European Commission

Period covered: 11 April - 20 May
Issued: 29 May 2012

Crop Monitoring in Europe

MARS BULLETIN Vol.20 No. 5 (2012)

Positive outlook for spring crops

Crop	Yield t/ha				
	2011	MARS 2012 forecasts	Avg 5yrs	%12/11	%12/5yrs
TOTAL CEREALS	5,13	**5,05**	4,99	-1,6	+1,2
Total Wheat	5,35	**5,34**	5,31	-0,1	+0,7
soft wheat	5,59	**5,62**	5,57	+0,5	+0,8
durum wheat	3,20	**3,03**	3,14	-5,5	-3,7
Total Barley	4,31	**4,43**	4,36	+2,8	+1,6
spring barley	3,86	**4,07**	3,83	+5,4	+6,2
winter barley	5,00	**5,01**	5,14	+0,2	-2,6
Grain maize	7,59	**7,02**	6,94	-7,6	+1,1
Rye	3,06	**3,18**	3,18	+3,9	+0,0
Triticale	3,90	**3,81**	3,98	-2,2	-4,2
Other cereals	2,94	**2,92**	3,22	-0,6	-9,4
Rape and turnip rape	2,86	**2,87**	3,00	+0,2	-4,4
Potato	31,59	**29,70**	29,78	-6,0	-0,3
Sugar beet	71,51	**69,59**	67,85	-2,7	+2,6
Sunflower	1,97	**1,80**	1,79	-8,6	+0,6

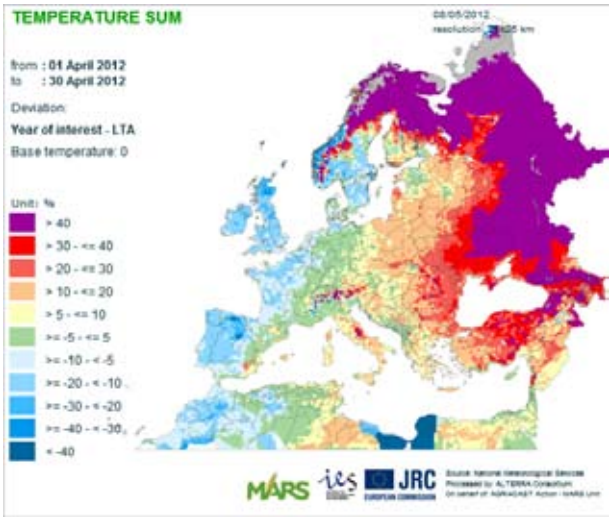
April and May brought plenty of rain to western and northern Europe as well as to Romania, Bulgaria and Greece. The dry spell continues in southern Ukraine and more rain is needed in parts of Germany, Poland, Slovakia and Hungary. There has been below-average temperature accumulation in the UK, Ireland and other parts of northern Europe as well as western France. The first hot spells have been recorded in the Iberian Peninsula and around the Black Sea, along with a high temperature accumulation in Bulgaria, Romania and Ukraine. In general the current prospects for **EU-27 yields are average.** Compared to our last forecasts, soft wheat yields have been revised slightly downwards for the EU as a whole, mainly due to lowered yield expectations for Germany, Bulgaria and Romania, while **soft wheat** yields are slightly higher for France and the United Kingdom. **Winter barley** yield forecasts for the EU as a whole are now 2.7% lower than in the last Bulletin, mainly due to yield reductions in Germany and France. **Spring barley** yield forecasts for the EU-27 are 5% up on the last Bulletin, as the figure for Spain was increased by 11%. **Rape seed** yield is stable. The decrease in yield for Germany compared to the last Bulletin is compensated by an increase in France.

Joint Research Centre

1. AGRO-METEOROLOGICAL OVERVIEW

There has been plenty of rain in western and northern Europe and in Romania, Bulgaria and Greece. The dry spell continues in southern Ukraine and more rain is needed in parts of Germany, Poland, Slovakia and Hungary. The temperature accumulation is below average in the UK, Ireland and other parts of northern Europe as well as in western France. The first hot spells have been recorded in the Iberian Peninsula and around the Black Sea, along with a high temperature accumulation in Bulgaria, Romania and Ukraine.

April was a rather chilly month in Western Europe, with a temperature accumulation far below the average in the United Kingdom, Ireland, the Benelux countries and huge parts of France as well as in Spain and Portugal. The low temperature accumulation in western Europe was mainly due to low maximum values, but minimum temperatures also dropped below 0°C around 17 April - though this is not likely to have harmed the plants. In general, plant growth was slower than normal but has not accumulated a significant delay in Western Europe. The low temperature accumulation came with plentiful precipitation. The United Kingdom, France and northern Italy all received more than their long-term average rainfall, removing concerns raised by the earlier excessively dry period. The number of rainy days was also significantly higher than usual, making field work difficult. Welcome rain also fell in Morocco, partially mitigating the effects of the previous dry period, as well as in Portugal and Spain. However, the rainfall in southern Spain came too late to help restore yield potential. In Central and Eastern Europe, temperature accumulation fluctuated around the average in Germany and higher than usual temperatures were accumulated in Poland, the Czech Republic, and Slovakia and around the Black Sea generally. This was particularly the case in southern Ukraine, where temperatures peaked above 30 degrees towards the end of April, and the hot spell continued into May - also covering parts of Romania. Precipitation was rather scarce in important agricultural regions in eastern Germany, Austria, Slovakia, Poland and Hungary. Here further rain is needed to maintain the yield potential. Romania, by contrast, received a lot of rain after the previous dry period, maintaining the country's yield potential, and this is also true of the main crop-producing regions in Bulgaria. Western and southern Ukraine remained dry. With the hot weather, soil moisture is now being rapidly depleted. As the dry period continues into May, moisture has fallen by 30 to 50 mm since the beginning of April. As a consequence of the hot spell, temperate accumulation in Ukraine in May is ate least 40% above the long-term average. Romania and Bulgaria are also seeing high temperature accumulation, compensating for their previously delayed crop growth. Temperature accumulation in May fluctuated around the average for Central Europe, France, Italy and the Baltic States. As in April, May brought lower-than-normal temperature accumulation for the UK and Ireland, while in France the accumulation was normal. In Spain and Portugal, on the other hand, the temperature accumulation has been high, with daily maxima above 30 degrees for 6 to 9 days in the southern and central parts of the Iberian Peninsula. Rainfall in May continued to be plentiful in Romania and Bulgaria as well as in southern Spain, Portugal, the UK and northern Europe. Greece and Turkey also received beneficial rainfall, ensuring good growing conditions.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to : 30 April 2012
Deviation:
Year of interest - LTA
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Unit: %
> 40
> 30 - <= 40
> 20 - <= 30
> 10 - <= 20
> 5 - <= 10
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>= -10 - < -5
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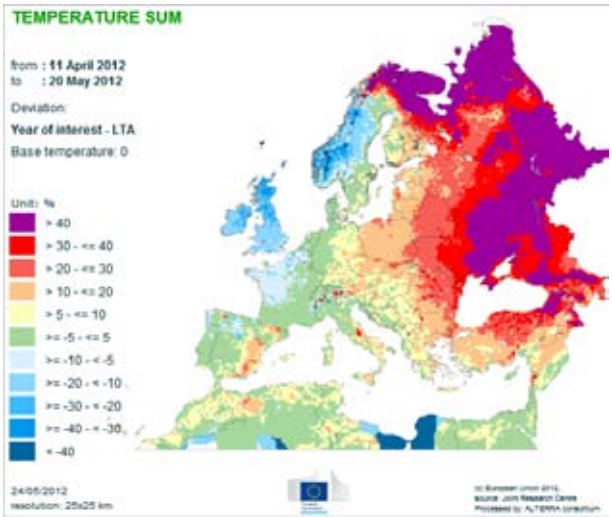
>= -30 - < -20
>= -40 - < -30
< -40
MARS
JRC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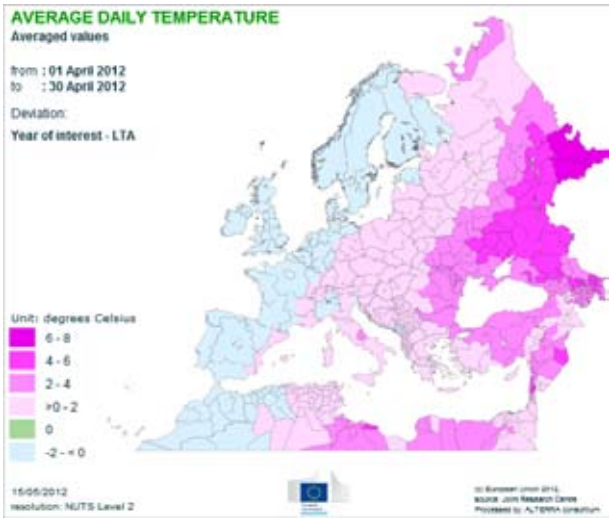
> 20 - <= 30
> 10 - <= 20
> 5 - <= 10
>= -5 - <= 5
>= -10 - < -5
>= -20 - < -10
>= -30 - < -20
>= -40 - < -30
< -40
24/05/2012
resolution: 25x25 km


AVERAGE DAILY TEMPERATURE
Averaged values
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to : 30 April 2012
Deviation:
Year of interest - LTA
Unit: degrees Celsius
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4 - 6
2 - 4
>0 - 2
0
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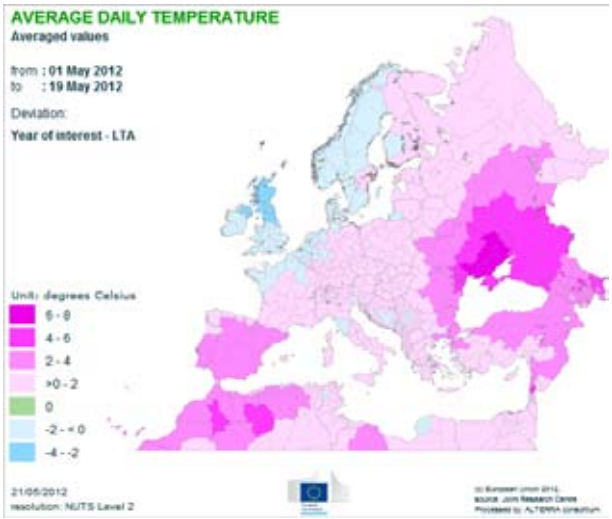
15/05/2012
resolution: NUTS Level 2


AVERAGE DAILY TEMPERATURE
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Deviation:
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2 - 4
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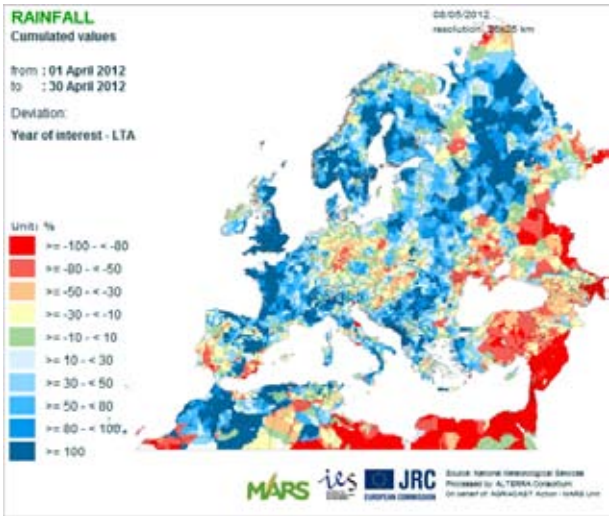
0
-2 - < 0
-4 - -2
21/05/2012
resolution: NUTS Level 2


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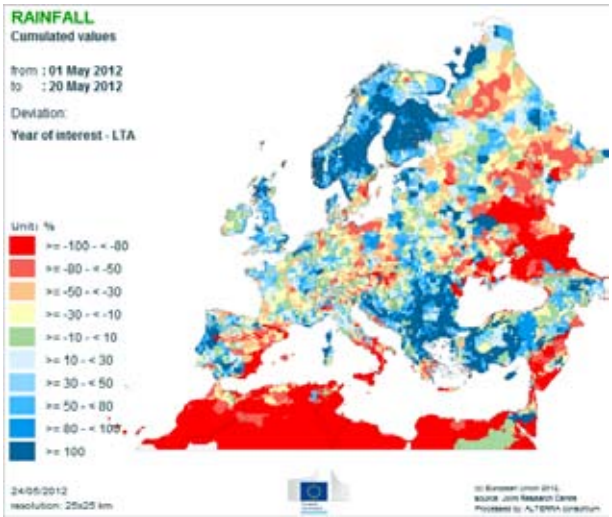
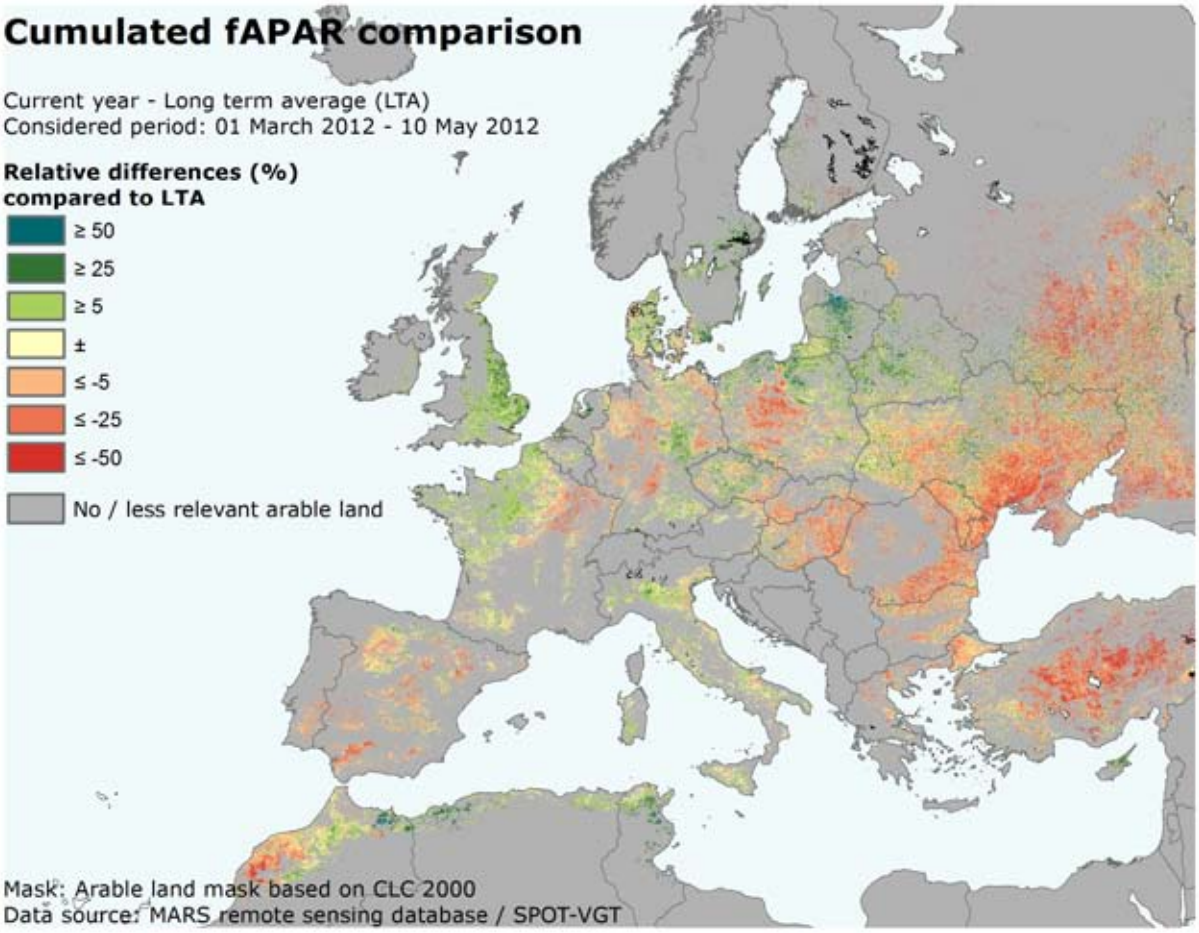
>= 50 - < 80
>= 80 - < 100
>= 100
MARS
JRC


RAINFALL
Cumulated values
from : 01 May 2012
to : 20 May 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
24/05/2012
resolution: 25x25 km

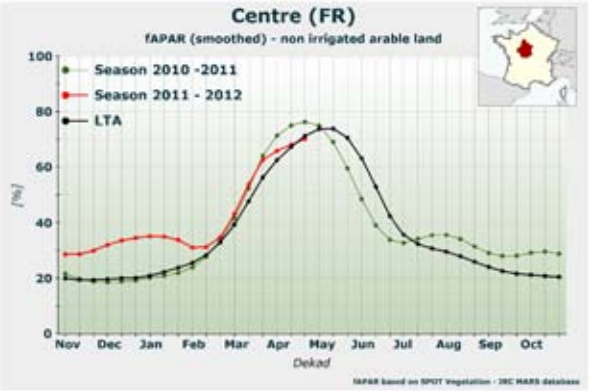
2. REMOTE SENSING – OBSERVED CANOPY CONDITIONS

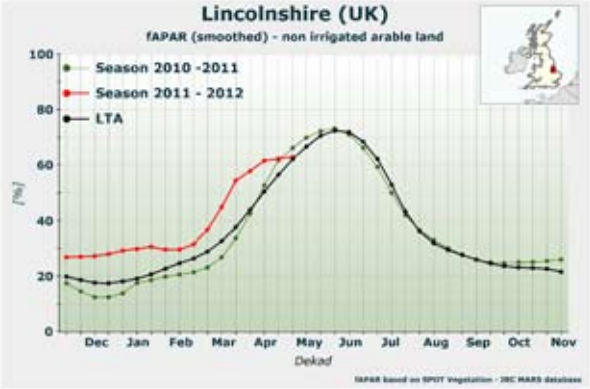
Slowdown of canopy development in the northern Iberian Peninsula. Development delays persist in Central Europe. Improved canopy conditions in the Western Black Sea region.

