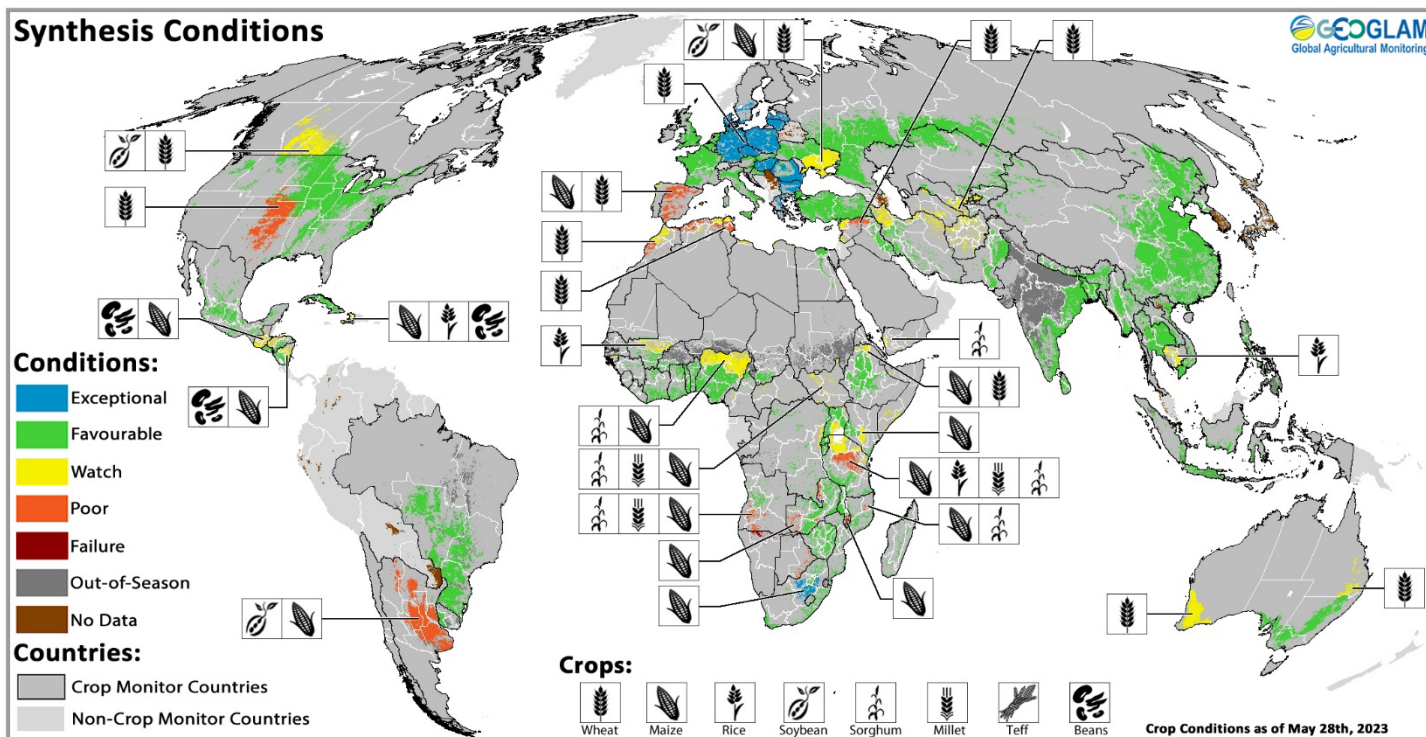


# GEOGLAM Global Crop Monitor

Synthesized from the Crop Monitor for AMIS, the Crop Monitor for Early Warning, and direct submissions from individual countries.



Crop condition map synthesizing information for all Crop Monitor crops as of May 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, and national and regional experts. **Regions that are in other than favourable conditions are labeled on the map with a symbol representing the crop(s) affected.**

|                               | Wheat | Maize | Rice | Soybean | Legend:          |
|-------------------------------|-------|-------|------|---------|------------------|
| <b>Current Conditions</b>     |       |       |      |         | Positive  Better |
| <b>Compared to last month</b> |       |       |      |         | Mixed  Similar   |
| <b>Compared to last year</b>  |       |       |      |         | Negative  Worse  |

See Appendix I for detailed methodology description

## Global Crop Overview

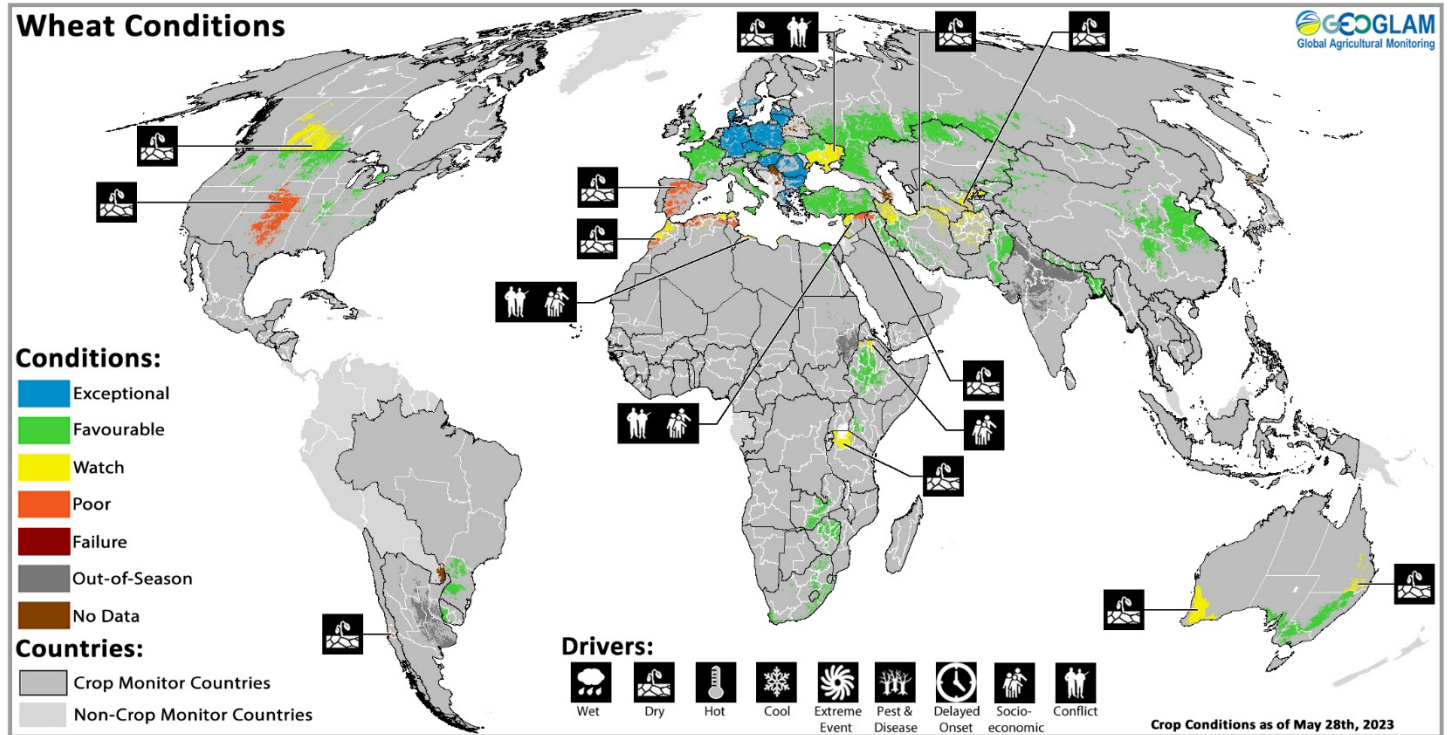
Global crop conditions at the end of May are positive for maize and rice, while mixed for wheat and soybeans. For **wheat**, areas of concern remain in Spain, North America, MENA, Central Asia, and Australia. For **maize**, conditions are generally favourable except in Argentina and parts of Sub-Saharan Africa. For **rice**, conditions are favourable except for in Cambodia, the Caribbean, and parts of Sub-Saharan Africa. For **soybeans**, conditions are mixed due to a prolonged drought in Argentina and the ongoing war in Ukraine. The remaining crops are covered in the [CM4EW](#) publication.

