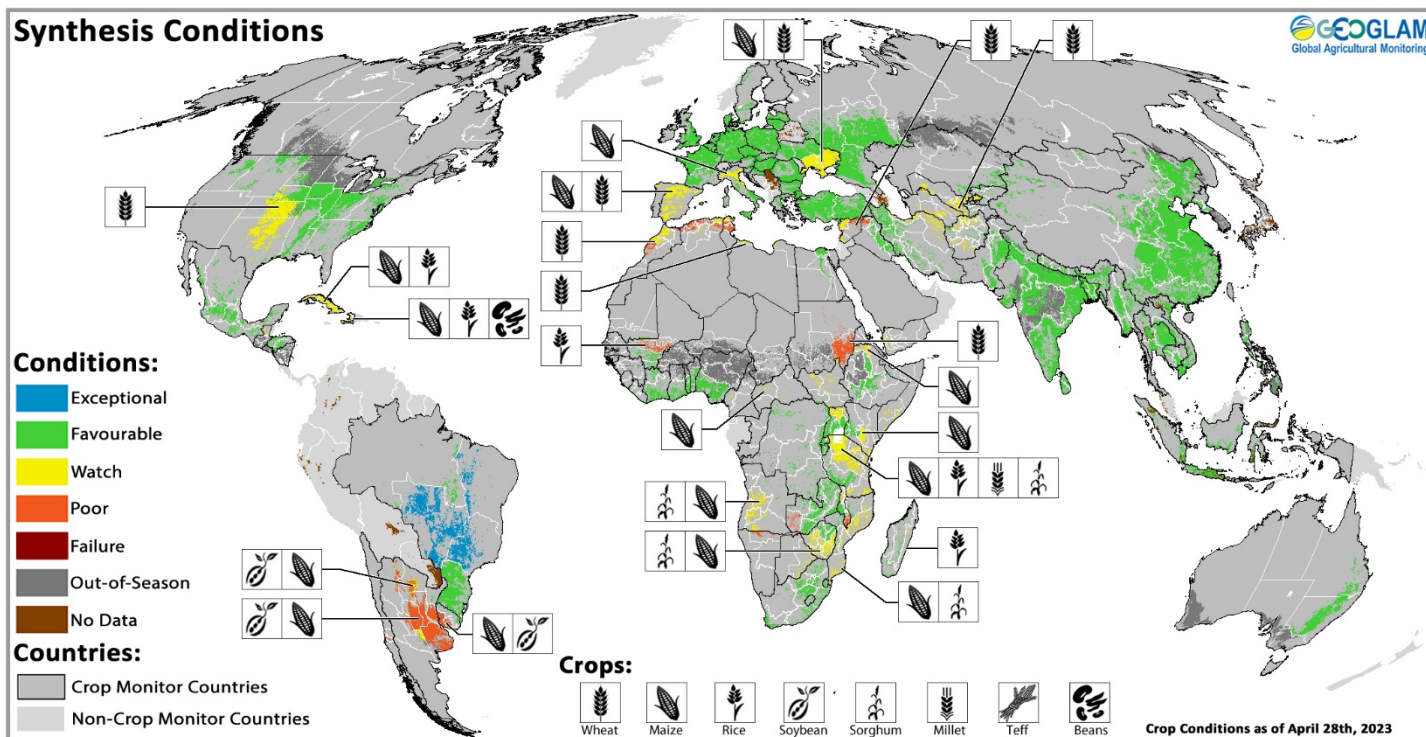


# GEOGLAM Global Crop Monitor

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 April 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 |
| <b>Compared to last month</b> | —     | ↑     | ↑    | ↑       | Better   |
| <b>Compared to last year</b>  | ↑     | —     | —    | ↑       | Mixed    |
|                               |       |       |      |         | Negative |
|                               |       |       |      |         | Similar  |
|                               |       |       |      |         | Worse    |

See Appendix I for detailed methodology description

## Global Crop Overview

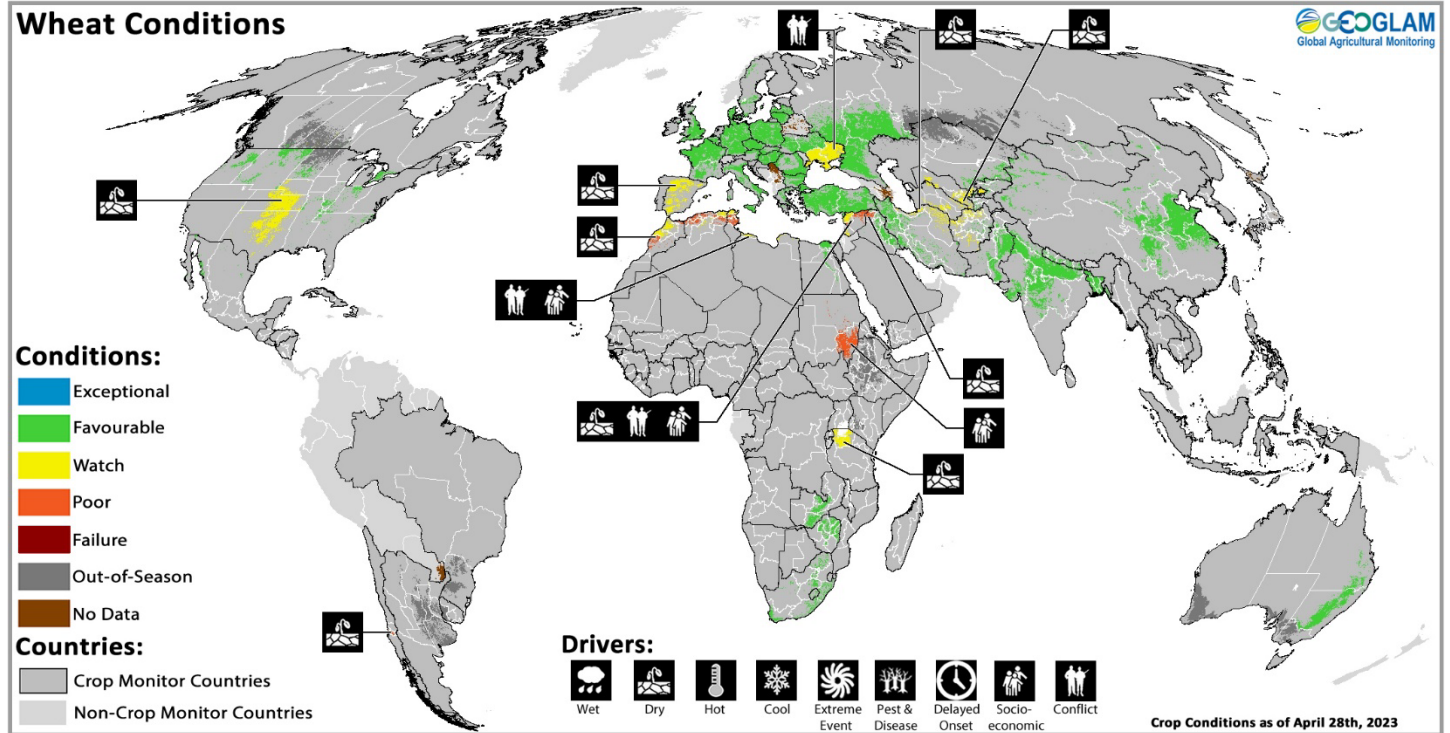
Global crop conditions at the end of April are positive for wheat, maize, and rice, while mixed for soybeans. For **wheat**, conditions are generally favourable except for in parts of Europe, the US, MENA, and Central Asia. For **maize**, conditions are generally favourable except in Argentina and parts of Sub-Saharan Africa. For **rice**, conditions are favourable except for in the Caribbean, and parts of Sub-Saharan Africa. For **soybeans**, conditions are mixed due to a prolonged drought in Argentina. The remaining crops are covered in the [CM4EW](#) publication.

