JRC MARS Bulletin Vol. 24 No 3

European Commission

Period covered: 1 December-15 March
Issued: 21 March 2016

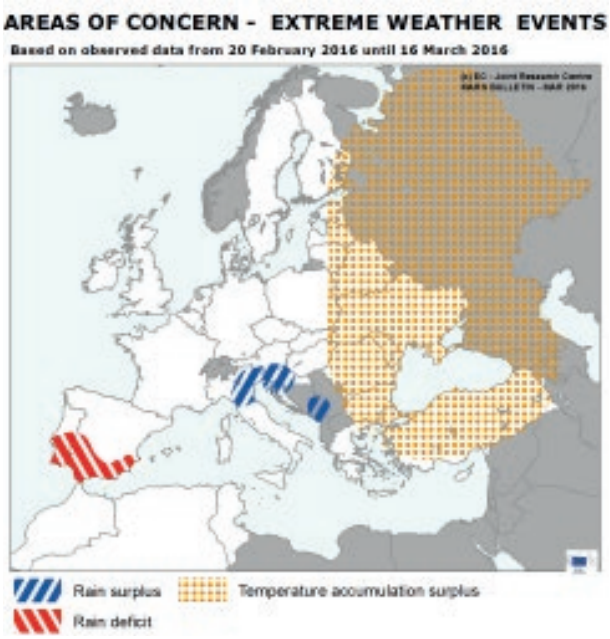
JRC MARS Bulletin
Crop monitoring in Europe
March 2016

Predominantly good conditions for winter cereals

Winter crops strongly advanced in most of Europe due to the mild winter

Winter crops are generally in good shape and well developed in the EU due to the mild winter conditions. In general, prospects for the new season are promising. At this stage of the season the forecasts are based on the historical trend or average values.

Since the beginning of February, southern Spain and Portugal have been facing a rain deficit. This comes at a moment of increasing water demand as crop canopies are reaching maximum expansion. Northern Italy has experienced a rainfall surplus since mid-February. A similar situation is found in Slovenia, Croatia and Montenegro, where a significant rainfall surplus has been recorded since mid-January and winter crops are locally suffering from water logging; possible impacts will be visible in the coming weeks. Eastern European countries (Belarus, Ukraine, Romania, Bulgaria and Moldova) and Turkey experienced a milder-than-usual end to the winter. This thermal anomaly is not critical per se, but prompted the de-hardening of crops, thus making them vulnerable to possible late frost-kill damages.



Crop	Yield t/ha				
	2015	MARS 2016 forecasts	Avg 5yrs	% 16/15	% 16/5yrs
TOTAL CEREALS	5.48	**5.42**	5.27	- 1.2	+ 2.8
Total Wheat	6.01	**5.70**	5.59	- 5.1	+ 2.0
soft wheat	6.26	**5.96**	5.82	- 4.8	+ 2.3
durum wheat	3.49	**3.33**	3.33	- 4.7	- 0.1
Total Barley	5.02	**4.87**	4.72	- 2.9	+ 3.3
spring barley	4.17	**4.17**	4.12	+ 0.1	+ 1.2
winter barley	6.12	**5.82**	5.58	- 4.9	+ 4.4
Grain maize	6.42	**7.12**	6.90	+ 10.9	+ 3.2
Rye	3.93	**3.85**	3.74	- 2.0	+ 2.9
Triticale	4.15	**4.26**	4.21	+ 2.7	+ 1.3
Rape and turnip rape	3.35	**3.31**	3.20	- 1.4	+ 3.2
Potato	32.581	**33.39**	32.13	+ 2.5	+ 3.9
Sugar beet	67.52	**73.98**	71.81	+ 9.6	+ 3.0
Sunflower	1.74	**1.95**	1.90	+ 12.0	+ 2.7

Issued: 17 March 2016

1 Agro-meteorological overview

2 Observed canopy conditions by remote sensing

3 Country headlines

4 Crop yield forecasts

5 Atlas

Joint Research Centre

1. Agro-meteorological overview

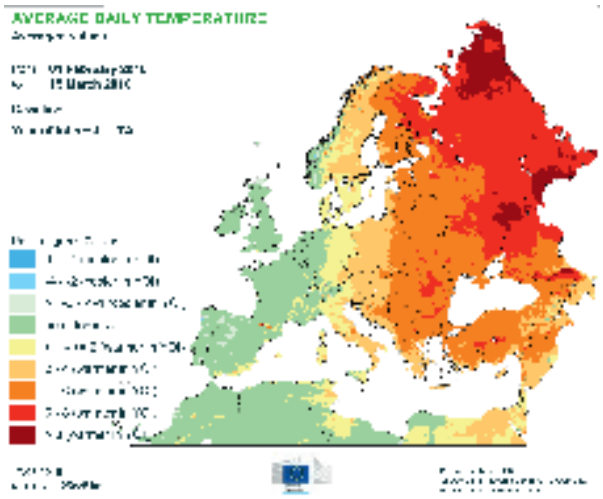
1.1. Areas of concern

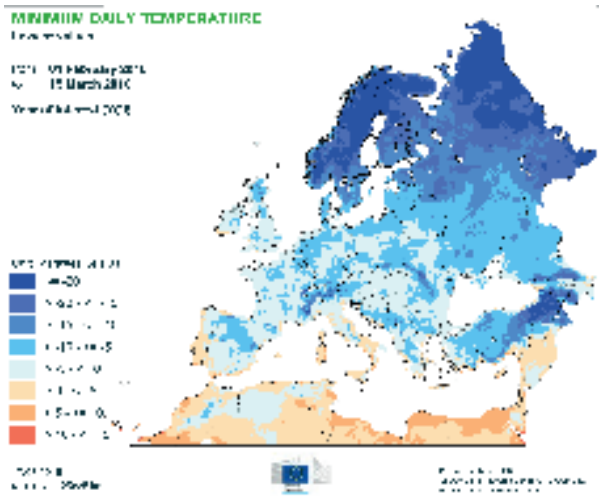
Temperatures were progressively warmer towards the east. Air temperatures between Sweden and Italy typically exceeded the long-term average by 1-3 °C. Along the eastern border of the EU, the positive thermal anomaly reached 4-6 °C, but in Russia (especially in southern and eastern regions) temperatures were 7-9 °C warmer than usual.

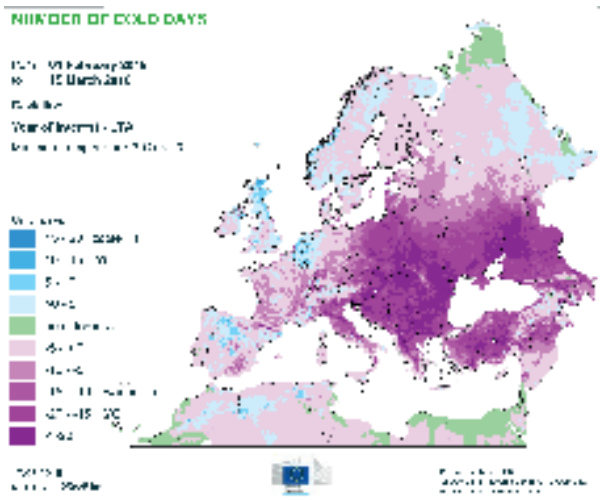
Frost events (Tmin<0 °C) were less frequent than usual (10-20 fewer days from 1 February to 15 March) in central and south-eastern areas of the continent, and temperatures remained moderate (Tmin>– 8 °C) south of the Baltic Sea.

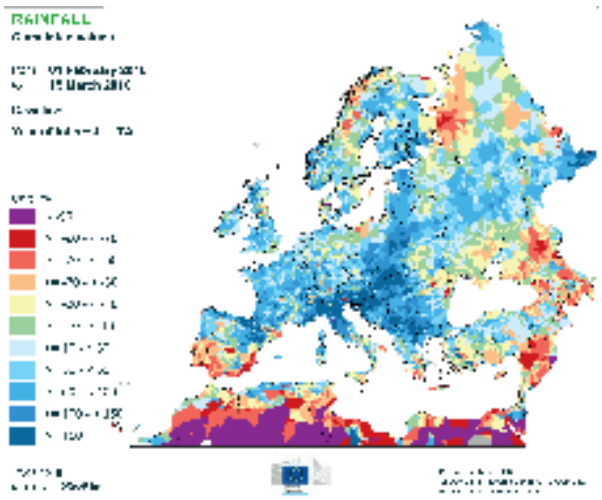
In general, rainfall supply was good for most of Europe. Consecutive, eastwardly moving low-pressure weather systems that formed over the Atlantic resulted in plentiful, and even locally excessive, precipitation in the western British Isles, France, north-western regions of the Iberian Peninsula and southern Norway. The Alpine region, northern Italy and the Balkan Peninsula also experienced abundant rainfall events. Above-average rainfall was recorded in Finland, the Baltic countries, eastern Poland, the Czech Republic, most of Germany, the Carpathian Basin, Belarus, northern Ukraine and central and south-eastern regions of Russia. In February and early March, excessive rainfall events once again caused flood damages in different locations in the UK.

Drier-than-usual weather conditions occurred in only a few regions of Europe, primarily in the southern Iberian Peninsula, north-western Poland, southern Turkey and southern Russia. A less pronounced precipitation deficit has been observed in north-eastern Romania and southern Ukraine. Although the precipitation tendency increased during February in central and western Mediterranean countries, and partially in the Maghreb, cumulated rainfall still shows a considerable deficit since early November. The situation is severe in the main wheat-producing areas of Morocco, where the precipitation sums of this growing season are at a record low, or at least among the lowest in our climatological record.

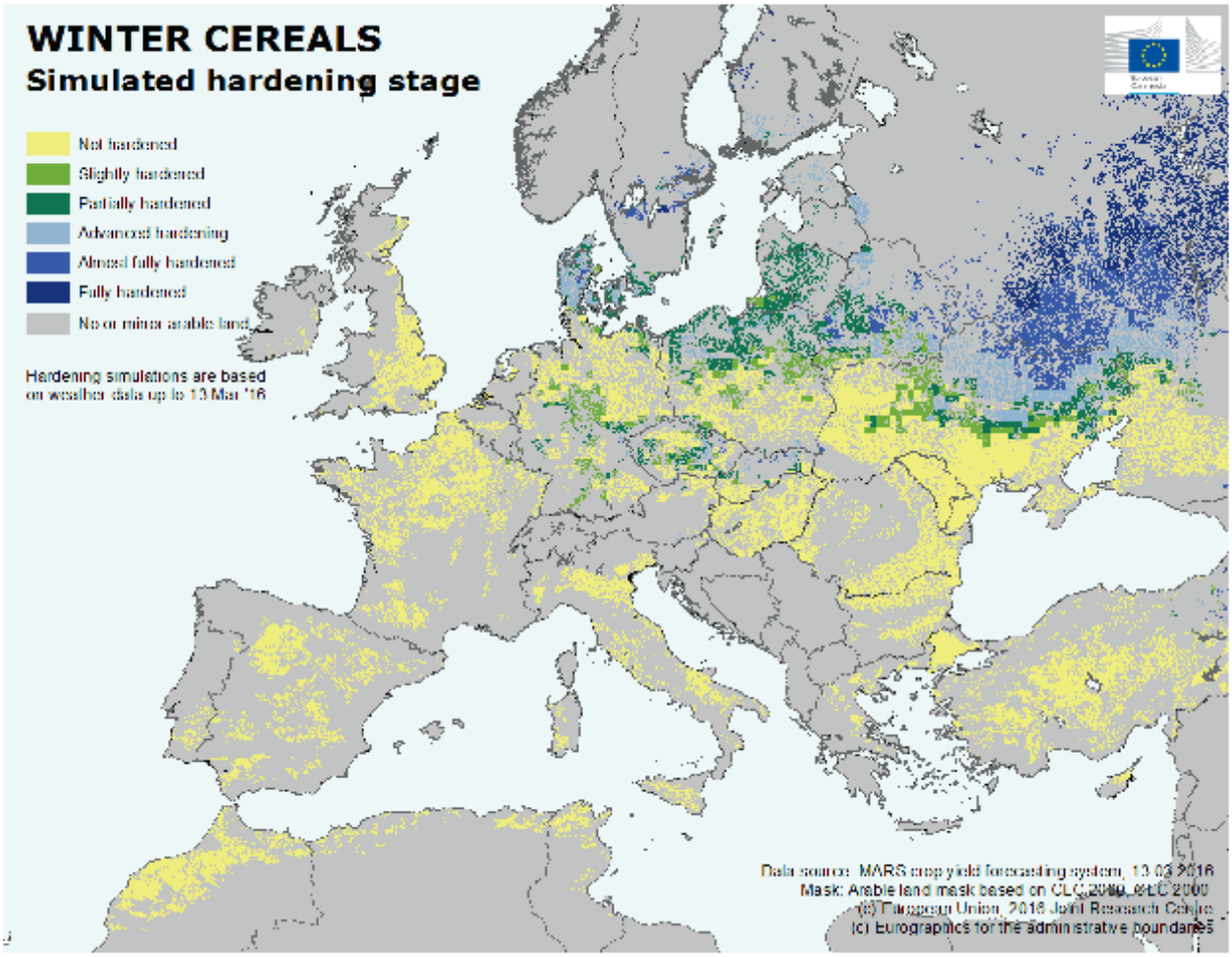








1.2. Frost-kill analysis



Since the beginning of February, the frost tolerance of winter cereals decreased significantly in central and eastern Europe due to unseasonably mild temperatures. Considering the current European winter wheat situation, no or slight frost tolerance is simulated in western and southern Europe as well as in Germany, southern Poland, Hungary, the Balkan Peninsula, most of Turkey (except the very eastern regions), south-western Ukraine and southern Russia. Winter crops are in the partial or advanced hardening stages in Denmark, northern Poland, the southern regions of Sweden and Finland as well as in Belarus and north-eastern Ukraine. The territory of winter wheat that has reached the almost or fully hardened state is reduced to eastern Turkey, areas along the eastern border of Belarus and Ukraine and the central and eastern regions of Russia, where frosty weather conditions persist.

During this winter, the majority of frost-kill events occurred in late December and early January. Western and southern Ukraine, Moldavia, south-western Belarus and some regions of southern Russia appear to have been moderately affected. Only slight or minor frost-kill damage is likely in western Poland, eastern Bulgaria, eastern Romania, the Baltic countries and southern Finland. No additional significant damage is expected to have occurred since mid-January. On the basis of the medium-range weather forecast, no serious frost-kill damage is expected between now and the end of March. Minimum temperatures below – 10 °C are expected in north-eastern Europe, where crops are still partly hardened; but damage could occur locally. Overall, the de-hardening process will progress further as daily temperatures increase.

