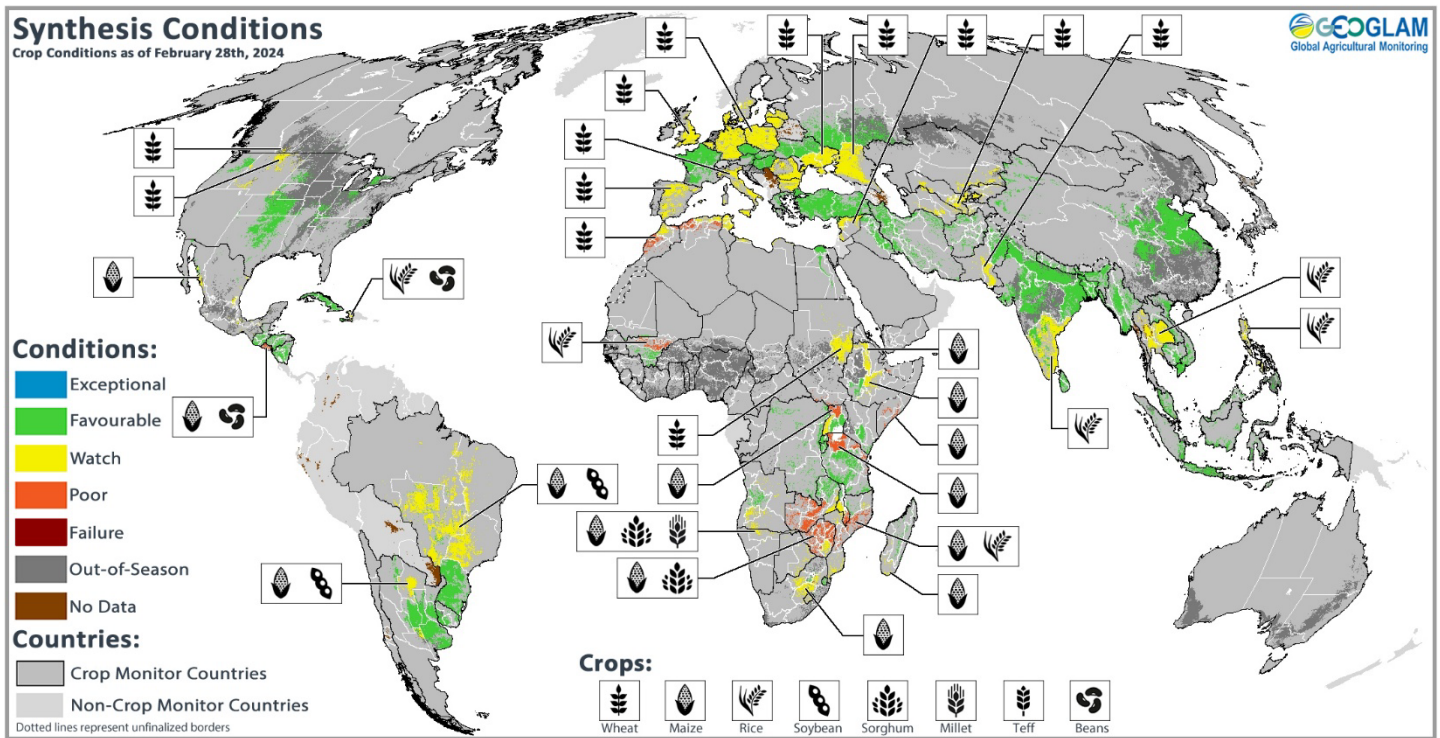


GEOGLAM Global Crop Monitor

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 February 28th. 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 labelled on the map with a symbol representing the crop(s) affected.**

	Wheat	Maize	Rice	Soybean	Legend:
Current Conditions					Positive Better
Compared to last month					Mixed Similar
Compared to last year					Negative Worse

See Appendix I for detailed methodology description

Global Crop Overview

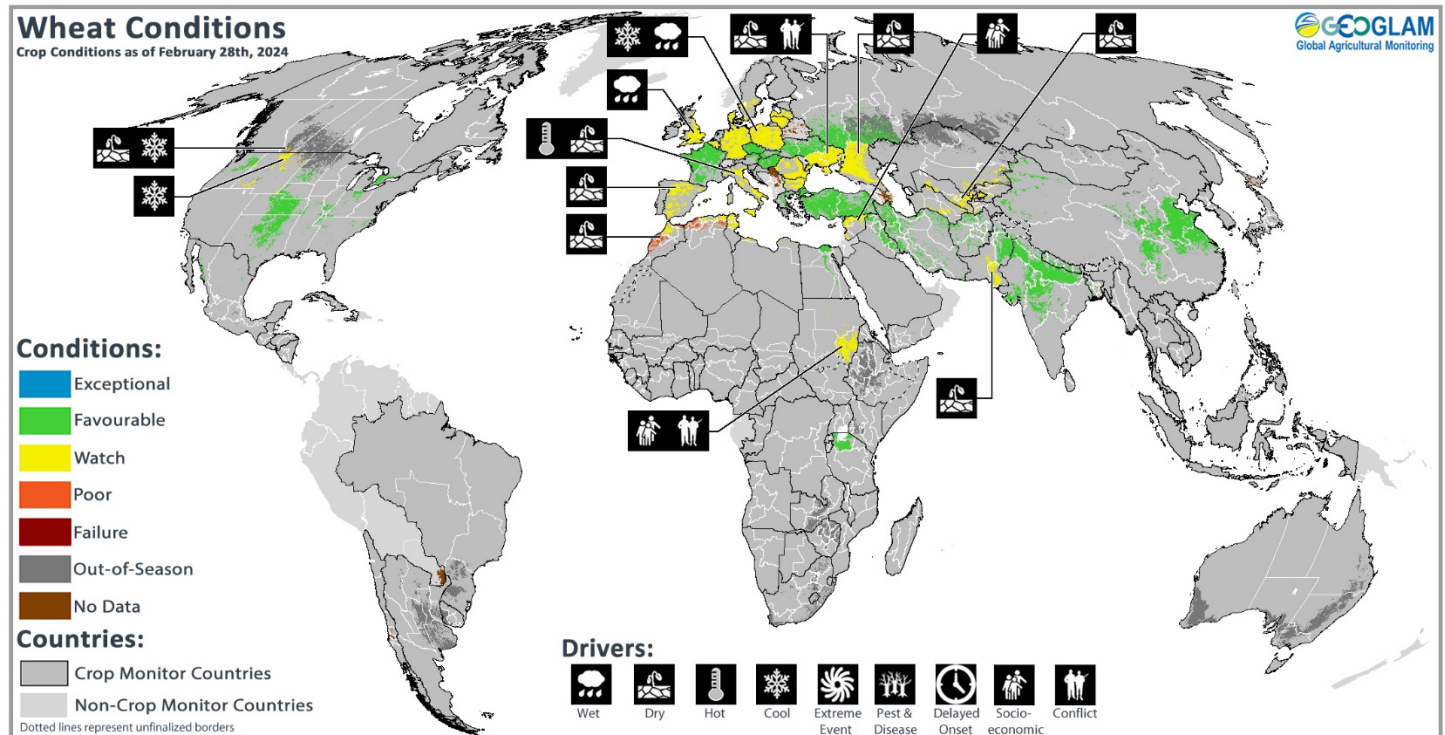
Global crop conditions at the end of February are positive for rice, mixed for wheat and maize, and negative for soybeans. For **wheat**, major areas of concern are in Europe, Ukraine, the Russian Federation, and Central Asia. For **maize**, areas of concern are in South America and Southern Africa. For **rice**, conditions are generally favourable except for some dry conditions in southern India and Southeast Asia. For **soybeans**, conditions have improved in Argentina, however, hot and dry weather has negatively impacted crops in Brazil. The remaining crops are covered in the [CM4EW](#) publication.

