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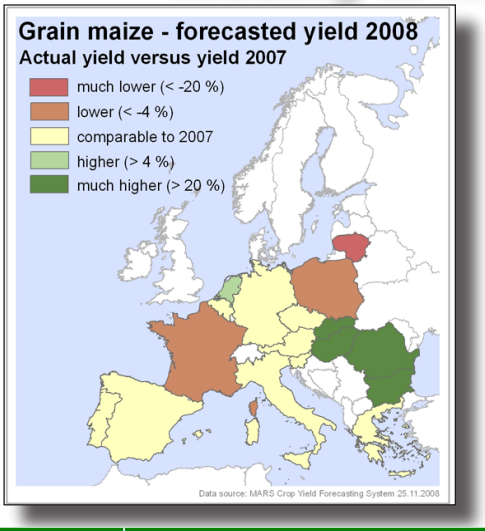
MARS AGROMETEOROLOGICAL

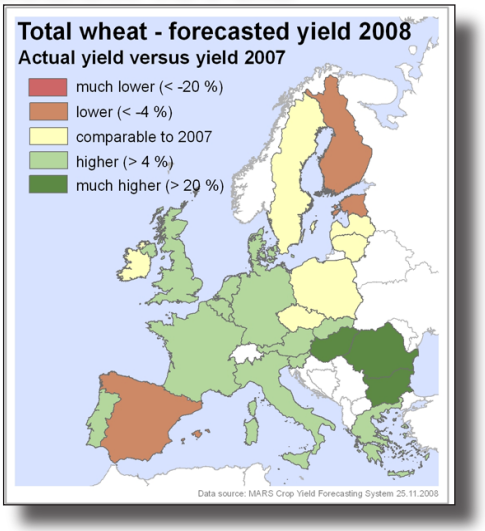
Crop Monitoring in Europe

Review of the 2007-2008 campaign
Situation from1st September to 20th November

Vol. 16, No. 6

Favourable season coupled with increased area leading to high production levels





25th November 2008 CROPS	EU27 yield forecast (t/ha) from AGRI4CAST				
	2007	2008	Avg 5 yrs	% 08/07	% 08/ Avg
TOTAL CEREALS	4.5	**5.0**	4.7	+11.1	+6.9
Soft wheat	5.1	**5.7**	5.4	+11.4	+5.4
Durum wheat	2.9	**3.1**	2.8	+8.8	+12.9
Total wheat	4.8	**5.4**	5.0	+11.3	+7.0
Total barley	4.2	**4.4**	4.2	+4.8	+5.5
Grain maize	5.8	**6.9**	6.3	+17.8	+8.4
Other cereals (1)	3.2	**3.5**	3.2	+9.3	+6.7
Rape seed	2.8	**3.0**	3.0	+5.5	-1.6
Sunflower	1.5	**1.6**	1.6	+12.3	+0.2
Potato	28.8	**28.1**	26.9	-2.4	+4.5
Sugar beet	63.7	**62.7**	59.5	-1.5	+5.4

(1) Sorghum, rye, maslin, oats, triticale, mixed grain other than maslin, millet, buckwheat
Yield figures are rounded to 100 kg. **Sources:** See page 2.

Contents

A. Synthesis of the 2007-2008 campaign

1. Highlights of the 2007/08 campaign

Favourable conditions throughout the 2007/08 campaign, without exceptional events impacting strongly upon the yield, determined decidedly higher yield levels than last year and clearly above the five-year average for all cereals. The EU-27 final cereal yield figure is expected at 5.04 t/ha (about + 11 % compared with 2007 and + 6.9 % compared with the five-year average). Cereal areas (source: Eurostat) should also increase by 3.3 % compared with the average. The result in terms of production should range around 304 million tonnes.

A mild winter with an anticipated crop development was followed by a spring with seasonal temperatures and an unusually distributed rainfall pattern — abundant for the Iberian Peninsula and western Mediterranean, Ukraine and Russia, and very scarce in northern latitudes and central and eastern Mediterranean. In early summer a dry spell intersected northern Europe but beneficial rains in July eased the situation afterwards. Summer temperatures were generally seasonal. Conditions throughout the harvesting period were good for southern Europe, but unfavourable conditions occurred during maturity and harvesting for parts of northern Europe.

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ipsc Institute for the Protection and Security of the Citizen

2. Crop yield forecasts

AGRI4CAST crop yield forecasts at national level for EU-27: 25th November 2008

Country	TOTAL WHEAT (t/ha)					SOFT WHEAT (t/ha)					DURUM WHEAT (t/ha)				
	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs
EU27	4.84	**5.39**	5.04	+11.3	+7.0	5.10	**5.68**	5.39	+11.4	+5.4	2.86	**3.11**	2.75	+8.8	+12.9
AT	4.78	**5.05**	5.00	+5.8	+1.0	4.85	**5.11**	5.05	+5.4	+1.3	3.45	**4.10**	4.23	+18.8	-3.2
BE	7.83	**8.62**	8.38	+10.2	+2.9	7.83	**8.62**	8.38	+10.2	+2.9	-	-	-	-	-
BG	2.20	**3.43**	2.96	+55.8	+15.8	2.20	**3.43**	2.96	+55.8	+15.8	-	-	-	-	-
CZ	4.86	**4.92**	4.86	+1.3	+1.3	4.86	**4.92**	4.86	+1.3	+1.3	-	-	-	-	-
DE	6.97	**7.48**	7.27	+7.4	+3.0	6.97	**7.48**	7.27	+7.4	+3.0	-	-	-	-	-
DK	6.56	**6.89**	7.00	+5.1	-1.5	6.56	**6.89**	7.00	+5.1	-1.5	-	-	-	-	-
EE	3.48	**3.13**	2.73	-10.1	+14.5	3.48	**3.13**	2.73	-10.1	+14.5	-	-	-	-	-
ES	3.47	**3.23**	2.81	-7.0	+14.9	3.84	**3.51**	3.15	-8.7	+11.4	2.49	**2.47**	2.25	-0.7	+10.1
FI	3.91	**3.52**	3.61	-10.1	-2.6	3.91	**3.52**	3.61	-10.1	-2.6	-	-	-	-	-
FR	6.26	**7.25**	6.76	+15.8	+7.1	6.44	**7.45**	6.95	+15.7	+7.1	4.37	**4.88**	4.60	+11.7	+6.0
GR	2.22	**2.34**	2.14	+5.4	+9.4	2.50	**2.88**	2.70	+15.3	+6.6	2.10	**2.11**	2.02	+0.3	+4.3
HU	3.59	**4.46**	3.99	+24.3	+11.9	3.59	**4.46**	3.99	+24.3	+11.9	-	-	-	-	-
IE	8.47	**8.52**	8.89	+0.6	-4.2	8.47	**8.52**	8.89	+0.6	-4.2	-	-	-	-	-
IT	3.42	**3.78**	3.44	+10.6	+10.0	4.91	**5.20**	5.10	+6.0	+2.0	2.73	**3.13**	2.79	+14.6	+12.2
LT	3.92	**3.99**	3.52	+1.8	+13.2	3.92	**3.99**	3.52	+1.8	+13.2	-	-	-	-	-
LU	5.60	**6.26**	6.11	+11.8	+2.4	5.60	**6.26**	6.11	+11.8	+2.4	-	-	-	-	-
LV	3.59	**3.63**	3.14	+1.2	+15.6	3.59	**3.63**	3.14	+1.2	+15.6	-	-	-	-	-
NL	7.21	**8.48**	8.40	+17.6	+1.0	7.21	**8.48**	8.40	+17.6	+1.0	-	-	-	-	-
PL	3.94	**3.79**	3.76	-3.8	+0.7	3.94	**3.79**	3.76	-3.8	+0.7	-	-	-	-	-
PT	1.86	**2.07**	1.55	+11.1	+33.0	1.86	**2.07**	1.55	+11.1	+33.0	-	-	-	-	-
RO	1.54	**2.93**	2.42	+90.1	+21.1	1.54	**2.93**	2.42	+90.1	+21.1	-	-	-	-	-
SE	6.26	**6.27**	5.92	+0.1	+5.9	6.26	**6.27**	5.92	+0.1	+5.9	-	-	-	-	-
SI	4.16	**4.41**	4.21	+6.0	+4.8	4.16	**4.41**	4.21	+6.0	+4.8	-	-	-	-	-
SK	3.83	**4.01**	3.95	+4.6	+1.6	3.83	**4.01**	3.95	+4.6	+1.6	-	-	-	-	-
UK	7.35	**7.96**	7.79	+8.3	+2.3	7.35	**7.96**	7.79	+8.3	+2.3	-	-	-	-	-

Note: Countries with areas below 10000 ha are not counted in

Country	TOTAL BARLEY (t/ha)					GRAIN MAIZE (t/ha)					RAPESEED (t/ha)				
	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs
EU27	4.21	**4.41**	4.18	+4.8	+5.5	5.83	**6.87**	6.33	+17.8	+8.4	2.79	**2.95**	3.00	+5.5	-1.6
AT	4.20	**4.72**	4.52	+12.5	+4.4	9.93	**9.93**	9.42	+0.0	+5.4	2.98	**2.70**	2.87	-9.6	-6.0
BE	7.99	**8.20**	7.82	+2.7	+4.9	12.00	**12.11**	11.32	+0.9	+7.0	-	-	-	-	-
BG	2.25	**3.25**	2.64	+44.4	+23.2	1.46	**3.86**	3.93	+164.7	-1.6	1.72	**2.01**	1.68	+17.1	+20.2
CZ	3.80	**4.23**	4.05	+11.4	+4.4	6.80	**7.03**	6.49	+3.4	+8.4	3.06	**3.16**	2.82	+3.2	+12.0
DE	5.41	**5.98**	5.78	+10.5	+3.5	9.45	**9.48**	8.63	+0.3	+9.8	3.44	**3.64**	3.58	+5.7	+1.5
DK	4.92	**4.74**	5.12	-3.6	-7.4	-	-	-	-	-	3.33	**3.24**	3.40	-2.9	-5.0
EE	2.66	**2.34**	2.31	-11.9	+1.3	-	-	-	-	-	1.81	**1.68**	1.56	-7.0	+8.1
ES	3.60	**3.30**	2.74	-8.4	+20.6	9.92	**9.89**	9.75	-0.3	+1.4	-	-	-	-	-
FI	3.61	**3.10**	3.38	-14.2	-8.3	-	-	-	-	-	1.26	**1.33**	1.23	+5.7	+8.1
FR	5.57	**6.67**	6.11	+19.6	+9.1	9.49	**8.85**	8.49	-6.8	+4.2	-	-	-	-	-
GR	2.30	**2.33**	2.31	+1.3	+0.8	8.90	**8.59**	8.94	-3.5	-4.0	-	-	-	-	-
HU	3.16	**3.80**	3.44	+20.0	+10.2	3.73	**6.96**	5.81	+86.5	+19.6	2.20	**2.19**	2.24	-0.4	-2.1
IE	6.71	**6.75**	6.70	+0.5	+0.6	-	-	-	-	-	-	-	-	-	-
IT	3.55	**4.01**	3.66	+13.0	+9.5	9.31	**9.53**	8.88	+2.4	+7.3	2.06	**2.31**	1.73	+12.3	+33.9
LT	2.66	**2.38**	2.64	-10.4	-9.7	4.81	**3.75**	3.12	-22.0	+20.4	1.79	**1.75**	1.71	-2.1	+2.3
LV	2.36	**2.08**	2.18	-11.8	-4.5	-	-	-	-	-	2.13	**1.83**	1.79	-14.3	+2.0
NL	5.56	**6.15**	6.01	+10.6	+2.4	11.92	**12.81**	11.35	+7.5	+12.8	-	-	-	-	-
PL	3.25	**3.00**	3.07	-7.9	-2.5	6.57	**5.75**	5.49	-12.5	+4.7	2.67	**2.70**	2.57	+1.1	+5.1
PT	1.99	**1.99**	1.59	+0.2	+25.7	5.79	**5.80**	5.36	+0.3	+8.3	-	-	-	-	-
RO	1.46	**2.44**	2.19	+67.6	+11.5	1.53	**3.34**	3.34	+118.3	+0.1	0.99	**1.30**	1.34	+31.0	-3.4
SE	4.48	**4.42**	4.19	-1.3	+5.6	-	-	-	-	-	2.54	**2.80**	2.47	+10.1	+13.3
SI	3.66	**3.99**	3.60	+9.0	+10.7	7.54	**7.26**	7.12	-3.7	+1.9	-	-	-	-	-
SK	3.15	**3.83**	3.45	+21.6	+10.8	3.97	**6.16**	5.27	+55.2	+16.8	2.07	**2.40**	2.04	+15.7	+17.7
UK	5.82	**5.85**	5.87	+0.7	-0.3	-	-	-	-	-	3.14	**3.05**	3.21	-3.0	-5.0

Note: Countries with areas below 10000 ha are not counted in

Sources: "2007" yields from EUROSTAT CHRONOS, last update 2008-11-18;
"Avg 5yrs" from FAO statistics 2001-2006;
"2008" yields from MARS CROP YIELD FORECASTING SYSTEM