## Global Climate Influences

El Niño conditions are forecast to develop during the next several months. There is a 62% chance of El Niño during May-June-July rising to 86% chance during October-November-December, according to the IRI/CPC forecast. Positive Indian Ocean Dipole (IOD) conditions may also develop during June to September. For further details see page 6.

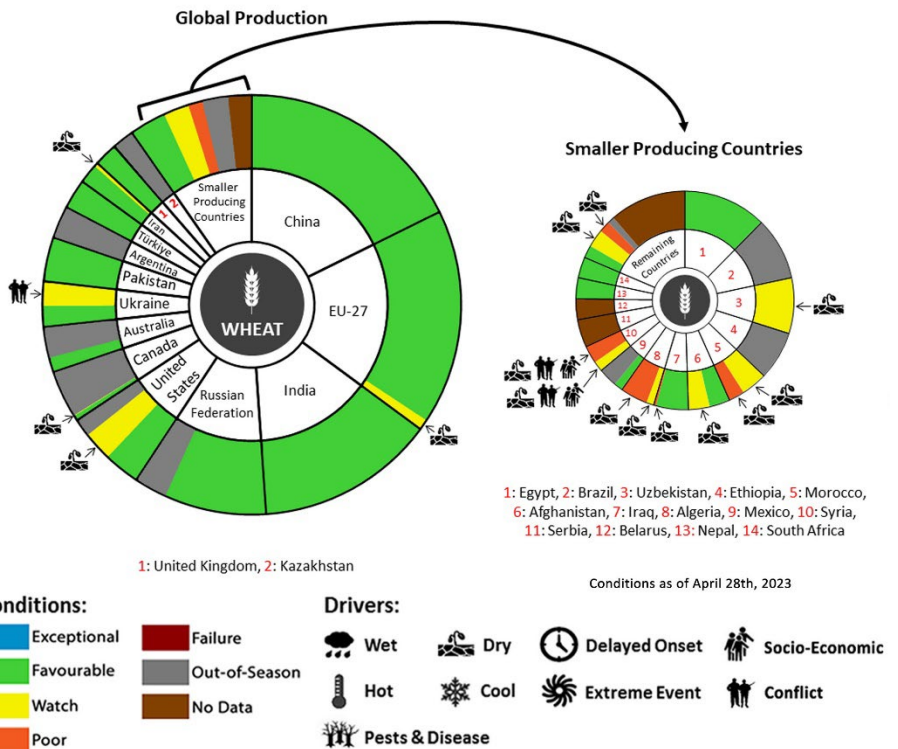
Source: UCSB Climate Hazards Center

# 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 April 28<sup>th</sup>.

In **North America**, dry soil conditions remain an issue across the US central and southern Great Plains for winter wheat. Spring wheat sowing has begun. In Canada, winter wheat conditions are generally favourable. In Mexico, harvesting is beginning under favourable conditions. In **Europe**, conditions are generally favourable in the EU except for Spain, where the crop could reach failure if rainfall does not return by the end of May. In the UK, conditions are favourable. In Türkiye, conditions are generally favourable, with recent above-average temperatures and abundant rainfall supporting the crop. In Ukraine, recent rainfall has improved soil moisture conditions and removed areas of drought. However, the ongoing war continues to impact the east and south regions. In the Russian Federation, conditions are favourable for winter wheat and the beginning of spring wheat sowing in the Volga district. In **Central Asia**, there has been a significant improvement in winter wheat crop development from the previous month due to improve precipitation amounts, except in Turkmenistan, Uzbekistan, and parts of Afghanistan where concern remains for continuing dry conditions. Sowing of spring wheat is now underway under favourable conditions. In **South Asia**, harvesting of the *Rabi* crop is wrapping up in India under favourable conditions. In Pakistan, harvesting of the *Rabi* crop is continuing under favourable conditions. In Nepal, harvesting is continuing under favourable conditions. In **East Asia**, conditions are favourable in China as winter wheat enters the reproductive stage and sowing of the spring wheat begins. In Oceania, conditions are favourable in Australia as sowing begins in Queensland and New South Wales. In **MENA**, crops continue to develop under mixed conditions and are unlikely to recover from persistent dryness in parts of Morocco, Algeria, Tunisia, Syria, and Iraq. In **Sub-Saharan Africa**, sowing is beginning across Southern Africa under favourable conditions. In **South America**, sowing is beginning in Chile under poor conditions.

