European Commission

Period covered: 1 March - 7 April
Issued: 14 April 2014

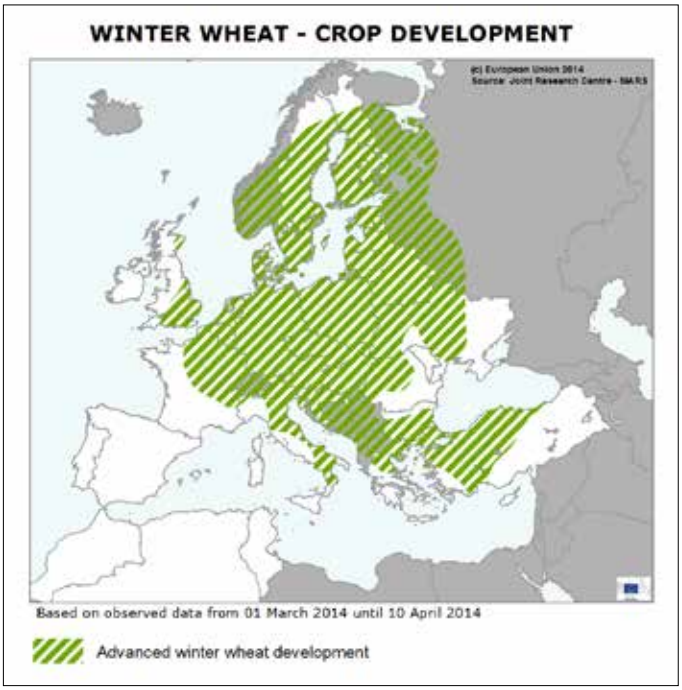
Crop Monitoring in Europe

MARS BULLETIN Vol.22 No. 4 (2014)

Well-advanced winter crops would now welcome rain

The period under review continued the trend of above-average temperatures that prevailed over most European regions since the beginning of winter. These conditions determined a significant advance in the development of winter crops, and were generally also favourable for spring sowing and other field operations.

Rainfall was scarce in Germany, Hungary, Ukraine, Belarus and the central part of Russia. Below-average rainfall was also observed over eastern France, the Benelux countries and some areas in eastern Italy, southern Spain and western Turkey. Rain scarcity is an emerging concern, but most of these areas are currently not experiencing any water shortage. However, such shortages are likely to occur if the dry period continues, and drying top soils will hamper the emergence of spring crops. In Poland, the Baltic countries, Romania and Bulgaria, the positive thermal anomalies are improving biomass accumulation, and water supply is not constrained. The Iberian Peninsula is experiencing normal conditions, with the exception of torrential rains in southern Portugal at the beginning of April.



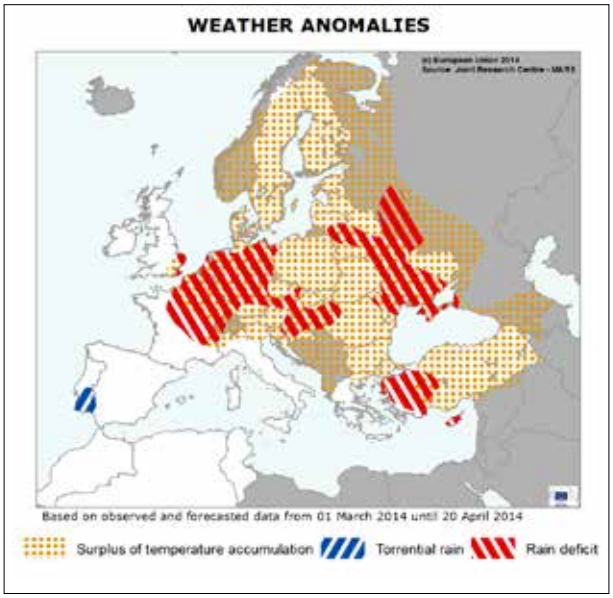
Crop	Yield t/ha				
	2013	MARS 2014 forecasts	Avg 5yrs	%14/13	%14/5yrs
TOTAL CEREALS	5.29	**5.25**	5.08	-0.9	+3.3
Total Wheat	5.58	**5.50**	5.34	-1.4	+3.0
soft wheat	5.82	**5.73**	5.58	-1.6	+2.7
durum wheat	3.25	**3.19**	3.22	-1.6	-0.8
Total Barley	4.84	**4.61**	4.49	-4.9	+2.7
spring barley	4.43	**4.02**	3.93	-9.2	+2.1
winter barley	5.49	**5.44**	5.30	-0.9	+2.6
Grain maize	6.66	**7.03**	6.84	+5.5	+2.8
Rye	3.97	**3.52**	3.49	-11.4	+1.0
Triticale	4.33	**4.10**	4.10	-5.1	+0.0
Other cereals	3.29	**3.24**	3.17	-1.5	+2.1
Rape and turnip rape	3.09	**3.13**	3.05	+1.3	+2.7
Potato	31.07	**32.58**	30.92	+4.9	+5.4
Sugar beet	68.80	**71.18**	70.42	+3.4	+1.1
Sunflower	1.93	**1.90**	1.86	-1.8	+2.0

Issued: 11 April 2014

Joint Research Centre

1. Agro-meteorological overview

1.1 Areas of concern



During March, extensive agricultural areas throughout Europe experienced rain scarcity and above-average temperatures. Above-average temperatures have prevailed in most European regions since the beginning of winter, determining a significant advance in the development of winter crops.

In **eastern France and England**, the crops' demand for water is still being met by soil water reserves, which were replenished at the beginning of the winter season. However, top-soils are drying out, and the spring crops sowing/ emergence will be negatively impacted if the precipitation deficit continues. The rain deficit is most pronounced in the **Benelux countries, most of Germany** and the main agricultural regions of **central Europe**, where crop growth is almost one month advanced compared to the average. Winter crops are currently not suffering from water shortages but are likely to do so in the coming weeks if the dry period continues. In Poland, the **Baltic countries, Romania and Bulgaria**, the positive thermal anomalies are improving biomass accumulation, and water supply is currently not constrained. The warm and dry weather in **central Ukraine**, on the other hand, caused sub-optimal conditions for winter wheat canopy development but, as significant rains are forecast for the next few days, soil moisture values are expected to return to average. In **central and western Turkey**, the main agricultural regions present average biomass accumulation: despite the significant positive thermal anomalies, canopy growth did not improve due to the water deficit.

Southern Portugal was hit by torrential rains (around 90 mm of rain in a single day) at the beginning of April. This could have negatively affected the reproductive stages of winter cereals in this region, which were almost at the flowering stage.

1.2 Agro-meteorological review (1 March - 7 April)

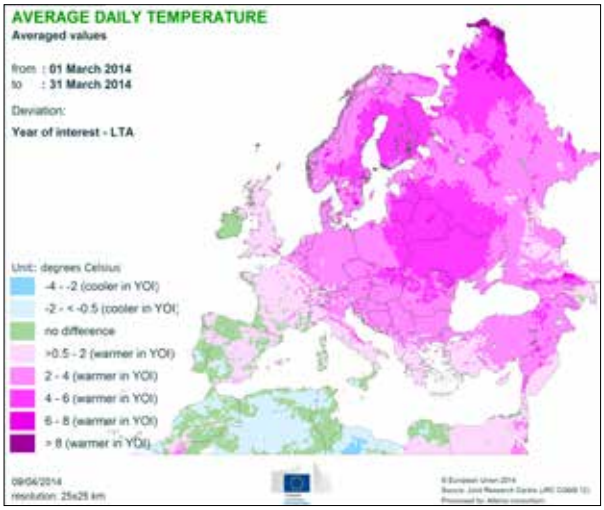
March was persistently drier than usual in most of central and eastern Europe, and warmer than usual across Europe. During the first week of April, north-eastern Europe was affected by negative thermal anomalies, while above-average temperatures continued in the rest of Europe.

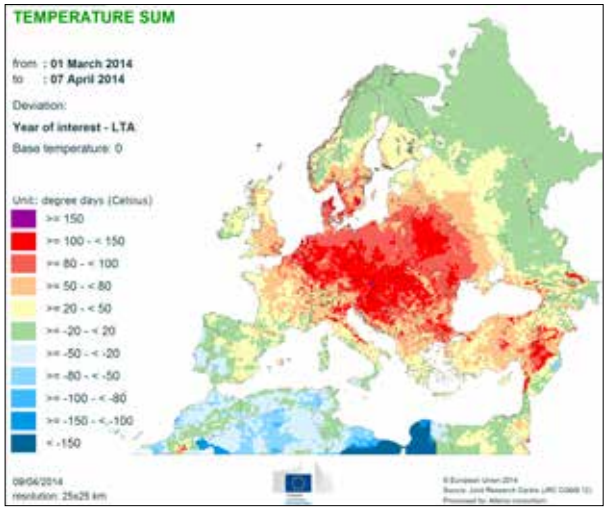
Observed temperatures

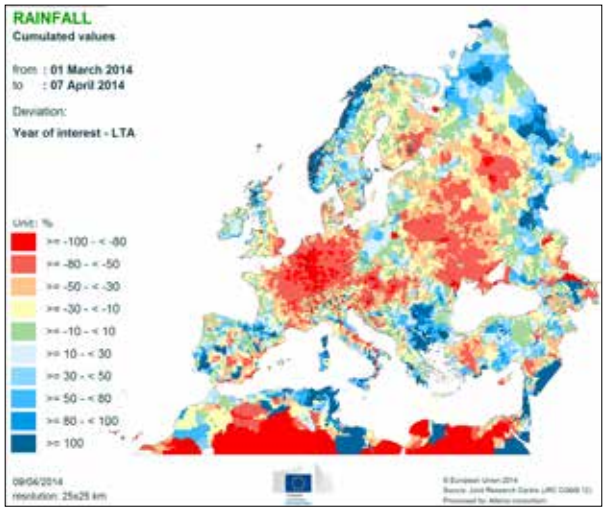
In March, positive thermal anomalies, mainly in the range of 2 to 4°C, prevailed over central and eastern Europe, while near-average or slightly above-average temperatures were observed over western Europe, the Mediterranean region and the UK. The unusually mild conditions were particularly pronounced in Ukraine, Belarus, the Baltic countries, northern Russia and the eastern part of the Scandinavian Peninsula, with average temperatures as much as 4 to 6°C above the long-term average. During the first days of April, a cold air intrusion affected large parts of eastern and north-eastern Europe, with average temperatures ranging from -2 to -4°C below the long-term average and absolute minimum daily temperatures below -6°C (even reaching below -15°C over parts of Russia, the Scandinavian Peninsula and the eastern coast of the Black Sea). Below-average temperatures were also recorded over eastern Turkey. By contrast, warmer-than-usual thermal conditions persisted over the British Isles, France, the Benelux countries, Germany, northern and central Italy, the Czech Republic, Slovakia, Hungary, western Romania and the Balkans. For the whole period (1 March-7 April), cumulated active temperatures (Tbase = 0°C) exceeded the average by more than 80 growing degree days over central and eastern Europe (from the Benelux countries to Belarus and Ukraine), as well as over some areas in northern Italy, Turkey and Sweden.

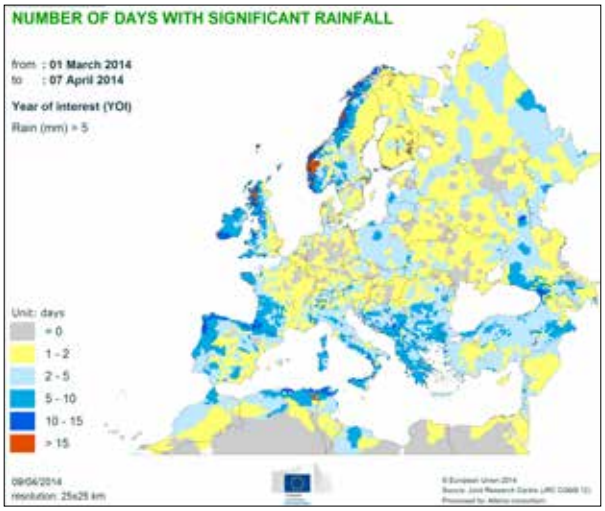
Observed precipitation

Drier-than-usual conditions persisted over Germany, Hungary, Ukraine, Belarus and the central part of Russia, with cumulated precipitation more than 80% below the average. Below-average rainfall was also observed over eastern France, the Benelux countries and some areas in eastern Italy, southern Spain and western Turkey. Almost no days with significant precipitation were recorded over the aforementioned regions. By contrast, cumulated rainfall exceeded the average by more than 50 mm over north-western Scotland; Norway; some areas in Sweden, Poland and eastern Russia; some areas in Italy (especially in the south); southern Portugal and along the Pyrenees; a region covering southern Romania, Serbia, Bulgaria, Macedonia and the north-eastern part of Greece; southern Peloponnese and the central part of Turkey. The first week of April was characterised by scarce or absent (<3 mm) precipitation over the main agricultural production areas in central and eastern Europe, further contributing to the water deficit in western France, Germany, Poland, Hungary, Ukraine and Turkey. Cumulated precipitation above 30 mm was observed over some areas in the western part of the UK, southern Ireland, Portugal, along the Pyrenees and over some areas in southern Italy. A heavy rainfall event hit the southern part of Portugal on the 1st of April, with daily values locally above 80 mm.