Country	SUNFLOWER (t/ha)					SUGAR BEET (t/ha)					POTATO (t/ha)				
	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs
EU27	1.45	**1.63**	1.62	+12.3	+0.2	63.66	**62.73**	59.52	-1.5	+5.4	28.78	**28.10**	26.89	-2.4	+4.5
AT	2.25	**2.53**	2.56	+12.4	-1.4	62.84	**68.60**	63.87	+9.2	+7.4	29.49	**30.90**	30.38	+4.8	+1.7
BE	-	-	-	-	-	69.33	**72.07**	69.84	+4.0	+3.2	46.95	**48.30**	43.85	+2.9	+10.1
BG	0.94	**1.37**	1.40	+46.1	-2.2	-	-	-	-	-	13.32	**15.92**	15.71	+19.5	+1.4
CZ	2.13	**2.23**	2.24	+4.5	-0.4	53.25	**52.88**	50.72	-0.7	+4.3	25.72	**26.00**	23.96	+1.1	+8.5
DE	2.65	**2.16**	2.25	-18.3	-3.7	62.43	**61.63**	59.05	-1.3	+4.4	42.35	**42.61**	39.92	+0.6	+6.7
DK	-	-	-	-	-	57.22	**55.52**	57.50	-3.0	-3.4	39.42	**35.60**	38.60	-9.7	-7.8
EE	-	-	-	-	-	-	-	-	-	-	17.28	**12.90**	14.05	-25.3	-8.2
ES	1.17	**1.04**	1.00	-11.5	+3.8	71.92	**73.95**	68.95	+2.8	+7.3	28.20	**27.66**	27.29	-1.9	+1.4
FI	-	-	-	-	-	42.07	**35.07**	37.05	-16.6	-5.3	25.42	**22.94**	22.85	-9.8	+0.4
FR	2.68	**2.46**	2.36	-8.1	+4.4	82.16	**81.80**	79.33	-0.4	+3.1	42.51	**44.46**	42.14	+4.6	+5.5
GR	-	-	-	-	-	62.94	**61.70**	62.01	-2.0	-0.5	23.38	**22.32**	23.79	-4.5	-6.2
HU	2.07	**2.34**	2.17	+13.1	+7.8	-	-	-	-	-	22.45	**26.15**	23.45	+16.5	+11.5
IE	-	-	-	-	-	-	-	-	-	-	34.00	**37.36**	35.60	+9.9	+5.0
IT	2.19	**2.15**	2.07	-1.8	+4.1	54.06	**53.93**	48.24	-0.2	+11.8	25.63	**25.34**	24.45	-1.1	+3.7
LT	-	-	-	-	-	-	-	-	-	-	10.93	**14.29**	11.86	+30.8	+20.5
LV	-	-	-	-	-	37.00	**38.97**	37.29	+5.3	+4.5	15.63	**13.62**	13.76	-12.8	-1.0
NL	-	-	-	-	-	67.15	**67.63**	64.58	+0.7	+4.7	43.79	**43.18**	42.76	-1.4	+1.0
PL	-	-	-	-	-	51.25	**46.22**	44.10	-9.8	+4.8	21.46	**18.08**	18.34	-15.7	-1.4
PT	0.80	**0.70**	0.53	-12.5	+32.1	-	-	-	-	-	15.57	**15.22**	15.09	-2.2	+0.8
RO	0.65	**1.12**	1.29	+72.3	-12.9	26.06	**30.84**	26.63	+18.4	+15.8	13.85	**15.16**	14.26	+9.5	+6.3
SE	-	-	-	-	-	48.90	**49.99**	48.90	+2.2	+2.2	27.82	**27.89**	29.10	+0.3	-4.1
SK	2.03	**2.12**	2.06	+4.4	+2.8	44.86	**50.23**	45.78	+12.0	+9.7	15.82	**17.06**	15.31	+7.9	+11.5
UK	-	-	-	-	-	58.31	**56.94**	57.26	-2.4	-0.6	40.41	**42.10**	41.25	+4.2	+2.1

Note: Countries with areas below 10000 ha are not counted in

AGRI4CAST yield forecasts at national level for Black Sea area and Maghreb

Country	WHEAT (t/ha)					BARLEY (t/ha)					GRAIN MAIZE (t/ha)				
	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs
DZ	1.30	**1.31**	1.42	+1.1	-7.7	1.61	**1.48**	1.51	-8.0	-1.6	-	-	-	-	-
MA	0.62	**1.38**	1.47	+124.1	-6.6	0.38	**0.60**	0.88	+56.9	-31.6	0.46	**0.66**	0.82	+42.3	-19.1
MD	1.31	**2.11**	1.89	+60.9	+11.4	1.31	**1.25**	1.56	-4.8	-20.1	0.78	**2.57**	2.51	+228.8	+2.2
TN	1.69	**1.71**	1.69	+1.3	1.3	1.08	**0.90**	0.91	-16.7	-0.8	-	-	-	-	-
TR	2.06	**2.24**	2.19	+8.9	+2.4	2.06	**2.54**	2.41	+23.4	+5.5	7.04	**6.32**	6.33	-10.2	-0.1
UA	2.29	**2.43**	2.42	+6.2	+0.5	1.46	**1.97**	1.93	+34.6	+2.2	3.35	**3.60**	3.74	+7.6	-3.7

Country	RAPE SEED (t/ha)					SUNFLOWER (t/ha)				
	2007	2008	Avg 5yrs	%08/07	%08/5yrs	2007	2008	Avg 5yrs	%08/07	%08/5yrs
UA	1.10	**1.08**	1.29	-1.8	-16.1	1.00	**0.80**	1.00	-19.5	-19.7

Abstract

The 6th 2008 printed MARS Bulletin (Vol. 16, No. 6) covers meteorological analysis and crop yield forecasts for the period 1 September to 20 November 2008.

Previous related analysis available:

—Climatic updates: CU2008/9, CU2008/10, CU2008/11.

— Rice Bulletin Vol. 4 No. 2 and Pastures Bulletins 2008 No. 3.

—Complete Bulletin, 01/07/2008 to 31/08/2008 (Vol. 16, No 5).

Next printed issue

Vol. 17, No 1: Spring 2009.

Contributions

The ***MARS technical report*** is an EC publication from JRC/IPSC Agriculture Unit-AGRI4CAST Action

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MARS Bulletin reports, press releases and climatic updates are available at: http://mars.jrc.ec.europa.eu/

MARS Agrometeorological web database is accessible at: http://www.marsop.info

MARS stands for Monitoring Agriculture with Remote Sensing.

Technical note:

The long-term average used within this bulletin as a reference is based on an archive of data covering 1975–2007.

The CNDVI is an unmixed normalised vegetation index on the base of Corine land cover 2000 for arable land or grassland.

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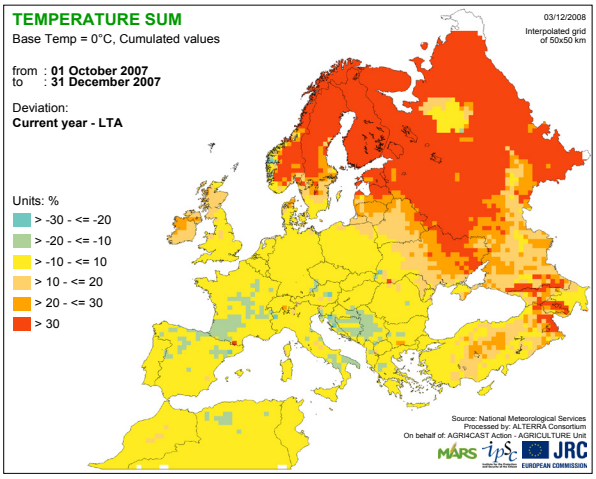
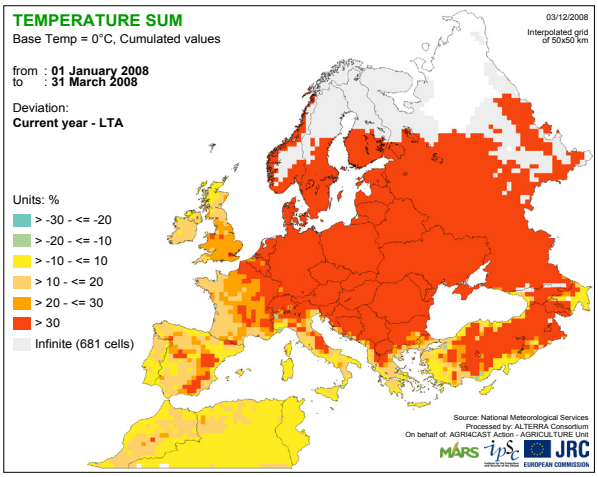
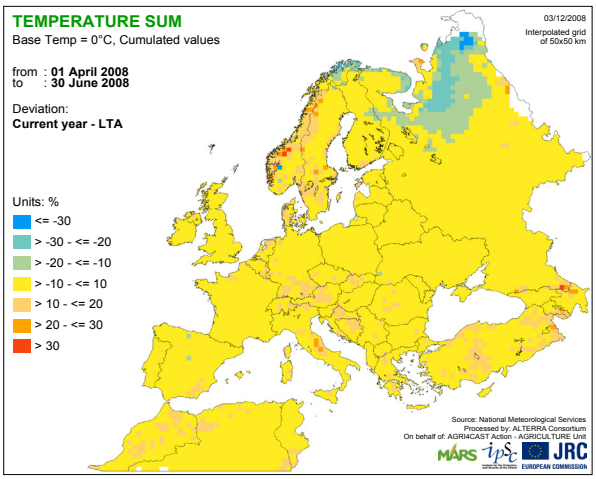
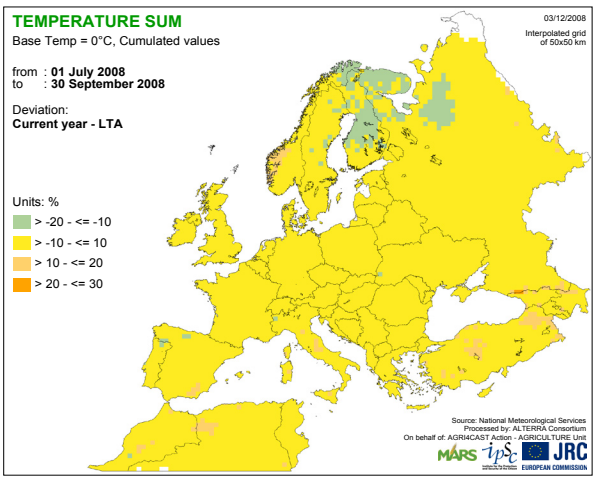








3. Meteorological overview 2007/08

AUTUMN 2007 (October - December): Generally seasonal temperatures, except in Russia with milder conditions. Quite dry in western EU whilst wet in the Balkans and western Black Sea Basin.

The autumn was mainly characterised by a generally mild **October** and **December**, especially in the eastern EU and Russia, while in **November**, generally cooler than seasonal temperatures occurred. These conditions were more prominent on the northern and eastern side of the continent, whilst on the western side (France, Spain and Portugal) cooler than seasonal temperatures were recorded. The largest anomalies were recorded in Ireland, western Great Britain, Denmark, Sweden, the Baltic countries, Finland, Belarus, Russia, Ukraine and Turkey where, at the end of December, a surplus of around 50–90 growing degree days (GDD) (as compared with the long-term average — LTA) was accumulated (+ 20/+ 40 %). Those surpluses were mainly due to the higher than seasonal minimum daily temperature recorded in October and December: in Ireland, the UK, Russia, the Baltic countries and Finland on average the minimum temperatures were even 6–8 °C above the seasonal values. The relative higher temperatures were favourable to a rapid germination and tilling of the new winter cereals, but exposed the new plants to a higher risk of frost damage ('dehardening'). However, the occurred frost events were always coupled with a snow cover depth able to protect the active vegetation. Opposite conditions occurred in November: over the majority of the continent, cooler than seasonal conditions were recorded. In particular in Spain, south-west France, north-west Italy and Algeria the minimum temperatures were 5–7 °C below the LTA.

The spatial distribution of rain had an even more unseasonal pattern: the rain was recorded mainly in the Balkans and Black Sea Basin, whilst it was very scarce in western EU. In particular, from the second half of October until mid-December the rain was quite abundant (more than + 40 % compared with the LTA) and persistent on the eastern side of the continent: in Romania, Bulgaria, eastern Greece, northern Austria and southern Hungary the largest **surpluses** were recorded (around 200–250 mm of rain, equivalent to + 80/+ 90 % compared with the LTA). On the contrary, in the Iberian Peninsula, western and southern France and northern and central Italy very low rain was recorded. In those areas, the rain during this period is of particular importance, because it is crucial to refill the water soil reservoirs for the whole vegetative cycle of winter crops. Therefore the impacts of the water shortage in this period were not immediately visible. The largest **deficits** were recorded in Portugal (– 200 mm, – 60 % compared with the LTA; this is particularly relevant considering that in this season Portugal normally receives around 45 % of the annual amount of rain), in Spain (and in particular in Castilla y León, Cataluña, Castilla-La Mancha and Aragón where practically no rain was recorded), in central Italy and the Po Valley (140 mm of rain was missing, equivalent to 85 %) and in southern France (Midi-Pyrénées, Languedoc-Roussillon, deficit > 80 %).

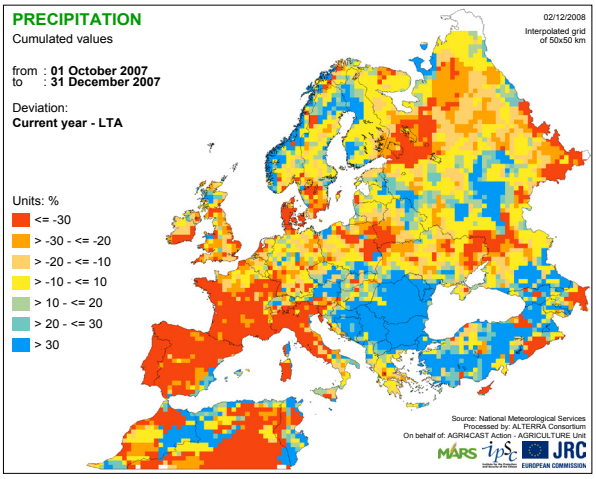
Locally in southern Spain a few extreme rain events occurred: 130 mm on 20 November in Andalucía, with possible impacts on fields (erosion, temporary flood) and on the young winter crop plants.

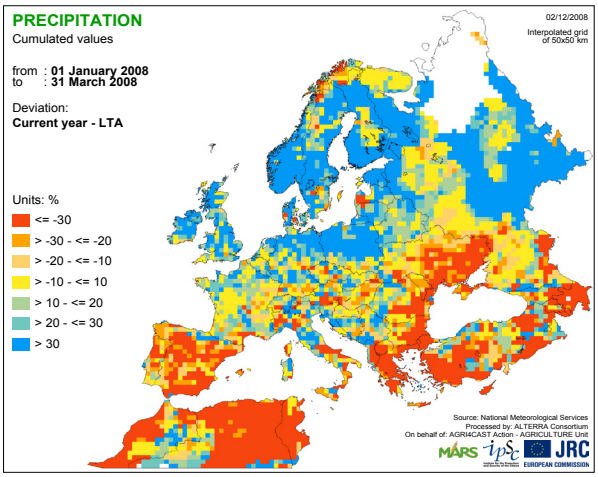
WINTER 2008 (January – March): Similar conditions to the previous year: unseasonably mild conditions during the whole winter; rather dry in many of the Mediterranean and Black Sea areas whilst wetter in central and northern EU.

