



## MED-Amin Bulletin 2021 – 2

### Winter crops early outlook at the end of April 2021

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May 2021

Winter crops progress under favourable conditions in western Mediterranean countries. Cold spells, high temperature fluctuations and lasting dry events leave uncertainties for the outlook of some regions in northern and north-eastern countries. Negative crop growth conditions keep on prevail in central Maghreb.

The present bulletin is a general outlook about the progress of cereal crops in the Mediterranean region. It provides **early qualitative forecasting** of the 2020-2021 campaign, with particular focus on soft wheat, durum wheat and barley. The period of review last from the sowing up to the end of April 2021. **A final outlook will be carried out** in June, to keep on monitoring crop conditions in the Mediterranean region until the harvest.

This crop monitoring and early warning initiative was progressively developed since 2016 by the MED-Amin network, using a general approach similar to the one implemented by GEOGLAM for the Agricultural Market Information System (AMIS). The MED-Amin network, gathering **13 Mediterranean countries** and coordinated by the CIHEAM, aims to reduce prices volatility in agricultural markets. This initiative lays the foundation for an **early warning system** strengthening food security in the region.<sup>1</sup>

## Regional outlook summary

At the end of April 2021, the general outlook for winter **crops across the Mediterranean is rather positive despite mixed conditions illustrating differences between the regions**. New agro-meteorological events interested the region during the period March-April 2021, following the [previous monitoring at the end of February](#).

Winter crop conditions are fairly good and even with a positive outlook with a potential for exceptional harvest in the Iberian

Peninsula (**Spain and Portugal**), most productive regions of **Morocco, Lebanon** and north-eastern **France**.

Following numerous winter storms, cold spells affected the northern Mediterranean rim, in particular France, Italy and the Balkans. Many anomaly decreases in temperatures after hot conditions may have affected negatively cereal growth, especially when this was combined to lasting below-average soil moisture: this is the case of many South-Western regions of **France**, northern and Southern **Italy** and inner Balkans (**Greece, Albania**).

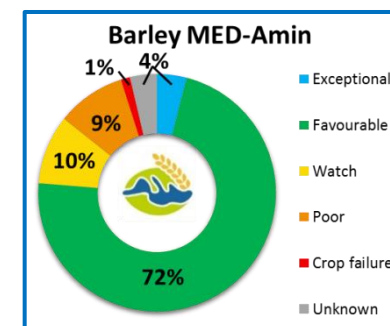
A lasting drought, often associated with hot temperatures, affected the southern rim of the Mediterranean (**central Maghreb**: Moroccan Oriental, extended part of hinterland wilayas from West to Centre-East of Algeria and remote parts of central-western Tunisia) since September 2020. The rainfalls of March and beginning of April did not prevent measurable negative impacts on winter crops. Dry conditions represent an element of concern for crop growth also in central and south-eastern **Turkey**, particularly since the beginning of April.

Crop conditions are overall stable and in-line with an average season in Tunisia, Malta and Egypt.

