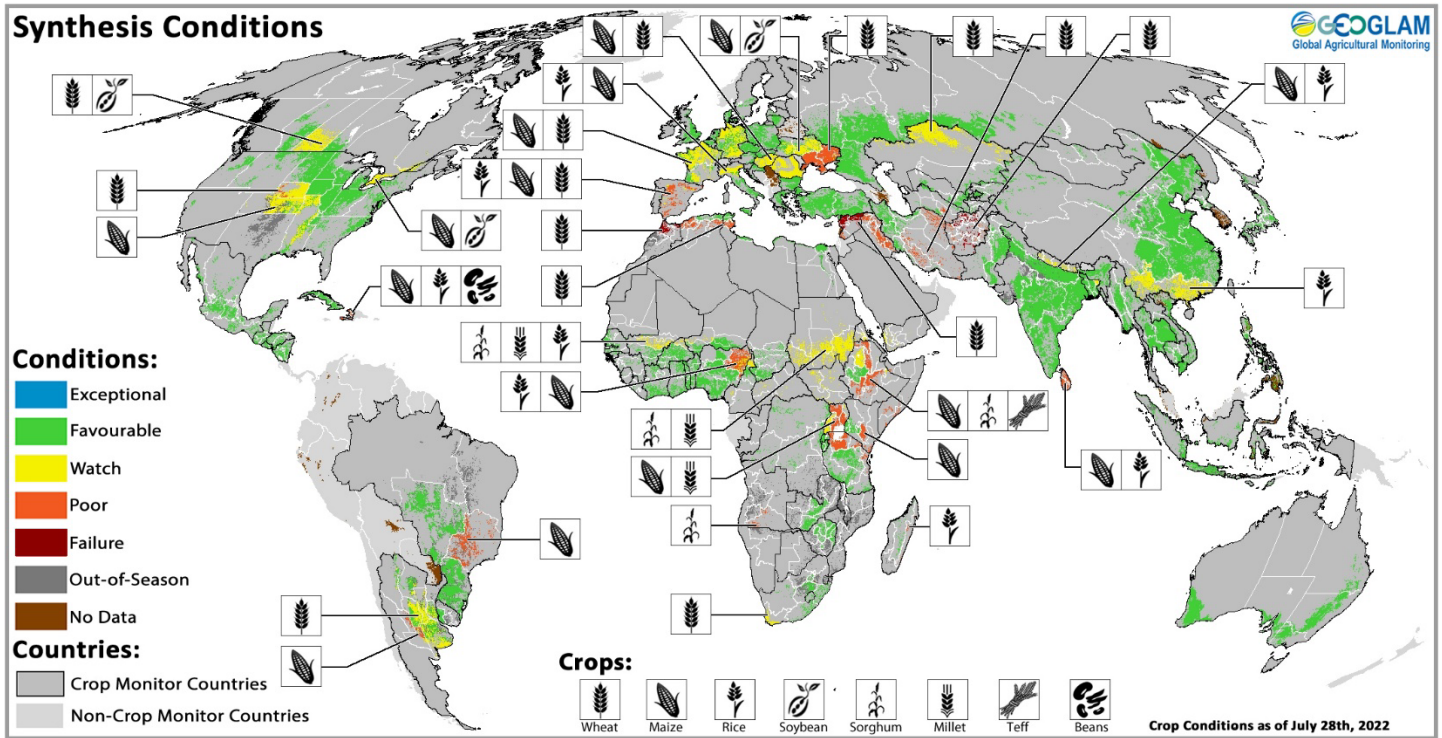


# GEOGLAM Global Crop Monitor

Global Conditions at a Glance (as of July 28<sup>th</sup>)



Crop condition map synthesizing information for all Crop Monitor crops as of July 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

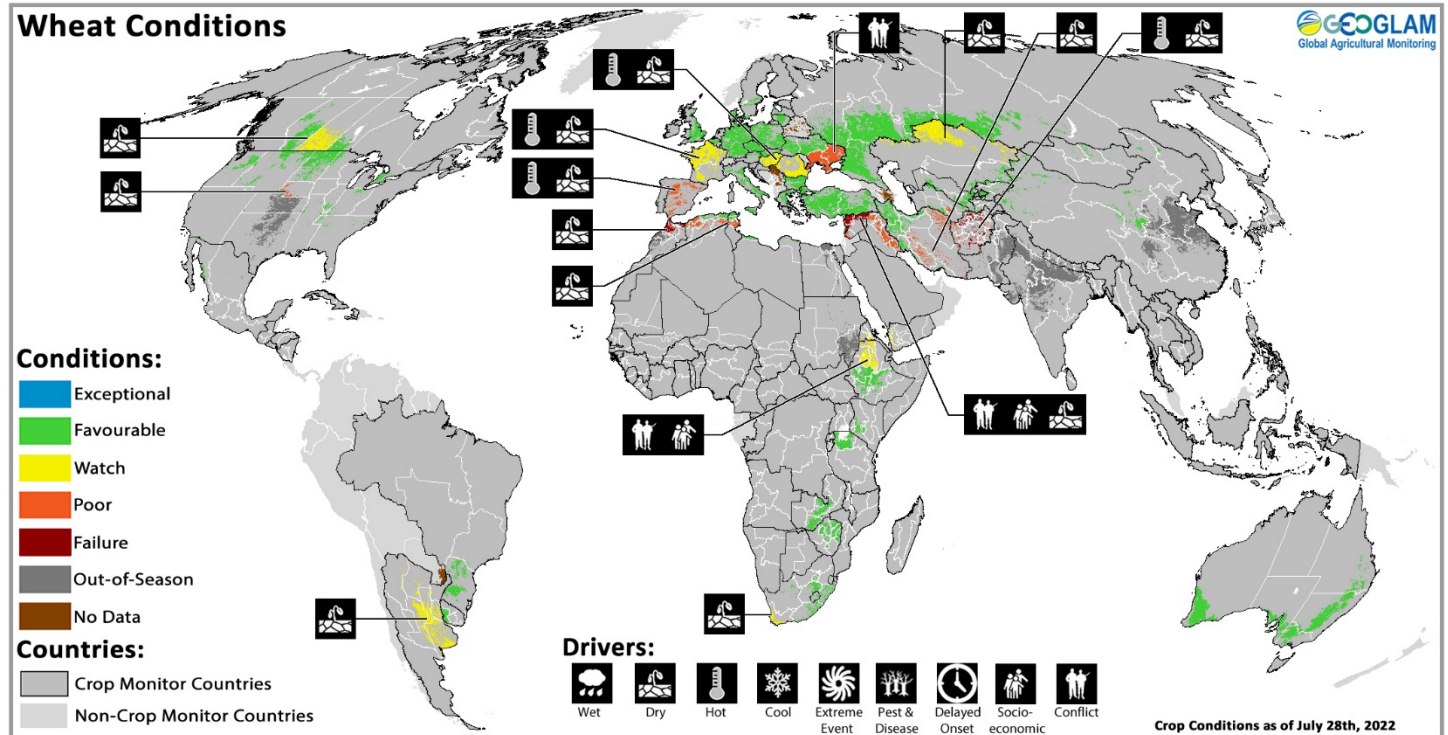
Global crop conditions at the end of July are overall positive for rice and soybeans while mixed for wheat and maize. For **wheat**, areas of concern remain in North America, South America, Europe, MENA, and Central Asia. For **maize**, hot and dry conditions have led to concerns in North America, Europe, and East Africa. For **rice**, conditions remain generally favourable except for in southern China and some minor areas in Southeast Asia. For **soybeans**, conditions are generally favourable. The remaining crops are covered in the [CM4EW](#) publication.