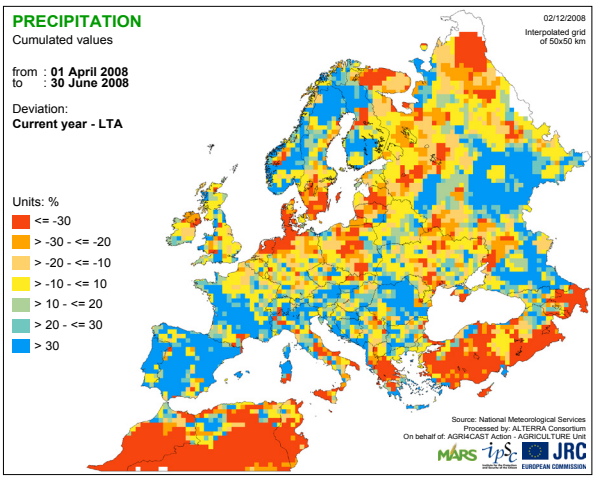
In the majority of the continent (except extreme southern regions) during the whole season, higher than seasonal temperatures were recorded. At the end of winter, only locally in Sicily, northern Spain and Turkey, negative deviations from seasonal conditions appeared. Practically all over the continent positive deviations were present. Those were particularly large on the central and eastern side of Europe: in northern Germany, Denmark, Poland, Romania, Bulgaria, the Czech Republic, Slovakia, Belarus and Ukraine the cumulated active temperatures (Tbase = 0 °C) were 250–280 GDD above the seasonal values (equivalent to 150–250 %). In synthesis, winter 2008 was one of the warmest since 1975: similar conditions occurred in 1975 and 1998; warmer conditions occurred only in 1990 and 2007. Both in absolute and relative terms in the EU territories, in **January** and **February** the warm anomalies were more significant than in **March**, when more normal conditions occurred in the EU (especially on the western side), but still warmer than average temperatures were recorded mainly in the Black Sea Basin. Despite the generally mild temperatures recorded and a reduced (as compared with the average) number of **frost days**, large temperature oscillations occurred in January, February and March. At the beginning of **January**, **minimum daily values** largely below the average (> 10 °C below the LTA) were recorded in southern Romania (– 26.8 °C), north-east Romania (– 24.2 °C), Bulgaria (– 22.7 °C) and Ukraine (– 25.4 °C). Again in January, during the third dekad, in western EU the **maximum daily values** showed large deviations even above the normal ranges of variation (> 10 °C above the average). Similarly, in **February** and **March** large temperature fluctuations occurred, for example in February in southern Italy (Sicily, Calabria), in Greece (Peloponnisos, Thessalia, Attiki, Sterea Ellada), very low minimum temperatures (8–10 °C below the LTA) were recorded. However, the largest fluctuations were recorded in east UK (the minimum daily temperature amplitude was almost 20 °C in two days around 18 February) and the Czech Republic (22 °C of variation between 17 and 22 February).

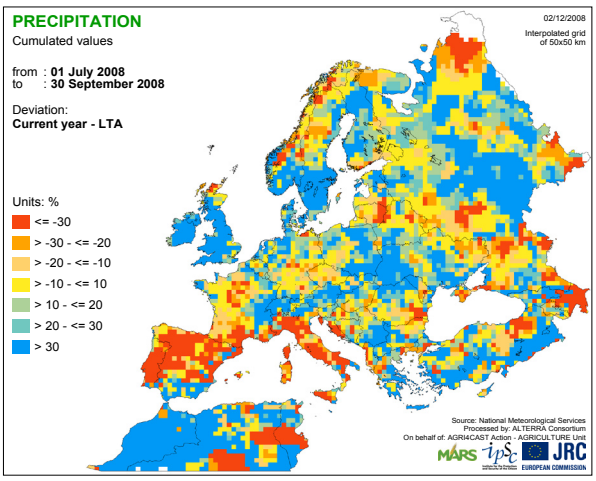
During the second half of **March**, anomalous high maximum daily temperatures (9–10 °C above the seasonal values were recorded in southern Germany, Spain (Andalucía), south-east Romania and the Po Valley, etc.) and a brief but harsh frost (– 8/– 9 °C in central Germany, northern and southern Poland, eastern Ukraine and southern Sweden).

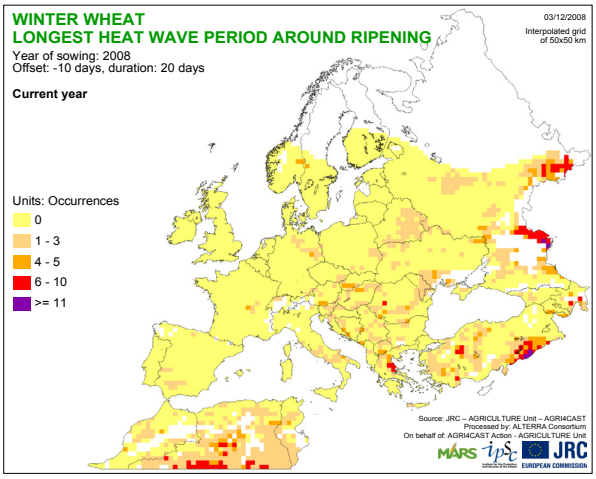
At a glance, during **winter** the precipitations were more abundant in the central and northern European areas whilst the Mediterranean and the Black Sea Basins suffered because of reduced water supplies. At the end of March in Ireland, Scotland, Norway, Denmark, northern Germany, Benelux, Poland and Finland a surplus of around 80–100 mm was estimated (equivalent to + 50/+ 80 %). On the contrary, in northern Portugal, southern France, central Italy, Greece, western and southern Turkey and Algeria, more than 150 mm rain was lacking, with possible negative impacts on winter crops, considering also the advanced stage of development in these areas. The precipitations were not equally spatially distributed between the months: in **January** a large amount of precipitation was recorded over the British Isles and Scandinavia, and less than seasonal precipitation in central and eastern Mediterranean (southern Italy, Algeria, Tunisia, Greece, Turkey); in **February** precipitation was quite scarce almost over the whole continent (except for the extreme northern areas): the largest deficits were in northern Spain and Portugal (> 100 mm missing), south-west France, central and southern Italy, western Greece, western Turkey and

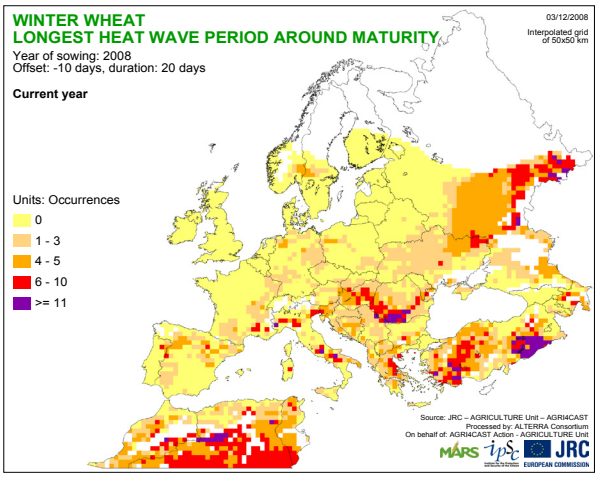


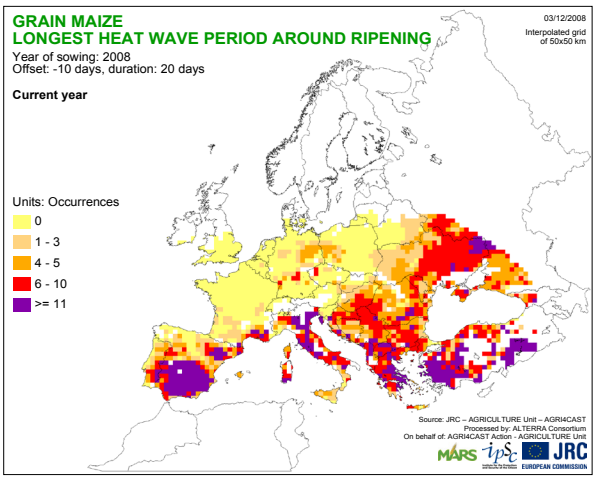


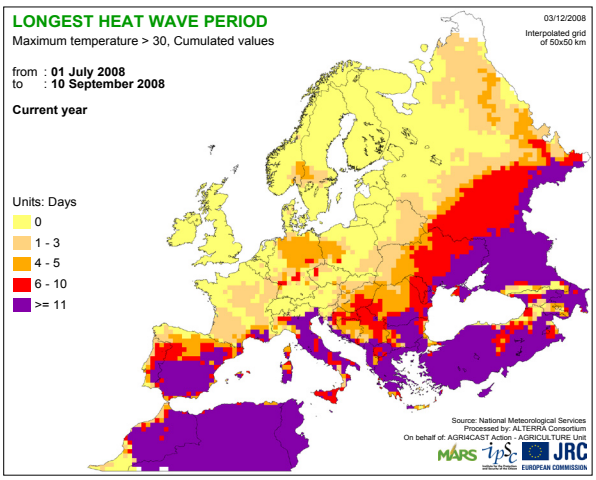












Algeria; **March** was definitely wetter than seasonal (except in the western Mediterranean, Black Sea Basin and northern Italy): the heaviest rain was recorded in northern France, the British Isles, Benelux, Pyrénées, Slovenia and central and southern Italy. Intense showers (115 mm) occurred in Sicily on 24 March.

SPRING 2008 (April – June): General favourable seasonal temperatures following a mild winter, but with large thermal fluctuations showing anomalous high temperatures and sporadic frost events. Abundant water supplies in western EU; insufficient in northern latitudes (mainly the Netherlands, Denmark, Germany and Sweden) and central and eastern Mediterranean (Maghreb, southern Italy, Greece and Turkey).

As a whole, spring 2008 followed a favourable course for the majority of European regions: generally seasonal temperatures, only a few extreme events, quite favourable rain distribution (except in the extreme northern latitudes and eastern Mediterranean) all allowed for a generally encouraging crop growth.

April presented seasonal temperatures all over the EU countries, and milder than seasonal on the extreme northern and eastern side (Sweden, Finland, the Baltic countries, Belarus, Russia and Turkey) mainly because of higher maximum and minimum temperatures (3–5 °C). Only a few and generally light frost events occurred and also the maximum daily temperatures remained, in general, within the seasonal range of variation. Therefore, crop growth was regular and continuous. However, in the last dekad the Azorean anticyclone entered deep into the continent, determining a warm African air flux over the Iberian Peninsula and progressively all over the continent: locally in Algeria, Tunisia, Greece and Turkey values above 30 °C occurred. In this month for the majority of Europe the cumulated rain values were above (> + 30 %), and in some case even largely above (> + 100 %), the seasonal averages. Only the Mediterranean Basin and Benelux received less water than expected. The largest surpluses (> + 150 % compared with the LTA) were recorded in central and northern Portugal (250 mm of rain cumulated; normally in April Portugal receives almost 50 % of the annual winter crops' rain), south-west and north-west Spain (Andalucía and Galicia), north-east Italy, east and south Germany, western Poland, northern Romania, Ukraine and Russia. These areas received on average 70 to 100 mm more than seasonal values. On the contrary, the areas in the southern latitude received only a few millimetres of rain (10–15 mm), which in absolute term is estimated as 30–50 mm (equivalent to – 70/– 90 %). However, despite the apparent modest deficit values, considering the advanced stages of development of the winter crops in these areas (flowering/grain filling), the water supplies that normally occurred in this period are very important in maintaining the potential performance of the cultivated rain-fed crops.

May again presented seasonal values of cumulated active temperatures. Only in central EU (Benelux, the English Isles, northern France, and western Germany) higher than seasonal values were recorded, because of the persistent influence of the Azorean anticyclone (pushing African air masses over the European territories). During the first half of the month in France, the English Isles and Benelux the maximum daily temperatures were 4–6 °C above the seasonal values, even if they remained quite a way below 30 °C. However, in Ireland, the UK, Finland and Sweden the highest (since 1975) maximum temperatures for this season were recorded. In the second half of the month, the warm flux moved eastward determining a significant drop of

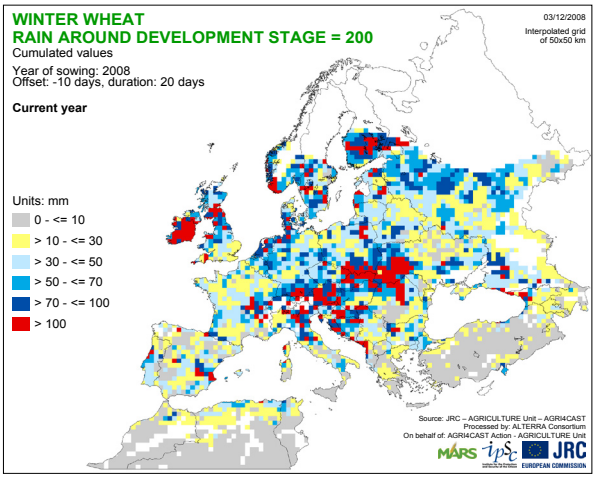
temperatures in western EU, and higher temperatures in central and eastern Mediterranean, the Balkans and Tunisia: in southern Italy, Greece, Tunisia and Turkey the maximum daily temperatures were 6–7 °C above the LTA and reached values even largely above 32 °C. The particular synoptic circulation determined an unusual distribution of rain with relatively dry conditions in the north and quite wet in western EU and Italy. The largest surplus (+ 60/+ 200 %) occurred in north and east Spain, central and southern Italy, south and west France, southern Portugal (Algarve) and southern UK. This rain was particularly beneficial in Spain and Portugal, which had been suffering from the rain shortages of the previous months. On the contrary, the largest deficit (– 100/– 50 %) occurred in Greece, Germany, south-east Italy, north-east UK, Northern Ireland, the Netherlands, Denmark, southern Bulgaria, the Baltic countries, Finland and north-west Poland. Negative impacts may have occurred in particular in Denmark, Finland, northern Germany and Poland, characterised by light soils and the presence of very sensitive stages of development both for winter and summer crops.

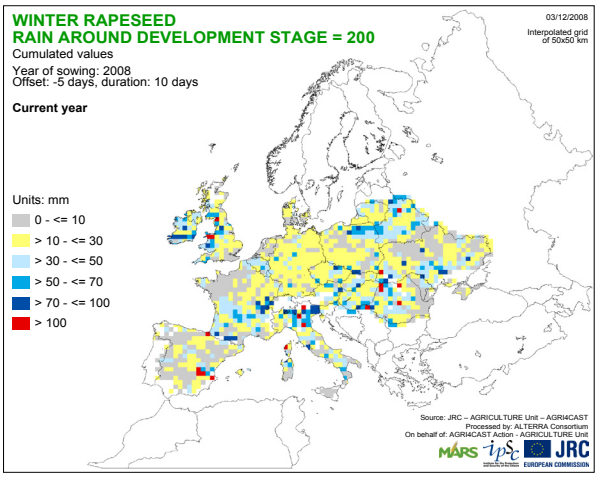
Also in **June**, as a whole, cumulated active temperature values very close to the seasonal averages were recorded. Relatively higher temperatures occurred in the first part in the northern latitudes (Denmark, northern Germany, Sweden, the Netherlands) and in the last part in central EU. The central part of the month was slightly cooler. The heat waves were very limited in number and duration. Therefore, crop growth followed less favourable conditions. Also the amounts of rain were generally close to the seasonal values. The rains were more abundant in northern Italy, Austria, Slovenia and locally in southern Spain, Hungary, Romania and Finland (+ 50/+ 80 mm compared with the LTA). On the contrary, significant deficit values were recorded only in Ukraine, Belarus and southern Poland (– 60/– 70 mm). Those deficits were particularly relevant for summer crops in Poland and northern Germany, where normally they receive 25–30 % of rain during the whole crop cycle.

