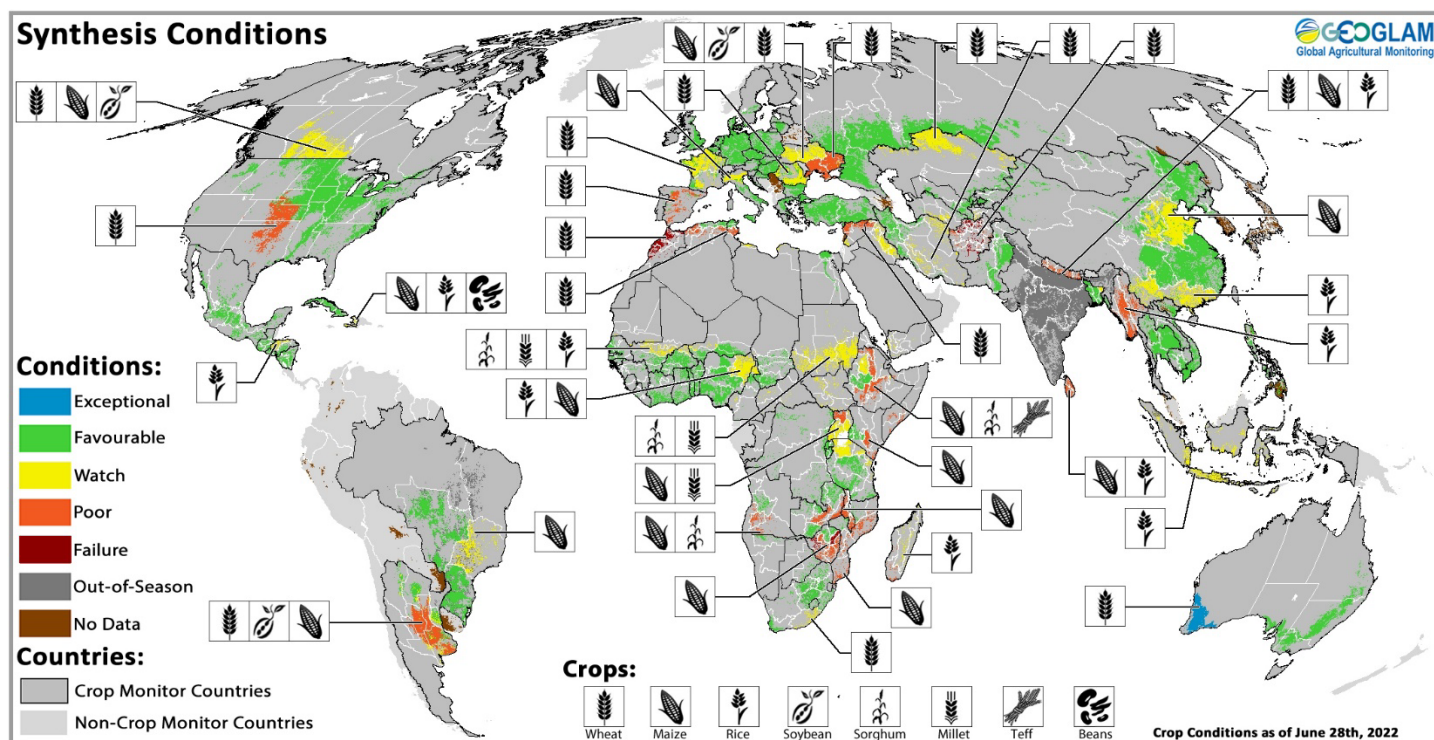


GEOGLAM Global Crop Monitor

Global Conditions at a Glance (as of June 28th)



Crop condition map synthesizing information for all Crop Monitor crops as of June 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 labeled on the map with a symbol representing the crop(s) affected.**

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

See Appendix I for detailed methodology description

Global Crop Overview

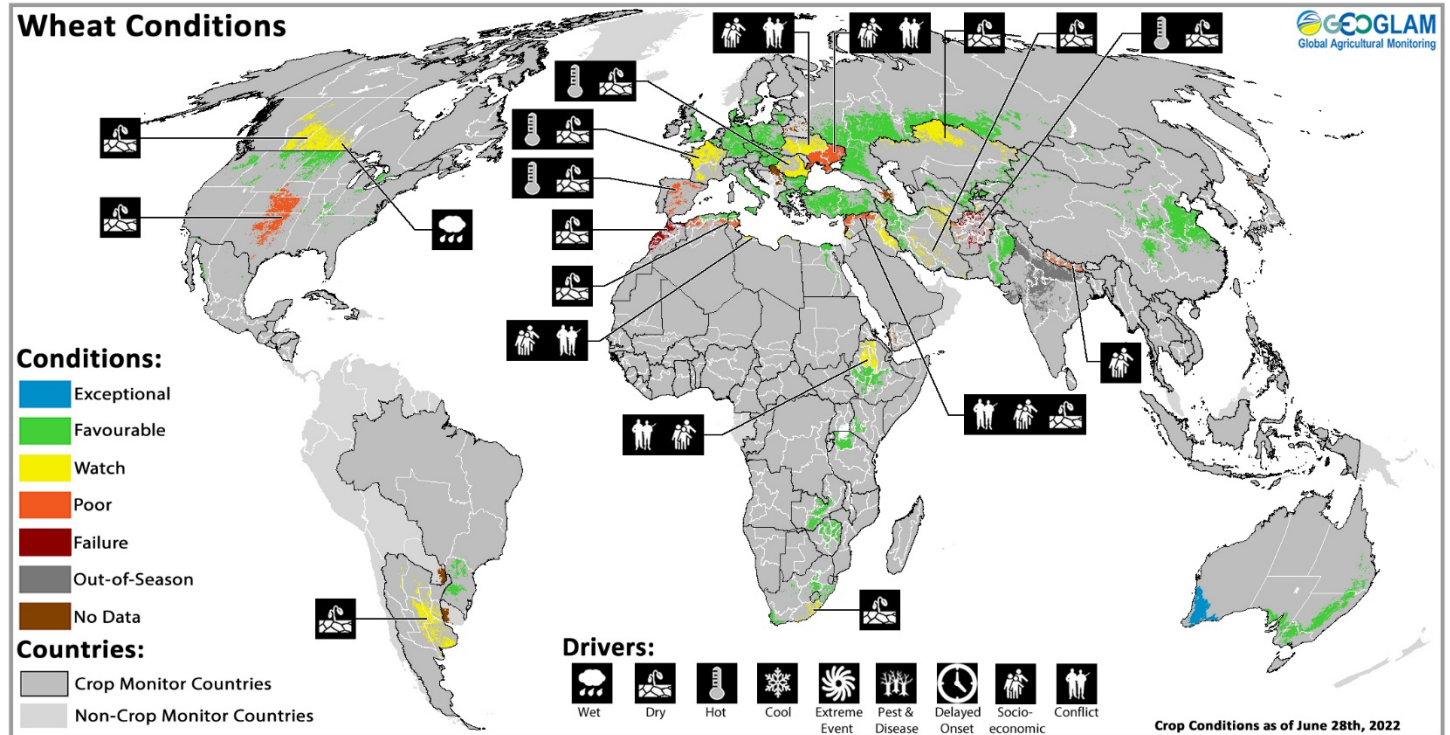
Global crop conditions at the end of June are overall positive for maize, rice, and soybeans while mixed for wheat. For **wheat**, areas of concern remain in North America, Europe, MENA, and Central Asia, while potentially developing in Argentina. For **maize**, conditions are generally favourable except for in southeast Brazil, parts of the Northern China Plain, and Sub-Saharan Africa. For **rice**, conditions remain generally favourable except for in southern China and some minor areas in Southeast Asia. For **soybeans**, harvesting is wrapping in Argentina, while sowing is wrapping up in North America, Europe, and Asia. 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 from July to September (52% chance) and are forecast to strengthen after that (59% chance for October to December). Additionally, Negative Indian Ocean Dipole (IOD) conditions are forecast to develop in July and last through November or longer. For further details see page 6.