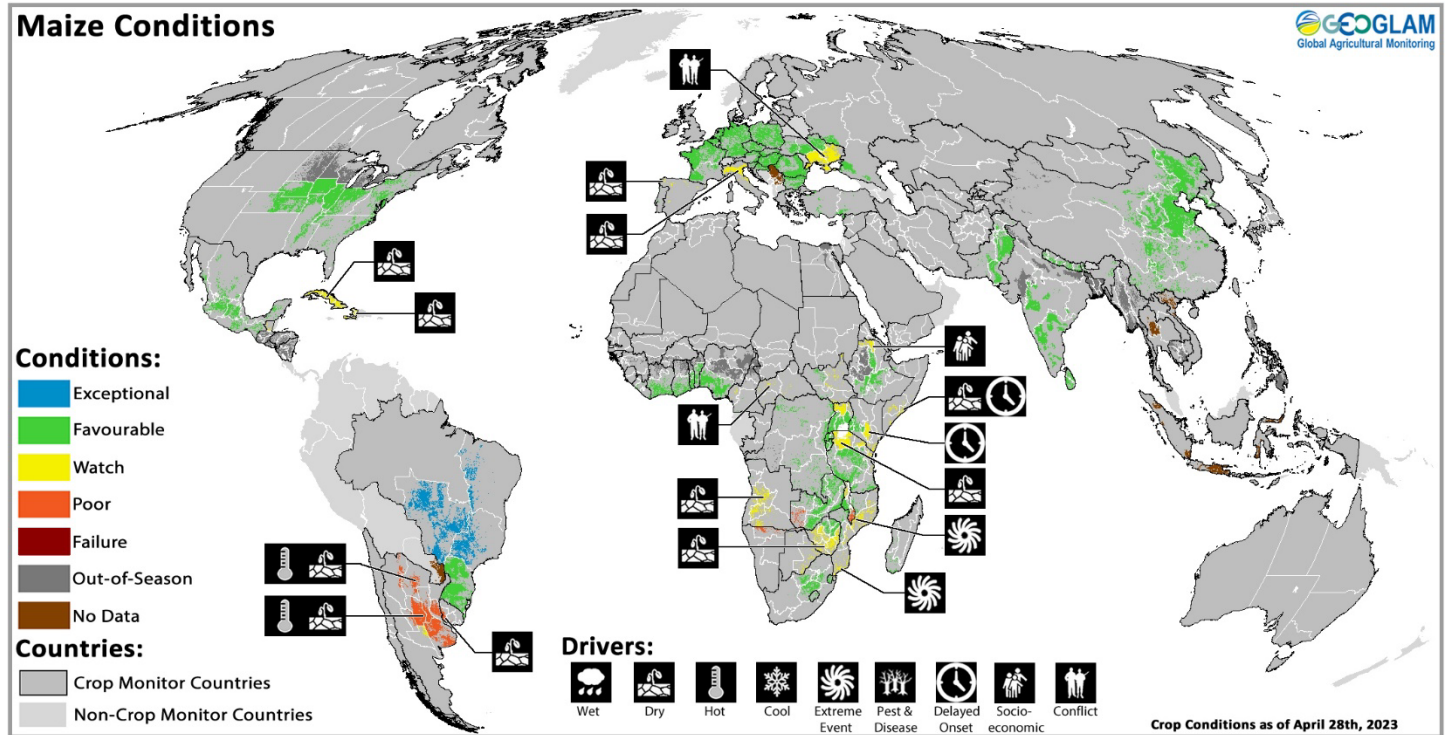


For detailed description of the pie chart, please see box on page 5.

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

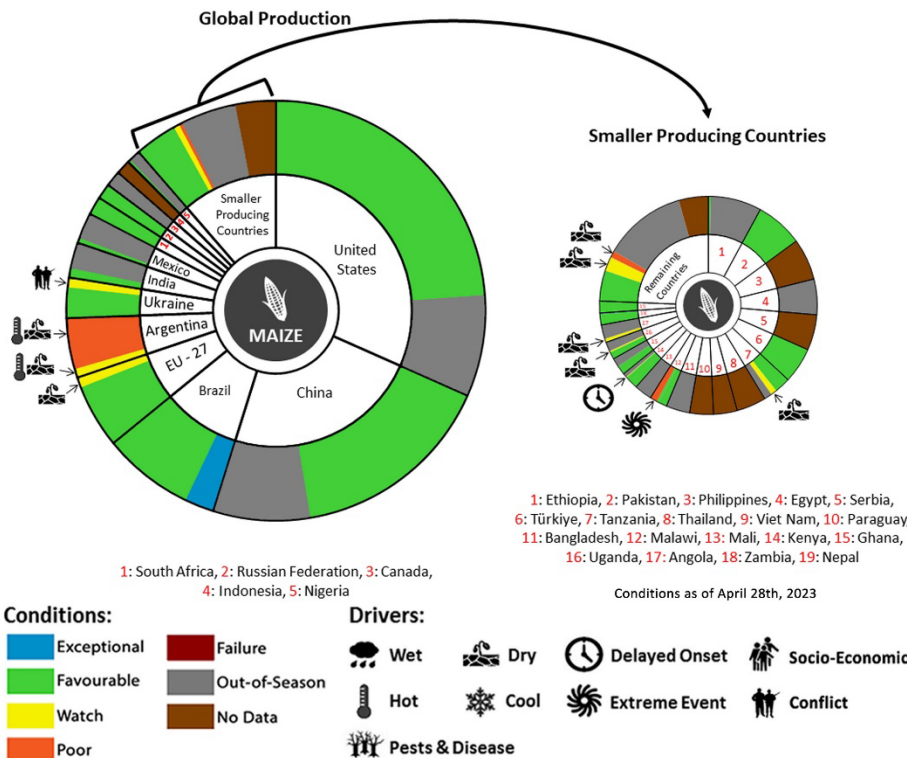


# MAIZE



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 April 28<sup>th</sup>.

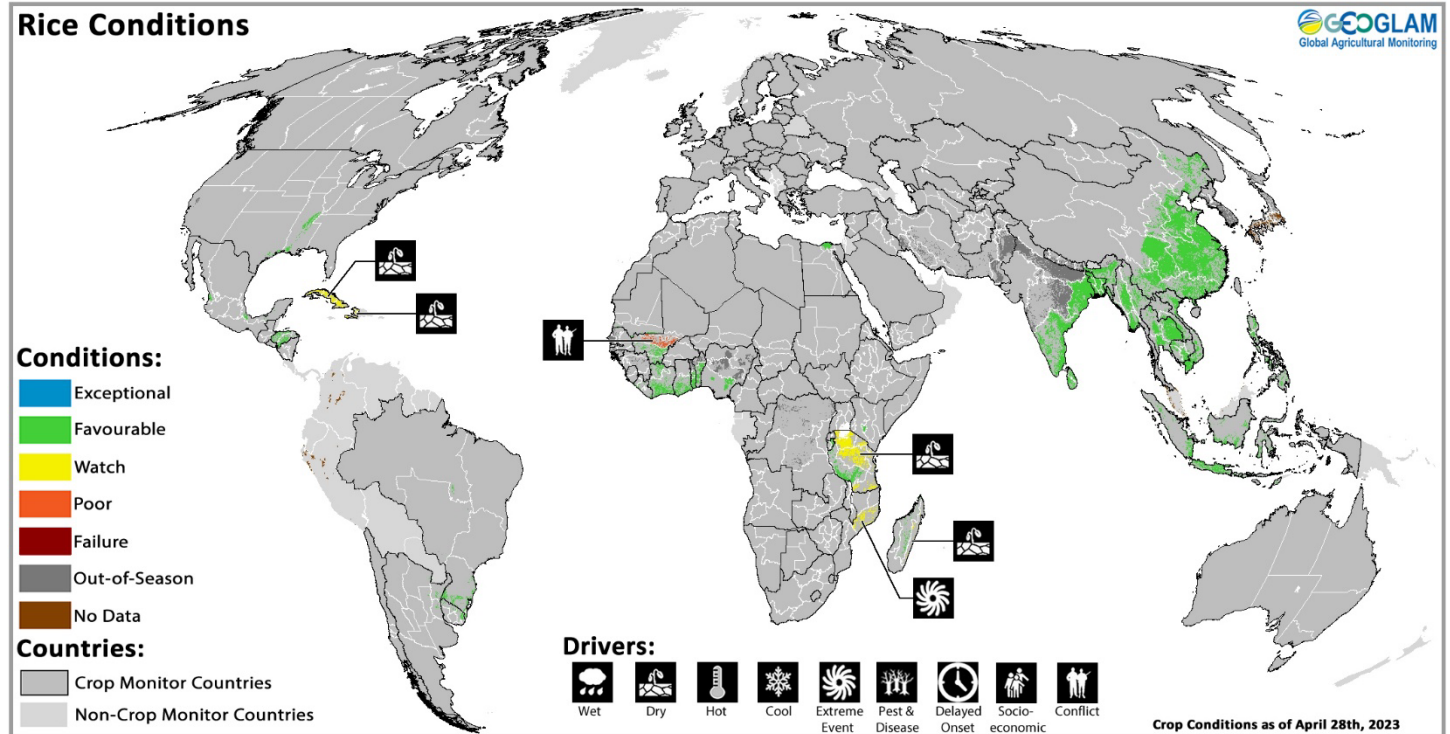
In **South America**, harvesting for the spring-planted crop (smaller season) is progressing with primarily exceptional conditions. The summer-planted crop (larger season) is currently in the vegetative to reproductive stages under favourable conditions. In Argentina, harvest is ongoing with significantly reduced yields for both the early-planted crop (typically larger season) and the late-planted crop (typically smaller season), albeit at a slower pace than last year due to a higher proportion of the late-planted crop. In Uruguay, harvest is wrapping under poor conditions. In **Central America & the Caribbean**, harvesting of the Autumn-Winter crop (smaller season) in Mexico is ongoing under favourable conditions. In Cuba, harvesting has begun with below-average conditions due to earlier dryness. In Haiti, limited sowing of *Printemps* crops is underway. In **North America**, sowing is continuing to expand northward in the US. In **East Asia**, sowing is continuing for the spring-planted crop in China. In **South Asia**, harvesting of the *Rabi* crop in India and Pakistan is wrapping up under favourable conditions. In Sri Lanka, sowing of *Yala* season crops is now underway with favourable conditions. In **East Africa**, conditions have improved for *Belg* season crops in Ethiopia due to enhanced rains. In the south, planting of main season crops continues under mixed conditions due to ongoing dryness with some improvement in parts of Kenya and the United Republic of Tanzania. In **West Africa**, sowing of the main season crop is continuing in the south under favourable conditions except in conflict-affected areas of the Central African Republic and Cameroon. In **Southern Africa**, harvesting of main season crops is nearing completion under mixed conditions due to persisting dry conditions in parts of Angola, Namibia, Botswana, Zambia, Zimbabwe, Malawi, Mozambique, and Madagascar as well as impacts from the passage of Tropical Cyclone Freddy in parts of Malawi and Mozambique. In South Africa, conditions are favourable as recent dry conditions are supporting crop ripening and harvesting.