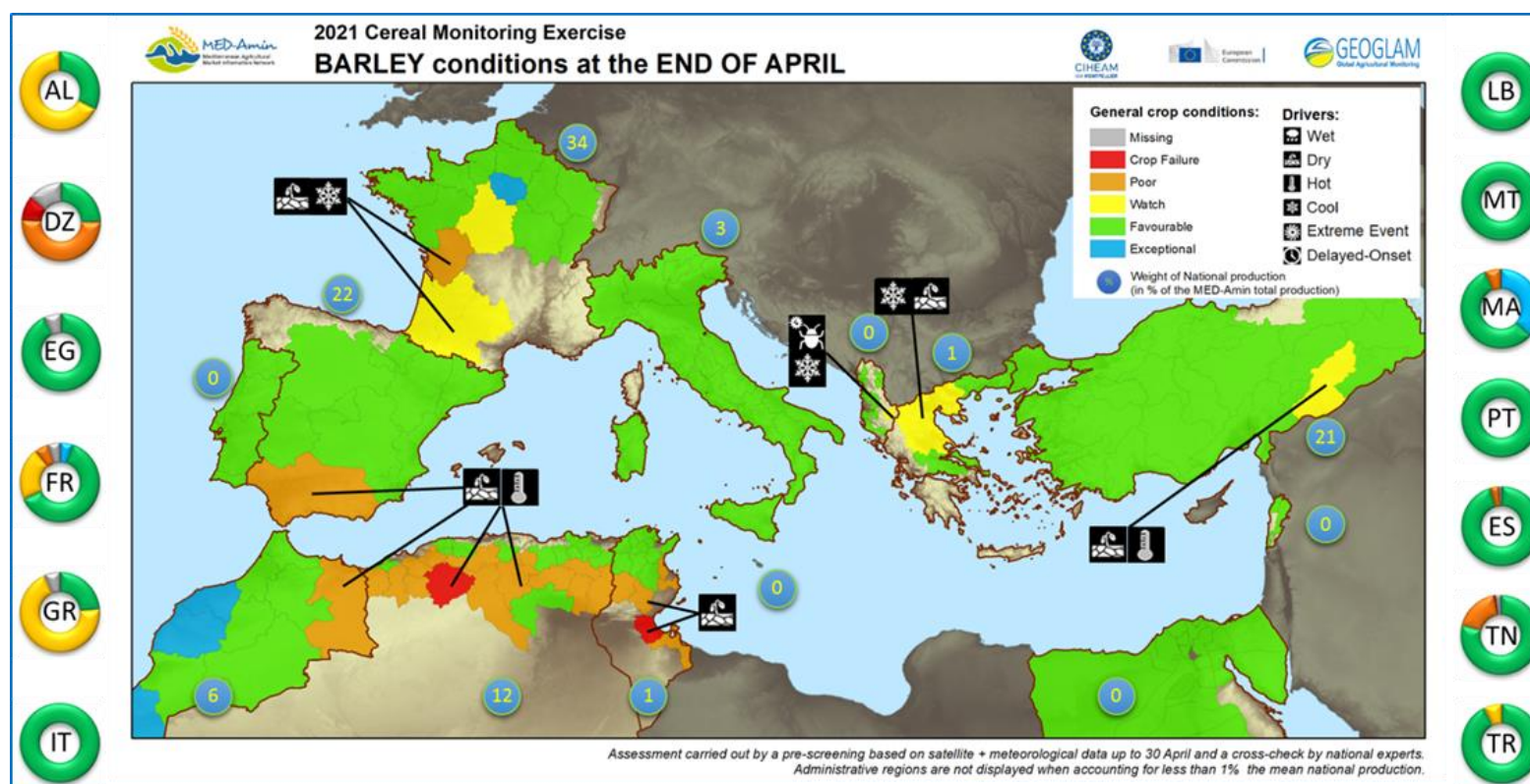
In most areas, the coming weeks are decisive for the coming harvest, based on current developments.

<sup>1</sup> For more info: <http://www.med-amin.org>, <http://ec.europa.eu/jrc/en/mars> and <http://cropmonitor.org>

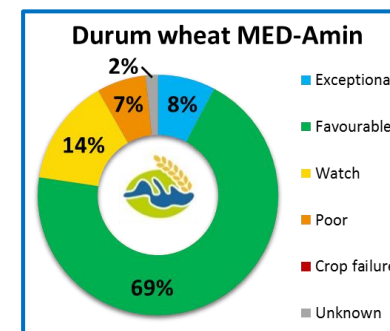
**BARLEY** is concerned by mixed to adverse abiotic conditions at regional level this campaign (see pie-chart beside on the right) even if less than a quarter (20%) of MED-Amin planted area is highlighted as 'poor', 'crop failure' or as to 'watch', the latest with potential for degradation in the coming months. However, 4% of the MED-Amin production is under 'exceptional' weather conditions. Barley is performing worse than wheat in France, the major producer in the region, but better than wheat in Italy.



