

# MARS

## Crop Monitoring in Europe

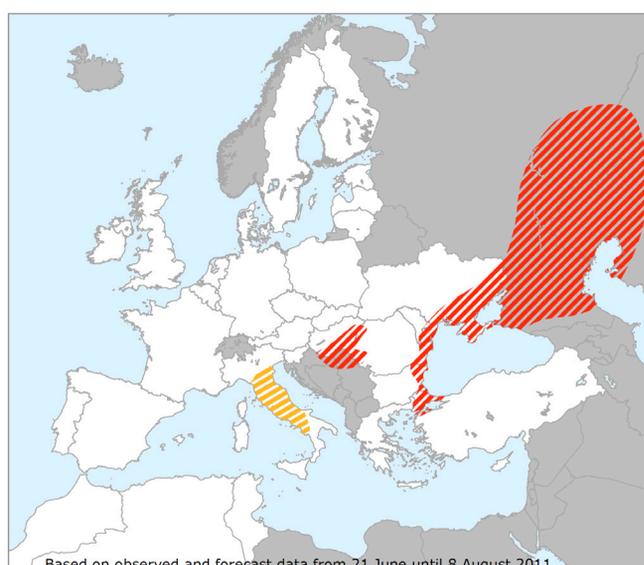
Vol. 19, No. 11  
Issued: 26<sup>th</sup> July 2011

### Bulletin

Period of analysis: 21<sup>st</sup> June - 20<sup>th</sup> July 2011

## GOOD PROSPECTS FOR GRAIN MAIZE SO FAR BUT SOME CONCERNS DUE TO HIGH TEMPERATURES IN SOUTH-EAST EUROPE

### AREAS OF CONCERN



Based on observed and forecast data from 21 June until 8 August 2011

Dry conditions

Hot spell

Data source: MARS crop yield forecasting system 25.07.2011



### Highlight

A rather wet period for most of Europe with high total rainfall in Poland, Ukraine, Romania, Czech Republic, Slovakia, southern Germany and eastern France. Temperature accumulation was average for most of Europe but higher for southern Spain, Italy and Greece. There were persistent high temperatures around the Black Sea towards the end of July.

Total wheat production for the EU27 is forecasted at 137.03 Mt, which is 1.6 % less than the production in 2010, and is due to a reduction of both soft (-1.3 %) and durum wheat (-7.3 %). The acreage for both cereals is lower than last year, -2.1 % and -8.6 % respectively. Compared to our last bulletin, soft wheat forecast is revised upwards (from 5.5 t/ha to 5.6 t/ha at EU27 level) due to the beneficial grain filling phase in Germany, France and the United Kingdom and higher yield forecasts for Romania and Poland just like in the past.

The production forecast for barley (54.15 Mt) is comparable to 2010. Winter barley yields and areas are below 2010 figures but spring barley is clearly above, mainly because of excellent yields in Spain.

Seasonal production of grain maize is currently forecasted at 61.21 Mt, and as such, is above the 5-year average, but some recent hot spells have given rise to concerns for Hungary and Romania.

Rapeseed yields in the EU 27 are less than those from last year and below the 5-year average due to adverse weather conditions in the main producing countries throughout the season.

| Crops                | Yield t/ha (as of 26th July) |              |          |        |          |
|----------------------|------------------------------|--------------|----------|--------|----------|
|                      | 2010                         | 2011         | Avg 5yrs | %11/10 | %11/5yrs |
| <b>TOTAL CEREALS</b> | 4.95                         | <b>4.97</b>  | 4.91     | +0.4   | +1.3     |
| <b>Total Wheat</b>   | 5.29                         | <b>5.36</b>  | 5.26     | +1.2   | +1.7     |
| <i>soft wheat</i>    | 5.55                         | <b>5.60</b>  | 5.54     | +0.9   | +1.1     |
| <i>durum wheat</i>   | 3.15                         | <b>3.20</b>  | 3.11     | +1.5   | +2.8     |
| <b>Total Barley</b>  | 4.33                         | <b>4.35</b>  | 4.32     | +0.4   | +0.8     |
| <i>spring barley</i> | 3.70                         | <b>3.86</b>  | 3.75     | +4.5   | +3.1     |
| <i>winter barley</i> | 5.21                         | <b>5.09</b>  | 5.17     | -2.2   | -1.4     |
| <b>Grain maize</b>   | 7.03                         | <b>6.95</b>  | 6.71     | -1.1   | +3.5     |
| <b>Other cereals</b> | 2.93                         | <b>2.94</b>  | 3.29     | +0.5   | +1.4     |
| <b>Rape seed</b>     | 2.97                         | <b>2.85</b>  | 3.02     | -4.0   | -5.5     |
| <b>Potato</b>        | 28.27                        | <b>31.19</b> | 28.44    | +10.3  | +9.7     |
| <b>Sugar beets</b>   | 67.83                        | <b>68.83</b> | 65.84    | +1.5   | +4.5     |
| <b>Sunflower</b>     | 1.84                         | <b>1.82</b>  | 1.72     | -1.1   | +5.7     |

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: 28/06/2011) and EES (last update: 12/07/2011)  
2011 yields come from MARS CROP YIELD FORECASTING SYSTEM (CGMS output up to 20/07/2011)

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- V Yield forecast in EU27 neighbourhood

# I. Agrometeorological overview

**A rather wet period for most of Europe with high total rainfall in Poland, Ukraine, Romania, Czech Republic, Slovakia, southern Germany and eastern France. Temperature accumulation was average for most of Europe while a surplus was recorded in southern Spain, Italy and Greece. There were persistently high temperatures around the Black Sea towards the end of July.**

## Temperatures and evapotranspiration

Short hot spell towards the end of June in France, Italy, Romania, Ukraine but more pronounced in southern Spain. Cold spell at the beginning of July followed by persistent high temperatures in Spain, Hungary and the Black Sea area.

The last ten days of June showed above normal GDD accumulation in Spain, France and Benelux in conjunction with anomalous high temperatures (37 °C in the centre of France, 27<sup>th</sup> of June). However, a lower than normal temperature accumulation was found to characterise the Black Sea area again. The general circulation over Europe changed during the first dekad of July and resulted in a significant cold spell over Europe. Only Scandinavia, Russia and Maghreb experienced temperatures nearer to the ones in previous years. GDD accumulation during the first dekad of July was in general slightly below the long term average and was characterised by a high amplitude between minimum and maximum temperatures. The last ten days of the observation period (11 – 20th of July) showed above normal temperature accumulation for Italy, Bulgaria, Romania, Greece, Slovakia, Ukraine and Belarus. High temperatures were recorded in Romania, Bulgaria and Hungary (up to 7 days above 32 °C in eastern Romania) but temperature accumulation in Spain, France, UK and western Germany remained below average. Radiation received during the period under consideration is below average for northern France, Germany, and for western and eastern Ukraine. Surplus radiation was recorded for Portugal, Poland and Hungary. Potential evapotranspiration was below average in Denmark and eastern Ukraine but was above average in Hungary, eastern Germany and western Poland. Conditions at rapeseed ripening and maturity were also close to average, with a slight surplus in Ukraine.

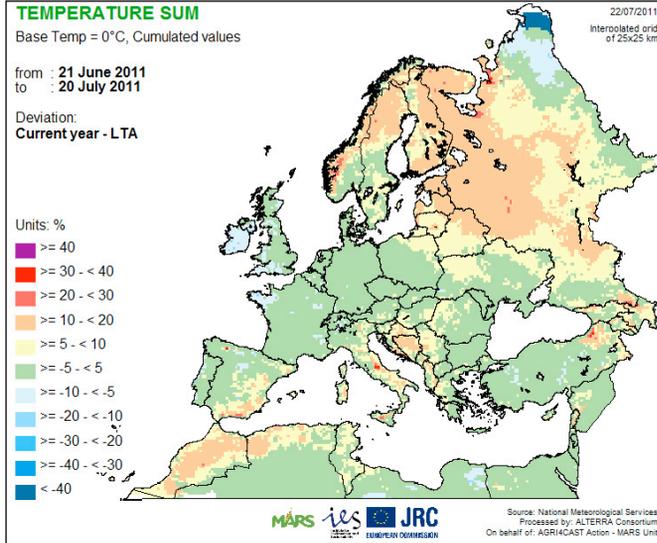
## Rainfall

In general, rain was above average in Europe, where the wet period recorded substantial rainfall surplus for eastern France, Germany, Netherlands, Poland, Czech Republic, Slovakia, and Ukraine. However, rainfall was scarce in Hungary, Italy (Emilia-Romagna), north-west Germany (Weser Ems), and southern Austria.

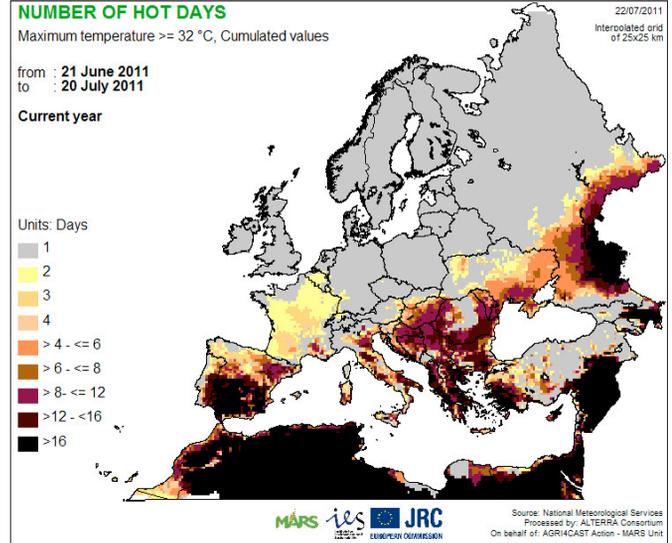
Very heavy rainfall characterised the end of June in Ukraine where local daily rainfall rates were above 50 mm. Some extreme events were also recorded in Germany and the Netherlands. Romania also received plenty of rainfall. Rainfall moved northwards during early July and was mainly centred over Poland, Czech Republic, Slovakia, eastern Germany and Denmark, as well as in Ireland and Scotland. It rained during the second dekad of July, mainly in France, Benelux, southern Germany, and Poland with the exception of the central part, where values were clearly above the long term average (>100 %). The number of rainy days during the last dekad of July greatly hampered harvest activities in France, southern Germany and Benelux.

Rainfall from June onwards is considered to be beneficial for grain filling of winter wheat. Weather conditions happened to be prosperous for grain maize, tuber and root crops.

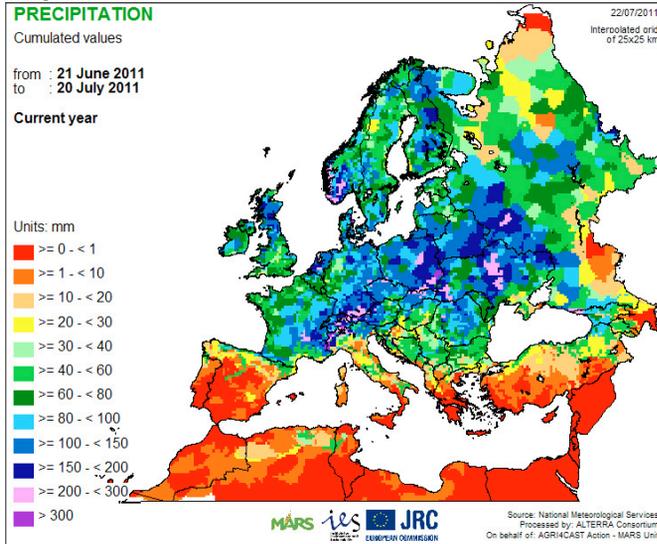
**Map 1**



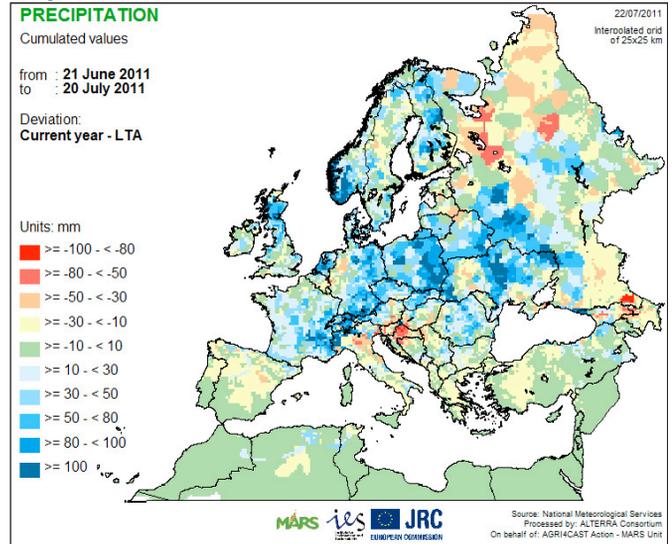
**Map 2**



**Map 3**



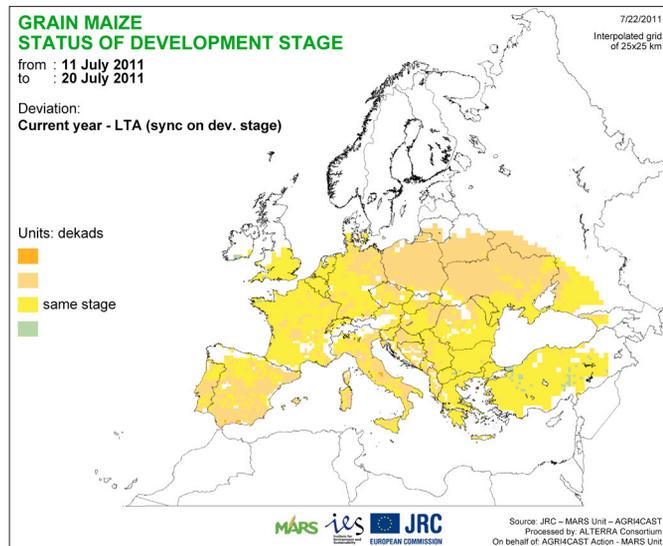
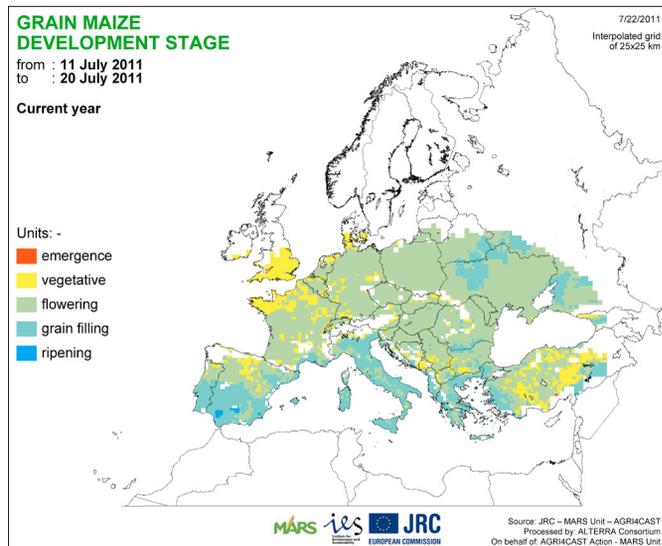
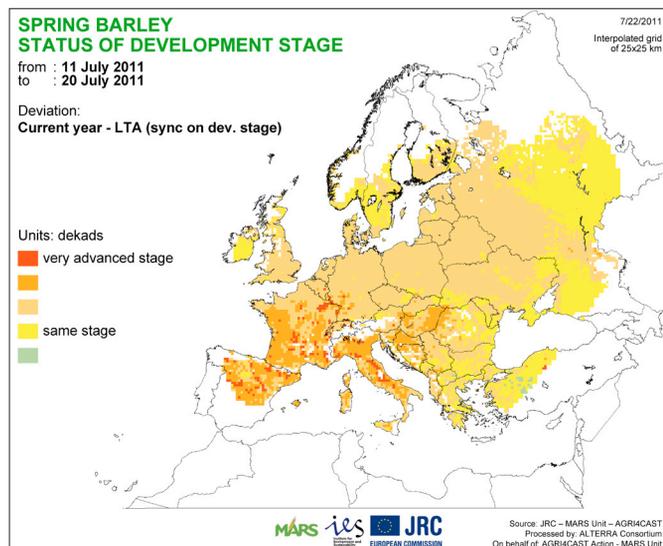
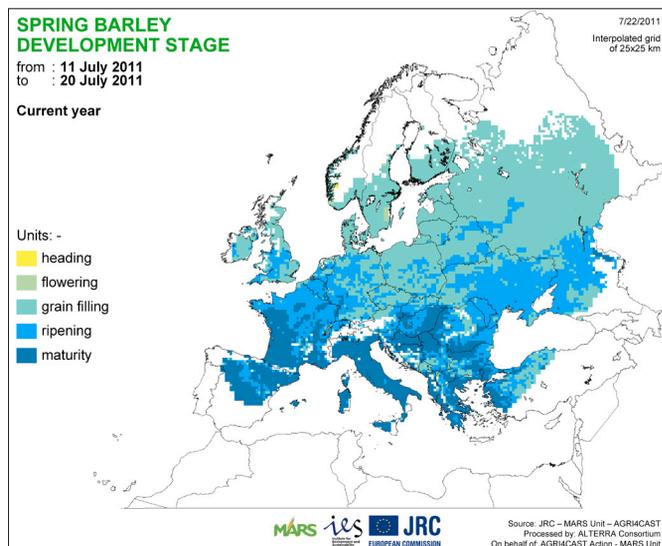
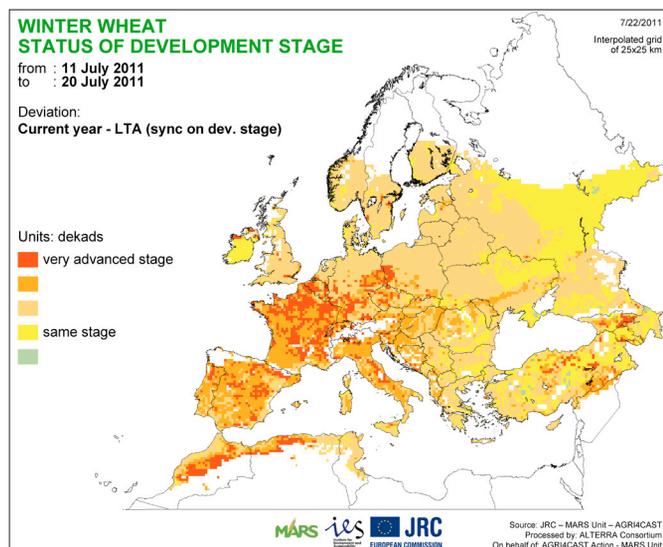
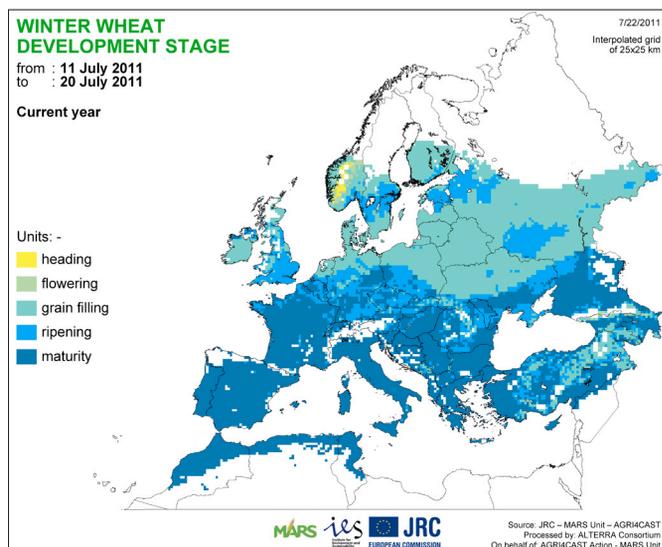
**Map 4**



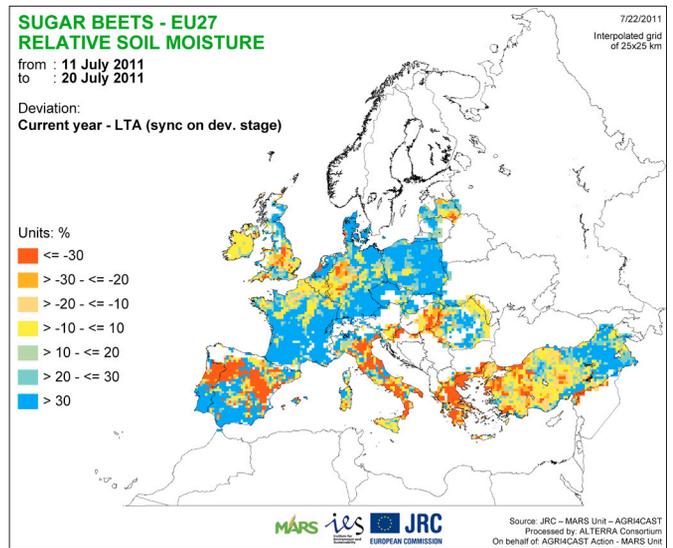
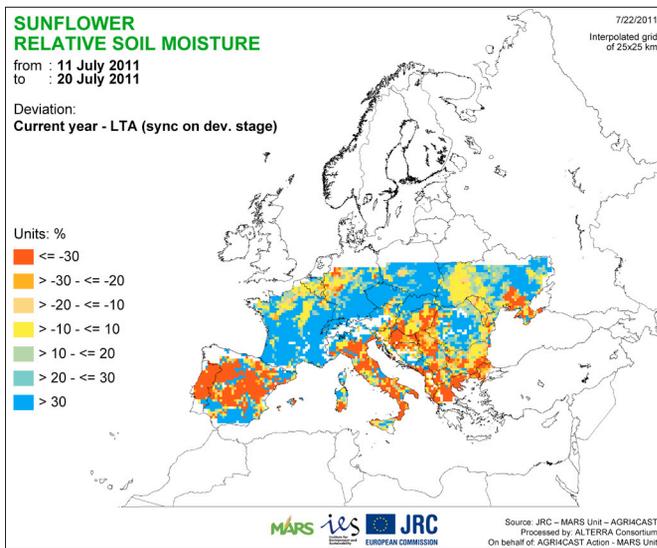
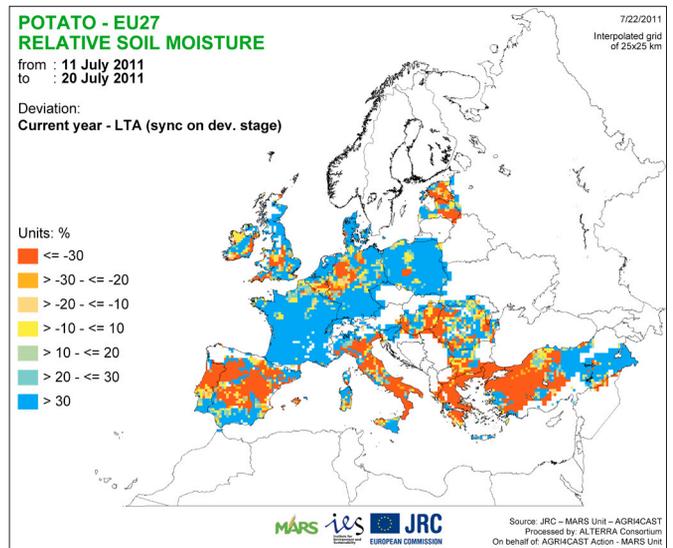
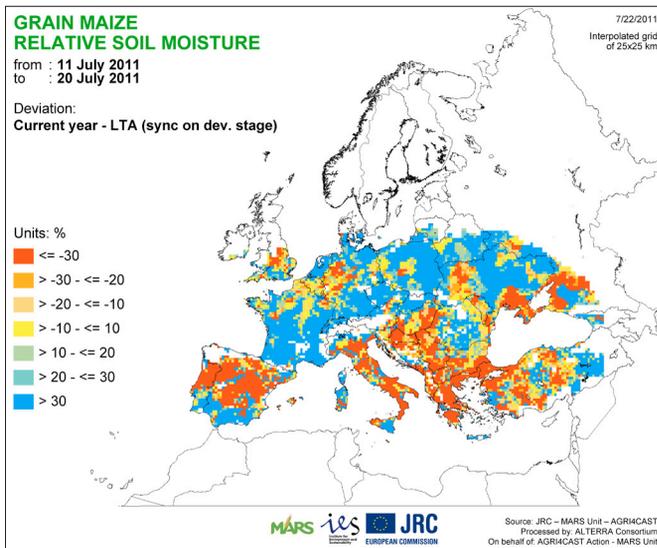
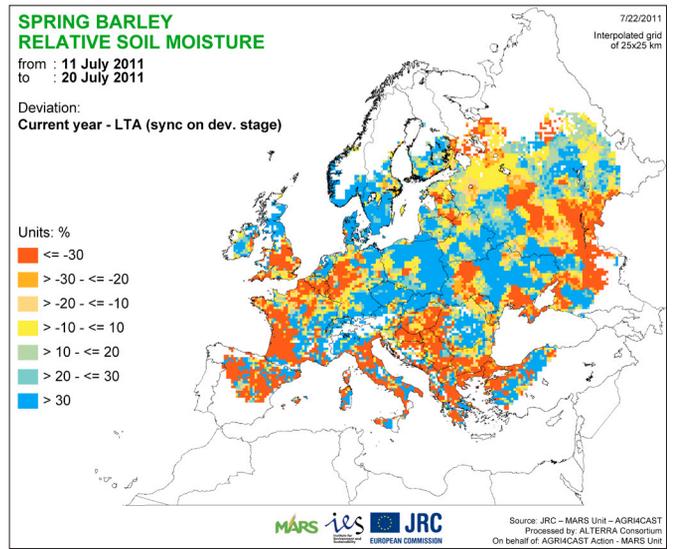
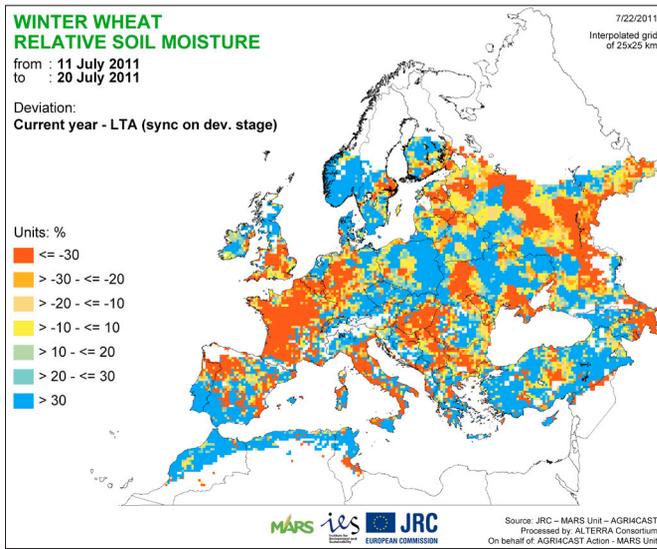
## II. Crop Monitoring