Global Climate Influences

The ongoing El Niño event has started to weaken, and neutral ENSO conditions are likely by April to June (79% chance). A La Niña event may develop soon thereafter. There is a 68% chance of La Niña conditions by July to September 2024, based on the CPC/IRI forecast. While long-range ENSO forecasts made at this time of year have less accuracy, it is notable that there may be a quick shift to a persistent La Niña. For further details see [page 6](#).

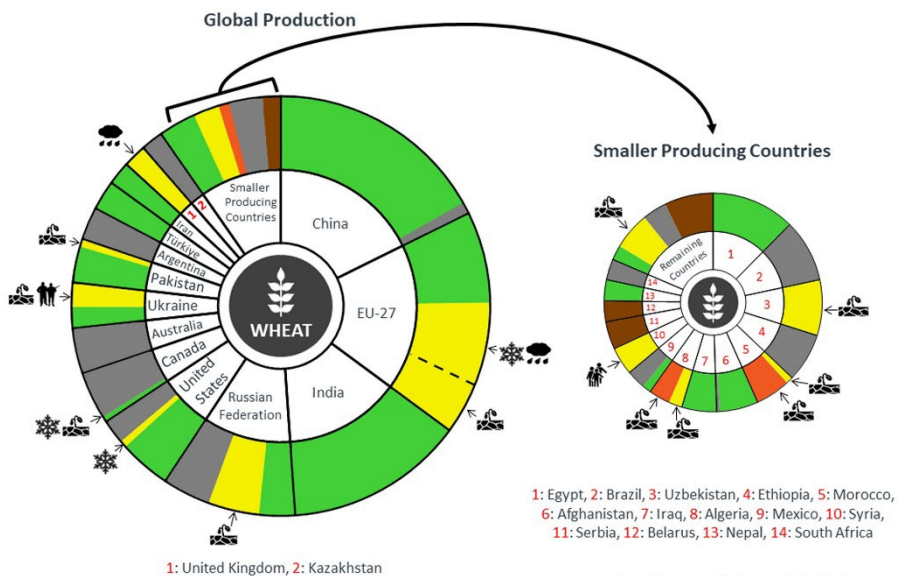
Source: UCSB Climate Hazards Center

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 February 28th.

In **North America**, unseasonably warm weather in the US during late February has brought winter wheat out of dormancy about two weeks earlier than normal across the southern half of the country. In Canada, winter wheat conditions are generally favourable, however, below-average winter precipitation and a lack of adequate snow cover places parts of the Prairies at risk of winterkill. In Mexico, conditions are favourable for winter wheat. In **Europe**, conditions are currently mixed in the EU due to cold and wet weather in northern Europe along with warmer and drier-than-average weather in the south. The spring weather will determine final yields. In the UK, continuing excessive rainfall remains a concern. In Türkiye, conditions are favourable. In Ukraine, due to high winter temperatures, plant growth and development have restarted in some areas, benefiting crops that had reduced development in the fall due to dry conditions, however, the active warzone and dry conditions in the south remain a concern. In the Russian Federation, dry conditions remain in some areas of the Caucasus despite some recent precipitation. In **Central Asia**, there are prevailing dry concerns for winter wheat in Turkmenistan, Uzbekistan, Kazakhstan, Kyrgyzstan, and Tajikistan. In Afghanistan, conditions have improved for winter wheat due to recent rainfall. Spring wheat sowing has begun. In **South Asia**, conditions are favourable in India with an increase in total sown area compared to last year. In Pakistan, conditions are mixed in the rainfed areas due to dry weather. There is an increase in total sown area this year. In Nepal and Bangladesh, crops are in the vegetative to reproductive stages under favourable conditions. In **East Asia**, winter wheat in China is under favourable conditions. In **MENA**, Wheat continues to develop under mixed conditions. Severe drought has impacted crops in northern areas of Morocco, Algeria, Tunisia, and Libya. Yield prospects in Algeria and Morocco are poor. In Egypt, above-average temperatures and rainfall during the beginning of 2024 have benefitted crop growth. In Syria, Iraq, and Iran, high temperatures and good rainfall have resulted in average to above-average biomass. In **East Africa**, wheat crops in Sudan are in the vegetative to reproductive stage for harvest starting in March under mixed conditions due to the ongoing conflict and related socio-economic challenges. In Tanzania, conditions have improved as crops have been able to recover from earlier flooding.