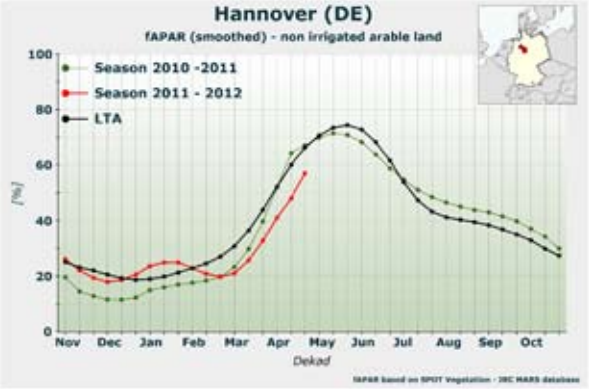


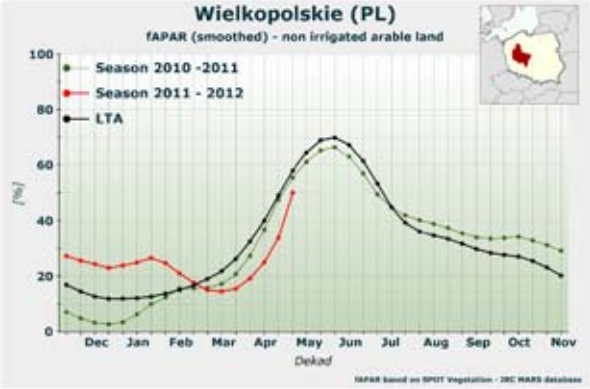
The map shows the differences between the cumulated Fraction of Absorbed Photosynthetically Active Radiation (fAPAR) values during the period 1 March - 10 May 2012 and the cumulated long-term average (LTA, 1998 – 2010) for the same period. The red areas are arable land where the growing season has been delayed or where there is critical biomass development in spring time. The opposite is the case in the green areas. Crop development in the southern **Iberian Peninsula** is at a critical stage. In southern agricultural regions the damage suffered in recent months can no longer be remedied, while green canopy development in the northern regions has been delayed by the low temperature in recent weeks (see *Castilla y Leon* fAPAR profile). Across the whole of **Italy**, weather conditions allow slight optimism for both winter and spring crops. In **western France** and the **eastern United Kingdom**, the wet and cold weather during the second half of May has slightly slowed down the anticipated growth. This has led to normal canopy development in France, while in the United Kingdom crop canopy is still at an advanced stage. The fAPAR curves for the *Centre* region (*FR*) and *Lincolnshire* (*UK*) for the current season show the biomass conditions, though the latest fAPAR values are strongly reduced by cloud cover. The central European region has been affected by winter kill and biomass development has not recovered here. The general trend for arable land in **eastern France**, **central Germany** and **western Poland** is highlighted by the current season's fAPAR profiles for the *Hannover* (*DE*) and *Wielkopolskie* (*PL*) regions. The latter graph shows that the warm weather in May has reduced the delay. In **Hungary**, crops are slightly late in reaching their phenology stages but the overall biomass accumulation range is about average (see *Eszak - Magyarorszag* fAPAR profile). Other biomass conditions for winter and spring crops will mainly depend on whether the dry spell continues. The cultivated land around the **Black Sea** has seen positive temperature accumulation. In **Romania** and **Bulgaria**, high temperatures were coupled with good amounts of precipitation, allowing biomass development to reach normal stages - making up for the considerable delay in early spring. This is confirmed by the most recent fAPAR values that are around, or even above, the LTA (e.g. *Severoiztochen* (*BG*). In **Ukraine**, by contrast, the most important wheat production areas saw their soil water content fall rapidly in May, causing a further reduction in the crop growth rate (e.g. *Khersons'ka* fAPAR profile). In **Russia**, canopy development moved from severely delayed to normal, thanks to the favourable temperatures. A similar trend was seen in **Turkey**. Across the **Maghreb** region, a slightly early harvest is expected, due to the prolonged drought.

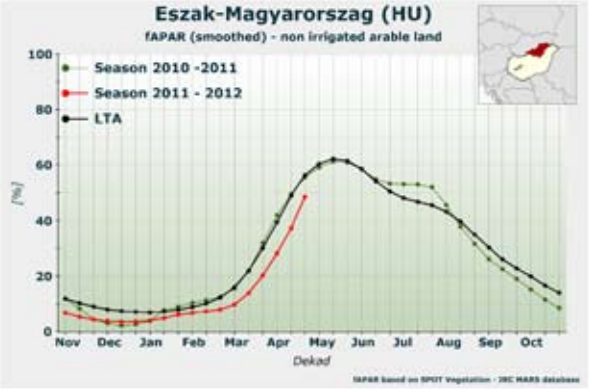

Castilla Y León (ES)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct
Dekad

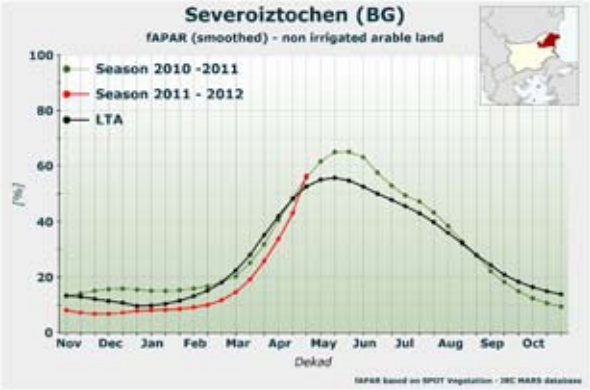

Centre (FR)
fAPAR (smoothed) - non irrigated arable land
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct
Dekad


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


Hannover (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


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


Eszak-Magyarorszag (HU)
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


Severoiztochen (BG)
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


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

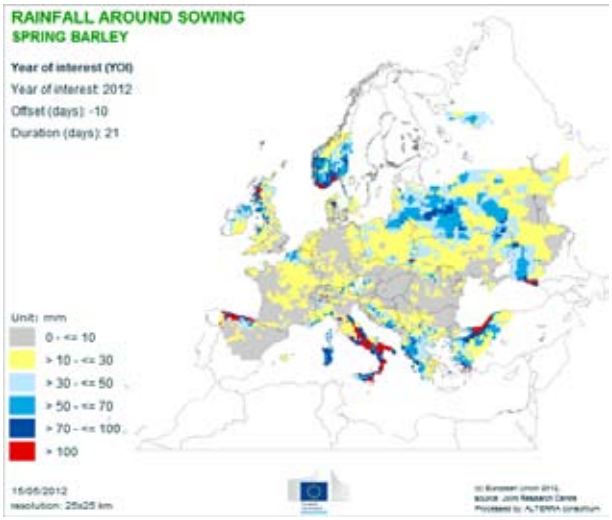
3. SPRING SOWING CONDITIONS

The cold wave in February caused significant damage to winter crops in eastern France, Germany, Poland and some areas of Romania and Bulgaria. As a consequence, spring crops are benefiting from winter crop area losses and the spring crop area has been revised upwards. In France, Germany and Poland, winter kill mainly affected cereals. The area lost to winter kill will be re-planted mainly with spring barley in France and with spring barley and maize in Germany and Poland. In Romania and Bulgaria, rapeseed was the crop most severely affected by winter kill losses. It is expected to be replanted with maize and sunflower.

Spring barley

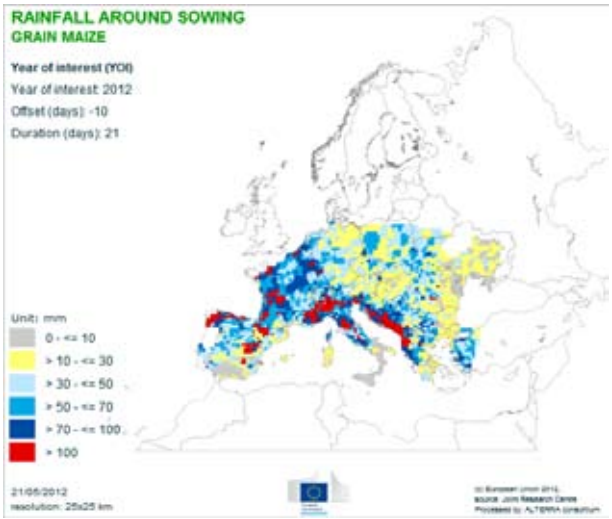
In general the spring barley sowing took place under good weather conditions. Most of central Europe experienced between 10 and 30 mm of rainfall around sowing time, not hampering field activities. Locally in Italy, in northern Spain and in the west of Turkey, very wet conditions (>70 mm /21 days) built up mostly after the sowing period. In conjunction with favourable temperatures, this has meant good conditions for germination. In north-eastern Europe, the long-lasting snow cover caused some delays. In Romania, Hungary and Ukraine, dry conditions in March may have delayed field preparation and the early development of plants.

The rainfall began in April in Romania and Hungary, creating good soil moisture conditions, but the weather remained dry in southern and eastern Ukraine.



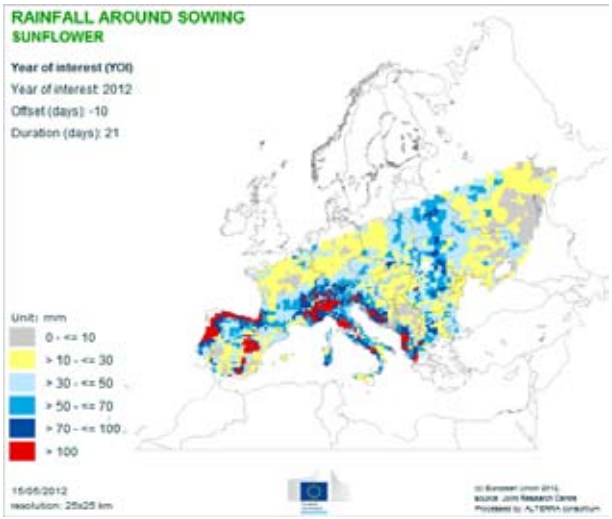
Grain maize

The continuous rain in April is delaying the sowing of maize in north-western Europe (France and Belgium), and the overly-wet conditions (>70 mm /21 days) could create obstacles to the germination and emergence of plants. Some fields will therefore need to be planted again. The ideal planting window for maize will soon end, and any fields not planted by then could be hit by yield losses. Grain maize sowing in Italy was early and wet conditions were mostly cumulated after sowing, allowing good germination and emergence. Bulgaria and Hungary recorded between 10 and 30 mm of rainfall around the sowing period, not hampering field activities. Abundant precipitation in Romania may have hampered the sowing of maize mainly in the central and western regions. In Germany and Poland, maize was sown under good soil moisture conditions. In general, the low temperatures recorded in Central Europe in the second half of May could delay plant development.



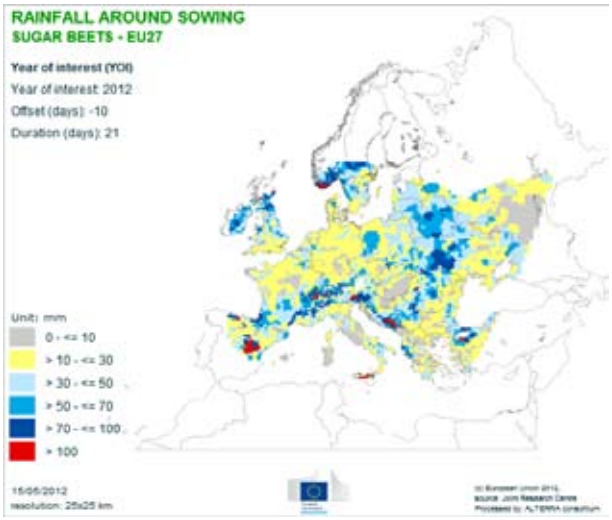
Sunflower

In the major producing areas of Spain (the Centre and Andalusia) and France (south-west), favourable weather conditions allowed for good sowing and germination. In Castilla-La Mancha (Spain) and in some areas of Northern and Central Italy, wet conditions (>100 mm /21 days) were mostly cumulated after sowing. This in conjunction with favourable temperatures meant good germination and emergence. The late sowing in Romania and Bulgaria may have been done in wet soil. In Hungary, between 10 and 30 mm of rainfall were recorded around the sowing period, not hampering field activities.



Sugar beet

In the countries which are the main producers of sugar beet in the EU, soil moisture conditions were good for sowing. Germany, France and Poland recorded between 10 and 30 mm of rainfall around sowing time, not hampering field activities. In these countries, subsequent precipitation allowed proper germination and emergence.



4. COUNTRY ANALYSIS

EUROPEAN UNION

In general, the current prospects for EU-27 yields are average. Compared to our previous forecasts, soft wheat yield figures have been revised slightly downwards for the EU as a whole, mainly due to lower yield expectations for Germany, Bulgaria and Romania, while for France and United Kingdom the revised figures are slightly higher. Winter barley yield forecasts for the EU as a whole are now 2.7% lower than in the last Bulletin, mainly due to yield reductions for Germany and France. Spring barley yield forecasts for the EU-27 are 5% up on the last Bulletin, as the figure for Spain was increased by 11%. Rape seed yield is stable. The decrease in yield for Germany compared to the last Bulletin is compensated by an increase in France.

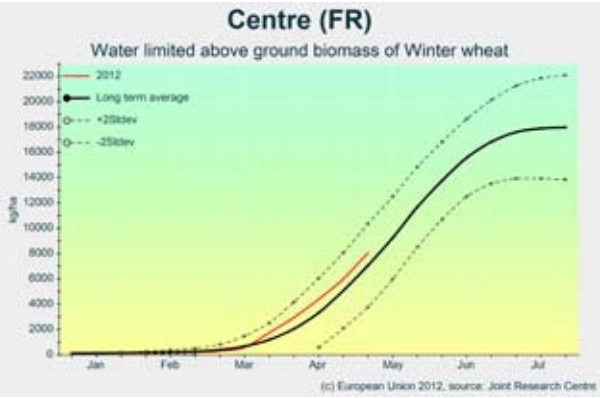
France – Favourable conditions after intense rainfalls

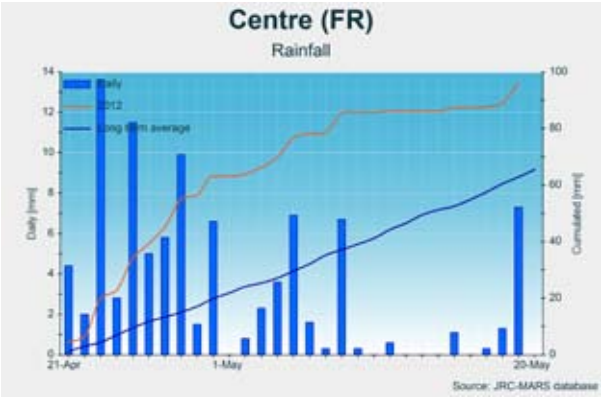
Recent rainfall has improved the outlook for winter cereals.

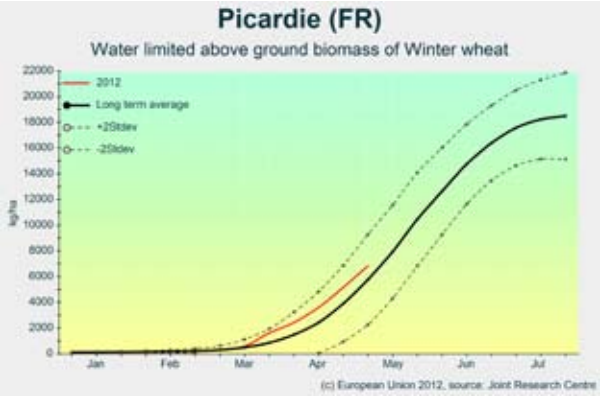
The intense precipitation in practically all regions from the second half of April led to quite favourable conditions for winter cereals, which are now reaching flowering, especially in the Southern regions. Remote sensing analysis shows that winter crops have reached higher-than-usual leaf area development in *Centre*, *Poitou-Charentes*, *Pays de la Loire*, *Bretagne* and *Normandie*. Yield expectations have therefore been revised upwards for soft wheat, durum wheat, triticale and winter barley. Spring barley too has experienced very positive conditions so far. Moreover, after the re-sowing of areas affected by winter kill in the North East, more land than ever before is now sown to spring barley. For rye and winter rapeseed, yields are expected to be in line with the average for the past five years.

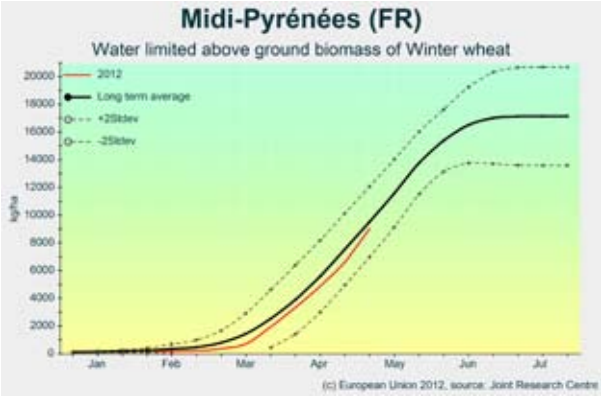
Sunflower has already emerged, and the recent rainfall will help it develop. However, colder-than-usual weather during the second half of April and the first half of May could slightly delay its development. The late sowing of grain maize in western regions may have been affected by intense rainfall during the last quarter of April, and thus delayed until the first half of May.

Sugar beet and potatoes are in the late emergence stage, and the temperatures over the next few months will be decisive for the biomass production of both crops. The yield expectations for all summer crops have been calculated using the trend for recent years.







