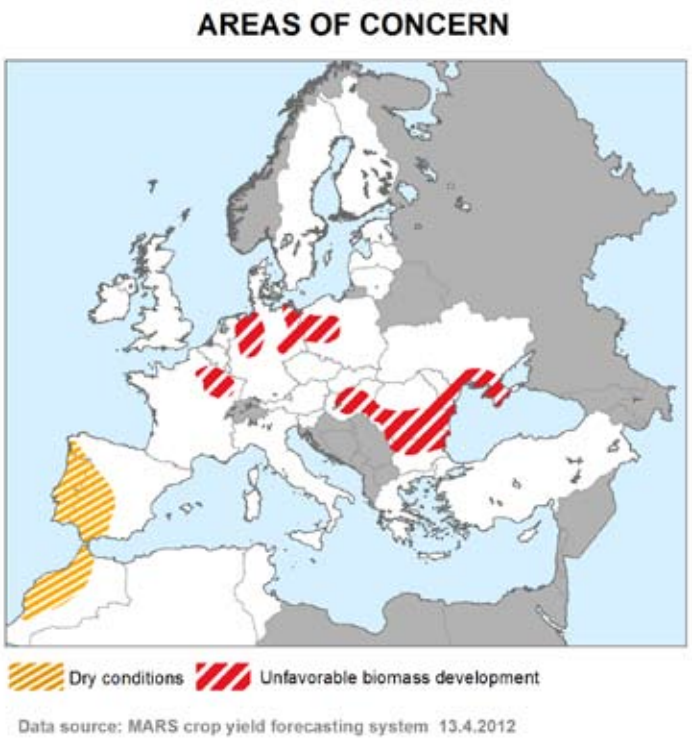
European Commission

Period covered: 27 March - 20 April
Issued: 23 April 2012

Crop Monitoring in Europe

MARS BULLETIN Vol.20 No. 4 (2012)

Current prospects for EU-27 yields are on average



Crops	Yield t/ha				
	2011	MARS 2012 forecasts	Avg 5yrs	%12/11	%12/5yrs
TOTAL CEREALS	5,12	**5,09**	4,99	-0,7	+1,9
Total Wheat	5,36	**5,42**	5,31	+1,1	+2,1
soft wheat	5,58	**5,68**	5,57	+1,8	+2,0
durum wheat	3,41	**3,18**	3,18	-6,6	+0,0
Total Barley	4,34	**4,39**	4,36	+1,1	+0,5
spring barley	3,87	**3,88**	3,83	+0,4	+1,3
winter barley	5,06	**5,15**	5,16	+1,7	-0,2
Grain maize	7,50	**7,03**	6,92	-6,2	+1,6
Rye	3,06	**3,26**	3,18	+6,5	+2,5
Triticale	3,90	**3,89**	3,98	-0,2	-2,3
Other cereals	2,95	**2,95**	3,23	+0,0	-8,6
Rape and turnip rape	2,86	**2,88**	3,00	+0,7	-3,9
Potato	31,65	**30,58**	29,76	-3,4	+2,8
Sugar beet	71,25	**69,23**	67,80	-2,8	+2,1
Sunflower	1,99	**1,79**	1,79	-9,9	+0,3

A very mild but predominantly dry March boosted the start of the season in central and eastern Europe, but has been followed by a so-far chilly April, slowing crop growth. Biomass development in Romania, Bulgaria and Hungary is not satisfactory. Eventually, precipitation did arrive around the Mediterranean with rain for Spain, southern France, Italy and the Maghreb. The dry period in England has also come to an end.

As the season advances, crop model simulations are being increasingly used to forecast winter cereals. In northern Europe and the Baltic states as well as in Ukraine, forecasts are still based on the trend analysis. In general, the current prospects for the EU-27 yields remain average. Compared to our last forecasts, rape seed has been revised down, lower biomass accumulation is now apparent in the crop growth model, and the yield potential has fallen due to frost damage. The low yield potential for durum wheat in Spain is confirmed and yields have been revised down compared to the last bulletin.

Joint Research Centre

1. AGRO-METEOROLOGICAL OVERVIEW

A very mild but predominantly dry March boosted the start of the season in central and eastern Europe, but has been followed by a so-far chilly April, slowing crop growth. Eventually, precipitation did arrive around the Mediterranean with rain for Spain, southern France, Italy and Maghreb. The dry period in England has also come to an end.

Observed temperatures

Spring started in **March** with higher than normal temperatures and a temperature accumulation well above the average, with the exception of the Iberian peninsula, western France, Greece and the Maghreb, which experienced seasonal temperatures and a normal temperature accumulation. It was significantly fresher than normal in Turkey.

Maximum temperatures climbed above 20 degrees in parts of Germany, Poland and Austria, a positive deviation from the long-term average of just over 8 degrees. The same was true for northern Italy and most of France, with accelerated crop growth in those regions.

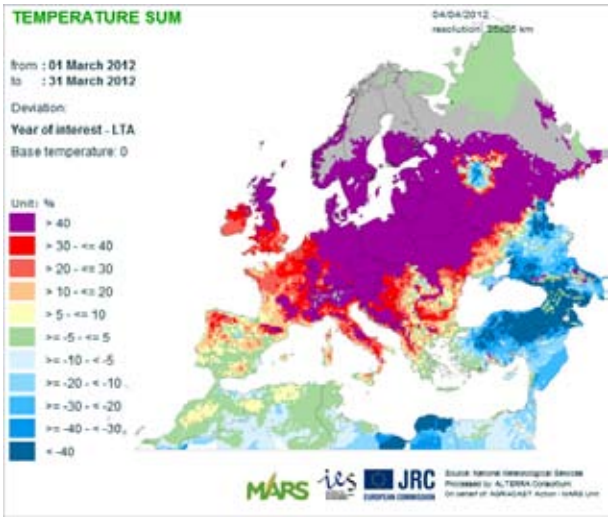
Cold days below -8 degrees were restricted to the Baltic states, eastern Poland, and Ukraine. Also, the number of cold days below 0 degrees was considerably lower than in previous years for northern and central Europe, whereas central Spain saw an unusual drop in temperatures below 0 degrees mid-March. Towards the end of March, all main agricultural areas in Europe were snow-free.

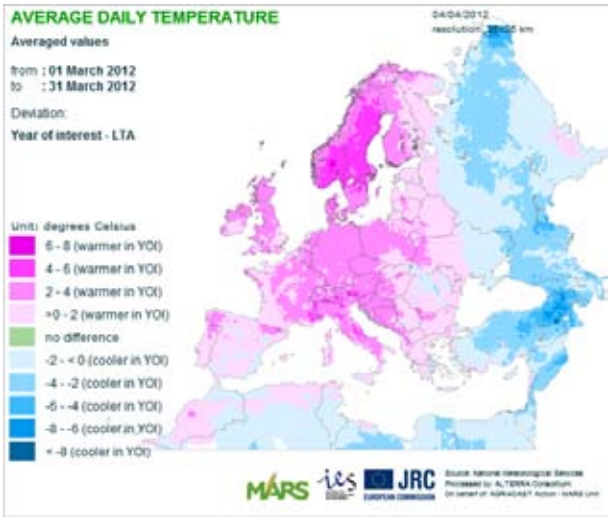
The beginning of **April** was characterised by a sharp drop in temperatures and night frosts in central and eastern Europe. Even some snowfall was recorded, whereas Turkey was again seeing spring temperatures.

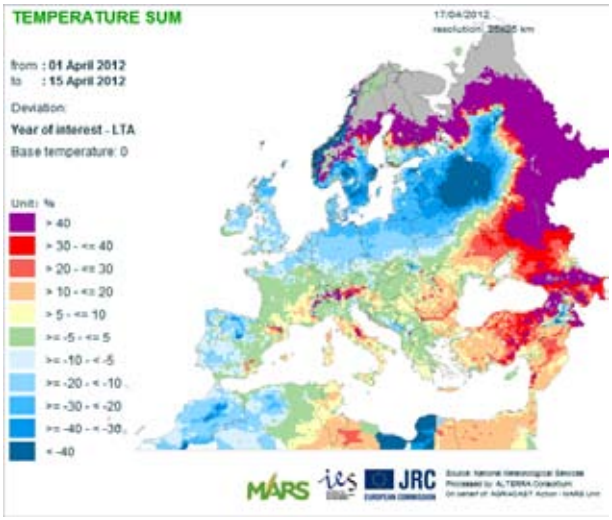
Observed precipitation

March was a dry month for most of Europe. There was a pronounced rainfall deficit in almost all Member States with the exception of Estonia, *Sicily* (IT), and *East Anglia* (UK) where the rain was more than welcome after a dry period. There was rain too in *Murcia* (ES) and *Alentejo* (PT), slightly alleviating the drought situation. Total rainfall in those countries with a rainfall deficit in March varied between 0 and 30 mm. Eastern Germany for example did not see a single day of rain above 5 mm and neither did the Czech Republic.

April has so far been a rather rainy month with particularly high rainfall in Italy, southern France, and large areas of Spain and the Maghreb, all regions that had previously been suffering from a water deficit. Northern and eastern Europe, including southern England, has also received beneficial rains. Relative soil moisture is below the long-term average following the two rather dry months of February and March in Italy, France (southern and western parts) and Great Britain. In Portugal and southern Spain the situation was more severe at the end of March due to the continued dry spell, but the rains in April will partly replenish the soil moisture in these regions. Below-average rainfall has been recorded in Germany and central and western France, further exacerbating the water deficit.



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to : 15 April 2012
Deviation:
Year of interest - LTA
Base temperature: 0
Unit: %
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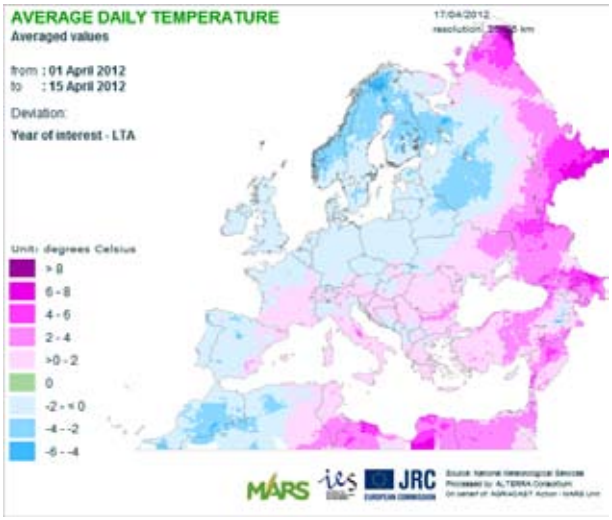
> 30 - <= 40
> 20 - <= 30
> 10 - <= 20
> 5 - <= 10
>= -5 - <= 5
>= -10 - < -5
>= -20 - < -10
>= -30 - < -20
>= -40 - < -30
< -40
MARS
JRC


AVERAGE DAILY TEMPERATURE
Averaged values
from : 01 April 2012
to : 15 April 2012
Deviation:
Year of interest - LTA
Unit: degrees Celsius
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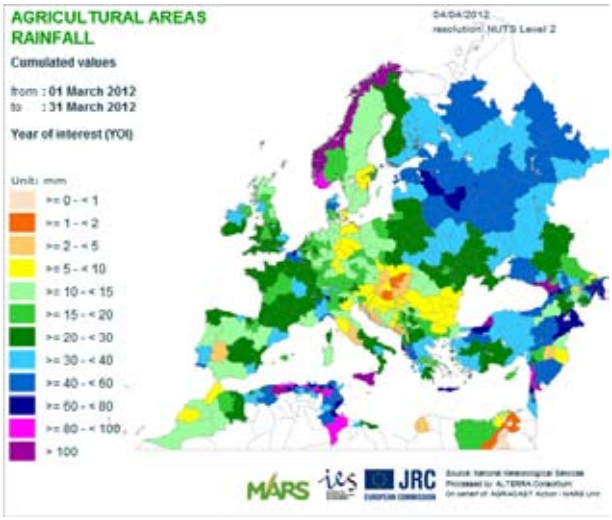
6 - 8
4 - 6
2 - 4
>0 - 2
0
-2 - < 0
-4 - -2
-6 - -4
MARS
JRC


AGRICULTURAL AREAS
RAINFALL
Cumulated values
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to : 31 March 2012
Year of interest (YOI)
Unit: mm
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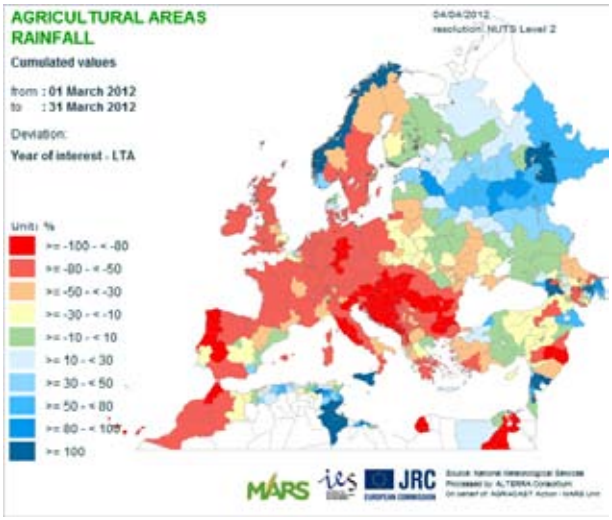
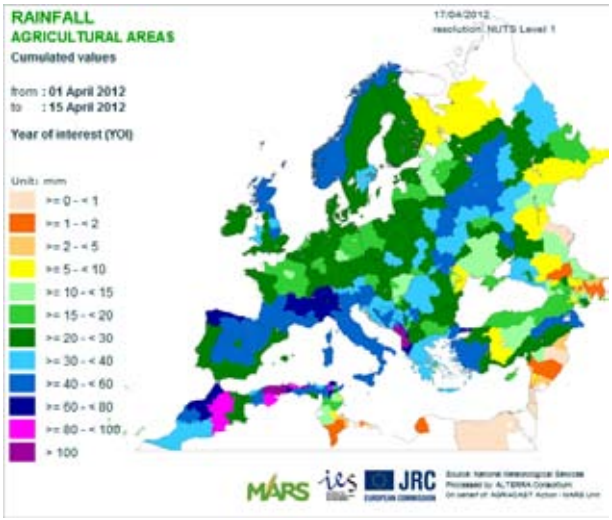
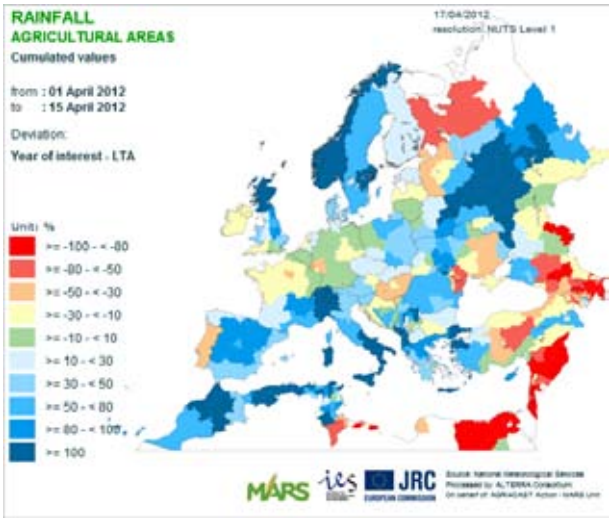
>= 2 - < 5
>= 5 - < 10
>= 10 - < 15
>= 15 - < 20
>= 20 - < 30
>= 30 - < 40
>= 40 - < 60
>= 60 - < 80
>= 80 - < 100
> 100
MARS
JRC

