Compromised expectations for cereals in Morocco and western Algeria; some concern for barley in Tunisia

In autumn, the start to the season was jeopardised by the absence of rains, followed by a persistent rainfall deficit and above-average temperatures in a large belt from western to eastern Maghreb. In Morocco and western Algeria, cereals underperformed during the vegetative phase and experienced accelerated development during flowering and grain filling. By contrast, crops in eastern Algeria and northern Tunisia benefited from higher water supply in autumn and during the agronomic season, resulting in adequate or even favourable biomass accumulation. Barley appears moderately impacted in central regions of Tunisia. Growth is average in Libya and Egypt.

Morocco (DZ): Wheat and barley are negatively impacted in Casablanca-Settat, Fès-Meknès, Rabat-Salé-Kénitra and Marrakech-Safi, the four most important regions for cereal production. Given the well-advanced season, there is little scope for the crops to recover.

Algeria (DZ): In the north-western regions of Tlemcen, Sidi bel Abbès, Ain Témouchent and to a lesser extent Tiaret, crop vegetative phases have been delayed and biomass accumulation is below average. There is still time for partial recovery.

Tunisia (TN): Positive outlook for wheat but possible negative impact on barley production. Crop conditions in the impacted central regions of Le Kef and Siliana are being closely monitored.

Libya (LY): Crops are faring well on average, thanks to close-to-average seasonal thermal and precipitation conditions. Moderate crop delays are observed in the littoral regions of Tripolitania.

Egypt (EG): Despite exceptional rainfall observed in March in the central Nile Delta, crop conditions are similar to an average season and forecasts for wheat and barley are following the trend.
Country highlights

The maps display the relative differences between the fraction of Absorbed Photosynthetically Active Radiation (fAPAR) computed from remote sensing imagery between 1 December 2019 and 10 April 2020, and the medium-term average (MTA, 2010-2019) for the same period. Positive anomalies (in green) reflect above-average canopy density or early crop development while negative anomalies (in red) reflect below-average canopy density or late crop development.
In autumn, the start to the season was jeopardised by the absence of rains, followed by a persistent rainfall deficit and above-average temperatures in a large belt from western to eastern Maghreb.

- The main agricultural regions of central Morocco present an extended negative anomaly of biomass accumulation. Prolonged drought conditions from the beginning of January until mid-March hampered crop growth during vegetative phases and shortened crop cycles during flowering and grain filling. A positive fAPAR anomaly is observed in north-western Morocco, where seasonal rainfall favoured biomass accumulation.

- Unfavourable crop biomass accumulation can be observed in eastern Algeria, where since early vegetative stages suboptimal levels were observed due to a rain deficit. By contrast, in eastern Algeria, positive fAPAR anomalies are the result of frequent rainfall events during the autumn and spring.

- Favourable crop biomass accumulation is generally present in Tunisia, with negative anomalies for some inland agricultural regions where there was a slowdown in biomass accumulation because of scarce precipitation cumulates over the period January to March.

- Mixed conditions have prevailed over all agricultural districts of Libya (Tripolitania and Cyrenaica). Given the prevalence of irrigated arable land, this mainly locally affected early or late crop development.

- In Egypt, crops are exhibiting an average season, particularly in the outer areas of the Nile Delta and along the western bank of the Nile.
Morocco

Dire expectations for crop production

*Cereals are negatively impacted by persistent drought conditions. Our yield forecasts for the country are far below the 5-year average for wheat and barley.*

A compromised season in Morocco is confirmed. During the review period (1 December to 15 April), the country experienced severe rainfall shortages together with warmer-than-usual temperatures, resulting in drought conditions. Cumulative precipitation since the beginning of December is just 100 mm, one of the lowest values in the 1980-2020 historical series. As a result, crop growth was hampered in the four most important regions for cereal production: Casablanca-Settat, Fès-Meknès, Rabat-Salé-Kénitra and Marrakech-Safi. Analysis of earth observation data shows below-average biomass accumulation and shortening of phenological cycles. Crops adapted their physiology to the drought by accelerating development at the expense of primary production. A crop onset delay of 2-3 weeks is observed in the regions of Fès-Meknès and Rabat-Salé-Kénitra due to delays in sowing. Currently, cereals in Morocco have almost completed the senescence period and harvest is approaching fast. It is expected that, in the event of very low yields or crop failures, harvested area will decrease compared to sown area.
Algeria

Average to below-average expectations for crop production

In western Algeria, cereals suffered from drought conditions; however the lack of biomass production is partially compensated by above-average accumulation in eastern regions. Our forecasts are moderately below the 5-year-average.

