soil moisture for winter crops is slowly decreasing. The rain shortage has allowed spring sowing without any problems.





ESTONIA — Significant rain shortage in April and at the beginning of May.

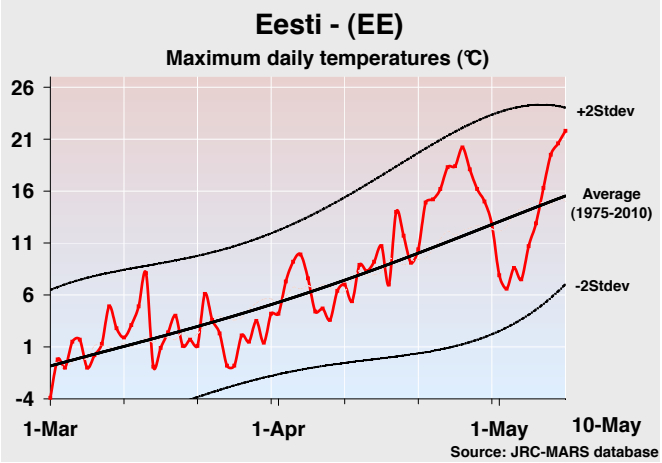
ESTONIA	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	2.71	**3.02**	2.96	+11.3	+1.9
spring barley	2.41	**2.51**	2.49	+4.2	+1.0
rapeseed	1.32	**1.49**	1.51	+12.7	-1.8

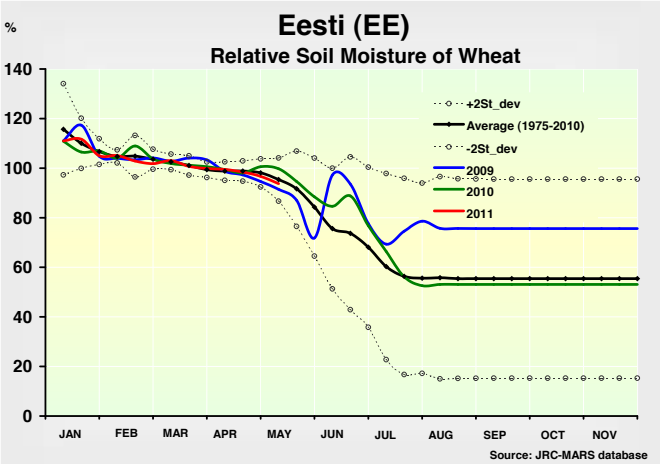
Scarce rainfall but soil water supplies for winter crops are in the average range, allowing seasonal development of winter crops. Favourable conditions around the period for spring crop sowing.

In the current season mild maximum temperatures have been recorded since the beginning of March, although minimum temperatures in March were quite low. Cumulated active temperatures (Tbase = 0°C) and solar radiation in March were seasonal, but in April they were slightly higher than usual, as a consequence of high maximum temperature values. The short cold spell at the beginning of May slightly slowed down crop development.

This period is the driest since 2005 recorded in the database. Cumulated precipitation in Estonia (39 mm) was the lowest among the Baltic countries. The weather conditions also created a significant climatic water deficit for the country.

Currently, similar to the average year, winter wheat has entered the heading phase in southern regions. Even the soil water supplies are close to the normal seasonal values. Generally good conditions have been observed during the period for sowing spring barley.





LATVIA — Mild March and April but significant rain shortage.

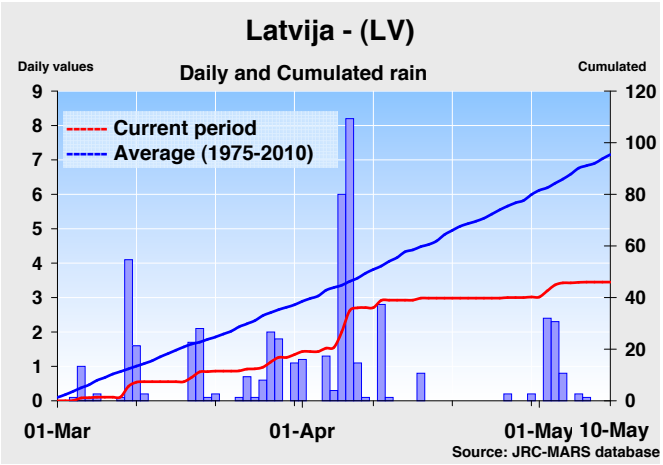
LATVIA					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
potato	16.0	**16.0**	15.8	-0.3	+0.9
soft wheat	3.3	**3.4**	3.4	+4.2	-0.3
spring barley	2.8	**2.5**	2.4	-9.5	+6.4
turnips (rape)	2.1	**2.0**	2.1	-4.3	-1.0

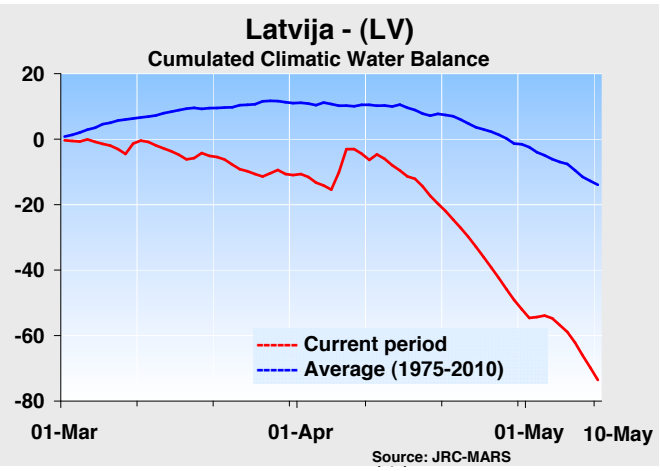
Despite scarce rainfall, soil water supplies are in the average range, allowing seasonal development of winter crops. Favourable conditions around the period for sowing spring crops.

Cumulated active temperatures (Tbase = 0°C) throughout the whole period covered by this analysis were slightly higher than average. Solar radiation is in the average range. After a warm spell at the end of April, May started with a short cold spell but within the range of variation.

Cumulated precipitation was 50 % lower than on average. In early May, in conjunction with a temperature decrease, the country received beneficial rainfall. Farmers could have benefited from mild weather conditions for spring field activities.

Winter crops are still at the beginning of their development. Despite scarce precipitation, soil water supplies should be sufficient for sowing and emergence of spring barley.





MEDITERRANEAN COUNTRIES

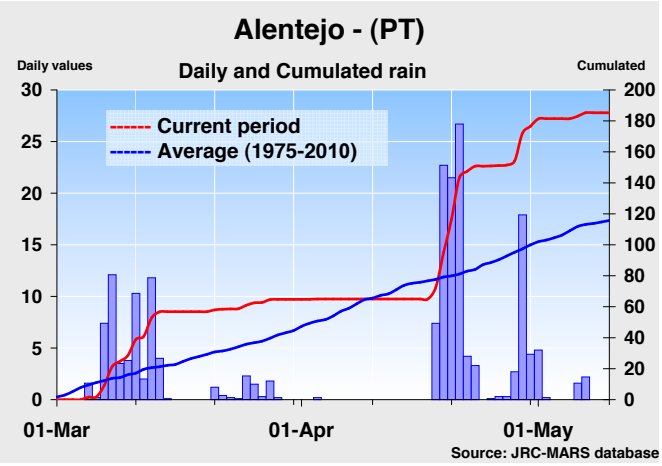
PORTUGAL — Favourable meteorological conditions during spring raise yield expectations for cereals.

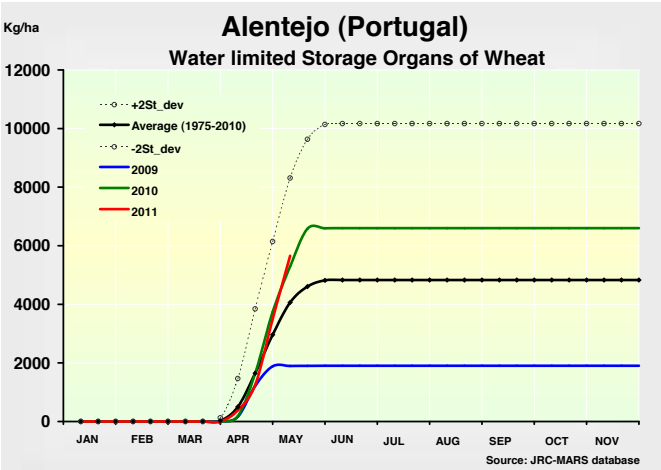
PORTUGAL					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	2.8	**2.3**	2.2	-16.3	+5.0
winter barley	1.6	**2.2**	2	+35.4	+6.7
grain maize	6.5	**6.6**	6	+2.2	+9.9
sunflower	0.6	**0.6**	0.6	+14.4	+2.8
potato	13.1	**14.6**	14.6	+11.9	+0.0

Rainfall and temperature accumulated during March and April were above the seasonal values. Winter cereals are enjoying favourable conditions during the grain-filling stage.

