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Campaign analysis

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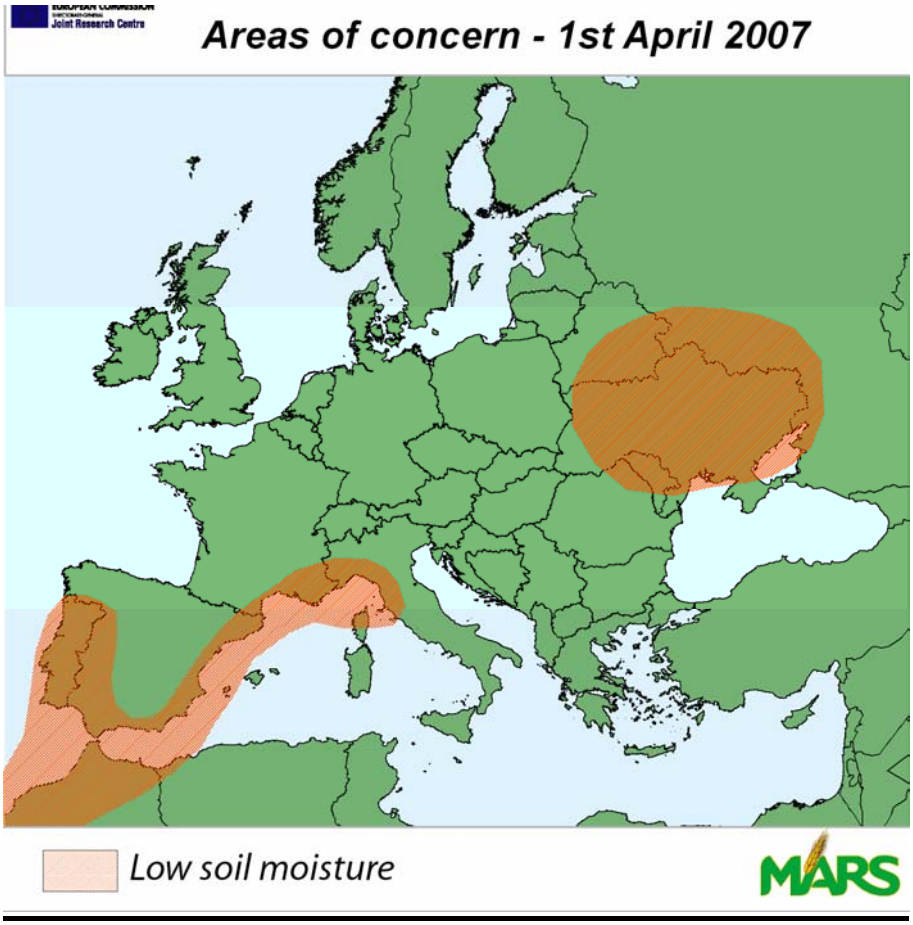

Contents

1. Crop yield forecasts

MARS STAT yield forecasts at EU25 level: 31 MARCH 2006

CROPS	European Union 27 Yield (t/ha)				
	2006	2007	Average 5 years	% 2007/06	% 2007/ Average
TOTAL CEREALS	4.7	**5.0**	*4.8*	+5.9	+4.4
Soft wheat	5.4	**5.7**	5.5	+6.0	+4.9
Durum wheat	2.8	**2.9**	*2.6*	+4.6	+10.6
Total wheat	5.0	**5.3**	*5.1*	+5.5	+5.4
Spring barley	3.4	**3.7**	*3.7*	+9.5	+2.0
Winter barley	5.1	**5.3**	*5.0*	+3.5	+6.2
Total barley	4.1	**4.3**	*4.2*	+6.3	+4.0
Grain maize	6.5	**6.7**	*6.5*	+3.0	+3.9
Other cereals (1)	3.0	**3.1**	*3.2*	+5.5	+4.5
Rape seed	2.9	**3.0**	3.0	+3.6	+1.0

Yield figures are rounded to 100 kg

(1) Sorghum, rye, maslin, oats, triticale, mixed grain other than maslin, millet, buckwheat

Sources:

2006 yields come from EUROSTAT CRONOS

2007 yields come from MARS CROP YIELD FORECASTING SYSTEM

2. Agrometeorological overview

Still unseasonable mild conditions over the majority of the continent. A winter tail in second half of March brought strong wind and risk of frost damages. Rather dry in many of the Mediterranean and Black Sea areas whilst wetter in central and north EU. Heavy rain in Sicily.

2.1 TEMPERATURES AND EVAPOTRANSPIRATION

Following a quite mild January, again in February and March warmer than seasonal temperatures occurred (except west EU, Greece and Maghreb). Drastic changes in central and west EU in the second half of March.

Certainly 2007 winter can be considered one of the mildest out of the last 20 years: only 1990 and 2001 presented similar thermal conditions. At the end of March, in the whole central and eastern EU the accumulated **active temperatures** (GDD with base temperature = 0°C) were present largely in surplus: in average 130-150 GDD but with maximum of 200-230 GDD between Romania and Hungary. Only in the west side of the continent (namely: Ireland, south-west France, central and west Spain, Portugal and Maghreb) more seasonal values were recorded. The milder than seasonal temperatures were not uniformly distributed over the period: in **February** the higher temperatures (both minimum and maximum were 6-8° above the LTA) occurred mainly in central EU, Italy and Balkans, while in Sweden and Finland very cold conditions were recorded (even <-35°C); more seasonal in Spain, UK and Ireland; on **mid March** the warm front moved eastward and in the west and central EU a drastic drop (mainly on minimum values) occurred. Obviously, due to the higher absolute temperatures in March, the effect on the cumulated GDD

surplus was larger in this month than in February. As compared to the seasonal average, the largest anomalies were recorded in March both for minimum values (in Spain with 6-8°C below LTA) and maximum (in central Italy, south-west and south France, Ukraine and Russia with 10-12°C above LTA and in Turkey with 18-19°C above LTA). Again in March, due to the cold air mass eruption, frost events occurred, but in general coupled with snow, which likely prevented crop canopy damages. The lowest temperatures occurred in Spain (-7.5°C in Aragon and Castilla y Leon, -7.0°C in Cataluña) and south France (-7.3°C in Provence) between 22nd and 25th of March. In these areas crop damages were likely.
The above-mentioned thermal conditions influenced positively the value of the **potential evapotranspiration,** mainly in March. At the end of March, the cumulated values were significantly above the seasonal average in east EU (mainly Romania, Poland, Benelux, Denmark and north Germany) and Eastern Countries (e.g.: Ukraine, Belorussia and Russia).

2.2 RAIN AND CLIMATIC WATER BALANCE

Dry conditions in Mediterranean regions (except Italy and Balkans), Portugal and Ukraine. Rather wet in France, northern Spain, Balkans and southern Italy. Intense showers in Sicily.

As a whole, in EU countries during the considered period in general the rain was not limiting the potential crops production, except in specific regions: southern and eastern Spain, central and southern Portugal, north-west Italy, where it was scarce. In effect, the rain was abundant and largely spread **in February** on the majority of the EU territory: in many cases (North Spain, France, southern UK, Germany, western Poland, Denmark, southern Sweden, Romania, Hungary) was largely above the seasonal cumulated values (>+50% of LTA and in some areas even > 100%). On the contrary in some Mediterranean regions persisted relative dry conditions with a shortage of water supply: southern and eastern Spain, southern France (Rhone Valley), north-western Italy (Po valley), eastern Greece (Makedonia) and the Black Sea basin. However, in these areas thanks to the quite low winter crop water consumptions (early stage of development of the active crops) the climatic water balance presented shortfall but not dramatic values.
In March the rainy events moved partially southward and some areas affected by shortage rain received abundant and beneficial water supply: southern Italy, eastern Greece, south-eastern Spain, Maghreb (>100 mm above LTA). In Sicily some intense showers (>160 mm on 9th of March) occurred with possible local over welling and temporary floodings. In these areas the rain will permit to have consistent soil water reservoirs for future reproductive stages of development of winter crops (e.g.: durum wheat). But still some regions received less rain as expected: southern Spain, southern Portugal, Rhone Valley, Po valley, eastern Ukraine, southern Turkey and Morocco, where the soil water content was even more depleted (deficit estimable around 80-100 mm). In these areas, considering the more advanced crops development, the potential yield could be affected and the final result will strongly be linked to the future water supplies.

2.3 WEATHER FORECASTS FOR NEXT DAYS (APRIL 4-12)

TEMPERATURES: Temporary decrease in Spain and Morocco, followed by a progressive increase eastward; still some frost events in east EU

Today and tomorrow, in Spain and Morocco a temporary reduction of temperatures is forecasted (Fig.1), but in the following days progressively the temperatures will increase and the warm front will move eastward.
Starting from the 7th, the maximum temperatures could reach over 20°C in many areas in Spain, France, Italy and in the internal territories of Eastern EU.
Anyway, still the minimum daily values will remain for some days below 0°C. A higher number of freezing days are forecasted in Eastern EU and Eastern Europe, as well in the high lands of Turkey.

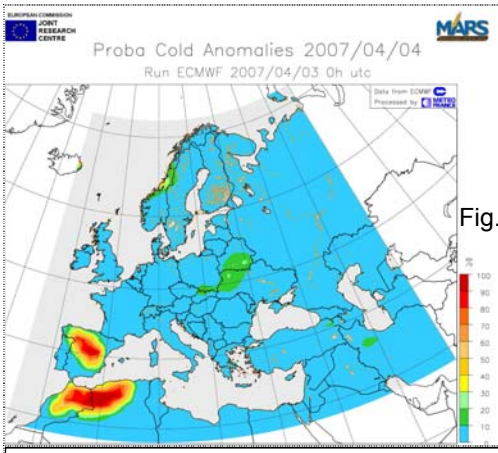

Fig.1

Fig.2

Fig.3

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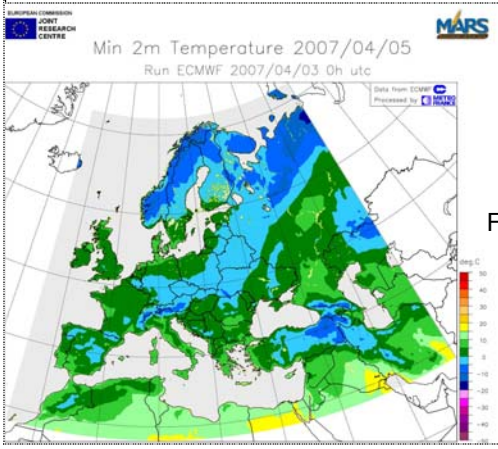


Fig.5

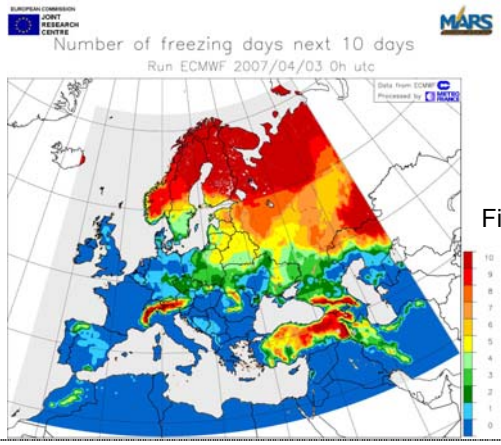


Fig.6

RAIN: beneficial rain in Mediterranean areas

Fortunately in the next days rain will be mainly concentrated in those areas now affected by shortage water supply: south and east Spain, north of Morocco, Algeria and Greece (Fig.1, 2). In these areas, likely the rain will interrupt a prolonged dry period, which depleted significantly the soil water content and where the increase of temperatures will boost both the potential evapotranspiration and the crops water requirements (due to the advancing stages of developments and the related “crops coefficient”).
On the contrary, no significant water supply will occur in the rest of the continent, except for east Turkey (Fig.3-6).

