

Updated crop yield forecasts for 2006 and analysis of drought effects

This Memorandum provides additional information, maps and graphs related to IP/06/1097 on the forecast of cereal production and the impacts of drought. During the agricultural season, the Commission's Directorate General Joint Research Centre (DG JRC) regularly issues forecasts for the main crop yields and produces analyses of the impact of weather conditions on crop production. These are based on advanced methodologies using satellite remote sensing and mathematical models which simulate crop growth.

The models and methodology in use have been conceived, experimentally developed and operationally implemented within DG JRC.

The crop yield forecasts, analyses and full description of the methodology are available at: <http://agrifish.jrc.it/marsstat/>.

Crop yield estimates for the main crops for EU25

MARS crop yield estimates at EU25

Figures updated as of 31st July 2006

	Yield 2006**	% difference compared to		
		2005	Average(2001-2005)	2003
Cereals (total)	4.8	-2.7	-3.0	6.8
Total wheat	5.3	-3.0	-1.3	8.9
Soft wheat	5.7	-4.0	-2.3	6.8
Durum wheat	2.6	5.0	2.0	14.7
Total barley	4.1	0.3	-4.6	-0.5
Winter barley	5.1	-2.0	-1.7	11.4
Spring barley	3.5	1.4	-7.4	-9.9
Grain Maize	7.9	-5.1	-0.1	18.7
Other cereals	2.9	-1.7	-2.9	-3.1
Rape Seed	3.1	-2.2	4.9	17.2
Sunflower	1.9	-0.5	4.4	10.1
Sugar Beet	58.3	-3.0	2.7	8.4
Potato	28.3	-4.3	0.4	6.7

*Data sources: **MARS-STAT/JRC*

Yield: figures expressed in t/ha and rounded to 100 kg

Analysis of crop yield by crop type and Country

Total Wheat (soft and durum varieties)

The yield is expected to be 3% lower than last year; the resulting EU production could be decreased by about 4.3 Mt. In 2005, wheat production reached a record level. The decrease of production, compared with the average of the last 5 years, is forecast at 1.4 Mt. Thanks to an early maturation, durum wheat (except Italy) production is higher than 2005. Therefore, the total wheat production deficit is attributable solely to soft wheat, which shows the highest decrease in Poland (13.4% lower than previous year and 0.7 Mt less production), UK (-9.0% as compared to 2005 and a reduction around 1.5 Mt), France (-3% compared to 2005, with 0.9 Mt of reduction) and Germany (-1.8% as compared to 2005 with 0.5 Mt of reduction).