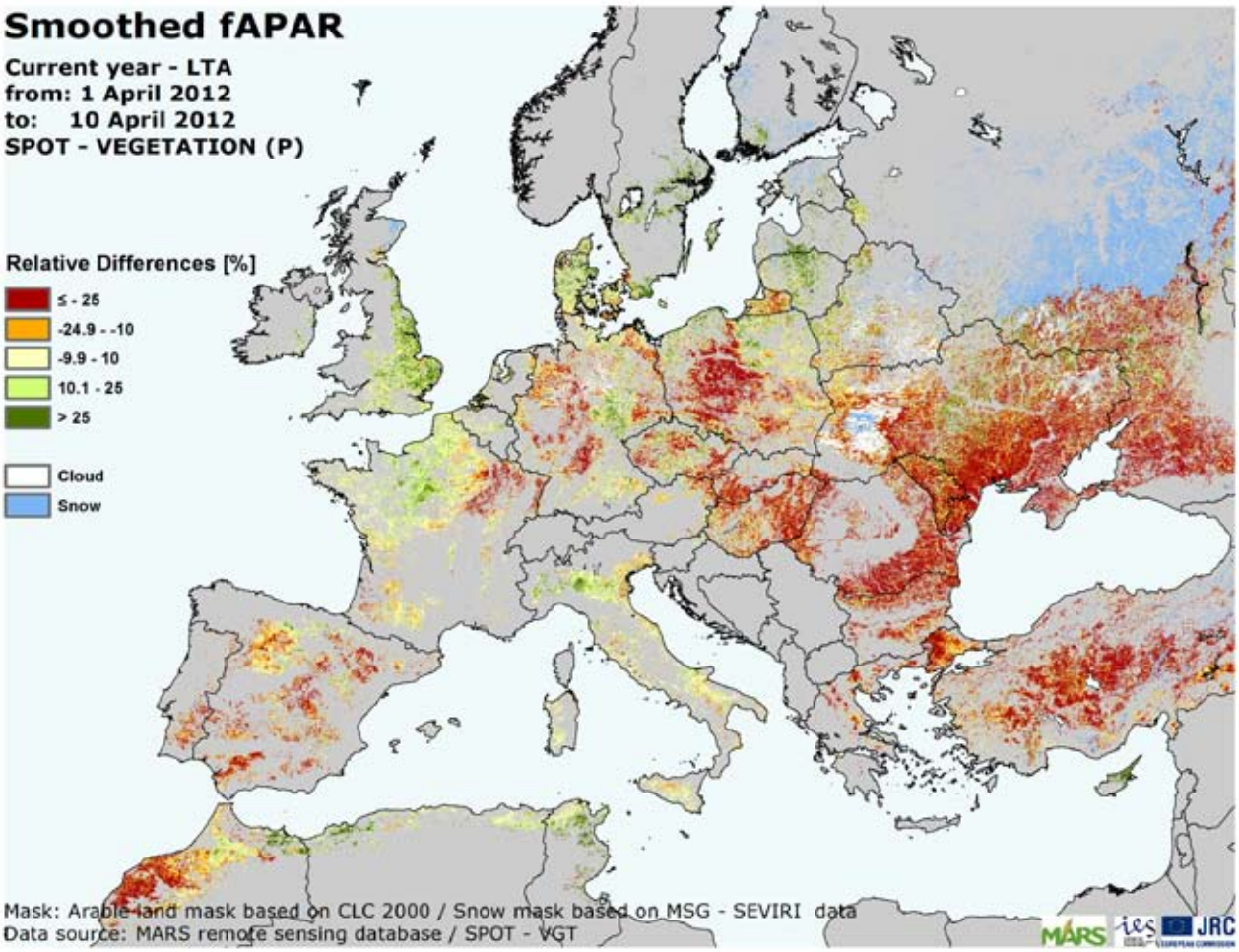

AGRICULTURAL AREAS
RAINFALL
Cumulated values
from : 01 March 2012
to : 31 March 2012
Deviation:
Year of interest - LTA
Unit: %
>= -100 - < -80
>= -80 - < -50
>= -50 - < -30
>= -30 - < -10
>= -10 - < 10
>= 10 - < 30
>= 30 - < 50
>= 50 - < 80
>= 80 - < 100
>= 100
MARS
JRC


RAINFALL
AGRICULTURAL AREAS
Cumulated values
from : 01 April 2012
to : 15 April 2012
Year of interest (YOI)
Unit: mm
>= 0 - < 1
>= 1 - < 2
>= 2 - < 5
>= 5 - < 10
>= 10 - < 15
>= 15 - < 20
>= 20 - < 30
>= 30 - < 40
>= 40 - < 60
>= 60 - < 80
>= 80 - < 100
> 100
MARS
JRC


RAINFALL
AGRICULTURAL AREAS
Cumulated values
from : 01 April 2012
to : 15 April 2012
Deviation:
Year of interest - LTA
Unit: %
>= -100 - < -80
>= -80 - < -50
>= -50 - < -30
>= -30 - < -10
>= -10 - < 10
>= 10 - < 30
>= 30 - < 50
>= 50 - < 80
>= 80 - < 100
>= 100
MARS
JRC

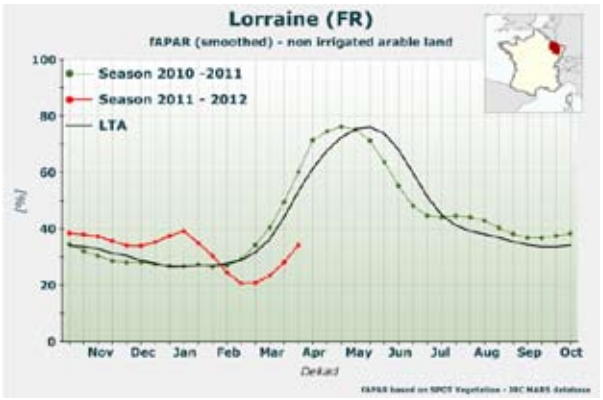
2. REMOTE SENSING – OBSERVED CANOPY CONDITIONS

The map reflects the general status of cropland canopies across Europe in the first 10 days of April with respect to the long-term average for the same period (LTA, 1998-2010). The overall situation is very similar to that described one month ago in the previous bulletin, with further confirmation of the general trends reported.

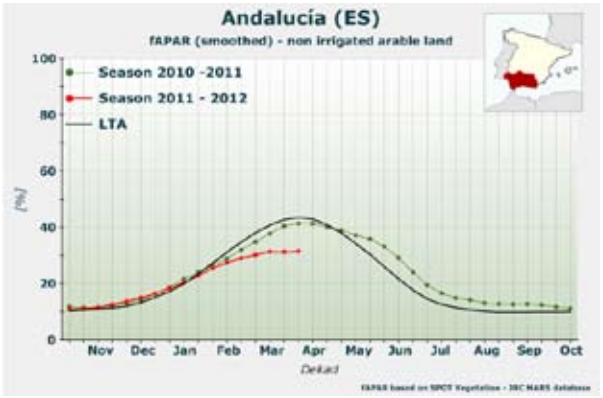


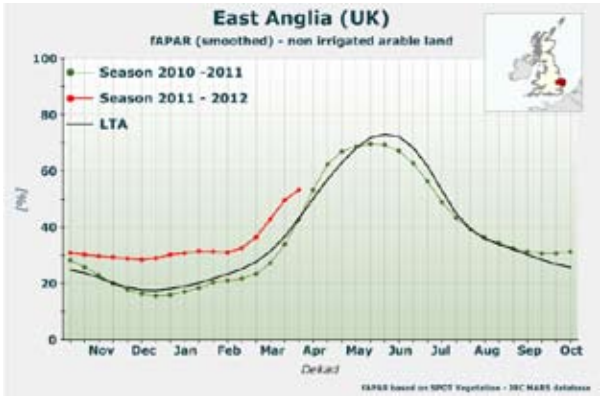
In **eastern France** and **western Germany**, the impact of the winter kill due to the cold spell in February is clearly evident in the smoothed temporal profiles of fAPAR. Both graphs for *Lorraine* (FR) and *Unterfranken* (DE) show a reduction of biomass after what started as a normal year, now resulting in much lower fAPAR values for the season. **Western France** and **eastern England**, which have avoided the cold spell and benefited from warmer temperatures since the beginning of the year, display higher fAPAR values than normal for the season. The graph for *East Anglia* (UK) suggests that the drought affecting eastern England has not had a strong impact on the biomass of winter crops. **The Iberian peninsula** is still seeing differences in crop behaviour with normal conditions in the north (see *Castilla y Leon* (ES) profile) but a severe lack of rain in the south (see *Andalucia* (ES) profile), where much lower than normal biomass accumulation is observed.

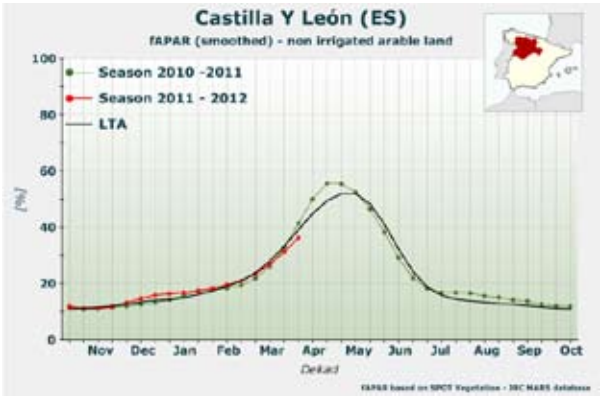
In **Morocco**, the lower-than-average fAPAR values shown in the map above are due not only to a shift in the season, as mentioned in the previous bulletin, but also to the serious dry conditions, which have led to below-average biomass accumulation and subsequent damage to the yield potential, as shown in the graph for the *Centre* (MO). For **Italy**, the fAPAR is close overall to its LTA values. In **Greece**, the combination of unusually low temperatures early in the year and the lack of rain last autumn have resulted in delayed development and growth of winter cereals, yielding an fAPAR profile considerably below the LTA, as illustrated by the graph for *Kentriki Makedonia* (GR). In **central and eastern Europe**, the late germination due to the dry autumn and the lengthy delay due to the late winter cold spell account for the bad start to the season for winter crops (see *Sud-Muntenia* (RO) graph as an example).

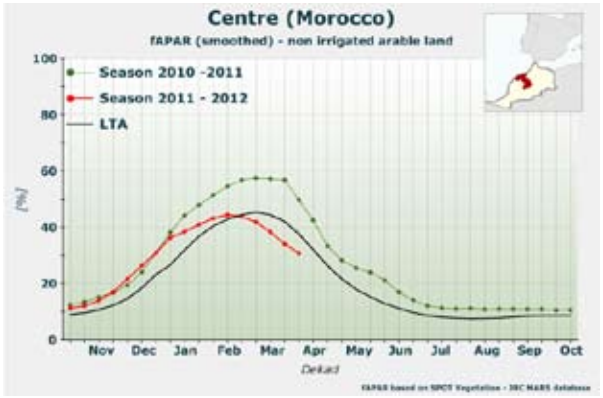

Lorraine (FR)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct
Dekad

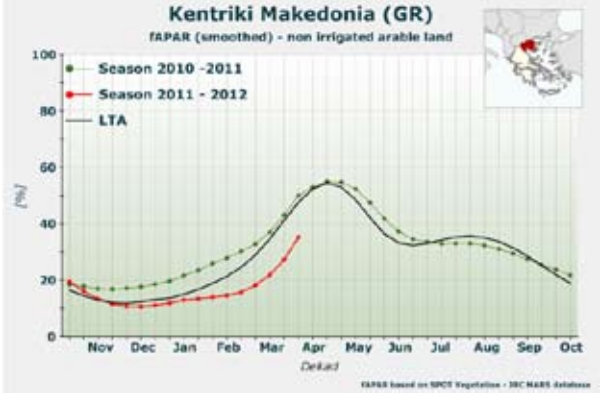

Unterfranken (DE)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct
Dekad

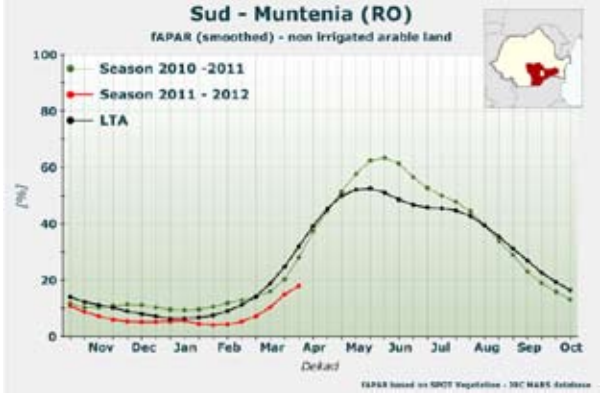

Andalucía (ES)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct
Dekad


East Anglia (UK)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct
Dekad


Castilla Y León (ES)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct
Dekad


Centre (Morocco)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct
Dekad


Kentriki Makedonia (GR)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct
Dekad


Sud - Muntenia (RO)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct
Dekad

3. COUNTRY ANALYSIS

EUROPEAN UNION

As the season advances, crop model simulations are being increasingly used to forecast winter cereals. In northern Europe and the Baltic states, forecasts are still based on the trend analysis. A mixed start to the season and problems related to low biomass development are noted in Bulgaria, Romania, Hungary, Poland and to some extent Germany. Good conditions with promising yield potentials are so far found in France and Italy. The start of the spring barley season in Spain is also promising. In general, the current prospects for EU-27 yields are average. Compared to our last forecasts, rape seed has been revised down, lower biomass accumulation is now apparent in the crop growth model, and the yield potential has fallen due to frost damage. The low yield potential for durum wheat in Spain is confirmed and yields have again been revised down compared to the last bulletin.

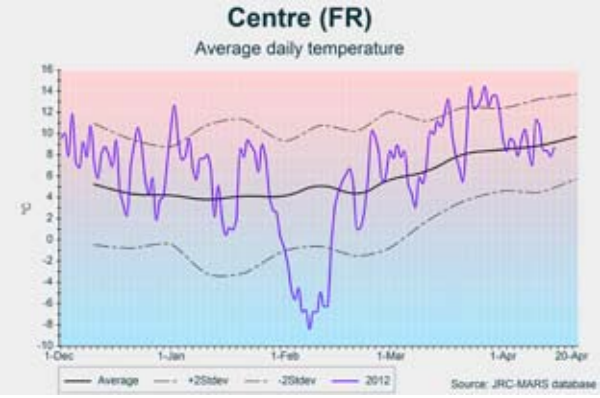
France – Favourable weather for crop development

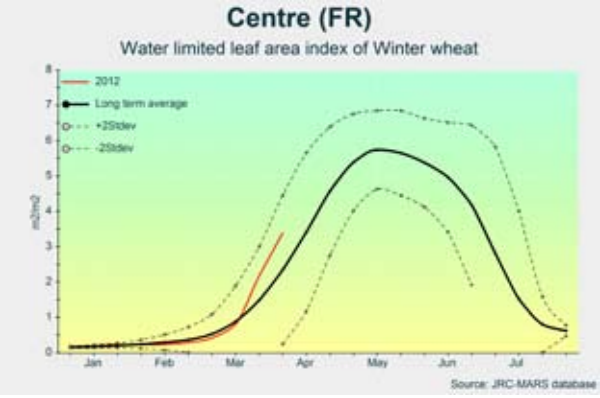
Mild temperatures during March and April benefited crop development, without any negative effect due to water stress. The expected yields for winter cereals are around the average for recent years.

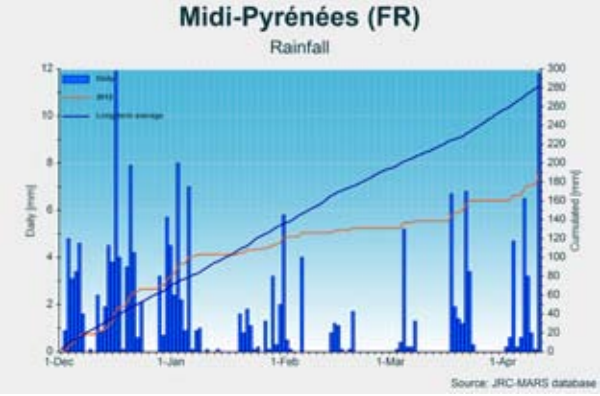
Weather conditions during the last month benefited the development of winter crops. After a cold February, when temperatures drastically reduced the development of winter cereals, March and April have been substantially warmer than usual, especially in south-eastern regions. Although rainfall accumulation from December is around 20-30% lower than average, remote sensing data reveal that, up to now, no effects of water stress can be detected in crops.