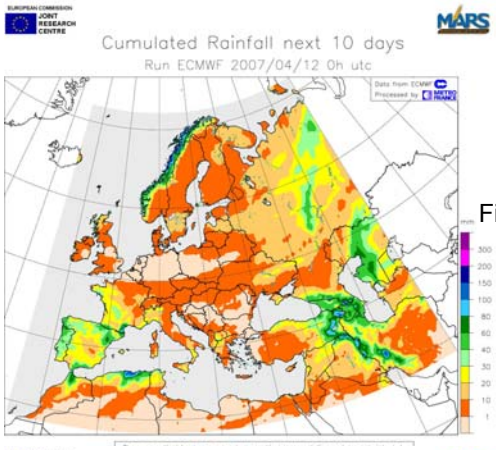


Fig.1

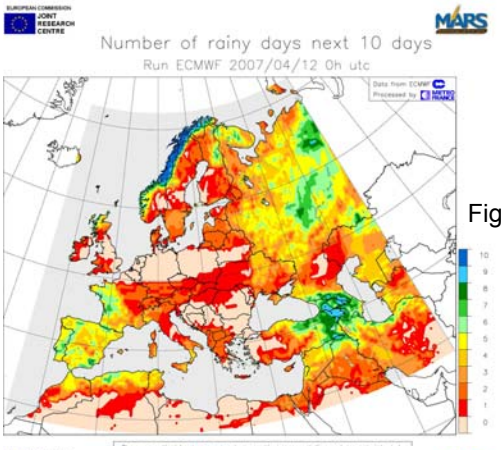


Fig.2

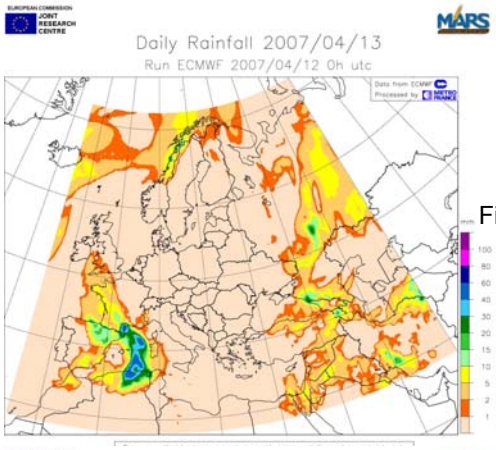
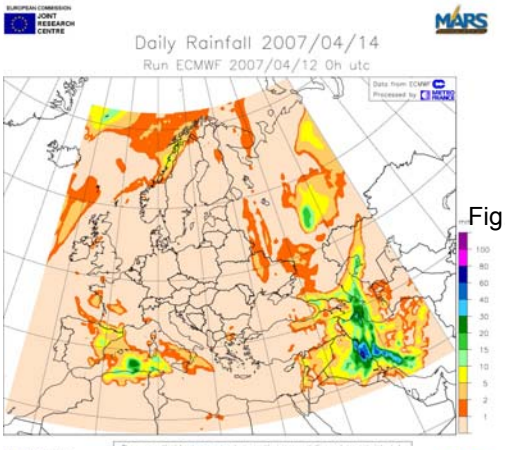


Fig.3



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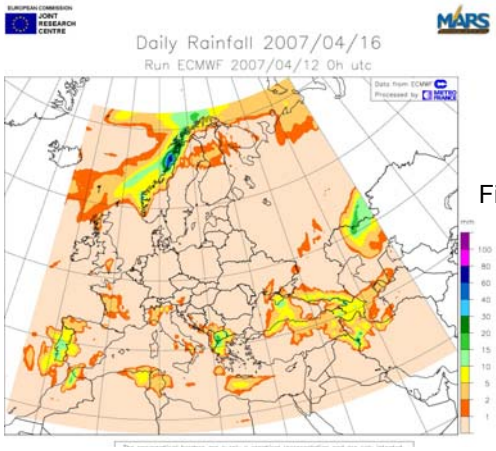


Fig.5

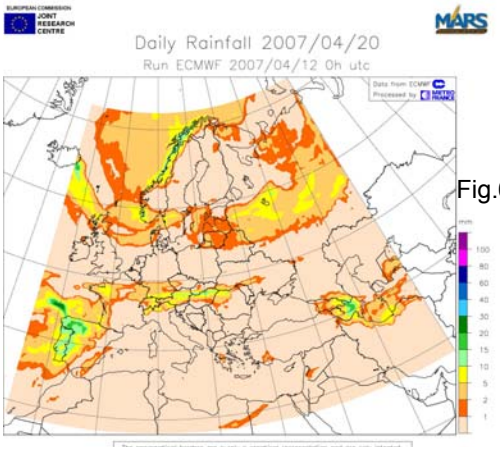


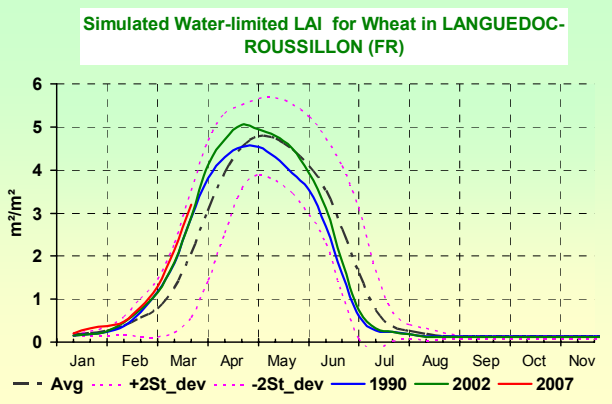
Fig.6

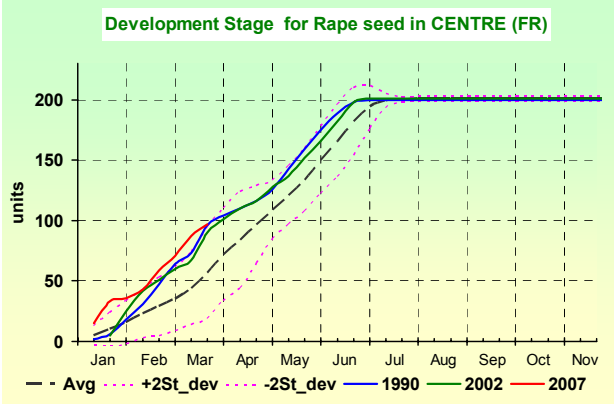
3. Campaign analysis at country level

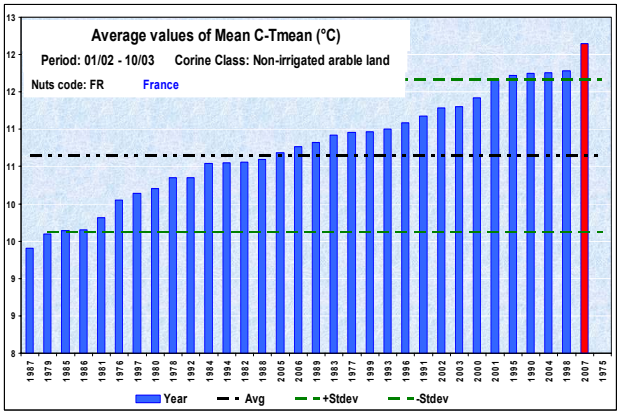
3.1. EU27

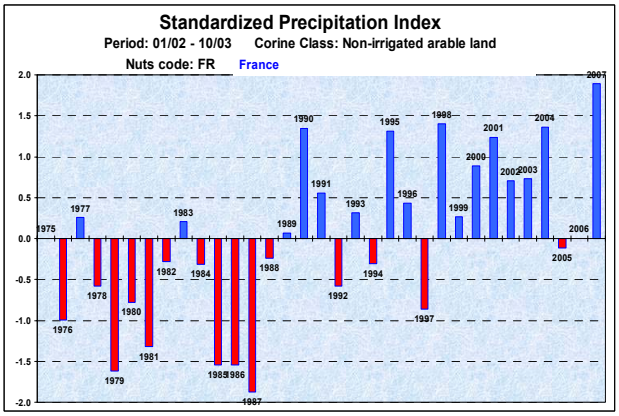
France: anticipated crops development under optimal conditions

The **exceptional mild winter** continued up to the beginning of March and the crop development was **anticipated by two decades for wheat and one month for the rapeseed** very similar to the 2002 or 1990 plant cycle. From mid March a general **cold spell associated with snow** in the eastern France has slowed down the crop growth but should not have made frost kill damages.
The mild temperature should have limited the frost regulation of parasite and the plant will probably suffer in the coming weeks from a higher parasite pressure.
Most of the country benefited from higher than seasonal **rainfall (> 30%)** from February to the 1st decade of March. From then the precipitation remained lower than the seasonal values. For the coming vegetative growing period, the crop can still rely on good soil moisture. However, Languedoc Roussillon and Provence Cotes d'Azur have water reserves slightly lower than the average.
The early spring crop preparation should have been hindered early and late February by the rainfalls but should have continued within normal conditions in March. In eastern the snow of March could have also interfered with the field works.







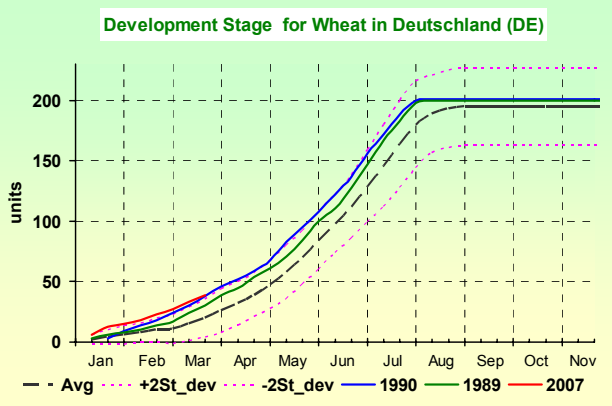


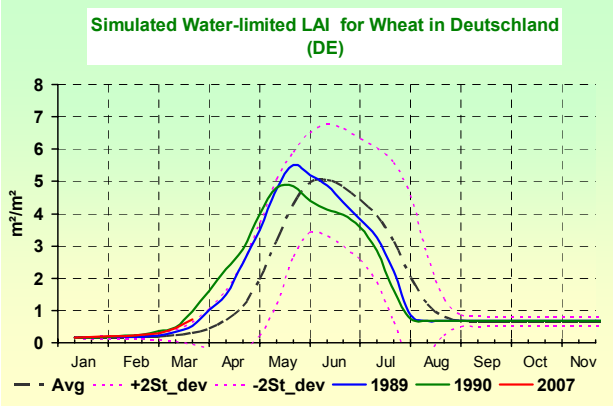
Germany: exceptional anticipated crop development with optimal soil moisture

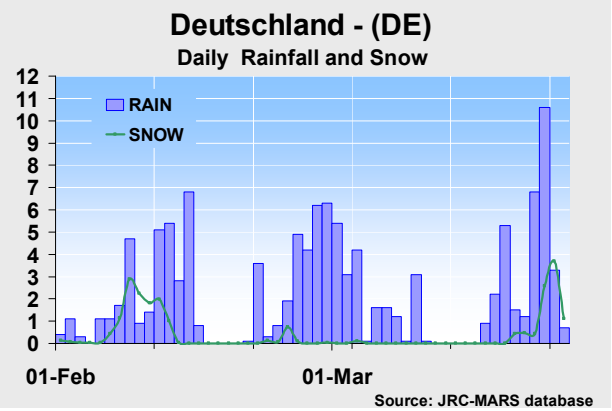
Germany experienced an exceptional mild winter. The average temperature remained above the average up to the 2nd decade of March. From then a limited cold spell affected the half southern of the country with negative temperature. Despite the crop de-hardening these temperature drop associated with snow falls should not have affected the crops. As result of the mild period wheat and rapeseed showed an anticipated crop development by more than 4 decades like in 1989.

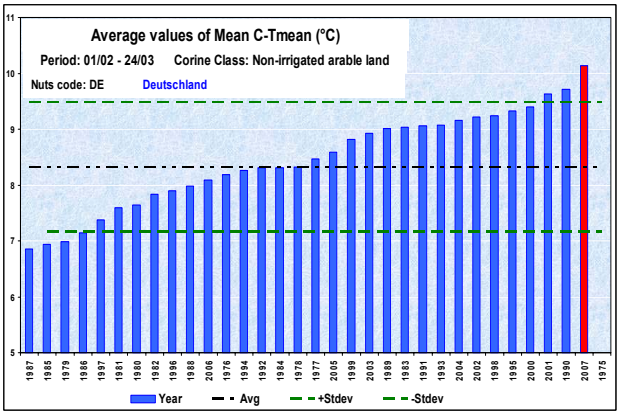
The precipitations were abundant at higher level than the seasonal value with two drier periods mid February and mid March. The country experienced two main snow spells at the beginning of February and end of March. The crops will benefit from optimal soil moisture and will not be water limited in the coming fast growing period. The early spring sowing could have been slightly hindered by the precipitation particularly late February and March.

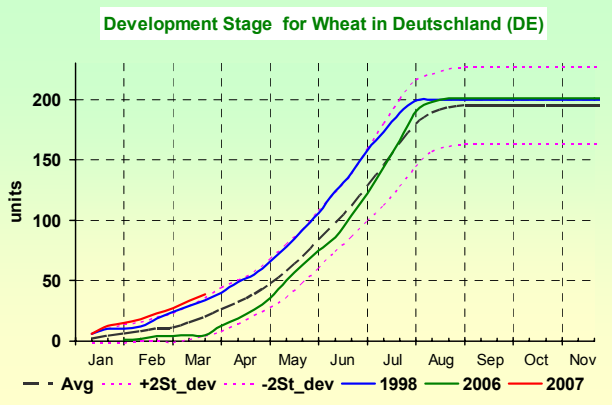
The mild and wet conditions should be favourable for the parasite development in the coming period.