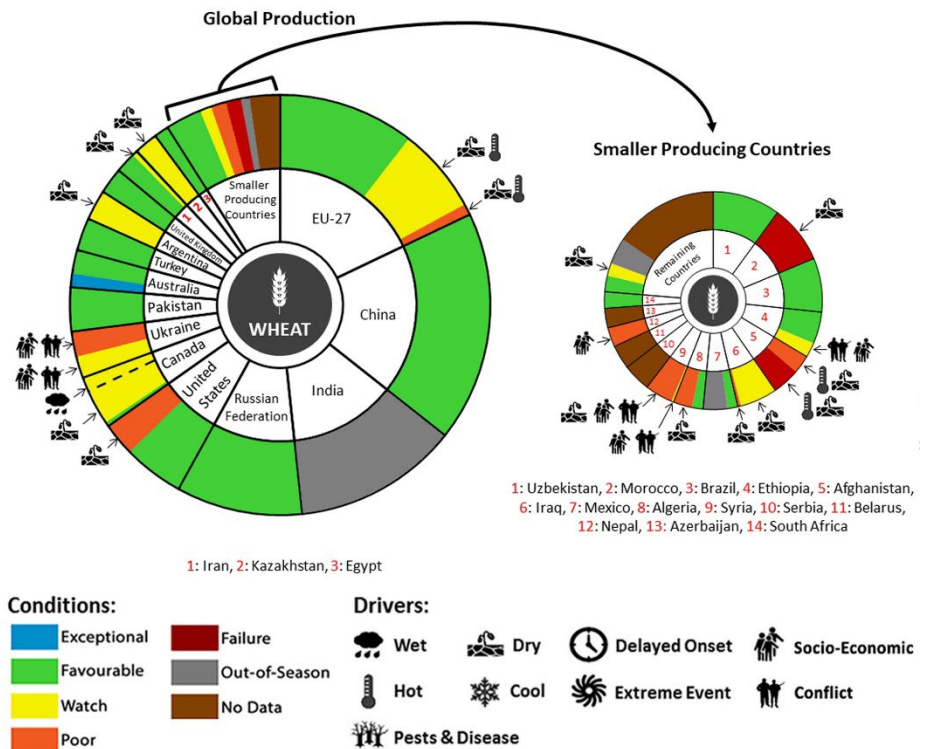
Source: UCSB Climate Hazards Center

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 June 28th.

