

European
CommissionPeriod covered: 1 September - 20 October
Issued: 24 October 2014

Crop Monitoring in Europe

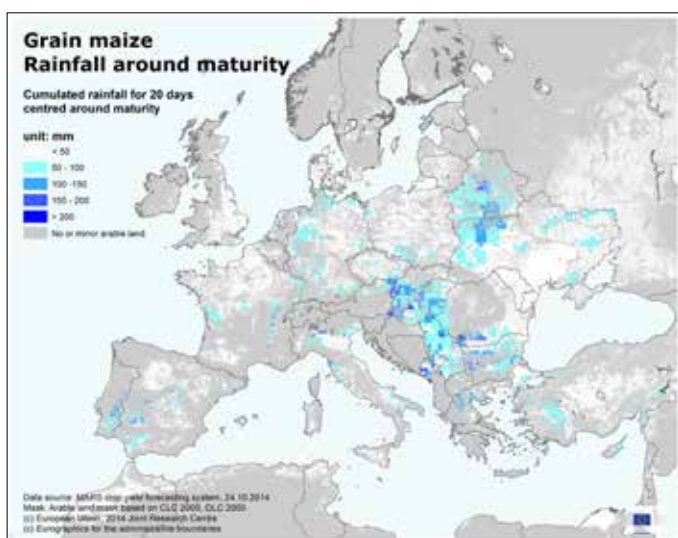
MARS BULLETIN Vol.22 No. 10 (2014)

High summer crop yields at EU-28 level

September was drier and slightly warmer than usual in most of Europe, creating good conditions for the ripening and harvesting of summer crops. Above-average precipitation with heavy rainstorms was recorded, however, over the Balkans, Turkey, the eastern part of central Europe, and Portugal. During the first two weeks of October, wetter conditions prevailed in western Europe and the southern part of the Scandinavian Peninsula, while warm and dry conditions continued over all other European regions.

No areas of concern with widespread impact on yields of summer crops are reported for this period, despite the plentiful rainfall which hampered harvest activities over Hungary, Bulgaria, Romania, the

Czech Republic, Slovakia, the Balkans, and parts of Germany and Turkey. Summer crop yields at the EU-28 level are high, and maize yields in Romania, Hungary and Bulgaria are forecast to be more than 25% above the five-year average.



Crop	Yield t/ha				
	2013	MARS 2014 forecasts	Avg 5yrs	%14/13	%14/5yrs
TOTAL CEREALS	5.32	5.41	5.09	+1.7	+6.3
Total Wheat	5.59	5.64	5.34	+0.9	+5.7
<i>soft wheat</i>	5.82	5.87	5.57	+1.0	+5.4
<i>durum wheat</i>	3.35	3.17	3.22	-5.2	-1.5
Total Barley	4.86	4.59	4.49	-5.6	+2.2
<i>spring barley</i>	4.45	3.90	3.94	-12.4	-1.2
<i>winter barley</i>	5.50	5.57	5.30	+1.2	+5.0
Grain maize	6.75	7.59	6.79	+12.4	+11.8
Rye	3.97	3.71	3.46	-6.4	+7.3
Triticale	4.30	4.27	4.08	-0.8	+4.6
Other cereals	3.20	3.24	3.33	+1.0	-2.8
Rape and turnip rape	3.11	3.32	3.07	+6.8	+8.2
Potato	30.96	33.75	30.62	+9.0	+10.2
Sugar beet	67.96	73.16	69.36	+7.7	+5.5
Sunflower	1.96	2.11	1.85	+7.5	+13.8

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Technical remark: Since 1 October onwards, only modelled weather data from ECMWF is used for the Bulletin analysis, as observed data from meteorological stations is currently not available.

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Pasture monitoring

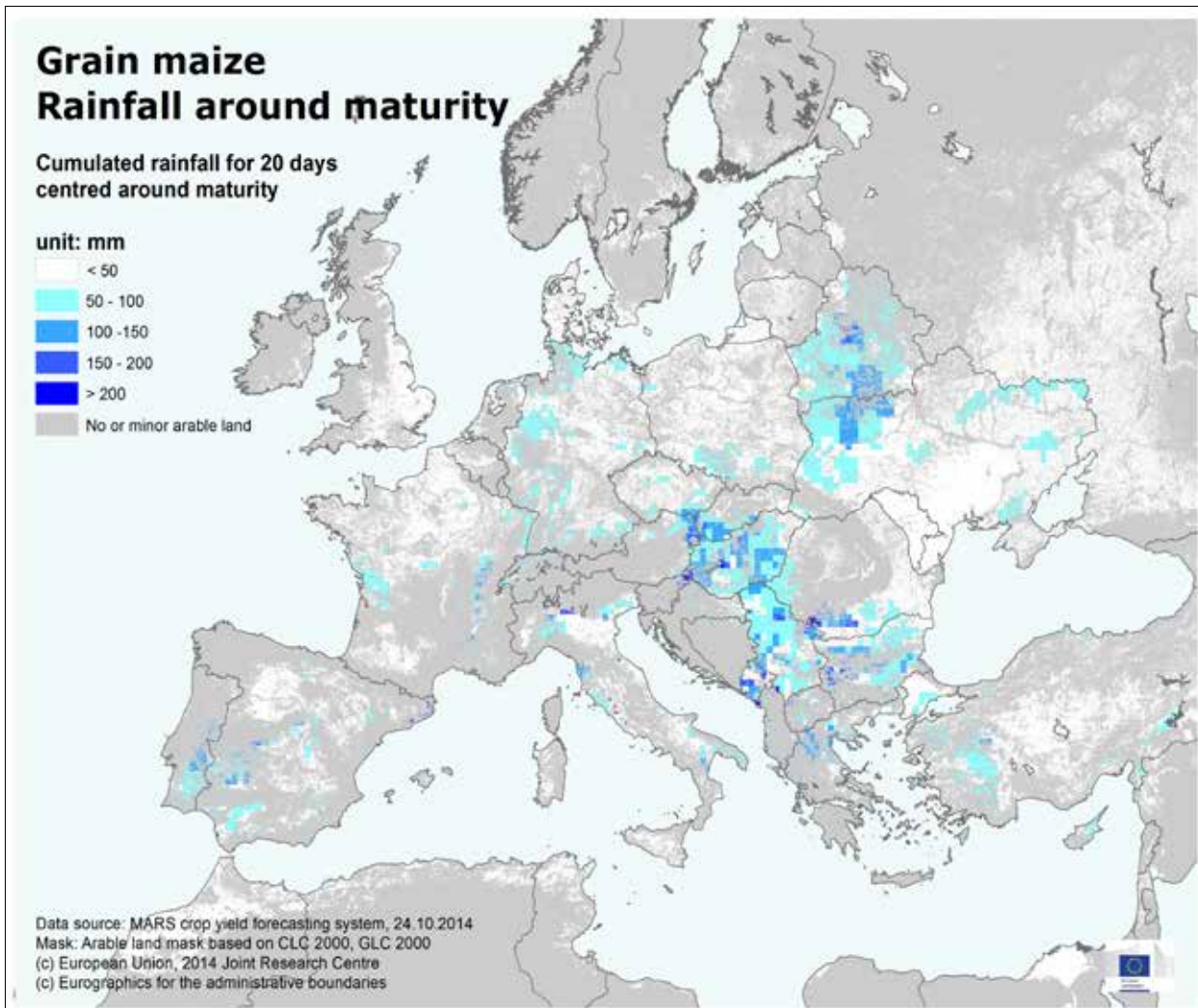
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Atlas maps

1. Agro-meteorological overview

1.1 Areas of concern

No areas of concern with widespread impact on yields of summer crops are reported for this period, despite the plentiful rainfall, which hampered harvest activities over Hungary, Bulgaria, Romania, the Czech Republic, Slovakia, the Balkans, and parts of Germany and Turkey.



1.2 Agro-meteorological overview (1 September - 20 October)

September was slightly warmer and drier than usual in most of Europe, creating good conditions for the maturation and harvesting of summer crops. Above-average cumulated rainfall, with heavy rainfall events, was recorded mainly over the Balkans, Turkey, the eastern part of central Europe, and Portugal. During the first two weeks of October, wetter conditions prevailed in western Europe and the southern part of the Scandinavian Peninsula, while warmer and drier conditions persisted in all other European regions.

Observed temperatures

The first half of September was characterised by normal to slightly above-average temperatures over Europe. Greater warm anomalies (2 to 4°C above the long-term average) were observed in large areas of Spain, the Scandinavian Peninsula, eastern Europe, Turkey and the region east of the Black Sea, whereas slightly colder-than-usual temperatures were experienced in eastern Italy and eastern Russia.

Ukraine, Moldova and northern Romania saw above-average maximum daily temperatures, in the range of 4 to 6°C. During the second half of September, warmer conditions continued to prevail in western, central and southern Europe, with maximum daily temperatures above 30°C in southern Italy, eastern Spain, south-western France, Greece, and western Turkey. By contrast, average temperatures were slightly below

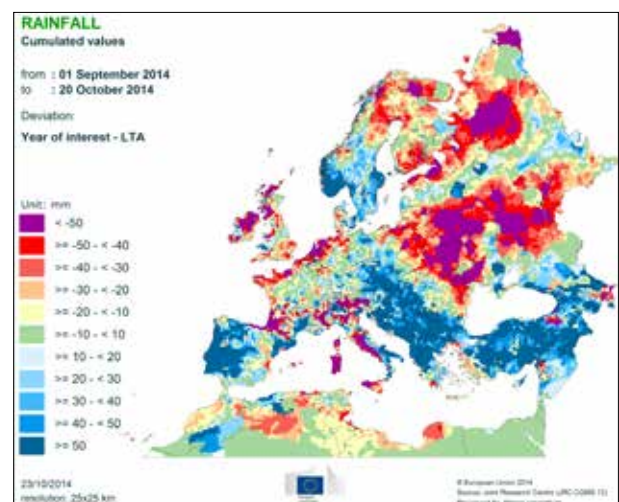
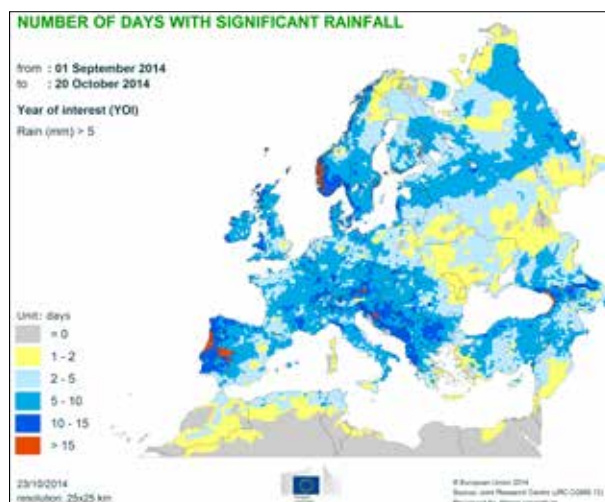
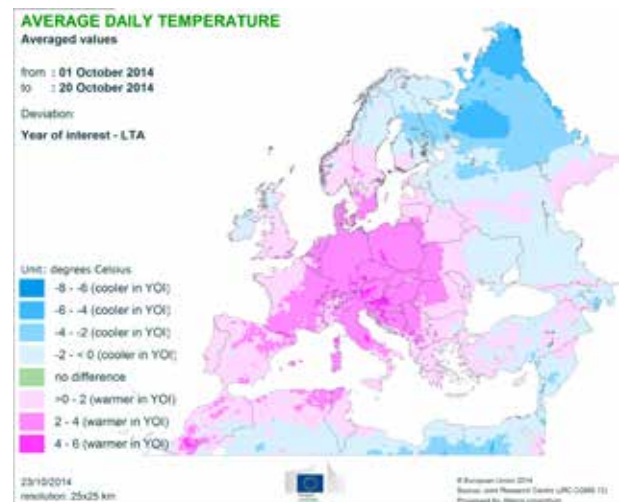
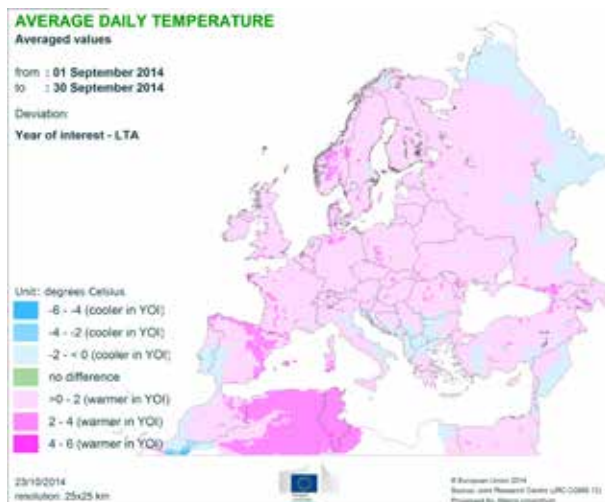
average in Romania, Bulgaria, Moldova, Ukraine, Belarus, the northern part of the Scandinavian Peninsula, southern Russia, and Turkey. During the first two dekads of October, warmer weather conditions prevailed in most of Europe, with the exception of Russia, eastern Ukraine and Finland. Average

temperatures up to 4°C above the long-term average were observed in central Europe, southern and eastern France, Italy, Denmark, southern Sweden, the Balkans, Romania, and western Ukraine.

