



MED-Amin Bulletin 2024 – 1

Winter crops outlook at 10 March 2024

Winter anomalies primarily impacting the western MED-Amin regions

The start into the 2024 cereal campaign was predominantly affected by prolonged dry weather conditions in the Western Mediterranean region. Winter cereals in Western Maghreb are already been hampered. However, crops in the Iberian Peninsula have recovered, following significant and well distributed rainfall since mid-January. Over-wet conditions have hindered normal planting and agronomic operations in the Atlantic regions of France, and to a lesser extent in Italy. Conversely, crop conditions are generally favourable in other Mediterranean regions, with a positive outlook so far.

The present **bulletin** gives an outlook about the progress of cereal crops in the Mediterranean region. It provides **early qualitative forecasting** of the **2023-2024 campaign**, with particular focus on soft wheat, durum wheat and barley. This **first outlook** reviews crop conditions from the sowing up to **10 March 2024**, with a specific **focus on the 1 October - 10 March period**.

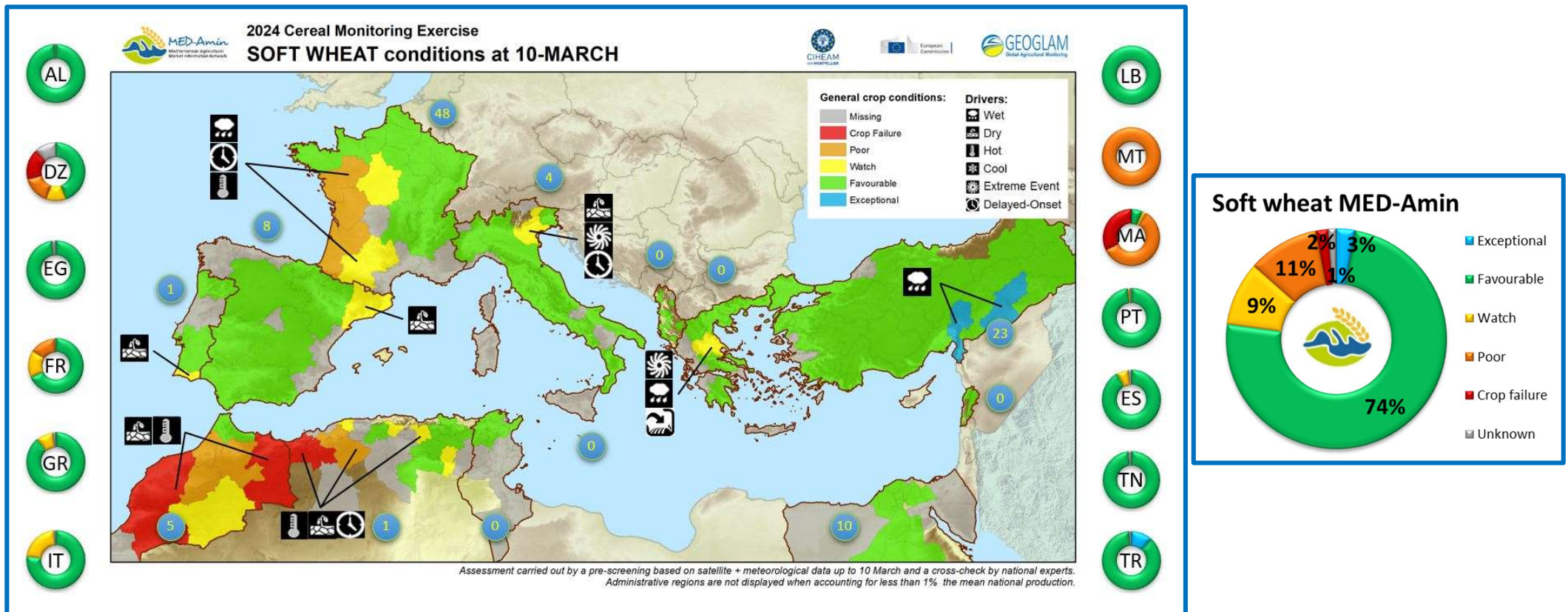
This crop monitoring and early warning initiative was progressively **developed since 2016 by the MED-Amin network in collaboration with the Joint Research Centre (JRC) of the European Commission**, providing an **early qualitative** assessment of crop condition and yield potential of **three winter 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) and to disseminate corresponding **warnings**.¹

In a context of **rapid market changes** at global and notably Mediterranean level, boosted by the war in Ukraine, a new driver 'low input' can be displayed among the other abiotic drivers of future production.