The rainfall during the two first weeks of March, the second half of April and the beginning of May put this spring among the more humid in the historical series. Cumulated precipitation over this period was 60 % higher than the long-term average (30 % higher over the period November 2010—April 2011). Moreover, cumulated active temperatures were also higher than the seasonal values — 9 % higher than the long-term average — which paints a positive scenario for the later period of grain-filling in soft wheat and winter barley.

The temperatures in the last three weeks were crucial in the development of storage organs of winter cereals, combined with the water accumulated during winter and spring. Simulations point to higher biomass production in the storage organs than the LTA, but already below 2010 (the highest yield in the historical records). Soft wheat yield is thus forecast at 2.3 t/ha, 5 % higher than the last five years, while expected yield of winter barley rises to 2 t/ha (6.7 % above the values for the period 2006-2010). Spring crops are already in the emergence/vegetative phase. The forecasts are based on analysis of historical series.





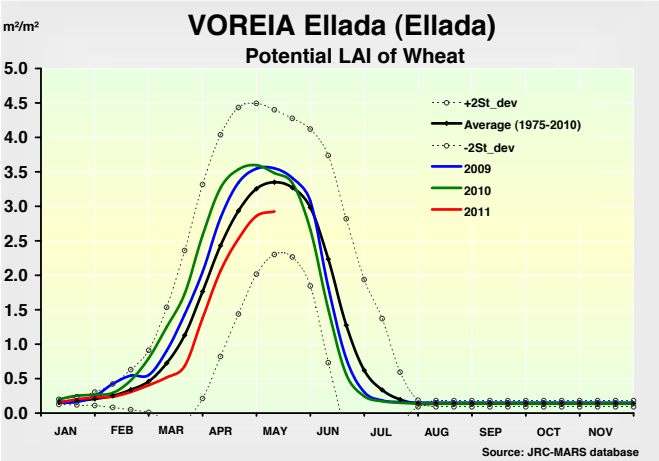
GREECE — Wet and cold conditions, especially in the eastern part.

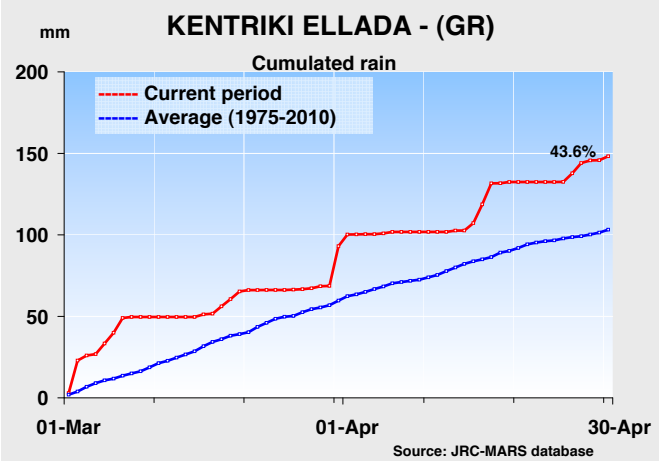
GREECE					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	2.9	**2.8**	2.8	-3.9	+0.3
durum wheat	2.5	**2.4**	2.4	-2.1	-0.5
winter barley	2.8	**2.5**	2.4	-13.5	+1.6
grain maize	10.2	**10**	9.9	-1.5	+1.2
sunflower	1.7	**1.2**	1.3	-29.0	-4.5
sugar beets	81.2	**67.8**	70.7	-16.6	-4.1
potato	26.9	**26**	25.3	-3.5	+2.7

The cold wet conditions recorded in the eastern part of the country reduced the very high yield potential forecast in the last bulletin.

The thermal sum has been in line with the average, especially along the coasts. By contrast, the more continental areas were warmer on the western side (Thessalia) and colder in the east (Thraki). The southern part of the country and the big islands (Peloponnese and Crete) experienced a wetter spring than usual, while in the continental regions dry (shortfall of 16.6 % in Kentriki Makedonia) to very dry conditions (deficit of 41.5 % in Anatoliki Makedonia) were observed. Irradiance levels stayed close to or below the average, reducing the evapotranspirative demand in the drier areas and, therefore, the risk of water shortage but also smoothing the crop yield potential. Only Kentriki and Anatoliki Makedonia have soil moisture values below the average, but the risk of water stress seems very unlikely.

Winter wheat is still completing flowering in most regions of the country with a delay of a few days. The low irradiance level and the average temperatures (around 2°C lower than the LTA during April) reduced biomass accumulation and canopy expansion. As a consequence, grain-filling could also be reduced. However, the final yield potential still seems in line with the average. By contrast, good conditions are forecast for spring crops, especially potato and maize.



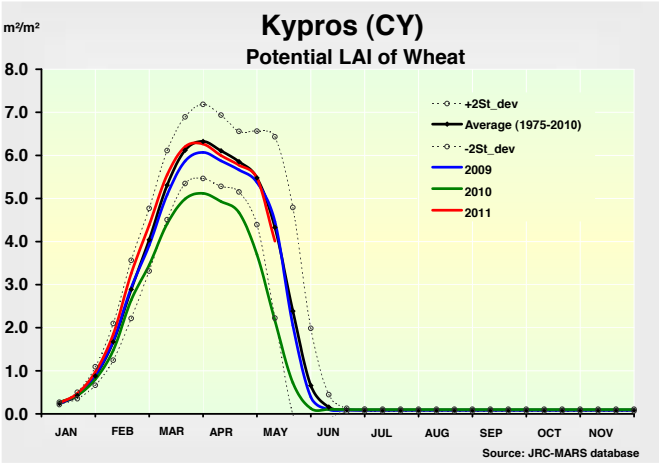


CYPRUS — Abundant and well distributed rainfall.

CYPRUS					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
barley	1.8	**1.1**	1.3	-37.7	-12.5

The extremely humid conditions might have added to the risk of fungal diseases.

Rainfall was abundant (cumulated values were 58 % higher than the long-term average) and well distributed, leading to good water availability for winter crops but also a higher risk of fungal infections. Temperatures were close to the average and, despite the rainy weather, solar radiation showed cumulated irradiance levels slightly above the LTA. This pushed canopy development which seems to be supporting the biomass accumulation and grain filling adequately. The yield potential is therefore forecast as close to the average.



CENTRAL AND EASTERN EUROPE

HUNGARY — Spring crops could fill the acreage of damaged winter crops.

HUNGARY					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	3.7	**4.2**	4.05	+12.8	+3.9
durum wheat	3.3	**3.8**	3.82	+12.9	-1.9
winter barley	3.6	**3.9**	3.88	+9.9	+1.0
spring barley	3.0	**2.8**	3.17	-7.2	-11.5
grain maize	6.6	**6.8**	6.21	+3.0	+10.0
turnips (rape)	2.2	**2.4**	2.32	+9.6	+1.9
sunflower	2.0	**2.5**	2.25	+24.3	+8.6
potato	21.7	**25.8**	24.24	+18.7	+6.4

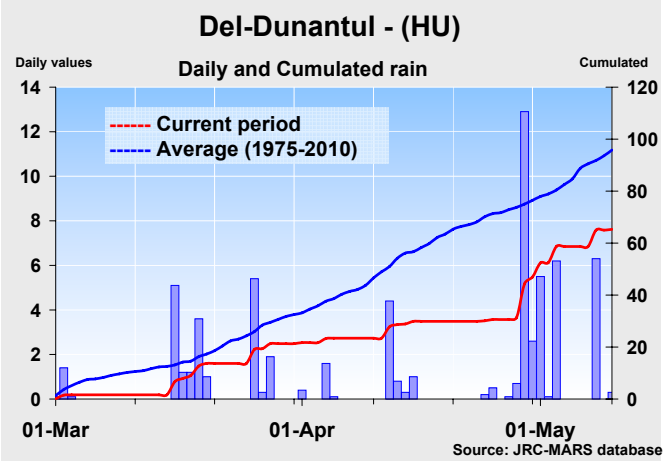
Below-average cumulated rainfall, but yield expectations are still normal.