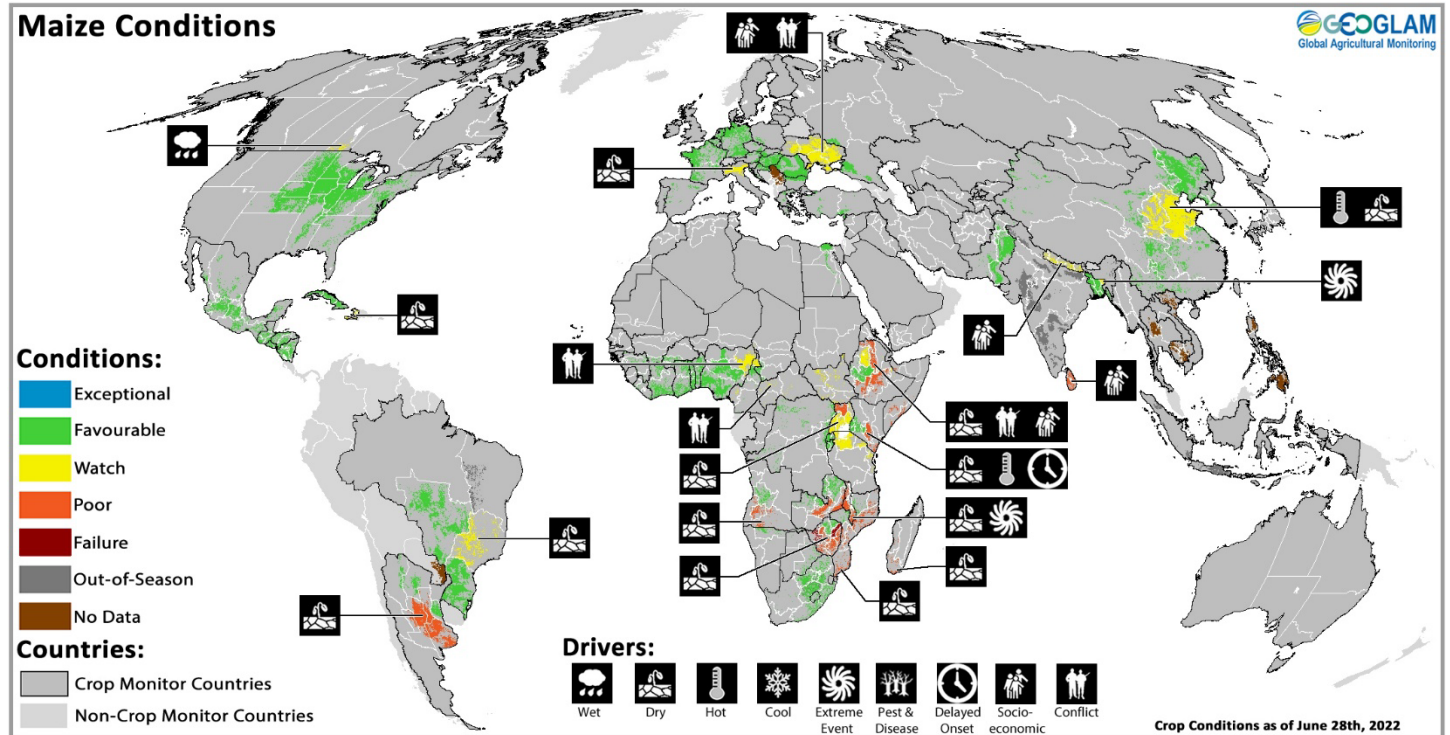
In **North America**, harvesting of winter wheat is ongoing in the US under mixed conditions as prolonged dryness in the central and southern Great Plains has impacted yields. Spring wheat conditions are favourable, albeit developmentally delayed. Dryness in the western Canadian prairies along with excess moisture in the eastern prairies is not favourable for spring wheat. Conditions are favourable in Mexico. In **South America**, conditions are favourable in Brazil, while dry conditions in Argentina are impacting sowing. In **Europe**, hot and dry weather is impacting France, Spain, Portugal, and Romania, while the rest of Europe remains under favourable conditions. Weather conditions remain stable in Ukraine; however, the ongoing war continues to bring significant uncertainties, particularly in the occupied areas. In the Russian Federation, conditions remain favourable for winter wheat going into harvest. Spring wheat conditions have been supported by recent rainfall. In Turkey, conditions are favourable. In **Central Asia**, harvesting of winter wheat is underway. Dryness has led to poor to failure conditions in Afghanistan, while concern remains in parts of northern Kazakhstan, Tajikistan, and Turkmenistan. In **South Asia**, harvesting is wrapping up in Pakistan and Nepal. In **East Asia**, conditions are favourable for winter and spring wheat in China. Spring wheat is in the vegetative stage in Mongolia. In **Oceania**, conditions are favourable in Australia; however, extremely wet conditions across parts of northern New South Wales and southern Queensland are delaying sowing activities. In **MENA**, harvesting of winter wheat is wrapping up under mixed conditions due to persistent dryness which has resulted in crop failure in Morocco and below-average yields in parts of Algeria, Tunisia, Syria, and Iraq. In Iran, below-average production is expected in Esfahan and Fars provinces as well as in Khorasan province due to recent drier than average conditions. In **Sub-Saharan Africa**, sowing winter wheat continues in Lesotho, South Africa, Zambia, and Zimbabwe. Conflict concerns remain in Ethiopia.



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

* Assessment based on information as of June 28th

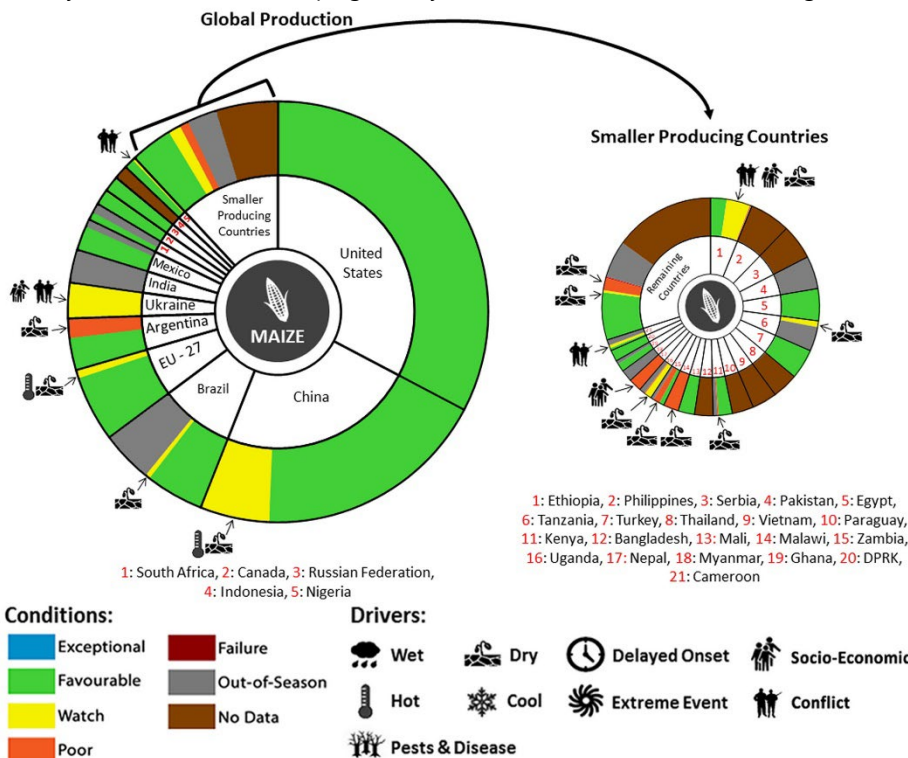
MAIZE



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 June 28th.