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

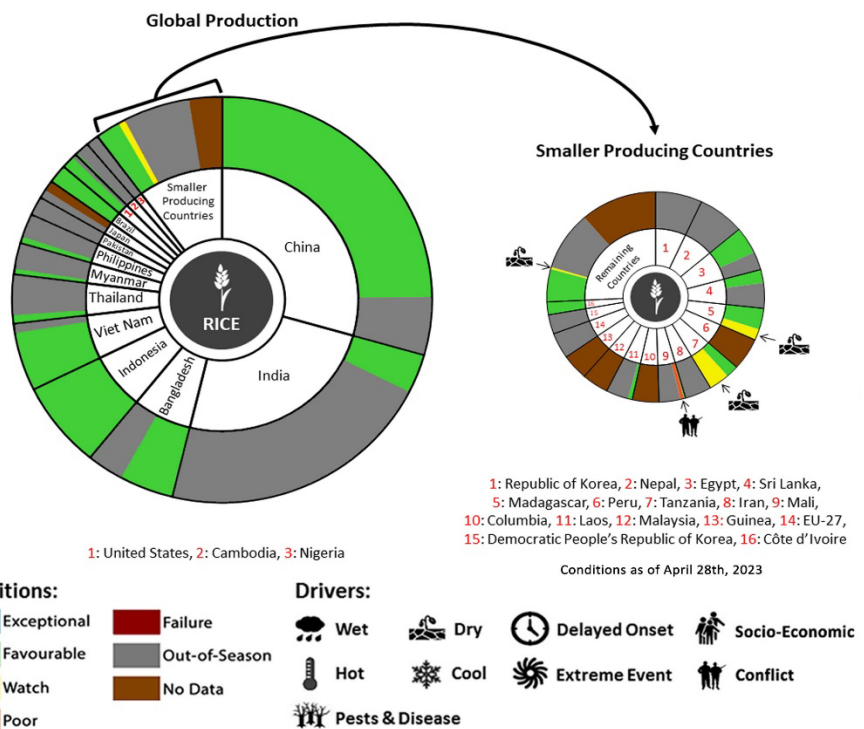
\* Assessment based on information as of April 28<sup>th</sup>

# 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 April 28<sup>th</sup>.

In **East Asia**, conditions are favourable in China as early-planted rice is in the vegetative stage and sowing of single-season rice is beginning. In **South Asia**, conditions are favourable in India for the *Rabi* crop as transplanting is wrapping up and harvesting is beginning in some southern states. In Bangladesh, harvesting of both the *Boro* and *Aus* season crops is now underway under favourable conditions. In Sri Lanka, sowing of *Yala* season crops is now ongoing under favourable conditions. In **Southeast Asia**, harvesting of wet-season rice is continuing in Indonesia under favourable conditions. Sowing of dry-season rice is beginning with good irrigation water levels. In Viet Nam, conditions are favourable for dry-season rice (winter-spring rice) across the country as harvesting continues in the South with yields slightly above last year's level due to good weather and lower fertilizer costs. Sowing of wet-season (summer-autumn rice) is beginning in the Mekong River Delta earlier than last year. In Thailand, the harvesting of dry-season rice is progressing with good yields due to sufficient water and favourable weather. In the Philippines, dry-season rice harvesting is more than halfway complete under favourable conditions due to average to above-average rainfall. In Myanmar, sowing of dry-season rice is now complete as harvest is underway in the Delta region. In Cambodia, harvesting of dry-season rice is nearing completion. In the **Americas**, sowing is continuing in the US. In Mexico, harvesting of Autumn-winter season crops is ongoing. In Cuba and Haiti, dry conditions remain an issue. In Honduras, sowing of *Primera* season crops is underway. In Brazil, Argentina, and Uruguay, harvesting is wrapping up under favourable conditions. In **Sub-Saharan Africa**, conflict remains an issue in Mali while dry conditions are an issue in Madagascar and Tanzania. In Mozambique, the impacts of Tropical Cyclone Freddy remain an issue.

