Overview:
At the end of October, conditions remain mixed for wheat, maize, rice, and soybeans. Winter wheat harvest begins in the southern hemisphere with dry conditions in Australia and Argentina, and winter planting begins in the north. Maize prospects improved in parts of the northern hemisphere as harvest wraps up while expanding dryness is impacting planting in Argentina. Rice conditions remain mixed with favourable conditions in China and parts of India while poor wet-season outcomes are expected in Thailand. Poor soybean outcomes are expected in parts of Nigeria, Romania, Ukraine, and the US as harvest nears completion.

Contents:
Conditions and Forecasts at a Glance........................................ 2
Wheat Conditions................................................................. 3
Maize Conditions............................................................... 4
Rice Conditions................................................................. 5
Soybeans Conditions.......................................................... 6
Climate Forecasts............................................................... 7
Appendix I – Terminology & Definitions................................. 12
Appendix II – Crop Season Specific Maps.............................. 13
Assessment based on information as of November 28th 2023
At a glance for AMIS countries (as of November 28th)

Crop Conditions at a Glance

**Wheat** – In the southern hemisphere, dryness persists in parts of Australia and Argentina as winter harvest begins. In the northern hemisphere, winter planting begins under mixed conditions.

**Maize** – In the northern hemisphere, harvest is nearing completion with improvement in parts of the Russian Federation, US, and Mexico. Planting is ramping up in the southern hemisphere with expanding dryness in Argentina.

**Rice** – In China, harvesting conditions are favourable for both single and late-season crops. In India, Kharif conditions remain favourable except in the south. In Southeast Asia, poor wet-season outcomes are expected in Thailand, and limited rains are impacting planting in Indonesia.

**Soybeans** – In the northern hemisphere, harvesting is nearing completion under mixed conditions with poor outcomes expected in parts of Nigeria, Romania, Ukraine, and the U.S.

Forecasts at a Glance

**Climate Influences** – El Niño is currently present, and models predict a strong intensity during November to January. The ongoing positive Indian Ocean Dipole (IOD) event increased to a strong level of intensity during recent weeks.

**Argentina** – Above-average precipitation is likely through January 2024 across much of the east, including the major producing regions, and above-average temperatures are expected in the northern half of the country, particularly in the northwest.

**Brazil** – Through January 2024, below-average rainfall is expected across much of the north and northeast, above-average rainfall is likely across the centre and south, and above-average temperatures are likely in all regions.

**The United States** – Above-average precipitation is likely through early November in most areas except along the Southwest. Above-average rainfall is expected for the November-December-January period along much of the southeast.

* Assessment based on information as of November 28th
Wheat Conditions for AMIS Countries

**Wheat**: In **Australia**, hot and dry conditions in the east and west are likely to reduce yields to below-average levels. In **Argentina**, conditions have deteriorated due to inadequate soil moisture with yields likely to be affected. In the **EU**, winter wheat planting continues with concern in Bulgaria and Romania due to dry and hard topsoil and in Lithuania due to wet conditions. In the **UK**, conditions are favourable for the start of winter sowing. In **Türkiye**, rains received in October have established favourable soil moisture for sowing and germination. In **Ukraine**, limited October rains mostly abated drought and were conducive for planting, though dryness remains a concern for crop emergence. In the **Russian Federation**, insufficient precipitation in October increased dryness, especially in the Volga region, though cooler temperatures helped to lessen some of the dry impacts. In **China**, winter planting begins under favourable conditions. In the **US**, dry conditions favoured winter wheat planting, and warm weather promoted emergence and establishment. In **Canada**, winter wheat planting is now underway with concern in Alberta and Saskatchewan due to fall drought conditions, raising concern for crop emergence.