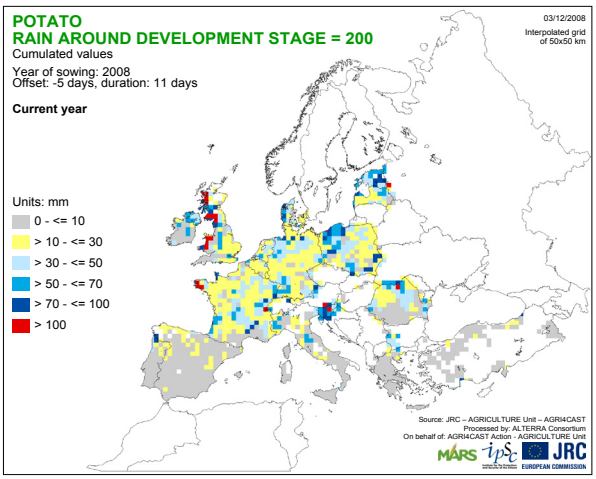
SUMMER 2008 (July – September): Generally favourable seasonal weather conditions: normal temperatures and amount of rain (except in Ireland, the UK, Denmark, Sweden and Austria, with a very wet September, and in Italy and southern France with reduced water supplies).

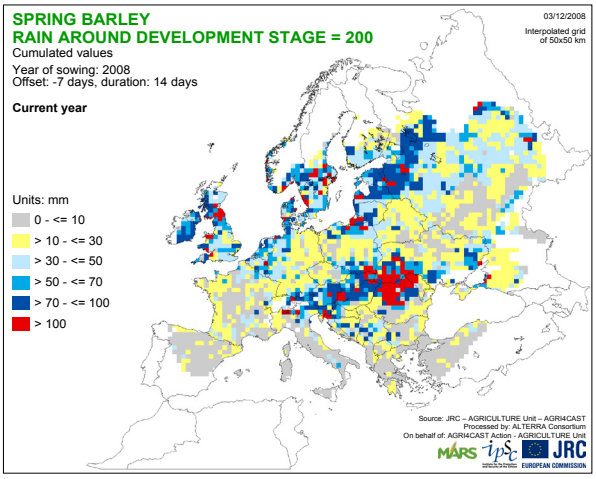
As a whole the season followed a quite favourable course: generally seasonal temperatures, with limited extremes and a good water supply. The only exceptions occurred in the extreme northern areas, where persistent and abundant rain in September affected the last part of the winter crops and the fields' preparation for the new campaign.

During the three months both the minimum and maximum daily temperature values, despite the large oscillations recorded in some cases, remained generally within the normal ranges of variation. Therefore, the cumulated active temperatures with Tbase = 0 °C showed negligible departures from the norm (+/– 5 % in the majority of the continent's regions); only in Finland, central France and northern Spain were slightly larger deficits present: on average – 10 %, equivalent to 80–120 GDD. However, in those areas the relative cooler conditions had a positive impact, slowing down winter crop development, which was already in reproductive stages. Quantitatively similar surpluses, but smaller in percentage, occurred also in the Mediterranean areas (southern Spain, Algeria, southern Italy and southern Black Sea).









A limited number of heat waves were also recorded. The most significant occurred between the end of June/ beginning of July and mid-August. These mainly affected southern Spain, Italy, the former Yugoslav Republic of Macedonia and Greece (maximum temperatures above 35 °C); and in the second part of July also the northern latitudes: Scotland, Scandinavia, Denmark, the Netherlands and northern Germany (maximum daily values were even above 32-33 °C). In August, during the second dekad, on all the eastern side of the continent, the maximum daily temperatures were 5°/8 °C above the norm (reaching 38°/39 °C); whilst on the western side, and in particular northern Portugal and Spain, cooler than seasonal (4°/5 °C below LTA) temperatures occurred.

In the three months under consideration, the rain in general was quite well distributed in time and space. This allowed favourable crop development and growth. As mentioned above, the only extremes occurred in some of the northern countries (Denmark, the UK, Ireland and Sweden), with persistent (around 30–35 rainy days) and abundant rain (+ 50/+ 80 %, but locally reached + 150 % with more than 400 mm of rain). In Italy, southern France and northern Spain there were scattered rain events and a reduced amount of water supply (– 80/– 120 mm).

In June the rain was more concentrated in the northern and central-eastern areas, whilst it was practically absent in western EU and Mediterranean areas. In July, the rain was abundant (> 150–200 mm) particularly along the Alps, between Ukraine and eastern EU borders, the British Isles, the Netherlands and northern Germany, southern Sweden and Russia. Again a rain deficit (– 80/– 100 % compared with the LTA) occurred in southern Portugal, eastern Spain, southern Italy, eastern Greece and western and southern Turkey. August was, in general, relatively dry compared with July. Basically, the rain moved northwards and the highest cumulated values were recorded in Ireland, Scotland, Denmark, Sweden, the Baltic countries, northern Poland, Finland, Normandy and the Alpine area, creating concrete obstacle for field activities (haymaking, harvesting, field preparation, etc.) On the other hand, the water shortages were more severe than those which occurred in July (in Italy (mainly in northern and central areas), southern Romania, Hungary, Ukraine and northern Turkey, with a lack of 50–70 mm of rain). Smaller, but still significant, deficits occurred also in Slovakia, the Czech Republic, southern and eastern Germany, south-western France and south-eastern Poland.

4. Campaign analysis on EU-27

Cereals

Favourable conditions throughout the 2007/08 campaign, without exceptional events impacting strongly upon the yield, determined decidedly higher yield levels than last year and clearly above the five-year average for all cereals. The average yield for cereals at EU-27 level is now set at 5.04 t/ha. This corresponds to an increase of 11 % compared with last year and + 6.9 % with respect to the five-year average.

Total cereal production (rice excluded) is now expected at 304 million tonnes (+ 46 million tonnes compared with 2007, almost 18 % higher than 2007 and 10 % higher than the five-year average). But the total production is forecast to remain 6 % below the exceptional 2004 harvest. An area increase of almost 6 % has been observed compared with last year's campaign contributing to the overall good production level but the majority comes from the good yield level obtained and now forecast at 5.04 t/ha.
The largest surplus of 18 % compared with last year is observed for grain maize, followed by soft wheat and winter barley (both around + 11 %). The forecast yield of spring barley is at the level of last year's yield but is 3.6 % above the five-year average

SOFT WHEAT

The yield for soft wheat is forecast at 5.68 t/ha at EU-27 level leading to an increase of 11% compared with last year and 5% higher than the five-year average.

France as the largest producer has a yield forecast at 7.45 t/ha (16 % higher compared with last year and + 7 % compared with the five-year average). Following a mild winter France experienced generally wet conditions during spring and summer coupled with seasonal and slightly lower temperatures, which are beneficial for soft wheat. Germany, as the second largest producer, was hit in the northern part by a dry period in May/June but due to replenishing rainfall later in the summer the impact remained limited. Yield is forecast at 7.48 t/ha, 7 % higher than last year, and 3 % higher than the five-year average. The United Kingdom has had a good season with the exception of a very wet August, especially in the western part of the country; this therefore did not impact soft wheat much. Yield is forecast at 7.96 t/ha (+ 8.3 % last year, + 2 % five-year average).

Very good yields compared with last year are expected for Romania (2.93 t/ha, + 90 %), Bulgaria (3.43 t/ha, + 56 %) and Hungary (4.46 t/ha, + 24 %). Clear yield increases compared with last year and more moderately compared with the five-year average are depicted for Belgium (8.62 t/ha, + 10 % compared with last year, + 3 % with the five-year average), the Netherlands (8.48 t/ha, + 18 %, + 1 %), Italy (5.2 t/ha, + 6 %, + 2 %) and Greece (2.88 t/ha, + 15 %, + 7 %).

The yields for Sweden (6.27 t/ha), Latvia (3.63 t/ha), Lithuania (3.99 t/ha), the Czech Republic (4.92 t/ha) and Slovakia (4.01 t/ha) are expected to be close to the level of the previous year. Finland (3.52 t/ha) (over wet in August) and Poland (3.79 t/ha) (dry period in early summer) show lower yields than in the previous campaign (Finland – 10 %; Poland – 4 %). The same counts for Spain (3.51 t/ha), but the yield level is well above the five-year average (+ 11.4 %).

A 15-day advance (two-dekad in some cases) in crop development was simulated for central and northern

countries, such as northern France, Germany, Poland, the Czech Republic, Slovakia, Austria, and the United Kingdom. The advance is due to high temperatures occurring in the first part of the crop cycle; therefore, no significant impact on yields is expected.

BARLEY

The forecast yield at EU-27 level is 4.41t/ha and thus 4.8 % higher than last year and 5.5 % higher than the five-year average. The season was less beneficial for spring barley with the same yield level as last year (3.83 t/ha) and close to the five-year average (+ 3.6 %). Winter barley yield is forecast at 5.35 t/ha (+ 11 % compared with last year and + 8 % compared with the five-year average).

Total barley production is now set at more than 63 million tonnes, corresponding to an increase of 10 % compared with last year and the five-year average. The area has also been increased around 5 % (source: Eurostat).

For winter barley, substantial yield increases are forecast for the two largest producers: France (6.83 t/ha) and Germany (6.48 t/ha) (+ 19 % and + 11 % respectively). An exceptionally good season after the bad 2007 season is depicted for Bulgaria (3.31 t/ha, + 46 %) and Romania (2.74 t/ha, + 60 %). With respect to last year, lower yields are forecast for Spain (2.91 t/ha, – 8 % compared with last year), Austria (5.52 t/ha, – 2.7 %), the Czech Republic (4.54 t/ha, – 6 %) and Poland (3.63 t/ha, – 5 %).

Lower than last year spring barley yields are forecast for Denmark (4.57 t/ha, – 6 %), Estonia (2.34 t/ha, – 12 %), Finland (3.1 t/ha, – 14 %), Lithuania (2.35 t/ha, – 11 %), Latvia (2.08 t/ha, – 12 %) and Poland (2.88 t/ha, – 9 %). Due to the shorter cycle, the dry conditions throughout early summer negatively impacted the yield.

Spain, as the largest spring barley producer by far, experienced a good season leading to a yield forecast of 3.38 t/ha and thus the third highest yield forecast in the available time series. It is 8.6 % lower than last year's record yield but still 22 % above the five-year average. Higher yields than last year for spring barley are forecast for Austria (+ 24 %), Bulgaria (+ 28 %), the Czech Republic (+ 20 %), Germany (+ 10 %), France (+ 22 %), Hungary (+ 32 %), the Netherlands (+ 11 %), Romania (+ 76 %) and Slovakia (+ 24 %).

Central countries (Germany, Austria, the Czech Republic and Slovakia) experienced a one-week advance in reaching physiological maturity. In some regions, this advance was partially accumulated before flowering, although, in general, it is due to high rates of thermal time accumulation in the last part of the reproductive phase. In some cases this could have slightly lowered yield expectations because of a shortened grain filling phase. In some of the northern regions, young plants could have suffered because of soil moisture excess in the emergence and post-emergence phases.

GRAIN MAIZE

A good year is forecast for grain maize. The forecast yield at EU-27 level (6.87 t/ha) is 17.8 % higher than the last year and 8.4% higher than the five-year average.

With respect to the five-year average, the best results are forecast for Hungary (6.96 t/ha, + 19.6 %), Lithuania (3.75 t/ha, + 20.4 %), the Netherlands (12.81 t/ha, + 12.8 %) and Slovakia (6.16 t/ha, + 16.8 %). Decidedly good conditions also occurred in Belgium (12.11 t/ha, + 7.0 % compared with the five-year average), the Czech Republic (7.03 t/ha, + 8.4 %), Germany (9.48 t/ha, + 9.8 %), Italy (9.53 t/ha, + 7.3 %) and Portugal (5.80 t/ha, + 8.3 %). Practically, only Bulgaria (3.86 t/ha) and Greece (8.59 t/ha) are forecast to yield less than the average (respectively – 1.6 % and – 4.0 %).

Compared with the 2007 campaign, the highest positive fluctuations are due to the anomalous conditions that occurred last year, for example the extremely dry and hot summer which severely compromised the yields for important producers, such as Bulgaria (3.86 t/ha, + 164.7 %), Romania (3.34 t/ha, + 118 %) and Hungary (6.96t/ha, + 86.5 %).

Grain maize completed its cycle with about a two-dekad advance compared with the average in many regions of central and eastern Europe. Anyway, in most of the cases, the advance was accumulated during the vegetative phase, therefore without lowering yield expectations because of the reduced number of days available for grain filling. Problems due to insufficient water availability could have occurred in some areas in Poland, Germany and Greece in the period between May and June.

Oilseeds

RAPESEED

Anticipated development stage, shortening of cycle due to high temperatures but good water availability. The final yield expectation at EU-27 level is better than last year's but lower than average: respectively 2.95 t/ha, +5.5 % compared with 2007 and -1.6% with the five/year average.

Compared with last year, many countries are expected to get a better yield, especially the eastern countries like Romania (+ 31 %, 1.3 t/ha), Bulgaria (17.1 %, 2.0 t/ha), Slovakia (15.7 %, 2.4 t/ha) and also France (+ 14.9 %, 3.3 t/ha), Sweden (+ 10.1 %, 2.8 t/ha) and Germany (5.7 %, 3.6 t/ha). Compared with the average, the countries with a lower yield in 2008 are: Romania (– 3.4 %), which had a dramatic drop in 2007, Denmark (– 5 %), Hungary (– 2.1 %) and Austria (– 6 %, 2.7 t/ha).

Rapeseed grew under normal conditions after a mild winter, particularly for central and eastern Europe where higher than seasonal temperatures were recorded (at the end of winter, in northern Germany, Denmark, Poland, Romania, Bulgaria, the Czech Republic and Slovakia temperatures were above the seasonal values). In this area rapeseed showed an advanced development. France faced very dry conditions.

In June the rise in temperatures continued, reaching and remaining at extreme level for several consecutive days, especially in southern Bulgaria, Romania, Spain, etc. In the Czech Republic and Slovakia rapeseed reached physiological maturity with a two-dekad advance as compared with the average under optimal soil water availability. The favourable conditions experienced by the crop during the season allowed a satisfactory canopy development. Considering the reproductive stages of development of the winter crops, the high temperatures in those areas created heat stress conditions with rapid senescence and plant parching, and high evapotranspiration demand, but fortunately rainfall was abundant especially in the central-eastern countries, namely Slovenia, Hungary, Bulgaria and Romania. In some countries in the northern latitudes, the effect of the drought of May–June was attenuated by the persistent rain which disturbed the last part of the winter crop cycle: Ireland, Scotland, Denmark, Sweden and Finland suffered as a result of these conditions. No particular adverse events occurred.