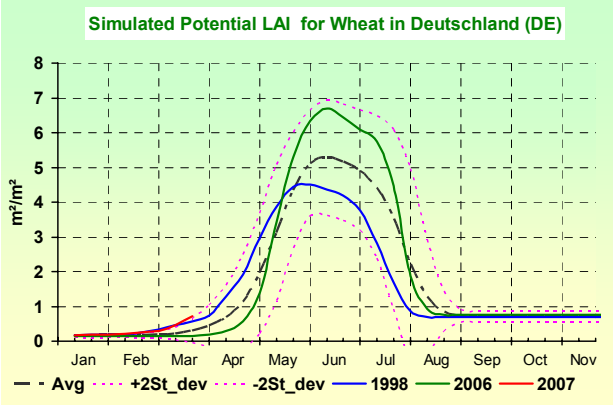






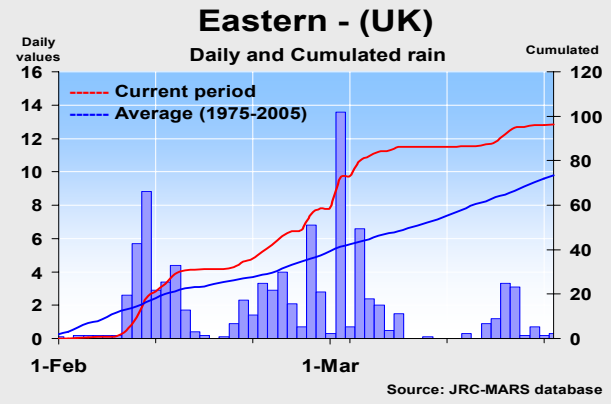


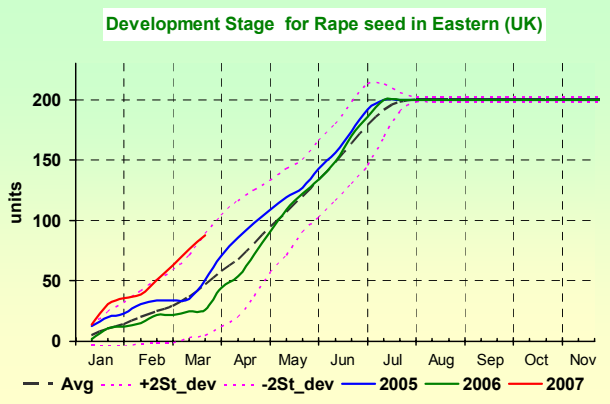




UK and Republic of Ireland: a mild but wet winter, more seasonal and drier since mid March

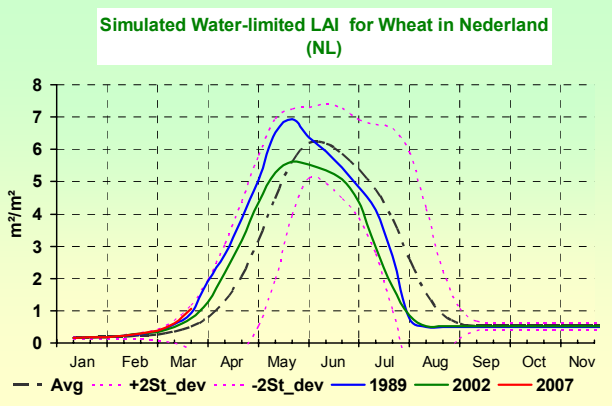
Following a mild start to the year, at the beginning of February more seasonal **temperatures** were restored; but only for a short period, because again in mid February warmer conditions returned. In the second half of March more seasonal thermal conditions occurred. However, during the period the temperatures always remained within the normal ranges of variation and no significant extreme events occurred. Late light frost events were recorded in the last part of March but without significant impact on active crops, also thanks to snow cover. As a whole, in the considered period, the temperatures were on average 1.5°/2°C above the seasonal mean and therefore the cumulated active temperatures presented 70-90° GDD above the LTA values (+25/30%). Consequently, all of the developments of the active crops, but especially for winter rape seed, were boosted. At the end of March, winter cereals' stages were 15-20 days in advance and more than 30 days for rape seed (practically at flowering stage). Similar conditions occurred in 1998 and 2002 and more advanced stages were recorded only in 1990.
The very advanced and sensitive stages of development reached (e.g. rape seed) and the probability to have late frost events (normally possible until the end of April), expose those crops to future risks, despite the seasonal forecasts show still mild conditions for the next months.
During the period, the **rains** were abundant (on average +20/25% as compared to LTA), and frequent (more than 15 rainy days), especially in western UK, more seasonal in IE.
Mainly in east UK, persistent rain and mild temperatures determined favourable conditions for pest and diseases and for nitrogen leaching. Therefore, the current high crops potentiality could be reduced given the absence of an appropriate crop management and protection. The rainfalls and snow (mainly in Wales and Scotland) were also on obstacle for spring sowing (e.g. barley).

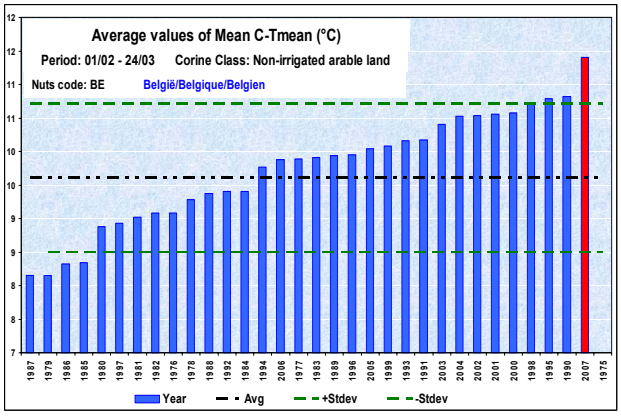


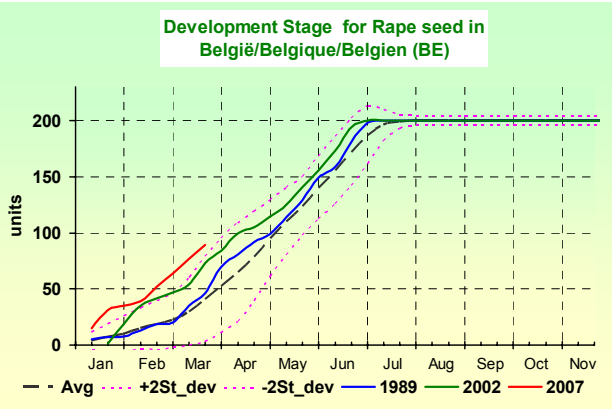


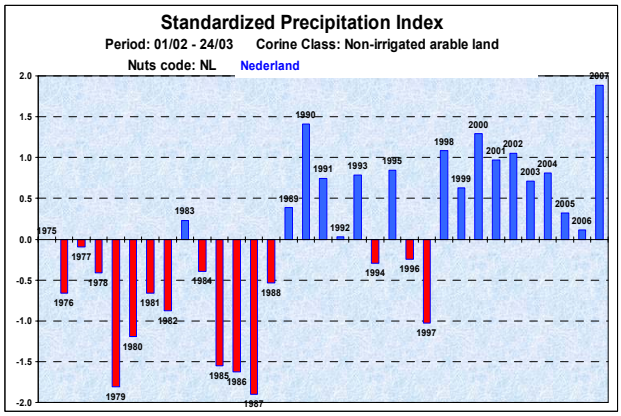
Belgium, The Netherlands, Luxembourg: exceptionally mild and wet

After a very mild winter Belgium and The Netherlands experienced the highest average temperature for February-March since 1975. The end of March was characterized by a colder spell that did not reach frost kill temperature. As a result of this exceptional mild condition the vegetation development is anticipated by one month for the wheat and forty days for the rapeseed like in 1989 and 2002.
The BENELUX recorded from 20 to 60 mm above the seasonal rainfalls which represent one of the wettest February-March for the last 30 years. The replenished soil moisture will benefit to the crops at a re-growth stage. However the early spring crops sowing should have been hindered.
The lack of significant frost spell in winter that usually reduced the parasite pressure ans the on going mild temperature associated with the wet conditions should facilitate the development of pests and diseases in the coming days.







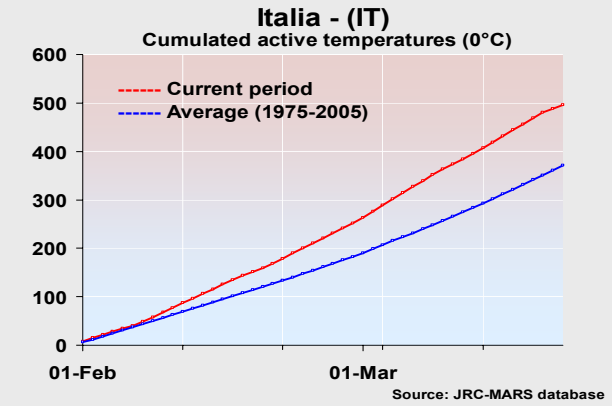


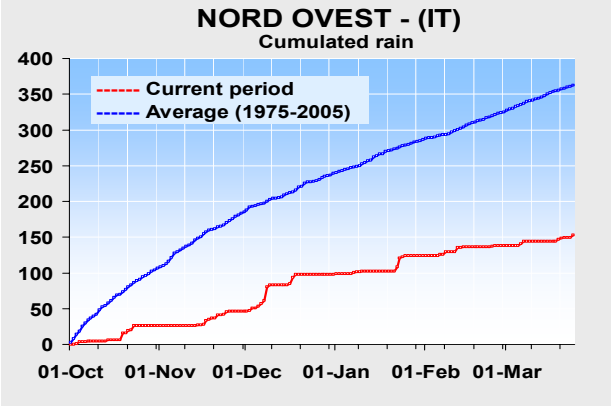
Italy: warmer than normal up to mid March; drier in the north, beneficial rain in southern areas.

The two months were characterized by milder than seasonal **temperatures**. Both the minimum and the maximum daily values remained above the seasonal average (on average 2-3°C) since the second dekad of March. Therefore, the active temperatures presented higher accumulation values around 80-120° GDD as compared to LTA. Similar thermal conditions occurred in 1990, 2001 and 2002. Geographically, the surplus GDD was not uniformly distributed: the highest values (>200) were recorded in central Italy, along the Adriatic and in the Po valley; lighter surplus occurred in the southern part, in Sicily and North-west. In the second half of March a drastic temperature reduction occurred (in average 6-8°C, even larger in southern areas). Despite that, as a whole, the plants' growth was accelerated and at the end of March, the development stages were, on average, 1 or 2 weeks in advance as compared to the LTA and similar to 2001; even more advanced in Central Italy. As a whole, only a few frost days was recorded and solely in the Po valley the minimum reached -3° or -4°C in mid February, but likely without evident damages.

In general, the **rainfalls** were scarce in northern and central areas whilst in southern, and in particular in Sicily, they were abundant and well spread over the period (12-15 rainy days). In Sicily, at the beginning of March, intense showers occurred, determining the second wettest year since 1975 (the wettest was 1996); the soil reservoirs were filled and are available for the future reproductive stages of winter crops (durum wheat).

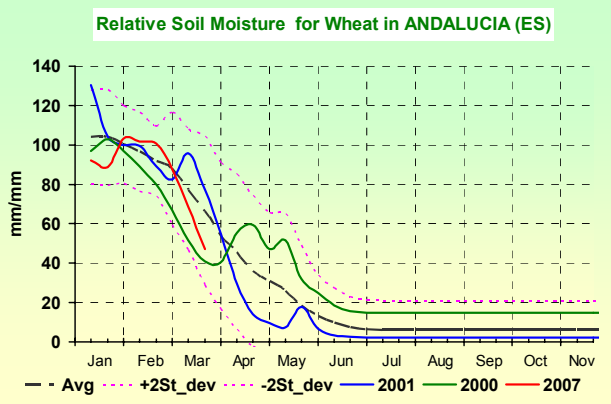
On the contrary, in the Po valley, and in particular in the north-west, dry conditions, already started during the previous autumn, persisted. The water deficit was around 50-60 mm (-40/-50% as compared to LTA) but is estimable around 200 mm since last October (-60%). In the Po valley the current campaign is the second driest since 1975 (the absolute driest was 1990). Fortunately the weather forecast for the next weeks shows high probability to have relevant water supplies.

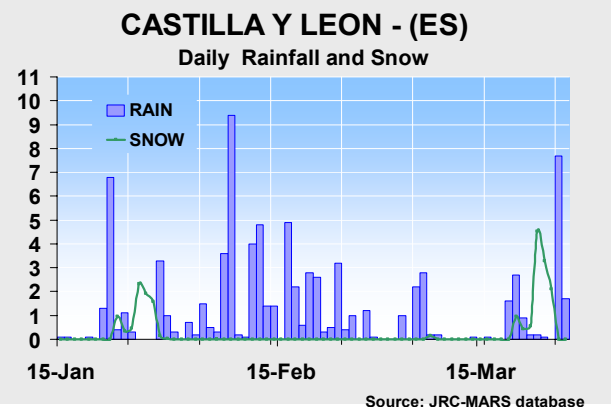


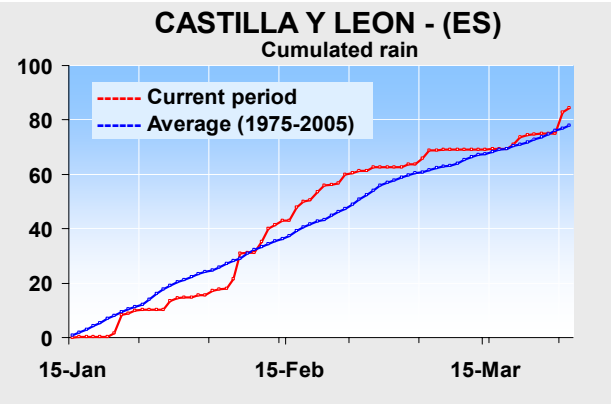


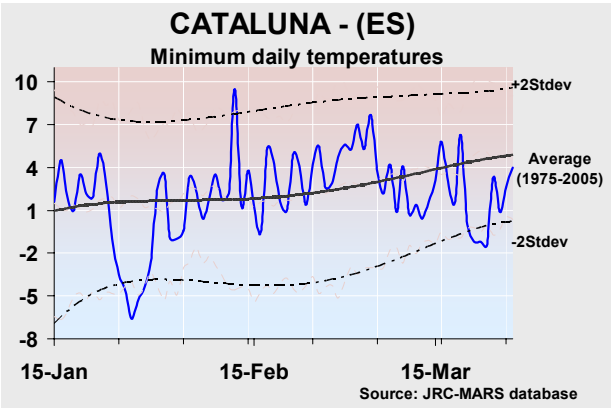
Spain: A bad start of the season followed by a significant improvement in March

Following a dry spell that lasted from December up to the third decade of January, climatic conditions improved significantly in March in the main winter cereal production areas of Spain. There were diffuse rains in Castilla-Leon, Castilla-La Mancha, Extremadura and Andalucía and even some snow falls in the north-east (Aragon). Crops which have been sown late in autumn 2006 and had suffered from the water shortages in the emergence and first tillering phases should have taken advantage of the recovery of topsoil moisture. Temperatures, which usually see a marked distinction between the north and south of the country, were, this year, uniformly high, with the minimum levels systematically above the 0 degrees limit for most of the period. In mid of March there was a reduction in precipitation, especially in the south, but it was soon recovered in the last decade of the month, when rainfall picked up again especially across the south west regions. This break of precipitation in the course of a rather wet winter season could actually be considered positive for field preparation works in view of spring crops planting. Overall conditions can be considered positive for winter cereals. Expected yield for durum wheat takes into account the favourable condition and stands at 2.5 t/ha, significantly increased on 2006 (+40%) but also on the 5 yrs average (2 t/ha), which is however affected by the disastrous 2005 and 2006 season. Soft wheat, mostly concentrated in the north of the country, is estimated at 3 t/ha (11% on 2006) on the same trend as durum wheat but affected by the drier conditions in the east of the country. Winter barley yield is expected at 2.6 t/ha (+2.8 % on 2006).



