Overview:

At the end of March, conditions are mixed for maize and soybeans, while favourable for wheat and rice. Winter wheat is breaking dormancy under generally favourable conditions except in parts of Europe. Hot and dry conditions continue to impact maize in Brazil, South Africa, and Mexico. Rice conditions are generally favourable, albeit with dry conditions impacting crops in Thailand, Vietnam, the Philippines, and southern India. Soybean conditions remain mixed due to the impacts of earlier hot and dry weather in Brazil and parts of northern Argentina.
Conditions at a Glance (as of March 28th)

Global crop condition map synthesizing information for all four AMIS crops as of March 28th. Crop conditions over the main growing areas for wheat, maize, rice, and soybean are based on a combination of national and regional crop analyst inputs and earth observation data. Crops that are in other than favourable conditions are displayed on the map with their crop symbol.

Crop Conditions at a Glance

**Wheat** – In the northern hemisphere, winter wheat is breaking dormancy under generally favourable conditions except in parts of Europe. Spring wheat sowing is beginning in China.

**Maize** – In the southern hemisphere, harvesting of the spring-planted crop in Brazil is progressing under mixed conditions as hot and dry conditions continue to negatively impact crops in South Africa.

**Rice** – Sowing of the early-planted crop in China and harvesting of the Rabi crop in India is beginning. In Southeast Asia, dry conditions continue to impact the northern countries at the start of the harvesting period.

**Soybeans** – In the southern hemisphere, harvesting continues in Brazil under mixed conditions while slowly beginning in Argentina.

Forecasts at a Glance

**Climate Influences** – The ongoing El Niño event is weakening, and neutral ENSO conditions are likely by April to June (83% chance). A quick shift to persistent La Niña conditions is anticipated. The CPC/IRI predicts a 75% chance of La Niña by July to September 2024, and chances remain high throughout the forecast period.

**Argentina** – Over the next few weeks below-average precipitation is likely over the main agricultural areas, which will be supportive of operations. Temperatures will remain near average.

**Mexico** – In April, below-average precipitation is likely along the Gulf of Mexico, while in May precipitation is likely to be below-average along the southern Pacific Coast.

**United States** – During April, above-average precipitation is probable across large portions of the country, excluding the Pacific Northwest, while above-average temperatures are probable across the northern and central parts of the country.

* Assessment based on information as of March 28th, 2024

While the Crop Monitor for AMIS is primarily focused on documenting crop conditions based on environmental factors, the war in Ukraine and in other conflict areas will very likely negatively impact the ability of the crop to be harvested.
Wheat Conditions for AMIS Countries

Wheat crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs and earth observation data. Crop condition information is based upon information as of March 28th, 2024. Where crops are in other than favourable conditions the climatic drivers responsible for those conditions are displayed. Crop Season Specific Maps can be found in Appendix 2.

**Wheat**: In the **EU**, adverse winter weather has negatively impacted crops, resulting in plans for resowing in the north and reduced yield potential in the south. However, since February, crop conditions have improved in some countries, supporting a near-average yield forecast for the EU as a whole. In the **UK**, continuing excessive rainfall is a concern. In **Türkiye**, crop development is ahead of average owing to a mild winter and ample rainfall. In **Ukraine**, a very warm February and March with supportive soil moisture conditions have resulted in the regrowth of winter wheat a month earlier than usual, however, the active warzone in the south and east remains a concern for agriculture. In the **Russian Federation**, winter wheat conditions remain stable with additional precipitation forecast for the next two weeks. In **China**, winter wheat conditions are favourable as spring wheat sowing begins. In **India**, harvesting has begun under favourable conditions. In the **US**, improving soil moisture across most of the country during the winter months is supporting winter wheat as it begins breaking dormancy. In **Canada**, winter wheat conditions are generally favourable, however, dry conditions remain across much of the Prairies.

* Assessment based on information as of March 28th, 2024
Maize Conditions for AMIS Countries

Maize crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs and earth observation data. Crop condition information is based upon information as of March 28th. Where crops are in other than favourable conditions the climatic drivers responsible for those conditions are displayed. Crop Season Specific Maps can be found in Appendix 2.