1.3. Meteorological winter review (December, January, February)

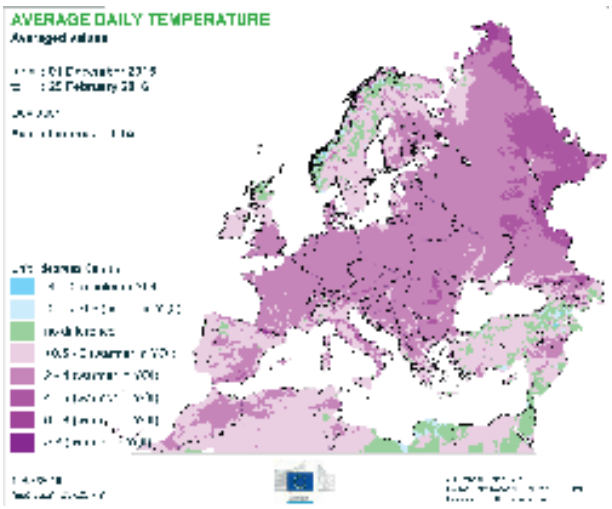
Warmer-than-usual weather was experienced in major parts of Europe and north-western Africa. Mean winter air temperatures were generally 2-4 °C above the long-term average in major parts of Europe. This winter was the warmest on our record in western Mediterranean regions and among the three warmest on our record in central, western and south-eastern Europe.

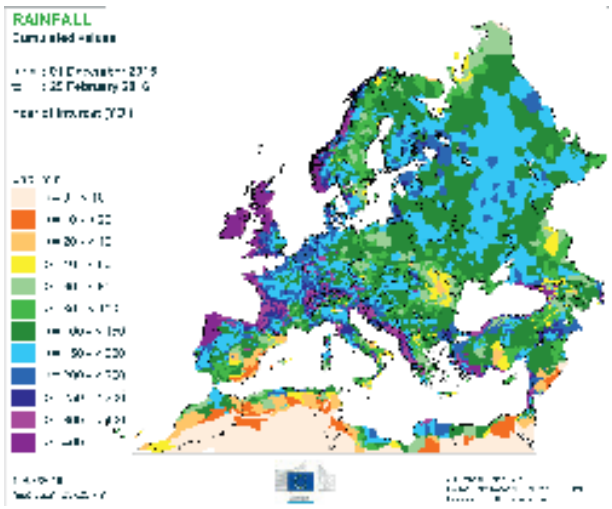
Polar air inflow from north-eastern Europe at the beginning of January caused a cold spell in eastern and south-eastern Europe and Turkey. Minimum daily temperatures during the cold spell dropped below – 20 °C in many areas of the abovementioned regions, leaving winter crops exposed to frost.

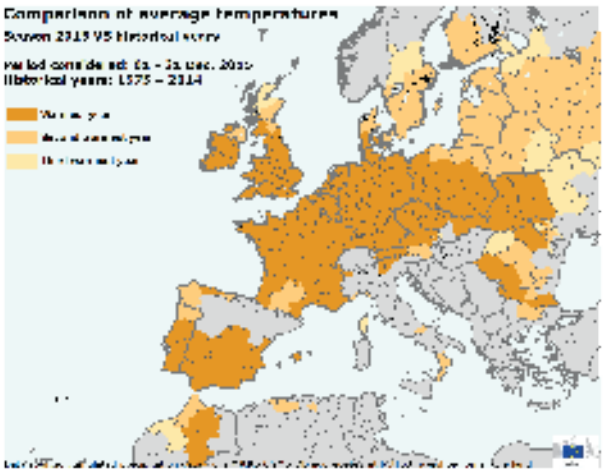
Winter precipitation was substantially below the long-term average in the eastern part of the Iberian Peninsula, Mediterranean part of France, southern Italy, Greece, south-western Turkey, eastern Romania, Moldova, the westernmost part of Ukraine and north-western Poland. Total precipitation cumulates in eastern Spain and eastern Romania remained below 60 mm. The rainfall deficit in northern Italy and in many areas of central Europe during the first half of winter was compensated by precipitation events in February.

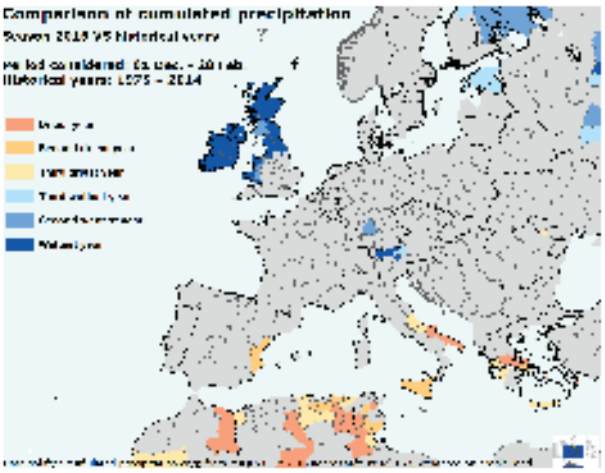
Western Europe saw a series of cyclones forming in a westerly flow over the Atlantic, which resulted in abundant rainfall in the British Isles, western France, the north-western part of the Iberian Peninsula, the northern Alpine region and the eastern Adriatic coast. Above-average rainfall was also recorded in Hungary, Croatia, Slovenia, and large regions of eastern Europe. Exceptional rainfall events caused flooding in central and northern England and Ireland at the beginning of January.

A substantial rainfall deficit since the beginning of winter was recorded in the major agricultural areas of northern Morocco and northern Algeria. Recorded rainfall cumulates since the beginning of winter are among the lowest on our records, with rainfall cumulates barely exceeding 40 mm in many regions; exceptions are isolated Mediterranean coastal areas, where rainfall cumulates reached above 150 mm. However, northern provinces of Morocco and the western half of Algeria have received beneficial rainfall since 20 February.

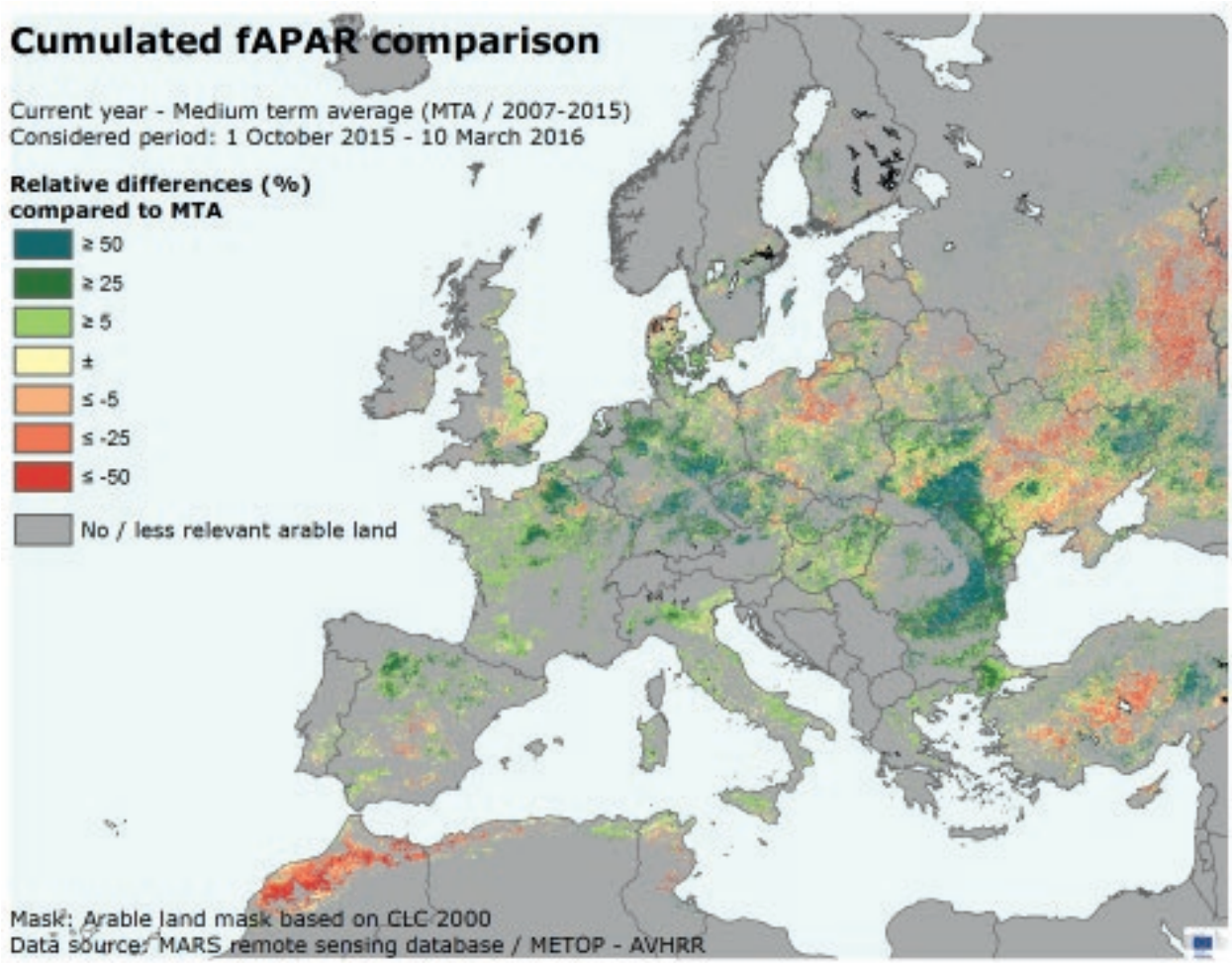





Comparison of average temperatures
Historical years: 1975 – 2014


Comparison of cumulated precipitation
Historical years: 1975 – 2014

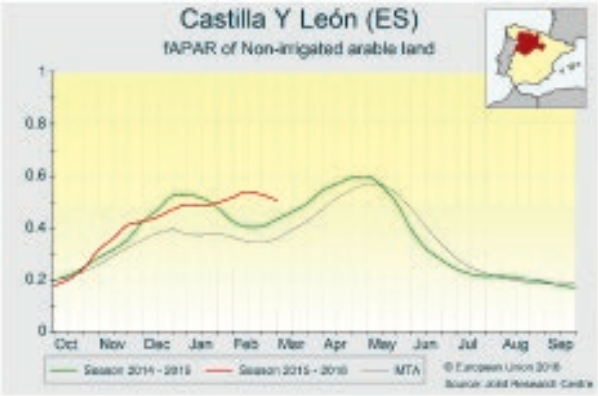
2. Remote sensing — Observed canopy conditions

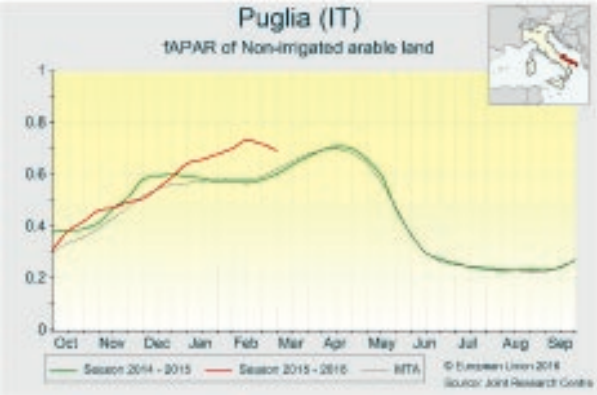


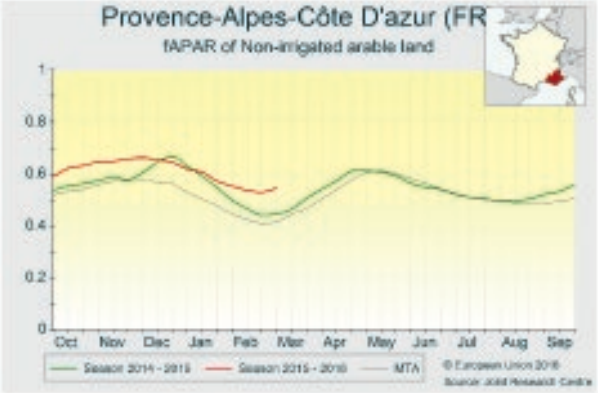
Winter crops strongly advanced in most of Europe

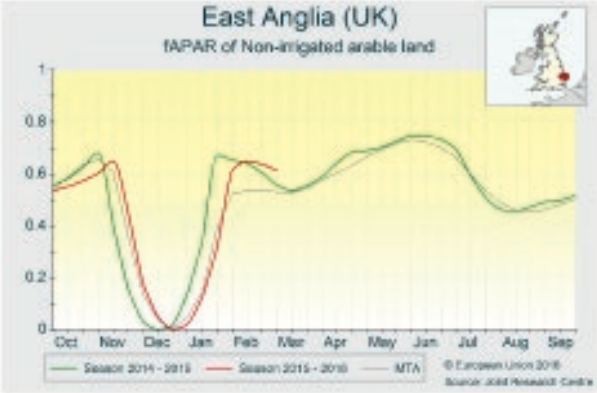
The map displays the differences between the fraction of absorbed photosynthetically active radiation (fAPAR) cumulated during the period from 1 October 2015 to 10 March 2016 and the medium-term average (MTA, 2007-2014) for the same period. Please note that the fAPAR figures of most of the areas shown in red in eastern Europe (e.g. northern Ukraine and inner Russia) were affected by partial cloud and snow coverage, or present largely an artefact, as for Turkey.

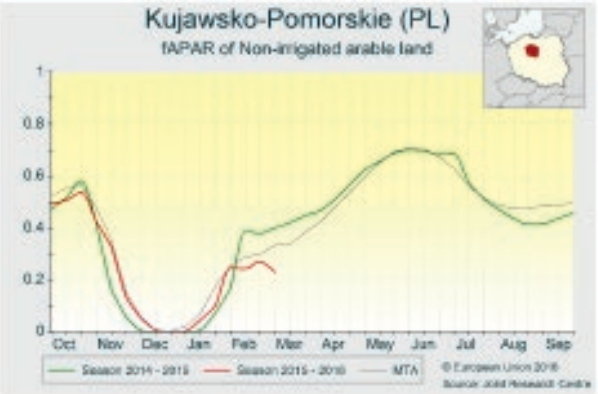
Spain presents strong positive anomalies in northern regions (e.g. *Castilla y León*) due to an advanced crop cycle and a well-developed crop canopy, thanks to mild winter conditions and above-average rains from January. In **Italy**, the main durum-wheat-growing regions (e.g. *Puglia*) experienced a mild and dry winter that led to an early crop cycle with optimal canopy growth. The sparse precipitation has not yet hampered crop growth, but crops will be at risk if it does not rain in the coming weeks, as this will trigger an early senescence and possible yield losses. In southern **France** (e.g. *Provence-Alpes-Côte d'Azur*), winter crops are well advanced and the crop cycle is strongly ahead of schedule. France experienced a generally mild winter, and an optimal restart to the growing season is expected. In the **United Kingdom**, excessive winter rains have determined suboptimal conditions for crop development. However, mild winter temperatures favoured early crop development once the overly wet conditions ended (e.g. *East Anglia*). **Germany** and most of central Europe present strong positive fAPAR anomalies, which are associated with early winter crop development due to the mild winter temperatures and average precipitation levels. A slightly different situation prevails in **Poland**, where the cold spell of January caused some frost-kill damage, as is evident from a drop in fAPAR values in the profile of the *Kujavsko* region. Eastern countries, **Greece** (e.g. *Thessalia*) and western **Ukraine**, saw optimal and early crop development. In southern Ukraine, sub-optimal sowing conditions and two frost-kill events in January determined a partial re-sowing of winter crop areas and, consequently, a partial shift towards spring or summer crops. In **Turkey**, crops present advanced stages with positive fAPAR anomalies (e.g. *Ankara*). The most critical areas as displayed in the map are in the **Maghreb** (e.g. Morocco — *Centre*), where the prolonged water shortage led to crop failures of non-irrigated winter crops.