MARS crop yield estimates at EU25 and National level

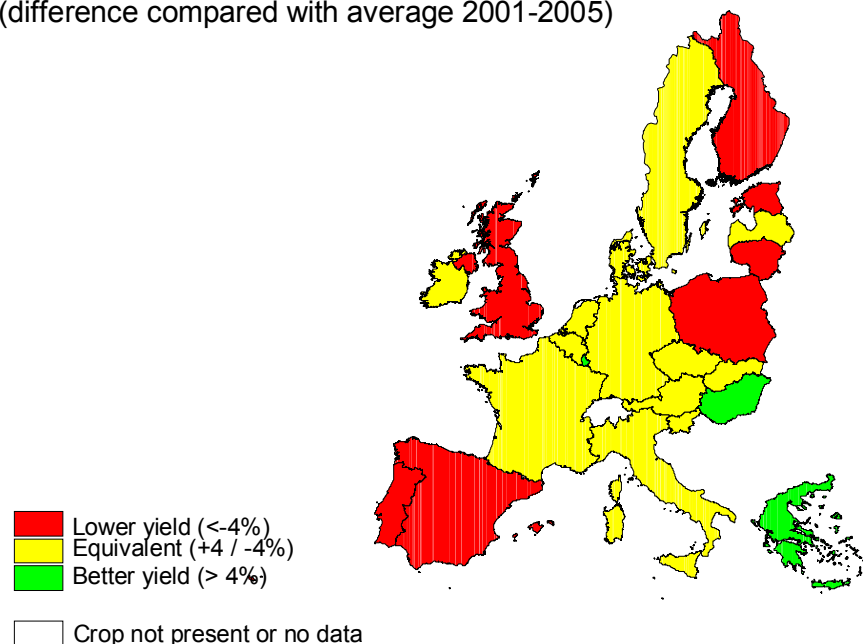
Figures updated as of 31st July 2006

	Total Wheat				
	Yield 2005*	Yield 2006**	% 06/05	Average (2001-2005)*	% 06/Average
EU25	5.4	5.3	-3.0	5.3	-1.3
AT	5.0	5.2	3.7	5.1	2.2
BE	8.4	8.6	2.6	8.4	2.2
CZ	5.1	5.0	-0.3	4.9	3.4
DE	7.5	7.3	-1.8	7.4	-0.7
DK	7.2	7.1	-1.6	7.2	-0.7
EE	3.1	2.3	-25.8	2.5	-6.8
ES	1.7	2.2	30.3	2.6	-13.7
FI	3.7	2.2	-41.6	3.5	-36.9
FR	7.0	6.8	-2.9	7.0	-2.8
GR	2.1	2.3	9.4	2.0	12.7
HU	4.5	4.4	-1.4	4.0	10.3
IE	8.4	9.0	7.3	8.9	2.0
IT	3.6	3.3	-9.3	3.2	3.3
LT	3.7	3.4	-10.2	3.6	-7.1
LU	6.0	6.5	7.8	6.1	6.5
LV	3.6	3.1	-13.8	3.1	0.8
NL	8.7	8.2	-5.8	8.4	-3.2
PL	4.0	3.4	-13.4	3.8	-10.0
PT	0.7	1.3	88.1	1.3	-4.5
SE	6.3	6.0	-4.7	6.0	0.8
SI	4.7	4.4	-5.5	4.4	0.1
SK	4.3	4.1	-5.3	4.0	1.6
UK	8.0	7.3	-9.0	7.7	-6.2

Data sources: *EUROSTAT; **MARS-STAT/JRC
Yield: figures expressed in t/ha and rounded to 100 kg

Total Wheat estimation campaign 2006

(difference compared with average 2001-2005)



Total Barley (including winter and spring varieties):

At EU level, barley yields are expected to remain almost unchanged compared to 2005, though it is reduced by 4.6% if compared to the last 5-year average (equivalent to a production decrease of 3.5 Mt).

The significant reductions estimated in Germany (-5.6% compared to 2005), Poland (-9.6% compared to 2005 and 0.4 Mt), Latvia (-36.0% and 0.3 Mt), UK (-4.5% and 0.2 Mt) and Czech Republic (-8.7% compared to 2005) were compensated by the good harvest in Spain (+48.7% compared to the extremely low 2005 yield but -14.6% compared to 5-year average).

MARS crop yield estimates at EU25 and National level

Figures updated as of 31st July 2006

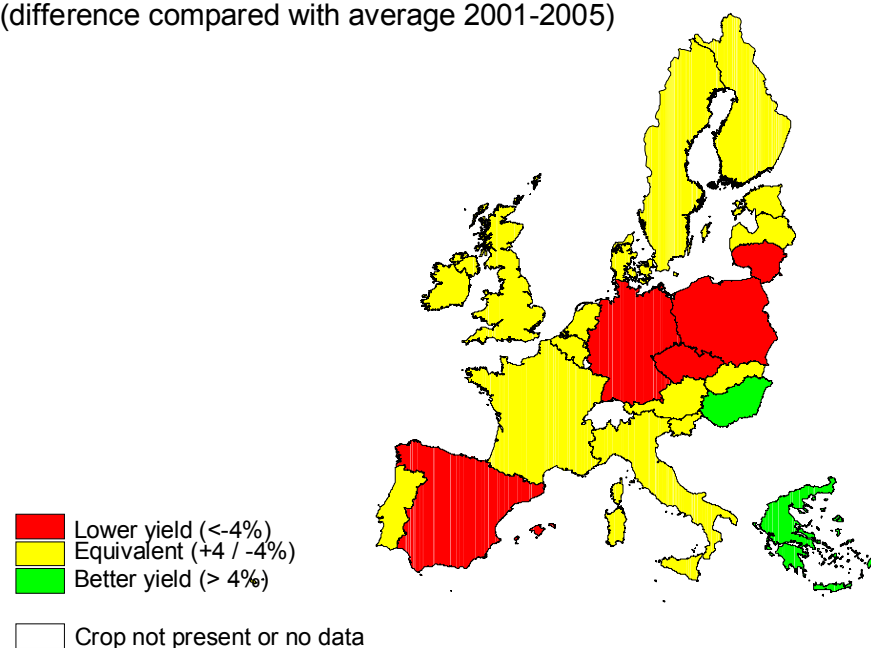
	Total Barley				
	Yield 2005*	Yield 2006**	% 06/05	Average (2001-2005)*	% 06/Average
EU25	4.1	4.1	0.3	4.3	-4.6
AT	4.6	4.5	-1.4	4.6	-1.5
BE	8.0	8.1	1.0	7.9	2.9
CZ	4.2	3.9	-8.7	4.1	-6.2
DE	6.0	5.6	-5.6	5.9	-4.6
DK	5.4	5.2	-3.5	5.2	-0.7
EE	2.5	2.1	-18.1	2.1	-2.7
ES	1.4	2.1	48.7	2.5	-14.6
FI	3.5	3.3	-6.1	3.3	1.3
FR	6.5	6.4	-0.7	6.2	2.6
GR	2.4	2.3	-5.2	2.2	5.9
HU	3.8	3.9	3.6	3.4	16.7
IE	6.2	6.3	1.6	6.5	-2.6
IT	3.8	3.5	-8.9	3.6	-2.5
LT	2.7	1.7	-36.0	2.7	-34.7
LV	2.5	2.0	-18.1	2.1	-1.6
NL	6.1	5.9	-3.5	6.0	-1.1
PL	3.2	2.9	-9.6	3.2	-8.2
PT	0.6	1.3	113.3	1.3	1.9
SE	4.3	4.3	-0.3	4.3	-0.1
SI	4.0	3.7	-5.9	3.6	2.8
SK	3.6	3.4	-5.6	3.5	-2.5
UK	5.9	5.6	-4.5	5.7	-1.8