Observed precipitation

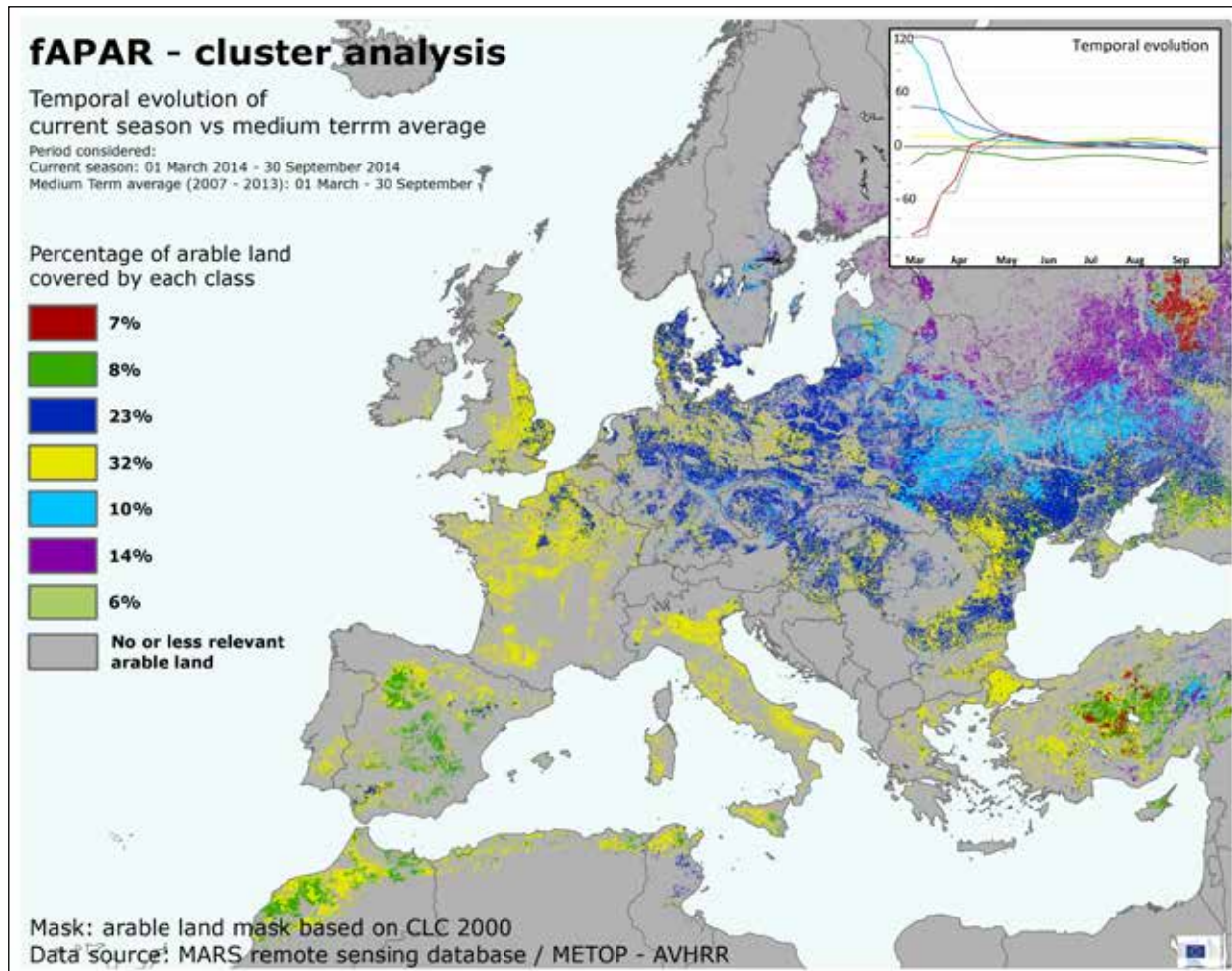
The cumulated rainfall during the first half of September was well above the long-term average (>50 mm) over the Balkans, Slovenia, Hungary, Slovakia, the Czech Republic, Austria, central and southern Italy, western Turkey, and locally in Portugal. Heavy rainfall in Croatia and Slovenia from 10 to 12 September led to flooding and waterlogging. All other European regions were drier than usual. The second half of September was characterised by wetter-than-usual conditions mainly over eastern Ukraine, Turkey, Bulgaria, the western part of the Iberian Peninsula and locally over south-eastern France. Normal to drier-than-usual conditions were observed elsewhere. During the first two dekads of October,

above-average cumulated rainfall (>50 mm) was recorded in southern and central parts of the Scandinavian Peninsula, Latvia, central Russia, France, the United Kingdom, western and central parts of the Iberian Peninsula, the western part of northern Italy, western Romania, and locally in Germany. Normal to drier-than-usual conditions prevailed over all other European regions. Warm and dry conditions during September created good conditions for the maturing and harvesting of summer crops in most of Europe, with the exception of Hungary, Bulgaria, Romania, the Czech Republic, Slovakia, the Balkans and parts of Germany and Turkey where heavy rainfall may have hampered harvest activities.



2. Remote Sensing - observed canopy conditions

March – September summary: Early start to spring growth. Average biomass conditions throughout the season in the main European regions. Canopy affected by dry conditions in Spain and Turkey.



The cluster map displays the fAPAR (fraction of Absorbed Photosynthetically Active Radiation) behaviour of the current season, 1 March to 30 September, as compared to the medium-term average (MTA / 2007 – 2013). The **green profile** (which represents 8% of arable land) describes the average trend of large regions in Spain. Canopy conditions were around average at the beginning of spring, but crops were hampered by scarce rainfall during the following months. The winter crops were only marginally affected (e.g. in *Castilla y Leon*), but the spring crops experienced sub-optimal canopy development. The same trend is visible in the main central agricultural areas of **Turkey**, where water stress at the very beginning of the season hampered the canopy growth of both winter and spring crops.

The **dark blue** (23% of arable land) regions stretch from Germany towards the Danube plain, and cover the main arable land areas in eastern Europe. The crop season in those areas was characterised by an early re-growth in spring due to the mild temperatures that remained above average from March to May. In those regions, the fAPAR values remained above average until June, when the winter crops' senescence started, and then fell to normal values. Consequently, the crop

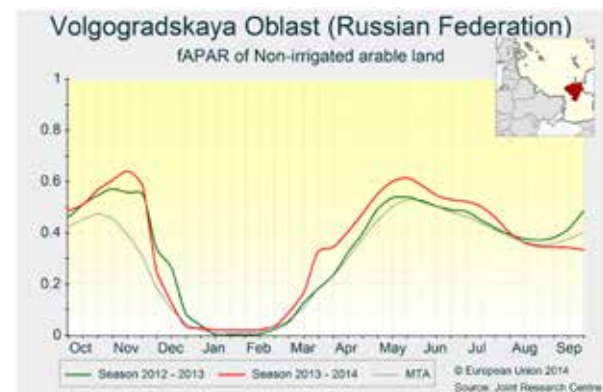
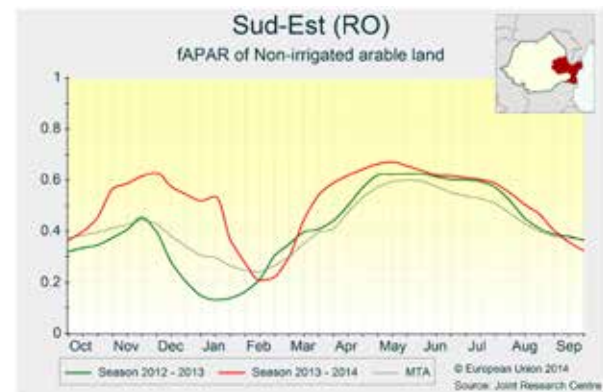
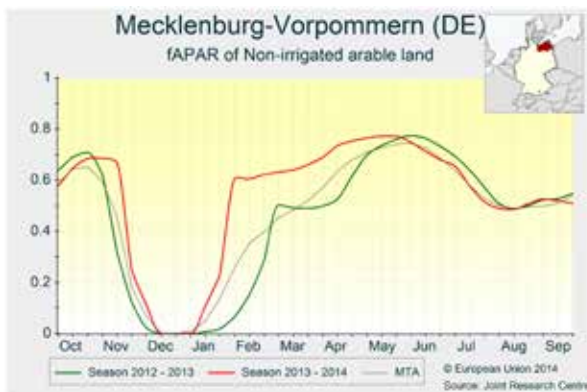
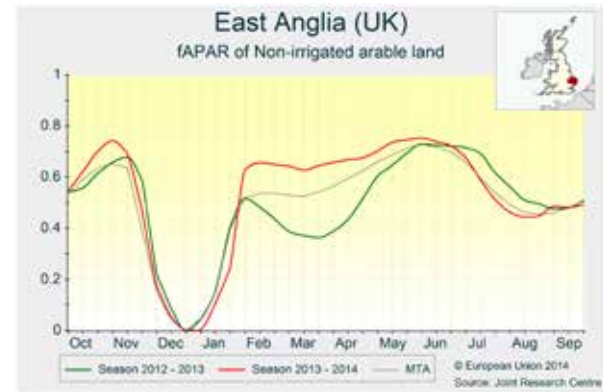
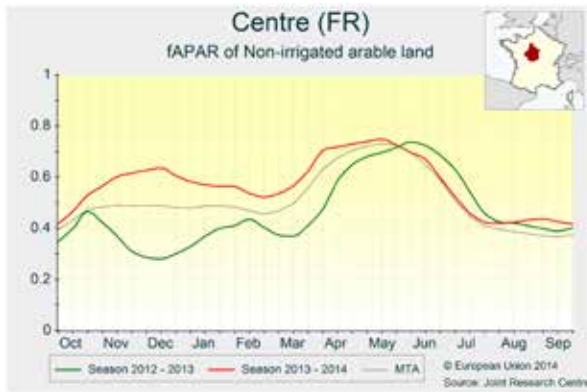
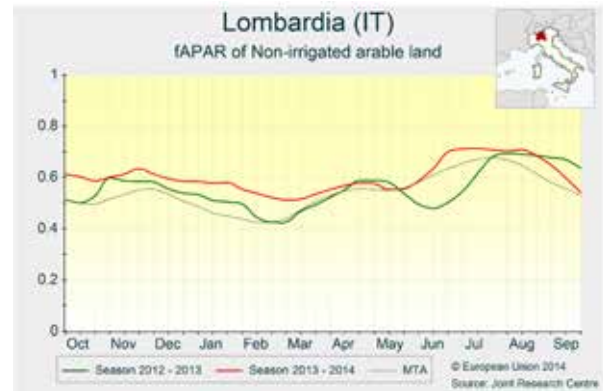
season was longer than usual, with no relevant impacts on the crop canopy status. This trend is visible in the main crop-growing regions of the **United Kingdom** (e.g. East Anglia) and **Germany** (e.g. *Mecklenburg*), as well in **Central Europe**.

Regions in **yellow** (32% of arable land) have in common an early end to the winter dormancy period and an early start to the phenological cycle for both winter and spring crops. In some regions, crop conditions were slightly hampered during the season (dry conditions in eastern **France**, wet conditions in northern **Italy**), but the overall prospect remained positive (e.g. *Centre de la France*). The summer period for these regions was marked by above-average fAPAR values, mainly due to the optimal canopy development of summer crops: ideal temperatures and abundant rains boosted vegetative growth. The best canopy conditions are visible in **Romania** as shown by the *Sud-Est* fAPAR profile.

Areas represented in **cyan** (10% of arable land) experienced ideal development conditions for winter crops, particularly in the northern plains of **Ukraine**, where the optimal starting conditions lasted for the whole agricultural season, determining an exceptional biomass accumulation for all crops (e.g. *Kharkivs'ka*). The **purple** profile (14% of arable lands)

shows Russian regions where above-average temperatures in spring determined optimal early canopy development. The advanced stages and good growing conditions lasted until the end of July, when hot and dry conditions accelerated winter crop senescence and negatively impacted the grain-

filling phase of spring crops. The **light green** (6%) and **red** profiles (7% of arable land) describe similar trends present in Russian croplands; the main issue that characterises these regions is the late and deep snow coverage that lasted until the beginning of April.



3. Country analysis

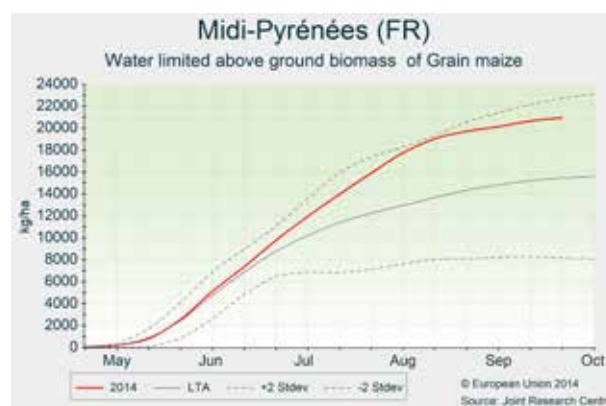
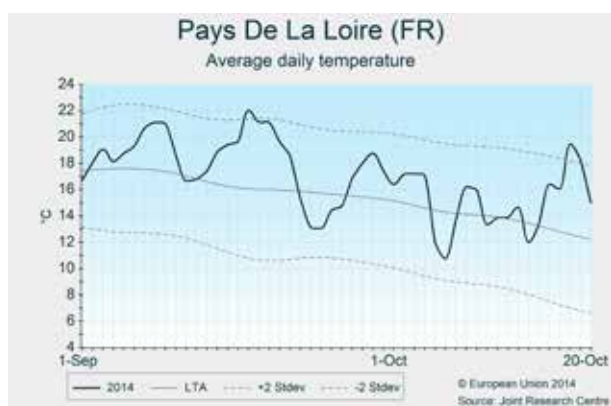
3.1 European Union

France

Mild temperatures

The period of review, which marks the end of the growing season, was warmer than average. Since 1 September, temperatures stayed between 1 and 2°C above the long-term average. Whereas little rainfall was observed in September, the first half of October was particularly rainy, resulting in

near-average cumulated rainfall for the analysis period as a whole. Grain maize, sugar beet and potatoes benefited from good conditions this summer, and yields are forecast to be above the five-year average.

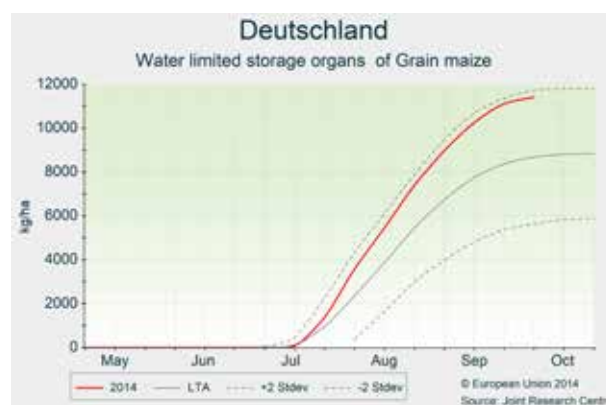
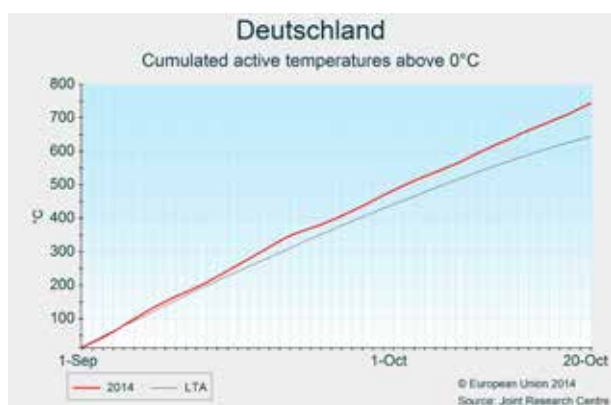


Germany

Good season for summer crops

Temperatures during September were seasonal, with slightly above-average temperature sums in the north. Conditions were drier in the west, with more precipitation towards the east and north, where a surplus is recorded. October shows a clear surplus of temperature sums with average temperatures 3 to 4°C above the long term average. Precipitation was

generally average, with a dry period at the beginning of the month and more rainfall from 10 October onwards. Overall, good conditions prevailed for the maturing of maize, with the exception of some spots in Nordrhein-Westfalen where wet conditions prevailed. Good yields are expected for maize as well as for sugar beet and potatoes.

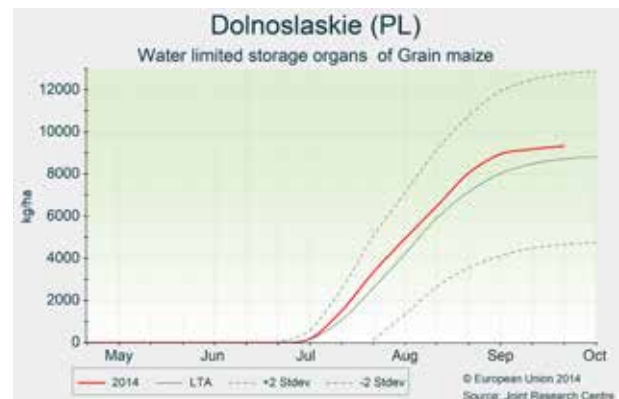


Poland

Sugar beet close to average

Temperatures remained above average from 1 September. Rainfall was scarce in northern and eastern regions, and close to average in western and southern regions. Grain maize and

potato yields are forecast to be above the average. Sugar beet yields are forecast to be close to the average as a consequence of the dry conditions observed in *Kujawsko-Pomorskie*.