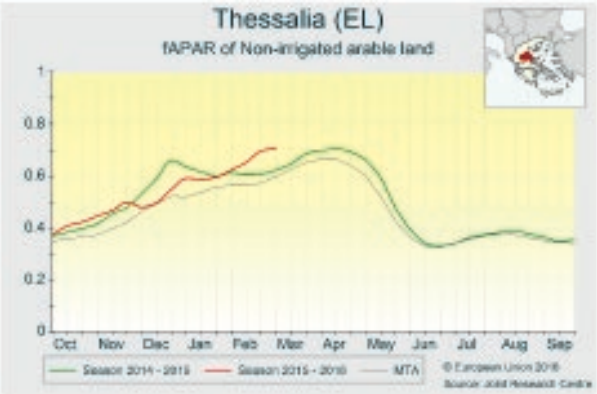

Castilla Y León (ES)
fAPAR of Non-irrigated arable land
1
0.8
0.6
0.4
0.2
0
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Season 2014 - 2015
Season 2015 - 2016
MTA
© European Union 2016
Source: Joint Research Centre

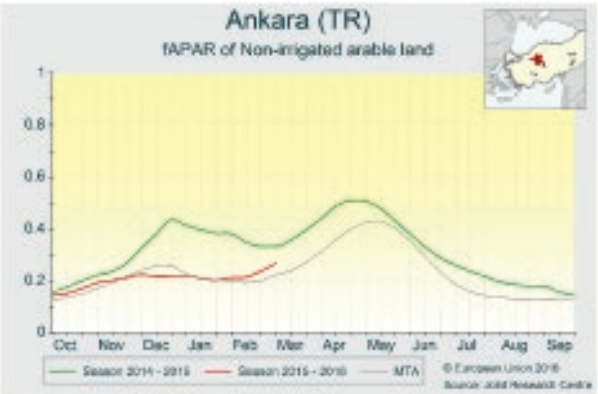

Puglia (IT)
fAPAR of Non-irrigated arable land
1
0.8
0.6
0.4
0.2
0
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Season 2014 - 2015
Season 2015 - 2016
MTA
© European Union 2016
Source: Joint Research Centre

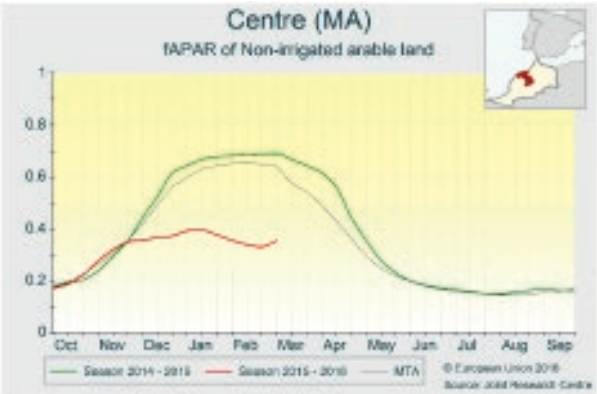

Provence-Alpes-Côte D'azur (FR
fAPAR of Non-irrigated arable land
1
0.8
0.6
0.4
0.2
0
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Season 2014 - 2015
Season 2015 - 2016
MTA
© European Union 2016
Source: Joint Research Centre


East Anglia (UK)
fAPAR of Non-irrigated arable land
1
0.8
0.6
0.4
0.2
0
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Season 2014 - 2015
Season 2015 - 2016
MTA
© European Union 2016
Source: Joint Research Centre


Kujawsko-Pomorskie (PL)
fAPAR of Non-irrigated arable land
1
0.8
0.6
0.4
0.2
0
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Season 2014 - 2015
Season 2015 - 2016
MTA
© European Union 2016
Source: Joint Research Centre


Thessalia (EL)
fAPAR of Non-irrigated arable land
1
0.8
0.6
0.4
0.2
0
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Season 2014 - 2015
Season 2015 - 2016
MTA
© European Union 2016
Source: Joint Research Centre


Ankara (TR)
fAPAR of Non-irrigated arable land
1
0.8
0.6
0.4
0.2
0
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Season 2014 - 2015
Season 2015 - 2016
MTA
© European Union 2016
Source: Joint Research Centre


Centre (MA)
fAPAR of Non-irrigated arable land
1
0.8
0.6
0.4
0.2
0
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep
Season 2014 - 2015
Season 2015 - 2016
MTA
© European Union 2016
Source: Joint Research Centre

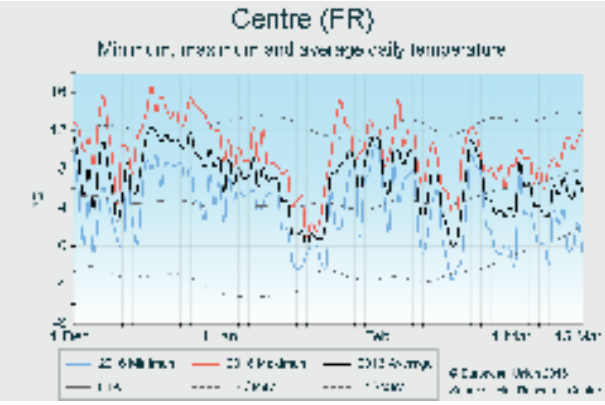
3. Country headlines

3.1. European Union

France

Crop development substantially advanced due to mild conditions

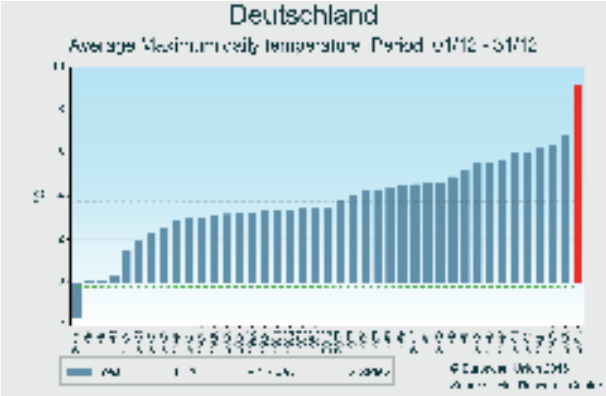
Temperatures remained largely above average during autumn and winter, particularly in the southern half of the country. Average temperatures were only slightly negative at the end of January in the northern half of the country. As a consequence of the mild temperatures, the crop development stages of all winter crops are considerably advanced, particularly in the southern regions. Durum wheat is on average one month in advance compared to the past two years, while soft wheat is 15 days ([1]) in advance.



Germany

Mild and wet winter

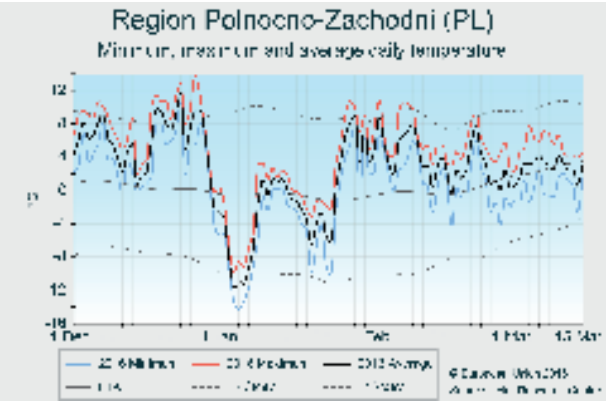
December and February were very mild, with December being the mildest month on record. Some harsher frosts occurred in January, accompanied by two periods of snow cover at the beginning and towards the end of January. Despite the weakly hardened cereals, no major frost-kill damage has been recorded. Overall precipitation since December was around average in central and northern Germany, and above average in southern Germany. December was extremely dry with fewer rainy days than usual, but February was wet everywhere, which helped to replenish soil moisture levels. Currently the start to the season looks promising, and crops are advanced due to the mild temperatures.



Poland

A cold spell exposed winter crops to frost-kill damage

Winter was much milder than usual. Temperatures stayed largely above the average from October to December, before dropping sharply to below 0° C in early January. Snow cover protected plants in most regions, but the northwest had no snow cover and so crops in these regions were damaged by frost, with a national estimated loss of around 10 % ([2]).



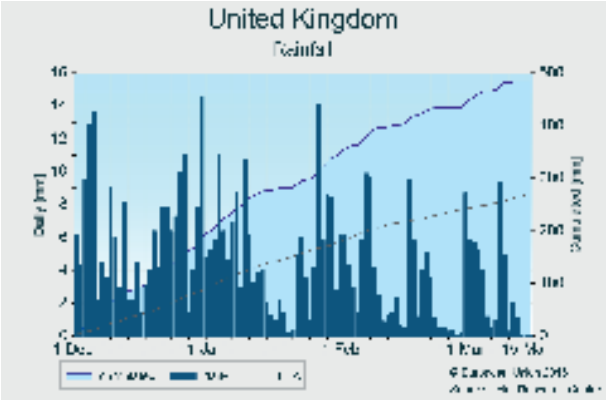
([1]) See also https://cereobs.franceagrimer.fr/Publications/CO_France_2016-S09.pdf

([2]) See also http://www.farmer.pl/produkcja-roslinna/zboza/iung-10-proc-ozimin-do-przesiewu-regionalnie-nawet-50-proc,62567.html

The United Kingdom and Ireland

A mild and wet winter

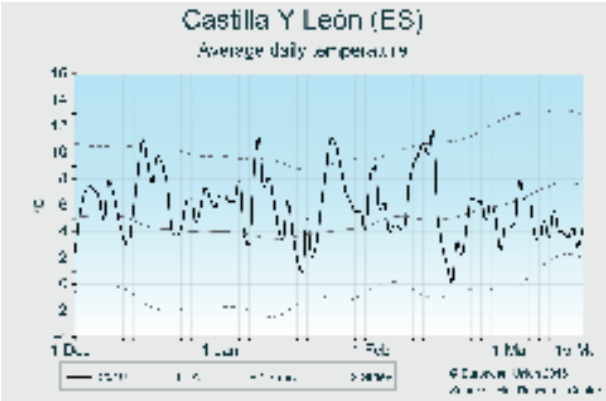
This winter (December-February) was characterised by well-above-average temperatures and rainfall in most of the UK and Ireland. It was the warmest winter on our records in most of England and Wales, and the wettest in Ireland, northern England, Wales and Scotland. December and the first dekad of January were particularly wet and mild. By contrast, below-average and negative minimum temperatures prevailed during the last days of February and the first half of March, especially in the southern UK, whereas rainfall levels decreased. Winter crops in the main production areas of the UK are generally well advanced. The frosts of the past weeks slowed crop development but also helped to reduce pest and disease pressure. In Ireland and those parts of the UK that were hardest hit by excessive rains, many fields show patches of crops that were damaged by waterlogging, part of which may be replanted with spring cereals. Spring field activities are expected to take off over the coming days if soil-water conditions continue to improve.



Spain and Portugal

Early start to the season

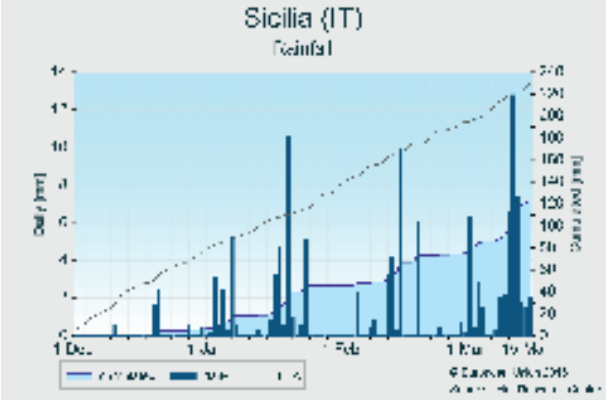
Thanks to unusually mild temperatures during most of autumn and winter, winter cereals developed early across the Iberian Peninsula, and are currently in the heading stage. The significant precipitation registered since January, following a rather dry period in November-December with almost no rain in the main agricultural areas, has been essential to support an adequate growth of winter wheat and barley during the initial development phases. The outlook is for average yields of winter crops.



Italy

Water scarcity in the south

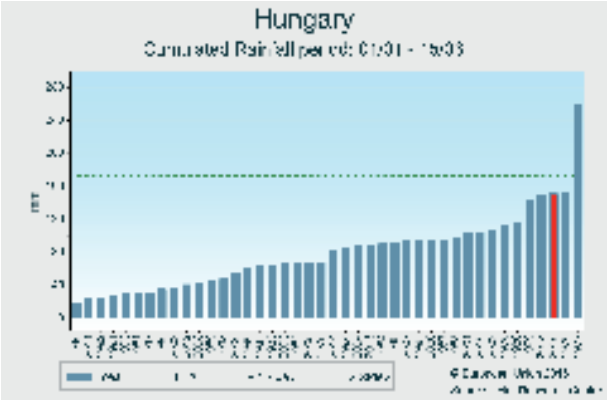
Overall, thermal conditions in winter were warmer than usual in Italy, and only a few days of temperatures below 0° C were registered in northern provinces. The favourable thermal conditions led to advanced growth of winter cereals across the country. Precipitation was scarce in all regions from December until the beginning of February, following which copious rain fell in central and northern regions from the end of February until mid-March. By contrast, in southern Italy the rain deficit persisted during the whole period under review (from 1 December to 15 March). In particular, Sicilia and Puglia experienced one of their lowest cumulated rains since 1975, with rainfall levels at only 40 % to 50 % of the normal cumulated values. Generally, the outlook for the current season is positive, except for some concerns related to the establishment of durum wheat due to water scarcity.



Hungary

Plentiful precipitation is causing water logging

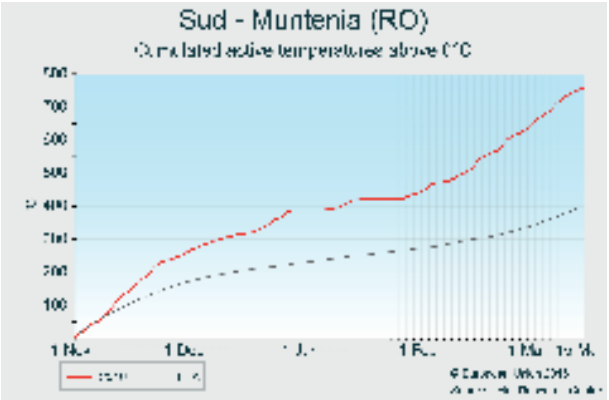
From early November, daily temperatures mostly exceeded the average, except for two shorter cold spells in early and late January. The mild weather conditions ensured the good wintering of winter cereals with no significant damage. A rainy October was followed by a drier period until the end of 2015. However, weather conditions turned decisively wetter in 2016. The precipitation surplus led to inland flooding and waterlogging problems in the regions of Dél-Alföld, Észak-Alföld and Dél-Dunántúl, where poorly drained or heavy soils are frequent. The overly wet soil conditions can also delay the sowing of sugar beets and spring barley.