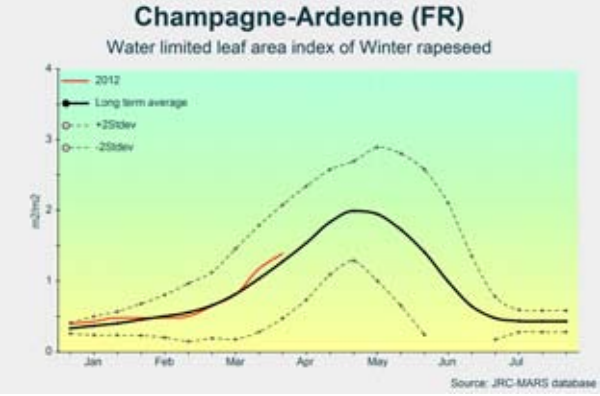
Durum wheat in southern regions continues to be favoured by the abundant rainfall in recent weeks. In central and northern France, soft wheat and winter barley have reached the heading stage, and crop indicators show a vegetative development higher than the seasonal values. Yield forecasts are average for all crops, with good prospects if mild temperatures and precipitation continue in the coming weeks. Rape seed was considerably affected by the cold wave during February in some areas of *Champagne-Ardenne*, *Lorraine* and *Bourgogne*, with a substantial impact on the crop area.

The sowing of sunflower is currently proceeding under normal conditions.









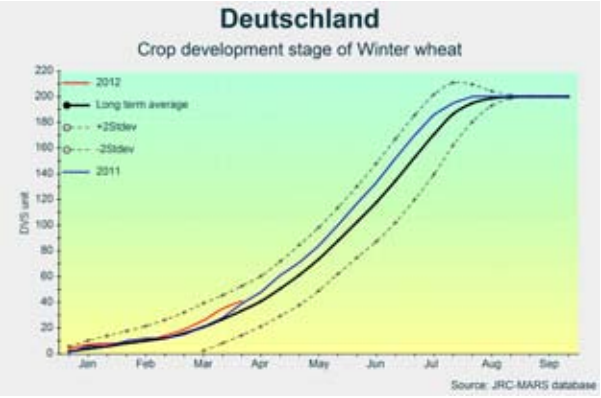
Germany – Mixed start to the season

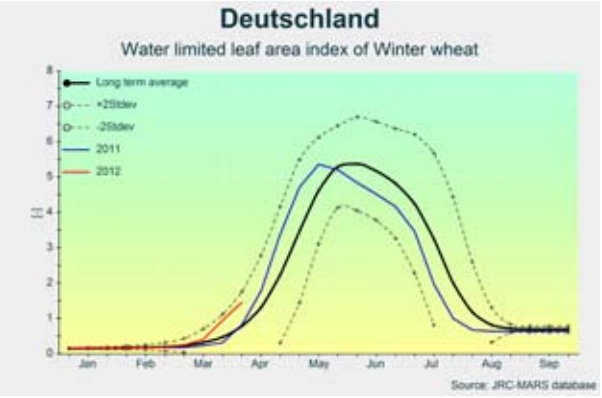
Winter kill damage due to the cold spell in February and a precipitation deficit have characterised the season so far. The crop growth anticipated due to the mild temperatures in March has now been slowed down by the cold April. The yield outlook is positive with forecasts in line with the 5-year average, with the exception of rape seed (-9%).

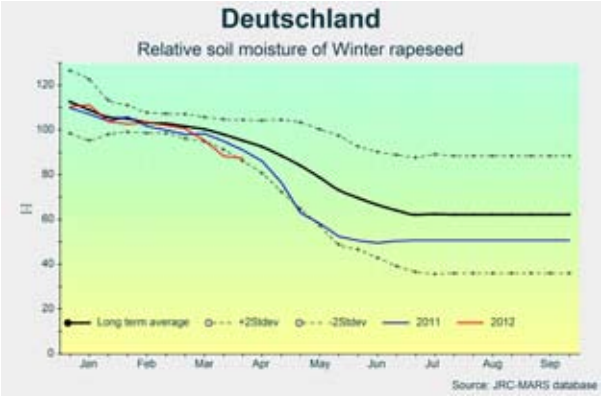
Germany experienced generally milder than seasonal conditions from the beginning of December to the end of January, until, like the rest of Europe, it was hit by an extremely cold period up to mid-February. Our winter kill simulations pointed to problems mainly in eastern Germany, and recent analysis of remote sensing information confirms a bad start to the season in *Sachsen*, *Sachsen-Anhalt* and *Brandenburg*.

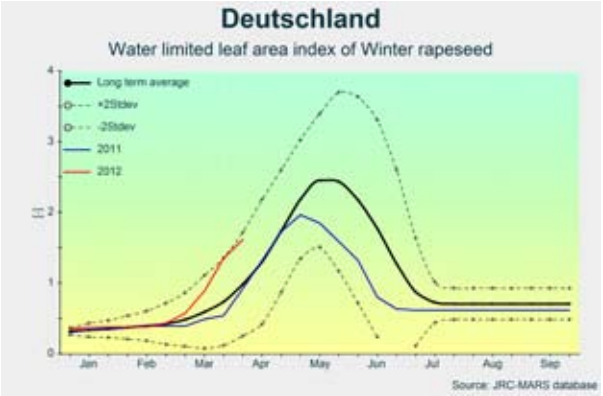
Precipitation was plentiful in December and January across the country, followed by a dry February with rainfall deficits in the order of -80% to -50% in the western part of the country. March was even drier across the whole country. The two dry months also meant a lot of sunshine and plentiful radiation. In March, temperature levels climbed well above the average with maximum temperatures above 22 degrees. April started with a sharp decrease in temperatures, night frosts and even some snowfall. Accumulated temperatures in April are well below the average with a gradient from north (colder) to south (milder). With the beginning of April, rainfall started to cross the country, but the rainfall deficit since the beginning of February is still evident and rainfall in the coming weeks will be essential to maintain the yield potential.

Our crop growth models anticipate advanced crop development stages throughout the country and a good canopy development as a consequence of the high radiation and accumulated temperatures mainly in March. Crop growth slowed down significantly in April due to the cold temperatures. Crop yield forecasts are now based on the results of our crop growth model for soft wheat, durum wheat, winter barley, triticale and rape seed, and have been generally revised down compared to the trend values in the last bulletin due to the cold spell damage.







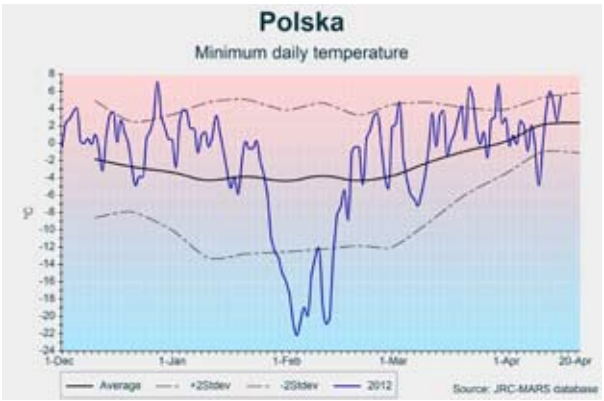


Poland – Winter kill of biomass in main agricultural areas

As a consequence of the winter kill damage due to the cold spell in February, winter crop yields are forecast to be below the five-year average; soft wheat and rye by -5%, triticale, winter barley and oil rapeseed by <-7%. A mild March ensured good conditions for field work and the start of sowing.

December and the first two dekads in January were very mild in Poland, with temperatures above the long-term average and maximum daily temperatures exceeding 10°C. In this period the surplus of cumulative active temperatures (Tbase > 0°C) exceeded the long-term average by more than 100 growing degree days. Only the winter of 2006/07 had seen milder temperatures. Due to persistent mild temperatures, winter crops were not fully hardened when the harsh frost started at the end of January, as also simulated by ourmodel. At the end of January a rapid decrease in temperatures, down to below -22°C, was recorded across Poland. The cold spell continued until mid-February. The second dekads of February and March again saw warmer than usual temperatures and an accumulation of solar radiation above the long-term average. Precipitation in December and the first two dekads of January was above the long-term average, whereas the very cold spell was accompanied by little or no snowfall with snow cover very thin. As a consequence frost damage was very likely. March was dry with very little precipitation, whereas April started with significant rainfall, allowing the replenishment of soil water supplies for the good germination of spring crops.

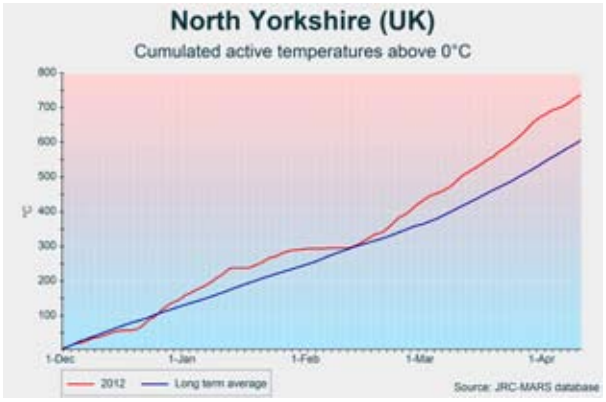
Our model simulations, confirmed by remote sensing analysis, show that biomass development is rather poor in important agricultural areas in the western part of the country (*Wielkopolskie, Kujawsko-Pomorskie* as well *Dolnoslaskie* and *Lodzkie*). As a consequence of the unfavourable weather conditions, the winter crop yield forecast is below the five-year average.

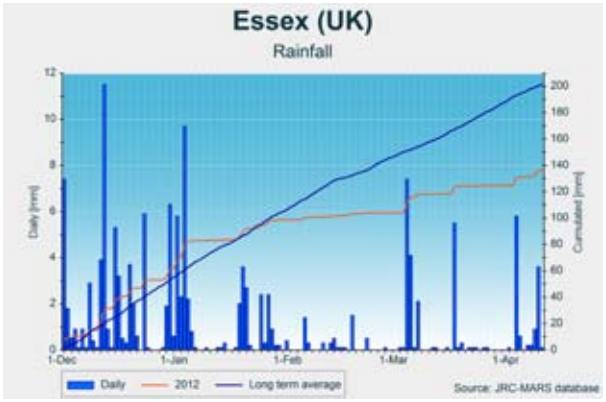


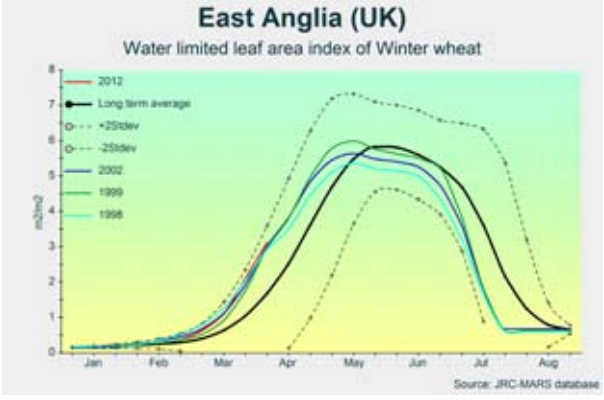
United Kingdom and Ireland – A warm and especially dry year

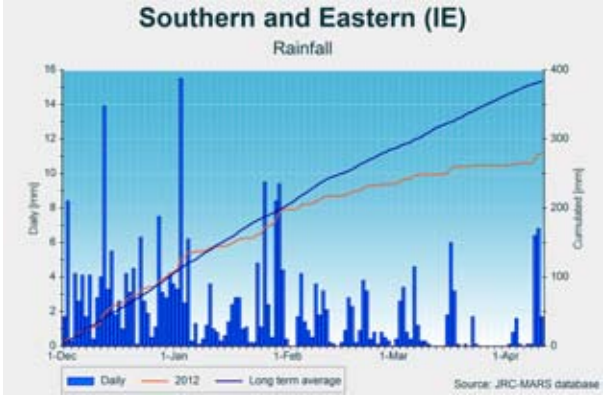
Crop growth and development is advanced due to warmer than usual conditions. Drought may not be much of a problem for winter crops if the current April rains continue.

Since the winter, meteorological conditions over the British Isles have been characterised by overall warm temperatures and lower precipitation than usual. There has been an above -average curve of growing degree days since the beginning of the year, stimulating the early development of winter crops. Higher temperatures combined with good amounts of solar radiation have also resulted in a higher-than-normal accumulation of biomass, which is also evident from remote sensing. In February, *England* and *Wales* were hit by the cold wave that struck much of Europe, but no major frost damage is expected. The unusually low precipitation over most of the UK and Ireland from mid-January to late-March has caused a large cumulative water-balance deficit. However, it is still early to anticipate any effect on winter cereal yields, since the small and frequent rains in early April may keep top-soil moisture at favourable levels for crop growth. The yield forecasts are therefore maintained based on the trend of previous years. An exception is rape seed, for which the yield is revised slightly down since the recent rains coincide with the flowering stage and might hamper pollination. The recent rains also suggest that conditions for sowing summer crops are relatively favourable.









Spain and Portugal – Winter crops in the South affected by water stress

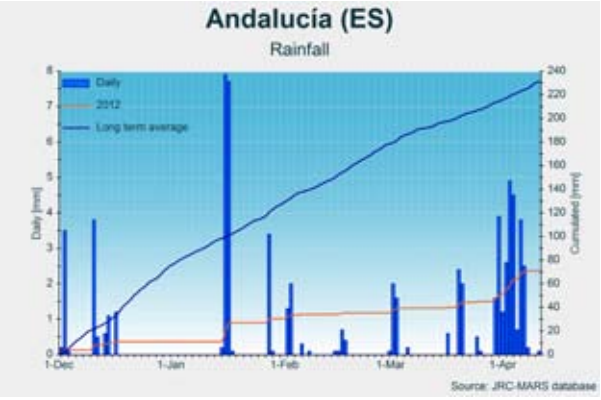
The dry period during winter has severely limited winter crop development in the south of both countries. Yield expectations for durum wheat in Spain and for soft wheat and barley in Portugal are therefore significantly affected.

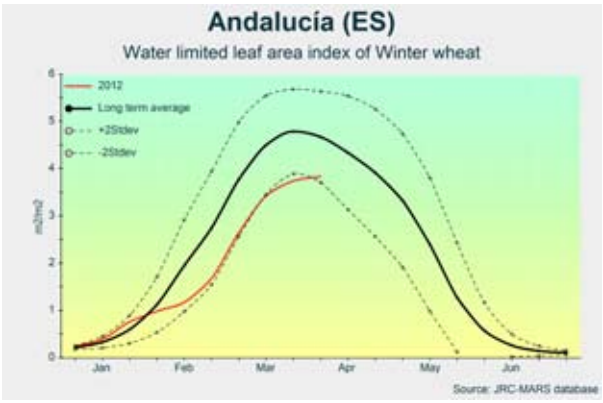
The growing season in the Iberian peninsula has been affected by one of the driest winters in the historical series. Temperatures have been lower than usual, especially during February. In southern Spain (*Andalucía*, *Extremadura*), the low precipitation during winter has severely limited the development of winter crops, already at the flowering stage, with the damage not mitigated by the rainfall of recent weeks. This results in low yield expectations for durum wheat and triticale. Similar conclusions can be drawn for all winter crops in Portugal.