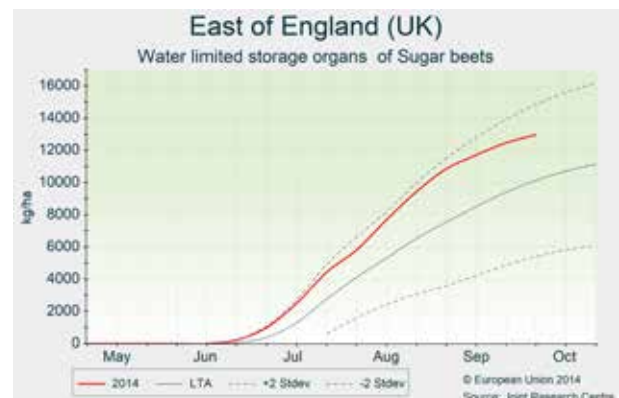
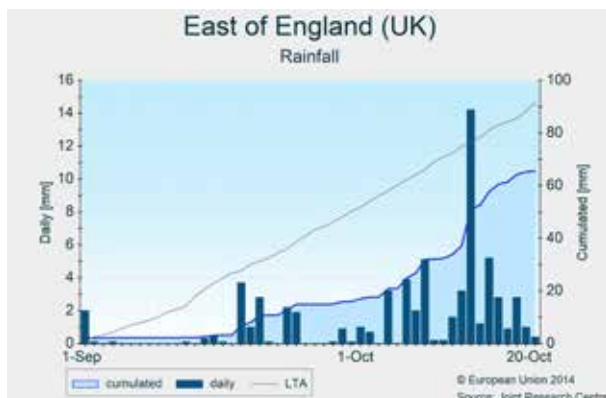


The United Kingdom and Ireland

Favourable weather conditions in September

The period of review was predominantly characterised by slightly above-average temperatures, with the larger temperature surpluses occurring in southern Brittany. September was mostly dry. Rainfall in October was around or somewhat above average in the main cropland areas, with no extreme events. These conditions, especially those of September, were favourable to the remaining standing

crops, as well as for the harvesting of any remaining winter or spring cereal crops, sugar beets and potatoes, and other field activities. The yield forecast for sugar beets and potatoes remains practically unaltered compared to the previous bulletin: above those of last year, and above the five-year average.

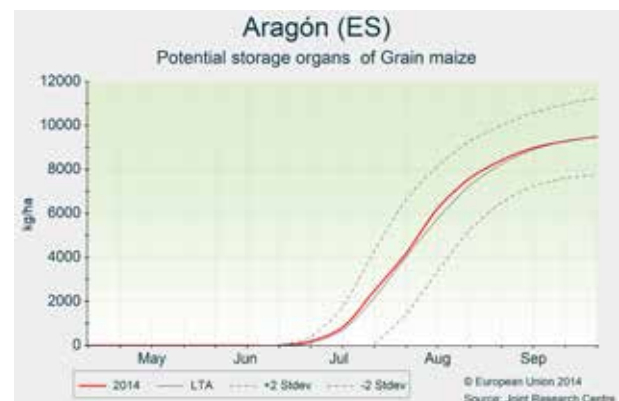
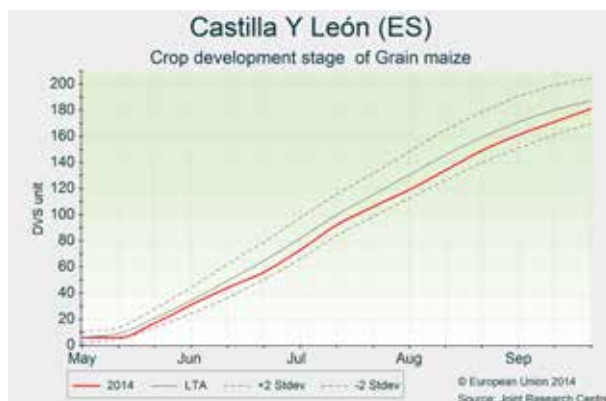


Spain and Portugal

Abundant precipitation in October

Temperatures in September and October were higher than usual, especially in north-eastern Spain. After a rather dry

summer, abundant precipitation was recorded during the first half of October, especially in the western half of the Peninsula.



Sugar beets and potatoes have already been harvested. The grain maize harvest has been completed in the south and the east, and will start shortly in *Castilla y Leon* and northern

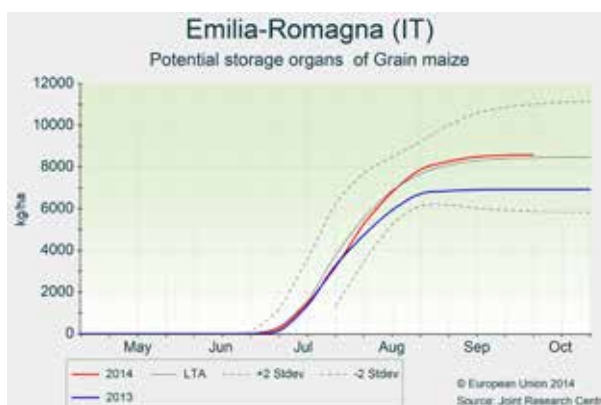
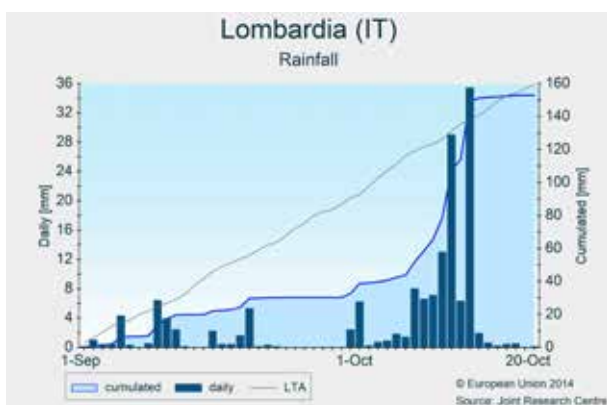
Portugal. In general, yields for summer crops are expected to be around the five-year average, as the irrigation campaign took place with no constraints.

Italy

Late start to the harvest, and high maize yields

After a colder-than-usual summer, temperatures during the period of review were well above average throughout Italy, with maximum daily temperatures locally exceeding 32°C in the south. Drier-than-usual conditions prevailed during September, with the exception of north-eastern and south-eastern regions, where heavy rainfall was recorded during the first dekad of September. October, thus far, was characterised by above-average rainfall in northern and central regions, with heavy rainfall and severe thunderstorms causing flooding and

waterlogging locally. Normal to drier-than-usual conditions prevailed in the south. Maize harvesting was practically completed by the end of September, with a delay of 10-15 days in the north due to the relatively cold and wet August. September provided good conditions for harvesting, and the positive yield outlook is maintained.

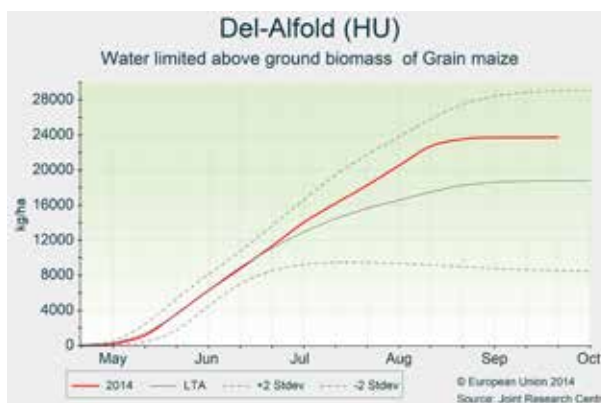
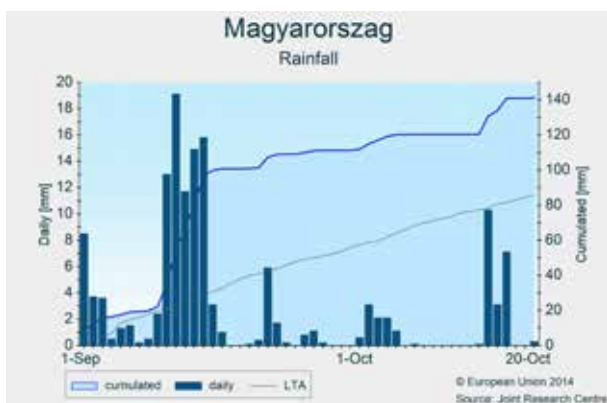


Hungary

High maize yields

Favourable weather conditions during the last dekad of September and the first dekad of October allowed the harvesting of sunflowers, sugar beets and potatoes to be resumed, after it had been disrupted due to abundant rainfall.

The yield forecast for sunflowers is maintained since the probable harvesting losses were already considered in the previous forecast. High yields are forecast for maize, the harvesting of which will last longer than usual, however.

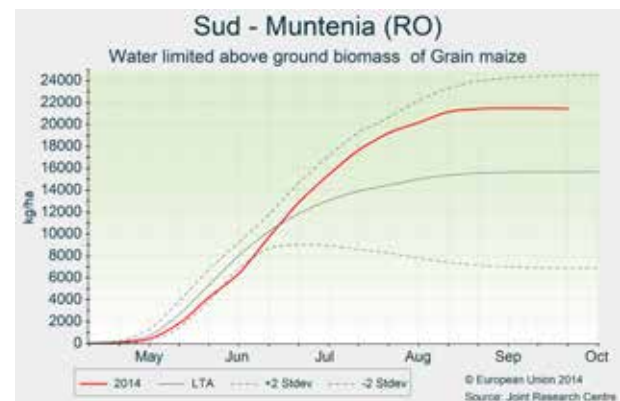


Romania

Near record yields for maize

Dry weather conditions that were favourable for the harvesting of maize prevailed over Romania, but significant rains may have hampered the harvest locally along the western and south-western borders. The sunflower harvest is

close to completion, with no significant harvest losses. Yield expectations are at or near record levels for both maize and sunflower crops.

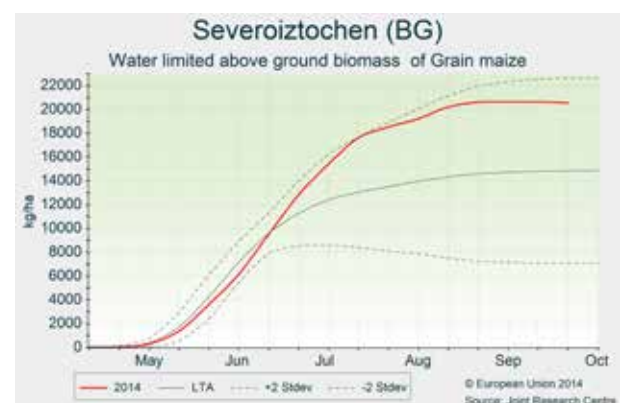
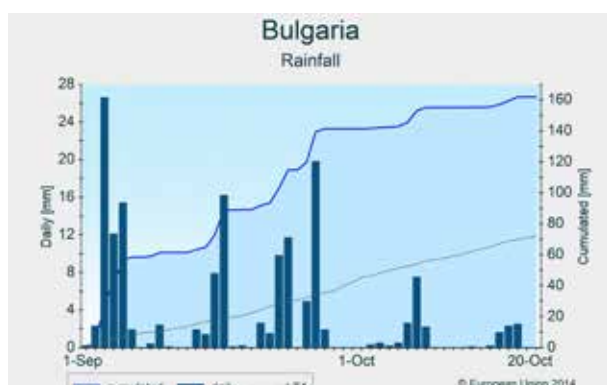


Bulgaria

Harvest problems due to abundant rainfall

Abundant rainfall (150 mm on average) in September caused significant problems for the harvesting of maize and sunflowers, except in the north-eastern part of Bulgaria which remained drier. Rainfall levels fell in the first dekad of October. The moisture content of maize and sunflower grains is high, which implies that the harvest could be delayed and that grains may need to be dried artificially, at additional cost.

Yield expectations are close to record levels for maize and sunflower crops, but there may be harvest losses, primarily in the case of sunflowers.

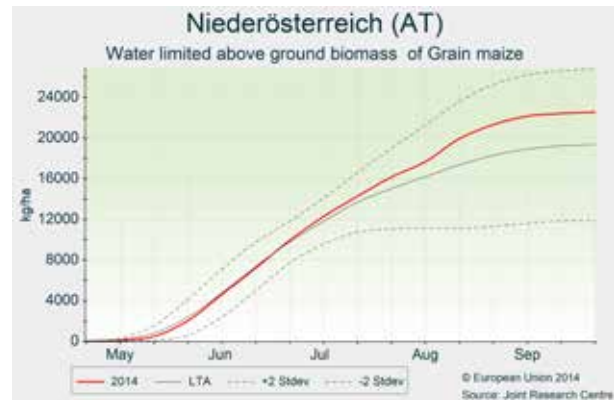
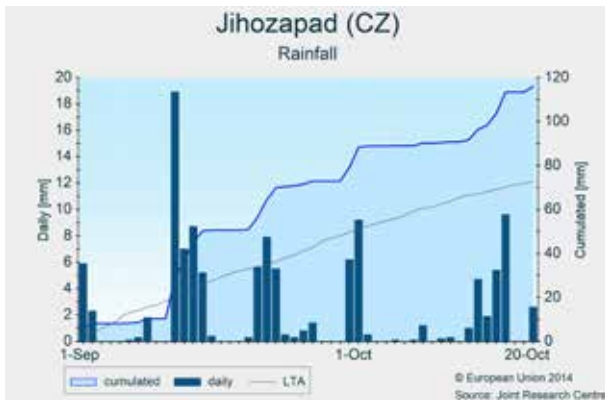


Austria, Slovakia and the Czech Republic

Above-average maize yields

First half of September was characterised by significantly warmer- and wetter-than-usual weather conditions. Wet conditions continued during the second half of September, causing delays to the harvesting of summer crops. The weather stabilised in the first half of October with drier and

warmer-than-usual conditions, allowing farmers to proceed with the harvesting of summer crops. Above-average maize yields are forecast due to the favourable summer weather conditions.