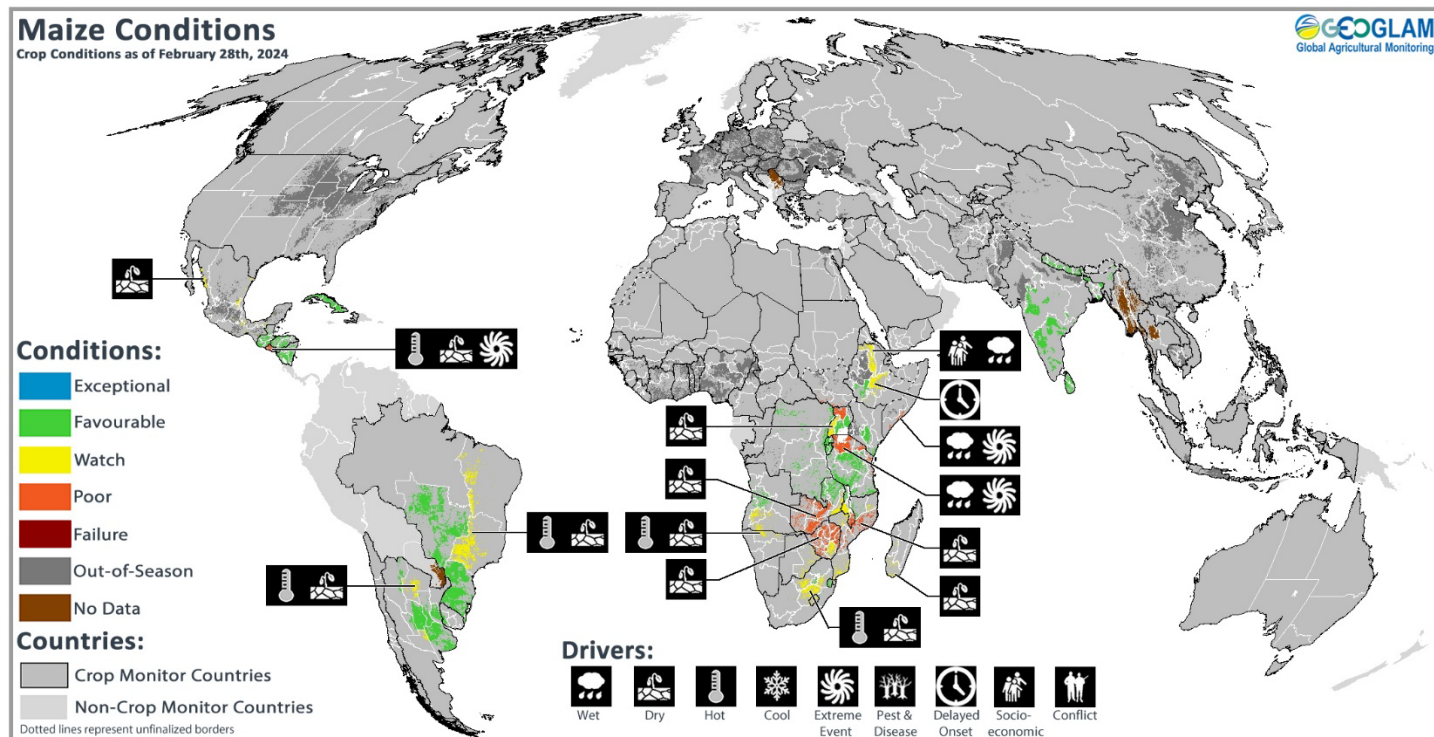
Conditions as of February 28th, 2024

Conditions:	Drivers:
<ul style="list-style-type: none"> ■ Exceptional ■ Favourable ■ Watch ■ Poor ■ Failure ■ Out-of-Season ■ No Data 	<ul style="list-style-type: none"> Wet Dry Hot Cool Extreme Event Pests & Disease Delayed Onset Socio-economic Conflict

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

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

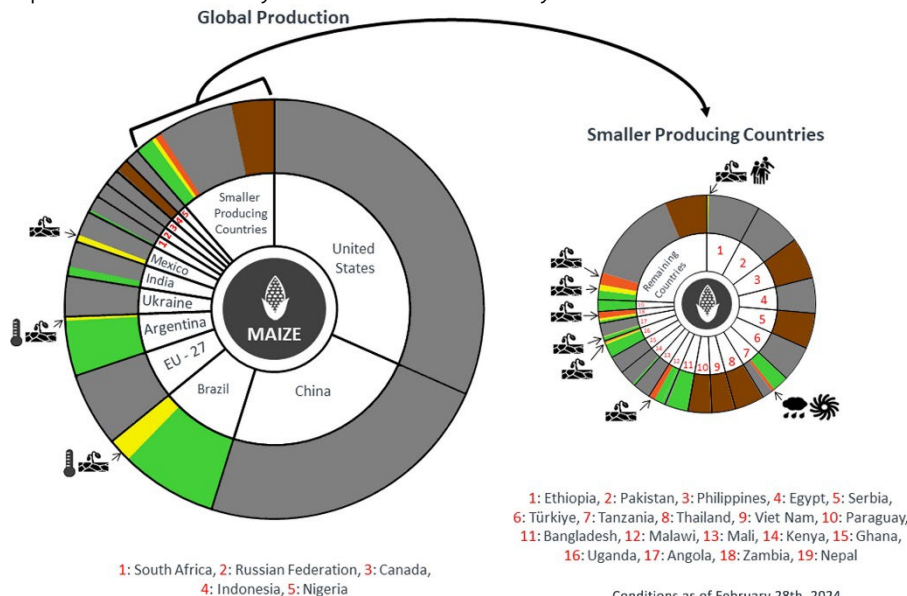
MAIZE



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 February 28th.

In **Central America & the Caribbean**, sowing continues in Mexico for the Autumn-winter season (smaller season) albeit with reduced irrigation water reserves. In Cuba, sowing of the main season crop continues under favourable conditions. The harvesting of *Segunda* season crops is complete in El Salvador, Guatemala, Honduras, and Nicaragua. In **South America**, harvesting is continuing in Brazil for the spring-planted crop (smaller season) under mixed conditions in the Northeast and Southeast regions due to an earlier lack of rainfall and high temperatures. Sowing of the summer-planted crop (larger season) is continuing under favourable conditions. Both the spring-planted and the summer-planted seasons are estimated to have decreased in total sown area compared to last year. In Argentina, harvesting is beginning for the early-planted crop (larger season) under generally favourable conditions as recent rains broke weeks of hot and dry weather. Conditions are generally favourable for the late-planted crop (smaller season). In Uruguay, harvesting is ongoing under favourable conditions. In **South Asia**, conditions are favourable in India for the *Rabi* (smaller season) crop. In Bangladesh, conditions are favourable for the winter crop (larger season). In Sri Lanka, harvesting of *Maha* season crops is underway under favourable conditions. In **East Africa**, harvesting of second-season crops finalized in February in Rwanda, Burundi, Kenya, and Somalia under mixed conditions. In Ethiopia, delayed rainfall is impacting the sowing of the *Belg* season crops.

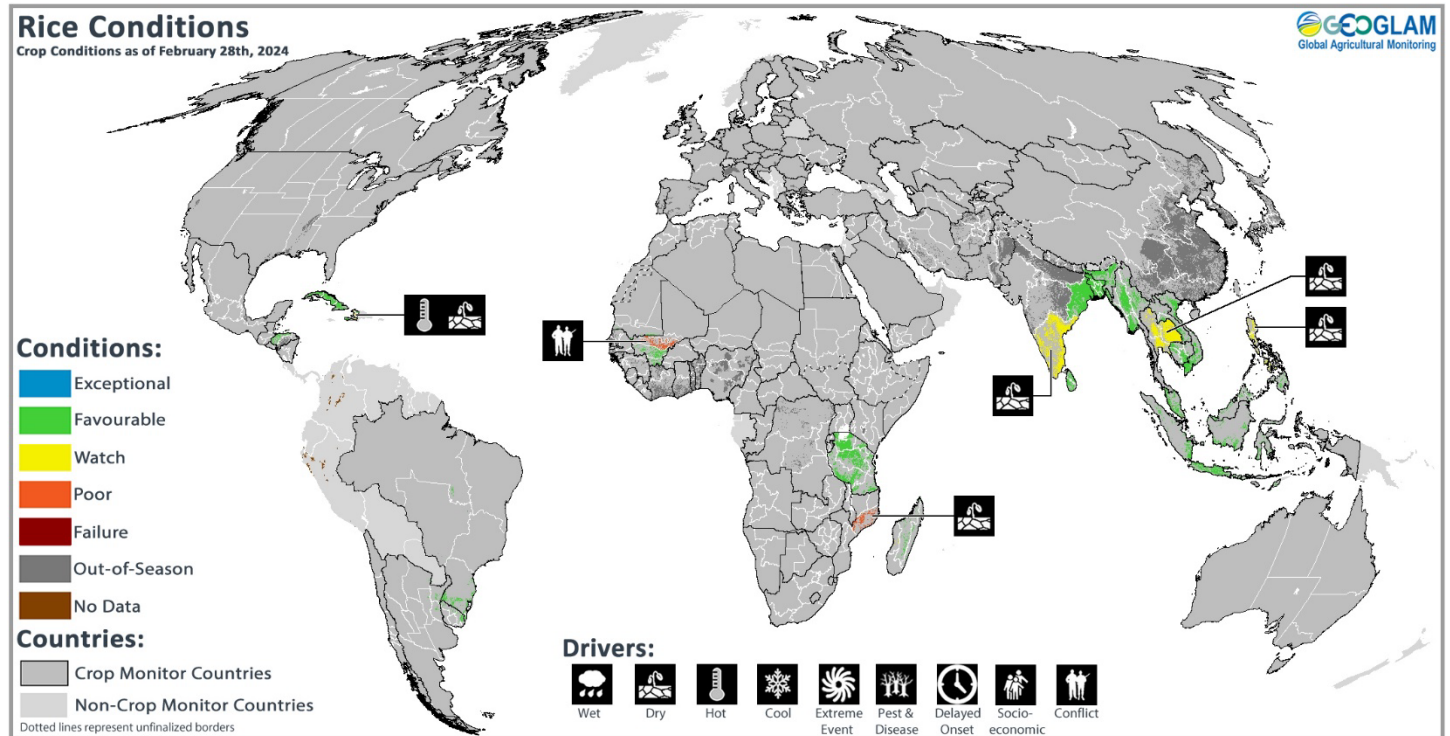
Sowing and development of the main season crops is underway in bimodal areas in the eastern half of Kenya, Uganda, Rwanda, and the United Republic of Tanzania under mostly favourable conditions, except in northeastern Kenya due to residual flooding impacts and in western Uganda due to a delayed rainfall onset. In **Southern Africa**, harvesting of the main season crops is just beginning in Angola and Zambia. Conditions have been downgraded in eastern Angola, eastern Zambia, southeastern Zimbabwe, central Malawi, western Mozambique, central-northern South Africa, Lesotho, central and western Zambia, most of Zimbabwe, southern Malawi, and central Mozambique due to a record dry spell of close to 40 days during the middle of the cropping season, culminating in the lowest rainfall received for the late-January to February timeframe in the last 40 years.