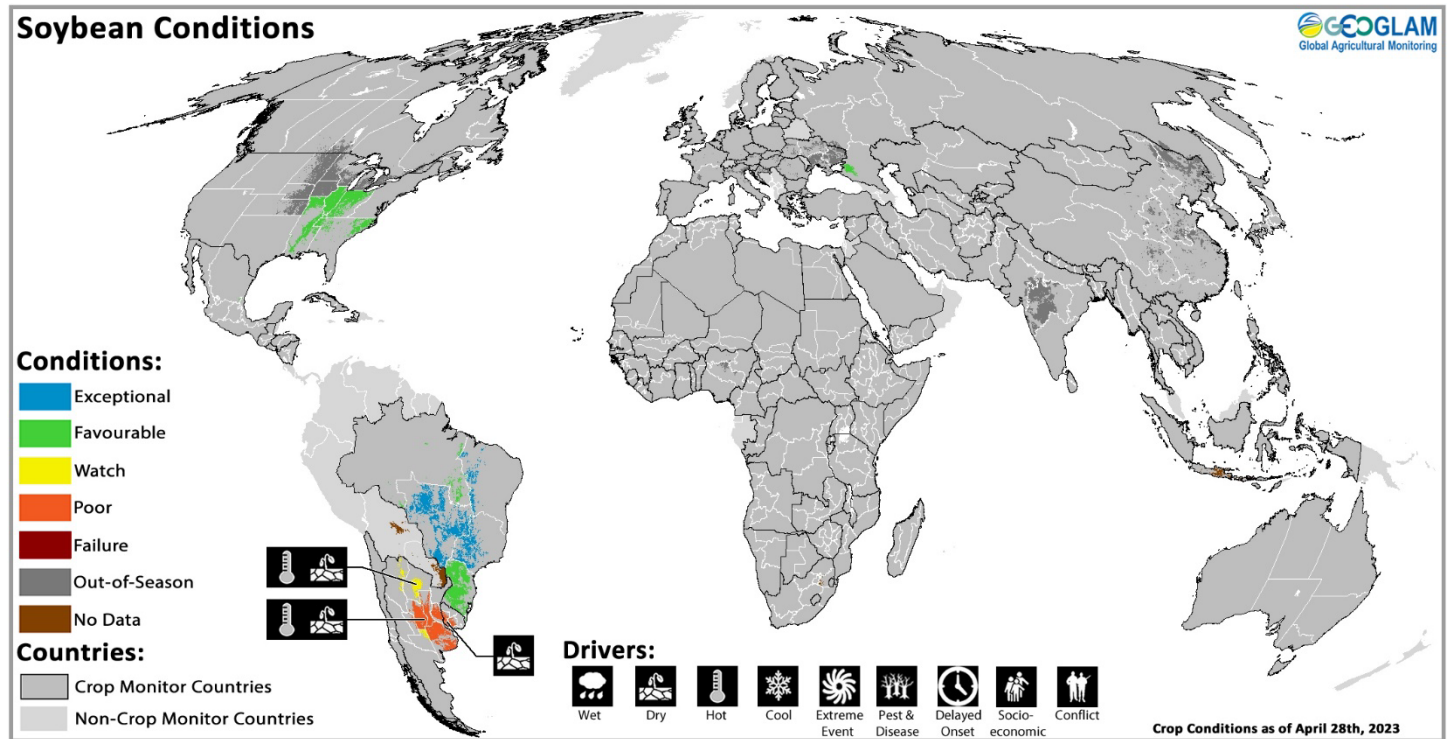


For detailed description of the pie chart, please see box on page 5.

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

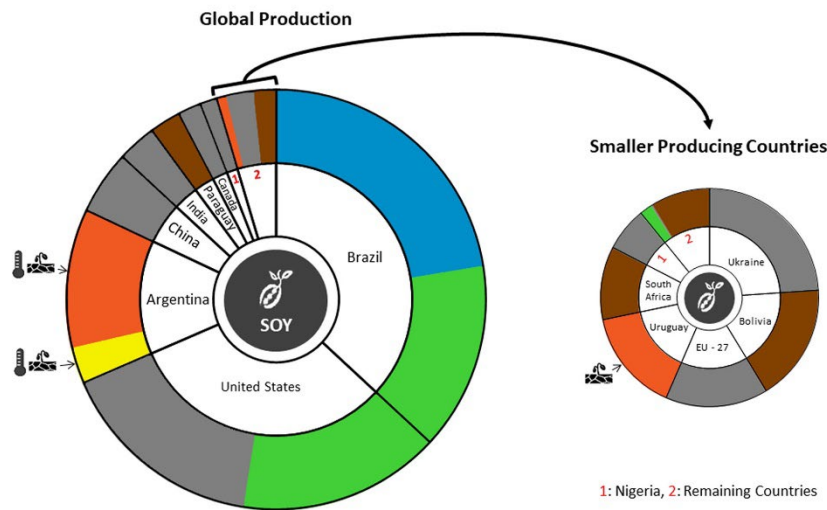


# SOYBEAN



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 April 28<sup>th</sup>.

In **South America**, harvesting is wrapping up in Brazil with exceptional yields in the Central-West, Southeast, and Northeast regions. In the South region, despite the lack of rain and high temperatures in Rio Grande do Sul, the favourable conditions in the other states were enough to result in a regional yield close to the 5-year average. In Argentina, harvesting is progressing for both the early-planted crop (larger season) and the late-planted crop (smaller season) with low yields so far. The poor crop conditions are a result of water deficits and extreme heat throughout the season and especially at critical moments of yield development. Many affected plots were abandoned or used as fodder. In Uruguay, both the first and second crops have heavy reductions in yields due to the prolonged drought. In **North America**, conditions are favourable in the US as sowing begins in the southeast and the lower reaches of the Corn Belt. In **Europe**, sowing is beginning in the south of the Russian Federation.



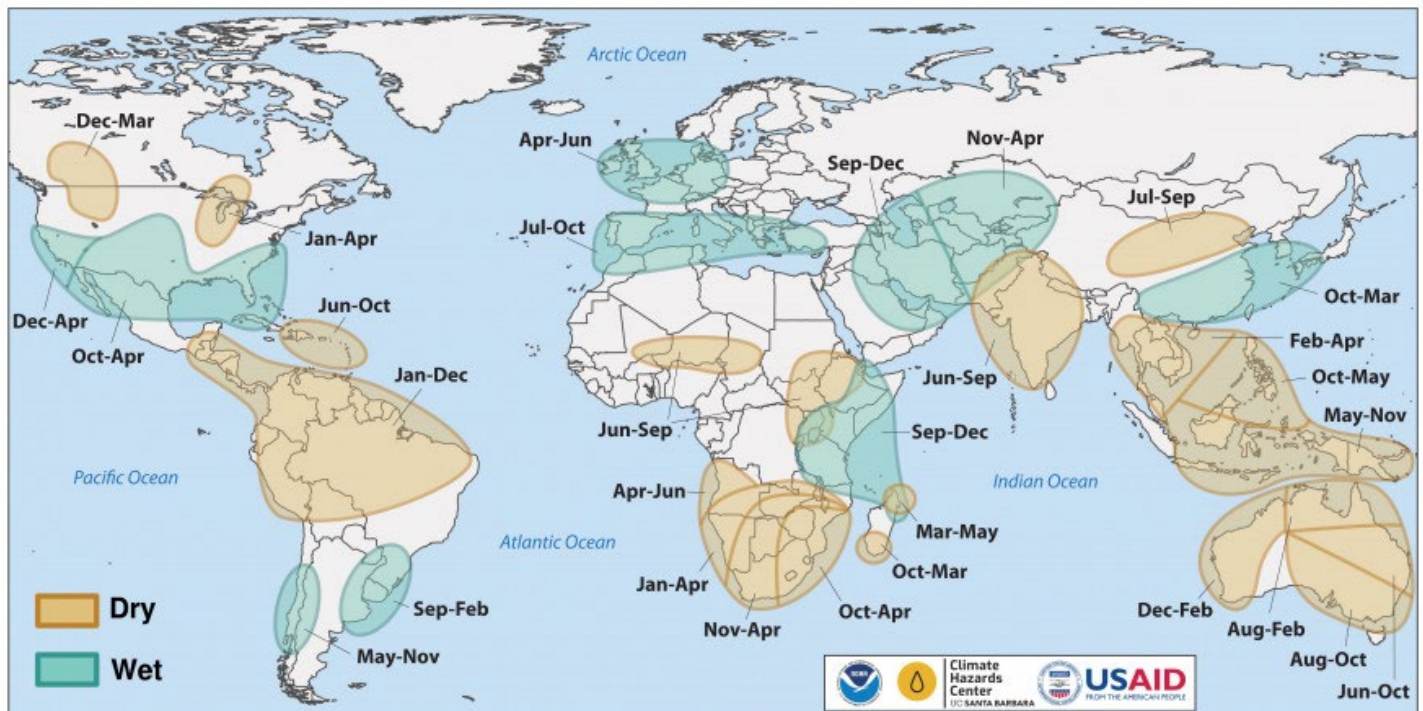
**Pie Chart Description:** Each slice represents a country's share of total Global production (5-year average). Main producing countries (representing 90-95 percent of production) are shown individually, with the remaining 5-10 percent grouped into the "Smaller Producing Countries" category. The proportion 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. El Niño conditions are forecast to develop during the next several months. There is a 62% chance of El Niño during May-June-July rising to 86% chance during October-November-December, according to the IRI/CPC forecast. El Niño events can have widespread, global impacts. These 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 September, 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 May-June-July 2023 forecast (Figures 3 & 4) is influenced by the potential development of El Niño and a positive Indian Ocean Dipole (IOD).