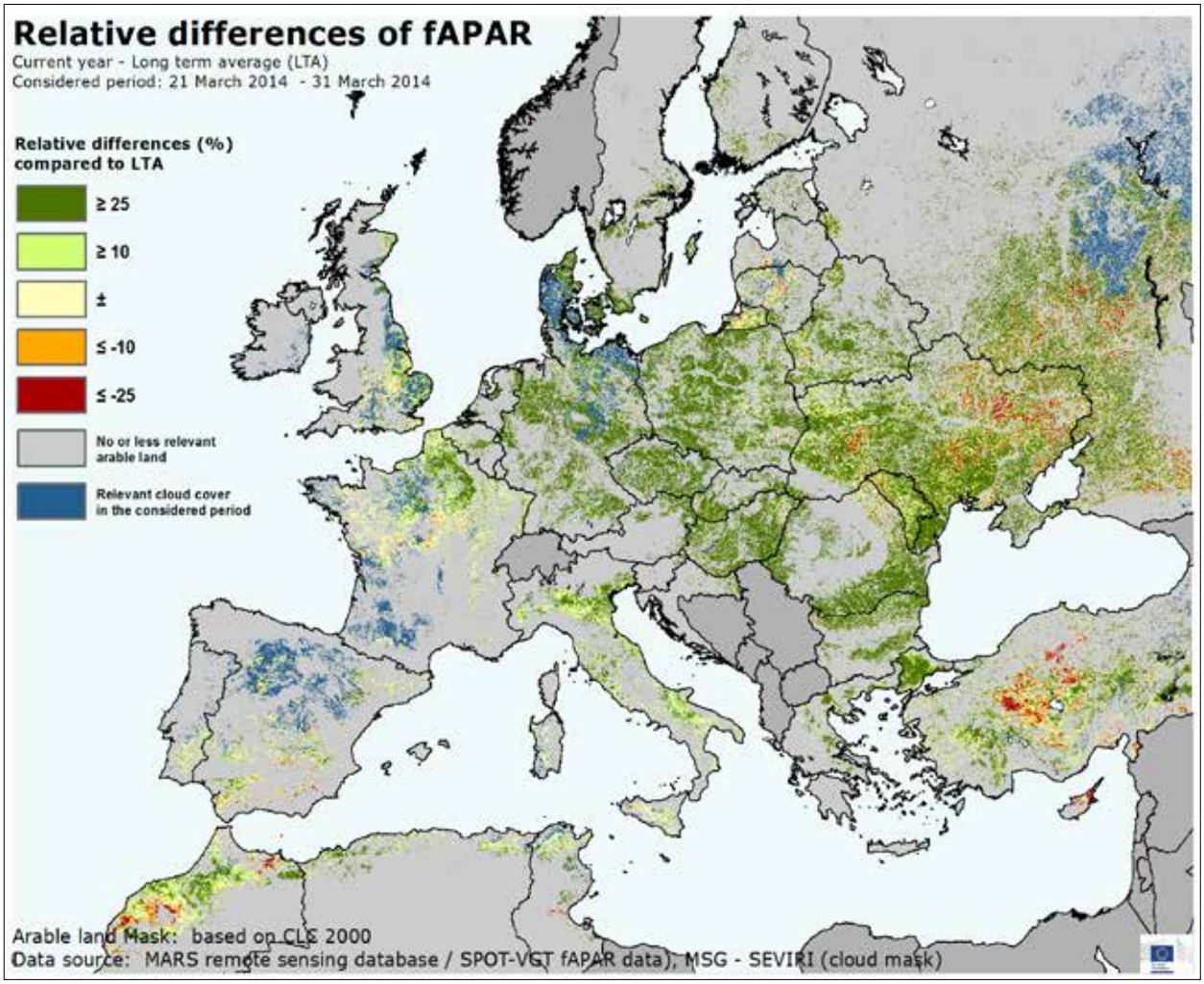




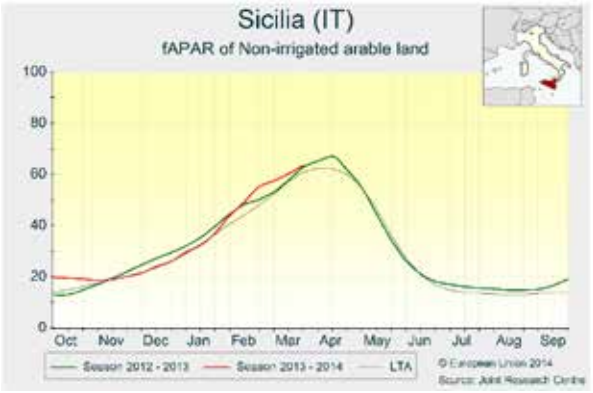


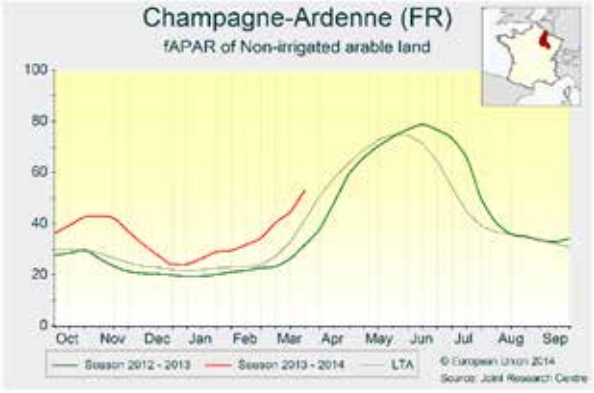
2. Remote Sensing - observed canopy conditions

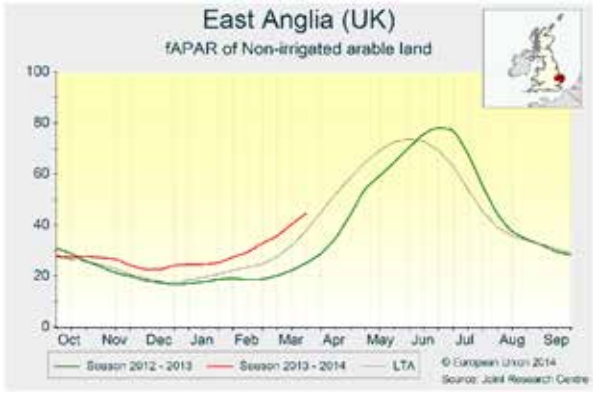
Winter crops are strongly advanced from western to eastern Europe. Positive biomass accumulation in the Mediterranean countries. Unfavourable canopy development in eastern Ukraine and central Turkey.

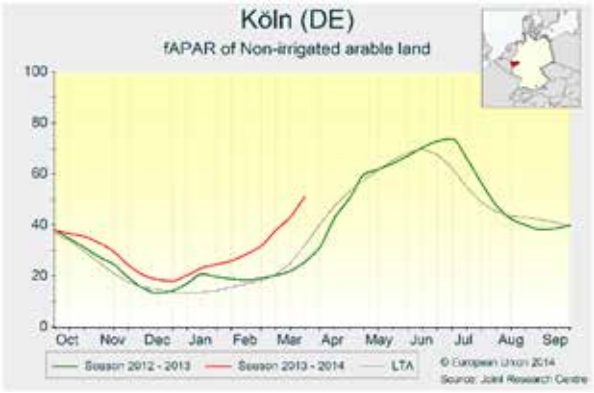


The map displays the differences between the fraction of Absorbed Photosynthetically Active Radiation (fAPAR) observed during the period 21-31 March 2014 and the long-term average (LTA, 1998-2012) for the same period. In the **Iberian Peninsula**, crops benefitted from the abundant rainfall of the winter months, especially in southern regions, where fAPAR values are above average and are now similar to the last year's spring season. In **Italy** (e.g. *Sicilia*), durum wheat canopy density is slightly higher than usual thanks to the positive thermal anomalies and sufficient soil moisture conditions. Crops in **western and southern France** faced wet weather conditions in March: the canopy was not affected but the risk of infections is increasing, due to the positive temperatures anomalies. In **central and eastern France** (e.g. *Champagne-Ardenne*) and in the **United Kingdom**, positive thermal anomalies since winter led to the very early development of the winter crops. A strong advance in crop cycles is also present in **Germany** and **central and eastern Europe**. In some of these regions (**western and southern Germany, northern Austria, the southern Czech Republic, Hungary**), the high temperatures have been associated with a significant lack of precipitation for several weeks: while the winter crops canopy has not yet reflected any impact, it is likely to be affected if significant rainfall does not occur in the coming weeks. In the **Baltic countries** (e.g. **Latvia**), the effect of the frost kill of January is still visible: affected crops did not recover from that event. In **Ukraine**, persistent warm temperatures determined high crop growth rates during March. In central regions (e.g. *Poltavs'ka*), increased crop demands for water are not met due to the large precipitation deficit built up over the past months. The map displays the deficit in the canopy development. In central (e.g. *Ankara*) and western **Turkey**, crops are exposed to a similar water shortage: there is a deficit of green biomass even though a positive thermal anomaly has occurred since February. In **Morocco**, the density of the winter crops canopy is higher than average, and plants are around the flowering stage.


Sicilia (IT)
fAPAR of Non-irrigated arable land
100
80
60
40
20
0
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Season 2012 - 2013
Season 2013 - 2014
LTA
© European Union 2014
Source: Joint Research Centre


Champagne-Ardenne (FR)
fAPAR of Non-irrigated arable land
100
80
60
40
20
0
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Season 2012 - 2013
Season 2013 - 2014
LTA
© European Union 2014
Source: Joint Research Centre


East Anglia (UK)
fAPAR of Non-irrigated arable land
100
80
60
40
20
0
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Season 2012 - 2013
Season 2013 - 2014
LTA
© European Union 2014
Source: Joint Research Centre


Köln (DE)
fAPAR of Non-irrigated arable land
100
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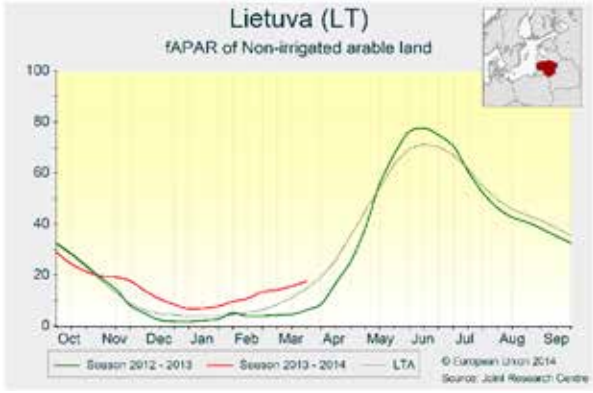
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Season 2012 - 2013
Season 2013 - 2014
LTA
© European Union 2014
Source: Joint Research Centre


Lietuva (LT)
fAPAR of Non-irrigated arable land
100
80
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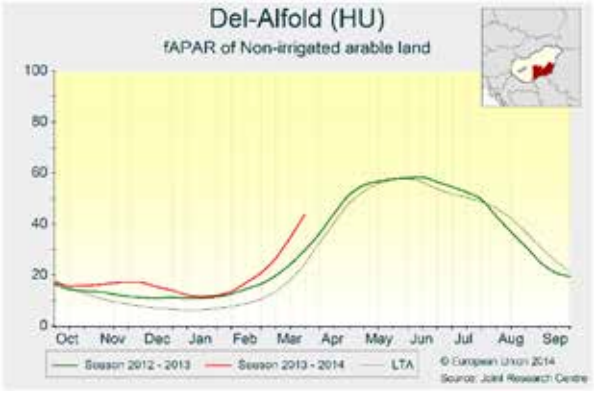
40
20
0
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Season 2012 - 2013
Season 2013 - 2014
LTA
© European Union 2014
Source: Joint Research Centre


Del-Alfold (HU)
fAPAR of Non-irrigated arable land
100
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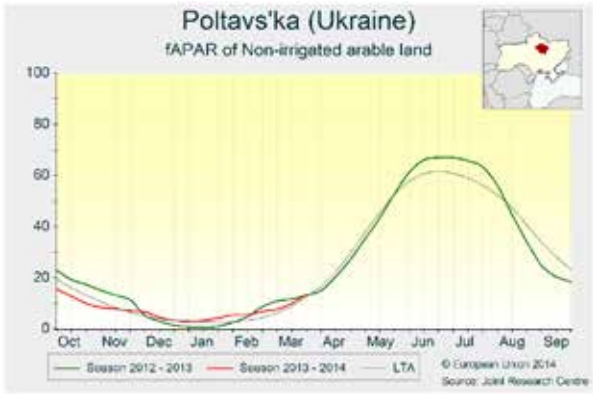
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Season 2012 - 2013
Season 2013 - 2014
LTA
© European Union 2014
Source: Joint Research Centre


Poltavs'ka (Ukraine)
fAPAR of Non-irrigated arable land
100
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20
0
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Season 2012 - 2013
Season 2013 - 2014
LTA
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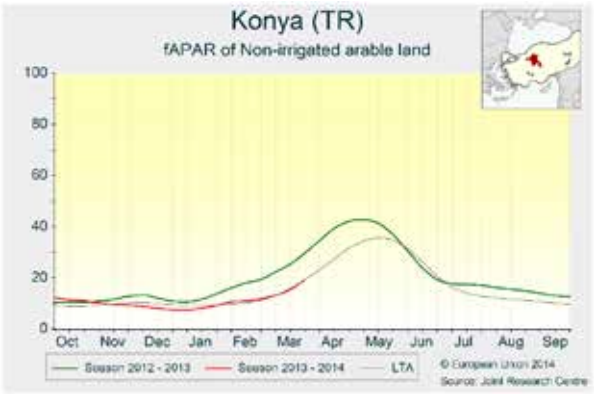

Konya (TR)
fAPAR of Non-irrigated arable land
100
80
60
40
20
0
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Season 2012 - 2013
Season 2013 - 2014
LTA
© European Union 2014
Source: Joint Research Centre

3. Country analysis

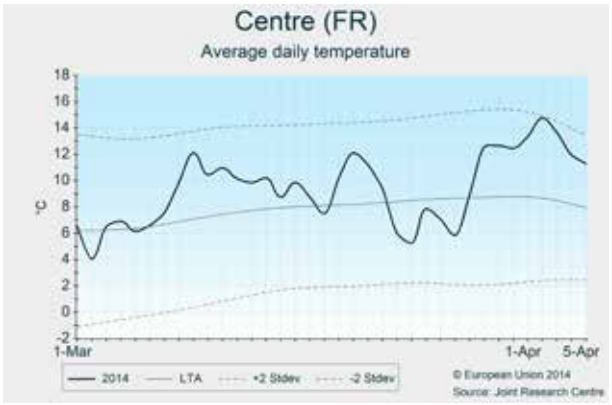
3.1 European Union

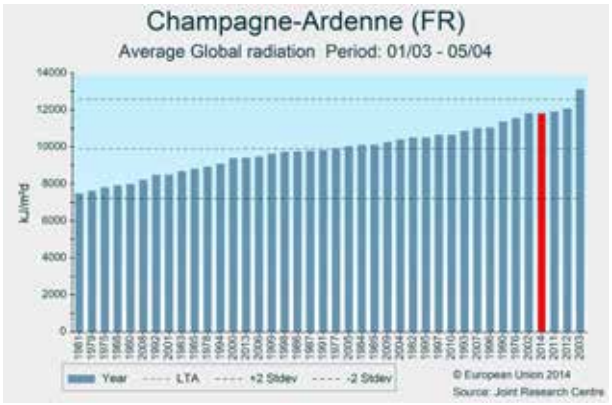
France

Ideal meteorological conditions boosted crop growth

Following a mild and wet winter, March continued mild, with only sparse rainfall. Crops are benefiting from these conditions. Winter cereals are advanced compared to an average year.