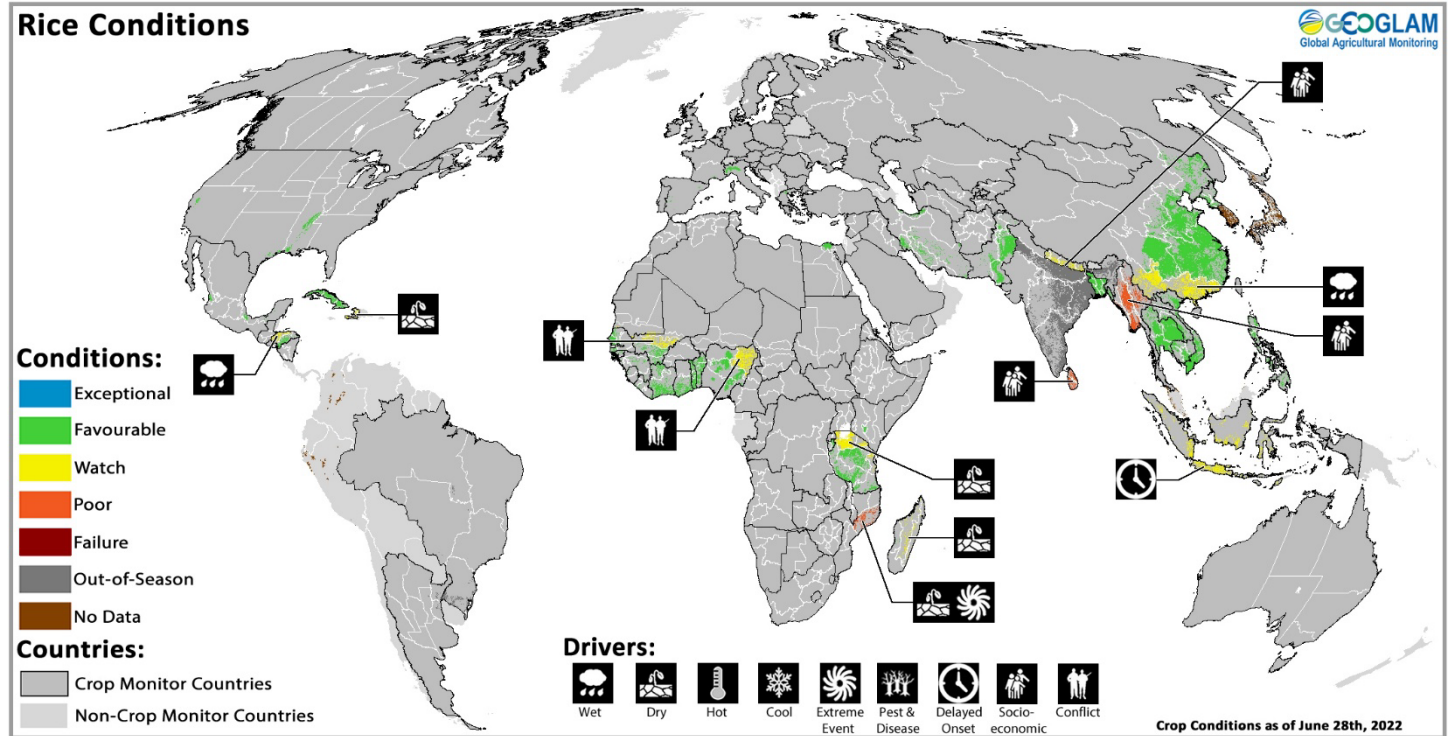
In **South America**, harvesting in Argentina of the early-planted crop (larger season) and the late-planted crop (smaller season) is continuing under mixed conditions as drought from December to January has reduced the yields of the early-planted crop. In Brazil, harvesting of the summer-planted crop (larger season) is beginning under mixed conditions due to a lack of rain, particularly in the Southeast region. In **Central America & the Caribbean**, harvesting of the autumn-winter crop (smaller season) and the sowing of the spring-summer season (larger season) continues in Mexico. Sowing of the *Primera* season crops continues in Guatemala, Honduras, El Salvador, and Nicaragua. Harvesting of main season crops is underway in Haiti under mixed conditions, while under favourable conditions in Cuba. In **North America**, conditions are generally favourable, albeit with some excess moisture in the eastern Canadian Prairies and developing dryness in the US Corn Belt. In **Europe**, hot and dry conditions are developing in Italy. In Ukraine, conditions for working in the fields remain mixed due to the uncertainties of the

ongoing war. In the Russian Federation, conditions are favourable. In **Asia**, hot and dry conditions in parts of the Northern China Plain are slowing the development of spring-planted maize. Summer-planted maize is sowing. In Pakistan, Nepal, and Bangladesh, main season crops continue sowing. In Sri Lanka, the *Yala* season crop production is expected to decrease sharply due to shortages of fertilizer, fuel, and pesticides. In **West Africa**, sowing and development of the main season crop are underway. Conditions are generally favourable except in southern Mauritania where the rainfall season has yet to begin and in conflict-affected regions. In **East Africa**, harvest is underway for secondary *Belg* crops in Ethiopia under poor conditions, and conditions are mixed for *Meher* season crops due to rainfall deficits and ongoing insecurity. In parts of Kenya, Uganda, and Somalia, several consecutive failed rainy seasons are impacting crops in many areas. In **Southern Africa**, harvesting of the main season crops has wrapped up in Angola, Namibia, north and eastern Botswana, Zimbabwe, and central Mozambique.