Data sources: *EUROSTAT; **MARS-STAT/JRC

Yield: figures expressed in t/ha and rounded to 100 kg

Barley estimation campaign 2006

(difference compared with average 2001-2005)



Grain Maize

At EU level, for the time being the yield decrease in grain maize is estimated at 5.1% compared to 2005. This deficit combined with an area decrease will result in a lower production of at least 3.9 Mt. However, the impact on irrigation reserves in some of the main productive basins of the EU (south-west France and northern Italy) could cause further reductions if not enough rainfall occurs in the coming weeks.

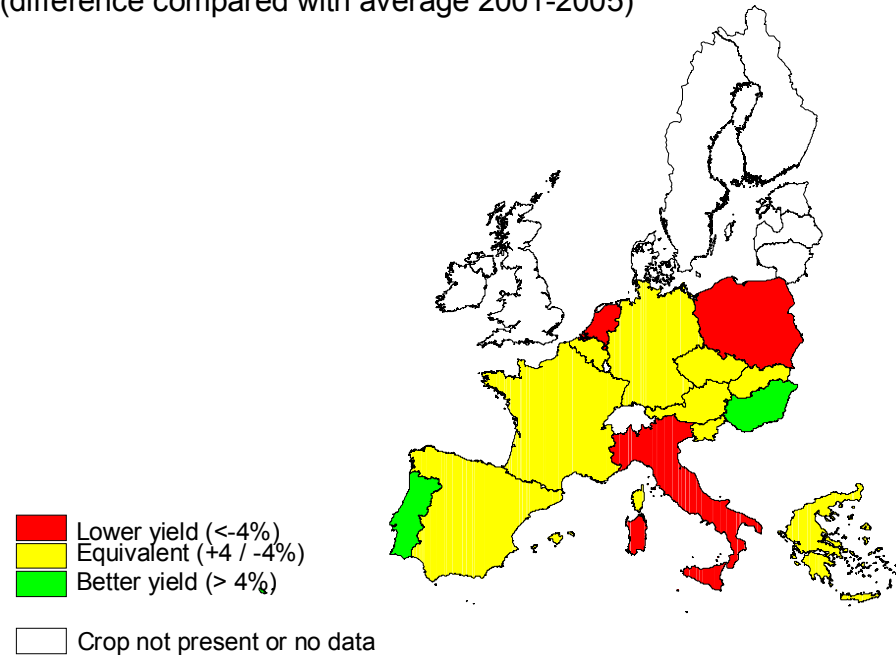
MARS crop yield estimates at EU25 and National level