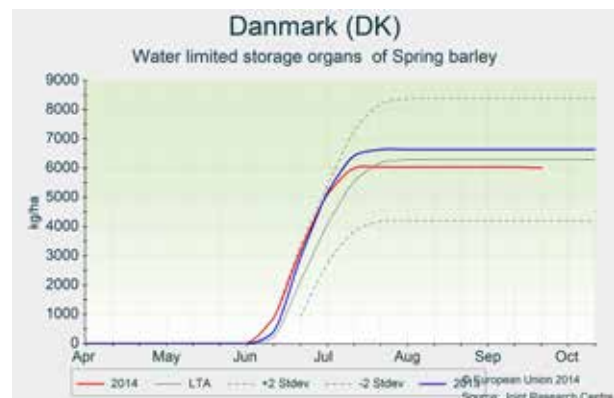
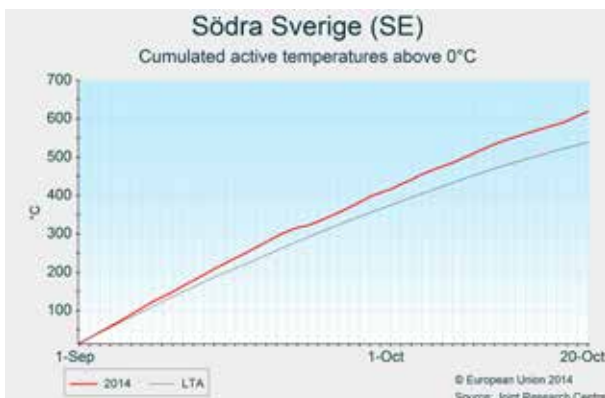


Denmark and Sweden

Good harvest conditions for summer crops

During the period from 1 September to 20 October, warmer-than-usual thermal conditions prevailed, with cumulated active temperatures ($T_{base}=0^{\circ}\text{C}$) and global radiation well above the average in the main agricultural regions. After the abundant precipitation of August, rainfall was around or slightly below average in September, creating good harvest

conditions for summer crops. By contrast, above-average rainfall was observed during the first two dekads of October. The yield forecasts for spring barley and potatoes remain close to the five-year average. Slightly above-average yields are expected for sugar beets.

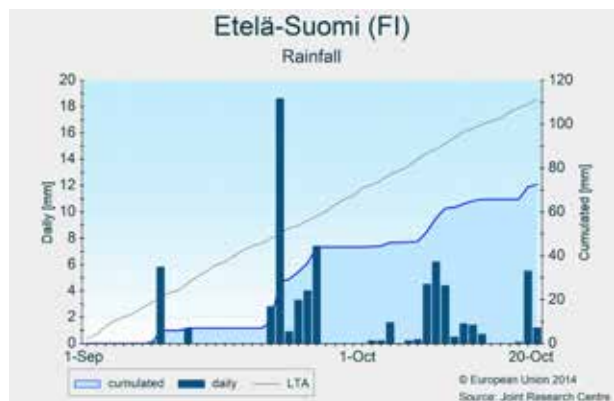
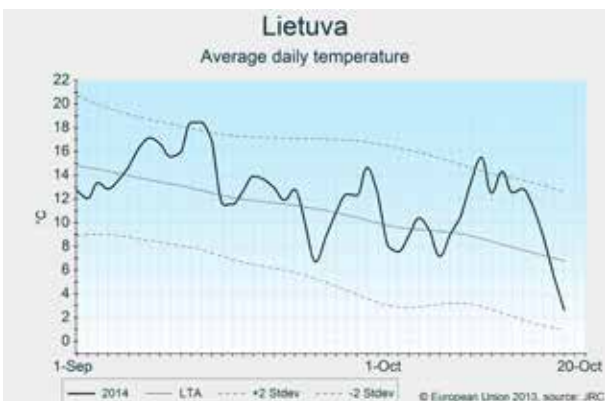


Finland, Lithuania, Latvia and Estonia

Mild autumn period

Temperature conditions were warmer than usual during the

period analysed throughout the region. Rainfall was below



average in Finland, as well as in the Baltic countries, where, however, precipitation increased in October. The yield forecast for maize in Lithuania was revised downwards, due to the dry conditions in September, but remains slightly above average. The yield forecasts for the other countries in the region and

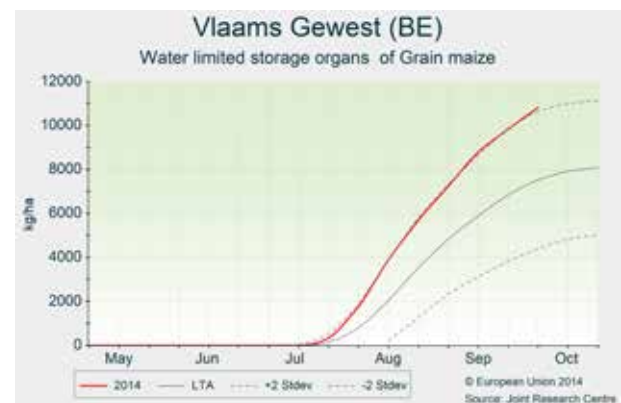
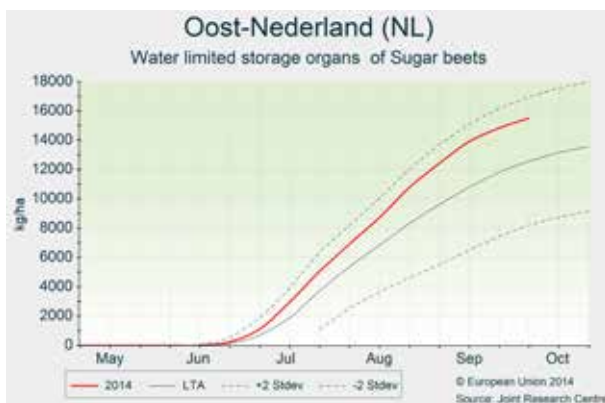
for the other summer crops remain similar to those of the September bulletin.

Belgium, the Netherlands and Luxembourg

Summer crop yields well above five-year average

The period of review was characterised by predominantly above-average temperatures, especially in October. Rainfall in September was well below average, especially in the Netherlands, Luxembourg, and the Région wallonne in Belgium, where the first two dekads of September remained practically dry. Rainfall during the remainder of the period followed a more-or-less normal pattern, with no extreme events. Solar radiation was above average. These conditions, especially those of early September, were favourable for

maize grain filling and ripening, sugar beet growth, and the harvesting of sugar beets and potatoes. The yield forecasts for these crops remain practically unaltered compared to the previous bulletin: above those of last year and above the five-year average.

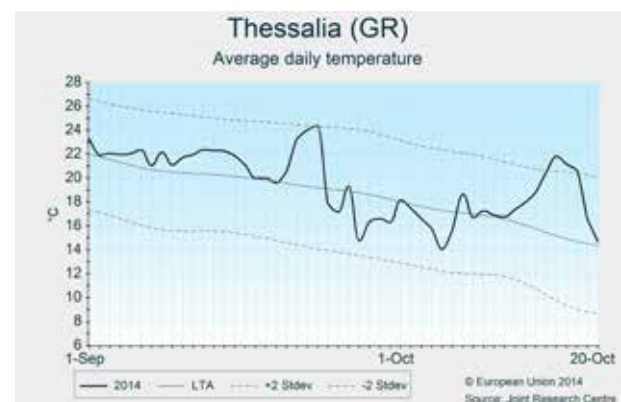
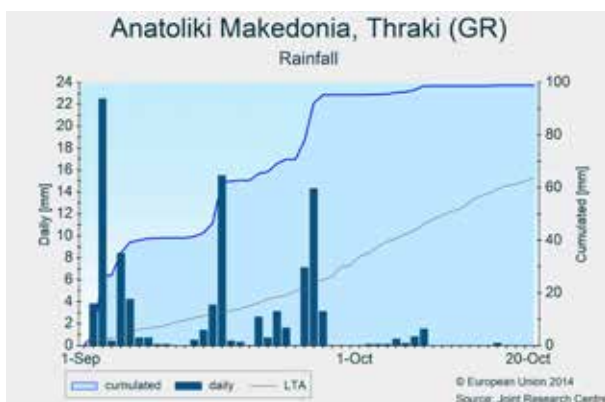


Greece and Cyprus

Rainy September

In Greece, temperatures during September fluctuated around the average, but dropped below the average during the last five days of this month and the first dekad of October. The

second dekad of October was warm again, with temperatures far above the long-term average. September was a rainy month, which delayed the harvesting of grain maize. October,



however, offered a convenient dry period for the completion of the harvest. In Cyprus, temperatures were around average since 1 September and, after a prolonged drought, significant rainy days occurred in the country and drove the cumulated

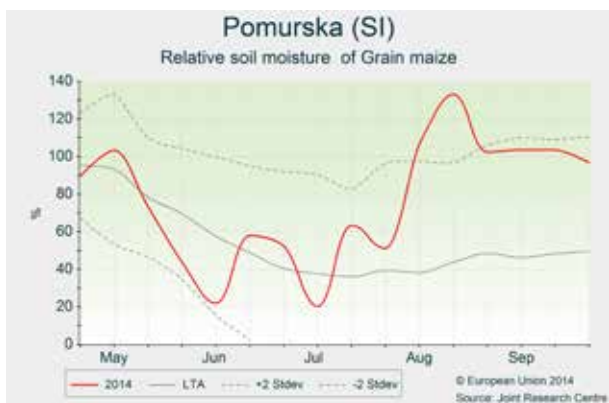
values above the long-term average for the period under review.

Slovenia and Croatia

High grain maize yields

September started with wet conditions, locally leading to excessive soil moisture conditions. The second half of September and first two dekads of October were characterised by drier and significantly warmer-than-usual conditions,

allowing for the harvesting of summer crops. High grain maize yields are forecast due to favourable weather conditions during the flowering and grain-filling periods.



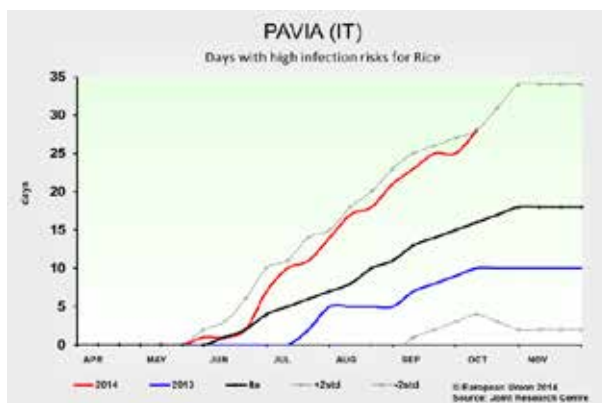
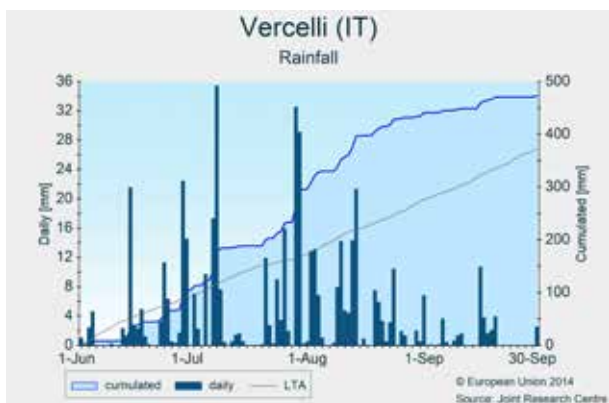
3.2 European Union - rice producers

Italy

Below-average yields expected due to high infection risks

Predominantly wet and cold summer conditions in Piemonte and Lombardia increased the number of days with a high risk of blast infections. Colder-than-usual thermal conditions, in the range of 0.5 to 2°C below average, prevailed in July and August in the most important rice-production areas, with minimum daily temperatures locally as much as 4 to 6°C below average (Novara and Vercelli). Consequently, a significant

delay in phenological stages (locally more than 10 days) and slowly progressing ripening stages were observed. According to our model, these conditions could affect final yields, even if accumulated biomass values are around average. The yield forecast was revised downwards, and it is now below the latest five-year average value.

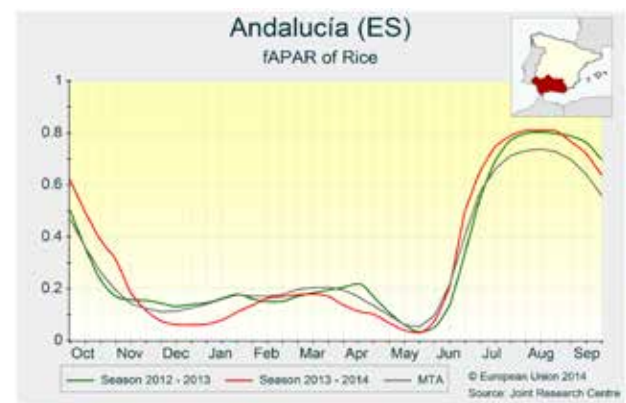
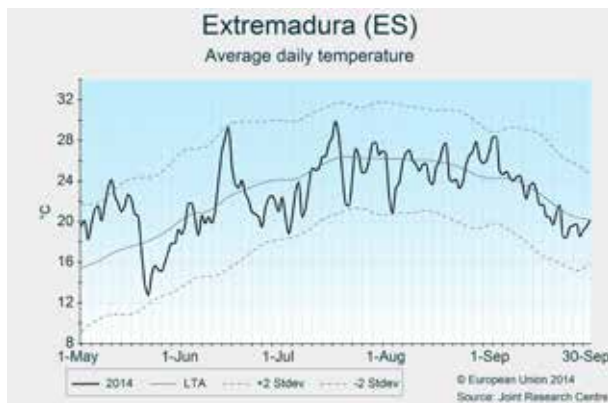


Spain

High yields expected

Favourable weather conditions occurred since the start of the growing season (in May) and continued during the period 1 July – 30 September in the main rice producing areas of Spain (i.e., *Cataluña*, *Valenciana*, *Andalucía* and *Extremadura*). Potential crop growth indicators such as total biomass accumulation, storage organ biomass and leaf area index are well above the long-term average. Precipitation was close to average throughout the growing season, ensuring

the availability of irrigation. Higher cumulated rainfall was reported in *Extremadura* and *Cataluña*, locally increasing the risk of blast infection. Nevertheless, crop development continued to be advanced throughout the season, and fAPAR (a satellite-based indicator of green canopy) values reached those of last year, which were above the norm. Therefore, the forecast was revised slightly upwards, staying above the five-year average and similar to that of last year.

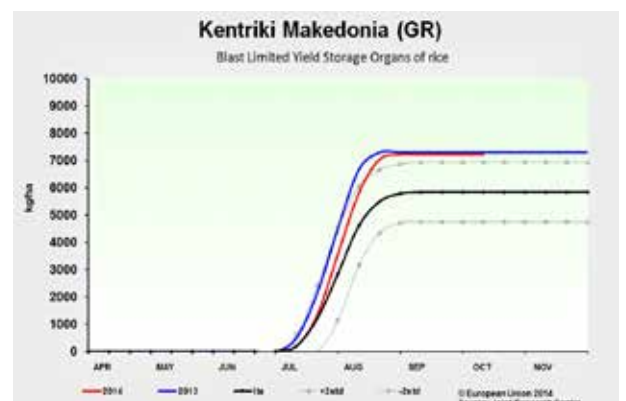
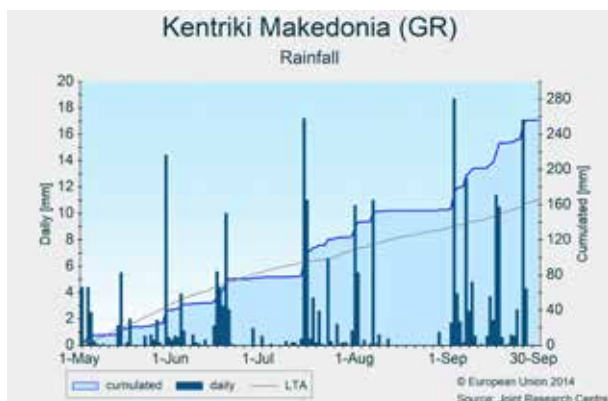


Greece

Positive yield outlook

Favourable temperatures and abundant rainfall provided good conditions for crop growth and development since the start of the growing season. Potential crop growth indicators such as total biomass accumulation, storage organ biomass and leaf area index are well above the long-term average. A very low risk of blast infection is estimated in northern

districts from our model calculations, while a higher number of days with infection risk is predicted in the coastal area, because of the warm and humid weather conditions. Remote sensing analyses also confirmed higher-than-usual biomass accumulation, so the yield forecast is set above the five-year average.