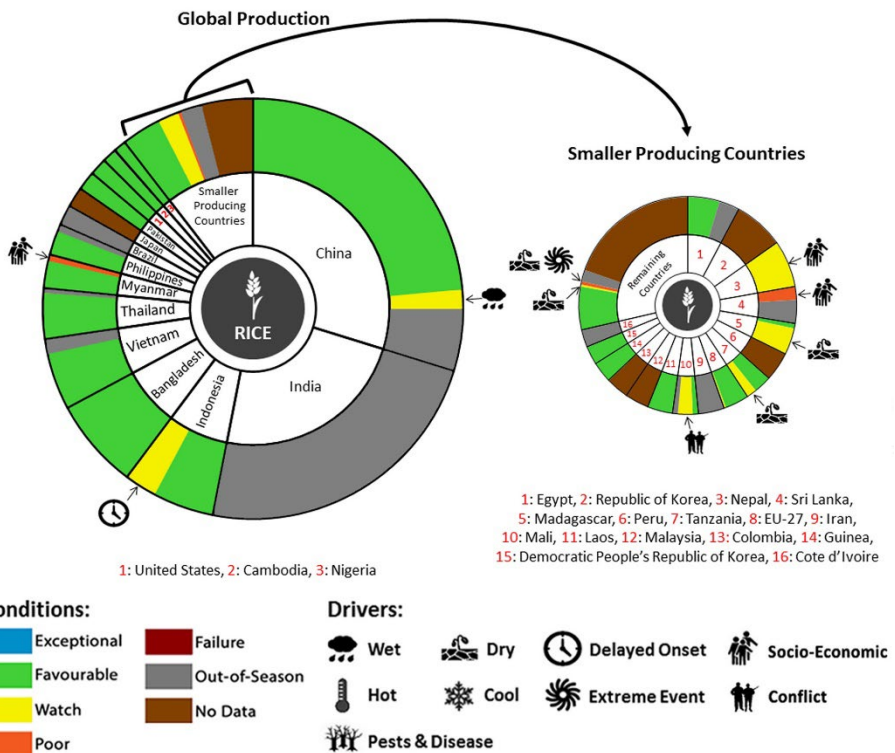
For detailed description of the pie chart, please see box on page 5.

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 June 28th.

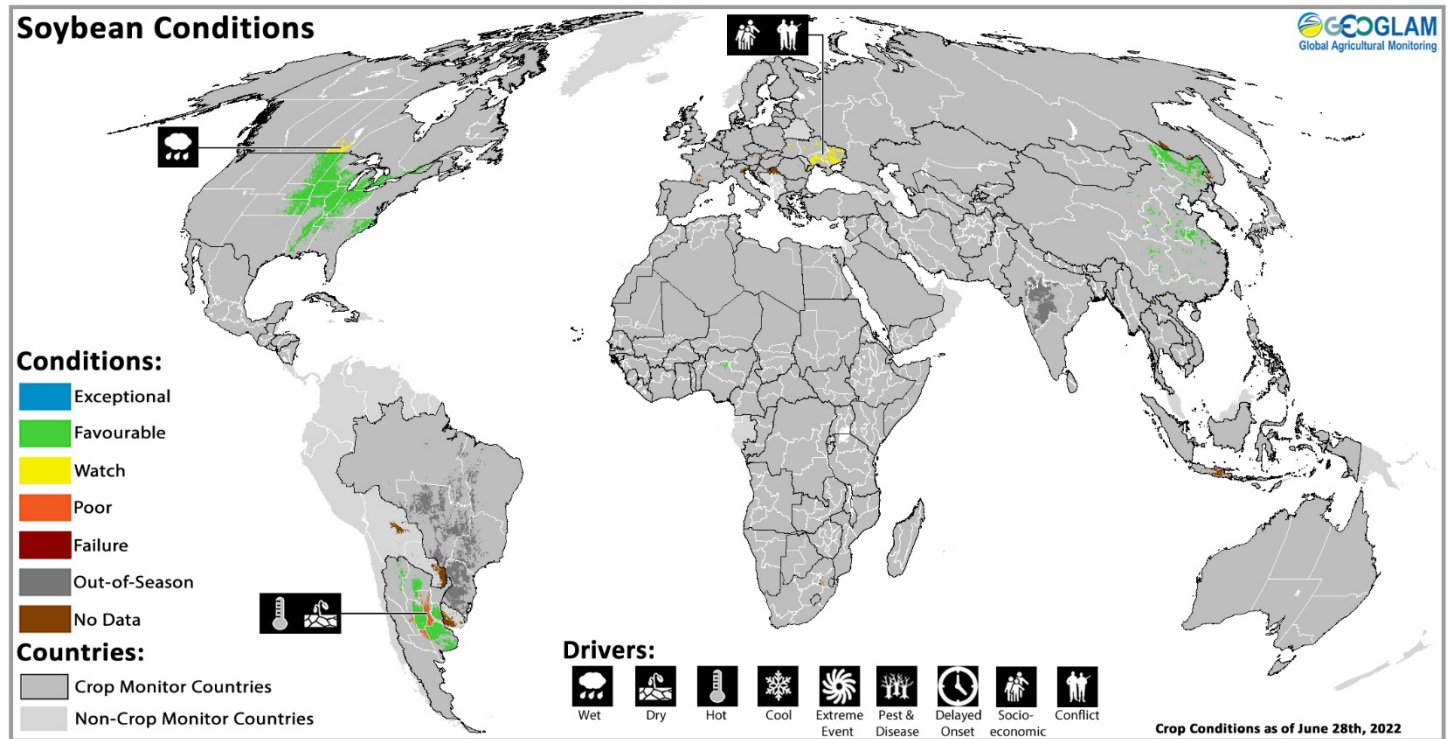
In **East Asia**, high rainfall and low solar radiation in southern China have reduced the potential yields of early-season rice. Single-season rice is under favourable conditions. In the Democratic People’s Republic of Korea, sowing conditions have improved due to recent rainfall in June. In **South Asia**, harvesting of the *Boro* season crop is wrapping up in Bangladesh, while land preparation and early planting of Aman season rice crops are underway. In Pakistan, sowing of Kharif (summer) season rice crops is underway. In Nepal, sowing of the main season crop is ongoing 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**, harvesting of winter-spring rice (dry-season) is continuing in northern Viet Nam, while sowing of wet-season rice is ongoing in Viet Nam, Laos, Cambodia, Myanmar, and the Philippines. In Indonesia, harvesting of wet-season rice is wrapping up under favourable conditions. Although already in its third month, sowing of dry-season rice remains at low levels. In the **Americas**, conditions are favourable in the US. In Mexico, sowing of the spring-summer crop is ongoing. In Cuba, harvesting of main season rice is wrapping up while the sowing of second season rice is ongoing. In Honduras, *Primera* season rice is under mixed conditions due to above-average rainfall. In Haiti, harvesting is ongoing under mixed conditions. In **Europe**, conditions are favourable in France, Spain, and Italy. In **MENA**, conditions are favourable in Iran and Egypt. In **Sub-Saharan Africa**, sowing of main season rice is ongoing in West Africa under generally favourable conditions except for in Mali. Conditions are favourable in Kenya and Burundi. In Tanzania, harvesting of *Msimu* season rice crops is underway in unimodal and key-producing areas under favourable conditions.