Scarce precipitation is observed during the season in Algeria. Rainfall cumulates for the period 1 December to 15 April are 60-75% of the LTA. In the north-western regions of Tiemcen, Sidi bel Abbès, Ain Temouchent and to a lesser extent Tiaret, crop vegetative phases have been delayed by 10-20 days at the beginning of the season, as crop growth slowed as a stress response to the drop in temperatures during plant germination. After flowering, crop development accelerated in response to the dry conditions and resulting biomass accumulation levels were below average. Exceptions to this are the north-eastern wilayas of Annaba, El Tarf, Guelma, Souk Ahras, Oum el Bouaghi and Tébessa, which benefited from more rain in autumn – 5-15% above the LTA. Consequently, crop growth in north-eastern regions was not affected by rain scarcity and presented average to above-average values. The crop response is explained by the higher water supply in autumn and by later sowings in eastern regions. Therefore, crops escaped the drought conditions during their most vulnerable phenological stages. Overall, the positive outlook expected for north-eastern wilayas is partly compensating for the negative expectations for north-western regions. Our forecast is below average for barley and close to average for wheat.
Tunisia

Positive outlook for wheat; below-average expectations for barley

The season was characterised by limited water availability at the beginning of the vegetative phase. Although wheat-producing regions do not appear to be affected, barley cultivation was impacted in some of the main producing regions.

The beginning of the 2019/2020 agricultural season in Tunisia was marked by mild temperatures, and timely and well-distributed autumn rains. Cumulative precipitation was scarce from the second half of January up to the end of February, with values on average 30% below the LTA and a predominance of above-average daily temperatures. Analysis of earth observation information suggests a slowdown in biomass accumulation in some regions of northern and central Tunisia. From the beginning of March onwards, with the return of rains, crops recovered up to average values in the regions of Zaghouan, Kairouan and Nabeul, but failed to recover in the regions of Le Kef and Siliana, where nearly 35% of national barley is produced (based on the last 5-year average). This can be attributed to the anomalous high maximum temperatures registered in these regions during the period of scarce precipitation. Crop growth in the regions of Béja, Bizerte and Jendouba has not slowed due to shortages in water supply; interpretation of fAPAR profiles suggests above-average biomass accumulation in these regions since the onset of the season. Currently, cereals in Tunisia are at various flowering stages.
Libya

Average to above-average cereal production

The season was characterised by moderate fluctuations in daily temperatures, and by average to above-average rainfall. Beneficial growing conditions have prevailed since February. Average to above-average yields expected.

Crops are faring well because the review period was characterised by mild temperatures, mostly remaining 1-2°C close to the LTA, with the exception of eastern coastal areas which experienced higher-than-usual temperatures in November and December. Rainfall cumulates followed a west-east gradient along the coastline of Libya: average (e.g. in Az Zawiya) to above-average (e.g. Al Khams) in the western half of the country, and higher-than-usual in the eastern half.

Rainy events took place mainly in January and March. Analysis of remote sensing profiles shows a regular onset to the season and cumulated biomass in line with or slightly above the medium-term average for the agricultural regions of Cyrenaica (e.g. Banghazi). A crop delay of 10-20 days is observed in the western littoral regions of Tripolitania (e.g. Misurata) at the beginning of the season. Crops have slowed in the early vegetative stages as a result of unusually low temperatures registered in November and December. Cereals are currently at the grain-filling phenological stage. Our yield forecasts are based on the historical trend and show values ranging from average (barley) to above-average (wheat).
Egypt

Average growing conditions despite an exceptional rainfall event

Positive thermal conditions characterised the season in Egypt. Exceptional rainfalls were observed in March, after cereals flowering. Our forecasts for the country are in line with the average.

Favourable temperatures sustained crop growth in Egypt since the beginning of the campaign. In the Nile delta above-average temperatures were recorded in December, followed by thermal conditions fluctuating around the LTA in winter and spring. Similar temperatures were observed in the Nile valley regions at the beginning of the season and warmer-than-usual conditions (2°C > the LTA) in March and April (e.g. Beni Suef, Menia). No extreme daily temperatures, potentially affecting winter crops flowering, were observed in the February-March period. Rainfall has been above the LTA since beginning of winter in most of the Egyptian agricultural regions. A storm with plentiful precipitation took place on 12 March. It was centered in Dakahlia, Shkia and Behera, with a daily rainfall cumulate from 36 mm to 62 mm. This event had a moderate impact on production since it occurred after cereals flowering. Remote-sensing-derived photosynthetic activity (fAPAR) suggests average biomass production. Our yield forecasts are following the trend.
Crop yield forecasts

**North-Africa yield forecasts for wheat - April 2020 Bulletin**

<table>
<thead>
<tr>
<th>Country</th>
<th>Avg 5yrs</th>
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<th>MARS 2020 forecasts</th>
<th>%20/5yrs</th>
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**North-Africa yield forecasts for barley - April 2020 Bulletin**

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**North-Africa yield forecasts for soft wheat - April 2020 Bulletin**

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<th>Country</th>
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**North-Africa yield forecasts for durum wheat - April 2020 Bulletin**

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Note: Yields are forecast for crops with more than 10000 ha per country; figures are rounded to 10 kg

Sources:

2015-2019 data come from FAO, INRA Maroc, Ministère de l’Agriculture et de la Pêche Maritime Maroc, CNCT Tunisie, Ministère de l’agriculture des ressources hydrauliques et de la pêche Tunisie and DSASI-MADR Algeria

2020 yields come from MARS CROP YIELD FORECASTING SYSTEM (output up to 20/04/2020). NA (no data)
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