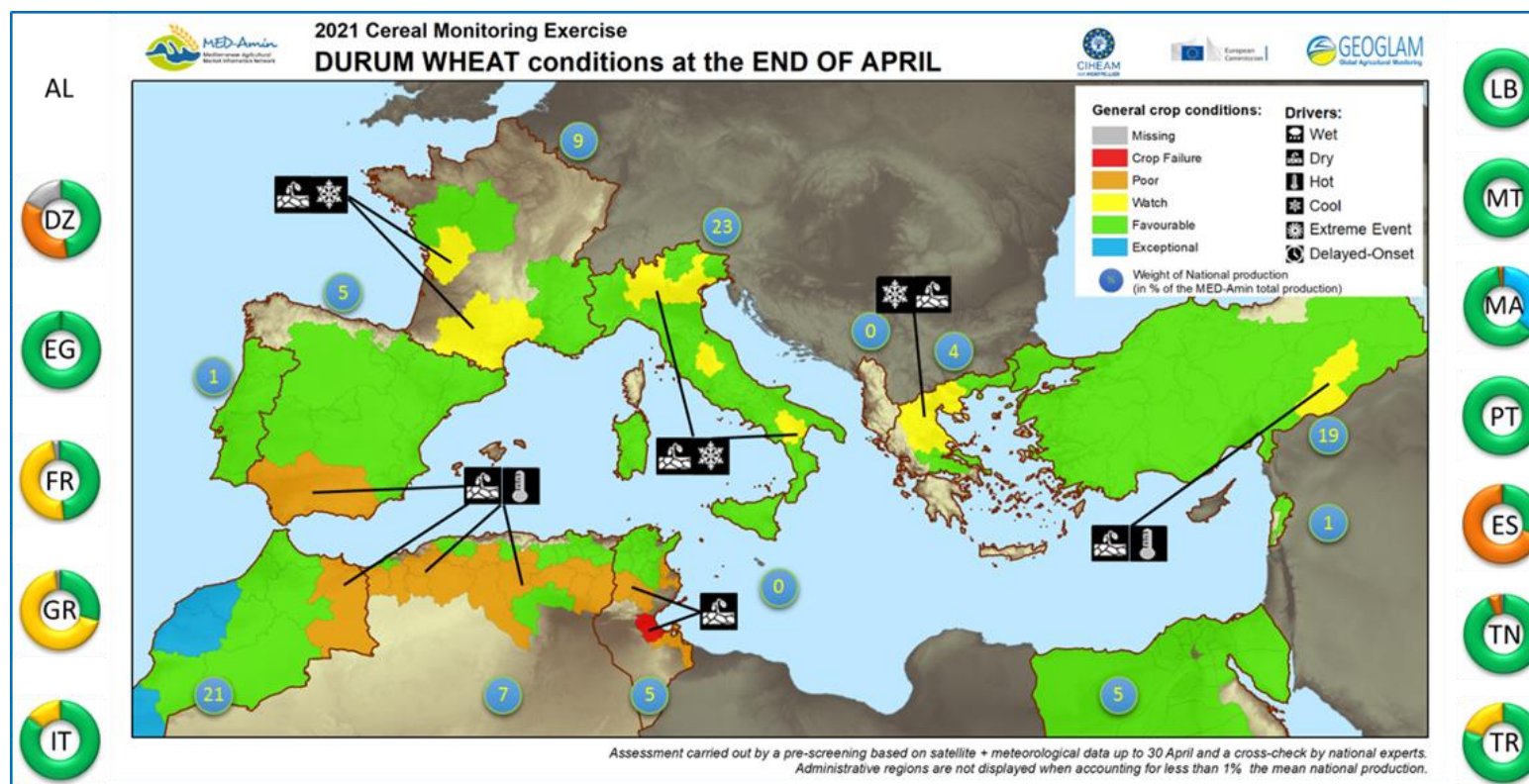
For example, in **France** (FR) accounting for 34% of MED-Amin area barley supply (based on the 5-Y average), *Centre*, *Aquitaine* and *Midi-Pyrénées* regions are to 'watch' (21% of French production, see pie chart on the left side of the map below), *Poitou-Charentes* under 'poor' conditions (6% of French production) and *Ile-de-France* as 'exceptional' whereas conditions are favourable elsewhere. Please refer also to the National Highlights section below (p. 6).



**DURUM WHEAT** is a typical Mediterranean production (47% the World production). It is **also affected crop from adverse abiotic conditions so far** although 3/4 of the acreage in the MED-Amin region is growing under normal / 'favourable' or 'exceptional' conditions (respectively 68% and 9% of the monitored areas). More than 14% are considered as to 'watch' and 7% under 'poor' conditions (see pie chart beside on the right).