Thermal conditions in March were milder than usual, particularly in the north-east (2°C above average in *Picardie, Champagne-Ardennes, Lorraine*). Global radiation was well above the average in the northern half of the country. Rainfall was unevenly distributed, with cumulated values close to the average in the Atlantic regions and western Mediterranean regions, while the rest of the country had just sparse rainfall. North-eastern regions experienced no significant rainfall since the beginning of March. However, cumulated rainfall since autumn remains above or close to the average throughout the country. As a consequence of the mild winter and early spring conditions, soft wheat, winter barley and rapeseed in the northern half of the country are 20 days in advance, according to our model. In the southern regions, winter cereals are 10 days in advance. As western and south-western regions received some rainfall in March, the pest pressure is still high. In north-eastern regions, the long dry period could impact the growth of winter cereals and the sowing of spring cereals if it persists over the next few weeks. Despite the differing conditions, crops are generally benefiting from high soil moisture levels and mild temperatures.





Germany

Warm and too dry

March was one of the warmest and driest in our historical time series. Crop development is advanced with good leaf area expansion, but rain is now needed to sustain crop growth in the coming weeks.

March was very mild. The temperate accumulation is clearly above average, and temperatures peaked as high as 22 to 24°C. In fact, the average maximum temperature for the month is amongst the highest on our records for March. Only 2007 and 1990 appear to be warmer. As a consequence, crop growth was accelerated and the development of winter crops is well advanced. Radiation was also high compared to an average year, and leaf area expansion is above average in all areas,

with the exception of *Bayern*. Due to the rapid growth, lack of rain and high radiation, soil water levels started to deplete rapidly, especially in *Nordrhein Westfalen*. March was not only a very warm month but also one of the driest on our records, making the start of the season unique in our time series. Large parts of Germany did not receive any beneficial rain, and the overall deficit accumulated in March ranges from more than 50 mm to 10 mm, with a west-east (stronger-weaker deficit) gradient. Rain is now needed to sustain further crop growth. On the other hand, crops will develop a deep rooting system, making them less vulnerable to possible summer droughts. Forecasts are based on trend values and averages.

Poland

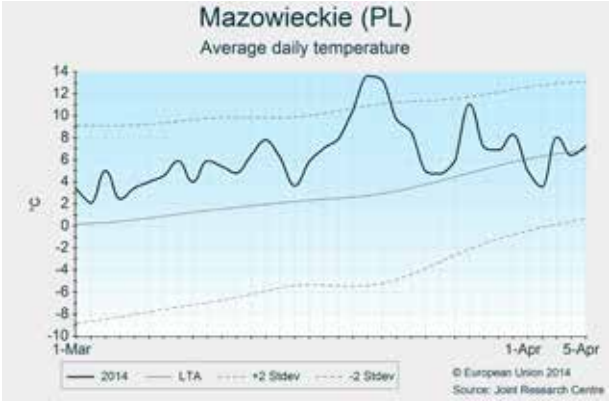
Mild temperatures contribute to a good start to the season

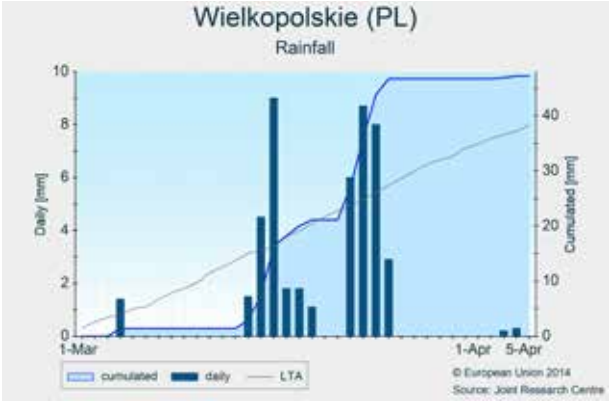
Temperatures were milder than usual in March and precipitation was close to the average. Thermal conditions were favourable for winter cereals to break dormancy and for the sowing and emergence of spring crops.

In March, thermal conditions remained mild, in line with the conditions of this winter. Temperatures were around 3°C above average in all regions. Cumulated rainfall was close to or slightly above the average, due to substantial precipitation from mid-March to the end of March.

As temperatures were largely above the base temperature for the development of winter cereals, crop development is, according to our model, 20 days in advance compared to an average year. Conditions are also favourable for the sowing and emergence of spring cereals.

While these conditions represent a good start to the season, winter cereals are only reaching the heading stage in the south of the country, and the tillering stage in the north; so it is still too early in the season for a refined yield forecast. Thus the forecasts are based on the trend.





United Kingdom and Ireland

Favourable conditions prevail in the UK; too wet in Ireland

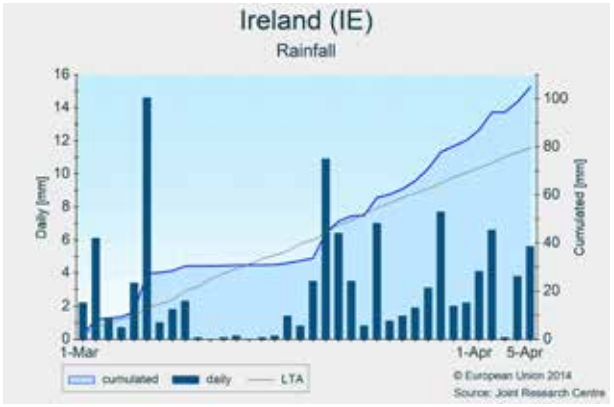
Predominantly mild and relatively dry weather conditions provided good conditions for winter crops and for the sowing of spring crops in the UK's main crop-producing areas. In Ireland and parts of northern UK, wet conditions continued to hamper field operations.

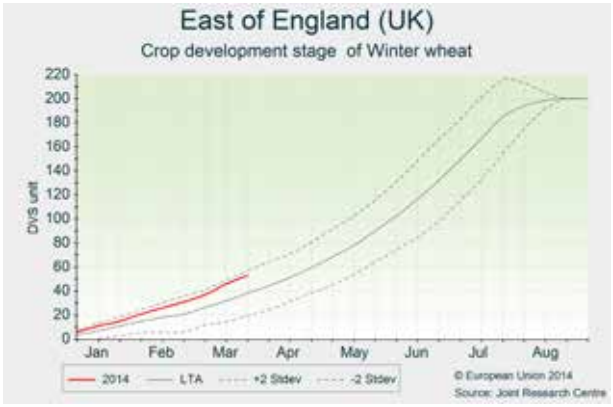
The period under review (1 March – 5 April) presented strongly contrasting conditions across the British Isles. In Britain, the review period was one of the warmest on our records (since 1975), especially in the south-eastern parts. After a relatively cool start, March resumed its earlier trend of above-average temperatures, only interrupted by a cold snap with below-average temperatures and some night frost during the third dekad. In Ireland, temperatures fluctuated much closer to the average, and little or no frost was recorded.

Rainfall patterns were even more contrasting. In the eastern parts of Britain, rainfall was well below the long-term average, and mainly confined to the abovementioned cooler periods. Additional rain would actually be welcomed in some of the south-eastern parts of the UK. In most of Ireland and Scotland, on the other hand, the excessively wet conditions that prevailed during winter continued, albeit less intensively and interrupted by a drier period during the second dekad of March.

These weather conditions have been favourable for the UK's main crop-producing areas in the eastern parts of Britain. There, winter crops have recovered well from the wet winter, the cold snap helped to control pests, farmers were able to conduct field operations and the spring sowing campaigns

are well-advanced. Particularly in Ireland, and in parts of the northern UK, however, even though the current weather conditions are causing no harm to crops, farmers have had few opportunities to enter their fields, which could result in a risk to winter crops and delay in the sowing of spring crops.





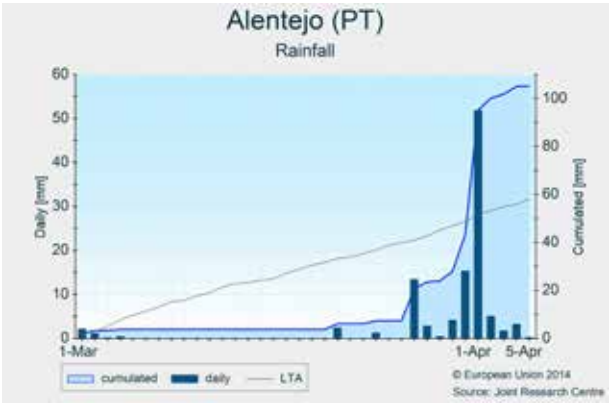
Spain and Portugal

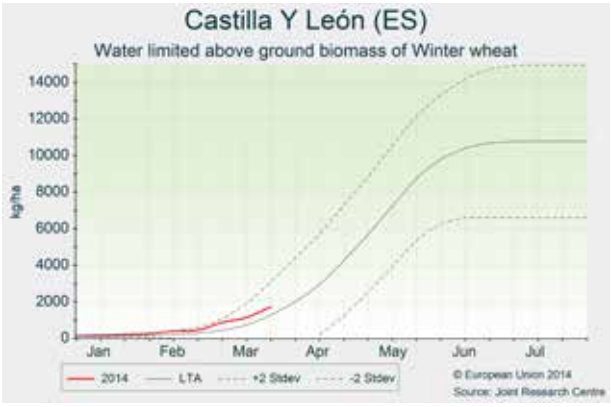
Rainfalls during the first days of spring

Substantial precipitation has been registered during the last two weeks in the western half of the Iberian Peninsula. The outlook for winter crops is on average.

The first two weeks of spring have been humid, especially in the western regions. From 27 March to 3 April consecutive rainfalls were registered in the western provinces of *Andalucia, Castilla y Leon, Extremadura* and most of Portugal. The intensity of rainfalls events was especially high in the south of Portugal, where 50 mm were registered only on 1 April, reaching up to 90 mm in some specific locations in *Alentejo*. Temperatures have been colder than usual across the Iberian Peninsula at the end of March, when the mentioned rainfalls took place. However, they are increasing these last days, especially in the north-east where daily averages are exceeding by 2°C the long-term average.

Winter cereals in Portugal may have been negatively impacted by the local extreme rainfalls registered in Alentejo. Possible damages on wheat, barley and triticale –already in flowering stage– will have to be evaluated in the coming weeks. In Spain, durum wheat is also reaching flowering –about one week earlier than usual– in southern regions, and green biomass formation at this point of the growing season exceeds the average. In northern regions, by contrast, winter cereals are still on early heading phase and crop indicators reveal close to average crop growth. Both wheat and barley have been growing without major constraints up to now in Spain, but yield potentials will mostly depend on weather conditions during April and May.



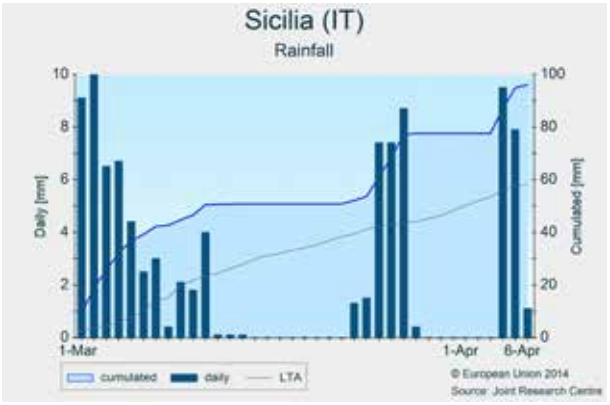


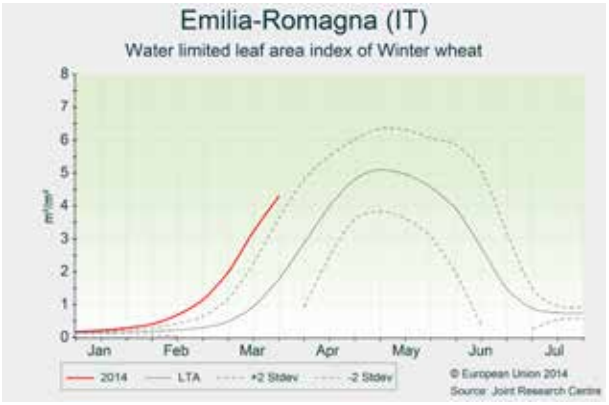
Italy

Good growth conditions

Mild thermal conditions, with scarce rainfall in the north and favourable precipitation in the southern regions, assured good crop growth.

After a very wet winter, the absence of significant rainfall in northern and central Italy, during the period between 5 March and 20 March and after 27 March, was favourable to spring sowing and accessing fields to control pests and diseases. In southern Italy, rainfall above the long-term average was recorded during the period of analysis, with cumulated values exceeding 100 mm in the western part of Sicily. Daily temperatures remained well above average in all regions. According to our model calculations for winter crops, leaf area index and biomass accumulation are above average, thus suggesting a favourable outlook, even though the risk of pests and diseases is still very high. Winter wheat and barley are at the end of the heading stage in northern regions, while in central and southern Italy flowering is starting in some fields. Rapeseed is at the flowering stage in most fields, presenting a significant phenological advance. Good soil moisture levels also provided favourable growing conditions for durum wheat in southern Italy. The current yield forecasts for winter crops, which are based on scenario analyses, remain close to the 5-year average. For the other crops, only trends were used at this stage for making yield forecasts.