Romania

Good crop establishment due to mild and wet winter

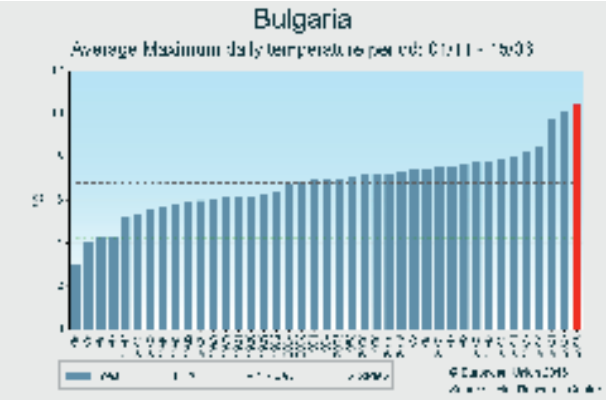
Temperatures fluctuated significantly above the average from the beginning of November until mid-March, but January was quite snowy and colder than usual. Considering the whole period under review, the active temperature sum (Tbase=0 °C) indicates a huge surplus, typically reaching + 200-300 GDD in the north-western and 300-400 GDD in the eastern and south-eastern regions. Winter crops developed particularly early due to the warmer-than-usual weather conditions. No significant frost-kill or other damages are likely. The regrowth of winter crops and the sowing of spring cereals have started earlier than usual due to the unseasonably high temperatures of February. Most of Romania received near- or above-average precipitation, but some areas of the Centru and Nord-Est regions have a slight precipitation deficit.



Bulgaria

Well-developed winter crops

The period from 1 November to 10 March was the warmest of the past 40 years, indicating a 2-4 °C positive thermal anomaly depending on the region. Bulgaria experienced two cold periods in January, when daily minimum temperatures typically fell below – 10 °C (down to – 20 °C in the western regions), but a thick snow cover protected crops against frost-kill damage. Precipitation was plentiful, especially in the southern half of Bulgaria. Weather conditions were favourable for wintering. Crop growth and crop development are adequate and very promising so far. Above-average temperatures are welcome at the start of the spring sowing campaign, but topsoils are still very wet due to the frequent and abundant rainfall that occurred during the first half of March.



Austria, Slovakia and the Czech Republic

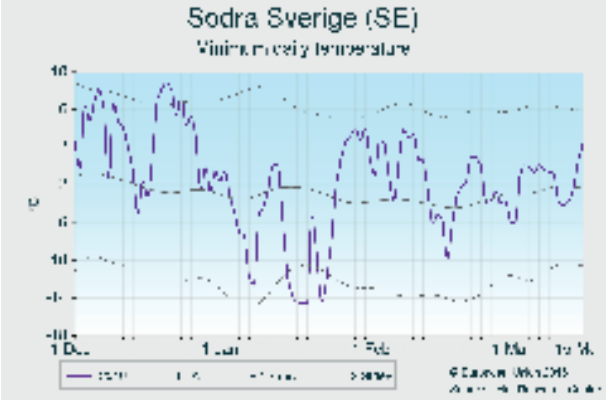
Advanced winter crops due to mild winter

Winter air temperatures were generally 2-4 °C higher than usual, making this one of the warmest winters on our record for Austria and the Czech Republic. Daily air temperatures were generally above the long-term average, except during two moderate cold spells at the beginning and towards the end of January. Wetter-than-usual conditions were recorded in Slovakia, the eastern part of the Czech Republic and the central part of Austria. Elsewhere, especially in northern Austria and central Czech Republic, a moderate precipitation deficit was recorded. Warm weather during winter left winter crops only partially hardened and therefore vulnerable to cold spells. However, due to the mild nature of the cold spells, no frost damage was incurred.

Denmark and Sweden

Mild winter conditions

In both countries, average temperatures remained above the long-term average for most of the period from 1 December to 15 March. These conditions changed from 5 to 25 January, when temperatures dropped well below average, reaching – 10 °C in Denmark, – 15 °C in southern Sweden and – 30 °C in northern Sweden. Minor frost-kill damage was registered in southern Sweden. Slightly above-average rainfall events occurred in both countries, with an even distribution throughout the period under review. Consequently, soils are moist with values around average for winter crops. As a result of the generally mild winter conditions, winter barley in both countries presents slightly advanced development stages.

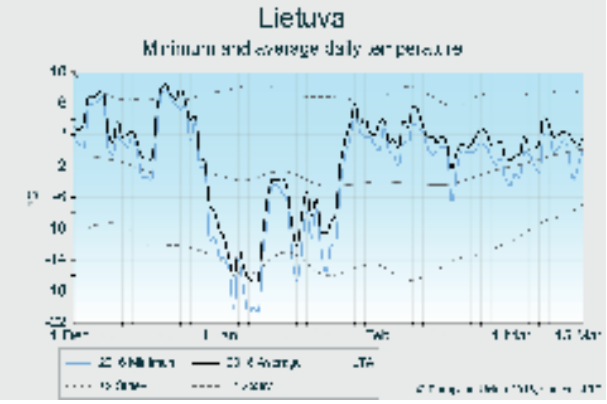


Finland, Lithuania, Latvia and Estonia

Unusually mild winter despite a cold January

December was unusually mild, with a global daily temperature of around 5 °C above average in all countries. This delayed the hardening of winter crops, making them more vulnerable to frost-kill damage. Slight to locally moderate damages were incurred when temperatures dropped in the first dekad of January, especially in Lithuania, where the share of winter crops (soft wheat and rapeseed) is higher than in the other countries.

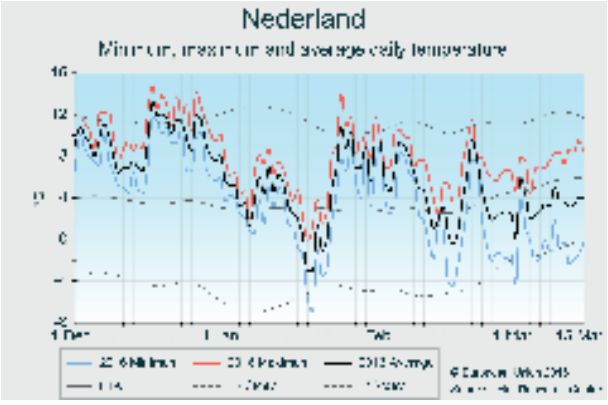
Nevertheless, frost-kill damage is far below that reported in January 2014. In the whole area so far, cumulated precipitation is well above average. February was a particularly rainy month. Since the beginning of March, seasonal values in terms of overall temperatures and rainfall were recorded in all countries.



Belgium, the Netherlands and Luxembourg

Exceptionally mild winter with a chilly tail

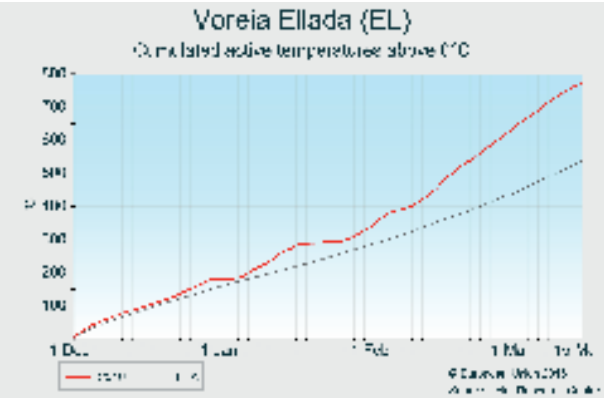
In the Benelux countries, December 2015 was by far the warmest December on our records. Mild temperature conditions, albeit less extreme, also prevailed in January and February, making the winter as a whole (December-February) the second warmest on our records. Below-average temperatures and negative minimum temperatures prevailed during the last days of February and the first half of March. Precipitation was well below average in December but was above average from January until the first week of March. As a consequence of these mild conditions, winter crops are generally performing well, except on poorly drained soils. Spring field activities are delayed compared to the past two years due to cold and wet soil conditions, but these have slowly improved since the first week of March.



Greece and Cyprus

Thermal conditions above average

Winter was characterised by warmer-than-usual weather conditions, which were interrupted by two short cold spells at the beginning and at the end of January (minimum temperatures dropped to – 10 °C). Temperature accumulation since the beginning of December shows a surplus of around 46 % in the northern parts of the country. Precipitation was scarce between 1 December and early January, but occasional rainfall occurred afterwards and improved the soil moisture. Winter cereals benefited from the mild conditions and present well-advanced development stages and high biomass accumulation. Cyprus also experienced a mild winter. However, the combination of temperatures that were mainly above the long-term average and the low levels of precipitation have led to soil moisture levels that are far below average. Therefore, rainfall is needed to help the development of winter cereals.



Slovenia and Croatia

Mild winter conditions, high soil moisture levels at the beginning of spring

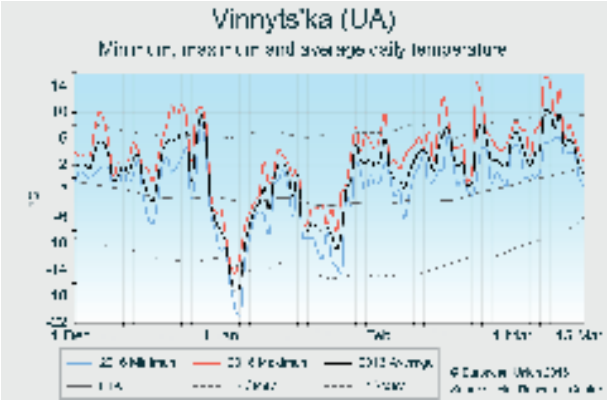
Air temperatures were generally above seasonal values, except at the beginning and towards the end of January, when moderate cold spells occurred. Consequently, Slovenia and Croatia experienced one of the warmest winters on our observational records, with air temperatures generally 2-4 °C above the long-term average. A high intra-seasonal precipitation variability was observed. A dry December was followed by some precipitation events in early January and wet conditions during February. The 2015-2016 winter was therefore wetter than usual, especially in the western parts of the countries. Wet and mild conditions persisted into early (meteorological) spring. The mild weather during winter prevented winter crops from hardening, leaving them vulnerable to cold spells. However, as the two cold spells that occurred during winter were not very severe, no frost damage was incurred. Regionally, winter crops are exposed to high soil moisture conditions, which are limiting growth. High soil moisture levels and warm temperatures are favourable for the development of diseases.

3.2. Black Sea Area

Ukraine

Unfavourable start to the season

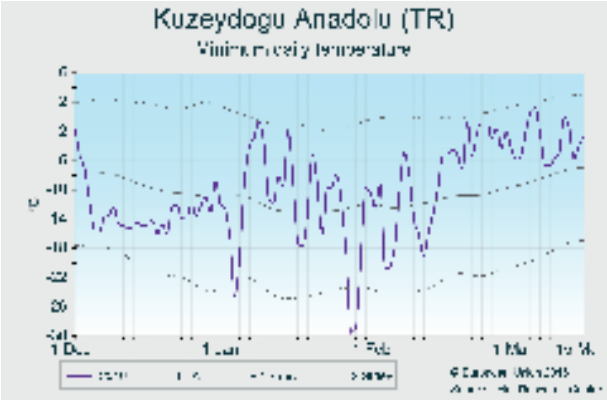
Due to dry conditions at the beginning of autumn, sowing conditions of winter crops were unfavourable. Some of the sowing was reported to have been delayed until December in southern oblasts. December was unusually mild and was followed by a cold spell in January, when minimum temperatures reached – 20 °C. The snow cover was sufficient to protect the crops in eastern oblasts, while crops in western and southern oblasts (which had no snow cover) were exposed to frost. The area of winter crops is expected to greatly decrease and be converted to spring or summer crops. According to some experts, 30 to 40 % ([3]) of the area of winter crops has been lost.



Turkey

Favourable conditions for winter cereals

December started with colder-than-usual temperatures, and ended with a short cold spell that drove temperatures even lower (to – 25 °C in eastern regions). Since then, temperatures were mainly above average, with the exception of the last days of January when another, more severe, cold spell hit the country and temperatures dropped to – 30 °C in eastern regions. However, due to protective snow cover, no frost-kill damage is expected. December was mainly dry throughout the country, but rainfall events have been evenly distributed since the beginning of January. Thus, soil moisture is being kept at average levels with minimum fluctuations. These conditions have been favourable for winter cereals, which present advanced development stages and high biomass accumulation.



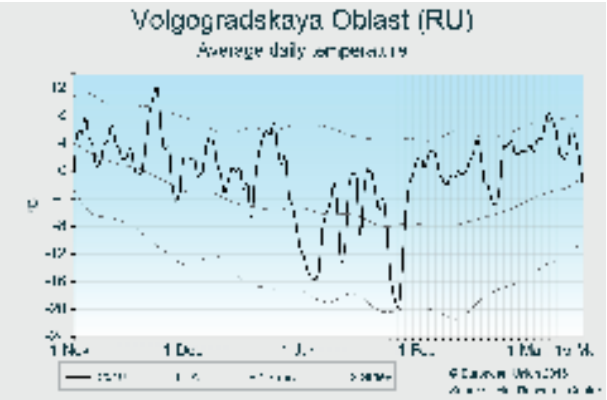
(3)See also http://www.apk-inform.com/en/exclusive/opinion/1065193#.VuaW4uYlf-s.

3.3. European Russia and Belarus

European Russia

Abnormally mild winter facilitated the successful wintering of wheat

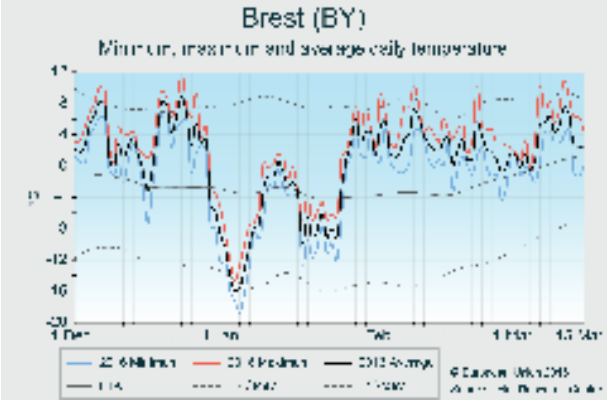
In the southern half of European Russia, the period from 1 November to 10 March was one of the mildest in our 40-year agro-climatological archive. Temperatures fluctuated more or less persistently above the long-term average. The reviewed period was 2-5 °C warmer than usual. Only in the first and last dekads of January were significantly lower-than-average minimum temperatures recorded. Minor or locally moderate frost-kill damage occurred primarily in the western part of the Southern Okrug. Precipitation was generally seasonal and was particularly plentiful in the Chernozem region, the southern half of Near Volga Okrug and areas close to the Black Sea. The mild and wet weather provided good conditions for wintering and helped compensate the negative effect of the unfavourable weather of the past autumn. Unusually high average temperatures in late February and the beginning of March allowed for an early start to the spring sowing campaign in southern Russia.