SUNFLOWER

Good year with very good yields in Hungary and France and better than 2007 in Romania and Bulgaria. The expected yield is about 1.6 t/ha at EU-27 level, close to the five-year average and higher than last year (+12 %).

More than 90 % of the EU-27 sunflower surface is covered by five countries. Hungary experienced an excellent year, with 2.34 t/ha (+ 13 % on 2007 and + 8 % on the five-year average). France and Spain are expected to have a better yield than average, but lower than last year's: France: 2.46 t/ha, + 4 % on average, – 8 % on 2007; and Spain: 1.04 t/ha, + 3.8 % on average. The last two of the main producing countries (Bulgaria and Romania), after a bad result in 2007, had better conditions in 2008: Romania had a moderate yield of 1.12 t/ha (+ 72 % on 2007), and Bulgaria an almost average yield of 1.37 t/ha (+ 46 % on 2007).

Throughout the main crop cycle, Hungary has benefited from wet conditions. Sunflower enjoyed a relatively humid and warm summer, which has led to very good production. A similar situation was present in France, which nevertheless did not reach last year's optimal conditions, due to more dry soil conditions by the end of July and beginning of August in central-western regions. In Spain a wet and warm spring and early summer provided excellent conditions for the early sunflower in the south. Instead, the northern regions, with a more delayed cycle, suffered from a very dry summer (July and August), which reduced the country's average yield.

In Romania and Bulgaria, spring was characterised by rainfall below the average and by an irregular distribution of precipitations. During May some areas were wetter than average, others drier than average. While July was quite a positive month, August and the first dekad of September were dry and hot, mainly in the south of Romania and north of Bulgaria, which rendered yields lower than initially expected.

Roots and tuber crops

SUGAR BEET

At EU-27 level, the 2008 sugar beet yield is forecast at 62.73 t/ha (– 1.5 % and + 5.4 % respectively compared with the last campaign and the five-year average).

Favourable conditions characterised the sugar beet campaign in Belgium (72.07 t/ha, 3.2 % higher than the five-year average) and the Netherlands (67.63 t/ha, + 4.7 %), with well-distributed rainfall and optimal soil moisture since July. A good season is forecast also for Austria (68.60 t/ha, + 7.4 % compared with the average) and Germany (61.63 t/ha, + 4.4 %), despite the drought affecting the north-eastern part of the country in May and June. Yield formation occurred under suitable soil moisture since mid-July. In Spain, sugar beet grew under average agrometeorological conditions, whereas in Greece precipitations were scarce although well distributed. In Italy and the Czech Republic, yields are expected to be close to those recorded the last year (in both cases around 53 t/ha). Good yields — higher than both 2007 and the five-year average — are forecast for Romania (+ 18.4 % compared with 2007), Slovakia (+ 12 %) and Latvia (+ 5.3 %). In Poland the forecast yield (46.2 t/ha) is lower than the last season but higher than the five-year average. In the United Kingdom and Denmark, a slight yield decrease is expected compared with last year, respectively – 2.4 % and – 3.0 %. The most significant yield decrease is forecast for Finland (– 5.3 % compared with the five-year average), because of frequent rainfall events and thus limited solar radiation in July and August.

POTATO

The forecast for potato at EU-27 level (28.10 t/ha) is lower than the one recorded for 2007 (- 2.4 %), although significantly higher than the five-year average (+ 4.5%).

A good season is forecast for Germany (42.61 t/ha, + 6.7 % compared with the five-year average), where potato completed its cycle under optimal water supply. The potato campaigns in Hungary, Ireland, Lithuania, Romania and Slovakia were characterised by optimal conditions, which led to forecast yields that were decidedly higher both than the last campaign and the five-year average. Forecasts are, respectively, Hungary 26.15 t/ha (+ 16.5 % compared with 2007), Ireland 37.36 t/ha (+ 9.9 %), Lithuania 14.29 t/ha (+ 30.8 %), Romania 15.16 t/ha (+ 9.5 %) and Slovakia 17.06 t/ha (+ 7.9 %).

With respect to the previous campaign, the worst conditions occurred in Denmark (35.60 t/ha, – 9.7 %), Estonia (12.90 t/ha, – 25.3 %), Finland (22.94 t/ha, – 9.8 %), Greece (22.32 t/ha, – 4.5 %), Latvia (13.62 t/ha, – 12.8 %) and Poland (18.08 t/ha, – 15.7 %). In Poland, long-standing dry spells in May and June (during flowering) and between July and August affected many plantations, especially in the western part of the country. In Finland and Estonia, persistent precipitations in July and August were coupled with low temperatures and solar radiation, significantly penalising the crop.

Rice

The rice yield at EU-27 level is forecast at 6.48 t/ha, which is slightly lower than both last year (- 0.6 %) and the five-year average (- 0.9 %).

Among the main producers, only Greece has shown a good potential during the current campaign (7.94 t/ha, + 2.7 % with respect to the five-year average). The others are facing less favourable conditions than the average. Forecasts for Italy, Spain, Portugal and France are, respectively, 6.32 t/ha (– 1.6 %), 6.86 t/ha (– 3.5 %), 5.79 t/ha (– 0.1 %) and 5.30 t/ha (– 4.9 %). A good potential is shown for eastern countries: forecasts are 3.72 t/ha for Romania (+ 10.9 % compared with the average), 4.85 t/ha for Bulgaria (+ 6.9 %) and 3.86 t/ha for Hungary (+ 6.1 %).

In Italy, although simulated values related to canopy development and total biomass accumulation are satisfactory, the Piemonte-Lombardia district experienced conditions favourable to severe blast disease infection. Hail damages are expected in some areas. Blast problems may also have occurred in France.

In Andalucía the sown surface was reduced due to insufficient water availability; salinisation problems affected the Guadalquivir Basin. The abrupt night temperature fall that occurred in Aragón and Cataluña on 16 August (10 °C were reached) could have led to yield losses due to spikelet sterility.

5. Campaign analysis on the Black Sea Area

Turkey: overall a positive season for winter cereal although characterised by erratic weather. The outcome for maize was normal.

The winter season was characterised by erratic weather, which, however, guaranteed sufficient precipitation during the crucial development phases in the main cereal production areas of central Anatolia. Winter wheat reported a positive yield of 2.24 t/ha, almost + 9 % above 2007 and also + 2.4 % over the five-year average. Barley yield is forecast at 2.54 t/ha, + 23.4 % on 2007 and + 5.5 % on the five-year average. For grain maize, which is grown largely under irrigation, the forecast yield is 6.3t/ha, which is substantially stable with respect to the five-year average (6.32 t/ha, – 0.1 %) but with a significant decrease on 2007 (– 10.2 %).

The start of the agricultural season for winter cereals in central Anatolia was favoured by a sufficient soil moisture supply from October onward. The combined occurrence of mild temperatures favoured the emergence and tillering of wheat and winter barley.

The period from January to February was characterised by an enduring cold spell in the Konya and Ankara provinces and even the Black Sea coastal regions, and Bati Marmara experienced snowfalls. The frost and the prevalent cold weather, however, did not impact on the dormancy phase of winter cereals.

In early March the climatic conditions were characterised by a marked distinction between the northern and southern portions of central Turkey. The Black Sea districts and the core of the cereal production areas of central Anatolia received abundant rainfall while the south and Mediterranean regions were rather dry. In concurrence with these events, temperatures had a significant upturn with unseasonal peaks of over 30 °C in the central areas. In April the dry weather moved inland and precipitations were virtually absent since the first half of April in the Konya and Ankara districts. These conditions did not significantly affect winter cereals which, partly due to the cold weather, partly due to a dry April, experienced a certain delay in coming out of vernalisation.

There were precipitation events in the first half of May, which allowed a recovery of soil moisture, while temperatures returned to the seasonal averages. Cereals took advantage of these conditions which, combined with a favourable level of photosynthetically active radiation, allowed the start of the heading phase under good auspices. Even in the districts overlooking the Aegean Sea (Manisa, Izmir) the deficit of cumulated precipitation did not significantly impact on cereals' final developments phases. Rainfall continued in the first half of June over central Anatolia while the rest of the country experienced a progressive decrease of precipitation. At the end of the season, winter cereals had recovered from the hardships caused by the irregular seasonal weather and the final yield resulted above the 2007 yield and even above the five-year average.

Summer crops are prevalent in coastal and irrigated areas and in the western region of Bati Marmara. In these areas, grain maize in particular did not experience the particularly favourable conditions of the 2007 season. Spring saw a sequence of wet and dry weather and even though June was fairly rainy, July was dry. Precipitation events were again fairly abundant and well distributed throughout the month of August, dropping finally in September. This climatic combination favoured the early development of grain maize but later limited its productive development. The estimated productive outcome was in the end substantially stable compared with the five-year average (6.32 t/ha, – 0.1 %) but with a significant decrease on 2007 (– 10.2 %).

Ukraine: favourable meteorological conditions and high yield expectation.

Expected yields are 2.43 t/ha for wheat (+ 6 % on last year), 1.97 t/ha for barley (+ 35 % on last year) and 3.6 t/ha for maize (+ 7.6 % on last year).

The meteorological conditions in general were favourable for all main crop development. A mild winter and the following rains in spring created good soil moisture conditions for

crop growth in summer. As a result, the dry period in June was not affecting crop growth. Warmer than normal weather in summer leads to anticipated crop development, and it is likely that the winter and spring crop harvest will be finished before the LTA dates. As a result, dry conditions in August may not have affected winter crops; however, the growth of summer crops may be affected, especially in the northern regions.

The CGMS modelling results show that water-limited total biomass for winter wheat at the end of the season was above normal and higher than in the previous year.

The remote sensing indicators at the end of the season show that vegetation was worse than normal only in the central part of the country, and better in other parts, especially in eastern and north-western regions.

Analysis of all crop growth indicators during the current season allows us to conclude that the yield of winter and spring crops is expected to be higher than normal, and the yield of summer crops is likely to be close to normal or slightly lower.

6. Campaign analysis on the Eastern Area

Belarus: favourable conditions and high crop yield expectation.

Expected yields are 3.02 t/ha for wheat, 2.91 t/ha for barley and 4.16 t/ha for grain maize.

The winter was good for the winter crop dormant period. Some precipitation in spring together with above normal temperature lead to anticipated crop development. The climatic water balance and soil moisture content at the beginning of summer was better than normal and optimal for crop development. Near the middle of the season the weather was dry; however, crops were able to consume water from the soil.

According to the CGMS modelling results the winter wheat water-limited biomass at the end of the season was higher than normal. Remote sensing indicators at the end of the season demonstrated that the situation with the agricultural vegetation was slightly better than normal. Dry weather in October created good conditions for summer crop harvesting. Analysis of all crop growth indicators during the current season allows us to conclude that the yield of most crops is expected to be higher than normal.

Moldova: dry conditions in August; however crop yield is expected to be above average.

Expected yields are 2.11 t/ha for wheat (+ 61 % compared with last year and + 11 % compared to the five-year average), 1.25 t/ha for barley and 2.57 t/ha for maize (+ 229 % compared with last year).

The first half of the season was favourable for crop growth. Winter and spring weather was close to optimal for main crop development. Rains in May–June lead to good soil moisture storage, and this moisture was enough for winter crop development. Dry weather in the second half of July and in August (especially in southern regions) occurred when winter crops were harvested, and spring crops were close to maturity. The dry period did not seriously affect crop growth.

The CGMS modelling results show that water-limited total biomass for winter wheat at the end of the season was above normal and higher than in the previous year.

Analysis of all crop growth indicators during the current season allows us to conclude that the yield of winter and spring crops is expected to be higher than normal, and the yield of summer crops is likely to be close to normal or slightly higher.

Russia: favourable meteorological conditions and high yield expectation for most crops.

The winter period was favourable for winter crops, and better than in the previous season. The meteorological conditions in spring also were favourable for winter crop development. The spring crop sowing campaign is likely to be finished earlier than in the previous season due to warmer conditions during April.

May 2008 was slightly colder than normal everywhere except in the near Urals region, where air temperature was close to normal. However, in general, air temperature was favourable both for winter crop development and summer crop sowing.

Agrometeorological conditions during the winter and spring leads to favourable soil moisture content everywhere, except in north-western regions where soil moisture content was lower than normal.

The middle of the season was slightly colder than normal. However, the air temperature should not affect crop development. The amount of precipitation was higher than normal in the central region, near the Volga region and in the northern Caucasus. The weather was drier than normal near the western border of Russia, and in the Rostov region.

The July–August 2008 period was warmer than normal practically everywhere. In general, air temperature was favourable for spring crop harvesting and for the last stages of summer crop development. The amount of precipitation in July was close to normal everywhere. However, in August less rain than normal was recorded.

Based on the analysis of all crop growth indicators one may conclude that agrometeorological conditions in the 2008 season were in general favourable for winter, spring and summer crops. The agrometeorological situation for spring crops was unfavourable in the north-western regions

due to a low amount of precipitation in May and June, and for potatoes in the central part of Russia due to high soil moisture content in July. The yield of winter and spring cereals is expected to be higher than in the previous good year, and higher than normal. The yield of sunflower and maize in the European part of Russia is likely to be higher than normal too.

7. Campaign analysis on the Maghreb

Morocco, Tunisia and Algeria: in Morocco the overall crop yield recovered from the 2007 drought; Algeria and Tunisia achieved average yields for cereals.

The estimated yield for wheat in the 2007–08 season in Morocco is 1.38t/ha, – 6.6 % on the five-year average but with + 124 % recovery on the 2007 disaster. Barley is estimated at 0.6 t/ha, + 57 % on 2007 but still – 31 % with respect to the five-year average. In Algeria, wheat and barley forecasts remained stable at 1.31 t/ha and 1.48 t/ha respectively. In Tunisia the wheat forecast is 1.71 t/ha, which is substantially stable with respect to 2007 but + 1.3 % on the five-year average. The yield of barley is estimated at 0.9 t/ha (– 16.7 % on 2007, and – 0.8 % on the five-year average).