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

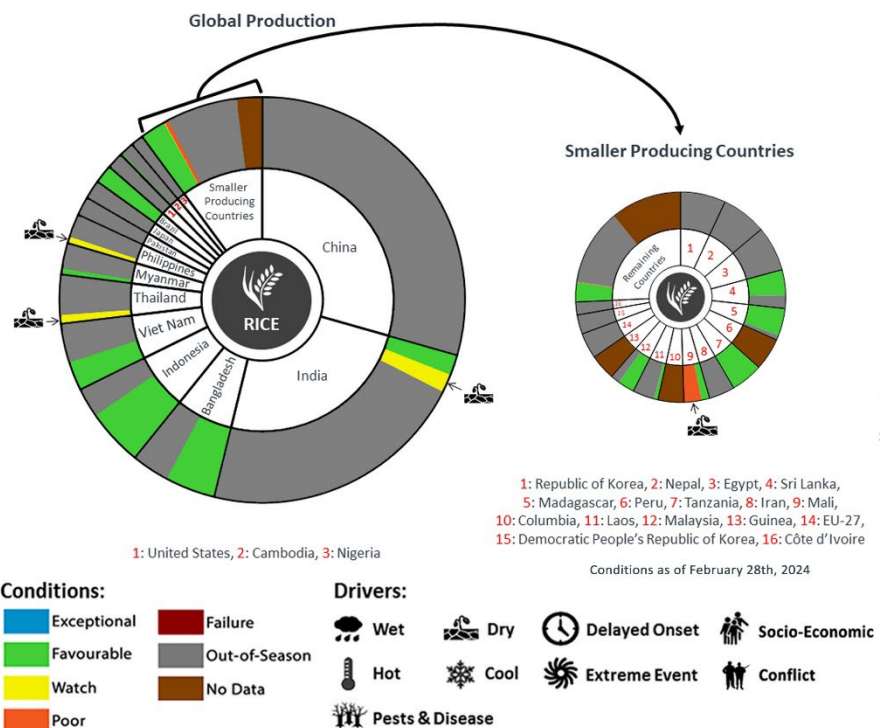
* Assessment based on information as of February 28th, 2024

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 February 28th.

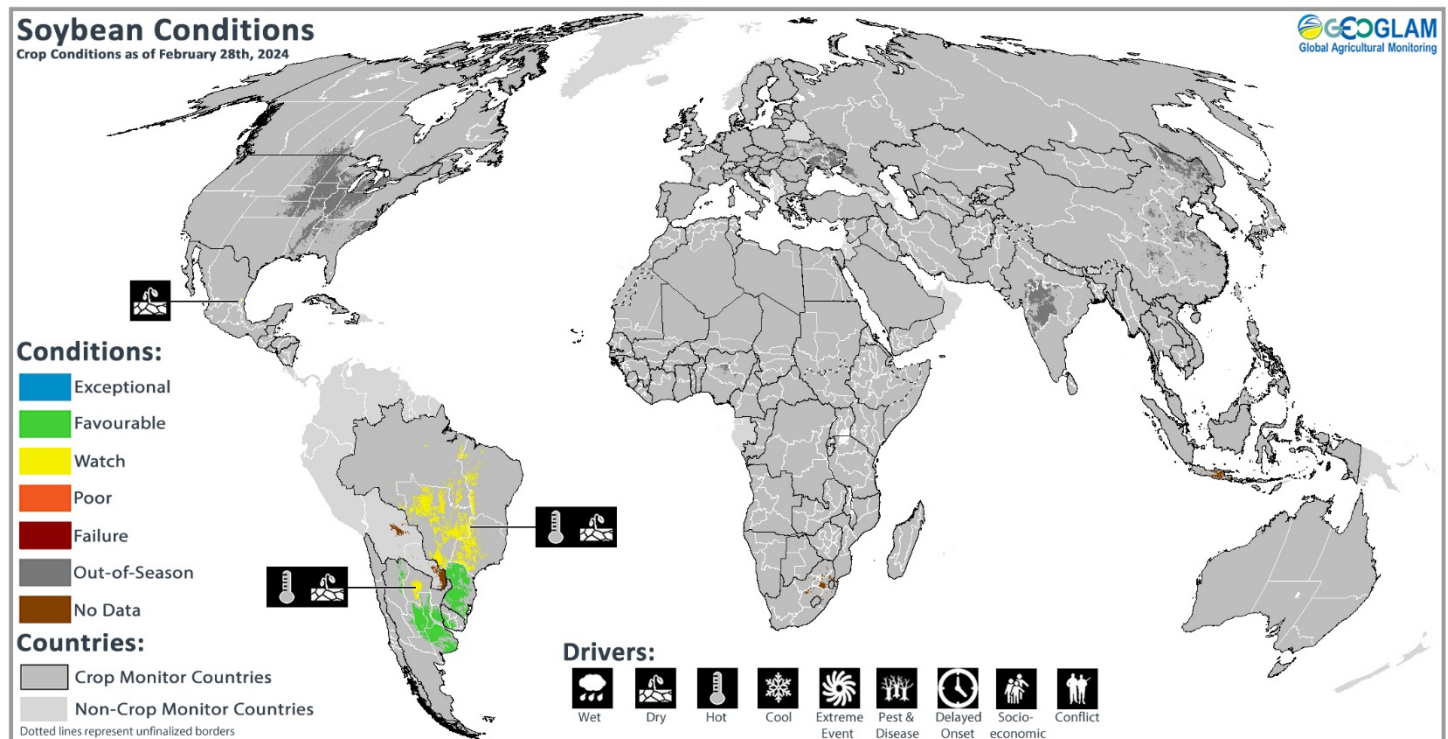
In **South Asia**, the *Rabi* crop is under favourable conditions in India’s eastern states as transplanting continues, however, reduced water availability in the southern states, especially in Karnataka, has resulted in a reduction in total sown area compared to last year and may threaten yields. In Bangladesh, conditions are favourable for the Boro season rice (largest season). In Sri Lanka, harvesting of *Maha* season rice, which accounts for 70 percent of annual production and is mostly irrigated, is now underway and will be finalized in March, and conditions remain favourable throughout the country. In **Southeast Asia**, conditions are favourable in Indonesia as the sowing of wet-season rice enters its fifth month and harvesting of earlier sown crops continues. In Viet Nam, sowing of dry-season rice (winter-spring rice) is beginning in the north, while in the south, the development of dry-season rice (winter-spring rice) is continuing. Harvest is beginning in some provinces of the Mekong River Delta. In Thailand, dry-season rice is under mixed conditions due to a shortage of irrigation water and recent high temperatures that are damaging to crop and yield development. In the Philippines, conditions are mixed for dry-season rice as reduced rainfall since the end of 2023 is beginning to impact crops across most of the country except for Mindanao. In Myanmar, the sowing of dry-season rice is progressing under favourable conditions with the crops in the tillering to panicle-forming stages. In Cambodia, dry-season rice is developing under favourable conditions and an increase in total sown area compared to last year due to the high paddy price. In Laos, the sowing of dry-season rice is wrapping up under favourable conditions with an increase in total sown area compared to last year. In Malaysia, the sowing of wet-season rice is wrapping up under favourable conditions. In Brunei, wet-season rice is growing under favourable conditions. About 30 percent of irrigated areas and 5 percent of rainfed areas have been harvested. In the **Americas**, second-season rice in Cuba is under favourable conditions. In Haiti, harvesting of second-season rice is just beginning under mixed conditions due to previous dry and hot weather. In Brazil, harvesting begins under favourable conditions. In Uruguay, conditions are favourable. In Argentina, conditions are favourable. In **Sub-Saharan Africa**, conflict continues to be an issue in northern Mali as dry conditions impact crops in Mozambique.