### 1. Crop atlas maps

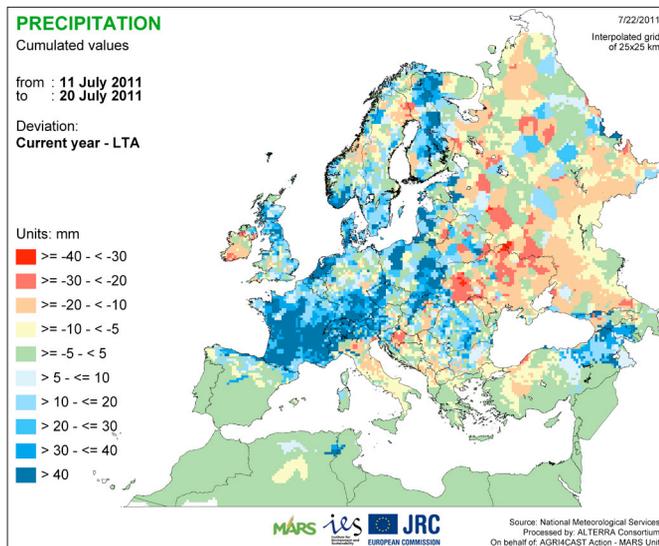
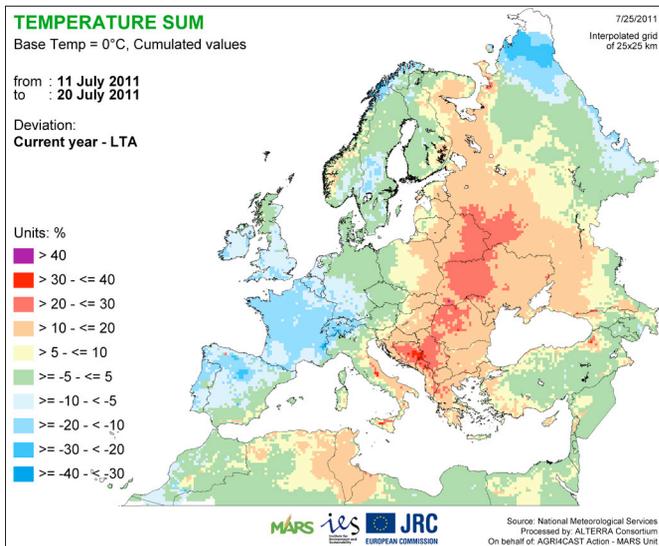
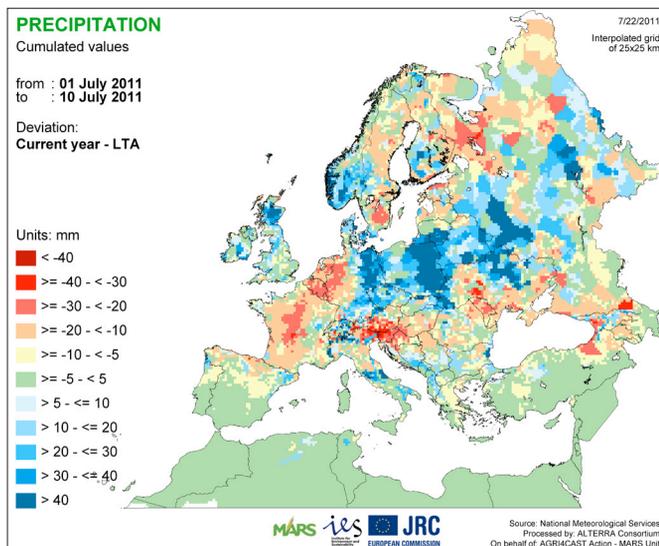
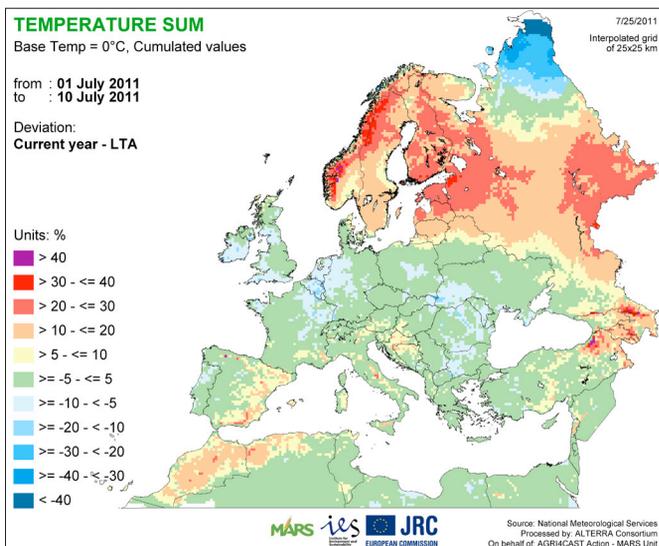
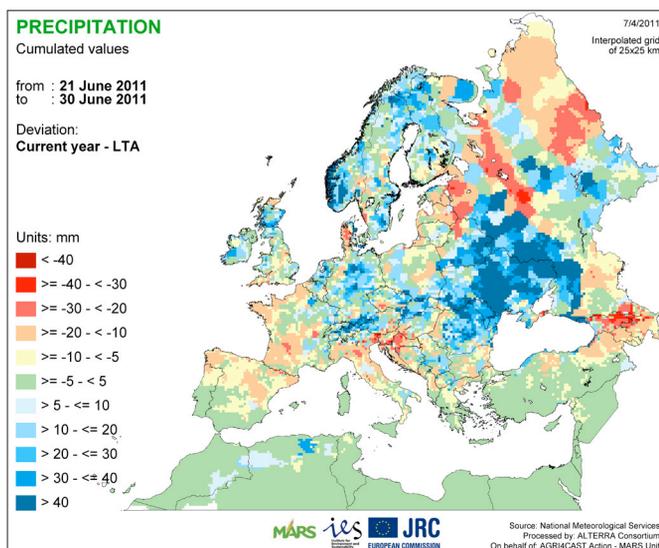
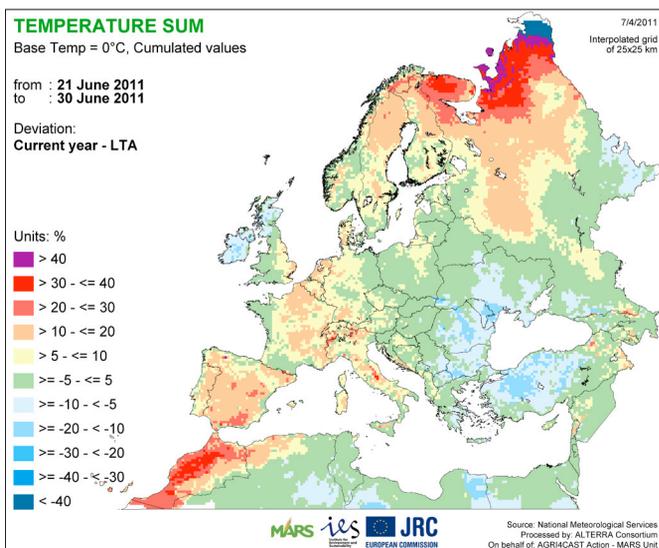
#### Development stage and status of development stage



## Relative soil moisture

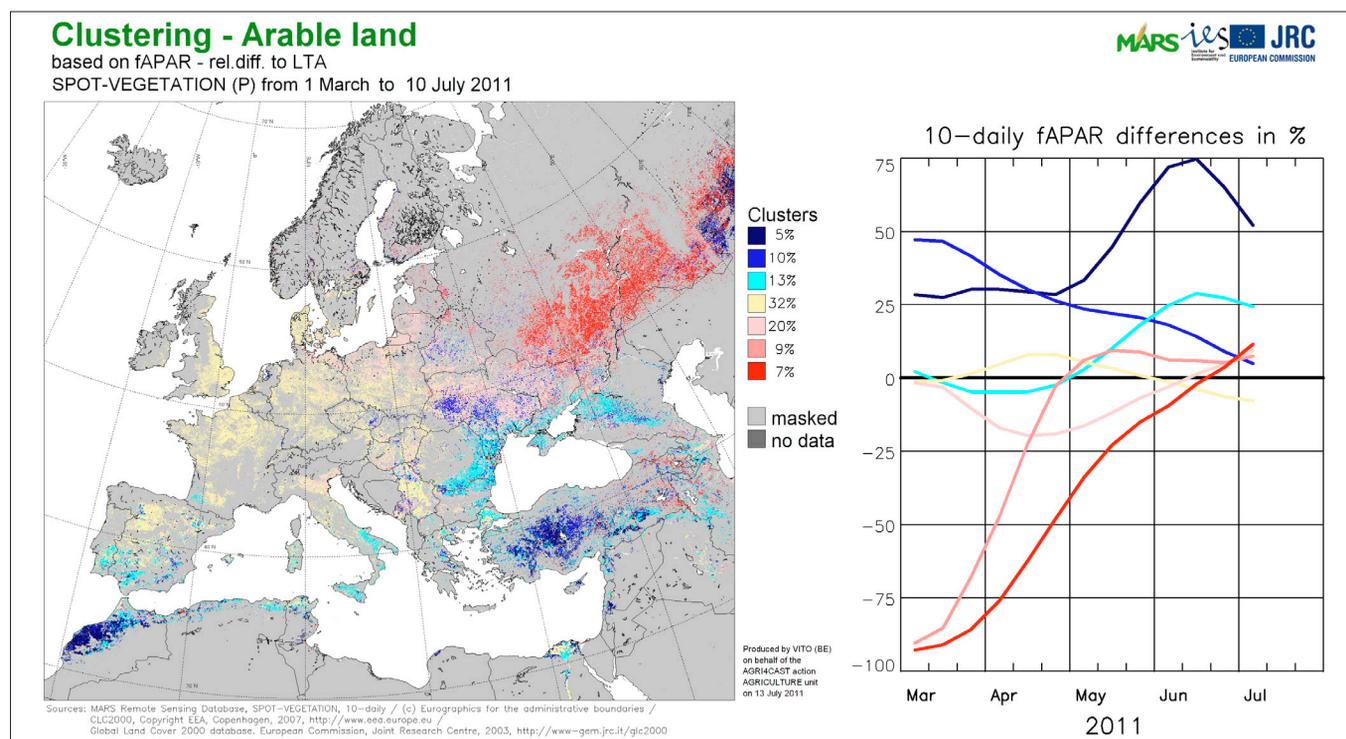


## Temperature sum and precipitation



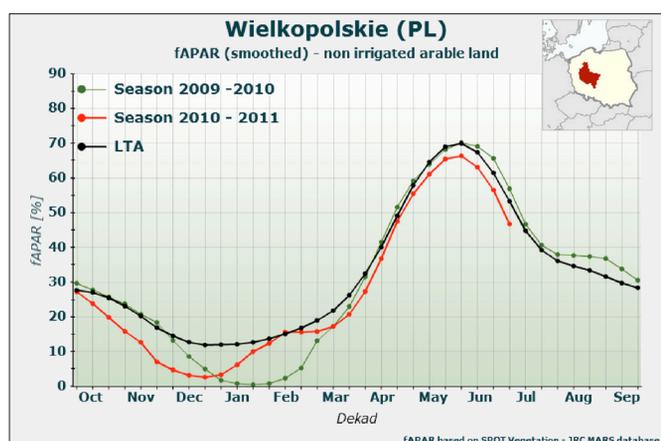
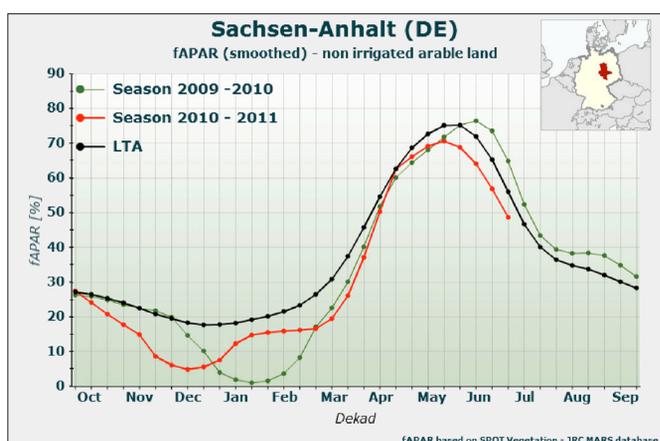
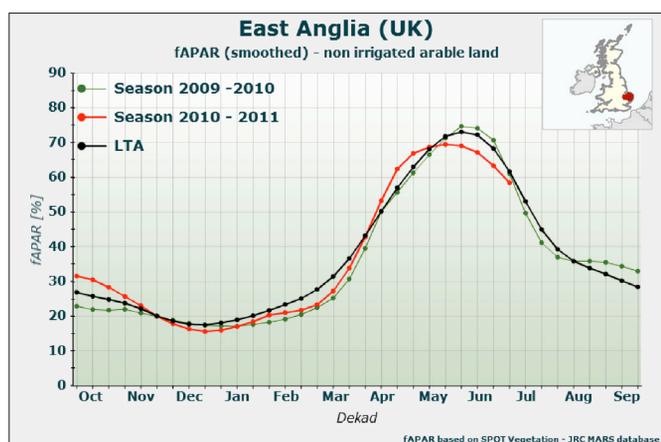
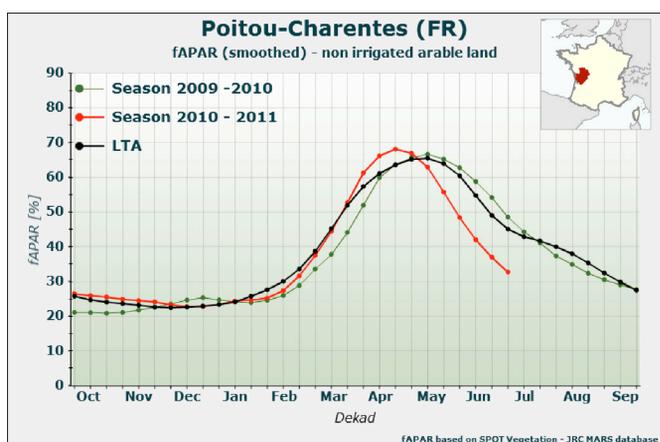
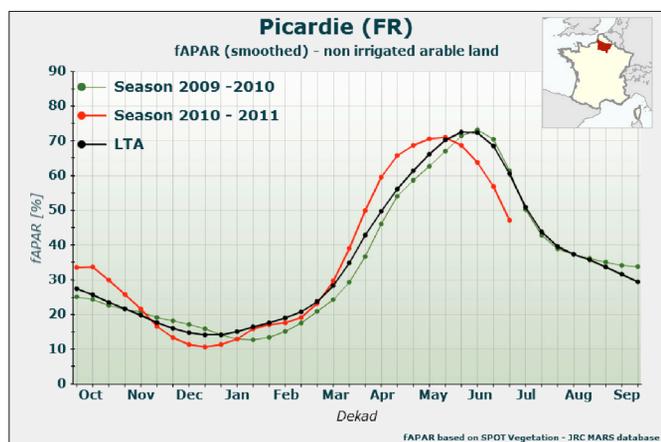
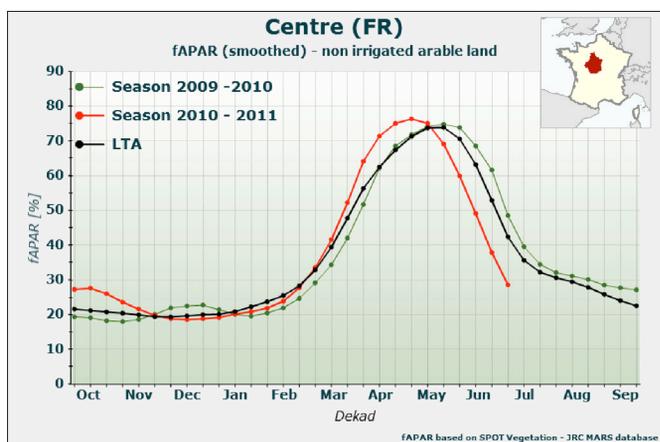
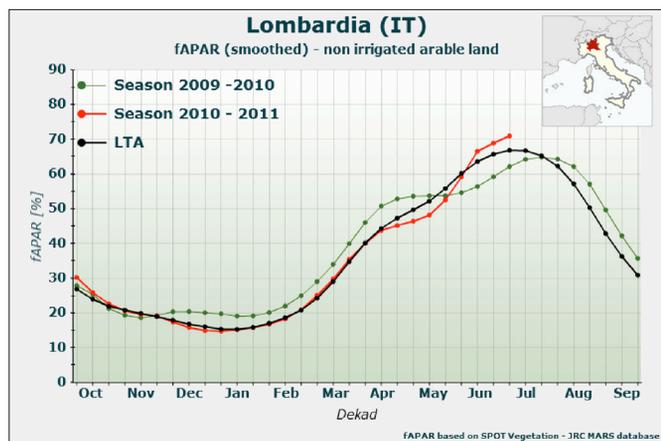
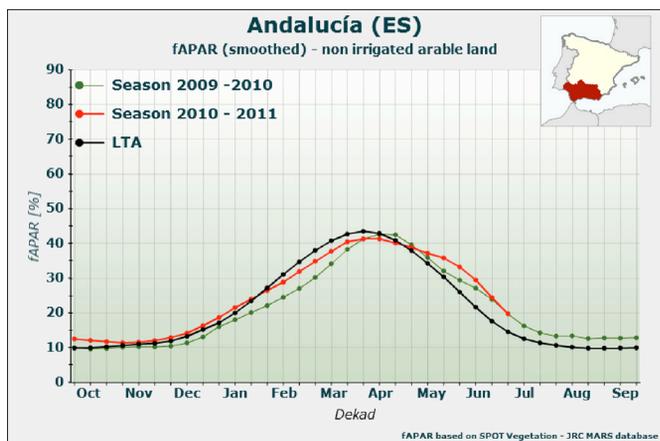
## 2. Remote sensing — Observed canopy conditions: good development in eastern Europe

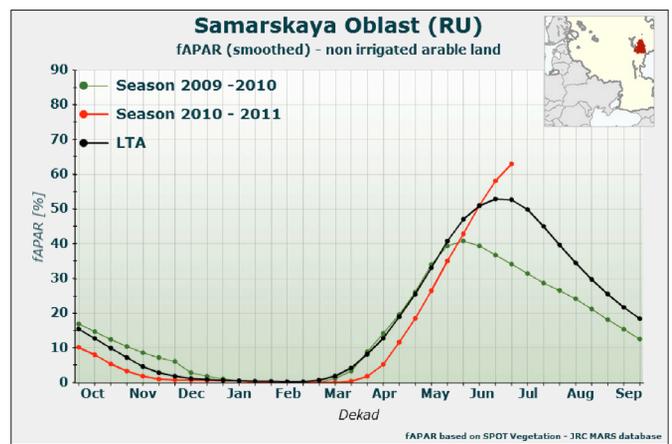
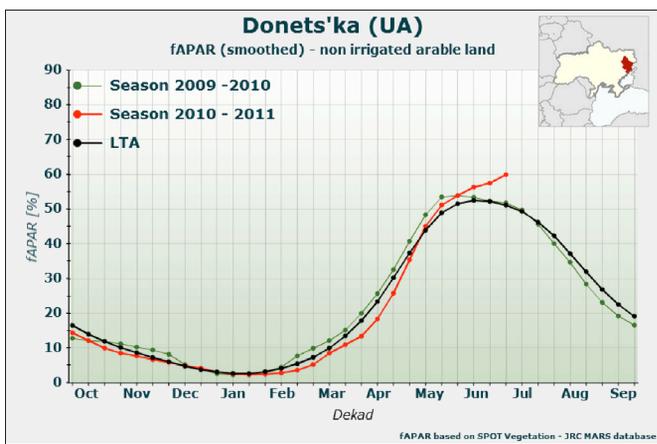
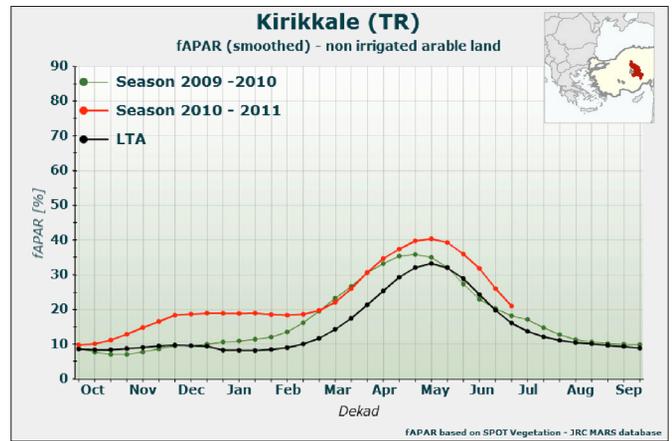
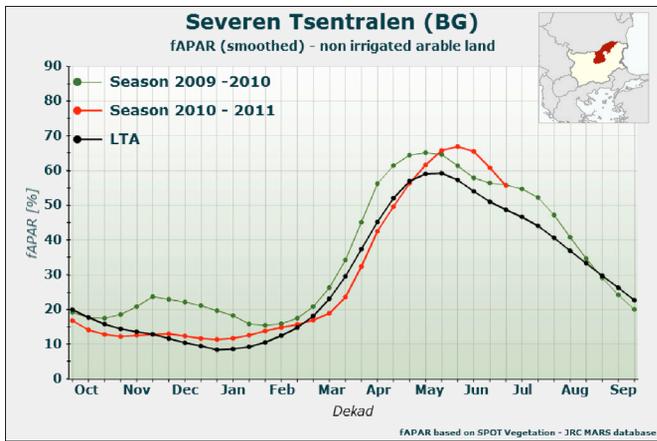
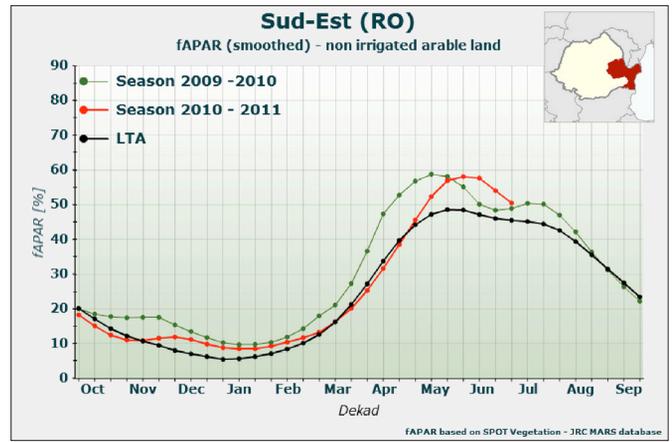
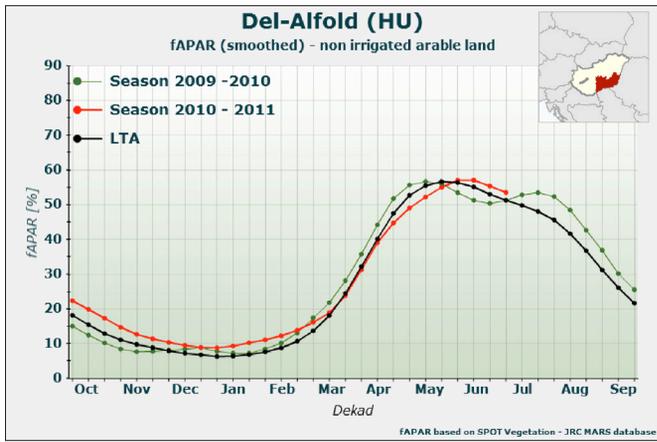
Western Europe detected an early senescence that was often coupled with a shortening of the phenological cycle. The negative trend for eastern Germany and Poland continues. Biomass development allows for high yield expectation in the Black Sea region. Crop development is rather good, although delayed in many regions.



The cluster map displays a fAPAR behaviour at the beginning of the season, from the 1<sup>st</sup> of March to the 10<sup>th</sup> of July, as compared to the same values in the calculated long term average year (1998 – 2010). The **red** profile describes the most delayed stages of winter cereals in **Russia**. Delay due to late sowing is still present but did not affect canopy development. The actual values are clearly above average and an increase is expected for the next period. The fAPAR profile for the *Samarskaya* region, on the central agricultural plains of Russia, is provided as an example for the described trend. The **light red** profile describes less delayed development stages for winter crops in western **Ukraine** regions and in the eastern Russian ones. Canopy development behaviour displays recovery from spring delayed stages and an above average development at the summer start, thanks to optimal weather conditions (e.g. *Donets'ka* fAPAR profile). The **pink** profile is for those regions where winter crops development faced sub-optimal conditions during spring time. Two main behaviours could be identified here. The fAPAR profile of *Lombardia* (**Italy**) displayed a change of biomass growth trend in the current season: from June onwards, summer crops experienced a boost in biomass accumulation due to optimal weather conditions. On the southern **Baltic Sea** coast, the bad spring canopy development was unable to recover, and the season is ending with a lack of cumulated biomass. The low fAPAR values are clearly below average in two of the main agricultural areas in **Germany** (*Sachsen-Anhalt* region) and **Poland** (*Wielkopolske* region). The **yellow** profile describes a canopy behaviour of the main agricultural areas in the western part of Europe. In **France**,

the spring boost of vegetation led to an early cycle almost everywhere. Water shortage in the late spring had low impact on canopy development in the central and northern regions (see fAPAR profiles of *Centre* and *Picardie* region), while summer crops in the remaining regions were affected due to a shortening of the cycle (e.g. fAPAR profile *Poitou Charentes*). In **England**, the dry period from May to June determined a suboptimal development of winter and spring crops, as shown by the fAPAR profile for the *East Anglia* region. The **cyan** profile is present all over Europe and has different meanings. In southern **Spain**, it highlights the shift from winter to summer crops, which is well described by the current year profile for *Andalucía*. The higher than average fAPAR values of May and June represent the cited condition. A similar trend is seen in **Hungary** but coupled with better development of summer crops as compared to the winter ones (see *Del Halfold* profile). In the main agricultural fields of **Romania** and **Bulgaria**, the good temperature and sufficient water supply led to a very good development of plants where biomass accumulation was much higher than average. Canopy development was already positive for winter crops and is even better for summer ones. The fAPAR profiles for the *Sud Est* region in Romania and the *Severen Tsentralen* region in Bulgaria are provided as examples. The **dark blue** and the **blue** profiles account for very good seasons that are mainly localised in the far eastern Russian regions and main agricultural districts in **Turkey**. The *Kirikkale* fAPAR profile displays a very good season that ends with very good yield expectation. The agricultural season has already come to an end in all of the Mediterranean regions.





### III. Crop yield forecast at EU-27 level

#### AGRI4CAST crop yield forecasts at national level for EU-27 (26 July 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    | 5.29               | <b>5.36</b> | 5.26     | +1.2   | +1.7     | 5.55              | <b>5.60</b> | 5.54     | +0.9   | +1.1     | 3.15               | <b>3.20</b> | 3.11     | +1.5   | +2.8     |
| AT      | 5.01               | <b>5.23</b> | 5.06     | +4.4   | +3.3     | 5.04              | <b>5.28</b> | 5.10     | +4.7   | +3.4     | 4.50               | <b>4.50</b> | 4.37     | +0.0   | +3.1     |
| BE      | 9.35               | <b>8.27</b> | 8.68     | -11.5  | -4.6     | 9.35              | <b>8.27</b> | 8.68     | -11.5  | -4.6     | -                  | -           | -        | -      | -        |
| BG      | 3.74               | <b>3.87</b> | 3.34     | +3.5   | +15.8    | 3.74              | <b>3.87</b> | 3.34     | +3.5   | +15.8    | -                  | -           | -        | -      | -        |
| CY      | -                  | -           | -        | -      | -        | -                 | -           | -        | -      | -        | -                  | -           | -        | -      | -        |
| CZ      | 4.99               | <b>5.29</b> | 5.09     | +6.1   | +4.1     | 4.99              | <b>5.29</b> | 5.09     | +6.1   | +4.1     | -                  | -           | -        | -      | -        |
| DE      | 7.23               | <b>7.51</b> | 7.46     | +3.8   | +0.6     | 7.24              | <b>7.52</b> | 7.47     | +3.8   | +0.7     | 5.35               | <b>5.41</b> | 5.48     | +1.1   | -1.3     |
| DK      | 6.63               | <b>7.49</b> | 7.22     | +13.0  | +3.8     | 6.63              | <b>7.49</b> | 7.22     | +13.0  | +3.8     | -                  | -           | -        | -      | -        |
| EE      | 2.71               | <b>2.85</b> | 2.96     | +5.3   | -3.6     | 2.71              | <b>2.85</b> | 2.96     | +5.3   | -3.6     | -                  | -           | -        | -      | -        |
| ES      | 3.01               | <b>3.37</b> | 3.08     | +11.8  | +9.3     | 3.37              | <b>3.56</b> | 3.31     | +5.5   | +7.4     | 1.95               | <b>2.78</b> | 2.47     | +42.8  | +12.6    |
| FI      | 3.43               | <b>3.55</b> | 3.71     | +3.6   | -4.2     | 3.43              | <b>3.55</b> | 3.71     | +3.6   | -4.2     | -                  | -           | -        | -      | -        |
| FR      | 6.87               | <b>6.41</b> | 6.89     | -6.7   | -6.8     | 7.04              | <b>6.57</b> | 7.07     | -6.6   | -7.1     | 5.06               | <b>4.70</b> | 4.81     | -7.2   | -2.3     |
| GR      | 2.59               | <b>2.25</b> | 2.54     | -13.0  | -11.2    | 2.91              | <b>2.66</b> | 2.79     | -8.7   | -4.7     | 2.49               | <b>2.12</b> | 2.45     | -14.7  | -13.3    |
| HU      | 3.72               | <b>4.25</b> | 4.05     | +14.2  | +5.1     | 3.73              | <b>4.26</b> | 4.05     | +14.1  | +5.1     | 3.32               | <b>3.95</b> | 3.82     | +19.1  | +3.5     |
| IE      | 8.60               | <b>9.16</b> | 8.68     | +6.6   | +5.6     | 8.60              | <b>9.16</b> | 8.68     | +6.6   | +5.6     | -                  | -           | -        | -      | -        |
| IT      | 3.70               | <b>3.82</b> | 3.65     | +3.0   | +4.5     | 5.16              | <b>5.22</b> | 5.19     | +1.1   | +0.6     | 3.04               | <b>3.12</b> | 2.97     | +2.5   | +4.9     |
| LT      | 3.31               | <b>3.58</b> | 3.61     | +8.2   | -0.9     | 3.31              | <b>3.58</b> | 3.61     | +8.2   | -0.9     | -                  | -           | -        | -      | -        |
| LU      | 5.96               | <b>5.82</b> | 6.15     | -2.4   | -5.5     | 5.96              | <b>5.82</b> | 6.15     | -2.4   | -5.5     | -                  | -           | -        | -      | -        |
| LV      | 3.28               | <b>3.48</b> | 3.43     | +6.0   | +1.5     | 3.28              | <b>3.48</b> | 3.43     | +6.0   | +1.5     | -                  | -           | -        | -      | -        |
| MT      | -                  | -           | -        | -      | -        | -                 | -           | -        | -      | -        | -                  | -           | -        | -      | -        |
| NL      | 8.91               | <b>8.57</b> | 8.52     | -3.8   | +0.6     | 8.91              | <b>8.57</b> | 8.52     | -3.8   | +0.6     | -                  | -           | -        | -      | -        |
| PL      | 3.94               | <b>4.01</b> | 3.87     | +1.8   | +3.5     | 3.94              | <b>4.01</b> | 3.87     | +1.8   | +3.5     | -                  | -           | -        | -      | -        |
| PT      | 1.45               | <b>1.74</b> | 1.93     | +19.9  | -10.0    | 1.45              | <b>1.74</b> | 1.93     | +19.9  | -10.0    | -                  | -           | -        | -      | -        |
| RO      | 2.80               | <b>3.46</b> | 2.58     | +23.5  | +33.9    | 2.80              | <b>3.46</b> | 2.58     | +23.5  | +33.9    | -                  | -           | -        | -      | -        |
| SE      | 5.40               | <b>5.92</b> | 5.86     | +9.7   | +1.0     | 5.40              | <b>5.92</b> | 5.86     | +9.7   | +1.0     | -                  | -           | -        | -      | -        |
| SI      | 4.80               | <b>4.67</b> | 4.33     | -2.7   | +7.9     | 4.80              | <b>4.67</b> | 4.33     | -2.8   | +7.9     | -                  | -           | -        | -      | -        |
| SK      | 3.47               | <b>4.31</b> | 4.01     | +24.4  | +7.6     | 3.46              | <b>4.29</b> | 4.00     | +24.0  | +7.2     | 3.58               | <b>4.72</b> | 4.33     | +31.7  | +9.0     |
| UK      | 8.05               | <b>7.74</b> | 7.89     | -3.9   | -2.0     | 8.05              | <b>7.74</b> | 7.89     | -3.9   | -2.0     | -                  | -           | -        | -      | -        |