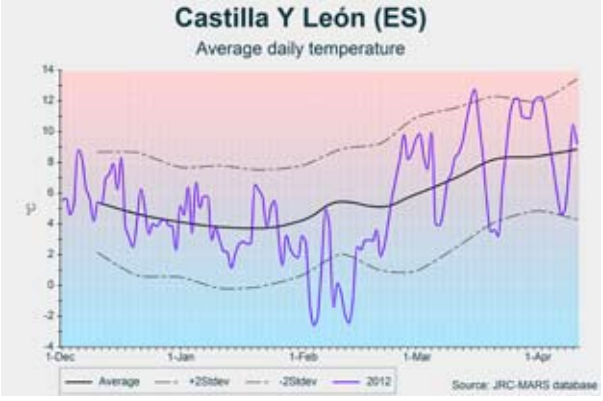
By contrast, in northern and central Spain, winter cereals are still at the heading stage, with a phenology delay for most of the areas due to low temperatures. Although cumulative rainfall from the beginning of the season remains low, the precipitation of recent weeks will benefit crop development.

The predicted yield for soft wheat and barley remains close to the average, but the water supply during the next month will be crucial.

Sunflower is being sown in April under favourable conditions.







Italy and Slovenia – Winter crops benefit from the latest rainfall

Seasonal weather in winter in conjunction with scarce precipitation has led to a large deficit in the water balance in the northern and central regions, but thanks to the imminent rainfall the crop situation might not be critical.

From December to March, northern and central Italy and Slovenia experienced a pronounced rainfall deficit of -80% to -50% compared to the long-term average. In the southern regions, however, mainly in Sicily, the period under review was characterised by heavy rainfall, which led to wetter conditions than the average.

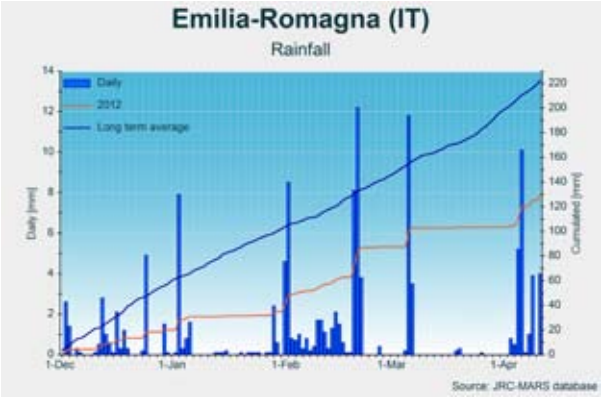
After a mild early winter and a very cold February, March was particularly warm, with daily maximums even exceeding 25 degrees in northern Italy and pushing the thermal sum significantly above the average in northern Italy and Slovenia. Both the latter show advanced crop development stages and a good vegetative development. The rainfall recorded and further forecast for April will stop the decline in soil water content in the northern and central regions, but the water balance deficit since the beginning of February is still evident and rainfall in the coming weeks will be essential to maintain the yield potential.

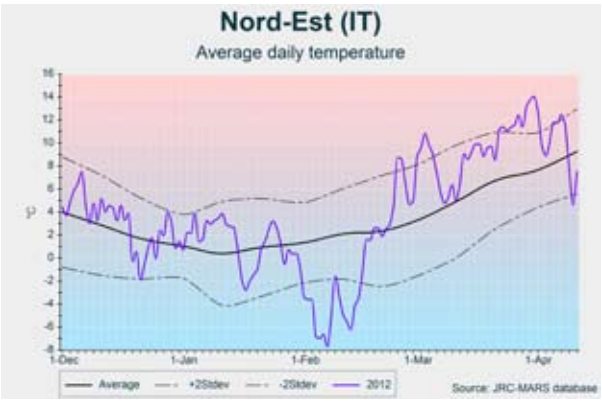
In southern Italy, thermal sums stayed closed to the average and the previous crop development delay was made up.

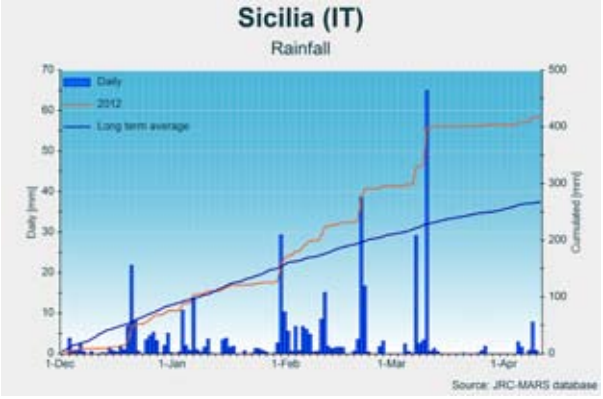
Thanks to mild but wet conditions, durum wheat shows adequate growth in Sicily and Apulia.

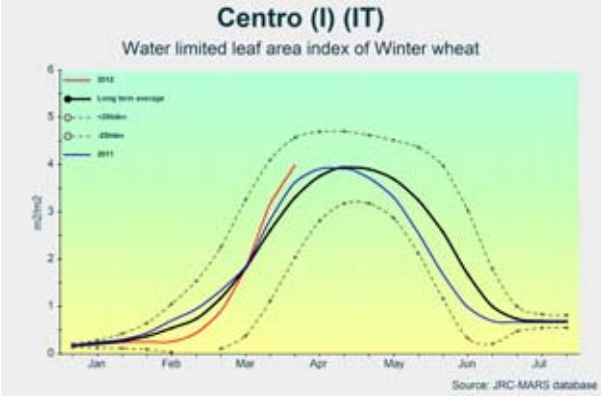
Winter wheat and barley are at the stem elongation stage in the northern and central regions, while in the south flowering is starting. The sowing of maize and sugar beet started in March, profiting from good accessibility to the fields.

Forecast yields for winter crops are around the average for recent years, but weather conditions during the next month will be crucial.





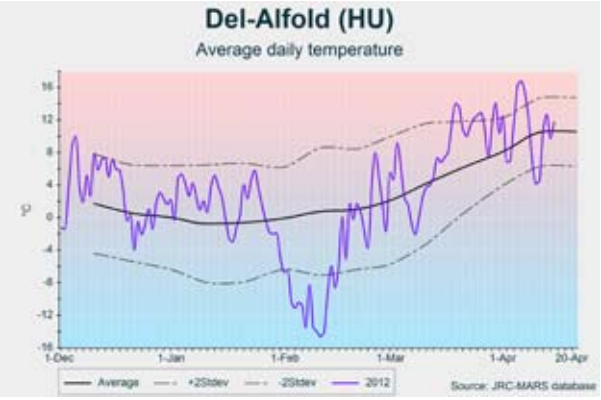




Hungary – Good sowing, but bad sprouting conditions

Dry soil conditions are common in Hungary due to no or little autumn and spring precipitation. The water deficiency curtailed biomass accumulation and the canopy development of winter crops. The severe winter frosts did not cause serious winter kill damage for winter cereals.

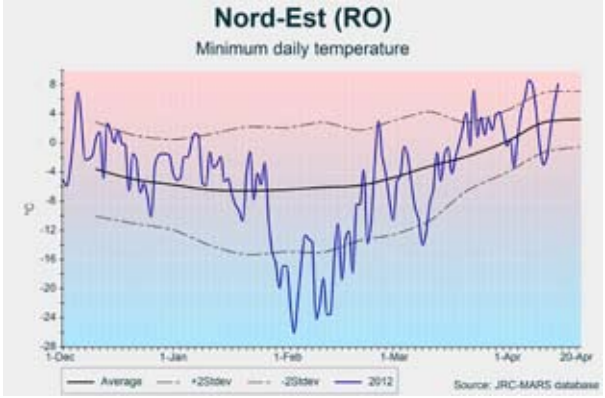
The dry autumn was followed by a wetter and warmer than usual period from December until the last week of January, facilitating the recovery and development of winter cereals. The last days of January and the first half of February were freezing cold, but a thick snow cover protected the winter crops. Limited winter kill is expected with the only exception of rape seed. Near-normal thermal conditions with significant fluctuations were experienced until mid-March: the first dekad of February and the second half of March were +2 to +3°C warmer than usual. Cold air on 8 and 9 April caused severe frost (-4°C to -9°C), but probably with no serious effect on field crops. In February the precipitation sum was below average by 10-20 mm, and March proved to be the driest in our 37-year records. Some rainfall in the first dekad of April temporarily moistened the upper soil. The mild and dry weather in March and the first dekad of April provided good sowing conditions for spring barley and sugar beet, but the upper soil layer was too dry for adequate sprouting and emergence in several places. The water shortage also decreased the biomass accumulation of winter crops. Remote sensing data confirm this fact. Abundant and persistent rains are needed to ease the current drought situation. The current yield forecast was revised down compared to the previous trend values for winter crops, taking into account the results of our crop model simulations.

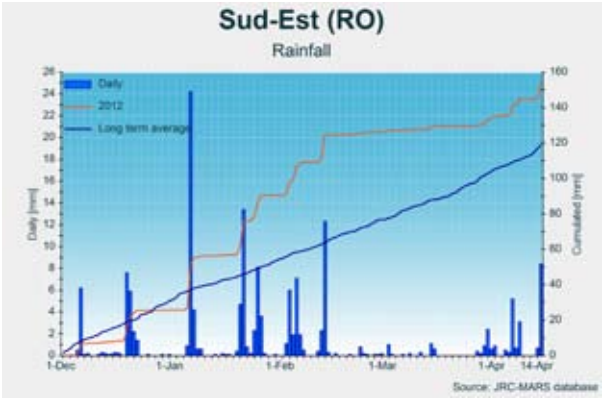


Romania – Water deficiency and under-developed crops

The extreme cold spell in February caused frost kill damage, mainly in under-developed rape seed. The melting snow cover compensated for the low precipitation in March. The warm and dry weather conditions were favourable for seasonal sowing, but further rains would be advantageous.

The previous autumn (September-November) was one of the driest in Romania. This dry spell led to weak germination and inadequate development of winter crops, especially in the case of rape seed. December and most of January were milder and moister than usual, facilitating the wintering and growth of crop stands. The precipitation sums from December until mid-February were seasonal or slightly above the long-term average. Cold air intrusion caused





temperatures to fall after 25 January, ushering in an extremely cold 20-day period. On the coldest nights temperatures fell below -20°C and in some places even approached -30°C. The snow mostly protected the winter wheat and to some extent the more sensitive winter barley from frost kill. The underdeveloped rape seed could have experienced significant damage and in several places the fields became gappy. Re-sowing is probable with maize or sunflower in springtime. Thick snow cover was accumulated until mid-February. The positive day-time temperatures from late February gradually melted the snow cover and partly refilled the soil moisture. This water input compensated for the missing precipitation of March, which was around 12 mm. Until the first half of March, thermal conditions were colder than usual, postponing crop development. The warm spring started suddenly from 17 March followed again by a significant drop in temperature around 9 April. The soil conditions were good for seasonable sowing. Precipitation increased in April, but further abundant rains are needed for the tilling and stem elongation phase of winter cereals, when the water demand increases sharply. The current forecast was based on the trend for spring crops, while for winter crops our crop growth model simulation was used, although the values are close to trend early in the season.

Bulgaria – Unfavourable precipitation pattern

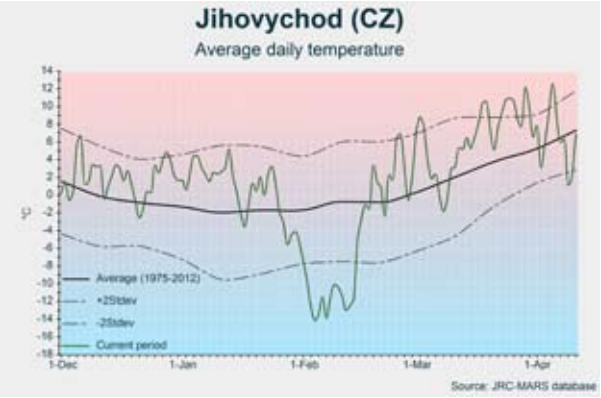
Dry and wet periods alternated during the last half of the year in Bulgaria, causing sub-optimal conditions for plant growth. Crops are mostly underdeveloped and biomass accumulation is below average.

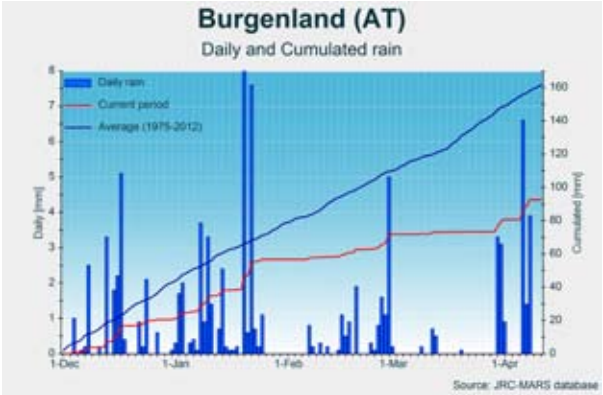
Thermal conditions were favourably mild until the last days of January, when an arctic air mass arrived and brought temperatures down sharply. In the first dekad of February the mean temperature was 12°C colder than usual. Although the winter crops were not fully prepared to survive the freezing temperatures, the snow blanket was able to protect the winter crop adequately. As with other countries in the Balkans, rape seed could have been adversely affected and could have experienced significant winter kill damage. The weather turned warm after 16 March and temperatures exceeded the upper bound/limit of the confidence interval by several days. Now, the cumulative active temperature (Tavg > 0°C) is +30% - +50% above the climatological norm in north Bulgaria. The temporal distribution of precipitation has been uneven and unfavourable since August. Last autumn, Bulgaria suffered from a long, practically rainless period from mid-October until mid-December, causing problems at the beginning of the cropping season for winter cereals. During the following two months there was a long period of plentiful rain and snow until mid-February, with precipitation exceeding the long-term average by 80-140%. At the time, snow depth was around 10 cm in the eastern regions, but exceeded 50 cm in west Bulgaria. Not surprisingly, precipitation was scarce again from mid-February until mid-April, but the melting snow temporarily replenished the soil moisture. The light spring rain and showers did not hamper sowing and other field work. Further rain is now needed as the water demand of winter and spring crops will soon increase dramatically. The yield forecasts for spring crops are calculated by trend, because the vegetation period has barely begun. The outlook for winter crops is still close to average but turning negative in the event of further water supply problems.

Austria, Czech Republic and Slovakia – Overall positive trend for winter crops but more rain is needed

Mild winter conditions and the imminent rainfall suggest a general positive trend for winter crops, but rainfall is needed in large areas of Austria and the Czech Republic. Crop yield forecasts are well above the 5-year average for soft and durum wheat, winter barley and rye. Spring crop sowing could be delayed due to imminent rain.

Thermal conditions have been generally milder than the long-term average during winter and the first part of spring, driving the thermal sum to a significant surplus in the three countries. An abrupt temperature fall was observed during the first two weeks of February (minimum temperatures reached -15 to -17°C), but it should have been counteracted by snow cover during the same period. Generally, rainfall has been around the long-term average with the exception of some areas of *Niederösterreich* (*Weinviertel*, *Waldviertel*) and *Burgenland* in Austria, and *Jihovychod* (*Jihomoravsky Kraj*) in the Czech Republic, which experienced a fairly severe drought. The forthcoming rainfall in these areas (ranging from 20 and 60 mm) could partially replenish the soil water content. At the moment, the general situation suggests an overall positive trend for winter crops but more rain could be needed to avoid yield losses. The short abrupt temperature fall with slight snowfall observed during the first dekad of April could slow down the development of winter crops and the forthcoming rainfall could postpone the sowing of spring crops. Crop yields based on our crop growth model are therefore generally revised up compared to the trend values used in the last bulletin; this is true for soft and durum wheat, winter barley and rye in Czech Republic and Austria. At the moment trend values for Slovakia are confirmed.