Figures updated as of 31st July 2006

	Grain Maize				
	Yield 2005*	Yield 2006**	% 06/05	Average (2001-2005)*	% 06/Average
EU25	8.4	7.9	-5.1	8.0	-0.1
AT	10.3	9.4	-8.6	9.3	1.7
BE	11.7	11.4	-2.5	11.4	0.0
CZ	7.2	6.7	-6.4	6.8	-1.9
DE	9.2	8.6	-6.4	8.8	-1.8
ES	9.7	9.9	2.5	9.6	3.1
FR	8.3	8.3	0.1	8.4	-1.6
GR	9.0	8.9	-1.0	8.9	0.0
HU	7.5	6.9	-8.6	6.0	15.6
IT	9.4	8.7	-7.5	9.1	-4.3
NL	12.2	11.7	-4.3	12.3	-4.9
PL	5.7	5.4	-6.4	5.8	-7.3
PT	4.7	5.9	26.2	5.5	6.7
SI	8.3	6.9	-16.7	6.9	-0.5
SK	7.0	5.5	-22.3	5.4	1.9

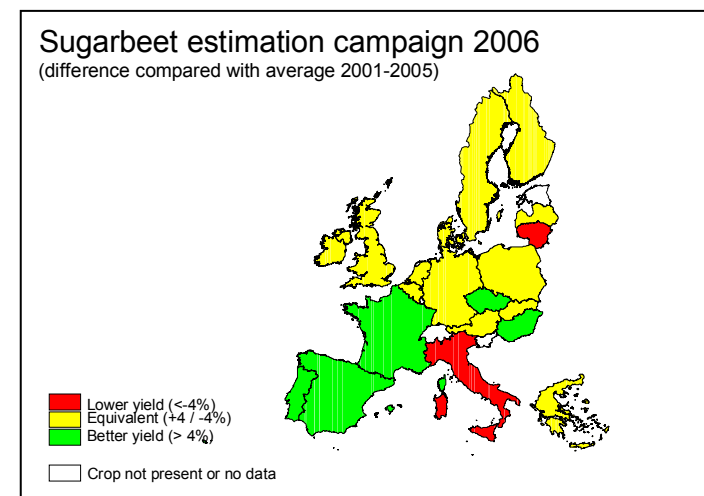
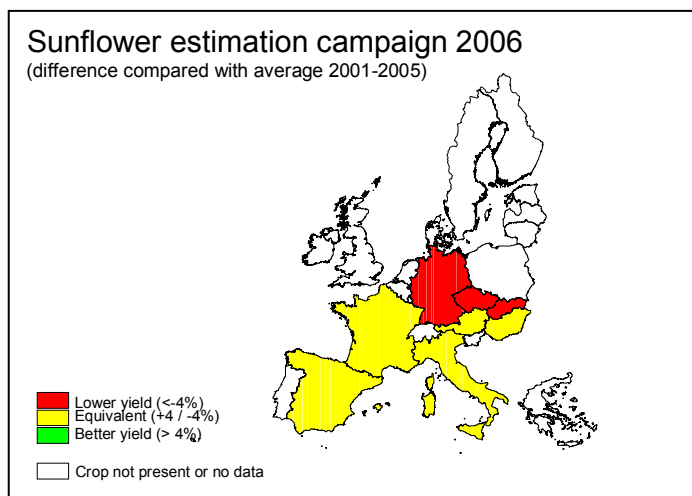
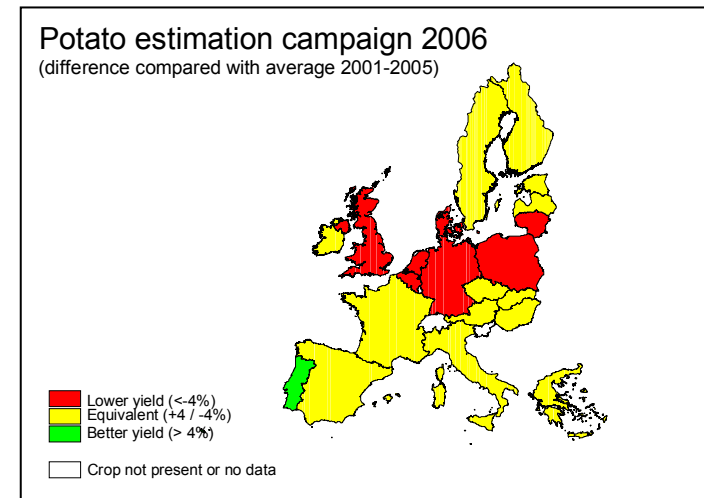
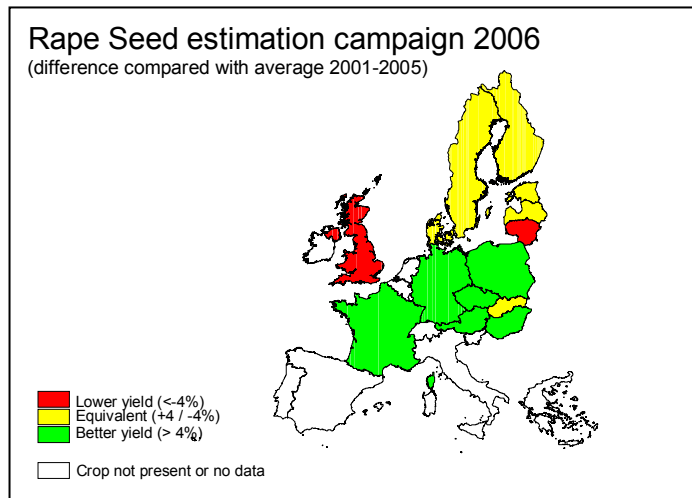
Data sources: *EUROSTAT; **MARS-STAT/JRC
Yield: figures expressed in t/ha and rounded to 100 kg