| 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                | <b>4.35</b> | 4.32     | +0.4   | +0.8     | 7.03               | <b>6.95</b>  | 6.71     | -1.1   | +3.5     | 2.97             | <b>2.85</b> | 3.02     | -4.0   | -5.5     |
| AT      | 4.50                | <b>4.72</b> | 4.58     | +4.9   | +3.2     | 9.28               | <b>10.89</b> | 10.02    | +17.4  | +8.7     | 3.17             | <b>2.95</b> | 3.10     | -6.9   | -4.7     |
| BE      | 8.62                | <b>7.59</b> | 8.24     | -11.9  | -7.9     | 12.12              | <b>12.43</b> | 11.67    | +2.6   | +6.5     | 4.03             | <b>3.42</b> | 3.89     | -15.1  | -12.1    |
| BG      | 3.41                | <b>3.50</b> | 3.21     | +2.7   | +9.1     | 6.24               | <b>5.20</b>  | 4.11     | -16.7  | +26.3    | 2.57             | <b>2.44</b> | 2.18     | -5.0   | +12.0    |
| CY      | 1.77                | <b>1.52</b> | 1.26     | -14.4  | +20.2    | -                  | -            | -        | -      | -        | -                | -           | -        | -      | -        |
| CZ      | 4.08                | <b>4.39</b> | 4.12     | +7.7   | +6.5     | 6.71               | <b>8.17</b>  | 7.21     | +21.8  | +13.3    | 2.83             | <b>2.89</b> | 3.00     | +2.2   | -3.7     |
| DE      | 6.30                | <b>6.09</b> | 6.05     | -3.4   | +0.6     | 8.79               | <b>9.63</b>  | 9.17     | +9.5   | +5.0     | 3.90             | <b>3.45</b> | 3.82     | -11.4  | -9.7     |
| DK      | 5.11                | <b>5.36</b> | 5.07     | +5.0   | +5.8     | -                  | -            | -        | -      | -        | 3.48             | <b>3.71</b> | 3.57     | +6.7   | +4.0     |
| EE      | 2.41                | <b>2.56</b> | 2.49     | +6.4   | +3.1     | -                  | -            | -        | -      | -        | 1.32             | <b>1.43</b> | 1.51     | +8.5   | -5.4     |
| ES      | 2.84                | <b>3.22</b> | 2.94     | +13.5  | +9.4     | 9.92               | <b>10.04</b> | 9.94     | +1.2   | +0.9     | 1.81             | <b>1.86</b> | 1.70     | +2.9   | +9.4     |
| FI      | 3.07                | <b>3.47</b> | 3.45     | +13.1  | +0.6     | -                  | -            | -        | -      | -        | 1.13             | <b>1.27</b> | 1.37     | +12.4  | -7.6     |
| FR      | 6.38                | <b>5.76</b> | 6.36     | -9.8   | -9.5     | 8.74               | <b>8.85</b>  | 9.01     | +1.3   | -1.7     | 3.29             | <b>3.15</b> | 3.25     | -4.3   | -3.0     |
| GR      | 2.84                | <b>2.38</b> | 2.42     | -16.3  | -1.7     | 10.18              | <b>10.13</b> | 9.92     | -0.5   | +2.1     | -                | -           | -        | -      | -        |
| HU      | 3.37                | <b>3.69</b> | 3.60     | +9.7   | +2.7     | 6.63               | <b>6.19</b>  | 6.21     | -6.6   | -0.2     | 2.16             | <b>2.19</b> | 2.32     | +1.5   | -5.6     |
| IE      | 7.00                | <b>7.26</b> | 6.75     | +3.7   | +7.5     | -                  | -            | -        | -      | -        | -                | -           | -        | -      | -        |
| IT      | 3.62                | <b>3.70</b> | 3.64     | +2.3   | +1.7     | 9.11               | <b>9.52</b>  | 9.11     | +4.5   | +4.4     | 2.48             | <b>2.03</b> | 2.10     | -18.2  | -3.5     |
| LT      | 2.70                | <b>2.91</b> | 2.64     | +7.7   | +10.4    | -                  | -            | -        | -      | -        | 1.65             | <b>1.78</b> | 1.75     | +7.6   | +1.2     |
| LU      | -                   | -           | -        | -      | -        | -                  | -            | -        | -      | -        | -                | -           | -        | -      | -        |
| LV      | 2.80                | <b>2.58</b> | 2.38     | -7.9   | +8.3     | -                  | -            | -        | -      | -        | 2.13             | <b>2.06</b> | 2.06     | -3.1   | +0.3     |
| MT      | -                   | -           | -        | -      | -        | -                  | -            | -        | -      | -        | -                | -           | -        | -      | -        |
| NL      | 5.56                | <b>5.78</b> | 6.00     | +3.9   | -3.7     | 9.74               | <b>12.02</b> | 11.05    | +23.4  | +8.9     | -                | -           | -        | -      | -        |
| PL      | 3.15                | <b>3.13</b> | 3.08     | -0.7   | +1.6     | 5.75               | <b>6.16</b>  | 5.70     | +7.1   | +8.0     | 2.70             | <b>2.47</b> | 2.77     | -8.4   | -10.6    |
| PT      | 1.59                | <b>1.97</b> | 2.02     | +24.2  | -2.2     | 6.49               | <b>6.17</b>  | 6.03     | -4.9   | +2.2     | -                | -           | -        | -      | -        |
| RO      | 2.54                | <b>2.70</b> | 2.33     | +6.6   | +16.2    | 4.06               | <b>3.86</b>  | 3.20     | -5.0   | +20.6    | 1.79             | <b>1.79</b> | 1.51     | +0.2   | +18.4    |
| SE      | 3.97                | <b>4.45</b> | 4.19     | +11.9  | +6.2     | -                  | -            | -        | -      | -        | 2.55             | <b>2.91</b> | 2.69     | +14.1  | +8.2     |
| SI      | 4.30                | <b>4.09</b> | 3.82     | -5.0   | +7.0     | 8.54               | <b>7.98</b>  | 7.63     | -6.5   | +4.6     | -                | -           | -        | -      | -        |
| SK      | 2.72                | <b>3.37</b> | 3.39     | +23.5  | -0.7     | 5.49               | <b>7.12</b>  | 6.04     | +29.7  | +17.8    | 1.97             | <b>2.39</b> | 2.21     | +21.5  | +8.2     |
| UK      | 6.00                | <b>5.70</b> | 5.87     | -5.0   | -3.0     | -                  | -            | -        | -      | -        | 3.50             | <b>3.32</b> | 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)

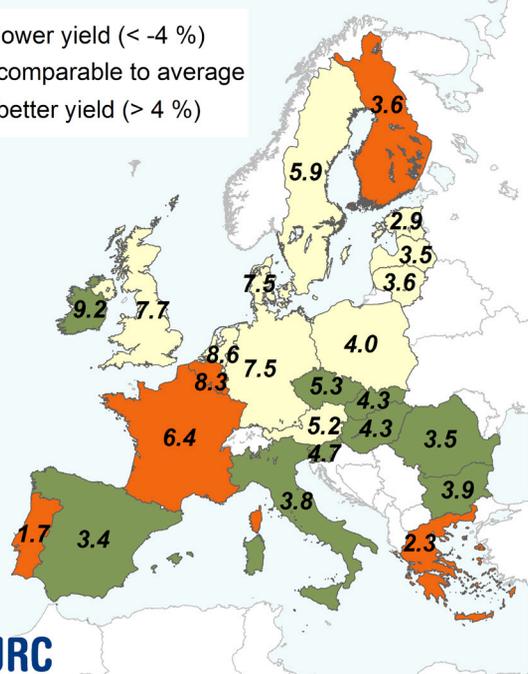
| Country | SUNFLOWER (t/ha) |      |          |        |          | SUGAR BEET (t/ha) |       |          |        |          | POTATO (t/ha) |       |          |        |          |
|---------|------------------|------|----------|--------|----------|-------------------|-------|----------|--------|----------|---------------|-------|----------|--------|----------|
|         | 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             | 1.82 | 1.72     | -1.1   | +5.7     | 67.83             | 68.83 | 65.84    | +1.5   | +4.5     | 28.27         | 31.19 | 28.44    | +10.3  | +9.7     |
| AT      | 2.62             | 2.67 | 2.60     | +2.0   | +2.6     | 69.84             | 71.01 | 67.62    | +1.7   | +5.0     | 30.57         | 32.86 | 31.12    | +7.5   | +5.6     |
| BE      | -                | -    | -        | -      | -        | 82.70             | 78.08 | 75.28    | -5.6   | +3.7     | 44.73         | 46.12 | 44.22    | +3.1   | +4.3     |
| BG      | 2.10             | 1.88 | 1.59     | -10.3  | +18.3    | -                 | -     | -        | -      | -        | 15.60         | 15.35 | 15.44    | -1.6   | -0.6     |
| CY      | -                | -    | -        | -      | -        | -                 | -     | -        | -      | -        | -             | -     | -        | -      | -        |
| CZ      | 2.11             | 2.29 | 2.25     | +8.5   | +1.6     | 54.36             | 59.18 | 54.85    | +8.9   | +7.9     | 24.56         | 27.06 | 25.07    | +10.2  | +8.0     |
| DE      | 2.11             | 2.23 | 2.21     | +5.5   | +0.6     | 65.01             | 66.03 | 63.01    | +1.6   | +4.8     | 39.98         | 43.70 | 41.39    | +9.3   | +5.6     |
| DK      | -                | -    | -        | -      | -        | 60.10             | 58.35 | 56.64    | -2.9   | +3.0     | 35.27         | 42.07 | 38.68    | +19.3  | +8.7     |
| EE      | -                | -    | -        | -      | -        | -                 | -     | -        | -      | -        | -             | -     | -        | -      | -        |
| ES      | 1.27             | 1.21 | 1.15     | -4.4   | +5.4     | 76.74             | 79.96 | 76.30    | +4.2   | +4.8     | 29.54         | 28.99 | 29.07    | -1.8   | -0.3     |
| FI      | -                | -    | -        | -      | -        | 37.13             | 40.09 | 38.24    | +8.0   | +4.8     | 26.15         | 27.63 | 25.30    | +5.7   | +9.2     |
| FR      | 2.35             | 2.31 | 2.40     | -1.5   | -3.6     | 82.16             | 86.17 | 85.16    | +4.9   | +1.2     | 41.40         | 41.84 | 42.87    | +1.1   | -2.4     |
| GR      | 1.72             | 1.25 | 1.28     | -27.3  | -2.1     | 81.25             | 66.74 | 70.72    | -17.9  | -5.6     | 26.89         | 24.93 | 25.27    | -7.3   | -1.4     |
| HU      | 1.97             | 2.36 | 2.25     | +20.1  | +4.9     | 58.34             | 55.17 | 53.01    | -5.4   | +4.1     | 21.73         | 25.14 | 24.24    | +15.7  | +3.7     |
| IE      | -                | -    | -        | -      | -        | -                 | -     | -        | -      | -        | 34.40         | 33.24 | 32.02    | -3.4   | +3.8     |
| IT      | 2.12             | 2.03 | 2.20     | -4.2   | -7.6     | 60.05             | 57.08 | 55.70    | -4.9   | +2.5     | 22.99         | 25.04 | 24.52    | +8.9   | +2.1     |
| LT      | -                | -    | -        | -      | -        | 47.22             | 49.31 | 43.49    | +4.4   | +13.4    | 12.99         | 13.71 | 12.17    | +5.6   | +12.7    |
| LU      | -                | -    | -        | -      | -        | -                 | -     | -        | -      | -        | -             | -     | -        | -      | -        |
| LV      | -                | -    | -        | -      | -        | -                 | -     | -        | -      | -        | 16.03         | 16.70 | 15.84    | +4.2   | +5.5     |
| MT      | -                | -    | -        | -      | -        | -                 | -     | -        | -      | -        | -             | -     | -        | -      | -        |
| NL      | -                | -    | -        | -      | -        | 74.37             | 75.10 | 71.73    | +1.0   | +4.7     | 43.59         | 45.66 | 43.94    | +4.7   | +3.9     |
| PL      | -                | -    | -        | -      | -        | 49.13             | 50.42 | 48.98    | +2.6   | +2.9     | 17.86         | 19.65 | 18.66    | +10.0  | +5.3     |
| PT      | 0.55             | 0.71 | 0.61     | +29.1  | +16.0    | -                 | -     | -        | -      | -        | 13.06         | 15.57 | 14.60    | +19.2  | +6.6     |
| RO      | 1.56             | 1.52 | 1.32     | -2.4   | +15.0    | 38.36             | 37.50 | 33.24    | -2.2   | +12.8    | 13.45         | 15.12 | 14.34    | +12.4  | +5.4     |
| SE      | -                | -    | -        | -      | -        | 52.08             | 56.03 | 53.67    | +7.6   | +4.4     | 30.08         | 30.45 | 29.81    | +1.2   | +2.1     |
| SI      | -                | -    | -        | -      | -        | -                 | -     | -        | -      | -        | -             | -     | -        | -      | -        |
| SK      | 1.81             | 2.34 | 2.15     | +29.3  | +9.0     | 54.52             | 59.27 | 53.26    | +8.7   | +11.3    | 11.45         | 16.12 | 15.43    | +40.8  | +4.4     |
| UK      | -                | -    | -        | -      | -        | 72.86             | 67.61 | 64.33    | -7.2   | +5.1     | 42.90         | 43.63 | 42.14    | +1.7   | +3.6     |

## Total 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 %)

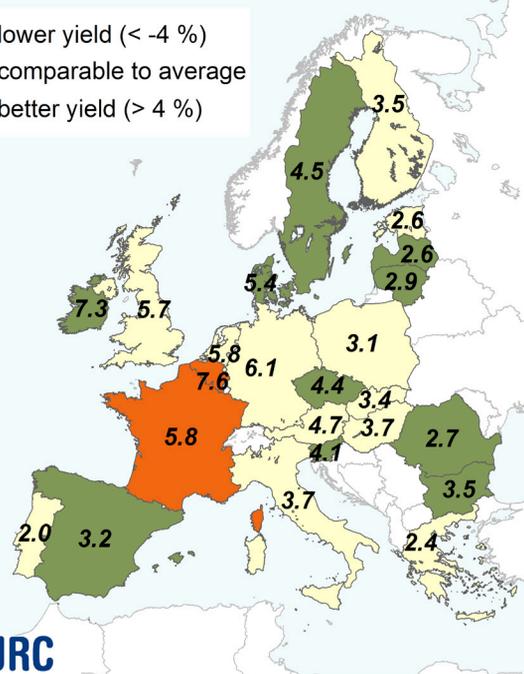


## Total barley - yield forecast 2011

### 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 %)

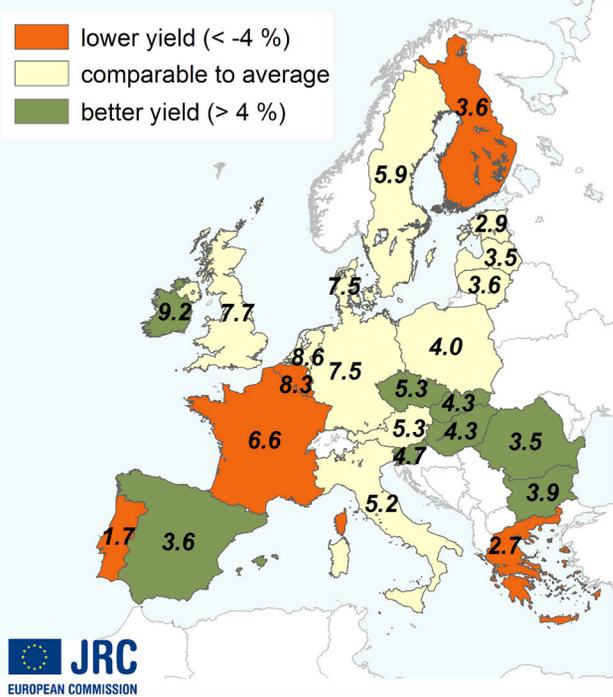


### Soft wheat - yield forecast 2011

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 %)

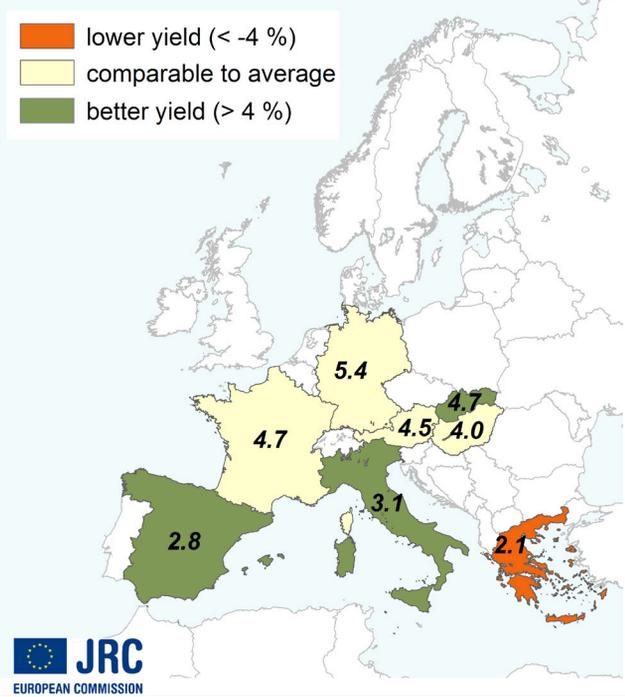


### Durum wheat - yield forecast 2011

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 %)

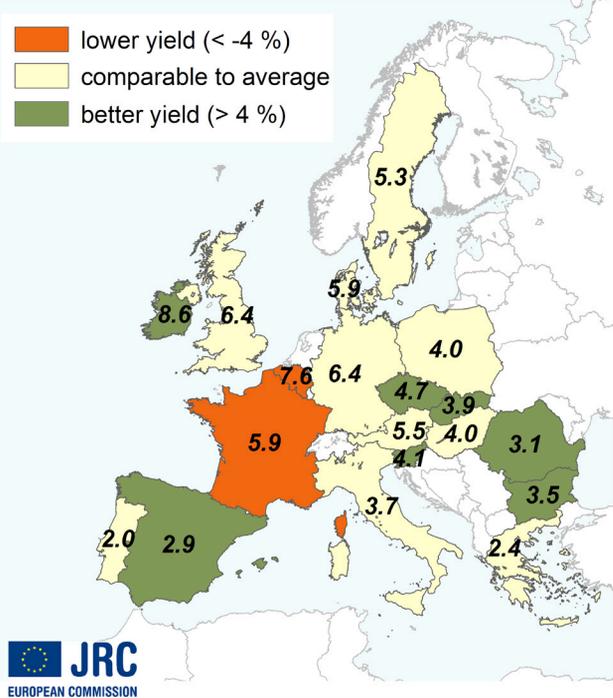


### Winter barley - yield forecast 2011

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 %)

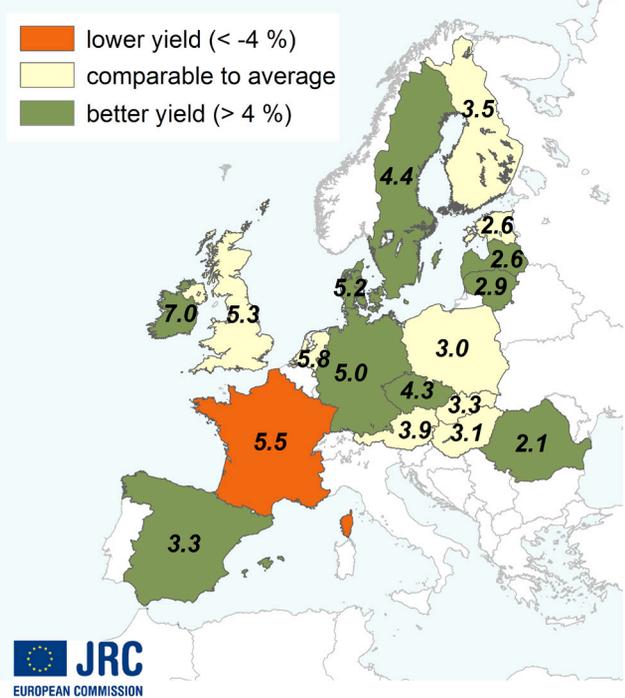


### Spring barley - yield forecast 2011

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 %)

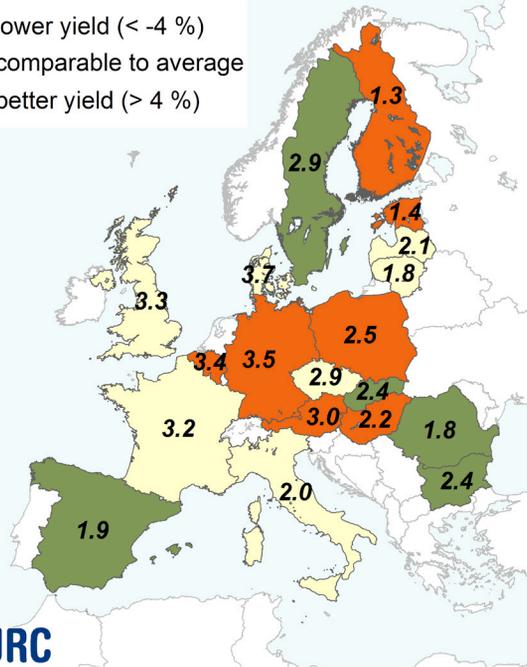


### Rapeseed - yield forecast 2011

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 %)

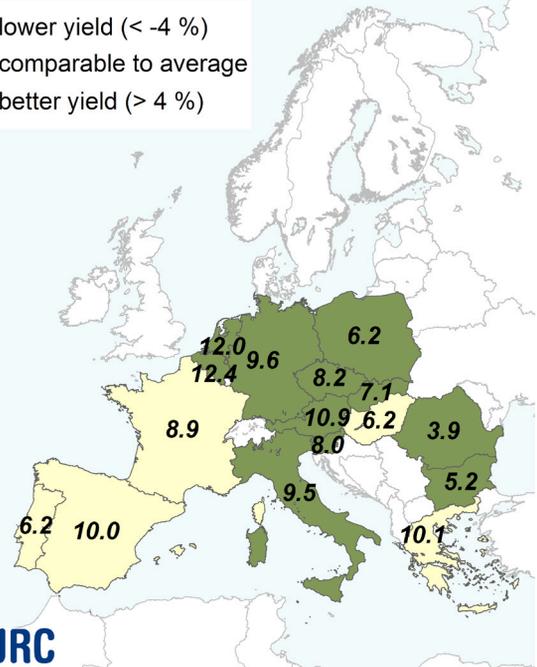


### Grain maize - yield forecast 2011

Actual yield versus average yield 2006- 2010

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

- lower yield (< -4 %)
- comparable to average
- better yield (> 4 %)

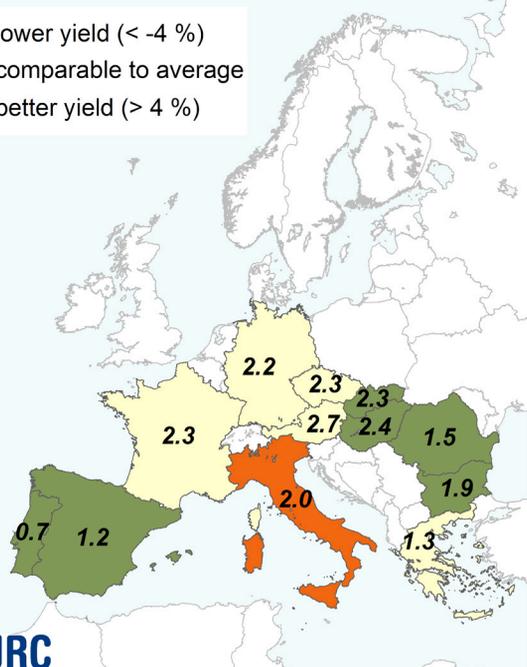


### Sunflower - yield forecast 2011

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 %)

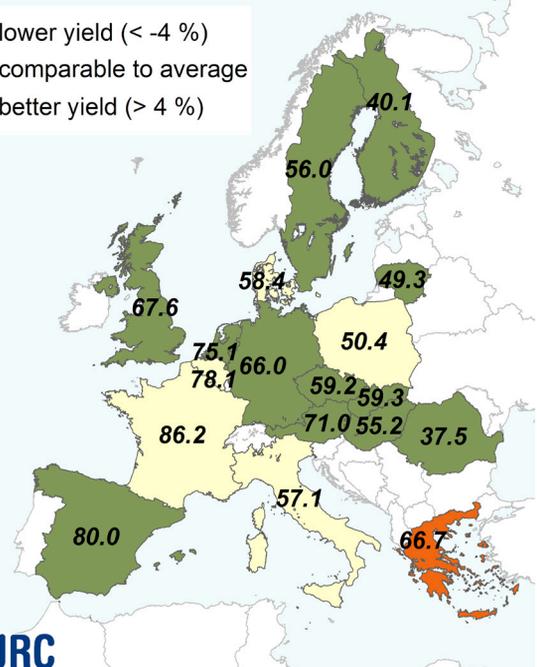


### Sugar beets - yield forecast 2011

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 %)



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

### France — Reduction of yield losses for winter crops. Good prospect for summer crops.

| FRANCE         |            |                     |          |        |          |
|----------------|------------|---------------------|----------|--------|----------|
|                | Yield t/ha |                     |          |        |          |
|                | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat     | 7.04       | 6.57                | 7.07     | -6.6   | -7.1     |
| 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       | 5.53                | 6.06     | -8.7   | -8.8     |
| grain maize    | 8.74       | 8.85                | 9.01     | +1.3   | -1.7     |
| turnips (rape) | 3.29       | 3.15                | 3.25     | -4.3   | -3.0     |
| sunflower      | 2.35       | 2.31                | 2.40     | -1.5   | -3.6     |
| sugar beets    | 82.16      | 86.17               | 85.16    | +4.9   | +1.2     |
| potato         | 41.40      | 41.84               | 42.87    | +1.1   | -2.4     |

**An important heterogeneity in yields for winter crops is observed as a direct consequence of drought during spring. Rainfall and average temperatures contributed to a positive grain-filling. Harvest was well advanced in many locations but was also hampered by rains in July. Rainfall and an important decrease of temperatures during the second dekad of July were particularly favourable for grain maize and sunflower development.**

#### AGROMETEOROLOGICAL ANALYSIS

Scattered rainfall was registered in all regions of the country from the 21<sup>st</sup> of June onwards. The strongest events were observed during the second dekad of July. It rained heavily from *Centre* to *Rhone Valley* and *Alsace*, and also in the southern part of *Sud-Ouest*. The cumulated precipitation for the period analysed is above the long-term average almost everywhere with values as high as +105 % in *Rhone-Alpes* and +40 to +50 % in *Centre*, *Poitou Charente* and *Alsace*. On the contrary, the cumulated rainfall in the northern strip from *Haute Normandie* to *Nord-Pas-de-Calais* is still in deficit (-2 to -8 %), and the same is observed for *Aquitaine (Gironde)* and *Bourgogne*. Sizeable rainfall deficits (> -40 %) were observed for *Maine-et-Loire (Pays-de-la-Loire)* and locally in *Bretagne* and in *Picardie*. As for temperatures, France first experienced a notable rise of temperatures during the last dekad of June and an important decrease during the second dekad of July. Consequently, the cumulative active temperature during the analysis period is either average (southern half of the country) or slightly below average. Both minimum and maximum temperatures were above the upper limit of the normal variation range for practically the entire country, except in *Méditerranée*, where these high values are quite usual. On the contrary, temperatures during the second dekad of July were generally lower than the long-term average in all regions where values were often close to the lower limit of the seasonal range of variation and even below those for the *Méditerranée*.