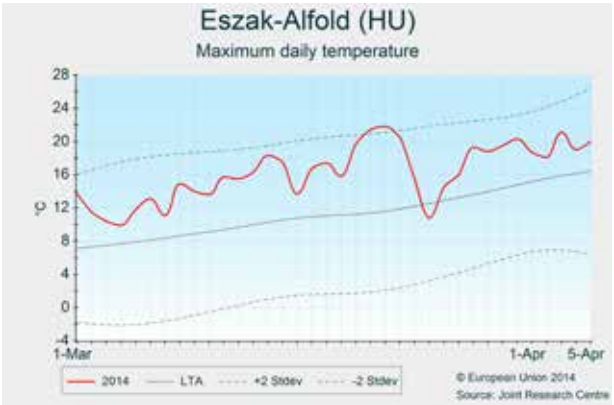


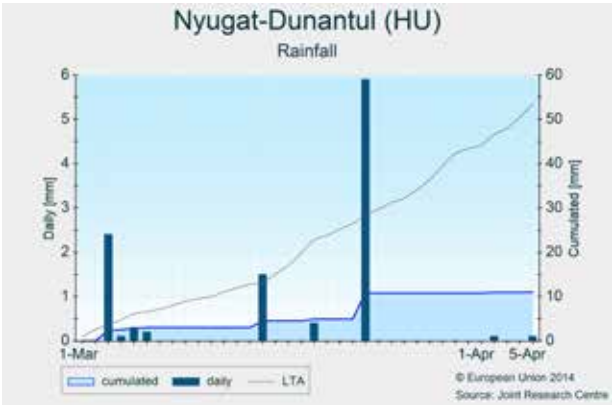
Hungary

Risk of spring drought

Conditions were warmer and drier than usual in March and early April. Winter crops indicate advanced development stages. Water shortage is intensified and has started to constrain the growth of winter crops. Rainfall is urgently needed to prevent the establishment of drought conditions.

Daily temperatures persistently exceeded the long-term average by +3 to +5°C, with the exception of 2-3 days towards the end of March. The phenological development of winter crops is greatly advanced, due to long-lasting mild weather conditions. Infrequent rainfalls were typical during the reviewed period, resulting in only 10-20 mm precipitation, which is 25-40 mm less than usual. Both the month of March and the entire October-March period are among the driest experienced in Hungary. While water scarcity is still not too severe, it has started to retard canopy expansion, and biomass accumulation is below optimal levels. The drier soil conditions led to a more developed root system, which could be favourable later in the growing season. Concurrently, the lack of rain allowed for the timely sowing of spring cereals and sugar beets.





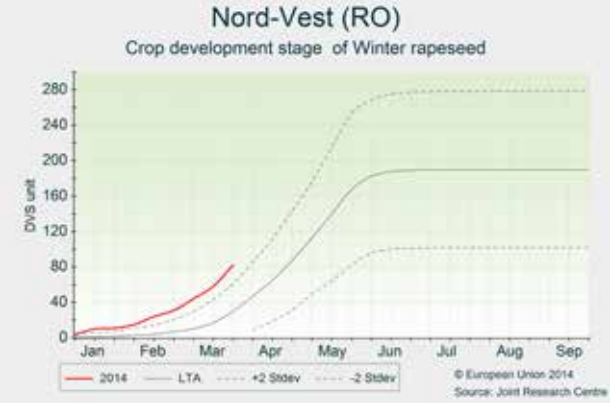
Romania

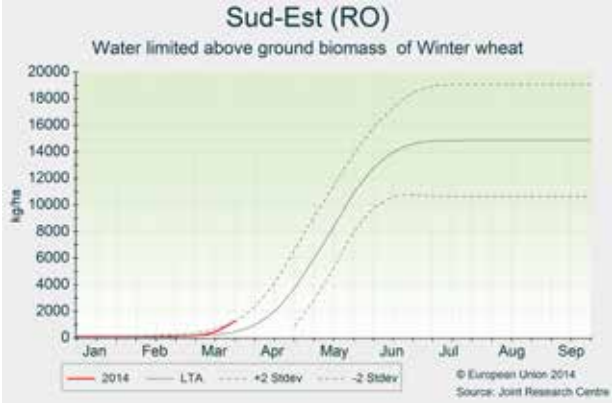
Positive expectations

Warm weather led to accelerated crop development. Due to extended dry periods, the spring sowing campaign progressed well. General conditions are good for winter crops, but further rains would be beneficial given the decreasing soil moisture and increasing crop water requirements.

Daily mean temperatures were mostly 2 to 4°C higher than the average. Substantial rain (30-100 mm) was measured in the southern and south-eastern areas in the first dekad of March, but meanwhile no significant rainfall was experienced in *Nord-Vest* and *Centru* regions. Later on the central and western territories experienced greater levels of rainfall (10-40 mm) and the eastern and southern areas experienced low or moderate precipitation (5-20 mm). Despite the spring rains, the moisture content of the upper soil layers is close to the minimum of the optimal range, primarily in the areas along the Black Sea, and the Hungarian and Moldavian borders.

The development stage of winter crops is exceptionally precocious. The leaf area expansion and biomass accumulation of winter crops are better than average, even considering the advanced phenology.





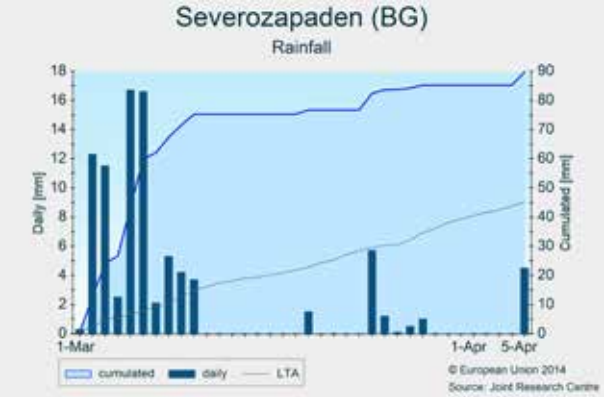
Bulgaria

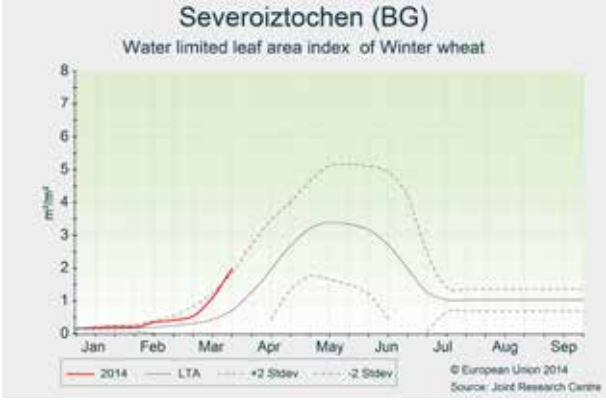
Good crop conditions

Winter crops are faring well thanks to abundant rainfall and warm weather conditions. Precipitation levels fell drastically during the past month, however. The soil moisture is still adequate, but rain would now be welcomed both for spring and winter crops.

Mild thermal conditions during the period under review accelerated crop development considerably. The distribution of precipitation was uneven in time and space. Rainfall was concentrated in the first dekad of March, followed by a drier period with moderate precipitation to date. Considering the period as a whole, precipitation was decidedly abundant in southern and western areas (70-110 mm), but was much less so in the north-east (40-60 mm). The relatively dry conditions of the past 25 days (second half of March and beginning of April) favoured seasonable field activities, and spring sowing got off to an early start. However, the upper soil layers have become dry, therefore more rainfall would be beneficial for adequate sprouting and solid emergence of spring crops.

Winter crops are well-established. Their development is advanced; crop canopy expansion is better than usual, and biomass exceeds the average. Soil water levels are still satisfactory, but rain will soon be needed as the winter crops have greater water requirements than usual.





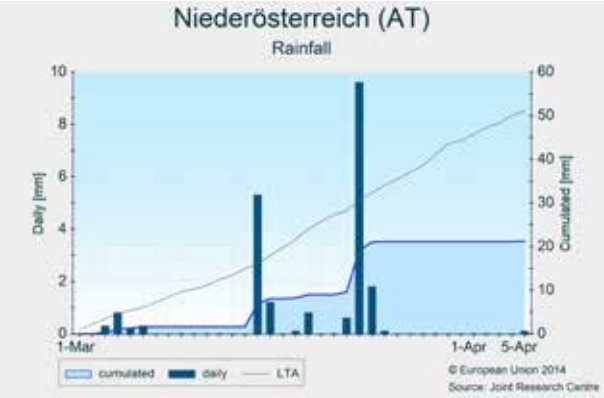
Austria, Slovakia and the Czech Republic

Warm weather with scarce rainfall continues after winter

Drier and warmer-than-usual conditions prevailed over major agricultural areas. Winter crops are beginning to suffer from the lack of soil moisture.

Warmer-than-usual weather conditions have continued in March and the beginning of April, with average daily air temperatures between 2 and 4°C above the long-term average. These warm conditions accelerated the development of winter crops. Scarce rainfall since the beginning of March failed to reduce the lack the soil moisture experienced over the winter period. Exceptions are *Stredocesky Kraj* and *Severovychod* in the Czech Republic, where abundant rainfall in the second half of March returned soil moisture levels to normal values. The warm conditions and drier-than-usual soils are expected to anticipate the sowing of summer crops. Nevertheless, if the lack of soil moisture continues, it may delay the germination.

Since soil moisture levels in many agricultural areas are low, growth and development of winter crops mainly depend on rainfall in the coming period, especially when the crops are flowering. A good yield potential can be foreseen if spring rains refill the soil moisture levels. Since it is too early in the season to foresee the rainfall conditions during the most sensitive growth stages of winter crops, the trend values from the previous bulletin are maintained.

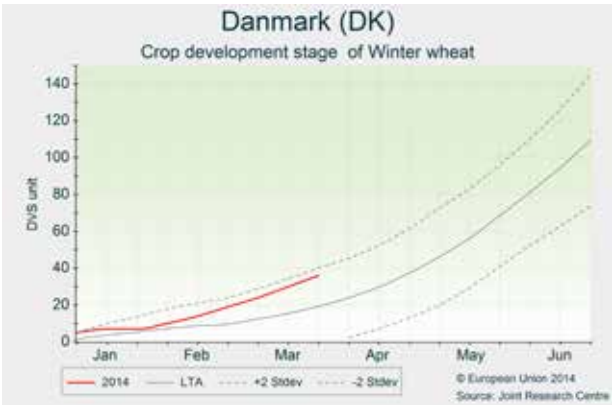


Denmark and Sweden

Advanced development of winter crops

Mild and sunny weather with adequate rainfall provide good growing conditions.

Warm weather conditions continued to prevail during March, with average temperatures up to 4 to 6°C above the average in Sweden, and 2 to 4°C in Denmark. April started with a cooler period, with daily temperatures close to or slightly below the average. During the period of analysis, cumulated rainfall in the range of 30-40 mm guaranteed sufficient water supply for winter crops. Winter cereals are at the heading stage, thus presenting phenological advance. According to our model and remote sensing data, leaf area expansion is well above average. The good growing conditions suggest an overall positive outlook for winter crops. Conditions for spring sowing are also favourable.



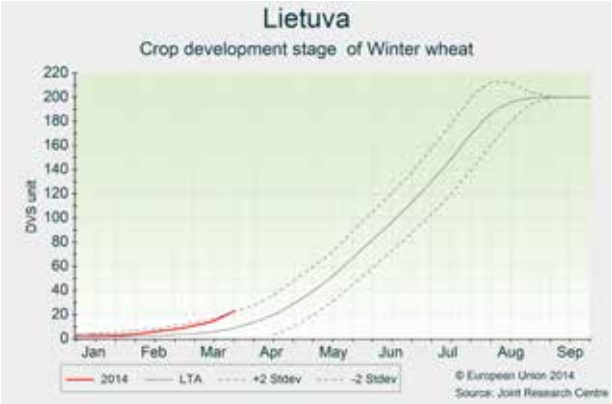
Finland, Lithuania, Latvia and Estonia

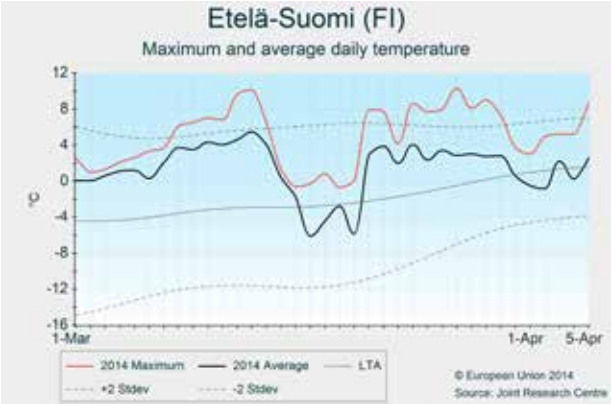
Favourable weather conditions lead to advanced crop development

Unusually warm temperatures and good soil water conditions have advanced the development of winter crops.

After a mild winter, temperatures in Finland and the Baltic countries remained above the long-term average. Average maximum temperatures were higher than usual, from 3°C above the normal in Finland to 4°C in Lithuania. Cumulated precipitation across the region was close to average for the period analysed (1 March – 5 April). The first half of March was relatively dry in southern Lithuania and southern Finland, but both areas received a good amount of water during mid-March, thus replenishing soil water storage.

These weather conditions created a good environment for the accelerated growth and development of winter crops. Winter wheat crop development is already advanced in all countries, and a similar tendency was recorded for winter rapeseed, particularly in Lithuania and Latvia. These conditions are also enabling advanced spring sowing throughout the region. In fact, Lithuania has already started to sow spring crops in some areas during the first half of March.





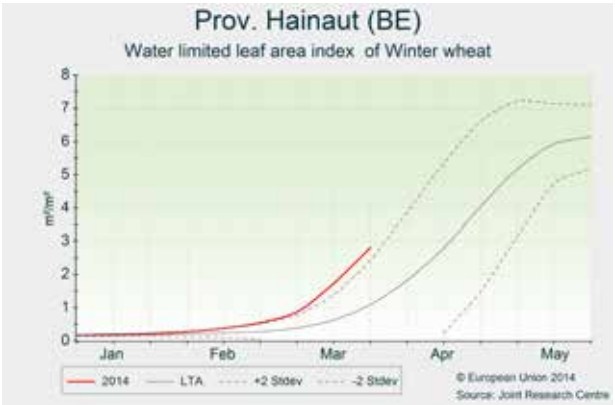
Belgium, the Netherlands and Luxembourg

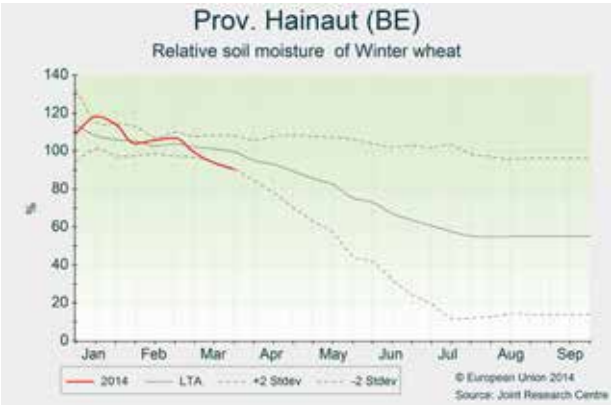
Mild and sunny

Warm and sunny weather provided good conditions for the growth and development of winter crops and for the sowing of spring crops. Rain will now be welcomed, particularly in the south-eastern parts of the Benelux region.