In Morocco the beginning of the 2007–08 agricultural season was characterised by dry weather and mild temperatures in the most important winter cereal production areas of the centre-west. These conditions were not favourable for the initial development stages of winter cereals. There was, however, some erratic precipitation from January to April which partially made up for the protracted water deficits. Higher than average temperatures in mid-February and March triggered an anticipated development of wheat, which reached maturity almost one dekad in advance compared with the norm. There were some sparse rains in May and then the seasonal outlook for the northern and eastern Maghreb followed a normal evolution. Dry conditions began again from June onward without, however, affecting the final stages of maturity of winter cereals. At the end of the agricultural season the cumulated precipitation exceeded by over 10 % that of 2007 but it still remained in deficit of the requirements. The harvest season was completed within the first dekad of June and, partly thanks to the distribution of the scarce rains and the mild temperature, the wheat yield returned to average levels. Barley, which is cultivated in more marginal areas, did not fully take advantage of the improved conditions and, although partly recovering, maintained significantly low yields. Maize cultivation is, for the most part, under irrigation and was not affected by the seasonal trends.

In Algeria the start of the season was favourable to cereal germination and tillering. Dry conditions in the west of the country did not affect the main wheat production areas, which are concentrated on the eastern coastal region of Oum el Bough. There were precipitations in these areas, which kept a sufficient moisture supply for cereals during the shooting and stem elongation phases. The positive trend that began in early spring continued throughout April, which was also characterised by sparse rain events coinciding with the final development stages of winter cereals. Precipitation continued all across May and June combined with mild temperatures. At the end of the harvest, in mid-June, the season offered average production. Conditions appear to be even more stable further to the east, in Tunisia. Temperatures were within the norm during winter and, in the winter, cereal production areas of the north and north-east benefited from sufficient rains in April. These, coupled with relatively high temperatures, favoured photosynthesis and biomass accumulation. Also in Tunisia yield at harvest is estimated to be within the norm.

8. Pasture analysis

Overall situation: The 2008 season resulted in good overall productivity levels for forage crops regardless of an unfavourable summer climatic trend. The weather conditions in spring favoured an abundant and early first cut. This trend also facilitated a protracted grazing period in the Iberian Peninsula and the Mediterranean regions. Alternating dry and wet periods characterised the summer season and this trend affected the productivity and quality of the forage and possibly delayed a second cut.

The productivity levels of forage and pastures during the 2008 season remained stable with respect to 2007 especially in the most relevant livestock breeding regions of the EU. Favourable climatic conditions, mild temperatures and well-distributed precipitation characterised the winter. The first cut was anticipated almost everywhere and production levels were, in general, above average. Precipitations in May were locally an obstacle to field accessibility without, however, affecting significantly the productivity. The excess in rain may, however, have had a negative impact on the quality of the forage. Dry conditions characterised July and August over most of central Europe. Second and potential third cut practices were probably reduced and delayed by this trend. The conditions of the green vegetation, as represented by the NDVI, appeared generally stable over most of Europe with respect to 2007. There was instead a marked increase over the LTA. Considering the localisation of the forage production areas, the worse conditions were concentrated between Germany and Poland and this is probably due to the drought that began in the region from August onward.

Permanent pastures

The overall availability of green biomass during the 2008 grazing season was within the norm in the regions of highest concentration of grazing livestock in the EU-27 (Spain, Ireland and central France). The season had an early start in the Iberian Peninsula due to a favourable combination of mild temperatures and sufficient precipitation. Regardless of a dry spell during March, the May rain allowed an extension of the grazing season. There were abundant precipitations in Ireland and the UK during the winter and these conditions favoured an early boost in vegetation. The persisting rain that followed, however, only allowed a relative increase of productivity since the excess of moisture was not supported by adequate radiation.

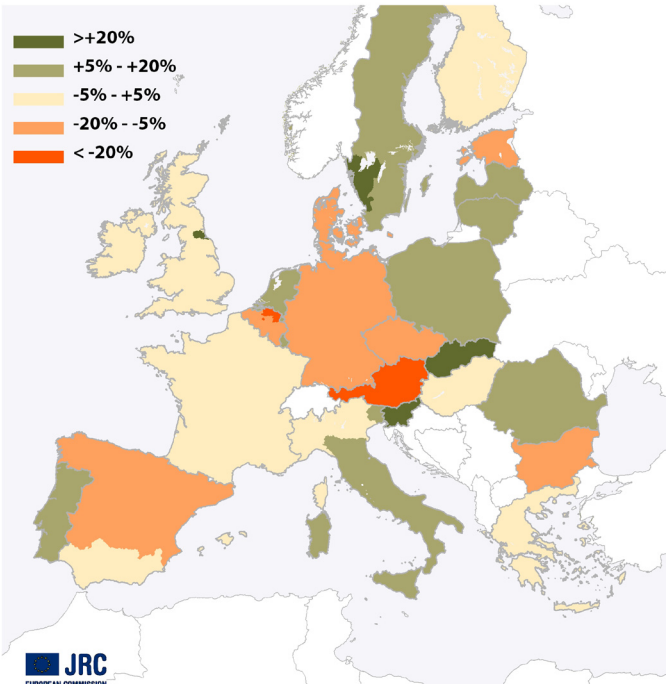
Rotation forage/hay

The cultivation of rotation forage crops for hay production is largely associated with the presence of stabled livestock and specifically cattle for milk production. In France, the mild and wet weather at the beginning of spring favoured the development of green vegetation, marking a significant improvement with respect to 2007. Biomass had a boost until June, but the inception of dry weather from July onward and these conditions probably delayed limited re-growth and the following cuts. The North Sea regions experienced favourable climatic conditions at the beginning of the season, resulting in a positive forage yield at the first cut. There was limited re-growth in central Germany during July and August; the persisting dry period possibly delayed the timing of the second forage cut and was associated with lower than average yields. Overall, productivity remained slightly below average. Poland and other east European countries experienced alternating weather conditions. Dry weather characterised spring and this resulted in an anticipated but scarce forage first harvest. Precipitation increased during summer in the eastern portions of the country, resulting in an improvement in the overall productivity that partly made up for the early losses.

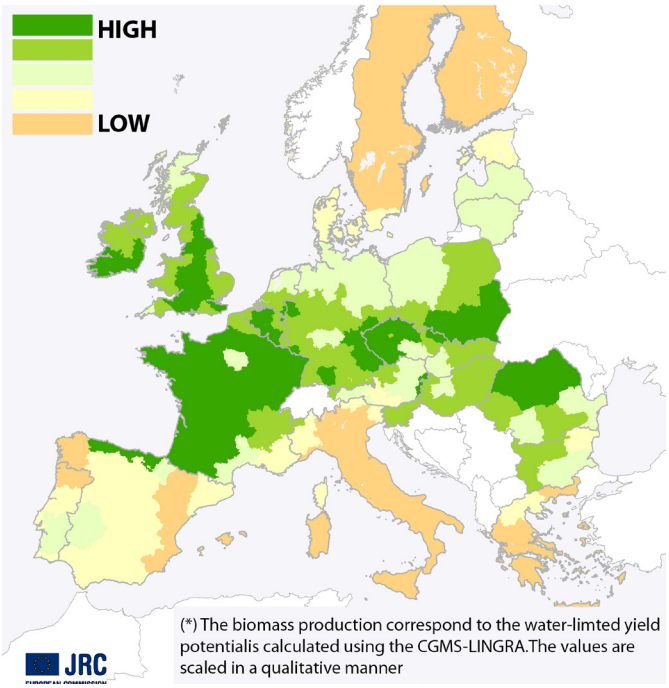
Rotation forage / silage/ green maize

The vocational silage production areas in south and central Europe, and especially Italy, experienced a dry winter. Precipitations recovered and were abundant from May onward and were sufficient to make up for the cumulated deficit favouring a positive outcome of the green maize crop. Overall productivity is estimated to be above average and with a marked improvement with respect to the 2007 season.

CUMULATE GREEN BIOMASS PRODUCTION
% Variation 2008 - 2007



APRIL - SEPTEMBER 2008
CUMULATE GREEN BIOMASS PRODUCTION (*)

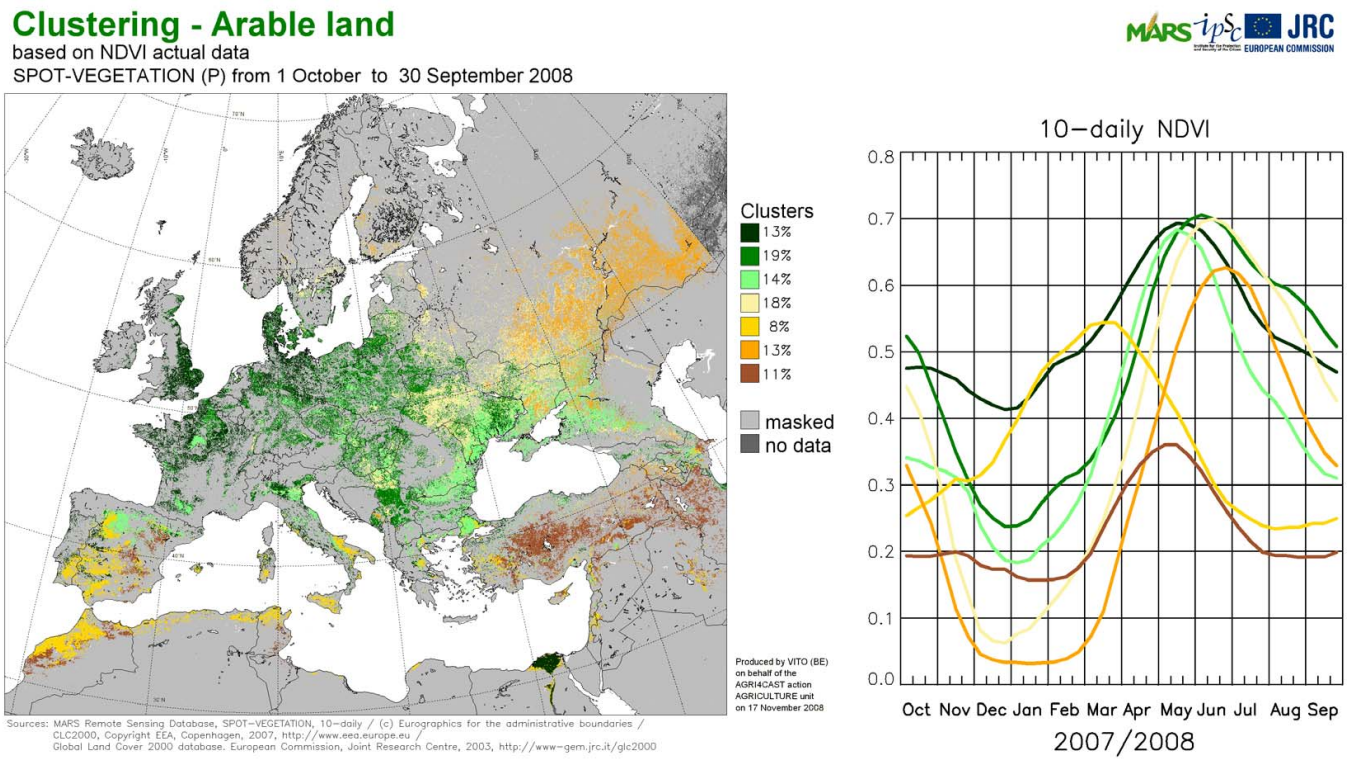


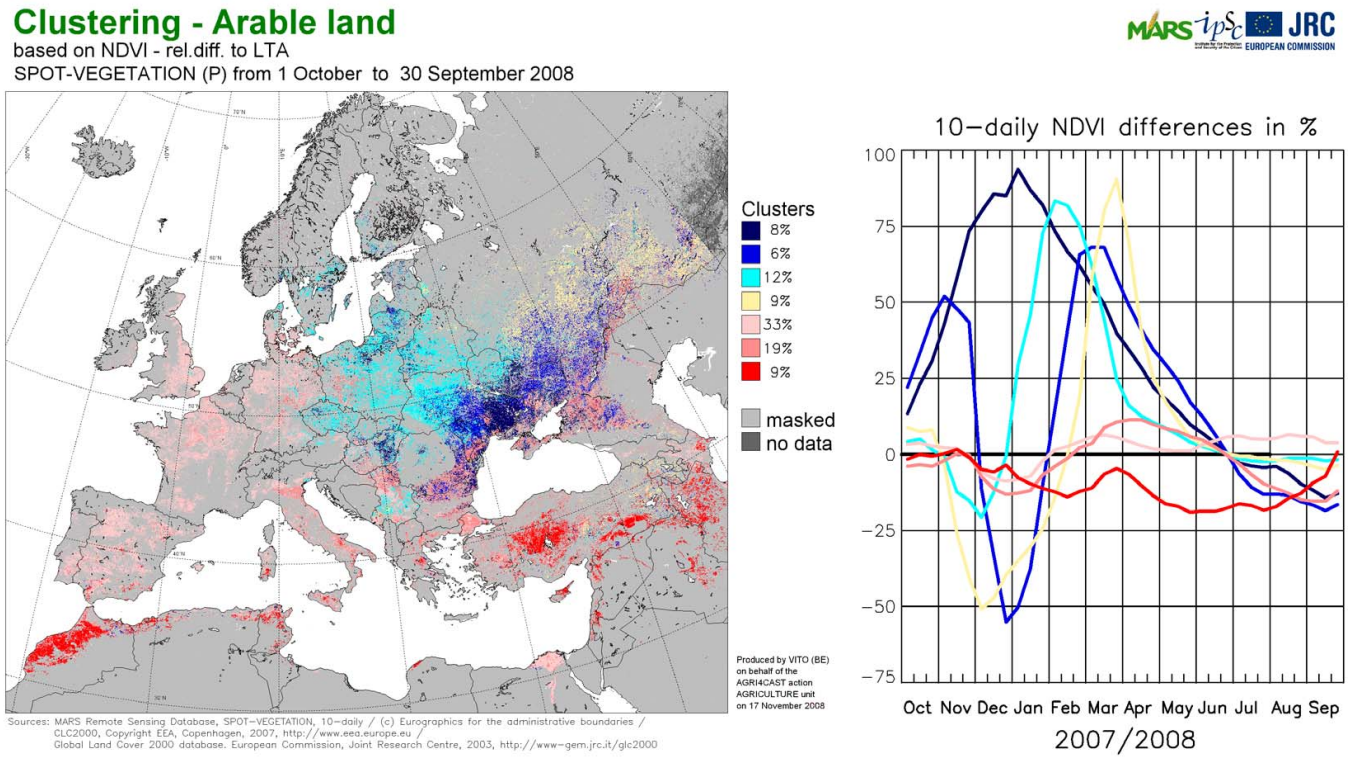
(*) The biomass production correspond to the water-limted yield potentialis calculated using the CGMS-LINGRA.The values are scaled in a qualitative manner

