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# MARS Bulletin

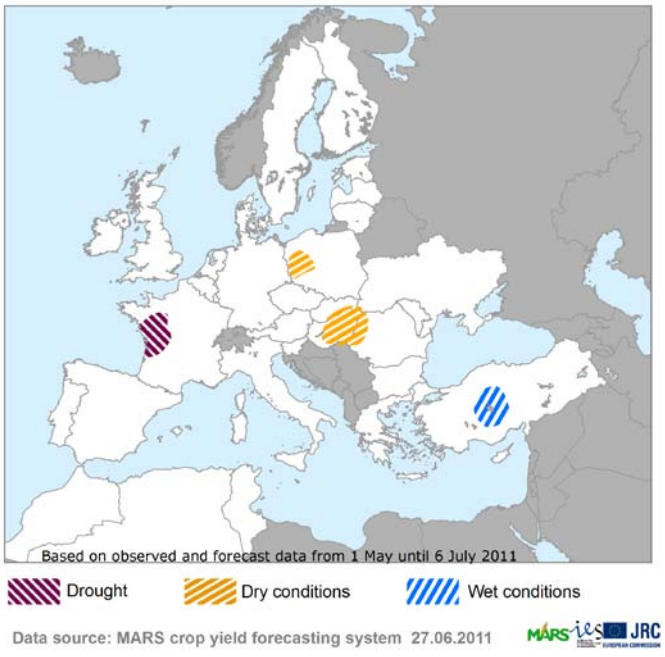
## Crop Monitoring in Europe

Vol. 19, No. 8
Issued: 28th June 2011

Period of analysis: 11th May – 20th June 2011

# THE PRONOUNCED DRY SPELL THAT HIT WESTERN EUROPE HAS COME TO AN END

### AREAS OF CONCERN




| Crops | Yield (t/ha) as of 28th June for EU27 | | | | |
|---|---|---|---|---|---|
| | 2010 | 2011 | Avg 5yrs | %11/10 | %11/5yrs |
| **TOTAL CEREALS** | 4.95 | **4.92** | 4.90 | -0.6 | +0.3 |
| **Total Wheat** | 5.30 | **5.27** | 5.27 | -0.5 | +0.1 |
| *soft wheat* | 5.56 | **5.50** | 5.54 | -1.0 | -0.7 |
| *durum wheat* | 3.15 | **3.19** | 3.11 | +1.2 | +2.6 |
| **Total Barley** | 4.33 | **4.28** | 4.32 | -1.1 | -0.8 |
| *spring barley* | 3.70 | **3.83** | 3.75 | +3.7 | +2.2 |
| *winter barley* | 5.21 | **4.98** | 5.17 | -4.5 | -3.7 |
| **Grain maize** | 7.03 | **6.90** | 6.71 | -1.8 | +2.8 |
| **Other cereals** | 3.04 | **3.01** | 3.28 | -1.0 | +0.2 |
| **Rape seed** | 2.97 | **2.80** | 3.02 | -5.8 | -7.2 |
| **Potato** | 28.25 | **30.82** | 28.44 | +9.1 | +8.4 |
| **Sugar beets** | 68.03 | **69.36** | 66.05 | +2.0 | +5.0 |
| **Sunflower** | 1.84 | **1.83** | 1.72 | -0.5 | +6.4 |

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: 17/06/2011) and EES (last update: 17/06/2011)
2011 yields come from MARS CROP YIELD FORECASTING SYSTEM (CGMS output up to 20/06/2011)

## Highlight

Towards the end of May a general change of weather constellation for Western Europe took place. The persistent high-pressure system which led to an extremely dry spring was replaced by a general westerly current, bringing in a string of low-pressure systems to Western Europe with a mix of rain and sunshine. Countries that had been hit by dry conditions have now received beneficial rainfall, thus ending the dry spell.

Total wheat production in EU27 is forecast at **134.2 mio t**, which is 1.9 % less than production in 2010, due to a reduction for both soft (-1.5 %) and durum wheat (-7.5 %). The acreage for both cereals is lower than last year, -0.5 % and -8.6 % respectively. The forecast production for barley (**53.3 mio t**) is comparable to 2010, the loss for winter barley (-9.4 %) being offset by the increase in spring barley (+9.3 %). Grain maize is estimated at **60.7 mio t**, which represents an increase of 4.6 % over 2010 and +7.5 % compared to the last 5-year average.

Weather conditions were unfavourable in the main rapeseed production countries; the yield forecast ranges from -16.5 % in Germany to -5.3 % in the UK, compared to last year. Production is estimated at **19.1 mio t**, which is 6.6 % less than last year.

## Contents



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MARS agrometeorological database: http:/www.marsop.info
Institute for Environment and Sustainability

# I. Agrometeorological overview

**Towards the end of May a general change of weather constellation for Western Europe took place. The persistent high-pressure system which led to an extremely dry spring was replaced by a general westerly current, bringing in a string of low-pressure systems to Western Europe with a mix of rain and sunshine. Countries that had been hit by dry conditions have now received beneficial rainfall, thus ending the dry spell.**

## 1. Temperatures and evapo-transpiration

**May** was warmer than the long-term average (LTA), with higher temperature sums for Germany, Benelux, United Kingdom, France, Italy, and the Iberian Peninsula. The remaining European countries experienced cooler than normal conditions (**map 1**). Since the beginning of **June** temperature accumulation shows an opposite trend, being warmer than the LTA in central and Eastern Europe (**map 2**), and thus partially compensating for the delayed crop growth and bringing crop development back to average or slightly advanced growth rates. Average to cooler conditions have characterised June so far for most of Western Europe. Accumulated evapo-transpiration for June shows a slightly different picture (**map 3**): low to average evaporative demand as compared to the LTA for France, Spain, Italy, Greece, and Turkey, but above the LTA for the *East of England* region and Belgium, despite average temperature accumulation. High evaporative demand is noted for most of Germany, Poland, the Baltic States, and large parts of Ukraine.

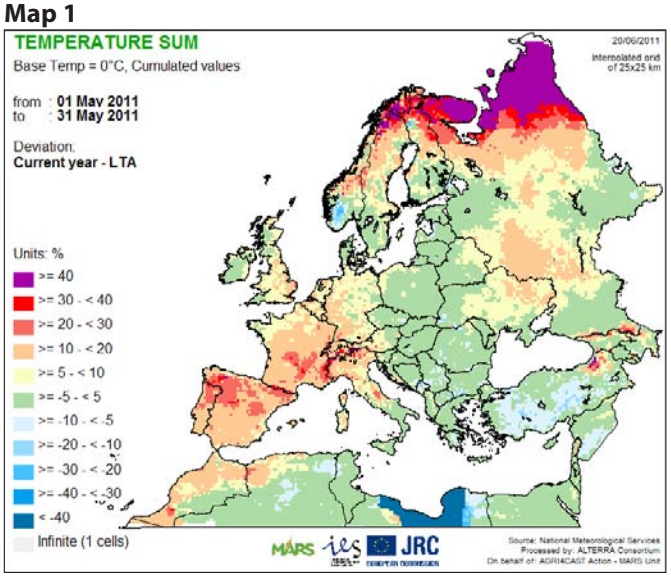
At the end of May and beginning of June temperatures peaked (above 30 °C) in northern Italy, east Germany, Poland, Ukraine and the border region of Romania and Hungary, as well as in Spain, Portugal and Greece, where such readings are within the average range. Except for the *Mediterranée* region, France was spared high temperatures, thus avoiding additional negative pressure on crops. From 18 June onwards temperatures above 30 degrees were observed for large parts of Ukraine.

## 2. Rain and climatic water balance

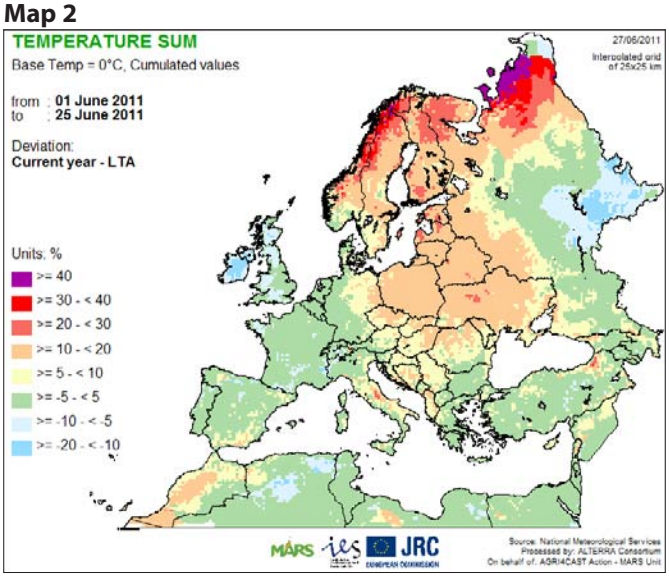
**May** as a whole was again a very dry month for France, most of Germany, eastern England and northern Italy, with albeit with some pronounced rainfall events. Ukraine received worrying low precipitation, whereas rainfall above the LTA was recorded for Greece and Italy, especially *Sicilia* and *Apulia*, and in Romania and Austria. The long-lasting dry period in France, Benelux, United Kingdom, Germany and northern Italy ended at the beginning of **June, although** different levels of rainfall were received in the regions affected (**map 5 and 6**). The rain arrived too late to allow winter crops to recover, but is still beneficial for spring and summer crops. Northern Italy saw a very rainy beginning of June, bringing extremely low soil moisture values back to average. Up to the time of reporting Spain, southern Italy, and Greece remain rather dry in the main agricultural areas, while a clear surplus of rainfall is recorded for northern Italy, Austria, Slovenia, Northern Europe, Benelux, northern Germany, Czech Republic, Romania and Turkey as compared to the LTA. Extreme events with precipitation of more than 50 mm in a day were recorded for *Aletenjo* in Portugal and the eastern regions of *Kärnten* and *Steiermark* in Austria, as well as in Slovenia and *Piemonte* region of Italy.

Soil moisture depletion ended with slightly rising levels in France, southern UK and Germany. Comparing **maps 7** and and **8** it is evident that the regions with critical soil moisture levels for soft wheat virtually disappeared as of 20 June.

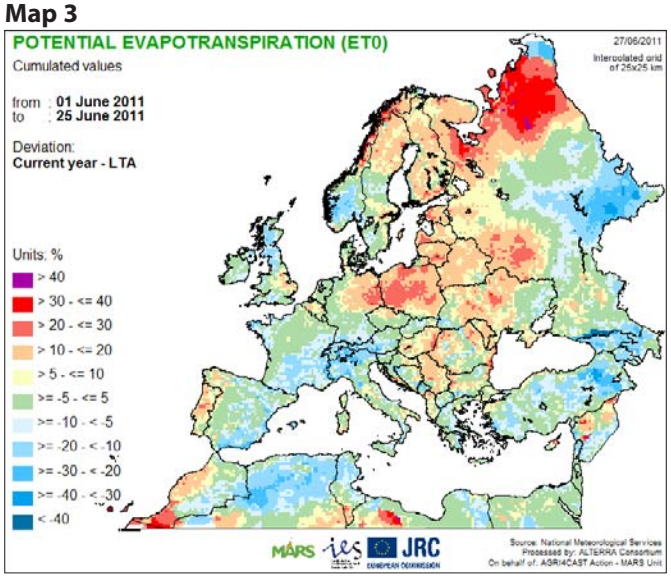
**Map 1**



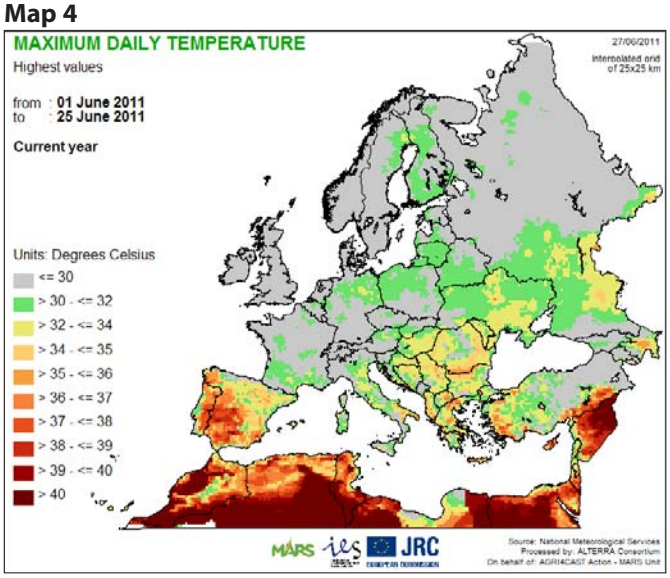

**Map 2**



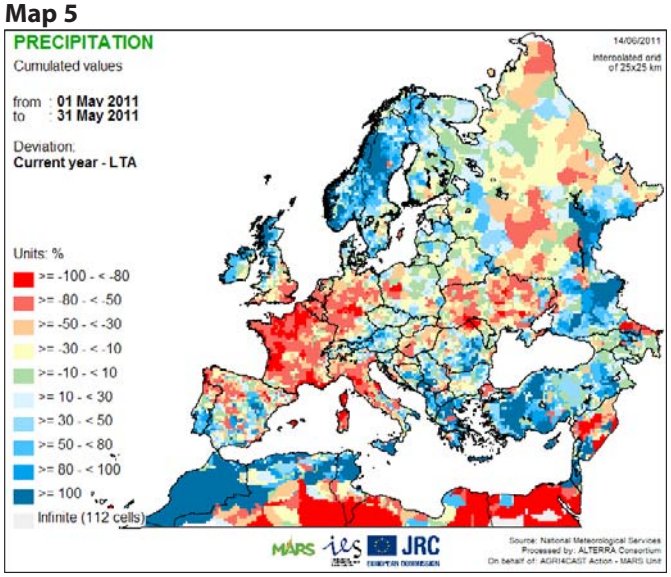
**Map 3**



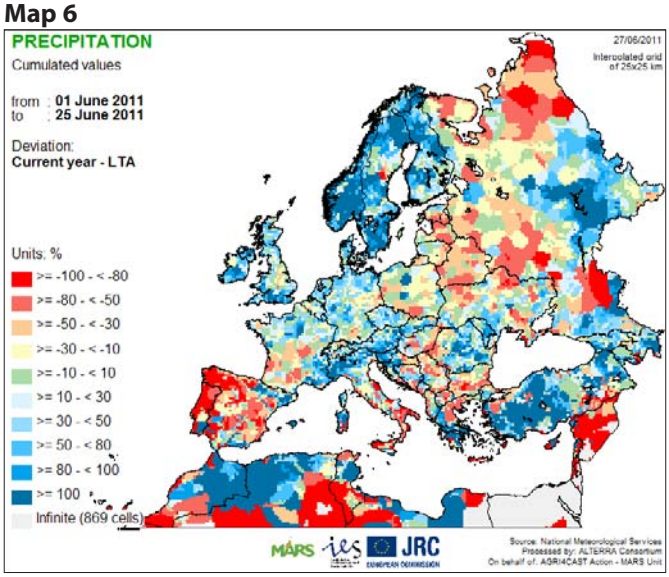

**Map 4**



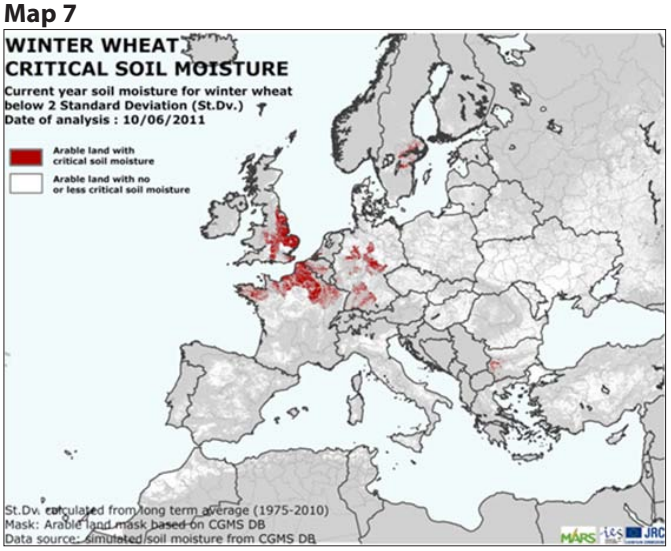

**Map 5**



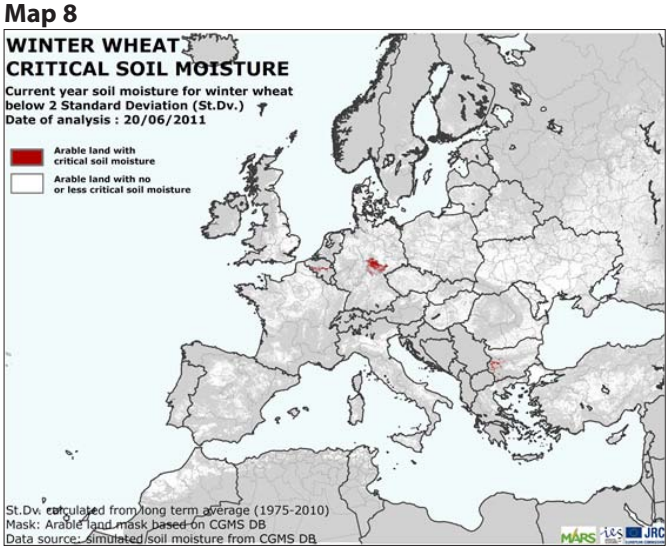

**Map 6**




**Map 7**



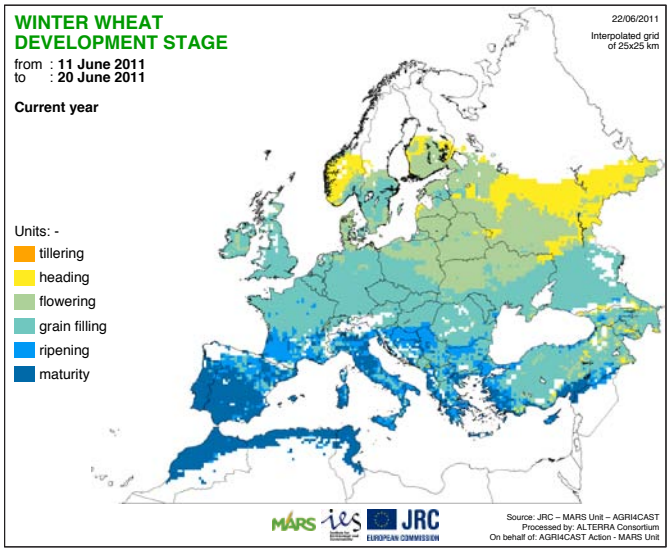

**Map 8**

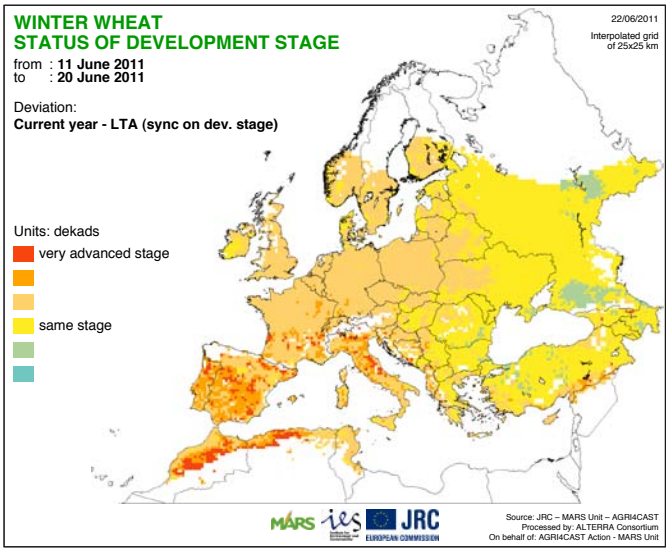


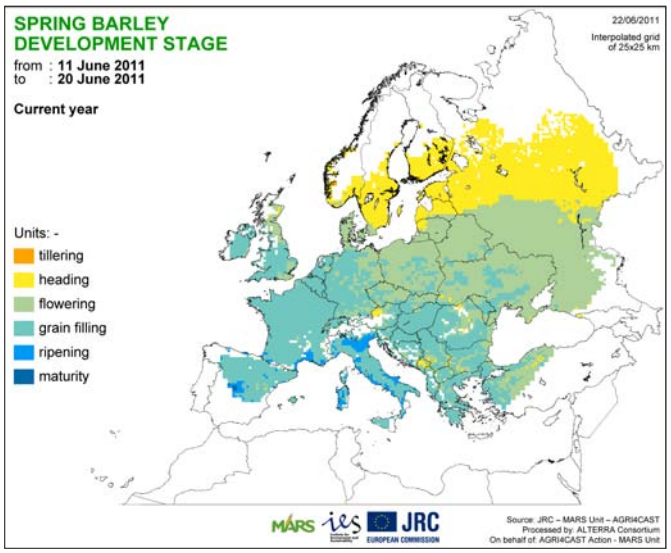
# II. Crop Monitoring

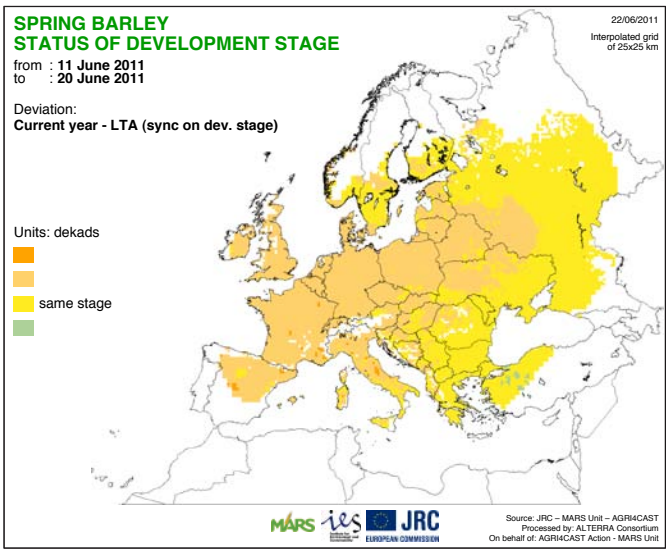
## 1. Crop atlas maps

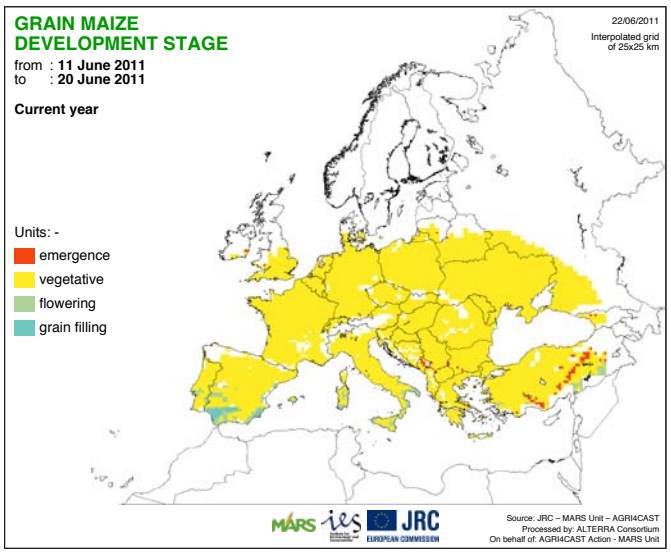
### Development stage and status of development stage

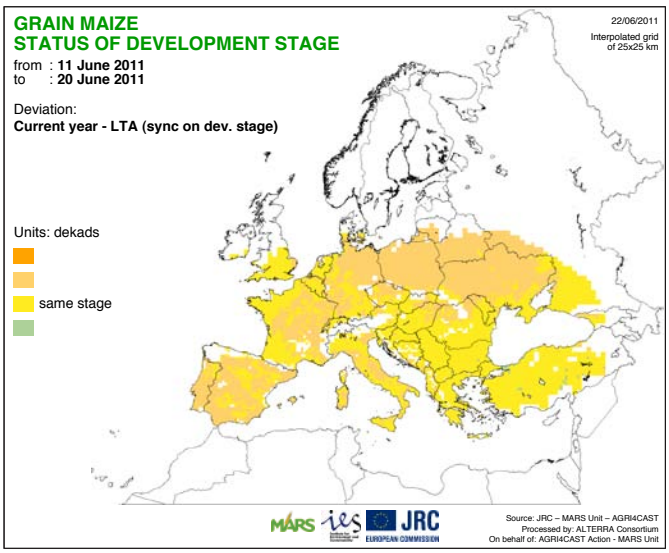


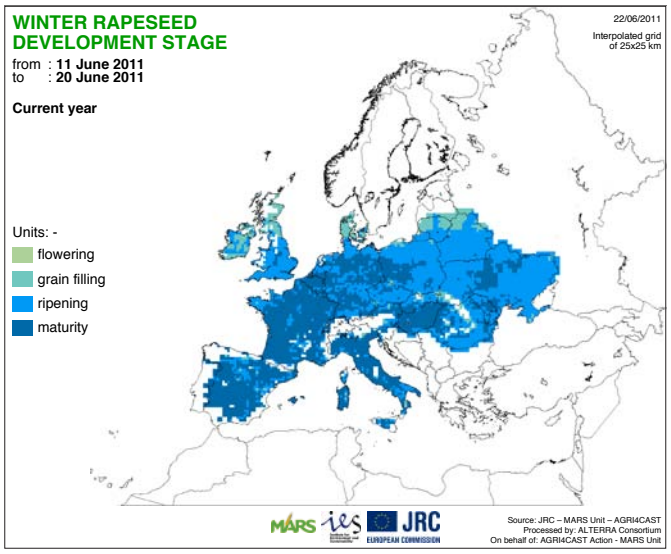



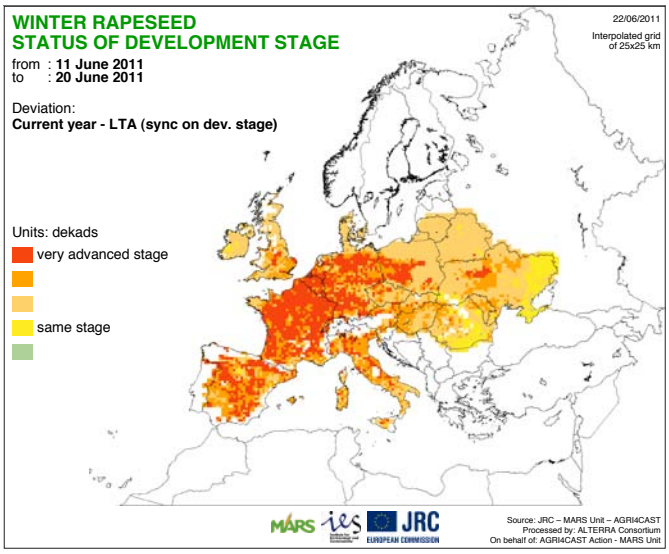



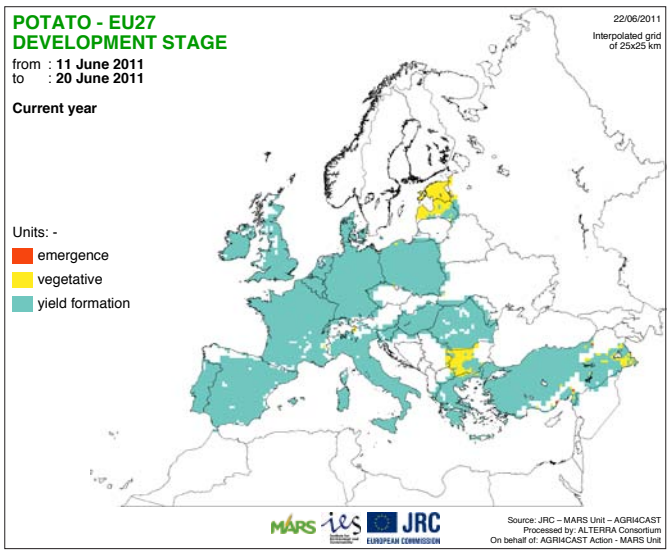



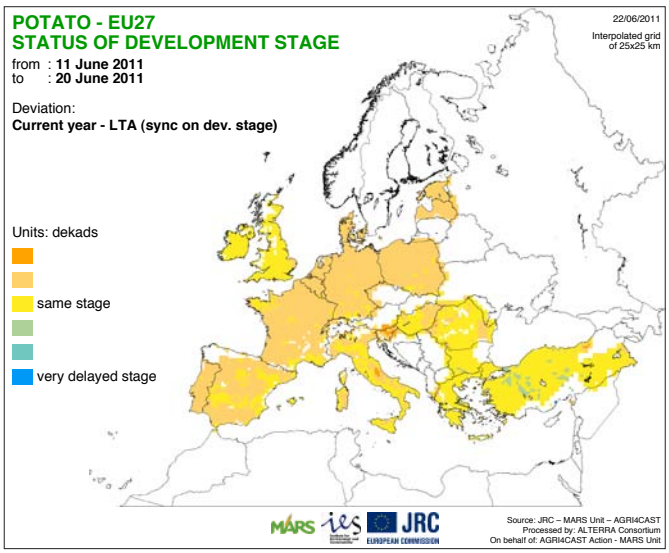



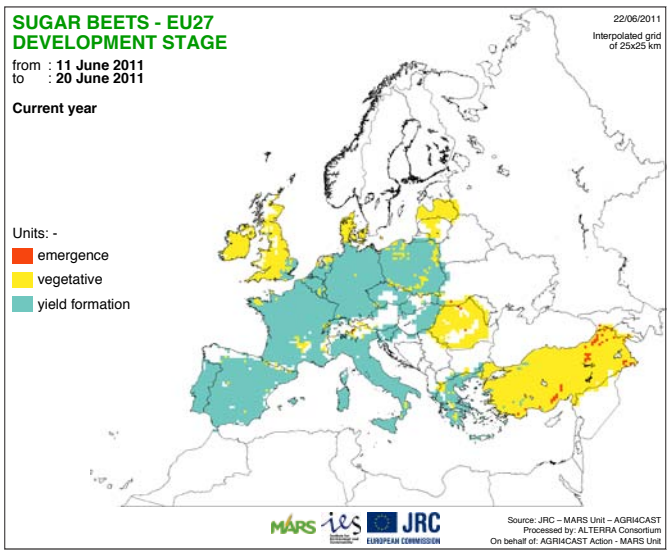



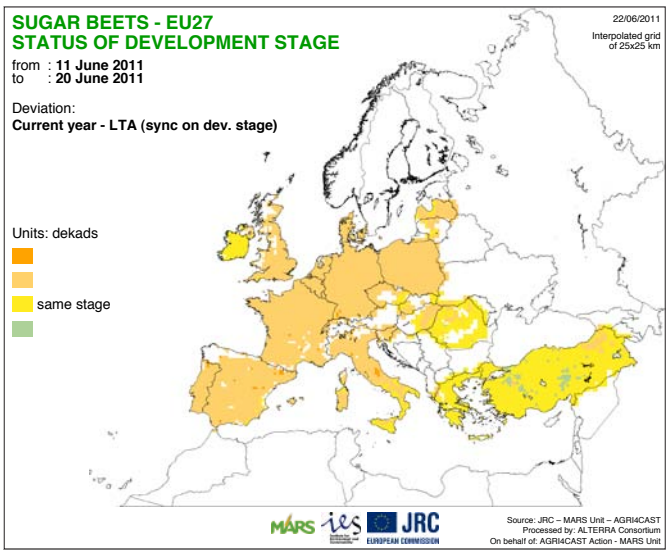

WINTER RAPESEED
DEVELOPMENT STAGE
from : 11 June 2011
to : 20 June 2011
Current year
Units: -
flowering
grain filling
ripening
maturity
22/06/2011
Interpolated grid of 25x25 km
Source: JRC – MARS Unit – AGRI4CAST
Processed by: ALTERRA Consortium
On behalf of: AGRI4CAST Action - MARS Unit


WINTER RAPESEED
STATUS OF DEVELOPMENT STAGE
from : 11 June 2011
to : 20 June 2011
Deviation:
Current year - LTA (sync on dev. stage)
Units: dekads
very advanced stage
same stage
22/06/2011
Interpolated grid of 25x25 km
Source: JRC – MARS Unit – AGRI4CAST
Processed by: ALTERRA Consortium
On behalf of: AGRI4CAST Action - MARS Unit


POTATO - EU27
DEVELOPMENT STAGE
from : 11 June 2011
to : 20 June 2011
Current year
Units: -
emergence
vegetative
yield formation
22/06/2011
Interpolated grid of 25x25 km
Source: JRC – MARS Unit – AGRI4CAST
Processed by: ALTERRA Consortium
On behalf of: AGRI4CAST Action - MARS Unit


POTATO - EU27
STATUS OF DEVELOPMENT STAGE
from : 11 June 2011
to : 20 June 2011
Deviation:
Current year - LTA (sync on dev. stage)
Units: dekads
same stage
very delayed stage
22/06/2011
Interpolated grid of 25x25 km
Source: JRC – MARS Unit – AGRI4CAST
Processed by: ALTERRA Consortium
On behalf of: AGRI4CAST Action - MARS Unit


SUGAR BEETS - EU27
DEVELOPMENT STAGE
from : 11 June 2011
to : 20 June 2011
Current year
Units: -
emergence
vegetative
yield formation
22/06/2011
Interpolated grid of 25x25 km
Source: JRC – MARS Unit – AGRI4CAST
Processed by: ALTERRA Consortium
On behalf of: AGRI4CAST Action - MARS Unit