**Maize:** In Brazil, harvesting is progressing for the spring-planted crop (smaller season) under mixed conditions, particularly in the Southeast region, where yields are significantly reduced due to an earlier lack of rainfall and high temperatures. Sowing of the summer-planted crop (larger season) is wrapping up with developing concerns in the southeast and south regions due to irregular rainfall and high temperatures. In Argentina, widespread rains are delaying the harvest of the early-planted crop (larger season), while conditions remain generally favourable for the late-planted crop (smaller season), albeit with growing concern due to incidences of pests and diseases (leafhopper and Spiroplasma). In South Africa, hot and dry conditions dominated since mid-January over a large part of the summer grain production region and have had a major negative impact on crops. In Mexico, dry conditions remain a concern for the Autumn-winter season (smaller season) due to reduced irrigation water reserves. In India, conditions are favourable for the Rabi crop. In the US, sowing begins in the southeast under favourable conditions. In China, the sowing of spring maize is beginning in the south.

* Assessment based on information as of March 28th, 2024
**Rice Conditions for AMIS Countries**

Rice crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs and earth observation data. Crop condition information is based upon information as of March 28th. Where crops are in other than favourable conditions the climatic drivers responsible for those conditions are displayed. Crop Season Specific Maps can be found in Appendix 2.

**Rice:** In **China**, conditions are favourable as the sowing of the early-planted crop begins. In **India**, harvesting for the Rabi crop is beginning under generally favourable conditions, except in the southern states due to reduced water availability during sowing and the season. In **Bangladesh**, conditions are favourable for the development of the Boro crop (largest season) and as sowing begins for the Aus crop (smallest season). In **Indonesia**, the total sown area for wet-season rice is below last season’s, however, intensive rainfall in February and March may encourage further sowing past the traditional end. The harvesting of earlier sown crops continues under favourable conditions. In **Viet Nam**, dry-season rice (winter-spring rice) sowing is continuing in the north, while in the south, harvesting of dry-season rice (winter-spring rice) is ongoing under mixed conditions due to saltwater intrusion in the Mekong Delta caused by dry weather. In **Thailand**, hot and dry conditions are negatively impacting crop development for dry-season rice. In the **Philippines**, below-average rainfall is affecting dry-season rice across most of the country except in Mindanao. In **Brazil**, harvesting continues under favourable conditions. In the **US**, sowing is beginning under favourable conditions.

* Assessment based on information as of March 28th, 2024
Soybean Conditions for AMIS Countries

Soybeans: In Brazil, harvesting continues under mixed conditions with yields below-average in the Central-West, Southeast, Northeast, and North regions due to a lack of rain and high temperatures during crop development. In the Central-West and Southeast regions, harvesting is further advanced and with the lowest yields, while in the Northeast and North regions, harvesting is not as far advanced and the negative impact on yields is smaller so far. In Argentina, abundant rains since mid-February have supported crop development and recovery from earlier dry conditions. Harvest is slowly beginning for the early-planting crop (typically larger season) with good yields as the late-planted crop (typically smaller season) enters the reproductive stages.
Climate Influences: Weakening El Niño

The ongoing El Niño event is weakening, and neutral ENSO conditions are likely by April to June (83% chance). A quick shift to persistent La Niña conditions is anticipated. The CPC/IRI predicts a 75% chance of La Niña by July to September 2024, and chances remain high throughout the forecast period.

Globally, record-high temperatures in the latter half of 2023 and 2024 reflect the influences of the strong 2023-2024 El Niño and climate change. Heat extremes will very likely continue during 2024. Abnormally dry and hot conditions during mid-season development can particularly harm crops, as has been ongoing in parts of South America since July 2023 and most recently during February and March of Southern Africa’s current main growing season.

Related to current El Niño conditions, drier-than-average conditions may continue in Southern Africa, Southeast Asia, the northern Maritime Continent, and parts of South America. La Niña conditions, if these develop, would continue a multi-year pattern of climate extremes. The strong and impactful 2023-2024 El Niño was preceded by three years of La Niña and associated multi-year droughts, especially in eastern East Africa, central-southern Asia, and southern South America.

