MED-Amin
Mediterranean Agricultural
Market Information Network

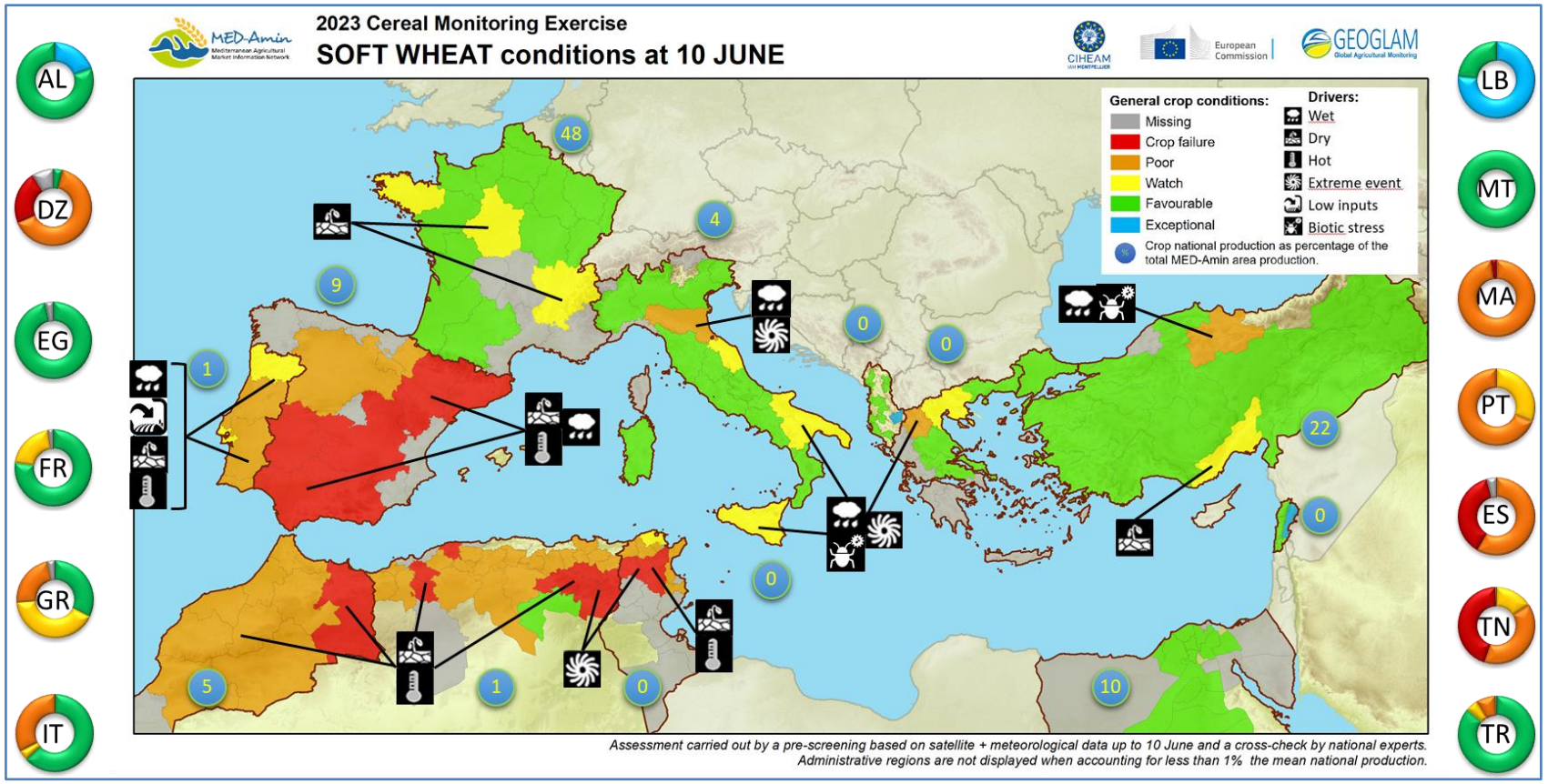
MED-Amin Bulletin 2023 N.3 | Crop conditions at 10 June 2023