SUGAR BEETS - EU27
STATUS OF DEVELOPMENT STAGE
from : 11 June 2011
to : 20 June 2011
Deviation:
Current year - LTA (sync on dev. stage)
Units: dekads
same stage
22/06/2011
Interpolated grid of 25x25 km
Source: JRC – MARS Unit – AGRI4CAST
Processed by: ALTERRA Consortium
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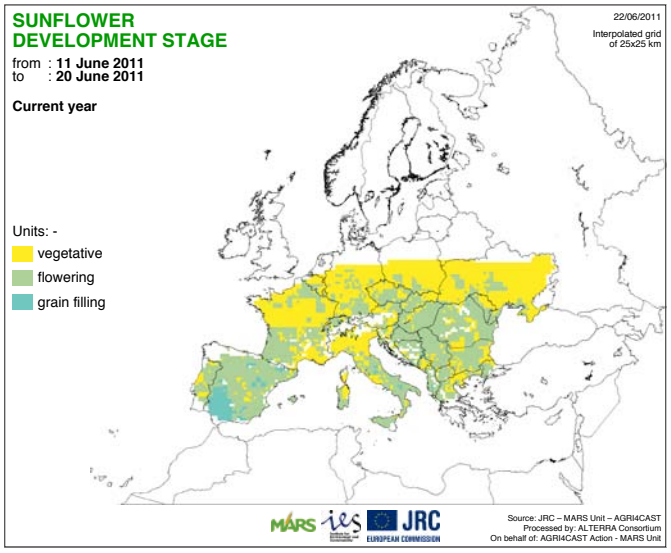
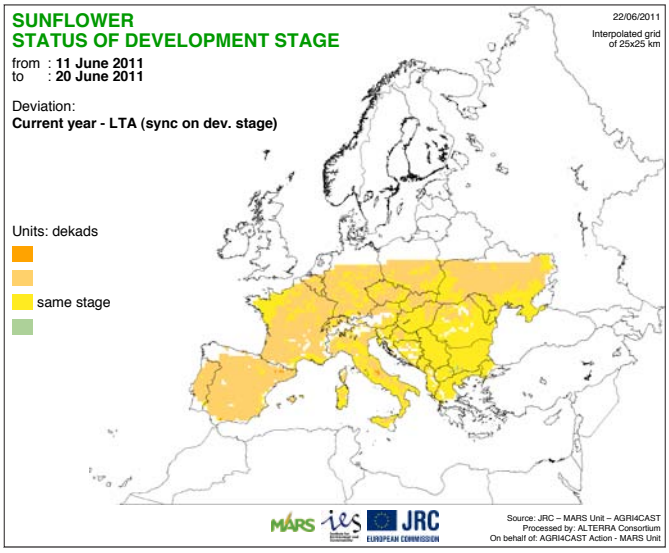
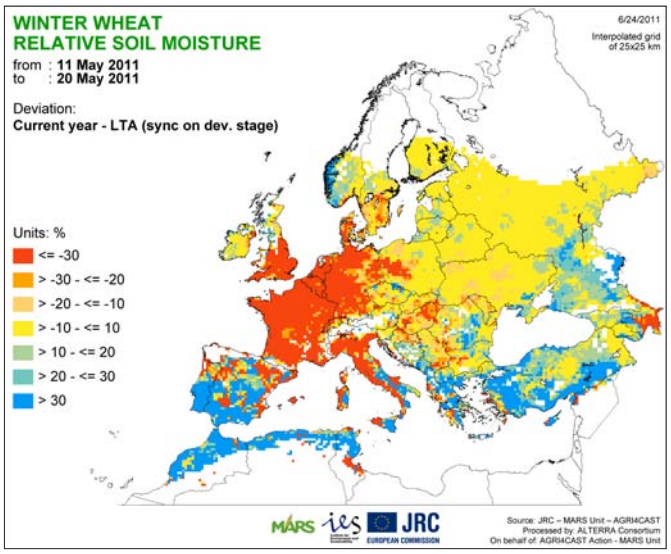
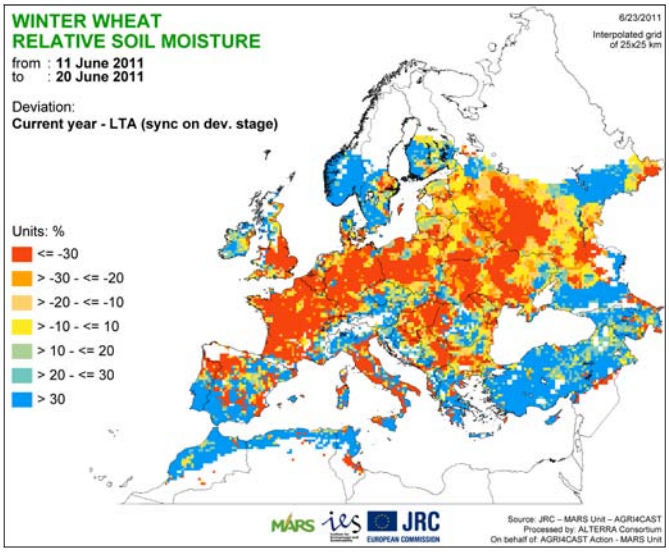
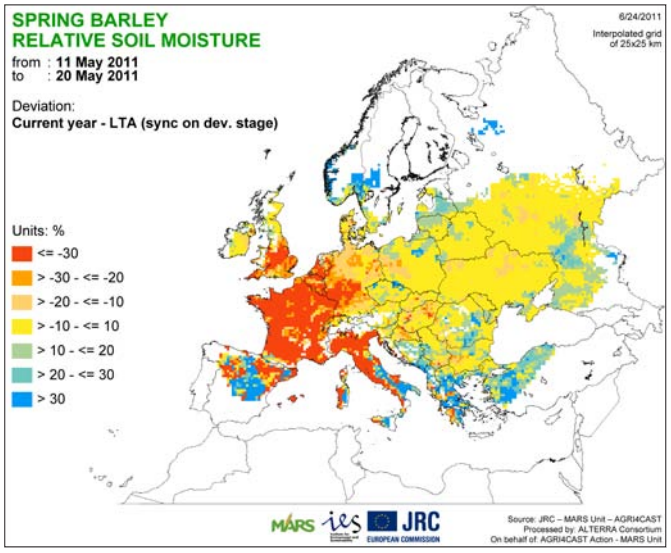


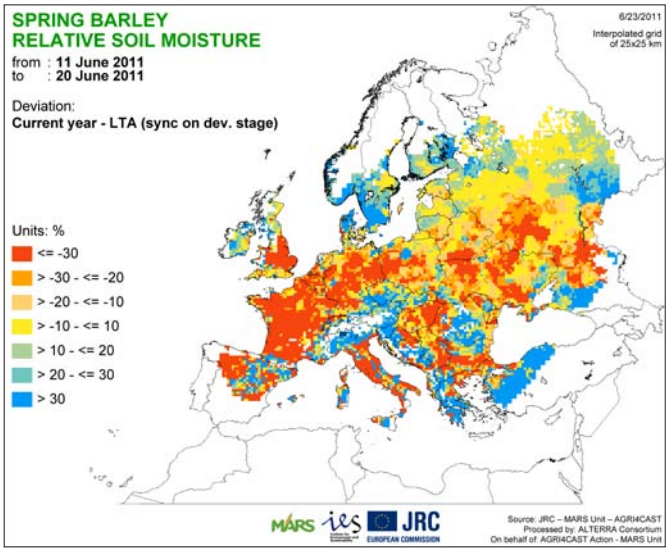



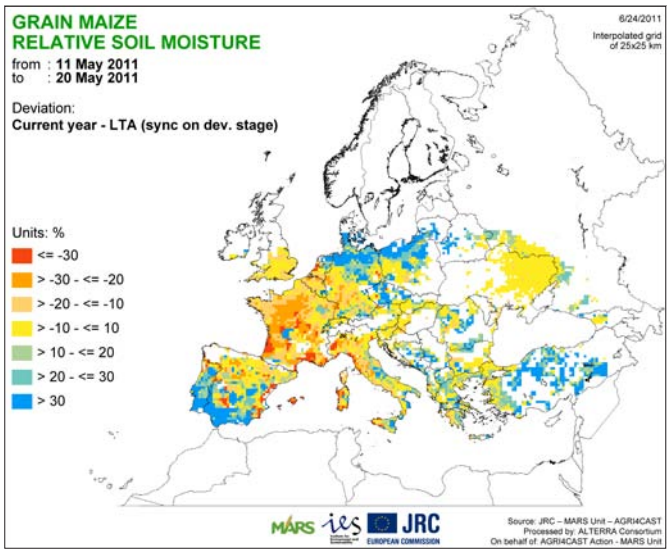

## Relative soil moisture

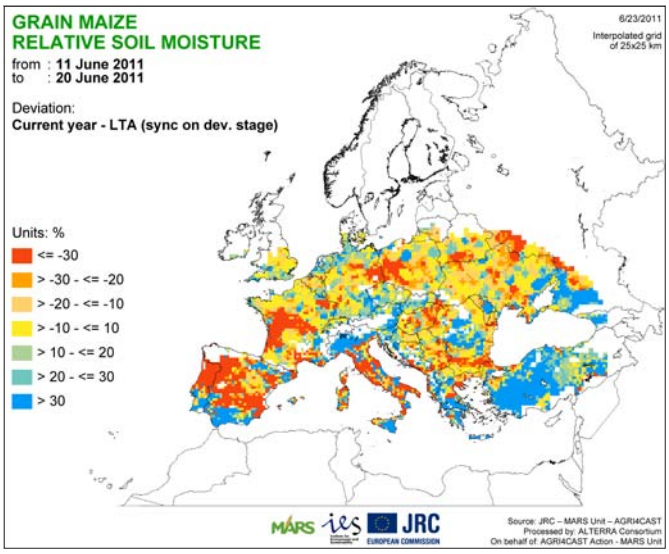


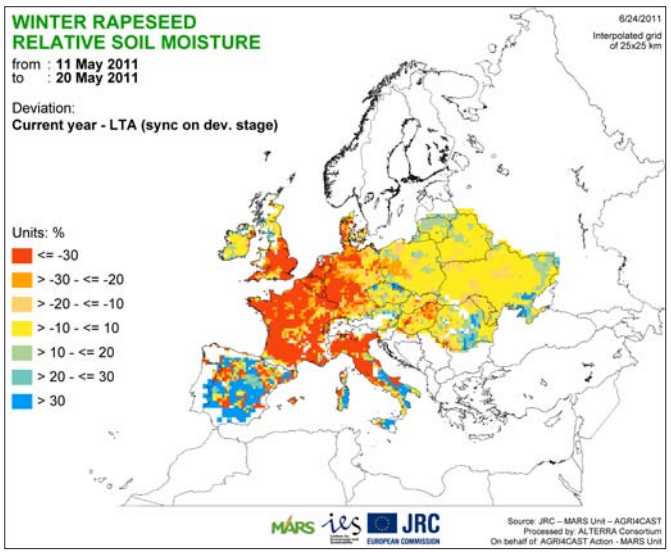



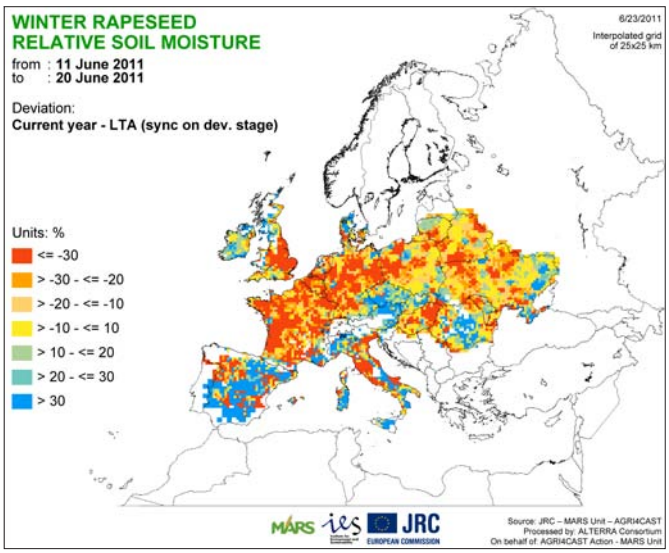



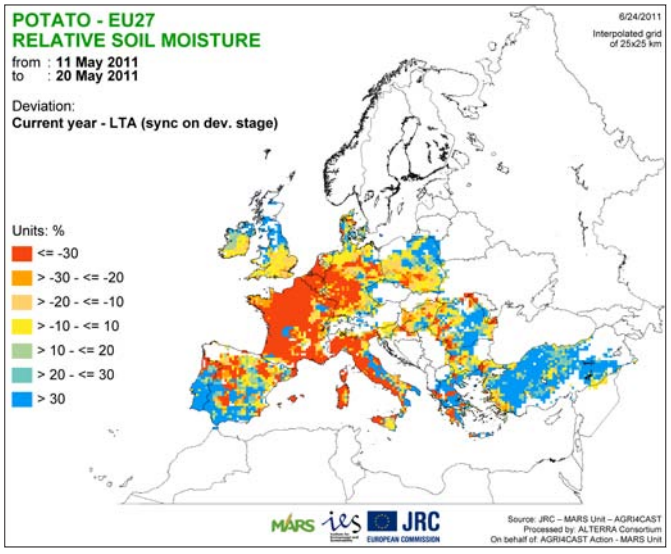



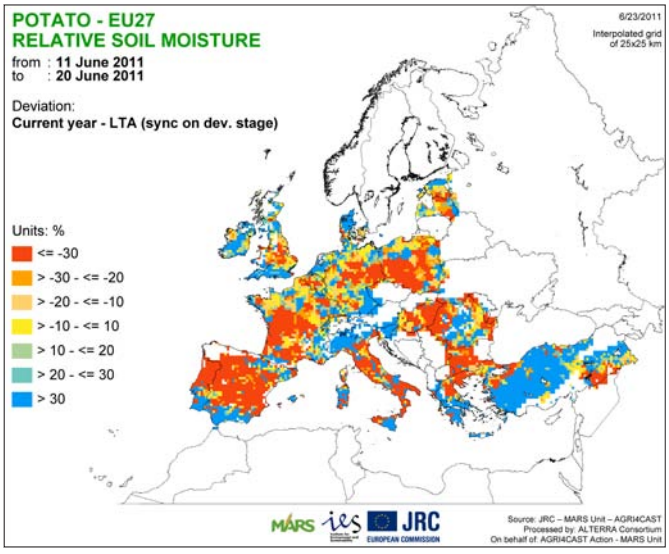

GRAIN MAIZE
RELATIVE SOIL MOISTURE
from : 11 May 2011
to : 20 May 2011
Deviation:
Current year - LTA (sync on dev. stage)
6/24/2011
Interpolated grid of 25x25 km
Units: %
<= -30
> -30 - <= -20
> -20 - <= -10
> -10 - <= 10
> 10 - <= 20
> 20 - <= 30
> 30
MARS
JRC
EUROPEAN COMMISSION
Source: JRC – MARS Unit – AGRI4CAST
Processed by: ALTERRA Consortium
On behalf of: AGRI4CAST Action - MARS Unit

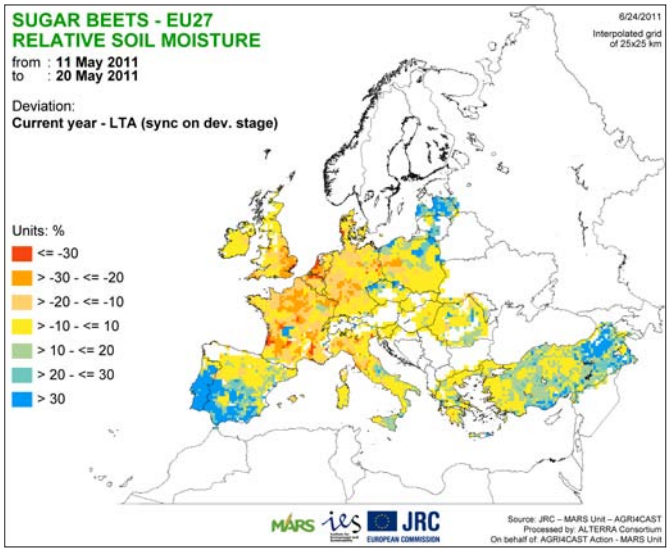

GRAIN MAIZE
RELATIVE SOIL MOISTURE
from : 11 June 2011
to : 20 June 2011
Deviation:
Current year - LTA (sync on dev. stage)
6/23/2011
Interpolated grid of 25x25 km
Units: %
<= -30
> -30 - <= -20
> -20 - <= -10
> -10 - <= 10
> 10 - <= 20
> 20 - <= 30
> 30
MARS
JRC
EUROPEAN COMMISSION
Source: JRC – MARS Unit – AGRI4CAST
Processed by: ALTERRA Consortium
On behalf of: AGRI4CAST Action - MARS Unit

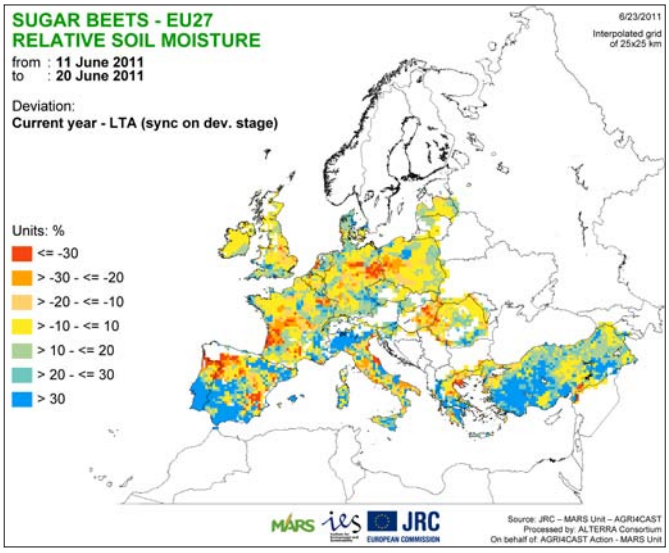

WINTER RAPESEED
RELATIVE SOIL MOISTURE
from : 11 May 2011
to : 20 May 2011
Deviation:
Current year - LTA (sync on dev. stage)
6/24/2011
Interpolated grid of 25x25 km
Units: %
<= -30
> -30 - <= -20
> -20 - <= -10
> -10 - <= 10
> 10 - <= 20
> 20 - <= 30
> 30
MARS
JRC
EUROPEAN COMMISSION
Source: JRC – MARS Unit – AGRI4CAST
Processed by: ALTERRA Consortium
On behalf of: AGRI4CAST Action - MARS Unit

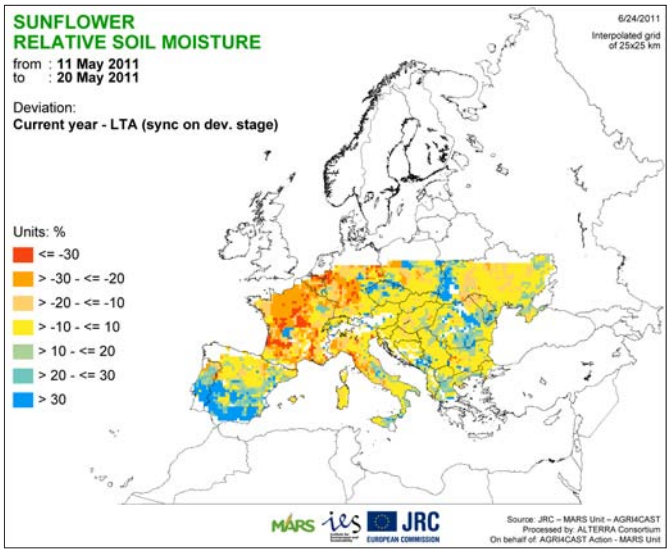

WINTER RAPESEED
RELATIVE SOIL MOISTURE
from : 11 June 2011
to : 20 June 2011
Deviation:
Current year - LTA (sync on dev. stage)
6/23/2011
Interpolated grid of 25x25 km
Units: %
<= -30
> -30 - <= -20
> -20 - <= -10
> -10 - <= 10
> 10 - <= 20
> 20 - <= 30
> 30
MARS
JRC
EUROPEAN COMMISSION
Source: JRC – MARS Unit – AGRI4CAST
Processed by: ALTERRA Consortium
On behalf of: AGRI4CAST Action - MARS Unit

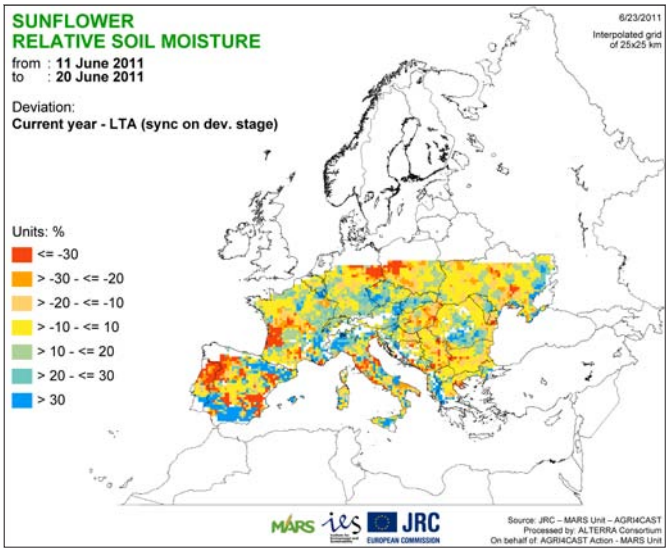

POTATO - EU27
RELATIVE SOIL MOISTURE
from : 11 May 2011
to : 20 May 2011
Deviation:
Current year - LTA (sync on dev. stage)
6/24/2011
Interpolated grid of 25x25 km
Units: %
<= -30
> -30 - <= -20
> -20 - <= -10
> -10 - <= 10
> 10 - <= 20
> 20 - <= 30
> 30
MARS
JRC
EUROPEAN COMMISSION
Source: JRC – MARS Unit – AGRI4CAST
Processed by: ALTERRA Consortium
On behalf of: AGRI4CAST Action - MARS Unit


POTATO - EU27
RELATIVE SOIL MOISTURE
from : 11 June 2011
to : 20 June 2011
Deviation:
Current year - LTA (sync on dev. stage)
6/23/2011
Interpolated grid of 25x25 km
Units: %
<= -30
> -30 - <= -20
> -20 - <= -10
> -10 - <= 10
> 10 - <= 20
> 20 - <= 30
> 30
MARS
JRC
EUROPEAN COMMISSION
Source: JRC – MARS Unit – AGRI4CAST
Processed by: ALTERRA Consortium
On behalf of: AGRI4CAST Action - MARS Unit

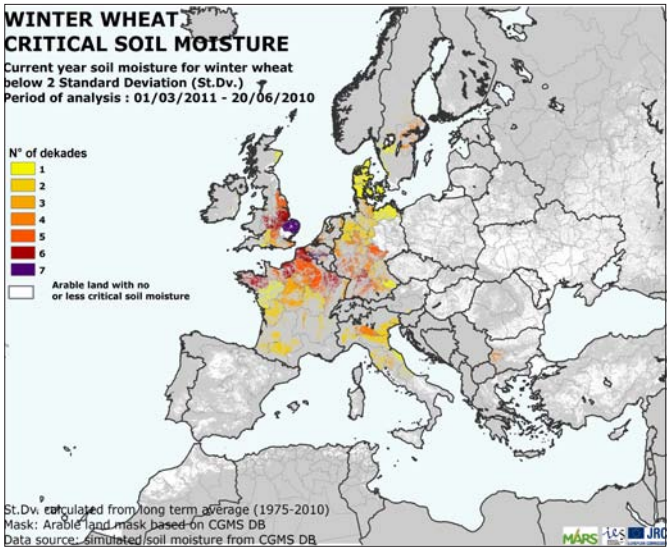

SUGAR BEETS - EU27
RELATIVE SOIL MOISTURE
from : 11 May 2011
to : 20 May 2011
Deviation:
Current year - LTA (sync on dev. stage)
Units: %
<= -30
> -30 - <= -20
> -20 - <= -10
> -10 - <= 10
> 10 - <= 20
> 20 - <= 30
> 30
6/24/2011
Interpolated grid of 25x25 km
MARS
JRC
EUROPEAN COMMISSION
Source: JRC – MARS Unit – AGRI4CAST
Processed by: ALTERRA Consortium
On behalf of: AGRI4CAST Action - MARS Unit

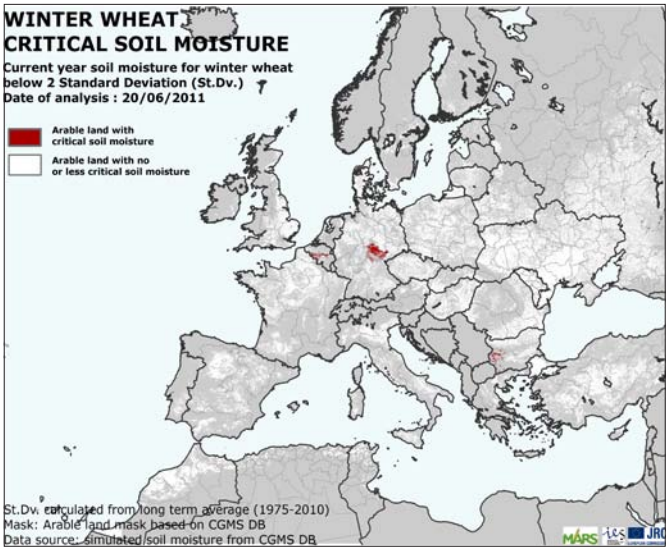

SUGAR BEETS - EU27
RELATIVE SOIL MOISTURE
from : 11 June 2011
to : 20 June 2011
Deviation:
Current year - LTA (sync on dev. stage)
Units: %
<= -30
> -30 - <= -20
> -20 - <= -10
> -10 - <= 10
> 10 - <= 20
> 20 - <= 30
> 30
6/23/2011
Interpolated grid of 25x25 km
MARS
JRC
EUROPEAN COMMISSION
Source: JRC – MARS Unit – AGRI4CAST
Processed by: ALTERRA Consortium
On behalf of: AGRI4CAST Action - MARS Unit

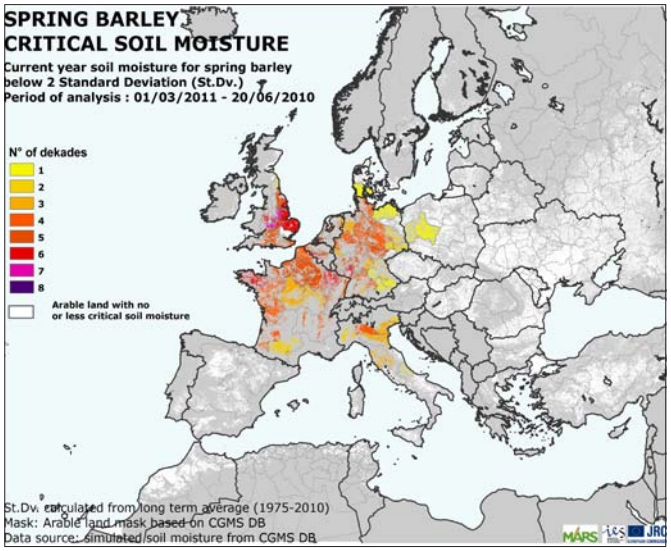

SUNFLOWER
RELATIVE SOIL MOISTURE
from : 11 May 2011
to : 20 May 2011
Deviation:
Current year - LTA (sync on dev. stage)
Units: %
<= -30
> -30 - <= -20
> -20 - <= -10
> -10 - <= 10
> 10 - <= 20
> 20 - <= 30
> 30
6/24/2011
Interpolated grid of 25x25 km
MARS
JRC
EUROPEAN COMMISSION
Source: JRC – MARS Unit – AGRI4CAST
Processed by: ALTERRA Consortium
On behalf of: AGRI4CAST Action - MARS Unit

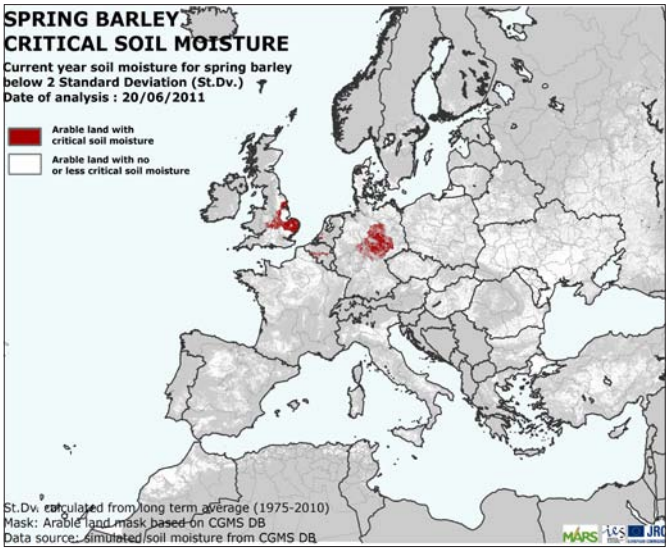

SUNFLOWER
RELATIVE SOIL MOISTURE
from : 11 June 2011
to : 20 June 2011
Deviation:
Current year - LTA (sync on dev. stage)
Units: %
<= -30
> -30 - <= -20
> -20 - <= -10
> -10 - <= 10
> 10 - <= 20
> 20 - <= 30
> 30
6/23/2011
Interpolated grid of 25x25 km
MARS
JRC
EUROPEAN COMMISSION
Source: JRC – MARS Unit – AGRI4CAST
Processed by: ALTERRA Consortium
On behalf of: AGRI4CAST Action - MARS Unit

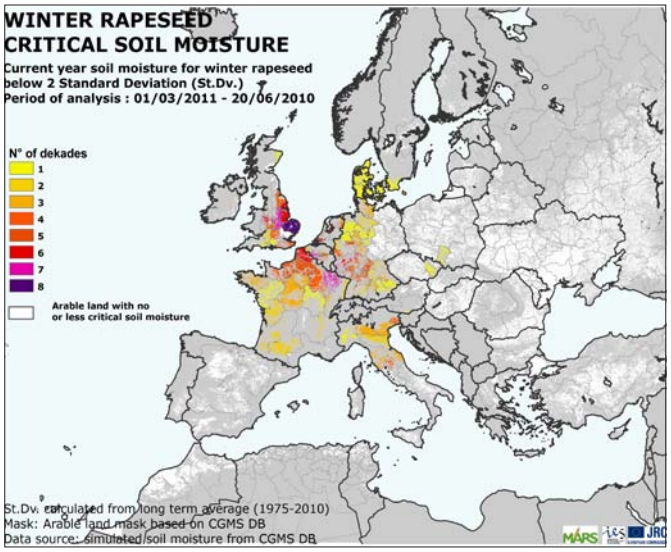
# Critical soil moisture

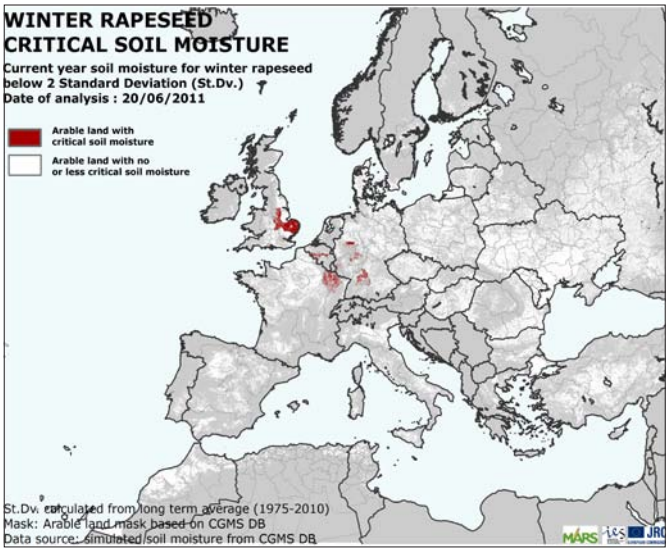


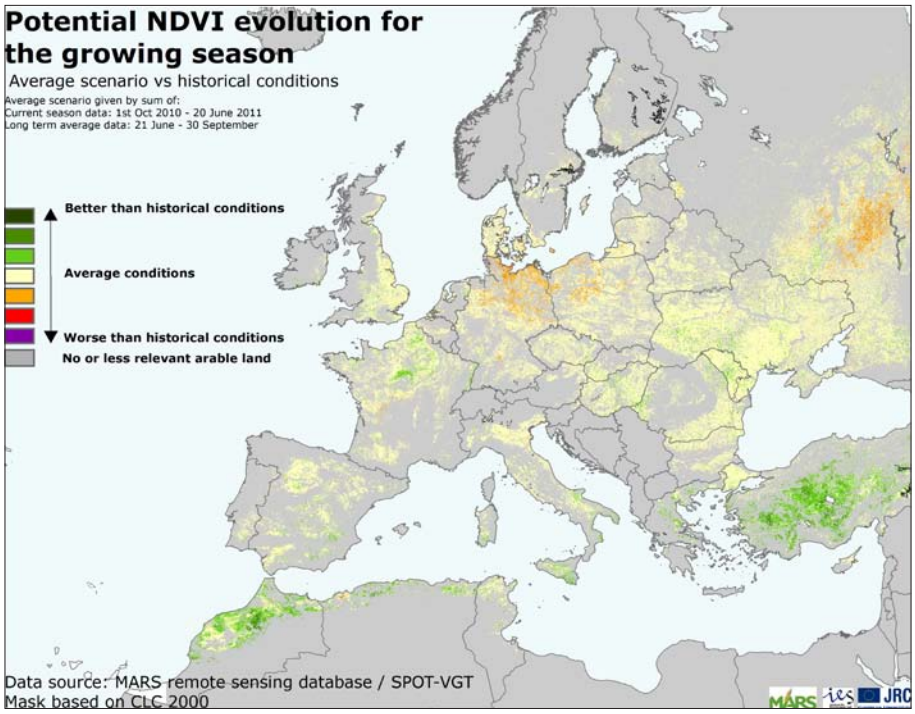



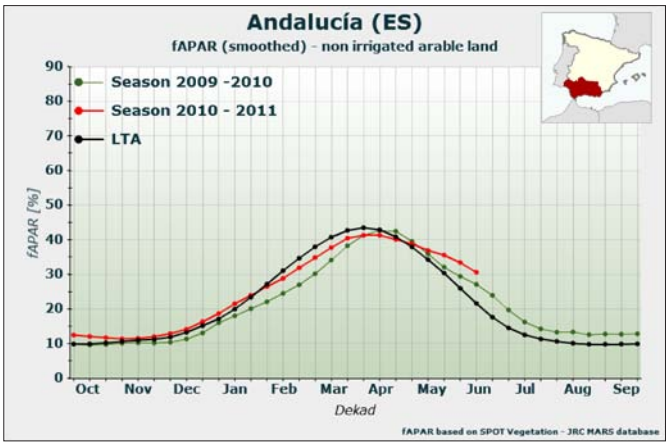



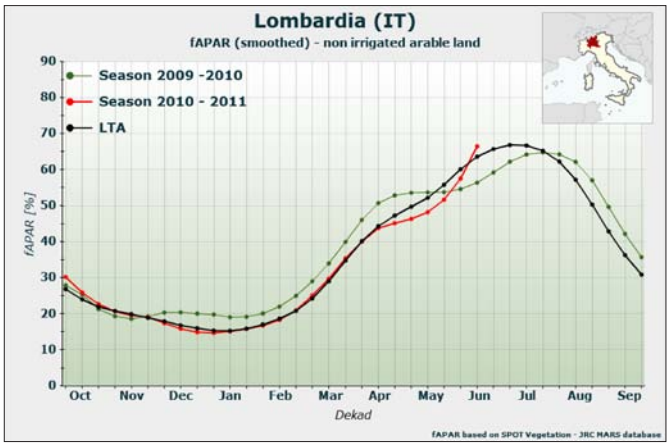
# 2. Remote sensing — Spot vegetation analysis — Observed canopy conditions