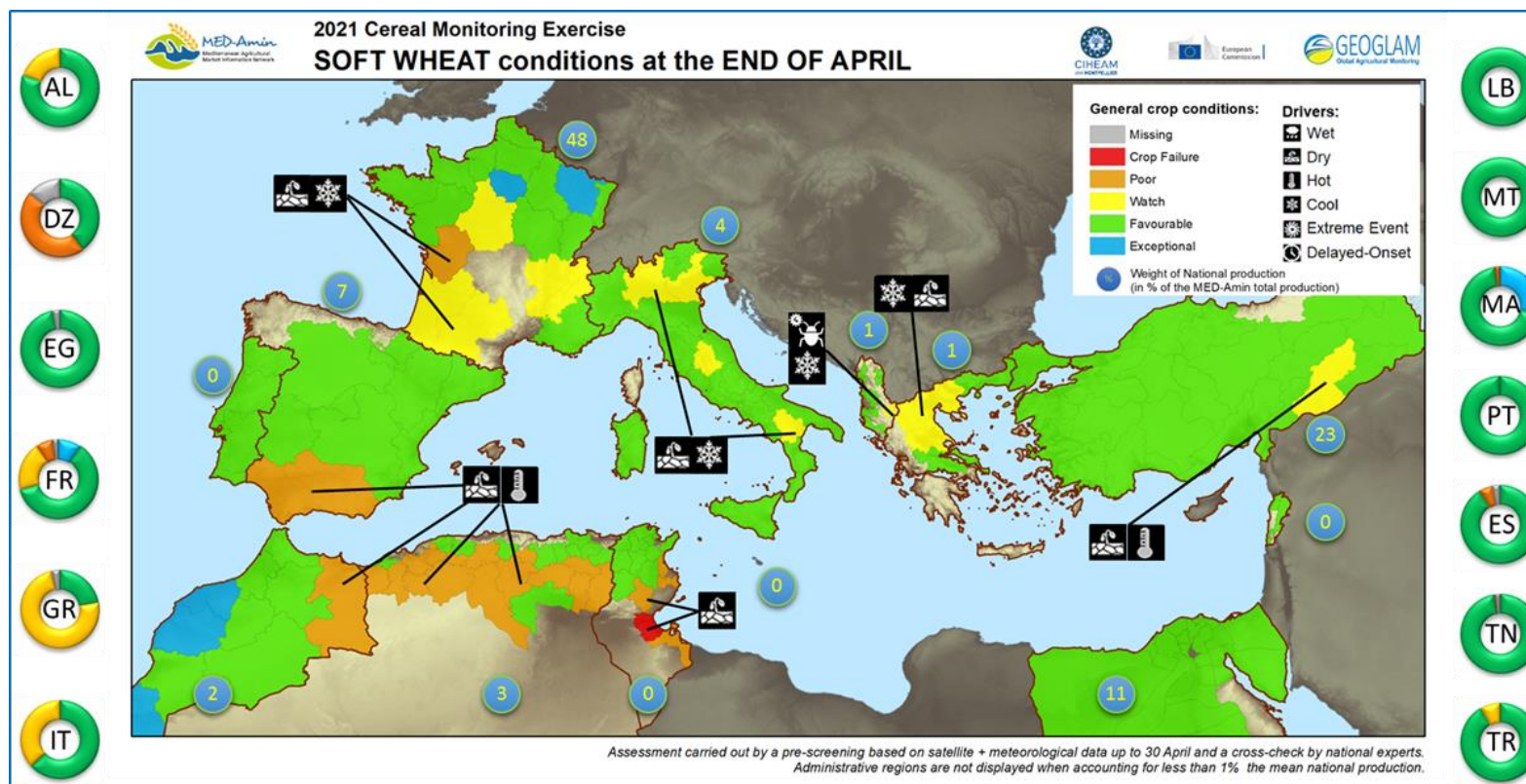
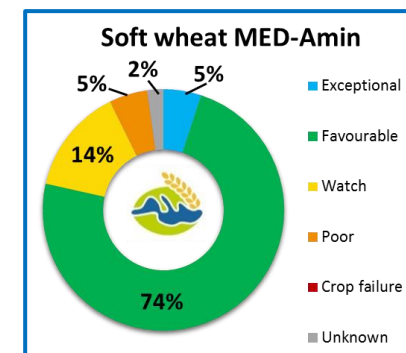