Belarus

Mild winter apart from one cold spell

In Belarus, winter conditions were milder than usual, resulting in positive anomalies of about 2 °C. Nevertheless, an intense cold air intrusion occurred at the beginning of January, when minimum temperatures dropped to about – 20 °C across the country. As simulated by our frost-kill model, this sharp drop in temperature combined with shallow snow cover (1-5 cm) and slightly hardened winter crops resulted in moderate frost damage, particularly in Brest. Rainfall was well distributed throughout the winter period, and cumulated precipitation was about 10-40 mm higher than the long-term average. The overall outlook for the current season is in line with the trend.

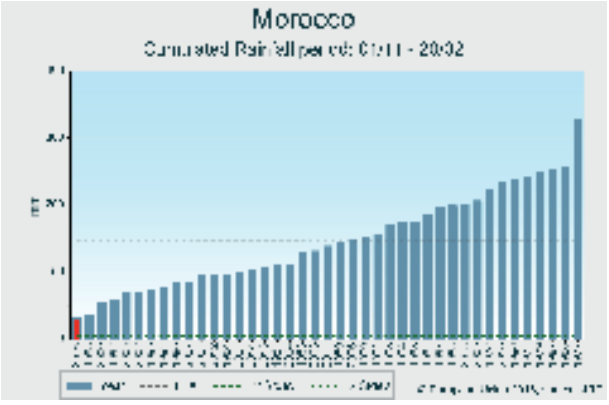


3.4. Maghreb

Morocco, Algeria and Tunisia

Winter cereals campaign already compromised in Morocco

The rains that typically accompany the start of the agricultural season in Morocco (around the first dekad of November) were delayed by almost three months. This exceptional shortfall in precipitation, along with the unusually warm temperatures, established adverse weather conditions which have seriously damaged crops. This is confirmed by a marked anomaly in the fAPAR data, and the winter-cereal campaign 2015-2016 in Morocco is already compromised. There is a similar pessimistic outlook for winter cereals in western Algeria. Eastern Algerian provinces were less affected, but crops remain extremely vulnerable. Weather conditions in Tunisia have been less adverse so far, and the outlook still remains seasonal.



4. Crop yield forecasts

Country	TOTAL WHEAT t/ha					TOTAL BARLEY t/ha				
	2015	2016	Avg 5yrs	%16/15	%16/5yrs	2015	2016	Avg 5yrs	%16/15	%16/5yrs
EU-28	6.01	**5.70**	5.59	- 5.1	+ 2.0	5.02	**4.87**	4.72	- 2.9	+ 3.3
AT	5.70	**5.40**	5.40	- 5.2	+ 0.1	5.54	**5.28**	5.38	- 4.7	- 2.0
BE	9.98	**9.17**	8.96	- 8.1	+ 2.3	10.46	**9.31**	8.86	- 11.0	+ 5.0
BG	4.47	**4.67**	4.10	+ 4.4	+ 13.8	4.10	**4.28**	3.88	+ 4.4	+ 10.3
CY	2.79	**2.13**	2.23	- 23.8	- 4.6	3.05	**1.91**	1.96	- 37.5	- 2.7
CZ	6.42	**5.84**	5.73	- 9.1	+ 1.9	5.55	**4.96**	4.96	- 10.7	+ 0.0
DE	8.09	**7.81**	7.81	- 3.4	+ 0.0	7.17	**6.74**	6.61	- 6.0	+ 2.0
DK	7.11	**7.32**	7.18	+ 2.9	+ 1.9	5.92	**5.78**	5.75	- 2.3	+ 0.7
EE	4.79	**3.75**	3.82	- 21.6	- 1.9	4.23	**3.36**	3.38	- 20.6	- 0.7
ES	2.92	**3.10**	3.07	+ 6.1	+ 1.1	2.46	**2.76**	2.72	+ 12.2	+ 1.4
FI	4.10	**3.82**	3.82	- 6.8	+ 0.0	3.46	**3.53**	3.54	+ 2.0	- 0.2
FR	7.79	**7.30**	7.20	- 6.3	+ 1.4	7.09	**6.66**	6.49	- 6.0	+ 2.6
GR	3.02	**2.93**	3.00	- 3.0	- 2.3	2.60	**2.69**	2.81	+ 3.3	- 4.2
HR	5.39	**4.94**	4.96	- 8.2	- 0.3	4.39	**4.56**	4.36	+ 3.9	+ 4.7
HU	5.14	**4.89**	4.49	- 4.9	+ 8.8	4.82	**4.76**	4.24	- 1.3	+ 12.3
IE	10.63	**9.51**	9.19	- 10.5	+ 3.5	8.56	**7.92**	7.77	- 7.4	+ 2.0
IT	3.93	**3.87**	3.89	- 1.4	- 0.4	3.91	**3.72**	3.72	- 5.1	- 0.1
LT	5.24	**4.45**	4.53	- 15.0	- 1.6	4.00	**3.48**	3.46	- 13.2	+ 0.3
LU	6.28	**6.33**	6.05	+ 0.7	+ 4.6	-	**-**	-	-	-
LV	5.03	**3.83**	3.90	- 23.8	- 1.6	3.83	**2.92**	2.93	- 23.8	- 0.3
MT	-	**-**	-	-	-	-	**-**	-	-	-
NL	10.09	**9.19**	9.06	- 9.0	+ 1.4	6.40	**6.66**	6.66	+ 4.1	+ 0.0
PL	4.57	**4.52**	4.44	- 1.3	+ 1.8	3.53	**3.71**	3.62	+ 5.2	+ 2.5
PT	2.16	**1.70**	1.62	- 21.2	+ 4.9	2.32	**2.04**	1.76	- 12.1	+ 15.5
RO	3.82	**3.81**	3.42	- 0.2	+ 11.3	3.45	**3.64**	3.17	+ 5.3	+ 14.7
SE	7.22	**6.57**	6.33	- 8.9	+ 3.9	5.25	**4.88**	4.80	- 6.9	+ 1.7
SI	5.11	**4.91**	5.08	- 3.9	- 3.2	4.63	**4.54**	4.56	- 2.0	- 0.3
SK	5.53	**4.31**	4.68	- 22.2	- 8.0	4.82	**3.98**	4.10	- 17.4	- 2.9
UK	8.83	**8.15**	7.86	- 7.7	+ 3.7	6.61	**6.25**	6.11	- 5.5	+ 2.3

Country	SOFT WHEAT t/ha					DURUM WHEAT t/ha				
	2015	2016	Avg 5yrs	%16/15	%16/5yrs	2015	2016	Avg 5yrs	%16/15	%16/5yrs
EU-28	6.26	**5.96**	5.82	- 4.8	+ 2.3	3.49	**3.33**	3.33	- 4.7	- 0.1
AT	5.77	**5.45**	5.44	- 5.5	+ 0.2	4.64	**4.65**	4.53	+ 0.1	+ 2.4
BE	9.98	**9.17**	8.96	- 8.1	+ 2.3	-	**-**	-	-	-
BG	4.47	**4.67**	4.10	+ 4.4	+ 13.8	-	**-**	-	-	-
CY	-	**-**	-	-	-	-	**-**	-	-	-
CZ	6.42	**5.84**	5.73	- 9.1	+ 1.9	-	**-**	-	-	-
DE	8.11	**7.82**	7.83	- 3.5	+ 0.0	-	**-**	-	-	-
DK	7.11	**7.32**	7.18	+ 2.9	+ 1.9	-	**-**	-	-	-
EE	4.79	**3.75**	3.82	- 21.6	- 1.9	-	**-**	-	-	-
ES	2.99	**3.24**	3.24	+ 8.5	+ 0.1	2.59	**2.37**	2.18	- 8.7	+ 8.5
FI	4.10	**3.82**	3.82	- 6.8	+ 0.0	-	**-**	-	-	-
FR	7.92	**7.44**	7.34	- 6.1	+ 1.4	5.62	**5.18**	5.25	- 7.8	- 1.4
GR	3.30	**3.06**	3.21	- 7.1	- 4.5	2.88	**2.87**	2.90	- 0.2	- 1.1
HR	5.39	**4.94**	4.96	- 8.2	- 0.3	-	**-**	-	-	-
HU	5.14	**4.88**	4.49	- 5.1	+ 8.7	4.83	**5.04**	4.39	+ 4.3	+ 14.8
IE	10.63	**9.51**	9.19	- 10.5	+ 3.5	-	**-**	-	-	-
IT	5.41	**5.56**	5.43	+ 2.7	+ 2.3	3.31	**3.17**	3.18	- 4.1	- 0.3
LT	5.24	**4.45**	4.53	- 15.0	- 1.6	-	**-**	-	-	-
LU	6.28	**6.33**	6.05	+ 0.7	+ 4.6	-	**-**	-	-	-
LV	5.03	**3.83**	3.90	- 23.8	- 1.6	-	**-**	-	-	-
MT	-	**-**	-	-	-	-	**-**	-	-	-
NL	10.09	**9.19**	9.06	- 9.0	+ 1.4	-	**-**	-	-	-
PL	4.57	**4.52**	4.44	- 1.3	+ 1.8	-	**-**	-	-	-
PT	2.16	**1.70**	1.62	- 21.2	+ 4.9	-	**-**	-	-	-
RO	3.82	**3.81**	3.42	- 0.2	+ 11.3	-	**-**	-	-	-
SE	7.22	**6.57**	6.33	- 8.9	+ 3.9	-	**-**	-	-	-
SI	5.11	**4.91**	5.08	- 3.9	- 3.2	-	**-**	-	-	-
SK	5.56	**4.30**	4.70	- 22.6	- 8.4	5.14	**4.39**	4.25	- 14.5	+ 3.3
UK	8.83	**8.15**	7.86	- 7.7	+ 3.7	-	**-**	-	-	-

Country	SPRING BARLEY t/ha					WINTER BARLEY t/ha				
	2015	2016	Avg 5yrs	%16/15	%16/5yrs	2015	2016	Avg 5yrs	%16/15	%16/5yrs
EU-28	4.17	**4.17**	4.12	+ 0.1	+ 1.2	6.12	**5.82**	5.58	- 4.9	+ 4.4
AT	4.92	**4.32**	4.66	- 12.3	- 7.3	5.99	**6.02**	5.99	+ 0.5	+ 0.4
BE	-	-	-	-	-	10.46	**9.31**	8.86	- 11.0	+ 5.0
BG	-	-	-	-	-	4.10	**4.28**	3.88	+ 4.4	+ 10.3
CY	-	-	-	-	-	3.05	**1.91**	1.96	- 37.5	- 2.7
CZ	5.54	**4.93**	4.98	- 11.1	- 1.1	5.56	**5.02**	4.89	-9 .7	+ 2.7
DE	5.42	**5.68**	5.70	+ 4.9	- 0.2	7.69	**7.05**	6.92	- 8.3	+ 1.8
DK	5.89	**5.66**	5.66	- 4.0	+ 0.0	6.04	**6.37**	6.16	+ 5.5	+ 3.5
EE	4.23	**3.36**	3.38	- 20.6	- 0.7	-	-	-	-	-
ES	2.51	**2.80**	2.78	+ 11.3	+ 0.7	2.11	**2.52**	2.40	+ 19.2	+ 4.8
FI	3.46	**3.53**	3.54	+ 2.0	- 0.2	-	-	-	-	-
FR	6.50	**6.42**	5.97	- 1.3	+ 7.5	7.30	**6.75**	6.69	- 7.5	+ 1.0
GR	-	-	-	-	-	2.60	**2.69**	2.81	+ 3.3	- 4.2
HR	-	-	-	-	-	4.39	**4.56**	4.36	+ 3.9	+ 4.7
HU	3.89	**4.07**	3.68	+ 4.8	+ 10.6	5.14	**5.02**	4.49	- 2.5	+ 11.8
IE	7.70	**7.29**	7.29	- 5.3	+ 0.0	10.20	**9.20**	9.28	- 9.8	- 0.8
IT	-	-	-	-	-	3.91	**3.72**	3.72	- 5.1	- 0.1
LT	4.00	**3.48**	3.46	- 13.2	+ 0.3	-	-	-	-	-
LU	-	-	-	-	-	-	-	-	-	-
LV	3.83	**2.92**	2.93	- 23.8	- 0.3	-	-	-	-	-
MT	-	-	-	-	-	-	-	-	-	-
NL	6.40	**6.66**	6.66	+ 4.1	+ 0.0	-	-	-	-	-
PL	3.30	**3.57**	3.49	+ 8.1	+ 2.1	4.13	**4.21**	4.10	+ 2.1	+ 2.7
PT	-	-	-	-	-	2.32	**2.04**	1.76	- 12.1	+ 15.5
RO	2.38	**2.57**	2.50	+ 8.1	+ 2.9	3.90	**4.05**	3.45	+ 3.8	+ 17.5
SE	5.20	**4.83**	4.76	- 7.1	+ 1.4	6.18	**5.91**	5.86	- 4.4	+ 0.9
SI	-	-	-	-	-	4.63	**4.54**	4.56	- 2.0	- 0.3
SK	4.74	**3.95**	4.04	- 16.7	- 2.3	5.08	**4.09**	4.41	- 19.4	- 7.3
UK	6.00	**5.81**	5.70	- 3.1	+ 1.9	7.52	**6.91**	6.83	- 8.2	+ 1.1

Country	GRAIN MAIZE t/ha					RYE t/ha				
	2015	2016	Avg 5yrs	%16/15	%16/5yrs	2015	2016	Avg 5yrs	%16/15	%16/5yrs
EU-28	6.42	**7.12**	6.90	+ 10.9	+ 3.2	3.93	**3.85**	3.74	- 2.0	+ 2.9
AT	8.68	**10.25**	9.98	+ 18.1	+ 2.7	4.33	**4.30**	4.40	- 0.6	- 2.2
BE	10.20	**11.02**	10.67	+ 8.0	+ 3.3	-	-	-	-	-
BG	5.13	**5.93**	5.56	+ 15.4	+ 6.5	-	-	-	-	-
CY	-	-	-	-	-	-	-	-	-	-
CZ	5.93	**7.72**	7.66	+ 30.1	+ 0.8	5.17	**5.06**	4.88	- 2.0	+ 3.7
DE	8.72	**10.06**	9.95	+ 15.3	+ 1.1	5.54	**5.66**	5.48	+ 2.2	+ 3.4
DK	6.00	**6.18**	6.00	+ 2.9	+ 3.0	5.92	**5.90**	5.97	- 0.4	- 1.2
EE	-	-	-	-	-	3.83	**2.93**	3.00	- 23.4	- 2.3
ES	11.30	**11.27**	11.08	- 0.3	+ 1.6	1.91	**2.03**	1.99	+ 6.3	+ 1.7
FI	-	-	-	-	-	3.44	**2.98**	3.03	- 13.4	- 1.8
FR	8.36	**9.27**	9.11	+ 10.9	+ 1.7	4.76	**5.00**	4.85	+ 4.9	+ 3.1
GR	11.12	**11.00**	11.34	- 1.1	- 3.0	2.04	**2.04**	2.03	- 0.3	+ 0.5
HR	6.49	**6.59**	6.01	+ 1.5	+ 9.6	-	-	-	-	-
HU	5.69	**6.48**	5.77	+ 13.9	+ 12.2	2.79	**2.72**	2.66	- 2.6	+ 2.3
IE	-	-	-	-	-	-	-	-	-	-
IT	9.72	**9.53**	9.28	- 2.0	+ 2.7	-	-	-	-	-
LT	4.81	**6.37**	6.38	+ 32.4	- 0.2	2.78	**2.36**	2.37	- 15.2	- 0.4
LU	-	-	-	-	-	-	-	-	-	-
LV	-	-	-	-	-	4.28	**3.15**	3.22	- 26.4	- 2.1
MT	-	-	-	-	-	-	-	-	-	-
NL	10.47	**11.38**	10.73	+ 8.7	+ 6.1	-	-	-	-	-
PL	4.71	**6.22**	6.15	+ 32.0	+ 1.0	2.78	**2.93**	2.82	+ 5.5	+ 3.7
PT	8.39	**8.42**	8.29	+ 0.4	+ 1.6	0.84	**0.90**	0.86	+ 6.0	+ 4.2
RO	3.44	**3.74**	3.66	+ 8.6	+ 2.0	-	-	-	-	-
SE	-	-	-	-	-	6.35	**6.17**	6.02	- 2.9	+ 2.4
SI	8.97	**8.20**	7.86	- 8.6	+ 4.4	-	-	-	-	-
SK	4.84	**6.08**	6.04	+ 25.6	+ 0.6	3.62	**3.43**	3.60	- 5.4	- 4.7
UK	-	-	-	-	-	-	-	-	-	-