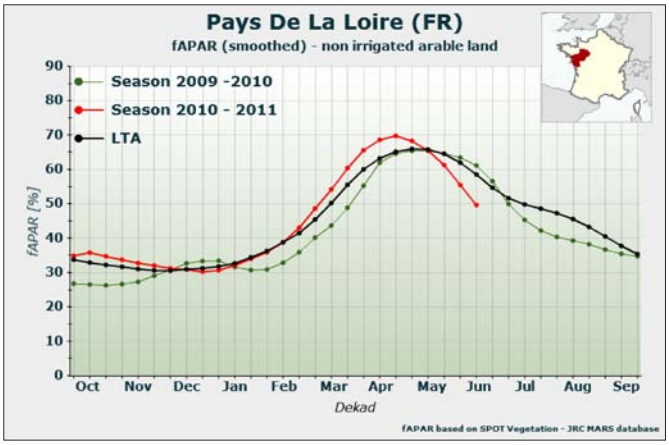
**In Western Europe the dry conditions led to a slightly early senescence. North Germany still faces lower than average biomass accumulation. Crop development on the eastern Black Sea coast recovered and is now above average. In Russia the protracted delay in winter crop development has been partially recovered. The cropping season in the Mediterranean basin is almost finished.**

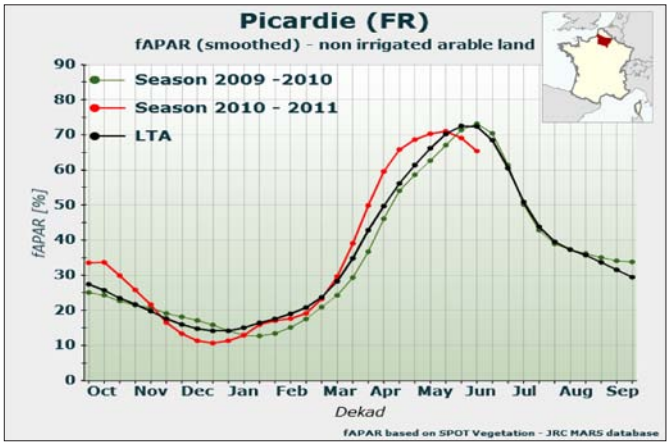


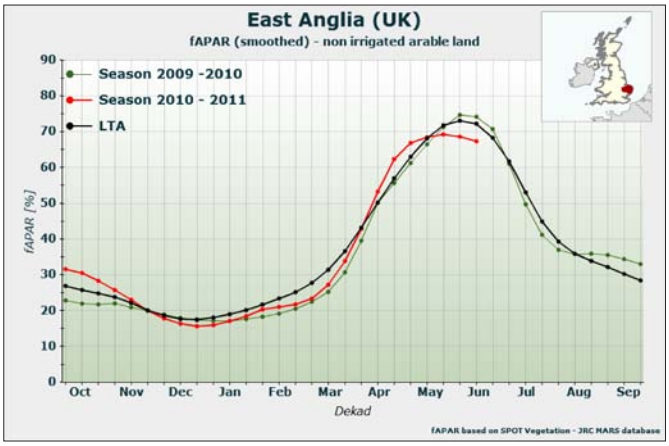

The picture above shows global biomass accumulation until the end of the growing season and therefore evaluates whether the current season is close to normal or more of an extreme event. The cumulated NDVI values for the end of the season were computed using the observed NDVI values from 1 October 2010 to 20 June 2011, and adding historical average NDVI values from 21 June to 30 September. The resultant NDVI cumulated values were compared with the three historical series (minimum, maximum, and average). The climatic conditions in spring on the Iberian Peninsula made for high yield expectations for winter crops, especially in **Spain**. In the southern agricultural regions the biomass peak was below the average due to some shifts from winter to summer crops (see **Andalucia** fAPAR curve). In **North Italy** winter crops suffered from dry conditions in April and May and faced reduced biomass development. The water supply in June allowed summer crops canopy to develop well, bringing a return to anticipated stages. These conditions are clearly shown in the fAPAR curve for **Lombardia**. In **France** the severe lack of water caused a shortening of the crop cycle. In western regions (e.g. **Pays De La Loire**) the spring biomass boost, caused by warmer than usual temperatures, was coupled with an early senescence of winter crops and a bad start for the summer ones. In the northern part of the country the phenological cycle is clearly anticipated and, even if the biomass accumulation is slightly above the average, the biomass peak is below average. The start of summer crops is better than expected thanks to the June weather conditions. This year's fAPAR curve for the **Picardie** region is given as an example. Very bad conditions are present in **United Kingdom.** The critically low soil moisture did not make for good canopy growth and brought development from advanced to normal stages, with a lack of biomass accumulation, as shown by the **East Anglia** fAPAR profile. In **Germany** crop development is ambivalent. The southern regions face a normal year, as displayed by the **Oberbayern** fAPAR curve for the current year. In the northern regions, however, crops did not recover from the bad start of the season, and the total cumulation of biomass is expected to remain below average (see **Sachsen-Anhalt** profile for the current season). Similar conditions can be seen in **Poland,** where the western part has a low and delayed biomass accumulation (see **Wielkopolskie** graph). In central Europe, conditions are at average. In **Hungary** some transitions from winter to summer crops occurred, as highlighted by the change in shape of the fAPAR curve, e.g. in the **Del-Halfold** region (see profile), as compared to the average curve. Very good crop development is registered across the western **Black Sea** coasts. The delayed stages of spring have been recovered, and biomass growth is clearly above average (e.g. **Sud Muntania (RO)** profile). With a north-to-south gradient, the phenological cycle is entering into the senescence phase (e.g. **Yugoiztochen (BG)** profile). The same trend is visible in **Ukraine,** where the southern regions, like **Ode'ka oblast** (see profile), have already entered the senescence phase after a good spring development. Crops in the northern areas slowed down in growth rate, and less than optimal development could happen, mainly driven by dry conditions (see **Chernihiv'ka** fAPAR profile). In **Russia** green biomass development is rather good (e.g. **Rostovskaya** profile) almost everywhere, with the exclusion of some agricultural districts where the late sowing led to a marked delay, as shown in the fAPAR graph of **Saratovskaya** region. The exceptional season in **Turkey** has entered into the senescence phase (see **Konya** profile).

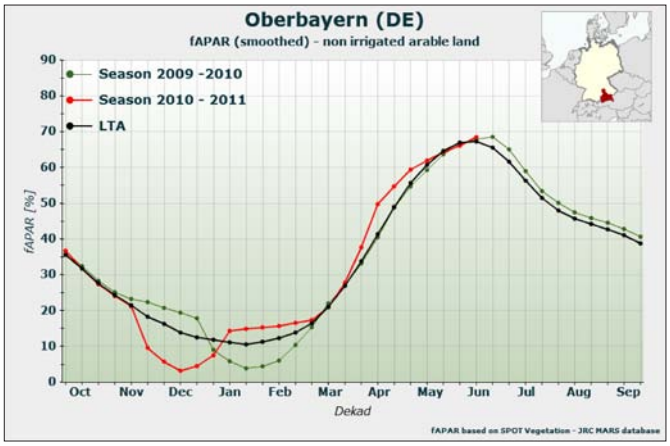

Andalucía (ES)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad
fAPAR based on SPOT Vegetation - JRC MARS database

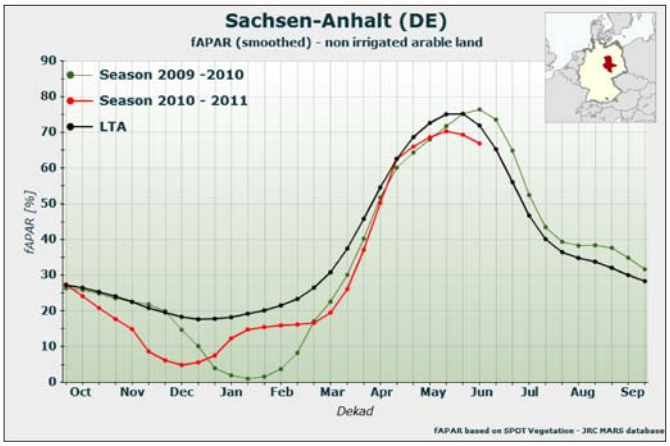

Lombardia (IT)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad
fAPAR based on SPOT Vegetation - JRC MARS database

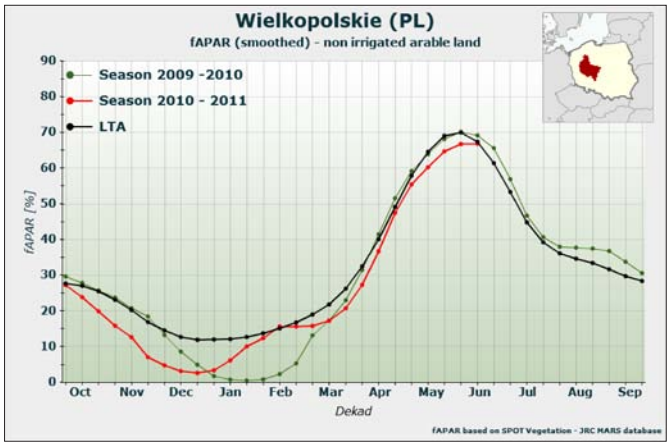

Pays De La Loire (FR)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad
fAPAR based on SPOT Vegetation - JRC MARS database

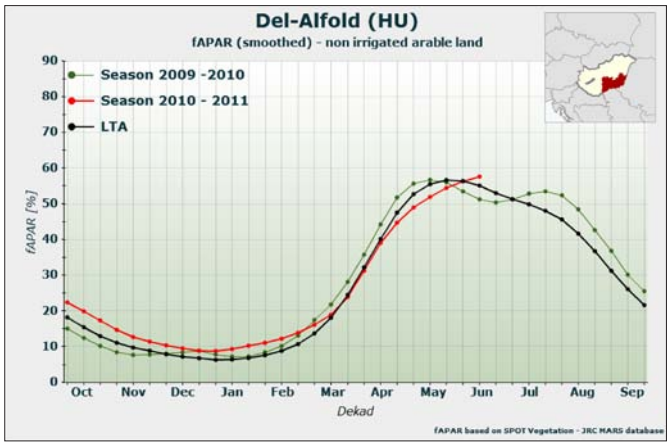

Picardie (FR)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad
fAPAR based on SPOT Vegetation - JRC MARS database

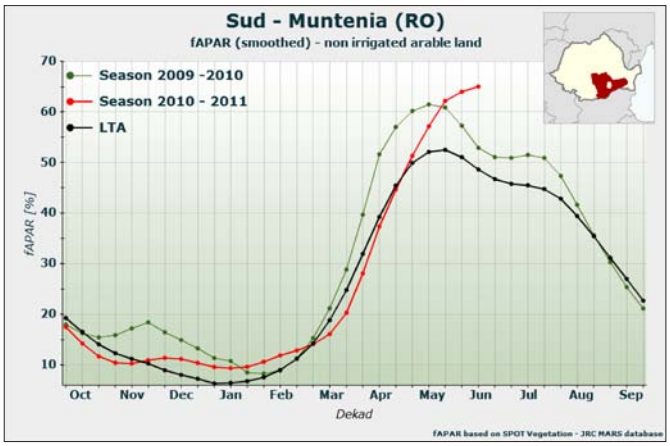

East Anglia (UK)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad
fAPAR based on SPOT Vegetation - JRC MARS database

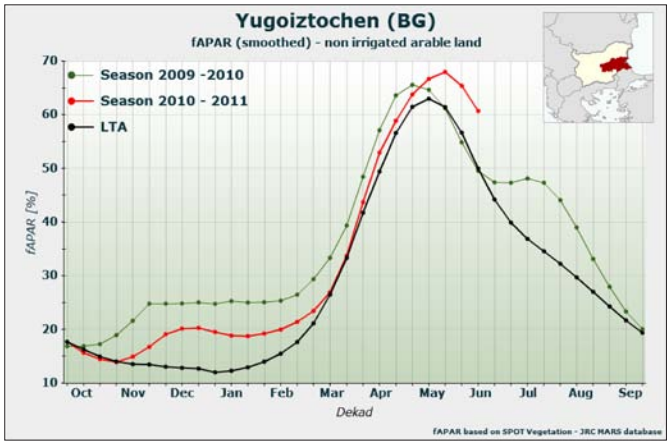

Oberbayern (DE)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad
fAPAR based on SPOT Vegetation - JRC MARS database

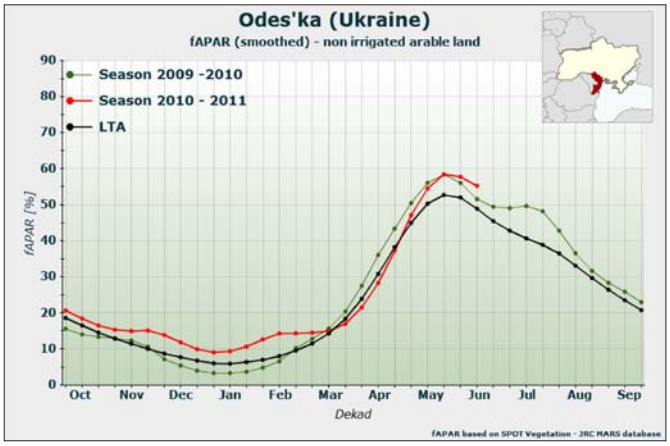

Sachsen-Anhalt (DE)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad
fAPAR based on SPOT Vegetation - JRC MARS database

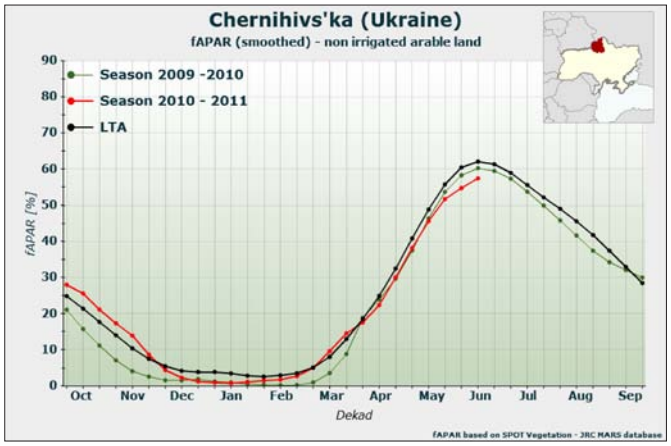

Wielkopolskie (PL)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad
fAPAR based on SPOT Vegetation - JRC MARS database

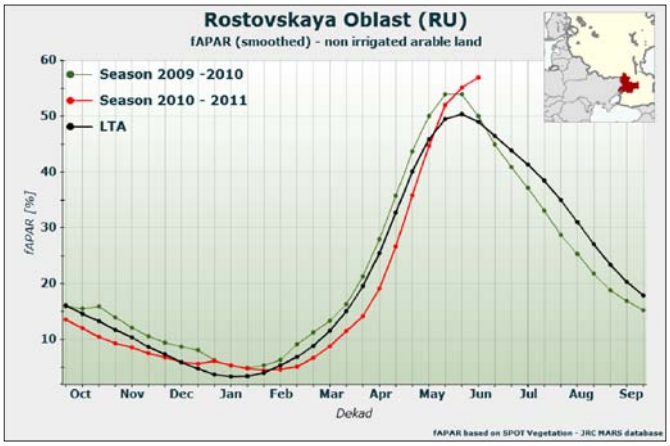

Del-Alfold (HU)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad
fAPAR based on SPOT Vegetation - JRC MARS database

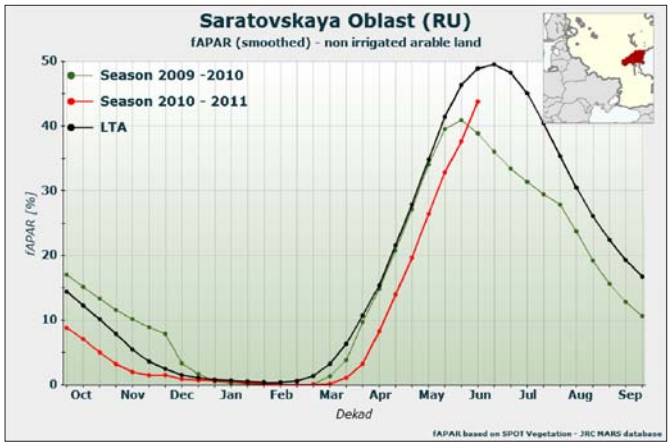

Sud - Muntenia (RO)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad
fAPAR based on SPOT Vegetation - JRC MARS database

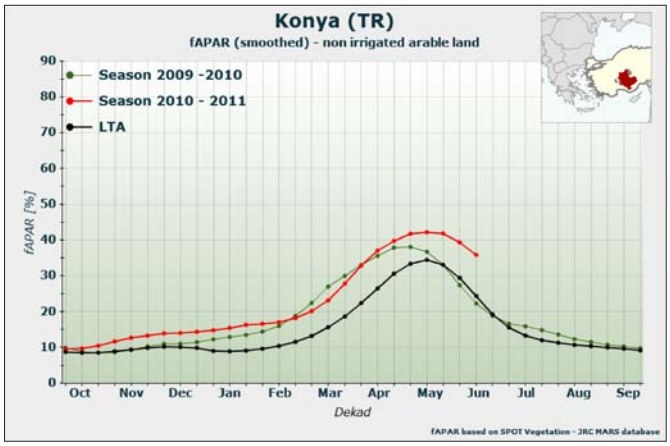

Yugoiztochen (BG)
fAPAR (smoothed) - non irrigated arable land
Season 2009 -2010
Season 2010 - 2011
LTA
fAPAR [%]
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Dekad
fAPAR based on SPOT Vegetation - JRC MARS database


Odes'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
fAPAR based on SPOT Vegetation - JRC MARS database


Chernihivs'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
fAPAR based on SPOT Vegetation - JRC MARS database


Rostovskaya Oblast (RU)
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
fAPAR based on SPOT Vegetation - JRC MARS database


Saratovskaya Oblast (RU)
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
fAPAR based on SPOT Vegetation - JRC MARS database


Konya (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
fAPAR based on SPOT Vegetation - JRC MARS database

# III. Crop yield forecast at EU-27 level

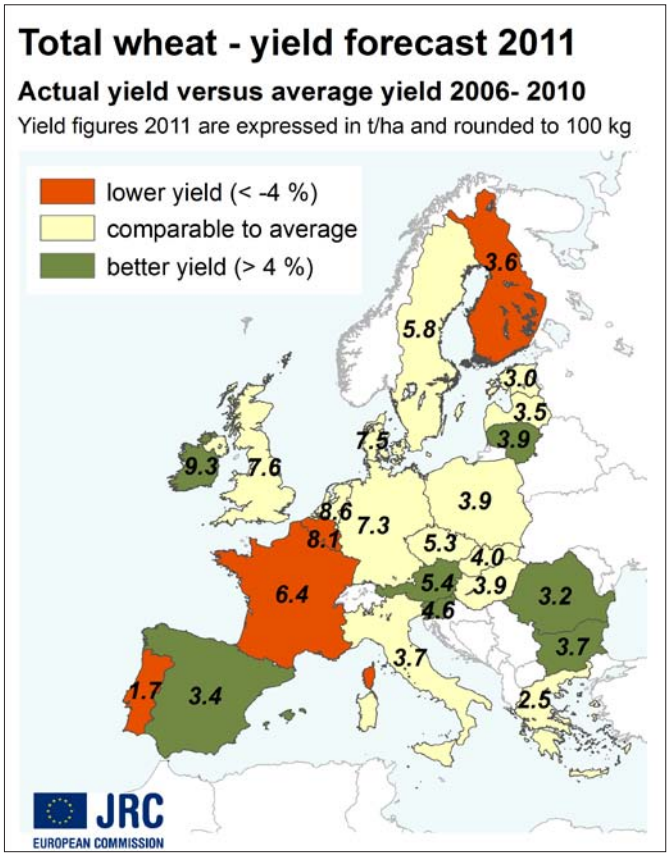
## AGRI4CAST crop yield forecasts * at national level for EU-27 (28 June 2011)

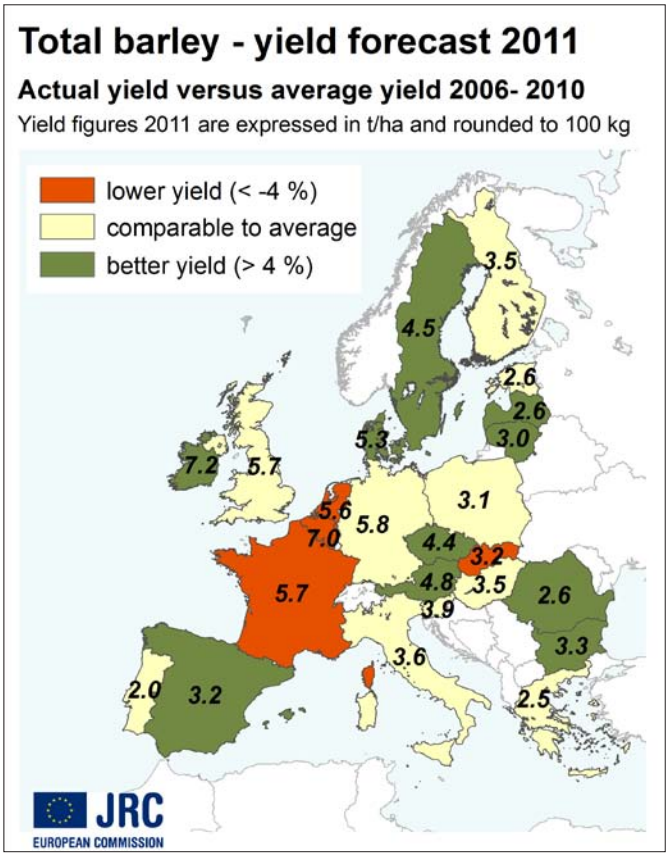
| Country | TOTAL WHEAT (t/ha) | | | | | SOFT WHEAT (t/ha) | | | | | DURUM WHEAT (t/ha) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2010 | 2011 | Avg 5yrs | %11/10 | %11/ 5yrs | 2010 | 2011 | Avg 5yrs | %11/ 10 | %11/5yrs | 2010 | 2011 | Avg 5yrs | %11/ 10 | %11/ 5yrs |
| EU27 | 5.30 | **5.27** | 5.27 | -0.5 | +0.1 | 5.56 | **5.50** | 5.54 | -1.0 | -0.7 | 3.15 | **3.19** | 3.11 | +1.2 | +2.6 |
| AT | 5.01 | **5.41** | 5.06 | +8.1 | +7.0 | 5.04 | **5.46** | 5.10 | +8.3 | +7.0 | 4.50 | **4.70** | 4.37 | +4.4 | +7.6 |
| BE | 9.35 | **8.13** | 8.68 | -13.1 | -6.3 | 9.35 | **8.13** | 8.68 | -13.1 | -6.3 | - | **-** | - | - | - |
| BG | 3.74 | **3.73** | 3.34 | -0.3 | +11.6 | 3.74 | **3.73** | 3.34 | -0.3 | +11.6 | - | **-** | - | - | - |
| CY | - | **-** | - | - | - | - | **-** | - | - | - | - | **-** | - | - | - |
| CZ | 4.99 | **5.26** | 5.09 | +5.4 | +3.4 | 4.99 | **5.26** | 5.09 | +5.4 | +3.4 | - | **-** | - | - | - |
| DE | 7.23 | **7.26** | 7.46 | +0.5 | -2.7 | 7.24 | **7.27** | 7.47 | +0.4 | -2.6 | 5.35 | **5.41** | 5.48 | +1.1 | -1.3 |
| DK | 6.63 | **7.49** | 7.22 | +13.0 | +3.8 | 6.63 | **7.49** | 7.22 | +13.0 | +3.8 | - | **-** | - | - | - |
| EE | 2.71 | **3.02** | 2.96 | +11.5 | +2.1 | 2.71 | **3.02** | 2.96 | +11.5 | +2.1 | - | **-** | - | - | - |
| ES | 3.01 | **3.37** | 3.08 | +11.8 | +9.3 | 3.37 | **3.56** | 3.31 | +5.5 | +7.4 | 1.95 | **2.78** | 2.47 | +42.8 | +12.6 |
| FI | 3.43 | **3.55** | 3.71 | +3.4 | -4.4 | 3.43 | **3.55** | 3.71 | +3.4 | -4.4 | - | **-** | - | - | - |
| FR | 7.04 | **6.41** | 6.92 | -8.8 | -7.3 | 7.24 | **6.57** | 7.11 | -9.2 | -7.6 | 5.06 | **4.70** | 4.81 | -7.2 | -2.3 |
| GR | 2.59 | **2.51** | 2.54 | -3.0 | -1.0 | 2.91 | **2.79** | 2.79 | -4.1 | +0.1 | 2.49 | **2.42** | 2.45 | -2.7 | -1.1 |
| HU | 3.72 | **3.94** | 4.05 | +5.7 | -2.7 | 3.73 | **3.94** | 4.05 | +5.5 | -2.7 | 3.32 | **3.86** | 3.82 | +16.1 | +1.0 |
| IE | 8.60 | **9.28** | 8.69 | +7.9 | +6.8 | 8.60 | **9.28** | 8.69 | +7.9 | +6.8 | - | **-** | - | - | - |
| IT | 3.70 | **3.68** | 3.65 | -0.7 | +0.7 | 5.16 | **5.09** | 5.19 | -1.3 | -1.8 | 3.04 | **2.97** | 2.97 | -2.4 | -0.1 |
| LT | 3.31 | **3.87** | 3.61 | +17.0 | +7.2 | 3.31 | **3.87** | 3.61 | +17.0 | +7.2 | - | **-** | - | - | - |
| LU | 5.96 | **5.75** | 6.15 | -3.5 | -6.5 | 5.96 | **5.75** | 6.15 | -3.5 | -6.5 | - | **-** | - | - | - |
| LV | 3.28 | **3.48** | 3.43 | +6.0 | +1.4 | 3.28 | **3.48** | 3.43 | +6.0 | +1.4 | - | **-** | - | - | - |
| 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 | **3.94** | 3.87 | +0.0 | +1.7 | 3.94 | **3.94** | 3.87 | +0.0 | +1.7 | - | **-** | - | - | - |
| PT | 1.45 | **1.74** | 1.93 | +19.9 | -10.0 | 1.45 | **1.74** | 1.93 | +19.9 | -10.0 | - | **-** | - | - | - |
| RO | 2.80 | **3.17** | 2.58 | +13.2 | +22.8 | 2.80 | **3.17** | 2.58 | +13.2 | +22.8 | - | **-** | - | - | - |
| SE | 5.40 | **5.77** | 5.86 | +6.9 | -1.6 | 5.40 | **5.77** | 5.86 | +6.9 | -1.6 | - | **-** | - | - | - |
| SI | 4.80 | **4.59** | 4.33 | -4.3 | +6.1 | 4.80 | **4.59** | 4.33 | -4.3 | +6.1 | - | **-** | - | - | - |
| SK | 3.47 | **4.00** | 4.01 | +15.3 | -0.3 | 3.46 | **3.97** | 4.00 | +14.8 | -0.7 | 3.58 | **4.42** | 4.33 | +23.6 | +2.3 |
| UK | 8.05 | **7.62** | 7.89 | -5.4 | -3.5 | 8.05 | **7.62** | 7.89 | -5.4 | -3.5 | - | **-** | - | - | - |

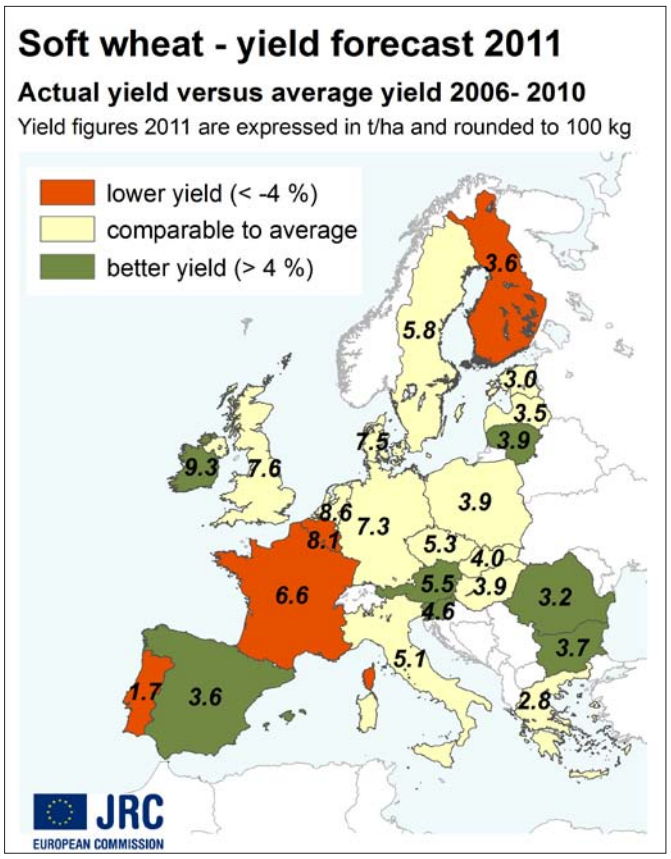
| Country | TOTAL BARLEY (t/ha) | | | | | GRAIN MAIZE (t/ha) | | | | | RAPE SEED (t/ha) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2010 | 2011 | Avg 5yrs | %11/10 | %11/ 5yrs | 2010 | 2011 | Avg 5yrs | %11/10 | %11/ 5yrs | 2010 | 2011 | Avg 5yrs | %11/10 | %11/ 5yrs |
| EU27 | 4.33 | **4.28** | 4.32 | -1.1 | -0.8 | 7.03 | **6.90** | 6.71 | -1.8 | +2.8 | 2.97 | **2.80** | 3.02 | -5.8 | -7.2 |
| AT | 4.50 | **4.80** | 4.58 | +6.5 | +4.8 | 9.28 | **10.71** | 10.02 | +15.4 | +6.8 | 3.17 | **3.04** | 3.10 | -4.0 | -1.7 |
| BE | 8.62 | **6.97** | 8.24 | -19.2 | -15.4 | 12.12 | **11.93** | 11.67 | -1.6 | +2.2 | 4.03 | **3.42** | 3.89 | -15.1 | -12.1 |
| BG | 3.41 | **3.34** | 3.21 | -1.9 | +4.2 | 6.24 | **5.48** | 4.11 | -12.2 | +33.2 | 2.57 | **2.55** | 2.18 | -0.8 | +16.9 |
| CY | 1.77 | **1.52** | 1.26 | -14.4 | +20.2 | - | **-** | - | - | - | - | **-** | - | - | - |
| CZ | 4.08 | **4.39** | 4.12 | +7.7 | +6.5 | 6.71 | **8.07** | 7.21 | +20.3 | +11.9 | 2.83 | **2.89** | 3.00 | +2.2 | -3.7 |
| DE | 6.30 | **5.82** | 6.05 | -7.5 | -3.8 | 8.79 | **9.69** | 9.17 | +10.2 | +5.7 | 3.90 | **3.26** | 3.82 | -16.5 | -14.9 |
| DK | 5.11 | **5.30** | 5.07 | +3.8 | +4.6 | - | **-** | - | - | - | 3.48 | **3.66** | 3.57 | +5.2 | +2.5 |
| EE | 2.41 | **2.56** | 2.49 | +6.3 | +3.0 | - | **-** | - | - | - | 1.32 | **1.45** | 1.51 | +10.0 | -4.1 |
| ES | 2.84 | **3.22** | 2.94 | +13.5 | +9.4 | 9.92 | **10.09** | 9.94 | +1.7 | +1.5 | 1.81 | **1.86** | 1.70 | +2.9 | +9.4 |
| FI | 3.07 | **3.45** | 3.45 | +12.3 | +0.0 | - | **-** | - | - | - | 1.13 | **1.26** | 1.37 | +11.2 | -8.5 |
| FR | 6.38 | **5.73** | 6.36 | -10.2 | -9.8 | 8.74 | **8.52** | 9.01 | -2.5 | -5.4 | 3.29 | **3.03** | 3.25 | -7.8 | -6.6 |
| GR | 2.84 | **2.47** | 2.42 | -13.2 | +2.0 | 10.18 | **9.92** | 9.92 | -2.6 | +0.0 | - | **-** | - | - | - |
| HU | 3.37 | **3.46** | 3.60 | +2.7 | -3.8 | 6.63 | **7.09** | 6.21 | +6.9 | +14.1 | 2.16 | **2.15** | 2.32 | -0.5 | -7.5 |
| IE | 7.00 | **7.23** | 6.75 | +3.4 | +7.2 | - | **-** | - | - | - | - | **-** | - | - | - |
| IT | 3.62 | **3.58** | 3.64 | -1.1 | -1.7 | 9.11 | **9.20** | 9.11 | +1.1 | +1.0 | 2.48 | **2.03** | 2.10 | -18.2 | -3.5 |
| LT | 2.70 | **2.96** | 2.64 | +9.8 | +12.5 | - | **-** | - | - | - | 1.65 | **1.87** | 1.75 | +13.6 | +6.8 |
| LU | - | **-** | - | - | - | - | **-** | - | - | - | - | **-** | - | - | - |
| LV | 2.80 | **2.58** | 2.38 | -7.7 | +8.5 | - | **-** | - | - | - | 2.13 | **2.19** | 2.06 | +2.8 | +6.4 |
| MT | - | **-** | - | - | - | - | **-** | - | - | - | - | **-** | - | - | - |
| NL | 5.56 | **5.64** | 6.00 | +1.4 | -6.0 | 9.74 | **12.93** | 11.05 | +32.7 | +17.0 | - | **-** | - | - | - |
| PL | 3.15 | **3.09** | 3.08 | -2.0 | +0.2 | 5.75 | **6.02** | 5.70 | +4.8 | +5.6 | 2.70 | **2.66** | 2.77 | -1.4 | -3.8 |
| PT | 1.59 | **1.97** | 2.02 | +24.2 | -2.2 | 6.49 | **6.17** | 6.03 | -4.9 | +2.2 | - | **-** | - | - | - |
| RO | 2.54 | **2.57** | 2.33 | +1.2 | +10.3 | 4.06 | **3.60** | 3.20 | -11.3 | +12.6 | 1.79 | **1.79** | 1.51 | +0.2 | +18.4 |
| SE | 3.97 | **4.47** | 4.19 | +12.4 | +6.7 | - | **-** | - | - | - | 2.55 | **2.89** | 2.69 | +13.2 | +7.4 |
| SI | 4.30 | **3.94** | 3.82 | -8.3 | +3.3 | 8.54 | **8.46** | 7.63 | -0.9 | +10.8 | - | **-** | - | - | - |
| SK | 2.72 | **3.17** | 3.39 | +16.4 | -6.4 | 5.49 | **6.81** | 6.04 | +24.1 | +12.7 | 1.97 | **2.25** | 2.21 | +14.1 | +1.6 |
| UK | 6.00 | **5.65** | 5.87 | -5.9 | -3.8 | - | **-** | - | - | - | 3.50 | **3.32** | 3.25 | -5.3 | +2.1 |