The period under review (1 March – 5 April) started relatively cool but after a few days resumed the earlier trend of above-average thermal conditions, only interrupted by a brief dip to slightly below-average temperatures during the third dekad of March. For the period as a whole, average temperatures where 2 to 3°C above the long-term average in most of the region, and up to 4°C above the long-term average in the south-eastern parts (Luxembourg, eastern Belgium, south-eastern Netherlands). Solar radiation levels were 20 to 30% higher than usual.

Rainfall was scarce, mainly confined to the abovementioned cooler periods. In most parts, cumulated precipitation during the period was more than 50% below the long-term average; in the south-eastern parts it was even more than 80% below





the long-term average.

Thus far, conditions have generally been favourable for winter crops, as well as for the sowing and emergence of spring crops. Winter crops are well advanced in canopy and phenological development, and the spring sowing campaigns are also well-advanced. Rain will now be welcomed, however, particularly in Luxembourg, eastern Belgium, and the south-eastern Netherlands.

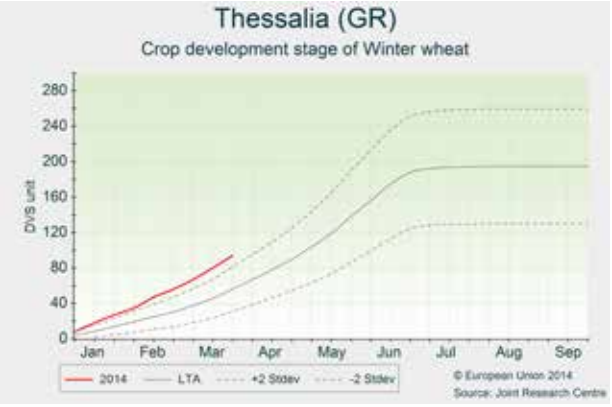
Greece and Cyprus

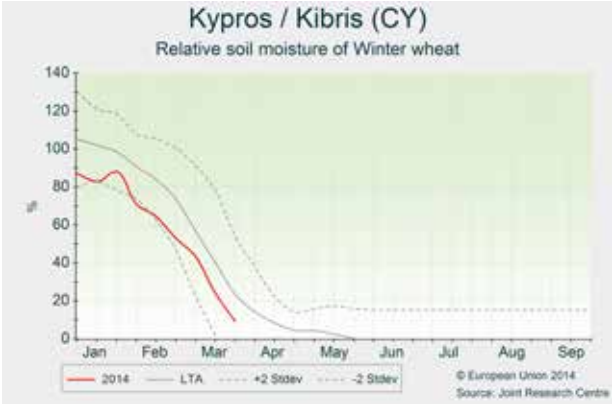
Warm conditions

Temperatures continue to fluctuate above the long-term average in both countries. In Greece, the winter cereals present advanced development, but in Cyprus drought conditions have been established, retarding development.

Continuing the trend since mid-January, temperatures in Greece remained above the long-term average during March. Moderate precipitation during the first dekad of March was followed by a dry period with almost no rainfall throughout the country until 25 March. A few rainy days occurred in the northern parts of the country from 25 to 28 March, but with little precipitation levels. Those warm and almost dry conditions started to drive the relative soil moisture below the long-term average. However, winter cereals benefited greatly from the precipitation experienced during early March, and present well-advanced biomass accumulation.

In Cyprus, a similar temperature regime is responsible for the warmest January-March period recorded in our database since 1979. Only low levels of precipitation occurred until mid-March, which were not enough to replenish the soils. Therefore, it seems that drought conditions are already established in Cyprus.





Slovenia and Croatia

Warm weather accelerates winter crop development

Drier and warmer-than-usual conditions prevailed over major agricultural areas of eastern Slovenia and eastern Croatia. Lack of soil moisture is starting to affect winter crops.

Significantly warmer-than-usual weather continued in March and early April, with average daily air temperatures 2 to 4°C above the long-term average. Dry weather conditions prevailed in the eastern part of Slovenia and the eastern part of Croatia. Cumulative rainfall has been less than 20 mm since the beginning of March in Vzhodna Slovenija and Sjeverozapadna Hrvatska, thus causing soil water depletion

and (still early) signs of water stress in crops. Soil moisture levels in Zahodna Slovenija and Jadranska Hrvatska remain close to normal values due to winter storage and beneficial rainfall in the second half of March.

Winter wheat conditions in the main agricultural areas, in the eastern parts of Slovenia and Croatia, will mainly depend on rainfall during the coming flowering period, when continued water deficits may reduce the number of seeds per head. It is too early in the season to foresee the impact of current soil moisture deficiency on winter crop yield potential. The trend values from the previous bulletin are therefore maintained.

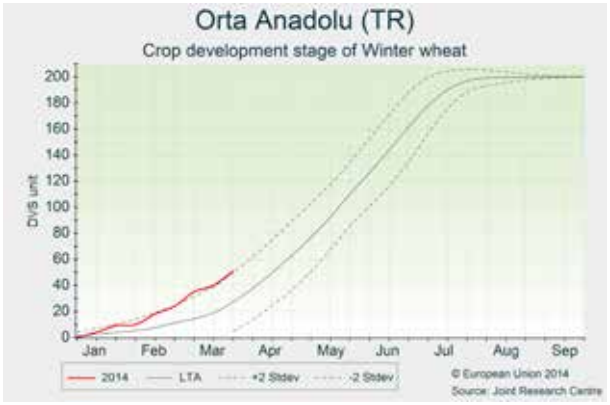
3.2 Black Sea Area

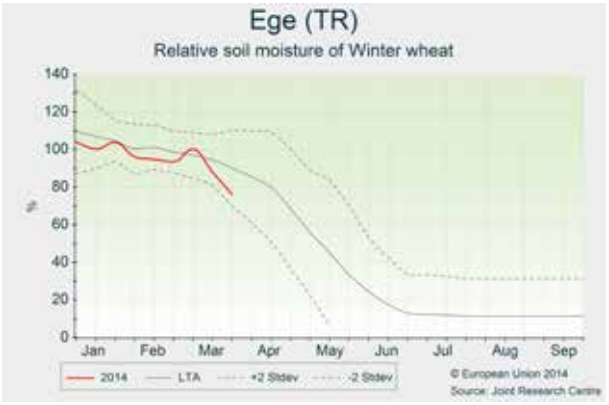
Turkey

Advanced development of winter cereals

While temperatures were generally above the long-term average, March ended with a cold spell. Winter cereals present well advanced development, soil moisture is starting to rapidly decrease in the west.

Temperatures in Turkey remained above the long-term average in March, but a cold spell affected the country between 29 and 31 March. This phenomenon was most intensive in the areas of *Ortadogu Anadolu*, *Dogu Karadeniz* and *Kuzeydogu Anadolu*, where the minimum temperature reached -14°C. However, due to protective snow cover, no frost kill was simulated in these areas. Levels of cumulated rainfall remain below average since 1 January, with the exception of *Bati Anadolu*, where levels remain slightly above average. As a consequence, soil moisture levels are depleting and are now below the long-term average in most areas. Winter cereals present well advanced development as well as advanced above-ground biomass, and prospects are generally good, with the exception of the western regions *(Bursa, Manisa)*.





Ukraine

Exceptionally dry conditions may affect crop growth

After a mild and dry winter, March also remained milder than usual, and rainfall was sparse. The exceptionally dry conditions in central Ukraine may affect yields of winter cereals. Winter wheat yield forecasts are below the 5-year average.

Meteorological conditions in March followed the tendency observed during this winter. Average temperatures remained

milder than usual, from 3°C above average in eastern regions to 5°C in north-western regions. Rainfall remained far below the average, and the six-month period October-March is one of the driest recorded in our database. The driest conditions were observed in central regions (*Cherkas'ka, Kirovohrads'ka, Mykolayivs'ka*) which received 50% of the average cumulated rainfall from October to March, and 40% of the average cumulated rainfall since 1 March. According to our model, winter crop development is 20 days in advance compared to an average year, which implies that leaf area and crop water demand are also unusually high for this time of the year. Biomass accumulation of winter cereals will be negatively affected unless soil water levels are significantly replenished. Wheat yields are forecasted to be below the 5-year average. The emergence of spring crops may also be impacted by these exceptionally dry conditions.

3.3 European Russia and Belarus

European Russia

Precipitation deficiency in the Black Soil region

In March, a positive thermal anomaly prevailed over Russia, and precipitation was adequate in southern regions. Significant areas of the Central Okrug received low levels of rainfall since October. Currently, crop water supply is still guaranteed, but future conditions of crops will depend very much on rainfall in May and June. The situation seems to be delicate and could easily worsen.

Significantly warmer-than-usual temperatures (from +2 to +6°C) occurred in Russia from mid-February until late March. Daily temperatures returned to normal in April. The southern half of *Central Okrug* was especially mild. The positive thermal anomaly was less noticeable (+2 to+3°C) in the *Southern* and *North-Caucasus Okrugs*. Unfortunately, the precipitation between October and March remained below the climatological norm by 50-100 mm in wide areas of the *Central Okrug*, including parts of the Black Soil region. This winter was one of the driest in *Bryanskaya, Kurskaya, Belgorodskaya, Kaluzhskaya, Orlovskaya, Lipetskaya* and *Tamborskaya* Oblasts. March and early April were also marked by less rainfall than usual in this area (only 20-30 mm). Concurrently, typically ample precipitation fell in the Southern and Near Volga Okrugs in March. The warm weather and scarce rainfall allowed for the earlier sowing of spring cereals in the southern part of *Central* Okrug, but more precipitation is needed for adequate germination, emergence and early growth of plants. Winter cereals are more developed than usual. Crop canopy expansion is also better than that of an average year.

Belarus

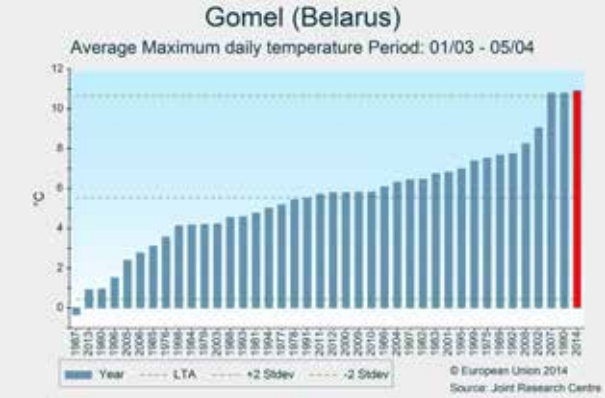
Exceptionally high temperatures lead to advanced crop development

Temperatures continue above the long-term average, precipitation has been less than usual but soil water storage is still close to average. Winter cereals present advanced development.

Following the mild conditions of winter, March temperatures in Belarus remained far above the long-term average. Average maximum temperatures of the period considered (1 March – 5 April) are the highest recorded in our database: on average 5°C above normal.

Precipitation since the beginning of March has been low, totalling 20-30 mm, which is around 30 mm less than usual. Decreasing soil water storage is not a concern yet, however, because of satisfactory precipitation during winter. Winter cereals present well advanced development and our models

suggest a good start to biomass accumulation. Current conditions are also favourable for the sowing of spring crops. Trends and average values have been used to forecast yields at this early stage.



3.4 Maghreb

Morocco, Algeria and Tunisia

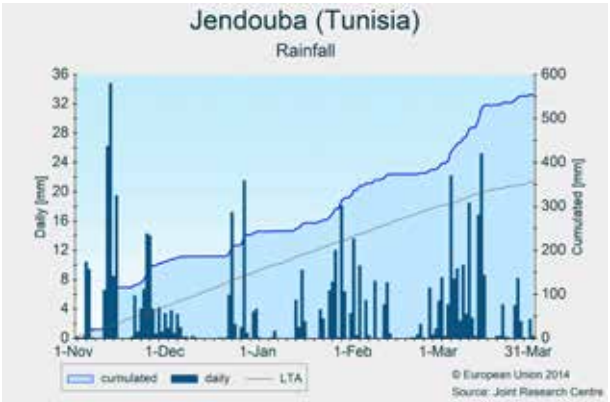
Rainfall and temperature mostly average over the last three weeks

Good conditions over the past few weeks, but these may not be enough to ameliorate what was a dry start to the season in Morocco. Rainfall and temperatures in Algeria and Tunisia remain favourable.

There has been average rainfall for the time of year in most agricultural regions of Morocco over the past few weeks. However, it is not clear to what extent these rains will compensate for what was otherwise a relatively dry start to the season in 2013. Remote sensing indicators are now positive, but follow what was a noticeably poorer start to the season, where canopy development was substantially delayed (although there is some ambiguity about this as, whilst remote sensing indicators now suggest a fully recovered and dense canopy, modelled indicators still suggest sub-optimal leaf area development). Yield forecasts are below trend, but this is a relatively unusual year and it is not yet clear how large this reduction might be.

Temperature and rainfall conditions have remained favourable in Algeria for the past few weeks. Remote sensing indicators also remain positive. Yield forecasts are presently around trend, but could improve before the end of the season.

Tunisia has also experienced an encouraging season so far. There have been good amounts of rainfall in the more northern governorates (where wheat is more typically grown). There has also been above-average rainfall in the central, more marginal governorates. Remote sensing indicators are favourable. Yield forecasts are above average.