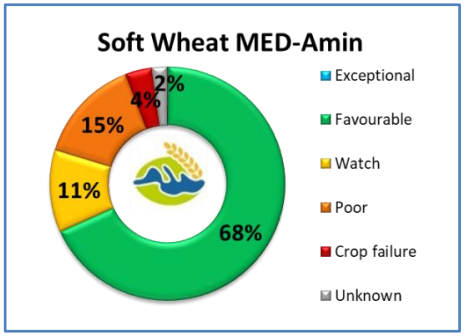
« Unexpected degradation at end of season in some Western Mediterranean areas »

Rainfall in the Maghreb and the Iberian Peninsula arrived too late to bring a beneficial effect on crops. Crop failures occurred in several important grain-producing regions of Spain, Morocco, Algeria and Tunisia. In other areas, crop growing conditions remained favourable despite a clear degradation due to over-wet conditions prevailing before harvest operations in parts of Türkiye, Italy and Greece. New France regions are under the spot-light after a new-coming dry spell.

The regional outlook for soft wheat is positive **with crops developing under more favourable conditions** than durum wheat and barley, with a large majority of the MED-Amin planted area under 'favourable' conditions (68% of the monitored area, see pie chart below; against 61% the previous year in May). Soft wheat is growing well in **France** (FR) and **Türkiye** (TR), the most productive countries of the region, accounting for 48% and 22% of MED-Amin production respectively despite some degradations due to over-wet condition in May and June. In **Morocco** (5% of MED-Amin production), the outlook for soft wheat is negative with all national production areas concerned by different levels of impact due to a persistent drought followed by over-wet and -cold conditions in May-June. In **Italy** (4% of MED-Amin production), one third of national production is rated as 'poor' due to floods occurring in the *Emilia-Romagna* region.