Country	TRITICALE t/ha					RAPE AND TURNIP RAPE t/ha				
	2015	2016	Avg 5yrs	%16/15	%16/5yrs	2015	2016	Avg 5yrs	%16/15	%16/5yrs
EU-28	4.15	**4.26**	4.21	+ 2.7	+ 1.3	3.35	**3.31**	3.20	- 1.4	+ 3.2
AT	5.29	**5.21**	5.26	- 1.5	- 0.9	2.98	**3.22**	3.23	+ 8.2	- 0.3
BE	-	-	-	-	-	4.60	**4.51**	4.43	- 1.8	+ 1.9
BG	3.00	**3.20**	2.94	+ 6.6	+ 8.7	2.55	**2.67**	2.46	+ 4.8	+ 8.7
CY	-	-	-	-	-	-	-	-	-	-
CZ	4.99	**4.62**	4.69	- 7.3	- 1.4	3.46	**3.41**	3.28	- 1.3	+ 3.9
DE	6.47	**6.41**	6.33	- 1.0	+ 1.2	3.91	**4.04**	3.80	+ 3.4	+ 6.5
DK	5.42	**5.64**	5.46	+ 4.1	+ 3.2	3.75	**3.80**	3.81	+ 1.4	- 0.3
EE	-	-	-	-	-	2.51	**2.01**	1.98	- 19.9	+ 1.1
ES	2.08	**2.37**	2.22	+ 13.7	+ 6.6	2.03	**2.48**	2.20	+ 22.1	+ 13.0
FI	-	-	-	-	-	1.48	**1.46**	1.45	- 1.7	+ 0.4
FR	5.41	**5.37**	5.30	- 0.7	+ 1.3	3.56	**3.46**	3.43	- 2.8	+ 0.7
GR	-	-	-	-	-	-	-	-	-	-
HR	3.82	**3.77**	3.93	- 1.3	- 4.0	2.59	**2.73**	2.78	+ 5.2	- 1.9
HU	3.99	**3.87**	3.75	- 3.1	+ 3.2	2.24	**2.82**	2.57	+ 26.0	+ 9.8
IE	-	-	-	-	-	-	-	-	-	-
IT	-	-	-	-	-	2.60	**2.50**	2.37	- 3.9	+ 5.1
LT	3.84	**3.28**	3.31	- 14.5	- 0.8	3.08	**2.30**	2.25	- 25.4	+ 2.2
LU	-	-	-	-	-	-	-	-	-	-
LV	-	-	-	-	-	2.89	**2.26**	2.24	- 21.8	+ 1.2
MT	-	-	-	-	-	-	-	-	-	-
NL	-	-	-	-	-	-	-	-	-	-
PL	3.52	**3.70**	3.58	+ 5.2	+ 3.5	3.26	**3.13**	2.88	- 4.0	+ 8.7
PT	1.72	**1.47**	1.39	- 14.6	+ 5.3	-	-	-	-	-
RO	3.48	**3.46**	3.43	- 0.6	+ 0.8	2.36	**2.70**	2.30	+ 14.4	+ 17.6
SE	5.80	**5.67**	5.49	- 2.2	+ 3.2	3.80	**3.27**	3.06	- 13.9	+ 6.9
SI	-	-	-	-	-	-	-	-	-	-
SK	3.61	**3.37**	3.47	- 6.5	- 2.9	2.72	**2.64**	2.65	- 3.0	- 0.3
UK	NA	**4.09**	3.99	NA	+ 2.3	3.56	**3.68**	3.49	+ 3.5	+ 5.4

Country	SUGAR BEETS t/ha					POTATO t/ha				
	2015	2016	Avg 5yrs	%16/15	%16/5yrs	2015	2016	Avg 5yrs	%16/15	%16/5yrs
EU-28	67.52	**73.98**	71.81	+ 9.6	+ 3.0	32.58	**33.39**	32.13	+ 2.5	+ 3.9
AT	63.04	**70.40**	70.64	+ 11.7	- 0.3	26.20	**31.68**	31.34	+ 20.9	+ 1.1
BE	NA	**78.71**	76.23	NA	+ 3.2	NA	**47.47**	48.14	NA	- 1.4
BG	-	-	-	-	-	13.80	**15.33**	13.33	+ 11.1	+ 14.9
CY	-	-	-	-	-	-	-	-	-	-
CZ	59.38	**66.40**	64.00	+ 11.8	+ 3.7	22.26	**25.92**	26.72	+ 16.4	- 3.0
DE	72.17	**71.77**	71.85	- 0.6	- 0.1	43.60	**45.36**	44.25	+ 4.0	+ 2.5
DK	61.24	**62.81**	63.01	+ 2.6	- 0.3	40.44	**40.91**	40.64	+ 1.2	+ 0.7
EE	-	-	-	-	-	-	-	-	-	-
ES	95.21	**95.64**	89.31	+ 0.4	+ 7.1	33.66	**33.43**	31.08	- 0.7	+ 7.5
FI	32.70	**36.55**	36.64	+ 11.8	- 0.2	24.88	**26.43**	26.41	+ 6.2	+ 0.1
FR	NA	**91.94**	89.55	NA	+ 2.7	NA	**44.56**	44.70	NA	- 0.3
GR	-	-	-	-	-	25.24	**25.45**	25.50	+ 0.8	- 0.2
HR	59.00	**56.36**	53.05	- 4.5	+ 6.2	-	-	-	-	-
HU	57.66	**61.42**	53.96	+ 6.5	+ 13.8	22.65	**25.94**	24.18	+ 14.5	+ 7.3
IE	-	-	-	-	-	-	-	-	-	-
IT	57.01	**58.02**	55.98	+ 1.8	+ 3.6	27.55	**26.19**	26.09	- 4.9	+ 0.4
LT	58.00	**53.13**	52.79	- 8.4	+ 0.7	16.00	**16.18**	16.07	+ 1.1	+ 0.6
LU	-	-	-	-	-	-	-	-	-	-
LV	-	-	-	-	-	18.00	**18.00**	17.97	+ 0.0	+ 0.2
MT	-	-	-	-	-	-	-	-	-	-
NL	83.30	**84.39**	81.21	+ 1.3	+ 3.9	42.69	**44.84**	44.08	+ 5.0	+ 1.7
PL	NA	**55.16**	52.97	NA	+ 4.1	NA	**22.01**	22.39	NA	- 1.7
PT	-	-	-	-	-	18.61	**18.99**	17.84	+ 2.0	+ 6.4
RO	34.50	**38.54**	34.78	+ 11.7	+ 10.8	14.50	**15.22**	14.97	+ 5.0	+ 1.7
SE	62.08	**63.70**	63.61	+ 2.6	+ 0.2	34.65	**34.41**	33.41	- 0.7	+ 3.0
SI	-	-	-	-	-	-	-	-	-	-
SK	-	-	-	-	-	-	-	-	-	-
UK	66.50	**71.03**	70.19	+ 6.8	+ 1.2	40.20	**41.69**	39.91	+ 3.7	+ 4.5

Country	SUNFLOWER t/ha				
	2015	2016	Avg 5yrs	%16/15	%16/5yrs
EU-28	1.74	**1.95**	1.90	+ 12.0	+ 2.7
AT	2.00	**2.61**	2.47	+ 30.5	+ 5.6
BE	-	-	-	-	-
BG	2.02	**2.33**	2.10	+ 15.4	+ 10.8
CY	-	-	-	-	-
CZ	2.11	**2.33**	2.30	+ 10.5	+ 1.4
DE	2.02	**2.14**	2.16	+ 6.1	- 0.9
DK	-	-	-	-	-
EE	-	-	-	-	-
ES	0.94	**1.08**	1.07	+ 14.7	+ 0.3
FI	-	-	-	-	-
FR	2.00	**2.33**	2.26	+ 16.6	+ 2.9
GR	2.74	**2.53**	2.52	- 7.6	+ 0.3
HR	2.66	**2.62**	2.53	- 1.4	+ 3.7
HU	2.45	**2.53**	2.41	+ 3.3	+ 4.7
IE	-	-	-	-	-
IT	2.26	**2.25**	2.25	- 0.8	- 0.1
LT	-	-	-	-	-
LU	-	-	-	-	-
LV	-	-	-	-	-
MT	-	-	-	-	-
NL	-	-	-	-	-
PL	-	-	-	-	-
PT	1.10	**0.82**	0.76	- 25.1	+ 8.1
RO	1.35	**1.65**	1.67	+ 21.5	- 1.7
SE	-	-	-	-	-
SI	-	-	-	-	-
SK	2.27	**2.39**	2.32	+ 5.4	+ 2.9
UK	-	-	-	-	-

Note: Yields are forecast for crops with more than 10 000 ha per country.
Sources: 2011-2016 data come from DG Agriculture and Rural Development short-term Outlook data (dated January 2016, received on 26.02.2016).
Eurostat Eurobase (last update: 17.02.2016) and EECP (last update: 15.10.2015).
2016 yields come from MARS Crop Yield Forecasting System (output up to 10.03.2016). NA (data not available).

Country	WHEAT (t/ha)				
	2015	2016	Avg 5yrs	%16/15	%16/5yrs
BY	3.43	**3.67**	3.48	+ 7.0	+ 5.4
DZ	1.48	**1.34**	1.60	- 9.5	- 16.3
MA	2.36	**0.61**	1.86	- 74.2	- 67.2
TN	2.15	**1.74**	2.05	- 19.0	- 15.0
TR	2.90	**2.75**	2.69	- 5.3	+ 2.2
UA	3.99	**3.61**	3.54	- 9.6	+ 2.0

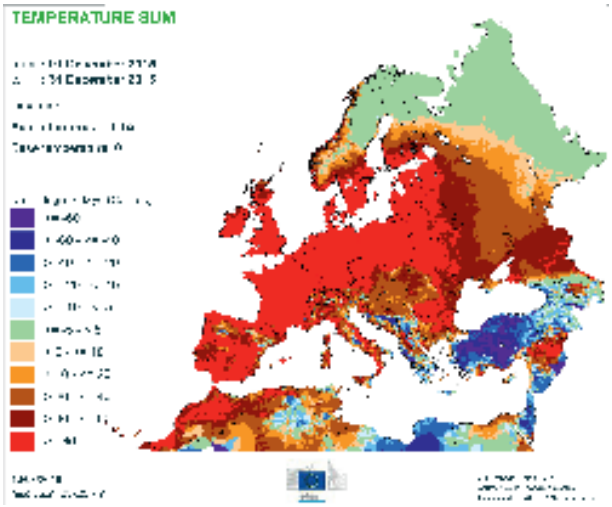
Country	BARLEY (t/ha)				
	2015	2016	Avg 5yrs	%16/15	%16/5yrs
BY	3.33	**3.44**	3.25	+ 3.2	+ 5.8
DZ	1.18	**1.27**	1.39	+ 7.6	- 8.6
MA	1.62	**0.44**	1.16	- 72.8	- 62.2
TN	1.44	**1.30**	1.30	- 9.5	+ 0.0
TR	2.9	**2.66**	2.65	- 8.4	+ 0.2
UA	3.07	**2.71**	2.59	- 11.8	+ 4.7

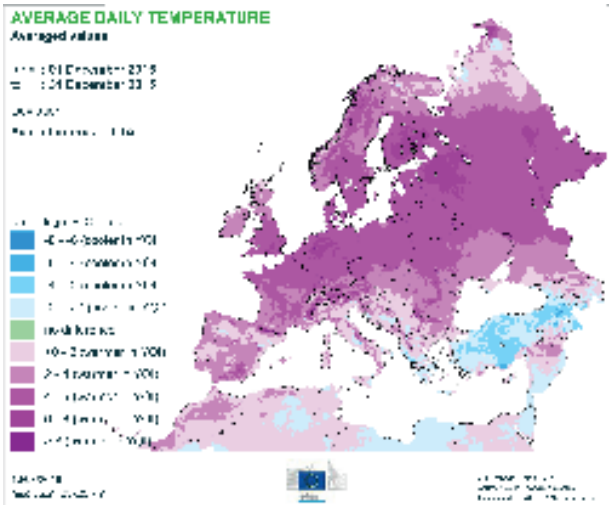
Country	GRAIN MAIZE (t/ha)				
	2015	2016	Avg 5yrs	%16/15	%16/5yrs
BY	5.33	**5.47**	5.62	+ 2.6	- 2.6
DZ	-	-	-	-	-
MA	-	-	-	-	-
TN	-	-	-	-	-
TR	9.30	**9.19**	8.39	- 1.2	+ 9.5
UA	5.56	**5.99**	5.74	+ 7.6	+ 4.2

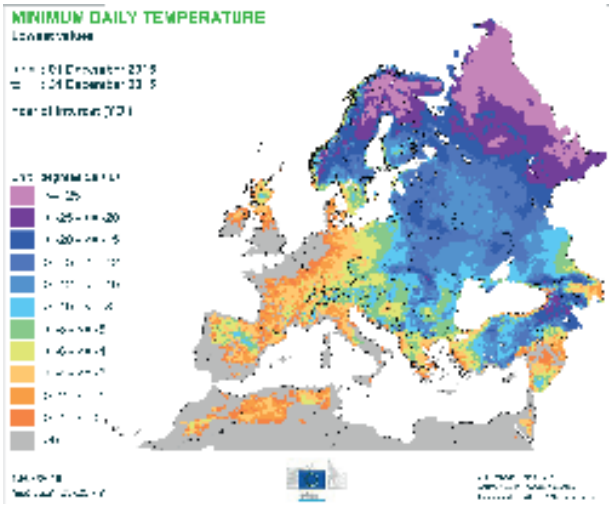
Note: Yields are forecast for crops with more than 10 000 ha per country.
Sources: 2011-2015 data come from USDA, State Statistics Service of Ukraine, FAO, Turkish Statistical Office, PSD-online, INRA Maroc, Min AGRI Tunisia and DSASI Algeria.
2016 yields come from MARS Crop Yield Forecasting System (output up to 10.03.2016)