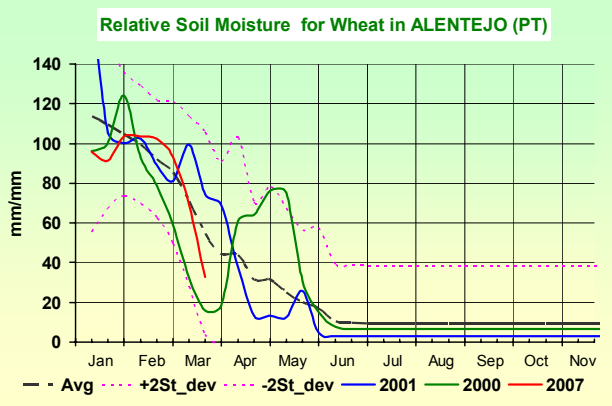


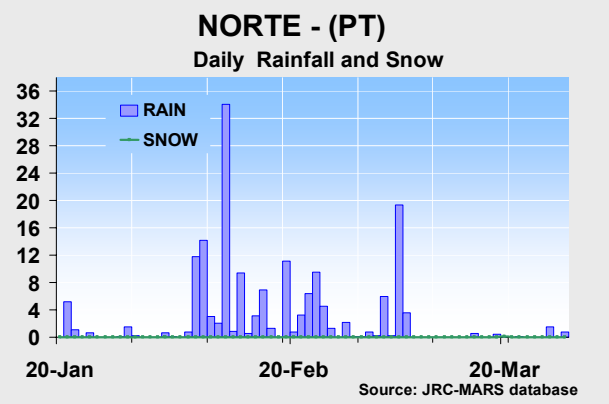




Portugal: Climate improves going into spring with a positive outlook for crops

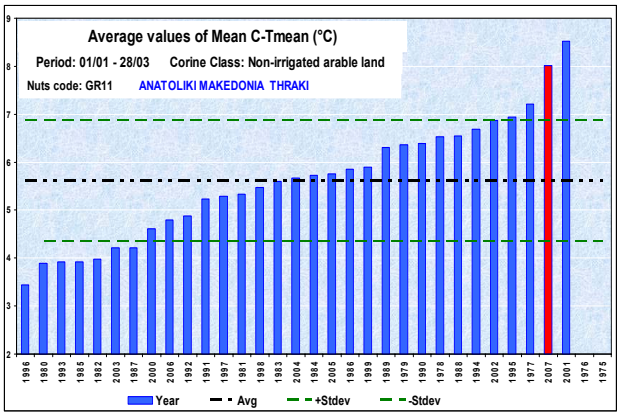
Winter 2007 in Portugal has had a climatic evolution similar to that of neighbouring Spain. The sowing season had been hampered and delayed by intense rain causing access problems for machinery. The period that followed, until the end of January, saw a sensible reduction in rainfall but, considering that there was a short cold spell, conditions should not have affected crops in the dormancy phase. Precipitation picked up again in the second and third decade of February, more significantly in the west and north part of the country (Norte). The evolution to the end of March saw again a reduction of precipitation especially in the south. Since these areas are the most relevant for the cultivation of winter cereals, this trend, coinciding with the beginning of the shooting phases could negatively affect crops. Considering the variability of the first months of 2007 and the uncertainties of the season ahead the estimate for soft wheat is the order of 1.8 t/ha, slightly increased with respect to the 5 yrs average , but significantly lower than 2006 (2.33 t/ha). Winter barley, developing later should have been less affected by the dry period of at the beginning of March and taken benefit from the latest rains. Yield forecast is for 1.6 t/ha.

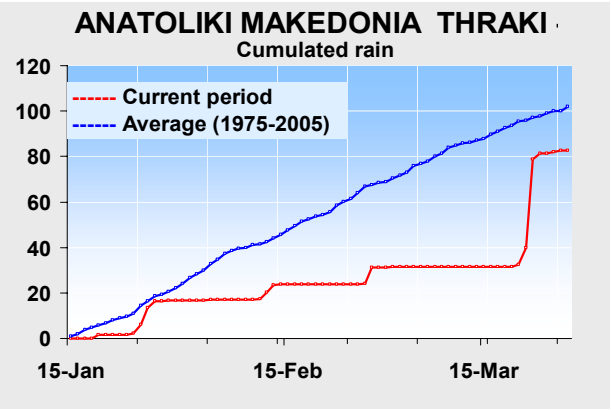


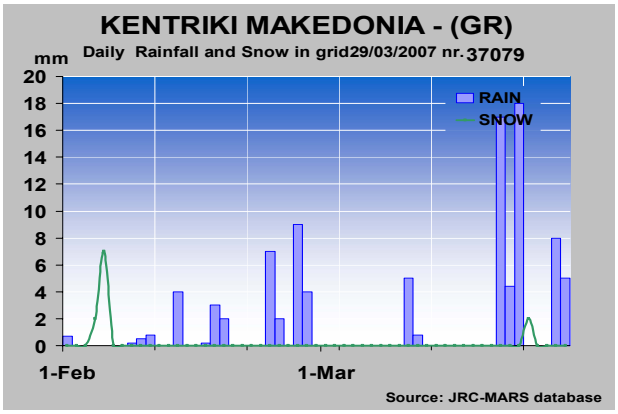


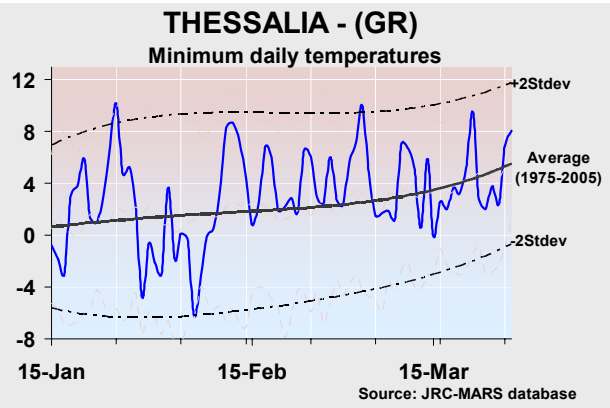
Greece: Very dry conditions in January and February, improving in March

Winter 2007 started with a rain deficit over most of the country. Precipitation during the month of January was over 60% lower than the long term average of the same period and this was reported to be the driest January in 50 years. Conditions were worse in the east, in Kentriki Makedonia which is also the bread basket of the country; here the overall cumulated moisture deficit was over 50 mm. The drought started easing in February and great part of the deficit was recovered within the last decade of March. Just as January and February ranked among the worst of the last 32 years in terms of precipitation, the last 2 decades of March, were among the best in the same length of time. This trend was reported over most of the main agricultural areas of the country from Anatoliki Makedonia to Thessalia and the Adriatic coast. Temperatures to present are higher than normal for most of the period with a decreasing North-South trend. The described conditions are conducive to an early brake of vernalization of winter cereals and, at this point in time, the climatic conjuncture with sufficient moisture in the topsoil and warm weather can be considered favourable to crop development. The same considerations are valid for barley even though it is still early due to the delayed development. Given the precocity in development of wheat, the risk of damages due to late frost or the return of dry spells is significant and so is the susceptibility to pest and diseases. In light of this climatic trend the expected yield for durum wheat is estimated at around 2 t/ha, slightly increased on the 5 years average. Soft wheat which is more common in the north-west is forecasted at 2.9 t/ha. For barley the expected yield stands at around 2.35 t/ha, with a slight increase on 2006.



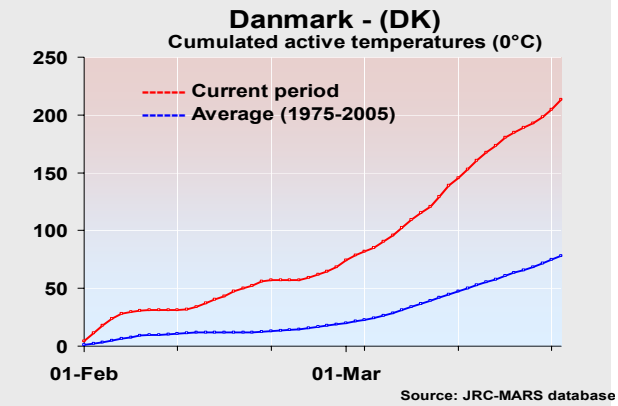


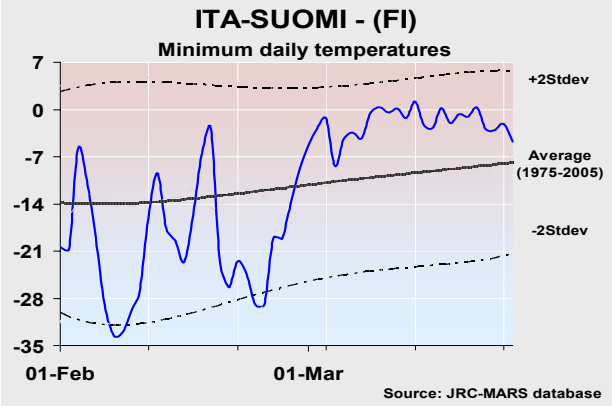




Denmark, Sweden and Finland: unstable February, mild and wet March in DK and SE, quite cold February in FIN.

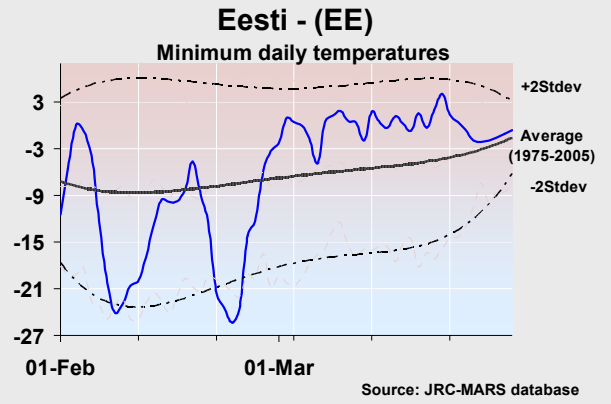
In DK and SE, in both months the weather was quite variable despite in general milder than seasonal temperatures occurred (mainly in March). During the period, the minimum values remained generally higher than seasonal values but however some degrees below zero. Some colder north atlantic air mass erupted, with associated snowy events: light snow was recorded during the first and third decade of February. In March, maximum values progressively increased and also unseasonable high temperatures were recorded: around 15-16°C on 12th of March. Those conditions probably interrupted the winter cereals' dormancy. At the end of March the cumulated GDD showed a significant surplus: more than 200° GDD as compared to the climatic average (80° GDD).
Rainy and light snowy events were quite frequent during the period and especially in March. Consequently, an abundant water supply was recorded, but also lower levels of solar radiation, particularly relevant at that latitude.
In Finland, again February was characterized by changeable and quite cold conditions: consecutive cold waves determined also extreme events (<-30°C). Then, in March rapidly the temperatures increased and the maximum reached values largely above the seasonal average. However, some snowy events occurred and at the end of March and the snow cover was still partially present, prolonging the crops dormancy stage.

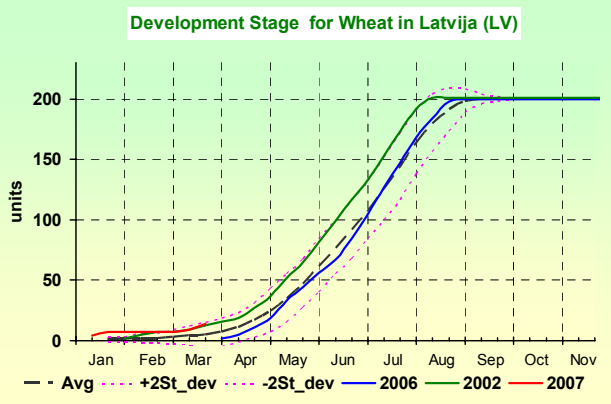


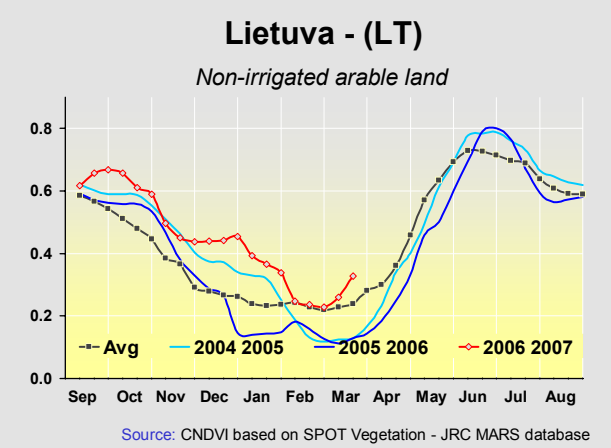


Estonia, Latvia, Lithuania: two frost waves in February, warmer than usual in March

The precipitation received during this period was slightly below the long term average.
The solar radiation was above the long term average.
As a result of lower precipitation and increased evaporation capacity the climatic water balance was below normal level, but till the end of March it remained positive (with a decreasing graduation from North to South).
The thermal resources available for the considered period were slightly above normal and the number of days with temperatures below 0°C was with 10 days lower than in an average year.
The remote sensing data suggest a higher than normal growth of vegetation.
For Estonia the development stage is above long term average. For this indicator the most similar year is 2002.