In **North America**, the two-week forecast (Figures 1 & 2) indicates potential areas of below-average precipitation over the Prairies in Canada along with the Northern Great Plains, Midwest, and Mid-Atlantic in the US. Areas of above-average precipitation are possible over the Western US. During the same time, temperatures are likely to be below-average in the US Southwest, while above-average across most of western and central Canada and the northern US. The long-term May-June-July 2023 forecast (Figures 3 & 4) shows no dominant tercile for precipitation over North America. 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 southern Mexico, Haiti, Dominican Republic, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama. During the same period, temperatures are likely to be above-average across central and southern Mexico, Guatemala, Belize, El Salvador, southern Honduras, Nicaragua, and Costa Rica. The long-term May-June-July 2023 forecast (Figures 3 & 4) suggests a likely similar pattern of below-average precipitation across southern Mexico, Haiti, Dominican Republic, Guatemala, Belize, El Salvador, Honduras, 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.

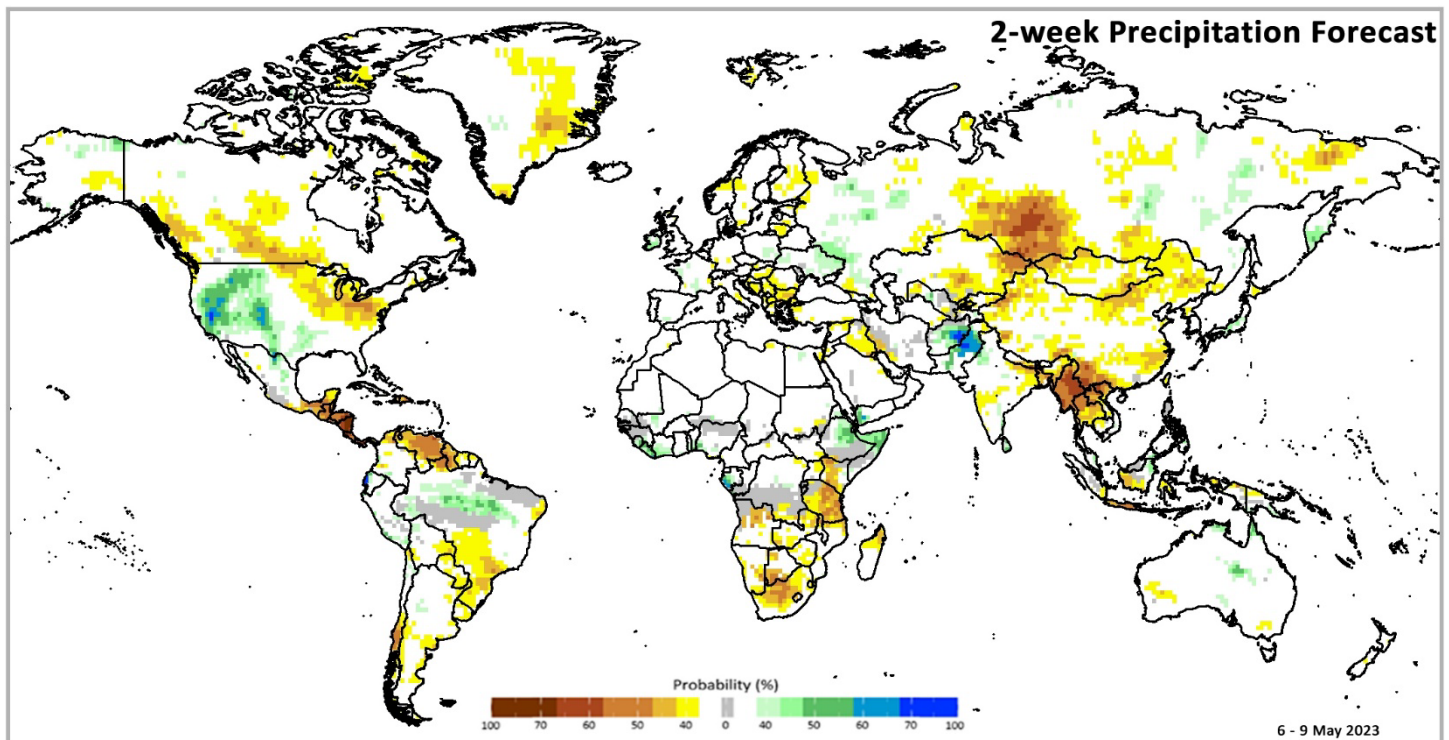
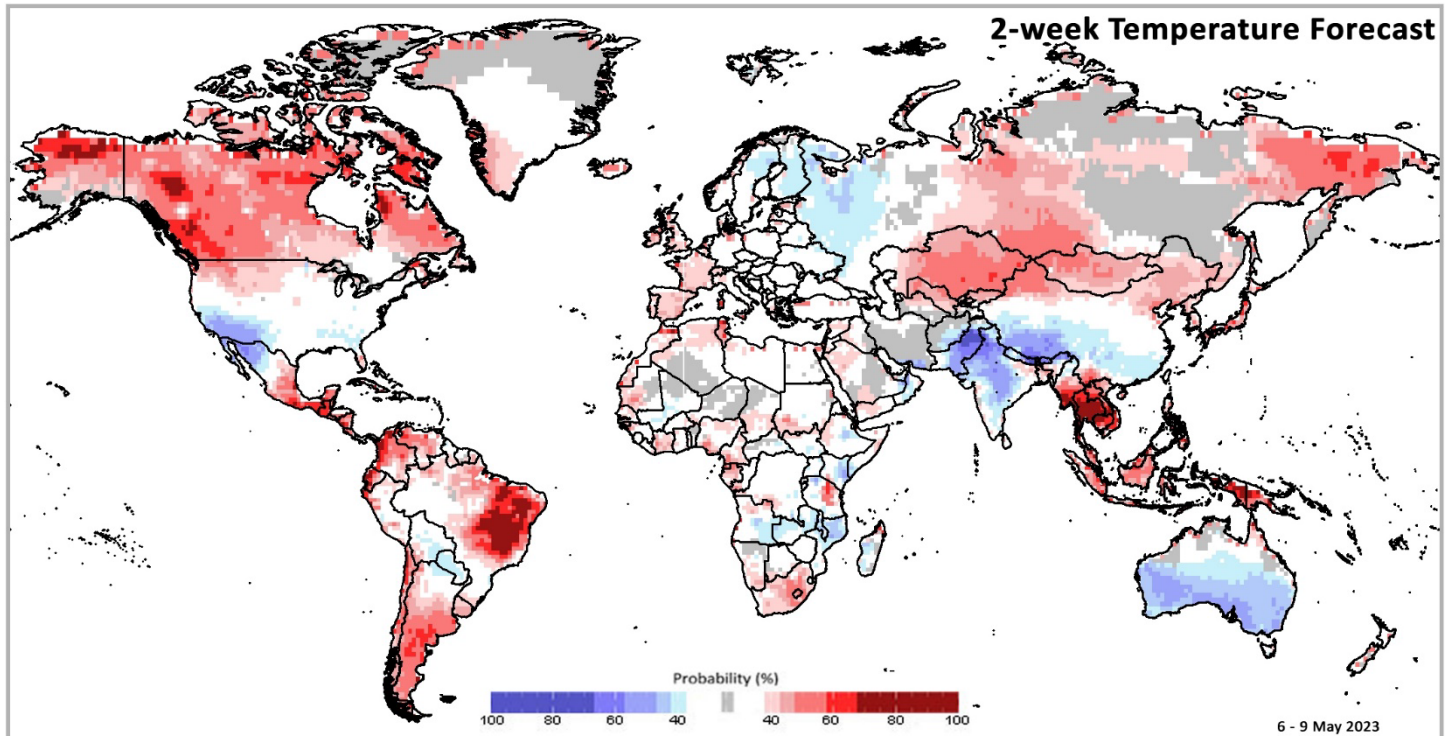