Grain Maize estimation campaign 2006 (difference compared with average 2001-2005)



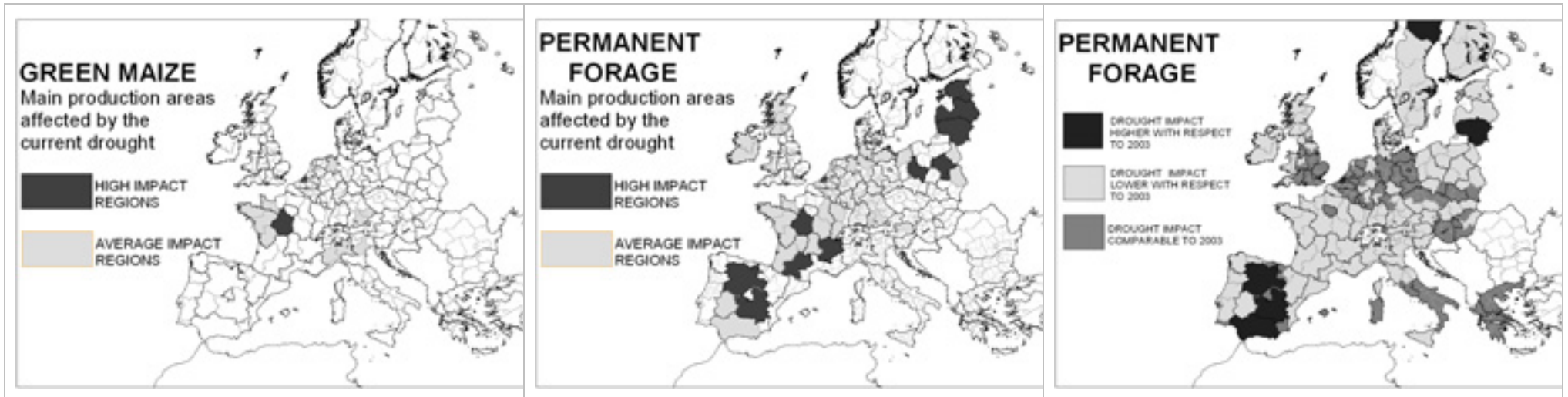
Rice: European rice production is forecast to be about 7% lower with respect both to the 5-year average and to the last campaign. This reduction is mainly due to a generalised decrease of the rice cultivated area (around -20% compared to 2005 for Spain, -5% for France, -5% for Greece, -1% for Italy) rather than a decrease in the yields. Portugal is the only European country showing a completely different trend (about +10% for the surface and +11.1% for the yield compared to last year). In some regions, rainfall in the coming days will be needed to avoid damage to crops.

Other crops: the remaining crops are, to a lesser extent, affected or potentially affected by a shortage of rain and water reserves. At EU25 level, rape seed yield is forecast at 2.2% less than 2005, sunflower at -0.5%, potato at -4.3% and sugar beet at -3%.