4. Crop yield forecasts

Country	TOTAL WHEAT t/ha					TOTAL BARLEY t/ha				
	2013	2014	Avg 5yrs	%14/13	%14/5yrs	2013	2014	Avg 5yrs	%14/13	%14/5yrs
EU28	5.58	**5.50**	5.34	-1.4	+3.0	4.84	**4.61**	4.49	-4.9	+2.7
AT	5.37	**5.17**	5.06	-3.7	+2.3	5.15	**5.03**	4.83	-2.3	+4.2
BE	8.93	**8.79**	8.83	-1.6	-0.4	8.58	**8.60**	8.57	+0.3	+0.4
BG	4.25	**3.84**	3.71	-9.6	+3.5	3.90	**3.76**	3.61	-3.7	+4.2
CY	-	**-**	-	-	-	1.47	**1.51**	1.66	+2.7	-8.8
CZ	5.70	**5.36**	5.19	-5.9	+3.2	4.67	**4.48**	4.37	-4.0	+2.7
DE	7.98	**7.79**	7.48	-2.4	+4.2	6.59	**6.34**	6.23	-3.7	+1.9
DK	7.28	**7.24**	7.14	-0.6	+1.5	5.77	**5.52**	5.54	-4.4	-0.4
EE	3.26	**3.35**	3.15	+2.7	+6.3	3.30	**3.15**	2.81	-4.5	+12.2
ES	3.58	**3.11**	3.01	-13.2	+3.3	3.63	**2.92**	2.81	-19.5	+4.0
FI	3.88	**3.89**	3.83	+0.2	+1.4	3.91	**3.50**	3.52	-10.4	-0.5
FR	7.25	**7.32**	6.99	+0.9	+4.6	6.30	**6.60**	6.43	+4.7	+2.6
GR	2.78	**2.67**	2.77	-3.9	-3.4	2.85	**2.65**	2.81	-7.0	-5.5
HR	4.95	**4.95**	4.79	+0.1	+3.4	3.84	**3.99**	3.93	+3.9	+1.6
HU	4.62	**4.22**	4.03	-8.8	+4.7	4.07	**3.89**	3.61	-4.3	+7.7
IE	8.97	**9.03**	8.53	+0.6	+5.9	7.49	**7.30**	7.04	-2.6	+3.7
IT	3.71	**3.89**	3.80	+4.7	+2.3	3.62	**3.52**	3.56	-2.8	-1.0
LT	4.30	**4.10**	4.03	-4.6	+1.8	3.27	**3.30**	3.04	+0.7	+8.3
LU	6.42	**6.00**	6.07	-6.5	-1.2	-	**-**	-	-	-
LV	3.89	**3.61**	3.68	-7.0	-1.8	2.73	**2.75**	2.65	+0.7	+3.8
MT	-	**-**	-	-	-	-	**-**	-	-	-
NL	8.72	**8.73**	8.65	+0.2	+0.9	6.95	**6.39**	6.41	-8.1	-0.3
PL	4.43	**4.35**	4.25	-1.8	+2.3	3.57	**3.50**	3.41	-2.0	+2.6
PT	1.71	**1.63**	1.43	-5.0	+14.1	1.69	**1.60**	1.54	-5.3	+4.0
RO	3.48	**3.22**	2.99	-7.3	+7.8	3.25	**3.12**	2.75	-4.0	+13.4
SE	5.78	**5.92**	5.76	+2.4	+2.7	4.62	**4.44**	4.46	-3.9	-0.5
SI	4.38	**4.76**	4.75	+8.7	+0.4	4.00	**4.30**	4.20	+7.4	+2.4
SK	4.58	**3.99**	3.97	-12.8	+0.6	3.93	**3.53**	3.42	-10.0	+3.3
UK	7.38	**7.74**	7.47	+4.9	+3.6	5.85	**5.69**	5.72	-2.7	-0.5

Country	SOFT WHEAT t/ha					DURUM WHEAT t/ha				
	2013	2014	Avg 5yrs	%14/13	%14/5yrs	2013	2014	Avg 5yrs	%14/13	%14/5yrs
EU28	5.82	**5.73**	5.58	-1.6	+2.7	3.25	**3.19**	3.22	-1.6	-0.8
AT	5.39	**5.21**	5.10	-3.3	+2.2	5.09	**4.37**	4.33	-14.2	+1.0
BE	8.93	**8.79**	8.83	-1.6	-0.4	-	**-**	-	-	-
BG	4.25	**3.83**	3.71	-9.9	+3.2	4.23	**4.25**	3.79	+0.5	+12.3
CY	-	**-**	-	-	-	-	**-**	-	-	-
CZ	5.70	**5.36**	5.19	-5.9	+3.2	-	**-**	-	-	-
DE	7.98	**7.79**	7.48	-2.4	+4.2	-	**-**	-	- -	-
DK	7.28	**7.24**	7.14	-0.6	+1.5	-	**-**	-	-	-
EE	3.26	**3.35**	3.15	+2.7	+6.3	-	**-**	-	-	-
ES	3.76	**3.25**	3.23	-13.5	+0.8	2.64	**2.35**	2.17	-11.0	+8.5
FI	3.88	**3.89**	3.83	+0.2	+1.4	-	**-**	-	-	-
FR	7.39	**7.46**	7.15	+0.9	+4.2	5.27	**5.04**	5.13	-4.3	-1.7
GR	2.94	**2.92**	2.99	-0.7	-2.4	2.72	**2.58**	2.69	-5.3	-4.1
HR	4.95	**4.95**	4.79	+0.1	+3.4	-	**-**	-	-	-
HU	4.63	**4.22**	4.03	-8.8	+4.7	4.43	**4.03**	3.84	-9.2	+4.8
IE	8.97	**9.03**	8.53	+0.6	+5.9	-	**-**	-	-	-
IT	5.22	**5.43**	5.37	+4.0	+1.1	2.97	**3.13**	3.09	+5.4	+1.4
LT	4.30	**4.10**	4.03	-4.6	+1.8	-	**-**	-	-	-
LU	6.42	**6.00**	6.07	-6.5	-1.2	-	**-**	-	-	-
LV	3.89	**3.61**	3.68	-7.0	-1.8	-	**-**	-	-	-
MT	-	**-**	-	-	-	-	**-**	-	-	-
NL	8.72	**8.73**	8.65	+0.2	+0.9	-	**-**	-	-	-
PL	4.43	**4.35**	4.25	-1.8	+2.3	-	**-**	-	-	-
PT	1.71	**1.63**	1.43	-5.0	+14.1	-	**-**	-	-	-
RO	3.48	**3.22**	2.99	-7.3	+7.8	-	**-**	-	-	-
SE	5.78	**5.92**	5.76	+2.4	+2.7	-	**-**	-	-	-
SI	4.38	**4.76**	4.75	+8.7	+0.4	-	**-**	-	-	-
SK	4.57	**4.00**	3.97	-12.4	+0.8	4.96	**3.83**	4.00	-22.8	-4.3
UK	7.38	**7.74**	7.47	+4.9	+3.6	-	**-**	-	-	-

Country	SPRING BARLEY t/ha					WINTER BARLEY t/ha				
	2013	2014	Avg 5yrs	%14/13	%14/5yrs	2013	2014	Avg 5yrs	%14/13	%14/5yrs
EU28	4.43	**4.02**	3.93	-9.2	+2.1	5.49	**5.44**	5.30	-0.9	+2.6
AT	4.38	**4.14**	4.03	-5.5	+2.7	5.77	**5.74**	5.59	-0.6	+2.6
BE	-	**-**	-	-	-	8.58	**8.60**	8.57	+0.3	+0.4
BG	-	**-**	-	-	-	3.90	**3.76**	3.61	-3.7	+4.2
CY	-	**-**	-	-	-	1.44	**1.51**	1.85	+4.7	-18.5
CZ	4.73	**4.43**	4.31	-6.4	+2.7	4.53	**4.61**	4.52	+1.7	+2.1
DE	5.43	**5.18**	5.25	-4.6	-1.3	6.93	**6.68**	6.56	-3.7	+1.8
DK	5.68	**5.40**	5.43	-4.9	-0.4	6.26	**5.97**	6.01	-4.6	-0.7
EE	3.30	**3.15**	2.81	-4.5	+12.2	-	**-**	-	-	-
ES	3.70	**2.97**	2.87	-19.7	+3.4	3.21	**2.62**	2.45	-18.5	+6.8
FI	3.91	**3.50**	3.52	-10.4	-0.5	-	**-**	-	-	-
FR	6.08	**6.30**	6.18	+3.7	+1.9	6.40	**6.73**	6.54	+5.1	+2.9
GR	-	**-**	-	-	-	2.85	**2.65**	2.81	-7.0	-5.5
HR	-	**-**	-	-	-	3.84	**3.99**	3.93	+3.9	+1.6
HU	2.99	**3.30**	3.09	+10.4	+6.7	4.48	**4.10**	3.91	-8.4	+5.0
IE	7.10	**6.95**	6.71	-2.1	+3.6	9.51	**8.58**	8.68	-9.8	-1.1
IT	-	**-**	-	-	-	3.62	**3.52**	3.56	-2.8	-1.0
LT	3.27	**3.30**	3.04	+0.7	+8.3	-	**-**	-	-	-
LU	-	**-**	-	-	-	-	**-**	-	-	-
LV	2.73	**2.75**	2.65	+0.7	+3.8	-	**-**	-	-	-
MT	-	**-**	-	-	-	-	**-**	-	-	-
NL	6.95	**6.39**	6.41	-8.1	-0.3	-	**-**	-	-	-
PL	3.39	**3.31**	3.26	-2.4	+1.5	4.10	**4.05**	4.01	-1.1	+1.0
PT	-	**-**	-	-	-	1.69	**1.60**	1.54	-5.3	+4.0
RO	2.34	**2.10**	1.96	-10.2	+7.4	3.64	**3.56**	3.17	-2.3	+12.3
SE	4.58	**4.40**	4.42	-3.8	-0.4	5.74	**5.44**	5.31	-5.1	+2.4
SI	-	**-**	-	-	-	4.00	**4.30**	4.20	+7.4	+2.4
SK	3.88	**3.54**	3.40	-8.8	+4.2	4.20	**3.52**	3.63	-16.2	-3.1
UK	5.66	**5.32**	5.39	-5.9	-1.2	6.40	**6.34**	6.34	-1.0	-0.0

Country	GRAIN MAIZE t/ha					RYE t/ha				
	2013	2014	Avg 5yrs	%14/13	%14/5yrs	2013	2014	Avg 5yrs	%14/13	%14/5yrs
EU28	6.66	**7.03**	6.84	+5.5	+2.8	3.97	**3.52**	3.49	-11.4	+1.0
AT	8.12	**10.24**	10.11	+26.1	+1.3	4.18	**4.09**	4.04	-2.2	+1.1
BE	11.15	**11.90**	11.60	+6.7	+2.6	-	**-**	-	-	-
BG	5.48	**5.15**	4.99	-5.9	+3.3	-	**-**	-	-	-
CY	-	**-**	-	-	-	-	**-**	-	-	-
CZ	6.73	**7.70**	7.72	+14.5	-0.2	4.72	**4.75**	4.56	+0.5	+4.1
DE	8.21	**9.75**	9.63	+18.7	+1.3	5.97	**5.26**	5.24	-12.0	+0.4
DK	5.86	**5.63**	5.48	-3.9	+2.7	6.14	**5.41**	5.58	-11.8	-3.1
EE	-	**-**	-	-	-	1.90	**2.77**	2.50	+45.2	+10.5
ES	10.99	**11.06**	10.80	+0.6	+2.4	2.47	**1.90**	1.86	-23.0	+2.2
FI	-	**-**	-	-	-	2.18	**2.72**	2.77	+25.1	-1.7
FR	8.14	**9.32**	9.00	+14.5	+3.5	4.93	**4.98**	4.96	+1.1	+0.5
GR	11.50	**11.10**	11.01	-3.5	+0.8	1.74	**2.01**	2.00	+15.3	+0.4
HR	6.60	**6.59**	6.18	-0.2	+6.6	-	**-**	-	-	-
HU	5.36	**6.27**	5.73	+17.0	+9.4	3.05	**2.43**	2.29	-20.4	+6.2
IE	-	**-**	-	-	-	-	**-**	-	-	-
IT	8.05	**8.73**	8.77	+8.5	-0.5	-	**-**	-	-	-
LT	7.36	**7.10**	6.66	-3.5	+6.7	1.96	**2.00**	2.27	+2.3	-11.9
LU	-	**-**	-	-	-	-	**-**	-	-	-
LV	-	**-**	-	-	-	2.67	**2.66**	2.70	-0.3	-1.3
MT	-	**-**	-	-	-	-	**-**	-	-	-
NL	11.52	**11.99**	12.07	+4.0	-0.7	-	**-**	-	-	-
PL	6.58	**6.83**	6.73	+3.8	+1.5	2.85	**2.69**	2.69	-5.7	+0.0
PT	8.31	**7.93**	7.70	-4.5	+3.1	0.90	**0.90**	0.87	+0.1	+3.8
RO	4.41	**3.59**	3.68	-18.7	-2.5	2.53	**2.52**	2.40	-0.4	+5.0
SE	-	**-**	-	-	-	5.67	**5.72**	5.65	+0.9	+1.2
SI	5.66	**7.69**	7.53	+35.8	+2.2	-	**-**	-	-	-
SK	5.17	**6.40**	6.03	+23.7	+6.1	4.09	**3.15**	3.14	-23.1	+0.4
UK	-	**-**	-	-	-	-	**-**	-	-	-