Figure 1: IRI SubX Precipitation Biweekly Probability Forecast for 6- 19 May 2023, issued on 28 April 2023. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](#)

In **South America**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation in northern Columbia, Venezuela, Guyana, central and southern Brazil, and southern Chile, while above-average over northcentral Brazil. During this time, temperatures are likely to be above-average in Columbia, Ecuador, Venezuela, eastern Brazil, Uruguay, southern Argentina, and Chile, while below-average in Paraguay. The long-term May-June-July 2023 forecast (Figures 3 & 4) suggests likely below-average precipitation in northeast Brazil, while above-average along coastal Ecuador and Peru. 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 Serbia, Bulgaria North Macedonia, while above-average in northeast Ukraine and the southcentral Russia Federation. During this time, temperatures are leaning to be above-average in Ireland, the United Kingdom, Portugal, Spain, France, Switzerland, and northern Italy, while below-average over the eastern Russian Federation. The long-term May-June-July 2023 forecast (Figures 3 & 4) predicts no dominant tercile for precipitation over 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 6 – 19 May 2023, issued on 28 April 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 leaning to below-average precipitation over Iraq and western Iran, while likely above-average over western Yemen. During this time, temperatures are likely to be above-average in parts of northern Morocco and Tunisia. The long-term May-June-July 2023 forecast (Figures 3 & 4) indicates a leaning toward above-average precipitation over most of the region. During this time, temperatures are likely to be above-average across the region, with the highest likelihood along the Mediterranean.

In **Sub-Saharan Africa**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation over central Kenya, Tanzania, northern Zambia, northern Malawi, northern Mozambique, northern Madagascar, central Angola, southern Namibia, southern Botswana, and central South Africa. Above-average precipitation is likely over southern Sierra Leone, Liberia, Côte d'Ivoire, western Gabon, central Ethiopia, and northern Somalia. At the same time, temperatures are likely to be above-average in northeast Tanzania, southern Nigeria, Côte d'Ivoire, Gabon, southern Namibia, South Africa, and Lesotho while below-average over northern Mozambique, eastern Kenya, and southern Somalia. For the long-term May-June-July 2023 forecast (Figures 3 & 4), precipitation is likely to be above-average northern Sub-Saharan Africa while below-average over eastern South Sudan, southwest Ethiopia, Uganda, and western Kenya. During this time, temperatures are likely to be above-average across most of Sub-Saharan Africa. For further details, see the [CM4EW](#) regional outlook for East Africa.