## Global Climate Influences

The El Niño-Southern Oscillation (ENSO) is currently in the La Niña phase and is expected to remain as La Niña into early 2023, according to the IRI/CPC. Weak La Niña conditions are likely during July to September (60% chance) and are forecast to strengthen after that (66% chance for October to December). Additionally, Negative Indian Ocean Dipole (IOD) conditions are emerging and are forecast to last through November or longer. For further details see page 6.

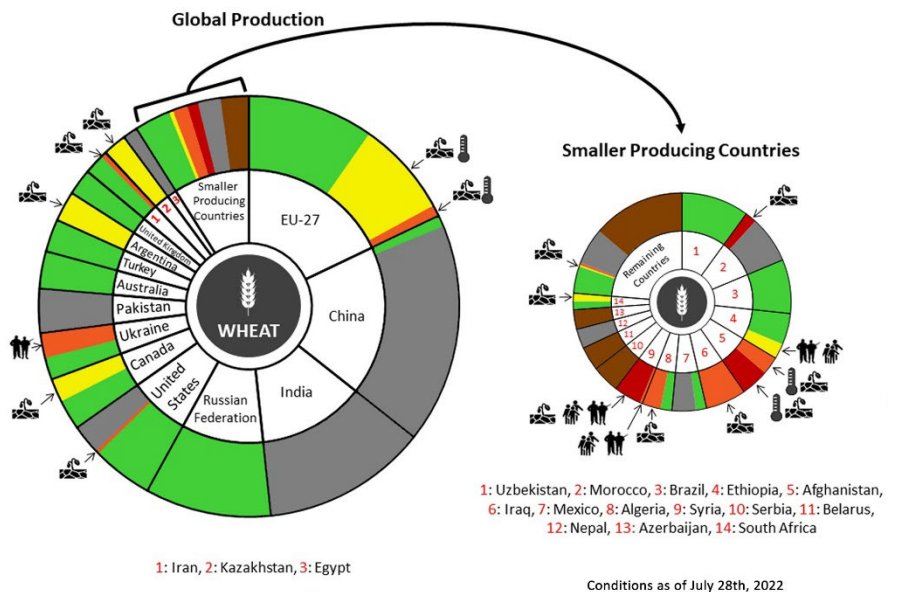
Source: UCSB Climate Hazards Center

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

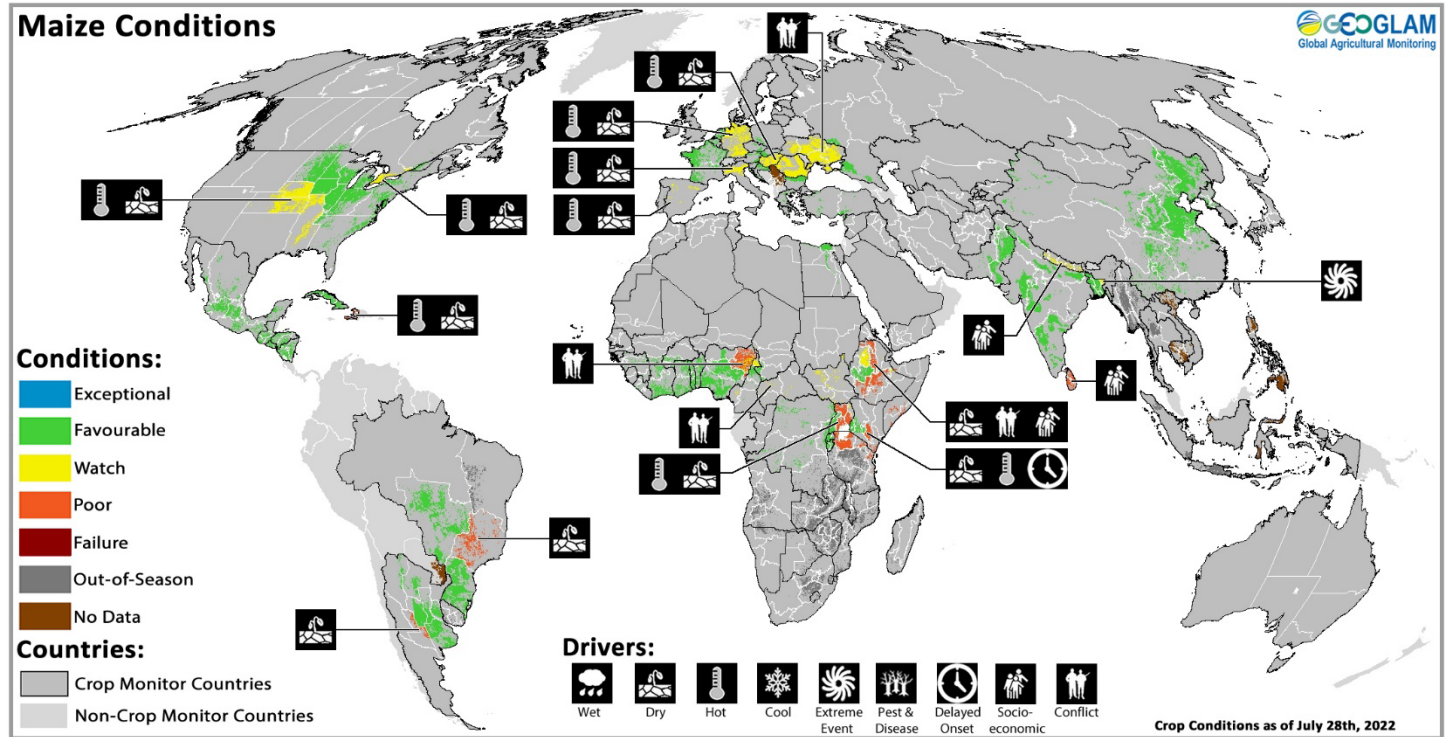
In **North America**, harvesting of winter wheat is progressing in the US under mixed conditions due to drought in the central and southern Great Plains. Spring wheat conditions are favourable. In Canada, conditions have improved for spring wheat in Alberta and Manitoba with increasing rains and warmer temperatures, while dry conditions are developing over winter wheat areas in Ontario. Harvesting is wrapping up in Mexico. In **South America**, sowing continues to be hampered in Argentina by dry conditions throughout the country, which is also expected to reduce the total area sown compared to last year. Conditions are favourable in Brazil and Uruguay. In **Europe**, harvesting is continuing across the EU with yields in Spain, Portugal, France, and Romania impacted the most by the recent hot and dry weather. Harvesting is ongoing in the United Kingdom. Harvesting is progressing in Ukraine, however, the ability to harvest near the conflict zones and within the occupied territories remains in question. In the Russian Federation, winter wheat is harvesting under favourable conditions. Spring wheat conditions are favourable. In Turkey, conditions are favourable. In **Central Asia**, harvesting of winter wheat is nearing completion in Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. Winter and spring wheat conditions are well below-average in Afghanistan. Dry conditions persist over spring wheat areas in Kazakhstan. In **East Asia**, spring wheat conditions are favourable for spring wheat in China and Mongolia. In **Oceania**, conditions are favourable in Australia, despite heavy rainfall and flooding during July across eastern parts of the country. In **MENA**, harvesting of wheat finalized in Morocco, Algeria, Tunisia, Libya, Syria, Iraq, and Iran under mixed conditions as persistent dryness throughout much of the season has resulted in crop failure with well below-average yields. In **Sub-Saharan Africa**, conditions are favourable across Lesotho, Zambia, and Zimbabwe. Dry conditions during May and July in the main producing region of the Western Cape in South Africa may negatively impact crops. Conflict remains an issue in northern Ethiopia.