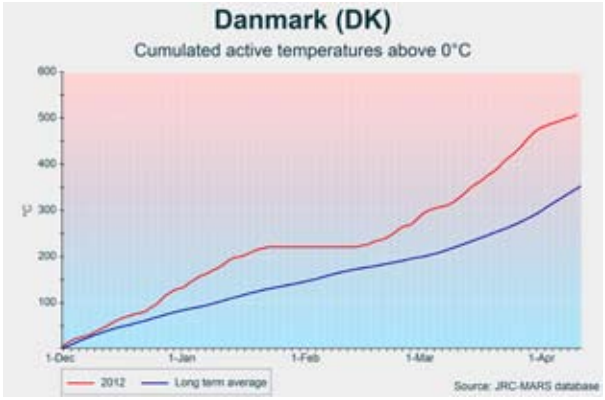


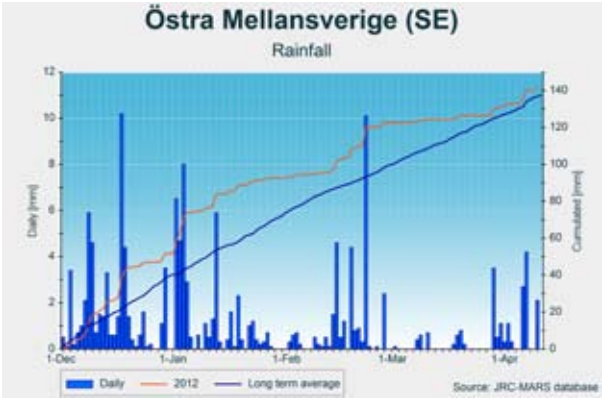


Denmark and Sweden – Good conditions and advanced development due to the mild temperatures in March

Favourable conditions in terms of temperatures and radiation with a general good water supply suggest a potentially good impact on winter crops, though April started with temperatures below the average.

Generally milder than seasonal conditions prevailed from the beginning of December until the last dekad of January, followed by an extremely cold period until mid-February. However, minimal damage to crops is expected.



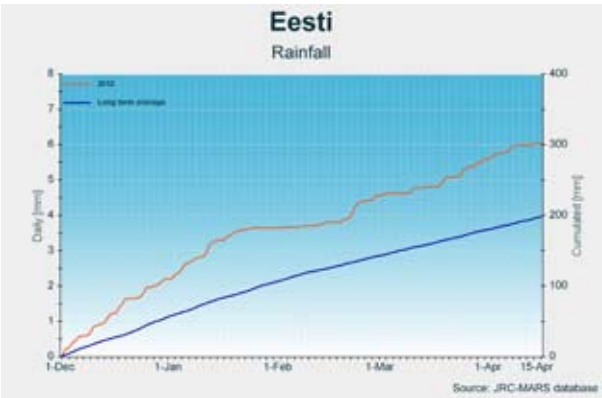


March was particularly warm and boosted the development of winter crops. On most days, maximum and minimum temperatures exceeded the long-term average. The consequences of warmer temperatures for crops are reflected in a cumulative active temperature curve significantly higher than the average, twice the LTA in *Östra Mellansverige*, and in advanced crop development stages, mainly in Denmark and in *Södra Sverige* for rape seed. Cumulative solar radiation was higher than normal from the start of February across all regions, favouring biomass accumulation for winter crops. The period from December to the end of January was marked by heavy precipitation, while rainfall from February to the first dekad of April was below the long-term average, mainly in Denmark and in *Södra Sverige*. Imminent rainfall in April will be favourable for crop growth and for sowing summer crops. However, it is still early to provide yield estimations other than those based on statistical trends of previous years.

Finland and Baltic states – High rainfall accumulation, normal to good start of the season for winter crops

Higher temperature accumulation and slightly higher simulated biomass promises a good start for winter crops, despite a cold spell at the beginning of April. Based on the results of our crop growth model the yield forecast is increased for soft wheat in Lithuania and Latvia compared to the trend given in the last bulletin.

Temperatures during the winter were characterised by a mild December and January, followed by a harsh cold wave in February and again by a very mild March with very mild temperatures, especially in Finland. Temperatures dropped at the beginning of April, accompanied by night frosts. The number of cold days was lower than the long-term average. Precipitation during the winter was higher than the long-term average (among the 5 wettest years in the historical series), except for Lithuania with rainfall accumulation close to LTA values. The high rainfall accumulation and possible wet soil may jeopardise timely soil cultivation for the sowing of spring crops, especially in Estonia. This may have the effect of shortening the growing season and reducing yields. Remote sensing (fAPAR) over the agricultural areas shows a slightly higher absorption of photosynthetic active radiation than average, and simulated aboveground biomass accumulation signals a normal to good start of the season for winter crops. Our soft wheat forecast, now based on the results of the crop growth model, is slightly higher in comparison with the previous period (soft wheat by 1% for Lithuania and by 7% for Latvia).

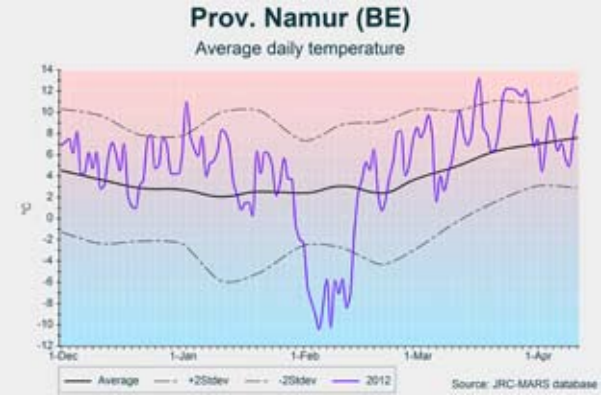


Belgium, the Netherlands and Luxemburg – Overall favourable growing conditions

Warm conditions favour the advanced development of winter crops. The February cold spell seems to have caused limited damage. Winter rains assured water availability during the drier spring.

Generally, temperatures have been above average since December across the Benelux countries, favouring early crop development and higher than normal biomass accumulation for winter crops according to crop model simulations. A strong cold wave hit the region in February, with several consecutive days with very low temperatures and little or no snow cover. However, unlike parts of northern France, no significant drop in the remote sensing indicators for biomass is observed, suggesting no severe damage occurred. Abundant precipitation from December to late January ensureda positive

water balance and higher cumulative rainfall than average, despite the strong decline in precipitation in February and March. With the return of frequent rains in April, conditions seem to be favourable for the growth of winter crops and for sowing summer crops. However, it is still early to provide yield estimations other than those based on statistical trends of previous years.

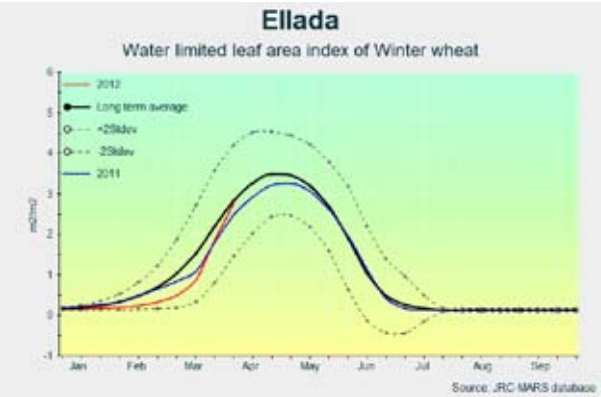


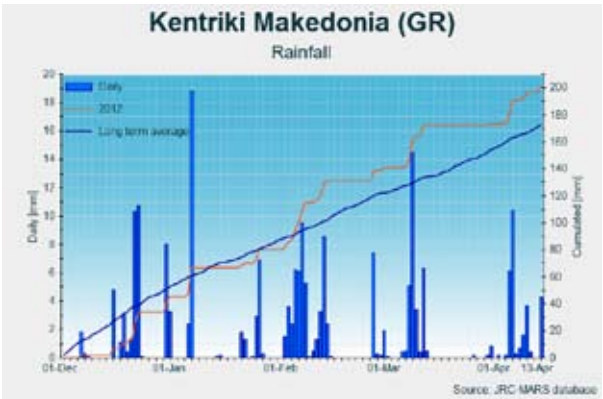
Greece – Delayed start of the season

The season started with dry conditions, making sowing difficult, but abundant rainfall later brought cumulative precipitation values back to average and temperatures above average after lower values in February and March. The forecasts for durum wheat, soft wheat and winter barley are stable and comparable to average values. The favourable seasonal start for spring crops could assure a promising forecast for maize.

The thermal sum has been regained and is now almost in the line with the LTA. After a strong drought in autumn, precipitation had been sufficient. It is now at average levels and still continuing, especially in the winter wheat production hub of the north-east and the barley production areas of the north (Kentriki Makedonia). The wheat growth cycle, although slightly delayed, is now proceeding favourably. The prevailing weather conditions could be regarded as a good portend for the initial development phases of spring crops.

Cyprus has received abundant rainfall. Cumulative irradiance levels close to the LTA will be adequate for biomass accumulation and grain filling. The forecast yield is therefore close to the average.



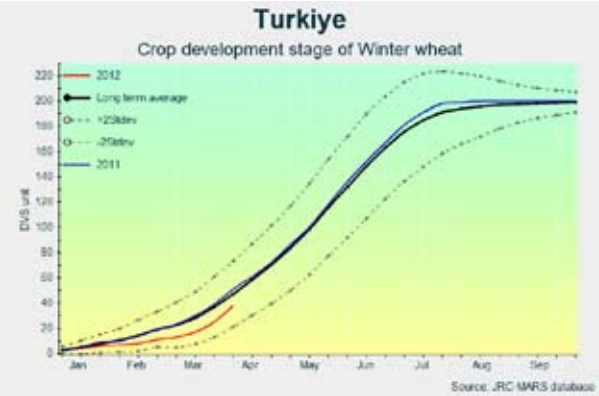


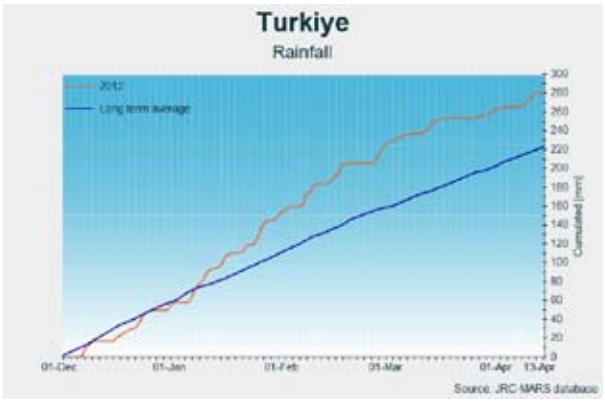
BLACK SEA AREA

Turkey – Substantial rain with promising growing conditions

The returning favourable temperature regime coupled with abundant rainfall may bring better yields, but it is quite early to expect an above-average outcome. Winter wheat and maize yields are forecast to be around the previous year's average and the five-year average values, respectively. Winter barley is set to be slightly lower than the previous year by around 2%.

The period covered in this analysis has seen favourable crop growth conditions and is continuing to do so. In general, the country, especially the main wheat producing area in central Anatolia, has received abundant rain (above the LTA) leading to good relative soil moisture. Crop development stages have been delayed and lower than the LTA due to lower average daily temperatures at the start of the season, but have now made up ground, so no detrimental effect on crop growth is foreseen. Also, accumulated temperature sums are now comparable to average values, pointing to average yields. All indicators considered, development appears to be proceeding normally and providing a conducive environment for maize sowing.

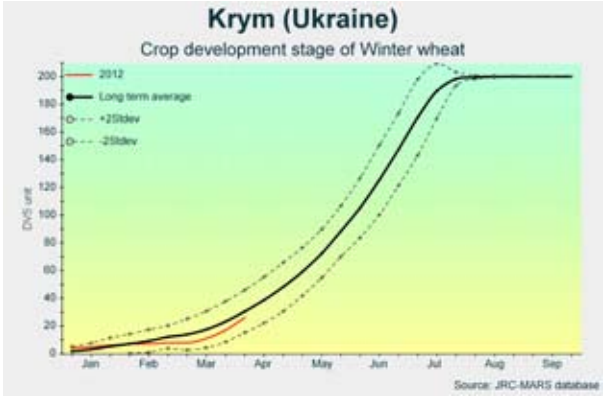




Ukraine – Unfavourable autumn conditions and frost kill in the Black Sea area

Insufficient soil moisture in autumn resulted in poor crop conditions before winter dormancy. The harsh winter caused losses in already weakened crops.

After being sown in favourable conditions, winter crops were then affected in autumn by a dry period over the entire country. At the same time, the main agricultural region in the south of Ukraine experienced temperatures 4-5°C lower than the long-term average. Winter conditions were close to the average apart from a very cold February. December and January were slightly warmer than usual with precipitation amounts exceeding the long-term average. February started with a rapid drop in temperature to 6-8°C below the long-term average. Low temperatures together with insufficient snow cover caused significant frost kill losses especially in the southern oblasts: *Krym*, *Khersonska*, and *Mykolayivska*. In March, low temperatures continued mainly in the eastern regions. In April, an average amount of rain has so far kept soil moisture at a sufficient level, but low temperatures mainly in the eastern oblasts have not helped crops to recover from the delay in the previous months. The crop development stage of wheat is close to the long-term average apart from in Krym and *Odeskaya*, where small delay is observed. The crop yield forecasts are based on a trend analysis.



EUROPEAN RUSSIA AND BELARUS

European Russia – Favourable wintering and good prospects for next season

The weather conditions until now were fair for winter crops in Russia. The extreme cold spell in February caused just moderate frost kill damage, mainly in the southern regions. Precipitation was seasonal or above the norm. Soil moisture content is sufficient. Winter crop development is satisfactory with mostly above-average biomass accumulation.

The weather conditions overall favoured the sowing of winter wheat due to scarce rainfall, although some showers and rains hampered the work locally along the Volga River and in the *southern Okrug*. Meanwhile, large areas near the Ukrainian border were unfavourably dry. In September and October, seasonal temperatures were observed in the southern and central regions of Russia, providing normal/average thermal conditions for emergence. December and the first half of January were noticeably less cold than usual, assisting the wintering of crops. However, in the following one month period, Siberian cold ruled Russia with severe frosts as low as -25°C to -33°C. This cold spell was extreme even in European Russia. The adequate snow cover provided good protection for winter wheat. Frost kill could have occurred in the regions close to the Black Sea, north of the Caucasus Mountains and some southern and central areas where the snow was not deep enough, though the frost damage on the whole is lower than usual. With moderate warming started from mid-February, the cumulative temperature sum (Tavg > 0°C) shows an additional +50 - +120 GDD for southern Russia, while northern and central areas as well as some coastal areas of the Black Sea and the Caspian Sea show a deficiency. In general the precipitation from November until now has been frequent and plentiful especially in the western part of *Volga Okrug* and *Volgograd Oblast*, with a +20 - +60% water excess, but most of the central Okrug also has a +10 - +30% surplus. The areas between the Black Sea and Caspian Sea as well as the eastern part of *Volga Okrug* (*Permskaya*, *Orenburgskaya Oblasts* and *Republic of Bashkorstostan*) are experiencing a 10% - 30% precipitation deficiency. All in all, the wheat cultivation areas are well supplied with water for the next season and the yield potential seems to be high.

Belarus – Rainfalls hampered spring sowing

The weather conditions last winter helped the wintering of crops. No significant frost kill is expected for Belarus. The winter precipitation replenished the soil moisture. Winter crop development is seasonal with around average biomass accumulation and an average yield outlook.