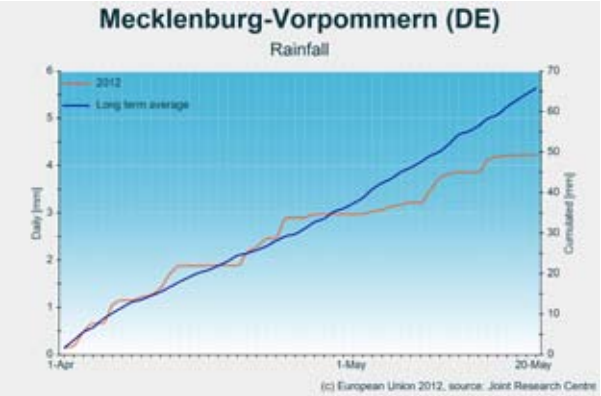


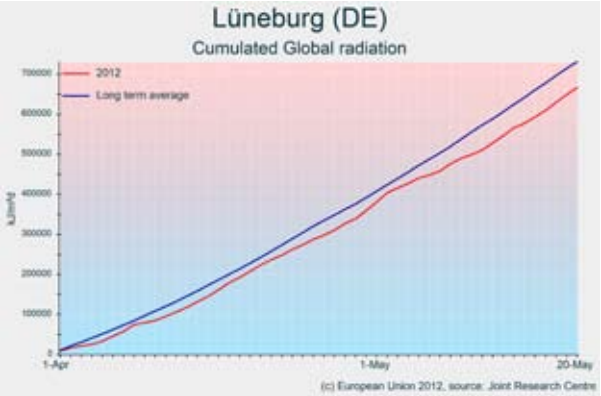
Germany – More rain is needed in the East

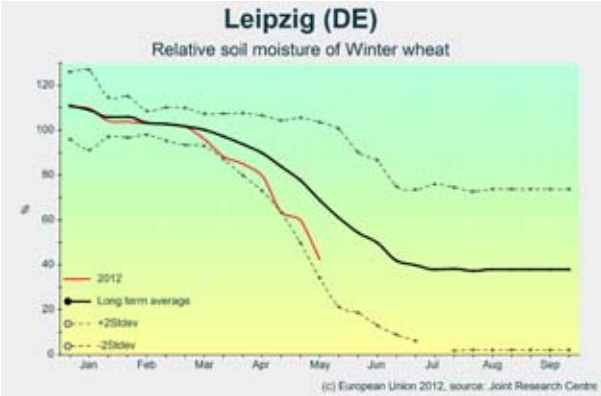
Cumulated precipitation for April and May is not sufficient to replenish soil moisture content in eastern Germany. Winter crops generally show moderately early development with forecasts slightly below the average. Spring barley prospects are positive.

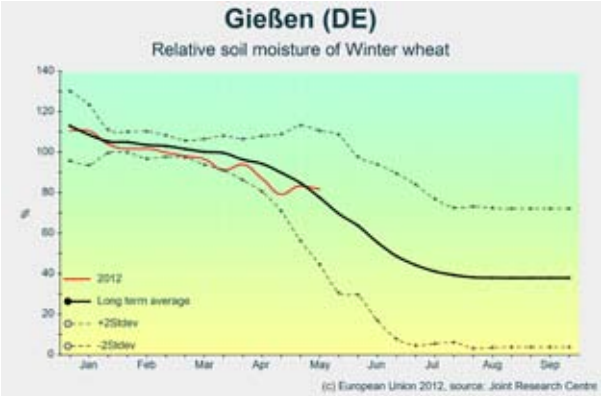
Since the beginning of April only *Rheinland-Pfalz* and *Saarland* have accumulated a clear surplus of rainfall, followed by *Hessen* with rainfall between 70 and 100 mm. In the other regions the picture is patchy: only 30–50 mm of rain fell in *Mecklenburg-Vorpommern*, *Sachsen-Anhalt*, *Brandenburg* and *Thüringen*. Considering the low soil moisture content for winter crops, rain is now needed to maintain the yield potential. The overall temperature is about average, but with huge fluctuations, e.g. night frosts on 17 April, when the temperature fell as low as -5°C in Bayern whereas temperatures above 30°C were recorded in the same region on 12 May. Incoming radiation was slightly below normal, except in some parts in southern Germany.

Winter wheat is reaching the end of the heading phase and has started flowering in *Thüringen*, *Sachsen* and *Sachsen Anhalt* as well as in *Baden Wuerttemberg*. Our model indicates that the crop has developed slightly early in these regions, as Germany did not experience such low temperatures as Western Europe. Soil moisture values in all the above regions are below the long-term average, except in *Hessen* and *Saarland*, but here too further rain is needed to maintain the yield potential. Compared to our last Bulletin the forecast has been revised downwards, but is still above last year's yield. The same applies to winter barley. Spring barley was sown under dry conditions and the subsequent period was rather cold, preventing any excessive shooting, and this may result in rather high yields. Rape seed has passed the flowering stage and has started its grain-filling period slightly early. Soil moisture levels are very low in eastern Germany, but so far this is not reflected in the limited storage organ content, which is currently expected to be above average. The forecast has been lowered compared to the last bulletin, due to mediocre growing conditions.







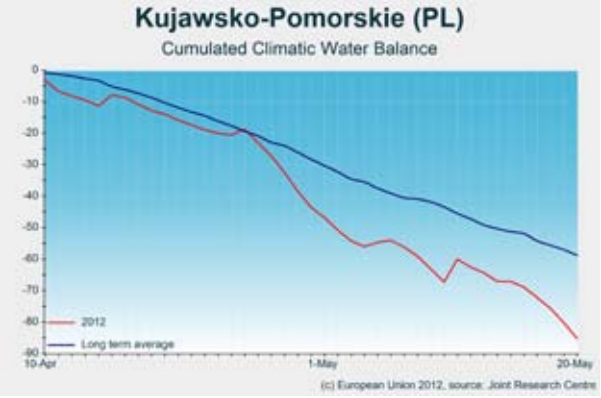


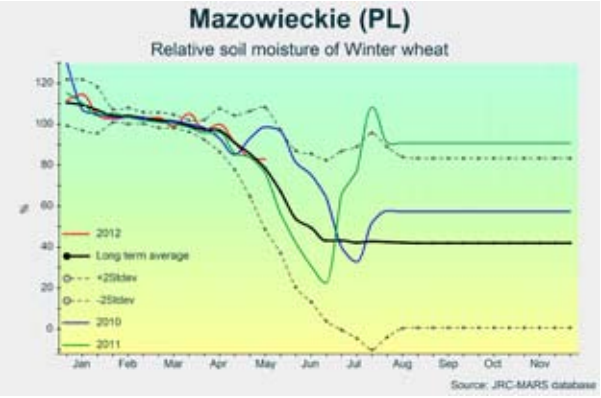
Poland – Good start of the growing season but more rain is needed

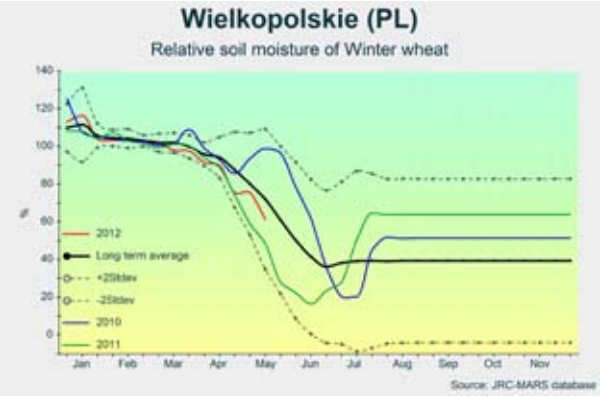
As in the last bulletin, we confirm winter crop yield forecasts that are lower than the five-year average – by 5% in the case of soft wheat and rye, and by 7% in the case of winter barley and oil seed rape. Triticale yield is now forecast at 11% below the five-year average, as winter kill hit the main productive regions. The spring crops yield forecast is good, around the five-year average.

The period analysed (since 11 April) was warmer than usual. It started with temperatures in the normal range; then two peaks were recorded - between 27 April and 4 May, and on 10-11 May. During these peaks, maximum daily temperature across the country exceeded 28°C. The middle third of the month (11-20 May) was colder than the long-term average but with no negative impact on plants. The accumulation of active temperatures (Tbase = 0°C) all over the country is 18% above the long-term average, and total solar radiation also exceeded the LTA. Cumulated rainfall in the country exceeded the long-term average by 17%, mainly in eastern areas -which received about 70-80 mm. The highest surplus (by >+50% LTA) was recorded in *Warminsko-Mazurskie* and *Mazowieckie*. The western part of the country received average precipitation. Rainfall was well distributed and weather conditions were favourable for the germination and emergence of spring crops. The climatic water balance for the country is in the normal range but across the centre from the north to the south (*Pomorskie, Kujawsko-Pomorskie, Lodzkie* and *Opolskie*) the climatic water balance is 30% lower than usual. In these regions and in the west of the country, more rain is needed to boost crop yields.

Winter wheat is heading all over the country, a few days earlier than the long-term average; our model predicts a good biomass accumulation, and soil moisture is sufficient in the east. Oil rapeseed has started grain filling and is flowering in the north of the country, while rye is also heading slightly early. Spring barley has started heading, while the other spring crops are in the early vegetative stage and their development is in line with the long-term average.



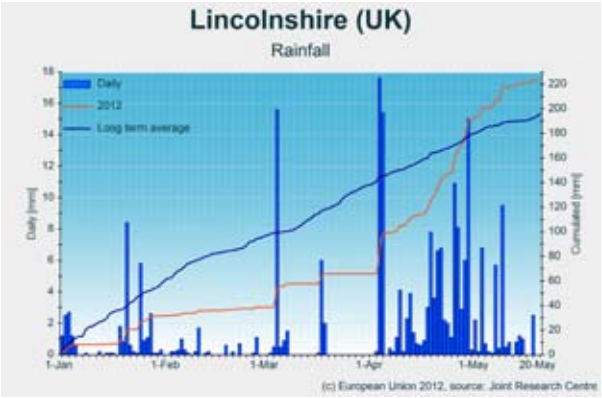


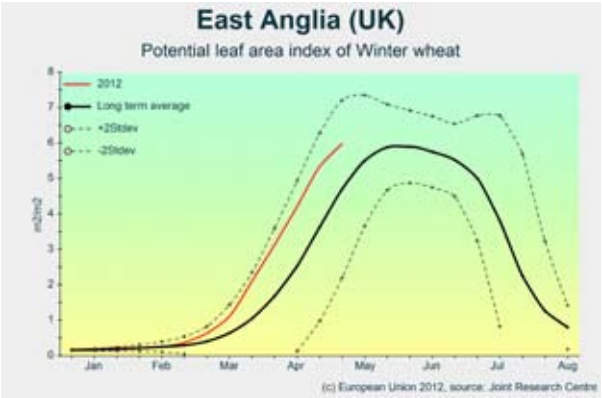


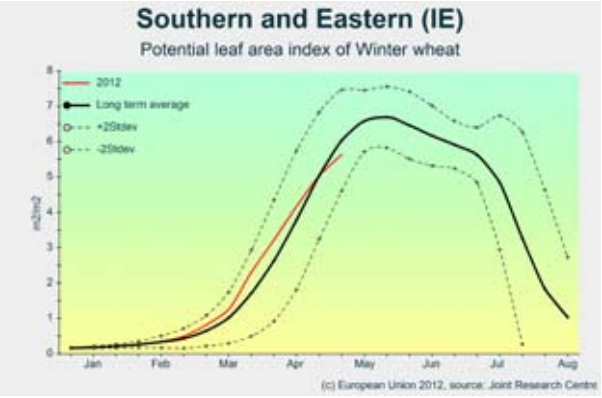
United Kingdom and Ireland – From very dry to very wet

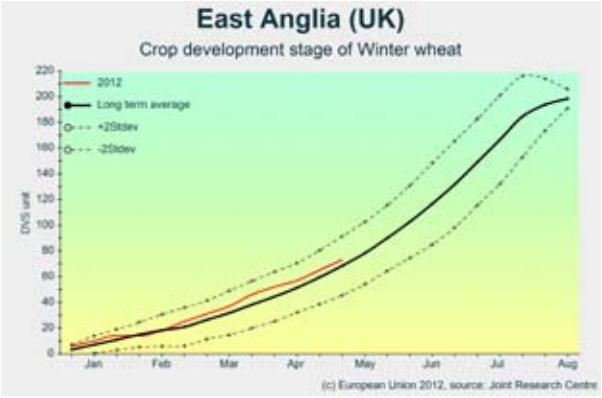
High cumulated precipitation for April and May definitely removes concerns over the early spring drought, but it also complicates management practices and increases the risk of disease. Winter crops generally show moderately early development and higher-than-normal biomass, giving yield forecasts that are slightly above average.

The rain that fell during April and May has definitely ended the drought that had been affecting most agricultural land throughout the British Isles. This has removed the risk of water stress in the more critical periods of stem elongation and booting for winter crops. However, the unusually high amount and frequency of precipitation may have adverse effects on crops and complicate their management. Damp conditions severely increase the risk of diseases appearing, which will be difficult to control since pesticide application is hampered by the wet conditions. The high soil moisture may be sub-optimal for spring crops and may delay the planting of potatoes. Pollination of rapeseed could also be hampered, potentially reducing the number of grains. Winter crops appear to have retained some the advance in crop development that they had acquired during the warm and sunny month of March. With the exception of winter cereals in Ireland, all have a higher-than-average Leaf Area Index (LAI). Although the exceptional conditions of drought followed by heavy rainfall may have had some impact on final yield, our models and remote sensing data indicate that crops are generally developing well. Consequently, crop yield forecasts are in general slightly above average. Exceptions include rapeseed in UK and winter barley in Ireland.







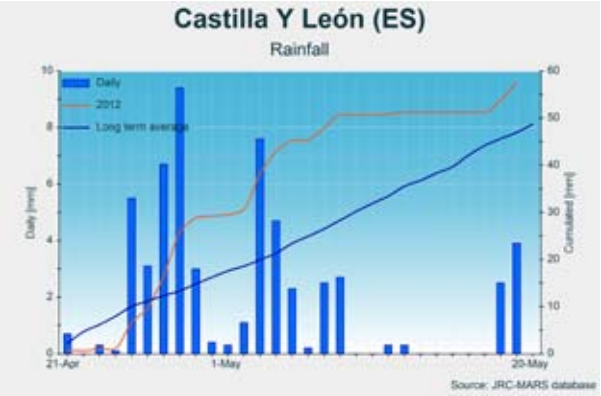


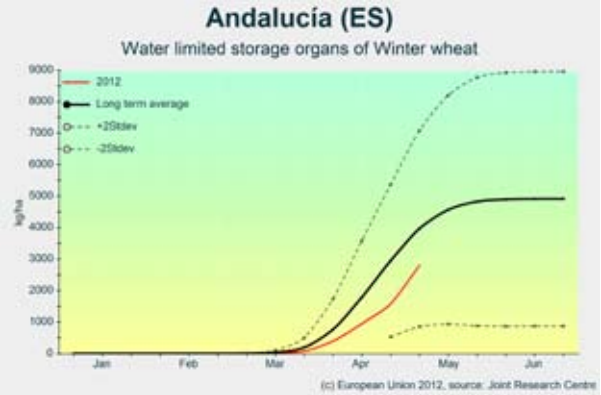
Spain and Portugal – Below-average expectations for winter crops

Rainfall during April has mitigated the dry winter conditions, but the weather in June will be crucial for winter cereals.

Rain fell just in time to mitigate the potentially adverse effects of the long dry winter in Northern and Central Spain. Soft wheat and barley in *Castilla La Mancha* and *Castilla y Leon* have benefited substantially from this rainfall, although the temperatures in April (2 to 3 degrees colder than usual, on average) hampered their vegetative growth. Yield expectations are, at this point, slightly below the recent years' figures for soft wheat, winter barley and rye in Spain. However, temperatures started to rise around mid-May (some regions recorded daily averages of up to 25°C, unusual at this time of year) and their trend until mid-June will be crucial for the grain filling stage. In the case of spring barley, the forecast yield is close to the average for the period 2007-2011. In the South of Spain and Portugal, the rain which fell in recent weeks came too late for winter cereals, which were already at the grain-filling stage. Consequently, yields for durum wheat and triticale in Spain and soft wheat, barley and triticale in Portugal are expected to be about 35% lower than in the last 5 years.

The scenario for spring crops, following the recent rainfall, is quite positive. Maize and sunflower have already emerged, and June and July will be the key months for assessing their potential yield. Since there was little precipitation during the winter, the water level in reservoirs is, in general, lower than it was this time last year. However, no irrigation constraints are yet foreseen.

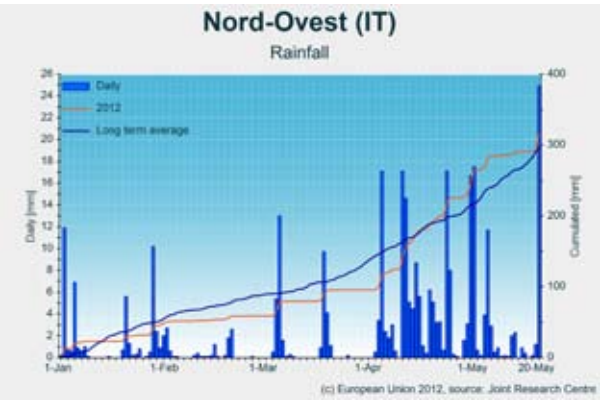


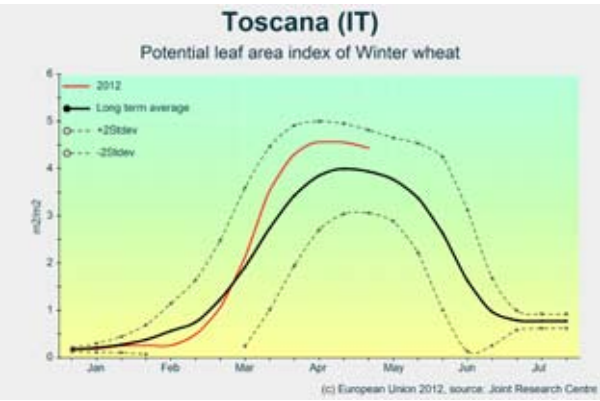


Italy and Slovenia – Favourable perspectives for crops

In the North and Central region, rain has put an end to the dry spell and good soil moisture conditions mean a favourable outlook for yield.