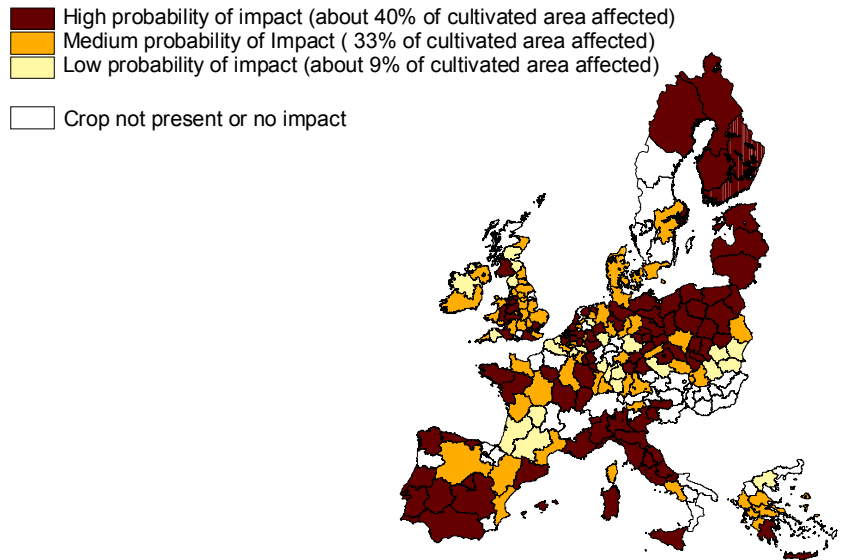
Forage (grassland and green fodder crops)

Dry conditions in May, worsening in June and July, affected permanent forage areas (pastures and grassland) as well as green forage and green maize in most of Europe. The impact was particularly significant in France, the Baltic countries and Spain. A strong impact was also felt in northern Germany and the Danube Valley but in these areas the situation was eased by precipitation in mid June and July. A strong impact on green fodder and green maize was also felt in the cultivated areas and especially in central France and in the Padana Valley in Italy. Even though some limited areas are severely affected, the overall situation is not as severe as in 2003. It is still too early to estimate the overall reduction in the available biomass but, if a measure can be given based on the deficit in rainfall, in central France this was over 40% compared to the long term average and over 50% compared to 2003. In the Padana Valley, the reduction was less marked though still a significant -30% compared to 2003.



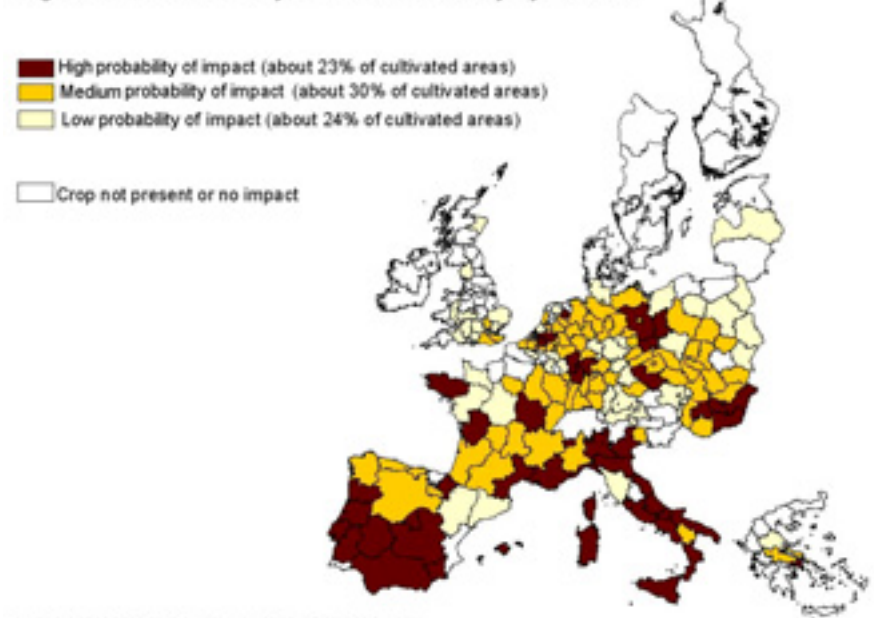
2006 versus 2003 Wheat Soil Moisture analysis: Areas affected by drought and heat stress so far