Last September, the below-average rain favoured the sowing of winter cereals. Precipitation in the first half of October supported germination in the northern areas, but at the same time the *Brest* and *Gomel oblasts* in south Belarus experienced a dry period until December. Mild thermal conditions ended in the first dekad of October and colder than average weather characterised the period until 20 November. Later, December and January brought temperatures +2°C to +4°C warmer than usual, but this temperate period was followed by a sharp decrease in temperatures in the last week of January, with the cold spell lasting until 20 February. Thermometers displayed minimum values between -28°C and -32°C on the coldest dawn. Fortunately, at the same time the surface was under a thick snow-cover, which provided effective shelter for the crops against freezing frosts. No significant winter frost kill is indicated by our model simulation for the country as a whole. Since the last dekad of February, thermal conditions have been highly variable, but not significantly anomalous. The precipitation sum for winter and spring is near to seasonal values with a slight deficiency in western areas and a slight plus in eastern regions. In the last dekad of March and first dekad of April,

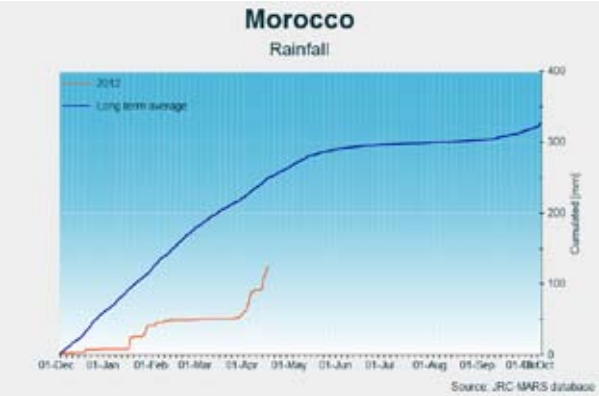
the frequent rainfall hampered the sowing of spring crops, especially in *Mogilev*, *Vitebsk* and *Gomel* oblasts. The yield forecasts for Belarus are based on the trend of previous years, because the daily mean temperature fluctuating around +5°C is prompting higher biological activity in crops after winter dormancy.

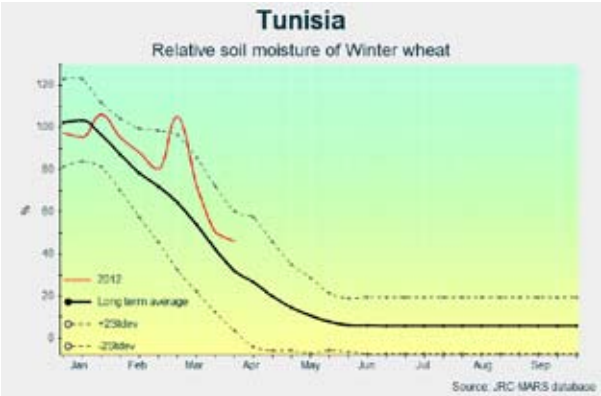
MAGHREB COUNTRIES

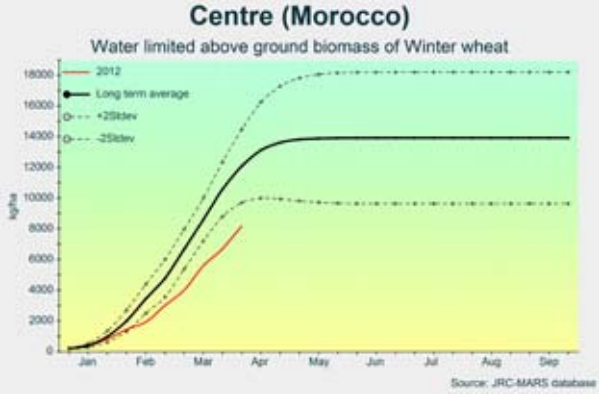
Morocco, Algeria and Tunisia – Severe drought in Morocco, crops affected

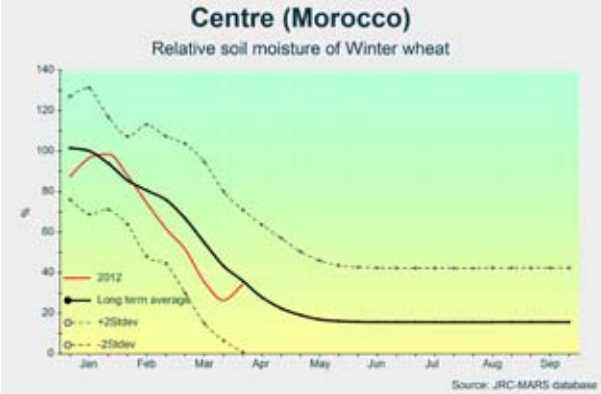
The yield forecast for soft and durum wheat in Morocco is significantly lower than the five-year average. Barley shows the same declining tendency. In Algeria, wheat and barley forecasts remain stable in terms of five-year average values. In Tunisia, on the other hand, a substantial improvement in wheat and barley yields is anticipated compared to the five-year average values.

The very low precipitation over Morocco from January to late March has caused a high cumulative water balance deficit in the wheat production areas, which is hampering yields. However, rain received in recent days has replenished soil moisture and, if it continues, could favour the crop. In contrast, the cereal production areas of Algeria and Tunisia have benefited from the positive trend that began in early spring and is still continuing. This is characterised by abundant precipitation coupled with a favourable thermal regime (higher temperatures combined with good amounts of solar radiation). This has led to a higher biomass accumulation than usual.









4. CROP YIELD FORECASTS

EU-27 and neighbouring countries

Country	TOTAL WHEAT(t/ha)					SOFTWHEAT (t/ha)					DURUM WHEAT (t/ha)				
	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs
EU27	5,36	**5,42**	5,31	+1,1	+2,1	5,58	**5,68**	5,57	+1,8	+2,0	3,41	**3,18**	3,18	-6,6	+0,0
AT	5,86	**5,58**	5,25	-4,8	+6,2	5,90	**5,62**	5,30	-4,8	+5,9	5,09	**4,84**	4,42	-5,0	+9,4
BE	8,14	**8,75**	8,60	+7,4	+1,7	8,14	**8,75**	8,60	+7,4	+1,7	-	**-**	-	-	-
BG	3,92	**3,73**	3,39	-4,8	+10,1	3,91	**3,71**	3,38	-5,1	+9,7	4,30	**4,45**	3,80	+3,5	+17,1
CY	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
CZ	5,79	**5,72**	5,35	-1,3	+6,9	5,79	**5,72**	5,35	-1,3	+6,9	-	**-**	-	-	-
DE	7,04	**7,48**	7,43	+6,3	+0,8	7,05	**7,49**	7,43	+6,3	+0,8	4,74	**5,30**	5,37	+11,7	-1,3
DK	6,52	**7,20**	7,12	+10,4	+1,0	6,52	**7,20**	7,12	+10,4	+1,0	-	**-**	-	-	-
EE	2,74	**2,83**	3,03	+3,3	-6,6	2,74	**2,83**	3,03	+3,3	-6,6	-	**-**	-	-	-
ES	3,45	**2,99**	3,21	-13,1	-6,7	3,69	**3,33**	3,46	-9,8	-3,7	2,42	**1,66**	2,44	-31,4	-32,1
FI	3,68	**3,73**	3,73	+1,3	-0,2	3,68	**3,73**	3,73	+1,3	-0,2	-	**-**	-	-	-
FR	6,64	**7,04**	6,86	+6,1	+2,6	6,79	**7,23**	7,04	+6,5	+2,6	4,79	**4,80**	4,84	+0,2	-0,8
GR	2,26	**2,31**	2,51	+2,5	-7,9	2,66	**2,70**	2,73	+1,5	-0,9	2,12	**2,18**	2,43	+2,9	-10,4
HU	4,21	**4,06**	4,07	-3,6	-0,4	4,21	**4,06**	4,08	-3,7	-0,5	4,04	**4,06**	3,81	+0,4	+6,6
IE	9,87	**8,41**	8,82	-14,7	-4,6	9,87	**8,41**	8,82	-14,7	-4,6	-	**-**	-	-	-
IT	4,18	**4,03**	3,74	-3,6	+7,7	5,36	**5,31**	5,16	-1,0	+2,8	3,65	**3,40**	3,11	-6,8	+9,5
LT	3,15	**3,39**	3,77	+7,7	-10,0	3,15	**3,39**	3,77	+7,7	-10,0	-	**-**	-	-	-
LU	5,40	**6,00**	6,04	+11,2	-0,6	5,40	**6,00**	6,04	+11,2	-0,6	-	**-**	-	-	-
LV	3,03	**3,30**	3,48	+8,8	-5,2	3,03	**3,30**	3,48	+8,8	-5,2	-	**-**	-	-	-
MT	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
NL	8,09	**8,70**	8,45	+7,5	+3,0	8,09	**8,70**	8,45	+7,5	+3,0	-	**-**	-	-	-
PL	4,10	**3,86**	4,04	-5,8	-4,5	4,10	**3,86**	4,04	-5,8	-4,5	-	**-**	-	-	-
PT	1,36	**1,14**	1,71	-16,0	-33,4	1,36	**1,14**	1,71	-16,0	-33,4	-	**-**	-	-	-
RO	3,62	**3,08**	2,76	-14,8	+11,9	3,62	**3,08**	2,76	-14,8	+11,9	-	**-**	-	-	-
SE	5,39	**5,85**	5,85	+8,6	+0,0	5,39	**5,85**	5,85	+8,6	+0,0	-	**-**	-	-	-
SI	5,17	**4,70**	4,52	-9,0	+4,0	5,17	**4,70**	4,52	-9,0	+4,0	-	**-**	-	-	-
SK	4,64	**4,17**	4,17	-10,1	+0,0	4,65	**4,17**	4,17	-10,4	+0,0	4,30	**4,31**	4,31	+0,1	+0,0
UK	7,75	**8,07**	7,76	+4,1	+3,9	7,75	**8,07**	7,76	+4,1	+3,9	-	**-**	-	-	-

Country	TOTAL BARLEY (t/ha)					SPRING BARLEY (t/ha)					WINTER BARLEY(t/ha)				
	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs
EU27	4,34	**4,39**	4,36	+1,1	+0,5	3,87	**3,88**	3,83	+0,4	+1,3	5,06	**5,15**	5,16	+1,7	-0,2
AT	5,61	**5,19**	4,83	-7,4	+7,5	4,98	**4,29**	4,10	-13,8	+4,8	6,21	**6,03**	5,68	-2,9	+6,1
BE	7,92	**8,44**	8,25	+6,5	+2,2	-	**-**	-	-	-	7,92	**8,44**	8,25	+6,5	+2,2
BG	4,10	**3,79**	3,44	-7,5	+10,4	-	**-**	-	-	-	4,10	**3,79**	3,44	-7,5	+10,4
CY	1,49	**1,19**	1,34	-19,9	-10,8	-	**-**	-	-	-	1,49	**1,19**	1,34	-19,9	-10,8
CZ	4,51	**4,30**	4,31	-4,6	-0,3	4,43	**4,15**	4,15	-6,2	+0,0	4,72	**4,69**	4,72	-0,7	-0,7
DE	5,47	**5,95**	5,96	+8,8	-0,2	4,90	**4,99**	4,81	+1,9	+3,7	5,67	**6,27**	6,34	+10,5	-1,1
DK	5,43	**5,21**	5,19	-4,1	+0,3	5,38	**5,11**	5,04	-5,0	+1,3	5,60	**5,76**	5,68	+2,9	+1,4
EE	2,44	**2,45**	2,55	+0,3	-4,1	2,44	**2,45**	2,55	+0,3	-4,1	-	**-**	-	-	-
ES	2,98	**2,79**	3,03	-6,4	-8,0	3,01	**2,91**	3,11	-3,5	-6,7	2,80	**2,13**	2,66	-23,9	-19,9
FI	3,41	**3,50**	3,43	+2,6	+1,8	3,41	**3,50**	3,43	+2,6	+1,8	-	**-**	-	-	-
FR	5,70	**6,39**	6,25	+12,0	+2,1	5,04	**6,07**	5,94	+20,5	+2,3	6,01	**6,53**	6,39	+8,7	+2,3
GR	2,38	**2,48**	2,42	+4,0	+2,2	-	**-**	-	-	-	2,38	**2,48**	2,42	+4,0	+2,2
HU	3,84	**3,62**	3,63	-5,6	-0,2	3,46	**3,18**	3,18	-8,2	+0,0	4,08	**3,88**	3,93	-5,0	-1,3
IE	7,80	**7,28**	6,95	-6,7	+4,7	7,50	**6,92**	6,72	-7,7	+3,1	9,00	**8,46**	8,44	-6,1	+0,2
IT	4,74	**3,84**	3,81	-19,1	+0,6	-	**-**	-	-	-	4,74	**3,84**	3,81	-19,1	+0,6
LT	2,90	**2,83**	2,83	-2,5	-0,1	2,90	**2,83**	2,83	-2,5	-0,1	-	**-**	-	-	-
LU	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
LV	2,40	**2,43**	2,46	+1,1	-1,5	2,40	**2,43**	2,46	+1,1	-1,5	-	**-**	-	-	-
MT	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
NL	5,93	**6,03**	5,99	+1,7	+0,7	5,93	**6,03**	5,99	+1,7	+0,7	-	**-**	-	-	-
PL	3,27	**3,21**	3,23	-1,8	-0,3	3,13	**3,10**	3,07	-0,9	+1,1	3,77	**3,61**	3,96	-4,2	-8,7
PT	1,26	**1,42**	1,77	+12,7	-19,9	-	**-**	-	-	-	1,26	**1,42**	1,77	+12,7	-19,9
RO	3,29	**2,69**	2,52	-18,1	+6,8	2,35	**2,03**	1,87	-13,7	+8,2	3,81	**3,02**	2,92	-20,8	+3,4
SE	4,44	**4,45**	4,32	+0,2	+3,1	4,44	**4,45**	4,32	+0,2	+3,1	-	**-**	-	-	-
SI	4,54	**4,28**	4,00	-5,7	+6,9	-	**-**	-	-	-	4,54	**4,28**	4,00	-5,7	+6,9
SK	3,95	**3,57**	3,49	-9,6	+2,2	3,94	**3,56**	3,46	-9,5	+3,0	4,00	**3,58**	3,74	-10,4	-4,2
UK	5,66	**5,82**	5,76	+2,7	+1,0	5,39	**5,41**	5,38	+0,4	+0,7	6,13	**6,48**	6,35	+5,7	+2,0

Country	GRAIN MAIZE (t/ha)					RYE (t/ha)					TRITICALE (t/ha)				
	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs
EU27	7,50	**7,03**	6,92	-6,2	+1,6	3,06	**3,26**	3,18	+6,5	+2,5	3,90	**3,89**	3,98	-0,2	-2,3
AT	11,30	**10,61**	10,43	-6,1	+1,7	4,40	**4,40**	3,98	+0,0	+10,5	5,00	**5,16**	5,13	+3,1	+0,6
BE	11,75	**12,30**	11,95	+4,7	+3,0	-	**-**	-	-	-	-	**-**	-	-	-
BG	5,19	**5,04**	4,26	-2,8	+18,5	2,10	**1,86**	1,86	-11,4	+0,2	3,09	**3,40**	3,01	+10,1	+12,9
CY	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
CZ	6,92	**7,73**	7,25	+11,7	+6,7	4,20	**4,67**	4,49	+11,3	+4,1	4,63	**4,02**	4,24	-13,2	-5,3
DE	10,62	**9,68**	9,68	-8,8	+0,0	4,11	**5,12**	4,70	+24,5	+8,9	5,24	**5,80**	5,67	+10,7	+2,4
DK	5,32	**-**	-	-	-	5,12	**5,11**	5,00	-0,3	+2,1	5,12	**5,07**	5,01	-1,0	+1,1
EE	-	**-**	-	-	-	2,24	**2,34**	2,69	+4,4	-13,2	-	**-**	-	-	-
ES	10,47	**10,22**	10,21	-2,4	+0,0	2,46	**1,77**	2,12	-28,0	-16,6	2,59	**1,62**	2,48	-37,3	-34,4
FI	-	**-**	-	-	-	2,80	**2,67**	2,67	-4,8	+0,0	-	**-**	-	-	-
FR	9,59	**9,19**	9,21	-4,2	-0,2	4,43	**4,86**	4,77	+9,7	+2,0	5,07	**5,30**	5,20	+4,5	+1,9
GR	11,09	**11,04**	10,71	-0,4	+3,1	2,13	**1,87**	2,32	-12,1	-19,4	-	**-**	-	-	-
HU	6,59	**6,90**	6,16	+4,7	+12,0	2,18	**2,31**	2,16	+6,0	+7,2	3,44	**3,40**	3,24	-1,3	+4,9
IE	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
IT	9,80	**9,42**	9,36	-3,8	+0,6	-	**-**	-	-	-	-	**-**	-	-	-
LT	-	**-**	-	-	-	1,90	**2,30**	2,31	+21,1	-0,5	2,30	**2,58**	2,74	+12,3	-5,8
LU	-	**-**	6,38	-	-	-	**-**	-	-	-	-	**-**	-	-	-
LV	-	**-**	-	-	-	2,70	**2,70**	2,98	+0,0	-9,4	2,70	**2,60**	2,64	-3,8	-1,6
MT	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
NL	11,52	**11,52**	11,52	+0,0	+0,0	-	**-**	-	-	-	-	**-**	-	-	-
PL	7,18	**6,35**	6,31	-11,6	+0,6	2,40	**2,33**	2,45	-2,8	-4,7	3,34	**3,13**	3,36	-6,3	-6,8
PT	7,91	**6,95**	6,73	-12,1	+3,2	0,85	**0,93**	0,94	+9,6	-1,3	0,93	**0,83**	1,42	-10,2	-41,4
RO	4,48	**3,71**	3,37	-17,1	+10,1	2,63	**2,30**	2,24	-12,7	+2,4	3,49	**3,20**	2,88	-8,2	+11,1
SE	-	**-**	6,02	-	-	5,77	**5,79**	5,66	+0,4	+2,3	4,76	**4,89**	4,94	+2,7	-1,0
SI	8,10	**8,06**	7,87	-0,5	+2,5	-	**-**	-	-	-	-	**-**	-	-	-
SK	6,87	**6,13**	6,32	-10,8	-3,1	3,22	**2,84**	2,80	-12,0	+1,4	-	**-**	-	-	-
UK	-	**-**	-	-	-	-	**-**	-	-	-	4,00	**4,10**	4,04	+2,6	+1,5