The rainfall recorded from April to May (>150 mm in north-western regions) stopped the decline of soil water content in northern and central Italy and Slovenia. By contrast, precipitation in southern regions, especially Sicily, was 30% down, after a very wet winter. Temperatures during this period were, in general, about average in northern regions and above average in central and southern Italy. After some very warm days in early May (mainly in the north), temperatures dropped to below average in mid-May across Italy and in Slovenia. This could slightly delay the development of plants.





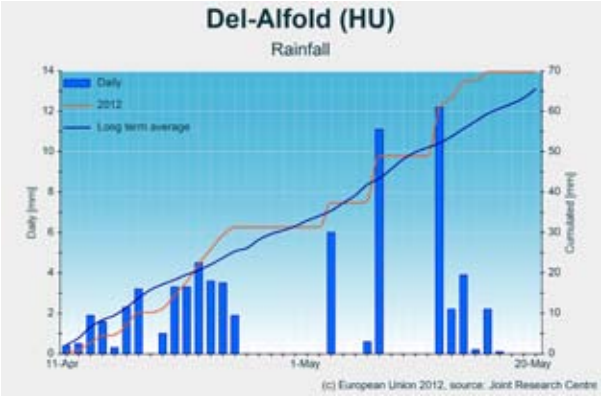
In northern Italy and Slovenia, the simulated leaf area index is above average, and crop growth indicates a favourable outlook for yield. In southern and central Italy, thermal sums stayed close to or slightly above the average. Crop development stages are around the average and the previous delay in crop development made up. Winter wheat and barley are finishing flowering and grain filling is beginning (the watery ripe stage) in northern and central regions, while in the South mealy ripening is starting in the earliest fields. The coming weeks will determine kernel size and weight. The water balance deficit in Sicily could affect durum wheat, and rainfall in the coming weeks will be essential to maintain the yield potential.

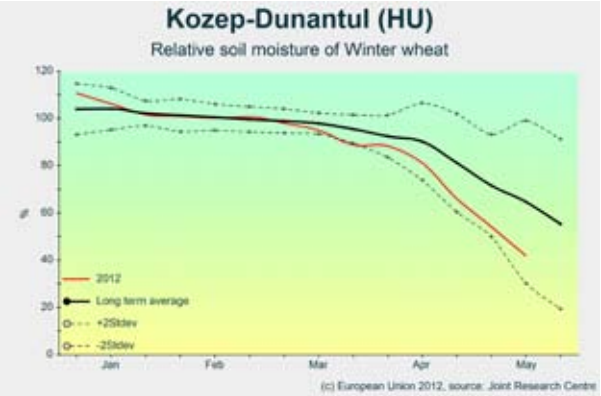
In general, spring crops have been sown early and rainfall was mostly cumulated after the sowing, creating good soil moisture conditions for the emergence and development of plants. In north-western regions, maize has been sown early and shows 6-8 unfolded leaves. In some areas in north-eastern regions, the sowing of maize was postponed and heavy rainfall after sowing could have hindered germination and emergence. Yield forecasts are close to the long-term average for all crops (according to our models and to remote sensing observation). Our yield forecasts for cereals were produced after a scenario analysis. For the other crops, only trends were used at this stage.

Hungary – Water scarcity reduces yield expectations

The negative climatic water balance indicates a significant water shortage and the soil moisture content is decreasing quickly. This has led to pessimistic yield forecasts below the long-term average.

Both daily minimum and maximum temperatures characteristically exceeded the usual values from mid-April until mid-May. The last 3 days of April and first 2 days of May achieved record-breaking maxima near to or above 30°C. The thermal-time sum shows +40 to +80 Growing Degree Days (GDDs) excess during the analysed period. The phenological development of all crops has been accelerated. After the dry March, rain fell in April - providing better growing conditions for both spring and winter crops. The cumulated rainfall since early April is near the seasonal average, though slightly lower in the north-western and northern parts of Hungary. Unfortunately, this year's cumulated climatic water balance is more than 80 mm below normal, due to previous dry periods and the currently higher level of evapotranspiration. The timing of precipitation was favourable for the sowing of maize and sunflower, allowing the work to be finished in good time. The water supply for crops is still more or less satisfactory, but the lower soil layers are dry - and without abundant rainfall the soil will not be able to fulfil the increasing water demand of crops will need. The remote sensing images indicate significant reductions in the absorption of photosynthetically active radiation, which is a direct cause of the reduced primary productivity. The current yield forecast of winter cereals is based on crop model outputs, while for spring crops it was determined by trend calculations (as it is still early in the season).



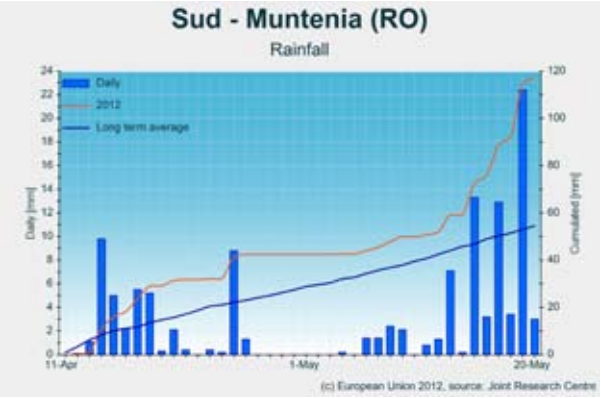


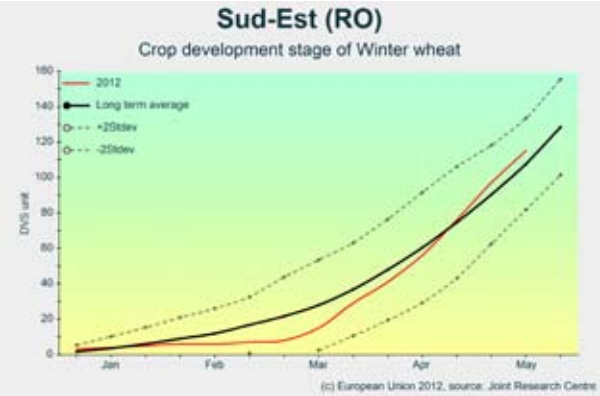
Romania – Winter crops partially recovered

The recent wet and warm weather has improved the yield expectation for winter cereals, though it is still slightly below average. The production outlook for rape-seed is very poor. The current development and growth state of spring crops is much better than the seasonal average.

The weather was significantly warmer than usual during the period under consideration. There was a significant surplus of cumulated active temperatures reaching 100 GDDs or more in central areas and even reaching 120-160 GDDs in eastern regions. The development of winter crops was held back in March, but accelerated during the subsequent warm weather and is now at an advanced stage in many places, with eastern regions being slightly ahead of the rest. Little or no frost was detected after mid-April. The number of hot days (Tmax>30°C) reached 5-11 days in the plain areas, east of

the Carpathian Mountains. The weather turned moist in April. This proved to be one of the wettest years since observations began in 1975. The cumulated monthly rainfall in Romania as a whole exceeded 70 mm. This abundant precipitation may have hampered the sowing of maize and sunflower, mainly in the central and western regions. The first ten days of May were less rainy, but after 13 May another wet period started. The rain was abundant primarily in *Macroregiunea Patru* and some places in the *Centru* and *Sud-Muntenia* regions, while some south-eastern areas near the Black Sea suffered from a lack of precipitation. The better water supply helped recharge the soil moisture so that winter crops partially recovered - with the exception of rape-seed. The already sown spring crops had good conditions for germination and emergence. The water limited biomass accumulation, and the leaf area index is very promising for spring barley, maize and sunflower. The present yield forecast for spring crops is close to normal, with a positive outlook.

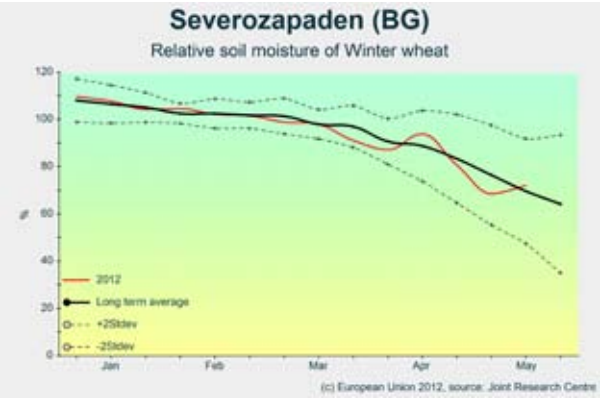


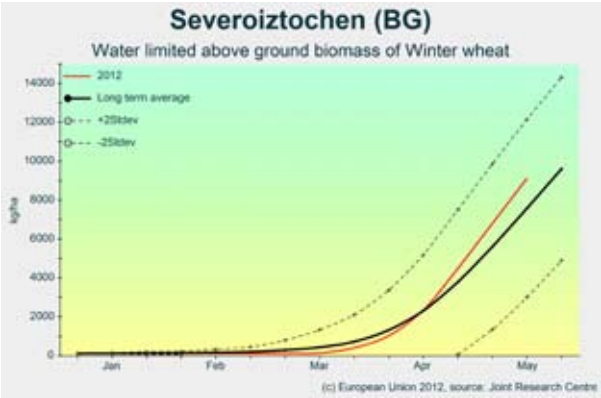


Bulgaria – Rainy May

The weather continued much warmer than usual during this period and the country-wise mean temperature was by 3°C above average. Winter and spring crops are showing unusually early phenological development. The abundant rainfall in May maintained the yield potential of winter cereals and was quite favourable for maize and sunflower.

The period from 10 April to 15 May was the hottest (in terms of minimum, average and maximum temperatures) since our observations began in 1975. The accumulated thermal time for both Tavg>0°C and Tavg>10°C base temperatures shows notable excesses of +100 to +170 GDDs all over Bulgaria, except for the *Yugozapaden* region. Global solar radiation was 10% to 30% above the norm, providing good conditions for photosynthesis. The spatial rain distribution was rather patchy, fluctuating around the seasonal average until May 10. The evaporative demand during this period was high and the climatic water balance showed a downward trend. The precipitation may have disturbed the seasonable sowing work in a few places only. During the 10 days from 11 to 20 May, abundant rain arrived in most of Bulgaria, providing 30-80 mm of water - which is 20–60 mm above the norm. The crop water supply situation improved greatly. In areas close to the Black Sea, on the other hand, there was less than the normal amount of precipitation. In the eastern part of the *Severoiztochen* region, in particular, the soil moisture under winter wheat plants decreased sharply and is now unusually low, while elsewhere in the country it is near normal. Spring crops have developed very early while winter crops are less advanced. The leaf area index and the total biomass are positive. Except for rape-seed, the current yield forecast is slightly above average and the outlook is positive, given further rainfall.

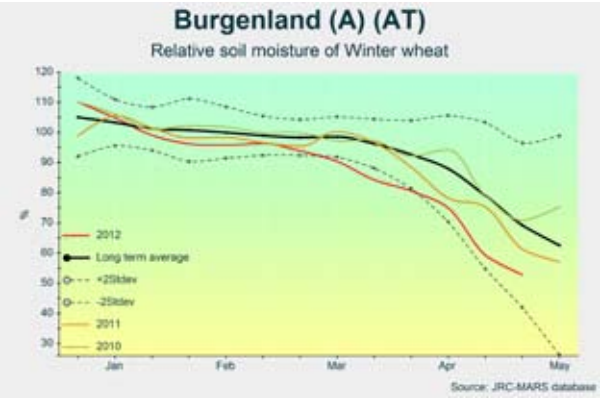


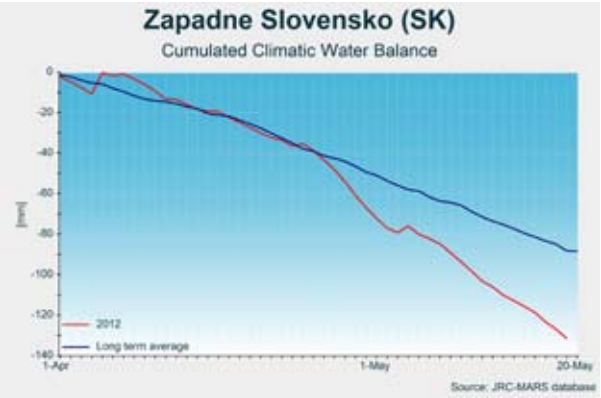


Austria, Czech Republic and Slovakia – Dry conditions

Generally warm conditions but dry weather in important agricultural regions of these three countries could reduce yields of winter crops. The situation is not yet critical and forecasts are still about average, but the situation needs to be monitored: rain is needed to avoid winter crops suffering during heading.

The weather during the last ten days of April and the first ten days of May was milder than the long-term average. Between 11 and 20 May, average temperatures were below the long-term average due to low maximum temperatures. As a consequence, the accumulation of active temperature (above 0°C) slowed down slightly but it remained above the long-term average. Rainfall was scarce in important agricultural regions of the three countries (i.e. *Niederösterreich*, *Oberösterreich*, and *Burgenland* in Austria, Jihovychod in the Czech Republic, and Zapadne Slovensko and *Vychodne Slovensko* in Slovakia). The simulated relative soil moisture was significantly below the long term average, and the climatic water deficit at the end of the period was some 20 to 43 mm higher, the highest figure being in the region of *Zapadne Slovensko* in Slovakia. The general situation does not yet seem critical, but rain is urgently needed to avoid critical water stresses during the heading stage of winter crops. Consequently, in all three countries, crop yield forecasts have been revised slightly downwards for soft and durum wheat, and rye. In general, spring barley was sown under dry conditions which allowed the best timing. Grain maize and the other spring crops have not emerged yet, but sowing conditions should have been good and should not create any constraint at the beginning of the season.





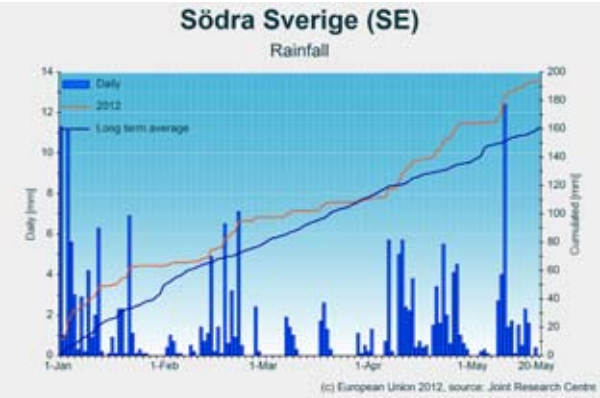
Denmark and Sweden – Good growing conditions

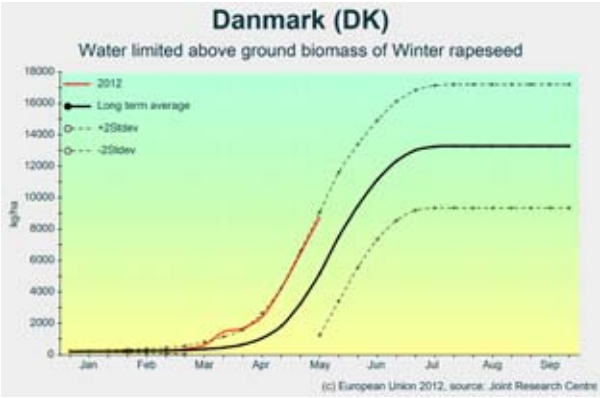
Rainfall distribution was good around the period under consideration, and temperatures were mild - higher than the seasonal norm. These conditions were favourable for plant growth and for the germination and emergence of spring crops.

The continued favourable conditions (temperatures and radiation) in spring accelerated crop growth and the development of winter crops. The cumulated active temperature (Tbase = 0°C) curve is significantly higher than average, and crop development stages are advanced in Denmark and in *Södra Sverige*.

The simulated leaf area index is generally well above average, in particular in Denmark for rape, with higher-than-normal simulated above-ground biomass. Such conditions may indicate potentially good yields for winter crops. Winter wheat is in the heading phase and rape seed is at the flowering stage, somewhat early in Denmark. Spring barley and sugar beet have been sown under good weather conditions, and rainfall around the sowing time did not hamper field activities.

Our yield forecasts for cereals were produced after a scenario analysis. For summer crops, the forecast is still based on the trend.





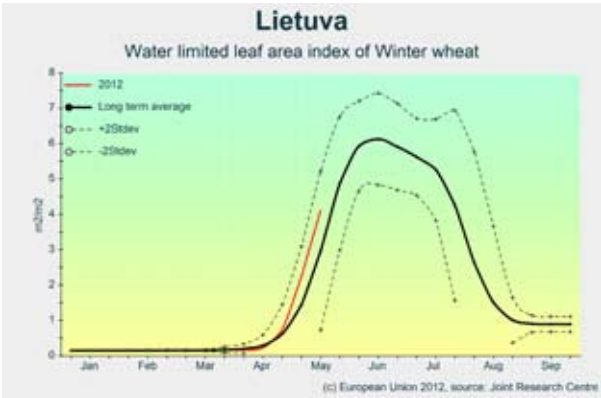
Finland and Baltic states – Mild temperatures and higher than usual rainfall accumulation

Favourable weather conditions in Lithuania and Latvia led to increased yield forecasts for soft wheat. Soft wheat yield is forecast to be 11.5% higher than last year in Lithuania and 10.5% higher in Latvia.

Temperatures during the analysed period were mild and higher than the long-term average for all countries. Cumulated active temperatures (Tbase = 0°C) are slightly higher than usual. The extent to which they exceed the long-term average increases as one goes south: the figures range from 12 GDD in Finland to 55 GDD in Lithuania. Rainfall accumulation has been higher than the long-term average especially in Finland and Estonia, with values almost double the long-term average. The high amount of rainfall has certainly delayed spring sowing in Finland, but it is expected that the sowing season will finish within the optimal period. So far, a normal growing season for spring crops is expected.