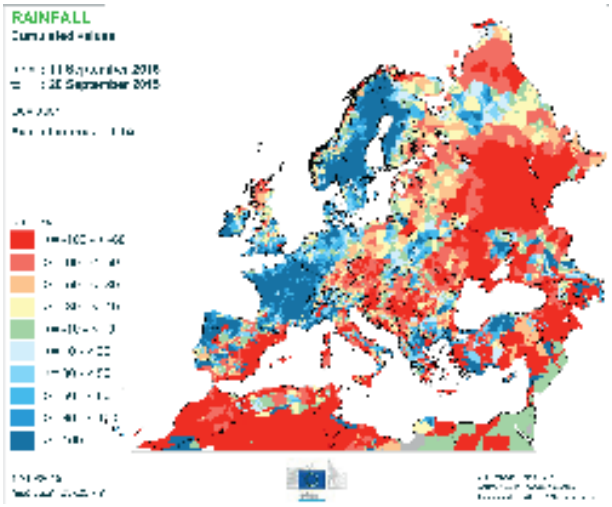
5. Atlas

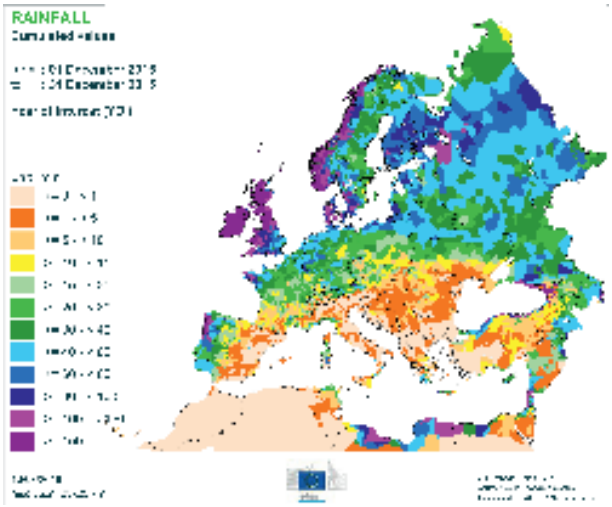
Meteorological conditions — December

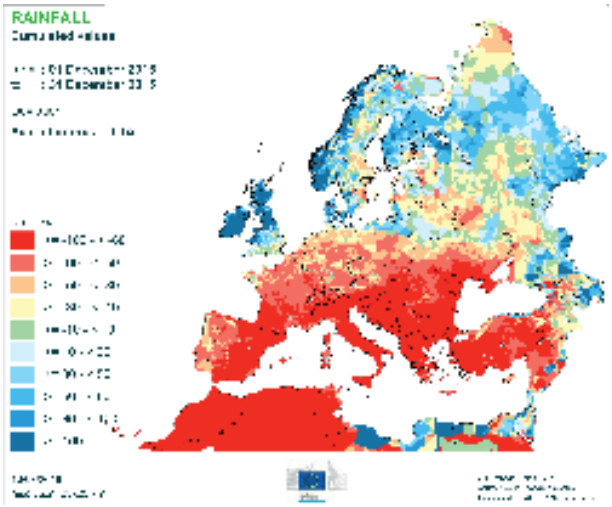




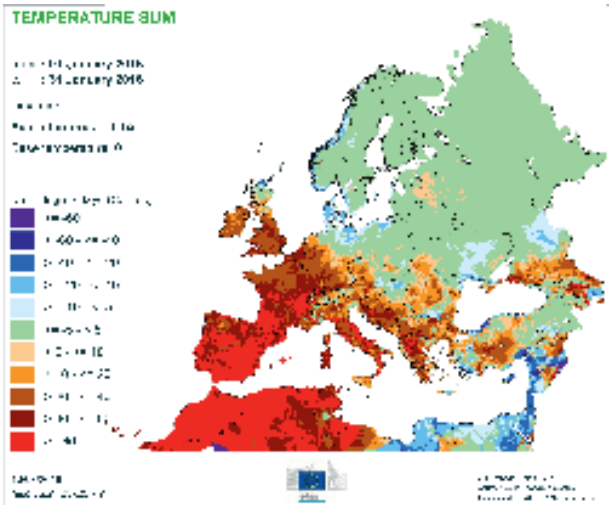


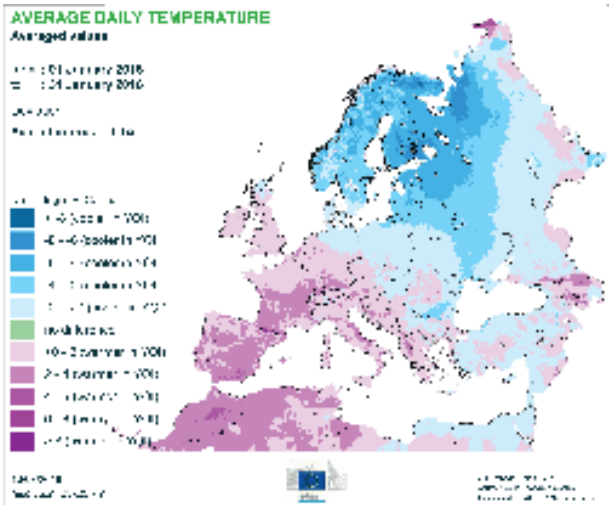


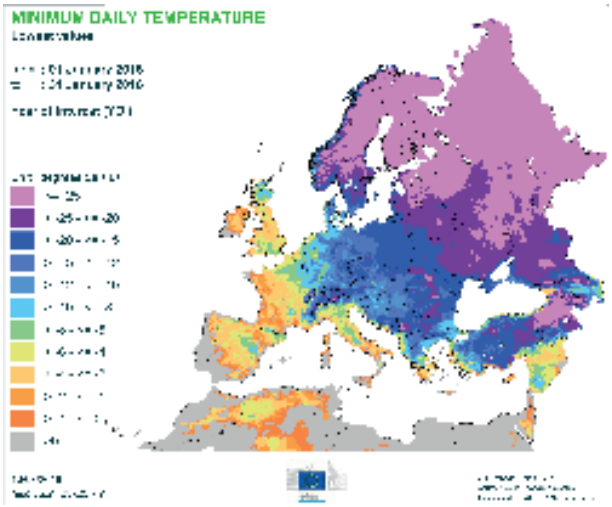


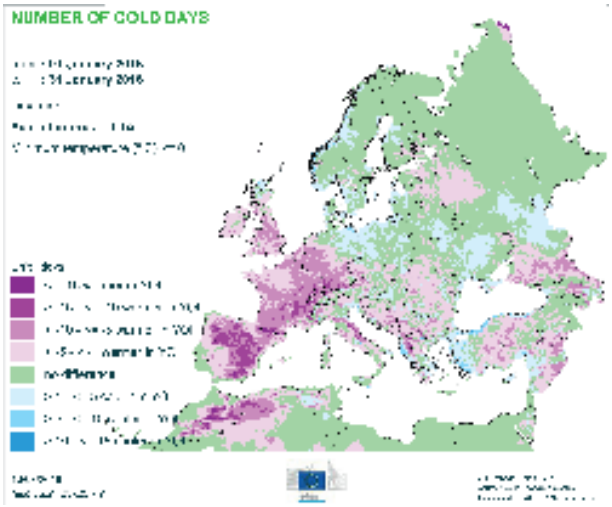


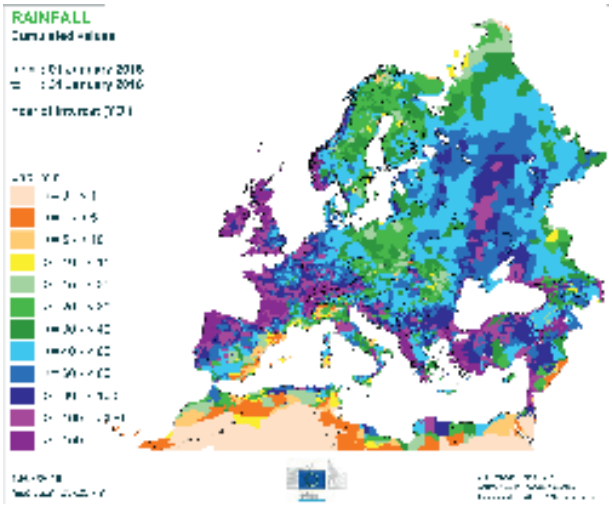
Meteorological conditions — January

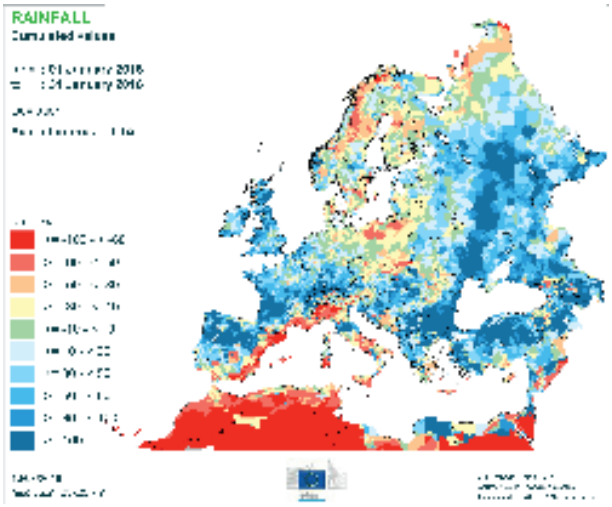




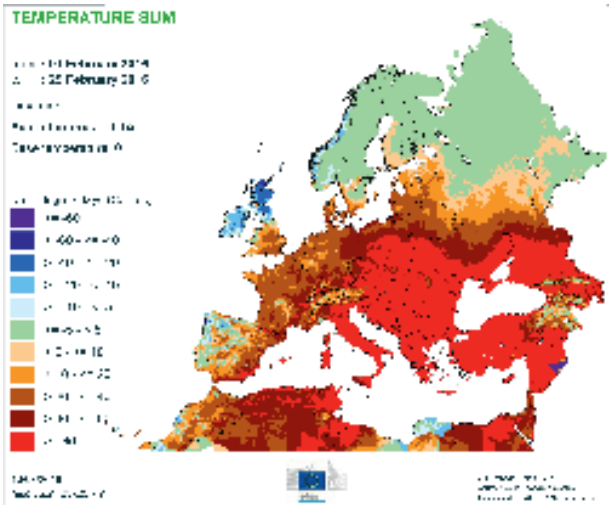


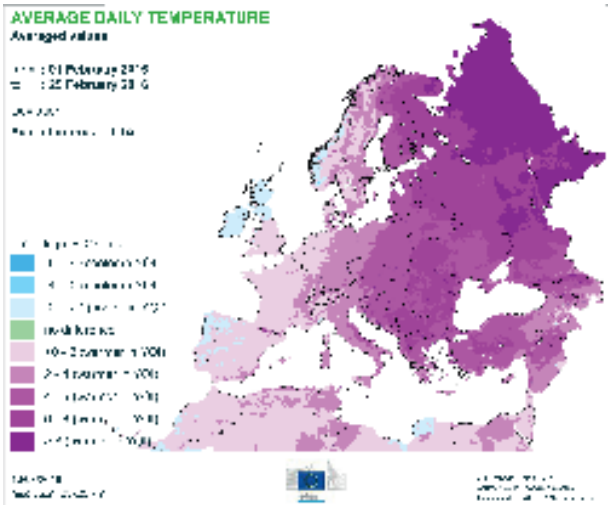


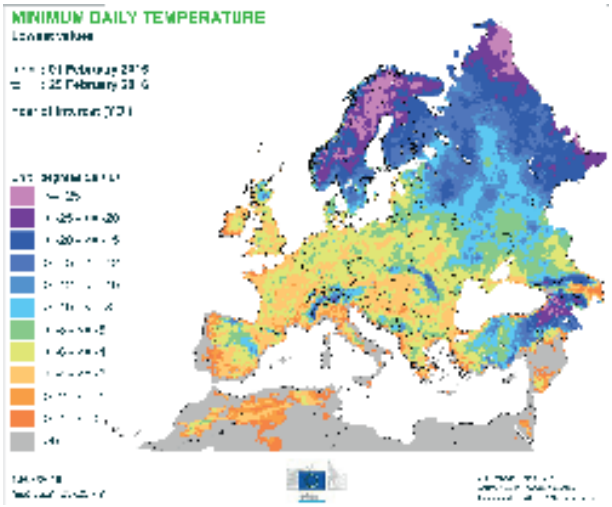


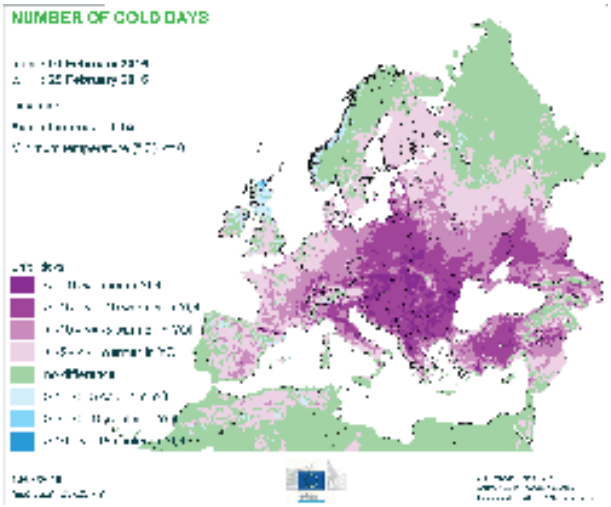


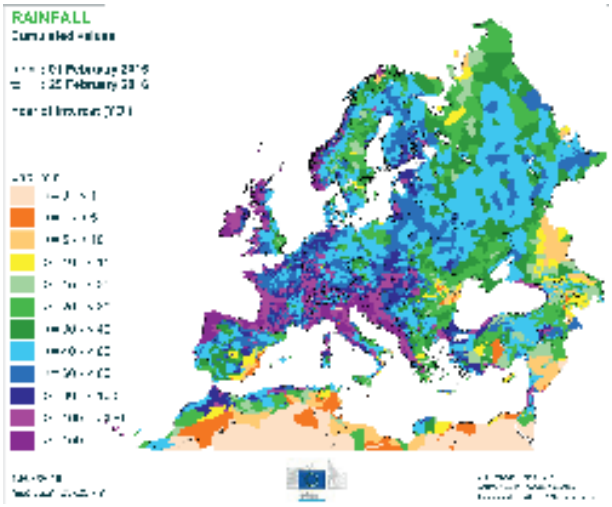
Meteorological conditions — February

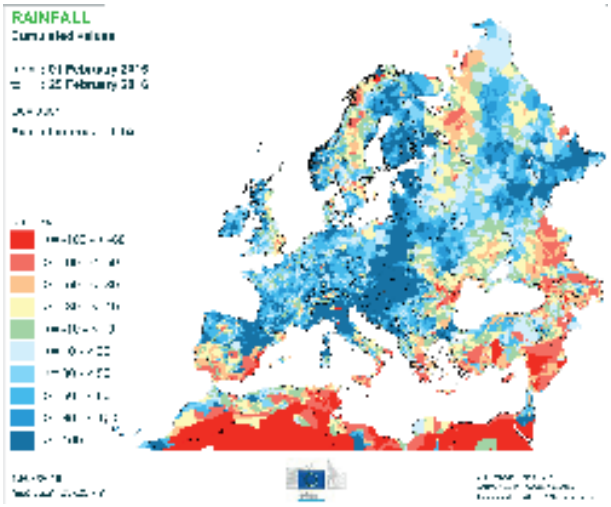




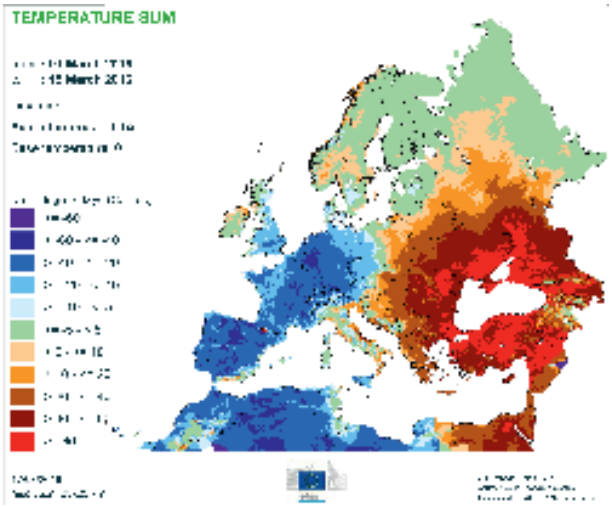


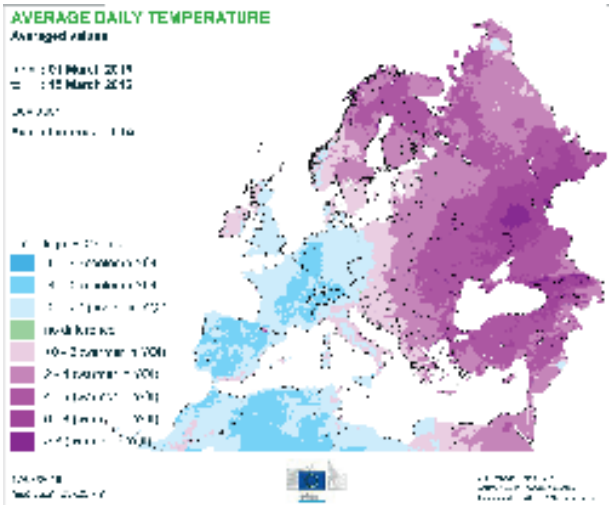


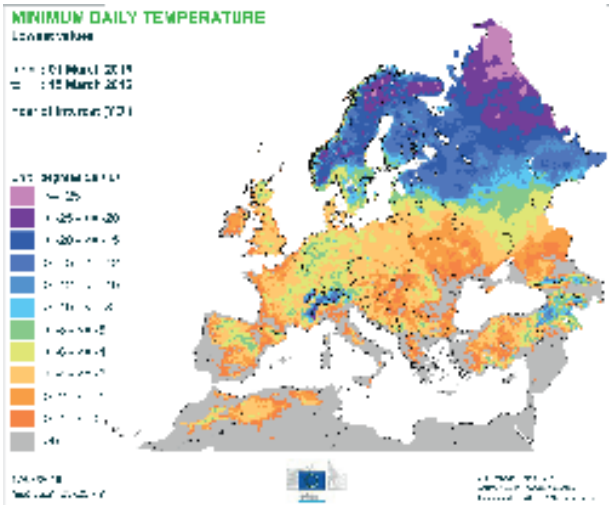


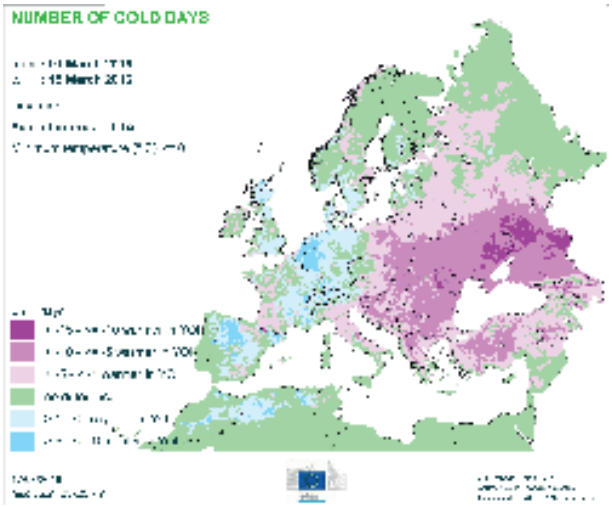


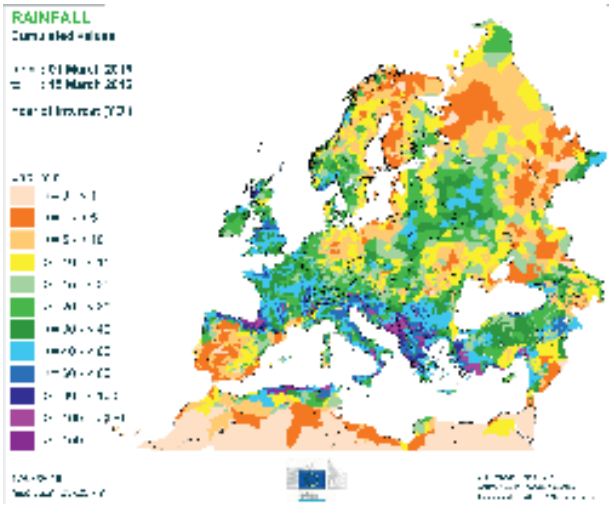
Meteorological conditions — from 1 to 15 March

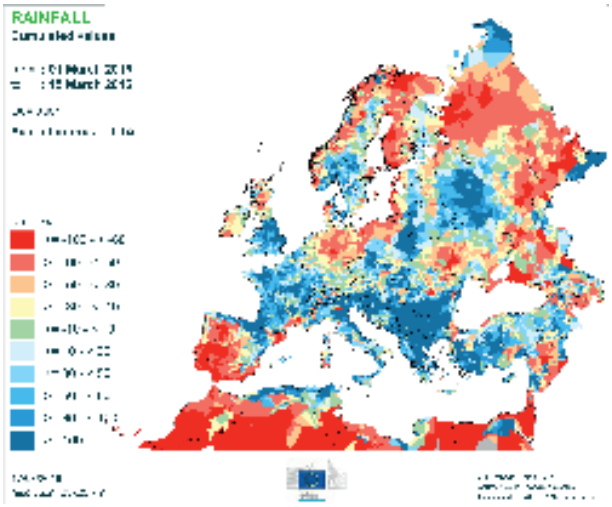




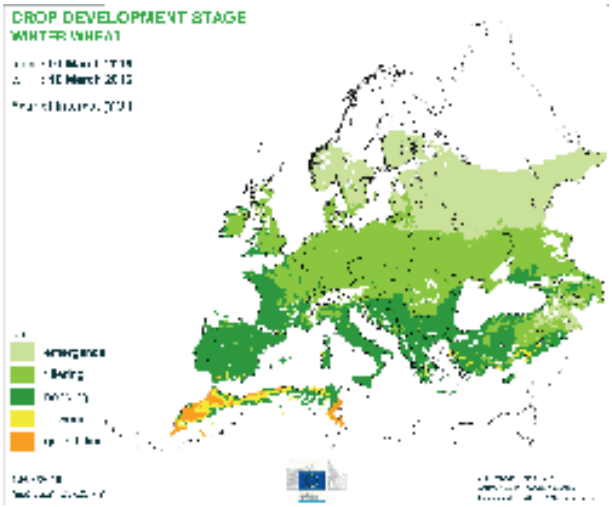


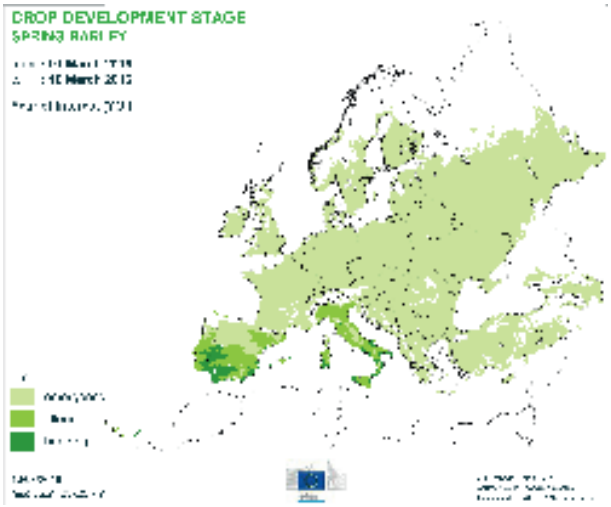


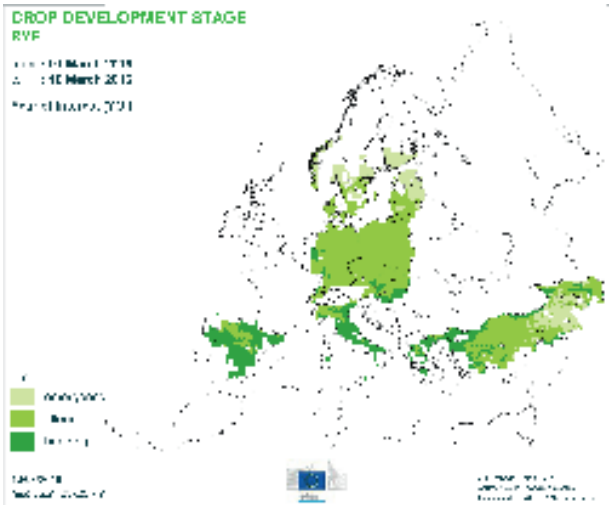


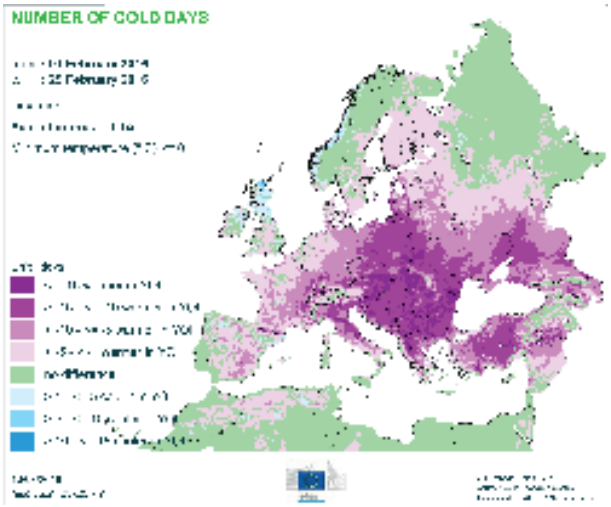


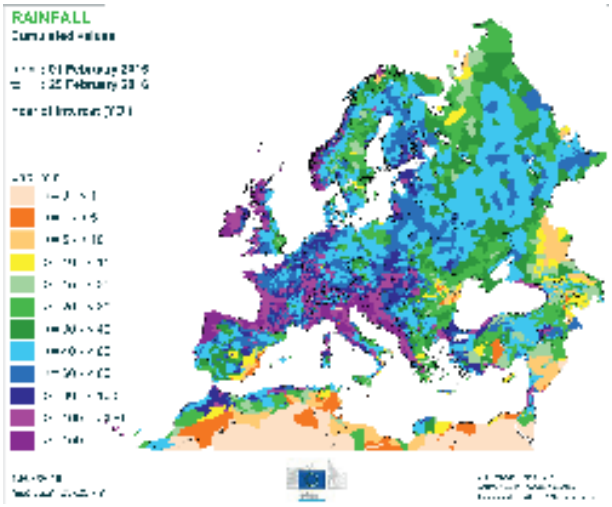
Crop development stages

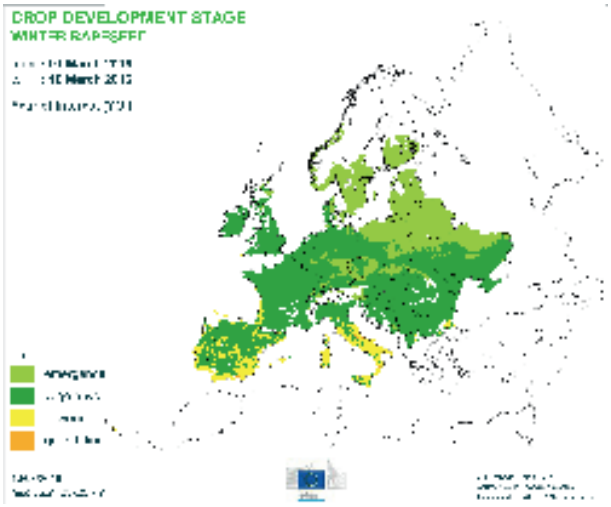












LB-AW-16-003-EN-N

JRC MARS Bulletins 2016

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