2006 Regions where Wheat has been affected by dry conditions



based on analysis on crop specific soil moisture availability

Regions 2003 where WHEAT yield has been affected by dry conditions



based on analysis on crop specific soil moisture availability

Areas with unusual low climatic water balance (01.05 -31.07.2006)

NUTS Code	NUTS Name	Hot days		Cumulated Rain		Climatic Water Balance (CWB)				
		Number	Year rank*	rain (mm)	Year rank**	Water balance (mm)	Year rank***	First lower water balance	Second lower water balance	Third lowest water balance
DE	Deutschland	13	1	168.5	8	-218	3	1976	2003	2006
DE13	FREIBURG	14	1	248.7	12	-164.9	2	1976	2006	1992
DE21	OBERBAYERN	11	3	207.9	4	-182.4	2	1990	2006	1991
DE27	SCHWABEN	14	1	166.3	5	-230.8	2	1990	2006	1994
DE5	BREMEN	8	3	110.6	1	-286.9	1	2006	1992	1976
DE6	HAMBURG	9	2	128.8	5	-239.5	3	1976	1992	2006
DE9	NIEDERSACHSEN	11	2	149.4	6	-229.5	3	1992	1976	2006
DEA	NORDRHEIN-WESTFALEN	13	3	179.3	12	-203.9	3	1976	1989	2006
DEB	RHEINLAND-PFALZ	18	2	197	19	-211.3	3	1976	2001	2006
DED	SACHSEN	17	1	139	5	-256.1	2	1991	2006	2003
DK	Danmark	0	32	130.9	10	-240	6	1992	1975	1976
EE00	Eesti	4	2	98.8	2	-242.9	2	1992	2006	1988
ES	España	44	2	71	10	-436.1	4	2005	2003	1986
ES12	PRINCIPADO DE ASTURIAS	0	32	74.8	1	-250.9	2	1990	2006	2005
ES5	ESTE	38	2	41	1	-433.6	2	1986	2006	1994
FI	Suomi	0	32	99.7	3	-248.7	1	2006	1989	1994
FR	France	14	2	159	13	-234.8	4	1976	1989	1986
FR42	ALSACE	24	1	179.7	6	-236.4	3	1976	1989	2006
FR5	OUEST	11	2	116.9	7	-284.7	3	1976	1989	2006
FR51	PAYS DE LA LOIRE	15	2	110.5	9	-290.3	3	1976	1989	2006
FR63	LIMOUSIN	17	3	158	8	-259.5	3	1989	1976	2006
FR81	LANGUEDOC-ROUSSILLON	28	2	93.3	5	-375.3	3	1989	2003	2006
GR	Ellás	39	10	96.2	15	-338.9	14	1997	2000	1984
GR25	PELOPONNISOS	22	25	44.4	16	-428.1	1	2006	1977	1998
IT	Italia	34	2	96.8	4	-377	3	2003	2005	2006
ITC	NORD OVEST	44	2	102.8	1	-342.4	2	2003	2006	2005
ITD	NORD EST	40	2	108.8	2	-331.6	2	2003	2006	1998
ITE1	TOSCANA	41	2	68.7	4	-416.9	2	2003	2006	2001
ITG2	SARDEGNA	40	1	16.4	3	-537.5	1	2006	2003	2001
LT	Lietuva	6	2	115.3	2	-248.9	1	2006	1992	2002
LV	Latvija	4	4	112.1	1	-246.7	1	2006	1992	1975
NL	Nederland	9	1	145.2	5	-239.9	2	1976	2006	1989
PL	Polska	15	1	146.5	10	-234	3	1992	1994	2006
PL11	LODZKIE	22	1	133	9	-271.9	1	2006	1992	1994
PL12	MAZOWIECKIE	18	1	119	9	-274.7	1	2006	1992	1994
PL41	WIELKOPOLSKIE	21	1	106.3	7	-306.9	2	1992	2006	1989
PL43	LUBUSKIE	23	1	96.7	5	-315.1	2	1992	2006	1989
UK	Great Britain	0	32	137.5	12	-206.8	6	1976	1989	1995
UKD2	CHESHIRE	3	2	138.5	12	-225.1	2	1989	2006	1995

* 1 - highest number of days with Tmax < 30°C; 32 the lowest number of days with Tmax < 30°C

** 1 - driest year; 32 the wettest year

** 1 - the lower CWB; 32 the highest CWB

See also [IP/06/994](#) + [MEMO/06/284](#) (the last crop yield forecasts published on 14 July 2006)