#### CROP DEVELOPMENT

**Winter wheat** is at maturity almost in all regions of productions except in most of *Bretagne* and *Normandie* and in a corridor from *Pas-de-Calais* to *Meuse* where it is still ripening. Only barley harvest is well advanced because it

generally commenced before the important rainfall during the second dekad of July (almost 80 % of barley has already been harvested). The field campaign indicates an important heterogeneity in yields within regions, thus confirming the beneficial effect of rain during the grain filling process in June, for many locations. Water supply, during grain-filling, was already taken into account in our earlier forecast. Rainfall during the three dekads under analysis had no influence on yield potential and yield estimates are therefore maintained stable for durum wheat, soft wheat and winter barley, as compared to the last forecast.

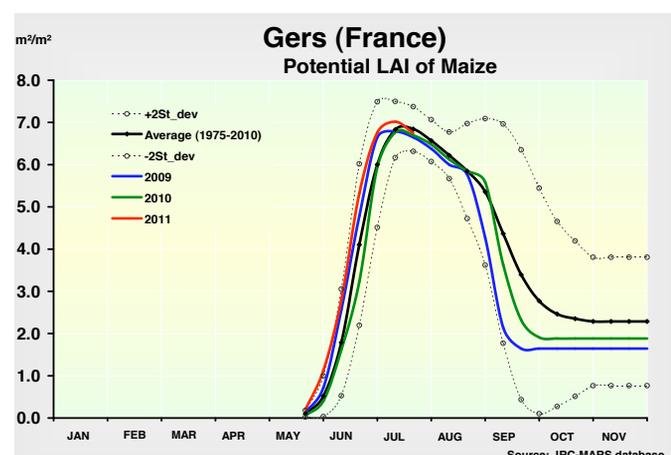
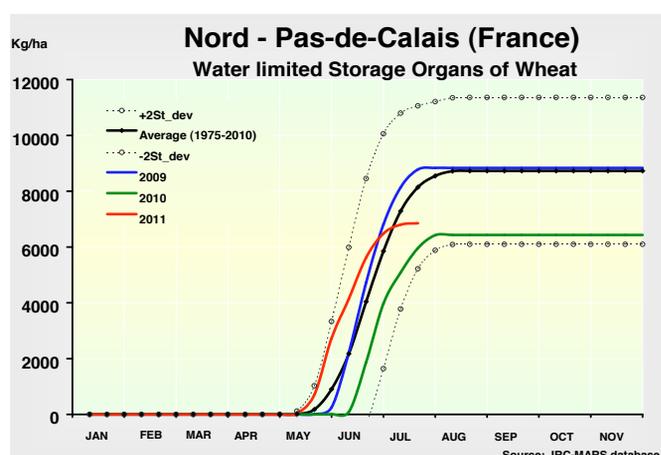
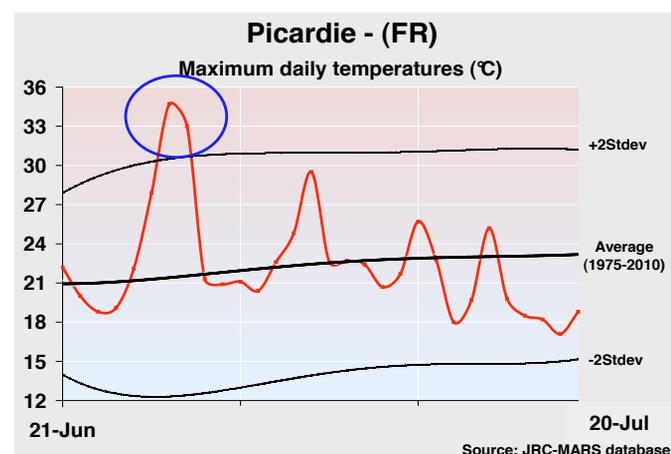
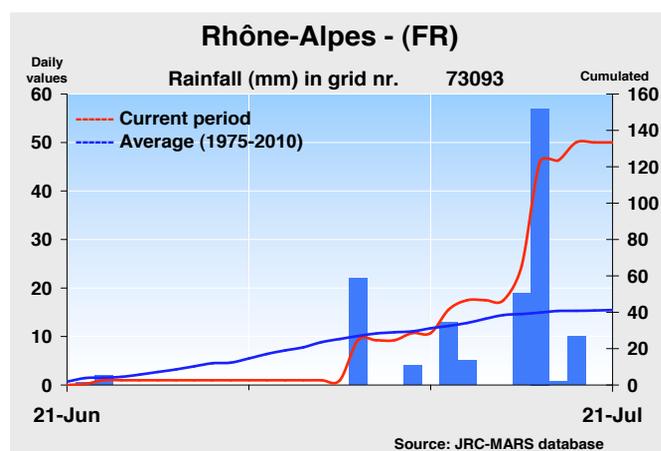
Apart from *Charente-Maritime* and locally in the central part of *Bassin Parisien* where maturity has been reached, **spring barley** is still ripening. In most northern areas of *Nord-Pas-de-Calais/Picardie* Barley is still at the grain filling stage. Generally, with 10 to 15 days ahead of LTA, spring barley is less advanced in development than winter cereals. Precipitation increased relative soil moisture in June and July that nevertheless remains low, albeit within the normal range of variation. These moderately positive aspects result in a slight forecast increase.

**Grain maize** is at the flowering stage in all of the main production regions: from *Pays-de-la-Loire/Centre* to *Aquitaine/Midi-Pyrénées*, in *Rhone Valley* and in *Alsace*, thus indicating a similar development stage when compared to the long term average. However, a slight delay (less than 7 days) can be observed in *Bretagne* where it is still at the vegetative stage of development. Weather conditions since the 21<sup>st</sup> of June can be considered as favourable for this crop as shown by the relative soil moisture levels — which are now higher than the long term average — and the leaf area profiles, particularly in *Sud-Ouest*. Yield forecast has been revised upwards since then. The recent rainfall increased the relative soil moisture to values above the long-term average for **sunflower**, which is at grain filling stage in the main production regions but still at flowering stage in the northern part of *Poitou-Charente*. Water supply and temperature drop are clearly favourable during the grain filling process. A promising yield is expected.

**Rapeseed** was at the ripening or maturity stage of development towards the second dekad of June, indicating precocity of about 15-30 days, except in *Bretagne*, *Normandie*, and locally in *Champagne-Ardenne* and in *Bourgogne*, where the advance was generally less than 5 days. Weather conditions towards the end of June favoured the harvest where rapeseed was at maturity in the main regions of *Ouest/Sud-Ouest*. Harvesting campaign has nearly been finished save for the northern departments of *Centre*, *Bretagne* and *Normandie*. On the contrary in the north-eastern part of the country, the ripening period has clearly been extended due to the weather conditions in July, and harvest has therefore been postponed. Our modelling simulations of storage organs under water stress indicate an important heterogeneity in the production region. The last forecast has been slightly revised upwards.

However, yields of **potato** and **sugar beet** at this stage of development (tuber formation for both in the main regions of production) have been revised downwards. Relative soil moisture increased but only recently, thanks to precipitation in the

second dekad of July and provides a more favourable scenario for potato than for sugar beet. On the other hand, the leaf area index for potato (leaf canopy) obtained through simulation is at a lower level when compared to the long-term average.



## Germany — Soft wheat and winter barley yields revised upwards. Beneficial weather conditions for maize so far.

|                | GERMANY |                     |          |        |          |
|----------------|---------|---------------------|----------|--------|----------|
|                | 2010    | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat     | 7.24    | 7.52                | 7.47     | +3.8   | +0.7     |
| durum wheat    | 5.35    | 5.41                | 5.48     | +1.1   | -1.3     |
| winter barley  | 6.66    | 6.43                | 6.48     | -3.5   | -0.8     |
| spring barley  | 4.95    | 4.98                | 4.76     | +0.6   | +4.6     |
| grain maize    | 8.79    | 9.63                | 9.17     | +9.5   | +5.0     |
| turnips (rape) | 3.90    | 3.45                | 3.82     | -11.4  | -9.7     |
| sunflower      | 2.11    | 2.23                | 2.21     | +5.5   | +0.6     |
| sugar beets    | 65.01   | 66.03               | 63.01    | +1.6   | +4.8     |
| potato         | 39.98   | 43.70               | 41.39    | +9.3   | +5.6     |

**Favourable conditions for yield formation of winter cereals. Limited damage of the dry spell. Yields are revised upwards for soft wheat and barley. Rapeseed yields are clearly below the average due to a difficult campaign. Positive outlook for grain maize and tuber crops.**

## AGROMETEOROLOGICAL ANALYSIS

Accumulated temperatures since the 21<sup>st</sup> of June have been around average, and temperatures generally stayed below 32 °C. They peaked to 34 °C along the western border only around the 28<sup>th</sup> of June and were followed by a sharp drop at the beginning of July. With the exception of a dry *Niedersachsen*, Germany received abundant rainfall with amounts clearly above the long-term average, thereby replenishing soil moisture contents, which was favourable for maize, as well as for root and tuber crops. Rainfall was mainly concentrated along *Bayern*, *Baden-Württemberg* and eastern Germany. *Brandenburg* received up to 180 mm of rain, which characterised it as the wettest period in our database since 1975.

## CROP DEVELOPMENT

According to our simulated data, **winter wheat** has reached maturity along the Rhine valley and in *Thüringen* and

*Sachsen*. In the north of the country, it is at the end of the grain filling period. The weather has been favourable for the remaining crop yield formation ever since the dry spell ended. The crop growth model shows above average storage organ content for Northern Germany (*Niedersachsen, Schleswig Holstein* and *Mecklenburg-Vorpommern*) and below average for *Brandenburg*. Average storage organ contents have also been simulated for the remaining country. The forecast is increased, as the model now uses storage organ content as a predictor.

**Winter barley** benefited less from rainy weather the mild temperatures as it was more advanced in the cycle. However, forecast was increased in this case too after taking into account the favourable conditions of the last part of the cycle. The same is valid for **spring barley** forecast.

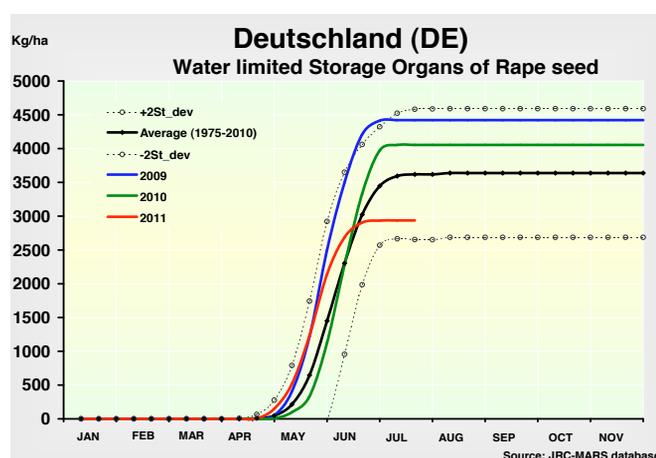
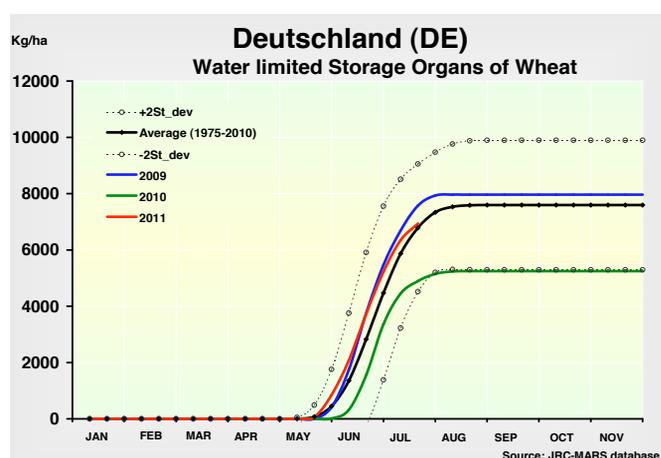
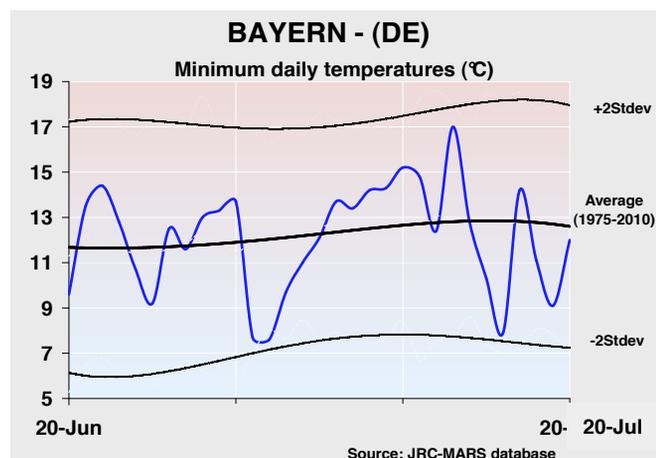
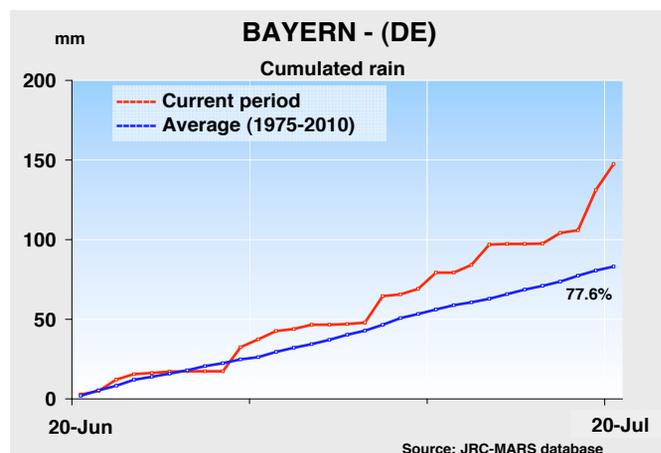
**Maize** is at the flowering stage and is slightly advanced because development had slowed down since the beginning of July. Leaf area expansion is well above average and soil moisture levels are at average level. Maize experienced good conditions throughout the first part of the cycle but

the present rainy weather might negatively impact on flowering. The earlier good yield level is confirmed.

**Rapeseed** reached maturity very much in advance, and on average, the cycle has been shortened by 2 dekads. The simulated storage organ content is low across the country, especially in *Niedersachsen* and *Nordrhein-Westfalen*. This is reflected as a forecast of 12 % below last year's yields.

**Sugar beet** and **potato** are in yield formation stage and show good storage organ accumulation, which is clearly above average.

First harvest of winter barley and rapeseed started at the end of June for the early threshing sites. Rainfall has since then interrupted harvest in the remaining parts of the country. Harvest of spring barley and winter wheat on early sites started around the 10<sup>th</sup> of July, but recurrent rain since then have hampered harvesting activities. Abundant rainy days are forecast (as of 26<sup>th</sup> July) until the end of July for southern Germany with the exception of the eastern part where bad weather has so far prevented farmers from harvesting.



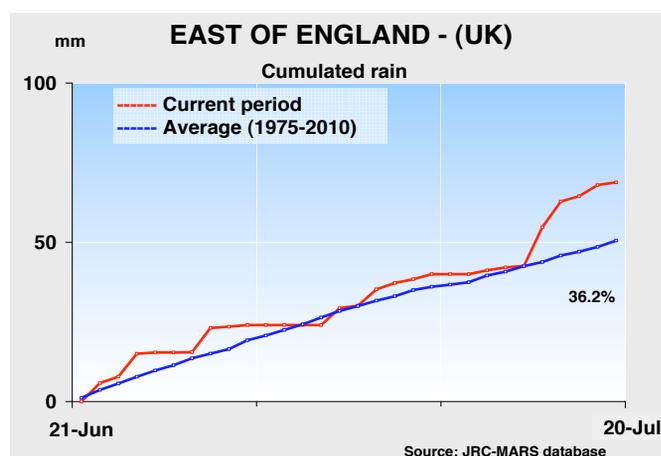
## United Kingdom — Yield formation for winter cereals under satisfactory conditions.

| UNITED KINGDOM |            |                     |          |        |          |
|----------------|------------|---------------------|----------|--------|----------|
|                | Yield t/ha |                     |          |        |          |
|                | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat     | 8.05       | 7.74                | 7.89     | -3.9   | -2.0     |
| winter barley  | 6.72       | 6.38                | 6.54     | -5.2   | -2.5     |
| 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      | 43.63               | 42.14    | +1.7   | +3.6     |

**Rainfall surplus at country level and normal temperature accumulation with lower than usual maximum temperatures. Yield formation for winter cereals finally under satisfactory conditions with good radiation levels. Storage organ contents are simulated with a good level in the North but there are strong deficits in central and eastern UK.**

### AGROMETEOROLOGICAL ANALYSIS

Temperature accumulations since the 21<sup>st</sup> of June are average but a lower than average maximum temperature was recorded. Only end of June temperatures increased to 32 degrees in *East of England*. Precipitation was abundant in Scotland with values of more than 100 % above the long-term average. For *England* and *Wales* the picture is more heterogeneous. *Yorkshire and the Humber, East Midlands* as well as *South-West England* remained relatively dry with absolute values between 10 mm and 40 mm of rainfall. *East of England* shows a clear surplus in the period considered with plenty of rainy days since the 1<sup>st</sup> of July. In general, the rain since the 21<sup>st</sup> of June was very beneficial for yield formation of winter cereals and partly compensated for the dry spell.



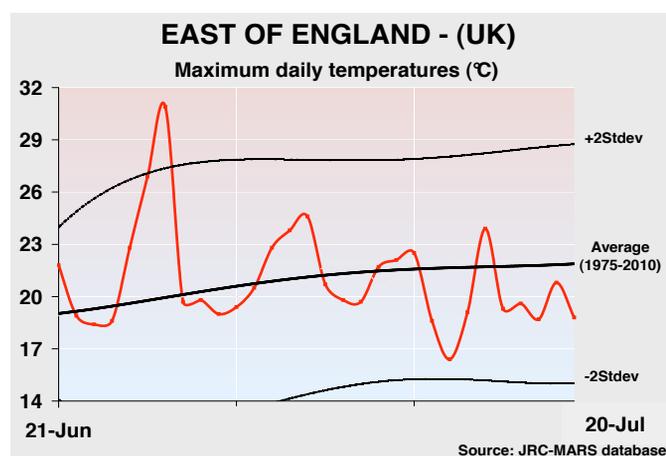
### CROP DEVELOPMENT

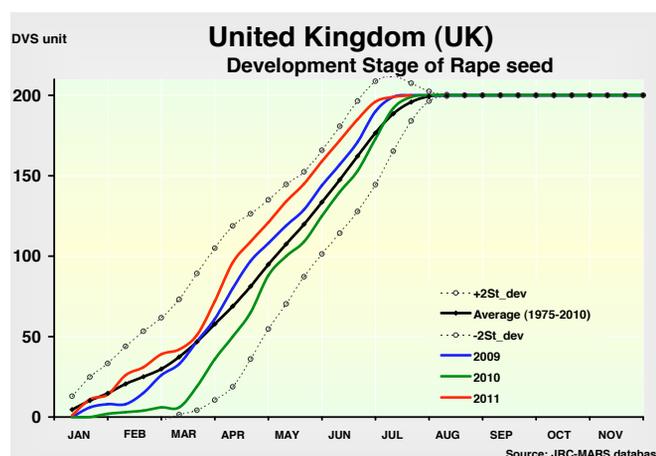
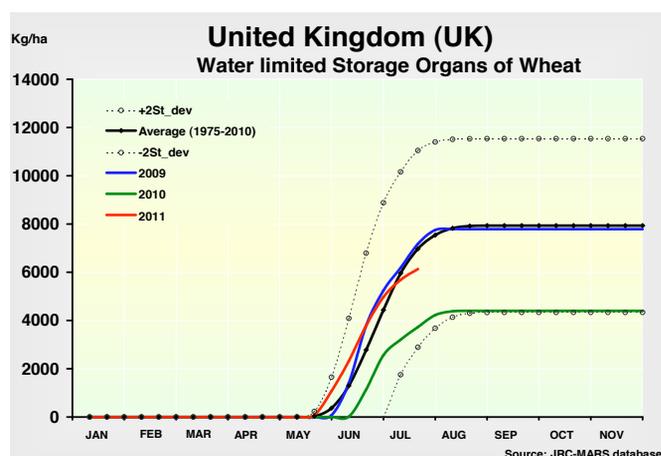
**Winter wheat** is at ripening stage in the main cereal producing regions and is slightly advanced compared to the average crop cycle. Soil moisture is still showing deficits when compared with the long term average and storage organ content is low for *East of England, East Midland* and *Yorkshire*, and the *Humber* regions most hit by the dry spell. Nevertheless, rainfall since the 21<sup>st</sup> of June has helped crops to recover and good radiation levels have been recorded. As a consequence the yield forecast is slightly revised upwards.

**Winter barley** harvest had started at some early spots throughout the country but was hampered last week due to the rainy weather. Yield has been revised upwards due to the more favourable conditions at the latest stages of yield formation. **Spring barley** is mostly at grain filling stage and so far has a better than average simulated storage organ content for the southern coastal areas but a deficit for *Yorkshire* and the *Humber* and *East Midlands*. The previous forecast is confirmed.

**Rapeseed** has reached maturity very much in advance just like in 1990 and harvesting has started locally. Despite the poorly developed leaf canopy, the shortened cycle and the extremely low soil moisture from April to the end of June at national level, the aggregated storage organ content has finally reached average values as the last part of the yield formation experienced more favourable conditions.

**Sugar beet** and **potato** are both in yield formation with well-developed canopies. Soil moisture for potato is fluctuating around the average whereas it is rather low for sugar beet. Due to favourable conditions, the forecast for potato has been increased ever since the last forecast. Sugar beet is confirmed.





## Italy — Better results than expected for winter crops.

| ITALY          |            |                     |          |        |          |
|----------------|------------|---------------------|----------|--------|----------|
|                | Yield t/ha |                     |          |        |          |
|                | 2010*      | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat     | 5.16       | 5.22                | 5.19     | +1.1   | +0.6     |
| durum wheat    | 3.04       | 3.12                | 2.97     | +2.5   | +4.9     |
| grain maize    | 9.11       | 9.52                | 9.11     | +4.5   | +4.4     |
| turnips (rape) | 2.48       | 2.03                | 2.1      | -18.2  | -3.5     |
| sunflower      | 2.12       | 2.03                | 2.2      | -4.2   | -7.6     |
| sugar beets    | 60.05      | 57.08               | 55.7     | -4.9   | +2.5     |
| potato         | 22.99      | 25.04               | 24.52    | +8.9   | +2.1     |

**Drought has probably been offset thanks to large intervention of irrigation. Good expectations for spring crops even if there is a risk of water shortage in the lower part of the Po plain and in the central regions.**

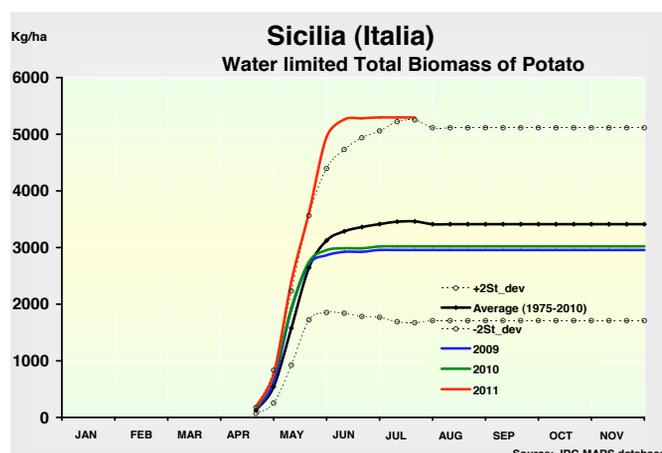
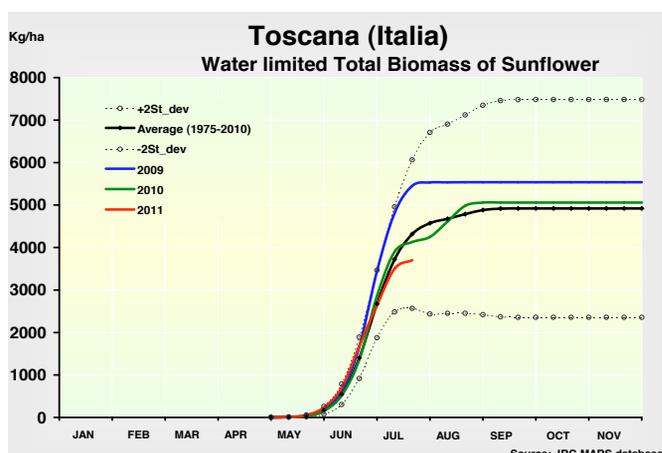
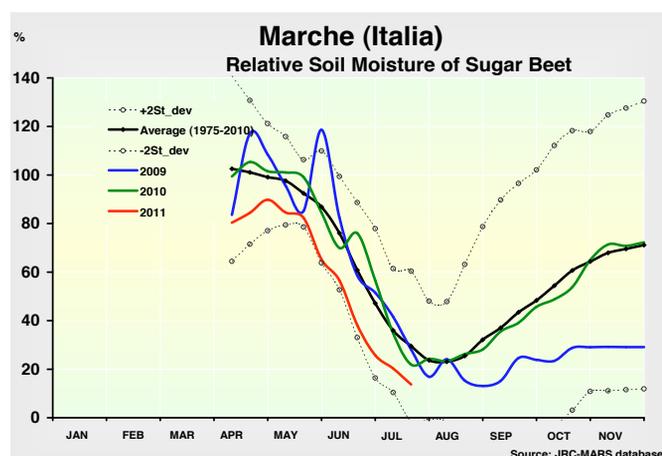
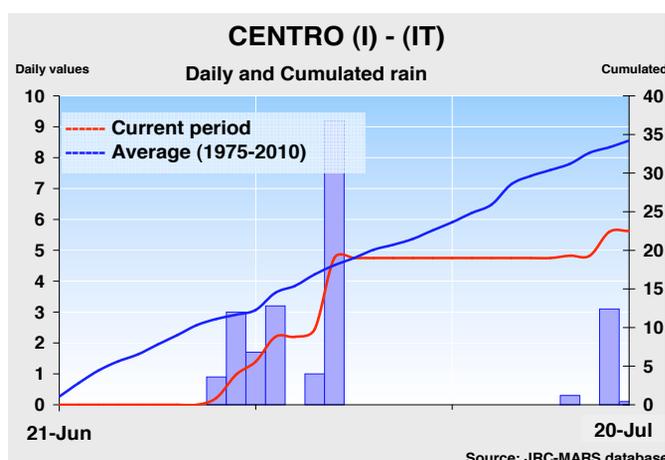
### AGROMETEOROLOGICAL ANALYSIS

The analysis period was generally characterised by isolated and light rainfalls all over the country. This was beneficial for harvest activities, especially in the northern part where the wet conditions of the previous dekads guaranteed optimal water supply for maize and sugar beet. However, in the centre, where water reservoirs were already empty, the persistence of dry weather is causing water stress, which has to be corrected with irrigation. Temperatures were high and rose to above 30 °C for several days, especially in the north-east, during the first dekad of July. This might have had a negative effect on these crops that did not complete grain filling. In the south, save for some isolated exception, the dry and hot conditions also boosted transpiration demand to very

high values with little impact on crop growth because the season has already ended.

### CROP DEVELOPMENT

The **winter crop** harvest is definitely advanced thanks to the warm and dry conditions of the last three dekads. It seems very likely that large areas in the *north* have been irrigated and show lower losses than those forecasted the last time because of the drought. On the contrary, yields are less encouraging in the *centre (Umbria)* because plants developed too fast. In the *South*, the satisfactory yield expectation foreseen for **durum wheat** has been confirmed and even good quality can be expected. **Grain maize** has begun flowering a few days in advance. Rainfall at the beginning of June and the optimal conditions that followed have offset the initial gap that was present due to the poor conditions at emergence. However, the heat wave which has hit the lower part of the Po Valley might in some cases negatively impact flowering. A good season is nevertheless depicted for maize. **Sugar beet** is in the yield formation stage and is accumulating sucrose into the tuber. High temperatures and the lack of precipitation are inducing the risk of water stress especially in *Marche* and *Emilia Romagna*. **Potato** might also suffer from water shortage, however biomass accumulation varies from exceptionally good conditions in *Sicily* to less satisfactory ones in *Campania* and *Emilia*. Even though **sunflower** is typically more resistant to dry conditions, the low soil moisture values have begun to negatively impact on the storage organs. In fact the water-limited simulation shows an early stop in biomass accumulation.