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

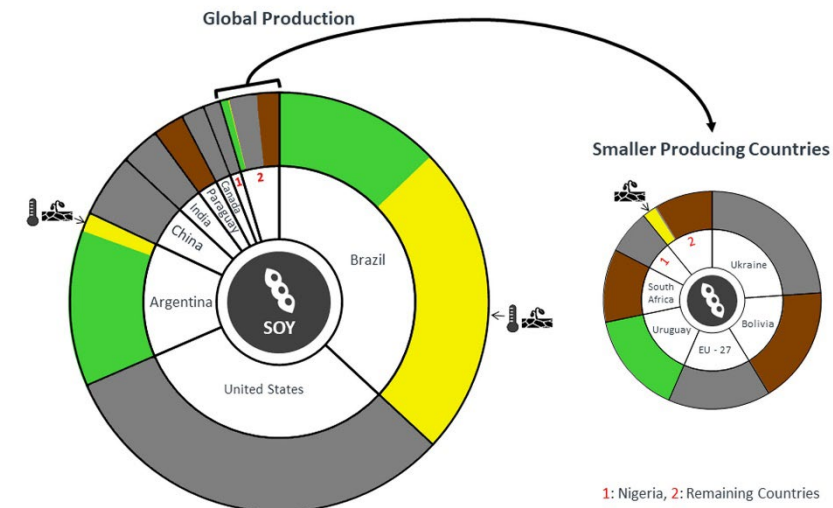
* Assessment based on information as of February 28th, 2024

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 February 28th.

In **South America**, harvesting continues in Brazil under mixed conditions across most of the country due to a lack of rain and high temperatures during crop development. Despite periods of reduced or excess rainfall in some areas of the South region, crop yields are close to average. In Argentina, conditions have improved across most of the country owing to ample rainfall in February, which was critical for the early-planting crop (typically larger season) during the yield development period. The rains have also improved conditions for the late-planted crop (typically smaller season), which is at the beginning of the yield definition period. In Uruguay, conditions are favourable. In Central America, sowing is ongoing in Mexico under dry conditions. The dams that supply the regular irrigation water are below normal levels.



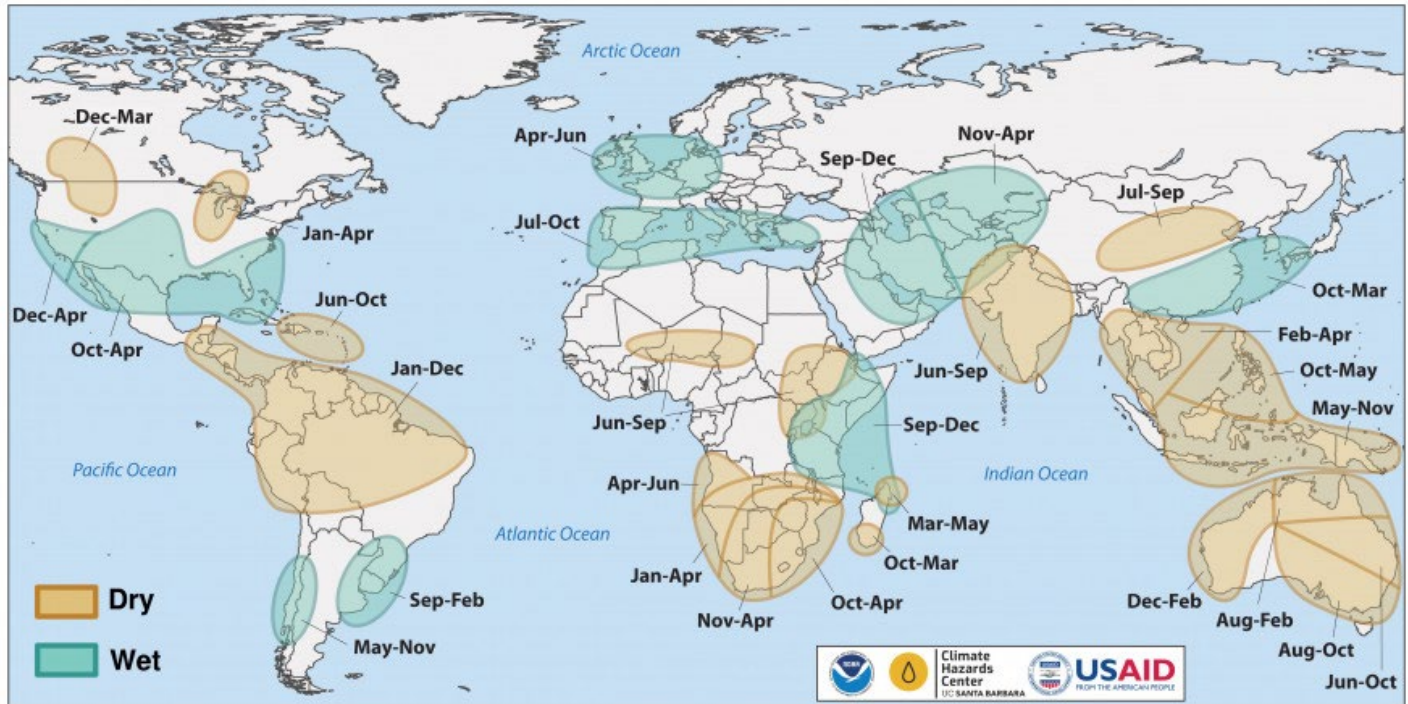
Pie Chart Description: Each slice represents a country's share of total Global production (5-year average). Main producing countries (representing 90-95 percent of production) are shown individually, with the remaining 5-10 percent grouped into the "Smaller Producing Countries" category. The proportion 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 ongoing El Niño event has started to weaken, and neutral ENSO conditions are likely by April to June (79% chance). A La Niña event may develop soon thereafter. There is a 68% chance of La Niña conditions by July to September 2024, based on the CPC/IRI forecast. While long-range ENSO forecasts made at this time of year have less accuracy, it is notable that there may be a quick shift to a persistent La Niña. The strong and impactful 2023-2024 El Niño was preceded by three years of La Niña conditions and associated multi-year droughts, most notably in eastern East Africa.