* Assessment based on information as of November 28th
Maize Conditions for AMIS Countries

Maize crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of November 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 the US, crops have improved from previous dryness with near-average yields expected. In Mexico, overall prospects are favourable despite below-average rains received in many areas. In Canada, harvesting continues under favourable conditions despite localized drought impacts in Manitoba and early season dryness in Ontario. In China, harvesting of both the spring and summer-planted crops finalized under favourable conditions despite below-average rains received along the north. In India, harvesting conditions are favourable except in the south where delayed and erratic monsoon rains led to prolonged dry spells. In the EU, conditions are mixed with poor outcomes expected in Greece due to flood events and in Bulgaria and Romania due to the rainfall deficit and high daily temperatures. In Ukraine, harvesting is underway with a higher yield than last year in non-occupied regions. In the Russian Federation, harvesting finalized under favourable conditions despite dry impacts in the southwest. In Brazil, sowing of the spring-planted crop (smaller season) is ramping up with good soil moisture in the main producing South region. In Argentina, a lack of rainfall is delaying sowing of the early planted crop (usually larger season) in almost all growing regions.

* Assessment based on information as of November 28th
Rice Conditions for AMIS Countries

Rice: In China, harvesting of the single-season crop finalized under favourable conditions despite previous dry and hot weather in the south and southwest. In India, the late monsoon rains postponed the start of the Kharif season in the south. Elsewhere, conditions are favourable as harvest begins in the north. In Indonesia, wet-season rice planting is progressing at a slow pace due to limited rainfall received. Dry-season rice harvesting is favourable. In northern Viet Nam, wet-season rice yields are expected to decrease due to heavy rain and flooding in the central region. In the south, the other wet-season (autumn-winter and seasonal) rice is under favourable conditions. In Thailand, conditions have been downgraded due to the impacts of drought early in the season as well as recent prolonged flooding. In the Philippines, wet-season rice conditions are favourable despite the passage of two tropical cyclones that brought heavy rains to parts of Luzon. In Japan, harvesting finalized under favourable conditions despite limited sunlight, record high temperatures, and limited rains received during parts of the season. In Brazil, sowing of the mostly irrigated crop continues under favourable conditions. In the US, harvesting finalized under favourable conditions.

* Assessment based on information as of November 28th
Soybean Conditions for AMIS Countries

Soybeans: In the US, harvesting finalized under mixed conditions as pervasive dryness impacted some north-central areas, though yields are expected to be average at the national level. In Canada, harvesting continues under favourable conditions with improvement in Quebec despite crop disease in some fields. In China, harvesting finalized under favourable conditions with improvement in the south and southwest. In India, following a dry spell in August, enhanced rains in September led to crop recovery. In Ukraine, harvesting is mostly complete under favourable conditions except in conflict-affected areas. In Brazil, sowing activities are slightly delayed due to excessive rains in the South region and limited precipitation in unirrigated areas, but conditions remain favourable.

For detailed description of the pie chart please see box below.

Information on crop conditions in non-AMIS countries can be found in the GEOGLAM Crop Monitor for Early Warning, published November 2nd

* Assessment based on information as of November 28th
Climate Influences: Strong El Niño Advisory and Intense Positive IOD

The ongoing El Niño event will likely reach a strong level of intensity during November 2023 to January 2024 (75 percent chance), then weaken and remain active into March to May 2024 (80 percent chance), according to the IRI/CPC forecast.

El Niño events tend to enhance precipitation in Central Asia, southern North America, south-eastern South America, east and southern East Africa, and south-eastern China. Drier-than-average conditions tend to occur in Central America, northern South America, parts of the northern U.S. and Canada, Southern Africa, Northern China, the Maritime Continent, and Australia.

The ongoing positive Indian Ocean Dipole (IOD) event increased to a strong level of intensity during recent weeks. The IOD will likely remain positive through at least December, according to the Australian Bureau of Meteorology. These conditions tend to enhance the drying influences of El Niño in Australia and the Maritime Continent, and substantially increase the chances of a wet and intense East Africa short rains season.