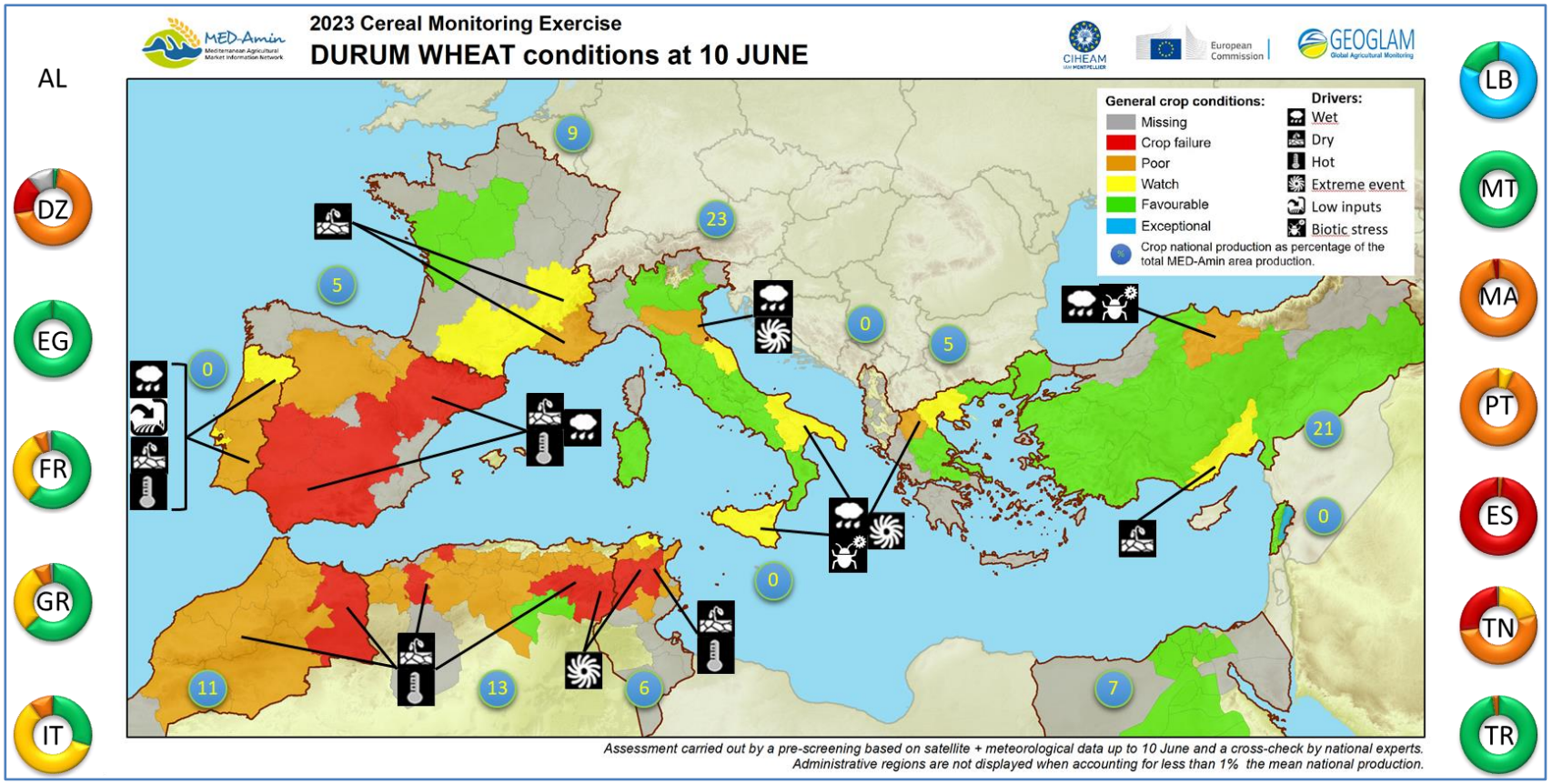
Please see the National Highlights section of this bulletin.

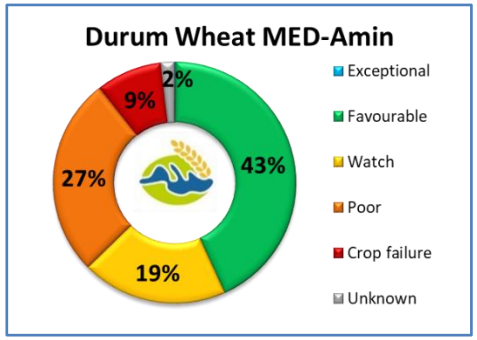




Durum wheat is a typical Mediterranean commodity and crop (47% of World production). It is **the winter crop most impacted by adverse weather conditions this year.** According the final outlook, 36% of the Durum wheat area in the MED-Amin region grew under poor-to-failure conditions, in particular in the Maghreb and Iberian Peninsula countries. For instance in **Algeria** (DZ), **Morocco** (MA), **Spain** (ES) and Tunisia (TN), which account respectively for 13%, 11%, 5% and 6% the MED-Amin area production. This share is similar to the previous year at the same date (37%). By adding the areas under scrutiny (in 'watch' status), this proportion raises to 55%: **More than half of the 2023 Mediterranean durum production is under concern**, against 47% the previous year which ended in a low output in the region, see pie chart below.

