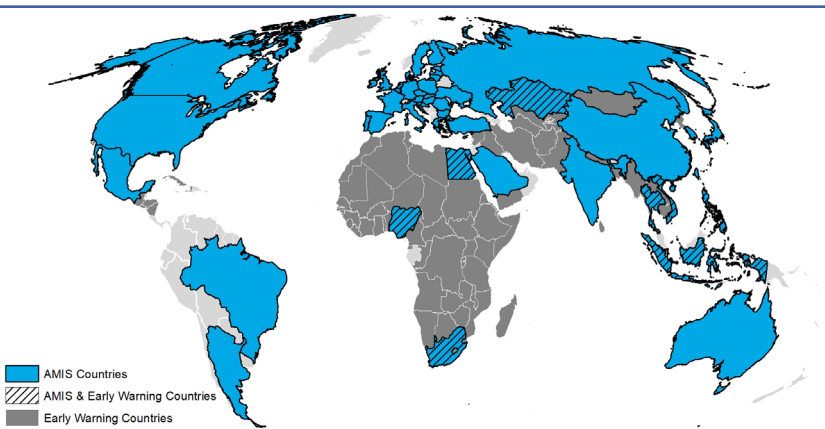




# Crop Monitor for AMIS

## Overview:

At the end of May, conditions are favourable for wheat, maize, and rice, while mixed for soybeans. For wheat, conditions are generally exceptional in parts of Europe, while poor in Spain and parts of the US. Maize is harvesting in Argentina under poor conditions and in South Africa under exceptional conditions, while sowing continues in the Northern Hemisphere under favourable conditions. Rice conditions are favourable across Asia. Soybean harvesting continues in Argentina under poor conditions while sowing is ongoing in the northern hemisphere under favourable conditions.

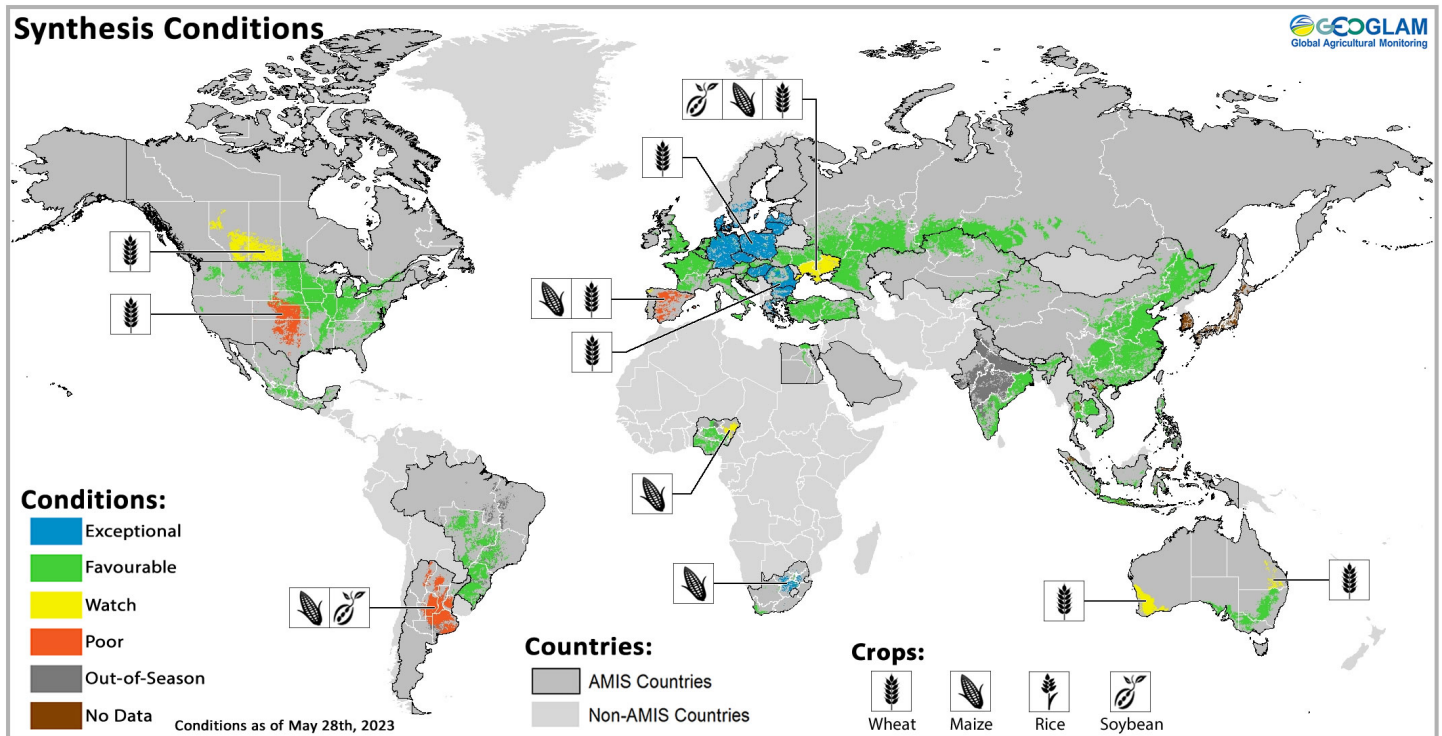


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*Assessment based on information as of May 28<sup>th</sup> 2023*

## At a glance for AMIS countries (as of May 28th)



Global crop condition map synthesizing information for all four AMIS crops as of May 28th. Crop conditions over the main growing areas for wheat, maize, rice, and soybean are based on a combination of national and regional crop analyst inputs along with earth observation data from all Crop Monitors. **Crops that are in other than favourable conditions are displayed on the map with their crop symbol.**

### Crop Conditions at a Glance

**Wheat** - In the northern hemisphere, winter wheat is under exceptional conditions across a large part of Europe, while poor in Spain and parts of the US. Spring wheat sowing is in full swing. In the southern hemisphere, sowing is continuing in Australia.