Portugal

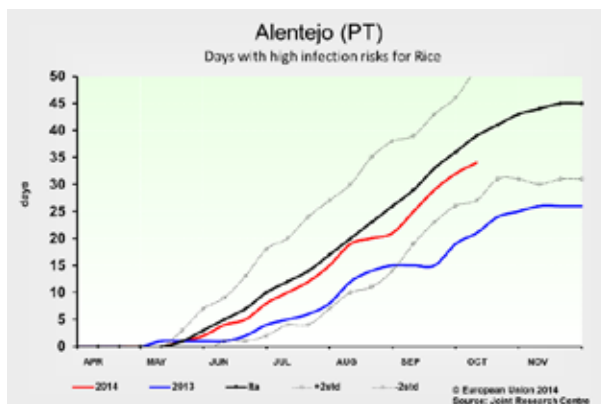
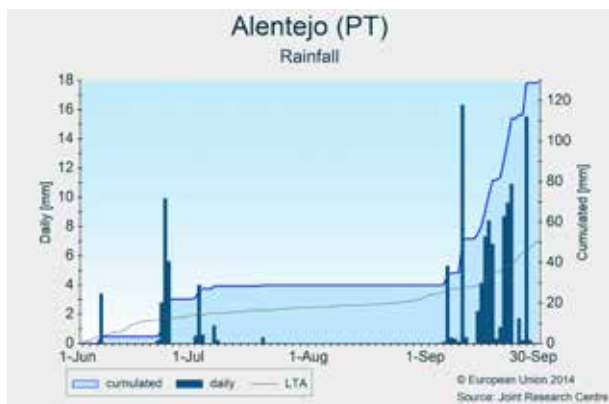
Wet conditions during September increased the risk of disease

The summer months were characterised by dry conditions and low average daily temperatures, thus leading to a de-

lay in development until the end of September. Significant rainfall recorded since the beginning of September increased

the number of days with a high risk of blast infections. The simulated growth indicators are close to or slightly below the

average. The yield forecast was revised slightly downwards, but remains close to the five-year average.

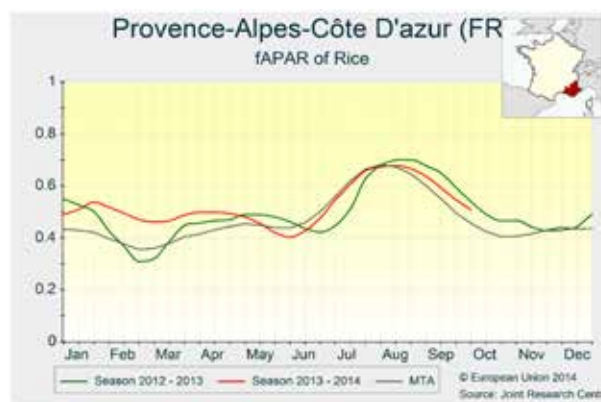
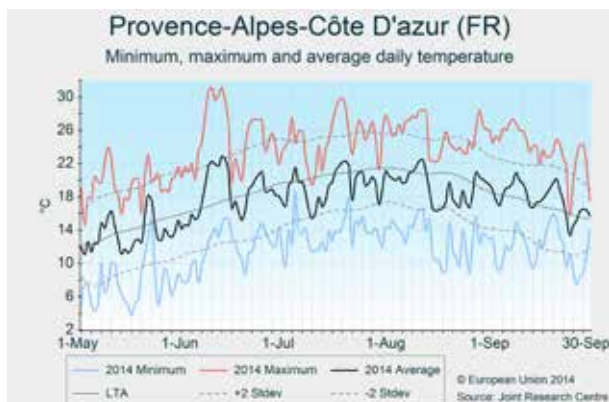


France

Above-average yield forecast

Meteorological conditions were good in the main rice-producing areas of France (*Languedoc-Roussillon* and *Provence-Alpes-Côte d'Azur*). Cumulated active temperatures above 0°C were close to the average, as a consequence of warm conditions at the beginning of the season (from May to end of June) and the low temperatures experienced during summer. In particular, temperatures were greatly below average for ten days in mid-August, and minimum temperatures dropped to 9°C. According to our simulated indicators, these low temperatures did not

have major consequences on spikelet sterility, as they occurred late in the season. As precipitation was close to average and well distributed during the season, crop indicators such as total biomass accumulation and storage organ biomass were above average, and the risk of fungal infection is near normal. The yield forecast remains high, well above last year's, which was the lowest yield recorded since 1984.

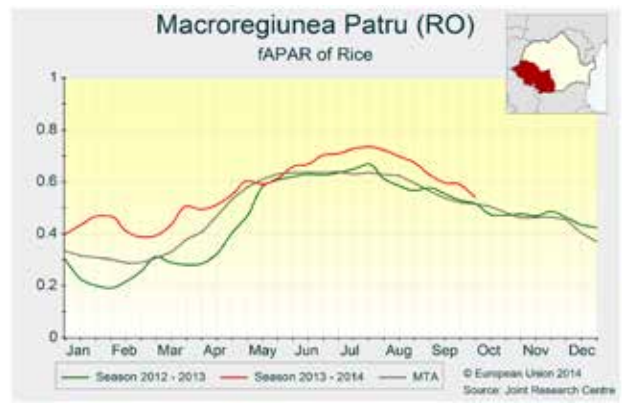
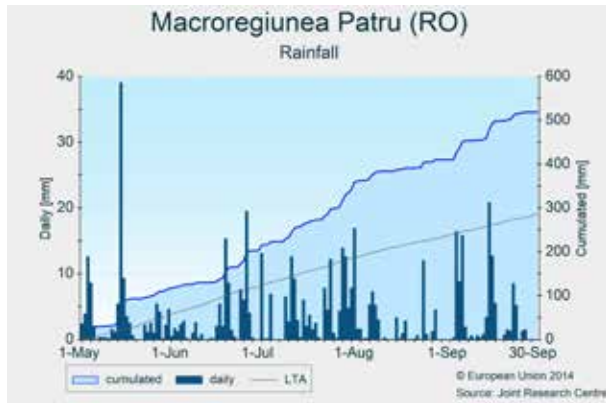


Romania

Yield outlook close to average due to risk of fungal infection

Abundant rainfall and favourable temperatures provided good conditions for rice growth and development since the start of the growing season. Very high potential biomass and storage organ accumulations were estimated according to our model calculations. fAPAR values also confirm good conditions for rice during the current season, resulting in high total biomass

accumulation. However, likely incidences of blast may reduce the potential yield, due to humid conditions persisting in the *Microregiunea Patru*. By contrast, near- or lower-than-normal risks of fungal infection were simulated in *Sud - Muntenia*. Hence, the yield forecast was revised upwards, and is now close to the average and higher than that of last year.

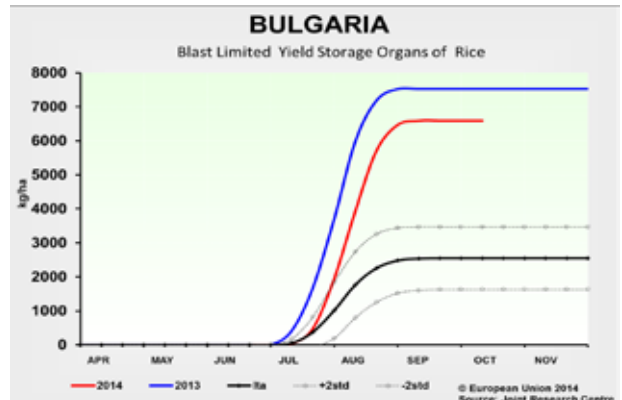


Bulgaria

Yield expectations near average

Favourable temperatures and abundant rainfall during the growing season ensured optimal conditions for crop growth and development, resulting in *good canopy development*. Nevertheless, abundant rainfall recorded during the first half

of September increased the risks of blast infections and could affect the final yields. According to our model results, yield expectations remain close to the five-year average but are lower than those of last year.

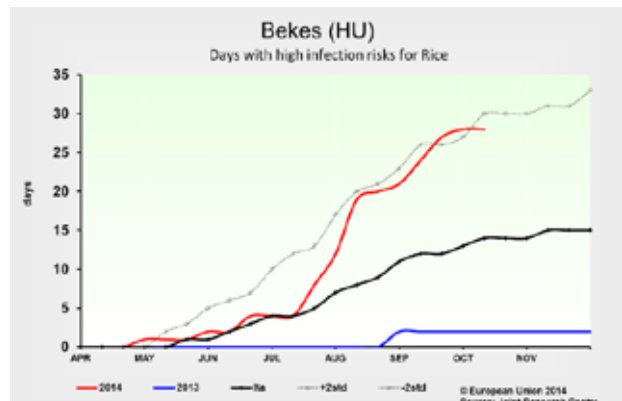
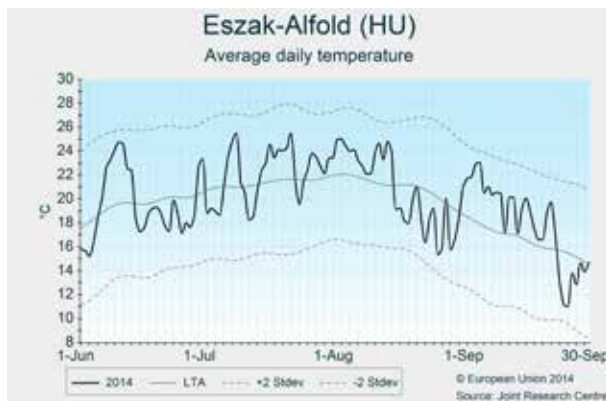


Hungary

Yield forecast revised downwards

Wet conditions recorded since the second half of July and low average temperatures during the second half of August have significantly increased the number of days with a high risk of blast infections. Despite good biomass accumulation,

blast infection could affect the final yields. Therefore, in accordance with our model results, the yield forecast was revised downwards.



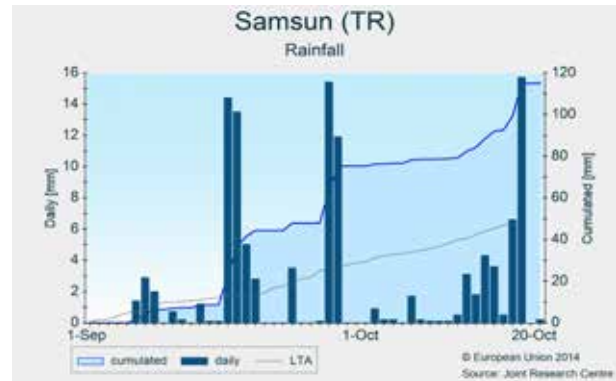
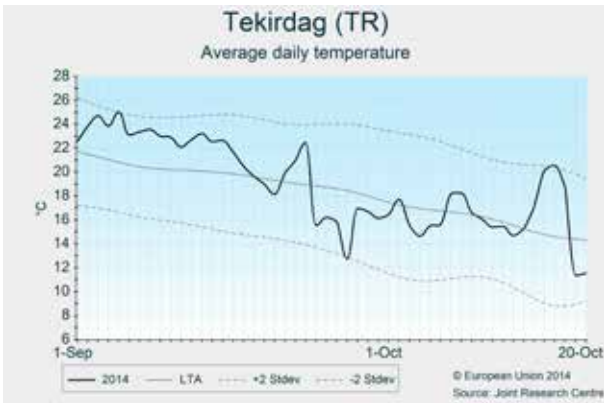
3.3 Black Sea Area

Turkey

Rainfall during September

After a long warm period, temperatures in September gradually returned to close to average values, and even fell below the average during the first dekad of October. Frequent and abundant rainfall events occurred throughout the country in September, especially in the second half of the month.

The harvesting of grain maize began early in September in southern areas and somewhat later in the north, but was interrupted due to the aforementioned rainfall, and resumed in October. Yield expectations are above the five-year average.

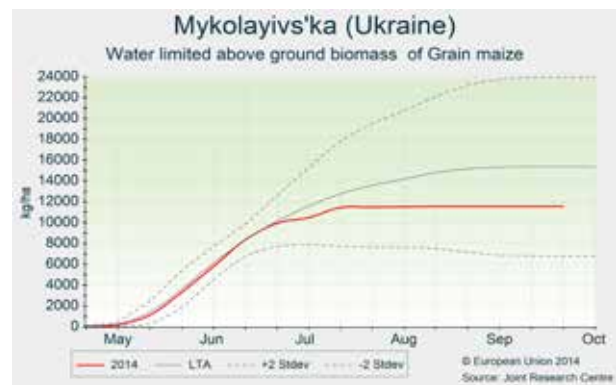


Ukraine

Mediocre maize yields

Most of the review period was dry, but marked by heavy thundershowers by the end of September. As a result, below-average cumulated rainfall values were recorded in the western regions, and near-average values in the eastern

regions. Temperatures were slightly above the average. The grain maize yield is forecast to be below the long-term trend (albeit close to the five-year average), due to the dry and warm weather observed this summer.



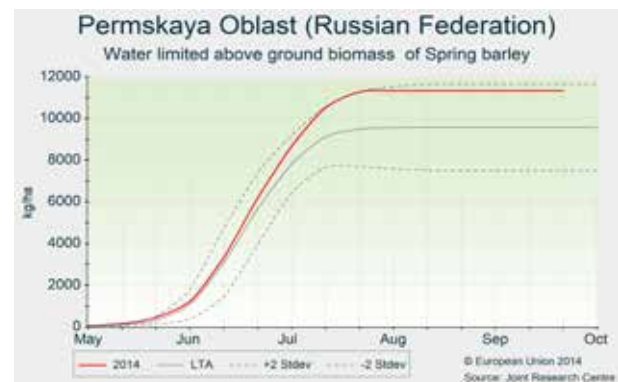
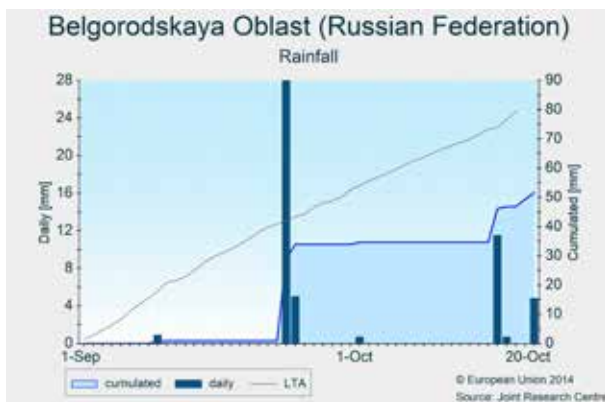
3.4 Russia and Belarus

Russia

Near-record yields for spring wheat and spring barley

Mostly below-average precipitation characterised European Russia. The harvest of spring cereals proceeded with no serious weather constraints. Near-record yields are expected for spring wheat and spring barley. Maize crops enjoyed good water supply until mid-July, but dry conditions later on had

moderate negative effects on yield formation. Therefore, the yield expectations are above the average but below last year's results. The harvest of maize is ongoing, and thus far has proceeded under favourable conditions.