In **Algeria** (DZ), accounting for 7% the production in the MED-Amin area, crop conditions are generally unfavourable in most of the wilayas: 47% are under 'favourable' conditions but more than 35% are now in 'poor' conditions as flowering is ending in most of the regions. In **Italy** (IT), crops are faring well, but 15% of the acreage is to 'watch' due to drier- and hotter-than usual conditions. Please refer also to the National Highlights section below (p. 6).



**SOFT WHEAT** crops are developing under slightly more favourable conditions than durum wheat and barley since the beginning of the campaign, with a large majority under favourable conditions (79% of monitored areas are identified under 'favourable' or 'exceptional' conditions, see pie chart beside on the right). Harvest expectations are positive at this stage in most of the productive regions.

For instance, soft wheat crops performed well in **Turkey** (TR), whose production accounts for 23% of MED-Amin production, with only a little proportion as to 'watch' (*Sanliurfa* region) (see the corresponding pie chart for TR on the right side of the map below). In **Albania** (1% of MED-Amin production), the outlook for soft wheat is mostly favourable but a concern rises in *Korcë* region. Please see the National Highlights section below (p. 6).



## National highlights<sup>2</sup>



**Albania:** So far, **winter crop conditions are favourable** since the vegetative development and flowering stages took place under normal condition. An average-to-positive development of biomass has been observed throughout the country, in particular in *Fier* county. Humidity and temperature fluctuations (compared to the average) were the main drivers of the 2020-2021 campaign. In *Korçë* county, **the most productive region** for winter cereals, soft wheat conditions have been challenging, resulting in poor development of plants and likely lower yield than average. Indeed, following favourable conditions in the first half of the season, low temperature accompanied by frost occurred at mid-March, which led to **rot and rust on a considerable area** of plants at the vegetative growth stage. Whereas the northern regions hosted wetter-than usual conditions (with asphyxia and weed concerns locally), the southern (*Vlorë*, *Gjirokastër*) were drier, with no significant impact on final harvest.



**Algeria:** The rainfall deficit featuring the current campaign, negatively affected cereals development **in many important western and central regions of the country, hampering crop biomass accumulation and yield formation, with a direct consequence to the expected final production**. The precipitation of November 2020 did not make up the situation. In central and western regions and southern highlands of the East (North of *Tébessa*, *Khenchela* and *Batna*), crops are definitely impacted by dry and hot conditions (in some regions of the West, cumulative rainfall did not exceed 50 mm since Feb. 2021). This will affect the yield and therefore the production in this zone. In the wilaya of *Tiaret*, barley crops, more advanced than wheat, has particularly suffered from drought and some crop failures are expected. Rainfalls of March 2021 coincided with the sensitive phase of the cereal (from heading to flowering) for early planted crops, which satisfied the strong water demand at this stage. They triggered a good recovery of late planted crops in the eastern regions. Additional rains in April strengthened the good recovery of the vegetation combined with adequate nitrogen fertilization and phytosanitary protection (fight against weeds and fungal disease).



**Egypt:** **The overall outlook is favourable** thanks to noticeable seasonal rainfall and warmer-than-usual thermal conditions (heatwaves were frequent and particularly intense in mid-December, mid-January and end of March, leading to record in the cumulated values). Satellite imagery

<sup>2</sup> Highlights relating to each country are detailed in a section using a coloured background depending on the overall assessment of the situation: green if favourable, yellow if on watch, orange if poor.

shows average to above-average conditions for cereals, which indicates that water supply from irrigation sustained crop growth during the vegetative and reproductive stages of development.<sup>3</sup>