Source: UCSB Climate Hazards Center

* Assessment based on information as of March 28th, 2024
Global Two-week Forecast of Areas with Above or Below-Average Precipitation

The two-week forecast (Figure 1) indicates a likelihood of above-average precipitation over parts of the central US, Nicaragua, Costa Rica, Panama, northeastern Brazil, Ireland, the United Kingdom, northwest Spain, northern Portugal, France, Belgium, the Netherlands, central Germany, Switzerland, northern Italy, southern Norway, northern Ghana, Togo, Benin, Nigeria, Cameroon, southern Chad, western Central African Republic, South Sudan, Eritrea, western Ethiopia, southeast Kenya, eastern Tanzania, northwest Angola, eastern Russian Federation, southeast China, Papua New Guinea, northern Australia, and northern New Zealand.

There is also a likelihood of below-average precipitation over the western Canadian Prairies, the west coast of the US, southern and western Mexico, northeastern Columbia, Venezuela, Guyana, Suriname, French Guiana, Ecuador, central Peru, northern and central-west Brazil, eastern Bolivia, northern Paraguay, central Chile, eastern Spain, northern Norway, central Russian Federation, northern Morocco, northern Algeria, Tunisia, southern Angola, Zambia, southern Malawi, Mozambique, Zimbabwe, Namibia, Botswana, northern South Africa, Madagascar, central and southern Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan, Tajikistan, Afghanistan, northern Pakistan, northern Iran, southern and northern India, Sri Lanka, Bangladesh, eastern Nepal, western northeast China, central Mongolia, the Democratic Republic of Korea, Republic of Korea, Japan, Myanmar, Thailand, Laos, Vietnam, the Philippines, western Malaysia, and central Australia.

* Figure 1: IRI SubX Precipitation Biweekly Probability Forecast for 6 – 19 April 2024, issued on 29 March 2024. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](https://iri.columbia.edu/subseasonal-forecasts)

* Assessment based on information as of March 28th, 2024
Argentina Outlook

The 3 to 9 April precipitation anomaly forecast (left) indicates a likelihood of below-average rainfall over the main agricultural-producing regions, which will be beneficial for harvesting activities. During the same period, temperatures are likely to be near normal over most regions.

The 10 to 16 April precipitation anomaly forecast (right) shows above-average rainfall is expected over southern Santiago del Estero, Cordoba, San Luis, and La Pampa, while below-average precipitation is over Corrientes, eastern Santa Fe, Entre Rios, and eastern Buenos Aires. During the same period, temperatures are likely to be near average across main agricultural areas.

Precipitation Anomaly Forecasts

* Assessment based on information as of March 28th, 2024
Mexico Outlook

The April outlook indicates likely below-average precipitation across most of the eastern portion of the country over into the Yucatan Peninsula. During the same time, maximum temperatures are likely to be above-average across most of the country, except for the western areas. During May, the outlook indicates likely above-average precipitation in the northern and eastern regions of the county, while below-average precipitation across the southern portions of the country. During the same time, maximum temperatures are likely to continue to be above-average across the central and southern parts of the country, while below-average across the western parts of the country.

Precipitation and Maximum Temperature Anomaly Forecasts

* Assessment based on information as of March 28th, 2024
United States Outlook

The April outlook indicates probable above-average precipitation across the Southwest up into southeast Idaho and Wyoming, eastern sections of the southern and central Great Plains across into the Southeast from Florida to the lower Great Lakes, and into the mid-Atlantic and New England regions. Conversely, below-average precipitation is possible in northern Maine and along the coastal Pacific Northwest. During the same time, temperatures are likely to be above-average across the northern part of the country down into northern California and along the eastern portions of the Great Plains in the western Southeast.

For the long-term seasonal April-May-June (AMJ) 2024 outlook, below-average precipitation is probable in the Pacific Northwest and over western Texas and eastern New Mexico, while above-average precipitation is probable over the Southeast up into the Mid-Atlantic and across into the central and northern Great Plains. During the same period, temperatures are likely to be above-average across the Pacific Northwest, Mid-West, New England, Mid-Atlantic, Southeast, and western Texas.

Monthly and Seasonal Outlooks


Source: NOAA Climate Prediction Center

* Assessment based on information as of March 28th, 2024
Appendix 1: Terminology & Definitions

Crop Conditions:

**Exceptional:** Conditions are much better than average* at the time of reporting. This label is only used during the grain-filling through harvest stages.

**Favourable:** Conditions range from slightly lower to slightly better than average* at reporting time.

**Watch:** Conditions are close to average* but there is a potential risk to final production. The crop can still recover to average or near average conditions if the ground situation improves. This label is only used during the planting-early vegetative and the vegetative-reproductive stages.