Crop indicators are in line with the meteorological situation and the outlook is good for winter crops, especially in Lithuania and Latvia. The development stage and leaf area index are advanced in comparison with the LTA and the previous year. Remote sensing indicators (fAPAR) confirm that winter crops are developing well in these countries. In general, the situation in Finland and Estonia is close to average for the abovementioned indicators, and there is no evidence that the prolonged rainfall has had negative effects.

Yield forecasts for winter crops, based on scenario analyses, started to improve in response to the favourable conditions prevailing in Lithuania and Latvia. Soft wheat yield is expected to be 11.5% higher than last year in Lithuania and 10.5% higher in Latvia. Forecast yields for triticale are also higher in Lithuania. The spring crops are at a very early stage and trend values are still being used in forecasting.

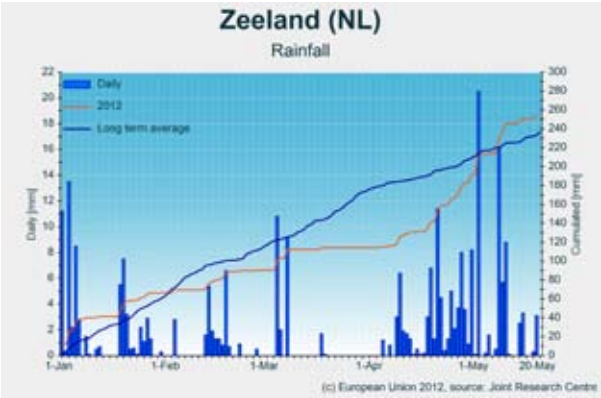


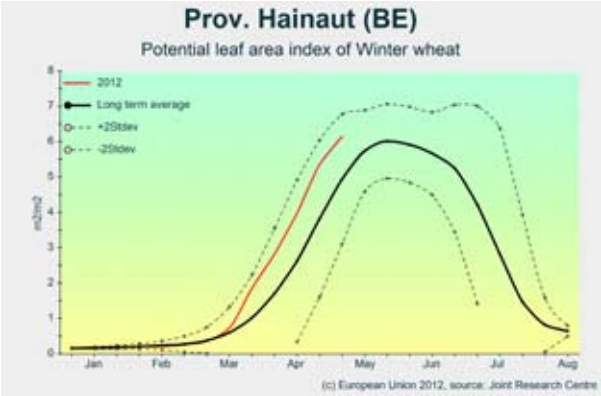
Belgium, the Netherlands and Luxemburg – Maize sowing delayed by spring rains

Intense rains in April-May ensure there is no water scarcity for cereals but complicate the sowing of maize. Forecasts remain close to the long-term average.

In the Benelux countries, there have been large amounts of rainfall during the period under consideration. This has significantly reduced the water balance deficit in most areas. Consequently, no water stress is expected for winter cereals during stem elongation, booting and heading. However, such humid conditions increase the risk of diseases and make it more difficult to spray pesticides to control them. Rain may have reduced the pollination success of rapeseed, potentially affecting yield. A more significant consequence of this continuously rainy period is that it is delaying the sowing of maize. Sugar beet is in its early development stage and may also suffer from these excessive rains.

In general, winter crops have developed earlier than the seasonal norm and consequently LAI is also above average. This should translate into a rather favourable outlook for yield. However, without more information, yield forecasts remain close to the long-term average.

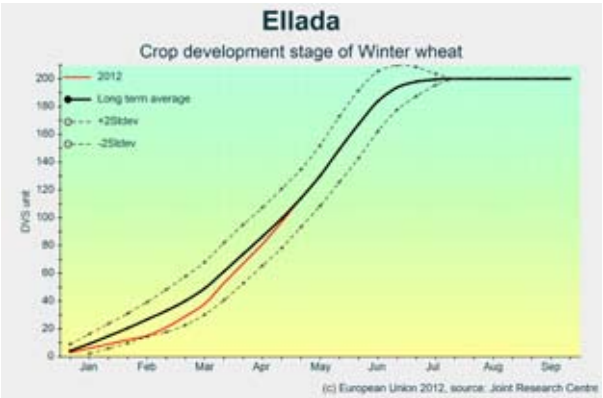


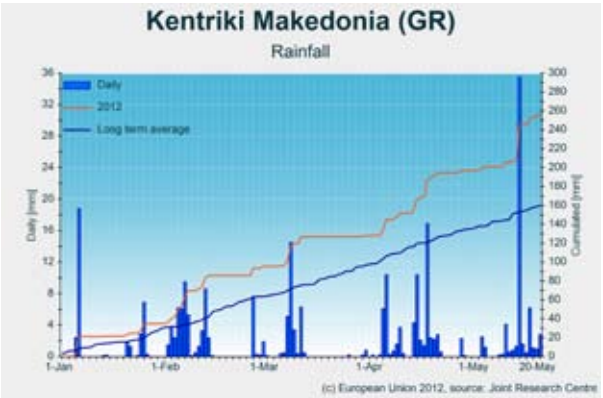


Greece – Crop growth regained

After initial dry conditions, the weather in recent months has been favourable, with abundant rainfall and high solar radiation. This may boost yields of durum wheat, soft wheat and winter barley. The favourable seasonal start for spring crops could lead to a good yield year for maize.

Greece has received a good amount of rainfall in recent weeks (April to mid-May), bringing the cumulated climatic water balance closer to the long-term average. Together with high cumulated global radiation, this is creating a conducive environment for crop growth and development, especially in the main winter wheat production areas in the north-east. The same situation is also found in the barley-producing areas in the north (*Kentriki Makedonia*). After getting off to a very late start, wheat development is now in line with long-term average values, so that crop yields are expected to be about average. The continuing favourable weather is also providing good start-up conditions for the development of spring crops. In Cyprus, on the other hand, biomass development (fAPAR values as an indicator) is currently below average, suggesting a lower yield forecast for winter barley.



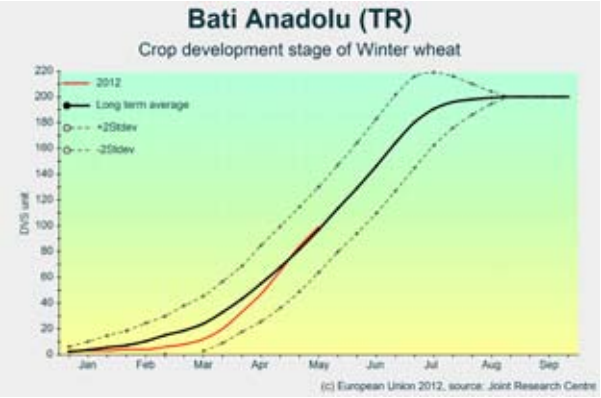


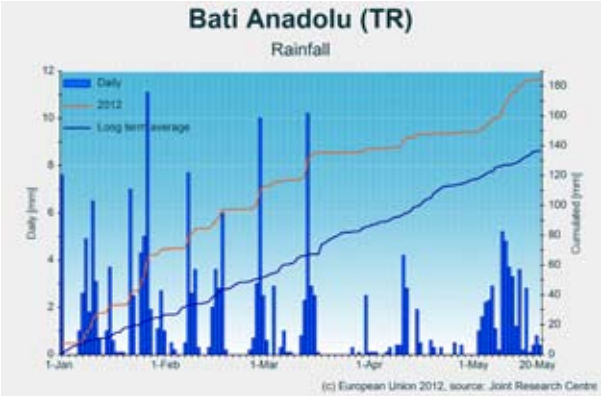
BLACK SEA AREA

Turkey – Low biomass development

Yields may benefit from the return to favourable temperatures and above-average rainfall. However, given the below-average biomass development of winter wheat and barley, yield forecasts for these crops are lower than the five-year average. Maize yield, on the other hand, is expected to be average.

During the period under consideration, average daily temperatures were above LTA values. This has brought crop development back in line with the LTA. The general weather picture is favourable, especially in the main wheat-producing areas of the country (i.e. the central Anatolian regions), where the crop is at the flowering stage. Given below-average NDVI values (see figure), the current yield forecast is around 10% lower than the five-year average. For maize, an average yield is anticipated since the prevailing weather conditions appear sufficiently favourable.

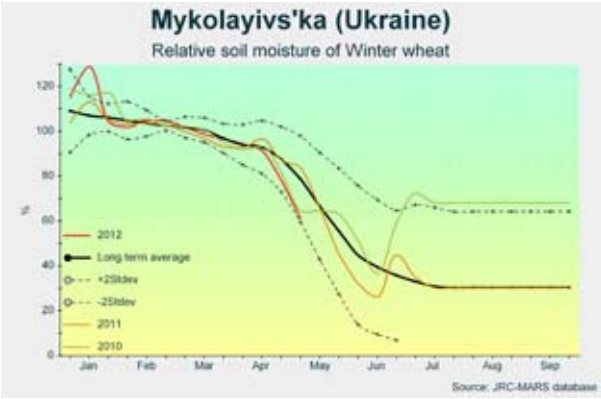




Ukraine – Winter crops still not recovered from difficult conditions

Hot and dry conditions in the Southern and Eastern regions. The unfavourable weather in autumn 2011 and intensive frost kill in the winter are still determining the overall winter crop development.

The period under consideration was characterised by exceptionally high average air temperatures 2-4°C higher than the long term average in western regions (oblasts), and 6–8°C higher in eastern regions. The high-pressure system that determined the weather in the eastern part of the country brought cloud-free conditions and thus high values for cumulated solar radiation and only small amounts of precipitation. The cumulated rainfall was significantly lower than the LTA in the whole of Ukraine east of the 30° meridian. The shortfall ranged from -50% in Kharkivska to -85% in Krym. The western part of the country, by contrast, received average amounts of rain. The relative soil moisture in the south-eastern oblasts is well below average. Winter crops, especially in the south-east of the country, are still suffering from the unfavourable conditions that prevailed before the winter dormancy and from the intensive frost kill which followed. Dry weather conditions during the period under consideration did not help crops recover. Consequently, winter wheat yield is expected to be 15% lower than the average for the last five years. The coming weeks will be crucial for crop development, as unfavourable conditions might lower the yield forecast even further. The weather conditions for spring crop sowing were difficult, due to insufficient soil moisture especially in southern and eastern regions.

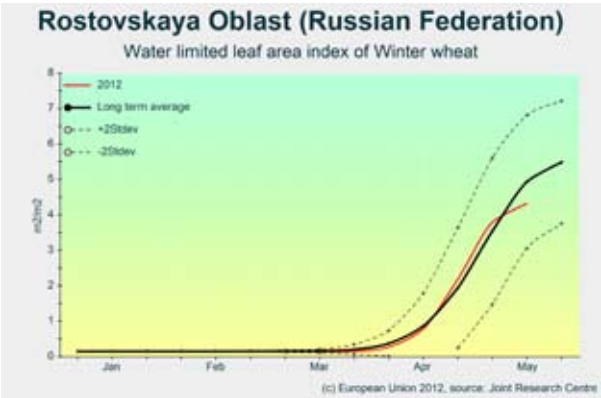


EUROPEAN RUSSIA AND BELARUS

European Russia – Very hot and dry in the south

The period under consideration was the hottest since 1975 in the belt from the Black Sea to the South Urals. Unfortunately the extreme temperatures were coupled with a long dry spell across Southern Russia, while the northern part of the country received normal amounts of precipitation. The analysis of remote sensing images shows a significant difference in photosynthetic activity between bad south-western and good south-eastern territories.

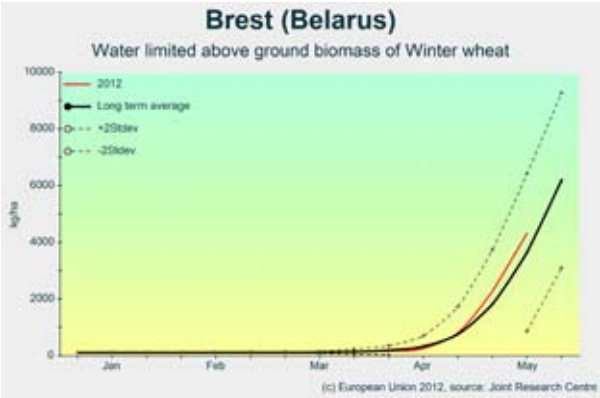
Over wide areas of Southern Russia, temperatures were as much as 5°C above the long-term average. Both the daily minima and maxima were extremely high almost continuously in this region. By comparison, in the northern regions of European Russia the weather was only moderately warmer than normal, exceeding the LTA only by one to three degrees. Little or no rainfall (less than 20 mm) was measured in *Volgogradskaya*, *Saratovskaya*, *Ulyanovskaya*, *Astrahanskaya Oblasts* and *Kalmykiya Republic*. Precipitation was 50% or more down in practically all the regions between the Caucasus and the Kazakh border. In this region, the winter wheat is beginning to flower, and will shortly enter the grain filling stage when water is most crucial to its yield formation. The crop conditions are steadier in the *Volgograd Oblast* and *Central-Chernozem* region, where the canopy development is sub-optimal but the total biomass is slightly above average. The *Volga Federal District* still shows high yield potential, but here too the soil moisture content has decreased sharply. The situation is critical in large winter-wheat-producing districts like *Krasnodarsky*, *Stavropolsky Kray* and *Rostovskaya Oblast*, and in the areas further to the Caspian Sea. It seems that the unfavourably dry weather hindered the recovery of winter wheat after the difficult wintering. Our crop model simulations show a weakened crop canopy development and consequently decreased biomass accumulation. It is obvious that, until plentiful rains fall soon, the yield potential will further diminish very quickly. The warmer conditions allowed the sowing of spring crops to be finished earlier, but insufficient moisture in the upper soil layers made it difficult in these regions.



Belarus – Abundant rain in April and May raises yield expectations

The forecast wheat yield appears to be higher than the five-year average, taking into consideration the favourable thermal and water supply conditions as well as the plentiful crop growth. The early forecast for grain maize and spring barley is based on the trend.

The cumulated active temperature sum over the period under consideration is 25-35% higher than the long-term average, since the daily values were mostly above average in April and in the first ten days of May. The last days of April were extremely warm, with daily maxima above 30°C in southern regions. There was no frost after 20 April. The solar irradiation level was close to LTA. The development of winter crops was normal for the season in March, but it accelerated from the beginning of April. The phenological development of winter wheat is anticipated by 5-10 days, especially in southern areas, but is still in the heading phase. During the considered period, the rainfall was normal for the season in the northern and western territories, but 20-70% above average in *Minsk*, *Gomel* and especially in the *Mogilev* region. The cumulated climatic water balance is in surplus all over the country, and increasingly so as one moves towards the south and east. The precipitation was evenly distributed over time: consequently, spring barley and maize were sown under normal conditions. Our model simulations indicate that, in the case of winter crops, the leaf area expansion, photosynthetic activity and biomass accumulation exceed the usual levels and also seem better than last year. Good crop growth can also be seen on remote sensing images, and confirms a high yield potential.

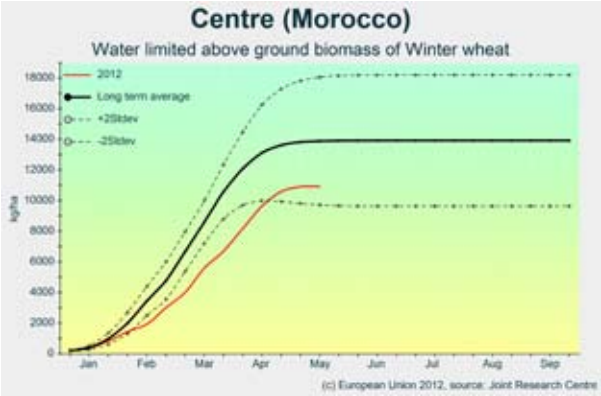


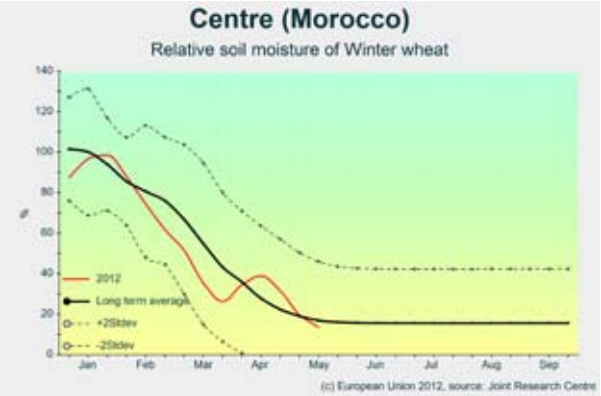
MAGHREB COUNTRIES

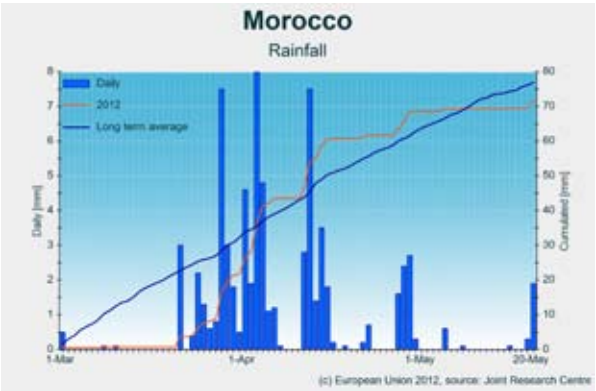
Morocco, Algeria and Tunisia - Crops likely to overcome drought stress in Morocco

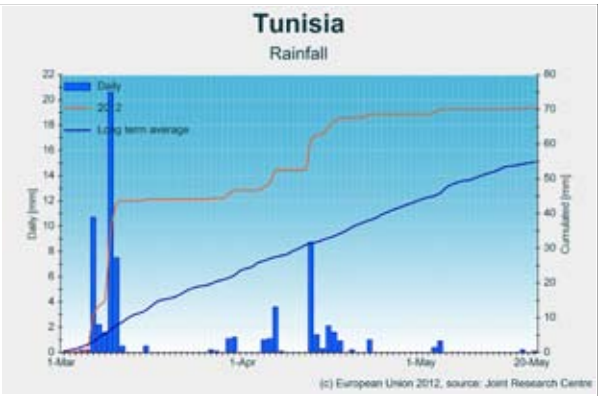
The yield forecast for soft and durum wheat in Morocco is significantly low compared to the five-year average. Barley shows the same downward trend. In Tunisia and Algeria, on the other hand, wheat and barley yields are expected to be much better than the five-year average.