## Spain — Winter crops harvest already finished. Favourable conditions for spring crops.

|                | SPAIN |                     |          |        |          |
|----------------|-------|---------------------|----------|--------|----------|
|                | 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  | 10.04               | 9.94     | +1.2   | +0.9     |
| turnips (rape) | 1.81  | 1.86                | 1.70     | +2.9   | +9.4     |
| sunflower      | 1.27  | 1.21                | 1.15     | -4.4   | +5.4     |
| sugar beets    | 76.74 | 79.96               | 76.30    | +4.2   | +4.8     |
| potato         | 29.54 | 28.99               | 29.07    | -1.8   | -0.3     |

Expectations after harvest of winter cereals are above average as compared to those from previous years. This is a consequence of a spring season with above seasonal precipitation values, especially in the southern regions. Phenology of spring crops is advanced as compared to an average year, and is a consequence of warm temperatures during May and June.

### AGROMETEOROLOGICAL ANALYSIS

After a spring season which was wetter than seasonal values, especially in *Castilla La Mancha* and *Andalucía*, the beginning of summer is dryer than the long term average in the north-western regions: in *Castilla y León*, the accumulated rainfall from May to mid-July is about 60 % of the average

values and in *Galicia*, the May to July period has been the driest of the historical series. Although this has favoured harvesting of soft wheat and barley, it could hamper grain filling of sunflower in *Castilla y León* and growth of potatoes in *Galicia*. Precipitation between May and July was close to seasonal values in the remainder of the regions.

Temperatures in the same period have also been warmer than the long-term average in almost all of the regions, especially during May and the last week of June. This produced an advancement of the phenological development of spring crops by about ten days as against values for the average year. Water stored in reservoirs appears to be sufficient to fulfil the requirements of the irrigation season: reserves in *Andalucía* stand at 85 % capacity while in the *Ebro* and *Duero* basins, the stored volumes are similar to the long term average.

### CROP DEVELOPMENT

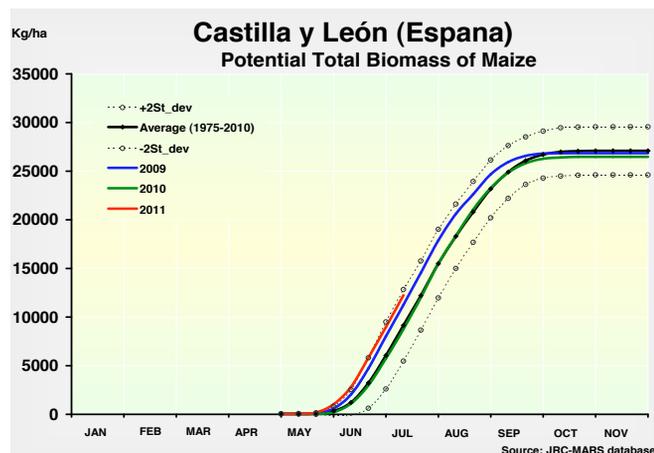
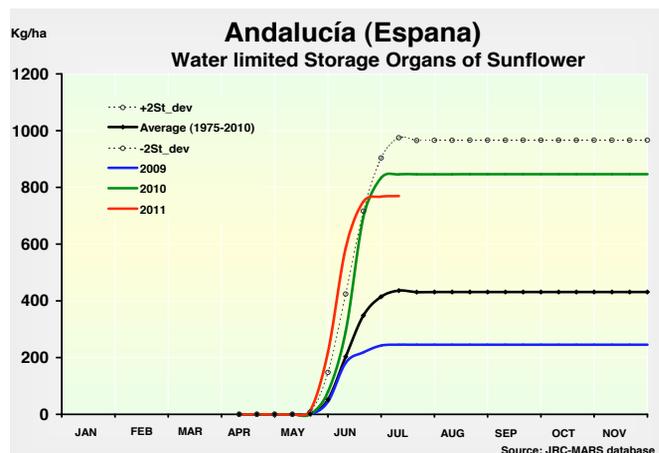
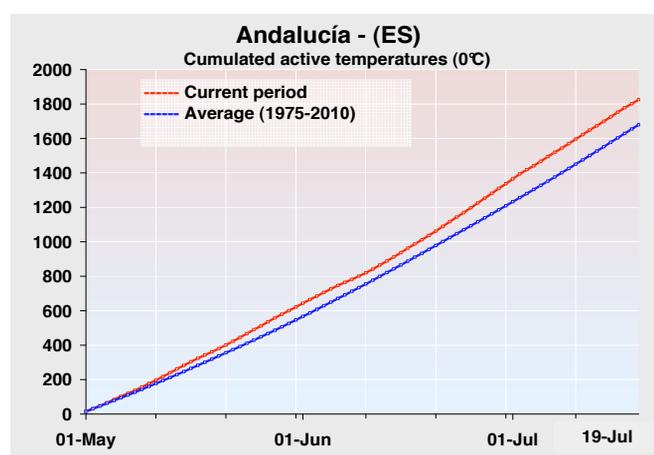
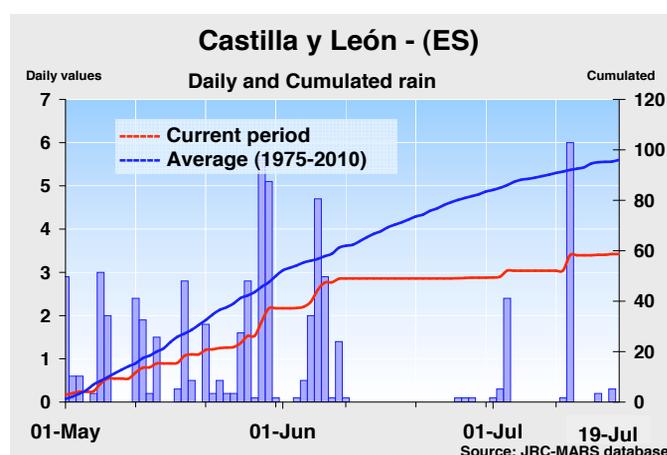
The harvest of **winter cereals** ended without significant delays, favoured by meteorological conditions. The forecasted yields reflect the favourable meteorological conditions experienced in winter and spring with abundant rainfall and high temperatures. Expectations for **durum wheat** are substantially higher than the average of the last five years (+12.6 %), while for **soft wheat** and **spring barley**, the increments are 7.4 % and 8.6 % respectively, which highlight the overall good year.

**Sunflower** presents an advancement in phenology; currently reaching maturity in *Andalucía* and in the grain filling stage in the remaining regions. Meteorological conditions during spring have increased the vegetative development of the plant suggesting that yield formation, especially in the southern regions, could be substantially higher than the standard values. In *Castilla y León*, the weather during the following weeks will determine the effect of the dry spell observed last month during the critical phase of grain filling. The expected yield is higher than the average of the last five years (+5.5 %) but below the top results of 2010 (-4.4 %).

**Grain maize** has reached grain-filling stage in *Aragón* and *Extremadura*, while flowering has begun in *Castilla y León*.

This implies advancement by one week against long-term average. And forecasts are similar to the averages for the past years, since no water constraints for irrigation are expected.

The forecast for **potato** is slightly lower than in previous years (-0.3 %). The crop presents advancement in the development stage and there should be enough water reserves for irrigation in *Castilla y León* and *Andalucía*. However, if the current dry spell in *Galicia* continues, then it may significantly reduce the final yield in this region. Sugar beet yields are expected to be higher (+4 %) than the average of the last five years. This is favoured by spring temperatures and no difficulties are therefore foreseen.



## Poland — Beneficial rainfall in the west and very wet in the east. Low yield expectations for rapeseed but still good for spring crops.

| POLAND         |            |                     |          |        |          |
|----------------|------------|---------------------|----------|--------|----------|
|                | Yield t/ha |                     |          |        |          |
|                | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat     | 3.94       | 4.01                | 3.87     | +1.8   | +3.5     |
| winter barley  | 3.92       | 3.97                | 3.84     | +1.2   | +3.2     |
| spring barley  | 2.98       | 2.97                | 2.94     | -0.3   | +1.0     |
| grain maize    | 5.75       | 6.16                | 5.70     | +7.1   | +8.0     |
| turnips (rape) | 2.70       | 2.47                | 2.77     | -8.4   | -10.6    |
| sugar beets    | 49.13      | 50.42               | 48.98    | +2.6   | +2.9     |
| potato         | 17.86      | 19.65               | 18.66    | +10.0  | +5.3     |

Mild temperatures and abundant precipitation were experienced all over the country. The dry period in western Poland was followed by favourable weather for grain filling, however, eastern and southern areas were over-wet. Rapeseed yield was revised downwards while yield for cereals was revised slightly upwards; positive yield for grain maize, tuber and root crops.

### AGROMETEOROLOGICAL ANALYSIS

During the observation period, the accumulation of active temperatures was recorded as average, with the

exception of the north-eastern area where a slight surplus was recorded. Maximum daily temperatures did not exceed 30 °C in most parts of Poland; the highest temperatures (up to 32 °C) were recorded in the south-eastern and south-western parts of Poland in the last ten-day period (11<sup>th</sup> to 20<sup>th</sup> July). Precipitation during the last ten days of June was in the seasonal range, due to persistent heavy rains across the country in the beginning of the first dekad of July. Maximum daily precipitation exceeded 50 mm in some eastern areas and at the end of the observation period in some western areas. All regions received above usual precipitation (on average +106 %) within the analysis period. The precipitation sum was between 88 mm in *Lubuskie* and 131 mm in *Opolskie* in the western regions, and the precipitation sum exceeded 150 mm in central and eastern Poland. The heaviest rainfall was recorded in *Lubelskie* (+193 % of LTA), where the precipitation sum exceeded 216 mm and, according to our database, this period is considered as the wettest since 1995.

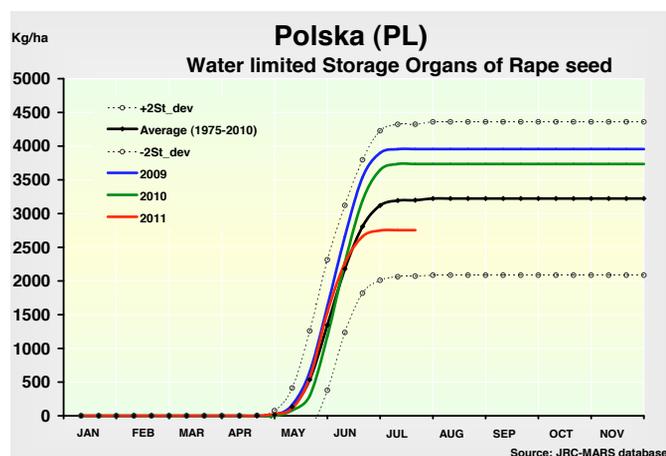
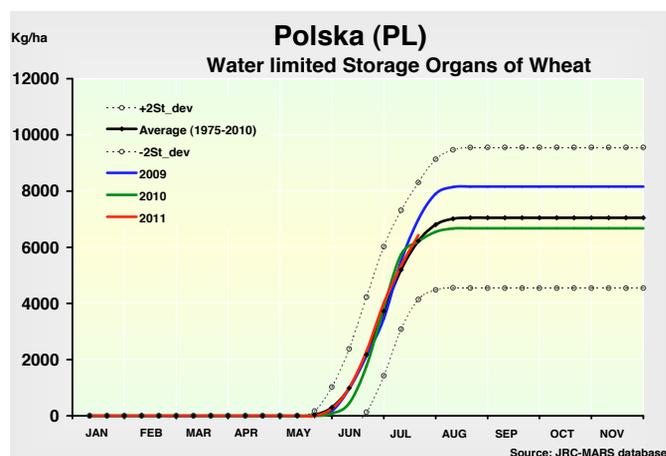
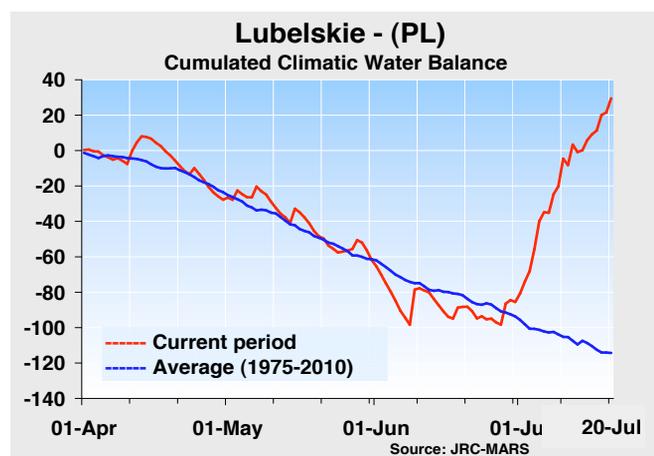
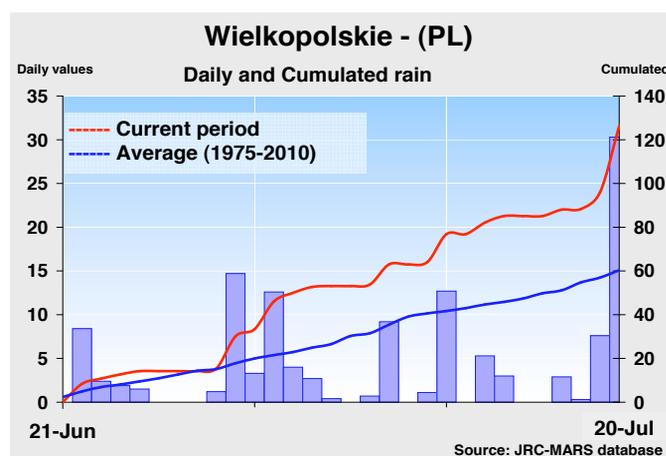
Ever since the 1<sup>st</sup> of April, cumulated active temperature, solar radiation and potential evapotranspiration have been slightly above the seasonal average all over the country. The deficit of rainfall as compared to evapotranspiration is still visible in western regions (-44 mm in *Wielkopolskie*). However, surplus has been recorded in eastern areas (+144 mm in *Lubelskie*). While weather conditions in western Poland may have benefited grain quality, the over-wet conditions in the east may have negatively impacted grain quality. The season

was unfavourable for rapeseed; recent heavy rainfall could have hampered winter barley and rapeseed harvesting.

## CROP DEVELOPMENT

**Winter wheat** is ripening from the west to the south and locally reaching maturity. In the other regions, it is filling grains. Storage organ accumulation, according to simulation with crop-growth model, is above last year's figure and slightly above the year average. In western regions (*Wielkopolskie*), storage organ content due to water-limited conditions is significantly below average and the average for the last two years. The situation is opposite in the east of Poland (*Lubelskie*), where storage organ content is above average and the figure for the last two years. **Winter barley** harvest has already started. **Spring barley** is filling grains; it has started ripening locally. The crop has shown greater than last year's storage organ content. **Rapeseed** has reached maturity two weeks in advance, as compared to the long-term average, and is being harvested. Weather conditions over the season were not favourable for rapeseed (late sowing, short crop development cycle) and yield is foreseen to be lower than last year's and lower than the last 5-year average. Model shows storage organ content to be below the average line.

**Grain maize** development has been slowed down due to weather conditions. Soil water supplies are above average now and yield potential is promising. The same is true for **sugar beet** and **potato**.



## Belgium — Beneficial rain for winter cereals confirmed. Good prospects for summer crops.

| BELGIUM        |            |                     |          |        |          |
|----------------|------------|---------------------|----------|--------|----------|
|                | Yield t/ha |                     |          |        |          |
|                | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat     | 9.35       | 8.27                | 8.68     | -11.5  | -4.6     |
| winter barley  | 8.62       | 7.59                | 8.24     | -11.9  | -7.9     |
| grain maize    | 12.12      | 12.43               | 11.67    | +2.6   | +6.5     |
| turnips (rape) | 4.03       | 3.42                | 3.89     | -15.1  | -12.1    |
| sugar beets    | 82.70      | 78.08               | 75.28    | -5.6   | +3.7     |
| potato         | 44.73      | 46.12               | 44.22    | +3.1   | +4.3     |

**Rain in June and July increased soil reservoir for all crops. Prospects for sugar beet, potato and grain maize are very promising at this stage of their development. Harvest of winter cereals and rapeseed is currently hampered by rain.**

### AGROMETEOROLOGICAL ANALYSIS

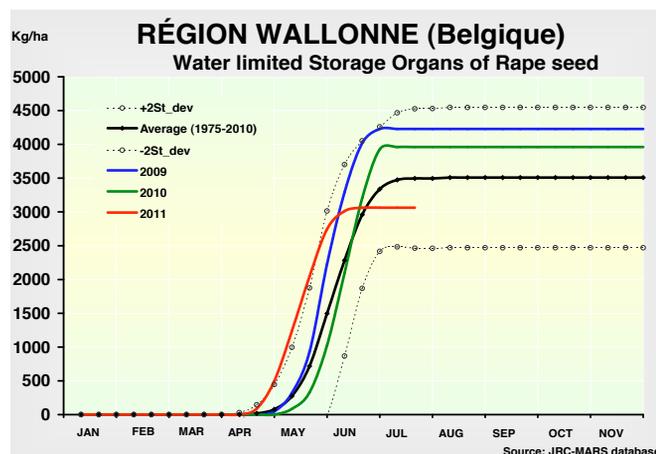
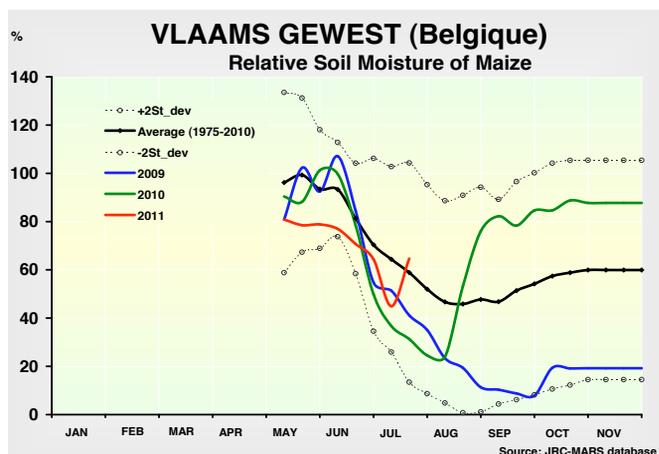
A rainy period from the 21<sup>st</sup> of June onwards resulted in a surplus cumulated precipitation when compared to the LTA. However, important differences exist between provinces with a surplus of +60 % in *Antwerpen* and -15 % in *Hainaut*. Temperatures increased during the 3<sup>rd</sup> dekad of June with values above the upper limit of the seasonal range of variation for both minimum and maximum temperature. The cumulated active temperature is average for the period of analysis.

### CROP DEVELOPMENT

**Winter cereals** are at maturity in the main production areas with an important precocity (at least two weeks in advance

in *Hainaut* and *West Vlaanderen*). **Barley** harvest has already started and harvest of **wheat** will start as soon weather conditions become more favourable. Grid level (25 x 25 km) simulation of storage organ weight indicates an important heterogeneity, with yields ranging from -30 % to +20 %, the worst results being those for *Hainaut*, *West Vlaanderen* and *Liège*. At national level, the output of the model clearly shows an improvement due to the favourable weather conditions in June. The previous forecast has been revised upwards: The difference with last year's yield is now -11.5 % for **soft wheat** and -11.9 % for **winter barley** (instead of -13.1 % and -19.2 % respectively). The picture is different for **rapeseed**. It was at maturity towards the end of June almost everywhere with an important advance compared to LTA. Weather conditions did not have the same impact on yield as shown by the output of the model. The previous yield forecast is confirmed.

Growth is average for **grain maize**, with relative soil moisture and leaf canopy at levels above the long-term average. Grain maize is still at the vegetative development stage in the northern locations of *Flanders*, but flowering has started in other places without any significant precocity. Relative soil moisture has increased for **sugar beet** and is now close to LTA; the leaf area profile is much higher than the long-term average. On the contrary, the leaf canopy profile is at a very low level for **potato**; relative soil moisture is average and potential storage organs are simulated at a higher level than average. Yield estimates have been revised upwards since the last forecast for the three summer crops.



## Netherlands — Extremely wet period leading to a very promising yield, especially for summer crops.

| THE NETHERLANDS |            |                     |          |        |          |
|-----------------|------------|---------------------|----------|--------|----------|
|                 | Yield t/ha |                     |          |        |          |
|                 | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat      | 8.91       | 8.57                | 8.52     | -3.8   | +0.6     |
| spring barley   | 5.56       | 5.78                | 6.00     | +3.9   | -3.7     |
| grain maize     | 9.74       | 12.02               | 11.05    | +23.4  | +8.9     |
| sugar beets     | 74.37      | 75.10               | 71.73    | +1.0   | +4.7     |
| potato          | 43.59      | 45.66               | 43.94    | +4.7   | +3.9     |

The country received a lot of rain being beneficial at this stage for all forecast crops, especially for sugar beet and maize. The situation for potato could change if substantial rain continues in the next dekads.

### AGROMETEOROLOGICAL ANALYSIS

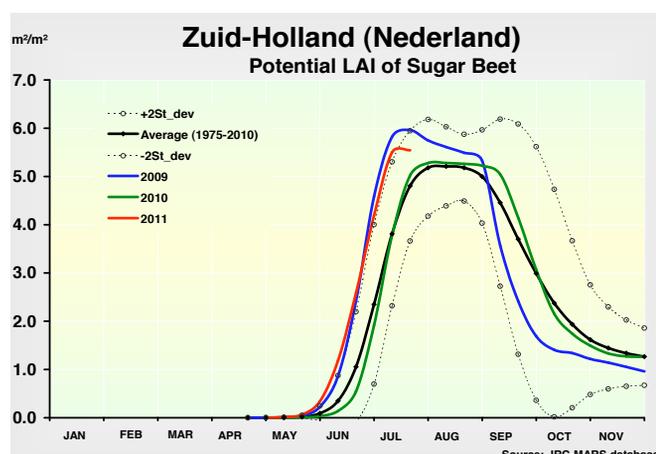
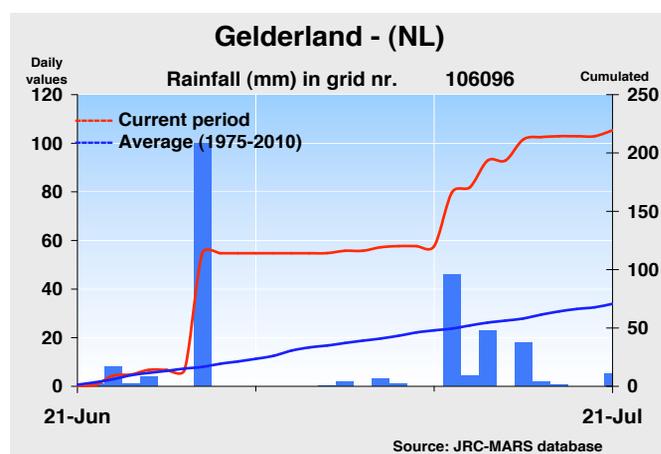
At the end of July, the country faced peak temperatures with values of 31.8 °C during the day and 19.3 °C at night. Temperatures otherwise fluctuated within seasonal values around the long-term average, and in all cases were below 30 °C. In terms of precipitation, all regions received significant rainfall, especially at the end of June and during the second dekad of July. The cumulated precipitation is largely surplus; +74 % at national level and local values could be as high as +120 % as in the case of *Gelderland*. Consequently, the cumulated climatic balance is much higher than average but the cumulated active temperature is just average.

### CROP DEVELOPMENT

**Soft wheat** is at the ripening stage in the southern provinces of the country (even at maturity in *Zuid-Holland*) but still at grain filling stage in the northern regions (*Groningen*).

In all regions, relative soil moisture is at or above average. On the contrary, the profile of the simulated leaf canopy is below the long-term average. The development stage of **spring barley** is at grain-filling/ripening and shows an advance of about 10 days in all important areas of production. Rainfall during the last three dekads increased relative soil moisture to levels above LTA, but contributed to slowing down yield potential in the meantime. Yield forecast was readjusted since the last bulletin and final figures are now close to average for both cereals.

Development of **grain maize** is average and at the flowering stage in the main production regions (*Gelderland*, *Noord Brabant* and *Limburg*). Relative soil moisture is above LTA and leaf area index is simulated at above LTA level. The important amount of rain may nevertheless have a negative impact during the flowering stage; yield forecast was therefore decreased slightly, but remains at a promising level. **Sugar beet** is at tuber formation in all regions with precocity of less than 10 days. Rain during the 2<sup>nd</sup> dekad of July raised relative soil humidity to close to average levels (*Zuid-Holland*) or much higher (*Groningen*). Level of simulated leaf canopy is higher than LTA and even near the upper seasonal limit in *Zuid-Holland*. These conditions are very favourable and therefore potential yield is estimated at a level similar to that in 2009. Yield forecast has been revised upwards. A similar promising result is shown for the yield potential of **potato**, but an excess of water could affect crops in all regions (the north is less of a concern). Relative soil moisture in many locations is indeed quite close to the upper limit of the range of variation. Yield forecast could be revised downwards if it continues to rain considerably.



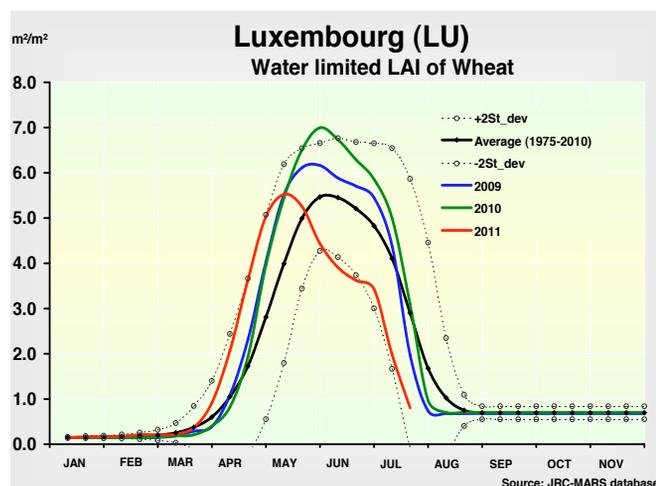
## Luxembourg — Yield prospect for soft wheat close to that of last year.

| LUXEMBOURG |            |                     |          |        |          |
|------------|------------|---------------------|----------|--------|----------|
|            | Yield t/ha |                     |          |        |          |
|            | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat | 5.96       | 5.82                | 6.15     | -2.4   | -5.5     |

### Weather conditions in June extended the grain filling period and yield performance is close to the 2010 level.

The cumulated precipitation at the end of the second dekad of July is still in deficit by -15 % despite rains since the end of June. Temperature values fluctuated around the long-term average within the seasonal range of variation, except on the 28<sup>th</sup> of June when both minimum and maximum temperatures were above the upper limit of the range of variation. Consequently, the cumulated active temperature was at average level during the three dekads under analysis and the relative soil moisture for soft wheat increased but is still lower than LTA. The yield prospect for soft wheat — at maturity already in many places — is much lower than LTA. This is a consequence of the important precocity (20 to 30 days in advance) and the underdeveloped leaf canopy since

mid-May. This negative aspect is partially compensated by favourable weather conditions in June during the grain filling stage. Storage organ weights under hydric stress conditions are simulated at a level, which is similar to that in 2010. The previous estimate is therefore slightly increased.



## Ireland — Good conditions for all crops.

| IRELAND       |            |                     |          |        |          |
|---------------|------------|---------------------|----------|--------|----------|
|               | Yield t/ha |                     |          |        |          |
|               | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat    | 8.6        | 9.16                | 8.68     | +6.6   | +5.6     |
| winter barley | 8.5        | 8.57                | 8.22     | +0.8   | +4.2     |
| spring barley | 6.7        | 6.96                | 6.56     | +3.9   | +6.1     |
| potato        | 34.4       | 33.24               | 32.02    | -3.4   | +3.8     |

The season remains very favourable for good yields, for both winter and summer crops in the main Irish agricultural regions. All crops are expected to accumulate more than average biomass, suggesting a good yield potential.