## Global Climate Influences

There is around a 90% chance of El Niño conditions developing during June to September, and these odds remain high through December 2023 to February 2024 (>90% chance), according to the IRI/CPC forecast. Positive Indian Ocean Dipole (IOD) conditions may also develop during June to October. For further details see page 6.

Source: UCSB Climate Hazards Center

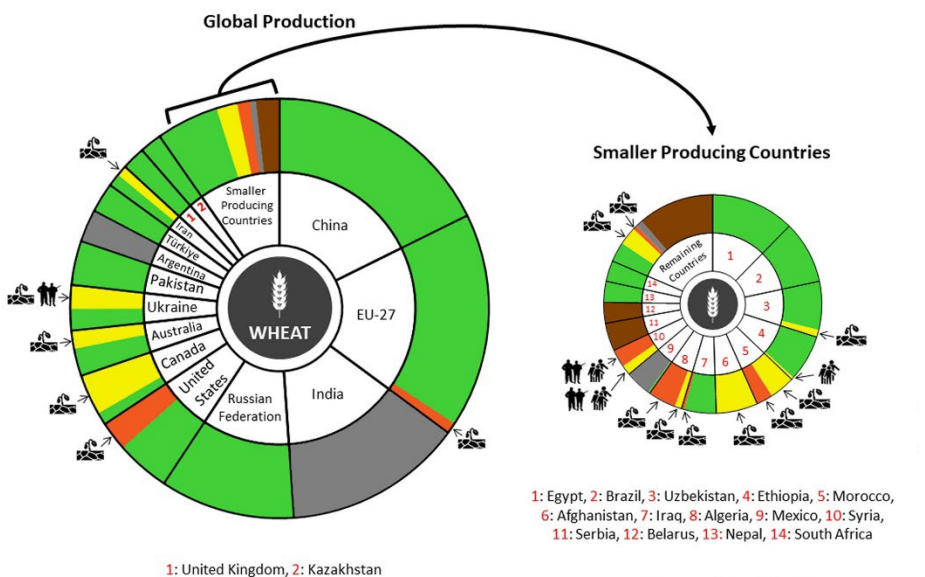
# WHEAT



Wheat crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Conditions are based upon information as of May 28<sup>th</sup>.

In **North America**, winter wheat in the central and southern Great Plains of the US has suffered from prolonged drought, leading to reduced yields and higher-than-average abandonment levels. Sowing of spring wheat is continuing across the country. In Canada, winter wheat conditions are generally favourable while spring wheat sowing begins under drought conditions in Alberta and Saskatchewan. In Mexico, harvesting is continuing under favourable conditions. In **South America**, sowing is ongoing in Brazil and Uruguay under favourable conditions, while under poor conditions in Chile due to drought. In **Europe**, conditions are favourable to exceptional in the EU except for Spain due to a historic drought. In the UK, conditions are favourable. In Türkiye, conditions are favourable as crops enter the reproductive stage. In Ukraine, May was drier than average, however, the April rains were enough to maintain favourable conditions in most regions except in the south. The ongoing war continues to obstruct fieldwork. In the Russian Federation, conditions are favourable for winter wheat and for the continued sowing of spring wheat.

In **Central Asia**, Winter wheat harvesting is ramping up while sowing and development of spring wheat is underway, and overall conditions are mixed with concern in Afghanistan, Turkmenistan, and Uzbekistan due to persistent dry conditions. In **South Asia**, harvesting of the *Rabi* crop in Pakistan is wrapping up under favourable conditions. In Nepal, harvesting is continuing under favourable conditions. In **East Asia**, harvesting of winter wheat in China is ongoing under favourable conditions as sowing of spring wheat wraps up. In Mongolia, spring wheat is developing. In **Oceania**, sowing is continuing in the eastern states of Australia under mixed conditions due to low soil moisture levels. In **MENA**, harvesting is ramping up with below-average yields expected in parts of Morocco, Algeria, Tunisia, Syria, and Iraq. In Syria, concern remains due to persistent conflict and socio-economic challenges. In **Sub-Saharan Africa**, sowing is underway in Zambia, Zimbabwe, South Africa, and Lesotho under favourable conditions.



Conditions as of May 28<sup>th</sup>, 2023

**Conditions:**  
 Exceptional (blue), Favourable (green), Watch (yellow), Poor (orange), Failure (red), Out-of-Season (grey), No Data (brown)

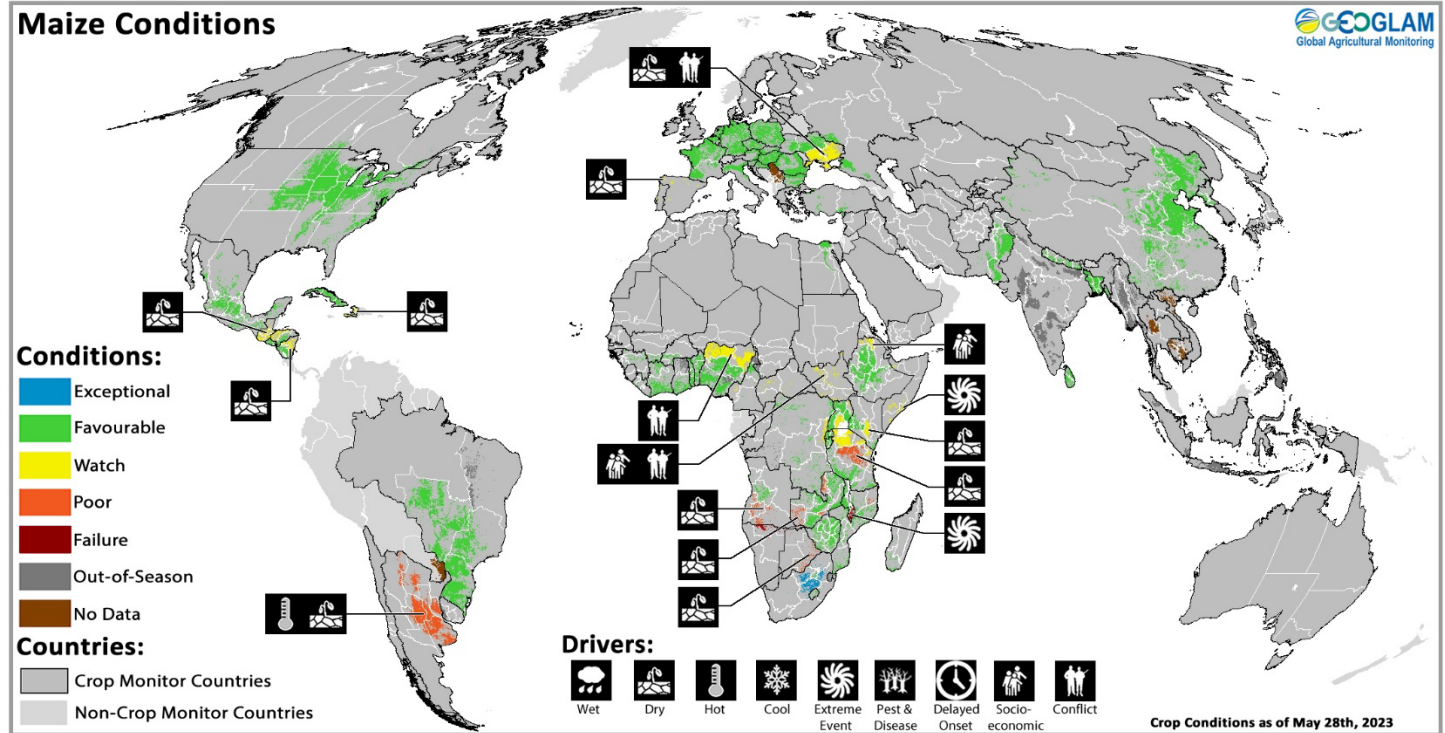
**Drivers:**  
 Wet, Dry, Delayed Onset, Socio-economic, Hot, Cool, Extreme Event, Conflict, Pests & Disease

For detailed description of the pie chart, please see box on page 5.