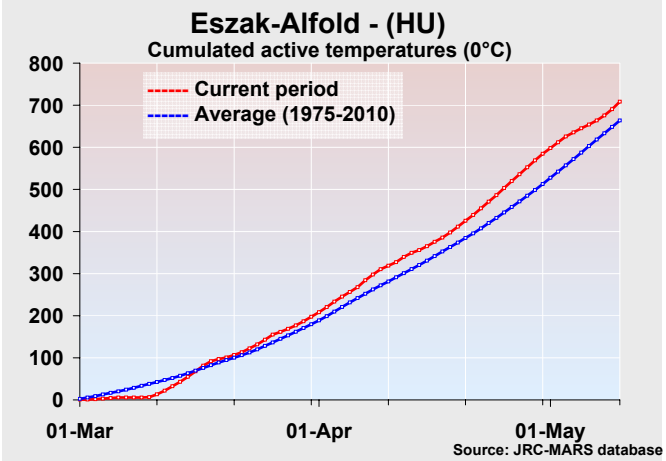
Winter turned into spring after 10 March. The temperature exceeded the long-term average significantly (by 3 to 5°C until 18 March). In general, the thermal conditions remained slightly positive most of the time until the end of April following the usual warming course. There was no considerable precipitation between 20 March and 20 April. The water balance of the last two months fell below the long-term norm, with the deficit ranging from 30 to 70 mm compared with average conditions. The long-lasting effects of previous extremely rainy years were still felt this spring. The wet soils in several places detained or delayed field preparation, deferring sowing by at least a week or two. Due to the geographical differences, farmers were faced with the effects of water shortages and water surpluses in different places at the same time. The warm period with low rainfall supported the drying of the soils and the area inundated decreased sharply.

The unfavourable wet weather conditions last autumn and winter reduced the acreage of winter wheat and rapeseed significantly, by an estimated 10 to 20 %. The probable scenario is that winter crops will be replaced, mainly by grain maize, sunflower or spring cereals.

The phenological development of winter crops is slightly advanced in the northern areas, but can mostly be evaluated as average. Winter wheat is heading and has just started flowering in southern regions. The biomass accumulation and canopy development of winter wheat has

not yet suffered from the precipitation deficiency, but further water stress will decrease the yield expectations. The general state of rapeseed was below average after wintering. The low soil moisture could further jeopardise yield formation for rapeseed, since it is currently at the flowering stage.





SLOVAKIA — Average yield expectations.

SLOVAKIA					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	3.5	**4.0**	4.0	+16.6	+0.8
durum wheat	3.6	**4.3**	4.3	+20.4	-0.3
winter barley	3.2	**3.7**	3.6	+17.0	+4.0
spring barley	2.7	**3.0**	3.4	+12.9	-10.6
grain maize	5.5	**6.3**	6.0	+14.4	+3.9
rapeseed	2.0	**2.3**	2.2	+18.5	+5.6
sunflower	1.8	**2.3**	2.1	+24.9	+5.4
sugar beets	54.5	**55.4**	53.3	+1.7	+4.1
potato	11.4	**16.6**	15.4	+45.0	+7.5

The weather conditions during spring were moderately dry and significantly warm. Crop development is adequate for the season, but late frost injuries are possible.

Although the first ten days of March were freezing, they were followed by milder conditions than usual. The mean temperature was 2 to 3°C higher than average until the end of April. The daily maximum values were high most of the time. In April just slight frosts occurred on the arable land.

The sudden inflow of cold air in the first ten days of May lowered the temperatures sharply. Between 4 and 6 May severe frost damage affected primarily the orchards and, to a lesser extent, the rapeseed fields in Slovakia. The degree of damage could differ significantly, depending on topography and local conditions.

Spring barley reached the heading stage in southern and western regions, while still tilling in the northern areas, but generally showing a slight advance compared with the LTA. The soil conditions were adequate for sowing maize and sunflower, but for germination and development sufficient rains in May would be important.

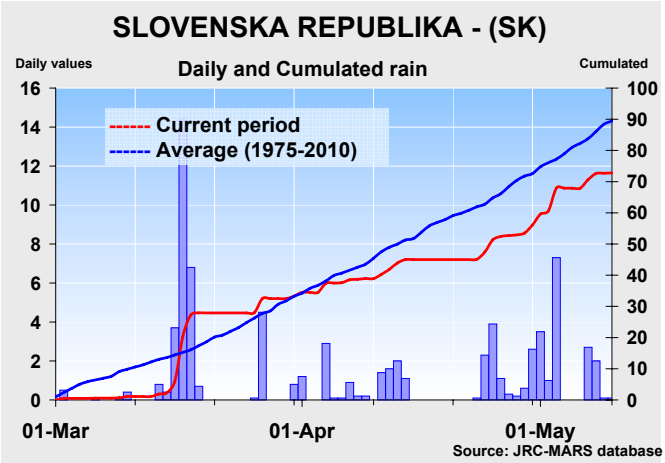
The precipitation in spring was evenly distributed, but the cumulated rainfall shows a moderate (10-30 %) deficit for the period considered. The cumulated climatic water balance was negative by 30 to 60 mm in the Stredné and Vychodné Slovensko regions more than on the western side of the country.

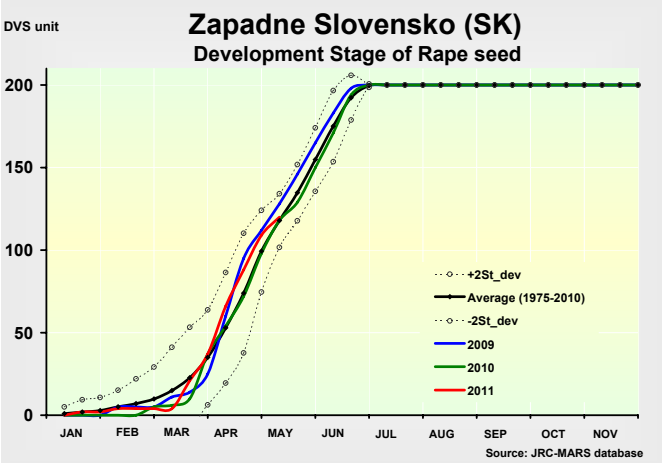
The difficult sowing due to over-wet soils and unfavourable weather conditions last autumn and winter diminished the chance of successful wintering. Most rapeseed fields affected were re-sown this spring.

The favourable small, low-intensity rainfall allowed field preparation and sowing of spring crops, while the mild thermal conditions promoted sprouting and emergence. The frost in May was decidedly adverse.

The water-limited biomass accumulation in winter wheat and barley can be considered normal, while rapeseed is improving, but is still not yet up to the average.

The winter crops are 5 to 10 days in advance in the Stredné Slovensko district, but seem to be only a few days ahead in the other areas. Winter wheat is heading, while rapeseed is flowering; in the south-western areas grain-filling has started.





AUSTRIA — Average conditions despite drought in western regions.