¹ MED-Amin network, gathering 13 Mediterranean countries and coordinated by the CIHEAM (International Centre for Advanced Mediterranean Agronomic Studies), aims to reduce prices volatility in agricultural markets. This initiative lays the foundation for 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>.

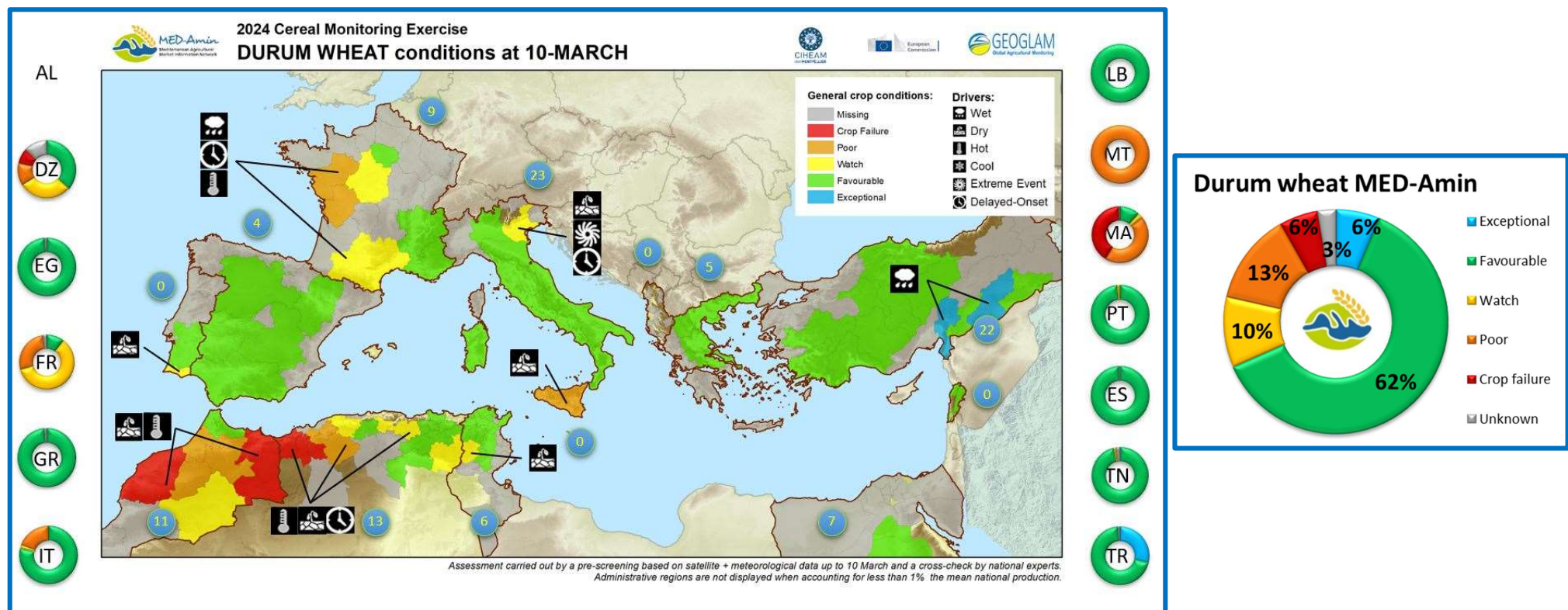
The regional outlook for **Soft Wheat** is positive **with crops developing under favourable conditions in the same way as Barley**, with a majority of the MED-Amin planted area under ‘favourable’ conditions (74% of the monitored area, see pie chart below; which is below the 79% of last year at the same date). Soft wheat is growing well in **Egypt** (EG), which accounts for 10% of MED-Amin production. In **Spain** (8% of MED-Amin production), the outlook for soft wheat is also positive, with a very small area under ‘watch’ condition due to a persistent drought.