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

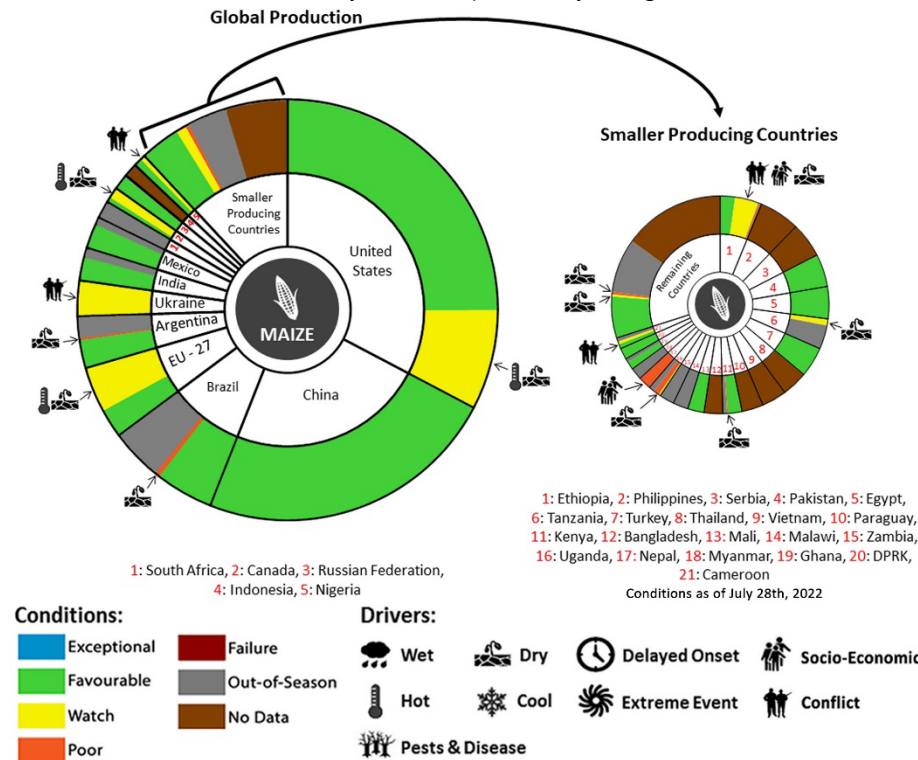
\* Assessment based on information as of July 28<sup>th</sup>

# MAIZE



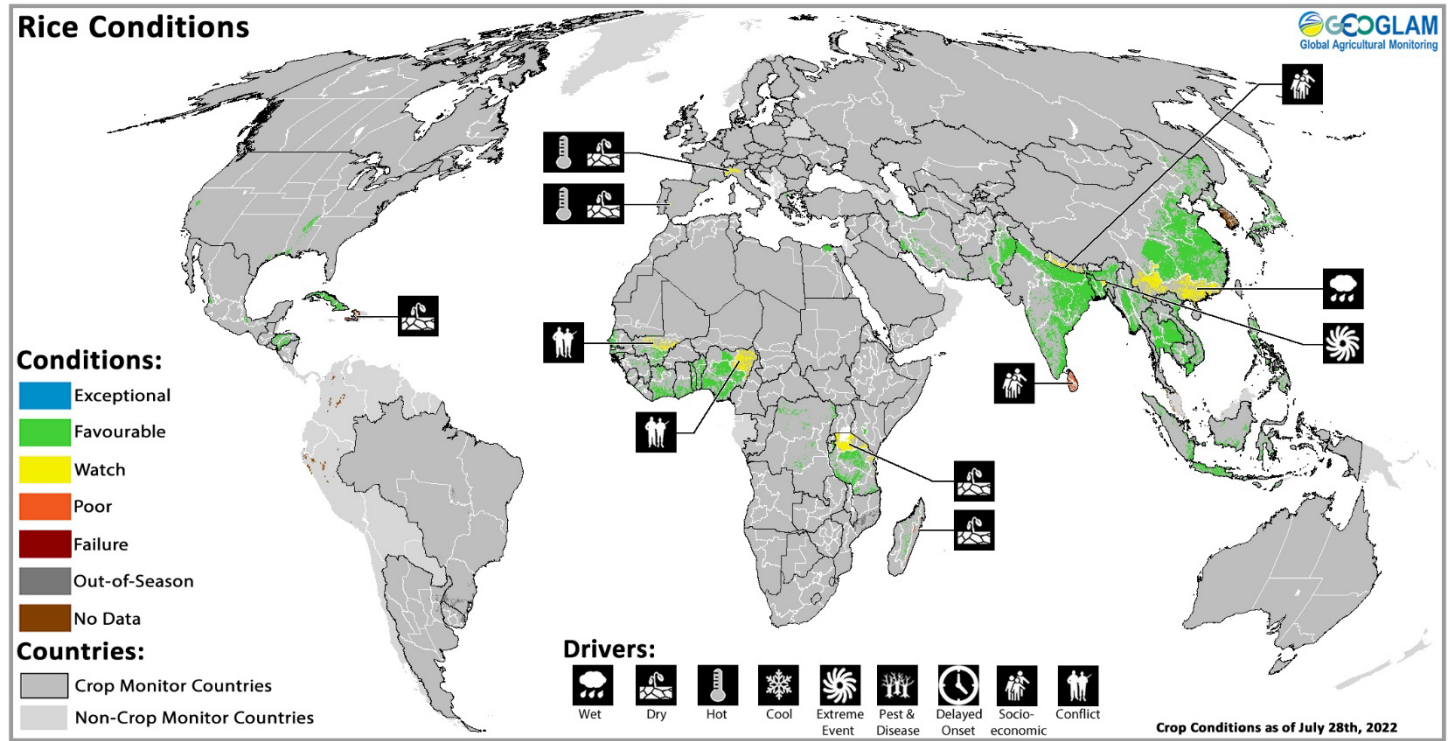
Maize crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Conditions are based upon information as of July 28<sup>th</sup>.