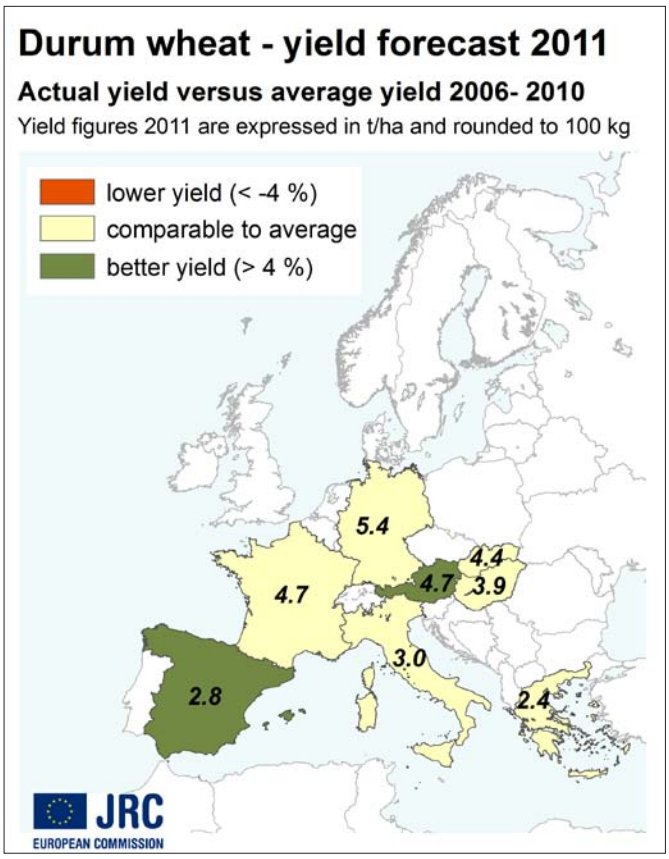
* Note: Yields are forecast for crops with more than 10000 ha per country; figures are rounded to 100 kg
Sources: 2006-2010 data come from EUROSTAT Eurobase (last update: 06/04/2011) and EES (last update: 14/04/2011)
2011 yields come from MARS CROP YIELD FORECASTING SYSTEM (CGMS output up to 30/04/2011)

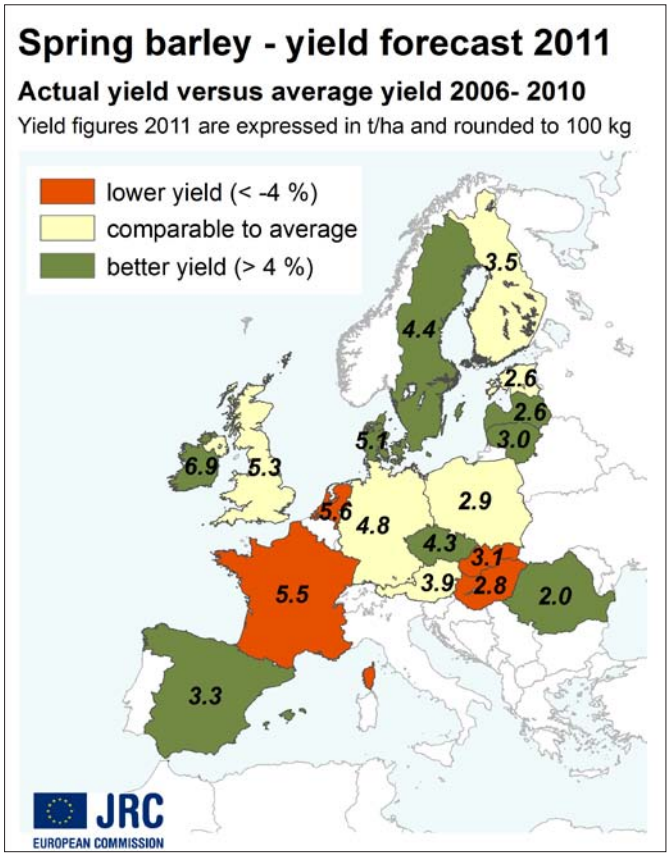
| Country | SUNFLOWER (t/ha) | | | | | SUGAR BEET (t/ha) | | | | | POTATO (t/ha) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2010 | 2011 | Avg 5yrs | %11/10 | %11/ 5yrs | 2010 | 2011 | Avg 5yrs | %11/10 | %11/ 5yrs | 2010 | 2011 | Avg 5yrs | %11/10 | %11/ 5yrs |
| EU27 | 1.84 | **1.83** | 1.72 | -0.5 | +6.4 | 68.03 | **69.36** | 66.05 | +2.0 | +5.0 | 28.25 | **30.82** | 28.44 | +9.1 | +8.4 |
| AT | 2.62 | **2.68** | 2.60 | +2.5 | +3.1 | 69.84 | **71.01** | 67.62 | +1.7 | +5.0 | 30.57 | **31.31** | 31.12 | +2.4 | +0.6 |
| BE | - | **-** | - | - | - | 82.70 | **77.64** | 75.28 | -6.1 | +3.1 | 44.73 | **44.20** | 44.22 | -1.2 | +0.0 |
| BG | 2.10 | **1.84** | 1.59 | -12.6 | +15.3 | - | **-** | - | - | - | 15.60 | **16.80** | 15.44 | +7.7 | +8.8 |
| CY | - | **-** | - | - | - | - | **-** | - | - | - | - | **-** | - | - | - |
| CZ | 2.11 | **2.28** | 2.25 | +8.2 | +1.4 | 54.36 | **59.01** | 54.85 | +8.6 | +7.6 | 24.56 | **27.84** | 25.07 | +13.4 | +11.1 |
| DE | 2.11 | **2.16** | 2.21 | +2.4 | -2.4 | 65.01 | **65.45** | 63.01 | +0.7 | +3.9 | 39.98 | **42.84** | 41.39 | +7.2 | +3.5 |
| DK | - | **-** | - | - | - | 60.10 | **58.57** | 56.64 | -2.5 | +3.4 | 35.27 | **43.21** | 38.68 | +22.5 | +11.7 |
| EE | - | **-** | - | - | - | - | **-** | - | - | - | - | **-** | - | - | - |
| ES | 1.27 | **1.36** | 1.15 | +7.4 | +18.4 | 76.74 | **80.25** | 76.30 | +4.6 | +5.2 | 29.54 | **30.07** | 29.07 | +1.8 | +3.4 |
| FI | - | **-** | - | - | - | 37.13 | **37.47** | 38.24 | +0.9 | -2.0 | 26.15 | **27.68** | 25.30 | +5.8 | +9.4 |
| FR | 2.35 | **2.25** | 2.40 | -4.3 | -6.3 | 82.16 | **87.88** | 85.16 | +7.0 | +3.2 | 41.40 | **42.55** | 42.87 | +2.8 | -0.8 |
| GR | 1.72 | **1.23** | 1.28 | -28.4 | -3.7 | 81.25 | **71.61** | 70.72 | -11.9 | +1.3 | 26.89 | **25.36** | 25.27 | -5.7 | +0.4 |
| HU | 1.97 | **2.46** | 2.25 | +24.9 | +9.1 | 58.34 | **57.49** | 53.01 | -1.5 | +8.4 | 21.73 | **26.94** | 24.24 | +24.0 | +11.2 |
| IE | - | **-** | - | - | - | - | **-** | - | - | - | 30.62 | **33.11** | 31.44 | +8.1 | +5.3 |
| IT | 2.12 | **2.26** | 2.20 | +6.7 | +3.0 | 60.05 | **57.31** | 55.70 | -4.6 | +2.9 | 22.99 | **24.64** | 24.52 | +7.2 | +0.5 |
| LT | - | **-** | - | - | - | - | **-** | - | - | - | 12.99 | **13.28** | 12.17 | +2.2 | +9.1 |
| LU | - | **-** | - | - | - | - | **-** | - | - | - | - | **-** | - | - | - |
| LV | - | **-** | - | - | - | - | **-** | - | - | - | 16.03 | **15.98** | 15.84 | -0.3 | +0.9 |
| MT | - | **-** | - | - | - | - | **-** | - | - | - | - | **-** | - | - | - |
| NL | - | **-** | - | - | - | 74.37 | **72.92** | 71.73 | -1.9 | +1.7 | 43.59 | **45.17** | 43.94 | +3.6 | +2.8 |
| PL | - | **-** | - | - | - | 49.13 | **50.26** | 48.98 | +2.3 | +2.6 | 17.86 | **18.66** | 18.66 | +4.5 | +0.0 |
| PT | 0.55 | **0.61** | 0.61 | +11.3 | +0.0 | - | **-** | - | - | - | 13.06 | **15.61** | 14.60 | +19.5 | +6.9 |
| RO | 1.56 | **1.45** | 1.32 | -6.9 | +9.7 | 38.36 | **34.46** | 33.24 | -10.2 | +3.6 | 13.45 | **14.94** | 14.34 | +11.1 | +4.2 |
| 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 | **2.22** | 2.15 | +22.6 | +3.4 | 54.52 | **58.34** | 53.26 | +7.0 | +9.5 | 11.45 | **16.12** | 15.43 | +40.8 | +4.4 |
| UK | - | **-** | - | - | - | 72.86 | **67.61** | 64.33 | -7.2 | +5.1 | 42.90 | **42.10** | 42.14 | -1.9 | -0.1 |

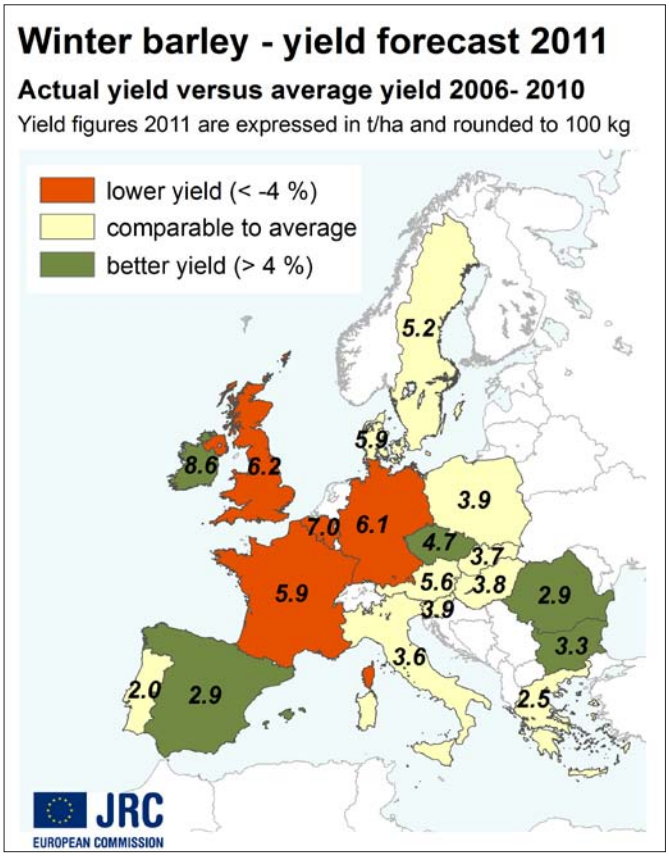



Soft wheat - yield forecast 2011
Actual yield versus average yield 2006- 2010
Yield figures 2011 are expressed in t/ha and rounded to 100 kg
lower yield (< -4 %)
comparable to average
better yield (> 4 %)
3.6
5.8
3.0
3.5
3.9
7.5
9.3
7.6
3.9
8.6
8.1
7.3
5.3
4.0
5.5
3.9
4.6
6.6
3.2
3.7
5.1
1.7
3.6
2.8
JRC
EUROPEAN COMMISSION


Durum wheat - yield forecast 2011
Actual yield versus average yield 2006- 2010
Yield figures 2011 are expressed in t/ha and rounded to 100 kg
lower yield (< -4 %)
comparable to average
better yield (> 4 %)
5.4
4.4
4.7
4.7
3.9
3.0
2.8
2.4
JRC
EUROPEAN COMMISSION

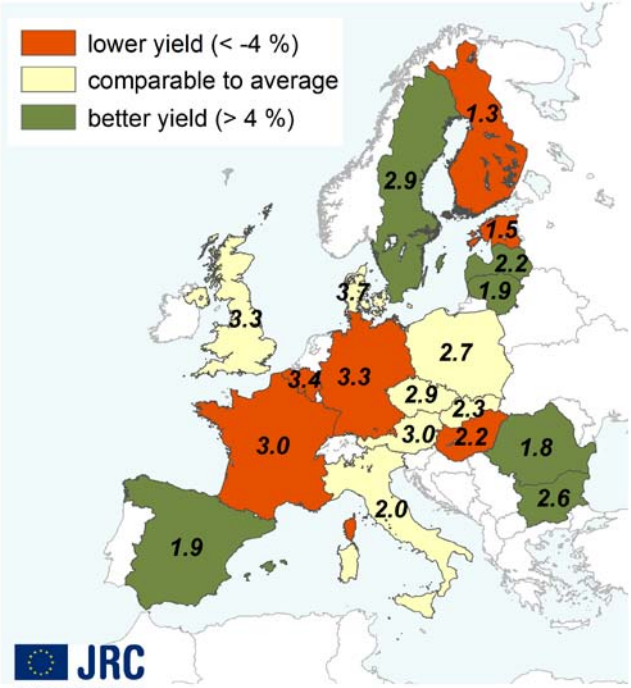

Spring barley - yield forecast 2011
Actual yield versus average yield 2006- 2010
Yield figures 2011 are expressed in t/ha and rounded to 100 kg
lower yield (< -4 %)
comparable to average
better yield (> 4 %)
3.5
4.4
2.6
2.6
3.0
5.1
6.9
5.3
2.9
5.6
4.8
4.3
3.1
3.9
2.8
5.5
2.0
3.3
JRC
EUROPEAN COMMISSION


Winter barley - yield forecast 2011
Actual yield versus average yield 2006- 2010
Yield figures 2011 are expressed in t/ha and rounded to 100 kg
lower yield (< -4 %)
comparable to average
better yield (> 4 %)
5.2
5.9
8.6
6.2
3.9
7.0
6.1
4.7
3.7
5.6
3.8
5.9
2.9
3.9
3.3
3.6
2.0
2.9
2.5
JRC
EUROPEAN COMMISSION

## Rapeseed - yield forecast 2011

**Actual yield versus average yield 2006- 2010**

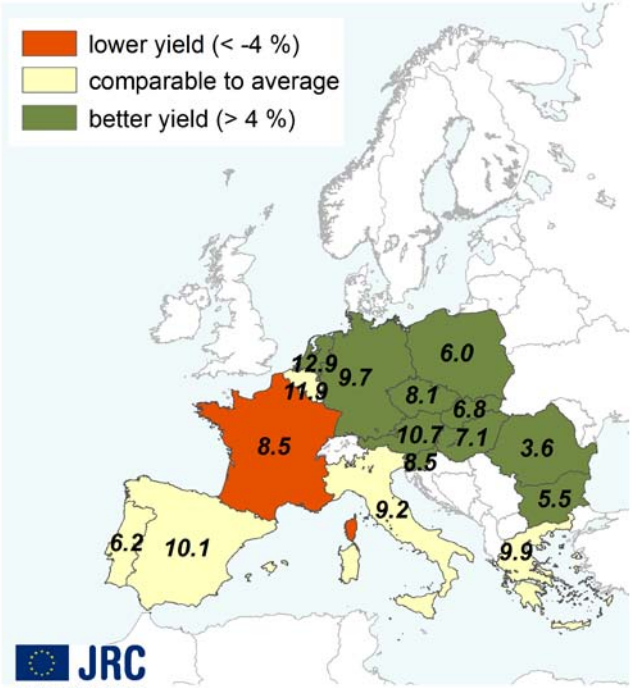
Yield figures 2011 are expressed in t/ha and rounded to 100 kg




## Grain maize - yield forecast 2011

**Actual yield versus average yield 2006- 2010**

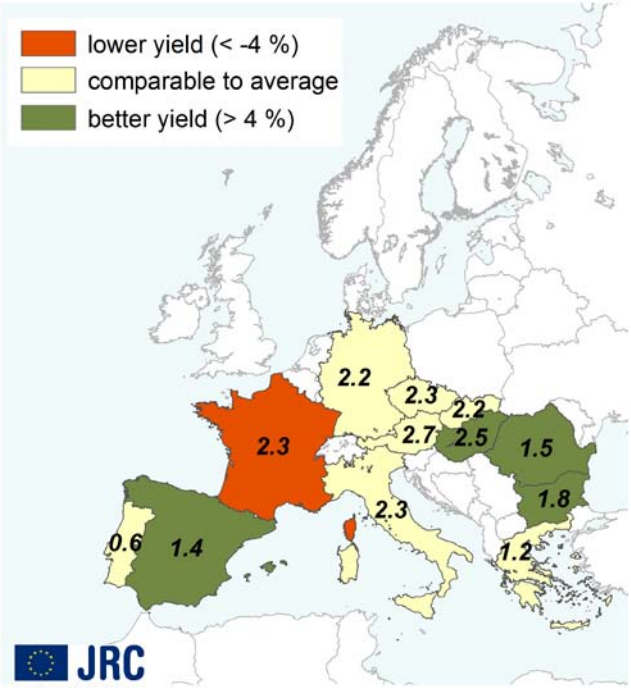
Yield figures 2011 are expressed in t/ha and rounded to 100 kg




## Sunflower - yield forecast 2011

**Actual yield versus average yield 2006- 2010**

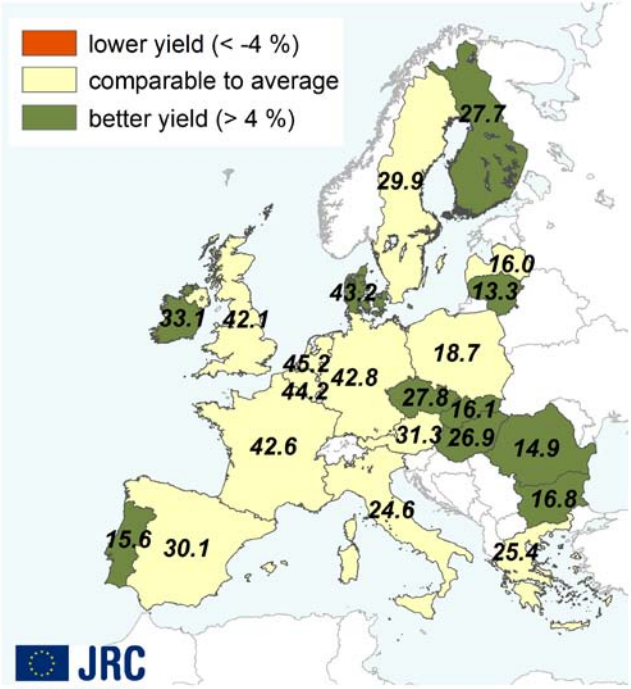
Yield figures 2011 are expressed in t/ha and rounded to 100 kg




## Potato - yield forecast 2011

**Actual yield versus average yield 2006- 2010**

Yield figures 2011 are expressed in t/ha and rounded to 100 kg



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

## FRANCE — Improved weather conditions in June, favourable for grain filling in winter cereals and the growth of spring crops. Cumulated rainfall still in deficit for most regions of the country.

| FRANCE | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 7.24 | **6.57** | 7.11 | -9.2 | -7.6 |
| durum wheat | 5.06 | **4.70** | 4.81 | -7.2 | -2.3 |
| winter barley | 6.50 | **5.85** | 6.48 | -10.0 | -9.7 |
| spring barley | 6.06 | **5.45** | 6.06 | -10.1 | -10.1 |
| grain maize | 8.74 | **8.52** | 9.01 | -2.5 | -5.4 |
| turnips (rape) | 3.29 | **3.03** | 3.25 | -7.8 | -6.6 |
| sunflower | 2.35 | **2.25** | 2.40 | -4.3 | -6.3 |
| sugar beets | 82.16 | **87.88** | 85.16 | +7.0 | +3.2 |
| potato | 41.40 | **42.55** | 42.87 | +2.8 | -0.8 |

**After peaking at the end of May and early June, maximum temperatures returned to more seasonal values. In parallel, considerable rainfall occurred during the two first dekads of June, helping to extend the grain filling period for winter crops. In general, the weather conditions in June favoured spring crops and, to some extent, limited the yield losses for winter crops.**

### AGROMETEOROLOGICAL ANALYSIS

In the **western and central** part of the country, very high temperatures (> 30 °C) occurred around 25 May in Aquitaine and around 4 June from Poitou-Charente to Centre and Bretagne. After these peaks, beyond two standard deviations of the average value, the temperature fell to average seasonal values. At the same time, these regions received considerable rainfall, but still not enough to replenish water reservoirs. The precipitation deficit ranges from -57 % in Poitou-Charente to -30 % in Centre. In the **north-east** of the country, despite continuous rain since 4 June, the cumulated precipitation is still in deficit, ranging from less than -5 % in Ile-de-France to -30 % in Nord-Pas-de-Calais. Temperatures dropped after 4 June to fluctuate around the long-term average. In **eastern** France, from Alsace/Lorraine to Rhone-Alpes, maximum temperatures dropped from 30 May (+28 °C) to 1 June (+13 °C) before climbing again to values close to the long-term average. During the two first dekads of June, rainfall significantly reduced the cumulated deficit in Rhone-Alpes to -4 % of the seasonal average; otherwise the deficit still varies from -15 % in Bourgogne to -25 % in Lorraine. In the **South**, the Méditerranée region faced a hot period from 23 to 25 May with maximum temperature readings above the upper limit of the seasonal range of variation. Later on, the maximum temperature returned to seasonal average values. Rainfall occurred in this region too from 30 May to 7 June, reducing the cumulated rainfall deficit in Midi-Pyrénées and Languedoc-Roussillon. In contrast, in the region Alpes-Cotes-d'Azur, a surplus of +31 % can be observed.

As a consequence of this, the cumulated active temperature remains positive.

### CROP DEVELOPMENT

**Winter cereals** faced very unfavourable conditions during the heading (northern part of the country) and flowering (more in the south and mainly for durum wheat) stages of development, with a persistent drought and above-LTA maximum temperatures from early April to the first dekads of May. This led to a marked precocity in the second dekad of May, with up to 20 days in advance in the western part of the country (from Aquitane/Midi-Pyrénées to Bretagne), in Nord-Pas-de-Calais, in Champagne-Ardenne, and in Lorraine. Only durum wheat development stages are on average in the South (Languedoc-Roussillon). The drop in maximum temperatures and rainfall in the second dekad of June probably occurred too late to extend the grain filling period. Only cereals sown in the early autumn with a well-developed rooting system might have benefited from this rainfall. Average temperatures and rainfall could be more beneficial to **spring barley**, which is at grain filling stage and only about 10 days in advance in all areas of production.

For **winter rapeseed** at grain filling stage of development and showing only a slightly advanced stage of development (about a dekad at the end of May in comparison to the long-term average), the weather in June could also be beneficial, especially if crops are in deep soil. However, this true of a few locations only, distributed from the south of the region Centre to the region Picardie. More frequently, rapeseed is already ripening, with a precocity varying from 20 to 30 days in most areas; even the harvest is already in progress in some places.

For all spring crops, there are only small advances in development stage — less than 10 days in most cases.

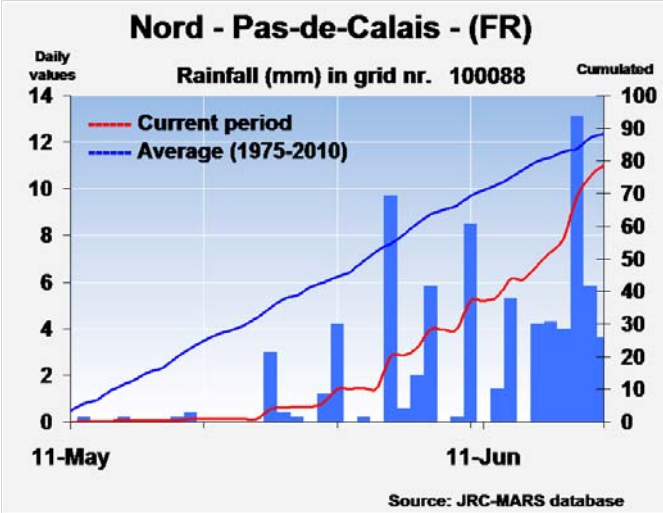
**Grain maize** is at the vegetative stage in almost all important regions of production but still at emergence in Bretagne, with an advanced stage of development mainly in the central strip of the country from Pays de la Loire to Alsace/Rhone-Alpes. Thanks to the recent rainfall, the relative soil moisture of grain maize has increased up to the LTA, except for Bretagne, Pays de la Loire and Centre, where the level is still below the lower limit of the seasonal range of variation.

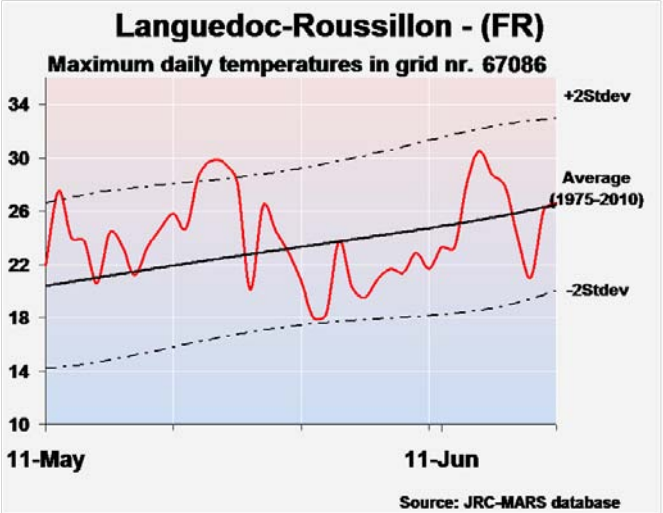
Growth conditions for **sunflower** are quite favourable in the main regions of production, with relative soil moisture around average except in Poitou-Charente, where it is

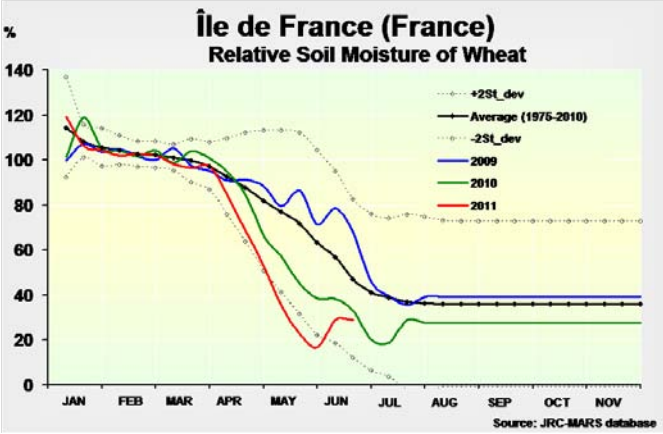
extremely low. In the main regions of production, flowering has started in Poitou-Charente and Midi-Pyrénées, but growth is still at the vegetative stage in the Centre.

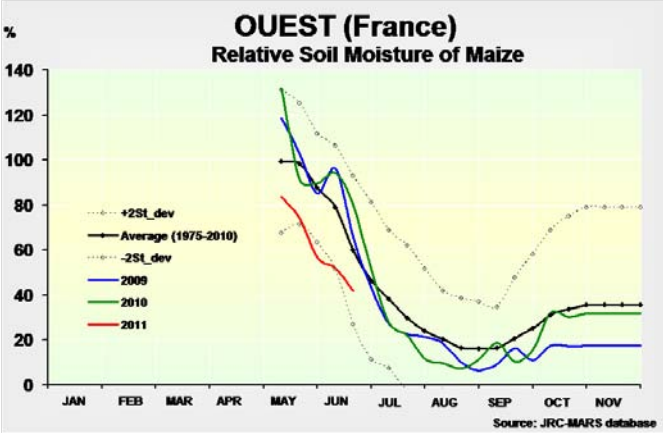
Most **sugar beet** was fortunately sown before 10 April and therefore emerged in relatively favourable conditions of water availability. During the dry period, problems occurred, mainly for weed control. With the rainfall from the end of May onwards and mild temperatures, growth was boosted.

In the main regions of production of the North East, sugar beet is at the vegetative stage, with a precocity estimated at 10 days. The weather conditions were also favourable for the growth of potato — at tuber formation stage of development — in the main regions of production (from Haute Normandie to Champagne Ardenne), as illustrated by the crop model simulating the potential storage organs. However, the current combination of good water supply and mild temperatures is likely to favour pest development.




## GERMANY — Recent rain ends the dry spell.

| GERMANY | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 7.24 | **7.27** | 7.47 | +0.4 | -2.6 |
| durum wheat | 5.35 | **5.41** | 5.48 | +1.1 | -1.3 |
| winter barley | 6.66 | **6.14** | 6.48 | -7.7 | -5.2 |
| spring barley | 4.95 | **4.78** | 4.76 | -3.3 | +0.5 |
| grain maize | 8.79 | **9.69** | 9.17 | +10.2 | +5.7 |
| turnips (rape) | 3.90 | **3.26** | 3.82 | -16.5 | -14.9 |
| sunflower | 2.11 | **2.16** | 2.21 | +2.4 | -2.4 |
| sugar beets | 65.01 | **65.45** | 63.01 | +0.7 | +3.9 |
| potato | 39.98 | **42.84** | 41.39 | +7.2 | +3.5 |

**A rainy June ended the prolonged dry spell, halting any further soil moisture depletion. Given the advanced crop cycle for winter crops, the rain came too late to allow the yield potential to recover fully.**

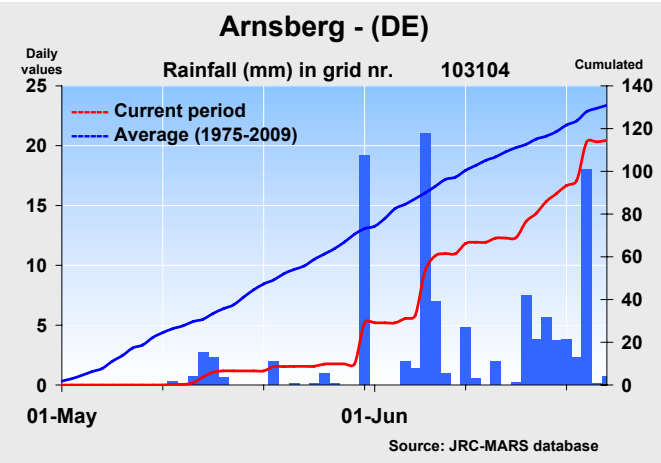
### AGROMETEOROLOGICAL ANALYSIS

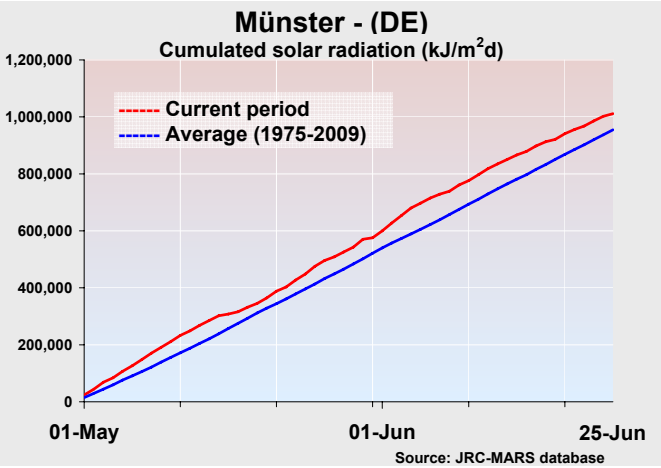
May continued to be a very dry month for most of Germany, with the exception of Brandenburg (north) and Bayern. Towards the end of May and beginning of June the rain returned and led to accumulated average values towards the end of June- for northern Germany. An overall defict remains for Sachsen, Sachsen-Anhalt, Thüringen, Nordrhein-Westfalen and Hessen. Rainy days continued throughout June, affecting different parts of the country. As the rain occurred partially in the form of thunderstorms and heavy events it caused some local damage. Accumulated temperatures in May were higher than average, with a gradient from west (warmer) to east (colder). Temperatures peaked in Brandenburg at the end of May and beginning of June. June to date has been warmer for the eastern part and average

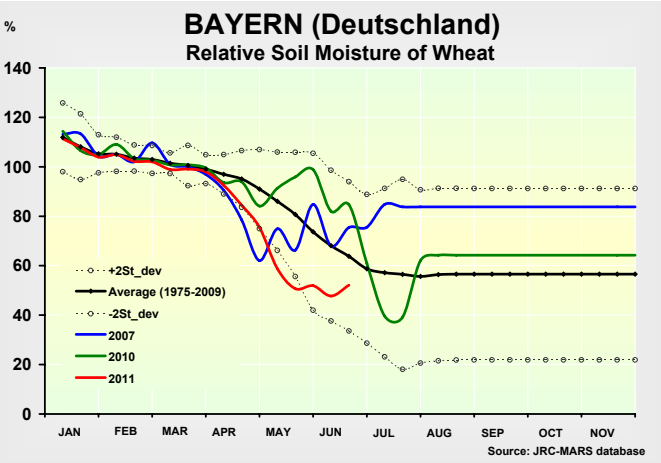
for the rest of Germany. Cumulated sunshine is above average for practically the whole country.