Please see the National Highlights section of this bulletin.



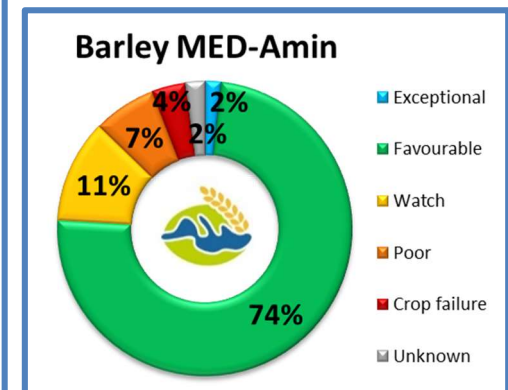
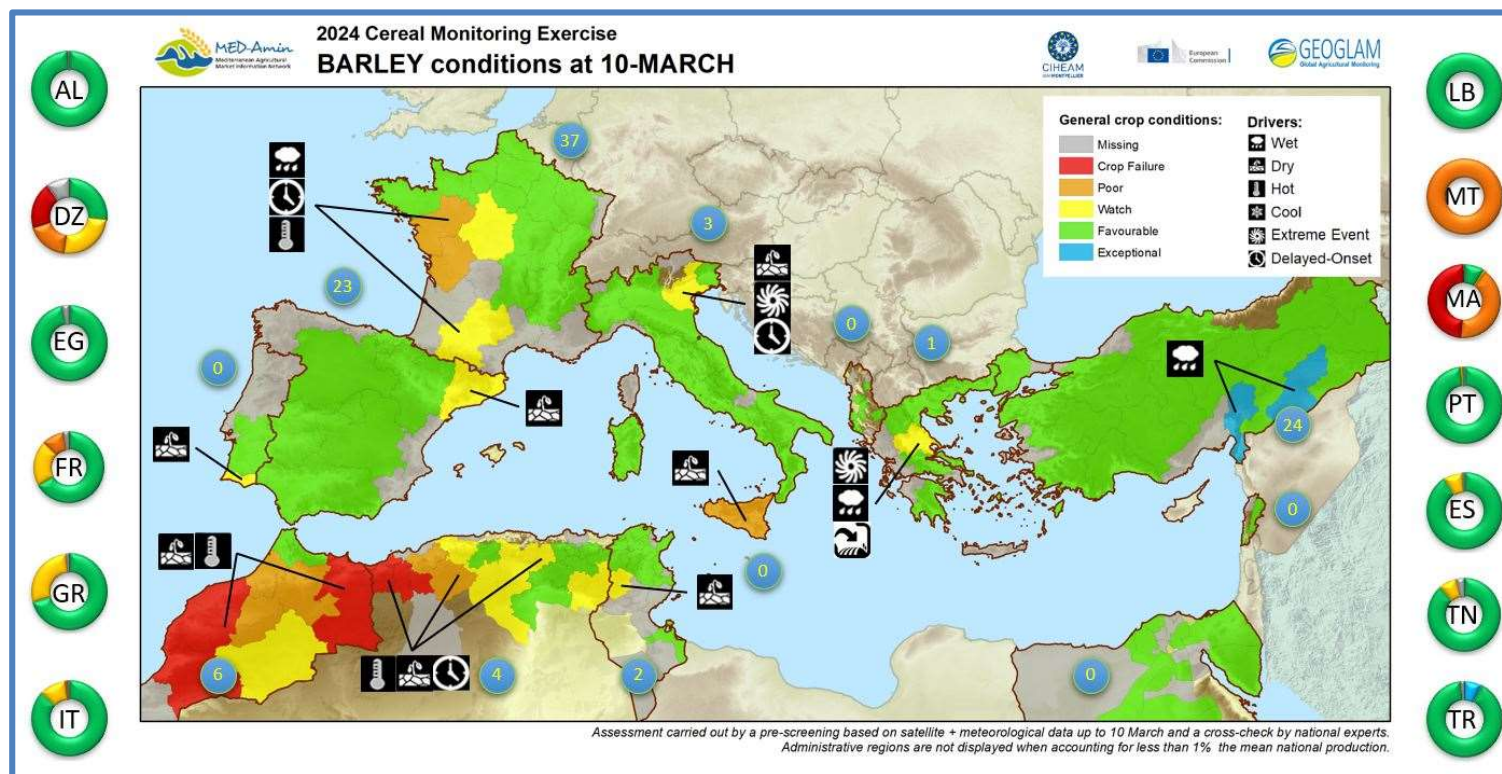
Durum Wheat is a typical Mediterranean commodity and crop (47% of World production). It is the most affected among winter crops by adverse conditions since the beginning of the campaign: **only 62% of the Durum wheat area planted in the MED-Amin region is developing under 'favourable' conditions**. In Italy (IT) which accounts for 23% of MED-Amin production, almost 1/4 of the area planted is concerned by prolonged dry conditions in Sicily ('poor' label). In Morocco (MA - 11% of MED-Amin production), most of the acreage planted with delay have already been hampered (only 10% under 'favourable' conditions). In Türkiye (TR - 22% of MED-Amin production), most of the crops are developing under 'favourable' even 'exceptional' conditions, respectively 2/3 and 1/3 share (see pie chart below). Globally, crop conditions are performing slightly better than last year at the same date.