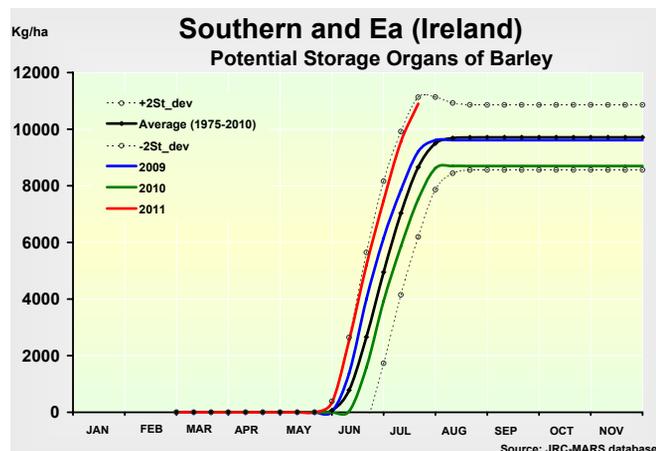
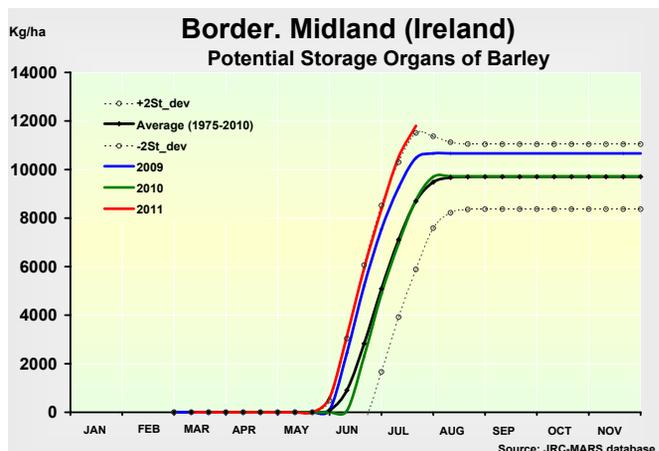
### AGROMETEOROLOGICAL ANALYSIS

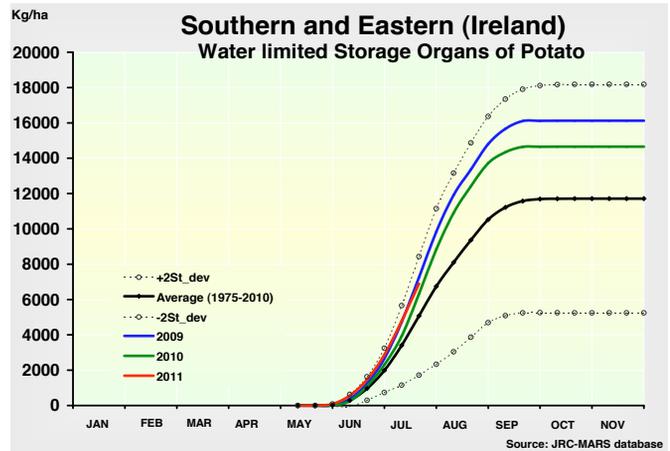
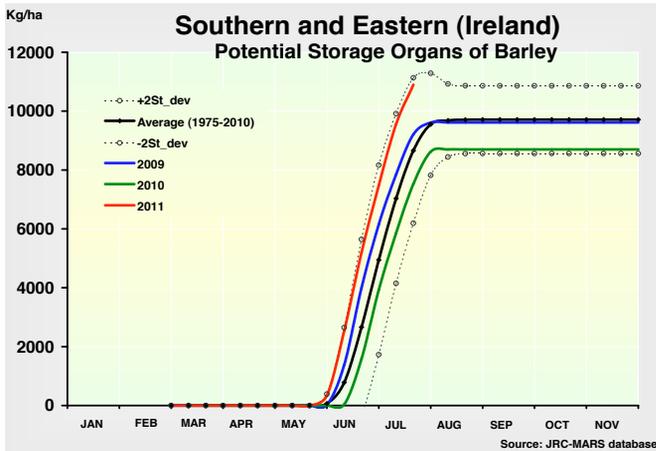
Precipitations in the month of June have been high for the season in the south-east and the mid-west but stayed

closer to normal elsewhere. Temperatures are similar to long-term average while solar radiation and cumulated temperatures are slightly below average for the current period (20<sup>th</sup> June to 20<sup>th</sup> July). Overall, growing conditions have remained favourable during most of the season for Ireland.

### CROP DEVELOPMENT

Crop growing conditions have remained favourable, thus assuring above-average storage organ accumulation for all crops. There is still some precocity in development of **wheat** and **barley** but not for **potatoes**, for which our crop simulations have nevertheless indicated a higher than average leaf area and biomass. With the extra information available during this period of analysis, yield forecasts have been slightly revised but they all remain above average.





**Denmark — Important rainfall but overall yields are still expected to be moderately high.**

| 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       | 5.90                | 5.69     | +8.7   | +3.7     |
| spring barley  | 5.00       | 5.20                | 4.88     | +4.1   | +6.6     |
| turnips (rape) | 3.48       | 3.71                | 3.57     | +6.7   | +4.0     |
| sugar beets    | 60.10      | 58.35               | 56.64    | -2.9   | +3.0     |
| potato         | 35.27      | 42.07               | 38.68    | +19.3  | +8.7     |

**Heavy rains occurred since mid-May with some particular intensive events along the eastern coast of Jutland. While heavy rains ensure water availability, they can also produce a slight negative impact on yields, counter-balance the otherwise good growing conditions, and provide slightly optimistic forecasts for all crops.**

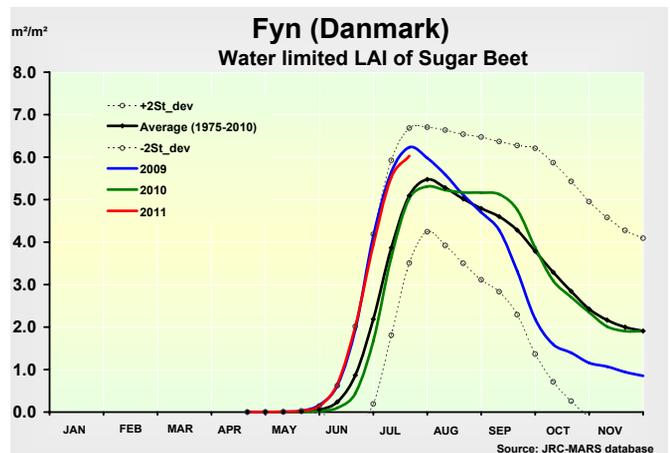
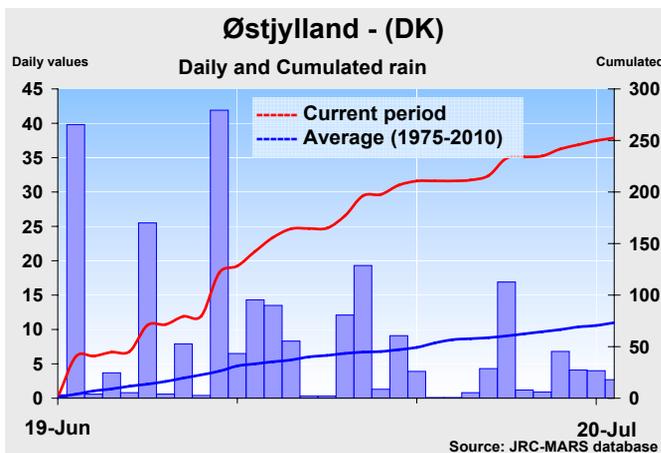
**AGROMETEOROLOGICAL ANALYSIS**

It has rained much over all of Denmark. The result is a change over from a water deficit to an excess of water condition on the Danish part of the *Jutland* peninsula. In *Sjaelland*, the dry spring has only now been compensated by rain to provide an

average water balance. High precipitation events (> 90 mm/day) were recorded locally at the end of June on the eastern coast of *Midjylland*. Cumulated active temperature and solar radiation remain above average, except for solar radiation in *Nordjylland* that is equal to the long term average.

**CROP DEVELOPMENT**

**Wheat** and **barley** are going through their grain-filling development phase with a relative advance compared to the long-term average. Although these crops might need slightly excessive precipitation for optimal grain filling, yield expectation remains above average for now. In *Midjylland*, the high precipitation events might cause lodging which could eventually decrease grain quality. **Rapeseed** has reached maturity over the season after being in advance since April, resulting in relatively high expected yield. After the early start, development of **sugar beet** has continued to be in advance compared to the long term average, thus enabling a much higher than normal leaf area and biomass accumulation in the main producing areas of *Fyn* and *Sjaelland*. This is also the case for **potato** in the main producing regions in *Jutland*. Overall, yields for summer crops are still expected to be high and forecasts remain optimistic.



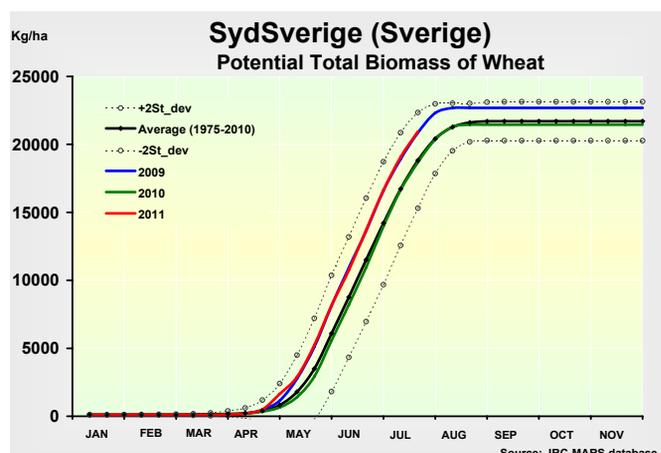
## Sweden — Relatively good yields expected amidst high precipitations.

| SWEDEN         |            |                     |          |        |          |
|----------------|------------|---------------------|----------|--------|----------|
|                | Yield t/ha |                     |          |        |          |
|                | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat     | 5.40       | 5.92                | 5.86     | +9.7   | +1.0     |
| winter barley  | 4.64       | 5.30                | 5.18     | +14.1  | +2.1     |
| spring barley  | 3.93       | 4.41                | 4.15     | +12.2  | +6.3     |
| turnips (rape) | 2.55       | 2.91                | 2.69     | +14.1  | +8.2     |
| sugar beets    | 52.08      | 56.03               | 53.67    | +7.6   | +4.4     |
| potato         | 30.08      | 30.45               | 29.81    | +1.2   | +2.1     |

Despite the unusually high cumulated precipitation in the south, growing conditions during June and July have nevertheless remained favourable. Crop development is in advance and biomass accumulation is above average. However, the optimistic forecast must be tempered by the uncertainty regarding the effects of the harsh winter, dry spring and wet summer.

### AGROMETEOROLOGICAL ANALYSIS

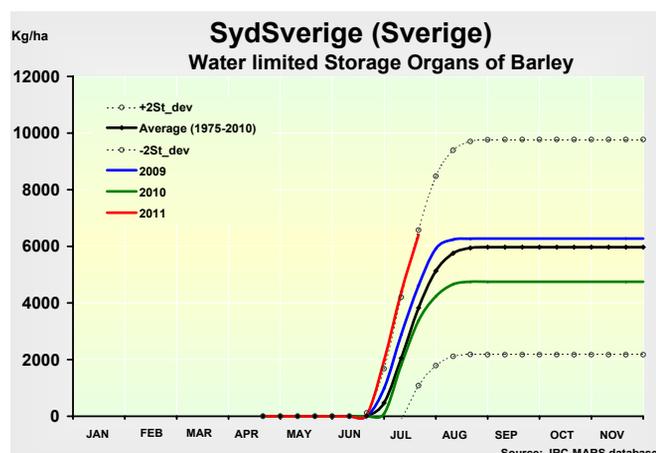
Many parts of Sweden have witnessed heavy precipitation in June and mid-July. In *Sydsverige*, this has taken the



cumulated water balance to well above average while in *Östra Mellansverige*, where it rained less in May and June, the water balance is now closer to average conditions. For the current period, solar radiation and temperatures have remained close to average but over the entire season. These cumulated values have been significantly above average, thereby providing generally good growing conditions.

### CROP DEVELOPMENT

Growing conditions during June and July have remained favourable thereby maintaining all crop developments on the same course: advance in crop development with respect to the long term average and higher than usual storage organ weights and biomass accumulation. This optimistic picture must be tempered with several events that have stricken winter crops such as the harsh winter, the spring drought and the recent heavy precipitations. Winter crop yield forecasts are therefore maintained slightly above average level while those of summer crops are more confidently higher than average in general.



## Finland — Mild weather and advanced crop development confirmed yield expectations.

| FINLAND        |            |                     |          |        |          |
|----------------|------------|---------------------|----------|--------|----------|
|                | Yield t/ha |                     |          |        |          |
|                | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat     | 3.43       | 3.55                | 3.71     | +3.6   | -4.2     |
| spring barley  | 3.07       | 3.47                | 3.45     | +13.1  | +0.6     |
| turnips (rape) | 1.13       | 1.27                | 1.37     | +12.4  | -7.6     |
| sugar beets    | 37.13      | 40.09               | 38.24    | +8.0   | +4.8     |
| potato         | 26.15      | 27.63               | 25.3     | +5.7   | +9.2     |

Country experienced slight surplus of precipitation and greater than usual accumulation of temperature and solar radiation.

### AGROMETEOROLOGICAL ANALYSIS

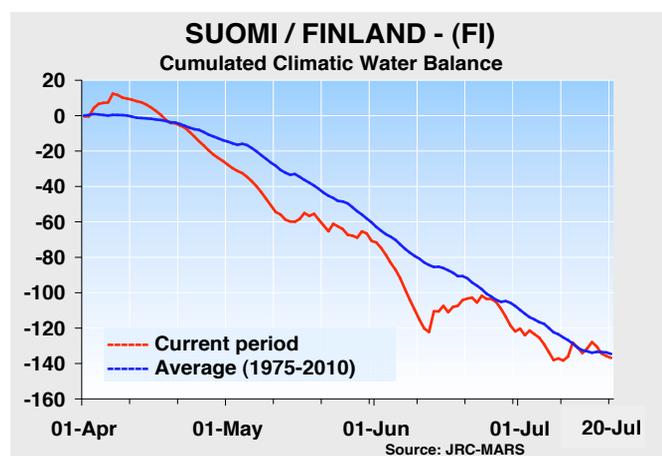
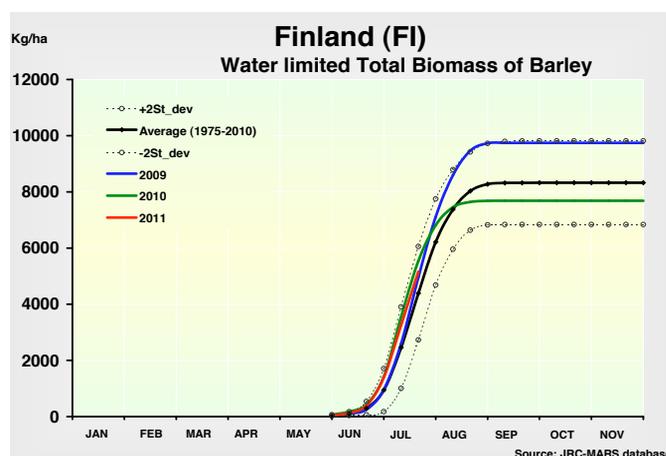
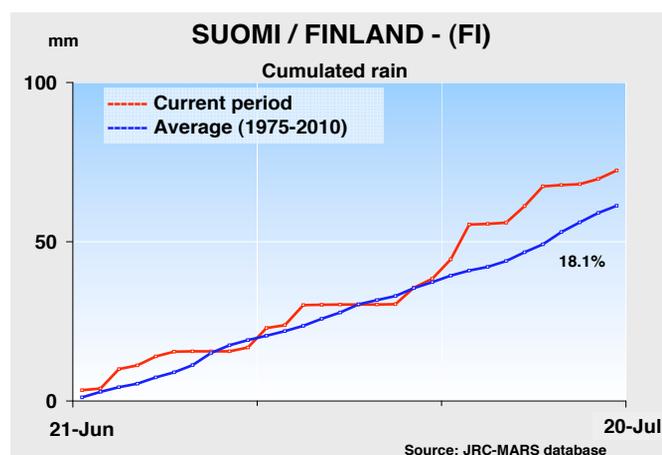
In the period concerned, accumulation of active temperatures and solar radiation were above the average limits all over the country. The first dekad of July was the warmest; maximum daily temperatures exceeded 30 °C in the south-east (*Etela-Suomi*) and locally in other areas of the country. Some peaks were recorded both for minimum and maximum temperature above limits of two standard deviations. Precipitation was average in the first half of the period, whereas it was above the normal seasonal line in the second half. Local daily amounts of rain exceeded 30 mm. The

overall cumulated rainfall was higher than the long-term average by 18 %. Since the beginning of the season, the precipitation sum has been equal to the average value and cumulated water balance course has been slightly below the usual seasonal line. This is because of the high potential evapotranspiration rate.

## CROP DEVELOPMENT

Development of crops has advanced as compared to the average yearly figure by 7-10 days. It slowed down slightly in the last dekad. Soil water supplies for **cereals** are now slightly above the long term average value. Our simulations for **soft wheat** storage organ content show good values that are decidedly above last year's ones. Soft wheat is filling grains, and has started ripening locally in the south-east. **Spring barley** is also filling grains. Accumulation of biomass for this crop has shown good potential. The next dekads will

nevertheless be crucial for yield formation unless weather conditions for crop growth become more favourable than last year.



## Lithuania — Shortened crop development. Cereals yield revised downward.

| LITHUANIA     |            |                     |          |        |          |
|---------------|------------|---------------------|----------|--------|----------|
|               | Yield t/ha |                     |          |        |          |
|               | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat    | 3.31       | 3.58                | 3.61     | +8.2   | -0.9     |
| spring barley | 2.70       | 2.91                | 2.64     | +7.7   | +10.4    |
| tumips (rape) | 1.65       | 1.78                | 1.75     | +7.6   | +1.2     |
| sugar beets   | 47.22      | 49.31               | 43.49    | +4.4   | +13.4    |
| potato        | 12.99      | 13.71               | 12.17    | +5.6   | +12.7    |

**Weather conditions have remained mild but crop development is at an advanced stage: around one week for cereals and three weeks for rapeseed. Soft wheat yield is revised downwards but there is still good potential for spring crops.**

## AGROMETEOROLOGICAL ANALYSIS

Active temperatures and solar radiation in Lithuania were observed to be equal to the seasonal long-term average. Thermal conditions were mild with maximum daily temperatures below 30 °C and relatively high minimum temperatures (above the long term average). The amount of precipitation

in the last dekad of June was seasonal but it was higher than usual (by 36 %) in July, all over the country. The highest values (above 120 mm) were recorded across the south-eastern areas towards the centre and the north of the country. These areas recorded 7-9 days of significant rainfall (above 5 mm/d), while *SiauliuApskritis* experienced four days of rain above 15 mm/d. Some days with rainfall above 30 mm were observed at local level. Consequently, soil water supplies increased slightly above average level, and climatic water balance was equal to zero during the observation period. Mild weather conditions have persisted in the country since the beginning of April. The sum of active temperatures is above average and seasonal amount of rainfall (cumulated climatic water balance) is slightly below the long-term average.

## CROP DEVELOPMENT

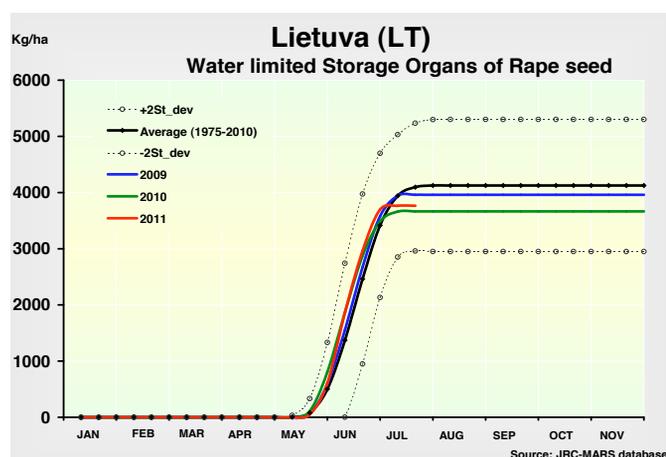
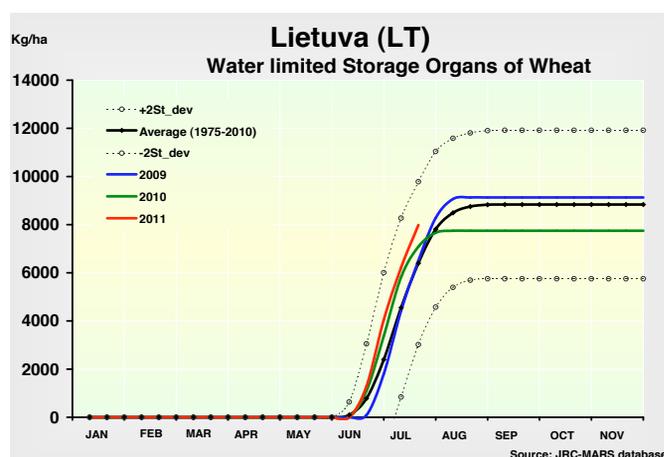
**Winter wheat** is filling grains and crop development is about one week advanced as compared to the long-term average. Crop-growth model simulations show storage organ content to be above last year's values. Winter crops may have suffered the consequences of a bad campaign in Lithuania last year: late sowing because of over-wet soils and later than usual start of development after a long

winter. The updated figure for cultivated area of soft wheat in Lithuania shows that cultivated area of **spring wheat** has doubled, leading to a slight decrease in yield values.

**Spring barley** is filling grains locally in the south-eastern areas where it has started ripening and crop development is at an advanced (up to 10 days) stage. Model simulation shows biomass and storage organ accumulation to be above average level and above last year's line, but the next decade will be crucial for final grain yield formation.

**Rapeseed** development, among the analysed crops, is the most advanced (even three weeks) as compared to LTA; and has reached maturity. Biomass and storage organ content present higher values than last year but the crop developed very quickly and a reduction of yield is likely to take place.

**Tuber crops** development is also advanced as compared to LTA (up to two weeks) and more advanced than the previous two years.



## Latvia — Advanced development and risk of shortened crop growth cycle are leading to lower yield expectations.

|                | LATVIA |                     |          |        |          |
|----------------|--------|---------------------|----------|--------|----------|
|                |        | Yield t/ha          |          |        |          |
|                | 2010   | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat     | 3.28   | 3.48                | 3.43     | +6.0   | +1.5     |
| spring barley  | 2.80   | 2.58                | 2.38     | -7.9   | +8.3     |
| turnips (rape) | 2.13   | 2.06                | 2.06     | -3.1   | +0.3     |
| potato         | 16.03  | 16.70               | 15.84    | +4.2   | +5.5     |

**Continuous mild weather and advanced crop development. Crop yield expectations slightly above the 5-year average.**

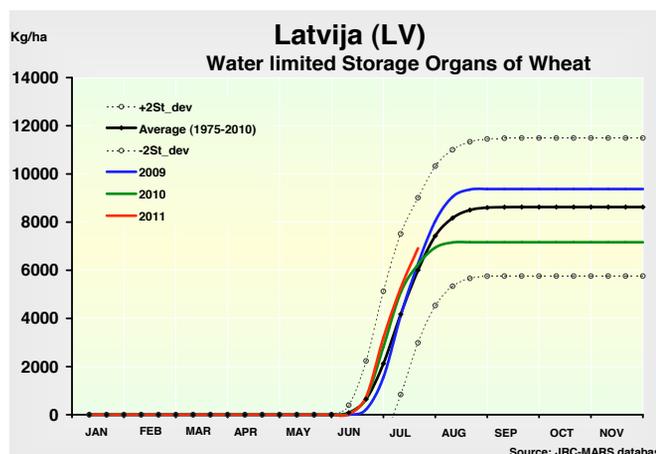
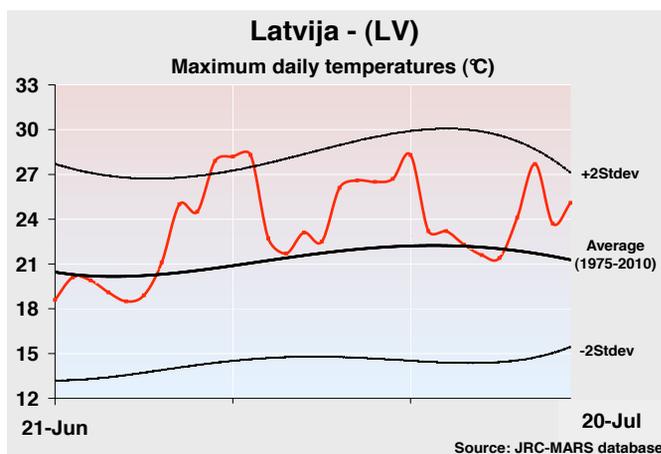
### AGROMETEOROLOGICAL ANALYSIS

In the concerned period, accumulation of active temperatures and solar radiation were above the normal seasonal range and cumulated temperatures exceeded LTA by +13 %. Maximum and minimum temperatures have been continuously above average since the beginning of July. The highest temperatures were recorded in the first dekad of July but only once, in the *Latgale* region, when the maximum temperature exceeded 30 °C. Mild temperatures persisted all over the country. Precipitation recorded in the analysed period was close to the long-term average. Rainfall deficit

(-12 % LTA) has been recorded in the country since the beginning of April. In the last dekad of June, western areas (*Kurzeme*) received more rain, while higher amounts of rainfall have been observed in the east, in June. The important agricultural regions in the central-south and south-eastern areas (*Latgale* and the east of *Zemgale*) have generally suffered rainfall deficits of between 10 % and 30 % as compared to LTA. Nevertheless, rainfall was beneficial for plants all over the country.

### CROP DEVELOPMENT

**Soft wheat** has started ripening in the north; at least two weeks in advance, while development is less advanced in most areas and wheat is filling grains. The next dekad will be crucial for consolidation of grain yields. **Spring barley** is also filling grains in Latvia in advance of 8 days, but it is flowering (with average status of development) locally along the Baltic Sea border and in the centre. Soil water supplies for spring barley have now reached seasonal level after a prolonged stay below the long-term average. **Rapeseed** storage organ content, simulated with the crop-growth model, is now below the long-term average and below last year's values.



**Estonia — Still not enough rain for satisfactory yields and milder temperatures than last year.**

| ESTONIA       |            |                     |          |        |          |
|---------------|------------|---------------------|----------|--------|----------|
|               | Yield t/ha |                     |          |        |          |
|               | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat    | 2.71       | 2.85                | 2.96     | +5.3   | -3.6     |
| spring barley | 2.41       | 2.56                | 2.49     | +6.4   | +3.1     |
| tumips (rape) | 1.32       | 1.43                | 1.51     | +8.5   | -5.4     |

Since the beginning of June, soil water supplies have been below the long-term average and below that of the previous two years. Crop development is more advanced than usual. Yield forecast has been revised slightly downwards.

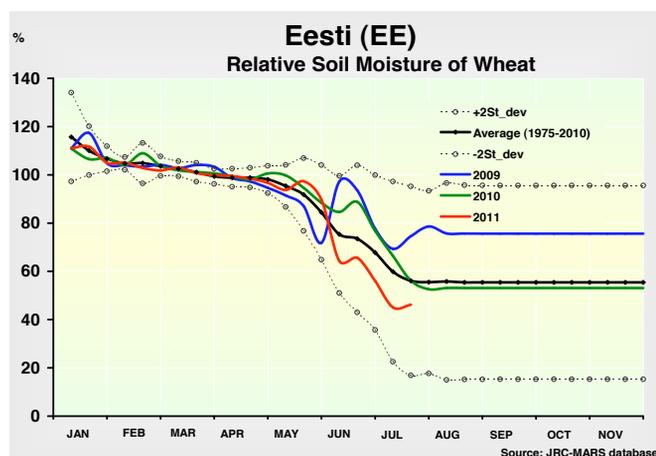
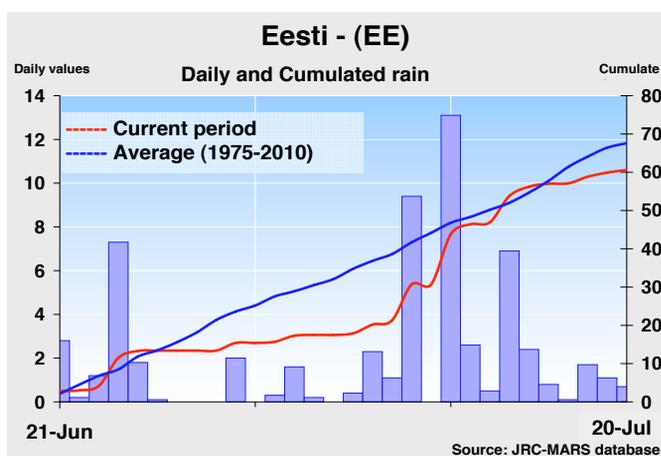
**AGROMETEOROLOGICAL ANALYSIS**

The last dekad of June experienced temperatures around the seasonal average, but since the 30<sup>th</sup> of June active temperatures have accumulated above the long-term average and have exceeded this value by +13 % (50-80 GDD) at the end of the concerned period. Both minimum and maximum daily temperatures have been above the usual seasonal line for almost the entire period. Temperatures above 30 °C were recorded on one day in the west. Average temperatures during the period (since 21<sup>st</sup> June)

exceeded two standard deviations, but were lower by 0.8 °C than temperatures recorded for the same period last year. Cumulated solar radiation was also slightly above the seasonal average line. The country received lower than usual rainfall by 10 % as compared to the yearly average, and this has changed to 23 % from April. The temporal evolution of the climatic water balance since the beginning of the season has been below average and is now lower than usual by 60 mm. The country received some beneficial rain in July, leading to a slight recovery of the soil water status.

**CROP DEVELOPMENT**

According to the crop-growth model simulation, **soft wheat** in the majority of areas is ripening. Locally in the south-east (*Louna-Eesti*), it has just reached maturity while it is filling grains in the north. Soft wheat development is at an advanced stage as compared to the yearly average, between 7-9 days in the centre and three weeks in the south-east. Very quick development and below average soil water supplies will not create high yields. Accumulation of storage organ has just reached a value that is similar to that from last year. The next decade will be crucial for yield establishment. **Spring barley** is filling grains in advance of 7-9 days.