In spite of fickle weather conditions during the start of the season, and low precipitation from January to late March over **Morocco**, recent rainfall has replenished the soil moisture content. This, along with favourable temperatures, improves the outlook for crop yields. In Tunisia and Algeria, cereal-growing areas benefited from well-distributed and abundant rainfall, together with favourable temperatures and high solar radiation. This finally translated into flourishing biomass accumulation. In view of these conditions, a good crop yield is expected - above the five-year average.









5. CROP YIELD FORECASTS

EU-27 and neighbouring countries

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	4,31	**4,43**	4,36	+2,8	+1,6	3,86	**4,07**	3,83	+5,4	+6,2	5,00	**5,01**	5,14	+0,2	-2,6
AT	5,61	**5,27**	4,83	-6,1	+9,0	4,98	**4,44**	4,10	-10,8	+8,4	6,21	**6,04**	5,68	-2,8	+6,2
BE	8,32	**8,42**	8,33	+1,2	+1,1	-	**-**	-	-	-	8,32	**8,42**	8,33	+1,2	+1,1
BG	4,10	**3,46**	3,44	-15,8	+0,6	-	**-**	-	-	-	4,10	**3,46**	3,44	-15,8	+0,6
CY	1,49	**0,89**	1,34	-40,0	-33,2	-	**-**	-	-	-	1,49	**0,89**	1,34	-40,0	-33,2
CZ	4,51	**4,33**	4,31	-4,0	+0,3	4,43	**4,15**	4,15	-6,3	+0,0	4,72	**4,78**	4,72	+1,3	+1,3
DE	5,46	**5,84**	5,96	+6,8	-2,1	4,90	**5,04**	4,81	+2,9	+4,7	5,67	**6,11**	6,34	+7,7	-3,7
DK	5,43	**5,21**	5,19	-4,1	+0,3	5,38	**5,11**	5,04	-5,1	+1,3	5,60	**5,78**	5,68	+3,3	+1,7
EE	2,44	**2,45**	2,55	+0,1	-4,1	2,44	**2,45**	2,55	+0,1	-4,1	-	**-**	-	-	-
ES	2,98	**3,11**	3,03	+4,5	+2,6	3,01	**3,24**	3,11	+7,8	+4,1	2,79	**2,37**	2,66	-15,2	-10,9
FI	3,41	**3,50**	3,43	+2,7	+1,9	3,41	**3,50**	3,43	+2,7	+1,9	-	**-**	-	-	-
FR	5,68	**6,24**	6,25	+9,9	-0,1	5,04	**6,08**	5,94	+20,8	+2,4	5,98	**6,39**	6,38	+6,8	+0,1
GR	2,38	**2,40**	2,42	+0,7	-1,0	-	**-**	-	-	-	2,38	**2,40**	2,42	+0,7	-1,0
HU	3,84	**3,52**	3,63	-8,4	-3,2	3,46	**3,08**	3,18	-10,9	-3,0	4,08	**3,76**	3,93	-7,9	-4,3
IE	7,80	**7,23**	6,95	-7,3	+4,1	7,50	**6,92**	6,72	-7,7	+3,1	9,00	**8,26**	8,44	-8,2	-2,1
IT	3,64	**3,62**	3,59	-0,5	+0,8	-	**-**	-	-	-	3,64	**3,62**	3,59	-0,5	+0,8
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	**3,15**	3,22	-3,5	-2,2	3,13	**3,01**	3,07	-3,8	-2,0	3,75	**3,66**	3,95	-2,3	-7,3
PT	1,26	**1,16**	1,77	-8,2	-34,7	-	**-**	-	-	-	1,26	**1,16**	1,77	-8,2	-34,7
RO	3,35	**2,78**	2,53	-16,9	+10,0	2,35	**2,10**	1,87	-10,8	+12,0	3,91	**3,12**	2,94	-20,1	+6,3
SE	4,35	**4,45**	4,30	+2,3	+3,5	4,35	**4,45**	4,30	+2,3	+3,5	-	**-**	-	-	-
SI	4,54	**4,30**	4,00	-5,3	+7,5	-	**-**	-	-	-	4,54	**4,30**	4,00	-5,3	+7,5
SK	3,93	**3,59**	3,49	-8,6	+3,1	3,94	**3,56**	3,46	-9,5	+3,0	3,86	**3,84**	3,72	-0,6	+3,4
UK	5,66	**5,76**	5,76	+1,7	+0,1	5,39	**5,41**	5,38	+0,4	+0,7	6,13	**6,37**	6,35	+3,9	+0,3

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	5,35	**5,34**	5,31	-0,1	+0,7	5,59	**5,62**	5,57	+0,5	+0,8	3,20	**3,03**	3,14	-5,5	-3,7
AT	5,85	**5,47**	5,25	-6,6	+4,1	5,90	**5,51**	5,30	-6,6	+3,9	5,09	**4,72**	4,42	-7,3	+6,8
BE	8,14	**8,75**	8,60	+7,4	+1,8	8,14	**8,75**	8,60	+7,4	+1,8	-	**-**	-	-	-
BG	3,86	**3,44**	3,37	-10,9	+1,9	3,84	**3,42**	3,37	-10,9	+1,6	4,30	**4,01**	3,80	-6,7	+5,6
CY	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
CZ	5,78	**5,38**	5,34	-7,0	+0,7	5,78	**5,38**	5,34	-7,0	+0,7	-	**-**	-	-	-
DE	7,01	**7,26**	7,42	+3,5	-2,2	7,02	**7,27**	7,43	+3,5	-2,2	4,88	**5,33**	5,40	+9,2	-1,2
DK	6,52	**7,22**	7,12	+10,8	+1,3	6,52	**7,22**	7,12	+10,8	+1,3	-	**-**	-	-	-
EE	2,65	**2,73**	3,01	+3,1	-9,2	2,65	**2,73**	3,01	+3,1	-9,2	-	**-**	-	-	-
ES	3,46	**2,94**	3,21	-15,1	-8,5	3,70	**3,28**	3,46	-11,2	-5,1	2,48	**1,57**	2,45	-36,6	-36,0
FI	3,85	**3,73**	3,77	-3,2	-1,1	3,85	**3,73**	3,77	-3,2	-1,1	-	**-**	-	-	-
FR	6,66	**7,19**	6,87	+7,9	+4,6	6,81	**7,39**	7,05	+8,4	+4,8	4,84	**4,96**	4,85	+2,4	+2,3
GR	2,26	**2,25**	2,53	-0,5	-11,2	2,66	**2,62**	2,80	-1,3	-6,1	2,12	**2,12**	2,43	-0,1	-13,0
HU	4,21	**3,73**	4,07	-11,2	-8,3	4,21	**3,73**	4,08	-11,3	-8,4	4,04	**3,81**	3,81	-5,8	+0,0
IE	9,87	**8,83**	8,82	-10,5	+0,1	9,87	**8,83**	8,82	-10,5	+0,1	-	**-**	-	-	-
IT	3,84	**3,83**	3,67	-0,3	+4,2	5,33	**5,33**	5,16	+0,0	+3,3	3,17	**3,09**	3,01	-2,5	+2,8
LT	3,39	**3,78**	3,82	+11,5	-1,0	3,39	**3,78**	3,82	+11,5	-1,0	-	**-**	-	-	-
LU	5,54	**6,03**	6,07	+8,8	-0,6	5,54	**6,03**	6,07	+8,8	-0,6	-	**-**	-	-	-
LV	3,06	**3,35**	3,48	+9,5	-3,8	3,06	**3,35**	3,48	+9,5	-3,8	-	**-**	-	-	-
MT	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
NL	7,85	**8,77**	8,40	+11,6	+4,4	7,85	**8,77**	8,40	+11,6	+4,4	-	**-**	-	-	-
PL	4,14	**3,86**	4,05	-6,6	-4,6	4,14	**3,86**	4,05	-6,6	-4,6	-	**-**	-	-	-
PT	1,36	**1,03**	1,71	-24,3	-40,0	1,36	**1,03**	1,71	-24,3	-40,0	-	**-**	-	-	-
RO	3,63	**2,95**	2,76	-18,7	+7,1	3,63	**2,95**	2,76	-18,7	+7,1	-	**-**	-	-	-
SE	5,60	**5,97**	5,89	+6,6	+1,4	5,60	**5,97**	5,89	+6,6	+1,4	-	**-**	-	-	-
SI	5,17	**4,79**	4,52	-7,3	+6,0	5,17	**4,79**	4,52	-7,3	+6,0	-	**-**	-	-	-
SK	4,52	**3,91**	4,15	-13,5	-5,8	4,53	**3,91**	4,14	-13,8	-5,7	4,20	**3,97**	4,28	-5,3	-7,3
UK	7,75	**8,18**	7,76	+5,6	+5,4	7,75	**8,18**	7,76	+5,6	+5,4	-	**-**	-	-	-

Country	GRAIN MAIZE (t/ha)					RYE (t/ha)					TRITICALE (t/ha)				
	2011	2012	Avg 5yrs	%12/1	%12/5yrs	2011	2012	Avg 5yrs	%12/1	%12/5yrs	2011	2012	Avg 5yrs	%12/1	%12/5yrs
EU27	7,59	**7,02**	6,94	-7,6	+1,1	3,06	**3,18**	3,18	+3,9	+0,0	3,90	**3,81**	3,98	-2,2	-4,2
AT	11,30	**10,61**	10,43	-6,1	+1,7	4,40	**4,19**	3,98	-4,7	+5,3	5,00	**5,11**	5,13	+2,2	-0,3
BE	11,75	**12,30**	11,95	+4,7	+3,0	-	**-**	-	-	-	-	**-**	-	-	-
BG	5,19	**4,53**	4,26	-12,7	+6,4	2,10	**1,86**	1,86	-11,5	+0,0	3,09	**3,35**	3,01	+8,6	+11,3
CY	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
CZ	8,12	**7,73**	7,49	-4,8	+3,2	4,69	**4,76**	4,59	+1,6	+3,9	4,63	**4,18**	4,24	-9,7	-1,5
DE	10,62	**9,68**	9,68	-8,8	+0,0	4,11	**4,83**	4,70	+17,5	+2,6	5,24	**5,59**	5,67	+6,6	-1,4
DK	5,32	**-**	5.07*	-	-	5,12	**5,21**	5,00	+1,9	+4,3	5,12	**5,14**	5,01	+0,3	+2,5
EE	-	**-**	-	-	-	2,40	**2,52**	2,73	+4,7	-7,7	-	**-**	-	-	-
ES	10,47	**10,16**	10,21	-2,9	-0,5	2,46	**1,96**	2,12	-20,5	-7,8	2,51	**1,59**	2,46	-36,7	-35,5
FI	-	**-**	-	-	-	2,90	**2,74**	2,69	-5,5	+1,9	-	**-**	-	-	-
FR	10,19	**9,19**	9,33	-9,9	-1,5	4,50	**4,85**	4,78	+7,7	+1,4	5,08	**5,46**	5,20	+7,5	+5,0
GR	11,09	**11,80**	10,53	+6,3	+12,0	2,14	**2,05**	2,07	-4,2	-1,2	-	**-**	-	-	-
HU	6,59	**6,63**	6,16	+0,6	+7,5	2,18	**2,18**	2,16	+0,0	+1,1	3,44	**3,23**	3,24	-6,2	-0,4
IE	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
IT	9,80	**9,42**	9,36	-3,9	+0,6	-	**-**	-	-	-	-	**-**	-	-	-
LT	-	**-**	-	-	-	2,02	**2,30**	2,34	+13,6	-1,6	2,51	**2,73**	2,78	+8,7	-1,9
LU	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
LV	-	**-**	-	-	-	2,35	**2,68**	2,91	+13,8	-8,0	2,28	**2,46**	2,55	+7,8	-3,9
MT	-	**-**	-	-	-	-	**-**	-	-	-	-	**-**	-	-	-
NL	11,52	**11,52**	11,52	-0,1	+0,0	-	**-**	-	-	-	-	**-**	-	-	-
PL	7,18	**6,35**	6,31	-11,5	+0,7	2,40	**2,32**	2,45	-3,4	-5,3	3,34	**2,99**	3,36	-10,4	-11,0
PT	7,91	**7,28**	6,73	-8,0	+8,0	0,85	**0,89**	0,94	+4,4	-6,0	0,93	**0,74**	1,42	-20,2	-47,9
RO	4,48	**3,71**	3,37	-17,1	+10,1	2,63	**2,36**	2,24	-10,2	+5,3	3,60	**3,08**	2,91	-14,4	+6,1
SE	-	**-**	-	-	-	5,31	**5,66**	5,57	+6,7	+1,6	4,44	**4,91**	4,88	+10,5	+0,6
SI	8,10	**8,06**	7,87	-0,5	+2,5	-	**-**	-	-	-	-	**-**	-	-	-
SK	7,15	**6,13**	6,38	-14,3	-3,9	3,10	**2,79**	2,77	-10,0	+0,7	-	**-**	-	-	-
UK	-	**-**	-	-	-	-	**-**	-	-	-	4,00	**4,24**	4,04	+5,9	+4,8

Country	RAPE AND TURNIP RAPE (t/ha)					POTATO (t/ha)				
	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/1	%12/5yrs
EU27	2,86	**2,87**	3,00	+0,2	-4,4	31,59	**29,70**	29,78	-6,0	-0,3
AT	3,35	**3,35**	3,12	+0,0	+7,4	34,05	**32,18**	31,96	-5,5	+0,7
BE	4,61	**4,06**	4,11	-11,9	-1,1	46,45	**45,36**	45,30	-2,3	+0,1
BG	2,37	**2,30**	2,29	-3,3	+0,0	14,34	**15,72**	15,73	+9,6	-0,1
CY	-	**-**	-	-	-	-	**-**	-	-	-
CZ	2,88	**2,94**	2,98	+1,9	-1,3	29,72	**26,53**	26,40	-10,7	+0,5
DE	2,91	**3,22**	3,66	+10,7	-11,9	46,00	**43,47**	43,28	-5,5	+0,4
DK	3,34	**3,55**	3,54	+6,2	+0,1	33,00	**39,38**	38,23	+19,3	+3,0
EE	1,52	**1,58**	1,55	+4,3	+2,2	-	**-**	-	-	-
ES	2,06	**1,78**	1,82	-13,5	-2,2	28,55	**30,28**	29,01	+6,1	+4,4
FI	1,44	**1,36**	1,39	-5,4	-2,2	25,20	**25,80**	26,24	+2,4	-1,7
FR	3,45	**3,40**	3,35	-1,4	+1,7	42,29	**43,08**	43,29	+1,9	-0,5
GR	2,37	**-**	2.37*	-	-	28,21	**26,10**	25,83	-7,5	+1,0
HU	2,23	**2,18**	2,29	-2,4	-5,0	26,37	**25,94**	24,51	-1,6	+5,8
IE	-	**-**	-	-	-	32,36	**34,05**	31,99	+5,2	+6,4
IT	2,58	**2,45**	2,28	-5,3	+7,5	25,63	**25,53**	25,12	-0,4	+1,6
LT	1,88	**1,90**	1,91	+1,1	-0,2	14,00	**13,74**	13,39	-1,8	+2,6
LU	-	**-**	-	-	-	-	**-**	-	-	-
LV	1,88	**2,07**	2,14	+9,9	-3,6	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	**2,51**	2,69	+11,2	-6,6	20,47	**19,89**	19,62	-2,8	+1,4
PT	-	**-**	-	-	-	15,60	**15,07**	15,18	-3,4	-0,7
RO	1,98	**1,51**	1,59	-23,5	-5,0	17,20	**15,31**	14,90	-11,0	+2,8
SE	2,64	**2,77**	2,72	+4,7	+1,6	31,84	**31,19**	30,65	-2,0	+1,8
SI	-	**-**	-	-	-	-	**-**	-	-	-
SK	2,33	**2,43**	2,26	+4,4	+7,7	22,37	**17,05**	17,06	-23,8	-0,1
UK	3,91	**3,34**	3,49	-14,5	-4,3	42,30	**42,60**	42,61	+0,7	+0,0

Country	SUGAR BEETS (t/ha)					SUNFLOWER (t/ha)				
	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs
EU27	71,51	**69,59**	67,85	-2,7	+2,6	1,97	**1,80**	1,79	-8,6	+0,6
AT	67,33	**69,52**	68,43	+3,2	+1,6	2,83	**2,69**	2,68	-4,9	+0,3
BE	75,63	**75,49**	75,25	-0,2	+0,3	-	-	-	-	-
BG	-	-	-	-	-	2,03	**1,91**	1,76	-6,1	+8,3
CY	-	-	-	-	-	-	-	-	-	-
CZ	59,51	**59,08**	56,46	-0,7	+4,6	2,54	**2,39**	2,33	-5,7	+2,8
DE	72,58	**66,55**	65,98	-8,3	+0,9	1,98	**2,28**	2,22	+14,7	+2,4
DK	60,10	**60,44**	57,49	+0,6	+5,1	-	-	-	-	-
EE	-	-	-	-	-	-	-	-	-	-
ES	88,80	**88,89**	80,43	+0,1	+10,5	1,20	**1,10**	1,18	-8,2	-6,5
FI	38,23	**39,44**	37,92	+3,2	+4,0	-	-	-	-	-
FR	91,24	**90,58**	87,65	-0,7	+3,3	2,54	**2,40**	2,46	-5,6	-2,6
GR	-	-	-	-	-	1,24	**1,35**	1,45	+8,6	-6,8
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	2,35	**2,25**	2,24	-4,2	+0,4
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	-24,8	-7,4
RO	34,61	**37,02**	34,38	+7,0	+7,7	1,87	**1,48**	1,39	-20,6	+6,8
SE	62,90	**52,77**	56,34	-16,1	-6,3	-	-	-	-	-
SI	-	-	-	-	-	-	-	-	-	-
SK	56,01	**55,63**	54,56	-0,7	+2,0	2,29	**2,24**	2,19	-2,4	+2,3
UK	65,00	**64,88**	62,28	-0,2	+4,2	-	-	-	-	-