**Poor:** Crop conditions are well below average*. Crop yields are likely to be more than 5% below average. This is only used when conditions are not likely to be able to recover, and an impact on production is likely.

**Out of Season:** Crops are not currently planted or in development during this time.

**No Data:** No reliable source of data is available at this time.

*“Average” refers to the average conditions over the past 5 years.

Drivers:

These represent the key climatic drivers that are having an impact on crop condition status. They result in production impacts and can function as either positive or negative drivers of crop conditions.

**Wet:** Wetter than average (includes water logging and floods).

**Dry:** Drier than average.

**Hot:** Hotter than average.

**Cool:** Cooler than average or risk of frost damage.

**Extreme Events:** Catch-all for all other climate risks (i.e., hurricane, typhoon, frost, hail, winter kill, wind damage, etc.). When this category is used, the analyst will also specify the type of extreme event in the text.

**Delayed-Onset:** Late start of the season.

Crop Season Nomenclature:

In countries that contain multiple cropping seasons for the same crop, the following chart identifies the national season name associated with each crop season within the Crop Monitor. Within the Crop Monitor for AMIS countries, the larger producing season (based upon the most recent 5-years of statistics) has been assigned to the first season.

<table>
<thead>
<tr>
<th>Country</th>
<th>Crop</th>
<th>Season 1 Name</th>
<th>Season 2 Name</th>
<th>Season 3 Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>Maize</td>
<td>Spring-planted</td>
<td>Summer-planted</td>
<td></td>
</tr>
<tr>
<td>Argentina</td>
<td>Soybean</td>
<td>Spring-planted</td>
<td>Summer-planted</td>
<td></td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Maize</td>
<td>Winter</td>
<td>Summer</td>
<td></td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Rice</td>
<td>Boro</td>
<td>Aman</td>
<td>Aus</td>
</tr>
<tr>
<td>Brazil</td>
<td>Maize</td>
<td>Summer-planted</td>
<td>Spring-planted</td>
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</tr>
<tr>
<td>Canada</td>
<td>Wheat</td>
<td>Spring Wheat</td>
<td>Winter Wheat</td>
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</tr>
<tr>
<td>China</td>
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<td>Winter Wheat</td>
<td>Spring Wheat</td>
<td></td>
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<tr>
<td>China</td>
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<td>Spring-planted</td>
<td>Summer-planted</td>
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<td>Early Crop</td>
<td>Late Crop</td>
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<td>Nil season (Nile Flood)</td>
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<td>Rabi</td>
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<td>Kharif</td>
<td>Rabi</td>
<td></td>
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<td>Rainy-Season</td>
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<td>Second-season</td>
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<td>Dry season</td>
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<td>Spring Wheat</td>
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<td>Thailand</td>
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<td>Spring Wheat</td>
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<tr>
<td>Viet Nam</td>
<td>Rice</td>
<td>Wet season</td>
<td>Dry season</td>
<td></td>
</tr>
</tbody>
</table>

* Assessment based on information as of March 28th, 2024
Appendix 2: Crop Season-Specific Maps

Winter Planted Wheat Conditions for AMIS Countries

Winter wheat crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs and earth observation data. Crop condition information is based upon information as of March 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

Spring Planted Wheat Conditions for AMIS Countries

Spring wheat crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs and earth observation data. Crop condition information is based upon information as of March 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

* Assessment based on information as of March 28th, 2024
Maize 1 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs and earth observation data. Crop condition information is based upon information as of March 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

Maize 2 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs and earth observation data. Crop condition information is based upon information as of March 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

* Assessment based on information as of March 28th, 2024
Rice 1 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs and earth observation data. Crop condition information is based upon information as of March 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

Rice 2 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs and earth observation data. Crop condition information is based upon information as of March 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

* Assessment based on information as of March 28th, 2024
Rice 3 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs and earth observation data. Crop condition information is based upon information as of March 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

Soybean 1 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs and earth observation data. Crop condition information is based upon information as of March 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

* Assessment based on information as of March 28th, 2024
Soybean 2 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs and earth observation data. Crop condition information is based upon information as of March 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

* Assessment based on information as of March 28th, 2024
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Cover photo courtesy of Brian Barker

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