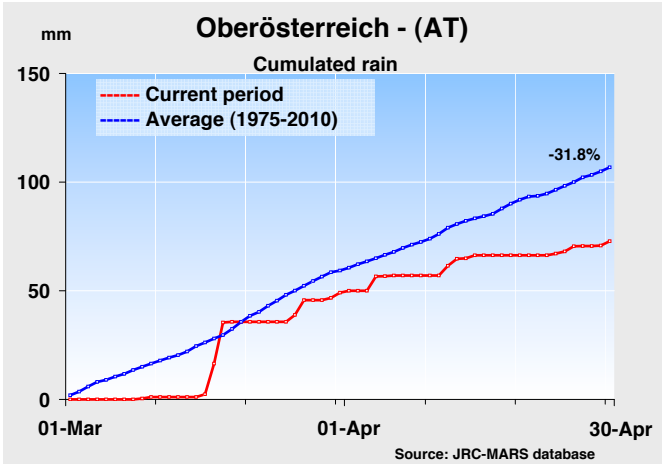
AUSTRIA	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5wyrs	%11/10	%11/5yrs
soft wheat	5.0	**5.2**	5.1	+3.2	+1.9
durum wheat	4.5	**4.5**	4.4	+0.6	+3.7
winter barley	5.4	**5.6**	5.5	+3.7	+2.2
spring barley	3.6	**3.8**	3.9	+6.9	-2.2
grain maize	9.3	**10.4**	10.0	+12.3	+4.0
turnips (rape)	3.2	**3.0**	3.1	-4.9	-2.6
sunflower	2.6	**2.6**	2.6	+0.0	+0.6
sugar beets	69.8	**68.8**	67.6	-1.4	+1.8
potato	30.6	**32.5**	31.1	+6.3	+4.4

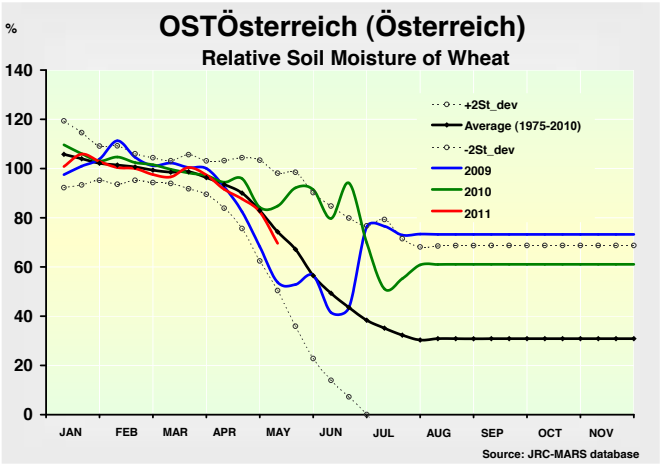
March and April were dominated by dry, warm conditions, but fortunately in the main agricultural area soil moisture values did not drop far below average.

The thermal sum was driven by continuously high temperatures which brought the GDD surplus up to 30 % in western and central areas and 20 % in Niederösterreich and Burgenland. A similar spatial gradient is shown for rainfall which was extremely scarce in the west but above average along the border with the Czech Republic and Slovakia (cumulated rainfall was 7.1 % above average in Niederösterreich). Despite the warm and relatively dry conditions, the evapotranspirative demand exceeded the average by only 20 %, even in the drier areas (i.e. Oberösterreich). This was because the irradiance level did not reach high values.

Soft wheat in the main agricultural district is completing heading less than ten days early.

Despite the lack of water in some areas, the soil moisture in the eastern part of the country is still close to the average, indicating a situation where the crops are generally not suffering from a water shortage. Even in the areas where the drought is more pronounced, the forthcoming rainfall is expected partially to replenish the soil water content. Rapeseed is at the flowering stage in almost the whole country. Only in some isolated areas, where development is further ahead of schedule, has the crop already started the grain-filling stage. This situation reflects less optimal crop yield potential due to the shortening of the canopy expansion. Spring barley was sown under dry conditions which allowed the best timing and so far the soil moisture has been enough to satisfy the crops' requirements. Grain maize and the other spring crops have not emerged yet, but the conditions at sowing seemed optimal and should not create any constraint at the beginning of the season.



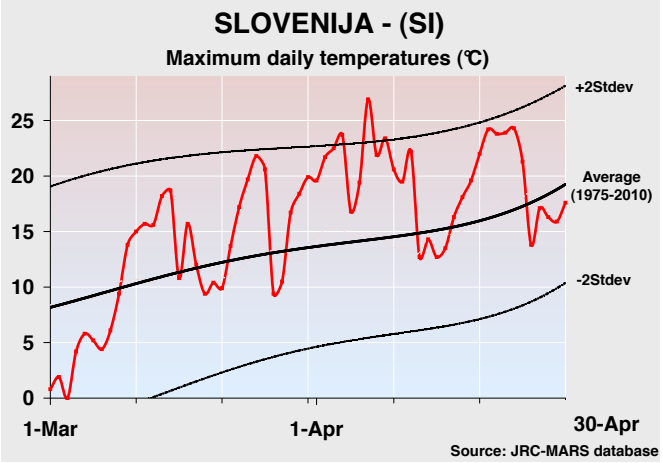


SLOVENIA — The high temperatures in April boosted crop development.

SLOVENIA					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
barley	4.3	**3.8**	3.8	-10.9	+0.4
grain maize	8.5	**7.9**	7.6	-7.3	+3.7
soft wheat	4.8	**4.4**	4.3	-9.1	+0.8

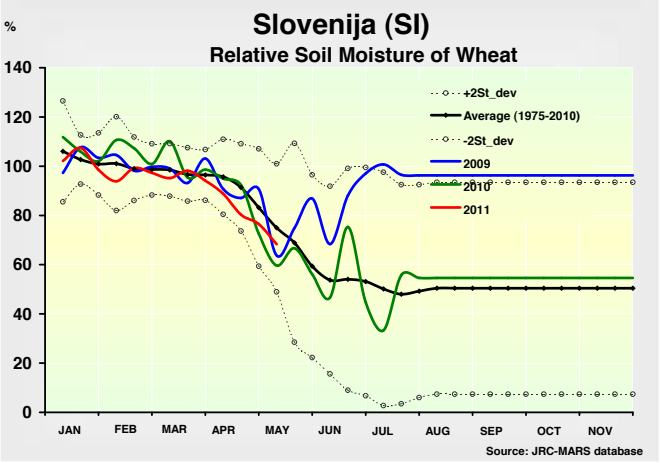
The high temperatures in April boosted crop development, shortening canopy expansion.

With the exception of some rainy days at the end of April which cut the deficit in cumulated rainfall to 22 %, precipitation was almost absent during the last two months. Despite a brief cold spell at the beginning of March, temperatures were continuously above the long-term average leading to a surplus of 100 GDD (Tbase = 10°C). In fact maximum daily temperatures were, on average, 2 to 4°C higher than usual.



These mild conditions pushed crop development, which caught up on the delay at the beginning of the season and is now ten days in advance. Despite the lack of precipitation, soil moisture values, although thought to be below the average, do not indicate a situation of significant water stress.

More rain is needed in the next few weeks when temperatures will rise and the evapotranspirative demand will grow stronger. Nevertheless, precipitation should not be too heavy in order to avoid damage to the flowers. The quick recovery in development, especially in the western regions, might have caused some shortening of the vegetative phase of winter wheat which could be reflected in suboptimal leaf expansion. Similar conditions are observed for winter barley. Grain maize has not emerged yet. However, conditions seem optimal for germination.



THE CZECH REPUBLIC — Late spring frost damage feared.

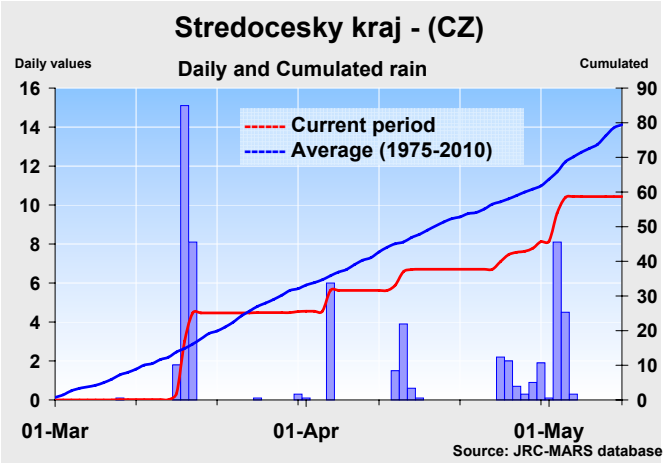
THE CZECH REPUBLIC					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	5.0	**5.1**	5.1	+2.0	+0.1
winter barley	4.5	**4.7**	4.5	+3.8	+3.2
spring barley	3.9	**4.2**	4.0	+6.5	+4.7
grain maize	6.7	**8.0**	7.2	+18.6	+10.3
turnips (rape)	2.8	**3.0**	3.0	+7.2	+1.0
sunflower	2.1	**2.3**	2.3	+9.3	+2.4
sugar beets	54.4	**58.3**	54.9	+7.3	+6.3
potato	24.6	**26.6**	25.1	+8.2	+6.0

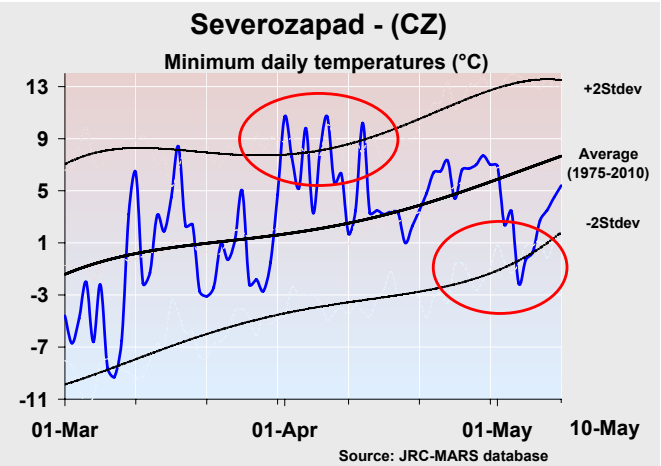
Below-average climatic water balance, but still appropriate yield potential for winter wheat. Yield expectations for rapeseed and spring crops have decreased due to severe frosts.