Please refer to the National Highlights section of this bulletin.



Barley crop conditions are globally similar to those of soft wheat at this early stage in the season. **A quarter of the MED-Amin planted area is under scrutiny** ('watch' status or worse). About 11% are already considered 'poor' or even in 'crop failure' with harvest likely to be significantly impacted or cut (see pie-chart below on the right). In several countries, barley is the winter crop most affected by weather anomalies of this campaign. The situation is in line with the 2021-2022, much better than last year. In **France** (FR) accounting for 37% of MED-Amin barley production (based on the last 5-Y average), almost 1/3 of planted areas are in 'watch' or 'poor' status, affected by over-wet conditions, whereas in **Algeria** (DZ - 4% of MED-Amin area), more than 3/4 of planted areas are not growing under favourable conditions: 26% considered as 'watch', 18% as 'poor' and 20% as 'crop failure' among the monitored wilayas (see pie chart on the left side of the map below).

Please refer also to the National Highlights section.



National highlights



Albania: The first half of the season was characterised by below-average but well distributed rainfall events resulting in accumulated rainfall 35% below the long-term reference. The average daily temperature was consistently above or well-above the seasonal norm, leading to an advanced stage of crop development. Satellite data analysis highlights moderately above-average crop biomass accumulation for winter crops (e.g. *Fier*).



Algeria: Satellite observations indicate that winter crop sowings in the western-continental regions have been delayed compared to the average season. Additionally, satellite images indicate below-average biomass accumulation as a result of the prevailing dry conditions. The regions of *Tlemcen, Sidi Bel Abbas, Relizane, Mascara, Saida* and *Ain Témouchent* are particularly of concern, with signs of irreversible crop damage. Even in irrigated areas such as *Tiaret*, crops are at (moderate) risk of failure. In the eastern and central continental regions (e.g. *Medea, Guelma*), satellite indicators reveal a delay in sowing due to the autumn drought. However, there has been a rapid biomass recovery to medium-term average levels or more. This can be attributed to the beneficial rains that occurred in December, the beginning of the year. The weather conditions in the coming weeks will be crucial for this country in limiting the overall damage and get closer to the five-year average of cereal production.



Egypt: Warmer-than-usual thermal conditions have characterized the season in Egypt so far. Especially during the December-January period. Satellite imagery indicates moderately above-average conditions for cereals, suggesting that there was sufficient water supply from irrigation to support adequate crop growth during the vegetative and reproductive stages of development.