Country	TRITICALE t/ha					RAPE AND TURNIP RAPE t/ha				
	2013	2014	Avg 5yrs	%14/13	%14/5yrs	2013	2014	Avg 5yrs	%14/13	%14/5yrs
EU28	4.33	**4.10**	4.10	-5.1	+0.0	3.09	**3.13**	3.05	+1.3	+2.7
AT	4.98	**5.09**	4.97	+2.1	+2.3	3.09	**2.97**	3.06	-3.9	-2.8
BE	-	**-**	-	-	-	4.27	**4.20**	4.16	-1.6	+1.1
BG	2.96	**3.30**	2.79	+11.2	+18.2	2.38	**2.68**	2.31	+12.7	+16.3
CY	-	**-**	-	-	-	-	**-**	-	-	-
CZ	4.70	**4.35**	4.29	-7.4	+1.4	3.45	**2.93**	3.01	-15.1	-2.7
DE	6.57	**5.96**	5.94	-9.3	+0.4	3.95	**3.85**	3.77	-2.6	+2.2
DK	5.71	**5.32**	5.14	-7.0	+3.4	3.87	**3.67**	3.68	-5.2	-0.4
EE	-	**-**	-	-	-	1.88	**1.85**	1.65	-1.9	+11.8
ES	2.79	**2.13**	2.32	-23.7	-8.2	2.62	**1.88**	2.05	-28.4	-8.5
FI	-	**-**	-	-	-	1.54	**1.36**	1.34	-11.5	+1.8
FR	5.31	**5.44**	5.40	+2.4	+0.8	3.04	**3.37**	3.40	+10.7	-0.9
GR	-	**-**	-	-	-	-	**-**	-	-	-
HR	3.41	**3.38**	3.59	-0.9	-5.8	2.75	**2.66**	2.64	-3.2	+0.9
HU	4.15	**3.60**	3.32	-13.2	+8.4	2.57	**2.60**	2.29	+1.3	+13.6
IE	-	**-**	-	-	-	-	**-**	-	-	-
IT	-	**-**	-	-	-	2.17	**2.28**	2.26	+4.8	+0.8
LT	3.38	**3.06**	3.06	-9.5	+0.0	2.17	**2.05**	2.07	-5.8	-1.3
LU	-	**-**	-	-	-	-	**-**	-	-	-
LV	2.60	**2.65**	2.72	+2.2	-2.5	2.21	**2.13**	2.21	-3.4	-3.4
MT	-	**-**	-	-	-	-	**-**	-	-	-
NL	-	**-**	-	-	-	-	**-**	-	-	-
PL	3.64	**3.51**	3.48	-3.6	+0.9	2.77	**2.85**	2.60	+2.9	+9.5
PT	1.55	**1.38**	1.21	-11.0	+13.8	-	**-**	-	-	-
RO	3.66	**3.55**	3.21	-3.1	+10.4	2.27	**1.98**	1.80	-12.8	+10.0
SE	4.90	**5.17**	4.83	+5.4	+7.0	2.64	**2.74**	2.74	+3.7	-0.3
SI	-	**-**	-	-	-	-	**-**	-	-	-
SK	3.40	**3.04**	3.05	-10.4	-0.2	2.76	**2.26**	2.27	-18.2	-0.3
UK	3.75	**3.89**	3.91	+3.6	-0.5	2.98	**3.52**	3.41	+18.3	+3.3

Country	SUGAR BEETS t/ha					POTATO t/ha				
	2013	2014	Avg 5yrs	%14/13	%14/5yrs	2013	2014	Avg 5yrs	%14/13	%14/5yrs
EU28	68.80	**71.18**	70.42	+3.4	+1.1	31.07	**32.58**	30.92	+4.9	+5.4
AT	63.30	**68.51**	67.98	+8.2	+0.8	26.88	**32.07**	31.32	+19.3	+2.4
BE	74.07	**78.97**	79.64	+6.6	-0.8	46.15	**46.29**	45.16	+0.3	+2.5
BG	-	**-**	-	-	-	12.14	**15.96**	14.21	+31.4	+12.3
CY	-	**-**	-	-	-	-	**-**	-	-	-
CZ	54.72	**62.72**	59.45	+14.6	+5.5	22.75	**27.86**	26.44	+22.5	+5.4
DE	66.56	**68.33**	68.44	+2.7	-0.2	38.31	**43.93**	42.64	+14.7	+3.0
DK	60.53	**60.60**	60.73	+0.1	-0.2	40.00	**40.58**	39.62	+1.4	+2.4
EE	-	**-**	-	-	-	-	**-**	-	-	-
ES	89.85	**93.49**	87.44	+4.0	+6.9	30.49	**30.30**	30.67	-0.6	-1.2
FI	38.67	**38.52**	39.40	-0.4	-2.2	27.52	**27.20**	26.81	-1.1	+1.5
FR	84.07	**89.81**	88.11	+6.8	+1.9	43.69	**45.91**	43.32	+5.1	+6.0
GR	-	**-**	-	-	-	25.36	**25.31**	25.35	-0.2	-0.2
HR	52.00	**53.56**	49.87	+3.0	+7.4	15.50	**16.83**	16.44	+8.6	+2.4
HU	47.00	**58.07**	**52.08**	+23.6	+11.5	28.21	**27.28**	25.31	-3.3	+7.8
IE	-	**-**	-	-	-	34.00	**32.14**	31.41	-5.5	+2.3
IT	84.18	**56.79**	60.51	-32.5	-6.1	25.60	**25.13**	25.20	-1.8	-0.3
LT	51.00	**53.28**	49.14	+4.5	+8.4	18.00	**15.36**	15.37	-14.7	-0.1
LU	-	**-**	-	-	-	-	**-**	-	-	-
LV	-	**-**	-	-	-	19.00	**17.85**	17.68	-6.0	+1.0
MT	-	**-**	-	-	-	-	**-**	-	-	-
NL	76.05	**77.65**	77.66	+2.1	-0.0	41.45	**45.06**	44.50	+8.7	+1.3
PL	52.94	**55.99**	54.26	+5.8	+3.2	21.42	**21.67**	21.70	+1.2	-0.1
PT	-	**-**	-	-	-	17.08	**16.78**	16.20	-1.8	+3.5
RO	32.28	**35.70**	33.72	+10.6	+5.9	15.03	**14.59**	14.35	-2.9	+1.7
SE	57.66	**56.65**	58.56	-1.8	-3.3	33.79	**32.00**	31.94	-5.3	+0.2
SI	-	**-**	-	-	-	-	**-**	-	-	-
SK	-	**-**	-	-	-	-	**-**	-	-	-
UK	68.38	**68.54**	68.54	+0.2	-0.0	40.14	**41.50**	40.86	+3.4	+1.6

Country	SUNFLOWER t/ha				
	2013	2014	Avg 5yrs	%14/13	%14/5yrs
EU28	1.93	**1.90**	1.86	-1.8	+2.0
AT	2.43	**2.66**	2.59	+9.3	+2.6
BE	-	**-**	-	-	-
BG	2.40	**2.16**	2.03	-9.9	+6.7
CY	-	**-**	-	-	-
CZ	2.34	**2.45**	2.32	+4.5	+5.2
DE	2.26	**2.19**	2.18	-3.3	+0.2
DK	-	**-**	-	-	-
EE	-	**-**	-	-	-
ES	1.13	**1.09**	1.10	-3.6	-1.1
FI	-	**-**	-	-	-
FR	2.05	**2.36**	2.32	+15.0	+1.6
GR	4.37	**2.26**	2.81	-48.3	-19.7
HR	2.40	**2.64**	2.55	+10.0	+3.4
HU	2.00	**2.39**	2.16	+19.8	+10.7
IE	-	**-**	-	-	-
IT	2.09	**2.15**	2.10	+2.7	+2.4
LT	-	**-**	-	-	-
LU	-	**-**	-	-	-
LV	-	**-**	-	-	-
MT	-	**-**	-	-	-
NL	-	**-**	-	-	-
PL	-	**-**	-	-	-
PT	0.59	**0.58**	0.55	-2.2	+5.0
RO	1.88	**1.60**	1.68	-14.7	-4.8
SE	-	**-**	-	-	-
SI	-	**-**	-	-	-
SK	2.35	**2.30**	2.17	-2.2	+5.9
UK	-	**-**	-	-	-

Notes: Yields are forecast for crops with more than 10000 ha per country
Sources: 2009-2014 data come from DG AGRICULTURE short term Outlook data (dated March 2014, received on 27/03/2014), EUROSTAT Eurobase (last update: 05/03/2014) and EES (last update: 14/02/2014)
2014 yields come from MARS CROP YIELD FORECASTING SYSTEM (CGMS output up to 31/03/2014)

Country	WHEAT (t/ha)				
	2013	2014	Avg 5yrs	%14/13	%14/5yrs
BY	3.59*	**3.47**	3.36	-3.26	+3.4
DZ	1.72*	**1.57**	1.62	-8.90	-3.0
MA	2.10*	**1.54**	1.75	-26.52	-12.0
TN	1.55*	**1.92**	1.92	23.74	-0.3
TR	2.78	**2.62**	2.63	-5.68	-0.2
UA	3.39	**2.67**	3.08	-21.39	-13.4

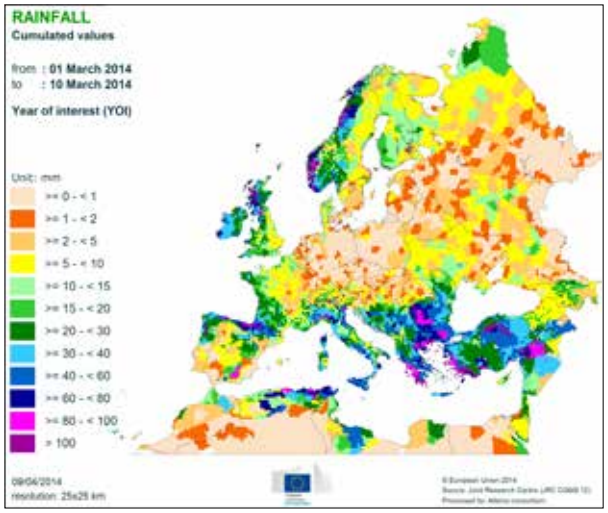
Country	BARLEY (t/ha)				
	2013	2014	Avg 5yrs	%14/13	%14/5yrs
BY	3.09	**3.33**	3.12	7.70	+6.5
DZ	1.65*	**1.49**	1.53	-9.76	-2.4
MA	1.24*	**0.98**	1.27	-20.89	-22.7
TN	0.94*	**1.29**	1.24	37.23	+3.6
TR	2.89	**2.64**	2.58	-8.69	+2.3
UA	2.34	**2.40**	2.25	2.48	+6.5

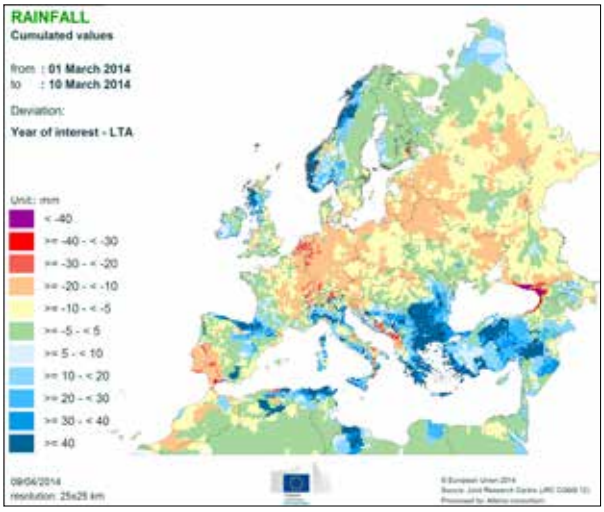
Country	GRAIN MAIZE (t/ha)				
	2013	2014	Avg 5yrs	%14/13	%14/5yrs
BY	5.92*	**6.06**	5.62	2.28	+7.7
DZ	-	**-**	-	-	-
MA	-	**-**	-	-	-
TN	-	**-**	-	-	-
TR	8.95	**8.11**	7.61	-9.35	+6.6
UA	6.4	**6.03**	5.56	-5.72	+8.6

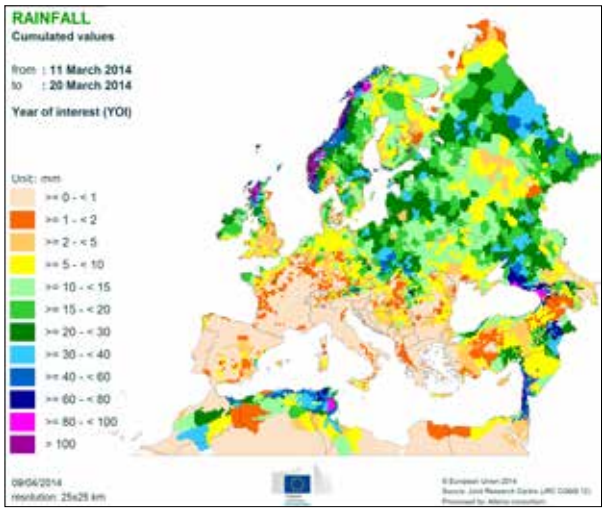
Notes: Yields are forecast for crops with more than 10000 ha per country
Sources: 2009-2013 data come from FAO, PSD-online, INRA Maroc, Min AGRI Tunlsia and DSASI Algeria
*2013 yields come from MARS CROP YIELD FORECASTING SYSTEM as reported valus were not available
*2014 yields come from MARS CROP YIELD FORECASTING SYSTEM (CGMS output up to 31/03/2014)