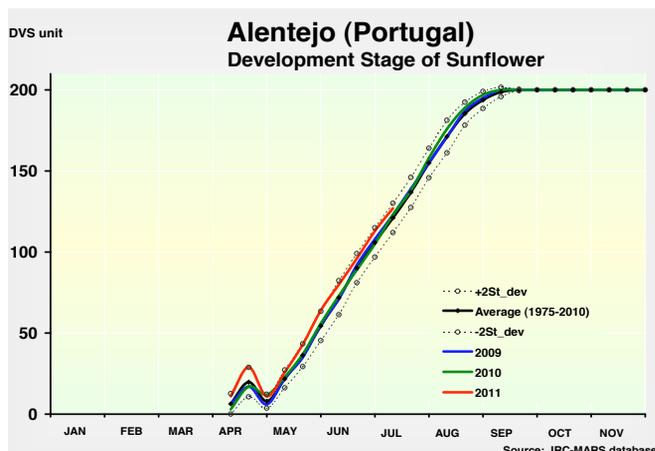
## Portugal — Meteorological conditions favoured the development of spring crops.

| 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       | 0.71                | 0.61     | +29.1  | +16.0    |
| potato        | 13.06      | 15.57               | 14.6     | +19.2  | +6.6     |

**Winter crops have been harvested. Precipitations above seasonal values in Alentejo have increased yield expectations for sunflower.**

### AGROMETEOROLOGICAL ANALYSIS

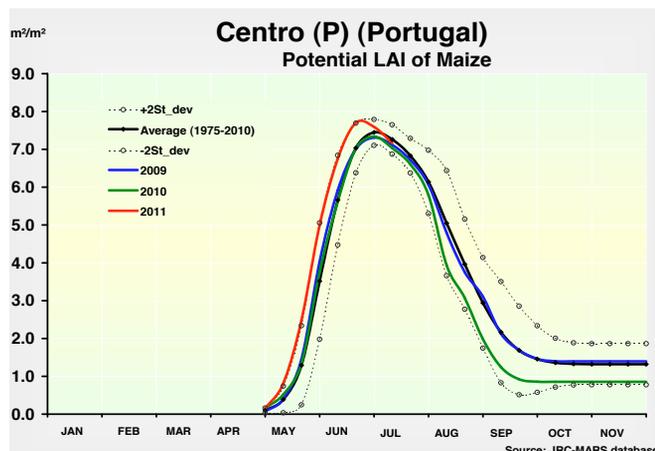
Meteorological conditions observed from May-July describe a contrasted situation between *Alentejo* and the northern regions (*Norte* and *Centro*). In the latter, the rainfall accumulated in that period has been substantially lower (-30 %) than the long-term average, with temperatures higher than the seasonal values. In *Alentejo*, rainfall during the end of April, May and the first two weeks of June has considerably (+80 %) exceeded the accumulated rainfall typical for these months.



### CROP DEVELOPMENT

Yield forecast for **soft wheat** is 1.74 t/ha, 20 % higher than that of last year, but 10 % lower than the average of the 2006-2010 period (yields were exceptionally high in 2008 and 2006). The forecast for **winter barley** is much higher than in 2010 (+24 %) and close to the average of the last five years. Both crops have already been harvested.

**Sunflower** has reached the grain filling development stage, and the meteorological conditions experienced during May and June — rainfall and temperatures higher than seasonal values — have been favourable for plant development. The forecasted yield is consequently 10 % higher than the period 2006-2010. **Grain maize** presents advancement of the development stage – by about ten days — as against the long-term average, and no constraints are foreseen in the following weeks. Yields are therefore expected to be close to the average of the previous years. And lastly, **potato** benefited from the accumulated rainfall during spring and from warm temperatures so that expectations are now 6.6 % higher than the average of the last five years.



## Greece — Poor expectations confirmed for winter crops.

| GREECE        |            |                     |          |        |          |
|---------------|------------|---------------------|----------|--------|----------|
|               | Yield t/ha |                     |          |        |          |
|               | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat    | 2.91       | 2.66                | 2.79     | -8.7   | -4.7     |
| durum wheat   | 2.49       | 2.12                | 2.45     | -14.7  | -13.3    |
| winter barley | 2.84       | 2.38                | 2.42     | -16.3  | -1.7     |
| grain maize   | 10.18      | 10.13               | 9.92     | -0.5   | +2.1     |
| sunflower     | 1.72       | 1.25                | 1.28     | -27.3  | -2.1     |
| sugar beets   | 81.25      | 66.74               | 70.72    | -17.9  | -5.6     |
| potato        | 26.89      | 24.93               | 25.27    | -7.3   | -1.4     |

**Drier and warmer conditions came too late to positively impact on winter crops. Only average accumulation is depicted for spring crops too.**

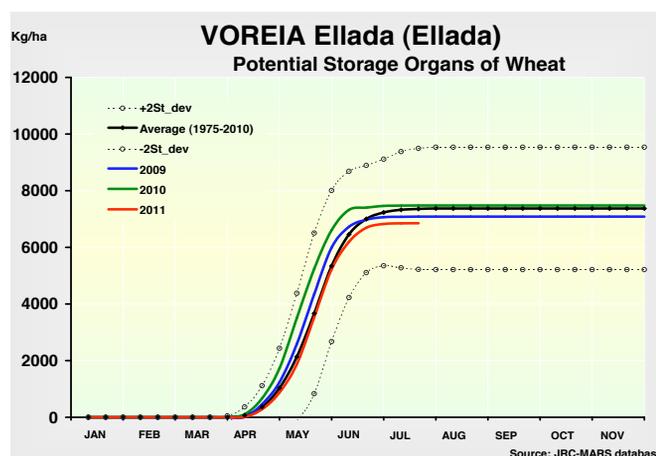
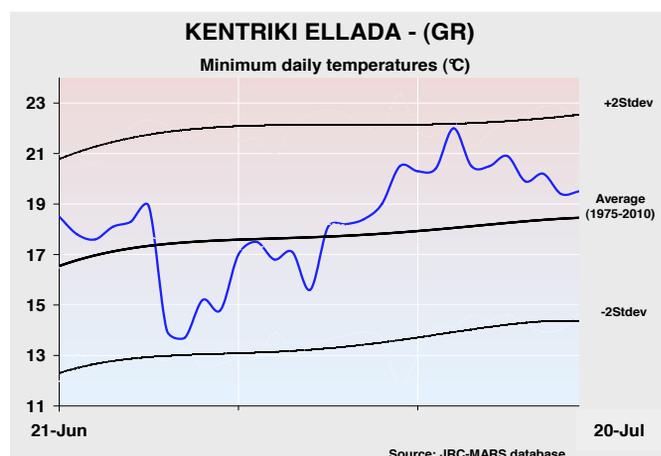
### AGROMETEOROLOGICAL ANALYSIS

Rainfall was absent all over Greece during the analysis period, in line with the seasonal pattern of precipitation. Temperatures increased with respect to the former analysis period but exceeded the average value only from the beginning of July onwards. Cumulated temperatures were higher than the long-term average in the continental area and along the coast of the Ionian Sea. However, the eastern part experienced colder conditions that further prolonged deficit in GDD accumulation. Irradiance level improved clearly but winter crops were already too advanced to profit from the high solar radiation that was offsetting the earlier poor conditions.

## CROP DEVELOPMENT

Sub-optimal conditions for development characterised the season until the last part of the cycle thereby preventing any possibility of offsetting the already announced poor conditions with an increased average weight of grains. Therefore **winter wheat** and **barley** have been revised slightly downwards to depict a season that is clearly below the 5-year average. Although delayed, harvest has now been completed in almost all regions. **Grain maize** completed flowering

and simulated values of canopy expansion have reached optimal levels, which may guarantee satisfactory biomass accumulation rates. **Potatoes** also show an average development, and thanks to the persistence of humidity until late in the season, the available water should be enough for an adequate yield formation. The picture drawn for **sugar beet** and **sunflower** is less satisfactory. Leaf area index of the tuber crop is dropping too fast to support an optimal yield formation. **Sunflower** suffered due to the cold weather and only now seems to be gaining biomass properly.

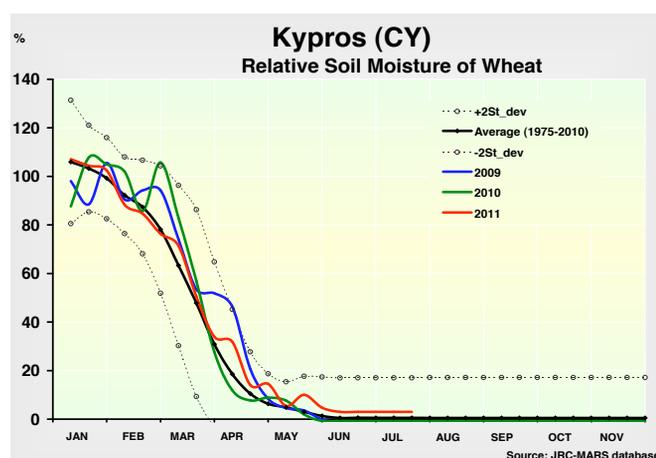


## Cyprus — Previous figures have been confirmed.

| 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    |

### Optimal conditions for harvest activities.

The weather was warm with the exception of a drop in temperatures at the beginning of July. Daily maxima climbed to above 35 °C from the 10<sup>th</sup> of July onwards. The lack of rain permitted an optimal and fast ripening, confirming the favourable yield potential predicted in the previous analysis.



## Hungary — Severe hot spell decreased maize yield expectations.

| HUNGARY        |            |                     |          |        |          |
|----------------|------------|---------------------|----------|--------|----------|
|                | Yield t/ha |                     |          |        |          |
|                | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat     | 3.73       | 4.26                | 4.05     | +14.1  | +5.1     |
| durum wheat    | 3.32       | 3.95                | 3.82     | +19.1  | +3.5     |
| winter barley  | 3.57       | 4.02                | 3.88     | +12.6  | +3.5     |
| spring barley  | 3.02       | 3.12                | 3.17     | +3.2   | -1.6     |
| grain maize    | 6.63       | 6.19                | 6.21     | -6.6   | -0.2     |
| turnips (rape) | 2.16       | 2.19                | 2.32     | +1.5   | -5.6     |
| sunflower      | 1.97       | 2.36                | 2.25     | +20.1  | +4.9     |
| sugar beets    | 58.34      | 55.17               | 53.01    | -5.4   | +4.1     |
| potato         | 21.73      | 25.14               | 24.24    | +15.7  | +3.7     |

Winter cereals yield expectation improved slightly and dry weather provided favourable conditions for harvesting. The extremely hot spell in July decreased the yield potential of spring crops.

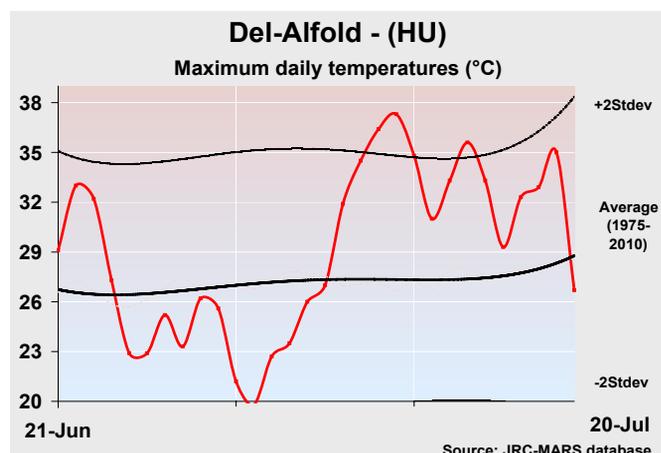
### AGROMETEOROLOGICAL ANALYSIS

Although the mean temperature approached the average during the last month, this was the result of two very different weather spells. The first half of the time-period considered was mostly colder than average, but from 6<sup>th</sup> July onwards, dramatic warming pushed daily maximum temperatures to above 30 °C. A record-setting heat wave affected Hungary on

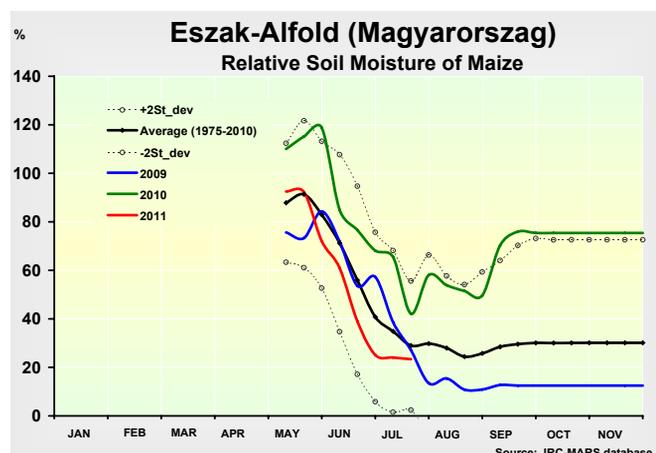
10<sup>th</sup> July, when daily maximum values reached from +36 °C to +39 °C on the Hungarian Great Plain. The extreme hot spell continued until 19<sup>th</sup> July. The precipitation sum remained below normal by 25-50 mm in the southern regions. Several places were hit by severe thunderstorms, where heavy rains, stormy winds and hail caused local damages to crop stands. The cumulative climatic water balance since 1<sup>st</sup> May indicates moderate (from -50 to -100 mm) deficiency.

## CROP DEVELOPMENT

The dryer weather conditions were favourable for ripening and reaping of winter cereals. Yield expectations have been slightly increased but these are still at average level of the past 5 years.



Most spring crops were affected by the heat wave and actual damages are difficult to evaluate. **Maize** was in the vulnerable flowering stage or had just stepped into the grain filling stage. Furthermore, heat combined with below average soil moisture content in the *Del-Dunantul* and *Del-Alfold* regions (the most important maize producing area in Hungary), decreased fertility of maize pollen. Yield expectation of maize was revised sharply downwards. The model simulation suggests below average moisture content in the upper soil layers but this deep rooting crop can still get supply from the deeper layers. **Sunflower** was less affected by the dry weather because this crop is more drought tolerant. Soils are wetter in the northern part of Hungary, mainly in the *Kozep-Dunantul* and *Eszak-Magyarország* regions.



## Slovakia — Above-average yield forecast for winter crops.

| SLOVAK REPUBLIC |            |                     |          |        |          |
|-----------------|------------|---------------------|----------|--------|----------|
|                 | Yield t/ha |                     |          |        |          |
|                 | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat      | 3.46       | 4.29                | 4.00     | +24.0  | +7.2     |
| durum wheat     | 3.58       | 4.72                | 4.33     | +31.7  | +9.0     |
| winter barley   | 3.17       | 3.89                | 3.57     | +22.6  | +9.0     |
| spring barley   | 2.67       | 3.30                | 3.37     | +23.6  | -2.1     |
| grain maize     | 5.49       | 7.12                | 6.04     | +29.7  | +17.8    |
| turnips (rape)  | 1.97       | 2.39                | 2.21     | +21.5  | +8.2     |
| sunflower       | 1.81       | 2.34                | 2.15     | +29.3  | +9.0     |
| sugar beets     | 54.52      | 59.27               | 53.26    | +8.7   | +11.3    |
| potato          | 11.45      | 16.12               | 15.43    | +40.8  | +4.4     |

**Wet weather replenished soil moisture content and provided good conditions for yield development of spring crops. Rainfall delayed ripening of winter crops but yield expectations are high.**

## AGROMETEOROLOGICAL ANALYSIS

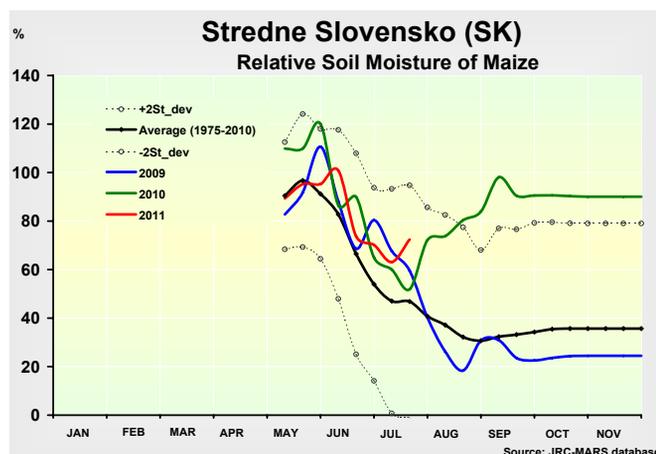
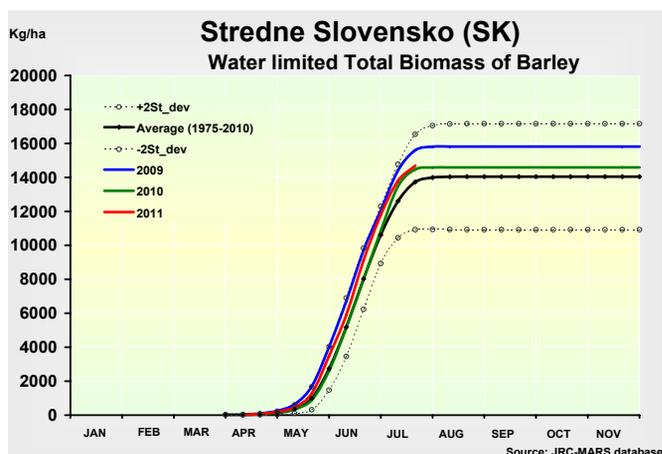
Temperatures fluctuated around the average value during the time-period under consideration and heat conditions were normal. The slightly positive cumulated active temperature ( $T_{base}=0$  °C) balance indicates a somewhat advanced

phenological development of spring crops. Rainfall during the considered time-period reached 80-130 mm, which is approximately +60 % above the usual limit. Precipitation along the Polish border exceeded 150 mm. The cumulated global radiation remained below average.

## CROP DEVELOPMENT

Frequent and plentiful precipitation favoured the development of **spring crops**, but hampered the harvest of **winter cereals**. There is a small probability of significant yield losses due to wet weather. Good harvest is expected with high **wheat, barley** and **rapeseed** production, which will to some extent compensate producers for the deficit from the previous very bad year.

Soil moisture content under **maize** crop exceeds the average, but this fact does not hinder plant development and photosynthetic activity. Canopy expansion and biomass accumulation values for **maize** and **sunflower** suggest ample yields. In the case of **potato** some scattered spots were too wet but yield potential is still quite fair. **Sugar beet** biomass accumulation seems to be better than average and especially good in the *Zapadne Slovensko* and *Stredne Slovensko* regions.



**Austria — Summer crops show an optimal canopy development with strong similarities to 2009.**

| AUSTRIA        |            |                     |          |        |          |
|----------------|------------|---------------------|----------|--------|----------|
|                | Yield t/ha |                     |          |        |          |
|                | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat     | 5.04       | 5.28                | 5.10     | +4.7   | +3.4     |
| durum wheat    | 4.50       | 4.50                | 4.37     | +0.0   | +3.1     |
| winter barley  | 5.39       | 5.49                | 5.47     | +1.8   | +0.3     |
| spring barley  | 3.59       | 3.90                | 3.92     | +8.7   | -0.5     |
| grain maize    | 9.28       | 10.89               | 10.02    | +17.4  | +8.7     |
| turnips (rape) | 3.17       | 2.95                | 3.10     | -6.9   | -4.7     |
| sunflower      | 2.62       | 2.67                | 2.60     | +2.0   | +2.6     |
| sugar beets    | 69.84      | 71.01               | 67.62    | +1.7   | +5.0     |
| potato         | 30.57      | 32.86               | 31.12    | +7.5   | +5.6     |

south of the country and led to a deficit in the cumulated precipitation values by about -50 %. This in conjunction with the very high temperatures registered from the 10<sup>th</sup> of July onwards pushed the evapotranspiration rate to levels that might not be adequately supported on light soils with low water availability.

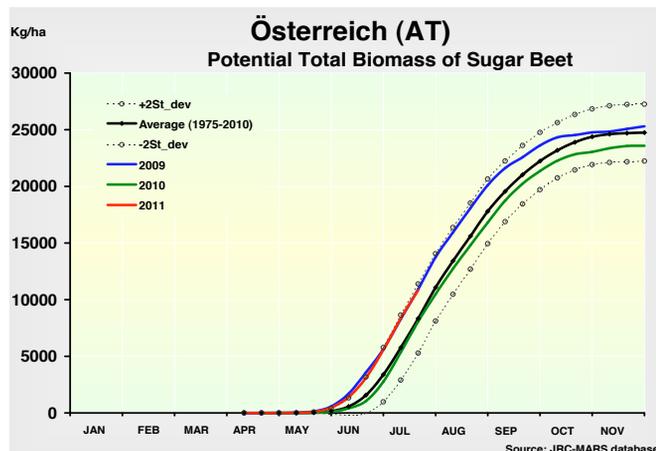
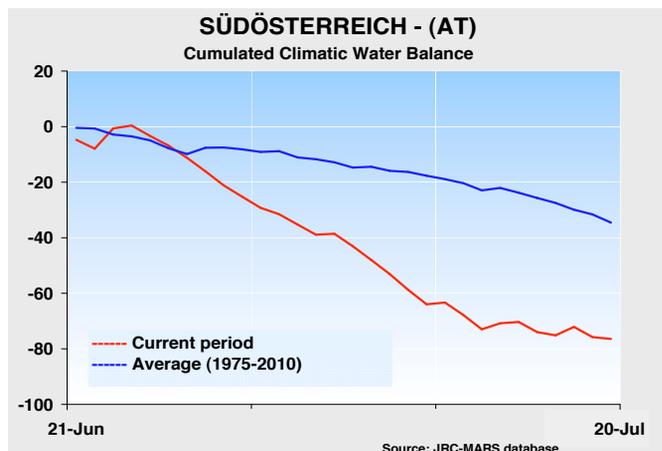
**CROP DEVELOPMENT**

Even though the first figures published by the Austrian Statistics Office provide rather pessimistic estimates, simulated biomass accumulation values nevertheless remain satisfactory both for **barley** and **wheat**. The favourable weather conditions since May and especially in the last decades of July were optimal for grain filling. **Barley** and **rapeseed** harvest is almost completed all over the country but only a part of the wheat fields have been threshed. **Spring barley** is completing the grain filling phase in advance and yield potential might be reduced due to heavy rains during flowering (rainfall at flowering exceeded 100 mm in the south). **Grain maize** has not yet entered into flowering but an optimal canopy expansion is simulated. A strong advance in development is depicted for **sugar beets** but will be less pronounced for **potato** and **sunflower**. Soil water content seems to be satisfactory for spring crops, which show an above average accumulation rate of storage organs, well supported by optimal leaf area development.

**Warm weather and good water availability should guarantee optimal conditions for spring crops. Harvest of winter cereals started in advance and still continues.**

**AGROMETEOROLOGICAL ANALYSIS**

Light but frequent precipitation in the eastern part of the country kept cumulated values close to average. Rainfall did not negatively affect irradiance levels, which were optimal during the last decades. A drop in temperature was observed at the beginning of July but it was followed by rather hot conditions. Daily maxima stayed above 30 °C for several days and impacted negatively on the last stages of winter crop grain filling. There was only isolated rainfall in the



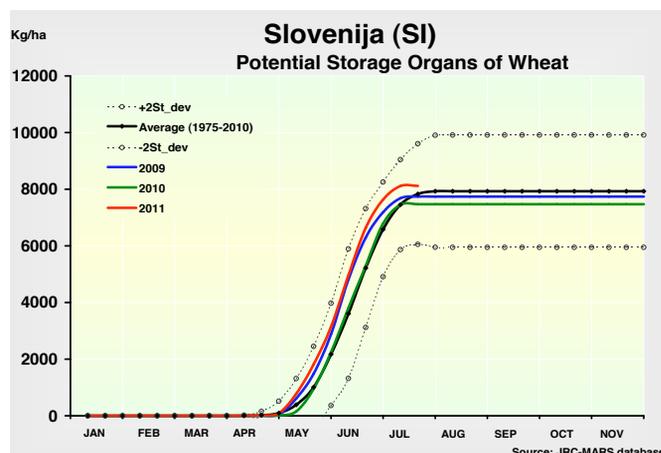
## Slovenia — Positive expectations for winter crops are confirmed.

| SLOVENIA      |            |                     |          |        |          |
|---------------|------------|---------------------|----------|--------|----------|
|               | Yield t/ha |                     |          |        |          |
|               | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| winter barley | 4.30       | 4.09                | 3.82     | -5.0   | +7.0     |
| grain maize   | 8.54       | 7.98                | 7.63     | -6.5   | +4.6     |
| soft wheat    | 4.80       | 4.67                | 4.33     | -2.8   | +7.9     |

**The winter crop season is confirmed to be positive although there are some concerns due to low water availability for maize.**

### AGROMETEOROLOGICAL ANALYSIS

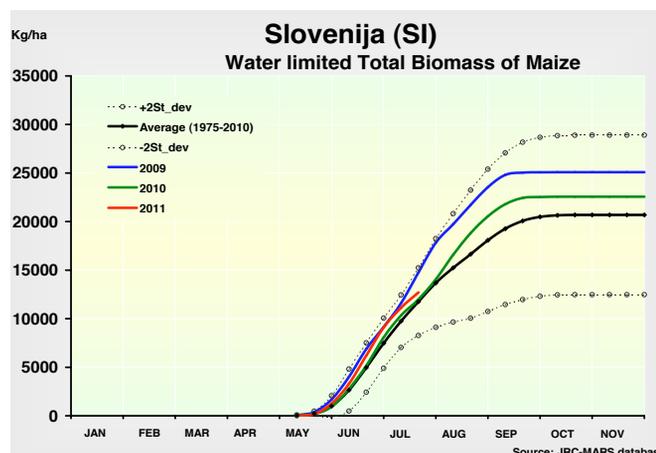
Rainfall was scarce and intensity was negligible, except for some isolated event. The cumulated values (if the well-distributed precipitations of the former period are considered) did not drop below average. Dry conditions were therefore optimal for the ripening phase of the winter cereals and for allowing access to fields for harvesting activities.



Evapotranspiration demand jumped to very high values because temperatures increased from the first week of July under clear skies with high radiation levels.

### CROP DEVELOPMENT

Despite the advance in cereals development, biomass accumulation in grain cereals seems to have reached very satisfactory levels. The former forecasts have been confirmed depicting a very positive season. **Grain maize** has not yet reached the flowering stage, which might be penalised if these high temperatures (above 35 °C) persist in the coming weeks. Moreover, given that root development occurred under humid conditions, they probably remained close to the surface and therefore any decrease in soil moisture may cause water shortage in a very sensitive development stage. Yield expectation has been reduced slightly but the impact on final yield will be much stronger if it does not rain in the next 10 days.



## The Czech Republic — Good season for winter cereals, bad season for rapeseed.

| CZECH REPUBLIC |            |                     |          |        |          |
|----------------|------------|---------------------|----------|--------|----------|
|                | Yield t/ha |                     |          |        |          |
|                | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat     | 4.99       | 5.29                | 5.09     | +6.1   | +4.1     |
| 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       | 8.17                | 7.21     | +21.8  | +13.3    |
| turnips (rape) | 2.83       | 2.89                | 3.00     | +2.2   | -3.7     |
| sunflower      | 2.11       | 2.29                | 2.25     | +8.5   | +1.6     |
| sugar beets    | 54.36      | 59.18               | 54.85    | +8.9   | +7.9     |
| potato         | 24.56      | 27.06               | 25.07    | +10.2  | +8.0     |

**Favourable heat conditions and abundant precipitation characterised last month's data. The yield expectation for all winter crops is exceeding that from the previous year. The current status of maize is fair and promises a high yield.**

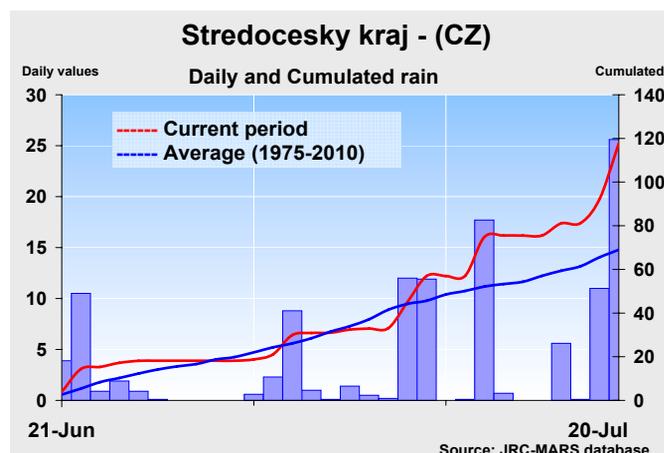
### AGROMETEOROLOGICAL ANALYSIS

Temperatures varied around the average figure during the last month and finally resulted in a near average mean temperature. Cumulated precipitation was +40 mm above average in the Czech Republic as a result of smaller and medium intensity rainfall events. The cumulated rain exceeded the average figure even in the driest *Jihovychod* region. The sky was frequently cloudy and therefore the global radiation sum fell short of the LTA by 2-3 %. The cumulated climatic water balance also indicates surplus for the examined period. The frequent rains have replenished soil moisture but may negatively affect the harvest.