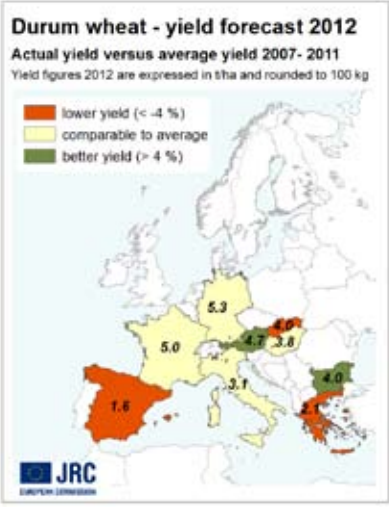
*In the range of the 5-yrs (2006-2011) only 2011 and 2010 figures available for computation

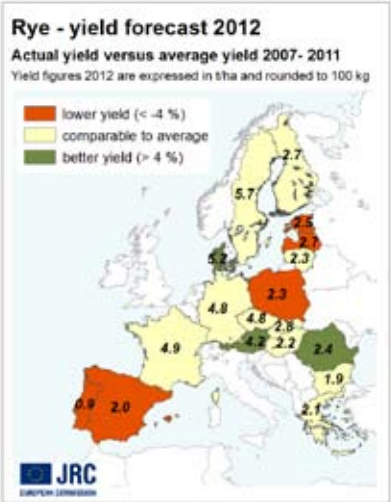
Notes: Yields are forecast for crops with more than 10000 ha per country; figures are rounded to 100 kg
Sources: 2007-2012 data come from DG AGRICULTURE short term Outlook (dated April 2012), EUROSTAT Eurobase (last update: 30/04/2012) and EES (last update: 17/04/2012)
2012 yields come from MARS CROP YIELD FORECASTING SYSTEM (CGMS output up to 10/05/2012)

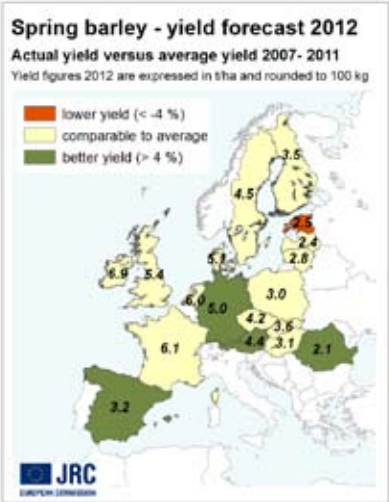
Country	WHEAT (t/ha)					BARLEY (t/ha)					GRAIN MAIZE (t/ha)				
	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs	2011	2012	Avg 5yrs	%12/11	%12/5yrs
BY	3,53	**3,62**	3,44	+2,6	+5,2	3,29	**3,31**	3,23	+0,5	+2,4	5,37	5,55	**4,89**	3,40	+13,6
DZ	1,47	**1,66**	1,39	+12,6	+19,1	1,23	**1,57**	1,26	+27,4	+23,9	-	-	-	-	-
MA	1,95	**1,24**	1,55	-36,4	-20,1	1,15	**0,77**	1,04	-32,9	-26,1	-	-	-	-	-
TN	1,57	**2,14**	1,58	+36,6	+35,5	1,94	**2,08**	1,33	+7,1	+56,7	-	-	-	-	-
TR	2,38	**2,12**	2,35	-10,9	-9,8	2,54	**2,21**	2,30	-13,0	-4,1	7,48	6,93	**7,19**	-7,40	-3,6
UA	3,22	**2,51**	3,00	-22,0	-16,4	2,34	**2,13**	2,23	-9,1	-4,7	4,85	4,68	**4,60**	-3,40	+2,0

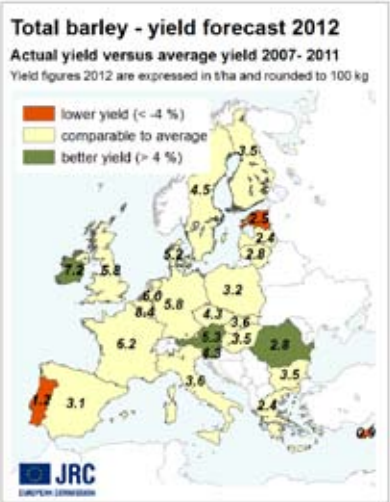
Notes: Yields are forecast for crops with more than 10000 ha per country; figures are rounded to 100 kg
Sources: FAO database, INRA-Morocco

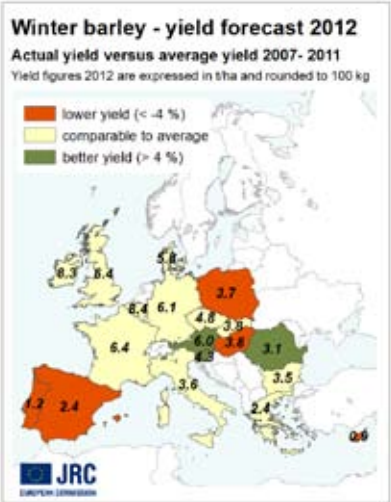
Yield forecast maps

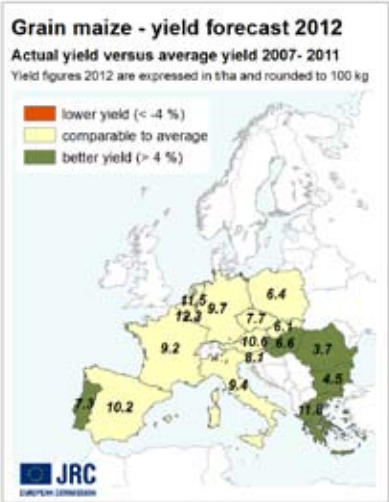








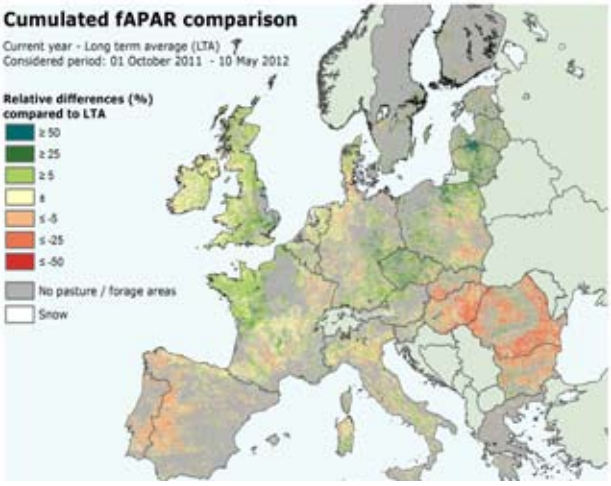


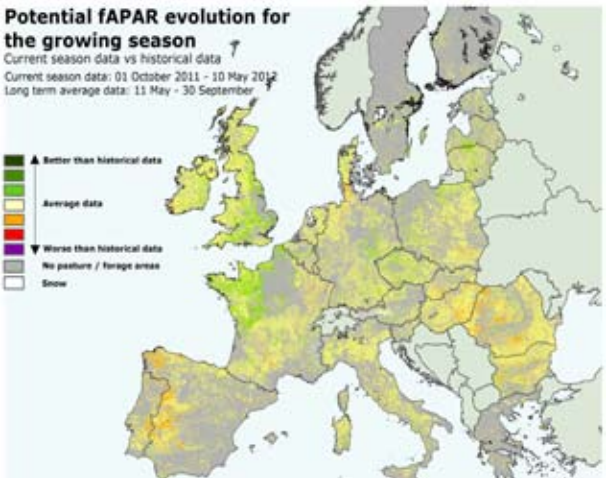


6. PASTURES IN EUROPE – REGIONAL MONITORING

Favourable start of the season in France and the UK, but lack of rainfall limits pasture development in the Iberian Peninsula

The analysis of remote sensing data shows rather favourable conditions in Northern and Western Europe at the beginning of the current season, with a generally high accumulation of biomass. The situation appears more difficult in the Iberian Peninsula, due to water constraints, and in South-eastern Europe, where plant development has been delayed. The cold spell that affected the whole of Europe in February slowed down or even stopped the development of biomass which was taking place after the milder-than-usual winter in many regions. However, warmer temperatures in March allowed many countries to recover seasonally normal production levels.





Contrasting conditions in the Mediterranean Basin

In **Spain** and **Portugal**, the *Dehesa* area (*Extremadura*, *Alentejo* and some provinces of *Andalucia* and *Castilla y Leon*) show a dramatic decrease in the biomass produced from February onwards, after one of the driest winters on record. Consequently, production levels are expected to be below average this season. In *Galicia*, also affected by the dry winter, pastures are gradually recovering their seasonal levels of plant development. In the other regions of northern Spain (*Pais Vasco*, *Asturias* and *Cantabria*), expectations remain average. By contrast, in the south of **Italy**, the warm temperatures recorded in recent weeks have boosted biomass accumulation and thus the outlook to the beginning of the summer is quite positive. Plant development is currently close to average in the North of the country, with temperatures slightly milder than usual in all regions. Moreover, water availability in the soil has increased following a rainy month of April – especially in *Lombardia*, *Piemonte* and *Emilia Romagna* – ensuring good conditions for biomass production in the coming month.

Good expectations for Western Europe

Mild temperatures and sufficient precipitation during the winter in the **UK** and **Ireland** stimulated plant development, and production reached levels substantially higher than the seasonal norm. After the dry spell in February and March, a very rainy April maintained biomass accumulation at high levels. Colder than usual temperatures in recent weeks have slightly reduced production rates, but the outlook for the rest of the season is quite positive.

In **France**, the start of the season shows two different situations. In North-Western regions (*Normandie*, *Bretagne* and *Pays de la Loire*) the scenario is similar to that in the UK: high biomass accumulation due to mild temperatures in December-January, favoured by intense rainfall from mid-April. Production levels are expected to be above average and no difficulties are foreseen. By contrast, in the other regions, the cold spell in February has delayed plant development, especially in the North-East. However, seasonal production levels are gradually being recovered, and temperatures over the next month will determine whether or not this trend continues. Average production levels are expected for **Benelux**.

Pasture growth delayed in Central Europe, but positive development expected

In North-Western **Germany**, pasture production levels have been lower than usual due to a delay in plant growth caused by the cold period in February. However, in the last three weeks temperatures have risen, permitting the gradual recovery of biomass production, now close to average levels. No major constraints are foreseen in the coming month. In Bayern and the rest of the South, mild temperatures from March onwards increased production levels above the seasonal values. Rainfall accumulation remains above average and the outlook is therefore positive for the next few months. Similar conditions are observed in **Austria**, the **Czech Republic** and **Slovakia**.

Favourable start of the season in Eastern countries

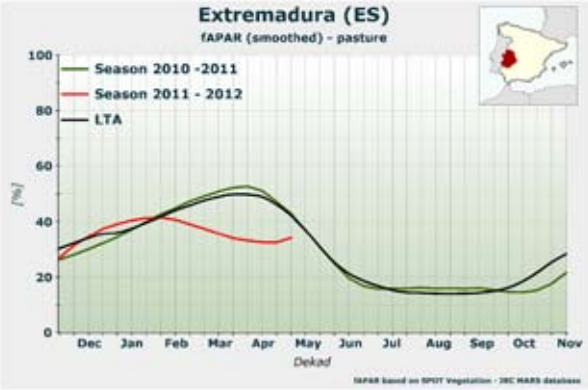
In North and Eastern **Poland**, **Estonia**, **Latvia** and **Lithuania**, the vegetative development of pastures has been favoured by warm temperatures during April and May, resulting in above-average biomass accumulation. Yield expectations are, consequently, quite positive for the next month. However, the start of the season in Western Poland has been delayed by more than one month due to the long cold spell in February and March, when average daily temperatures were as low as -15°C and there was a great deal of snow. Although warmer temperatures from the end of April produced rapid plant development, the season's cumulated biomass is still lower than average.

Cold temperatures delayed plant development in Northern Europe

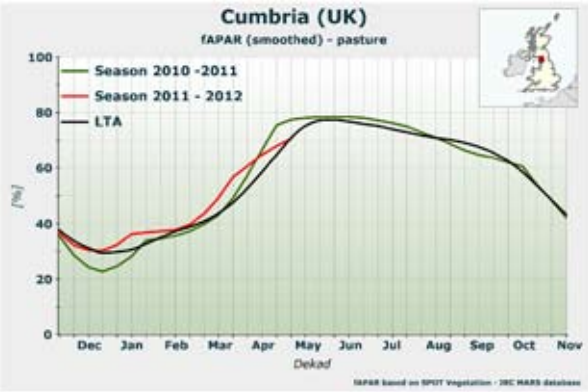
The start of the season in **Denmark** was slightly delayed due to cold temperatures in February, followed by an incipient spring that has been warmer than usual. That increased biomass accumulation, which reached seasonally normal levels. Rainfall accumulation throughout the season has been higher than average, so no water shortages are expected in the short term. Similar conditions apply in **Sweden** and **Finland**, with biomass production expected to develop well over the next month if mild temperatures continue.

Production levels limited by low winter temperatures in the Black Sea Area

In **Romania**, one of the driest autumns on record was followed by exceptionally low temperatures in February. Consequently, biomass accumulation since the beginning of the year has been significantly lower than usual. However, intense rainfall in April (almost double the seasonal values) and temperatures 5-7°C higher than average enabled biomass production in mid-May to reach levels close to those for a normal year. Precipitation and temperatures during May and June will be crucial to maintaining this positive trend.


Extremadura (ES)
fAPAR (smoothed) - pasture
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov
Dekad


Pays De La Loire (FR)
fAPAR (smoothed) - pasture
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov
Dekad


Cumbria (UK)
fAPAR (smoothed) - pasture
Season 2010 -2011
Season 2011 - 2012
LTA
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Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov
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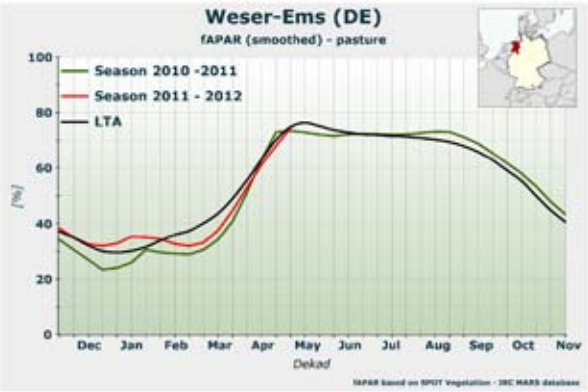
Weser-Ems (DE)
fAPAR (smoothed) - pasture
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov
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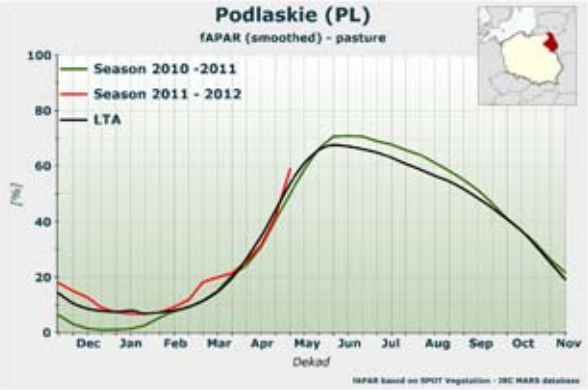
Podlaskie (PL)
fAPAR (smoothed) - pasture
Season 2010 -2011
Season 2011 - 2012
LTA
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Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov
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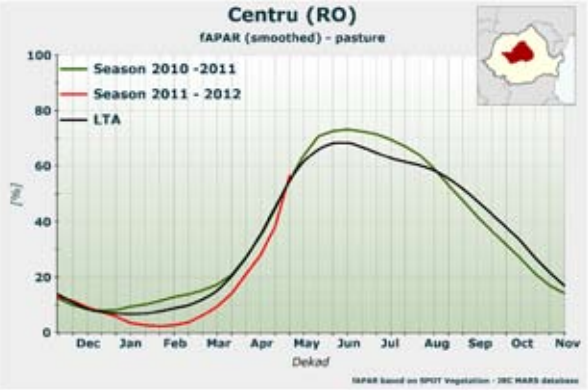
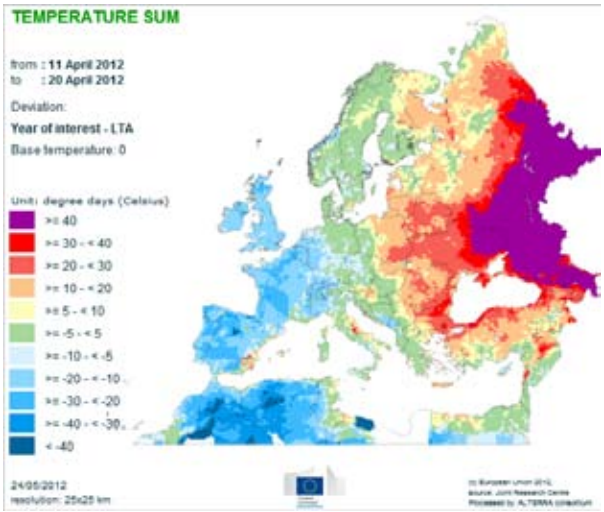
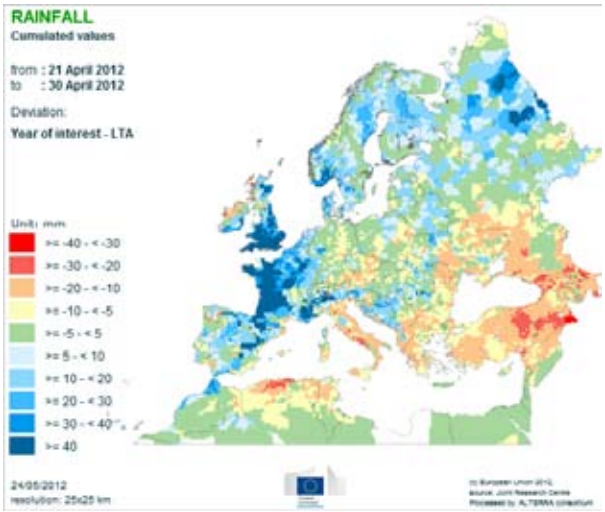
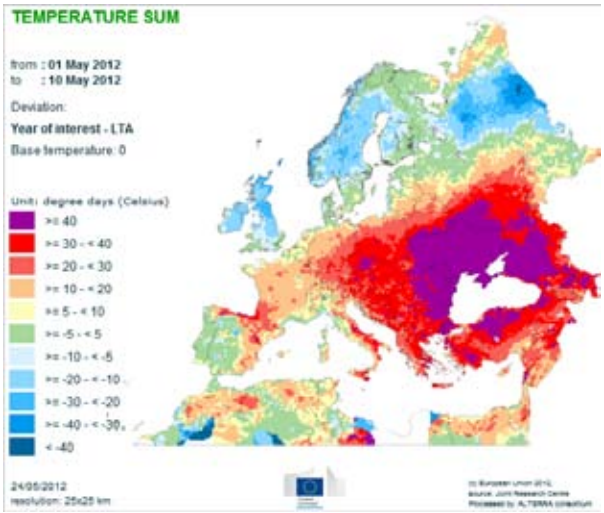