The spring was milder and drier than average this year in the Czech Republic. The cumulated active temperatures (Tbase = 0 °C) showed a surplus all over the country reaching 120 GDD by the beginning of May. April was particularly warm. On most days the daily maximum and minimum temperatures exceeded the long-term average. April was 2.9°C warmer than usual. In May the drastic fall in temperature caused late spring frosts from 3 to 9 May. The sharpest frosts reached -5°C along the northern and western borders of the Czech Republic.

In the western and central areas the cumulated precipitation remained below average. Rainfall was scarce from mid-March until the last week of April. The weather turned rainy from 24 April, improving the soil moisture conditions notably. The climatic water balance still shows a significant shortage in western Bohemia and a slight surplus in the eastern areas of Moravia.

The warm April boosted crop development, but then the cold first ten days of May slowed it down again. The biomass accumulation and the leaf area of winter wheat seem to be slightly better than average. Unfortunately, the adverse weather around sowing in late August and September last year and the unfavourable winter conditions left some rape plant stands weaker than average in many areas and the fields became unevenly planted. The appropriate agricultural techniques and the mild spring could have improved the situation temporarily. There is a chance that the harsh frosts in May could have caused damage in the rapeseed fields. The frost wounds could accelerate the spread of fungal diseases in these plant stands. The frost could also have affected the maize seedlings in fields where development is advanced, where re-sowing could even become necessary in badly damaged areas. In addition, there are fears that sugar beet and potato might have suffered injuries in some areas.





BULGARIA — Delayed phenological development.

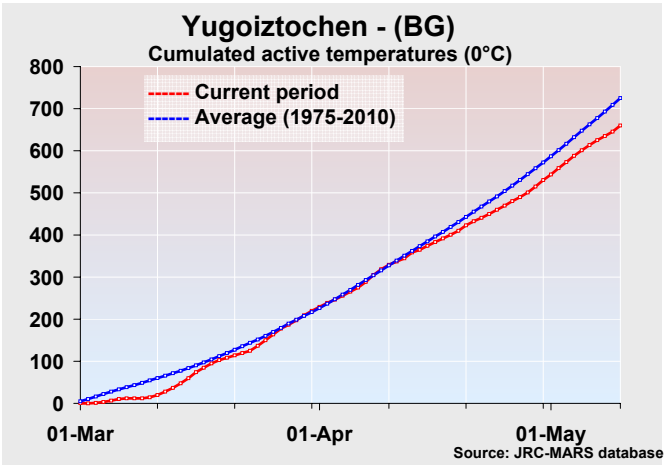
BULGARIA	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	3.2	**3.7**	3.3	+12.6	+12.4
winter barley	3.4	**3.3**	3.2	-3.2	+2.9
grain maize	4.4	**4.4**	3.7	+0.3	+17.4
sunflower	2.1	**1.7**	1.6	-20.0	+4.6
potato	15.6	**17.6**	15.4	+13.0	+14.2

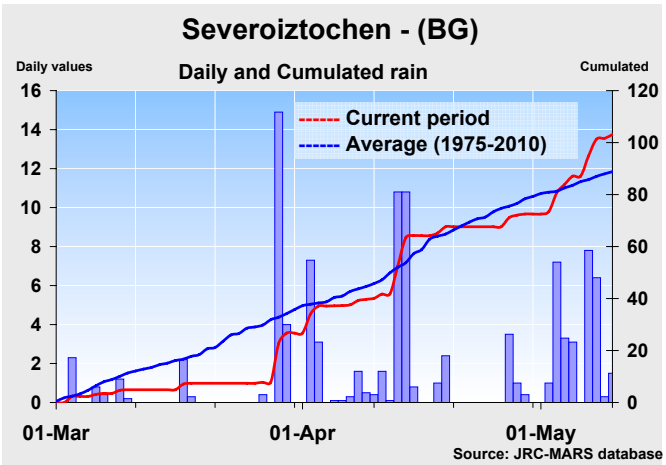
Good water supply, but below-average thermal conditions slowed down crop development.

The winter snow cover melted in the first ten days of March. The monthly mean temperature hardly deviated from the LTA, but the thermal conditions were very variable. The sharp and sudden temperature changes induced stress factors for winter crops just after the winter dormancy period. In the second half of April and mainly in the first ten days of May the weather was colder than normal and the daily maximum temperatures remained below average. The temperature decline was reflected in the daily minimum values as well, but fortunately no notable frost occurred in the first ten days of May.

The distribution and amount of precipitation was appropriate for crop development. Rainfall around the sowing of sunflower could have hampered this operation for a few days. The cumulated water balance indicates a slight deficit in the Severozapaden and Yugozapaden districts, but it is still adequate for the season. The irradiation conditions were normal, with negligible geographical differences from the LTA.

The development of winter wheat and rapeseed has been delayed by one or two weeks, primarily in the Severoiztochen and Severen tsentralen regions. Rapeseed entered the grain-filling stage. Winter wheat shows a more diverse picture, heading in the Severoiztochen region and flowering in most other districts, but in some southern areas grain-filling has even started. The leaf area expansion of winter crops has been fast and the leaf area index has increased steeply. Biomass accumulation is still below average and plant development is retarded due to the low active temperature sums. Even so, the yield expectations are still average since there was no real harmful meteorological event.





ROMANIA — Crop development retarded.

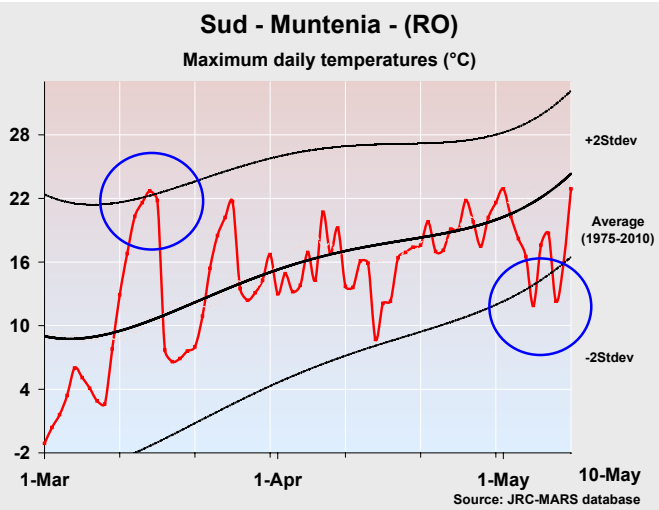
ROMANIA					
	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
soft wheat	2.8	**2.9**	2.6	+2.9	+11.6
winter barley	2.9	**2.9**	2.7	+0.0	+8.8
spring barley	1.8	**2.0**	1.8	+14.0	+9.8
grain maize	4.1	**3.5**	3.2	-14.8	+8.2
rapeseed	1.8	**1.7**	1.5	-8.7	+9.8
sunflower	1.6	**1.4**	1.3	-11.8	+4.4
sugar beets	39.1	**35.2**	33.4	-10.0	+5.3
potato	13.5	**14.6**	14.3	+8.4	+1.7

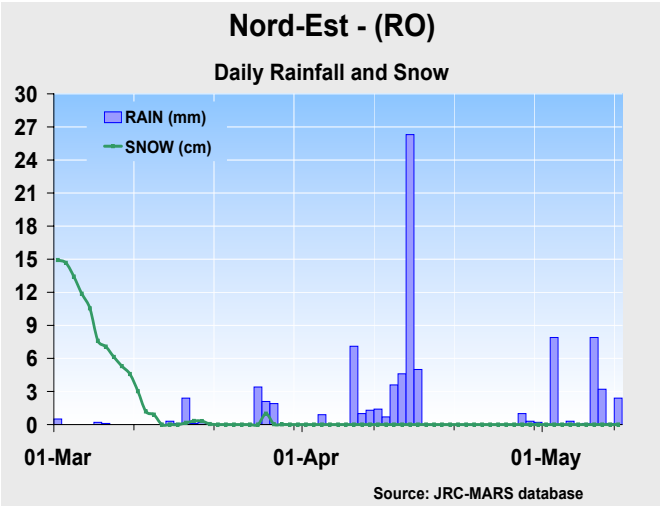
The cold spring delayed phenological development and induced below-average biomass accumulation in both winter and spring crops.