9. Satellite analysis 2007/08: SPOT Vegetation

Map highlights –normal conditions throughout Europe

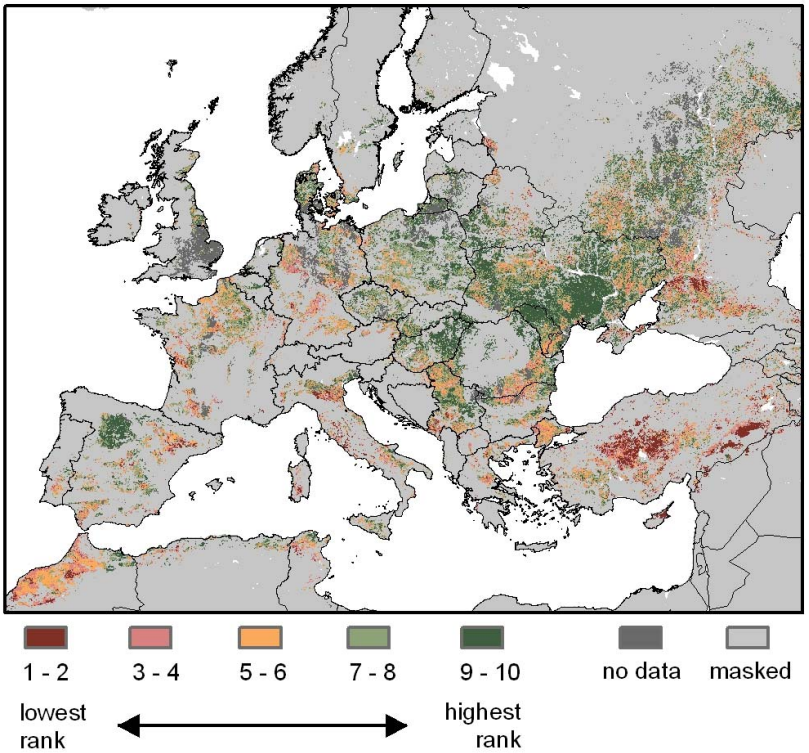
The 2007/08 season was in large parts of western Europe characterised by normal region specific NDVI profiles with average values. This phenomenon is well kept in the cluster analysis of percentage differences comparing the profiles of 2007/08 with the average year for the time period from October to September. The growing season of east European countries started early compared with the average season and was followed by drop of NDVI values to average or even slightly below after reaching the NDVI maximum. Turkey and Maghreb experienced slightly below average values mainly at the beginning and at the end of the growing season due to a shorter than usual length.





The less favourable conditions in Turkey due to drought are well depicted when analysing the cumulated NDVI values from October 2007 until September 2008 and ranking them among the available time series (in this case with NDVI data from SPOT Vegetation since 1998). Cumulated NDVI values for this region (dark red) were the lowest in the whole time series, whereas they are among the highest for Ukraine and Hungary, indicating a good situation. The same goes for Castilla y León in Spain, which experienced a very good season.

Comparison of Cumulated NDVI Values (October - September)



Cumulated NDVI of 2007/2008 ranked within all historic years (1998/1999 - 2006/2007) for arable land

Sources: MARS Remote Sensing Database, SPOT-VEGETATION, 10 daily / © EuroGeographics for the administrative boundaries / CLC2000, Copyright EEA, Copenhagen, 2007, http://www.eea.europa.eu / Global Land Cover 2000 database. European Commission, Joint Research Centre, 2003, http://www-gem.jrc.it/glc2000

B. New campaign analysis (from 01-Sept. to 20-Nov. 2008)

1. Agrometeorological analysis

Generally favourable conditions for a prompt germination and fields' preparation. Very dry in Portugal, north-west Spain, northern Germany and central Italy; excessively wet in Finland

Temperature

Slightly cooler than seasonal in western EU and progressively warmer eastward. Quite mild in Russia and eastern EU borders.

The period was mainly characterised by a marked east-west thermal gradient: milder than seasonal conditions on the eastern side of the continent and progressively cooler on the western side. However, almost everywhere the temperatures remained within the normal ranges of variation.

Analysing the period more in detail, it is evident that on the central and eastern side of the EU particularly mild conditions occurred at the beginning of **September** and between mid-**October** and mid-**November**, when the synoptic circulation changed, determining even cooler then seasonal temperatures. In the two milder periods, both the minimum and maximum temperatures remained almost constantly above the seasonal average. Significant outliers (above three standard deviations) were recorded in the stripe between Tunisia and Russia: in central and southern Italy in September (35–38 °C versus 23–25 °C of the LTA), in Ukraine, Romania, Poland and Hungary in October (22–3 °C versus 7–8 °C LTA) and in Austria and the Czech Republic in November (22–24 °C versus 7–8 °C LTA). However, along the three months, the temperatures decreased progressively

and in mid-October the first frost events occurred in many areas in central and northern EU.

Opposite conditions were recorded in the Iberia Peninsula, with slightly lower than seasonal temperatures, especially in the second half of the period.

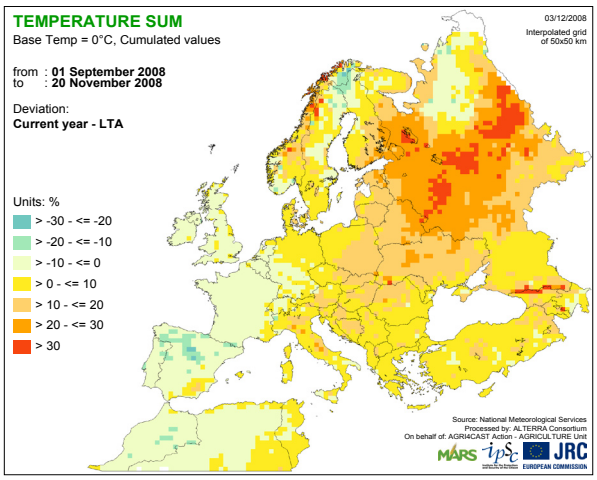
Therefore, in general, germination occurred under favourable thermal conditions and the progressive reduction of temperatures avoided damages caused by the frost events.

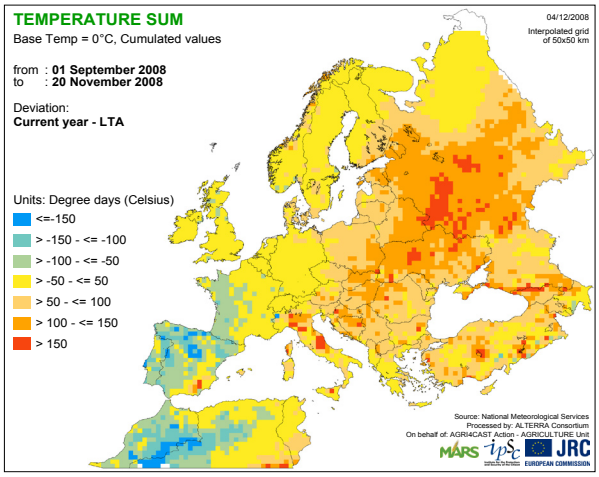
Rain

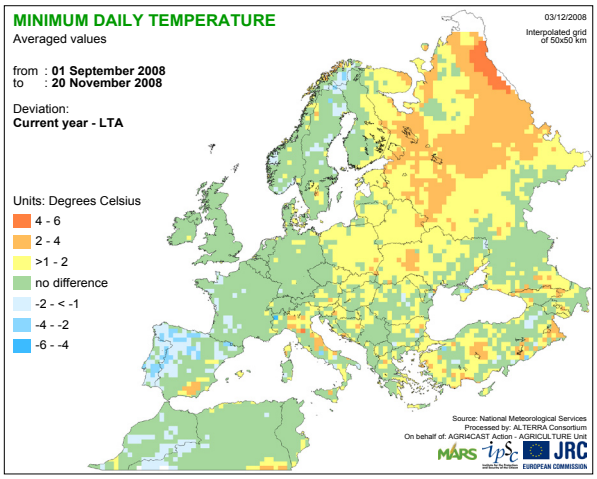
Generally good water supply in the EU (except Italy, Portugal, Hungary and Greece). Persistent rain in northern latitudes. Beneficial and abundant rain in Morocco and Algeria.

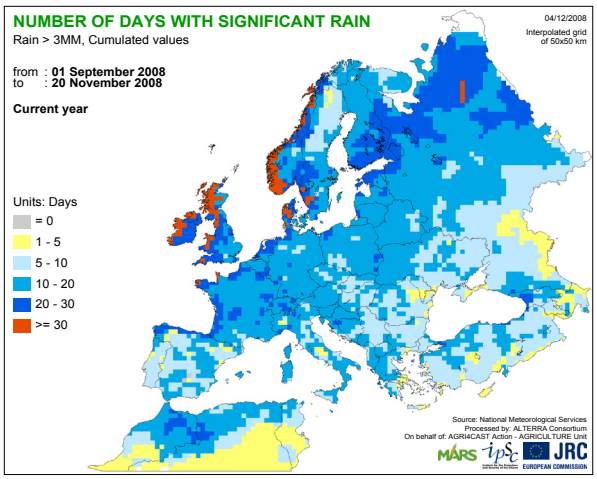
Also the rain in general was favourable for the new sowing period. In the majority of areas it was quantitatively adequate and well distributed in time. However, in **September** the rain was more abundant, especially in the Mediterranean and Black Sea Basin, and in the English Isles as well. In **October** the areas located in the northern latitudes received even more rain than expected, whilst the Mediterranean and Black Sea remained relatively dry. **November** was the driest month in the considered period and the rain was practically absent except in France, northern Spain, Italy, Maghreb, the English Isles, Benelux and Sweden. Very good amounts of rain were recorded in Morocco and Algeria, which is very valuable for the upcoming winter crops.

Locally, with a patched pattern, excesses or deficits were recorded. In particular, excessive and persistent rain disturbed the sowings in the English Isles, Denmark and Sweden. At the same time insufficient water supplies affected Portugal and western Spain, as well as central Italy and Sicily, Bulgaria, eastern Greece, Hungary and central-southern Russia.









2. Winter crop sowing overview

EU-27

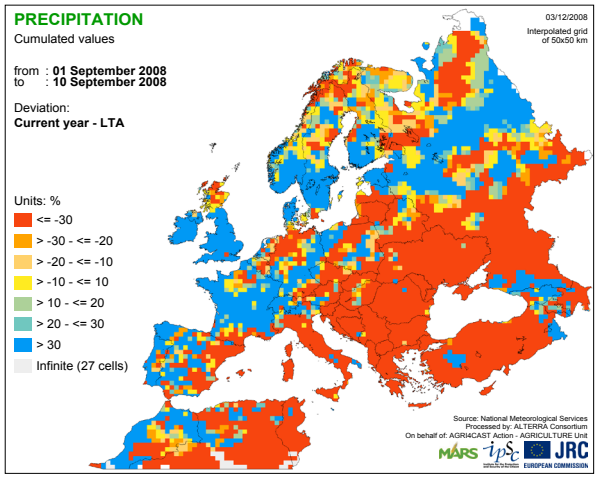
Winter wheat: wet sowing period occurred in eastern Europe, especially in Poland and Ukraine.

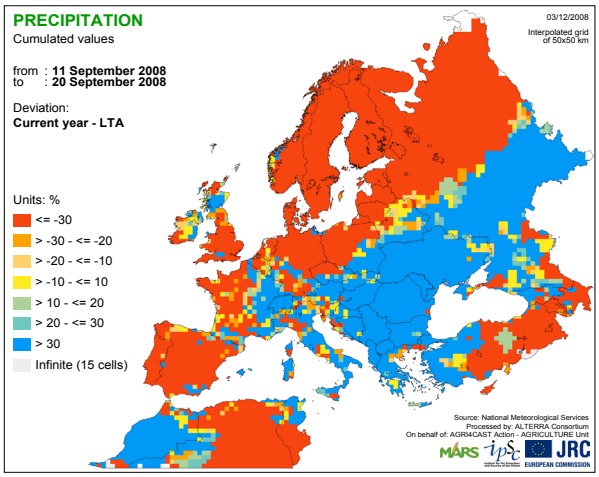
Precipitations around sowings affected mainly eastern countries and some regions in central Spain, Sardinia, north-eastern Italy and Greece. In south-eastern Poland and most of Ukraine the cumulated rainfall during the sowing period exceeded the LTA by 50 to 100 mm. The same regions and some areas around the border between France and Germany experienced relatively cooler days during the stage of emergence.

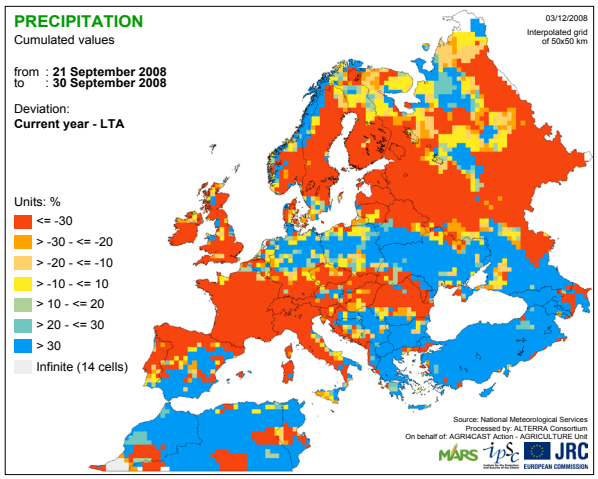
Very dry conditions in the standard sowing period occurred in Portugal, especially in the northern regions.

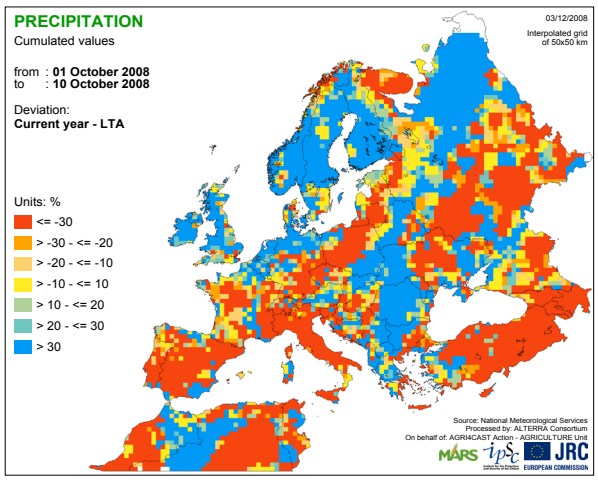
Winter barley: overall normal conditions; mild temperatures in central and eastern Europe should favour early emergence.

The sowing season of winter barley, as for other winter cereals, has reported no significant problems of field accessibility or excessive soil moisture due to persistent rains. The only difficulties appear to be concentrated in eastern Ukraine and southern Belarus where intense precipitation has been reported, precisely coinciding with main barley seeding operations. Precipitation in these









areas persisted for over two weeks and a possible delay could affect germination from taking place in a colder context. Also southern France and northern Italy appeared to be marginally affected although they are less relevant for the crop under analysis. Elsewhere, in central Germany, the Czech Republic, Slovakia, Hungary, Romania and Bulgaria, mild temperatures should potentially have favoured the emergence phase.