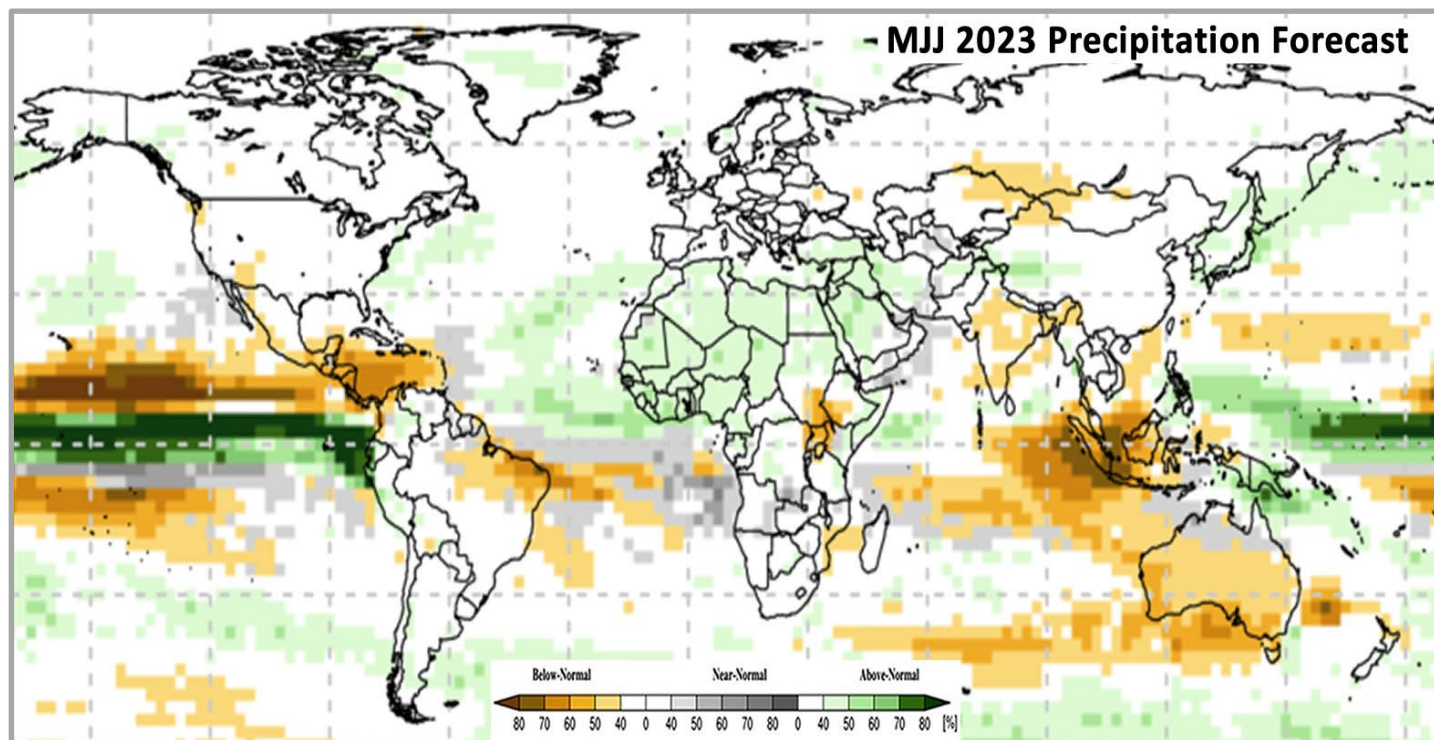


Figure 3: Probabilistic forecast for most-likely May-June-July (MJJ) 2023 rainfall tercile, based on April conditions. The white colour indicates that there is no dominant category across the model forecasts. Source: [WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble](#)

In **Central Asia**, the two-week forecast (Figures 1 & 2) indicates likely above-average precipitation over central Afghanistan, while below-average precipitation in southern and eastern Kazakhstan. During this time, temperatures are likely to be above-average across Kazakhstan, Uzbekistan, and Kyrgyzstan. The long-term May-June-July 2023 forecast (Figures 3 & 4) indicates a leaning towards below-average precipitation over northeastern Kazakhstan. 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 above-average precipitation over central Pakistan and Sri Lanka, while below-average over eastern India, southern Nepal, and Bangladesh. During this time, temperatures are likely to be below-average across most of the region. The long-term May-June-July 2023 forecast (Figures 3 & 4) indicates a leaning towards below-average precipitation across the region. At the same time, temperatures are likely to be above-average across the region.

In **East Asia**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation in parts of Mongolia, and parts of China, while above-average across Japan. During this time, temperatures are likely to be above-average across northern China, Mongolia, the Democratic Republic of Korea, the Republic of Korea, and Japan, while below-average in southwestern China. The long-term May-June-July 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 Myanmar, Thailand, northern Laos, northern Viet Nam, and southern Indonesia. During this time, temperatures are likely to be above-average over southern Myanmar, Thailand, Laos, Viet Nam, the Philippines, Malaysia, Indonesia, and Papua New Guinea, while below-average over most of Australia. The long-term May-June-July 2023 forecast (Figures 3 & 4) precipitation is predicted to be below-average over Indonesia, Malaysia, and Australia, while above-average over Papua New Guinea. During the same time, temperatures are likely to be above-average across the entire region except for Australia.

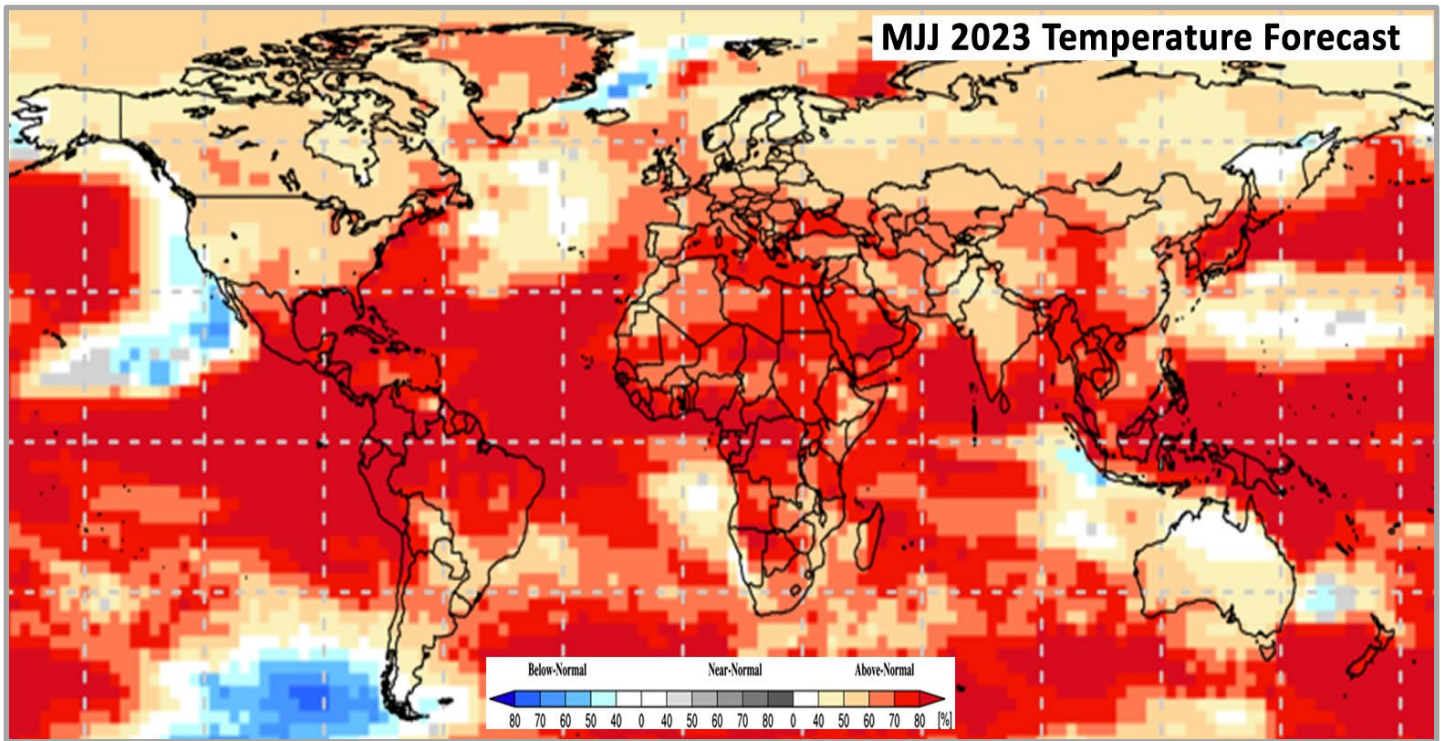


Figure 4: Probabilistic forecast for most-likely May-June-July (MJJ) 2023 temperature tercile, based on April conditions. The white colour indicates that there is no dominant category across the model forecasts. Source: [WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble](https://www.wmo.int/en/lead-centre-for-long-range-forecast-multi-model-ensemble)



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).