The snow cover did not disappear from the agricultural areas of Romania until the first half of March. The temperature increased from 11 March on and the daily maximum temperatures on 15 and 16 March reached 18 to 23°C, approaching or exceeding the top limit of the high values. After a short drop, temperatures rose to well over the LTA again in the last ten days of March. In April the temperature followed the usual upward course without any extremes worth mentioning. The cumulated active temperatures were slightly above average in western regions and far below the LTA in the eastern and southern parts of the country. In the first ten days of May an influx of cold air caused temperatures 5°C below average plus frosts in several places.

The cumulated rainfall over the period analysed reached or exceeded the usual sum. The climatic water balance is moderately positive in most of the eastern half of Romania but slightly negative in the Centru, Nord-Vest and Sud-Vest Oltenia regions.

The cold weather was unfavourable for crop development. The winter crops are smaller and less developed so far this year. The biomass accumulation of winter wheat is below average. The late spring frosts could have caused local damage in the vicinity of the Carpathians. The recent frosts occurred when winter rapeseed was at the flowering stage and could have harmed this crop in the Nord-Est, Nord-Vest and Centru regions. The rainfall around the time of sowing maize and sunflower could have temporarily suspended or postponed sowing. The emergence of spring crops was also delayed by the unfavourable cold weather. The general condition of seedlings is weaker than usual. Crops' phenological development is retarded by one or two weeks, especially in the Sud-Est, Sud-Muntenia and Sud-Vest Oltenia regions. The slightly above-average soil moisture and irradiation conditions paint a slightly positive picture. Consequently, the yield potential for the current year suggests it is still feasible to reach the average level.





V. Yield forecast in EU-27 neighbourghood

EASTERN COUNTRIES

BELARUS — Normal crop development despite dry period

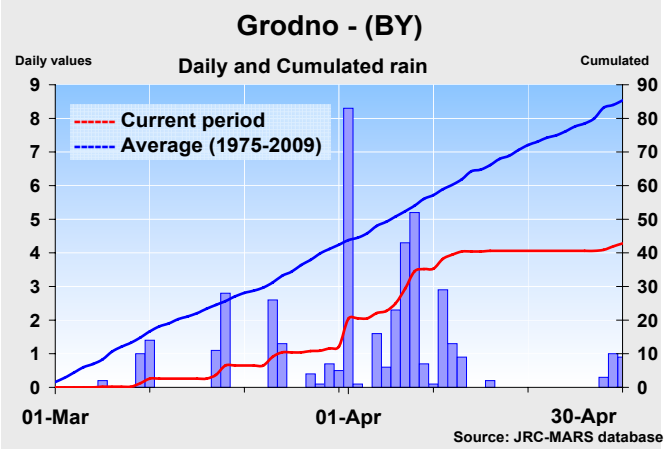
BELARUS					
	Yield t/ha				
	2010	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
barley	-	3.2	3.2	-	+2.4
wheat	-	3.3	3.4	-	-2.4

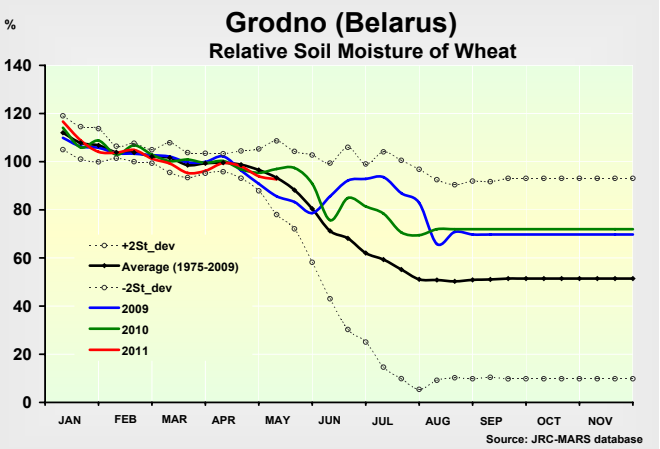
An exceptionally dry period, but sufficient soil moisture and slightly higher temperatures allowed normal development.

The agrometeorological situation was quite homogenous across the country. The air temperature was close to the average, slightly higher in the eastern part of the country. The amount of solar radiation received was also at the normal level. Nevertheless, the period covered by this analysis was exceedingly dry, with less than 50 % of the normal amount of rainfall.

Crop development

Despite the lack of rainfall, the relative soil moisture was still close to the average due to the preceding wet spell. Average crop development was observed and no significant deterioration is expected.



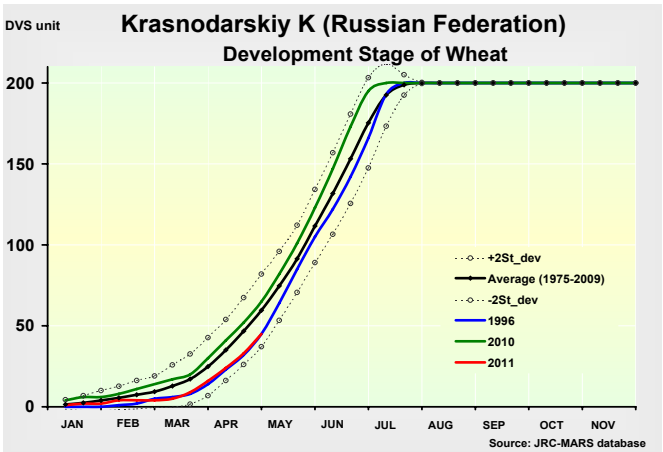


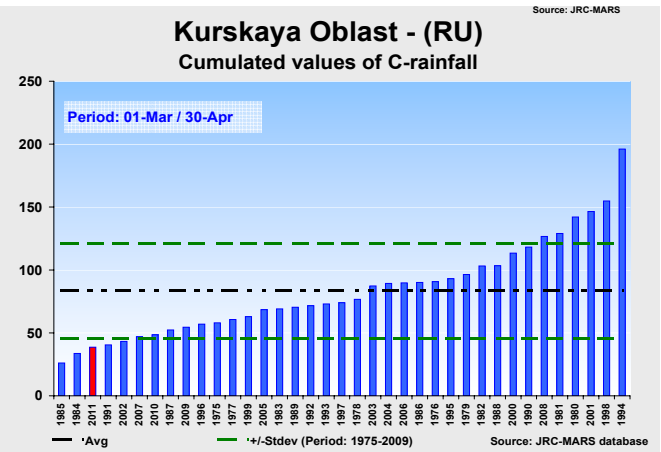
RUSSIA — Chilly period with heterogeneous distribution of precipitation

The weather conditions and crop development are in the normal range. However, the impact of the severe drought in 2010 is still visible.

The period covered by this analysis was marked by slightly lower temperatures than normal in the whole of the agricultural part of European Russia. Only the southern and Caucasian districts recorded lower values for solar radiation, while in the others it was close to the average. The amount of rainfall differs significantly between regions. Rostovskaya Oblast, which is an important wheat and barley growing region, received only two thirds of its average rainfall and the Kurskaya Oblast only 50 % of the LTA. The first half of April brought intensive rain, but only in the North Caucasian District and, locally, in the Volga District.