Winter rapeseed: generally favourable conditions; persistent rain narrowed the fields' activities only in the UK and Poland.

Despite a general reduction as compared with the previous year, the main production areas remain France (24 % of the 2007 EU-27 surface), Germany (23 %), Poland (12 %) and the United Kingdom (10 %). On the contrary, Romania (6 %), the Czech Republic (6 %) and Hungary (4 %) increased compared with the 2007 campaign.

Germany, Hungary, the Czech Republic and Romania experienced a favourable August and September. They got a quite seasonal amount of rain, distributed in a way to guarantee an optimal sowing.

In the Czech Republic the rain was more concentrated in mid-August but scarce in the following days. On the contrary Romania experienced a relative dry August and a rainy period in mid-September.

Also in France the rains were distributed in two rainy periods: the first half of August and the first half of September. Relatively wetter conditions occurred in Poland, where the rain was more persistent.

Decidedly too many wet conditions faced the farmer in the UK with only a usable window for sowing available at the very end of August and a second practically almost one month later.

However, everywhere the temperatures were quite favourable for a prompt germination. No extreme temperatures were recorded during the whole period and radiation was within the average level. Rapeseed could grow under normal conditions for emergence.

BLACK SEA AREA

Ukraine, Belarus, Moldova: dry sowing conditions in some regions.

Air temperature in September was close to normal in Ukraine, slightly higher than normal in the eastern part of Belarus, and slightly lower in Moldova. In October the air temperature was higher than normal in all countries.

The amount of rain in September was close to normal in Moldova. Practically in all regions of Ukraine the amount of precipitation in September was higher than normal. In Belarus the weather in September was drier than normal in the northern regions and wetter than normal in the southern regions. In October 2008 the amount of rain was lower than normal practically everywhere.

In general, meteorological conditions were favourable for winter crop sowing in Ukraine. In Moldova and Belarus the conditions for sowing were slightly dry. Higher than average air temperatures in the eastern part of Belarus should lead to a delay in winter crop sowing.

EASTERN COUNTRIES

Russia: delay of winter crop sowing in some regions.

September 2008 was warmer than normal in many regions, and especially in the western part of the country. The air temperature in October continued to be high, and in some regions it was higher than normal by 3–7 oC.

The amount of precipitation in September was lower than normal in the northern regions, and higher in the near Volga and in the southernmost regions of Russia. In October the amount of rain was lower than normal practically everywhere.

Soil moisture content in September was optimal for winter crop sowing in the main regions.

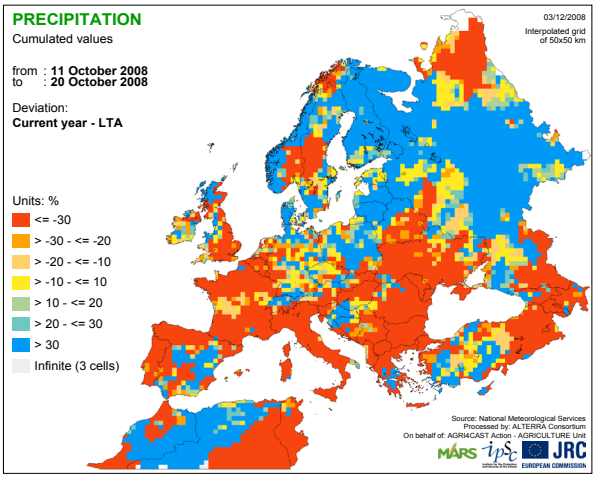
Thus, meteorological conditions during September–October 2008 were warmer and drier than normal in many regions of Russia. However, good soil moisture content created favourable conditions for winter crop sowing. Only in some regions (especially in the central and southern parts of European Russia) winter crop sowing could be delayed due to high air temperatures, which should lead to weak crop development before the winter dormant period.

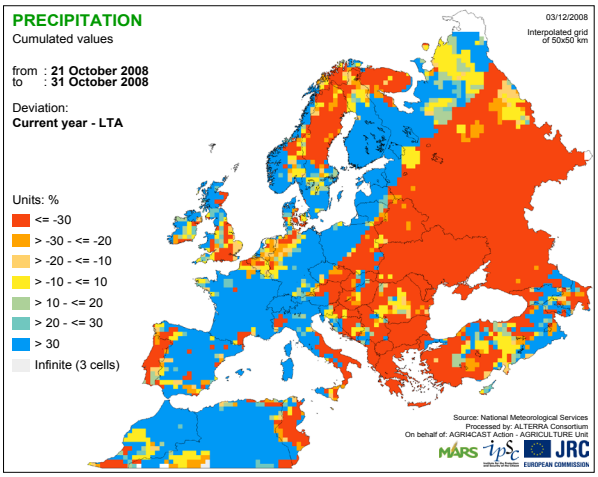
MAGHREB

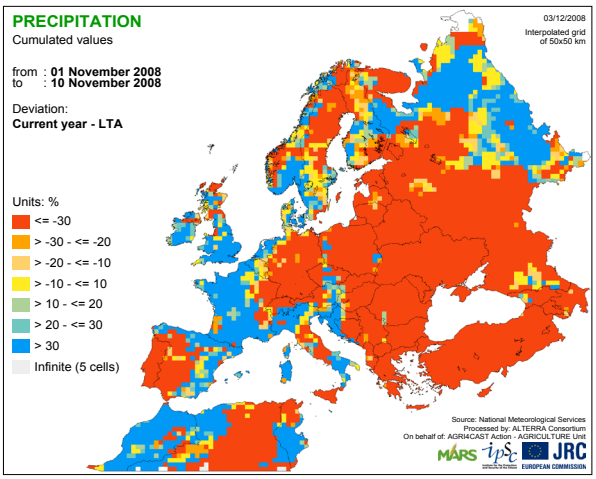
Morocco and Algeria: Wet sowing season.

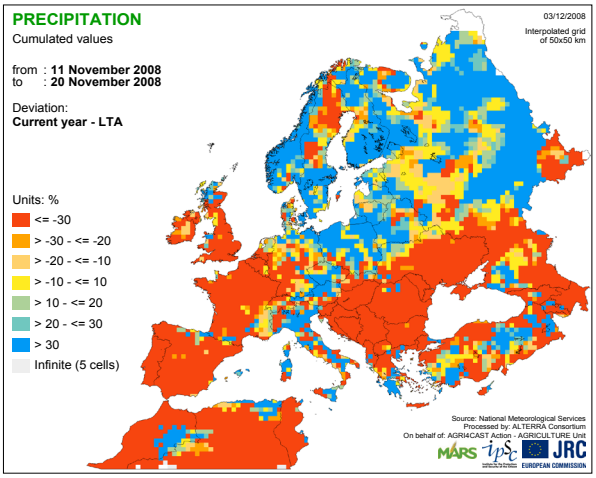
In the most important winter cereal production areas of Morocco, the beginning of the 2008–09 agricultural season was characterised by unusually wet weather. After a very dry summer, the first rains arrived by the third dekad of September in the main agricultural regions and have persisted until the first dekad of November. A similar situation was experienced in Algeria, although total cumulated rainfall in the period was lower than in Morocco (170 instead of 225 mm). The period from the second half of October to the beginning of November was especially rainy in both countries, but in Morocco it stopped raining from 5 November.

In Tunisia, autumn rainfall was more moderate, closer to the country's LTA, with a total cumulated rainfall during the period of approximately 100 mm. It was quite well-distributed and persistent, even during the second dekad of November. In general, good conditions have been present for the sowing of winter cereals, although some field preparation practices may have been hampered by the rain. Temperatures were in the norm in the three Maghreb countries during most of the period, but they became lower than average since the beginning of November, which is beneficial for the hardening of the winter cereals that would have been sown on time.





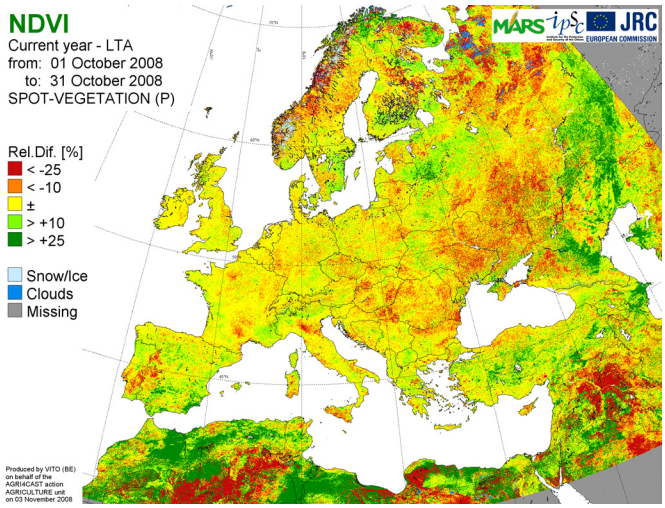


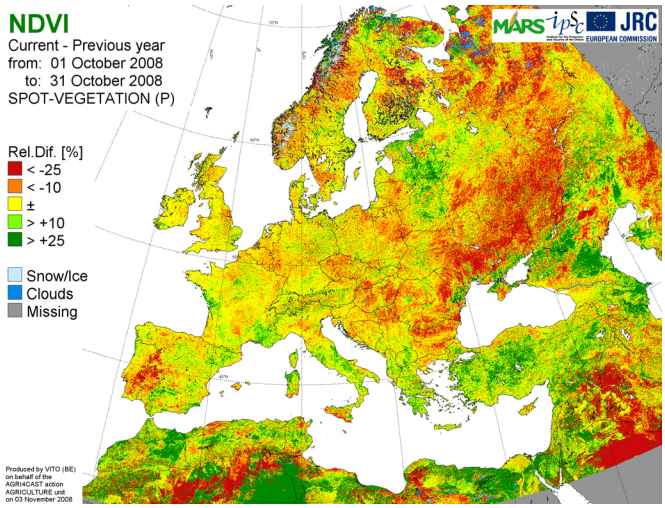


3. Satellite analysis: SPOT Vegetation

Map highlights - new season

The two maps show the relative differences of the NDVI maximum composite values of the current season (2008/09) compared with the LTA (left) and with last year (right) for the month of October. Normal autumn conditions are indicated for large parts of Europe in yellow. Slightly less biomass accumulation than the average and than the previous year can be observed only in single areas like in the Po Valley (Italy) and Midi-Pyrénées (France). The reverse applies in parts of Maghreb, where an early boost of vegetation is observed (green colours).



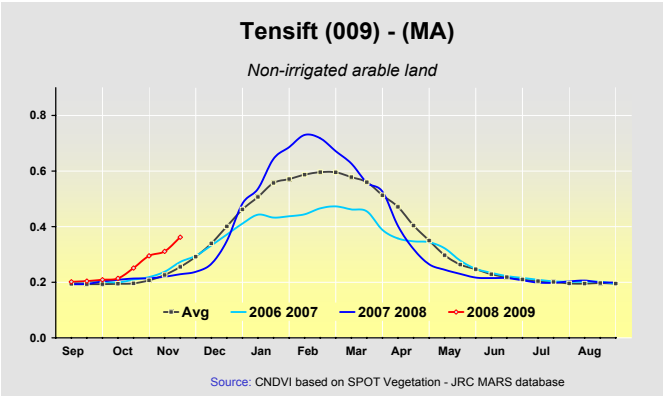


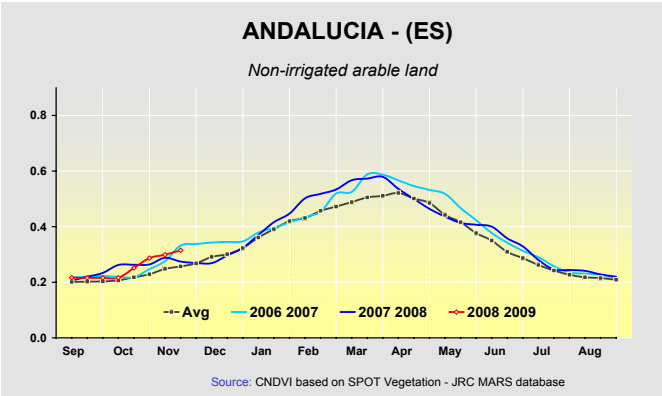
CNDVI - Highlights

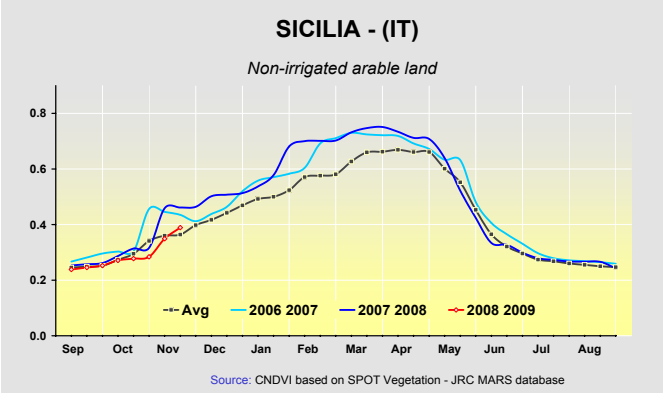
The anticipated vegetation boost for Morocco is present in the NDVI profiles for arable land (see Tensift). The increase of NDVI earlier than average can be related to unusual rainfalls in October.

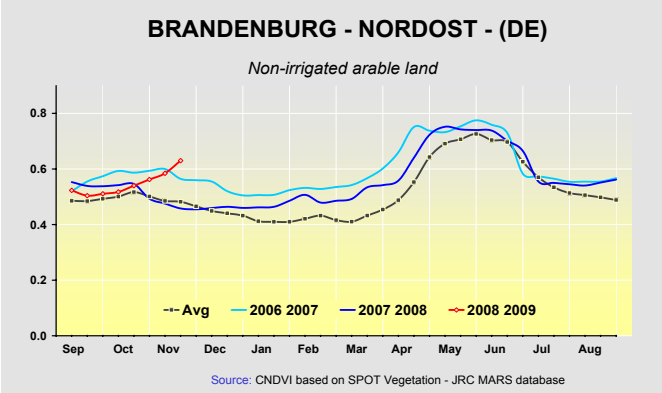
The start of the season in the countries bordering the north of the Mediterranean is normal. The NDVI values of the profile are oscillating around the average (see the profile of Sicilia in Italy). Values slightly above the average are displayed in the profile of Andalucía in Spain.

Among northern European countries, the accumulation of the biomass of winter crops before dormancy has begun. A good start before dormancy is exhibited in the profile of Brandenburg-Nordost in Germany.









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