Centru (RO)
fAPAR (smoothed) - pasture
Season 2010 -2011
Season 2011 - 2012
LTA
[%]
Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov
Dekad

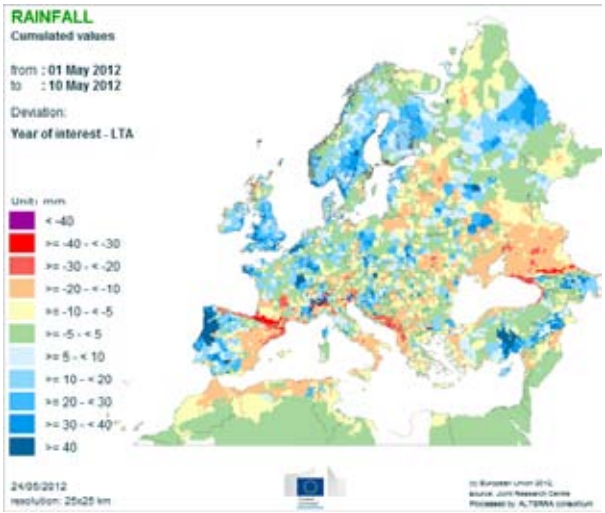
7. ATLAS MAPS

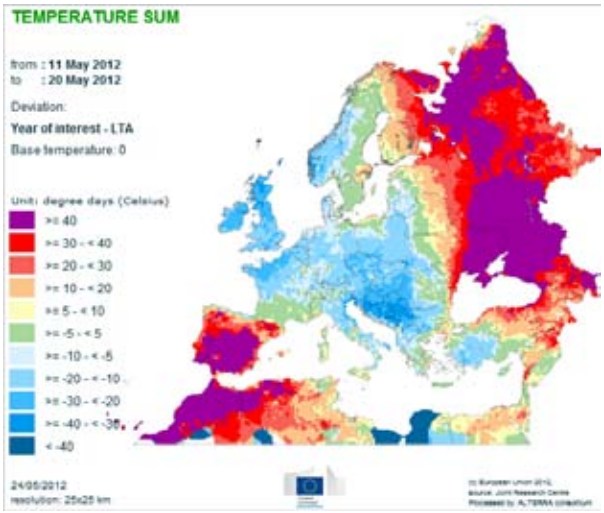
Temperatures and precipitation

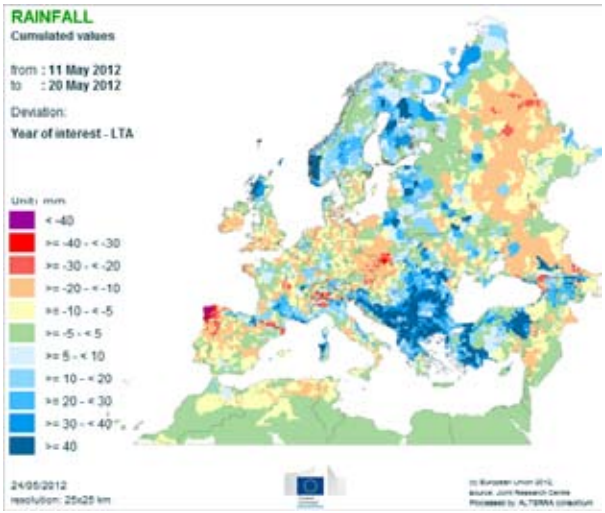




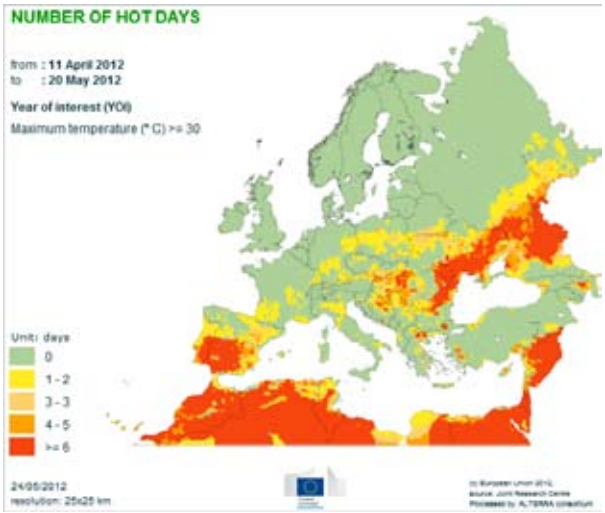


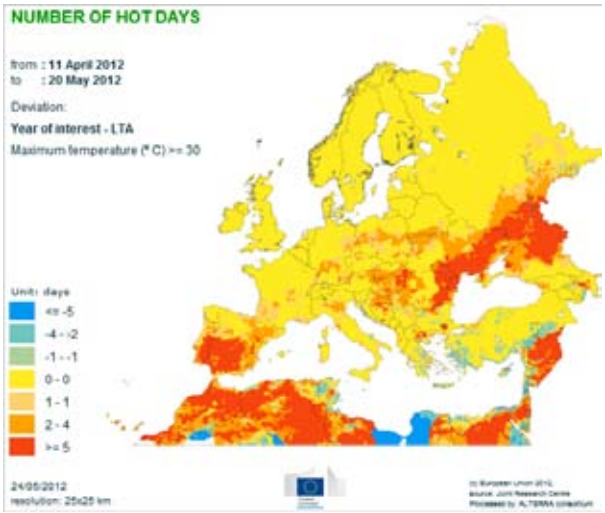


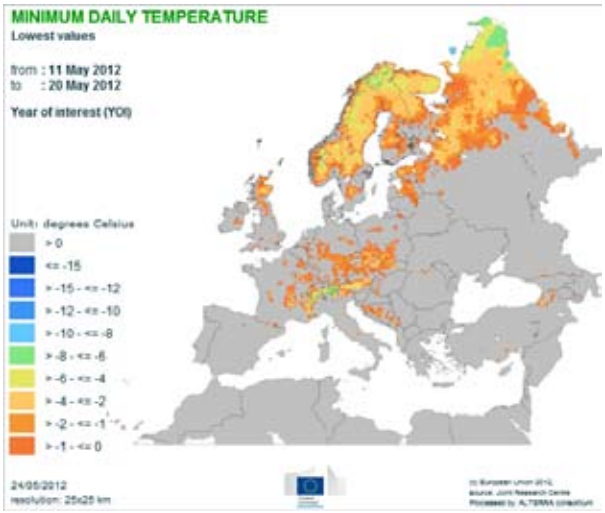


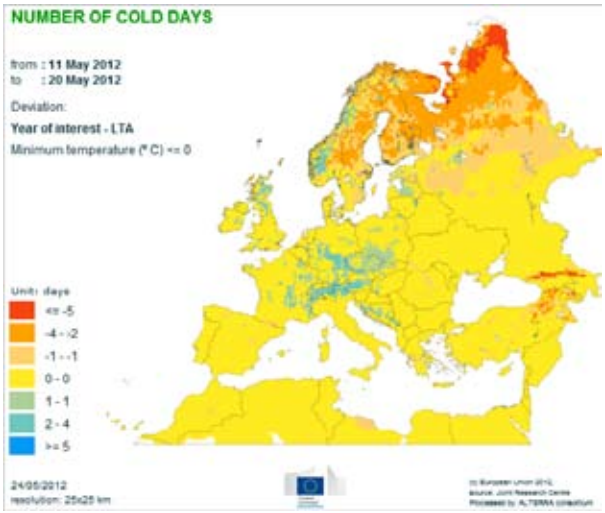


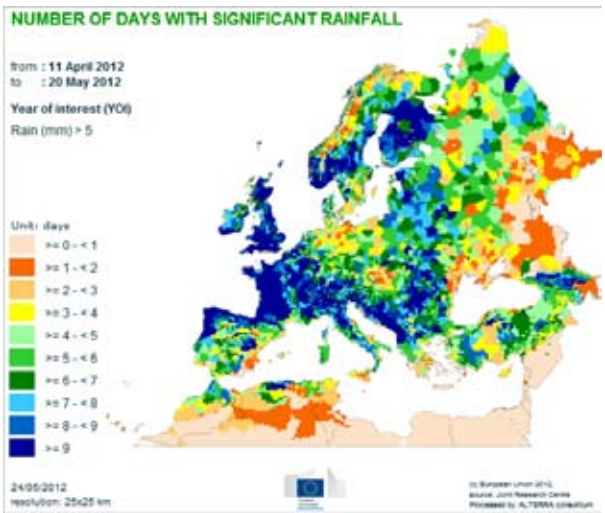
Extreme events

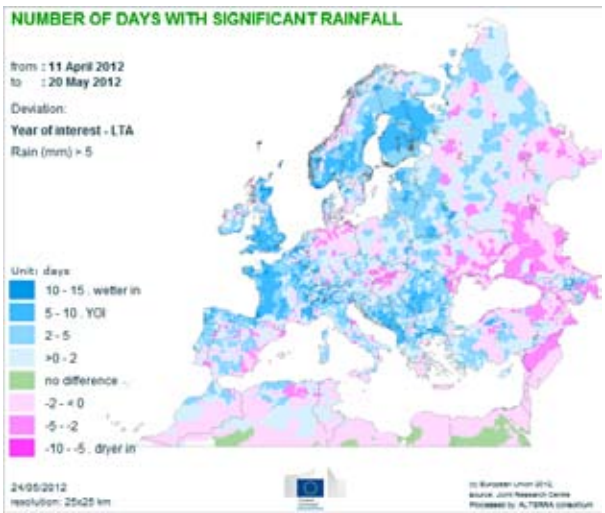




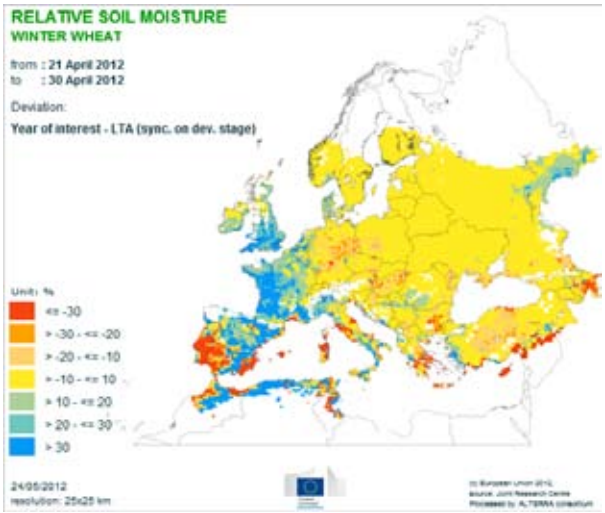


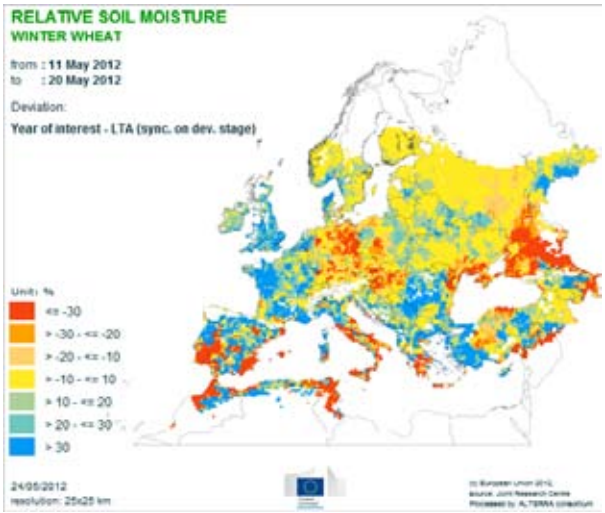


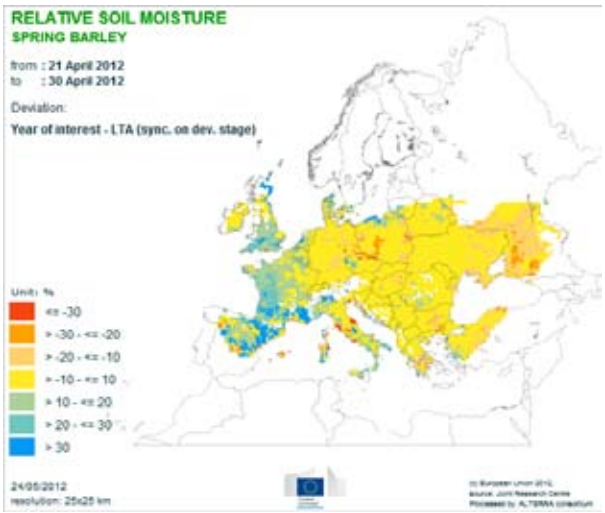


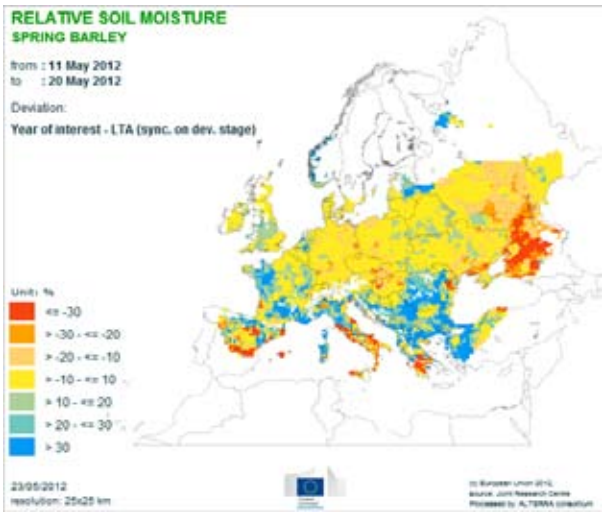


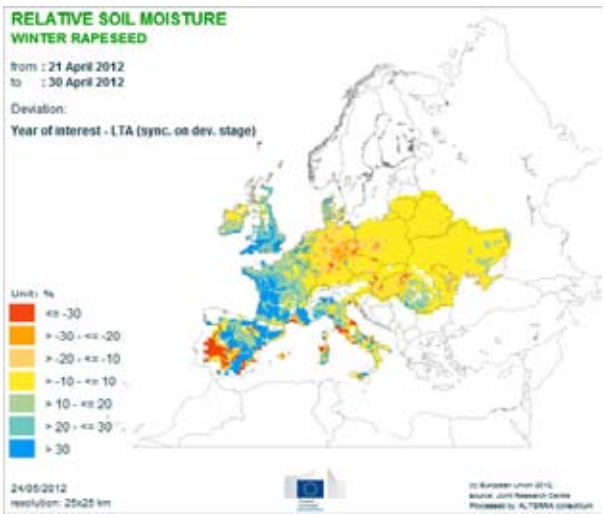
Relative soil moisture

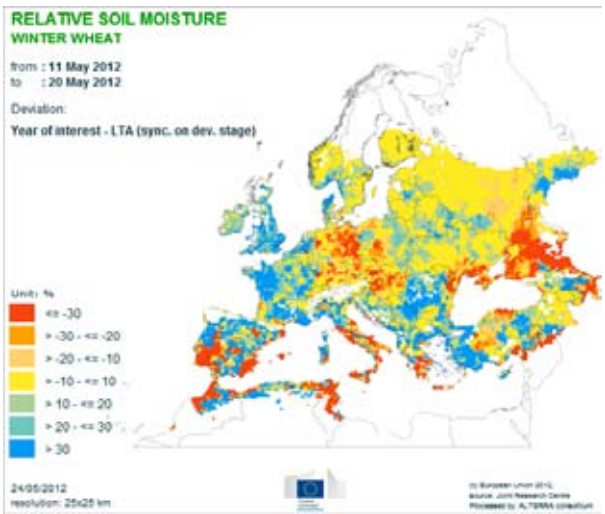












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29 May	Agromet. analysis, remote sensing analysis, and yield forecast, pasture analysis	Vol. 20 No. 5
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22 Oct	Agromet. analysis, remote sensing analysis and yield forecast, pasture analysis, rice analysis	Vol. 20 No. 10
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