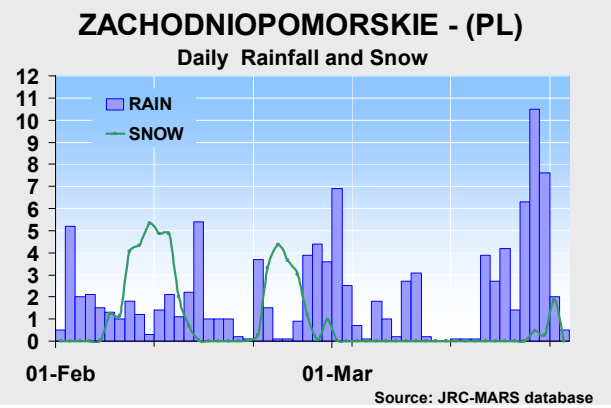


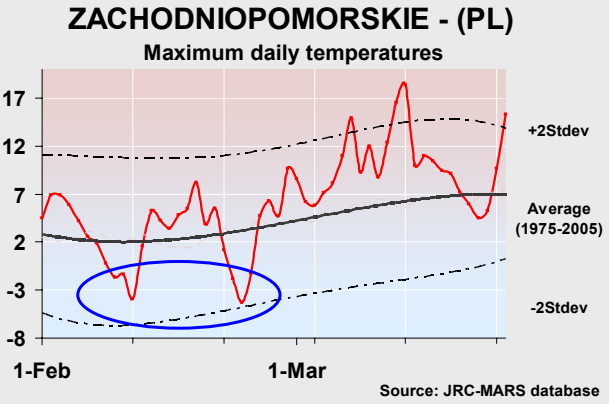


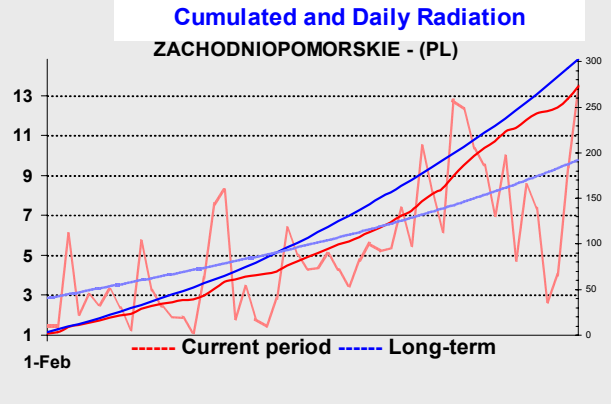
Poland: high temperatures recorded in the whole country

The country has experienced a mild end of winter and a warm spring. Cumulated active temperatures for winter crops since the beginning of February are more than 200% higher than the long-term average. The northern part of the Country experienced two cold air irruptions around 11th and 23rd February. The intensity of these events has been higher in the north eastern regions than in the north western ones. Rainfalls have been characterized by slight although almost daily events; this is partially able to explain the irradiation levels, in most cases below the long-term values.

Winter wheat is anticipating the end of the tillering phase by about 1-month; in the south western regions it is entering the stem elongation stage. In some regions, problems related to soil moisture excess could have been confirmed. Rapeseed is at the middle of the vegetative phase with about a 3-week advance. Also for this crop, the soil water content is reaching high values in many parts of the Country.



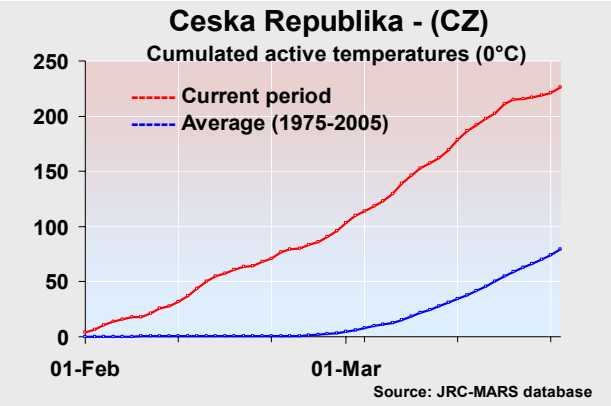


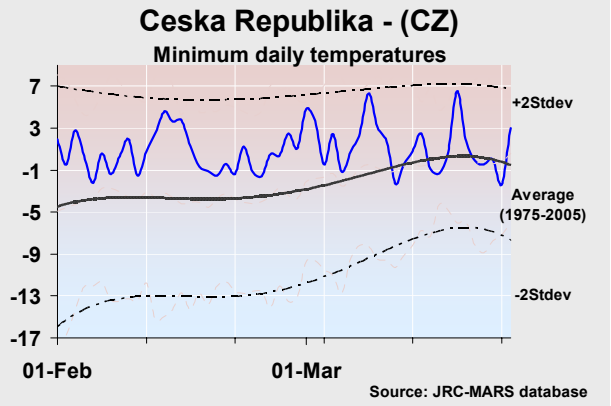


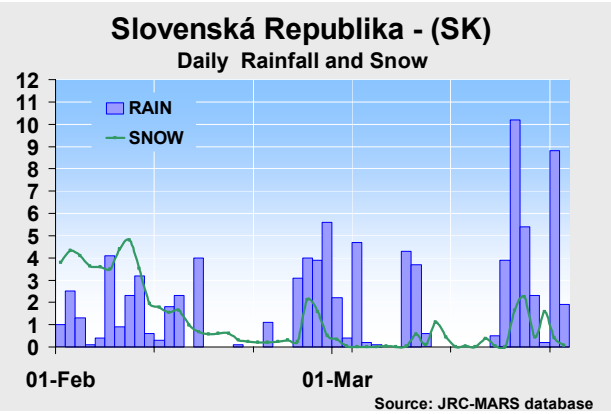
Czech and Slovak Republics: 2007 started as a warm and wet season

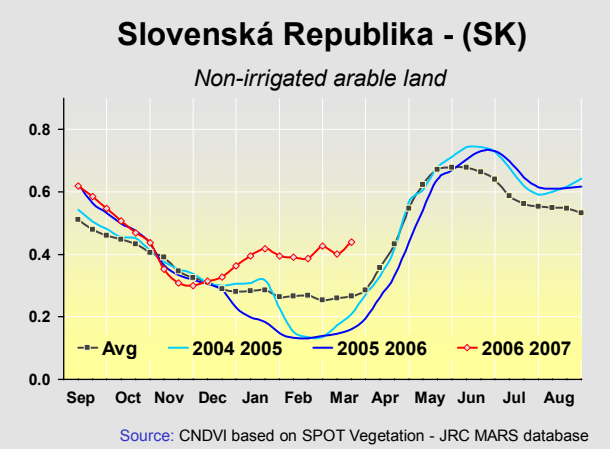
Meteorological conditions experienced by Czech and Slovak Republics are similar to those described for Austria. Cumulative rainfalls have started exceeding the average values from the end of February and are now about 50 % higher than the long-term average. Maximum values of cumulated rainfall within the two countries have been recorded in the western part of Slovak Republic (Bratislavsky and Zapadne) and in the Eastern part of the Czech Republic (Severovychod, Jihovychod, and Stredni), therefore at the border between the two Countries. Frequent rainfall events have been associated with irradiance level not very high, especially between the end of February and the beginning of March. Temperatures are depicting an extraordinary year, although the vegetative phase so shorter than the average could indicate a sub-optimal potential from a productive point of view. Like for Austria, the combined effect of the abundant rainfall and of the warm thermal conditions could possibly have a triggering effect on diseases.

CNDVI (non-irrigated arable land Corine class) shows values much higher than the average, because of the anticipated crops cycles which are leading to an early canopy development. Winter wheat has entered the stem elongation stage with about a 1-month advance with respect to the long – term average. Some problems due to soil water content excess could have verified in some areas because of the combined effect of melting snow and precipitations. For the same reasons, spring barley sowings could have encountered some difficulties related to the accessibility to the field for the machines. Rapeseed is in the second part of a vegetative phase which is expected to be more than 20-day shorter than the average.









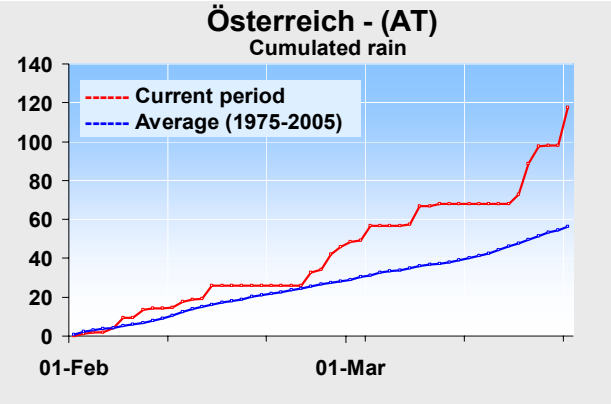
Austria: extraordinary high temperatures recorded since the beginning of the year

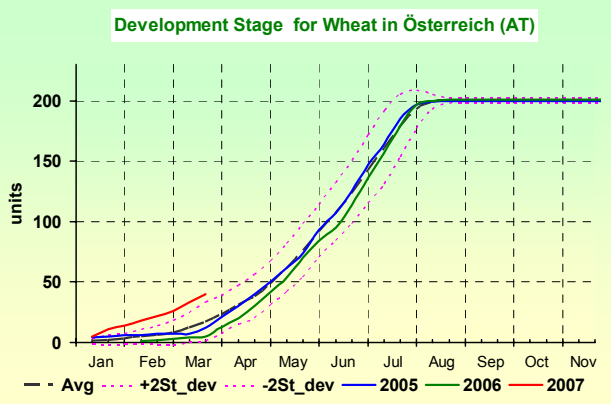
The country experienced temperatures considerably higher than the average for the whole considered period. Daily thermal minima were always above the average and maxima fell below the average only for a couple of days around the 21st of March, due to a storm event. The extraordinary availability of thermal units is shortening the crops vegetative phase. Cumulated rainfalls are exceeding the standard values of about 100 %. Problems due to soil moisture excess could affect the crops because of the combined effect of rapid melting snow due to high temperatures and abundant rainfall. This, combined with the discussed high temperatures, could depict a favourable condition for diseases. No frost damages are expected in all of the country.

Winter wheat: a 1-month advance in development is simulated for winter wheat because of the high temperature. This is an extraordinary value: the current development stage – beginning of stem elongation – has been reached with more than 1-decade advance also compared to the value corresponding to the average minus 2 standard deviations. Soil moisture excesses are simulated between February and March.

Spring barley is probably experiencing unfavourable sowing conditions in some areas because of the soil moisture excess which is threatening field accessibility. In some cases, mild temperatures could have induced farmers to anticipate the sowings: this could have avoided problems related to field-accessibility.

About a 1-month advance in development is simulated also for rapeseed, currently in the second part of the vegetative phase.

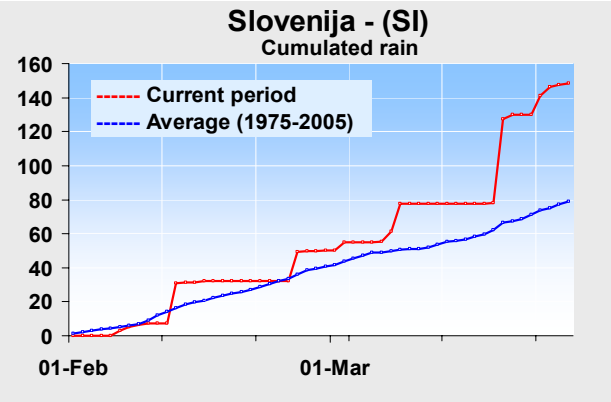




Slovenia: temperatures higher than average

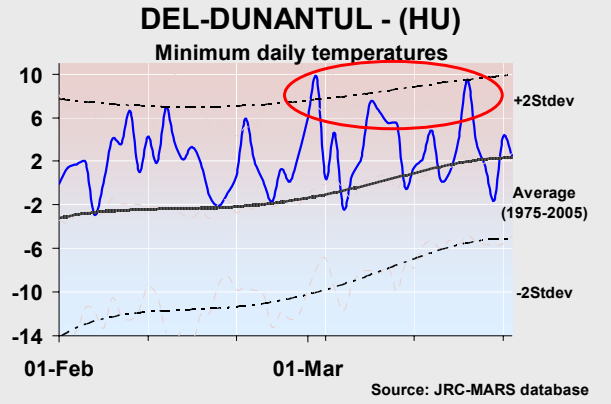
Temperatures higher than the average characterized February and March. In particular, daily minima have always maintained at values between 1 and 2 standard deviations higher than the long-term average. Cumulated precipitations since the beginning of February are about 100% higher than the mean value, mainly because of the important event verified on 19th March.

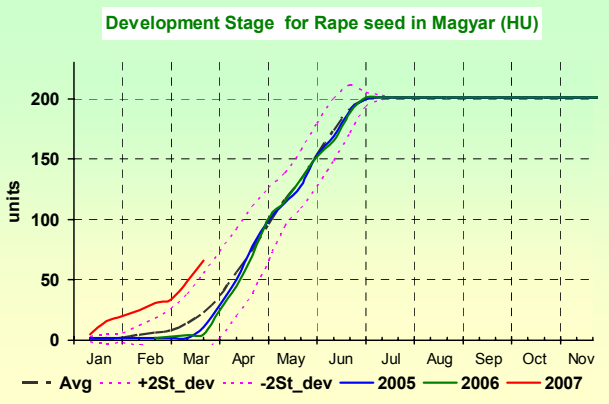
Winter wheat is at the mid-stem elongation stage with a 1-month advance compared to the 5-year average. Although the abundant precipitations recorded since the beginning of February, no significant problems related to soil moisture excess are simulated. Spring barley should not have suffered for the storm event occurred at the end of the second decade of March. Extraordinarily warm thermal conditions are pushing rapeseed development to pass the mid of the vegetative phase with a 25-day advance.