**France:** Following a good winter crops establishment thanks to good rainfall supply, the cold spell / frost episode in early April had little impact on cereals, apart from the fall planted spring barley showing some affected ears. The leaves of spring-sown spring barley may have burned without affecting plant development. To date, little impact has been observed on winter cereals, with the possible exception of the *Bassin parisien* where localized damage to winter barley and soft wheat has been observed. However, **the impact of frost can only be fully assessed when heading**. In the South of France, where the stages were more advanced, the concern is more about the consequences of the cold on meiosis. The main concern is the persisting water deficit since March in the South of France, particularly in *Occitanie* (*Midi-Pyrénées, Languedoc-Roussillon*) where growing conditions deteriorated sharply during the week of April 30. Tillers regressions were noted, as well as problems with nitrogen uptake. If the rains could still relieve the crops in the region *Centre*, the **potential has already deteriorated in Occitanie and Nouvelle Aquitaine (notably in Poitou-Charentes and Aquitaine)**. So far, crop conditions are exceptional in *Ile-de-France* and *Lorraine*, in particular for soft wheat. As of April 30, the last stages of cereal development (2 knots for soft wheat, heading for winter barley) are slightly behind the 5-year average, due to the cool spring temperatures. The “good” and “very good” growing conditions amount to 79% of the areas for soft wheat, 76% for winter barley and 69% for durum wheat, slightly higher than the five-year averages for the same date, except for the durum wheat which is close to average. They are also much higher than the values for the previous 2019-2020 cropping season.



**Greece:** In general, temperatures generally remained below average, although there were extensive fluctuations with two cases of freezing temperatures on 26 March and 10 April in the North of the country. Remote sensing values for **biomass accumulation of winter crops are average or slightly below-average**, confirmed by ground observations. In terms of phenological development, winter crops are entering the flowering phase. In *Thessaly*, crop conditions are not far from average, but there is a potential risk to final production. However, at the moment it is considered that crops are likely to be in line with normal, if conditions improve. In *Central Macedonia*, the other top productive region of cereals, winter crops are in vegetative growth and to a small extent in the flowering stage (the early ones), showing heterogeneous situations between subregions (*Serres, Imathia, Salonica*). There are no obvious effects from the cold period (from the end of March to April 15). Generally due to drought, plants are puny and if rainfall does not occur in the near future (10-15 days), yields will be cut to approx. 2.5-3.5 t/ha.

<sup>3</sup> These information on crop conditions in Egypt and Italy was made available from the JRC-MED-Amin analysis and the latest JRC MARS Bulletins: <https://ec.europa.eu/jrc/en/mars/bulletins>



**Italy:** In northern Italy, a cold wave was monitored around 10 April and below-average accumulated rainfall is still observed for most of the regions. However, beneficial rain events (> 5mm in a day) and around-average daily temperature was observed since the second half of April. Winter crops delayed in response to the main weather events, in particular soft and durum wheat, with likely minor impacts on final yields (i.e. *Veneto, Umbria*). **A margin of uncertainty for the final production remains. In southern regions**, rainfall events helped to improve soil moisture condition after a dry-than-usual April (i.e. *Puglia, Basilicata*) and generally colder-than-usual temperature took place since the end of this month. Winter and soft wheat biomass accumulation **gently recovers to around-average biomass accumulation levels**; fairly improved yield expectations are observed respect the previous outlook.<sup>3</sup>



**Lebanon:** This year was characterized by high precipitation with a cold period, which extended longer than normal, and had a positive effect on crop potential production that is expected to be favourable this season according to farmers. **Yield expectations are positive with a good level of production** and increased wheat acreage compared to the previous season, as wheat is cheaper to produce than other crops like vegetable and potatoes in this time of national crisis. In addition to economic crisis impact on agriculture sector, there is a concern from small groups of mature adult locusts crossed the Anti-Lebanon Mountains from Syria into the *Beqaa* Valley near *Aarsal* and *Ras Baalbek* on 22 April. Army sprayings on agricultural land in northeast Lebanon helped farmers combat swarms of locusts. There have been no big farming losses so far but there are concerns that more swarms could be blown to the south of Lebanon, told the Agriculture Ministry<sup>4</sup>. The *Eurygaster* insect was early detected and treated properly with no impact on yields.