As the Commission's in-house science service, the Joint Research Centre's (JRC) mission is to provide EU policies with independent, evidence-based scientific and technical support throughout the whole policy cycle. Working in close cooperation with policy directorates-general, the JRC addresses key societal challenges while stimulating innovation through developing new standards, methods and tools, and sharing and transferring its know-how to the Member States and international community.

The mission of the JRC–Institute for Environment and Sustainability (IES) is to provide scientific and technical support to the European Union's policies for the protection and sustainable development of the European and global environment.

The current MARS* Bulletin — Crop monitoring in Europe is a European Commission publication from AGRI4CAST (JRC/IES MARS Unit).

All MARS Bulletins are available at:
https://ec.europa.eu/jrc/en/mars/Bulletins

Analysis and reports
B. Baruth, I. Biavetti, A. Bussay, A. Ceglar, G. De Sanctis, S. Garcia Condado, S. Karetsos, R. Lecerf, R. Lopez, L. Nisini, L. Seguini, A. Toreti, M. Van den Berg, M. Van der Velde.

Reporting support
G. Mulhern

Editing
B. Baruth, M. Van den Berg, S. Niemeyer

Data production
MARS Unit AGRI4CAST/JRC, Alterra (NL), Meteogroup (NL), VITO (BE) and CMCC (IT)

Contact
JRC–IES-MARS / AGRI4CAST
info-agri4cast@jrc.ec.europa.eu

*MARS stands for Monitoring Agricultural Resources

Technical note:
The long-term average (LTA) used within this bulletin as a reference is based on an archive of data covering 1975-2015.

Publications Office

Print ISSN 2443-826X LB-AW-16-003-EN-C
PDF ISSN 2443-8278 LB-AW-16-003-EN-N