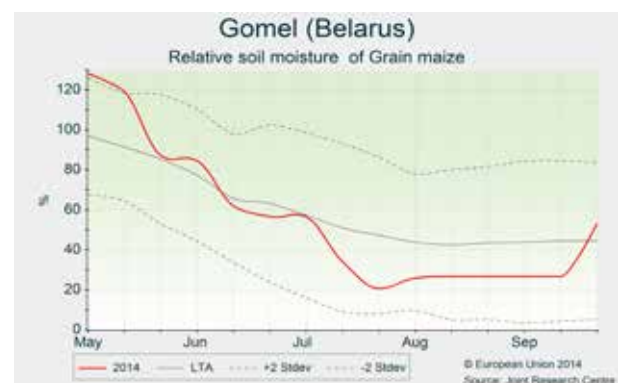
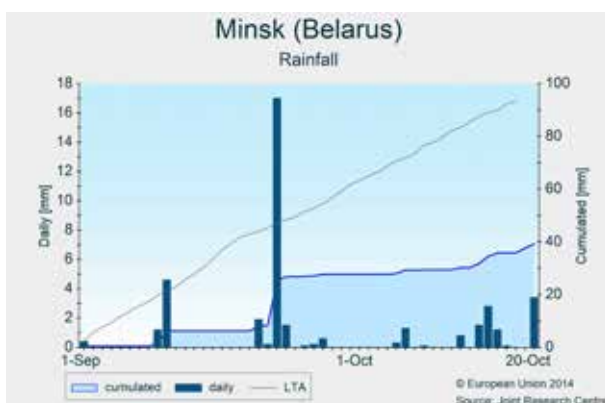


Belarus

Good harvest conditions for maize

Temperatures were warmer than usual during the review period (1 September – 20 October), and precipitation was low throughout the country: about 60 mm below the average for this period in Minsk, Gomel and Mogilev. These conditions were

favourable for the harvesting of grain maize, which started by the end of September. Grain maize yields are forecast to be close to the average, since some water stress occurred locally in southern districts.



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	5.59	5.64	5.34	+0.9	+5.7	4.86	4.59	4.49	-5.6	+2.2
AT	5.37	5.45	5.06	+1.5	+7.8	5.15	5.10	4.83	-0.9	+5.7
BE	9.13	8.66	8.78	-5.2	-1.4	8.54	8.41	8.51	-1.5	-1.1
BG	4.19	4.19	3.72	-0.1	+12.5	3.72	4.09	3.59	+9.8	+14.0
CY	-	-	-	-	-	1.58	0.98	1.87	-37.9	-47.5
CZ	5.67	5.33	5.23	-5.9	+2.1	4.57	4.51	4.35	-1.3	+3.5
DE	8.00	8.16	7.48	+1.9	+9.0	6.59	6.77	6.23	+2.8	+8.8
DK	7.28	7.69	7.14	+5.6	+7.7	5.77	5.58	5.54	-3.4	+0.7
EE	3.26	3.50	3.14	+7.4	+11.3	3.30	3.27	2.81	-1.1	+16.2
ES	3.58	2.93	3.05	-18.2	-3.9	3.63	2.55	2.81	-29.7	-9.1
FI	3.84	3.72	3.71	-3.1	+0.5	3.91	3.52	3.52	-9.9	+0.0
FR	7.26	7.26	7.02	-0.1	+3.4	6.30	6.48	6.42	+2.7	+0.8
GR	3.43	3.46	2.88	+1.1	+20.4	3.53	3.59	2.95	+1.7	+21.8
HR	4.89	4.20	4.97	-14.0	-15.6	3.78	4.18	4.09	+10.7	+2.2
HU	4.62	4.53	4.03	-2.0	+12.5	4.07	4.15	3.62	+2.0	+14.7
IE	8.97	9.02	8.53	+0.5	+5.7	7.49	7.60	7.05	+1.4	+7.8
IT	3.71	3.63	3.79	-2.1	-4.0	3.62	3.55	3.61	-2.2	-1.7
LT	4.30	4.36	4.03	+1.4	+8.2	3.28	3.37	3.06	+2.6	+9.9
LU	6.37	5.63	6.07	-11.6	-7.1	-	-	-	-	-
LV	3.89	3.68	3.68	-5.2	+0.2	2.73	2.78	2.65	+2.0	+5.1
MT	-	-	-	-	-	-	-	-	-	-
NL	8.72	8.70	8.74	-0.2	-0.5	6.81	6.84	6.38	+0.4	+7.2
PL	4.44	4.42	4.15	-0.4	+6.5	3.58	3.54	3.41	-1.2	+3.8
PT	1.62	1.77	1.41	+9.2	+25.6	1.69	1.75	1.54	+3.5	+13.7
RO	3.48	3.50	2.97	+0.8	+18.0	3.24	3.20	2.73	-1.4	+17.2
SE	5.79	6.27	5.77	+8.3	+8.6	5.01	4.51	4.55	-9.9	-0.7
SI	4.38	4.40	4.72	+0.3	-6.9	4.00	4.03	4.20	+0.8	-3.9
SK	4.58	3.80	4.00	-17.1	-5.1	3.68	3.80	3.38	+3.2	+12.2
UK	7.38	8.24	7.49	+11.6	+10.0	5.85	5.82	5.74	-0.4	+1.5

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	5.87	5.57	+1.0	+5.4	3.35	3.17	3.22	-5.2	-1.5
AT	5.39	5.50	5.10	+2.1	+7.9	5.09	4.42	4.33	-13.1	+2.2
BE	9.13	8.66	8.78	-5.2	-1.4	-	-	-	-	-
BG	4.20	4.19	3.73	-0.2	+12.3	3.17	3.77	3.22	+19.0	+17.1
CY	-	-	-	-	-	-	-	-	-	-
CZ	5.67	5.33	5.23	-5.9	+2.1	-	-	-	-	-
DE	8.00	8.16	7.48	+1.9	+9.0	-	-	-	-	-
DK	7.28	7.69	7.14	+5.6	+7.7	-	-	-	-	-
EE	3.26	3.50	3.14	+7.4	+11.3	-	-	-	-	-
ES	3.76	3.03	3.29	-19.4	-7.7	2.64	2.35	2.13	-11.2	+10.0
FI	3.84	3.72	3.71	-3.1	+0.5	-	-	-	-	-
FR	7.40	7.39	7.19	-0.1	+2.8	5.27	5.01	5.12	-5.0	-2.2
GR	3.44	3.50	3.10	+1.7	+13.0	3.42	3.45	2.80	+0.8	+23.2
HR	4.89	4.20	4.97	-14.0	-15.6	-	-	-	-	-
HU	4.63	4.54	4.03	-1.9	+12.5	4.43	4.08	3.84	-8.0	+6.3
IE	8.97	9.02	8.53	+0.5	+5.7	-	-	-	-	-
IT	5.22	5.22	5.34	-0.1	-2.2	2.97	2.86	3.08	-3.9	-7.2
LT	4.30	4.36	4.03	+1.4	+8.2	-	-	-	-	-
LU	6.37	5.63	6.07	-11.6	-7.1	-	-	-	-	-
LV	3.89	3.68	3.68	-5.2	+0.2	-	-	-	-	-
MT	-	-	-	-	-	-	-	-	-	-
NL	8.72	8.70	8.74	-0.2	-0.5	-	-	-	-	-
PL	4.44	4.42	4.15	-0.4	+6.5	-	-	-	-	-
PT	1.62	1.77	1.41	+9.2	+25.6	-	-	-	-	-
RO	3.48	3.50	2.97	+0.8	+18.0	-	-	-	-	-
SE	5.79	6.27	5.77	+8.3	+8.6	-	-	-	-	-
SI	4.38	4.40	4.72	+0.3	-6.9	-	-	-	-	-
SK	4.58	3.79	4.00	-17.3	-5.4	4.68	4.16	3.95	-11.0	+5.4
UK	7.38	8.24	7.49	+11.6	+10.0	-	-	-	-	-

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	4.30	4.27	4.08	-0.8	+4.6	3.11	3.32	3.07	+6.8	+8.2
AT	4.98	5.05	4.97	+1.4	+1.6	3.39	2.72	3.12	-19.8	-12.8
BE	-	-	-	-	-	4.26	4.31	4.22	+1.3	+2.1
BG	2.82	3.31	2.76	+17.0	+19.7	2.54	2.61	2.37	+2.8	+10.4
CY	-	-	-	-	-	-	-	-	-	-
CZ	4.58	4.51	4.33	-1.4	+4.3	3.45	2.95	3.03	-14.4	-2.8
DE	6.57	6.46	5.94	-1.8	+8.7	3.95	4.20	3.77	+6.3	+11.4
DK	5.71	5.45	5.14	-4.7	+5.9	3.87	3.88	3.68	+0.1	+5.3
EE	-	-	-	-	-	2.02	2.01	1.71	-0.3	+17.7
ES	2.79	2.30	2.26	-17.7	+2.0	2.56	1.87	2.04	-27.0	-8.3
FI	-	-	-	-	-	1.52	1.37	1.43	-9.8	-3.9
FR	5.31	5.37	5.39	+1.1	-0.2	3.04	3.45	3.39	+13.4	+1.6
GR	-	-	-	-	-	-	-	-	-	-
HR	3.40	3.00	3.65	-11.6	-17.8	2.66	2.70	2.62	+1.4	+3.0
HU	3.87	3.68	3.27	-4.9	+12.5	2.60	2.67	2.31	+2.3	+15.2
IE	-	-	-	-	-	3.53	3.55	3.48	+0.6	+1.8
IT	-	-	-	-	-	2.17	2.27	2.27	+4.3	-0.1
LT	3.13	3.31	3.00	+5.4	+10.1	2.13	2.15	2.06	+1.0	+4.4
LU	-	-	-	-	-	-	-	-	-	-
LV	-	-	-	-	-	2.36	2.11	2.18	-10.5	-3.2
MT	-	-	-	-	-	-	-	-	-	-
NL	-	-	-	-	-	-	-	-	-	-
PL	3.63	3.64	3.44	+0.1	+5.9	2.80	3.06	2.69	+9.3	+13.5
PT	1.54	1.45	1.21	-6.2	+19.3	-	-	-	-	-
RO	3.66	3.61	3.18	-1.3	+13.7	2.42	2.47	1.86	+2.1	+32.7
SE	4.88	5.69	4.82	+16.6	+18.1	2.64	2.93	2.76	+10.7	+6.2
SI	-	-	-	-	-	-	-	-	-	-
SK	3.35	2.92	3.10	-12.8	-5.9	2.74	2.24	2.28	-18.2	-1.8
UK	3.75	4.14	3.90	+10.4	+6.1	2.98	3.81	3.43	+28.1	+11.4

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	67.96	73.16	69.36	+7.7	+5.5	30.96	33.75	30.62	+9.0	+10.2
AT	68.16	72.37	69.07	+6.2	+4.8	28.59	34.45	31.65	+20.5	+8.8
BE	74.07	77.29	76.32	+4.3	+1.3	46.15	47.29	44.97	+2.5	+5.2
BG	-	-	-	-	-	15.69	18.84	14.86	+20.1	+26.8
CY	-	-	-	-	-	-	-	-	-	-
CZ	60.00	63.00	59.66	+5.0	+5.6	23.12	27.13	26.68	+17.4	+1.7
DE	63.88	74.80	68.06	+17.1	+9.9	39.83	45.26	42.95	+13.6	+5.4
DK	60.52	61.67	60.76	+1.9	+1.5	40.00	39.13	39.59	-2.2	-1.2
EE	-	-	-	-	-	-	-	-	-	-
ES	89.85	89.44	83.95	-0.5	+6.5	30.49	30.16	30.18	-1.1	-0.1
FI	38.78	38.04	36.19	-1.9	+5.1	27.56	27.41	26.03	-0.6	+5.3
FR	85.40	90.51	88.10	+6.0	+2.7	43.39	46.97	43.16	+8.3	+8.8
GR	-	-	-	-	-	25.36	24.63	25.72	-2.9	-4.2
HR	52.00	57.85	48.91	+11.3	+18.3	17.00	17.21	17.26	+1.2	-0.3
HU	49.98	63.63	51.01	+27.3	+24.7	21.83	27.86	23.65	+27.6	+17.8
IE	-	-	-	-	-	34.00	34.25	31.43	+0.7	+9.0
IT	53.04	57.04	56.22	+7.5	+1.5	25.61	24.87	24.82	-2.9	+0.2
LT	51.00	52.08	48.70	+2.1	+7.0	18.00	15.48	15.80	-14.0	-2.1
LU	-	-	-	-	-	-	-	-	-	-
LV	-	-	-	-	-	19.00	17.34	17.40	-8.7	-0.4
MT	-	-	-	-	-	-	-	-	-	-
NL	76.00	82.71	77.43	+8.8	+6.8	41.50	45.69	44.13	+10.1	+3.5
PL	52.90	52.79	52.08	-0.2	+1.4	21.40	22.28	20.55	+4.1	+8.4
PT	-	-	-	-	-	18.22	17.71	16.44	-2.8	+7.7
RO	32.28	37.07	33.60	+14.8	+10.3	15.03	16.59	14.47	+10.4	+14.6
SE	64.20	61.14	59.07	-4.8	+3.5	33.79	33.18	31.94	-1.8	+3.9
SI	-	-	-	-	-	-	-	-	-	-
SK	49.77	63.10	53.09	+26.8	+18.9	-	-	-	-	-
UK	68.40	72.23	68.03	+5.6	+6.2	40.10	43.52	41.07	+8.5	+6.0

Country	SUNFLOWER t/ha				
	2013	2014	Avg 5yrs	%14/13	%14/5yrs
EU28	1,96	2,11	1,85	+7,5	+13,8
AT	2,35	2,78	2,58	+18,0	+7,7
BE	-	-	-	-	-
BG	2,10	2,40	1,97	+14,6	+22,0
CY	-	-	-	-	-
CZ	2,20	2,46	2,38	+11,9	+3,4
DE	2,11	2,26	2,20	+7,3	+2,8
DK	-	-	-	-	-
EE	-	-	-	-	-
ES	1,21	1,03	1,11	-15,1	-7,4
FI	-	-	-	-	-
FR	2,05	2,48	2,32	+21,0	+7,2
GR	2,54	2,37	2,19	-6,7	+8,2
HR	3,24	2,59	2,74	-20,0	-5,2
HU	2,48	2,67	2,25	+8,0	+18,7
IE	-	-	-	-	-
IT	1,75	2,34	2,16	+33,8	+8,2
LT	-	-	-	-	-
LU	-	-	-	-	-
LV	-	-	-	-	-
MT	-	-	-	-	-
NL	-	-	-	-	-
PL	-	-	-	-	-
PT	0,64	0,62	0,56	-2,8	+10,8
RO	2,00	2,06	1,65	+3,0	+25,1
SE	-	-	-	-	-
SI	-	-	-	-	-
SK	2,33	2,40	2,22	+3,0	+7,7
UK	-	-	-	-	-

Notes: Yields are forecast for crops that cover more than 10 000 ha per country
Sources: 2009-2014 data come from DG Agriculture short term Outlook data (dated October 2014, received on 02/10/2014), EUROSTAT Eurobase (last update: 02/10/2014) and EES (last update: 09/09/2014)
2014 yields come from the MARS Crop Yield Forecasting System (CGMS output up to 10/10/2014)