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

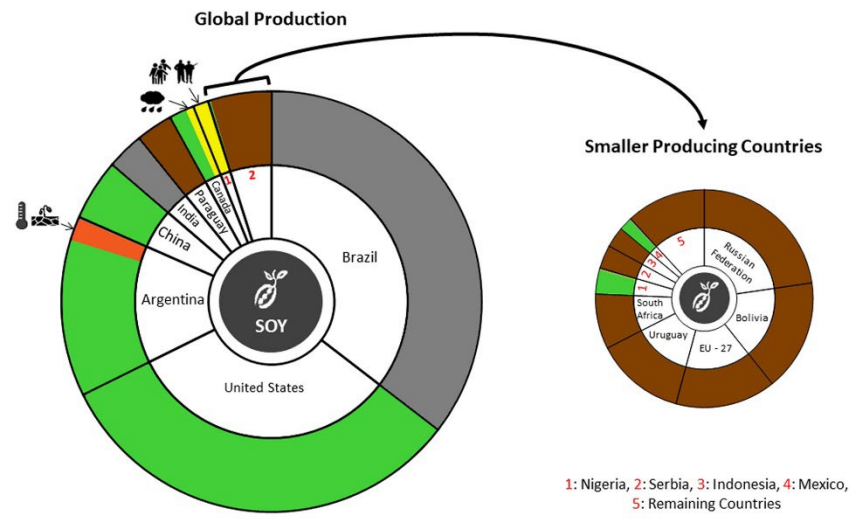
* Assessment based on information as of June 28th

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 June 28th.

In **South America**, harvesting is wrapping up in Argentina under generally favourable conditions for both the early-planted crop (larger season) and the late-planted crop (smaller season). Dry conditions throughout the growing season have led to reduced yields in La Pampa, Santa Fe, and San Luis, however, national yields are still expected to be close to the previous year. In **North America**, sowing is wrapping up in the US after earlier delays due to cold and wet weather in the northern Corn Belt. In Canada, conditions are favourable in the main producing province of Ontario, while under mixed conditions in the Prairies due to dryness in Saskatchewan and excess moisture in Manitoba. In **Asia**, sowing is ongoing in China under favourable conditions. In **Europe**, sowing is wrapping up in Ukraine under the uncertainties of the ongoing war.



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 slice 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.

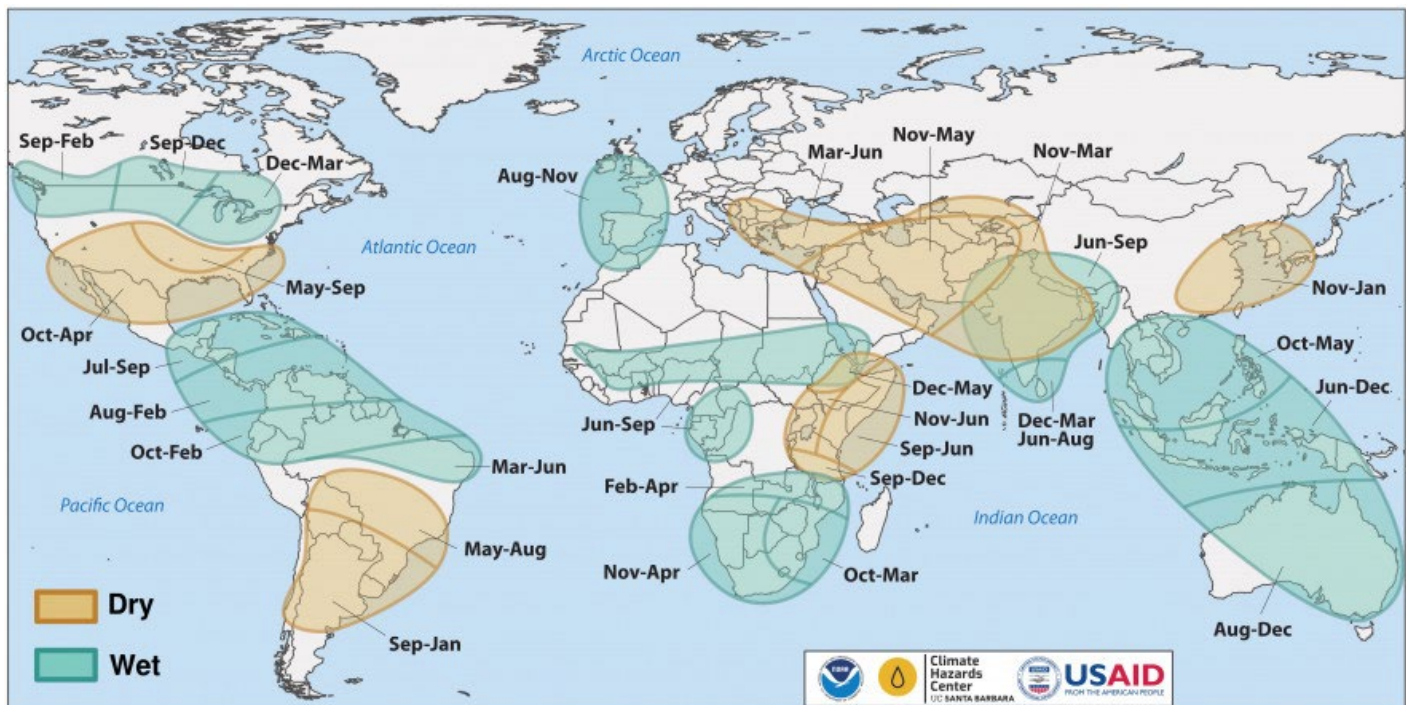


Global Climate Influences

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 from July to September (52% chance) and are forecast to strengthen after that (59% chance for October to December). 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 and would be particularly harmful to regions that have already experienced two years of below-average rainfall.

Negative Indian Ocean Dipole (IOD) conditions are forecast to develop in July and 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 (Figure 1) and the long-term July-August-September 2022 forecast (Figure 2) are influenced by the current La Niña phase.