Globally, record-high temperatures for January reflected the influences of the strong 2023-2024 El Niño and climate change. February temperatures have also been exceptionally warm. El Niño impacts constraining precipitation may also continue, such as in Southern Africa, Southeast Asia, the northern Maritime Continent, and portions of northern South America.

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, Source: [FEWS NET & NOAA & CHC](#)

Regional Outlooks

Both the two-week (Figures 1 & 2) and the long-term March–April–May 2024 forecasts (Figures 3 & 4) are influenced by the currently ongoing El Niño event along with a warming global climate.

In **North America**, the two-week forecast (Figures 1 & 2) indicates potential areas of below-average precipitation over the Prairies in Canada, the US Pacific Northwest and Texas, while potential areas of above-average precipitation over the US Southeast. During the same time, temperatures are likely to be above-average over most of Canada and the northern US, with below-average temperatures in the US Southwest. The long-term March–April–May 2024 forecast (Figures 3 & 4) shows a leaning toward above-average precipitation over the US Southeast. During the same time, temperatures are likely to be above-average across Canada, and the northern US.

In **Central America & the Caribbean**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation over central and southern Mexico, Guatemala, El Salvador, Honduras, Cuba, Haiti, and the Dominican Republic. During the same period, temperatures are likely to be below-average over northwest Mexico, while above-average across central and southern Mexico, Guatemala, El Salvador, southern Honduras, Nicaragua, and Costa Rica. The long-term March–April–May 2024 forecast (Figures 3 & 4) suggests below-average precipitation over central and southern Mexico, while above-average precipitation over southern Honduras, Nicaragua, Costa Rica, and Panama. During this time, temperatures are highly likely to be above-average across most of the region except for northern Mexico. For further details, see the [CM4AMIS](#) Regional Outlook for Mexico.

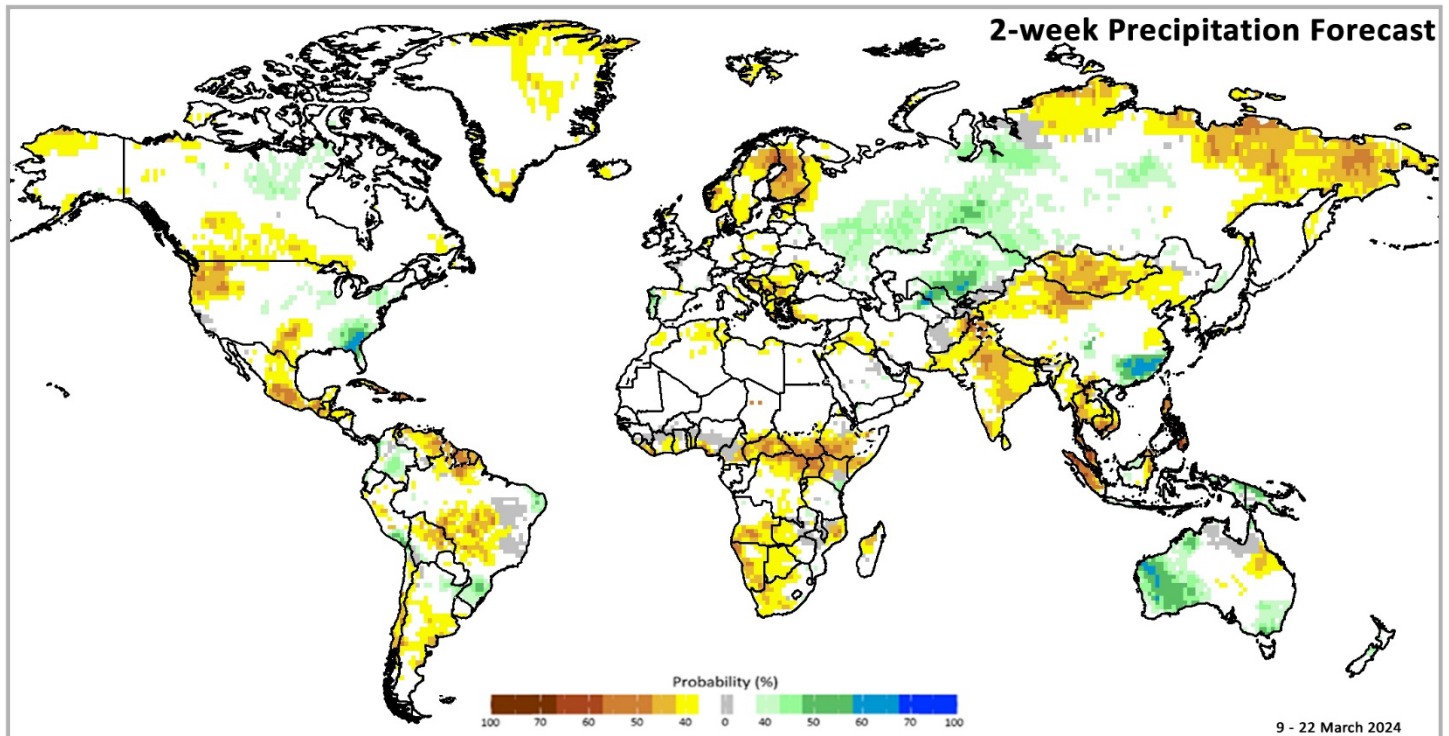


Figure 1: IRI SubX Precipitation Biweekly Probability Forecast for 9 – 22 March 2024, issued on 1 March 2024. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](#)

In **South America**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation over eastern Venezuela, Guyana, Suriname, French Guiana, northern and central Brazil, eastern Bolivia, central Chile, and southern Argentina, while above-average over central Colombia, southern Peru, and southern Brazil. During this time, temperatures are highly likely to be above-average across most of the continent except for southern Brazil, Uruguay, Argentina, and southern Chile. The long-term March–April–May 2024 forecast (Figures 3 & 4) suggests likely above-average precipitation across Colombia, Venezuela, and central Guyana, while below-average across Peru, central Brazil, eastern Bolivia, Chile, and southern Argentina. During that time, temperatures are highly likely to be above-average over most of the continent except for southern Brazil, southern Paraguay, Uruguay, Argentina, and southern Chile. For further details, see the [CM4AMIS](#) Regional Outlook for Argentina and Brazil.

In **Europe**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation over Norway, Sweden, Finland, Estonia, Croatia, Bosnia and Herzegovina, Serbia, southwest Romania, Bulgaria, Kosovo, Greece, western Türkiye, while above-average over Portugal and parts of the Russian Federation. During this time, temperatures are likely to be above-average over most of Europe. The long-term March–April–May 2024 forecast (Figures 3 & 4) indicates only a slight leaning to above-average over Spain and Eastern Europe. During the same period, temperatures are likely to be above-average across southern Europe along the Mediterranean Sea.