\* Assessment based on information as of May 28<sup>th</sup>

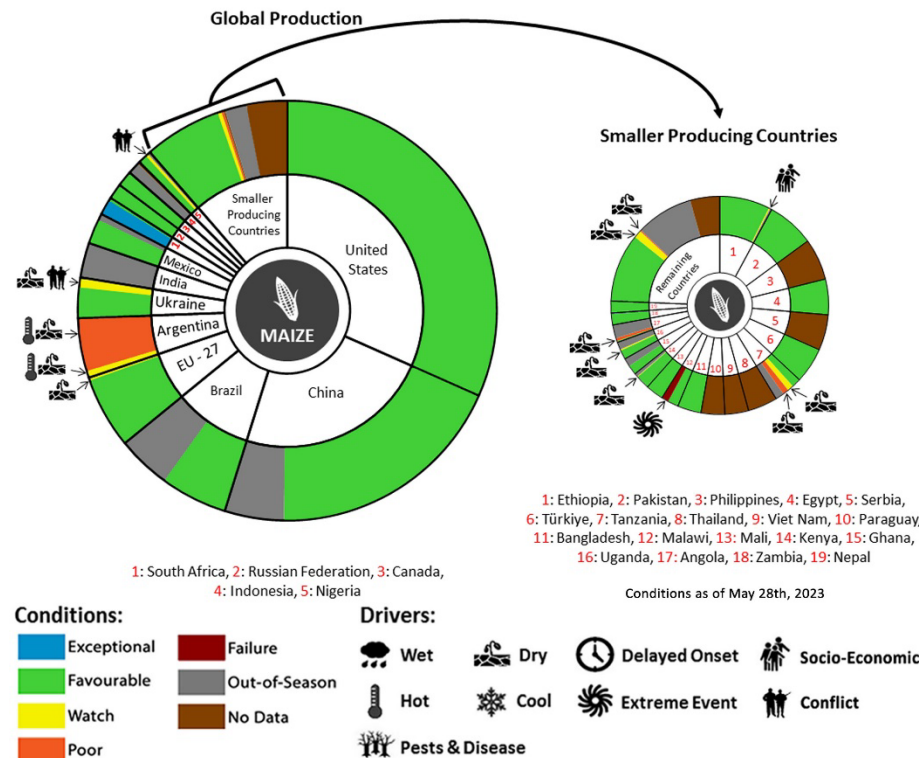


# MAIZE



Maize crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Conditions are based upon information as of May 28<sup>th</sup>.

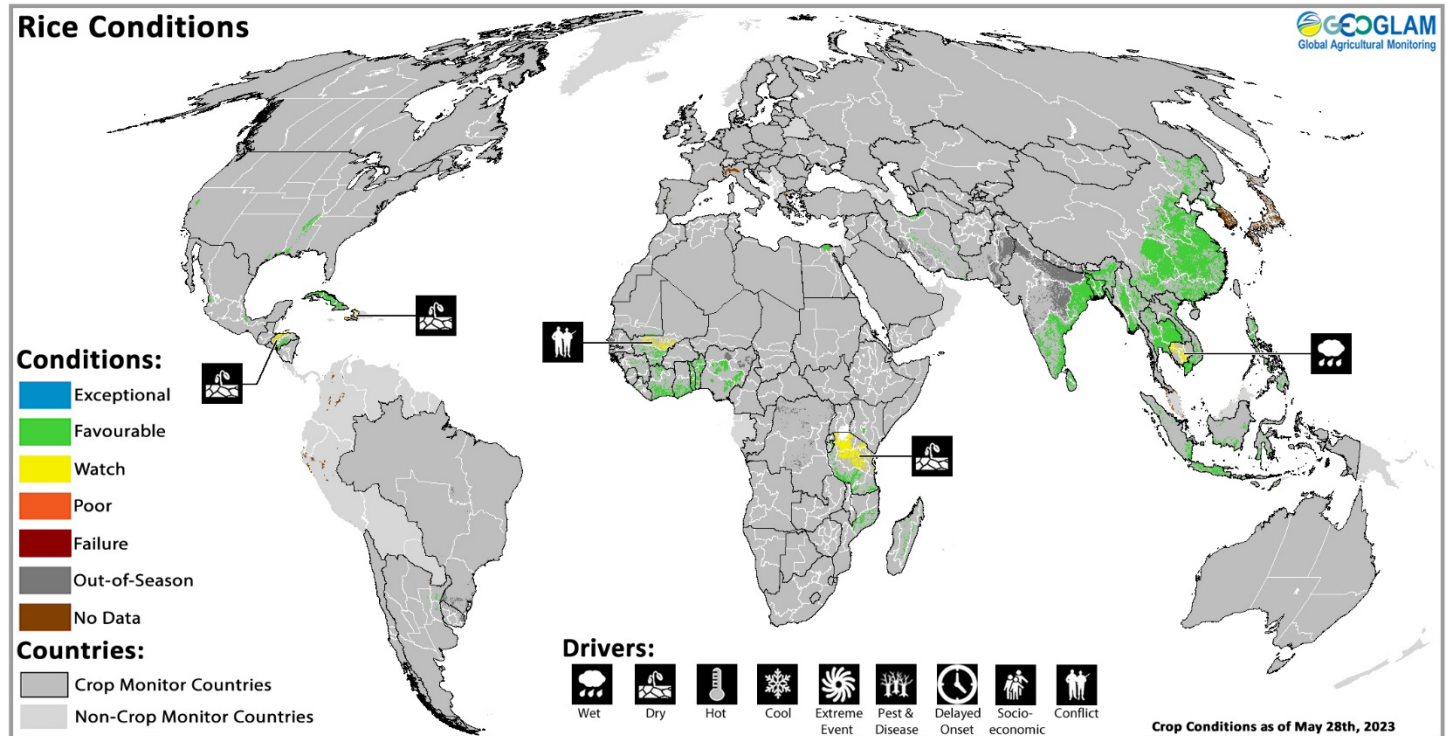
In **South America**, conditions are favourable in Brazil with the majority of the summer-planted crop (larger season) in the reproductive stage. In Argentina, harvest is continuing with significantly reduced yields for both the early-planted crop (typically larger season) and the late-planted crop (typically smaller season). The share destined for animal consumption has markedly increased due to the poor state of the crops. In **Central America & the Caribbean**, harvesting of the Autumn-Winter crop (smaller season) is continuing in Mexico while sowing for the Spring-Summer crop (larger season) begins. Sowing of the *Primera* season crops is just beginning under mixed conditions with concern in Guatemala, northern Honduras, and eastern Nicaragua due to hot and dry conditions. In Cuba, harvesting of the mains season crop is beginning. In **North America**, sowing is wrapping up in the US under favourable conditions. In Canada, sowing is beginning under favourable conditions. In **Europe**, sowing is nearing completion in the EU under generally favourable conditions, albeit with dry conditions in Spain and Portugal. In Ukraine, sowing is wrapping up under favourable conditions away from the war zones. In the Russian Federation, sowing is over halfway complete under favourable conditions. In **East Asia**, conditions are favourable in China for the spring-planted crop and the sowing of the summer-planted crop. In **South Asia**, harvesting of the *Rabi* crop in Pakistan is wrapping up under favourable conditions. In Sri Lanka, sowing of *Yala* season crops is continuing. In **East Africa**, conditions are generally favourable for both *Belg* and *Meher* season crops in Ethiopia. In the southern countries, sowing and development of main season crops continue under mixed conditions. In **West Africa**, sowing and development of main season crops continue under generally favourable conditions. In **Southern Africa**, harvesting of main season crops is wrapping up under mixed conditions due to persisting dry conditions in parts of Angola, Namibia, Botswana, Zambia, and Malawi. In South Africa, harvesting is wrapping up under exceptional conditions.