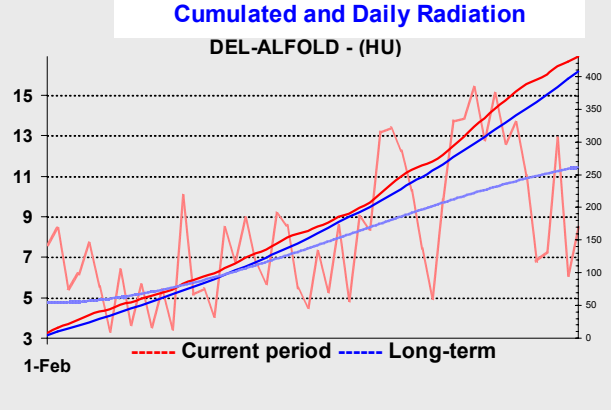


Hungary: 1-month advance is simulated for winter crops cycles

Temperatures strongly higher than the average have been recorded since the beginning of the year, inducing winter crops to strong advances in the crop cycles. Also precipitations have been higher than the average (almost +60 % compared to the long-term average for the whole Country), especially in the western Regions. Main rainfall events have been concentrated in February in the eastern regions (e.g. Eszak-Alfold), in March in the western ones (e.g. Nyugat-Dunantul). South eastern regions experienced satisfactory irradiance levels.
Winter wheat entered the stem elongation phase with about a 1-month advance with respect to the 5-year average. In spite of the precipitations higher than the average, simulated soil moisture is close to the average. This suggests that no problems related to field accessibility should have affected spring barley sowings. Rapeseed is in the second part of the vegetative phase and presents a 25-day advance compared to the norm.

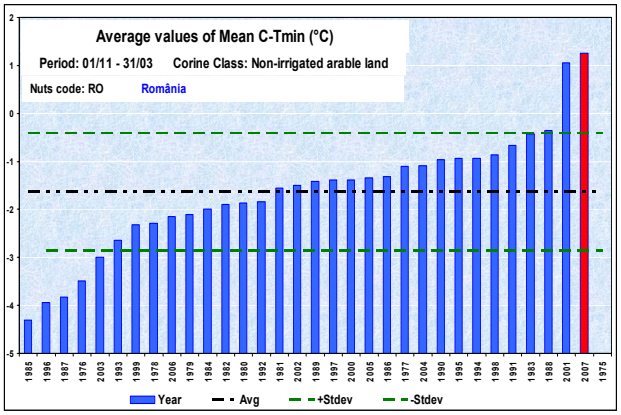


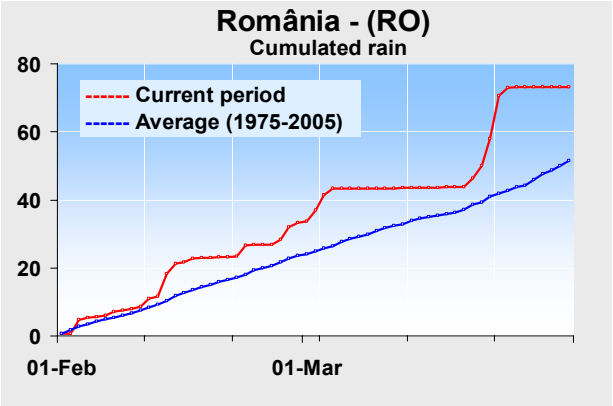


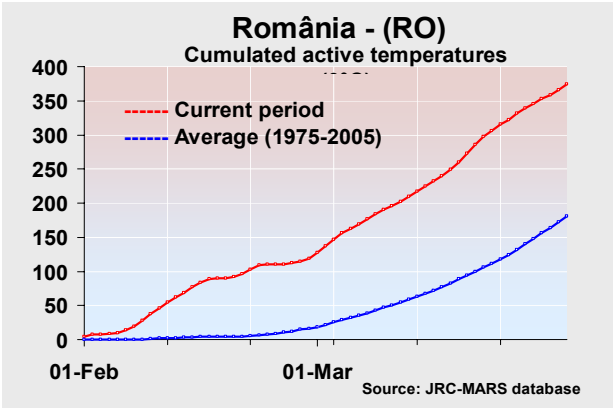


Romania: the warmest winter in the last 30 years

A mild February – March (the sum of active temperatures above long terms averages was enough for the unfolding of two new leaves) ended the warmest winter from the last 30 years. Simulated development of winter wheat was with about two standard deviations above the normal (the most similar year till now is 2002).
The precipitation received during February was slightly above the long term average and the two rain events from February improved partially the climatic water balance (-5 mm for March –February 2007, which is above the long term average of -13 mm and much better than -48 mm recorded for the similar period of the reference year 2002).

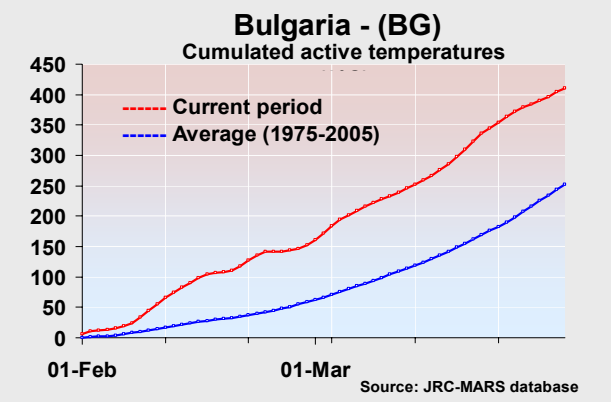


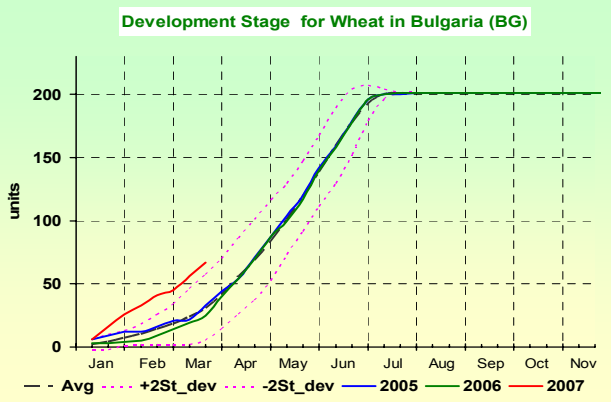




Bulgaria: the warmest winter in the last 31 years

The mild period February – March was the warmest winter of the last 31 years. During these last two months 16 days with minimum temperatures below 0°C were recorded (compared with a long term average of 29 days) and only one day with the minimum temperature below -5°C (long term average for this threshold is 14 days). During the considered period, the sum of active temperatures (Tbase=0°C) exceeded the normal level with more than 160 degree days and this was enough to provide a gain of two leaves on the main stem of winter wheat plants.
The development stage is anticipated for all the winter crops. It is expected that the soil moisture will decrease quicker than usual due to an increasing water demand of better developed crops. Expressed as an average for the all agricultural areas of the country the precipitation received since beginning of February are close to normal level. The wetter than normal areas are located along the southern of Danube, meanwhile the agricultural areas from eastern Bulgaria were drier than usual.
The climatic water balance (calculated since 1st November) was lower than usual, but still positive.
The level of solar radiation was close to normal, excepting some northern areas which were slightly above. The higher values of CNDVI based on SPOT Vegetation data are in agreement with the simulation of an anticipated development stage and a high LAI.

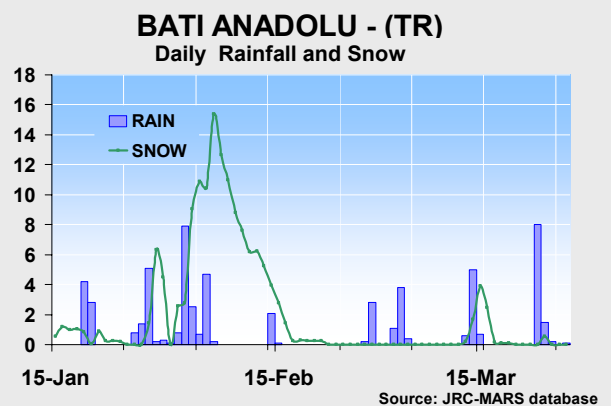


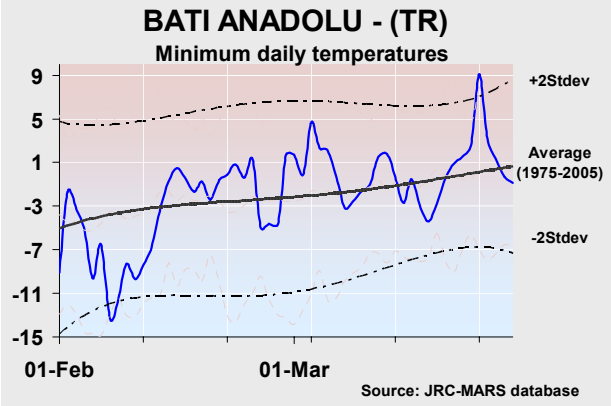


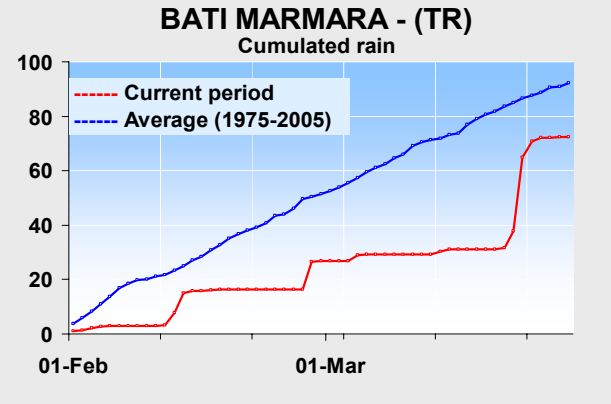
3.2. BLACK SEA AREA

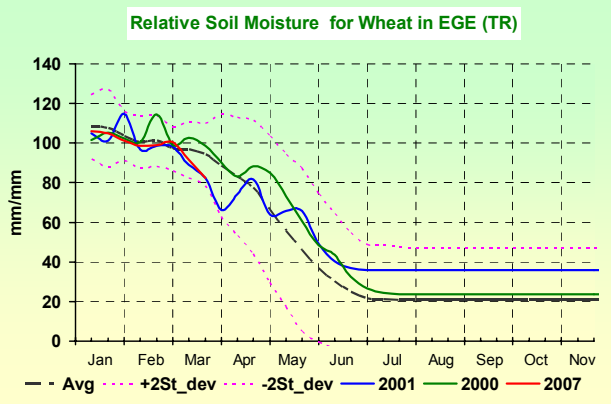
Turkey: Dry and warm in the west, cold and wet in the north east

The winter climate over the main cereal production areas of western and central Anatolia was characterized by alternating periods of intense rain and dry spells. From January to the beginning of February intense rain and snow spread from northern Turkey south-eastward. Dry conditions continued to prevail in the west (Bati Marmara) and in the south-west of the country, particularly on the Aegean coastal regions with a reduction of over 20% in precipitation with respect to the long term average. Throughout this period the Black Sea area was not affected and precipitation remained in the norm. There was a dry spell between mid February to early March followed however by a pickup in precipitation in the last decade of this month. All through winter, average temperatures remained in the norm, slightly higher in western and central Turkey, lower in the east. The start of the shooting phase of wheat should be favoured by the present conditions of temperature and top soil moisture. Shooting of burley, the cultivation of which prevails in the west, is slightly delayed and its outcome depends on the climatic developments of the next few weeks.
Given the described conditions, the expected yield of winter wheat is quite uncertain and could still be influenced by such hazards as late frost events in April or dry spell in central Anatolia during May/June. At the moment a reasonable estimate is on the average levels of 2.24 t/ha for wheat and 2.5 t/ha for barley.



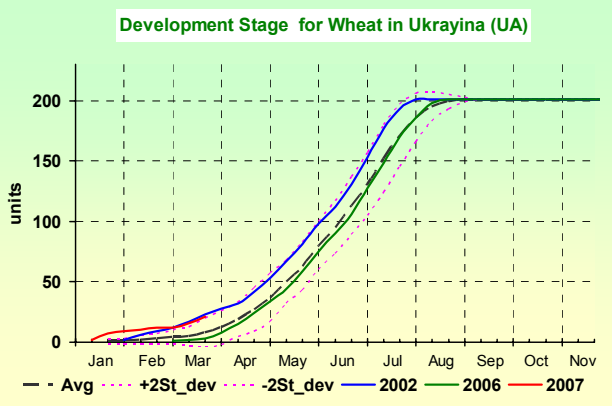


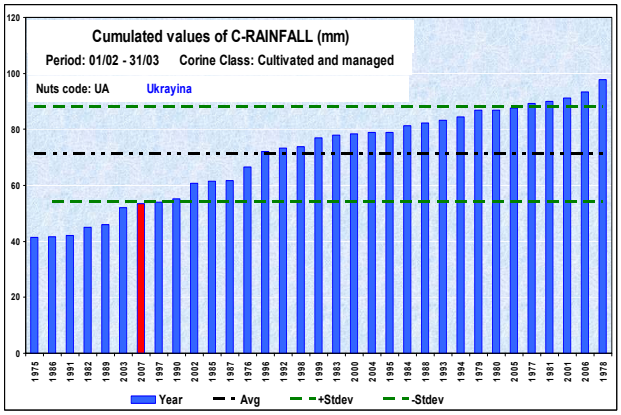




Ukraine: Mild winter, dry in south-eastern

Wheat forecast:
The highest degree development of winter crops is in advance with more than one month. The year with the most similar developmental pattern for the period January - March is 2002. In contrast 2002, the number of days with temperatures below -10°C was with about 40% lower (7 days for the period November 2006 March 2007, compared with 12 days from the winter 2001-2002). The global radiation was close to the long term average.
The rain received during February -March was lower than usual (less one standard deviation) but this period can be considered as exceptional dry only for the south eastern areas. No good rains are foreseen for the first 10 days of April, except a slight alleviation (4th April) for the south-eastern areas of concern. The precipitation regime for the considered period from the comparison year (2002) was slighter better but the climatic water balance since January 2007 was better than in 2002. There are still good chances for an average winter wheat yield.
Conditions for the spring field labours are somehow advantaged by the drier than usual soil but not optimal for crop emergence.