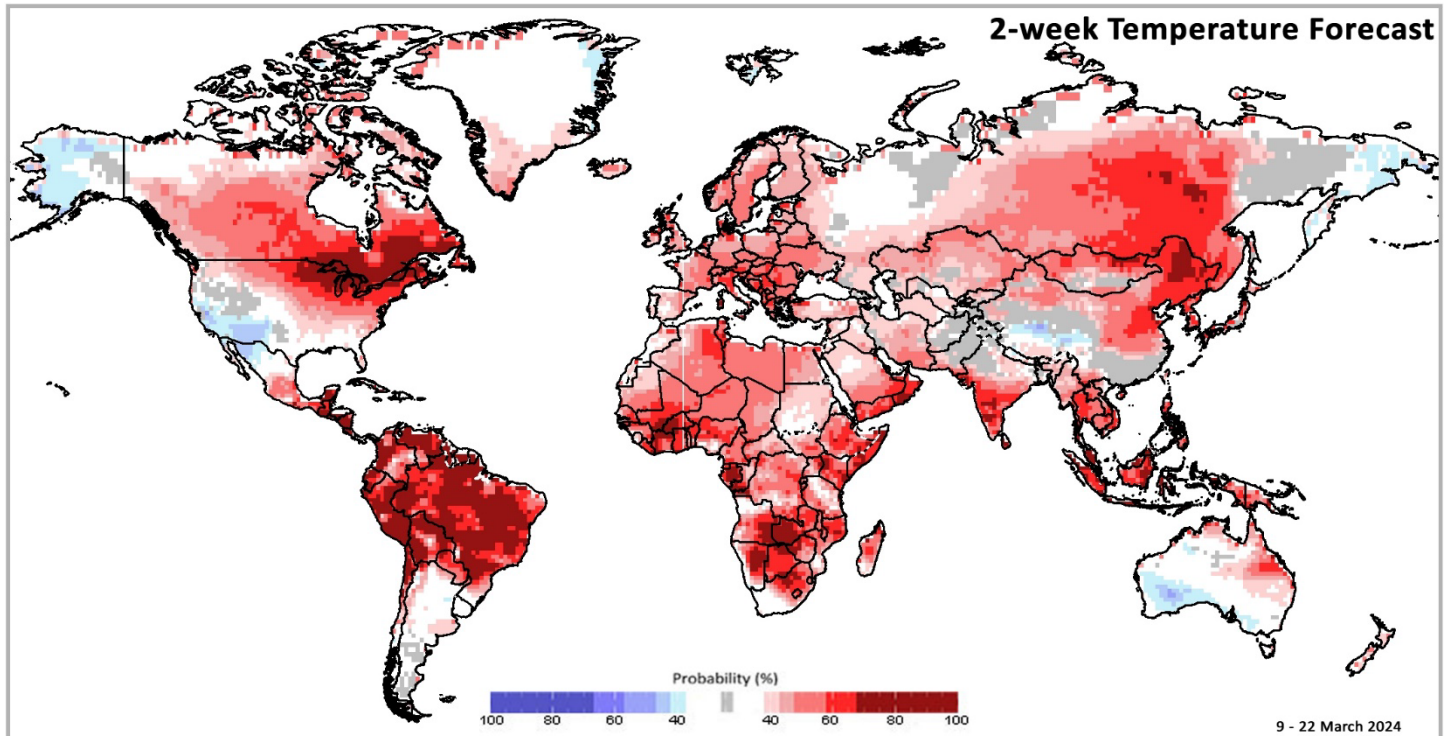


Figure 2: IRI SubX Temperature Biweekly Probability Forecast for 9 – 22 March 2024, issued on 1 March 2024. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](#)

In **MENA**, the two-week forecast (Figures 1 & 2) indicates a slight leaning to below-average precipitation over central Morocco, Algeria, Tunisia, and southern Iraq. During this time, temperatures are likely to be above-average over most of the region except over central Morocco, and central Saudi Arabia. The long-term March–April–May 2024 forecast (Figures 3 & 4) does not indicate any dominant precipitation tercile. During this time, temperatures are highly 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 Liberia, southern Nigeria, eastern Cameroon, southern Chad, the Central African Republic, South Sudan, southern Ethiopia, southern Somalia, northern Kenya, Uganda, the northern Democratic Republic of Congo, southern Angola, western Zambia, northeastern Mozambique, Botswana, Namibia, western South Africa, northern Madagascar, while above-average over southeast Kenya. At the same time, temperatures are likely to be above-average over most of Sub-Saharan Africa except for western South Africa, and northern Angola. For the long-term March–April–May 2024 forecast (Figures 3 & 4), precipitation is likely to be above-average across southern South Sudan, southwestern Ethiopia, southern Somalia, Uganda, Kenya, and northern Tanzania, while below-average over Angola, Zambia, Namibia, Botswana, Zimbabwe, South Africa, Mozambique, and Madagascar. During this time, temperatures are highly likely to be above-average across all of Sub-Saharan Africa except for coastal South Africa and Namibia. For further details, see the [CM4EV](#) regional outlooks for Southern Africa.

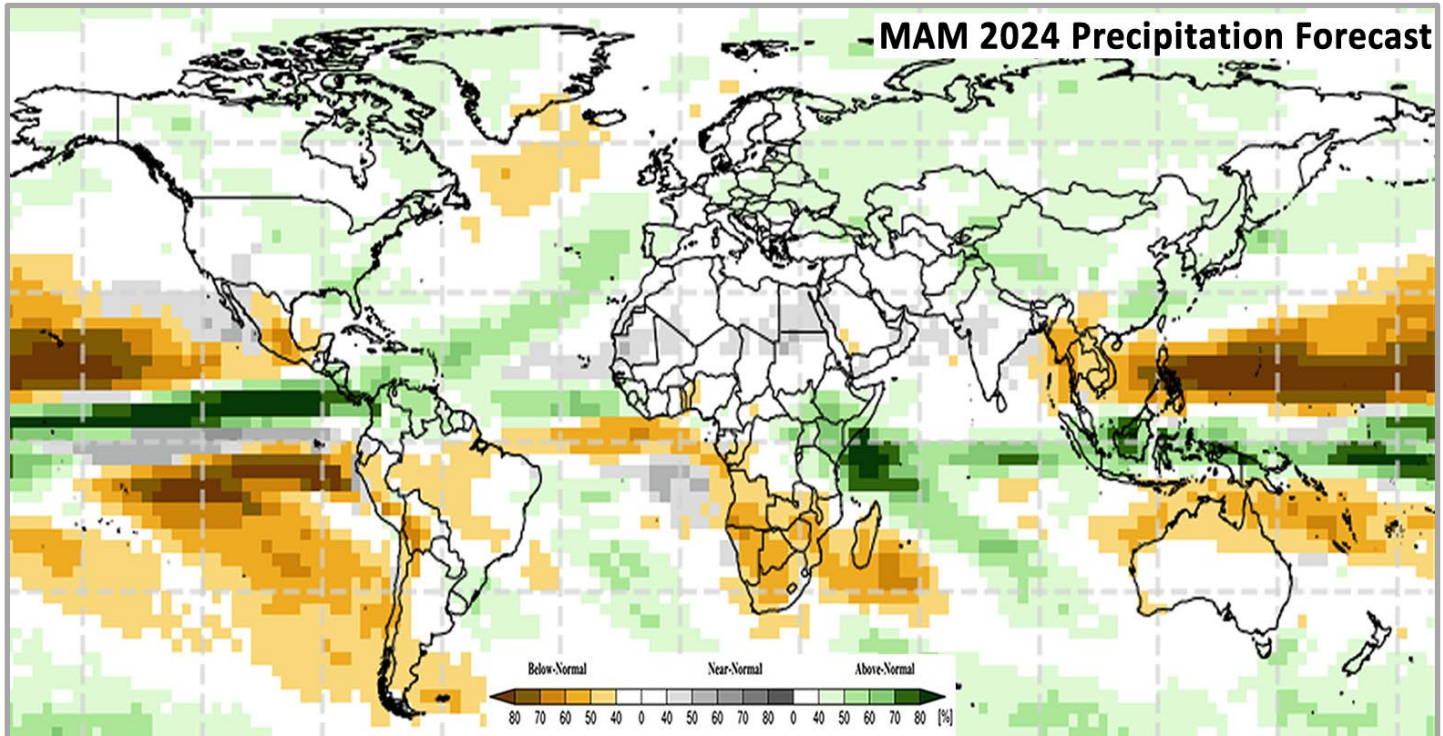


Figure 3: Probabilistic forecast for most likely March–April–May (MAM) 2024 rainfall tercile, based on February conditions. The white colour indicates that there is no dominant category across the model forecasts. Source: [WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble](#)