In **South America**, harvesting of the late-planted crop (smaller season) in Argentina is progressing throughout the country as grain moisture levels drop. Yields are heterogeneous, but near-average at the province level. In Brazil, harvesting of the summer-planted crop (larger season) is progressing with a reduction in yields in the southeast region due to a lack of rain during the reproductive stage. In **Central America & the Caribbean**, harvesting is wrapping up for the autumn-winter crop (smaller season) in Mexico as sowing continues for the spring-summer season (larger season). *Primera* season cereals continue to develop under generally favourable conditions despite localized flooding and crop losses in parts of Honduras and Guatemala. In Haiti, main season cereals are unlikely to recover from rainfall deficits and high temperatures during the *Printemps* season. Harvesting of main season crops is underway in Cuba. In **North America**, conditions are generally favourable in the US, however, recent hot and dry weather, particularly along the western and southern Corn Belt, might affect crops. In Canada, dry conditions through late June and July may impact crops in Ontario. In **Europe**, conditions are generally favourable in the EU, however, recent hot and dry weather has impacted Spain, Italy, Hungary, Romania, and Germany. In Turkey, conditions are favourable. In Ukraine, conditions remain mixed due to the ongoing war. In the Russian Federation, conditions are favourable. In **South Asia**, sowing is ongoing for *Kharif* and main season crops in India and Pakistan, while main season crops develop in Bangladesh and Nepal. In Sri Lanka, the *Yala* season crop production is expected to decrease sharply due to input shortages. In **East Asia**, conditions have improved in China owing to recent rainfall. In **West Africa**, main season crops are approaching early harvesting along the Gulf of Guinea countries while sowing continues along the Sahel. In **East Africa**, harvest is wrapping up for the *Belg* crops in Ethiopia under poor conditions, and conditions are mixed for *Meher* season crops. In the southern countries, harvesting of main season crops wrapping up in Uganda, Burundi, Rwanda, Tanzania, Kenya, and Somalia.



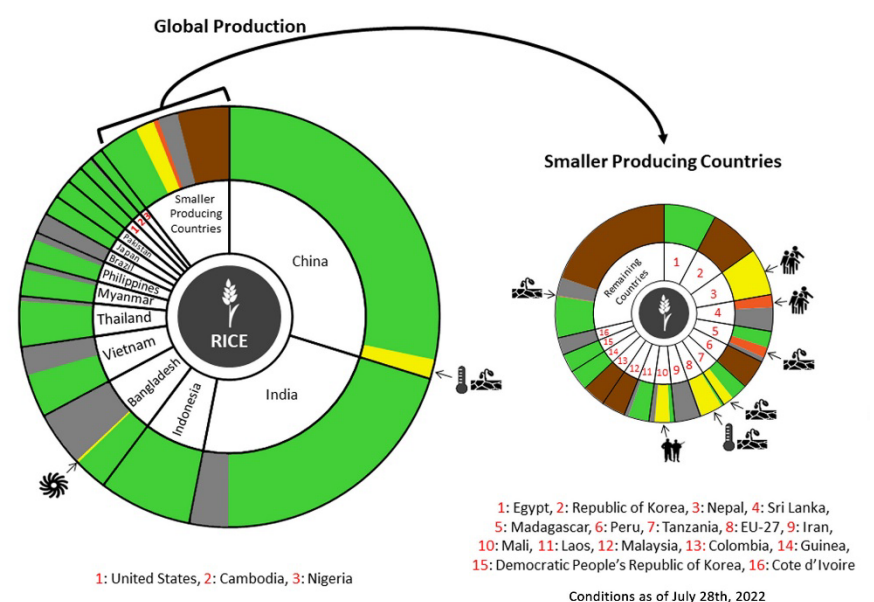
For detailed description of the pie chart, please see box on page 5.

# RICE



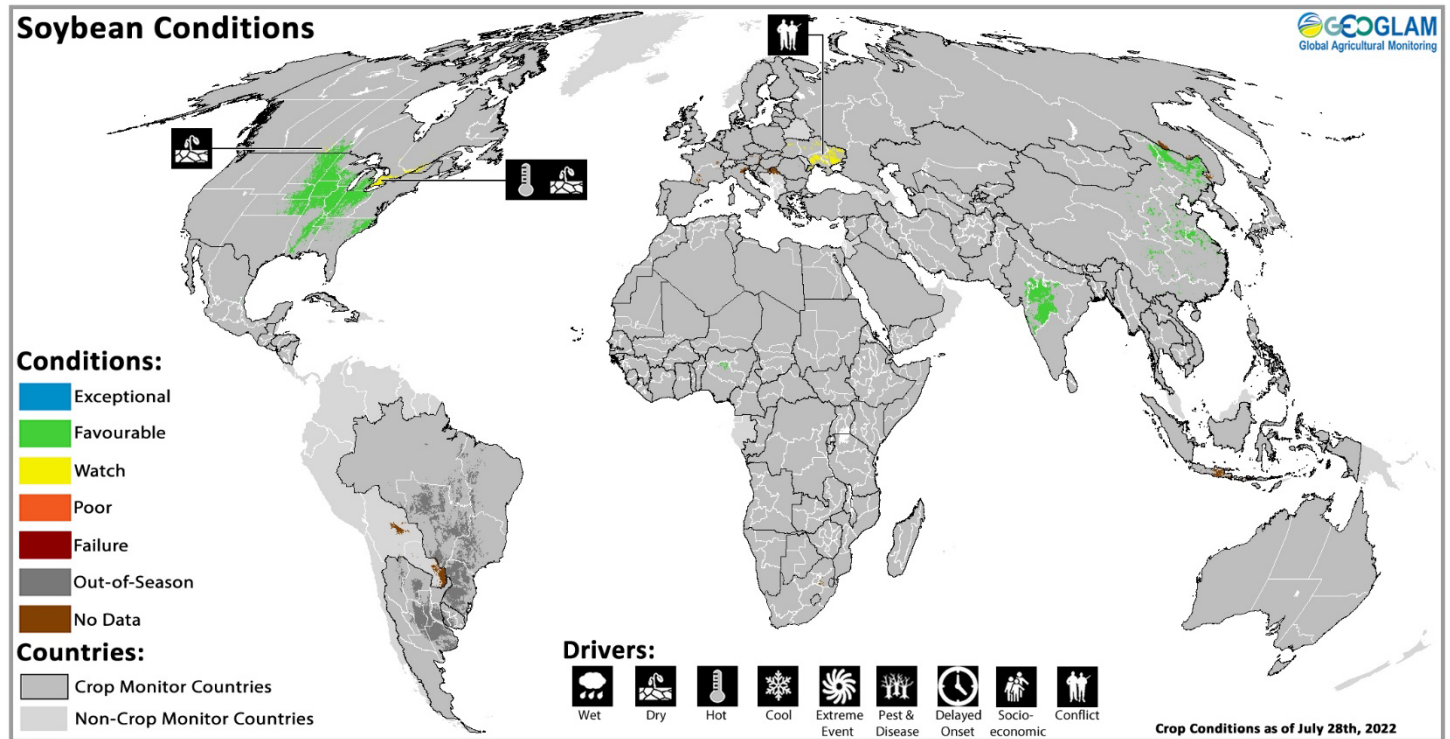
Rice crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Conditions are based upon information as of July 28<sup>th</sup>.