In **North America**, the two-week forecast (Figure 1) indicates likely below-average precipitation in the US across southern Texas and Louisiana. There is likely above-average precipitation in the US over Kentucky, Tennessee, and New England, while likely above-average precipitation over Quebec in Canada. The long-term August-September-October 2022 forecast (Figure 2) shows possible below-average precipitation across most of the Midwest and New England in the US along with southern Ontario and Quebec in Canada. For further details see the [CM4AMIS](#) Regional Outlook for the United States.

In **Central America & the Caribbean**, the two-week forecast (Figure 1) indicates likely below-average precipitation over Mexico's east coast, Honduras, Haiti, and the Dominican Republic. The long-term August-September-October 2022 forecast (Figure 2) suggests above-average precipitation across southern Mexico, eastern Honduras, and Nicaragua. For further details see the [CM4EW](#) Regional Outlook.

In **South America**, the two-week forecast (Figure 1) indicates likely above-average precipitation over Columbia, western Ecuador, western Venezuela, and northwestern Brazil. Below-average precipitation is likely over northeastern and central Brazil, northern Bolivia, Uruguay, Central Chile, and northern and southern Argentina. The long-term August-September-October 2022 forecast (Figure 2) suggests likely above-average precipitation across northern South America and below-average precipitation across southern South America. For further details see the [CM4AMIS](#) Regional Outlook for Argentina.

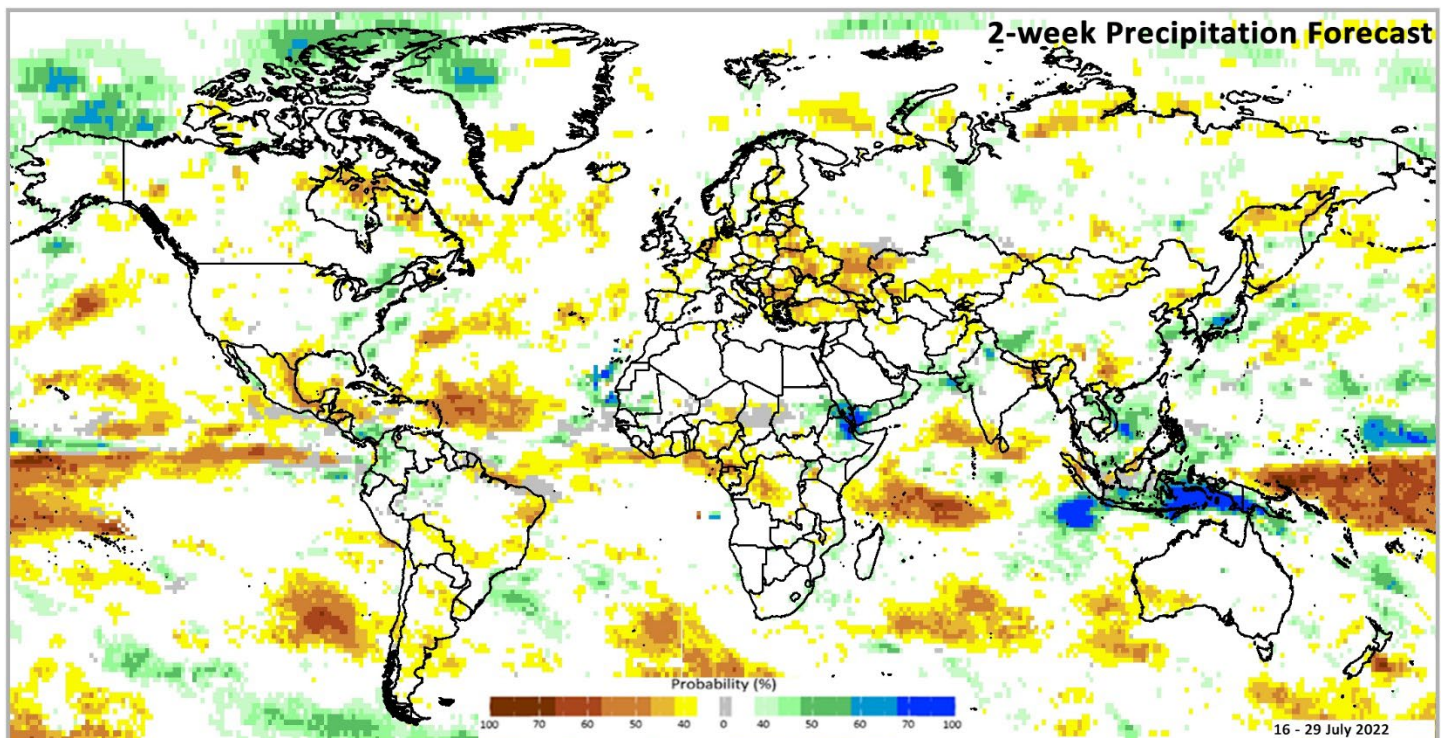


Figure 1: IRI SubX Precipitation Biweekly Probability Forecast for 16 – 29 July 2022, issued on July 8th, 2022. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](#)

In **Europe**, the two-week forecast (Figure 1) indicates likely below-average rainfall over the Netherlands, northwestern Germany, northern Poland, Serbia, southern Romania, Bulgaria, North Macedonia, Greece, Turkey, Moldova, central and northern Ukraine, Belarus, the southern Russian Federation, Georgia, Armenia, and Azerbaijan. The long-term August-September-October 2022 forecast (Figure 2) predicts likely below-average precipitation across all of Europe except for Ireland, the northern United Kingdom, Norway, Finland, and the Volga district of the Russian Federation. For further details see the [CM4AMIS](#) Regional Outlook for Europe.

In **MENA**, the two-week forecast (Figure 1) indicates likely average precipitation across the region. The long-term August-September-October 2022 forecast (Figure 2) predicts likely below-average precipitation across the entire region except for near-average precipitation over Egypt and central Iraq.