Country	WHEAT (t/ha)				
	2013	2014	Avg 5yrs	%14/13	%14/5yrs
BY	3.33*	3.67	3.31	+10.2	+10.8
DZ	1.72*	1.70	1.62	-1.4	+4.5
MA	2.10*	1.71	1.75	-22.8	-2.3
TN	1.55*	2.09	1.92	+34.7	+8.6
TR	2.78	2.55	2.63	-8.2	-3.0
UA	3.39	3.78	3.08	+11.4	+22.8

Country	BARLEY (t/ha)				
	2013	2014	Avg 5yrs	%14/13	%14/5yrs
BY	3.09	3.29	3.12	+6.4	+5.3
DZ	1.65*	1.42	1.53	-14.1	-7.1
MA	1.24*	1.16	1.27	-6.5	-8.6
TN	0.94*	1.41	1.24	+50.3	+13.5
TR	2.89	2.47	2.58	-14.8	-4.3
UA	2.34	2.56	2.25	+9.5	+13.8

Country	GRAIN MAIZE (t/ha)				
	2013	2014	Avg 5yrs	%14/13	%14/5yrs
BY	6.00*	5.67	5.65	-5.5	+0.4
DZ	-	-	-	-	-
MA	-	-	-	-	-
TN	-	-	-	-	-
TR	8.90	8.27	7.60	-7.1	+8.8
UA	6.40	5.70	5.56	-11.0	+2.6

Notes: Yields are forecast for crops with more than 10 000 ha per country
Sources: 2009-2013 data come from FAO, PSD-online, INRA Maroc, MinAGRI Tunisia and DSASI Algeria
*2013 yields come from MARS Crop Yield Forecasting System as reported values were not available
2014 yields come from MARS Crop Yield Forecasting System (CGMS output up to 10/10/2014; for DZ, MA and TN, CGMS output was used up to 10/06/2014 by which time the season had finished)

5. Pastures in Europe – Regional monitoring

High pasture productivity in most of Europe

Weather conditions were favourable for pasture growth in most of Europe. The warm temperatures registered since the end of winter led to a favourable start to the season, especially in central and northern Europe. Rainfall was

sufficient to maintain high biomass production rates in most of the main production regions. Only in western Spain and north-eastern France did rainfall scarcity during late spring and early summer constrain pasture growth.

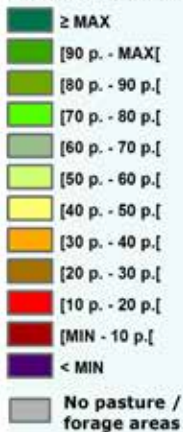
Seasonal cumulated fAPAR

Current season data vs historical data

Current season data: 1 Mar 2014 - 30 Sep 2014

Medium term average data: 1 Mar - 30 Sep (1998 - 2013)

Ranking according to the historical percentiles (p.)



Data source: MARS remote sensing database / METOP - AVHRR
Pasture and forage mask based on Capri database

Average season in the Iberian Peninsula, high yields in Italy

The 2013-2014 growing season in the **Iberian Peninsula** was marked by a humid winter with unusually warm temperatures. This resulted in high biomass production in the grasslands of the Dehesa area from January until the end of April. The end of spring and summer were relatively dry, however, and senescence was accelerated by water constraints experienced from May onwards. The overall results for the season as a whole are close to the average in that region. In northern Spain, by contrast, grasslands were less affected by water constraints during summer, resulting in above-average overall production levels.

In **Italy**, weather conditions were extraordinarily favourable in the main producing regions. In the fodder maize areas of the north (*Lombardia, Veneto, Piemonte*, etc.) the current season was one of the most humid of the past four decades. Therefore, biomass production levels in these regions were substantially above average. In the centre and the south of Italy, grassland productivity was above seasonal values, thanks to mild temperatures and sufficient rainfall.

High biomass production levels in north-western Europe

Abundant precipitation and above-average temperatures characterised the growing season in the **UK** and **Ireland**. Thanks to these favourable weather conditions, the vegetative growth of grasslands was substantially higher than in an average year, especially in Wales, northern England, Scotland and north-western Ireland, and the season can be considered as positive.

Similar conditions were observed in **France**, especially in the centre and the western half of the country (*Limousin, Auvergne, Bretagne, Poitou-Charentes*), and in the Benelux

region. Vegetative growth was favoured by the abundant precipitation registered during most of the growing season, resulting in above-average biomass accumulation of grasslands and fodder maize. In north-eastern France (*Lorraine, Bourgogne*), by contrast, pastures were affected by a dry spell during spring and the beginning of summer, constraining biomass growth in June. Nevertheless, abundant rainfall in July permitted the recovery of biomass by the end of summer. The results for the whole season are around average in these areas.

Favourable season in central Europe

In northern **Germany** and **Denmark**, the results of the 2013-2014 season are satisfactory. The temperatures were unusually warm in the period February-April, resulting in rapid grassland development. Therefore, biomass production was high from the start of the growing season, and remained high during the rest of spring and summer, thanks to sufficient precipitation. While the season in southern Germany can also be considered as positive, a lack of precipitation during late spring constrained biomass production in July and August,

and the yields are not as high as in the north.

The season was also positive in **Slovakia** and the **Czech Republic**, especially thanks to the favourable weather conditions of warm temperatures and sufficient rainfall during the first quarter of the year. The absence of dry spells during summer permitted above-average biomass production levels to be maintained. In Austria, overall grassland productivity for the season is also expected to be above average.

Warm temperatures along the season boosted biomass in north-eastern Europe

Grassland yields are also high in the main pasture regions of eastern **Poland**. The weather throughout the season was favourable for grasslands' growth. Temperatures from February to April were substantially above the average, boosting biomass production unusually early in the season. Precipitation was close to the average during spring and summer, thus permitting high biomass formation levels up to September.

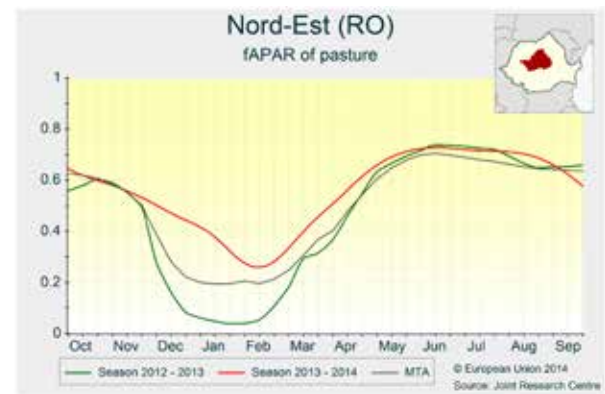
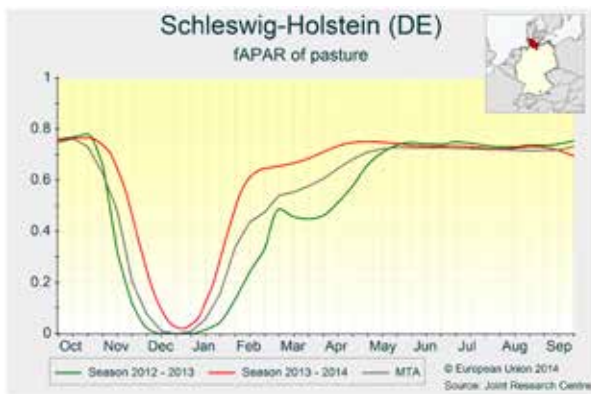
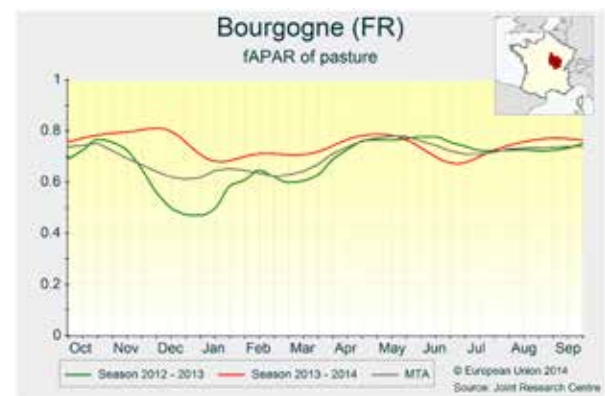
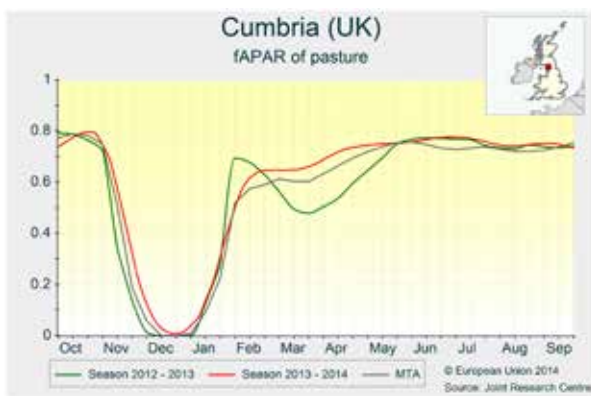
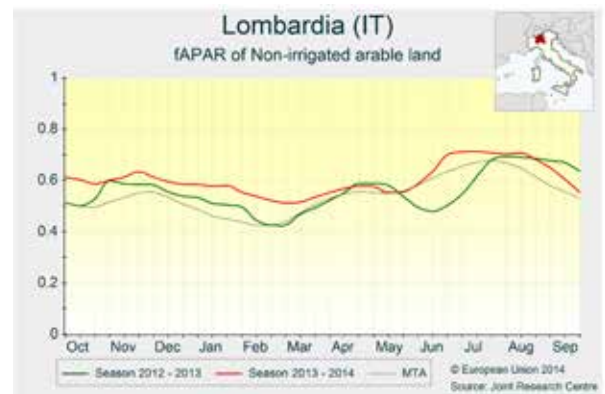
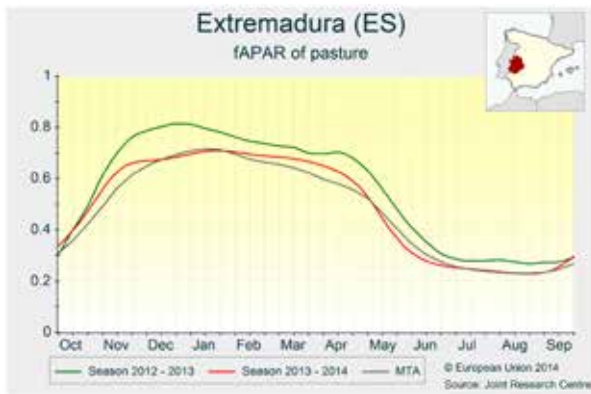
Unusually high temperatures at the end of the winter period

also led to an early start to the growing season in the main grassland areas of **Lithuania, Latvia** and **Estonia**. Biomass formation from February to mid-April was markedly higher than in an average year. Temperatures were also higher than usual during the second half of May and during July and August, which helped to keep biomass growth rates above average during summer, with no water constraints. Similar conditions were observed in **Finland** and **Sweden**.

Satisfactory results in south-eastern Europe

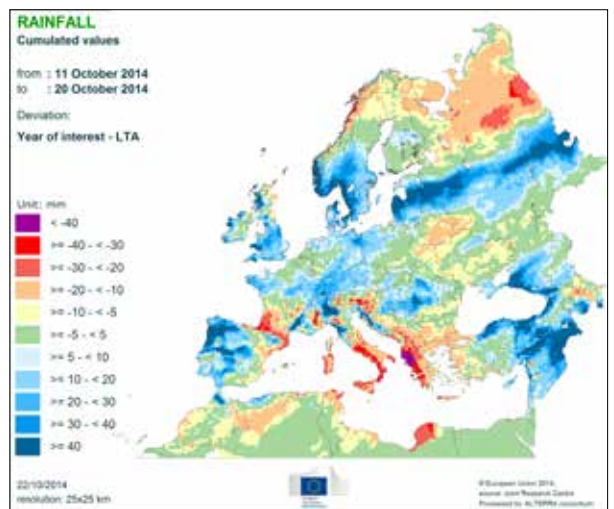
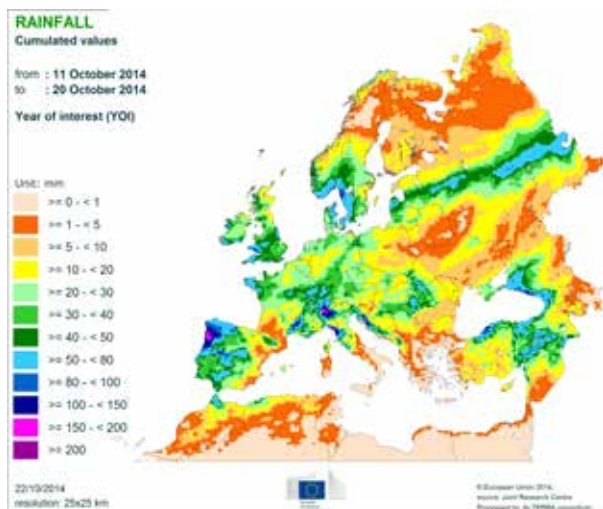
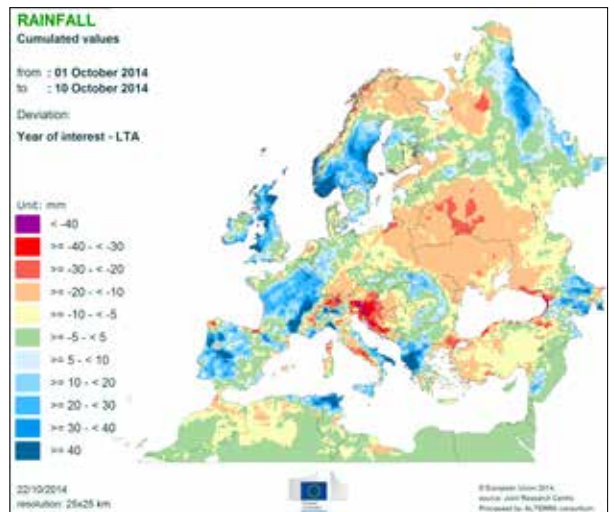
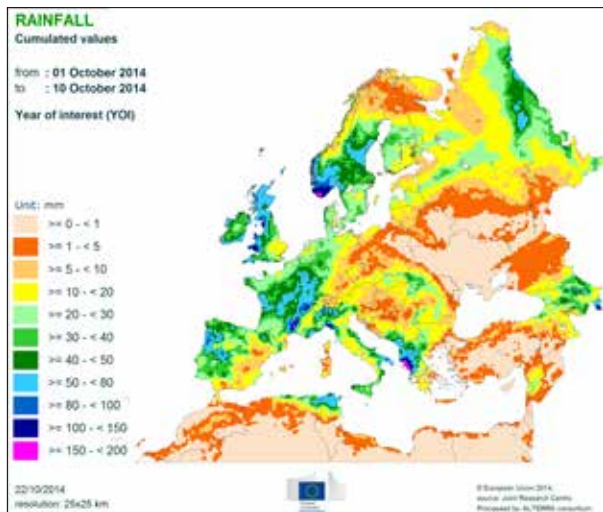
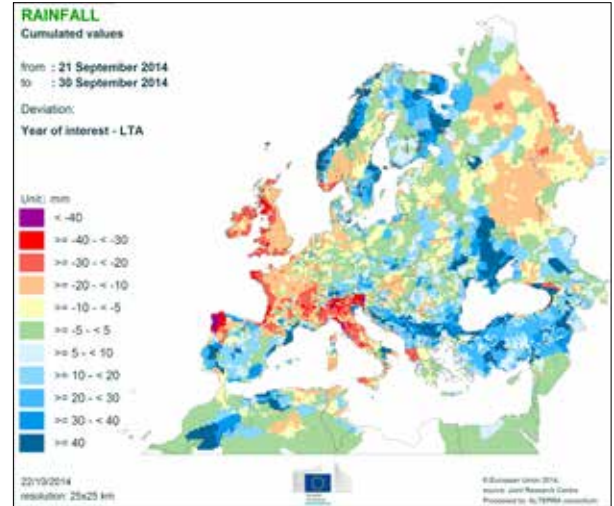
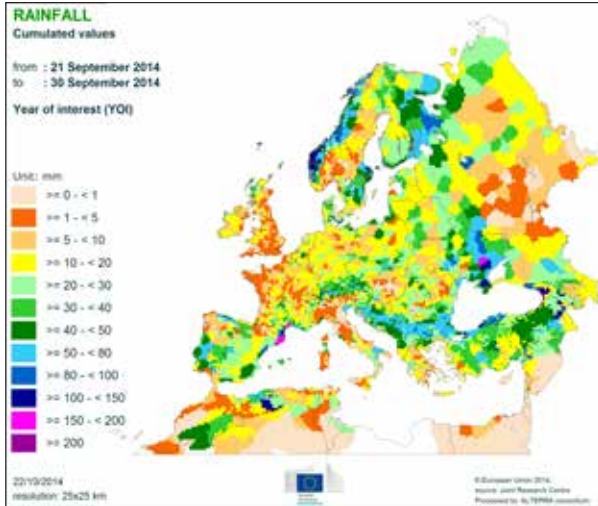
The 2013-2014 growing season was also favourable in the main pasture areas of **Hungary** and **Romania**. With the exception of a cold period at the end of January, winter temperatures were milder than usual, permitting rapid development of grasslands during the first quarter of the year. Weather conditions remained favourable thereafter, with