Source: UCSB Climate Hazards Center

Location and timing of likely above- and below-average precipitation related to El Niño events. Based upon observed precipitation during 22 El Niño events since 1950, wet and dry correspond to a statistically significant increase in the frequency of precipitation in the upper and lower thirds of historical values, respectively. Statistical significance at the 95% level is based on the resampling of precipitation during neutral El Niño-Southern Oscillation conditions. Source: FEWS NET & NOAA & CHC

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

The two-week forecast (Figure 1) indicates a likelihood of above-average rainfall over much of the US, southern Mexico, Cuba, the Dominican Republic, southern Peru, southwestern Bolivia, northern Argentina, Uruguay, the southern tip of Brazil, the Gulf of Guinea countries, much of East Africa, northwestern parts of Southern Africa, Madagascar, Ireland, the United Kingdom, France, Belgium, the Netherlands, Germany, southern Norway, Sweden, Finland, Lithuania, Ukraine, Romania, Türkiye, much of the Middle East, Afghanistan, Pakistan, central and eastern parts of the Russian Federation, Mongolia, west and northeastern China, Sri Lanka, Japan, the Democratic People’s Republic of Korea, the Republic of Korea, Cambodia, and eastern Australia.

There is also a likelihood of below-average rainfall over much of Canada, central Mexico, Ecuador, Colombia, Venezuela, Guyana, Suriname, French Guiana, much of Brazil, northern Peru, Bolivia, Paraguay, Chile, Argentina, western parts of North Africa, Senegal, Gambia, Mali, Guinea-Bissau, Guinea, Sierra Leone, southern parts of Southern Africa, Portugal, Spain, central and Caucasus areas in the Russian Federation, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, much of China, India, Bangladesh, Myanmar, Malaysia, Indonesia, Papua New Guinea, much of Australia, and New Zealand.

Figure 1: IRI SubX Precipitation Biweekly Probability Forecast for 4 – 17 November 2023, issued on 27 October 2023. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: IRI Subseasonal Forecasts Maproom

* Assessment based on information as of November 28th
**Argentina Outlook**

The 1 to 7 November precipitation anomaly forecast (left) indicates a likelihood of below-average rainfall over most north and central areas, particularly along the northern border from Salta extending eastwards through Corrientes. During the same period, below-normal temperatures are expected for most areas, particularly in eastern Cordoba, central Santa Fe, and western Entre Ríos.

The 8 to 14 November precipitation anomaly forecast (centre) shows below-average rainfall is expected in northern Cordoba, southern Santa Fe, and parts of Buenos Aires while above-average rainfall is likely from Jujuy extending eastwards across the northern border and southwards into Entre Ríos. During the same period, above-average temperatures are expected along the northern border regions while below-average temperatures are likely along the centre and south.

The long-term November-December-January 2024 precipitation anomaly forecast (right) indicates a likelihood of below-average rainfall over the northwest and south while above-average rainfall is expected across the east, particularly in the northeast. During the same time, above-average temperatures are expected across the northern half of the country, particularly in the northwest.

---

**Precipitation Anomaly Forecasts**


---

* Assessment based on information as of November 28th
Brazil Outlook

The long-term November-December-January 2023/2024 precipitation anomaly forecast (left) indicates a likelihood of below-average rainfall across much of the north and northeast, from Amazonas extending eastwards to Ceará and southwards into Espírito Santo. Above-average rainfall is expected over most central and southern areas as well as in Acre and eastern parts of Paraíba, Pernambuco, Alagoas, and Sergipe.

The long-term November-December-January 2023/2024 temperature anomaly forecast (right) indicates a likelihood of mostly above-average temperatures, particularly along parts of the north and in Piauí.

* Assessment based on information as of November 28th
United States Outlook

The 6 to 10 November outlook indicates a likelihood of above-average rainfall across the west, centre, and east, particularly in the Pacific, Dakotas, Corn Belt, and northeast. Below-average rains are expected along the southwest. During the same period, above-average temperatures are likely from the Pacific Northwest and extending through the southeast, particularly along parts of California, Arizona, New Mexico, and Texas, while below-average temperatures are likely from the Midwest through the Corn Belt and into the northeast.

For the long-term seasonal November-December-January outlook, below-average rainfall is expected along parts of the north and Lake States while above-average rainfall is likely across much of the southeast from Texas to New Jersey. During the same period, above-normal temperatures are expected along the northern half of the country, particularly in the northwest and northeast.