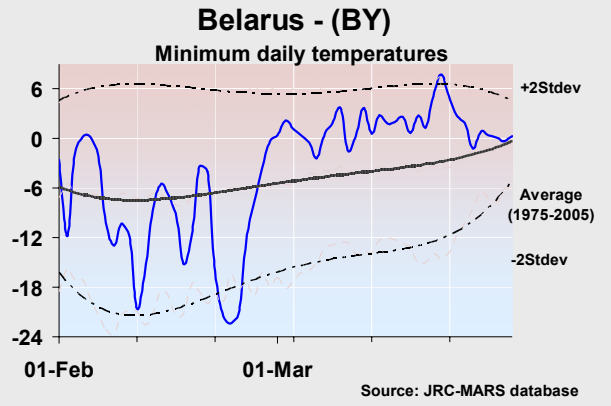




3.3. EASTERN COUNTRIES

Belarus: two frost waves in February, warmer than usual in March

The minimum temperature dropped twice below -20°C (11 and 23rd of February). Locally, the level of -30°C was reached in the north-western Belarus, but the optimal snow cover (around 15 cm) reduced partially the impact of the frost. After the first week of March the increasing of temperatures re-launched the growth of winter crops (the sum of active temperatures was enough for the unfolding of one new leaf) but also increased the vulnerability to late frosts due to dehardening. Simulated development of winter wheat was with about two standard deviations above the normal.
The precipitation received during this period was close to the long term average till the last ten days of March when it dropped below normal (-20mm).



Russia: good conditions for winter crops

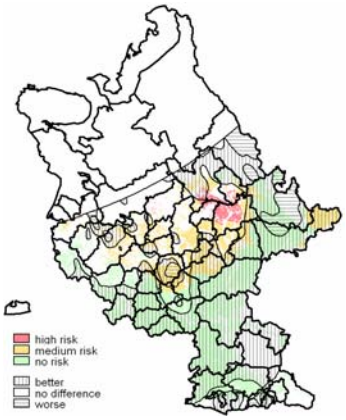
The period under analysis is the last stage of the dormant period of winter crops in all regions of European Russia.

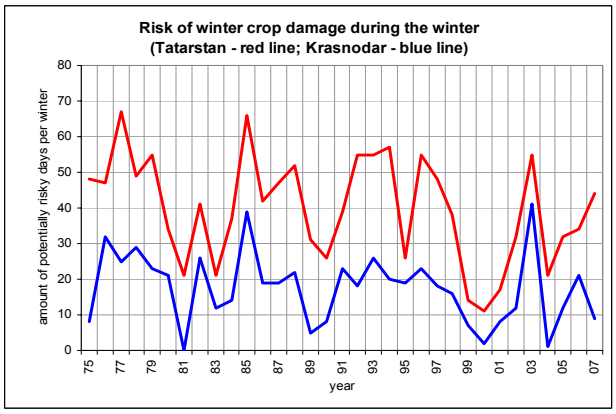
The winter started later than normal, and the period before was optimal for winter crops' development. The remote sensing indicators demonstrate good status of winter crops before the winter.

The maximum of the cold air invasion took place at the end of January, when the minimal air temperature in many regions was lower than - 20 degrees. However, lowing of air temperature was accompanied by snow. As a result the winter crops were protected from frost action in the main winter crop growing regions. Only in Tatarstan, the thickness of snow cover was extremely low, which should lead to winter crop damage in this region. The map below demonstrates difference in risk of crop damage during the current winter (colour), and difference of the situation with the previous winter (hatchings). In general, the current winter was more favourable for winter crop than the previous winter.

The warm December and 1st half of January should lead to a high soil moisture content, which creates good conditions for the spring period of crop growth.

It is likely to be that the percentage of winter crops killed by frost during this winter is lower than in previous years. Only in Tatarstan unfavourable winter conditions could affect nearly 30-50% of winter crops. However, in general for the European part of Russia the meteorological conditions were close to optimal for winter crops during the current winter period, and were better than in the previous season.

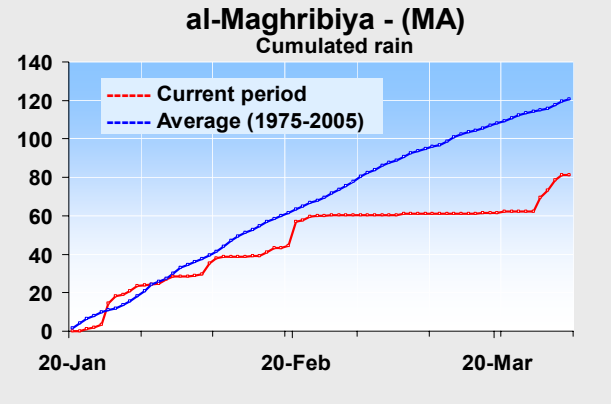

high risk
medium risk
no risk
better
no difference
worse

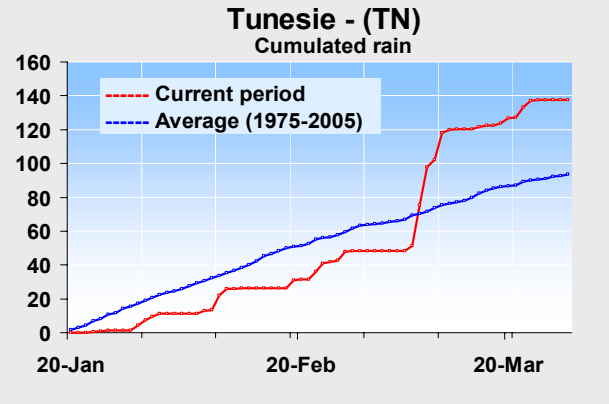

Risk of winter crop damage during the winter
(Tatarstan - red line; Krasnodar - blue line)
amount of potentialy risky days per winter
0
10
20
30
40
50
60
70
80
75
77
79
81
83
85
87
89
91
93
95
97
99
01
03
05
07
year

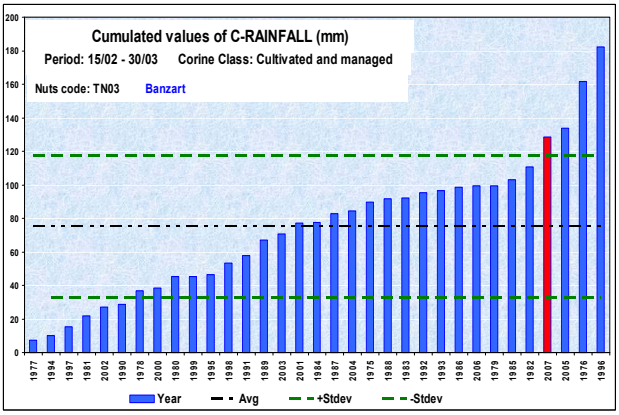
3.4. MAGHREB COUNTRIES

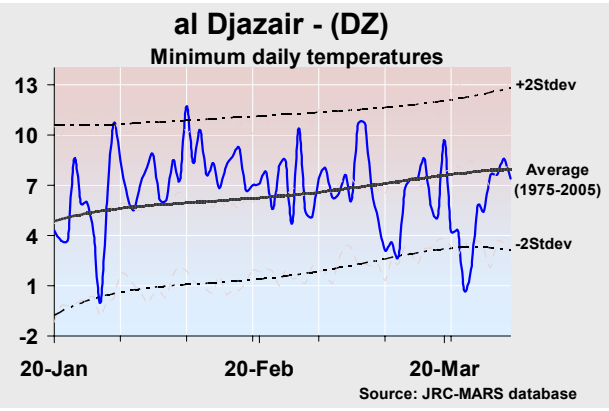
Maghreb: Recent rainfalls are supporting cereal development

Western Maghreb (Morocco) reported normal rainfall levels from the third decade of January to February. Conditions started becoming drier going into March, especially in the agricultural regions east of Gibraltar (Centre-North) and in the South. These events coincided with the delicate phases of tillering and heading of wheat. Recent rains however could partly help recover on available soil moisture and support the crops in the flowering and yield formation phases. Yield forecast for wheat in Morocco is 1.3 t/ha increased on 2006 (+30% but reduced on the 5yrs' average. The same trend is expected for barley (0.74 t/ha). Looking eastward to Algeria and Tunisia, January was characterized by scarce rainfall along the Mediterranean coast, from Algeria to Tunisia. With average temperatures below 8-9°C, crops were still in vernalization and the water deficit should not have affected development. From February onward rainfall was abundant on most of the coastal regions of Algeria, improving in the east, over Tunisia, where it also rained inland. Temperatures were reported normal for the whole season. Wheat and also barley, past the flowering stage should have taken advantage of these conditions. Expected yield of wheat in Algeria stands at 1.27 t/ha improved on 2006 and on the same level as in the 5 yrs; a similar trend is expected for barley in Algeria and for wheat and barley in Tunisia, 1.72 t/ha and 1 t/ha respectively.





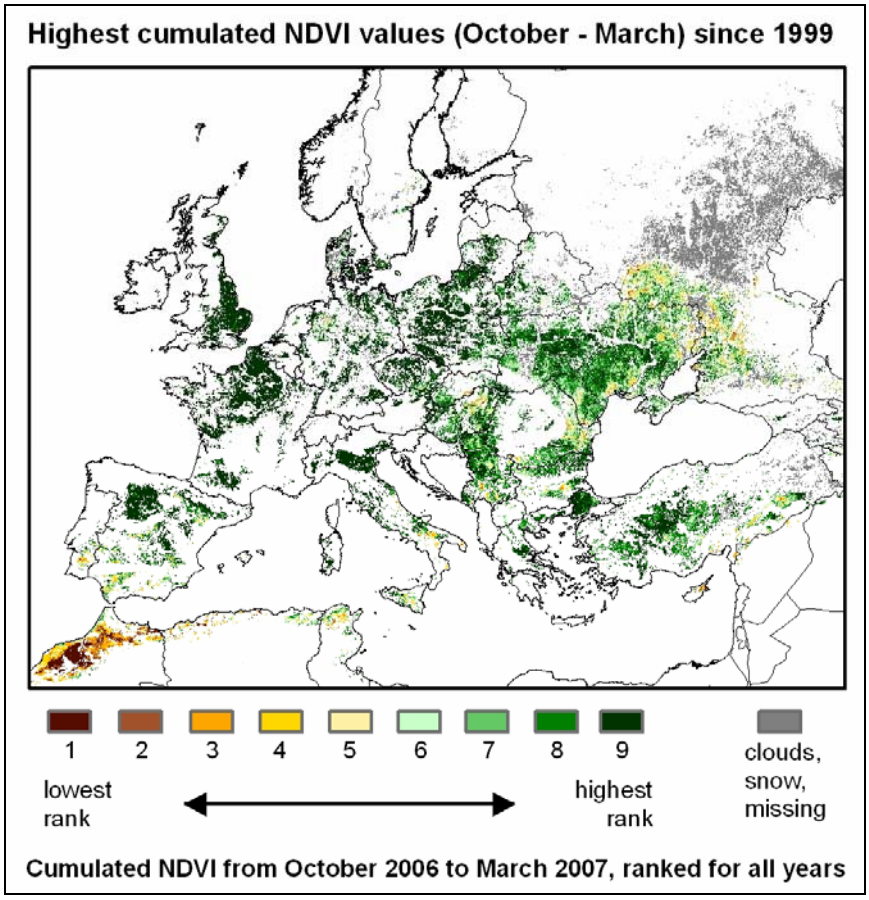




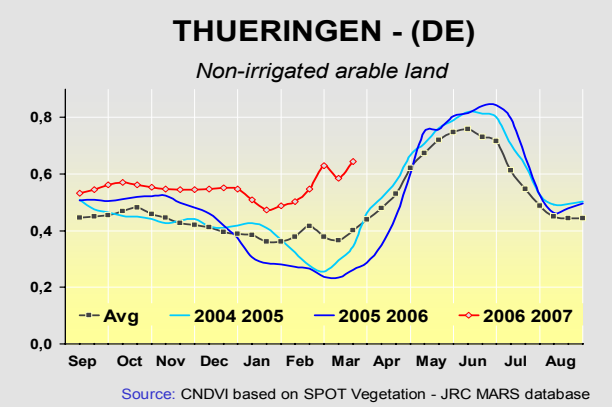
4. SPOT-VEGETATION satellite analysis

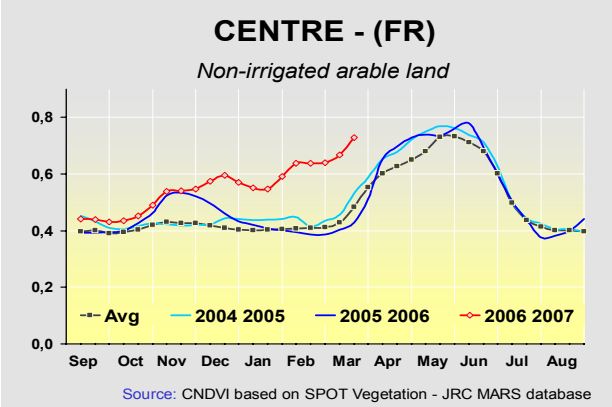
Well advanced vegetation development throughout Europe

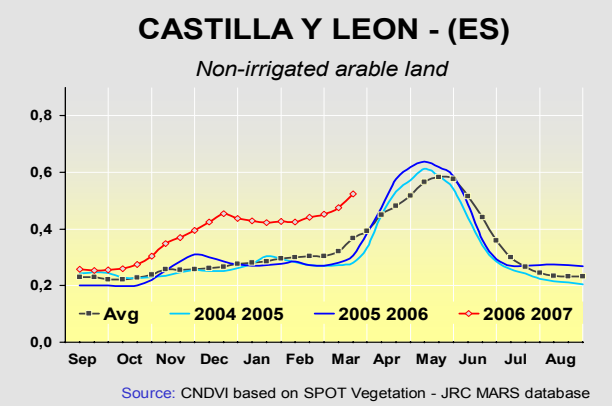
The **NDVI map** on arable lands (Corine Class) is showing the relative differences with the NDVI values of the second March decade taken from the average from 1998 until 2006. Positive deviations from the long term average can be found almost throughout the whole of Europe. Biomass accumulation is especially advanced in central and eastern Europe.