Country	RAPE AND TURNIP RAPE (t/ha)					POTATO (t/ha)				
	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs
EU27	2,86	**2,88**	3,00	+0,7	-3,9	31,65	**30,58**	29,76	-3,4	+2,8
AT	3,35	**3,20**	3,12	-4,6	+2,4	34,05	**32,18**	31,96	-5,5	+0,7
BE	4,61	**4,05**	4,11	-12,1	-1,4	46,45	**45,36**	45,30	-2,3	+0,1
BG	2,37	**2,30**	2,29	-3,3	+0,0	14,24	**17,69**	15,71	+24,3	+12,6
CY	-	**-**	-	-	-	-	**-**	-	-	-
CZ	2,88	**2,98**	2,98	+3,4	+0,0	29,72	**26,53**	26,40	-10,7	+0,5
DE	2,92	**3,36**	3,66	+15,1	-8,2	46,00	**43,47**	43,28	-5,5	+0,4
DK	3,34	**3,54**	3,54	+6,1	+0,0	33,00	**39,38**	38,23	+19,3	+3,0
EE	1,52	**1,54**	1,55	+1,1	-0,8	-	**-**	-	-	-
ES	2,00	**1,87**	1,81	-6,4	+3,3	28,55	**29,42**	29,01	+3,1	+1,4
FI	1,43	**1,36**	1,39	-5,1	-2,1	25,20	**25,80**	26,24	+2,4	-1,7
FR	3,43	**3,30**	3,34	-3,8	-1,2	42,29	**43,08**	43,29	+1,9	-0,5
GR	2,37	**-**	-	-	-	28,21	**27,33**	25,83	-3,1	+5,8
HU	2,23	**2,18**	2,29	-2,2	-4,8	26,37	**26,32**	24,51	-0,2	+7,4
IE	-	**-**	-	-	-	32,36	**34,05**	31,99	+5,2	+6,4
IT	2,58	**2,45**	2,28	-5,2	+7,5	25,63	**25,53**	25,12	-0,4	+1,6
LT	1,88	**1,95**	1,91	+3,9	+2,5	14,00	**13,74**	13,39	-1,8	+2,6
LU	-	**-**	-	-	-	-	**-**	-	-	-
LV	1,88	**2,01**	2,14	+7,1	-6,1	17,00	**16,39**	16,80	-3,6	-2,4
MT	-	**-**	-	-	-	-	**-**	-	-	-
NL	-	**-**	-	-	-	46,05	**44,84**	45,15	-2,6	-0,7
PL	2,26	**2,49**	2,69	+10,1	-7,4	20,47	**19,62**	19,62	-4,2	+0,0
PT	-	**-**	-	-	-	15,60	**15,22**	15,18	-2,5	+0,3
RO	1,98	**1,59**	1,59	-19,6	+0,0	17,20	**15,31**	14,90	-11,0	+2,8
SE	2,66	**2,72**	2,73	+2,3	-0,3	31,84	**31,19**	30,65	-2,0	+1,8
SI	-	**-**	-	-	-	-	**-**	-	-	-
SK	2,43	**2,28**	2,28	-6,3	+0,0	22,37	**17,05**	17,06	-23,8	-0,1
UK	3,94	**3,44**	3,50	-12,6	-1,7	42,30	**42,60**	42,61	+0,7	+0,0

Country	SUGAR BEETS (t/ha)					SUNFLOWER (t/ha)				
	2011	2012	Avg 5yrs	%12/1	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs
EU27	71,25	**69,23**	67,80	-2,8	+2,1	1,99	**1,79**	1,79	-9,9	+0,3
AT	67,33	**69,52**	68,43	+3,2	+1,6	2,95	**2,69**	2,71	-8,8	-0,6
BE	75,63	**75,49**	75,25	-0,2	+0,3	-	**-**	-	-	-
BG	-	**-**	-	-	-	2,03	**1,92**	1,76	-5,6	+8,9
CY	-	**-**	-	-	-	-	**-**	-	-	-
CZ	59,51	**59,08**	56,46	-0,7	+4,6	2,54	**2,39**	2,33	-5,7	+2,7
DE	72,58	**67,97**	65,98	-6,4	+3,0	2,25	**2,28**	2,28	+1,2	+0,0
DK	60,10	**60,44**	57,49	+0,6	+5,1	-	**-**	-	-	-
EE	-	**-**	-	-	-	-	**-**	-	-	-
ES	88,80	**88,67**	80,43	-0,1	+10,2	1,29	**1,08**	1,20	-16,7	-10,3
FI	38,23	**39,44**	37,92	+3,2	+4,0	-	**-**	-	-	-
FR	91,24	**90,58**	87,65	-0,7	+3,3	2,58	**2,40**	2,47	-7,0	-2,9
GR	-	**-**	-	-	-	1,24	**1,28**	1,24	+2,8	+2,8
HU	51,40	**54,45**	52,81	+5,9	+3,1	2,39	**2,29**	2,29	-4,2	+0,0
IE	-	**-**	-	-	-	-	**-**	-	-	-
IT	53,75	**54,76**	55,32	+1,9	-1,0	1,91	**2,14**	2,15	+12,0	-0,6
LT	49,00	**49,62**	45,54	+1,3	+9,0	-	**-**	-	-	-
LU	-	**-**	-	-	-	-	**-**	-	-	-
LV	-	**-**	-	-	-	-	**-**	-	-	-
MT	-	**-**	-	-	-	-	**-**	-	-	-
NL	80,65	**77,32**	74,66	-4,1	+3,6	-	**-**	-	-	-
PL	50,64	**50,34**	50,35	-0,6	+0,0	-	**-**	-	-	-
PT	-	**-**	-	-	-	0,83	**0,62**	0,67	-25,2	-7,9
RO	34,61	**37,02**	34,38	+7,0	+7,7	1,87	**1,48**	1,39	-20,6	+6,8
SE	52,76	**52,77**	54,31	+0,0	-2,8	-	**-**	-	-	-
SI	-	**-**	-	-	-	-	**-**	-	-	-
SK	56,01	**55,63**	54,56	-0,7	+2,0	2,45	**2,24**	2,22	-8,7	+0,9
UK	65,00	**64,88**	62,28	-0,2	+4,2	-	**-**	-	-	-

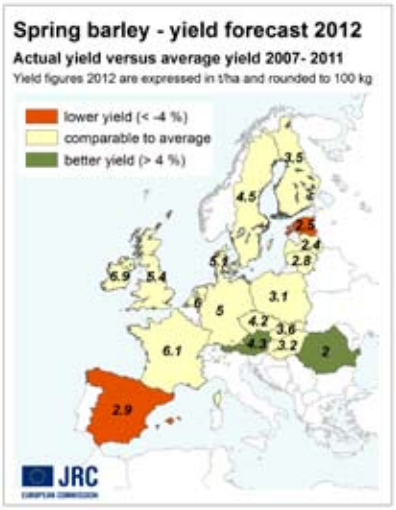
*In the range of the 5-yrs (2006-2011) only 2011 and 2010 figures available for computation

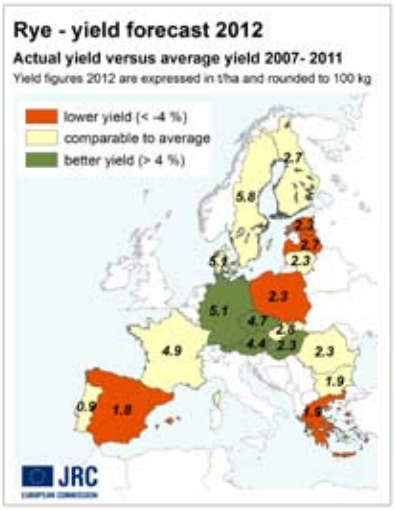
Notes: Yields are forecast for crops with more than 10000 ha per country; figures are rounded to 100 kg
Sources: 2007-2011 data come from DG AGRICULTURE short term Outlook data (March 2012), EUROSTAT Eurobase (last update: 12/03/2012) and EES (last update: 29/03/2012)
2012 yields come from MARS CROP YIELD FORECASTING SYSTEM (CGMS output up to 10/04/2012)

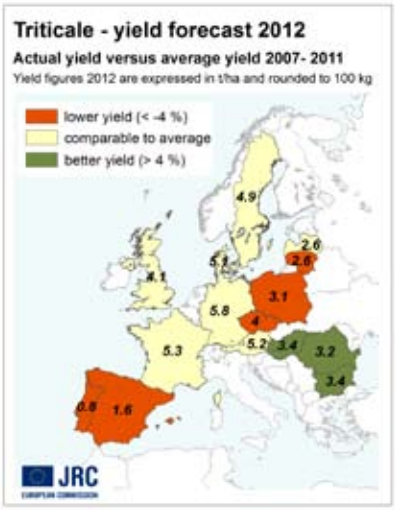
Country	WHEAT (t/ha)					BARLEY (t/ha)					GRAIN MAIZE (t/ha)				
	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs
BY	3,53	**3,52**	3,44	-0,2	+2,3	3,29	**3,31**	3,23	+0,5	+2,4	5,37	**5,55**	4,89	+3,4	+13,6
DZ	1,47	**1,40**	1,39	-4,6	+0,9	1,23	**1,27**	1,26	+3,5	+0,7	-	**-**	-	-	-
MA	1,95	**1,17**	1,55	-40,0	-24,6	1,15	**0,55**	1,04	-52,3	-47,5	-	**-**	-	-	-
TN	1,57	**2,10**	1,58	+34,1	+33,0	1,94	**1,95**	1,33	+0,7	+47,4	0,00	**-**	-	-	-
TR	2,38	**2,38**	2,35	+0,2	+1,4	2,54	**2,48**	2,30	-2,2	+7,8	7,48	**7,21**	7,19	-3,6	+0,4
UA	3,22	**3,00**	3,00	-6,9	-0,1	2,34	**2,33**	2,23	-0,3	+4,4	4,85	**4,68**	4,60	-3,4	+2,0

Notes: Yields are forecast for crops with more than 10000 ha per country; figures are rounded to 100 kg
Sources: FAO database, INRA-Morocco