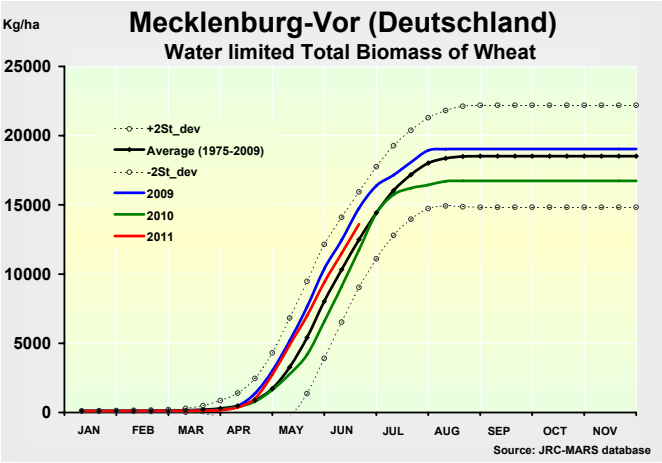
## CROP DEVELOPMENT

**Winter wheat** is at grain filling stage across the country, with a general advancement of 1 – 2 weeks. Soil moisture depletion has been halted by to the recent rainfall, but soil moisture levels remain well below the long-term average. The crop growth model simulation indicates storage organ content below average. Due to the prolonged dry spell the soft wheat forecast has been revised down compared to the last Bulletin and is now below average. **Winter barley** is advanced in the growth cycle compared to winter wheat and was affected more by the dry spell. **Rapeseed** is maturing in large parts of the country. The model simulates low storage organ contents compared to the average, with 25 % — 30 % below average in Sachsen-Anhalt and Thüringen. The maturing phase was rather wet, and plenty of rain is forecast for western Germany, negatively impacting final rapeseed maturing. As a consequence, the yield forecast is revised down sharply compared to the last Bulletin. **Spring barley** is flowering in the eastern part of the country and is at grain filling in western Germany, with a generally modest advancement. Leaf canopy is simulated at low level, and the forecast is revised down compared to the last Bulletin. With **Maize** at the vegetative stage, good soil moisture values are simulated, and crop development is slightly advanced. The forecast is at the level of the last two good years, 2008 and 2009.



# UNITED KINGDOM — June brings rain all over the country.

| UNITED KINGDOM | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 8.05 | **7.62** | 7.89 | -5.4 | -3.5 |
| winter barley | 6.72 | **6.24** | 6.54 | -7.1 | -4.5 |
| spring barley | 5.56 | **5.29** | 5.43 | -4.7 | -2.6 |
| sugar beets | 72.86 | **67.61** | 64.33 | -7.2 | +5.1 |
| turnips (rape) | 3.50 | **3.32** | 3.25 | -5.3 | +2.1 |
| potato | 42.90 | **42.10** | 42.14 | -1.9 | -0.1 |

**June brought rain all over the country, ending the pronounced dry spell that compromised the yield potential. Still, winter crop yields are clearly revised down, as compared to the last Bulletin.**

## AGROMETEOROLOGICAL ANALYSIS

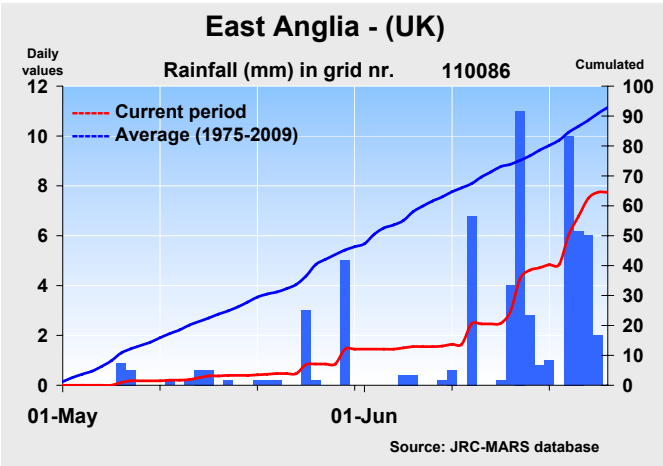
During March and April the main agricultural areas experienced much lower precipitation, leading to a deficit in cumulated values of about 80 %. May continued to be very dry in the south of the UK, whereas in the north of Yorkshire and the Humber region a surplus compared to the long-term average (LTA) was recorded. June eventually brought plenty of rain for the south-east and south-west of the UK, replenishing the soil moisture storage. However, precipitation remained scarce in the east of England as well as in Yorkshire and the Humber. As of 27 June, the precipitation deficit which had accumulated from 1 May onwards is still observable for the eastern UK, and soil moisture levels are still low. Further rain is forecast for the coming days.

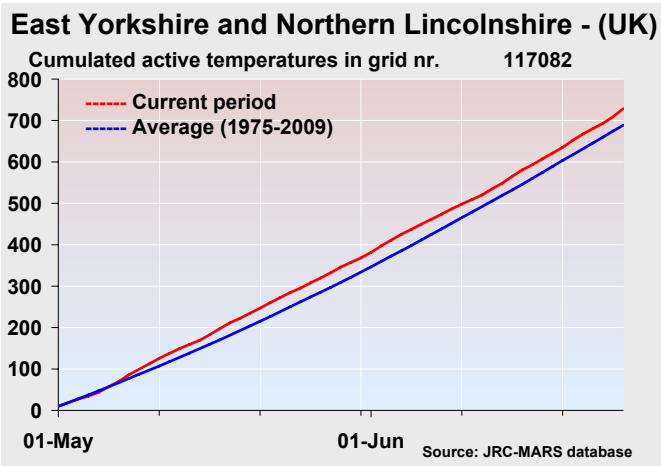
Cumulated temperatures remained above the LTA during the month of May over all the agricultural zones, boosted by a couple of warm days at the beginning of May, but without exceptionally high temperatures. Nevertheless the evaporative demand was high. June continued with seasonal average temperatures, and cumulated temperatures are slightly below the LTA. The overall sunshine was well above average in May, along with the dry period, but even in June the main agricultural areas received above-average sunshine.

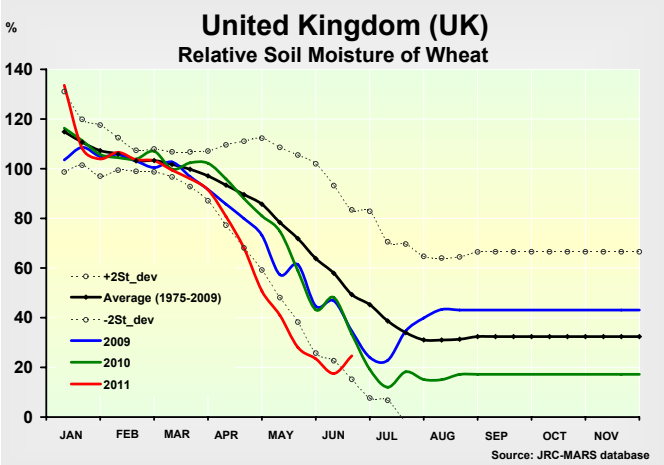
## CROP DEVELOPMENT

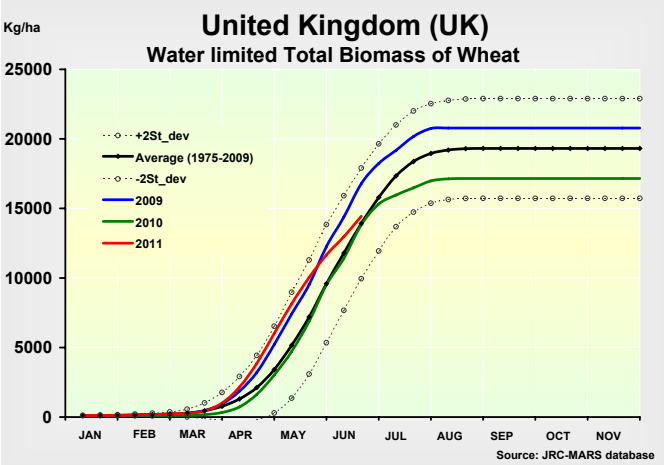
**Winter wheat** is at grain filling according to the model simulations. The advancement of the cycle of around 10-15 days has been maintained and even increased in the eastern UK. The crop growth system simulates for May a very slow biomass increase, and canopy development has reached an early maximum at average level (only in Scotland above average). Due to the extremely low soil moisture levels in May and the shortening of the crop cycle the yield forecast is revised down.

According to our model **spring barley** has entered grain filling, with the exception of Scotland and Sussex. Recent rainfall has halted soil moisture depletion, and values are increasing again. Canopy development is good. **Rapeseed** development has accelerated since April and is now at the end of the ripening stage all over England, with an advance of almost 2 dekads. In the eastern UK the crop has already ended its cycle. In general, canopy development and simulated biomass are clearly below average, but storage organ accumulation remains average. Rapeseed yield is forecasted at average level, although the recent rain might negatively impact the plants, being close to maturity.






## ITALY — Low yield expectation for winter crops due to poor conditions in the North.

| ITALY | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010* | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 5.16 | **5.09** | 5.19 | -1.3 | -1.8 |
| durum wheat | 3.04 | **2.97** | 2.97 | -2.4 | -0.1 |
| grain maize | 9.11 | **9.20** | 9.11 | +1.1 | +1.0 |
| turnips (rape) | 2.48 | **2.03** | 2.10 | -18.2 | -3.5 |
| sunflower | 2.12 | **2.26** | 2.20 | +6.7 | +3.0 |
| sugar beets | 60.05 | **57.31** | 55.70 | -4.6 | +2.9 |
| potato | 22.99 | **24.64** | 24.52 | +7.2 | +0.5 |

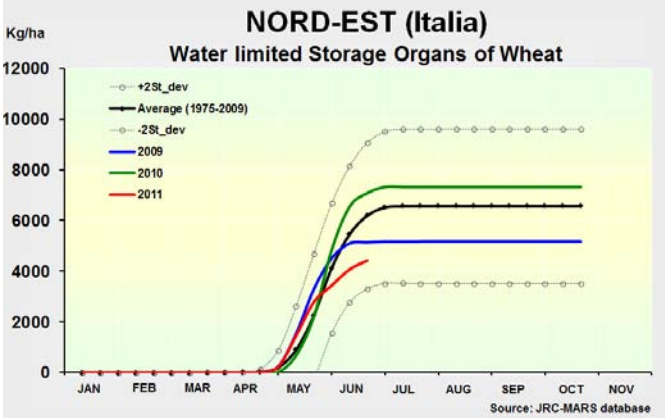
**Poor conditions in the northern part of the country due to drought in May and heavy rains at the beginning of June took a heavy toll on winter crops.**

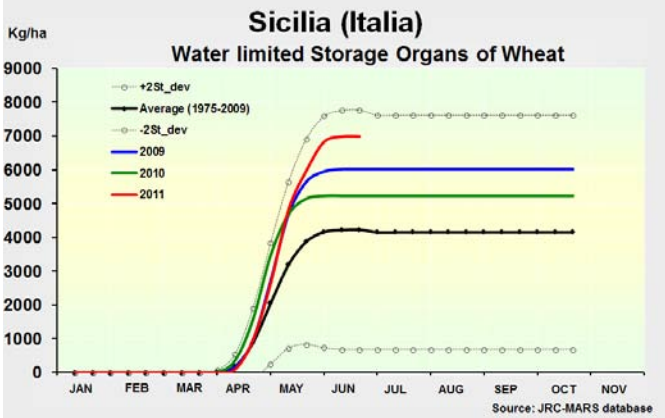
### AGROMETEOROLOGICAL ANALYSIS

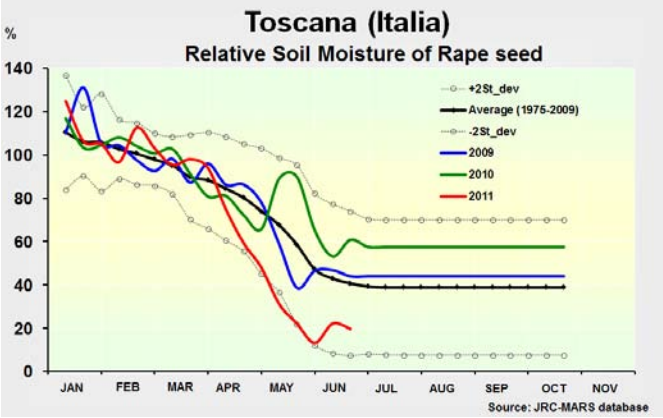
The period of analysis was in general characterised by warmer than average conditions in the northern regions (especially Trentino and Veneto) and along the Apennines, and close to average or even below in the Centre and South. Particularly the first half of May registered very high temperatures in the North, followed by a heat wave all over the Peninsula and followed in June by close to average thermal conditions in almost all regions; only Sicily experienced a strong drop in temperatures. Sicily was also the only region with a surplus of precipitation in May. The general lack of spring rainfall in Italy caused a severe drought in northern regions, where April had already been extremely dry, whereas it did had no negative effect in the South thanks to the earlier wet period. By contrast, in June the North down to Emilia Romagna and Tuscany experienced heavy rainfall, which might have affected grain filling and which caused waterlogging over large areas.

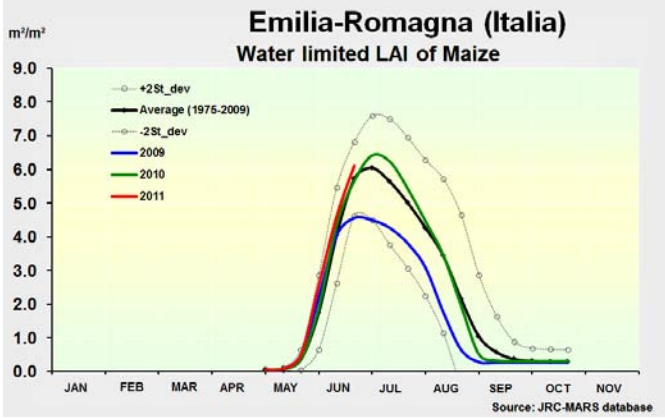
### CROP DEVELOPMENT

Cereals yield potential varies sharply from one region to another: **soft wheat** and **barley**, which are mainly grown in the north, were negatively affected by the drought so that yield expectations are poor. However, in several areas crops have been irrigated and so the estimates of final yield were revised down only partially. Yield expectations are satisfactory for **durum wheat**, which is grown mainly in southern regions, and which profited from the plentiful water availability and the fair temperatures that allowed the cycle to be completed within the correct time window. Nevertheless yield estimates are only close to average because of the difficulties encountered at sowing. **Rapeseed**, though less sensitive to dry periods, experienced sub-optimal grain filling due mainly to the shortening of the vegetative phase in the April heat. The stormy weather at maturity deteriorated rapeseed yield expectations. **Grain maize**, on the other hand, profited from the rainfall of the first dekads of June that brought the cumulated biomass up to satisfactory levels (up to > 30 % in Piedmont, Emilia and Tuscany). **Sugar beet** is now in the yield formation growth stage in almost all regions of production, heralding a good start to biomass accumulation and root enlargement, especially in northern regions. In the Centre, however, the persistent dry conditions seem to be having a harmful effect on sugar beet. **Potato** is suffering from the unfavourable soil moisture conditions in central regions, too, showing lower yield potential. The situation appears to be better in the North-West.




## SPAIN — Favourable conditions for winter crops. Good prospects for summer crops.

| SPAIN | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 3.37 | **3.56** | 3.31 | +5.5 | +7.4 |
| durum wheat | 1.95 | **2.78** | 2.47 | +42.8 | +12.6 |
| winter barley | 2.29 | **2.88** | 2.61 | +25.6 | +10.4 |
| spring barley | 2.94 | **3.28** | 3.02 | +11.7 | +8.6 |
| grain maize | 9.92 | **10.09** | 9.94 | +1.7 | +1.5 |
| turnips (rape) | 1.81 | **1.86** | 1.70 | +2.9 | +9.4 |
| sunflower | 1.27 | **1.36** | 1.15 | +7.4 | +18.4 |
| sugar beets | 76.74 | **80.25** | 76.30 | +4.6 | +5.2 |
| potato | 29.54 | **30.07** | 29.07 | +1.8 | +3.4 |

**The last two weeks, with no rainfall in most of the regions, favoured the harvesting of winter crops. Harvesting is already in progress in Andalucía, and will extend to most of the regions in the next week. Rainfall accumulation during winter and spring, especially in Andalucía and Castilla La Mancha, suggests yields above average for durum, soft wheat, and barley. The conditions for summer crops are also positive due to the abundance of water stored and temperatures close to the seasonal values.**

### AGROMETEOROLOGICAL ANALYSIS

Meteorological conditions in the two first weeks of June, with low rainfall in most of the regions, were favourable for winter cereals harvesting. In Andalucía, the harvest has been delayed in some areas due to rain at the end of May, but most of the durum wheat has already been harvested. In Castilla La Mancha, Castilla y Leon and Aragon the situation is also meteorologically stable, allowing grain harvest in the next week. Temperatures during May and June have been slightly warmer than the seasonal average, contributing to accelerated growth of sunflower and grain maize. Moreover, the rainfall accumulated during winter and spring has increased the water stored in reservoirs, especially in the South; in Andalucía water storage stands at 90 % of total capacity. Accordingly, the prospects for the irrigation season are rather good, with the water supply probably sufficient for summer crops. Nevertheless temperatures in July will be crucial for good development.

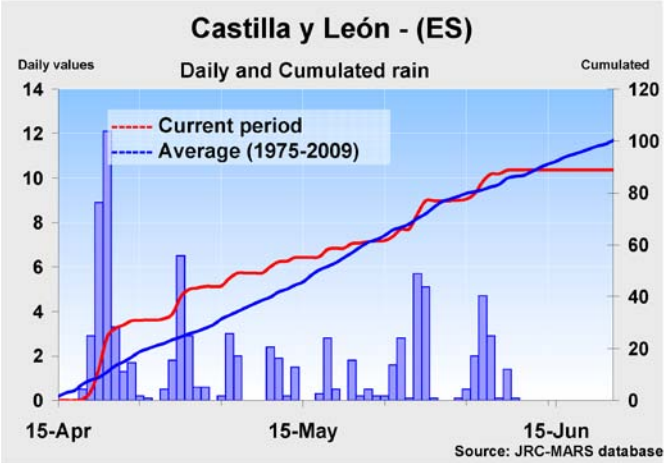
### CROP DEVELOPMENT

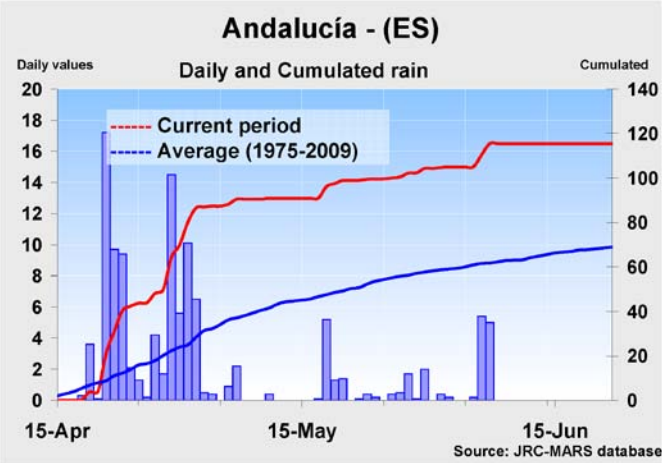
Winter and spring were determined by an abundance of rainfall, placing the current season among the wettest in the historical series in the southern regions (Castilla La Mancha and Andalucía). This means good expectations for winter cereal yields. For **durum wheat**, the expected yield is 2.78 t/ha, improving on the results of the 2009-2010 season, and also higher (+12 %) than the average of recent years. However, heavy rainfall during winter hampered late sowing in Andalucía, with a substantial shift of acreage from durum wheat to sunflower, thus constraining total national production (Andalucía produces 56 % of the durum wheat in Spain). For **soft wheat**, expectations are also good, above the average of recent years: the current forecast is 3.55 t/ha, against 3.37 t/ha over the past five years. Adequate meteorological conditions, with rainfall close to the seasonal

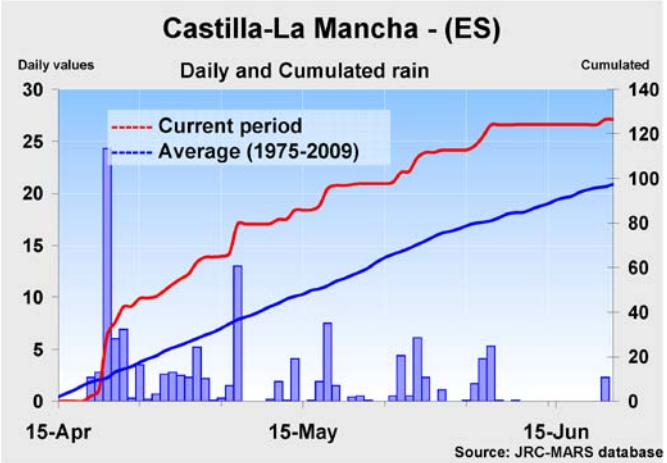
average in Castilla y Leon and temperatures above average, mainly in April and May, accelerated crop growth by about one week. Sufficient water supply resulted in favourable conditions for grain production. A similar situation was observed for **spring barley**, being one or two weeks in advance as compared to the average year, with an expected yield of 3.28 t/ha, i.e. 9 % higher than in recent years.

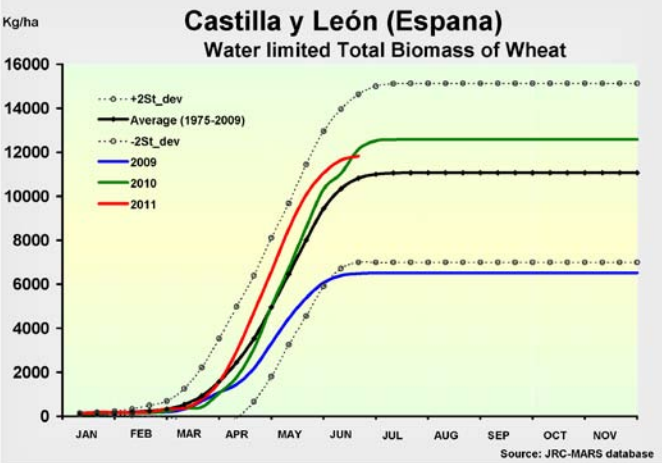
Prospects are also very positive for **sunflower**, already in the stage of grain filling in Andalucía, and at flowering in the rest of the regions. Rainfall and temperature during April-May were higher than average, fostering crop development. Indicators from modelling show biomass production levels considerably above average. The forecast points to yields almost 20 % higher than the average of recent years. **Grain maize** has also been favoured by meteorological conditions, especially by the water stored during winter and spring, ensuring adequate irrigation of the crop throughout the season. These good expectations of water availability could increase the acreage of grain maize, with double cropping in some irrigation districts of the northern regions. Maize has already reached flowering in the southern provinces of Andalucía, while it remains in the vegetative phase in the other regions. Due to the high temperatures the development stage is about 10 days earlier than average. The forecast for this crop is 10.1 t/ha, close to the average for recent years.

Tuber crops are also in an advanced stage of development, especially in the north (Castilla y Leon). The crop models project an anticipation of two weeks for **sugar beet** and **potato** as a consequence of warm temperatures. The forecasts for the two crops are 80.2 t/ha and 30.1 t/ha respectively, slightly above the average of the last five years, assuming adequate water supply with no restrictions on irrigation.



# POLAND — Drought in the west and north-west; possible yield reduction.

| POLAND | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 3.94 | **3.94** | 3.87 | +0.0 | +1.7 |
| winter barley | 3.92 | **3.91** | 3.84 | -0.3 | +1.6 |
| spring barley | 2.98 | **2.93** | 2.94 | -1.6 | -0.3 |
| grain maize | 5.75 | **6.02** | 5.70 | +4.8 | +5.6 |
| turnips (rape) | 2.70 | **2.66** | 2.77 | -1.4 | -3.8 |
| sugar beets | 49.13 | **50.26** | 48.98 | +2.3 | +2.6 |
| potato | 17.86 | **18.66** | 18.66 | +4.5 | +0.0 |

**The persistent drought in the west and north-west expanded southward and to the centre; yield expectations for rapeseed and spring barley are below the 5-year average, for winter cereals at average.**

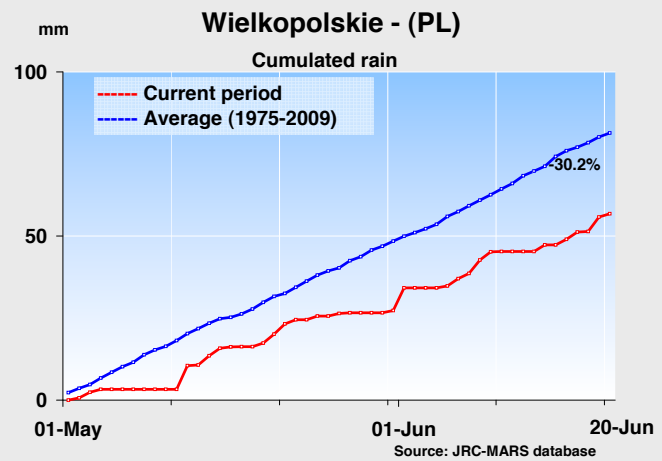
## AGROMETEOROLOGICAL ANALYSIS

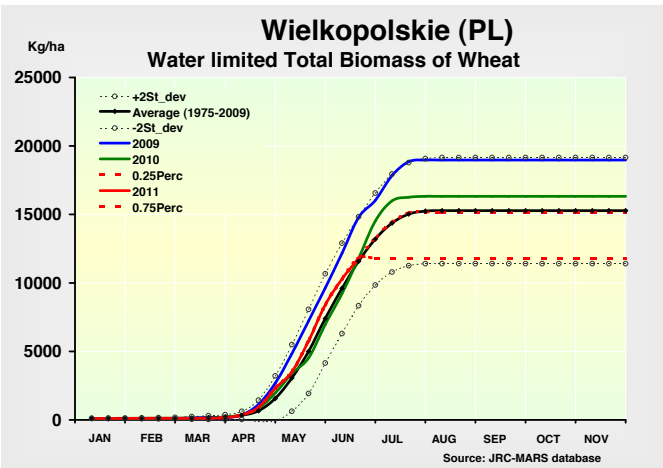
Between 1 May and 20 June Poland received very high rates of sunshine, resulting in high values for the cumulated evapotranspiration, to the reverse of the same period last year. Excluding the very cold first dekads of May, the period is recorded as having among the highest sunshine and evapotranspiration rates in the country since 1975. Similar conditions were recorded in 2003. Cumulated active temperatures were also above the average seasonal level (>80 GDD), which is mainly the result of the warm period between mid-May and the first dekad of June. The beginning of June saw 2-3 days with maximum temperatures above 30 °C. Within these two dekads the average temperatures in the zone between the north-west and the south of Poland were 2-3 °C higher than the long-term average values (LTA), in the east even 3-4 °C higher.

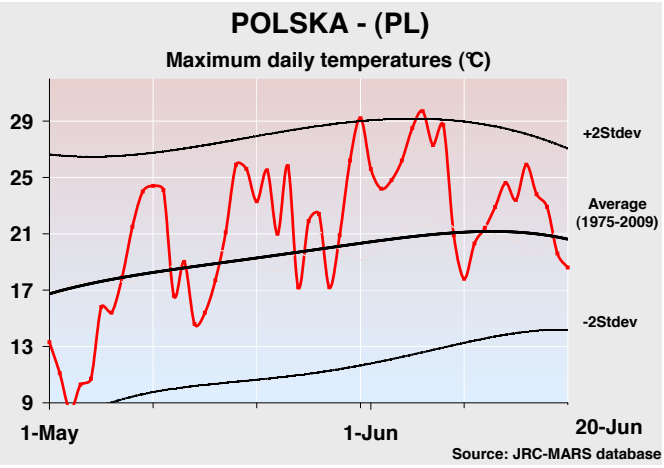
Despite total precipitation in the country being slightly below the average (-3 %) the rainfall deficit of 30 mm was larger than usual, and drought events were recorded in the main agricultural areas. Western and north-western Poland in particular suffered a continuous lack of water, and the rainfall deficit accumulated is greater than 50 mm. The longest dry period since March was recorded in Lubuskie, Wielkopolskie, Zachodnio-Pomorskie and Kujawsko-Pomorskie. In mid-May the north-western areas received beneficial rainfall. However, drought conditions continued to prevail in western Poland, and scarce precipitation was recorded in south and central Poland too. Some areas received abundant precipitation in June, beneficial mainly for spring crops and for higher grain quality in cereals.

## CROP DEVELOPMENT

Soil water supply has fallen steadily since mid-April. The highest negative departures from average were recorded in the first dekad of June all over the country; in some areas of Lubuskie region 1-2 dekads with soil moisture below the normal range of variation (-2 standard deviations) were recorded. The long-lasting dry period hampered growth of winter crops, mainly in June, and impacted on yield expectations. **Cereals** have started grain filling with a slight advance in time compared to LTA. The rainfall recorded over the last few days might have been beneficial for cereals, and the next two dekads will be crucial for yield formation. **Rapeseed** is in a very advanced development stage, up to two weeks ahead, and in some areas has already started ripening. Weather conditions since sowing have not been good for rapeseed, and a negative impact on oil seeds production in Poland is very likely. Moreover, since the end of May a significant slow-down in biomass accumulation has been simulated by the crop growth model. **Grain maize** and **sugar beet** are still in the vegetative development stage. Tuber crops have started yield formation slightly earlier than the LTA.



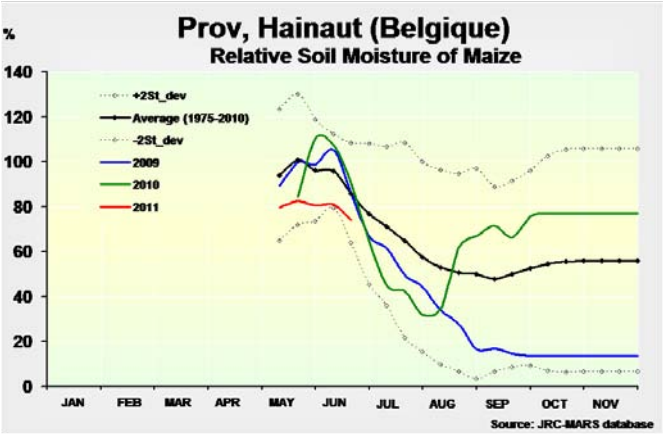
# BELGIUM — Beneficial weather conditions for spring crops and grain filling of cereals.

| BELGIUM | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 9.35 | **8.13** | 8.68 | -13.1 | -6.3 |
| winter barley | 8.62 | **6.97** | 8.24 | -19.2 | -15.4 |
| grain maize | 12.12 | **11.93** | 11.67 | -1.6 | +2.2 |
| turnips (rape) | 4.03 | **3.42** | 3.89 | -15.1 | -12.1 |
| sugar beets | 82.70 | **77.64** | 75.28 | -6.1 | +3.1 |
| potato | 44.73 | **44.20** | 44.22 | -1.2 | +0.0 |

**Rainfall arrived in May, being mostly beneficial for spring crops. The mild and wet weather however favours pest development, and this needs to be taken into consideration. Water supply through precipitation can be regarded as positive for the grain filling of winter cereals.**

## AGROMETEOROLOGICAL ANALYSIS

After a long period of rain shortage, rain fell from early May onwards. However, at the end of the second dekad of June cumulated rainfall is still in deficit, around -39 % nationally. Daily maximum temperatures were generally above the long-term average (LTA) in May, and even above the upper limit of the seasonal range of variation (i.e. two standard deviations) on 7 and 30 May. In June, after an unusual peak on 4 June, maximum temperatures fluctuated around the LTA. The surplus of cumulated active temperatures is estimated at +7 %.