In general, winter crops are mainly delayed due to slightly lower or just average temperatures (Volga District). Winter barley production seems to be heading for a lower level than usual. This is caused by difficulties with sowing which was delayed due to insufficient soil moisture after the severe drought in 2010. Overall, favourable conditions suggest that crops will continue to develop normally.





THE BLACK SEA COUNTRIES

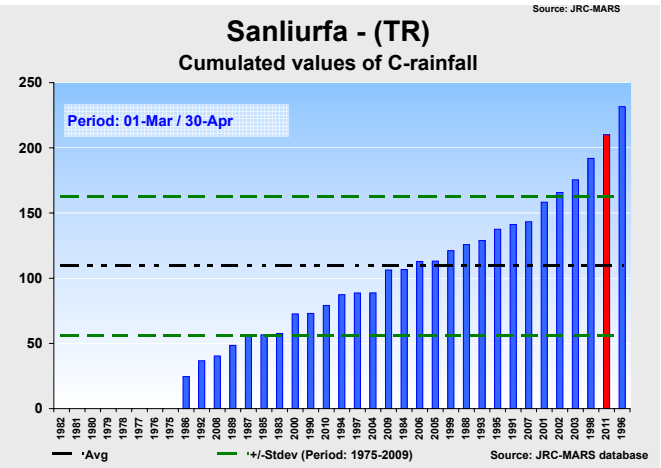
TURKEY — Substantial rain and crops still well advanced

TURKEY					
	Yield t/ha				
	2010	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
barley	2.4	**2.4**	2.3	+1.9	+5.4
wheat	-	**2.4**	2.3	-	+1.5

Extremely wet period with temperatures close to the average. The significant advance in crop development gained in winter was reduced slightly.

An exceptionally mild winter was followed by an exceptionally wet start to the spring. The solar radiation received in March was still satisfactory, but in April the whole country received much less radiation than usual, less than 50 % of the LTA in the eastern part. The temperature sums in the period covered by this analysis were close to the LTA with a slightly warmer March and slightly colder April. The difference between rainfall and the LTA changed from west to east. Eastern and central regions, such as Bati Marmara and Bati Anadolu, received precipitation close to the LTA. The eastern and southern regions received abundant rainfall with precipitation sums much higher than usual, such as Guneydogu Anadolu with more than 200 mm instead of the normal 100 mm.

During the period covered by this analysis winter crops developed normally, but the significant advance gained in the winter is still evident. According to the analysis of the NDVI index calculated on the basis of the SPOT VEGETATION satellite images, the accumulated biomass in the central part of the country (Bati Anadolu and Orta Anadolu) notably exceeds the normal amount at this stage of the season. The NDVI curve is following the one from the 2008-2009 growing season. In the rest of the country, a slowdown could be observed in western Bati Marmara, mainly due to a minor water deficit, while in south-western Sanliurfa crops were slightly delayed.



UKRAINE — Overall good crop conditions, average yields forecast

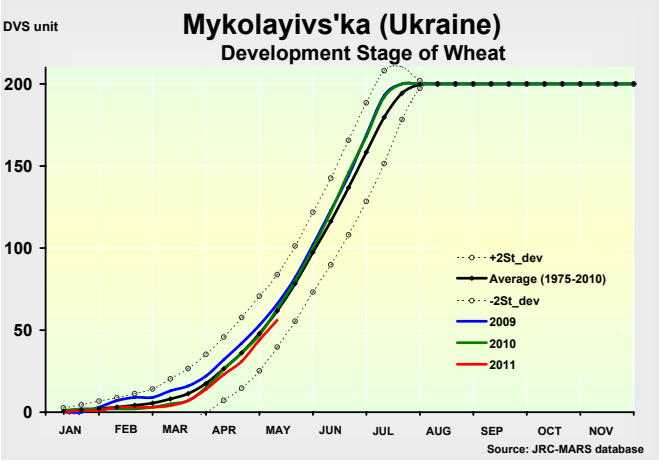
UKRAINE					
	Yield t/ha				
	2010	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
barley	-	**2.3**	2.3	-	+0.8
wheat	-	**2.9**	2.9	-	+0.3

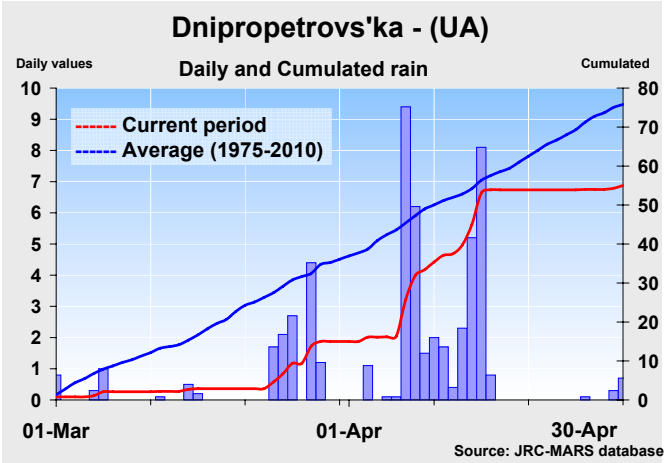
Rainfall lower than average, but normal temperature and average crop development were observed.

In the period covered by this analysis, Ukraine reported quite mild and favourable conditions. The solar radiation received was slightly higher than usual. Air temperature was close to the LTA: lower in the east and higher in the western part of the country. This was accompanied by a noticeably small amount of precipitation which was uniformly 30 % lower than usual across the whole country.

Crop development

Despite the dry period, relative soil moisture remained sufficient. Crops developed at average speed apart from in the colder eastern oblasts, where they were slightly delayed. At any rate, overall, average to good crop conditions were observed leading to average crop yield forecasts at the moment.





THE MAGHREB COUNTRIES

MOROCCO, ALGERIA AND TUNISIA — Positive crop season forecast thanks to the beneficial low temperatures in March and water balance surplus

MOROCCO, ALGERIA AND TUNISIA					
Wheat	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
DZ	-	**1.5**	1.4	-	+6.8
MA	1.7	**2.1**	1.6	+22.3	+33.1
TN	1.2	**1.8**	1.5	+55.7	+16.7

MOROCCO, ALGERIA AND TUNISIA					
Wheat	Yield t/ha				
	2010*	MARS 2011 forecasts	Avg 5yrs	%11/10	%11/5yrs
DZ	-	**1.5**	1.4	-	+6.8
MA	1.7	**2.1**	1.6	+22.3	+33.1
TN	1.2	**1.8**	1.5	+55.7	+16.7

Overall, all three countries received good rainfall, mainly in March and at the end of April. The low temperatures in March had a positive impact during the flowering/grain-filling stage of winter cereals. Their development accelerated in April due to very high temperatures. At the end of the first ten days of May, the cumulated climatic water balance was positive in the leading production regions and maturity has already been reached in various regions.

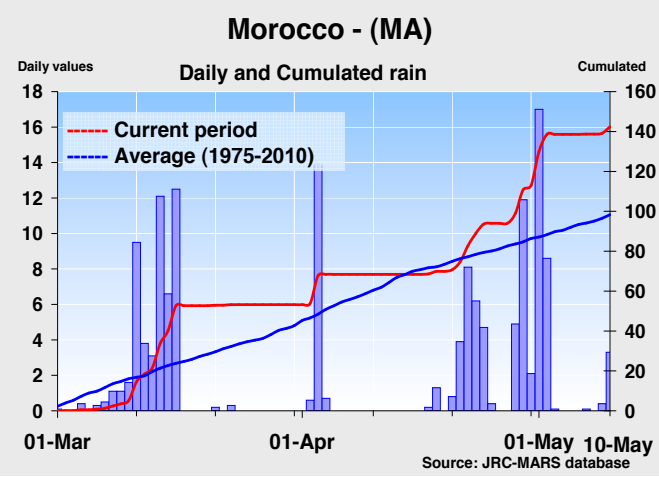
The three Maghreb countries received significant rain, mainly during the first 20 days of March, the last ten days of April and the first ten days of May. This led to a water surplus in comparison with the long-term average at the end of the first ten days of May in Morocco and in Algeria, but only average levels in Tunisia. Algeria and Tunisia faced a water deficit during the first 20 days of April only, due to the relatively dry period in the Maghreb countries from 21 March to 20 April. The situation in Morocco seems a little better due to the rain which fell on 2 April, mainly in the southern part of the country in the Sud and Tensift regions. By contrast, the picture is similar to the one in Algeria and Tunisia in the eastern part of the country (Oriental region). The three countries reported seasonal maximum temperatures in March, with values below the LTA during the first 20 days. April was much hotter during the first 20 days in Morocco and Algeria where values were above the upper limit of the normal range of variation. The temperatures fell back to seasonal values during the next two ten-day periods in all three countries.