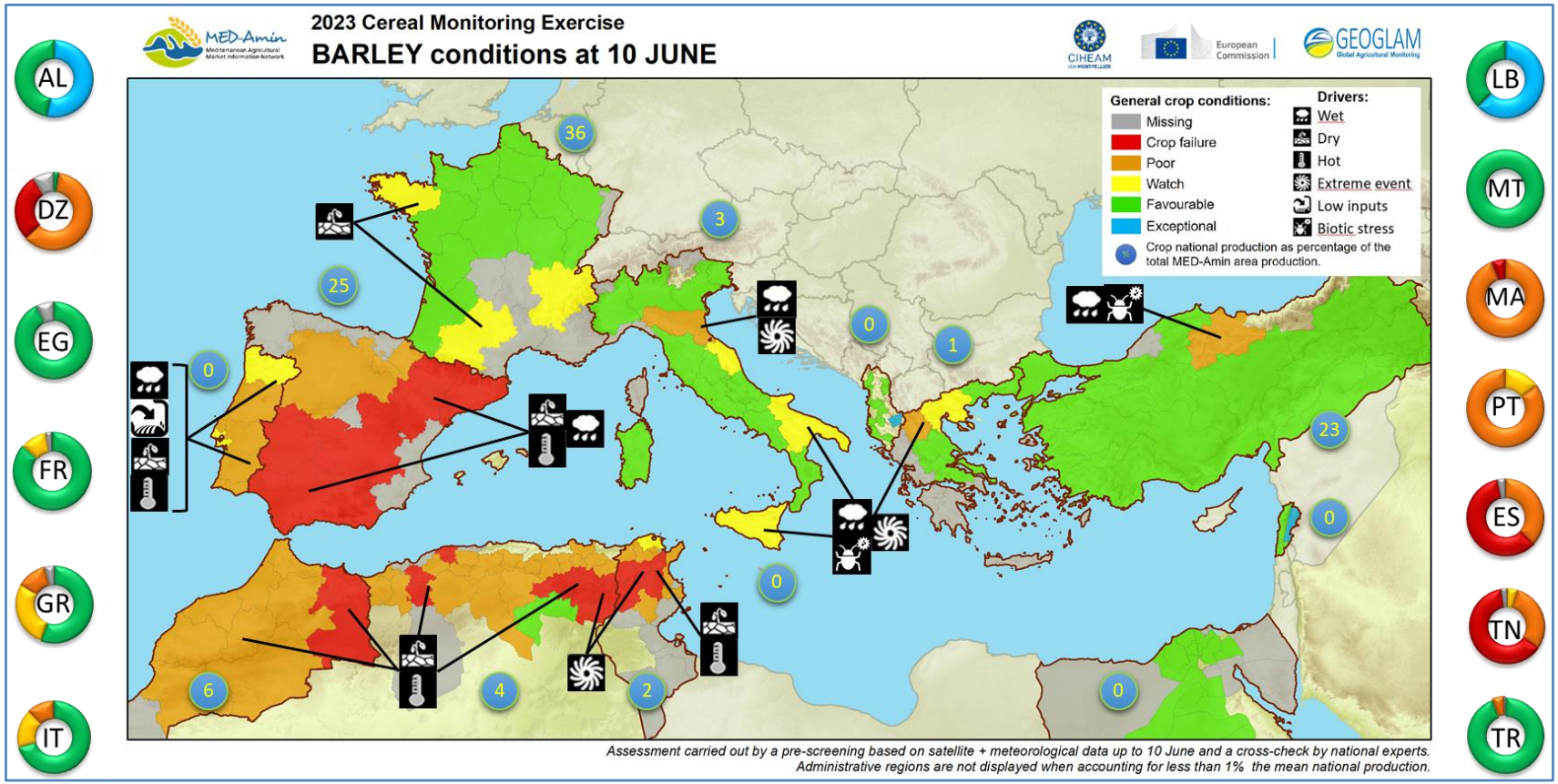
Please refer to the National Highlights section of this bulletin.