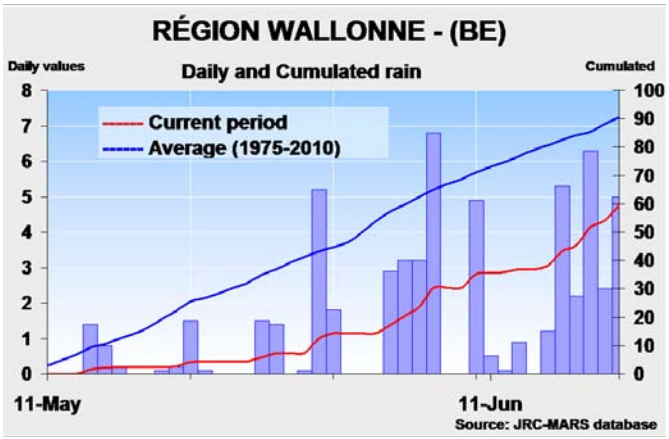



## CROP DEVELOPMENT

**Winter wheat and barley** have certainly suffered from the persistent drought from early April (heading) up to 10 May (flowering) during their development, especially in the western provinces of Hainaut and West-Vlaanderen. In these places precocity was estimated at 15/20 days, indicating a reduction in the expected yield, especially for the varieties sown late in autumn (November 2010). The negative impact will be limited for crops sown earlier and on deep soils that could have adapted by developing deep root systems. Grain filling started at the end of May when some rain fell. Ripening has started.

**Rapeseed** is at maturity almost everywhere and the harvest campaign has started. The expected yield is quite low because of the shorter crop cycle (20 to 30 days in advance), with flowering and grain filling occurring in very unfavourable weather conditions in April and May.

The weather conditions described above are much more favourable for **potato, maize and sugar beet,** especially those sown no later than in the first dekad of April. They benefited from positive active temperatures and high soil moisture levels. By contrast, for late varieties, like maize sown in May, problems occurred, mainly during emergence. Particular attention must now be paid to pests, especially aphids, since current conditions are favourable for their development. Potatoes and most of the sugar beet are at tuber formation, showing only a slight advanced development stage over the LTA. Grain maize is at the vegetative stage without any significant precocity.



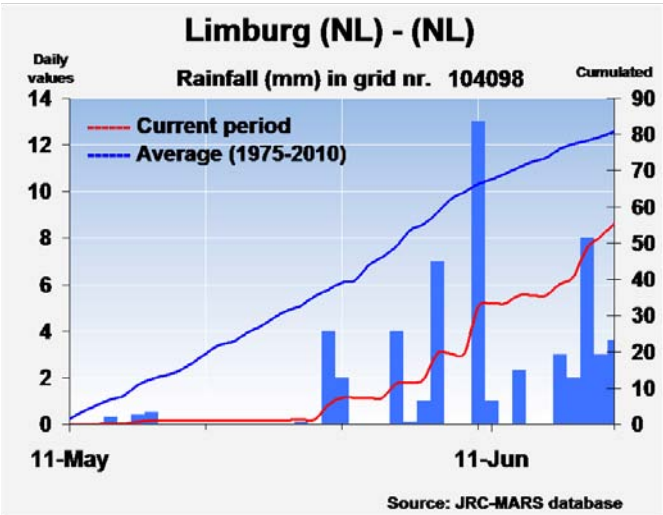
# THE NETHERLANDS — beneficial weather conditions for spring crops, except barley.

| THE NETHERLANDS | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 8.91 | **8.55** | 8.52 | -4.0 | +0.4 |
| spring barley | 5.56 | **5.64** | 6.00 | +1.4 | -6.0 |
| grain maize | 9.74 | **12.93** | 11.05 | +32.7 | +17.0 |
| sugar beets | 74.37 | **72.92** | 71.73 | -1.9 | +1.7 |
| potato | 43.59 | **45.17** | 43.94 | +3.6 | +2.8 |

**The drought mainly affected spring barley, while winter wheat suffered only during the heading phase. Both are at a slightly advanced stage of development. For spring crops, weather conditions are quite favourable: grain maize is at the vegetative stage of development, as is most of the sugar beet. The tuber formation of potato is well advanced.**

## AGROMETEOROLOGICAL ANALYSIS

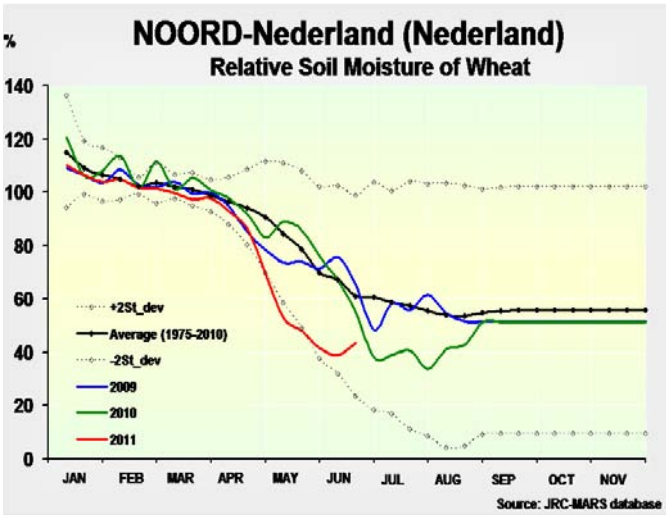
After the rainfall that started on 9 May, the cumulated rainfall deficit fell to -6.5 % of the long-term average (LTA) by the end of the second dekad of June. During the same period, the maximum temperature fluctuated around the LTA except for a few days (7 — 9 and 30 May). As a direct consequence for plants, the cumulated active temperature is positive and therefore quite favourable for their growth, but in the meantime the cumulated water balance is still in deficit.




## CROP DEVELOPMENT

The relative soil moisture for cereals (**winter wheat and spring barley**) increased in May and June, but despite this water supply is still below the lower seasonal limit (-2 standard deviations from the LTA) in all areas of production. On 20 June, with less than one dekad advance, both cereals are slightly in advance of the grain filling stage. However, winter wheat is still at flowering in the northern provinces (Drenthe, Groningen), as is spring barley in the central part of the country (Overrijsel and Gelderland). The current rainfall and moderate temperatures should be beneficial to both stages of development. The yield loss currently expected reflects mainly the unfavourable conditions during the heading process.

**Grain maize** is still at an early vegetative stage of development and the weather conditions have been extremely favourable for its development since early May. Relative soil moisture is high compared to the LTA. All these elements explain the very promising yield expectation from the scenario analysis. The weather conditions are also favourable for **potato and sugar beet**, both in a slightly advanced stage of development, and relative soil moisture is above the LTA in the main regions of production. Sugar beet is at the vegetative stage, except in the southern provinces, where tuber formation has started. Tuber formation of potato has started all over the country.



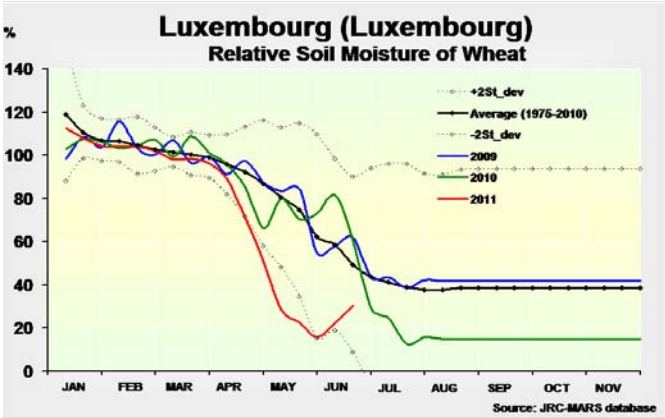
## LUXEMBOURG — persistent drought from March to end of May with negative impact on expected yields.

| LUXEMBOURG | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 5.96 | **5.75** | 6.15 | -3.5 | -6.5 |

**Soft wheat at the grain filling stage could benefit to some extent from the rainfall that arrived from the end of May onwards, but the negative impact of the drought during the heading stage will not be recovered.**

**Winter soft wheat** suffered from drought at heading and flowering in April and May. Rain, mainly in June, increased the cumulated rainfall, but the sum of precipitation by 20 June is still very low compared to the long-term average (LTA). At the same time, maximum temperatures remained high, often above the LTA, until 10 June.

As a consequence, the development stage was accelerated and the grain filling stage was reached with a precocity of about 15 days by 20 June. The current rain and temperature conditions could be beneficial for extending the grain filling period.




## IRELAND — Overall good season for all crops.

| IRELAND | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 8.60 | **9.28** | 8.69 | +7.9 | +6.8 |
| winter barley | 8.50 | **8.61** | 8.20 | +1.3 | +5.0 |
| spring barley | 6.70 | **6.92** | 6.56 | +3.3 | +5.5 |
| potato | 30.62 | **33.11** | 31.44 | +8.1 | +5.3 |

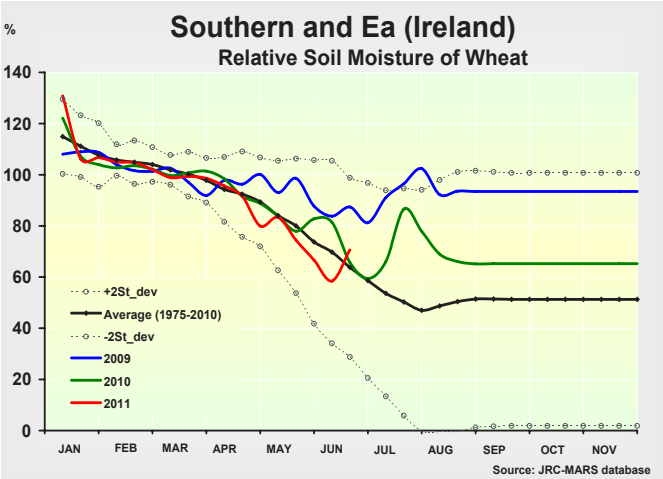
**With favourable weather conditions throughout the season, good yields can be expected for all crops.**

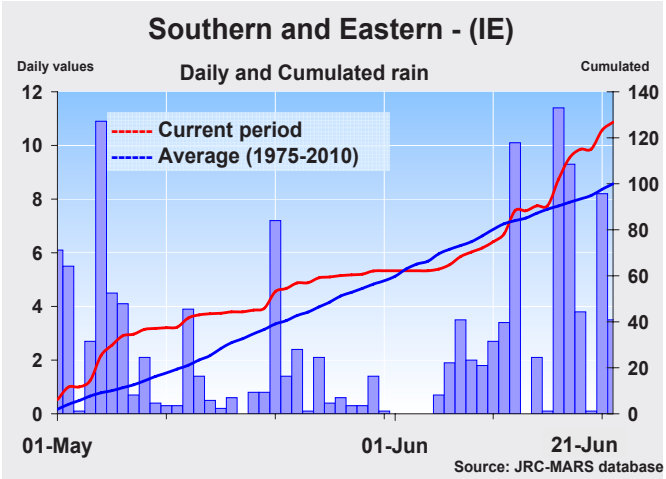
### AGROMETEOROLOGICAL ANALYSIS

Cumulated temperatures were above average in May, but fell back towards average in the middle of June. Cumulated sunshine was slightly lower than average for the same period. Precipitation has been abundant, especially at the beginning of May. Temperatures overall remained close to normal, with a short peak of daily maximum temperature at the beginning of June and a small drop in minimum temperature around 10 June.

### CROP DEVELOPMENT

Overall the season seems to be good for all crops. For **winter crops**, soil moisture was high enough at the beginning of flowering (end of May) to ensure that water deficit did not reduce the number of seeds per head. Soil moisture actually remained close to average in southern and eastern Ireland even during the dry month of April, resulting in little to no stress regarding water availability during the development phases that determine the number of ears. The yield forecasts for both **winter wheat and barley** are therefore above average. For spring crops, favourable conditions have allowed potato and spring barley to start their growth ahead of time. **Spring barley** yield forecast has been set above average. Since potato is a delicate crop for which the yield is still subject to much uncertainty, the forecast is still around the statistical trend.



# DENMARK — Heavy rains in May and June should limit yield losses.

| DENMARK | Yield t/ha | | | | |
|---|---|---|---|---|---|
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 6.63 | **7.49** | 7.22 | +13.0 | +3.8 |
| winter barley | 5.43 | **5.88** | 5.69 | +8.2 | +3.2 |
| spring barley | 5.00 | **5.13** | 4.88 | +2.6 | +5.2 |
| turnips (rape) | 3.48 | **3.66** | 3.57 | +5.2 | +2.5 |
| sugar beets | 60.10 | **58.57** | 56.64 | -2.5 | +3.4 |
| potato | 35.27 | **43.21** | 38.68 | +22.5 | +11.7 |

**Contrasting with the dry month of April, abundant precipitation in the second part of May and in June appear to have arrived in good time for winter wheat and rapeseed, thereby limiting yield loss. Good establishment and advanced start of summer crops offer potentially optimistic prospects.**

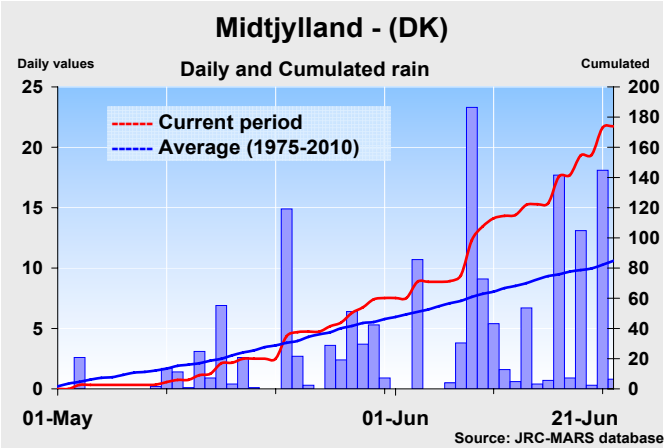
## AGROMETEOROLOGICAL ANALYSIS

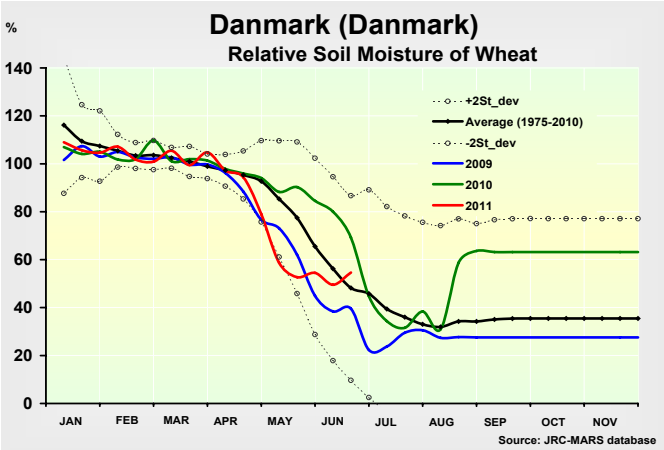
After the dry period in April, heavy precipitation occurred over most of Denmark between mid-May and 20 June. Rainfall was more than 30 % above the long-term average for the same period in Nordjylland and Midjylland, with particularly high precipitation on the eastern coast of these provinces. Minimum and maximum temperatures have oscillated around average. Cumulated temperatures and sunshine were slightly above average.

## CROP DEVELOPMENT

The dry period in spring from mid-April to mid-May coincided with heading of winter cereals. This has certainly affected the yield potential, since water deficit during this phase potentially reduces the number of ears per plant. However, rain from mid-May until 20 June ensured that plants suffered no water deficit during the critical early flowering period. The intensity of rainfall in some places might have caused some local damage. The weather forecast of 22 June does not indicate much rain in the coming days, which is good news for **wheat**, as it enters its grain-filling phase. For **rapeseed**, the rainy period could have been disastrous if it had arrived earlier, but it appears that the more vulnerable period of flowering was completed before the heavy rains arrived. Despite these slightly optimistic conditions for winter crops, it has to be remembered that the winter was harsh and that the crops might not have been in an ideal condition to endure the rather exceptional meteorological conditions witnessed this year. Overall, this has resulted in the yield forecast being revised down, yet still slightly above average.

Spring crops have started with a head start compared to the long-term average, suggesting potentially good yields. For **spring barley**, no water deficit occurred at the beginning of the heading phase, and so no reduction in the number of ears is expected and hence no negative impact on yield. **Potato** and **spring barley** yields are higher than in previous forecasts based purely on statistical trends, while for **sugar beet** it is still too early to anticipate changes with respect to the trend.




# SWEDEN — Abundant rainfall compensates for earlier dry period in most regions.

| SWEDEN | Yield t/ha | | | | |
|---|---|---|---|---|---|
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 5.40 | **5.77** | 5.86 | +6.9 | -1.6 |
| winter barley | 4.64 | **5.23** | 5.18 | +12.7 | +0.8 |
| spring barley | 3.93 | **4.43** | 4.15 | +12.8 | +6.9 |
| turnips (rape) | 2.55 | **2.89** | 2.69 | +13.2 | +7.4 |
| sugar beets | 52.08 | **55.72** | 53.67 | +7.0 | +3.8 |
| potato | 30.08 | **29.91** | 29.81 | -0.6 | +0.3 |

**Abundant precipitation in May and June seem to have arrived in time for cereals in Sydsverige, but some yield loss can be expected in Östra Mellansverige since soil moisture was very low during flowering. Quite good conditions at the start of summer crops offer potentially good yield prospects.**

## AGROMETEOROLOGICAL ANALYSIS

The dry month of April was followed by a very wet May and June over most of Swedish farmland, with the exception of some parts of Östra Mellansverige that remained close to the long-term average (LTA) for this period. Cumulated temperatures

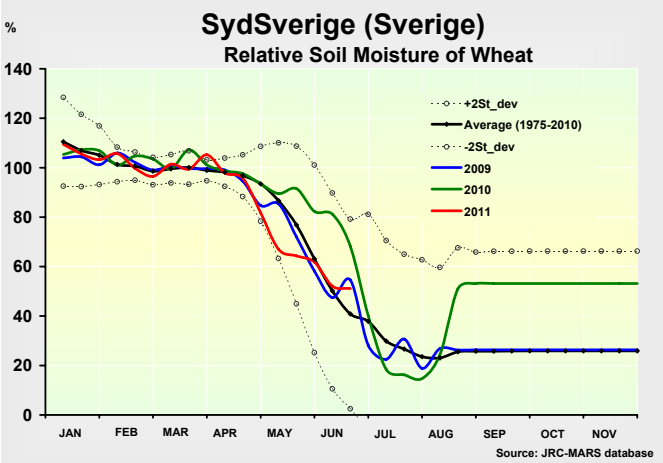
and sunshine are slightly above average. Minimum and maximum temperatures oscillated around the average.

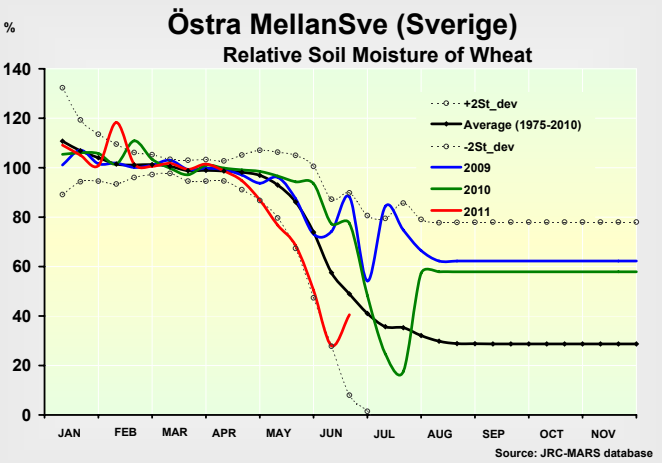
### CROP DEVELOPMENT

The dry period in April will have reduced yield potential for **winter wheat** and **barley** to some extent, since the plants were at the beginning of heading during this period. Considerable rainfall arrived in time to limit water deficit during the more critical flowering period for Sydsverige.

In Östra Mellansverige, however, soil moisture remained low during flowering due to lower rainfall, and further yield reduction can be expected. Forecasts for winter wheat and barley have therefore been revised down. For **rapeseed**, the delicate period of flowering arrived before the rain, which is good news for the yield.

Spring crops have started with a head start over the LTA, suggesting good yields. Unlike winter cereals, no water deficit for **spring barley** at the beginning of heading indicates that there should be no reduction in ears. The forecast has therefore been revised upwards. While conditions seem favourable for **potato** and **sugar beet**, it is still too early to anticipate changes with respect to the statistical trend.




## FINLAND — Precipitation average but temperatures considerably higher than average; drier and warmer than last year.

| FINLAND | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 3.43 | **3.55** | 3.71 | +3.4 | -4.4 |
| spring barley | 3.07 | **3.45** | 3.45 | +12.3 | +0.0 |
| turnips (rape) | 1.13 | **1.26** | 1.37 | +11.2 | -8.5 |
| sugar beets | 37.13 | **37.47** | 38.24 | +0.9 | -2.0 |
| potato | 26.15 | **27.68** | 25.30 | +5.8 | +9.4 |

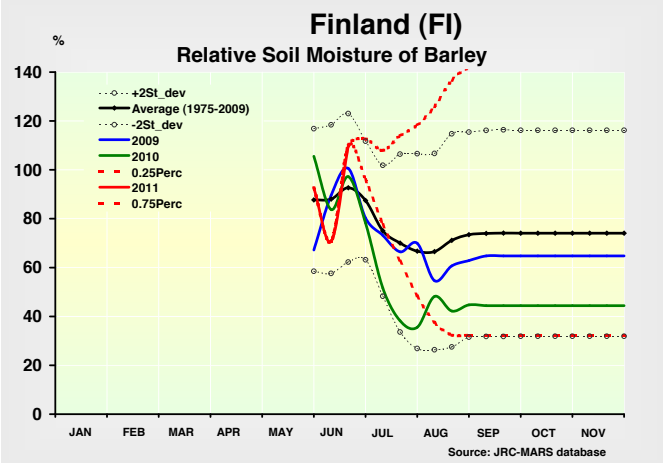
**With a mean temperature close to two standard deviations above average, and precipitation close to the long-term average (LTA) after a dry April, there is an increased risk of a dry growing season.**

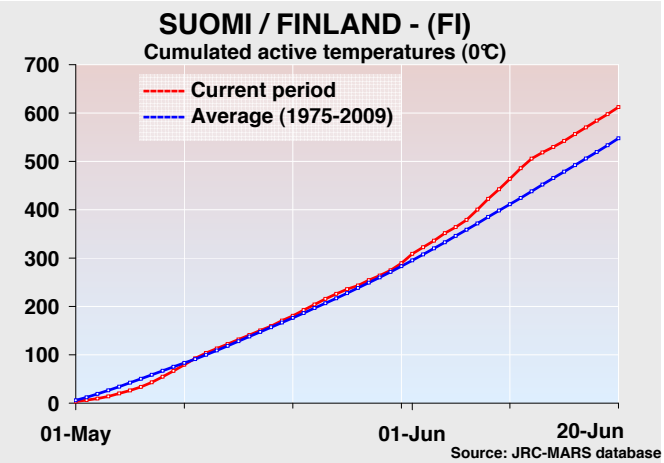
### AGROMETEOROLOGICAL ANALYSIS

Finland experienced a mild May and a very hot June, with a few days of maximum temperatures above 27 °C. In consequence, at the end of the period, cumulated active temperatures exceeded the LTA. The mean temperature and sunshine were close to two standard deviations above average. Precipitation was around the average seasonal line and well distributed between mid and the end of May. The most abundant rainfall events were recorded in the second dekad of June. Finland received about 75 mm of rain for agricultural areas, which is +16 % as compared to the LTA. These weather conditions resulted in a climatic water balance at the LTA for the period under review and should have been favourable for the emergence and growth of young crops.

### CROP DEVELOPMENT

The development of cereals is slightly advanced as compared to the LTA. Relative soil moisture is high, mainly for **spring barley**, but is expected to decrease because of the forecast lack of rainfall over the coming days. The total biomass of **soft wheat** is still around the average seasonal line.




## LITHUANIA — Average precipitation and high evapotranspiration: good yield expectations.

| LITHUANIA | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 3.31 | **3.87** | 3.61 | +17.0 | +7.2 |
| spring barley | 2.7 | **2.96** | 2.64 | +9.8 | +12.5 |
| turnips (rape) | 1.65 | **1.87** | 1.75 | +13.6 | +6.8 |
| potato | 12.99 | **13.28** | 12.17 | +2.2 | +9.1 |

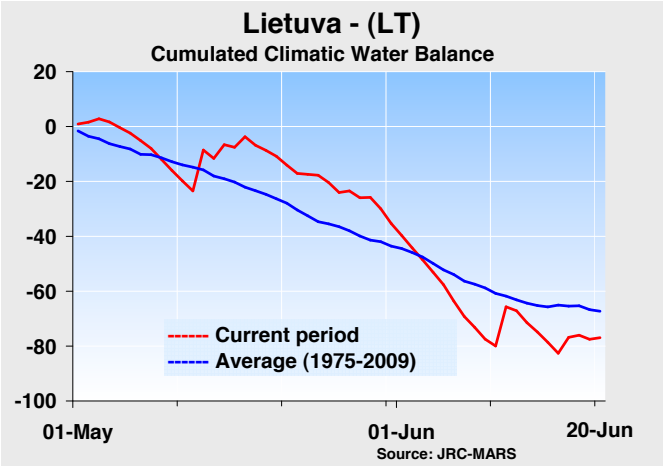
**Since early spring precipitation has been at the average seasonal level, and thermal conditions have been above average. Favourable weather has led to crop yield forecasts above the 5-year average and above last year's production.**

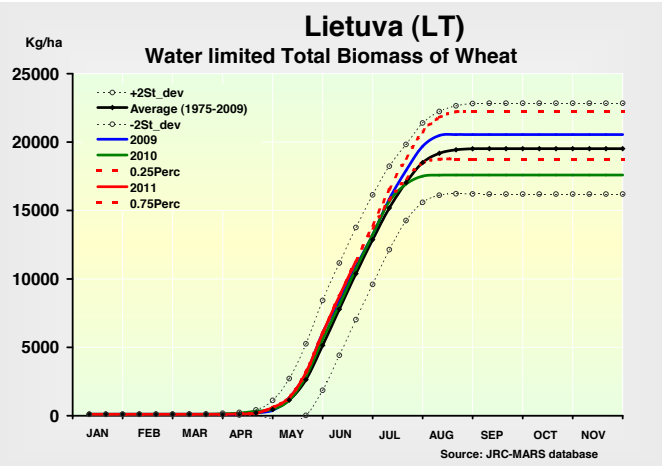
### AGROMETEOROLOGICAL ANALYSIS

Since the beginning of May cumulated active temperatures have exceeded the normal seasonal average by more than 80 GDD throughout Lithuania. This phenomenon was caused predominantly by the first dekad of June, which was more than 40 GDD warmer than usual and had 3-4 days with maximum temperatures above 30 °C in the central zone of Lithuania, from the north to the south. The country also recorded high readings for sunshine and evapotranspiration, slightly below the upper boundary of two standard variations. A warm beginning of June was followed by average temperatures and precipitation; rainfall in the last few days in the north-western part of the country exceeded the average by as much as 80 %. The favourable weather conditions have led to an average climatic water balance with little deficit.

### CROP DEVELOPMENT

Soil moisture for all crops is sufficient, and biomass growth shows good potential. So far, the crop model indicates storage organ values above average, mainly for **rapeseed**, but also for **soft wheat**. The development stage of soft wheat is around the seasonal average, whereas the development of rapeseed and spring crops is more advanced in some areas. In general yield expectations are promising.



## ESTONIA — Persistent dry conditions since the early spring.

| ESTONIA | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 2.71 | **3.02** | 2.96 | +11.5 | +2.1 |
| spring barley | 2.41 | **2.56** | 2.49 | +6.3 | +3.0 |
| turnips (rape) | 1.32 | **1.45** | 1.51 | +10.0 | -4.1 |

**In the coming days the country needs rainfall to alleviate the negative impact on crop production of the dry conditions which have persisted since March.**

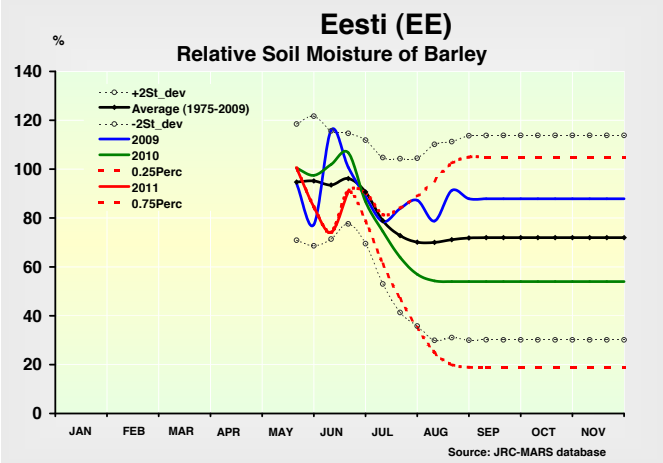
### AGROMETEOROLOGICAL ANALYSIS

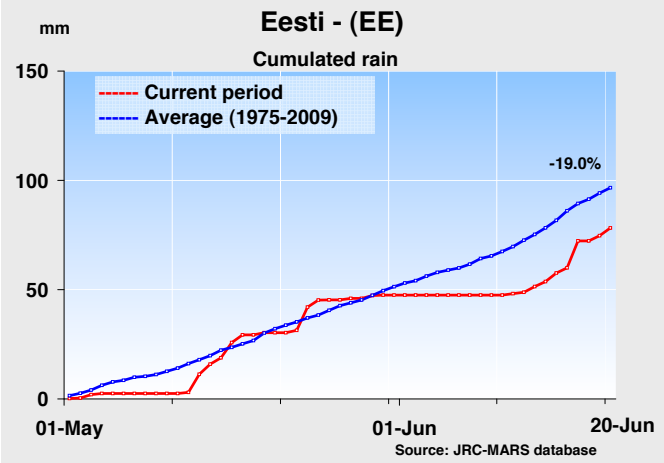
Cumulated active temperatures and sunshine in the period between 1 May and 20 June were above the seasonal average, whereas rainfall showed a significant deficit as compared to the long-term average (LTA). Between 1 and 11 June the country experienced a warm episode, with temperatures for a few days above the normal range of variation (i.e. two standard deviations).

Since the beginning of March Estonia has suffered a rainfall shortage of 31 % below the LTA, with the lowest precipitation levels occurring in the south-eastern Louna Eesti region. The country received beneficial rain in mid-May and the second dekad of June, with replenished soil water storage. The warm spell after this first rainfall event may have boosted crop growth. The weather in the coming days will be crucial for ensuring that the water supply is sufficient for good yield and good grain quality.

### CROP DEVELOPMENT

After scarce rainfall and a surplus of cumulated temperatures the relative soil moisture increased in the second dekad of June. **Spring barley** is heading and shows a slightly advanced status from the north-west to the south-east of the country, whereas development of **soft wheat** is at the seasonal average.




## LATVIA — In May the weather was favourable for crop growth and development; hot days in early June.

| LATVIA | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 3.28 | **3.48** | 3.43 | +6.0 | +1.4 |
| spring barley | 2.80 | **2.58** | 2.38 | -7.7 | +8.5 |
| turnips (rape) | 2.13 | **2.19** | 2.06 | +2.8 | +6.4 |
| potato | 16.03 | **15.98** | 15.84 | -0.3 | +0.9 |

**Mild average weather in May and mid-June raised crop yield expectations to above the 5-year average.**

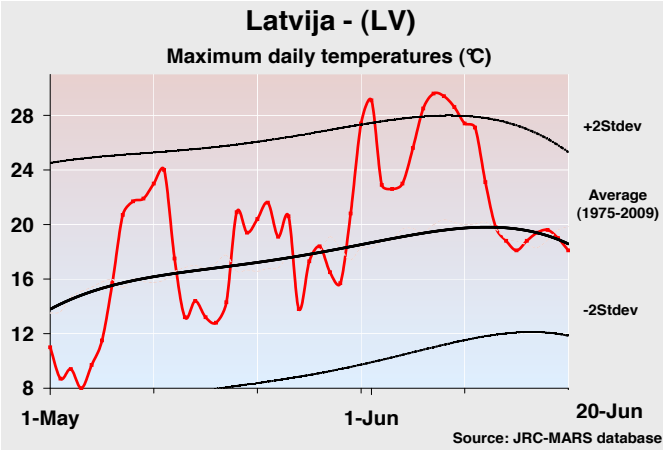
### AGROMETEOROLOGICAL ANALYSIS

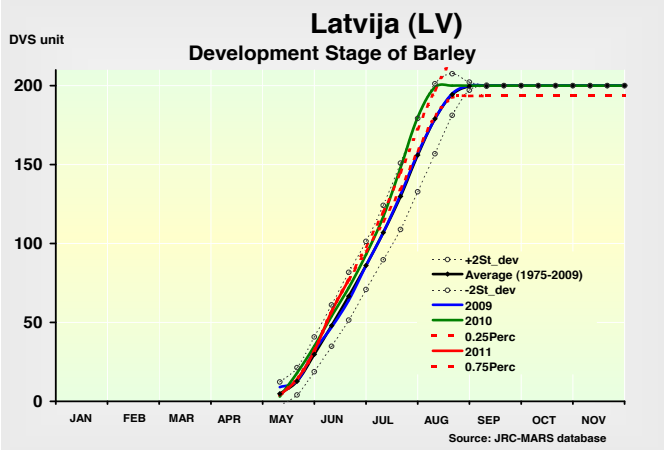
Since the beginning of May cumulated active temperatures and sunshine have been around average, with the exception of some western areas, where slightly higher than usual temperatures were recorded. This is mainly due to the very warm first dekad of June, with very high temperatures and very scarce rain all over the country. In Zemgale region a short hot spell (Tmax >30 °C) was recorded.