In **East Asia**, harvesting of early-season rice is wrapping up in China under favourable conditions, while hot and dry conditions impact late-planted rice in the south. Single-season rice is under favourable conditions. In Japan, conditions are favourable for early season crop development in the southwestern warm region. In the Democratic People’s Republic of Korea, conditions are favourable. In **South Asia**, sowing of the *Aman* season crop in Bangladesh is ongoing under favourable conditions. In India, transplanting of Kharif rice is progressing across most of the country under favourable conditions. In Pakistan, sowing of *Kharif* rice crops is underway. In Nepal, sowing of the main season crop continues under the uncertainty of high fuel and fertilizer prices. In Sri Lanka, production of the *Yala* season crop is expected to decrease sharply as a result of severe shortages of fertilizer, fuel, and pesticides. In **Southeast Asia**, wet-season rice is developing in Myanmar, Thailand, Laos, Viet Nam, Cambodia, and the Philippines under favourable conditions, though rising prices of agricultural inputs in some countries may impact production outcomes. In Indonesia, conditions are favourable for the wrapping up of wet-season rice harvest and the fifth month of sowing for dry-season rice. In the **Americas**, conditions are favourable in the US with a reduction in total sown area. In Mexico, conditions are favourable for the spring-summer crop. Conditions are favourable in Cuba and Honduras, while poor in Haiti for the main season crop. In **Europe**, conditions are worsening in Spain, and Italy due to hot and dry conditions. In **MENA**, conditions are favourable in Iran and Egypt. In **Sub-Saharan Africa**, conditions are generally favourable in West Africa except for in Mali and Northwest Nigeria due to conflicts. Harvesting is ongoing under favourable conditions in Burundi, Tanzania, and Madagascar. Conditions are favourable in Kenya.



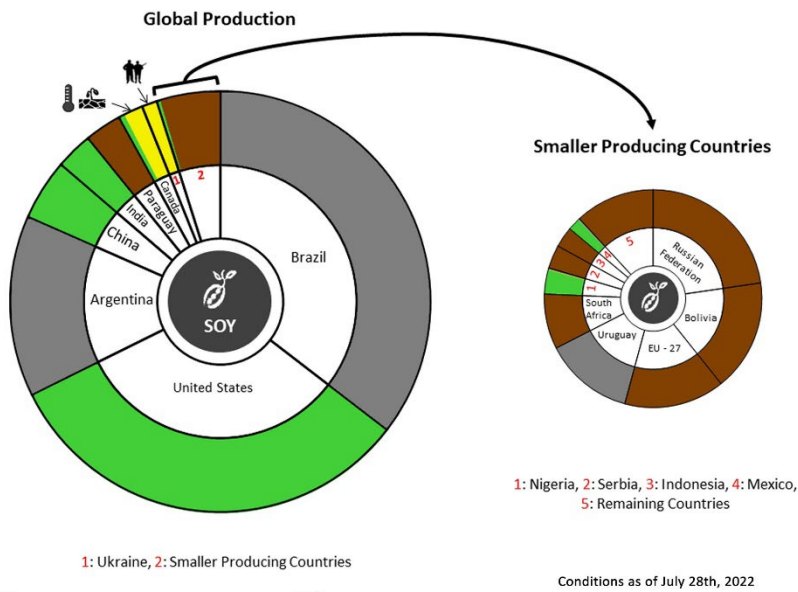
For detailed description of the pie chart, please see box on page 5.

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

In **North America**, conditions remain favourable in the US despite recent hot weather along the western and southern growing regions. There is a slight increase in total sown area compared to last year. In Canada, dry conditions have developed over the main producing province of Ontario, while conditions have improved in Manitoba. There is a reduction in the sown area compared to the 5-year average, most likely driven by a mixed beginning to the season in the Prairies. In **Asia**, conditions are favourable in China with the crop in the vegetative to reproductive stages. Sowing is wrapping up in India under favourable conditions and an increase in total sown area compared to last year and the average. In **Europe**, hot and dry conditions have reduced potential yields in the EU, most notably in Italy, Hungary, and Romania. In Ukraine, climatic conditions remain supportive while the war continues to bring uncertainties.



**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.



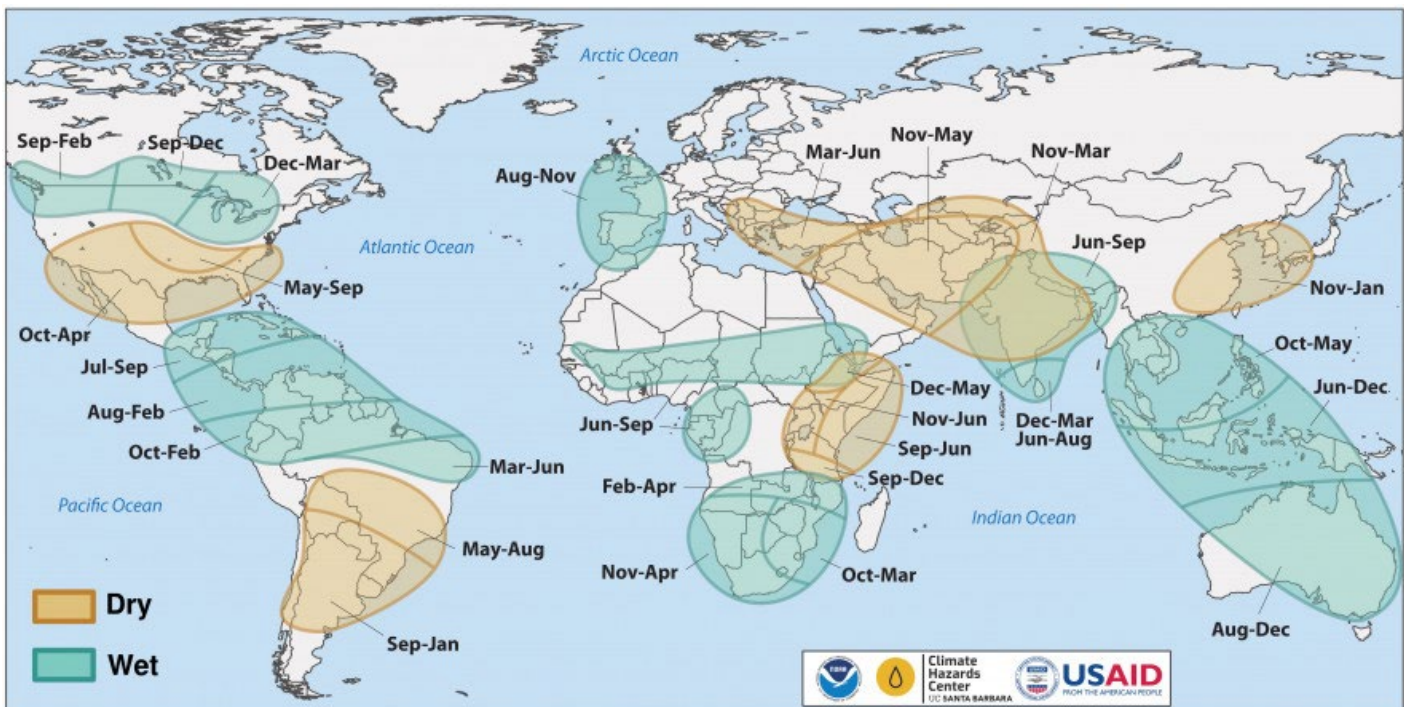
## Global Climate Influences

The El Niño-Southern Oscillation (ENSO) is currently in the La Niña phase and is expected to remain as La Niña into early 2023, according to the IRI/CPC. Weak La Niña conditions are likely during July to September (60% chance) and are forecast to strengthen after that (66% chance for October to December). There are low chances for El Niño conditions during this time.

If La Niña conditions persist or redevelop in late 2022, it would be the third year in a row with a La Niña event, which is uncommon. La Niña could elevate the risks of repeated dry conditions in negatively affected regions, such as eastern East Africa, southern South America, Central and Southern Asia, and southern North America, where multiple rainfall seasons have been below average since late 2020.