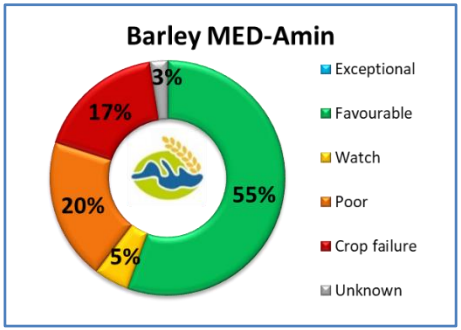




Barley is similarly highly impacted by repeated extreme events throughout the season, even though less than durum wheat. More than half of the MED-Amin planted area is developing well (55% of the monitored area, see pie chart below). However, adverse conditions impacted significantly the production in more than one third the Mediterranean monitored area, 20% is considered in 'poor' condition and 17% in 'crop failure'. This is the result of extreme weather events in top productive regions in Spain (ES) and Tunisia (TN), accounting for 25% and 2% of MED-Amin barley production, respectively. In these countries, nearly two third of the production are considered in 'crop failure' (see pie chart on the right side of the map below).

Please refer also to the National Highlights section.





National highlights

Albania: The meteorological conditions have been rather favourable at the end of season: soil moisture and temperature have been optimal for plant growth and development from the beginning of May to the beginning of June. Soft wheat and barley in the main agricultural districts of Albania are faring well this season. Yields expectations are slightly above 5-year average, and 0.15-0.2 t/ha higher than the previous season. The favourable metrological conditions have made possible for farmers to timely perform agronomical practices, such as weeds removal; especially to those fields subject to wheat regrain. From the surveys carried out, the degree of pests and diseases infection remains far from a concerning level for the final production. Good moisture levels and mild temperatures may lead to exceptional conditions at the time of harvest (e.g. *Korçe*).

Algeria: Coming after a severe and long-lasting drought since the beginning of the season, a rainy and (relatively) cold weather took place in Algeria during the 11-May – 10-June period. Rainfall was from above to well-above average in almost all the northern wilayas of the country, west to east. As in the case of other Maghreb and Iberian Peninsula countries, the rain this season arrived too late to improve winter crop conditions. The previous outlook is confirmed, with even conditions and perspective worsening due to the latest over-wet and extreme events (winds, floods) in several wilayas (e.g. *Batna, Tebessa, Oum El Bouaghi, Khenchela* and *Guelma)*. Quality of grains is expected to be degraded, with cases of sprouting reported locally. Final production is forecasted far below the 5-year average for both wheat and barley. [1]

Egypt: The positive outlook for cereals is confirmed. Satellite imagery shows average to above-average conditions for cereals, which indicates that there was sufficient water supply from irrigation to support adequate crop growth during the vegetative and reproductive stages of development. Harvest operations have wrapped up, with fair increase in cereal production estimates. However, imports are projected to slightly increase for the next 2023/24 marketing year according to market analysts.

France: Rainfalls came back in the driest regions of southern France, with some heavy thunderstorms. In some areas, these low-pressure systems may have resulted in over-wet conditions, which may have contributed to the outbreak of pest diseases (in *Hautes-Alpes* province for example) or may have physically damaged crops, lowering their yield potential. Conversely, new regions resulted affected by water deficit after a flash dry spell

[1] https://joint-research-centre.ec.europa.eu/jrc-news-and-updates/severe-drought-western-mediterranean-faces-low-river-flows-and-crop-yields-earlier-ever-2023-06-13_en

since mid-May, and are still closely monitored (i.e. *Bretagne, Centre-Val de Loire and Rhône-Alpes*), in particular in shallow soils. Crop development for winter cereals is still 'good' to 'exceptional' in the rest of the regions (e.g. *Pas-de-Calais, Picardie, Pays de la Loire*). Overall perspectives remain positive, with production expected slightly above the 5-year average, and much better than in 2022.