**Malta:** No extreme events are noted so far and general crop conditions are in line with averages.



**Morocco:** The winter cereals campaign in Morocco is about to finish and expectations for the **national production this year are clearly positive and well above the average**. The start to the season was similar to the 2019-2020 campaign: crop cycles were delayed by late autumn rains and crop sowings and establishments were postponed compared to an average season. Since January, several beneficial rainfall events occurred in almost all the main agricultural regions of the country and cultivations were moreover sustained by fairly-warm daily temperatures. The positive agro-meteorological condition initially triggered a fast biomass recovery to then create a positive trend in biomass accumulation, which in most of the cases resulted well above the average. An exception occurred for the region of *Oriental*, which was hampered by a long-lasting seasonal drought

<sup>4</sup> Source: <http://www.fao.org/ag/locusts/en/info/info/index.html>

conditions, especially in the January-February period and despite the positive weather conditions in the March-April period, cereals were not able to recover. The expectations for the final production in this region are poor.



**Portugal:** Beside normal to above-average accumulated precipitation since the beginning of crop campaign, March 2021 was hot and very dry and April very hot compared to the medium-term monthly average. *In Alentejo, the most productive region in Portugal*, the seasonal precipitation was sufficient to *guarantee a good vegetative development and sustain soil water availability* in March, where a nearly-to-zero precipitation was registered. The levels of water storage of ponds and dams are within the normal standards in *Alentejo*. In *Ribatejo e Oeste*, cereal crops developed well, even better than the previous campaign. In *Trás-os-Montes*, cereals showed an improvement in their state of vegetative development thanks to favourable agro-meteorological conditions in March and April. There, the outlook for wheat yield is lower than the previous year and similar for barley. Finally, in *Entre-Douro e Minho*, a not much productive region for cereals, wheat yield is expected to decrease compared to last year.



**Spain:** Cereals are faring well in their productive cycle and are maintaining a certain phenological advance with respect to an average season, especially for those agricultural areas where hot and dry conditions prevailed. So far, the *production outlook for wheat and barley is good, but further rains will be needed soon* to support an optimal grain filling. In *Andalucía*, soil moisture is becoming scarce and further rainfall is needed to complete the satisfactory development of durum wheat. There, the month of March was particularly dry and warm this year. In other major productive regions like *Castilla y Leon*, crop conditions are good and if weather conditions remain favourable, a good harvest can be achieved, albeit much smaller than the historic level of 2020 harvest.



**Tunisia:** *This campaign will be slightly better than the previous one and but not as good as that of 2018-2019.* Soft wheat and durum wheat crops are performing well in the coastal regions and in most of the interior regions of Tunisia. Moderate stress levels are observed in the central-western regions (e.g. *Kasserine, Kairouan*) which are accounting almost 20% the national production of barley. This is most likely due to a water deficit that occurred during the flowering period, but also in response of the drought in January and February. In *Kairouan*, even if crops can take benefit from irrigation, satellite indicators suggest biomass accumulation levels moderately below the medium term reference. In the southern governorates, which are not very productive, conditions remain poor due to hot and dry conditions.



**Turkey:** Due to the higher temperatures and drier than average conditions in November and December 2020, planting and plant emergence were harsh and led to delayed development stages. However, plants recovered with the rainfall in March 2021. In the South-eastern Anatolian Regions

(in particular *Sanliurfa* province), a slight decrease in yield is expected due to the low level of precipitation in April and long-lasting heatwave observed since mid-April. Irrigation systems could have encountered difficulties in keep soil water availability to the optimal values when drought conditions took place; an increasing irrigation demand is observed in the *Ankara* and *Konya* regions. However, [the global national outlook for cereals crops remains in line with average](#) since so far irrigation is sustaining crops growth and thanks to the increase in the cultivated area and high yield expectation in the rest of Turkish regions.

**General methodology:** The forecasting methodology is based on the monitoring of crop conditions using indicators derived from Earth observation, carried out jointly by the CIHEAM-IAMM and the Joint Research Centre of the European Commission (JRC). This allows detecting areas of concern, deviating from normal conditions, 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 analysed, validated or completed by each National Focal-points of the MED-Amin network, taking into account feed backs 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 (which started only in Egypt).
- **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.

→ **Follow the evolution of the harvest forecasting:** Compare the evolution between three monitoring periods by staying tuned to the MED-Amin releases on <https://www.med-amin.org/fr/> and [https://twitter.com/MEDAmin\\_network](https://twitter.com/MEDAmin_network).

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