Latvia experienced average amounts of rain within the period of analysis, which was beneficial after the very dry April. These conditions, accompanied by mild temperatures, boosted the climatic water balance in May to above average, leading to replenished soil water storage and accelerating the early growth of plants. Moreover, rain was well distributed, with a period of surplus in the second and third dekad of May.

### CROP DEVELOPMENT

The development of **soft wheat** is average, whereas **spring barley** and other spring crops show a one-week advance. After a short period of falling values in late May and early June, soil moisture is around the seasonal average. Total biomass of all crops is so far showing the seasonal average potential.




## PORTUGAL — Rainfall during May and June could hamper the harvest of winter cereals. Expected yields close to average.

| PORTUGAL | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 1.45 | **1.74** | 1.93 | +19.9 | -10.0 |
| winter barley | 1.59 | **1.97** | 2.02 | +24.2 | -2.2 |
| grain maize | 6.49 | **6.17** | 6.03 | -4.9 | +2.2 |
| sunflower | 0.55 | **0.61** | 0.61 | +11.3 | +0.0 |
| potato | 13.06 | **15.61** | 14.60 | +19.5 | +6.9 |

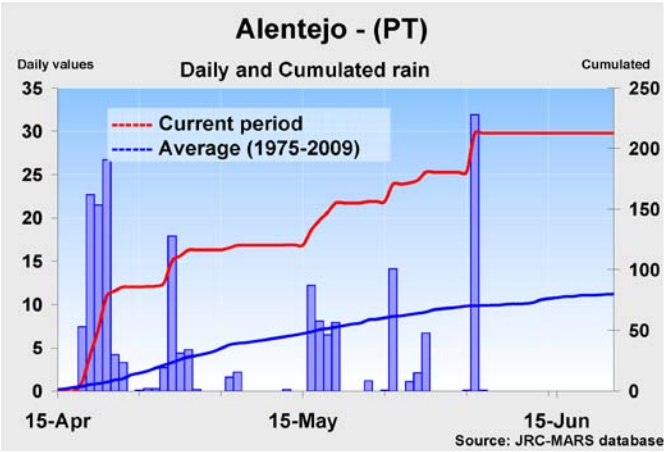
**After good expectations for winter cereals at the beginning of spring, the recent rainfall in Alentejo region could hamper the harvest of soft wheat and winter barley. Current forecasts point to average yields of winter crops and of grain maize and sunflower. Temperatures and rainfall during April and May increased expectations for potato.**

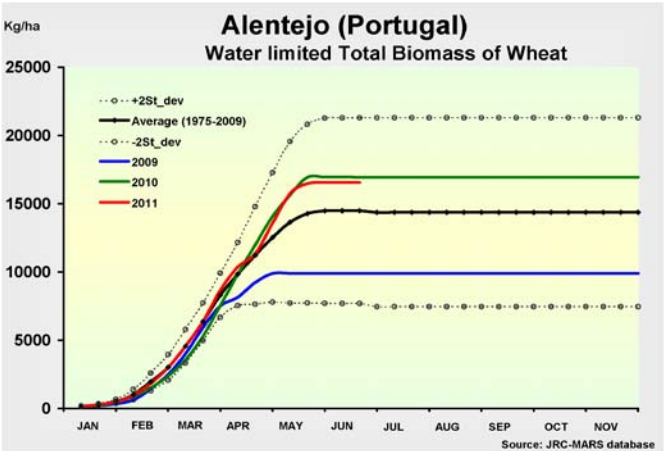
### AGROMETEOROLOGICAL ANALYSIS

After a positive beginning of the spring season, with temperatures and rainfall above average, especially in the first weeks of April, heavy rainfall at the end of the winter cereals season may hamper the harvest of soft wheat and winter barley. Precipitation between mid-April and mid-June was more than twice as high as the long-term average (LTA). The temperatures during May and June were higher than the seasonal average values, resulting in an advancement of the crop cycle for sunflower and maize.

### CROP DEVELOPMENT

The expected yields for **soft wheat** and **winter barley** are substantially higher than last year: forecasts are for 1.74 t/ha and 1.97 t/ha, respectively. However, the expected yield, especially of soft wheat, is considerably (10 %) lower than the average of the last five years, largely due to the exceptional high yields in 2006 and 2008. The prospects for **sunflower** and **maize** crops are also average, bearing in mind the benefits of the recent rainfall at the end of May and the first weeks of June. Currently, sunflower is at flowering stage, and the meteorological conditions in the next weeks will be crucial for the final yield. Grain maize has not yet flowering; however, it shows an advancement of one week against the average season as a consequence of the warm temperatures registered in May and June. Finally, the forecast for **potato** is 15.61 t/ha, almost 7 % higher than the average of recent years. Its phenology is about ten days in advance over the LTA, due to the accumulation of temperatures in the Centro and Norte regions during April and May. The meteorological conditions during July will be decisive for yield formation.



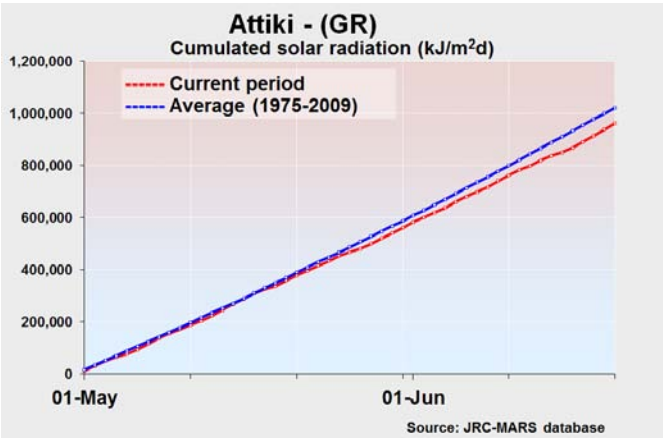
## GREECE — sunshine not enough for good grain filling.

| GREECE | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 2.91 | **2.79** | 2.79 | -4.1 | +0.1 |
| durum wheat | 2.49 | **2.42** | 2.45 | -2.7 | -1.1 |
| winter barley | 2.84 | **2.47** | 2.42 | -13.2 | +2.0 |
| grain maize | 10.18 | **9.92** | 9.92 | -2.6 | +0.0 |
| sunflower | 1.72 | **1.23** | 1.28 | -28.4 | -3.7 |
| sugar beets | 81.25 | **71.61** | 70.72 | -11.9 | +1.3 |
| potato | 26.89 | **25.36** | 25.27 | -5.7 | +0.4 |

**The persistent wet and cold weather confirmed the reduction of yield expectation to average.**

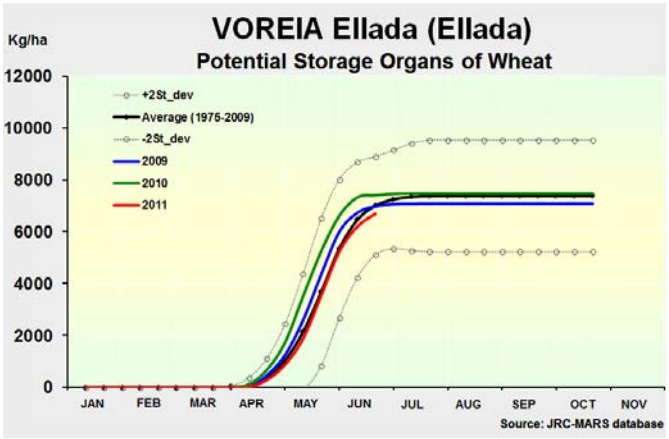
### AGROMETEOROLOGICAL ANALYSIS

With the exception of some isolated locations, Greece experienced wet conditions due to well distributed rainfall (Voreia Ellada) or less well spread, but more abundant, precipitation (Attiki). Both boosted the cumulated rainfall values to above the long-term average, ensuring high soil moisture content. In addition to the abundant precipitation that replenished soil moisture reservoirs, the soil moisture never dropped to low values because of the low temperatures and sunshine readings all over Greece during the period of analysis. Such low sunshine levels were observed mainly in Attiki, whereas in eastern Greece and in the major islands (e.g. Crete) conditions were more favourable for biomass fixation.




### CROP DEVELOPMENT

Despite the high soil moisture values and a positive start to the season, **winter wheat** is now suffering from low sunshine levels. Grain filling therefore occurred under suboptimal conditions, which reduced the high potential registered at the beginning of the season. Estimates for grain biomass are now close to or slightly below average. Similar conditions were observed for **barley**. In May spring crops showed a slight delay in development due to the cold; now this delay seems to have been recovered. Water availability allowed optimal development of the canopy of grain, which partially makes up for the poor sunshine. In fact, given the abundant availability of water at the beginning of the season, roots did not go deep, so that in the event of a drought they will not be capable of supporting the crop. **Sugar beet** and **potato** started slowly, but now biomass accumulation has reached satisfactory levels, whereas for **sunflower** the yield potential is less positive.



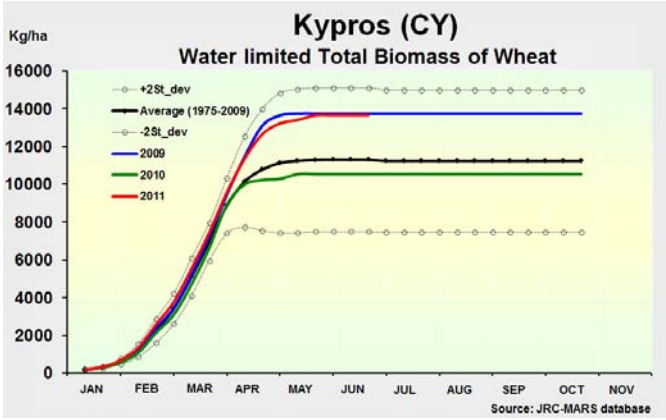

## CYPRUS — Less favourable than last year, but optimal season can be expected.

| CYPRUS | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| winter barley | 1.77 | **1.52** | 1.26 | -14.4 | +20.2 |

**Water supply above average and mild temperatures herald good yield potential.**

### AGROMETEOROLOGICAL ANALYSIS AND CROP DEVELOPMENT

The occasional, but significant, rainfall events boosted cumulated precipitation to considerably above average, guaranteeing an optimal water supply for crops during the whole review period. Mild temperatures and adequate sunshine levels completed the picture of an optimal growing season. Winter wheat biomass responded to these conditions with an exceptional development, leading to very favourable yield potential.



# HUNGARY — Crop yield negatively impacted by low soil moisture conditions.

| HUNGARY | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 3.73 | **3.94** | 4.05 | +5.5 | -2.7 |
| durum wheat | 3.32 | **3.86** | 3.82 | +16.1 | +1.0 |
| winter barley | 3.57 | **3.81** | 3.88 | +6.7 | -2.0 |
| spring barley | 3.02 | **2.84** | 3.17 | -5.9 | -10.2 |
| grain maize | 6.63 | **7.09** | 6.21 | +6.9 | +14.1 |
| turnips (rape) | 2.16 | **2.15** | 2.32 | -0.5 | -7.5 |
| sunflower | 1.97 | **2.46** | 2.25 | +24.9 | +9.1 |
| sugar beets | 58.34 | **57.49** | 53.01 | -1.5 | +8.4 |
| potato | 21.73 | **26.94** | 24.24 | +24.0 | +11.2 |

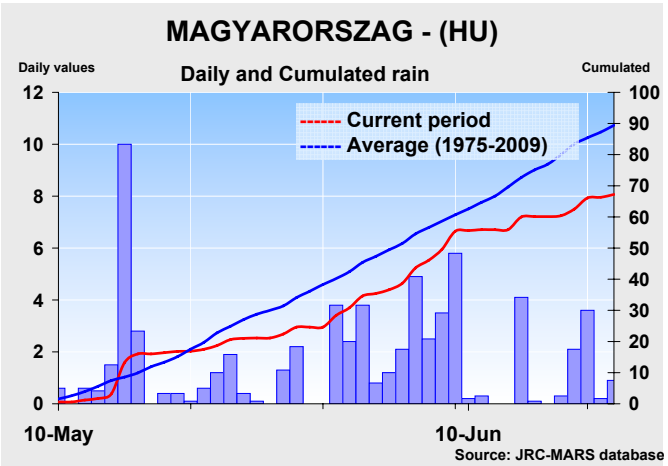
**Moderate rainfall was unable to enhance the earlier dry conditions. The yield expectation for winter wheat is average, but for rapeseed and spring barley it is low. Maize and sunflower yield potential is still increasing, but there is a need for abundant rain if summer crops are to reach good yields.**

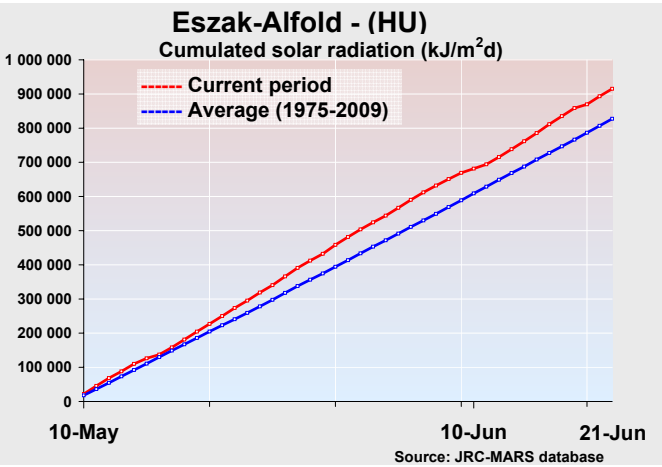
## AGROMETEOROLOGICAL ANALYSIS

The dry weather conditions experienced in April improved slightly in May and June as the rains returned. Rainfall in May meant that soils dried out more slowly, but the relative soil moisture content remained mostly below average. The precipitation was well distributed over time, but was very patchy and variable from place to place. A clear tendency towards a higher cumulated water balance deficit is detectable eastwards. At the same time, the evapotranspiration demand exceeded the average due to intensive sunshine and high daily maximum temperatures. Especially the last dekad of May and the first dekad of June were consistently warm. The hot days (Tmax > 30 °C) in the Del-Alfold and Eszak-Alfold regions numbered 6-11. The warm weather accelerated crop phenological development unfavourably.

## CROP DEVELOPMENT

The spring drought affected spring cereals badly, causing poor germination, unequal emergence, and inappropriate tilling. **Spring barley** might be negatively affected, too, by dry conditions during flowering and grain filling; low yield is expected for this crop. **Rapeseed** probably suffered a lack of water during the grain filling period; a further reduction in yield formation is possible, with a shortened crop cycle due to the shorter vegetative phase. **Winter barley** and **winter wheat** are in the grain filling phase; in the southern regions it is already ripening, and the harvest will start very soon. Both crops suffered less from the drought, nevertheless only near-average yields are forecast. The dry soil conditions of May forced maize and sunflower to develop a deeper and denser rooting system, which could be very favourable in mid-summer. If weather conditions are mainly favourable in the coming weeks, the yield expectations for summer crops could remain decent.



## SLOVAKIA — normal yield expectations.

| SLOVAK REPUBLIC | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 3.46 | **3.97** | 4.00 | +14.8 | -0.7 |
| durum wheat | 3.58 | **4.42** | 4.33 | +23.6 | +2.3 |
| winter barley | 3.17 | **3.66** | 3.57 | +15.5 | +2.7 |
| spring barley | 2.67 | **3.11** | 3.37 | +16.6 | -7.7 |
| grain maize | 5.49 | **6.81** | 6.04 | +24.1 | +12.7 |
| turnips (rape) | 1.97 | **2.25** | 2.21 | +14.1 | +1.6 |
| sunflower | 1.81 | **2.22** | 2.15 | +22.6 | +3.4 |
| sugar beets | 54.52 | **58.34** | 53.26 | +7.0 | +9.5 |
| potato | 11.45 | **16.12** | 15.43 | +40.8 | +4.4 |

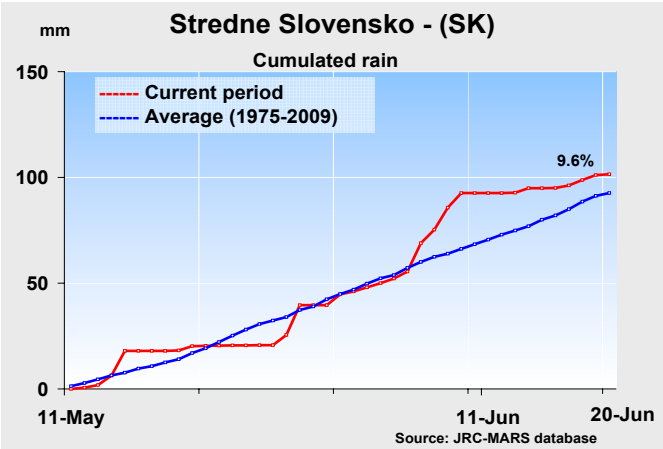
**Warm weather brought crop development forward; water supply to crops is still adequate for the season. Yield prospects for winter cereals and spring crops are near average.**

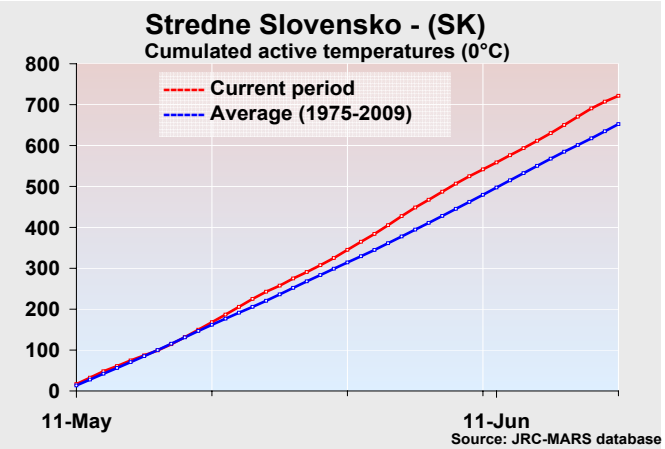
### AGROMETEOROLOGICAL ANALYSIS

The review period provided 75-130 mm precipitation in the main agricultural production areas. The cumulated rainfall was in surplus as compared to the LTA in Zapadne and Stredne Slovensko, with a slight precipitation deficit in Vychdne Slovesko. Precipitation provided satisfactory soil moisture values, with normal canopy development and normal photosynthetic assimilation. The above-average, and even sometimes high, daily maximum and minimum temperatures led to a surplus of +50 to +70 GDD between 19 May and 18 June.

### CROP DEVELOPMENT

Warm weather brought **wheat** and **spring crops** forward by one week on average, but this will have no negative impact on yield formation. The simulated values put biomass accumulation of winter cereals slightly above average in the western half of Slovakia, but normal in Vychodne Slovensko region. **Rapeseed** reached maturity 7-15 days in advance along the Hungarian border and is ripening in the northern areas. The yield will probably be better than in the very wet 2010, but will remain average compared to the 5-year average. The development of spring crops is at the seasonal average, and biomass accumulation as well as the water-limited leaf area appear adequate.




## AUSTRIA — Favourable conditions for crop development.

| AUSTRIA | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 5.04 | **5.46** | 5.10 | +8.3 | +7.0 |
| durum wheat | 4.50 | **4.70** | 4.37 | +4.4 | +7.6 |
| winter barley | 5.39 | **5.63** | 5.47 | +4.4 | +2.9 |
| spring barley | 3.59 | **3.90** | 3.92 | +8.7 | -0.5 |
| grain maize | 9.28 | **10.71** | 10.02 | +15.4 | +6.8 |
| turnips (rape) | 3.17 | **3.04** | 3.10 | -4.0 | -1.7 |
| sunflower | 2.62 | **2.68** | 2.60 | +2.5 | +3.1 |
| sugar beets | 69.84 | **71.01** | 67.62 | +1.7 | +5.0 |
| potato | 30.57 | **31.31** | 31.12 | +2.4 | +0.6 |

**The eastern part of the country experienced no drought, unlike neighbouring countries, so a good season is in prospect. The cold weather of May was compensated by optimal temperatures for ripening over recent weeks.**

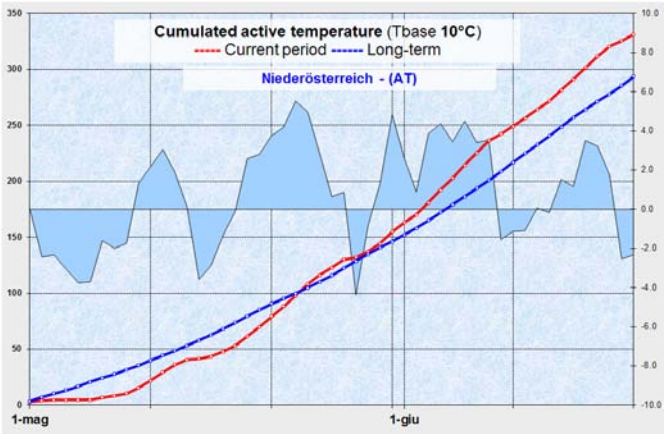
### AGROMETEOROLOGICAL ANALYSIS

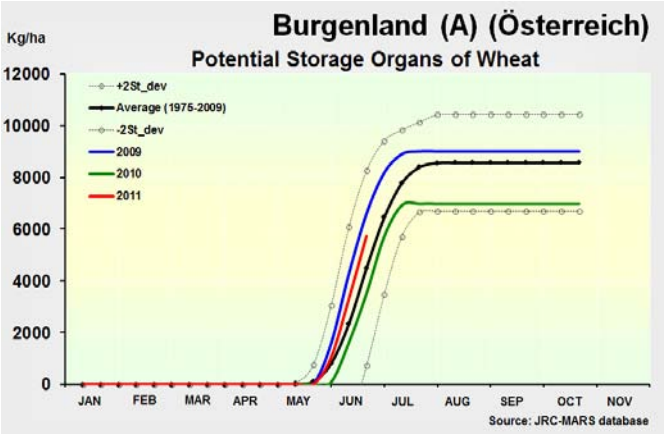
During May temperatures were often well below average, leading to a slight deficit in accumulated temperatures. However, this was offset by warmer conditions from the beginning of June. In fact, during the first two dekads of June maximum temperatures stayed above average; they did not, however, reach values which might have hindered grain filling. Precipitation was well distributed in time over the country, even in the western part that experienced drought in April, pushing the cumulated values above the average. In addition, sunshine levels were higher than average, producing optimal conditions for both winter and spring crops.

### CROP DEVELOPMENT

The drop in temperatures at the beginning of May slowed the advance of crop development generated by the

previous warm period. **Winter wheat** and **barley** are completing grain filling under optimal conditions, with consequently very good yield potential prospects. On the other hand, **rapeseed** might have suffered more from the advance in development at the beginning of the cycle, and in some areas the rainfall at maturity might have reduced the grain quality. Nevertheless yield expectations remain average. **Spring barley** shows a slight advance in development, which should have no negative impact on canopy expansion; however, due to the rainy weather at flowering, the yield potential might be reduced. Spring crops show optimal biomass accumulation, supported by good water availability, heralding a good season for **maize, tuber crops** and **sunflower**.




## SLOVENIA — Good yield potential can be expected.

| SLOVENIA | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| winter barley | 4.30 | **3.94** | 3.82 | -8.3 | +3.3 |
| grain maize | 8.54 | **8.46** | 7.63 | -0.9 | +10.8 |
| soft wheat | 4.80 | **4.59** | 4.33 | -4.3 | +6.1 |

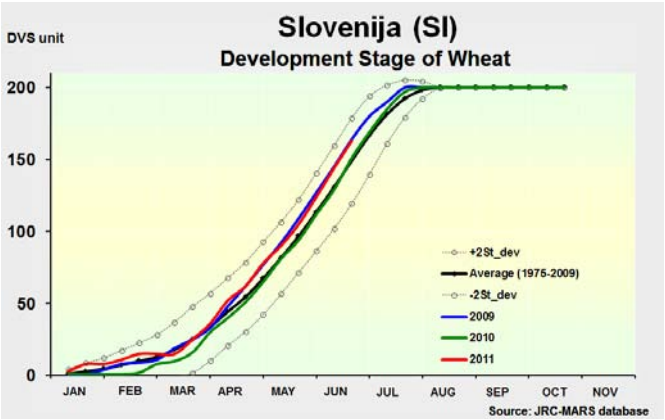
**Well distributed precipitation and warm temperatures underpin a satisfactory ripening phase for winter crops and an optimal season for grain maize.**

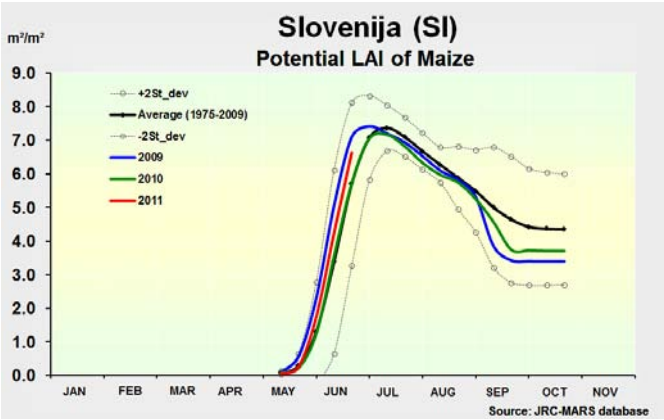
### AGROMETEOROLOGICAL ANALYSIS

Starting from the beginning of June, precipitation — something that had been scarce during the previous dekads — became abundant, bringing cumulated rainfall values up to above average (+35.5 %). Some isolated heavy rainfall events might even have caused waterlogging, with eventual possible negative impact on grain quality and yield potential. Thermal sum stayed close to the 5-year average until the beginning of June; then warmer conditions occurred. Sunshine levels were high during the whole period of analysis, leading to intense evapotranspirative demand that was satisfied by the optimal water availability.

### CROP DEVELOPMENT

Despite the advance in cereals development, the simulation points to good biomass accumulation; it is, however, unlikely that it will be as good as in 2010. **Winter cereals** are completing the ripening stage, with the prospect of optimal yield potential, though they might have suffered slightly from the shortening of the vegetative phase. In fact, leaf area expansion reached satisfactory values, but senescence started earlier. Nevertheless, the season seems to be better than the 5-year average. Optimal conditions are in prospect for **grain maize**, which is showing a very positive vegetative phase, supported by satisfactory soil moisture values.



## CZECH REPUBLIC — Warm and rainy weather.

| CZECH REPUBLIC | Yield t/ha | | | | |
|---|---|---|---|---|---|
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 4.99 | **5.26** | 5.09 | +5.4 | +3.4 |
| winter barley | 4.50 | **4.73** | 4.53 | +5.1 | +4.5 |
| spring barley | 3.91 | **4.29** | 3.98 | +9.7 | +7.8 |
| grain maize | 6.71 | **8.07** | 7.21 | +20.3 | +11.9 |
| turnips (rape) | 2.83 | **2.89** | 3.00 | +2.2 | -3.7 |
| sunflower | 2.11 | **2.28** | 2.25 | +8.2 | +1.4 |
| sugar beets | 54.36 | **59.01** | 54.85 | +8.6 | +7.6 |
| potato | 24.56 | **27.84** | 25.07 | +13.4 | +11.1 |

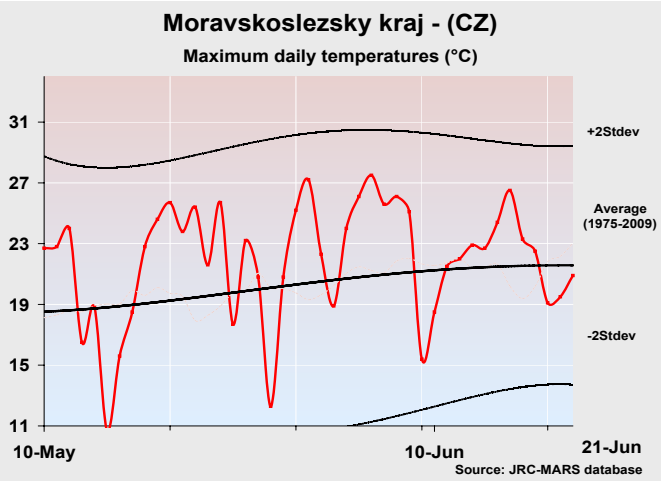
**Phenological development was exceptionally fast this spring, unfortunately shortening the crop cycle. Yield expectations for winter cereals are above average, but turnip yield will probably be moderate.**

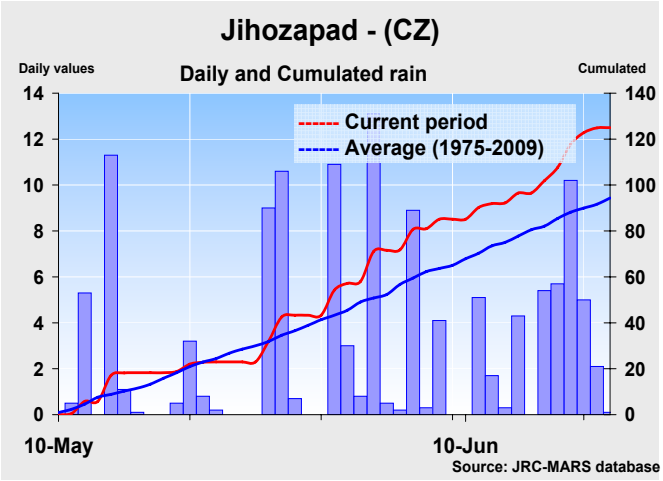
### AGROMETEOROLOGICAL ANALYSIS

Higher than average temperatures have pushed the temperature accumulation for summer crops in the last month to 60 — 90 GDD above average in the Czech Republic. Daily maximum temperatures approached high values in the last dekad of May and in the first days of June. The thermal conditions were very changeable, sometimes from one day to another. Plentiful and timely rainfall occurred, with cumulated precipitation sums above average everywhere in the country, even causing significant (+30 % — +50 %) water excess in Jihozapad and Jihovychod regions. Sunshine remained at an average level despite the numerous precipitation events.

### CROP DEVELOPMENT

Relative soil moisture was lower than usual, but did not become a limiting factor for crop development. Due to the warm spring the development of **winter cereals** was anticipated by 2-3 weeks and remains at a very advanced stage since the grain filling phase has started. **Rapeseed** is ripening and has in some zones even reached maturity. **Sunflower** is moving into the flowering stage, with a 1-2 weeks advance compared to the average in Moravia. Similarly, **spring barley** and **summer crops** are at advanced stages. The accelerated development has shortened the crop cycle unfavourably. Biomass accumulation of **winter wheat** and **winter barley** promises an average yield. The general state and yield potential of rapeseed seems to be moderate. The good canopy expansion and ample water-limited biomass of summer crops can be put down partly to the particularly accelerated phenological development. The moist and hot weather has increased the importance of appropriate plant protection.




## BULGARIA — High level of total biomass for winter crops.

| BULGARIA | Yield t/ha | | | | |
|---|---|---|---|---|---|
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 3.74 | **3.73** | 3.34 | -0.3 | +11.6 |
| winter barley | 3.41 | **3.34** | 3.21 | -1.9 | +4.2 |
| grain maize | 6.24 | **5.48** | 4.11 | -12.2 | +33.2 |
| turnips (rape) | 2.57 | **2.55** | 2.18 | -0.8 | +16.9 |
| sunflower | 2.10 | **1.84** | 1.59 | -12.6 | +15.3 |
| potato | 15.60 | **16.80** | 15.44 | +7.7 | +8.8 |

**The rainy weather with no heat stress has sustained a good yield outlook for winter cereals in the main production areas. Especially high and good quality yield is expected for winter wheat. The summer crops yield will depend on weather conditions in July.**

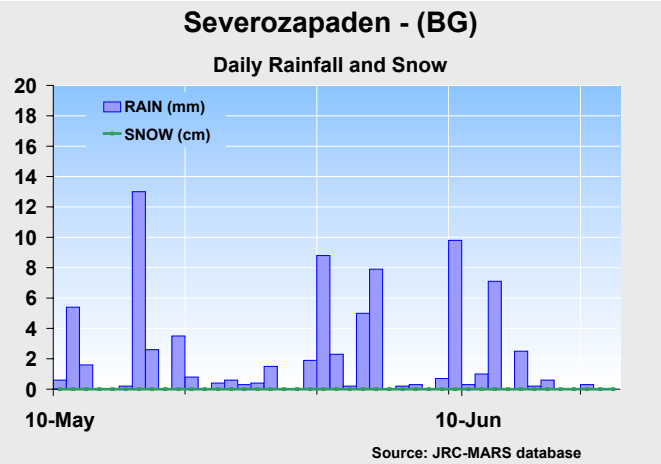
### AGROMETEOROLOGICAL ANALYSIS

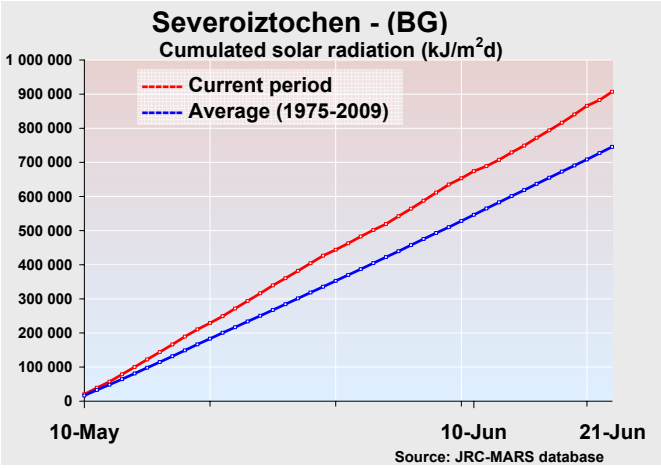
Cumulated rain for the period under review was between 40 % and 50 % below average in the southern provinces, and the soil moisture decreased significantly from mid-May onwards. This precipitation deficiency is a matter of some concern for further summer crop development. On the other hand, the northern half of Bulgaria received evenly distributed near-normal precipitation. The climatic water balance shows +30 mm — +40 mm surplus in this region

as compared to long-term average values (LTA). Cumulated active temperatures (Tbase > 0 °C) were +20 to +50 GDD above the LTA, but no particular heat stress has occurred so far. Abundant sunshine raised the evapotranspiration rate and the rate of biomass assimilation.