For detailed description of the pie chart, please see box on page 5.

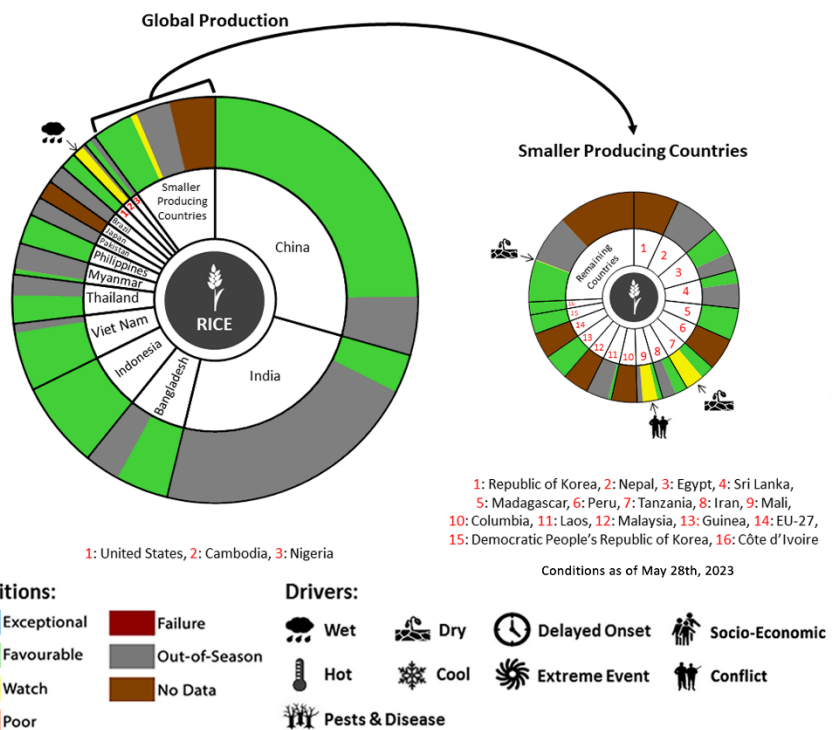
\* Assessment based on information as of May 28<sup>th</sup>

# RICE



Rice crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Conditions are based upon information as of May 28<sup>th</sup>.

In **East Asia**, conditions are favourable in China as early-planted rice enters the reproductive stage and the sowing of single-season rice continues. In the Democratic People’s Republic of Korea, sowing is underway. In **South Asia**, harvesting of the *Rabi* crop in India is wrapping up under favourable conditions. In Bangladesh, harvesting of *Boro* season rice finalized in May while planting and development of *Aus* season rice is underway. In Sri Lanka, sowing of *Yala* season crops is continuing under favourable conditions. In **Southeast Asia**, harvesting of wet-season rice is progressing in Indonesia under favourable conditions. Sowing of dry-season rice is continuing slowly as farmers wait for additional rainfall. In Viet Nam, conditions are favourable across the country for dry-season rice (Winter-Spring rice) as harvesting wraps up in the South. Sowing of wet-season (Summer-Autumn rice) is at the peak in the Mekong River Delta. In Thailand, harvesting of dry-season rice is nearing completion with good yields and an increase in total sown area compared to last year. In the Philippines, dry-season rice harvesting is wrapping up under favourable conditions. In Myanmar, harvesting of dry-season rice is wrapping up under generally favourable conditions, except in western areas impacted by Cyclone Mocha. In Cambodia, sowing of wet-season rice is beginning, and crop growth is slightly delayed due to scattered rainfall throughout the country. In Laos, harvesting of dry-season rice is wrapping up under favourable conditions. In the **Americas**, sowing is wrapping up in the US. In Mexico, harvesting of Autumn-winter season crops is continuing. In Cuba, harvesting of main season crops is just beginning while sowing of second season crops is underway. In Argentina, harvesting is wrapping up under favourable conditions. In **Sub-Saharan Africa**, conflict remains an issue in Mali while dry conditions are an issue in Tanzania. In Nigeria, sowing is underway in the central and southern regions.

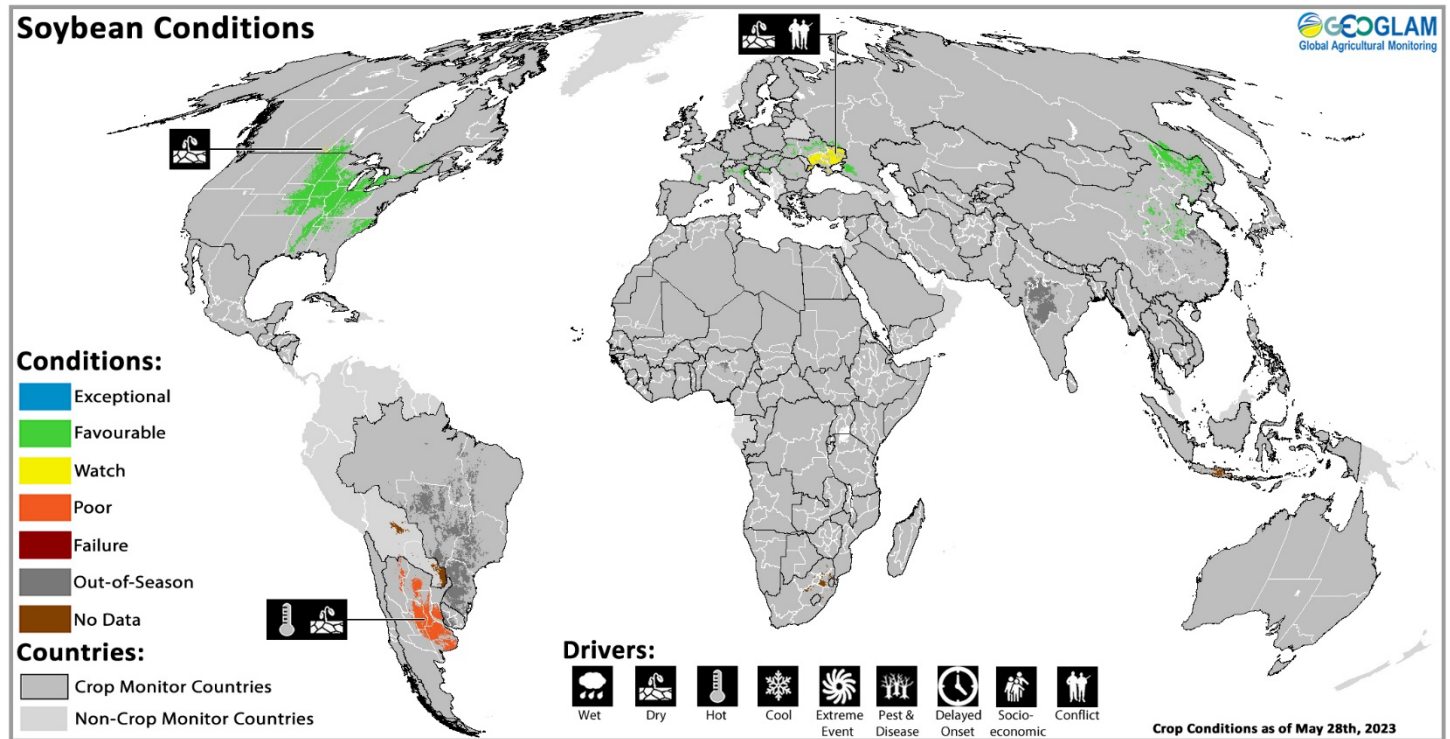


For detailed description of the pie chart, please see box on page 5.