In **Central Asia**, the two-week forecast (Figures 1 & 2) indicates likely above-average precipitation over central and southern Kazakhstan, central Uzbekistan, and central Turkmenistan, while below-average over northeastern Afghanistan. During this time, temperatures are leaning towards being above-average across the entire region. The long-term March–April–May 2024 forecast (Figures 3 & 4) indicates a slight leaning toward above-average precipitation over eastern and western Kazakhstan, Kyrgyzstan, Tajikistan, and northeastern Afghanistan. At the same time, temperatures are likely to be above-average across the entire region except for northern Kazakhstan. For further details, see the [CM4EW](#) regional outlook for Central and Southern Asia.

In **South Asia**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation over Pakistan, India, Nepal, and Bhutan. During this time, temperatures are likely to be above-average over southern Pakistan, central and southern India, and southern Sri Lanka. The long-term March–April–May 2024 forecast indicates likely above-average precipitation over northern Pakistan. At the same time, temperatures are highly likely to be above-average across the entire region. For further details, see the [CM4EW](#) regional outlook for Central and Southern Asia.

In **East Asia**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation over Mongolia, northwestern and northeastern China, while above-average over southeastern China. During this time, temperatures are likely to be above-average over northern Mongolia, northeast and central China, the Democratic Republic of Korea, the Republic of Korea, and Japan. The long-term March–April–May 2024 forecast (Figures 3 & 4) indicates a leaning toward above-average precipitation over western and southeast China, Mongolia, the Republic of Korea, and Japan. During that time, temperatures are highly likely to be above-average over central and western China, the Republic of Korea, and Japan.

In **Southeast Asia & Oceania**, the two-week forecast (Figures 1 & 2) indicates potential above-average precipitation over northeastern Indonesia, northern Papua New Guinea, and western and southeast Australia, while below-average over eastern Myanmar, Thailand, western and southern Laos, Cambodia, southern Viet Nam, the Philippines, western Malaysia, western Indonesia, and northeastern Australia. During this time, temperatures are likely to be above-average over the entire region except for western Australia, where temperatures are likely to be below-average. The long-term March–April–May 2024 forecast (Figures 3 & 4) indicates likely above-average precipitation over Indonesia, Malaysia, and Papua New Guinea, while below-average over Myanmar, Thailand, Laos, Cambodia, Viet Nam, the Philippines, and northern Australia. During the same time, temperatures are highly likely to be above-average across the entire region except for southern Australia.

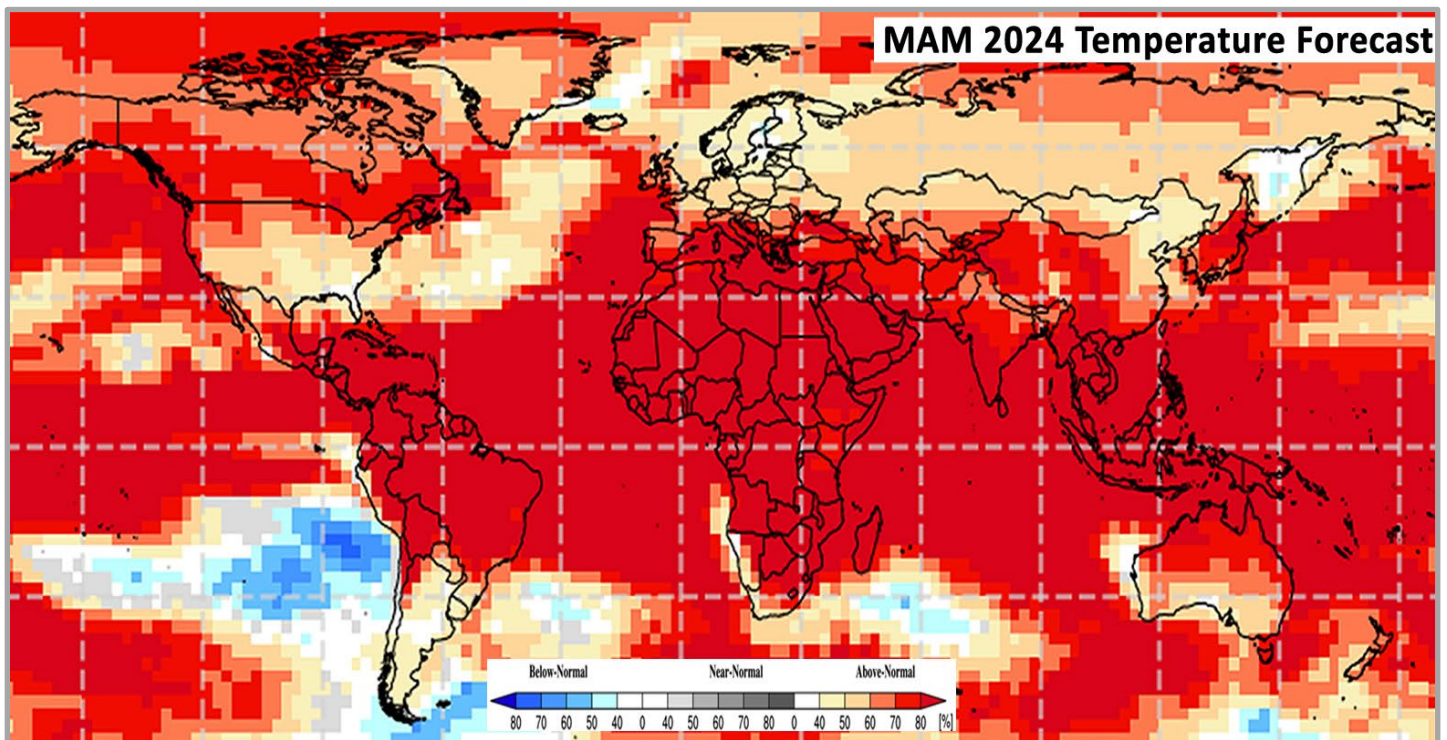


Figure 4: Probabilistic forecast for most likely March–April–May (MAM) 2024 temperature tercile, based on February conditions. The white colour indicates that there is no dominant category across the model forecasts. Source: [WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble](#)



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.

2024 Global Crop Monitor release dates:

1 February, 7 March, 4 April, 2 May, 6 June, 4 July, 1 August,
 5 September, 3 October, 7 November, 5 December

<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.



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.



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).