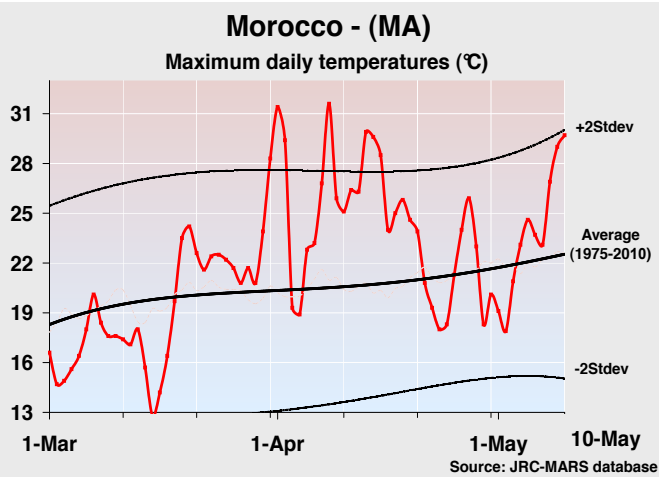
As a consequence of these positive weather conditions, the cumulated water balance is close to or higher than the LTA practically everywhere in Morocco, except in the eastern part of the country (Oriental). The situation is particularly positive in the Centre Nord and Sud regions. In Algeria and Tunisia, the same picture could be drawn with a large surplus in the central coastal part of Algeria (from Bejaia to Constantine) and along the Algerian-Tunisian border. Nevertheless, a big deficit can be observed in the southern region of Constantine and along the northern part of the Moroccan-Algerian border. In the case of relative soil moisture, the situation is quite satisfactory everywhere with levels often higher than the LTA but still within the normal range of variation.

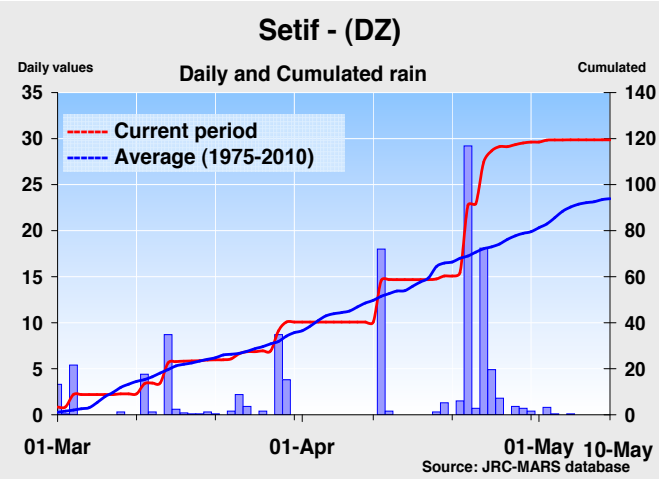
At the end of March, winter cereals were mostly at the grain-filling stage in Morocco, Algeria and the south-eastern part of Tunisia. Nevertheless, fields at the heading stage are still observed in Morocco (east of Centre Nord), in Algeria (Chlef) and Tunisia (Beja). In all three countries, winter cereals — which are at a normal stage of development in comparison with the LTA — therefore benefited from the water supply and the relatively low maximum temperatures in March.

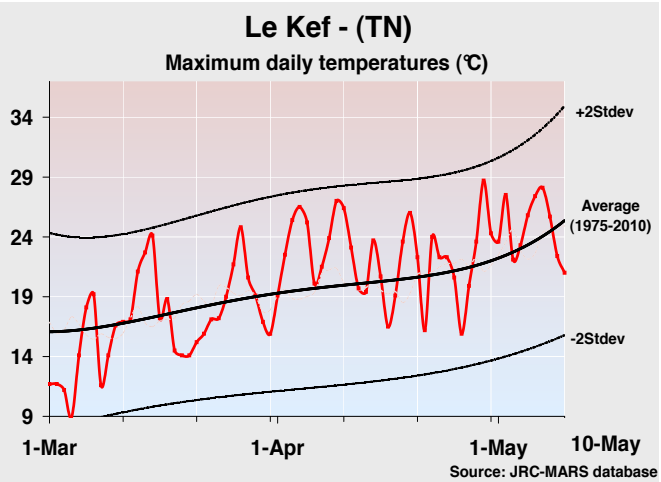
Except in the major production regions in Morocco (Centre and Centre Nord), the north-eastern part of Algeria and the northern half of Tunisia, development of cereals accelerated when the temperatures rose to very high values during the first 20 days of April. At the end of the first ten days — except in those regions — the development stage of cereals was in advance of the LTA and even very advanced in southern Morocco (mainly barley). Maturity has already been reached in the south of Morocco (Sud and Tensift regions) and in the north (Nord Ouest), in the south-eastern part of Tunisia and more locally in Algeria. Harvesting could therefore start soon.

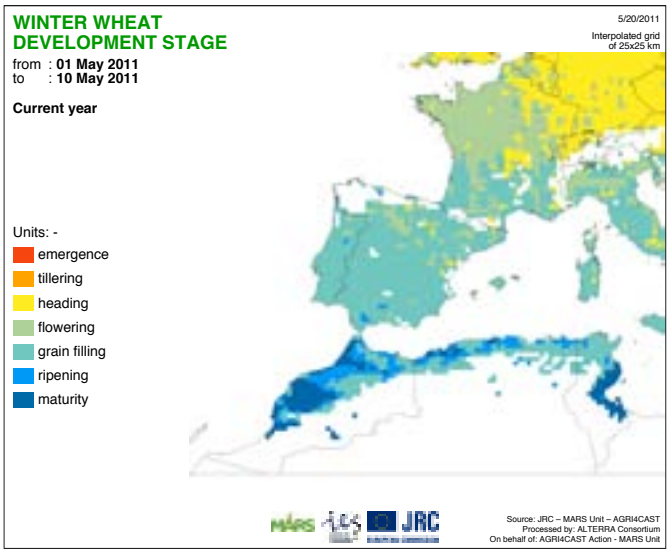
In view of the positive weather conditions in the main cereal production regions, the yield forecast is relatively optimistic for the current season for both barley and wheat. For barley, the yield estimate suggests an incredible jump in Tunisia, but this is due to the historically bad performance in 2010.

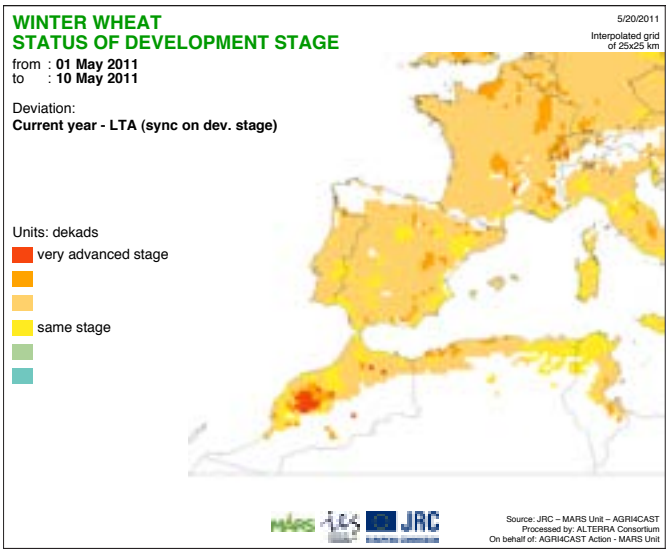












2011 MARS Bulletin (update)

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The current **MARS* Bulletin** is an EC publication from AGRI4CAST action (JRC/IES MARS Unit)

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Data production

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JRC 64878 – EUR 23298,

Scientific and Technical Research series — ISSN 1831 - 9793

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Luxembourg: Publications Office of the European Union, 2011 – 36 pp. – 21.0 x 29.7 cm, © European Union, 2011

Printed in Luxembourg. (Printed on white chlorine-free paper)

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LB-AM-11-006-EN-C

Publications Office

JRC EUROPEAN COMMISSION