\* Assessment based on information as of May 28<sup>th</sup>

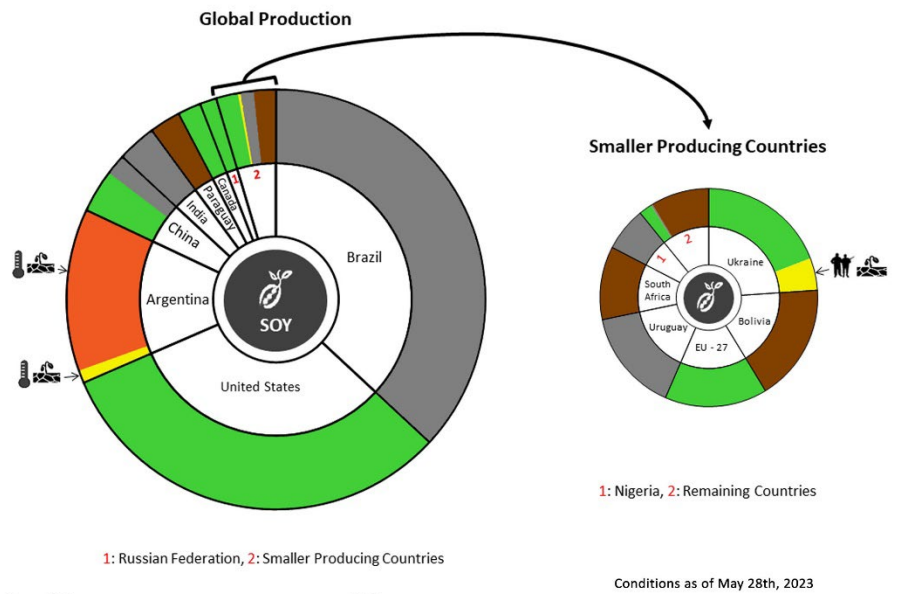


# SOYBEAN



Soybean crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Conditions are based upon information as of May 28<sup>th</sup>.

In **South America**, harvesting is continuing in Argentina for both the early-planted crop (larger season) and the late-planted crop (smaller season) with low yields across all regions. The poor crop conditions are a result of an early frost in mid-February along with water deficits and extreme heat throughout the season, which hit at critical moments of yield development. In **North America**, conditions are favourable in the US as sowing progress is noticeably ahead of average across most of the country, except for in North Dakota and Minnesota. In Canada, sowing is beginning under generally favourable conditions, except in Saskatchewan due to dry soils. In **Europe**, sowing is progressing in Ukraine under favourable conditions away from the frontlines of the war. In the Russian Federation, sowing is continuing under favourable conditions. In Asia, sowing continues in China under favourable conditions.



**Pie Chart Description:** Each slice represents a country's share of total Global production (5-year average). Main producing countries (representing 90-95 percent of production) are shown individually, with the remaining 5-10 percent grouped into the "Smaller Producing Countries" category. The proportion within each national slice is coloured according to the crop conditions within a specific growing area; grey indicates that the respective area is out of season. Sections within each slide are weighted by the sub-national production statistics (5-year average) of the respective country. The section within each national slice also accounts for multiple cropping seasons (e.g., spring and winter wheat). When conditions are other than 'favourable', icons are added that provide information on the key climatic drivers affecting conditions.

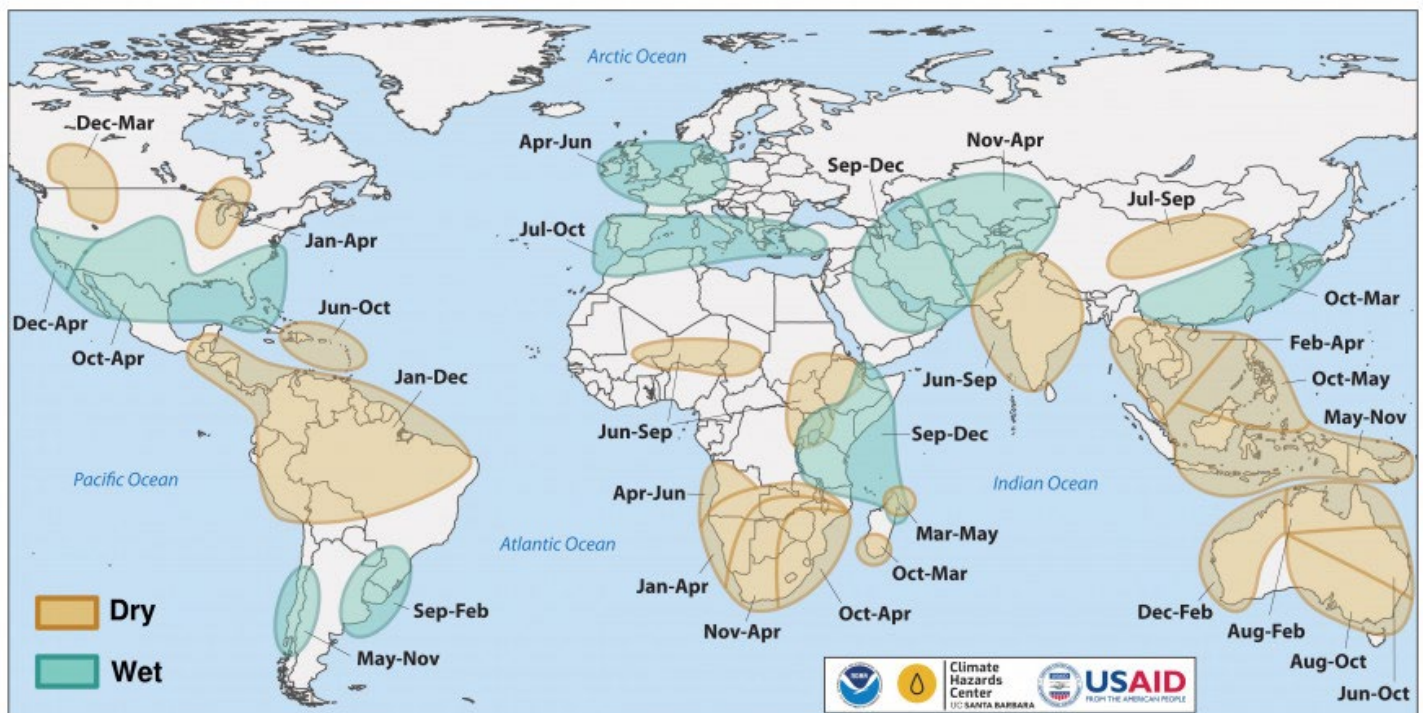
## Global Climate Influences

The El Niño-Southern Oscillation (ENSO) is currently in a neutral state. According to the IRI/CPC forecast, there is around a 90% chance of El Niño conditions developing during June to September, and these odds remain high through December 2023 to February 2024 (>90% chance). If this El Niño event develops, models predict that it will likely be a moderate or strong event.

El Niño events tend to enhance rainfall in Central Asia, southern North America, south-eastern South America, southern Europe, eastern and southern East Africa, and southern and eastern China. Drier-than-average conditions tend to occur in Central America, the Caribbean, northern South America, parts of western and northern East Africa, Southern Africa, India, Northern China, the Maritime Continent, and Australia.