Short-term and Seasonal Outlooks

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 (most recent 5 years) 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>Soybean</td>
<td>Spring-planted</td>
<td>Summer-planted</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>Maize</td>
<td>Summer-planted</td>
<td>Spring-planted (smaller producing season)</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>Wheat</td>
<td>Winter-planted</td>
<td>Spring-planted</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>Maize</td>
<td>Spring-planted</td>
<td>Summer-planted</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>Rice</td>
<td>Single-season</td>
<td>Late-season</td>
<td>Early-season</td>
</tr>
<tr>
<td>China</td>
<td>Wheat</td>
<td>Winter-planted</td>
<td>Spring-planted</td>
<td></td>
</tr>
<tr>
<td>Egypt</td>
<td>Rice</td>
<td>Summer-planted</td>
<td>Nil season (Nile Flood)</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>Maize</td>
<td>Kharif</td>
<td>Rabi</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>Rice</td>
<td>Kharif</td>
<td>Rabi</td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>Rice</td>
<td>Wet-season</td>
<td>Dry-season</td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>Maize</td>
<td>Spring-planted</td>
<td>Autumn-planted</td>
<td></td>
</tr>
<tr>
<td>Nigeria</td>
<td>Maize</td>
<td>Main-season</td>
<td>Short-season</td>
<td></td>
</tr>
<tr>
<td>Nigeria</td>
<td>Rice</td>
<td>Main-season</td>
<td>Off-season</td>
<td></td>
</tr>
<tr>
<td>Philippines</td>
<td>Rice</td>
<td>Wet-season</td>
<td>Dry-season</td>
<td></td>
</tr>
<tr>
<td>Russian Federation</td>
<td>Wheat</td>
<td>Winter-planted</td>
<td>Spring-planted</td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>Rice</td>
<td>Wet-season</td>
<td>Dry-season</td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>Wheat</td>
<td>Winter-planted</td>
<td>Spring-planted</td>
<td></td>
</tr>
<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 November 28th
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 along with earth observation data. Crop condition information is based upon information as of November 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 along with earth observation data. Crop condition information is based upon information as of November 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 November 28th
Maize 1 Conditions for AMIS Countries

Maize 1 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of November 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 Conditions for AMIS Countries

Maize 2 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of November 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 November 28th
Rice 1 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of November 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 along with earth observation data. Crop condition information is based upon information as of November 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 November 28th
Rice 3 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of November 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 along with earth observation data. Crop condition information is based upon information as of November 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 November 28th
Soybean 2 conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of November 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 November 28th
Prepared by members of the GEOGLAM Community of Practice
Coordinated by the University of Maryland with funding from NASA Harvest
Climatic Influences by Climate Hazards Center of UC Santa Barbara

The Crop Monitor is a part of GEOGLAM, a GEO global initiative.

Photo courtesy of Kara Mobley

https://cropmonitor.org/

@GEOCropMonitor

Sources & Disclaimer

Sources and Disclaimers: The Crop Monitor assessment is conducted by GEOGLAM with inputs from the following partners (in alphabetical order): Argentina (Buenos Aires Grains Exchange, MAGyP), Asia Rice Countries (AFSIS, ASEAN+3 & Asia RiCE), Australia (ABARES & CSIRO), Brazil (CONAB & INPE), Canada (AAFC), China (CAS), EU (EC JRC MARS), Gro Intelligence, India (NCFC), Indonesia (LAPAN & MOA), International (CIMMYT, FAO GIEWS, IFPRI & IRRI), Japan (JAXA, MAFF), Mexico (SIAP), Russian Federation (IKI), South Africa (ARC & CSIR & GeoTerralmage & SANSA), Thailand (GISTDA & OAE), Ukraine (NASU-NSAU & UHMC), USA (NASA, UMD, USGS – FEWS NET, USDA (FAS, NASS)), Viet Nam (VAST & VIMHE-MARD). The findings and conclusions in this joint multiagency report are consensual statements from the GEOGLAM experts, and do not necessarily reflect those of the individual agencies represented by these experts.

More detailed information on the GEOGLAM crop assessments is available at https://cropmonitor.org