abundant rainfall during April and May and, especially, from the second half of July, whereas temperatures remained close to seasonal values. As a result, biomass production rates were substantially higher than in an average year, especially in the fodder maize areas of the Danube basin.

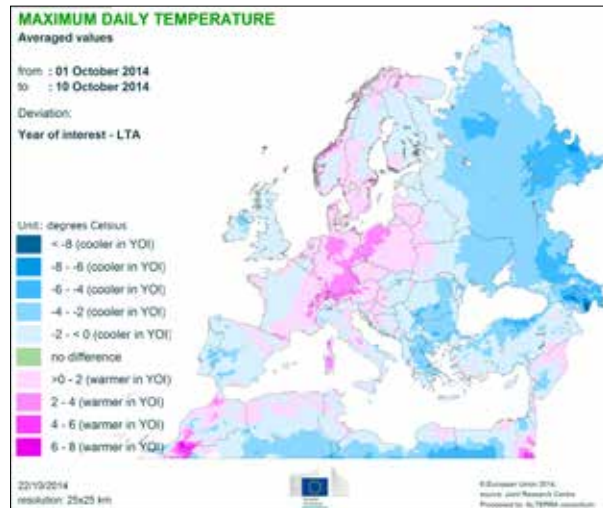
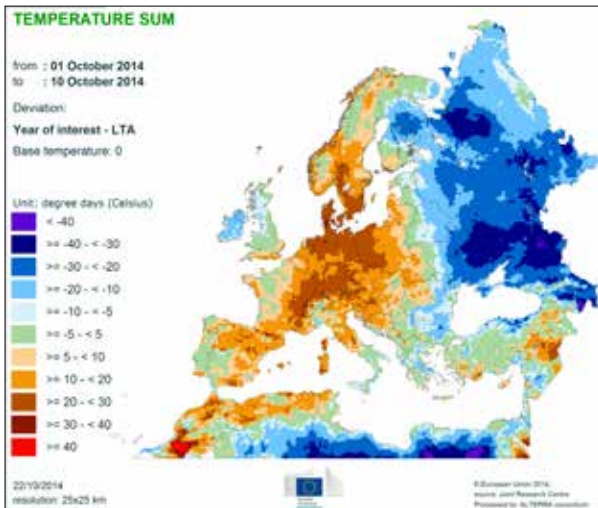
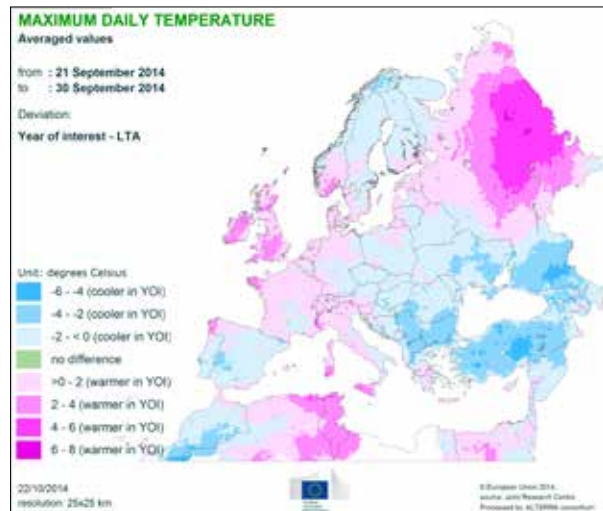
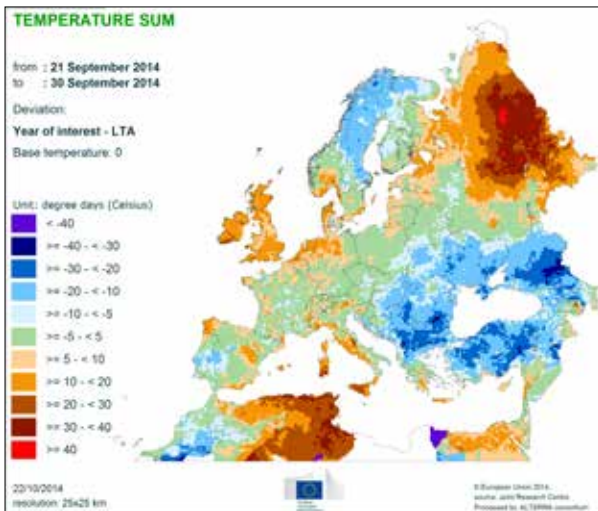
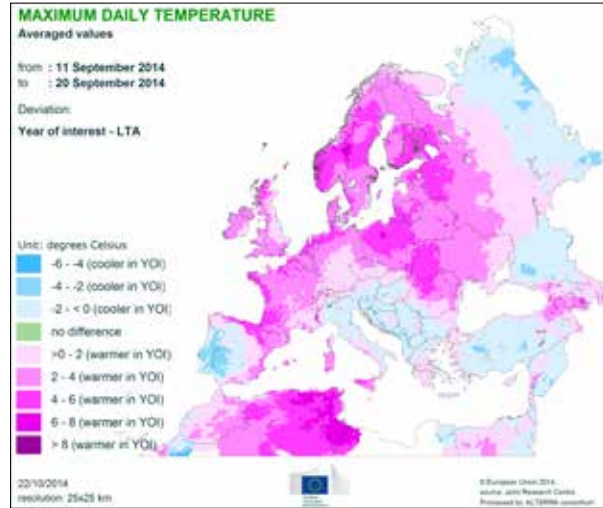
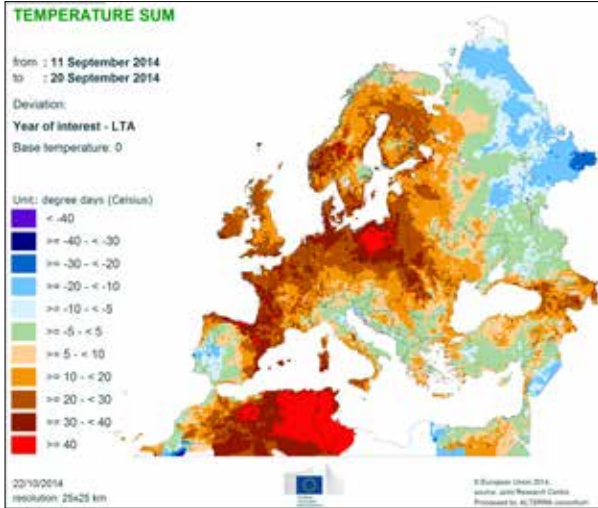


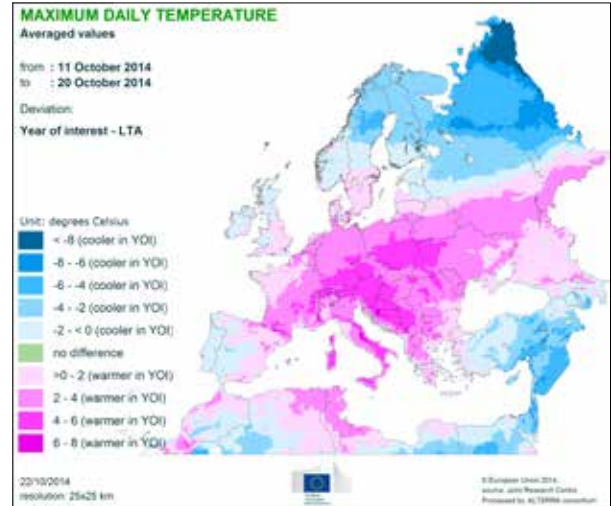
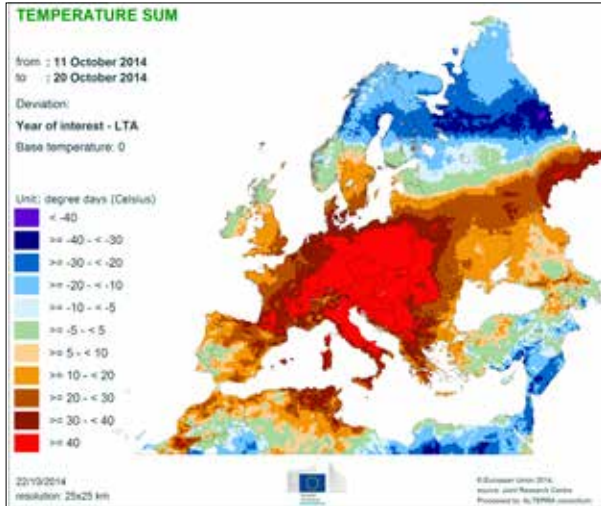
6. Atlas maps

Precipitation

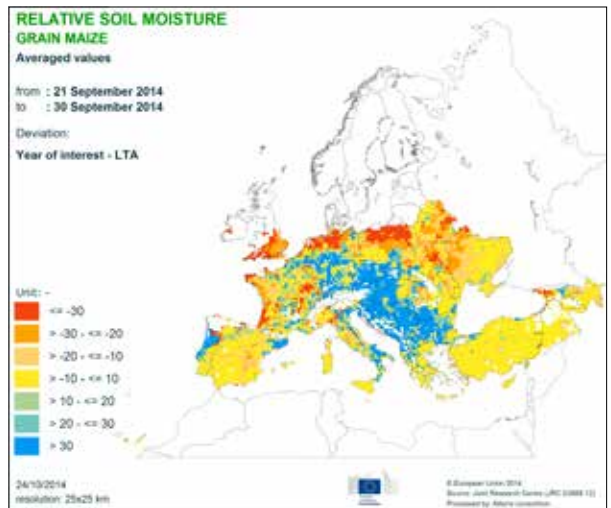
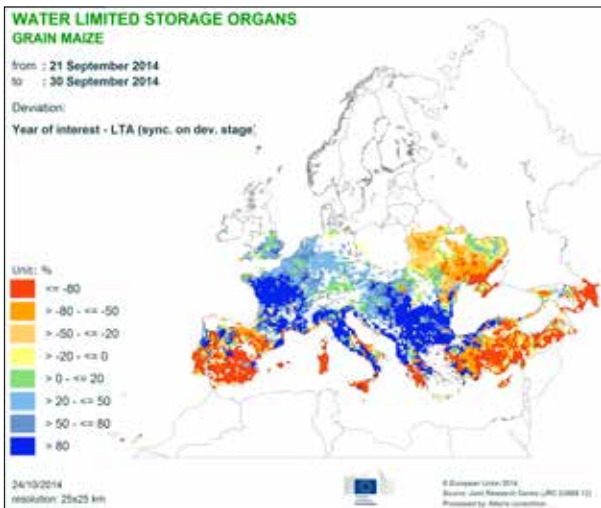
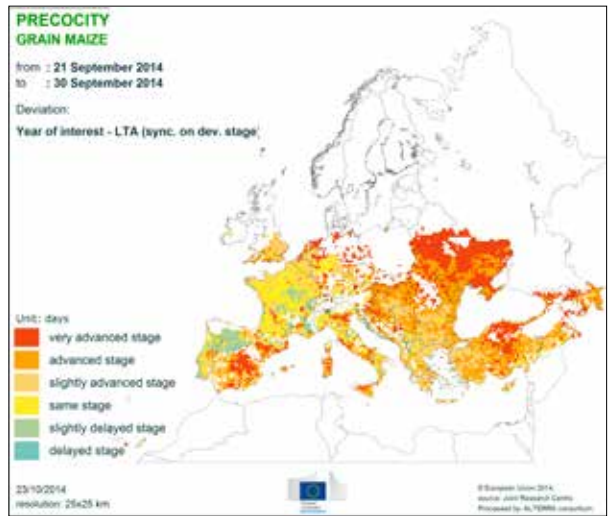
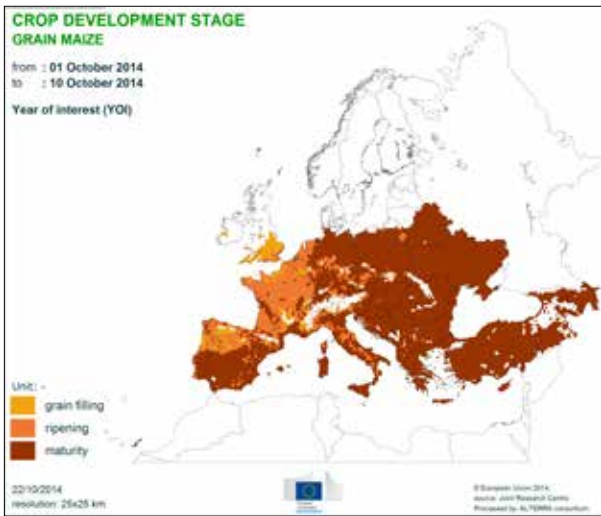


Temperatures





Maize crops



2014 MARS Bulletins

Date	Publication	Reference
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
15 Dec	Agromet analysis	Vol. 22 No. 12

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Analysis and reports

B. Baruth, I. Biavetti, A. Bussay, A. Ceglar, G. De Sanctis, G. Fontana, S. Garcia Contado, S. Karetos, R. Leckerf, R. Lopez, L. Seguini, A. Toreti, M. Van den Berg, M. Van der Velde.

Reporting support

G. Mulhern

Edition

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

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Contact

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

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