Positive Indian Ocean Dipole (IOD) conditions may also develop during June to October, according to the Australian Bureau of Meteorology. Positive IOD conditions can enhance El Niño-related drying influences in Australia and the Maritime Continent, and wetting influences during the East Africa short rains.

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](#)



## Regional Outlooks

The long-term June-July-August 2023 forecast (Figures 3 & 4) is influenced by the potential development of El Niño and a potential positive Indian Ocean Dipole (IOD).

In **North America**, the two-week forecast (Figures 1 & 2) indicates potential areas of below-average precipitation over the Canadian Prairies and Ontario, while areas of above-average precipitation are possible over the Western US. During the same time, temperatures are likely to be above-average over the Canadian Prairies and the US Pacific Northwest, while below-average over the US Southwest and east of the Mississippi. The long-term June-July-August 2023 forecast (Figures 3 & 4) shows a leaning of below-average precipitation over the US southwest and the Canadian Great Lakes region. During the same time, temperatures are leaning to be above-average across all of North America. For further details, see the [CM4AMIS](#) Regional Outlook for the United States.

In **Central America & the Caribbean**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation across western and southern Mexico, Guatemala, and Nicaragua. During the same period, temperatures are likely to be above-average across central and southern Mexico, Guatemala, Belize, El Salvador, southern Honduras, northern Nicaragua, and Costa Rica, while below-average in northwest Mexico. The long-term June-July-August 2023 forecast (Figures 3 & 4) suggests below-average precipitation across western Mexico, Nicaragua, Costa Rica, and Panama. During this time, temperatures are highly likely to be above-average across the entire region. For further details, see the [CM4EW](#) Regional Outlook for Central America and the Caribbean.

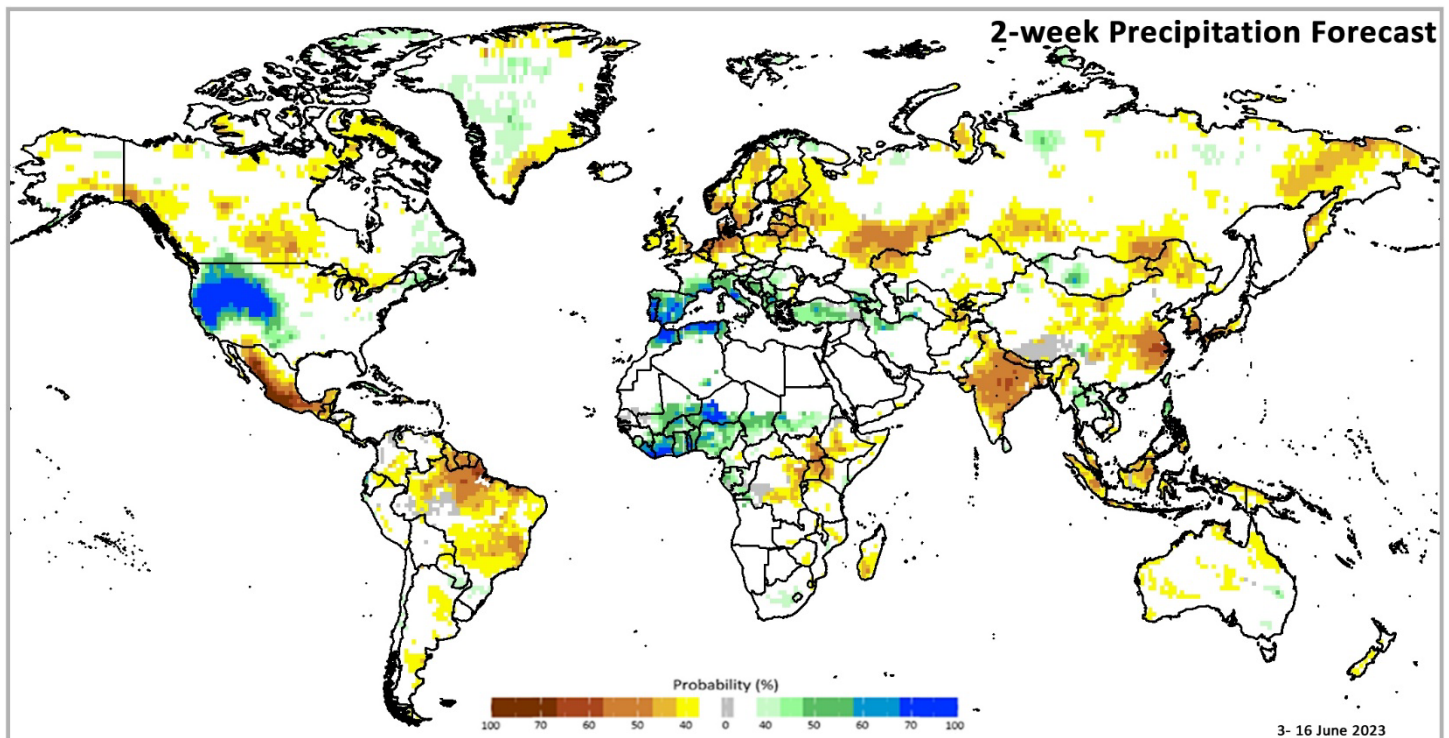


Figure 1: IRI SubX Precipitation Biweekly Probability Forecast for 3 – 16 June 2023, issued on 26 May 2023. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](#)

In **South America**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation in Guyana, Suriname, French Guiana, northern and central Brazil, and southern Chile, while above-average over northcentral Brazil. During this time, temperatures are likely to be above-average across most of the continent except for Chile, Argentina, and Uruguay. The long-term June-July-August 2023 forecast (Figures 3 & 4) suggests likely below-average precipitation in Columbia, Venezuela, Guyana, Suriname, French Guiana, and northern and northeast Brazil. During that time, temperatures will highly likely be above-average across most of the continent.

In **Europe**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation over Ireland, England, Belgium, Netherlands, northern Germany, southern Denmark, northern Poland, Norway, Sweden, Finland, Estonia, Latvia, Lithuania, Belarus, and the western and central regions of the Russian Federation, while above-average in Portugal, Spain, southern France, Italy, Bosnia and Herzegovina, Albania, northern Macedonia, Greece, Türkiye, and Georgia. During this time, temperatures are leaning to be above-average in Ireland, Serbia, Romania, Moldova, Ukraine, and the Russian Federation, while below-average in southern Spain. The long-term June-July-August 2023 forecast (Figures 3 & 4) indicates possible above-average precipitation across southern Europe. During the same period, temperatures will potentially be above-average across all of Europe with the highest likelihood over central Europe.