Greece: The 11 May-10 June period was characterized by wetter than usual conditions, with temperature slightly below average. Crop conditions have deteriorated since the previous monitoring due to the continuation of excessive humidity at critical stage of development. The overall outlook remains positive, with slightly below average expected production. Several extreme episodes occurred, with frequent and intense rainfall, sometimes hail, bringing excessive humidity whereas wheat and barley crop are heading to harvest. The events were particularly extreme in *Western Macedonia* and *Central Macedonia.* In these regions, impacts are observed for both barley and wheat crops. For barley, whereas the cultivation was favoured at the beginning of the campaign, it is now threatened by fungal diseases (despite the application of fungicides) and have fallen and rotted in the ground. Quality is likely to be affected and harvest has been postponed in several occasions. In areas where barley could have been harvested earlier, yields are good. For soft and durum wheat, similarly to barley, critical phase (flowering/pollination and grain formation) have been impacted by over-wet conditions. Many areas have been flooded, causing plants to face suffocating conditions and rot on the ground. Many weeds developed quickly, offsetting pesticide application and sometimes leaning on the crops. Tilting (due to storms and over-development of the biomass) and other factors are likely to impact yields at the regional scale with well below the average of previous years for instance in *Western Macedonia* and parts of *Central Macedonia*. In other productive regions like *Thessaly* and *Eastern Macedonia and Thrace*, forecast remains particularly promising despite the excessive humidity, sometimes higher than the last 5-year average. High production costs remain an issue for producers. Observers already foresee a decrease in inputs use for the next 2023-2024 campaign.

Italy: Rainfall during the analysis period was abundant throughout the peninsula. During the second decade in May, temperatures fell 2 to 4 degrees below the LTA. This occurred in conjunction with heavy rainfalls and windstorms. In mid-May, extreme rain events occurred for the second time this season in *Emilia-Romagna*, broadening the previously concerned area and worsening already critical conditions. Over-wet conditions with exceptional cumulative rainfalls and strong windstorms occurring from May to mid-June in Southern Italy increased uncertainties around durum wheat production. According to CREA (https://www.crea.gov.it/) experts, these events concerned over 50% of the seasonal production, resulting in *Sicily* and *Puglia* in high rates of field lodging, fungal disease outbreaks (like stem rust never seen before) and issues on quality of the grains, as well as delayed harvest operations. Production expectations are revised downward for durum and soft wheat, slightly below the 5-year-average.

Lebanon: Seasonal temperatures mostly oscillating around the long-term reference prevailed during the analysis period. Rainfall cumulate was above-average from March to beginning of May and rain events were adequate and well distributed to sustain crop growth. The conditions of abiotic and biotic stressors are in line with the previous year. Wheat and barley kernels are mature and ready to be harvested with productivity expectations clearly above-average (e.g. in *Bekaa).* The seasonal favourable conditions are also coupled to an increase in the area sown this season (compared to 5-y average). Field experts early estimate 2023 production to 100,000 tons of durum wheat, 20,000 tons of soft wheat and 15,000 tons of barley, which overall represents nearly three times the 2014-2020 average production (source MED-Amin baseline, 2019).

Malta: Average progress of winter cereals and positive outlook for 2023 despite scarce production is awaited.

Morocco: Cumulative rainfall for the 11 May – 10 June period was above-average in almost all the regions in Morocco, with rain events occurring mainly around mid-May. Average daily temperature, also influenced by rain events mostly remained 1-2 °C below-average. Such weather condition occurred after a long-lasting drought period, started even before the beginning of the cropping season. Remote sensing confirmed that these rainy events arrived in general too late to hope for recovery and were of insufficient consistency to improve soil moisture and to be beneficial for the remaining crops. Like in other Maghreb countries, the quality of grains may have been affected by this turnaround in weather conditions. The overall production is expected to decline well below the 5-year average for both wheat and barley, including in the top-producing region of *Meknès-Fès*. However, production is expected to be above the previous season, which was one of the worst of the past 15 years. [2]