France: The over-wet conditions have led to delays in sowing, and continue to be problematic as drier weather is awaited. The excess precipitation, approximately 10% above average, is observed in all regions, with the exception of *Languedoc-Roussillon*. This should lead to changes both in winter sowing choices and also in spring crops. The winter of 2023-2024 was marked by mild temperatures, with monthly records recorded in the southern regions. The average daily temperature was around 2°C above the 1991–2020 reference, with February 2024 being the second hottest February ever recorded nationwide, following February 1990 (+4°C). Nationally, the winter of 2023-2024 ranked as the 3rd warmest winter since 1900, behind the winters of 2020 (+2.3°C) and 2016 (+2.1°C). Additionally, there was a notable lack of sunshine over a large

part of the country, with a deficit between 10 to 30% from the *Center-West* to the *Paris Basin* and the *Ardennes*. Conversely, sunshine levels were consistent with the season in the Mediterranean regions, and more locally in the south of *Alsace*. The state of the aquifers is satisfactory across much of the territory, particularly on the reactive aquifers, due to a wet start of the recharge period (with 46% of levels above monthly average). As of March 10, 66% of areas planted with soft wheat are experiencing good to very good growing conditions (compared to 95% in 2023), while 68% of areas planted with winter barley and 72% of areas planted with durum wheat are also experiencing similar conditions, indicating a challenging start of the season, particularly in western regions (e.g. *Poitou-Charente*, *Pays de la Loire*).



Greece: In the main crop-growing regions of Greece, temperatures ranked among the highest in our records, but mostly without causing concern for crops. Crop development and biomass formation are progressing ahead of the medium-term average (e.g. *Central Macedonia*). Winter crops are currently in fair to good conditions, potentially becoming exceptional in the coming months if favorable conditions persist. In *Thessaly* region (*Larissa* and *Magnesia* prefectures), nearly 23,000 hectares of arable land continue to face challenges in re-establishing agricultural activities after the flood events of September 2023 (Copernicus Rapid Mapping Support Service - [EMSR692](#)). In other productive regions, mild winter with sufficient rains favoured the development of cereals crops and the optimal benefits of crop operations (e.g. fertilization). However, extreme weather events were observed in *Xanthi* (*Eastern Macedonia*) and hot and dry conditions compared to average in *Imathia* (*Central Macedonia*) without significant impact on crops for the moment.



Italy: In the January-February period there was limited rainfall in many parts of Italy, with cumulative rainfall ranking between the third and the fifth driest since 1991. However, in March, there was a distinct precipitation surplus, which had an overall beneficial effect on soil moisture without significant negative impacts on crops. In *Veneto*, the rainfall in March did not compensate for the deep winter drought. While flood phenomena were localized, they indicated that excessively arid soil is unable to absorb intense rainfall, leading to flooding. The rains disrupted the late winter fertilizations. Currently soft wheat crops are struggling and requiring fertilizers and weed control, if the remaining soil moisture enable the operations. In *Sicily*, the persistent drought since winter has become a serious concern. Durum wheat crops have suffered from very scarce rain; however, in some areas of the eastern part of the island, the situation appears slightly more favourable. The recent rains in March were insufficient to improve the situation in the field. In *Sicily*, there is an estimated 10% reduction in durum wheat plantings, triggered by both agrometeorological events and the decline in grain prices, which has discouraged farmers from planting.



Lebanon: Seasonal temperatures have consistently remained above the long-term average (LTA), ranging from 2 to 5 °C, with the only exception being the period around the beginning of February when several rainy events occurred. The accumulated rainfall was moderately below average throughout the campaign, with rain events well distributed from December 2023 to March 2024. Crop biomass accumulation is above average and consistent with the positive trend observed in the previous season (e.g. *Beqaa*).



Malta: The hot and dry conditions during the December-February period led to delayed sowings and below-average biomass accumulation. Crops are now entering the grain-filling stage.



Morocco: Exceptionally warm and extremely dry conditions have led to below-average biomass accumulation for cereals in most areas of the country, with little possibility of crops to fully recover. Rainfall cumulates were far below-average in Autumn and Winter, following a persisting drought. Crop biomass accumulation has fallen below to well below the medium-term average in most of the regions of Morocco, particularly in *Marrakech-Safi*, *Béni Mellal-Khénifra*, *Oriental* and *Casablanca-Settat*, where crop damage appears to be irreversible, and crops are at risk of failure. The only exception is observed in *Tanger-Tétouan-Al Hoceima* where biomass accumulation is above-average.