### CROP DEVELOPMENT

The phenological development of winter cereals is retarded by 1-2 weeks compared to the LTA. **Winter wheat** is still in the grain filling stage in the south-eastern part of the country, while in the north-western districts the ripening phase has started. Biomass accumulation of the winter crops seems to be very good, with the simulated values exceeding the average level by +10 % — +25 %. Particularly high values are forecast in Severentsentralen and Severoiztochen districts. In general, the simulation is indicating good yield potential with high grain quality. The abundant rain forecast for the next few days could be a concern for the quantity and quality of winter cereals. **Sunflower** has entered the flowering stage, showing below-average biomass accumulation. **Grain maize** is in the middle of the vegetative stage, with normal water supply in the main areas of production.




## ROMANIA — Good season expected for winter crops.

| ROMANIA | Yield t/ha | | | | |
|---|---|---|---|---|---|
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 2.80 | **3.17** | 2.58 | +13.2 | +22.8 |
| winter barley | 2.89 | **2.93** | 2.66 | +1.5 | +10.4 |
| spring barley | 1.76 | **2.02** | 1.83 | +14.8 | +10.6 |
| grain maize | 4.06 | **3.60** | 3.20 | -11.3 | +12.6 |
| turnips (rape) | 1.79 | **1.79** | 1.51 | +0.2 | +18.4 |
| sunflower | 1.56 | **1.45** | 1.32 | -6.9 | +9.7 |
| sugar beets | 38.36 | **34.46** | 33.24 | -10.2 | +3.6 |
| potato | 13.45 | **14.94** | 14.34 | +11.1 | +4.2 |

**The weather was favourable for winter crops in the southern and eastern areas of Romania. The forecast yields are high for winter wheat and winter barley, and for rapeseed and spring barley. The current status of summer crops is positive, but further rainfall is necessary to fulfil these expectations.**

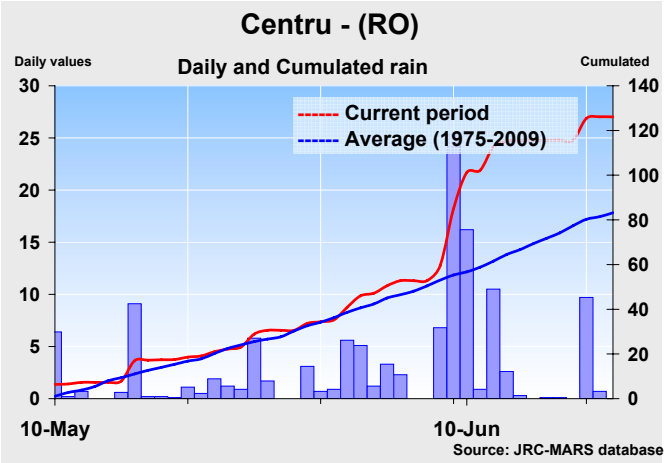
### AGROMETEOROLOGICAL ANALYSIS

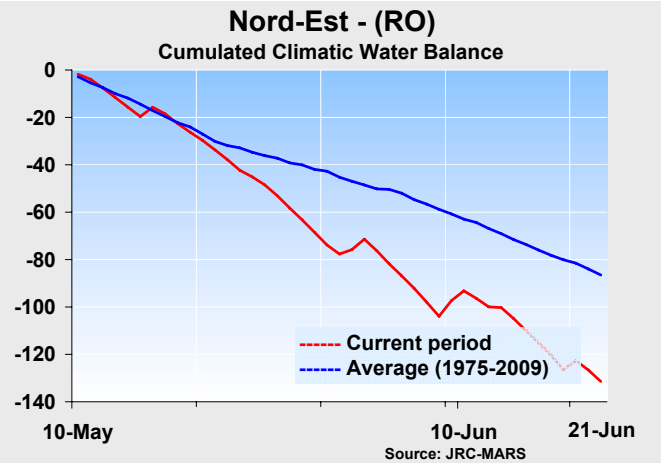
The period under consideration was favourably rainy in Romania. The agricultural areas in central and south Romania received 70-110 mm of cumulated precipitation, while some central areas were considerably wetter (150-190 mm). The climatic water balance was below normal on the Black Sea coast and in the western and northern areas, but the soil water reserves from the previous period sustained crop growth, with the sole exception of Nord-Vest and Sud-Vest Oltenia, where the water deficit has probably reduced biomass accumulation. In the northern part of Romania conditions were warmer than normal. In the second dekad of May and first dekad of June daily maximum temperatures consistently exceeded the average by 2-5 °C. Fortunately, the number of hot days remained moderate and no particular events created stressful conditions for crop development.

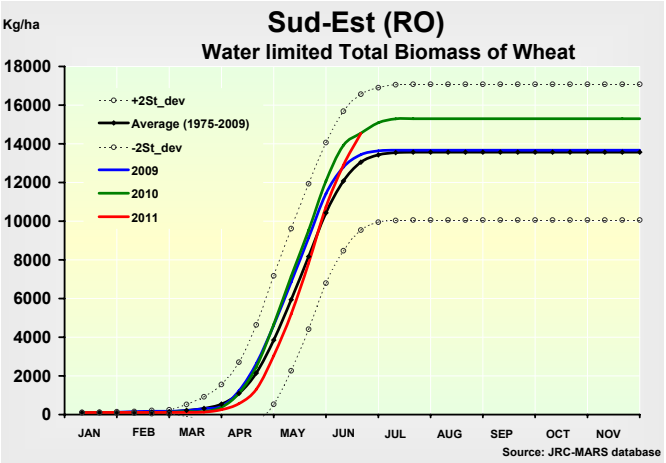
### CROP DEVELOPMENT

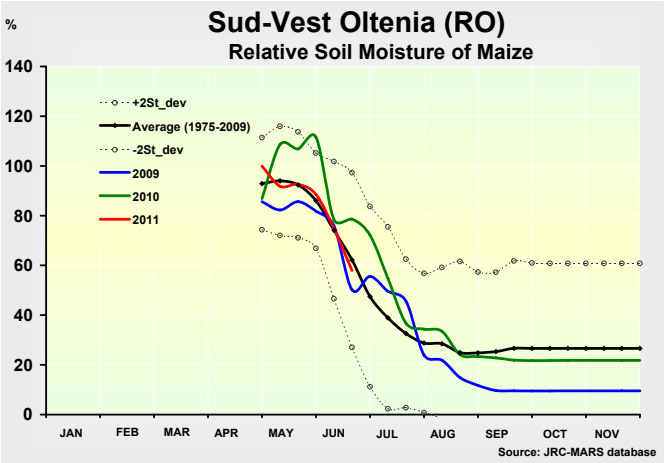
The development stage of winter crops was anticipated in Nord-Vest region compared with the long-term average, but positively postponed in the lowlands along the Danube. The steady biomass accumulation gives a positive picture and suggests above-average yield potential. The simulated water-limited total biomass and grain filling for **winter wheat** and **rapeseed** are high, but the vegetation cycle is not yet finished. Remote sensing data indicate unusually high biomass accumulation in Sud-Est and Sud-Muntenia regions. The expected grain quality for winter wheat is fine for most of the country.

For spring crops, development has been close to normal, with just a slightly advanced stage detectable near the Ukrainian border. The leaf area expansion and the biomass assimilation of **sunflower** and especially of **sugar beet** are below normal hitherto.


Centru - (RO)
Daily and Cumulated rain
Daily values
Cumulated
Current period
Average (1975-2009)
30
25
20
15
10
5
0
140
120
100
80
60
40
20
0
10-May
10-Jun
Source: JRC-MARS database


Nord-Est - (RO)
Cumulated Climatic Water Balance
0
-20
-40
-60
-80
-100
-120
-140
Current period
Average (1975-2009)
10-May
10-Jun
21-Jun
Source: JRC-MARS


Kg/ha
Sud-Est (RO)
Water limited Total Biomass of Wheat
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
+2St_dev
Average (1975-2009)
-2St_dev
2009
2010
2011
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
Source: JRC-MARS database


%
Sud-Vest Oltenia (RO)
Relative Soil Moisture of Maize
140
120
100
80
60
40
20
0
+2St_dev
Average (1975-2009)
-2St_dev
2009
2010
2011
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
Source: JRC-MARS database

# V. Crop monitoring in the EU27 neighbourhood

## THE BLACK SEA COUNTRIES

### TURKEY — Continuation of the exceptionally wet season.

| TURKEY | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| barley | 2.39 | **2.46** | 2.31 | +3.0 | +6.5 |
| grain maize | - | **6.97** | 7.08 | - | -1.5 |
| wheat | - | **2.34** | 2.32 | - | +0.6 |

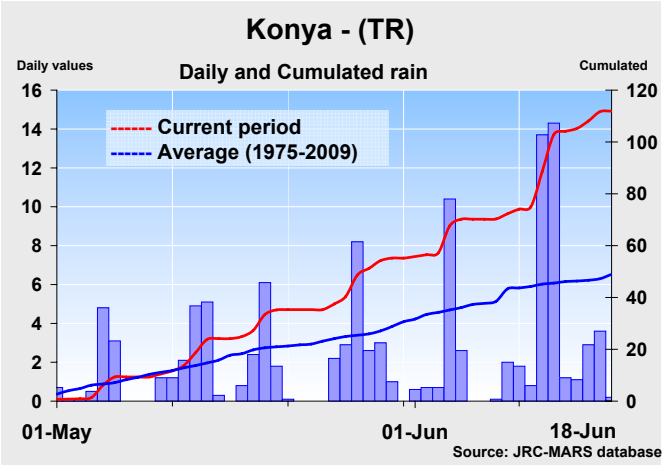
**Continuous rainy conditions have started to be difficult for crop development.**

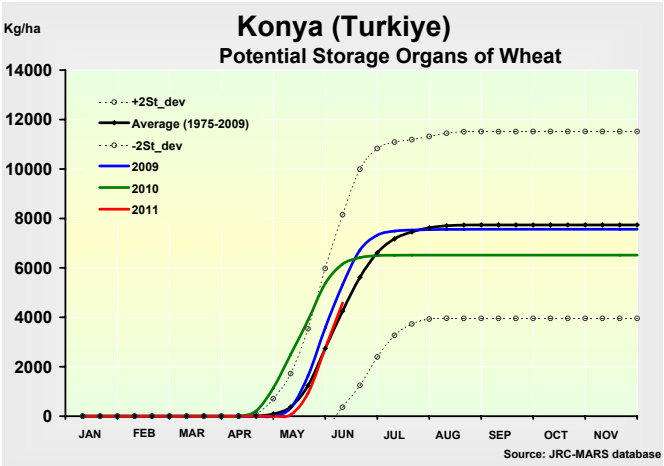
#### AGROMETEOROLOGICAL ANALYSIS

In the period under review Turkey experienced continued significant rainfall countrywide. The agriculturally most important regions in the central part of the country (*Bati Anadolu* and *Orta Anadolu*) received up to 220 % of the normal amount of precipitation. Concurrently, temperatures oscillated around the long-term average (LTA), slightly below the LTA in the western regions. Due to rainy conditions cumulative sunshine values were as much as 30 % down in the eastern regions (*Guneydogu Anadolu*).

#### CROP DEVELOPMENT

Continuous rainy conditions since spring have caused above-normal relative soil moisture. In the period under review development of **cereals** slowed down; however, above-ground biomass is still higher than normal. The impact of continuous rainfall on flowering is expected to be negative. **Grain maize** has developed on average or with a slight delay. The yield expectations are still as previously forecast.




### UKRAINE — Average crop development in spite of dry conditions.

| UKRAINE | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| barley | - | **2.26** | 2.26 | - | -0.2 |
| grain maize | - | **4.86** | 4.33 | - | +12.1 |
| wheat | - | **2.85** | 2.91 | - | -2.2 |

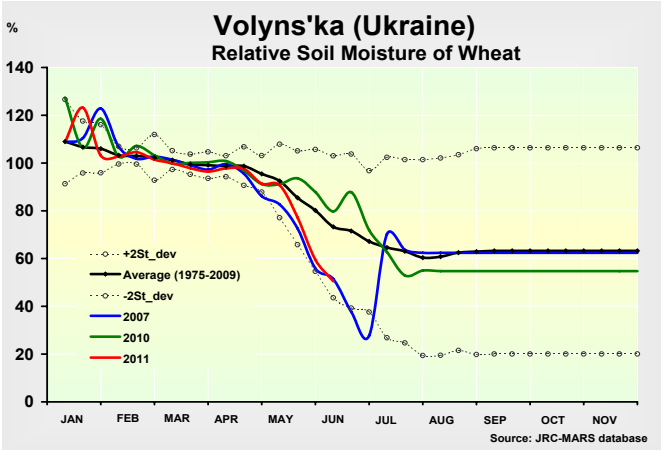
**Average temperatures and a dry period still indicate an average year for cereals. Good start for maize.**

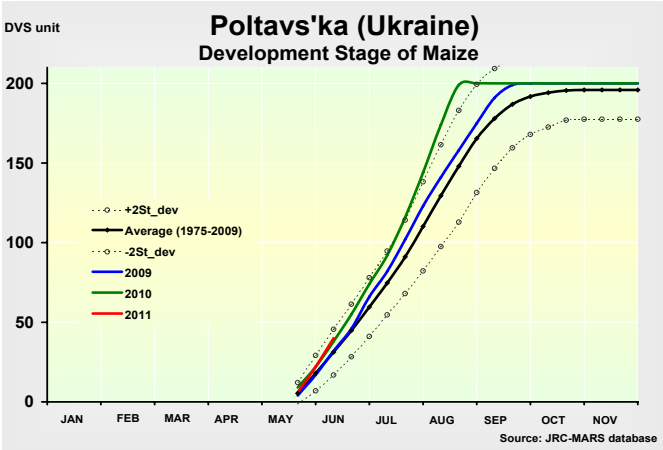
#### AGROMETEOROLOGICAL ANALYSIS

Ukraine experienced mild thermal conditions with temperature sums close to the long-term average (LTA) in the whole country. Concurrently, the amount of precipitation received was significantly below average. Northern oblasts *Sumska* and *Chernihivska* received 30 % of the usual precipitation, while the central and western oblasts received 60 %. Only the southern and eastern parts of the country from *Odeska* to *Donetska* oblasts received normal amounts of rain.

#### CROP DEVELOPMENT

The insufficient rainfall has caused a water deficit and low soil moisture content. The western part of the country has experienced soil moisture values 50 % lower than the LTA. However, **wheat** and **barley** have still developed close to the average. Taking into account the intensive rain forecast for the following period, the dry period is not expected to have any significant impact. **Maize** took advantage of favourable conditions in the southern oblasts and developed very well.




# EASTERN COUNTRIES

## BELARUS — Dry period, but crops develop well.

| BELARUS | | | | | |
|---|---|---|---|---|---|
| | Yield t/ha | | | | |
| | 2010 | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| barley | - | **3.26** | 3.16 | - | +2.9 |
| grain maize | - | **5.30** | 4.52 | - | +17.1 |
| wheat | - | **3.44** | 3.39 | - | +1.3 |

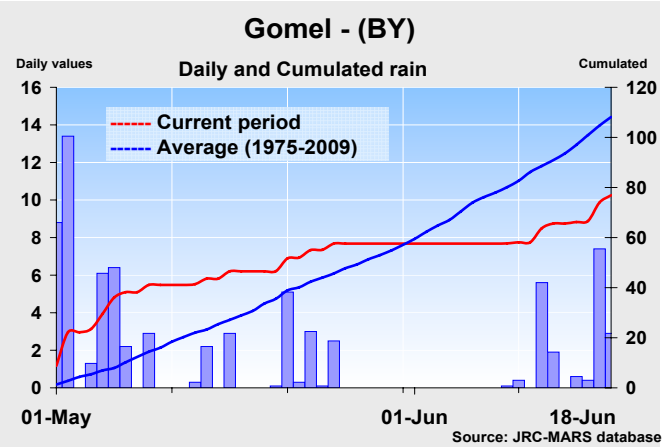
**Normal or advanced crop development has been observed in spite of a dry and hot period. Recent rainfall has prevented drought.**

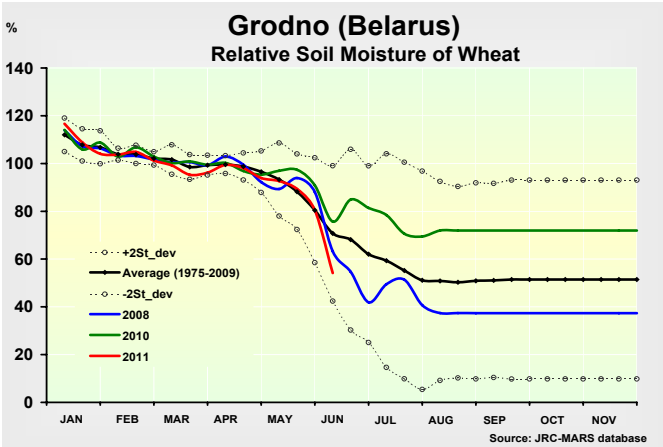
### AGROMETEOROLOGICAL ANALYSIS

The period under review was clearly warmer than usual in the whole country, but no exceptional temperatures occurred. Concurrently, the country experienced only small amounts of rainfall, with two dekads with no rain at the end of May and beginning of June. Fortunately, the second half of June brought intensive rainfalls that have prevented a serious drought.

### CROP DEVELOPMENT

Insufficient rainfall in May led to a soil moisture deficit. Especially in the eastern part of the country relative soil moisture was clearly below average. However, the short period of very dry conditions slowed down crop development only slightly. **Barley** did not suffer from the lack of rain and continued its average development. **Winter wheat** is advanced in *Grodno* and still average in the drier *Gomel* region. Water-limited above-ground biomass seems to be close to average for both cereals. **Maize** started well and is slightly more advanced than usual.




## RUSSIA — Winter crops are behind time.

**Favourable temperatures for crop development, but delayed crop cycle in the Volga region for winter cereals.**

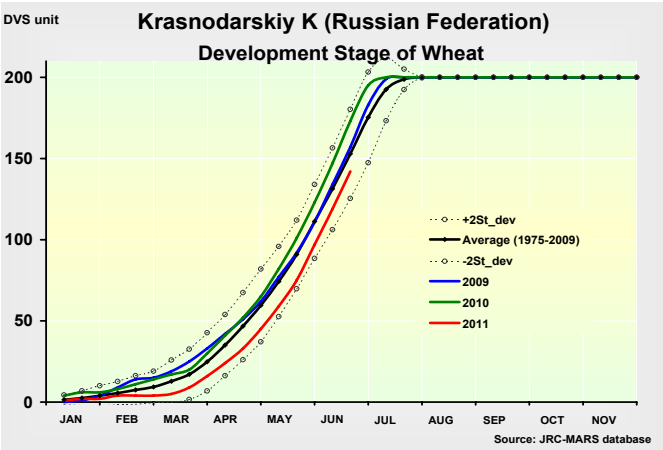
### AGROMETEOROLOGICAL ANALYSIS

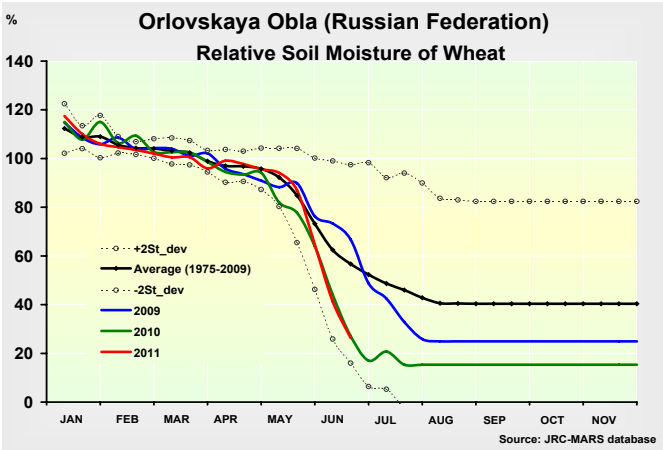
As far as warmth is concerned, the period under was favourable for crop development. Temperatures oscillated around the long-term average (LTA) with a slight surplus in the *Central* District from *Smolenskaya* to *Belgorodskaya* oblasts. However, water resources differed significantly between regions. The surroundings of Kuybyshew Reservoir (*Orenburgskaya, Samarskaya, Ulyanovskaya, Tatarstan*) received 100 % more rainfall than the LTA. The North Caucasian District and the Southern District also experienced

higher values of precipitation. By contrast, the Central District experienced insufficient rainfall, receiving no more than 50 % of the LTA.

## CROP DEVELOPMENT

Regions with lack of rainfall experienced insufficient soil moisture. In *Orlovskaya* soil moisture was 80 % lower than the LTA. Concurrently, in the southern regions (*Krasnodarsky Kray, Starvropolsky Kray*) intensive rains brought unfavourably high soil moisture values. In general **winter crops** were delayed in the *Volga* District and in the southern regions. Only in the *Central* District did crops develop as per average. **Maize** started the season promisingly, much advanced in the oblasts close to the Ukrainian border from *Smolenskaya* to *Rostovskaya*.




# THE MAGHREB COUNTRIES

## MOROCCO, ALGERIA, TUNISIA — Good production is expected for winter cereals, with higher expectations for wheat than for barley.

| MOROCCO, ALGERIA AND TUNISIA | | | | | |
|---|---|---|---|---|---|
| Wheat | Yield t/ha for wheat (durum and soft) | | | | |
| | 2010* | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| MA | 1.71 | **2.05** | 1.57 | +19.8 | +30.4 |
| TN | 1.15 | **1.94** | 1.54 | +68.1 | +26.0 |
| DZ | 1.50 | **1.47** | 1.44 | -2.1 | +2.3 |

| MOROCCO, ALGERIA AND TUNISIA | | | | | |
|---|---|---|---|---|---|
| Wheat | Yield t/ha for barley | | | | |
| | 2010* | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| MA | 1.34 | **1.49** | 1.06 | +11.3 | +40.9 |
| TN | 0.47 | **1.57** | 1.12 | +234.5 | +39.8 |
| DZ | 1.20 | **1.23** | 1.39 | +2.1 | -11.4 |

**The winter cereals season has come to an end in the three countries. It was positive since January in the main production regions of barley and wheat in terms of water supply. The picture is less favourable in *Oriental* (Morocco), where rainfall occurred too late to be highly beneficial. The persistent drought impacted negatively on cereals in the western part of Algeria (*Tlemcen*) and in the northern governorates of Tunisia (from *Jendouba* to *Biserte*). The harvest, mainly barley, started earlier than usual in May in the southern production regions in Morocco and Algeria, but only at the end of May in Tunisia (*Kasserine* and *Le Kef*). The harvest should be finished by everywhere early July. The late rain in May might have hampered the harvest locally in Morocco, where many cases of grain germination have been reported, potentially affecting the grain quality.**

## AGROMETEOROLOGICAL OVERVIEW

The three countries benefited from regular rainfall during the season in the main regions of production, especially along the Atlantic and Mediterranean in Morocco (*Centre, Nord Ouest*, and *Centre Nord*), in the centre and the eastern regions in Algeria (*Sétif, Constantine*) and in the centre north of Tunisia (from *Le Kef* to *Siliana/Kairouan*). Heat waves occurred in April and May, but their impact was limited.

At the end of the second dekad of June all regions in Morocco have a surplus of cumulated precipitation compared to the average (from +22 % in *Tensift* to +54 % in *Nord Ouest*), except in *Oriental,* where rainfall was at the long-term average (LTA) level only. More rainfall than average occurred in the regions *Sétif, Médéa*, and *Constantine* in Algeria, and in the regions *Le Kef, Siliana,* and *Kairouane* in Tunisia.

## CROP DEVELOPMENT

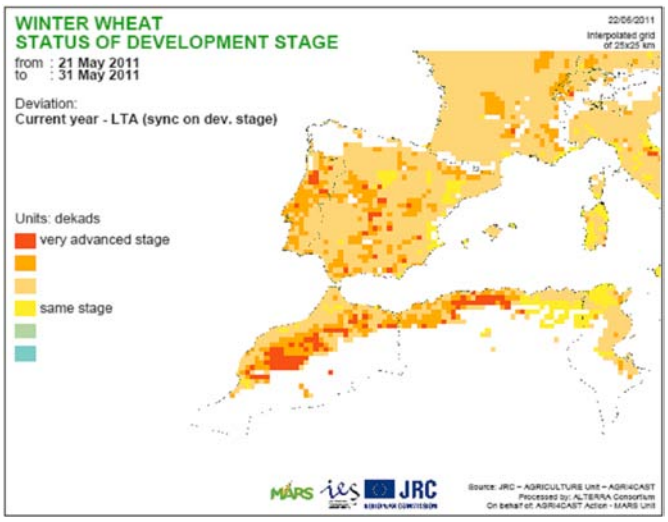
By the end of March, the development stages of cereals were average in all regions of Maghreb. A slight precocity could be observed mainly in the barley production area around *Tlemcen* in the western part of Algeria.

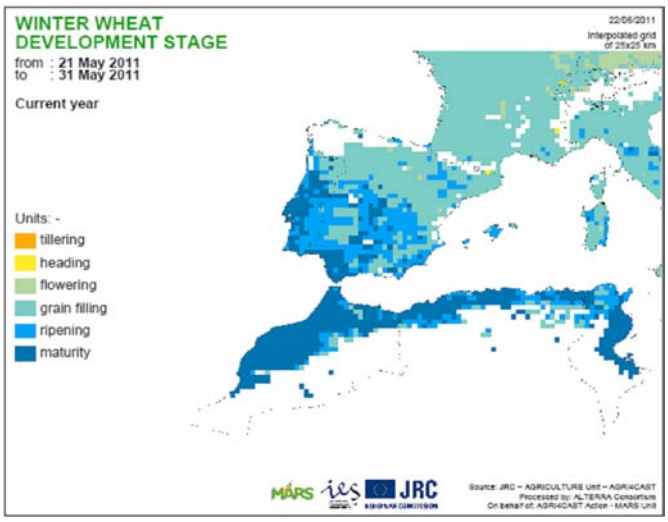
April was characterised by significant maximum temperatures during the first 15 days and by considerable and effective rainfall during the last 15 days. As a consequence, the crop cycle was not seriously affected, except in the region of *Tensift,* where mainly barley was already mature and ready to be harvested. At that time, cereals were at grain filling or at ripening stage only in the other production regions in Morocco.

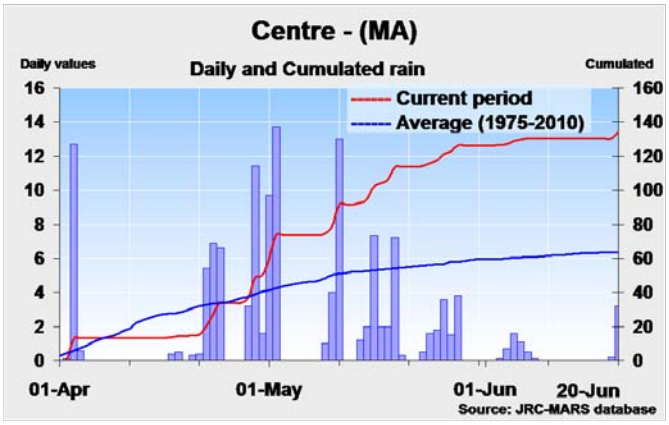
By the end of May, a gradual advance in crop development could be observed from northern Tunisia, where cereals

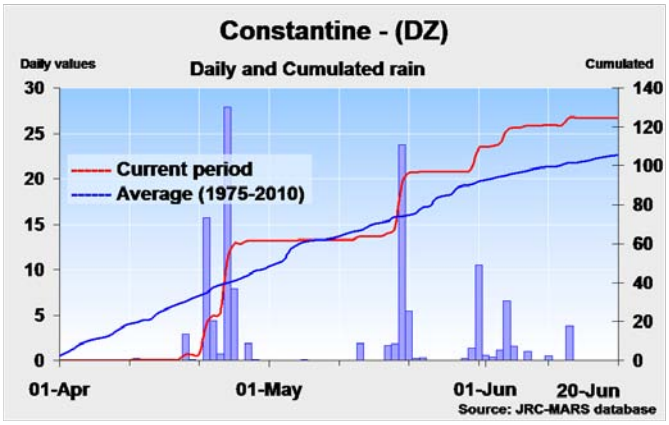
were at the grain filling or ripening stage of development and where the *Béja* region was less than one dekad in advance, to the south-west of Morocco, where the *Tensift* region was one month ahead of time.

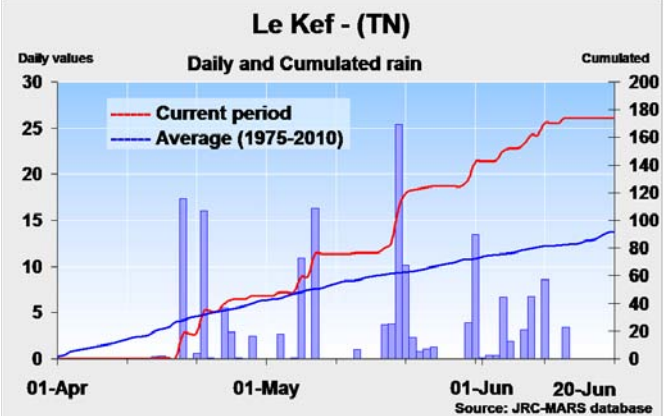
In general, weather conditions were quite favourable during the crop season, which can be estimated as average to good. The expected production for the three countries is estimated at 10.5 Mt for **wheat** and 5.2 Mt for **barley**.

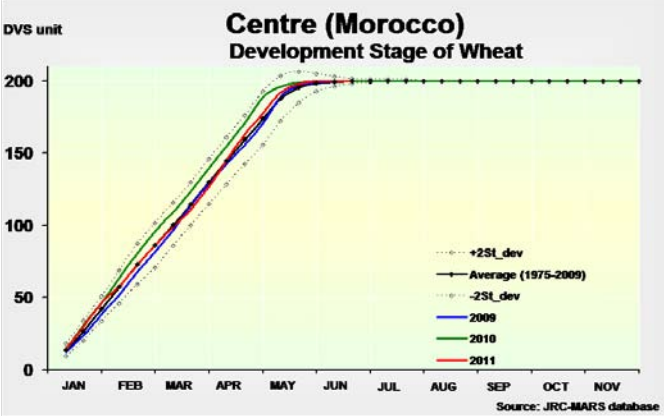


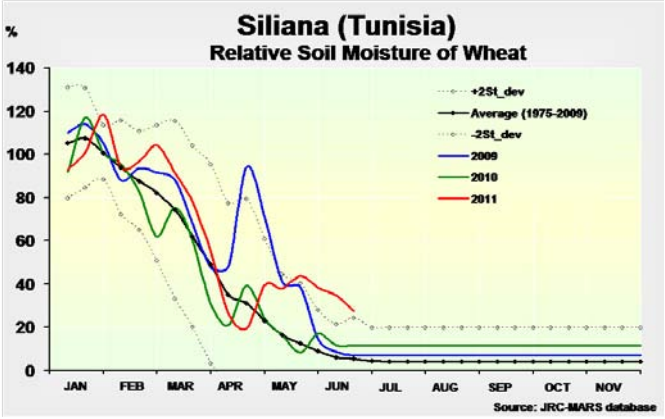



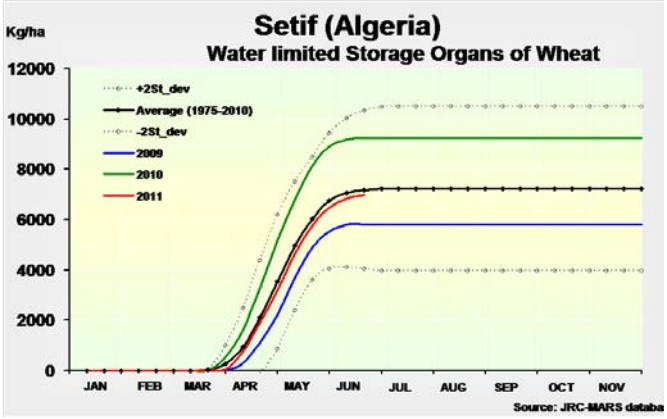



## 2011 MARS Bulletin (update)

### Publication date in 2011

| | |
|---|---|
| 8 Feb | Agrometeorological analysis and weather forecast Vol. 19 No. 1 |
| 8 Mar | Agromet. analysis, remote sensing and yield forecast Vol. 19 No. 2 |
| 22 Mar | Agrometeorological analysis and weather forecast Vol. 19 No. 3 |
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| 9 Aug | Agrometeorological analysis and weather forecast Vol. 19 No. 13 |
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| 4 Oct | Agrometeorological analysis and weather forecast Vol. 19 No. 17 |
| 4 Oct | Rice monitoring in Europe Vol. 19 No. 18 |
| 18 Oct | Pasture monitoring in Europe Vol. 19 No. 19 |
| 25 Oct | Crop yield forecast Vol. 19 No. 20 |
| 8 Nov | Agrometeorological analysis and weather forecast Vol. 19 No. 21 |
| 29 Nov | Agromet. analysis, remote sensing and yield forecast Vol. 19 No. 22 |
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B. Baruth, M. Bettio, J. Bojanowski, A. Bussay, G. Duveiller, M. El Aydam, W. Kasperska-Wolowicz, R. Lopez, A. Rosenmund, L. Seguini

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Corrigendum to Vol.19, No.6 of 17th May 2011, first page:
the published total production was wrongly reported as estimated at 269.6 Mt, instead of the correct value of 275.6 Mt.

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