Yield forecast maps

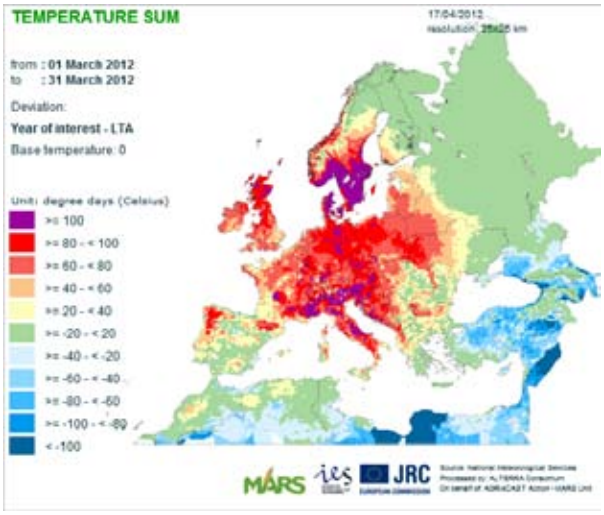


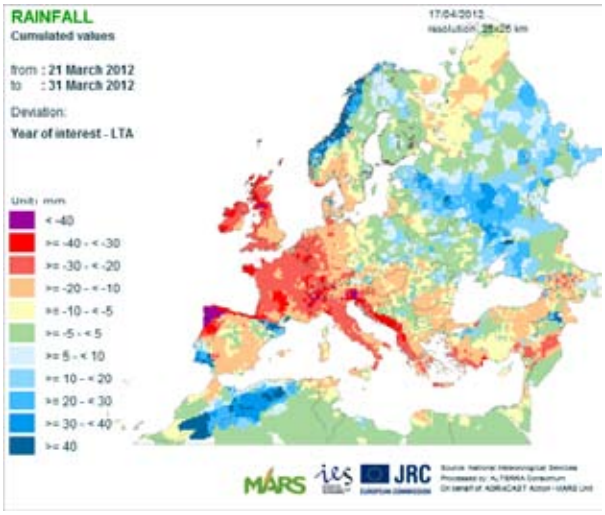


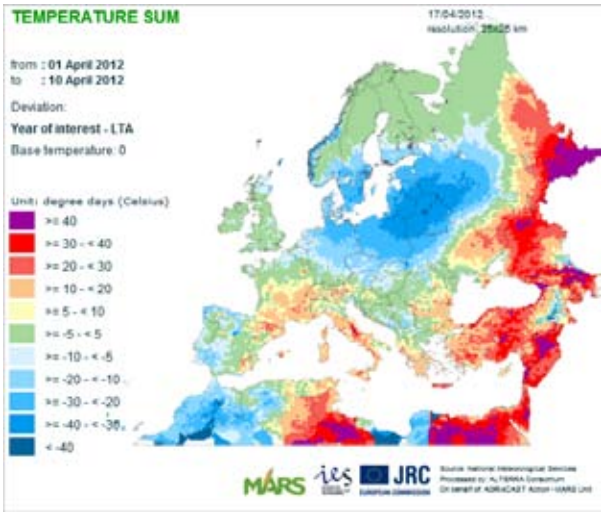


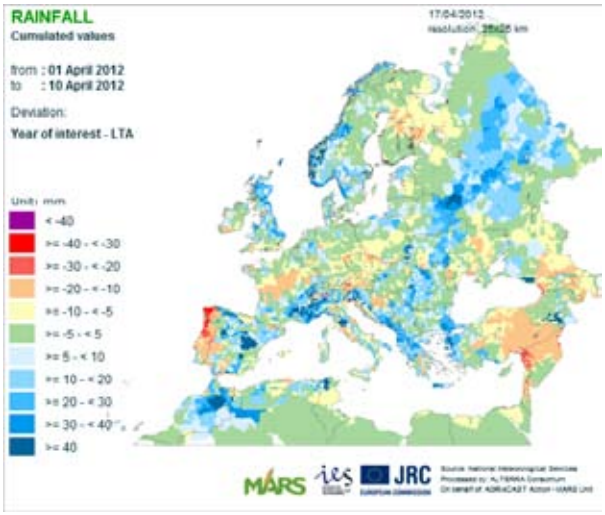
5. ATLAS MAPS

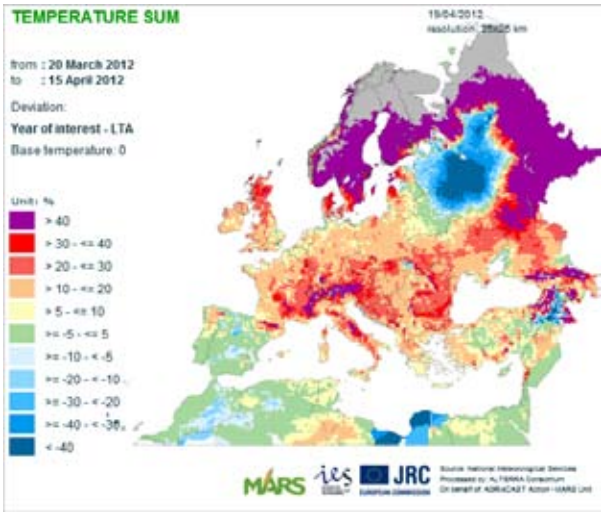
Temperatures

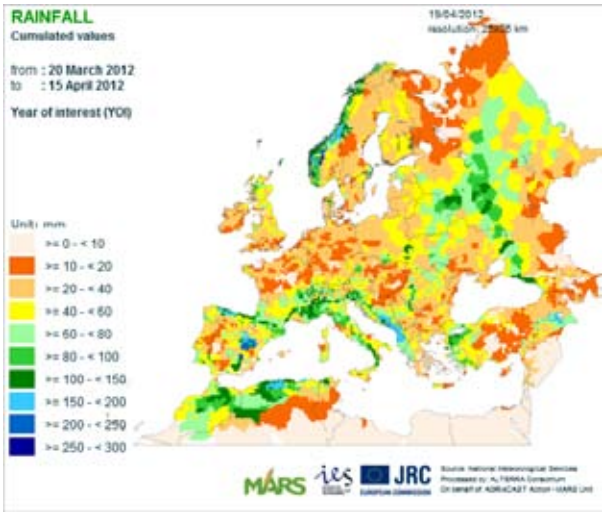




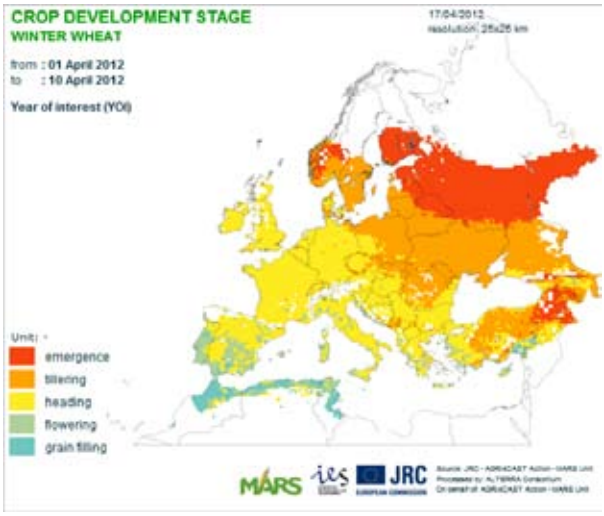


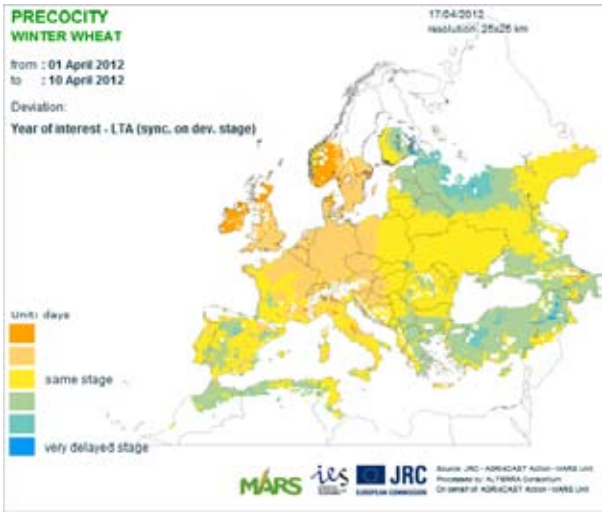


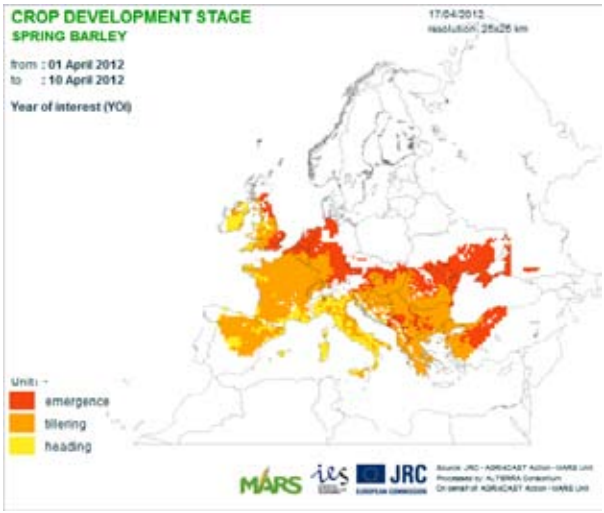


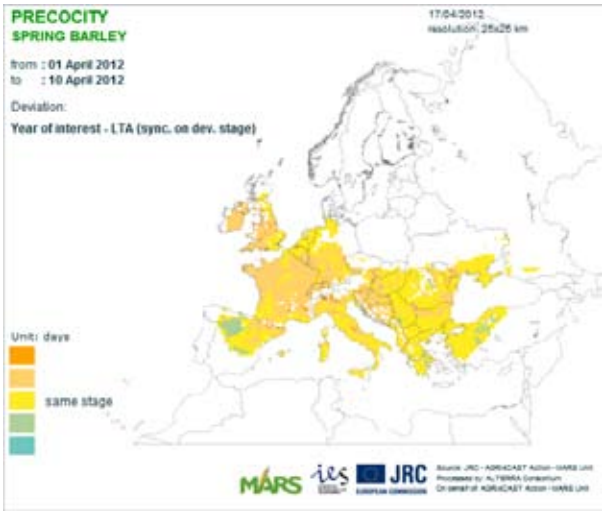


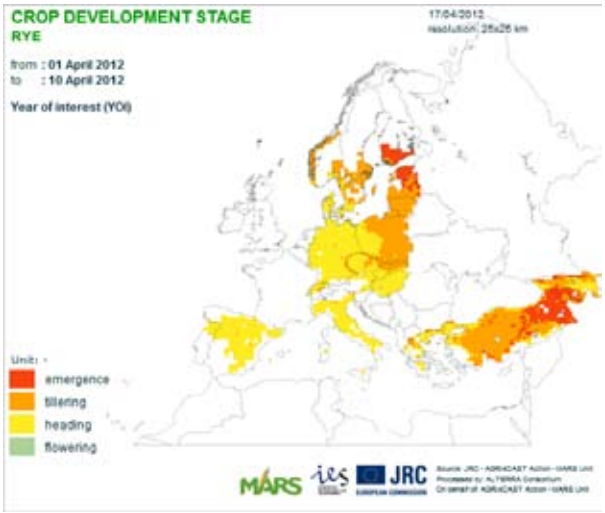
Development stage/precocity

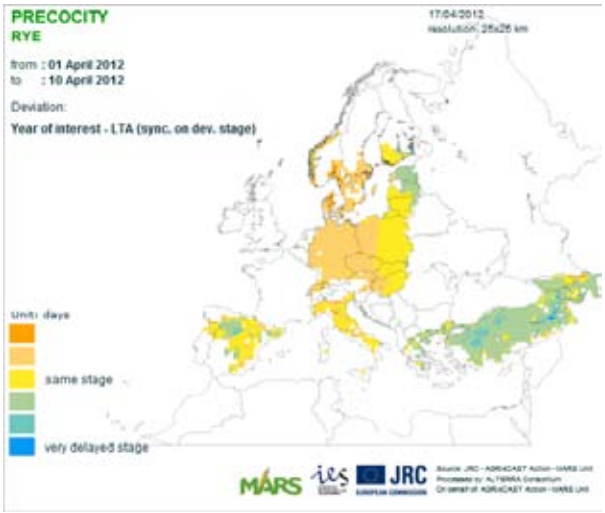




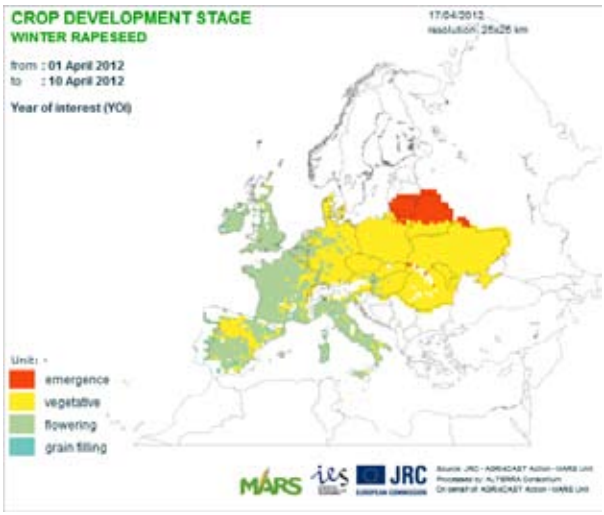


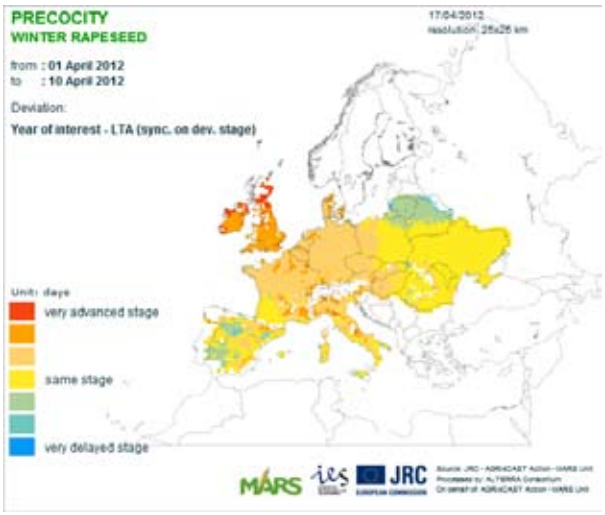




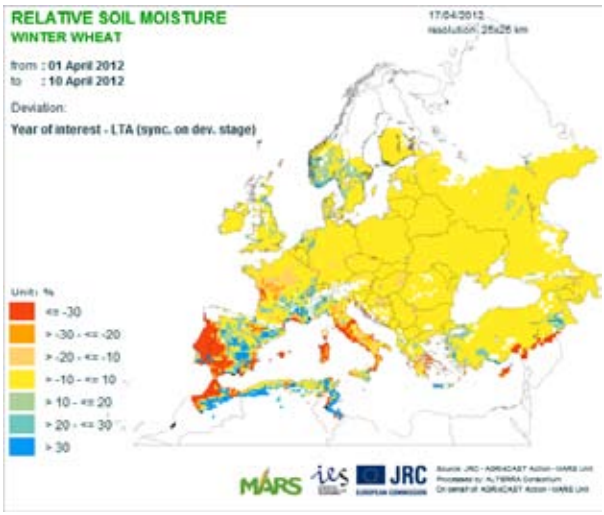


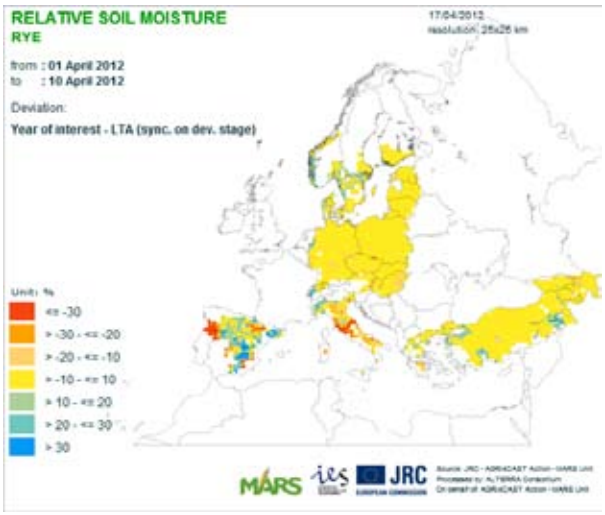
Development stage/precocity

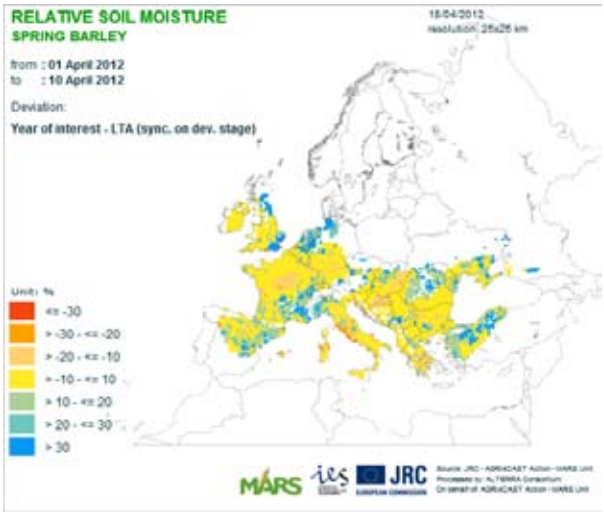


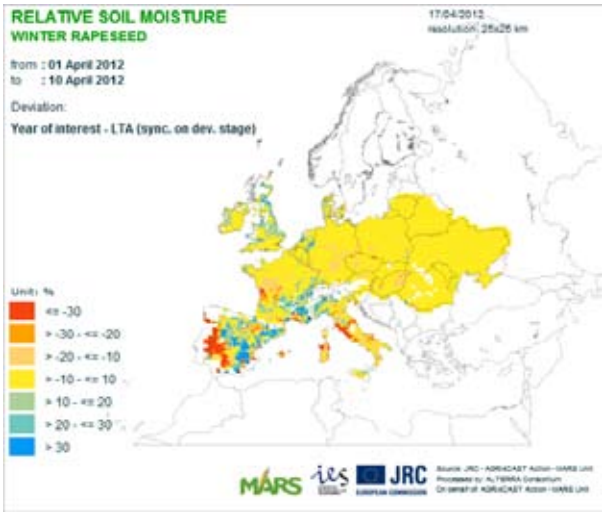


Relative soil moisture









LB-AM-12-004-EN-N

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Date	Publication	Reference
13 Jan	Agromet. analysis	Vol. 20 No. 1
10 Feb	Agromet. analysis	Vol. 20 No. 2
26 Mar	Agromet. analysis and yield forecast	Vol. 20 No. 3
23 Apr	Agromet. analysis, remote sensing analysis, and yield forecast	Vol. 20 No.4
29 May	Agromet. analysis, remote sensing analysis, and yield forecast, pasture analysis	Vol. 20 No. 5
25 Jun	Agromet. analysis, remote sensing analysis, and yield forecast, pasture update	Vol. 20 No. 6
23 Jul	Agromet. analysis, remote sensing analysis, and yield forecast, pasture update, rice analysis	Vol. 20 No. 7
27 Aug	Agromet. analysis and yield forecast, pasture update	Vol. 20 No. 8
24 Sep	Agromet. analysis, remote sensing analysis and yield forecast, pasture update	Vol. 20 No. 9
22 Oct	Agromet. analysis, remote sensing analysis and yield forecast, pasture analysis, rice analysis	Vol. 20 No. 10
26 Nov	Agromet. analysis, campaign review and yield forecast	Vol. 20 No. 11
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Luxembourg: Publications Office of the European Union

Printed in Italy

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Edition
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Data production
MARS unit AGRI4CAST/JRC and ALTERRA (NL), Meteoconsult (NL), VITO (BE)

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ISSN 1831-9424
ISSN 1831-9793

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