Portugal: May 2023 was classified as very hot in temperature and very dry in precipitation. This weather condition confirms the trend already observed in the previous months, and the previous outlook. Portugal continues to experience a drought, especially in the south of the country, where the drought is classified as “severe” or “extreme”, and the autumn-winter cereal campaign is definitively compromised in *Algarve* and *Alentejo*. The last week of May was characterized by rain events (sometimes heavy), hail and thunderstorms, especially in the interior Northern and Central regions. This occurred too late for the development and yield potential of autumn-winter cereals to recover in these regions. In *Trás-os-Montes*, crops experienced drier-than usual conditions until mid-May, which resulted in atypical vegetative development and premature maturity, without the completion of a normal cycle of growth. Despite the precipitation at the end of May, productivity is compromised, in contrast

[2] https://joint-research-centre.ec.europa.eu/jrc-news-and-updates/severe-drought-western-mediterranean-faces-low-river-flows-and-crop-yields-earlier-ever-2023-06-13_en

with the previous outlook (with indicated hopes of good output in this northern region). In general, the outlook is negative and cereal production and yield are forecasted much lower than average due to the extreme conditions during the vegetative cycle (heavy rainfall in December and high temperatures and water deficit since March/ April) which caused poor vegetative development, short spike, early filling and deficiencies in grain filling. The low production in some areas does not support harvest cost, hence some crops will most likely be used for forage. In irrigated land, the high temperatures and increased costs resulting from the surge in irrigation needs, lead to a projected decline of cereal productivity between 10% to 20%. The current cereal campaign should be one of the worst in the last decade, with a combined decrease in area and productivity.

Spain: The lack of precipitation and abnormally high temperatures have been the trend all along the campaign, especially in the southern half of the country, but also affecting many grain producing areas of the North-East. Rainfall in the second half of May has only partially alleviated the extreme soil dryness prevailing across the country, coming too late to prevent yield losses in the main areas affected: *Andalucía, Extremadura, Castilla La Mancha, Aragón* and *Cataluña*. In these regions, many producers will not harvest, they will leave fields for direct grazing or they may harvest as hay. In *Cataluña* for instance, some rains in May could have helped cereals to recover, but more recent heavy rains may cut any hope and hamper production and certainly decrease the quality of the grains. In *Castilla y Leon*, the most productive region for cereals, the outlook is still negative but less alarming due to delayed development of crops. There is no official figure yet, but according to the data provided by the sector, the expected 2023 production drop is going to be very sharp.

Tunisia: The final part of the season was characterized by cold and wet weather conditions, in contrast with the trend monitored since the beginning of the campaign (warm and dry, with cumulative precipitation record low from 1979-2022 historical series). Rain events in May and June were abundant and distributed. Cumulative precipitation was in the northern and central region well above average for this period. The previous negative outlook is confirmed, and is in-line-with those of the other Maghreb countries. Wheat and barley production is forecasted limited, with yield clearly cut from 5-year average, in particular in central regions (e.g. in *Le Kef, Siliana, Zaghouan, Ben Arous* and *Beja* governorates). Over-wet conditions in the monitored period added threat on the 2023 harvest in deteriorating the quality of the grains and making harvest operations more difficult when still in plan. [3]

[3] https://joint-research-centre.ec.europa.eu/jrc-news-and-updates/severe-drought-western-mediterranean-faces-low-river-flows-and-crop-yields-earlier-ever-2023-06-13_en

Türkiye: In the 2022-2023 campaign, the weather condition was extremely different compared to the average and previous seasons. In 2023, May rainfall in Türkiye was both above the long-term average and last May (May 2023: 66.8 mm, May LTA (1991-2020): 52.7 mm, and May 2022: 44.4 mm). Rainfall was 27% above the LTA with mixed regimes depending on the regions: -60% in South-eastern Anatolia Region (e.g. *Şanlıurfa, Mardin* and *Hatay*), +50% in the Aegean Region (e.g. *Afyonkarahisar*), +100% in the regions of *Kütahya, Manisa, İzmir, Aydın, Muğla, Uşak, Denizli, Burdur, Afyon, Antalya, Çankırı, Ankara, Erzincan* and *Tunceli*. The overall crop conditions were favourable. High yields are forecasted in comparison to previous year, largely benefitting from efficient and well distributed rainfall along the year. However, some concerns are raised from the previous monitoring period due to the recent over-wet conditions, in particular in the Black Sea region, resulting in an increased biotic pressure (e.g. rust symptoms) on crops during ripening. This situation could decrease the quality of wheat in these locations. If rainfalls continue until the end of June, quality will likely be impacted, even though barley and wheat production are low in the Turkish Black Sea region.