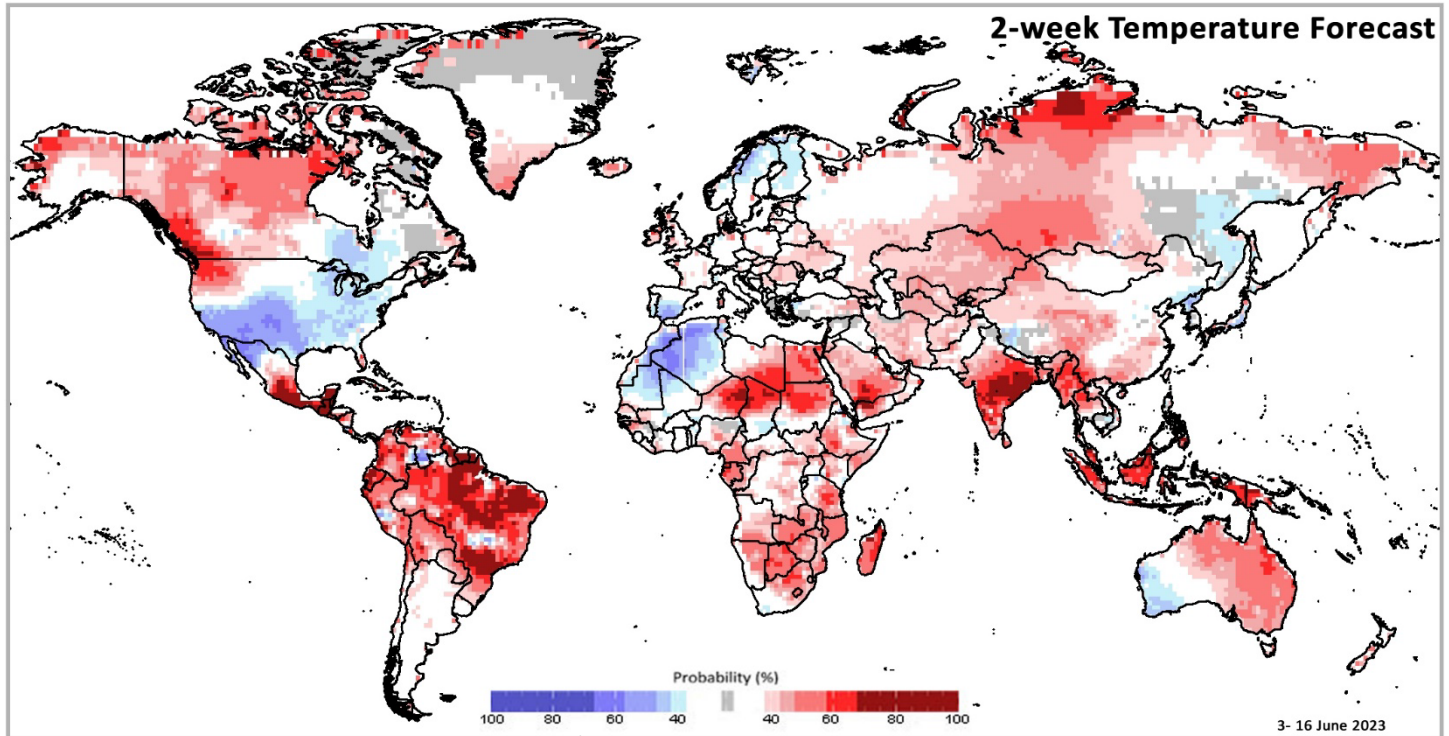


Figure 2: IRI SubX Temperature Biweekly Probability Forecast for 3 – 16 June 2023, issued on 26 May 2023. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](#)

In **MENA**, the two-week forecast (Figures 1 & 2) indicates a likelihood of above-average precipitation over Morocco, northern Algeria, Tunisia, and northern Iran. During this time, temperatures are likely to be below-average in parts of Morocco, Algeria, and Tunisia, while above-average in southeast Libya, Egypt, southern Jordan, Saudi Arabia, Yemen, and Iran. The long-term June-July-August 2023 forecast (Figures 3 & 4) indicates a leaning toward above-average precipitation over Morocco, Algeria, Tunisia, Libya, and Syria. During this time, temperatures are likely to be above-average across the entire region.

In **Sub-Saharan Africa**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation over eastern South Sudan, central Ethiopia, Uganda, western Kenya, the eastern Democratic Republic of Congo, and southern Madagascar. Above-average precipitation is likely over Liberia, Côte d'Ivoire, Mali, Burkina Faso, Ghana, Togo, Benin, Niger, Nigeria, Chad, Sudan, and Gabon. At the same time, temperatures are likely to be above-average across most of the region. For the long-term June-July-August 2023 forecast (Figures 3 & 4), precipitation is likely to be above-average across western Africa while below-average over South Sudan, central and southern Ethiopia, Uganda, western Kenya, northern Tanzania, and eastern DRC. During this time, temperatures are likely to be above-average across all of Sub-Saharan Africa. For further details, see the [CM4EW](#) regional outlook for East Africa.



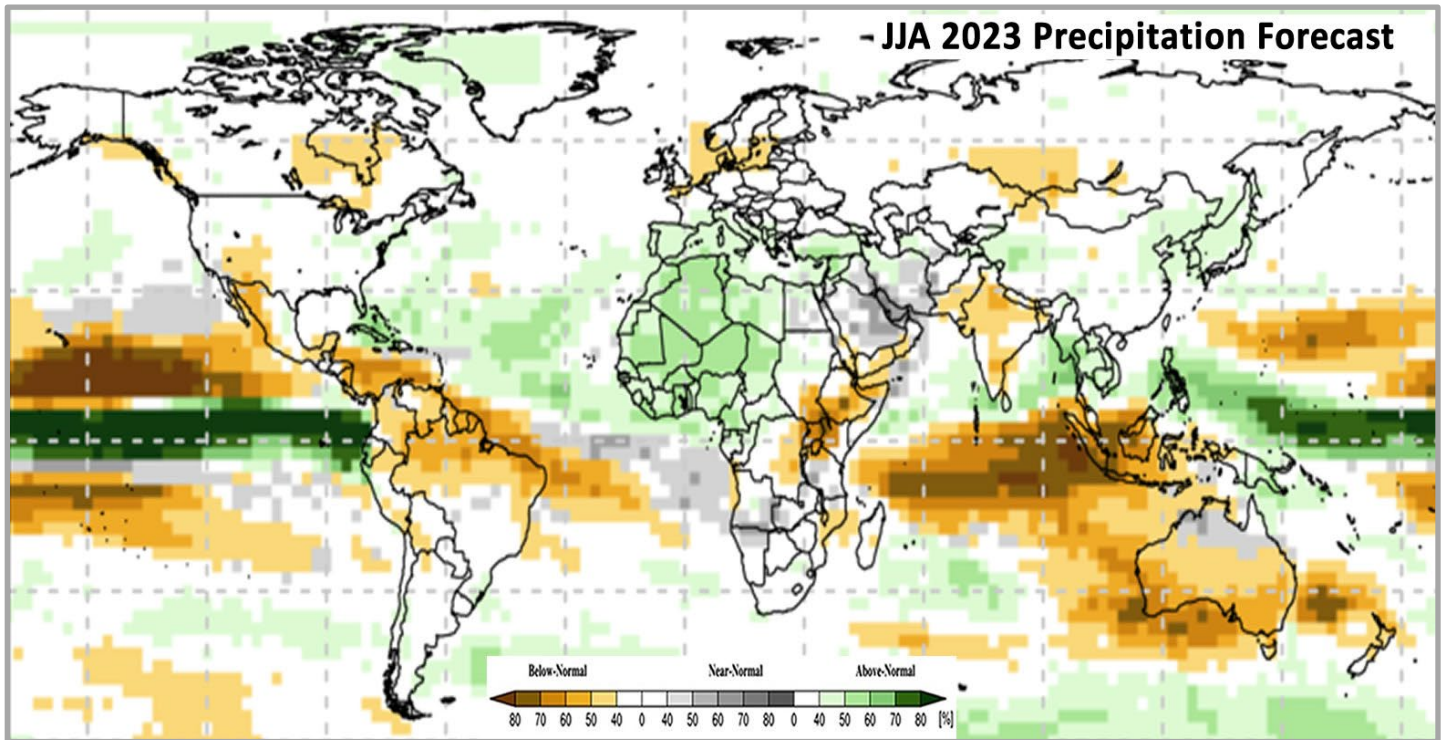


Figure 3: Probabilistic forecast for most-likely June-July-August (JJA) 2023 rainfall tercile, based on May conditions. The white colour indicates that there is no dominant category across the model forecasts. Source: [WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble](#)

In **Central Asia**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation over western Kazakhstan, eastern Uzbekistan, western Tajikistan, and northern Afghanistan. During this time, temperatures are leaning above average across the region. The long-term June-July-August 2023 forecast (Figures 3 & 4) indicates no dominant tercile for precipitation over the region. At the same time, temperatures are likely to be above-average across the entire region.