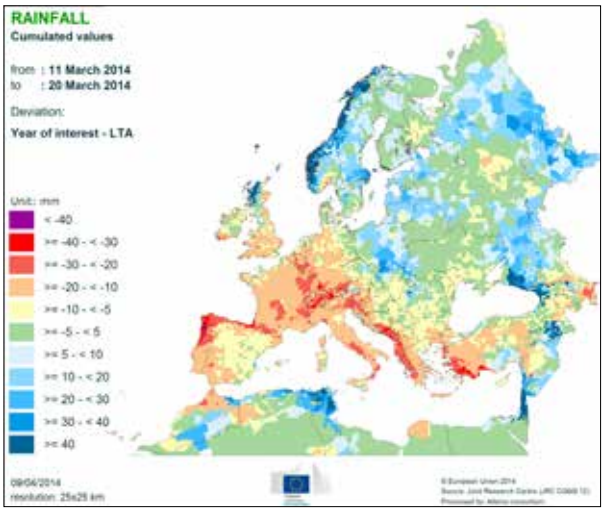
5. Atlas maps

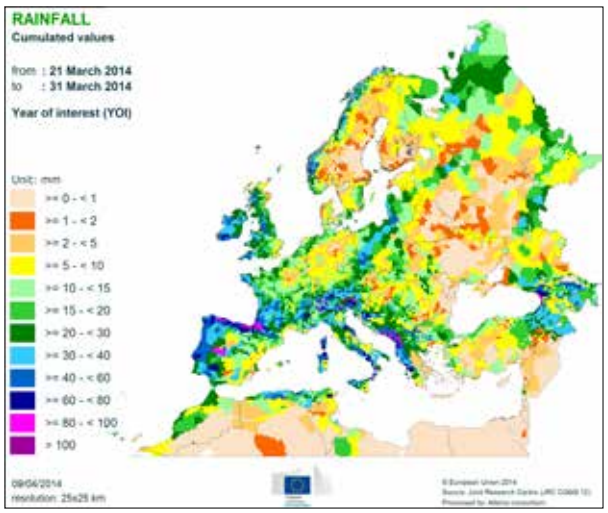
Precipitation

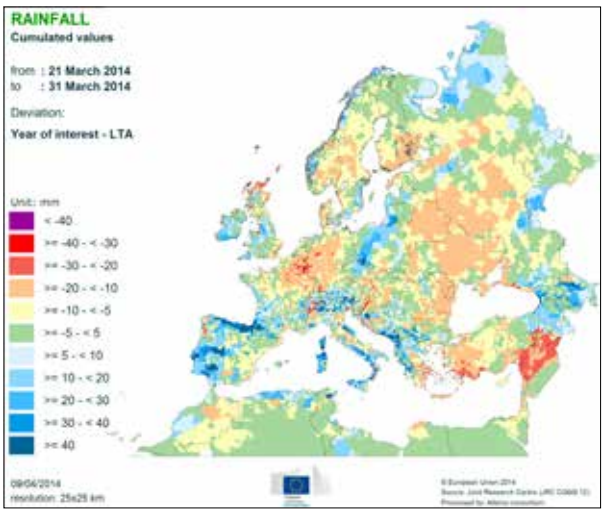




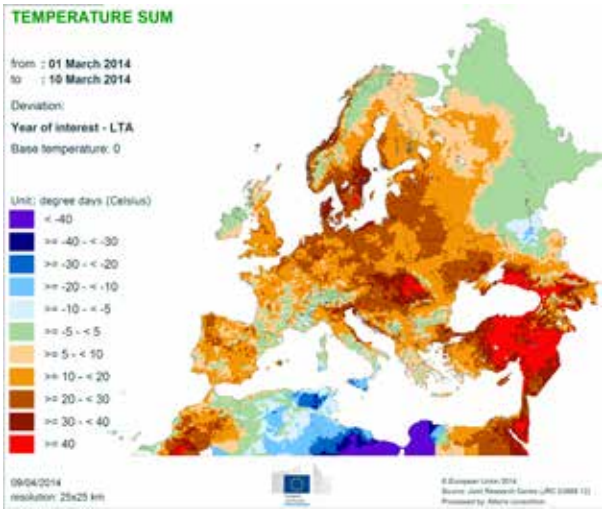


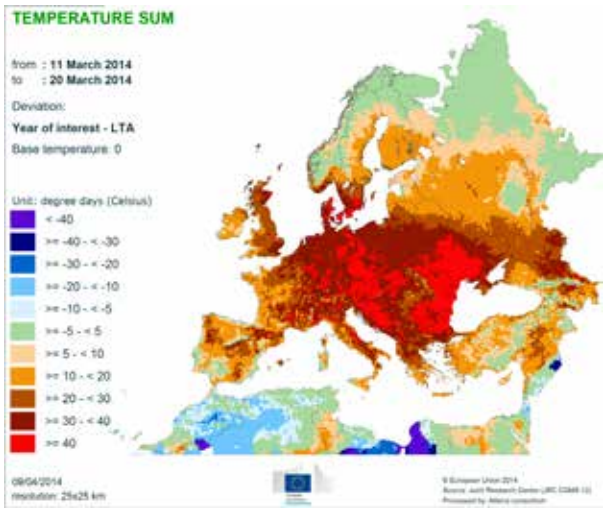


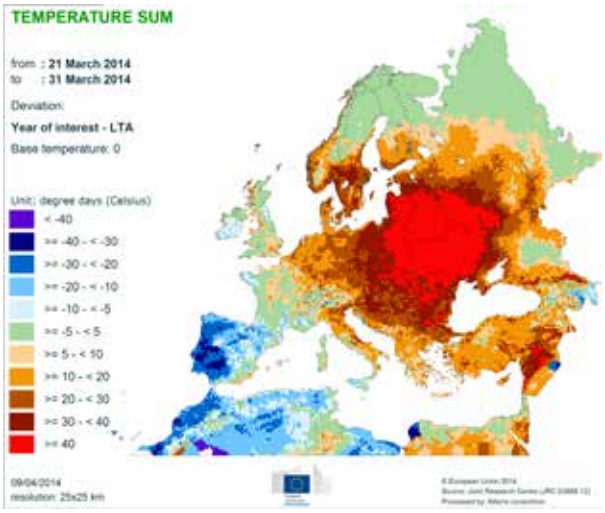


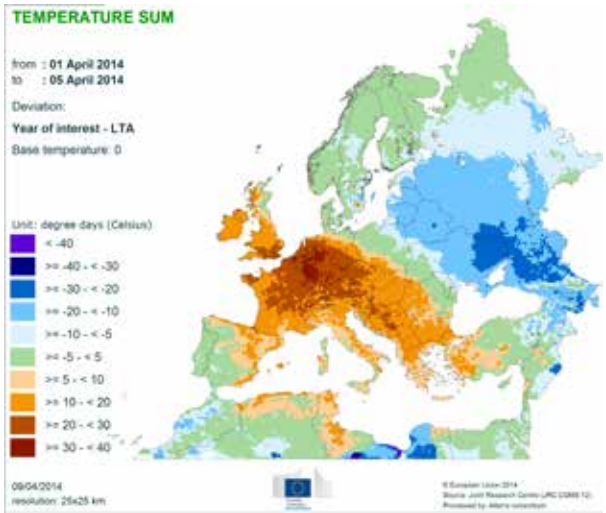


Temperature regime

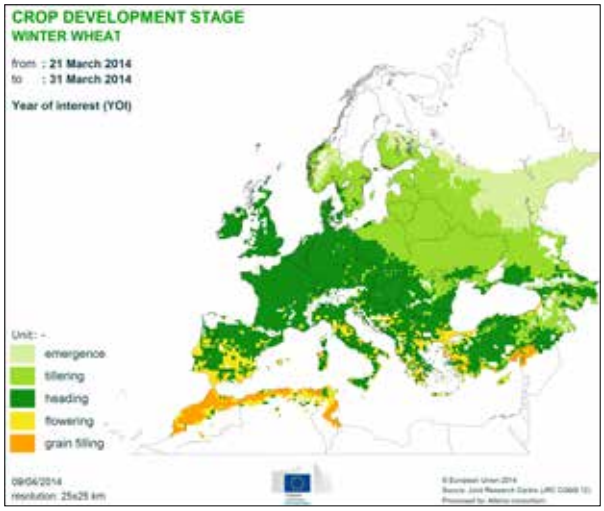


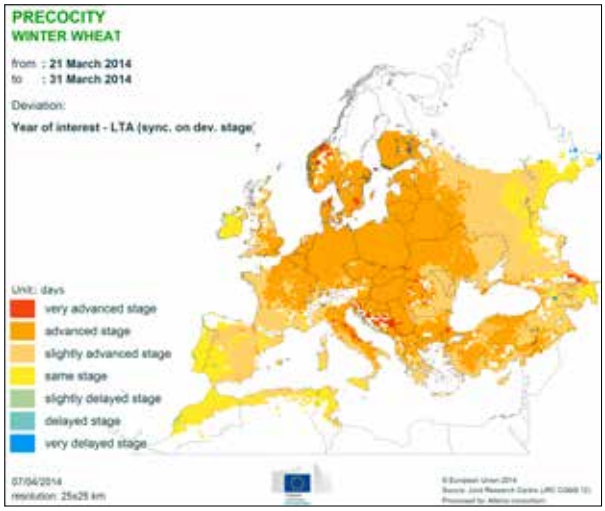


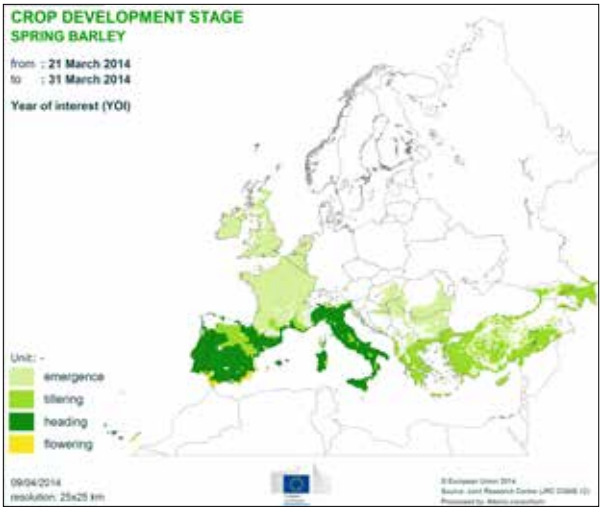


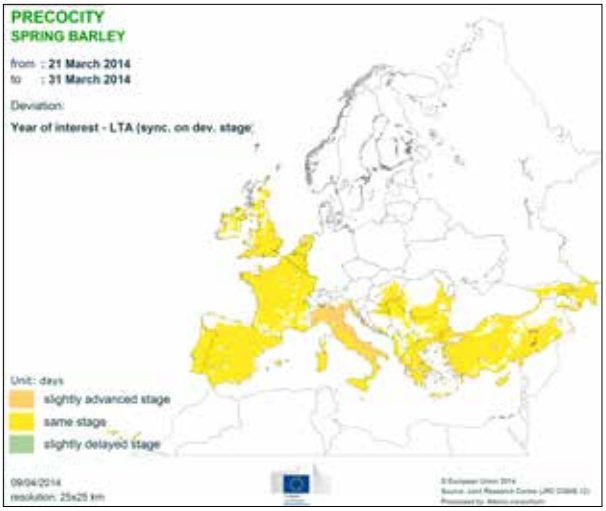


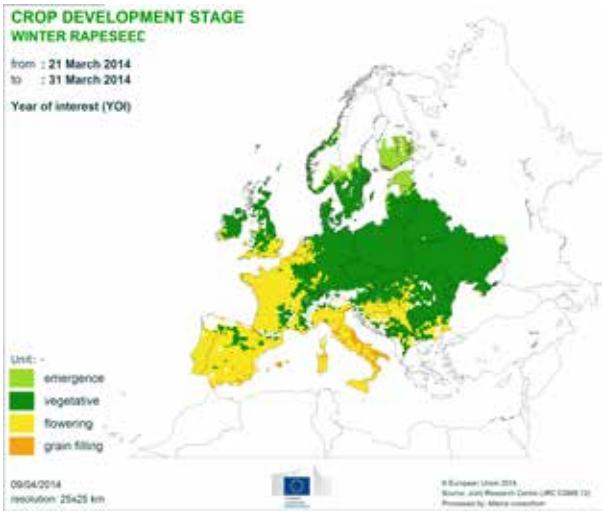
Crop development stages and precocity

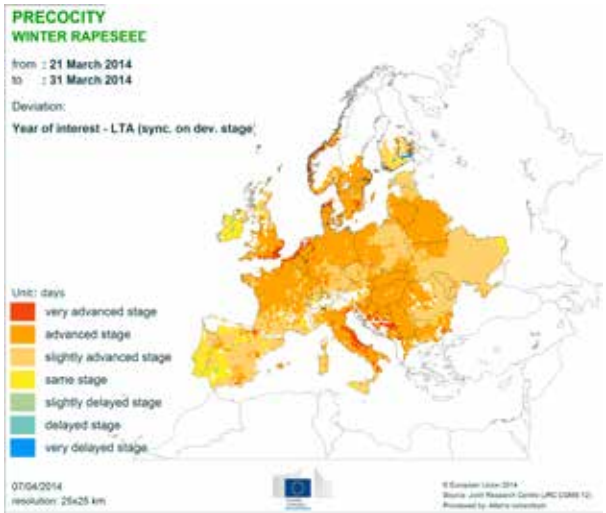




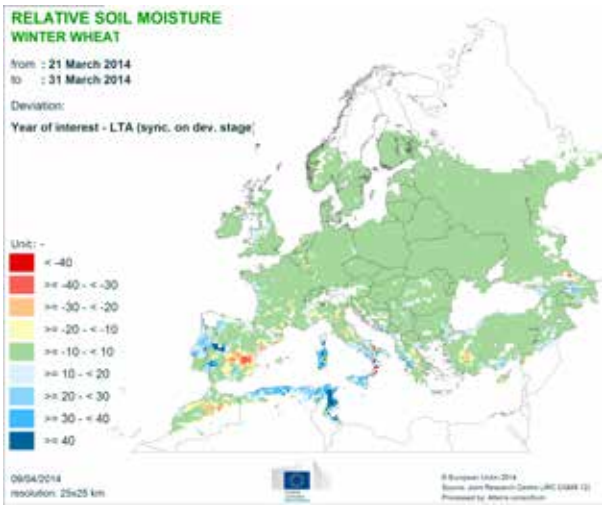


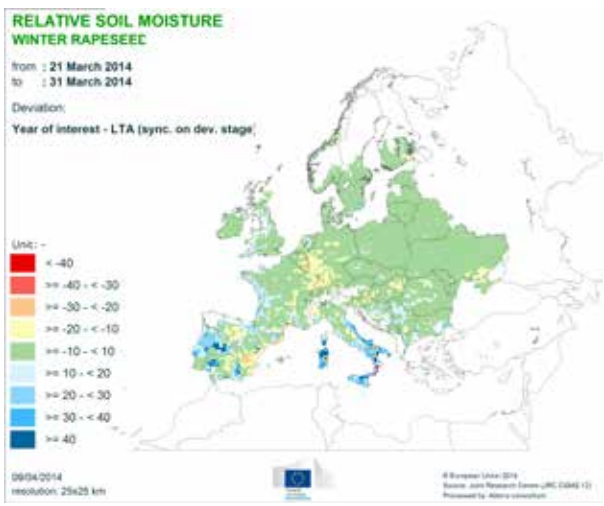






Relative soil moisture





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27 Jan	Agromet. analysis	Vol. 22 No. 1
24 Feb	Agromet analysis	Vol. 22 No. 2
24 Mar	Agromet analysis and yield forecast	Vol. 22 No. 3
14 Apr	Agromet analysis, remote sensing and yield forecast	Vol. 22 No. 4
12 May	Agromet analysis, remote sensing, yield forecast and pasture analysis	Vol. 22 No. 5
23 Jun	Agromet analysis, remote sensing, yield forecast and pasture update	Vol. 22 No. 6
21 Jul	Agromet analysis, remote sensing, yield forecast, pasture update and rice analysis	Vol. 22 No. 7
25 Aug	Agromet analysis, yield forecast and pasture update	Vol. 22 No. 8
22 Sep	Agromet analysis, remote sensing, yield forecast and pasture update	Vol. 22 No 9
27 Oct	Agromet analysis, remote sensing, yield forecast, pasture analysis and rice analysis	Vol. 22 No. 10
24 Nov	Agromet analysis and yield forecast, sowing conditions	Vol. 22 No. 11
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