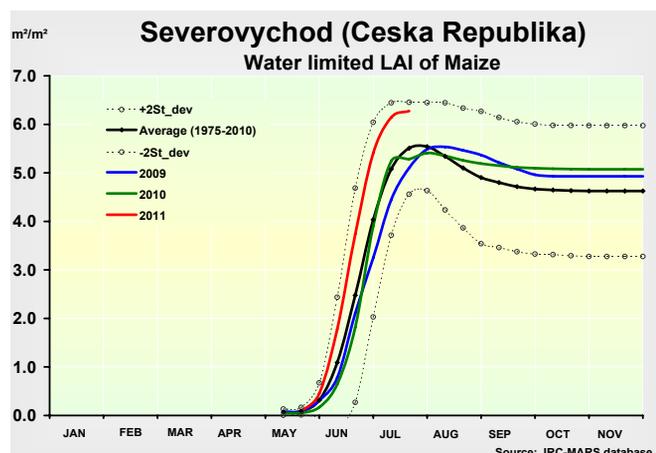
### CROP DEVELOPMENT

**Rapeseed** reached the physiological maturity stage as usual in the first dekad of July. The simulated foliage system development and actual biomass accumulation remained sub-optimal due to adverse wintering and late frost events. Yield expectations for rapeseed are moderate for this year.

**Winter wheat** development was not penalised by high temperatures or water shortage during the grain filling and ripening stages. The water limited biomass, and especially the storage organ weight at country level, are +10 % higher than the average. The current situation is promising; good yield mainly in the southern part of the Czech Republic.



A high soil water content is simulated by models for **spring crops**. Canopy development of **maize** approaches maximum values for our 35-year historical archive, and the simulated assimilation rate is also quite high. The picture is less positive for other spring crops, since only slightly above average yield potential was simulated for **potato, sunflower** and **sugar beet**.



## Bulgaria — High yields for winter crops.

| BULGARIA       |            |                     |          |        |          |
|----------------|------------|---------------------|----------|--------|----------|
|                | Yield t/ha |                     |          |        |          |
|                | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat     | 3.74       | 3.87                | 3.34     | +3.5   | +15.8    |
| winter barley  | 3.41       | 3.50                | 3.21     | +2.7   | +9.1     |
| grain maize    | 6.24       | 5.20                | 4.11     | -16.7  | +26.3    |
| turnips (rape) | 2.57       | 2.44                | 2.18     | -5.0   | +12.0    |
| sunflower      | 2.10       | 1.88                | 1.59     | -10.3  | +18.3    |
| potato         | 15.60      | 15.35               | 15.44    | -1.6   | -0.6     |

**In Bulgaria good yields are expected for winter cereals and rapeseed. This year could be one of the best. The biomass accumulation of spring crops suggests slightly below average yields.**

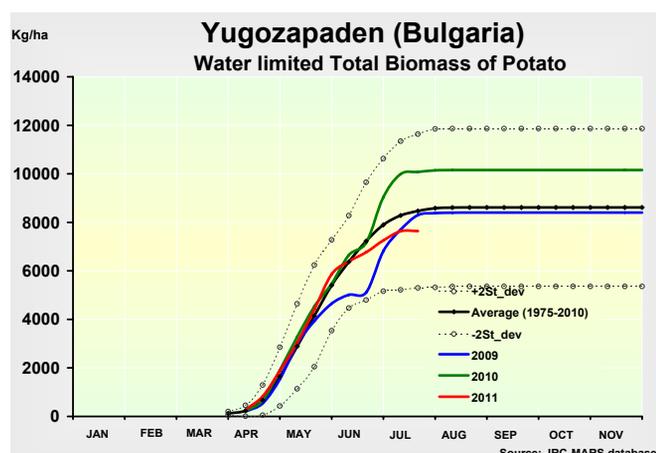
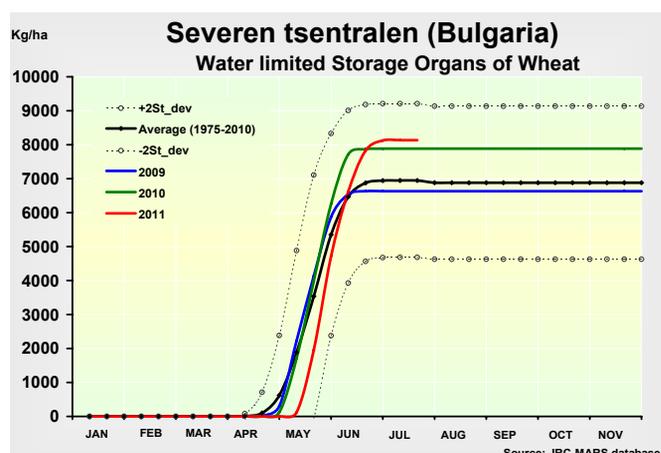
## AGROMETEOROLOGICAL ANALYSIS

Heat resources were close to normal for the considered time-period. The north-eastern and western regions of Bulgaria were somewhat wetter than usual, while other areas experienced close to normal amounts of precipitation. The evolution of the climatic water balance since May depicts

near average conditions: slightly positive in the northern and slightly negative deviation in the southern areas. High irradiation levels (9 % to 16 % above LTA) provided excellent conditions for the intensive photosynthesis of spring crops.

## CROP DEVELOPMENT

**Winter cereals** have reached maturity stage according to our model simulation. Grain filling ended with very high biomass and storage organ values, and harvesting has already started. Yields of rapeseed, winter wheat and barley will probably exceed the result from last year's bonanza. The expected grain quality could be exceptional this year due to favourable weather conditions. Development of **maize** and **sunflower** has been retarded slightly. Relative soil moisture for the summer crops is exactly in line with the long-term average. Development of leaf area index is normal but biomass accumulation is slightly below average. A weak canopy expansion of **potato** and below average biomass accumulation indicates some concern for the potato yield. Water supply conditions and high temperatures in the coming weeks can still significantly affect yields of spring crops.



## Romania — Expected yield and grain quality for winter wheat is well above average.

| ROMANIA        |            |                     |          |        |          |
|----------------|------------|---------------------|----------|--------|----------|
|                | Yield t/ha |                     |          |        |          |
|                | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| soft wheat     | 2.80       | 3.46                | 2.58     | +23.5  | +33.9    |
| winter barley  | 2.89       | 3.13                | 2.66     | +8.4   | +17.9    |
| spring barley  | 1.76       | 2.06                | 1.83     | +17.3  | +12.9    |
| grain maize    | 4.06       | 3.86                | 3.20     | -5.0   | +20.6    |
| turnips (rape) | 1.79       | 1.79                | 1.51     | +0.2   | +18.4    |
| sunflower      | 1.56       | 1.52                | 1.32     | -2.4   | +15.0    |
| sugar beets    | 38.36      | 37.50               | 33.24    | -2.2   | +12.8    |
| potato         | 13.45      | 15.12               | 14.34    | +12.4  | +5.4     |

**The favourable drier weather in July benefitted wheat harvest. Development of spring crops is adequate for the season but the simulated biomass accumulation is at average level.**

### AGROMETEOROLOGICAL ANALYSIS

Mean temperature values for Romania were near normal during the considered period except in the western areas where it was 1-2 °C warmer than usual. The weather was especially hot from 7<sup>th</sup> July onwards. Daily maximum temperatures as a rule reached +30 °C and even exceeded +35 °C in the western and southern regions. A period with extremely hot days with maximum temperatures above 35 °C lasted between 5-9 days in the *Timis* and *Arad* counties.

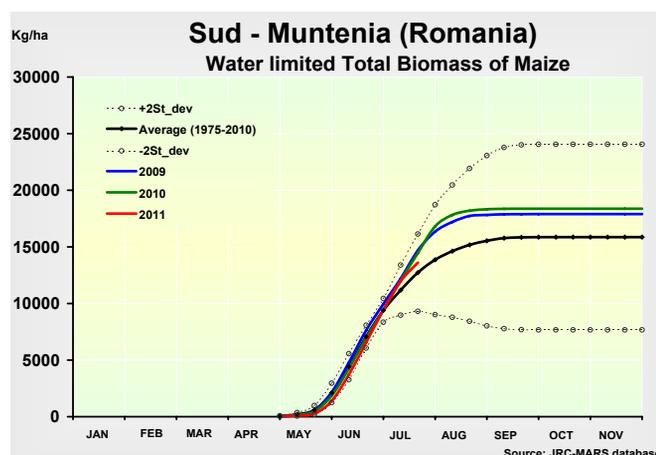
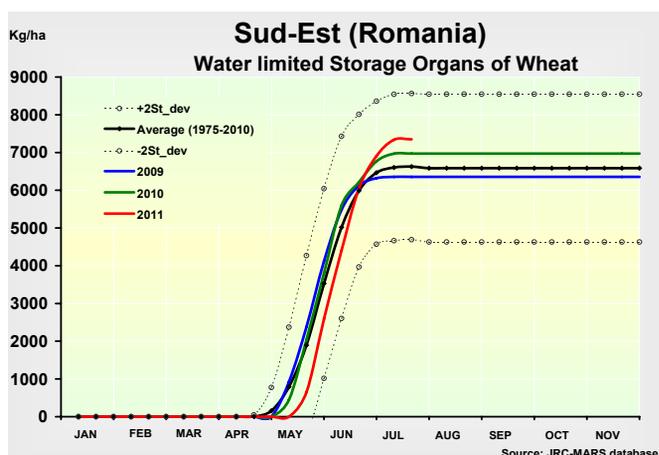
Precipitation was satisfactorily distributed over time. Rainfall remained below average along the western border and

some south-eastern spots but was plentiful in the wide central areas of Romania. Cumulated climatic water balance was slightly positive (+20 to +50 mm) as compared to what is typical for this period of the year.

### CROP DEVELOPMENT

Simulations for biomass accumulation of **winter cereals** are much higher than normal since the beginning of June. The weather this year was favourable for the grain-filling phase, because the soil still contained enough moisture. Furthermore, the milder June temperatures facilitated deposition of storage materials such as starch and protein. The expected yield and grain quality for winter wheat is well above average. Some thunderstorms disturbed reaping and caused damages to harvests only locally.

The very hot weather in July compromised the photosynthetic activity of **spring crops**, and warm nights with minimum temperatures above 18 °C increased respiration losses. The above-ground biomass values of **sunflower** were close to average. **Maize** biomass accumulation is very high in the *Centru* region and above average in the *Sud-Est* and *Sud-Muntenia* regions. Relative soil moisture for summer crops is favourable, but water deficiency and dryness signs are detectable in the western regions. Average conditions are depicted for **sugar beet**, and there are good expectations for **potato** crops even though the situation is strongly dependent on the heat and rainfall regime of the coming weeks.



## V. Crop monitoring in the EU27 neighbourhood

### THE BLACK SEA COUNTRIES

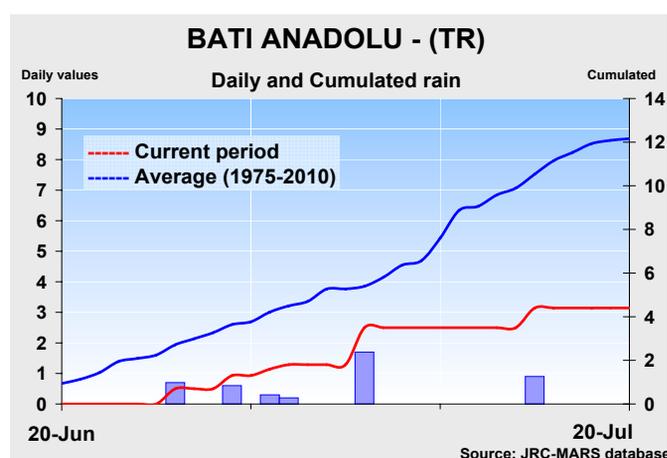
#### Turkey — Mild conditions and high yield expectations for crops.

| TURKEY      |            |                     |          |        |          |
|-------------|------------|---------------------|----------|--------|----------|
|             | Yield t/ha |                     |          |        |          |
|             | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| barley      | 2.39       | 2.54                | 2.31     | +6.1   | +9.8     |
| grain maize | -          | 7.29                | 7.08     | -      | +3.1     |
| wheat       | -          | 2.38                | 2.32     | -      | +2.4     |

**Average temperatures and low rainfall were beneficial for maturing crops. A favourable warm and wet season will lead to very promising yields.**

#### AGROMETEOROLOGICAL ANALYSIS

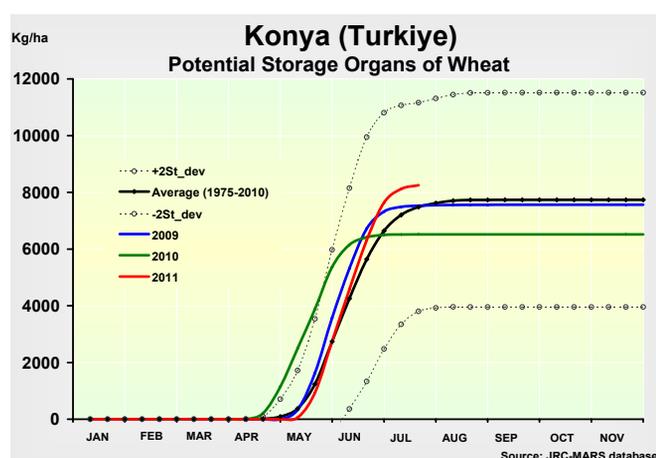
The period analysed was characterised by heat conditions that are typical for this time of the year. Temperatures oscillated slightly above the long term average with a short cold spell in the third dekad of June, which covered almost the



entire country. The accumulated GDDs were very close to the average. Only the eastern regions experienced 2-3 °C higher average daily temperatures. The considered period was drier than normal. Most of the country received very small amounts of rainfall in the third dekad of June and in the first dekad of July. However, the average precipitation is relatively low at this time of the year, so the significance of the small deficit is limited.

#### CROP DEVELOPMENT

Weather conditions were generally favourable for crops. **Wheat** was either ripening or reached maturity. The modelled potential storage organs showed signs of a very good season. **Maize** was at the flowering stage and was developing at an average rate. The accumulated biomass is close to the long term average and should lead to the usual yield for maize.



#### Ukraine — Good yield expectations despite recent damaging rains.

| UKRAINE     |            |                     |          |        |          |
|-------------|------------|---------------------|----------|--------|----------|
|             | Yield t/ha |                     |          |        |          |
|             | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| barley      | -          | 2.11                | 2.26     | -      | -7.0     |
| grain maize | -          | 4.84                | 4.33     | -      | +11.7    |
| wheat       | -          | 2.85                | 2.91     | -      | -1.9     |

**An exceptional wet period with heavy rain could have lowered yields by damaging crops and negatively affecting access to fields for harvesting operations.**

#### AGROMETEOROLOGICAL ANALYSIS

In the analysed period, temperature sums were nearer to the long term average value. Only *Krym* experienced slightly lower values, with average temperatures 2 °C below the average. The third dekad of June was a bit cooler in the whole country but temperatures from the beginning of July onwards remained above the LTA. The considered period was characterised by significantly higher values of rainfall.

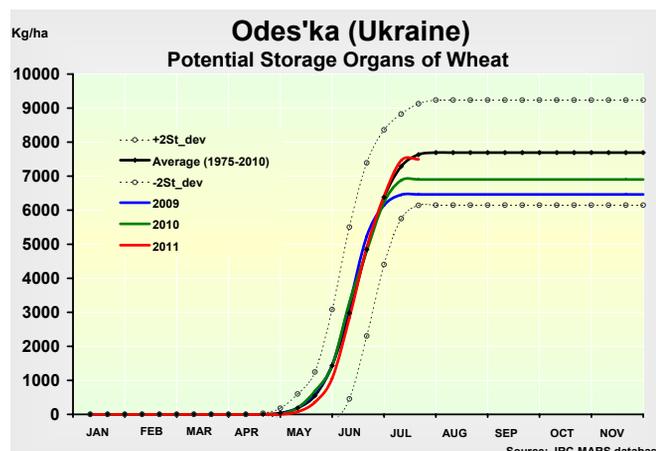
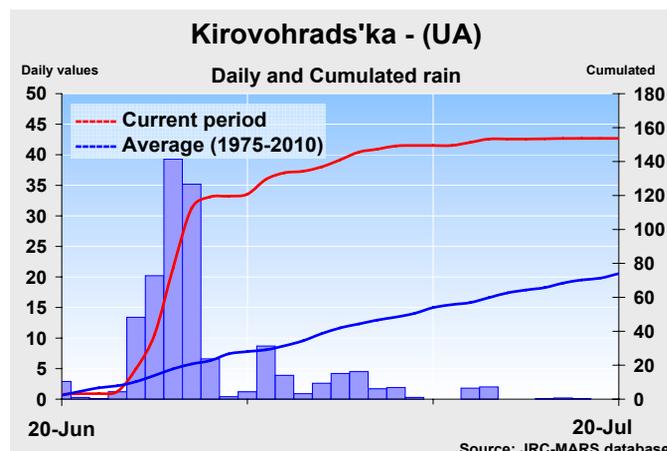
The central and eastern part of the country experienced intensive rains (>50 mm/day) in the third dekad of June. However, the western oblasts received lower precipitation per day but it was more consistent during the entire period. The rainfall sums were above average in *Kyyivska* (+120 %), *Cherkaska* (+145 %), *Kirovohradska* (+110 %), *Luhanska* (+155 %) and *Lvivska* (+50 %). Only the central oblasts (*Ternopilska*, *Khmelnitska* and *Rivnenska*) and the southern oblasts (*Krym* and *Khersonska*) experienced lower precipitation than the LTA.

#### CROP DEVELOPMENT

**Wheat** showed a gradient that varied from being delayed in the south-eastern oblasts (*Krym*, *Khersonska*, *Zaporlizza* and *Luhanska*) to being at normal development in the zone between *Odeska* and *Donetska*, and was advanced in the central-western part for the country. Potential storage organs were above average throughout the country except for the eastern oblasts where they were slightly lower.

**Rapeseed** reached maturity earlier than normal; however the potential storage organs were clearly lower than the LTA. Conditions were good for **maize** development which was slightly advanced for the flowering stage. The cumulated above ground biomass was 10-20 % higher than usual.

**Sunflower** also developed promisingly and the potential above ground biomass was 20 % higher than normal. Recent heavy rains may have hampered harvesting activities and may have negatively influenced grain quality. Good yields are nevertheless expected for all crops.



## EASTERN COUNTRIES

**Belarus — Generally good yield expectations. Rainy conditions could hamper harvesting activities.**

| BELARUS     |            |                     |          |        |          |
|-------------|------------|---------------------|----------|--------|----------|
|             | Yield t/ha |                     |          |        |          |
|             | 2010       | MARS 2011 forecasts | Avg 5yrs | %11/10 | %11/5yrs |
| barley      | -          | 3.18                | 3.16     | -      | +0.7     |
| grain maize | -          | 5.42                | 4.52     | -      | +19.9    |
| wheat       | -          | 3.53                | 3.39     | -      | +4.1     |

Mild heat conditions and sufficient rainfall were favourable for crop development. Crops were in advance and harvesting has just started with a not very positive weather forecast in the coming days.

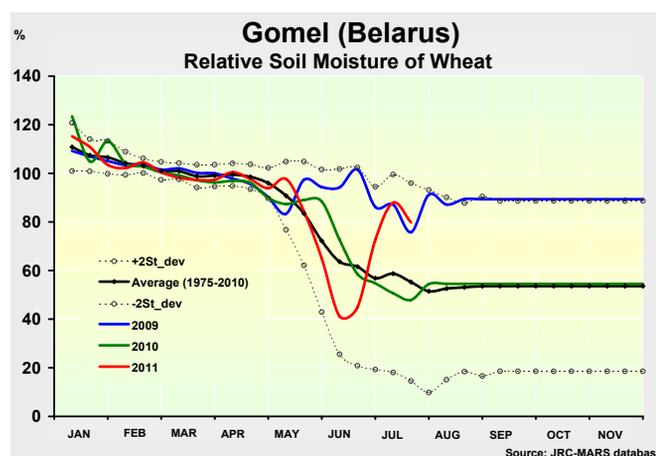
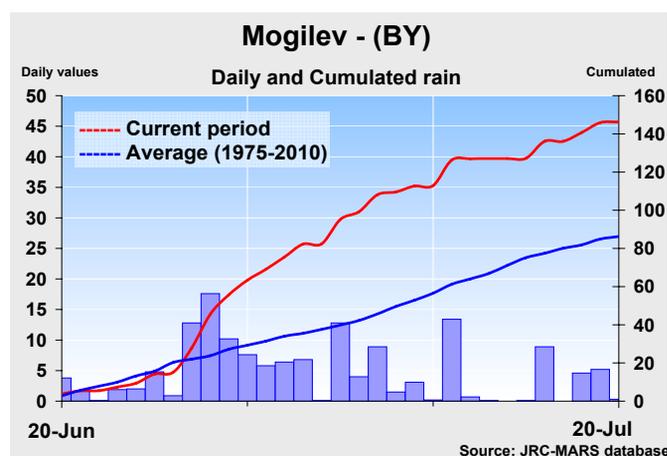
### AGROMETEOROLOGICAL ANALYSIS

The period of analysis was characterised by average daily air temperatures that were close to the long term average. The eastern part of the country was slightly warmer, especially in the second half of July, while western regions experienced two cold spells at the turn of June and July. Accumulated GDDs were very close to the long term average in the whole country. In the period considered, Belarus experienced more rainfall than usual, except in the northern *Vitebsk*.

After a dry beginning in June, the following dekads brought rainy conditions with maximum daily precipitations in the last dekad of June and the first dekad of July. The southern and eastern regions —*Brest, Gomel* and *Mogilev*— received 60-70 % more rainfall than the LTA. Rainfall in the central part of the country was 20-30 % above usual, while it was very close to the average in the northern *Vitebsk*.

### CROP DEVELOPMENT

Rainy conditions could have been beneficial for the grain filling of **wheat**, which reached maturity with a slight advancement. The potential storage organs weights were higher than the long term average in the whole country. **Grain maize** developed faster and reached the flowering stage. The potential above ground biomass is 30 % higher than the LTA in the northern regions, 25 % in the central regions and on par with average in the southern *Gomel*. According to the Ministry of Agriculture and Food, harvesting has already begun in the third dekad of July and will take around 20 days. The weather forecast for the next dekad shows rainy conditions, which may hamper harvesting activities.



## Russia — Average yield and no significant difficulties in harvesting activities are expected.

Warm and wet conditions in the *Central and Volga* Districts could have been beneficial for grain filling of wheat, while drier conditions in the southern oblasts were favourable for mature crops. Maize is slightly advanced.

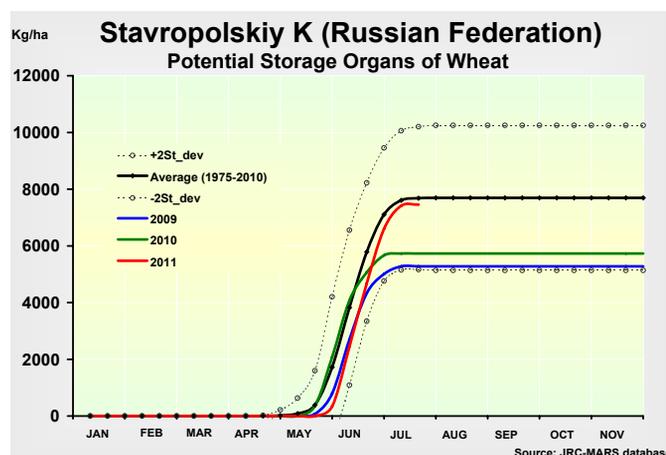
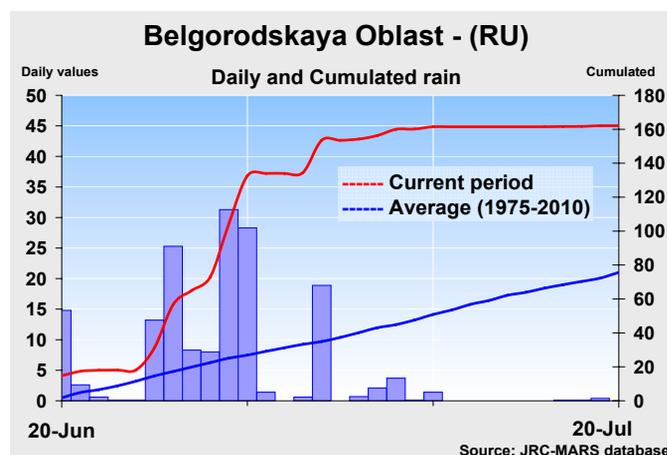
### AGROMETEOROLOGICAL ANALYSIS

The considered period was slightly warmer and average daily temperatures were 2-3 °C above average. Temperature sums were generally near the long term average except for the *Central* District and *Bashkortostan* where they were 10 % higher and 5 % lower respectively. The amount of rainfall differed between oblasts. A significant surplus was observed next to the Ukrainian border; such as in *Kurskaya* (+60 %), in *Belgorodskaya* (+120 %), and in *Voronezhskaya* (+40 %). The *Volga* District experienced close to LTA precipitation but the

*Southern* and the *Northern Caucasian* Districts experienced a deficit of around 30-40 %.

### CROP DEVELOPMENT

Weather conditions were favourable for crop development during the analysis period. **Wheat** developed with a slight advancement. Wheat reached a grain filling or ripening stage in the *Central* and *Volga* Districts, and maturity in the *Southern* and *North Caucasian* District. However, in the agriculturally important *Volga* District, potential storage organs are simulated to be lower than the LTA. Good yields are expected in the *Central* and *Southern* Districts. **Grain maize** is slightly advanced in the *Central* District and around the average in the *Southern* District. The potential accumulated green biomass of maize until the period of analysis should lead to a slightly higher than average yield.



## THE MAGHREB COUNTRIES

### Morocco, Algeria, Tunisia — Average to good season for the three countries.

| 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    |

Harvest of winter cereals has started in the three countries. The harvesting campaign of winter cereals in the Maghreb countries takes about three months, starting in Morocco (early May in the southern areas of production) and ending in Tunisia (mid-July). Such

| 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     |

campaign was only hampered locally in Morocco due to late rains in May. Weather conditions were favourable for harvesting in the three countries from early June onwards. The proposed yield forecast is the one simulated in the last bulletin (28<sup>th</sup> June).

### 2011 MARS Bulletin (update)

| Publication date in 2011 | Publication   | Reference             |
|--------------------------|---|-----------------------|
| 8 Feb                    | Agrometeorological analysis and weather forecast            | Vol. 19 No. 1         |
| 8 Mar                    | <b>Agromet. analysis, remote sensing and yield forecast</b> | <b>Vol. 19 No. 2</b>  |
| 22 Mar                   | Agrometeorological analysis and weather forecast            | Vol. 19 No. 3         |
| 12 Apr                   | Crop yield forecast   | Vol. 19 No.4          |
| 12 Apr                   | Agrometeorological analysis and weather forecast            | Vol. 19 No. 5         |
| 17 May                   | <b>Agromet. analysis, remote sensing and yield forecast</b> | <b>Vol. 19 No. 6</b>  |
| 14 Jun                   | Agrometeorological analysis and weather forecast            | Vol. 19 No. 7         |
| 28 Jun                   | <b>Agromet. analysis, remote sensing and yield forecast</b> | <b>Vol. 19 No. 8</b>  |
| 28 Jun                   | Pasture monitoring in Eu-rope                               | Vol. 19 No. 9         |
| 12 Jul                   | Agrometeorological analysis and weather forecast            | Vol. 19 No. 10        |
| ✓ 26 Jul                 | <b>Agromet. analysis, remote sensing and yield forecast</b> | <b>Vol. 19 No. 11</b> |
| 26 Jul                   | Rice monitoring in Europe                                   | Vol. 19 No. 12        |
| 9 Aug                    | Agrometeorological analysis and weather forecast            | Vol. 19 No. 13        |
| 23 Aug                   | Crop yield forecast   | Vol. 19 No.14         |
| 6 Sep                    | Agrometeorological analysis and weather forecast            | Vol. 19 No. 15        |
| 20 Sep                   | <b>Agromet. analysis, remote sensing and yield forecast</b> | <b>Vol. 19 No. 16</b> |
| 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 Eu-rope                               | 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                   | <b>Agromet. analysis, remote sensing and yield forecast</b> | <b>Vol. 19 No. 22</b> |
| 13 Dec                   | Agrometeorological analysis and weather forecast            | Vol. 19 No. 23        |

Special issues are planned for crop monitoring in countries outside EU27

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#### Analysis and reports

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**JRC 66000– EUR 24736,**  
**Scientific and Technical**  
**Research series — ISSN 1831 - 9793**

\* MARS stands for Monitoring Agriculture ResourceS Unit

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Luxembourg: Publications Office of the European Union,  
2011 – 40 pp. – 21.0 x 29.7 cm, © European Union, 2011

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