Negative Indian Ocean Dipole (IOD) conditions are emerging and are forecast to last through November or longer. Models indicate that this may be a strong IOD event. Negative IOD and La Niña conditions often happen in tandem. During previous tandem events, there have been severe drought impacts across the Horn of Africa, and heavy rainfall and flooding in Australia and southeast Asia.

Source: UCSB Climate Hazards Center



Location and timing of likely above- and below-average precipitation related to La Niña events. Based upon observed precipitation during 21 La Niña 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 <https://fewsn.net/la-ni%C3%B1a-and-precipitation>

## Regional Outlooks

Both the two-week forecast (Figures 1 & 2) and the long-term August-September-October 2022 forecast (Figures 3 & 4) are influenced by the current La Niña phase, and an emerging Negative Indian Ocean Dipole (IOD).

In **North America**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation in the US across the Pacific Northwest and the southern Plains, and in Canada across the Rockies and the western Prairies. There is likely above-average precipitation in the US over the Southwest. During the same time, Temperatures are likely to be above-average across the US West Coast and the South, while below-average in Canada in Manitoba, Ontario, and Quebec. The long-term August-September-October 2022 forecast (Figures 3 & 4) shows possible below-average precipitation across the US Great Plains and the Great Lakes region. During the same time, temperatures are likely 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 over eastern Mexico, northern Guatemala, and northern Honduras. During this time, temperatures are likely to be above-average in northern Mexico. The long-term August-September-October 2022 forecast (Figures 3 & 4) suggests above-average precipitation across Nicaragua, Costa Rica, and Panama. During this time, temperatures are likely to be above-average in eastern Mexico, and Cuba, while below-average in Nicaragua, Costa Rica, and Panama. For further details see the [CM4EW](#) Regional Outlook.

In **South America**, the two-week forecast (Figures 1 & 2) indicates likely above-average precipitation in Ecuador, northern Peru, and northern and southern Brazil. Below-average precipitation is likely over eastern Venezuela, southern Guyana, Suriname, French Guiana, northeast Brazil, Uruguay, southern Chile, and southern Argentina. During this time, temperatures are likely to be above-average across most of Brazil, Suriname, French Guiana, and southern Peru. The long-term August-September-October 2022 forecast (Figures 3 & 4) suggests likely above-average precipitation across northern South America and below-average precipitation across southern South America. During that time, temperatures will likely be above-average across southern and western South America, while below-average along coastal Columbia and Venezuela.

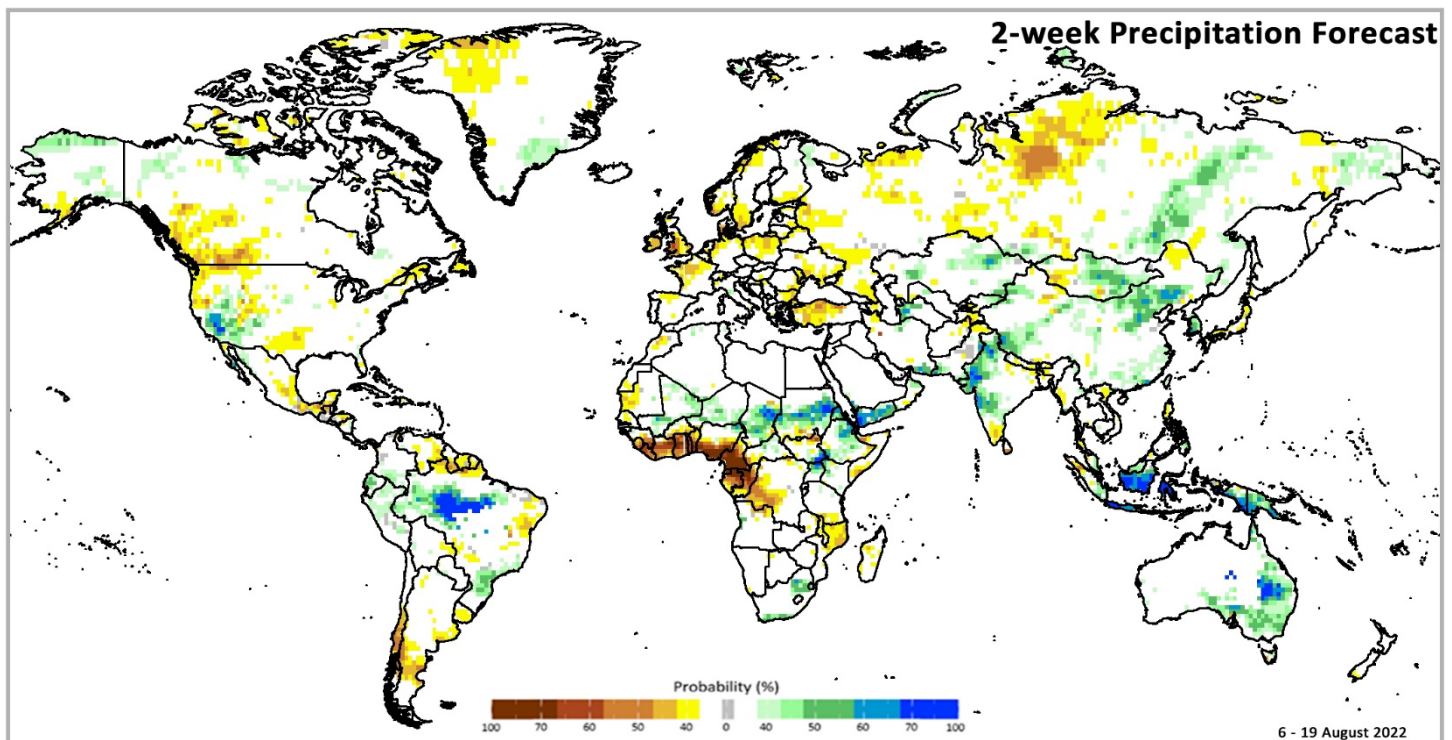


Figure 1: IRI SubX Precipitation Biweekly Probability Forecast for 6 – 19 August 2022, issued on July 29th, 2022. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](#)

In **Europe**, the two-week forecast (Figures 1 & 2) indicates likely below-average rainfall over northern Spain, Ireland, the western United Kingdom, northern France, eastern Belgium, eastern Netherlands, northern Germany, Denmark, Poland, southern Norway, southern Sweden, southern Finland, northern Belarus, western Russian Federation, southern Ukraine, Moldova, eastern Romania, Bulgaria, western and central Turkey, and Azerbaijan. During this time above-average temperatures are likely over south-eastern Europe. The long-term August-September-October 2022 forecast (Figures 3 & 4) predicts likely below-average precipitation across the majority of Europe except for Ireland, the northern United Kingdom, Norway, Sweden, and Finland. The highest probabilities are in southern Portugal, Romania, and Turkey. During the long-term forecast, temperatures are forecast to be very likely above-average across all of Europe.