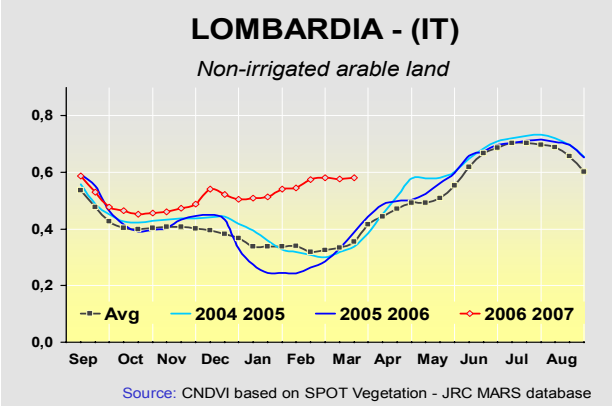


This is as well reflected in the **profiles** for the non irrigated arable land with exceptional high values. The profile for **Thüringen** in **Germany** shows biomass accumulation since the second decade of February with values high above the average. The same is true for the NDVI values of the **Centre** of **France.** Values are increasing since the second decade of January and showing an advancement of 5 decades (second decade of May) compared to the long term average. The positive trend that has been shown for **Castilla Y Leon (Spain)** in January continued throughout February and March with biomass accumulation and an advancement of three decades compared to last year. A comparable situation is also found for **Lombardia** in **Italy** with constant biomass accumulation throughout the winter months.

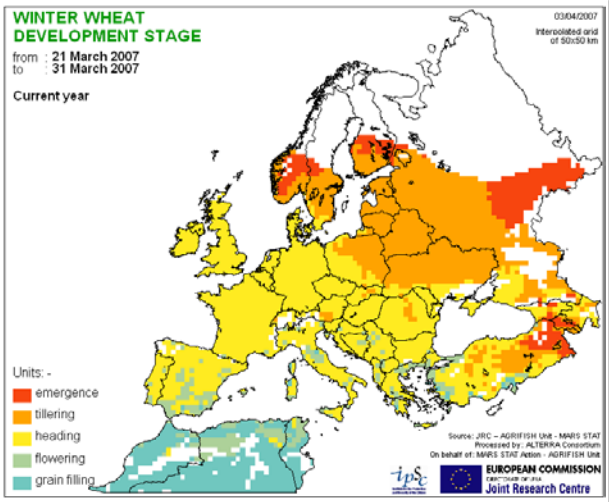

THUERINGEN - (DE)
Non-irrigated arable land
0,8
0,6
0,4
0,2
0,0
Avg
2004 2005
2005 2006
2006 2007
Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug
Source: CNDVI based on SPOT Vegetation - JRC MARS database

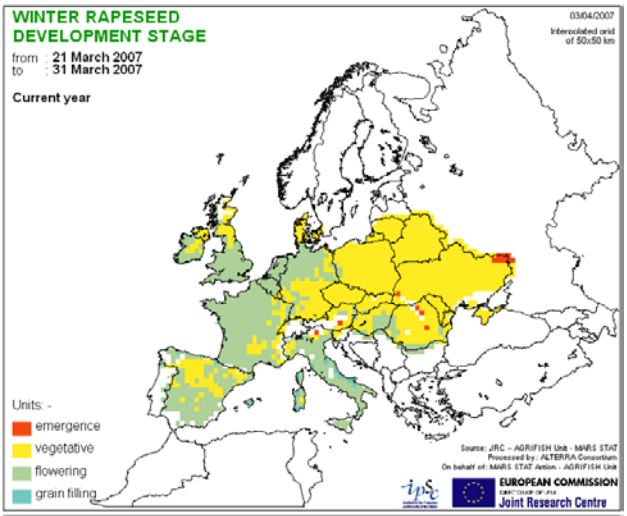

CENTRE - (FR)
Non-irrigated arable land
0,8
0,6
0,4
0,2
0,0
Avg
2004 2005
2005 2006
2006 2007
Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug
Source: CNDVI based on SPOT Vegetation - JRC MARS database

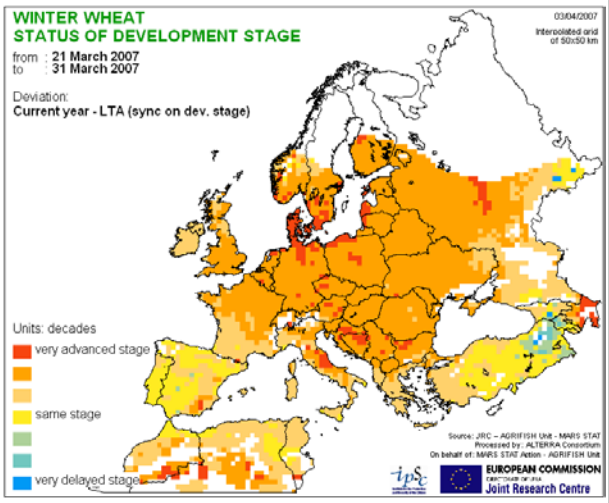

CASTILLA Y LEON - (ES)
Non-irrigated arable land
0,8
0,6
0,4
0,2
0,0
Avg
2004 2005
2005 2006
2006 2007
Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug
Source: CNDVI based on SPOT Vegetation - JRC MARS database

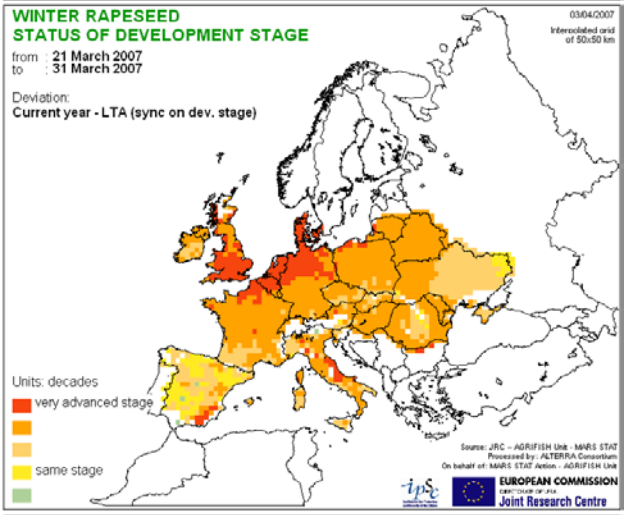

LOMBARDIA - (IT)
Non-irrigated arable land
0,8
0,6
0,4
0,2
0,0
Avg
2004 2005
2005 2006
2006 2007
Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug
Source: CNDVI based on SPOT Vegetation - JRC MARS database

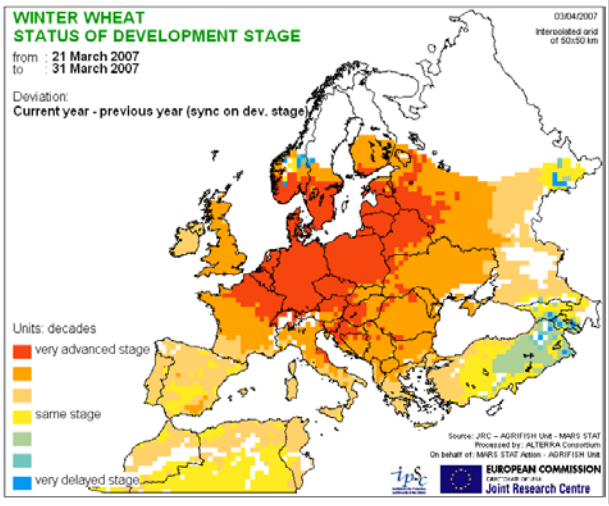
5. DEVELOPMENT STAGE OF WINTER WHEAT AND RAPESEED

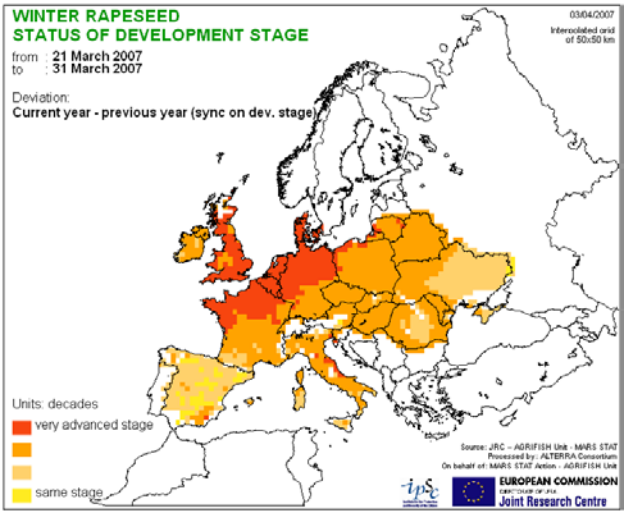




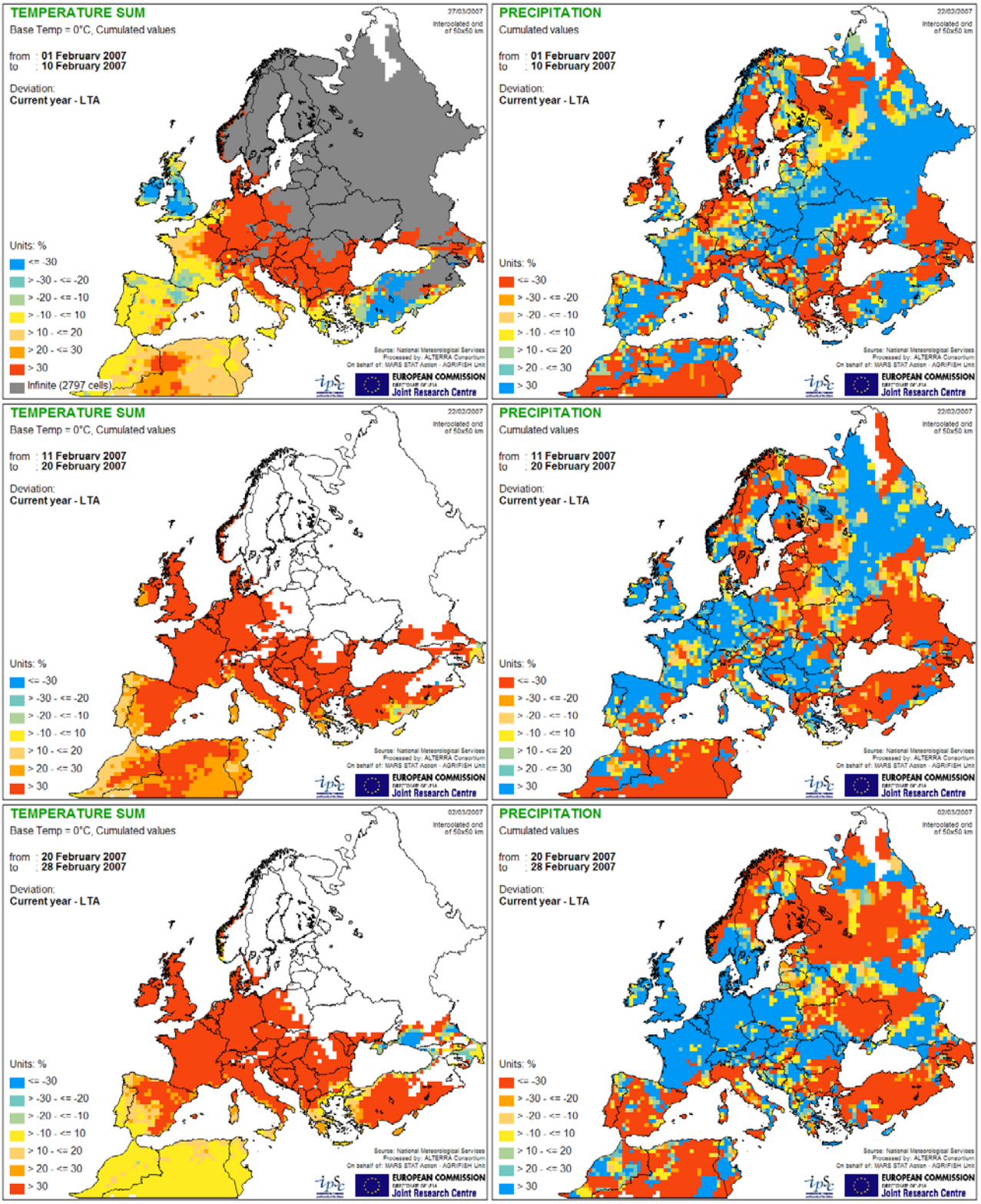








6. TEMPERATURE AND PRECIPITATIONS IN FEBRUARY 2007



2.4

7. TEMPERATURE AND PRECIPITATIONS IN MARCH 2007