In **South Asia**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation over India, Nepal, and Bangladesh. During this time, temperatures are likely to be above-average over central, eastern, and southern India, Sri Lanka, and Bangladesh. The long-term June-July-August 2023 forecast (Figures 3 & 4) indicates a leaning towards below-average precipitation across central Pakistan, India, and northern Bangladesh. At the same time, temperatures are likely to be above-average across the entire region. For further details, see the [CM4AMIS](#) Regional Outlook for India.

In **East Asia**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation over eastern Mongolia, and parts of eastern and northeast China, the Republic of Korea, and southern Japan. During this time, temperatures are likely to be above-average across northwest, central, and southern China, while below-average over the Democratic Republic of Korea, and central Japan. The long-term June-July-August 2023 forecast (Figures 3 & 4) indicates no dominant tercile for precipitation over the region. During that time, temperatures are likely to be above-average across the entire region.

In **Southeast Asia & Oceania**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation in northern Myanmar, Malaysia, Indonesia, and the southern Philippines. During this time, temperatures are likely to be above-average over southern Myanmar, northern Thailand, Laos, the southern Philippines, Malaysia, Indonesia, Papua New Guinea, and northern and eastern Australia, while below-average over most of western Australia. The long-term June-July-August 2023 forecast (Figures 3 & 4) is indicating below-average precipitation over Indonesia, Malaysia, and southern Australia, while above-average over southern Myanmar, Thailand, the Philippines, and Papua New Guinea. During the same time, temperatures are likely to be above-average across the entire region except for northern Australia.

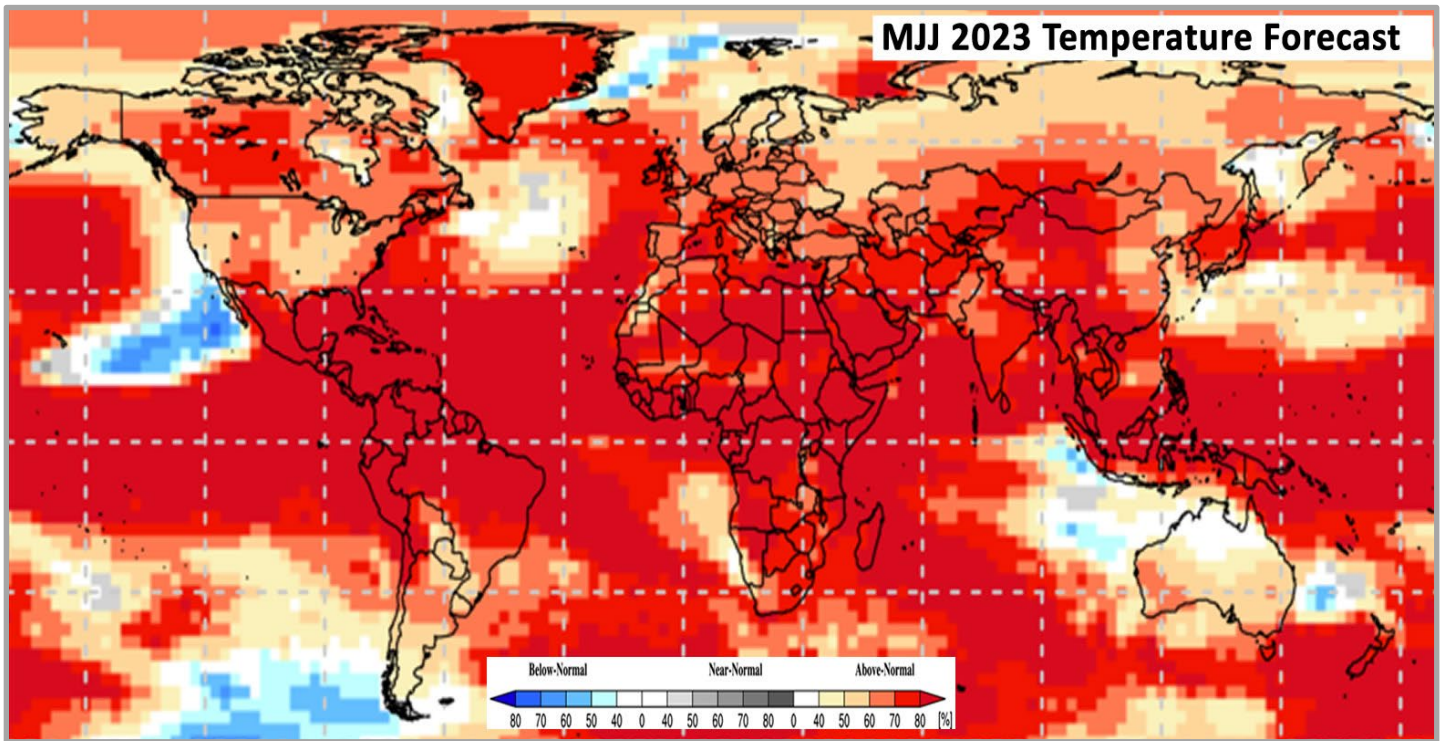


Figure 4: Probabilistic forecast for most-likely June-July-August (JJA) 2023 temperature tercile, based on May conditions. The white colour indicates that there is no dominant category across the model forecasts. Source: [WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble](https://www.wmo.int/en/lead-centre-for-long-range-forecast-multi-model-ensemble)



The Crop Monitor is a part of GEOGLAM, a GEO global initiative.  
Prepared by members of the GEOGLAM Community of Practice.  
Coordinated by the University of Maryland with funding from NASA Harvest.  
Synthesized from the Crop Monitor for AMIS, the Crop Monitor for Early Warning, and direct submissions from individual countries.

<https://cropmonitor.org/>

@GEOCropMonitor



# 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 not far from 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 5-25% below-average. This is only used when conditions are not likely to be able to recover, and an impact on production is likely.

**Failure:** Crop conditions are extremely poor. Crop yields are likely to be 25% or more below-average.

**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.*

|   |               |
|---|---------------|
|  | Exceptional   |
|  | Favourable    |
|  | Watch         |
|  | Poor          |
|  | Failure       |
|  | Out-of-Season |
|  | No Data       |

## Drivers:

These represent the key climatic, environmental, and anthropomorphic drivers that are having an impact on crop condition status. They result in production impacts and can act 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

**Pest & Disease:** Destructive insects, birds, animals, or plant disease.

**Socio-economic:** Social or economic factors that impact crop conditions (i.e., policy changes, agricultural subsidies, government intervention, etc.)

**Conflict:** Armed conflict or civil unrest that is preventing the planting, working, or harvesting of the fields by the farmers.

|   |                |   |                 |
|---|----------------|---|-----------------|
|    | Wet            |    | Dry             |
|    | Hot            |    | Cold            |
|  | Extreme Event  |  | Delayed Onset   |
|  | Socio-economic |  | Pests & Disease |
|  | Conflict       |   |                 |

## Crop Condition Indicators:

**Current Crop Conditions:** The current crop condition indicators are based on only the crops that are currently in season. Crops with "No Data" are not counted. The crop condition is considered "Positive", with a green-coloured crop symbol, when 85-100% of active crops are currently under favourable to exceptional conditions. The crop conditions are considered "Mixed", with an orange-coloured crop symbol, when only 70-85% of active crops are under favourable to exceptional conditions. The crop conditions are considered "Negative", with a dark red-coloured crop symbol when only 0-70% of active crops are under favourable to exceptional conditions.

**Crop Condition Comparisons:** Crop condition changes are measured between the current month's conditions compared to the previous month and exactly one year ago. Only active crops are considered. If there is a -5% change in global crop conditions, then the crop conditions are considered "Deteriorating" (indicated by a down arrow). If there is a +5% change in global crop conditions, then the crop conditions are considered "Improving" (indicated by an up arrow). Otherwise, crop conditions are considered "Stable" (indicated by a dash).