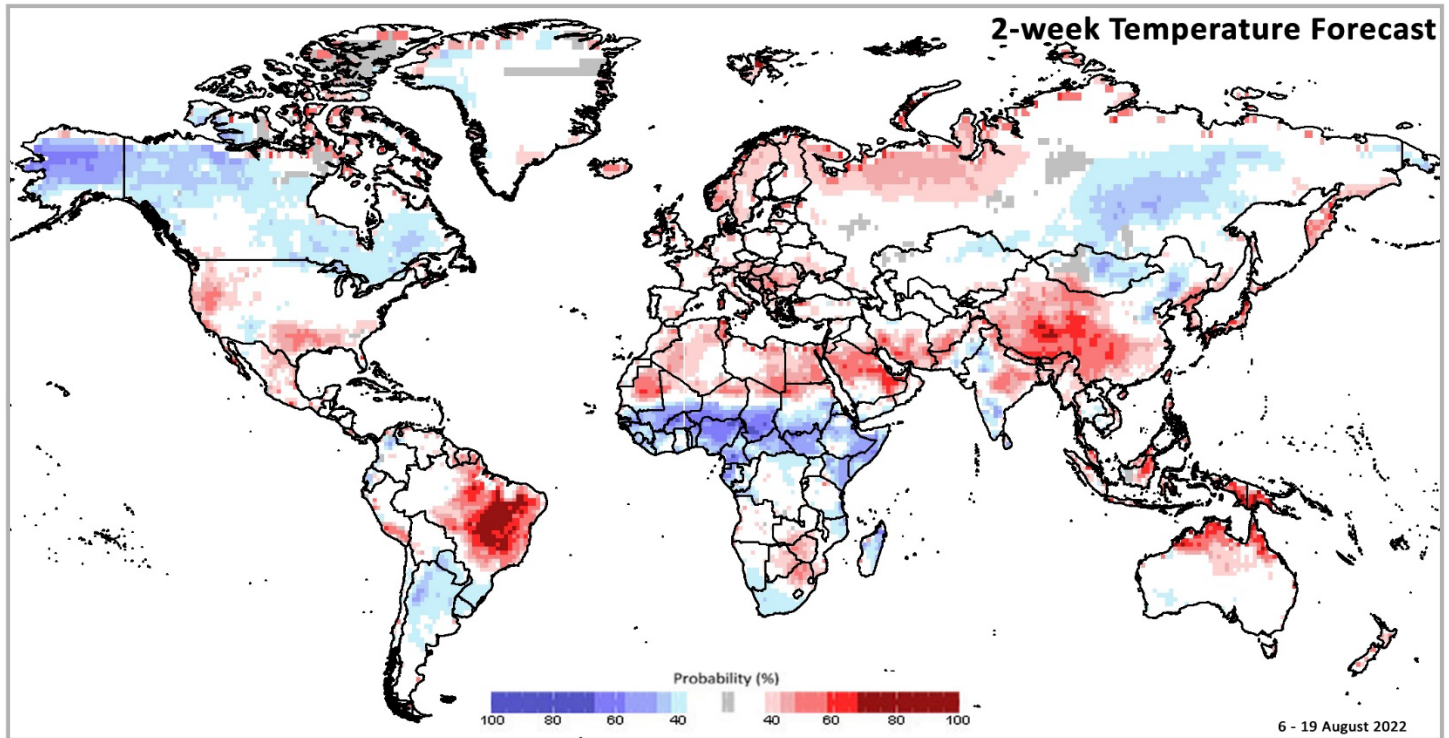


Figure 2: IRI SubX Temperature Biweekly Probability Forecast for 6 – 19 August 2022, issued on July 29th, 2022. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](#)

In **MENA**, the two-week forecast (Figures 1 & 2) indicates likely average precipitation across most of the region except for central Morocco, where below-average precipitation is possible. During this time temperatures are likely to be above-average across most of the region. The long-term August-September-October 2022 forecast (Figures 3 & 4) predicts likely below-average precipitation across the entire region except for Egypt. During this time temperatures are likely to be above-average across most of the region, most notably in Morocco, Algeria, Tunisia, western Libya, Jordan, northern Saudi Arabia, Iraq, and western Iran.

In **Sub-Saharan Africa**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation over western Mauritania, southern Guinea, Sierra Leone, Liberia, Côte d'Ivoire, southern Burkina Faso, Ghana, Togo, Benin, southern Nigeria, Cameroon, Equatorial Guinea, Gabon, Republic of Congo, western Democratic Republic of Congo, southern Somalia, northern Mozambique. Above-average precipitation is likely over parts of Mali, parts of Niger, Chad, Sudan, northeast and southwest Ethiopia, Eritrea, Yemen, southeast South Sudan, northern Uganda, northwest Kenya, and southern and east central South Africa. During this time, temperatures are likely to be below-average across much of the northern portion of the region, while above-average over southern Zambia, Zimbabwe, Botswana, and northern South Africa. For the long-term August-September-October 2022 forecast (Figures 3 & 4), precipitation is likely to be above-average over the northern countries, while below average over the central and southern countries, especially on the eastern and western portions of the continent. During this time, temperatures will be below-average across the northern countries and above-average across central Africa. For further details, see the [CM4EW](#) Regional Outlooks for East Africa.