Bulletin 2023 N.3 : *This bulletin gives an overview of the development of cereal crops in the Mediterranean from sowing to 10 June 2023, focusing on the period from 11 May to 10 June.*

Flagship regional activity: *This crop monitoring and early warning initiative was progressively developed* ***since 2016*** *by the MED-Amin network [4] in collaboration with the Joint Research Centre (JRC) of the European Commission, providing an early* ***qualitative assessment of crop condition and yield potential of three winter cereals*** *(soft wheat, durum wheat, barley) based on a GEOGLAM-like approach but with a two-steps methodology using remote sensing and feedback from national Focal Points which enabled to identify hot-spots of concerns at subnational level using nomenclature and pie-charts similar to GEOGLAM for AMIS (Agricultural Market Information System) (see below) and to disseminate corresponding warnings.*

General methodology: *The forecasting methodology is based on the monitoring of crop conditions using indicators derived from Earth observation (e.g. fAPAR or NDVI), carried out* ***jointly by the CIHEAM-IAMM and the Joint Research Centre of the European Commission (EC-JRC)****. Reflecting out-of-average biomass accumulation vs the medium-term average (2013-2022) allows us detecting areas of concern[5]. These pre-screened areas of concern are then analysed, validated or completed by each National Focal-points of the MED-Amin network when available, taking into account feedbacks from field observation and local experts, then labelling accordingly areas at risk.*

Crop conditions legend (GEOGLAM scale and nomenclature):

- *Exceptional: Conditions are much better than average at the time of reporting. This label can only be used between the grain-filling stages to the harvest stage.*
- *Favourable: Conditions range from slightly below to slightly above average at the time of reporting.*
- *Watch: Conditions are not far from average but there is a potential risk to final production However, at this time it is considered that crops might still recover if conditions improve.*
- *Poor: Conditions are well below average and are very likely to impact production with a harvest clearly below average.*
- *Crop failure: Crops have been strongly damaged, low yield and area reduction will strongly impact the production.*

Crop conditions Drivers (adapted from GEOGLAM nomenclature):

- ***Wet:*** *Above-average accumulated total precipitation;*
- ***Dry:*** *Little or no rainfall period;*
- ***Hot:*** *Unusually above-average temperatures;*
- ***Cold:*** *Unusually below-average temperatures;*
- ***Extreme events:*** *Occurrence of extreme weather events;*
- ***Delayed onset:*** *Delayed onset and operations of the crop year;*
- ***Biotic stress:*** *Crop impact caused by living organisms, specifically viruses, bacteria, fungi, nematodes, insects, and weeds;*
- ***Low Input:*** *limited use of inputs (fertilizers, pesticides, etc.) that could end in moving the outlook for the future harvest (yield, quality).*

Disclaimer:

This report has been prepared for the MED-Amin network. The information and views expressed in it do not necessarily reflect an official position of CIHEAM or of the European Commission.

[4] MED-Amin network, gathering 13 countries and coordinated by the CIHEAM (International Centre for Advanced Mediterranean Agronomic Studies), aims to reduce prices volatility in agricultural markets. It develops an early warning system strengthening food security in the region. For more info: http://www.med-amin.org, http://ec.europa.eu/jrc/en/mars and http://cropmonitor.org

[5] The long-term average (LTA) used within this Bulletin as a reference is calculated on the basis of weather data from 1991-2022.

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