In **Sub-Saharan Africa**, the two-week forecast (Figure 1) indicates likely below-average precipitation over southern Liberia, southern Côte d'Ivoire, southeast Niger, Nigeria, Cameroon, Equatorial Guinea, Gabon, Republic of Congo, western Democratic Republic of Congo, and southeast Uganda. Above-average precipitation is likely over eastern Sudan, northeast Ethiopia, Eritrea, and Yemen. For the long-term August-September-October 2022 forecast (Figure 2), precipitation is likely to be above-average over Senegal, Mali, Burkina Faso, Niger, Chad, Sudan, South Sudan, Eritrea, Ethiopia, and Yemen. Below-average precipitation is likely over Sierra Leone, Liberia, Côte d'Ivoire, Ghana, Togo, Benin, southern Nigeria, Cameroon, Equatorial Guinea, Gabon, the Republic of Congo, the Democratic Republic of Congo, Angola, Tanzania, eastern Kenya, southern Ethiopia, and Somalia. For further details, see the [CM4EW](#) Regional Outlooks for the Eastern Africa.

In **Central Asia**, the two-week forecast (Figure 1) indicates likely below-average precipitation in western and eastern Kazakhstan. The long-term August-September-October 2022 forecast (Figure 2) predicts likely below-average precipitation across Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, and Afghanistan. For further details see the [CM4EW](#) Regional Outlook.

In **South Asia**, the two-week forecast (Figure 1) indicates likely below-average precipitation in southern and western India, Bhutan, northern Bangladesh, and Sri Lanka. Above-average precipitation is likely in western India, and southern Pakistan. The long-term August-September-October 2022 forecast (Figure 2) indicates likely above-average precipitation across Pakistan, India, and Nepal, while below-average precipitation over Sri Lanka.

In **East Asia**, the two-week forecast (Figure 1) indicates likely below-average precipitation in eastern Mongolia, southern and northeastern China, and northern Japan. Above-average precipitation is likely over southwestern China and southern Japan. The long-term August-September-October 2022 forecast (Figure 2) suggests likely below-average precipitation over western Mongolia, while above-average precipitation over the rest of the region.

In **Southeast Asia & Australia**, the two-week forecast (Figure 1) indicates likely below-average precipitation in northern Myanmar, western Indonesia, and Western Australia. Above-average precipitation is likely in Laos, central Viet Nam, the southern Philippines, southern and eastern Indonesia, and southern Papua New Guinea. The long-term August-September-October 2022 forecast (Figure 2) precipitation is predicted to be above-average across the entire region except for western Indonesia and western Malaysia. For further details see the [CM4EW](#) Regional Outlook.

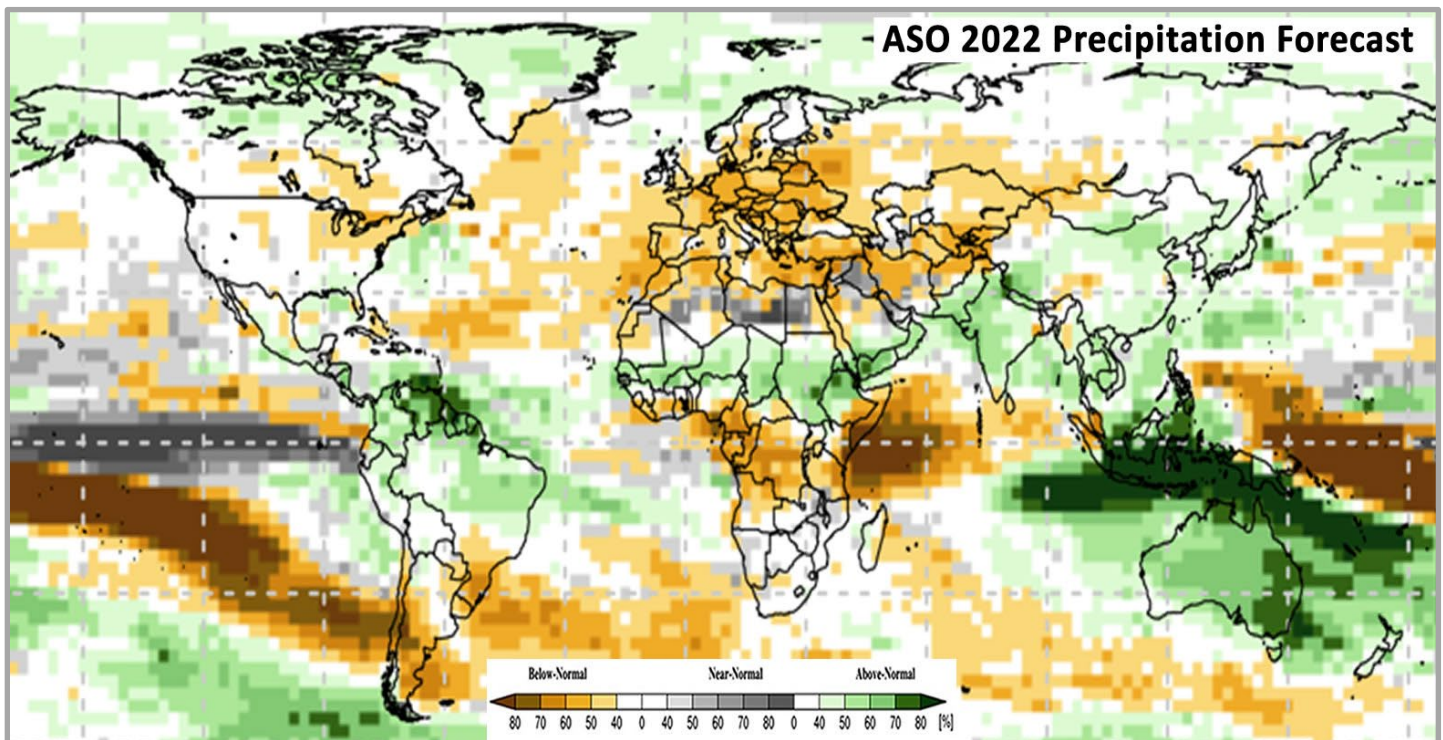


Figure 2: Probabilistic forecast for most-likely August-September-October (ASO) 2022 rainfall tercile, based on July conditions. The white colour indicates that there is no dominant category across the model forecasts. Source: [WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble](#)

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.*

	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 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).