Portugal: The period leading up to the beginning of March was characterized by below normal temperatures and high levels of soil moisture, particularly in the northern regions of the country, due to substantial rainfall in January and February. The abundant and evenly distributed precipitation overtook the dry conditions that prevailed at the end of 2023. Since mid-February, temperatures have significantly risen across the country, well above normal values for the season. In general, cereals showed good vegetative development across most of the territory, with the exception of the *Algarve*, where poor development is observed due to weak rainfall and low temperatures, despite good initial conditions for cereals sown in early October. In *Alentejo*, the most representative region for cereal production in Portugal, cereal crops are faring well and are at an advanced stage of development for the season. The area planted in wheat has increased compared to the previous year, while the opposite is observed for barley. In *Ribatejo e Oeste*, good germination and development were noted compared to the previous year. The area sown with durum wheat is higher than in 2023, while the opposite is observed for soft wheat and barley, as farmers have opted to invest less in these crops due to collapsed prices. In the northern regions of the country, crops are developing well, despite the excess water in the soil. In *Trás-os-Montes* occasional

yellowing situations in barley and wheat were observed. This campaign is expected to be much better than 2023, and could be even exceptional if conditions continue to be favourable.



Spain: So far, the conditions of wheat and barley crop development in Spain are favourable in the main producing areas, due to the favourable rains (e.g. *Castilla y León, Andalucía*). These crops are at more advanced stages in the South, where the flag leaf is the predominant phenological stage. In some areas of *Cataluña*, wheat and barley emergence faced challenges due to prolonged drought conditions until mid-January, but subsequent rains have significantly improved the outlook. Critical months are still ahead, and it will be necessary to closely monitor the spread of possible fungal diseases, due to the higher crop density and humidity.



Tunisia: The winter crop season experienced drought from September to November, followed by seasonal rain events in December, early January, and February. The autumn drought resulted in a delay of 20–30 days in the sowing of winter cereals. However, rainfall events in December and January replenished soil moisture and triggered a steep recovery during germination and the whole vegetative phase. As of March, biomass accumulation levels are slightly above the medium-term average, as observed in regions such as *Béja and Le Kef*. The phenological development of winter cereals is, on average, at the end of the vegetative phase.



Türkiye: February rainfall across Türkiye decreased by 42% compared to the average. However, when considering the whole development period, most regions have received sufficient rainfall. Currently, there is a surplus of rainfall of 8% compared to the average, and a 75% increase compared to last year. The rise in precipitation was particularly important in the *Eastern Anatolia* region (+36%), while in the *Aegean, Mediterranean* and *Central Anatolia* regions, are experiencing a lack of soil moisture. So far, crop development for wheat and barley is generally favourable, with no specific concern (e.g. *Konya, Kayseri, Sanliurfa*). Winter crops, in the coastal part of the *Mediterranean* region have entered the heading stage, while in the *Marmara, Aegean*, and partly *South-eastern Anatolia* regions, they are at the stemming stage. In other regions, they are at the end of the tillering phase as of the end of the February. Fertilization and weed control are progressing as expected.

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 (2014-2023) allows us detecting areas of concern, which are characterized using the GEOGLAM scale and nomenclature (see below). These pre-screened areas of concern, defined at a sub-national level, are then analyzed, validated or completed by each National Focal-points of the MED-Amin network, taking into account feedbacks from field observation and local experts.

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. This label may only be used between planting/early-vegetative stage and vegetative/reproductive stages.
- **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

The geographic borders in the present bulletin are purely a graphical representation and are only intended to be indicative. The boundaries do not necessarily reflect the official position of CIHEAM-IAMM and of the European Commission.

Follow the evolution of the harvest forecasting throughout the campaign:

Website



Twitter



Bulletins



<https://www.med-amin.org/en/>

https://twitter.com/MEDAmin_network

<https://www.med-amin.org/en/ressources-2/bulletinforecast>

Authors:

David GASC (CIHEAM Montpellier)
contact@med-amin.org

Giacinto MANFRON (EC-JRC, Ispra)
giacinto.manfron@ec.europa.eu



MED-Amin

Coordination
CIHEAM at CIHEAM Montpellier
↳ contact@med-amin.org

Site Web
↳ <http://www.med-amin.org>