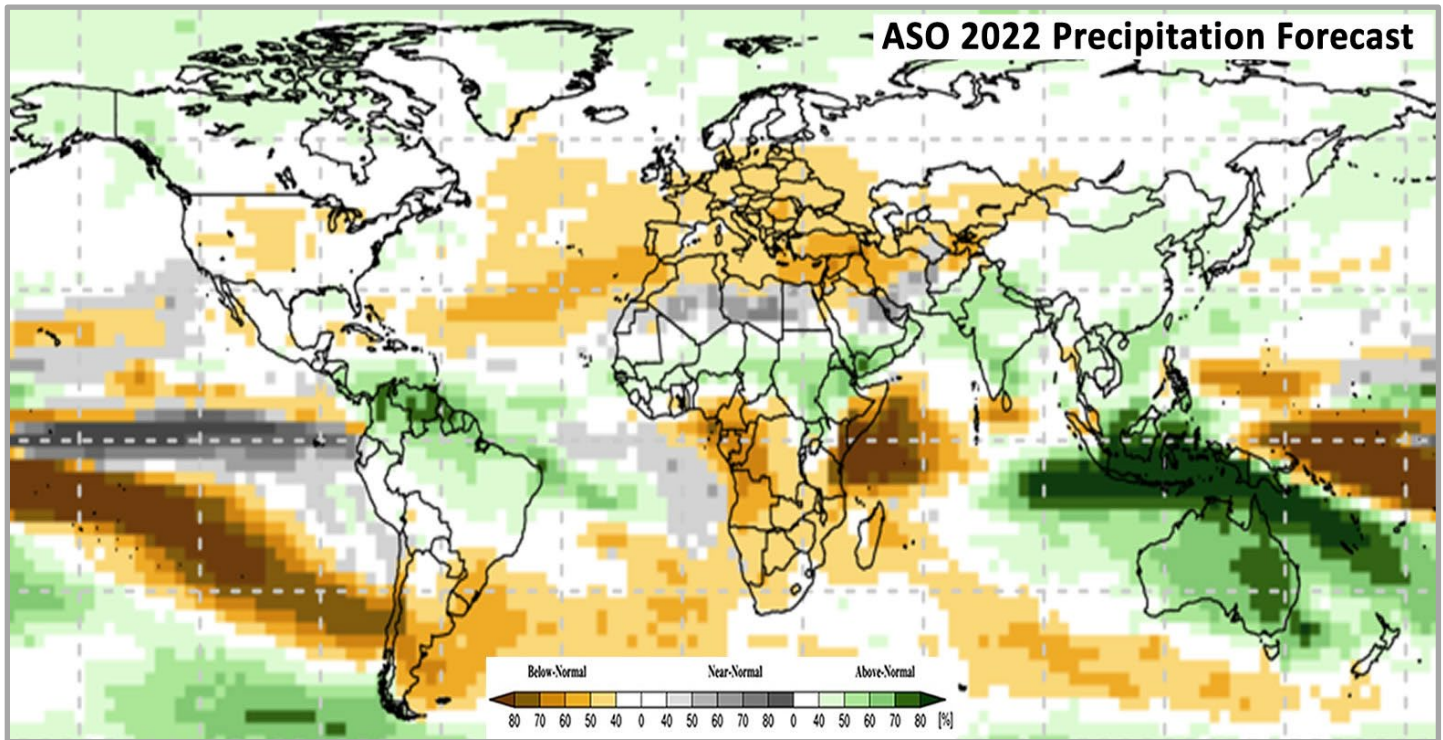


Figure 3: Probabilistic forecast for most-likely August-September-October (ASO) 2022 rainfall tercile, based on July conditions. The white colour indicates that there is no dominant category across the model forecasts. Source: [WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble](#)

In **Central Asia**, the two-week forecast (Figures 1 & 2) indicates likely average precipitation across much of the region except for pockets of above-average precipitation in Kazakhstan, eastern Kyrgyzstan, and western Turkmenistan, along with below-average precipitation in central Tajikistan and northeast Afghanistan. During this time, temperatures are likely to be above-average in southern Afghanistan. The long-term August-September-October 2022 forecast (Figures 3 & 4) predicts likely below-average precipitation across southern and eastern Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, and northern Afghanistan. At the same time, temperatures are likely to be above-average across much of the region, particularly in Afghanistan, Tajikistan, Kyrgyzstan, and Kazakhstan. For further details see the [CM4EW](#) Regional Outlook.

In **South Asia**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation in southern India and southern Sri Lanka, while above-average precipitation in southwest Pakistan and eastern India. During this time, temperatures are likely to be above-average in southwest Pakistan, central India, Nepal, Bhutan, and Bangladesh. The long-term August-September-October 2022 forecast (Figures 3 & 4) indicates likely above-average precipitation across the entire region except for below-average precipitation over Sri Lanka. During this time, temperatures are likely to be above-average in northern Pakistan, northern and eastern India, Nepal, Bhutan, and Bangladesh.

In **East Asia**, the two-week forecast (Figures 1 & 2) indicates likely below-average precipitation in western Mongolia and parts of Japan, while above-average precipitation is likely over central Mongolia, northern and northeast China, and the Republic of Korea. During this time, temperatures are likely to be below-average over central Mongolia, and northeast China, while above-average across much of the rest of the region. The long-term August-September-October 2022 forecast (Figures 3 & 4) suggests likely below-average precipitation over western Mongolia and northwest China, while above-average precipitation over much of the rest of 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 Indonesia, southern Thailand, and the northern Philippines. Above-average precipitation is likely in most of Indonesia, east Malaysia, the southern Philippines, Papua New Guinea, and eastern and southern Australia. During this time, temperatures are likely to be above average across parts of Myanmar, Malaysia, Indonesia, the Philippines, Papua New Guinea, northern Australia, and New Zealand. The long-term August-September-October 2022 forecast (Figures 3 & 4) precipitation is predicted to be above-average across most of the region except for northern Indonesia and western Malaysia. For further details see the [CM4EW](#) Regional Outlook.

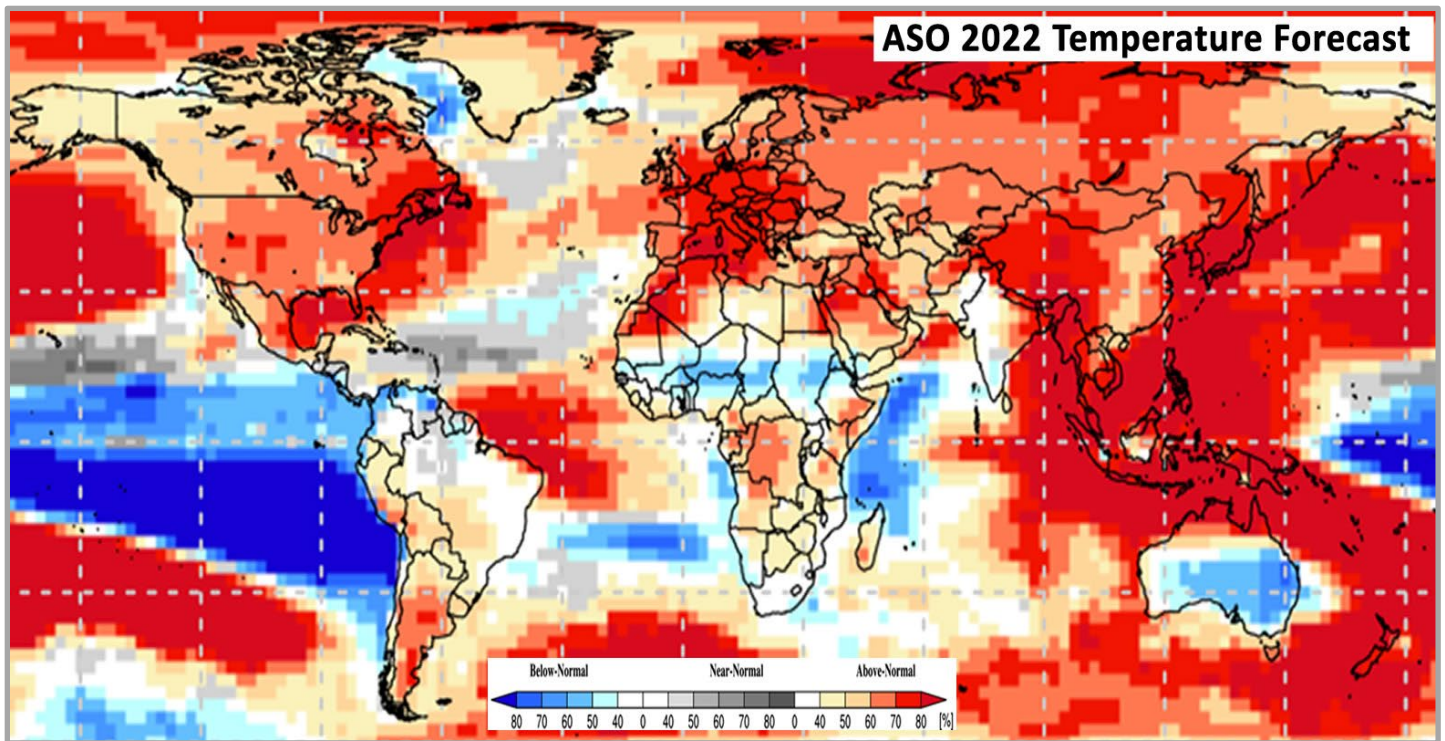


Figure 4: Probabilistic forecast for most-likely August-September-October (ASO) 2022 temperature tercile, based on July conditions. The white colour indicates that there is no dominant category across the model forecasts. Source: [WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble](#)

# 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 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 upon 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 to 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).