**Maize** - In the southern hemisphere, harvest is continuing in Argentina under poor conditions while in South Africa under exceptional conditions. In the northern hemisphere, sowing continues under favourable conditions.

### Forecasts at a Glance

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

**India** – In June, below-average rainfall is expected over most parts of the country except in some areas of the south peninsular. The Southwest monsoon (June to September) rainfall as a whole is forecast to likely be average compared to the Long Period Average (1971-2020).

**Rice** - In India, harvesting of the Rabi crop is wrapping up. In Southeast Asia, harvesting of dry-season rice is almost completed in the northern countries while in Indonesia harvesting of wet-season rice enters the final stages.

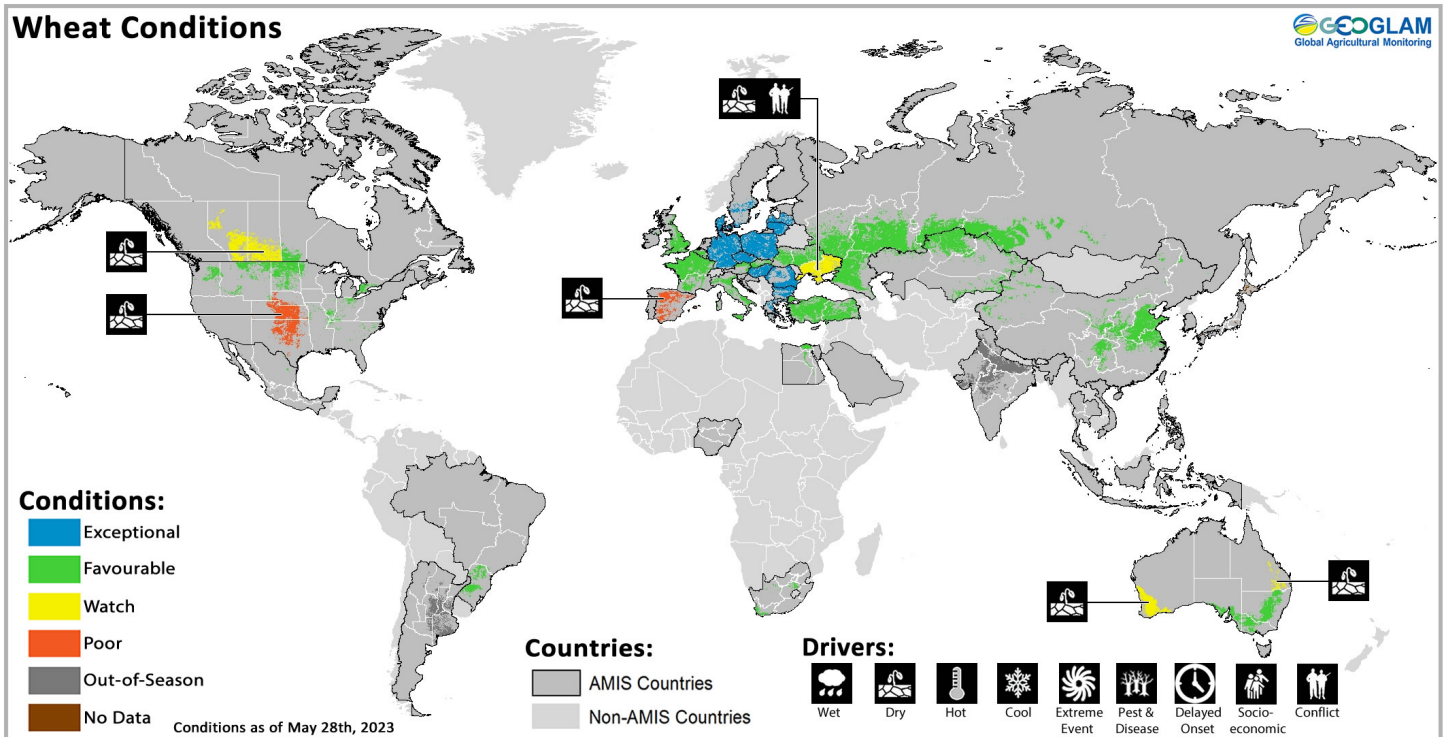
**Soybeans** - In the southern hemisphere, harvest is continuing in Argentina with poor yields. In the northern hemisphere, sowing is ongoing in the US, Canada, China, and Ukraine.

**The United States** – The short-term (two weeks) forecast indicates likely above-average precipitation across the western half of the country while a leaning to below-average over the Mid-West.

*While the Crop Monitor for AMIS is primarily focused on documenting crop conditions based on environmental factors, the war in Ukraine and in other conflict areas will very likely negatively impact the ability of the crop to be harvested.*

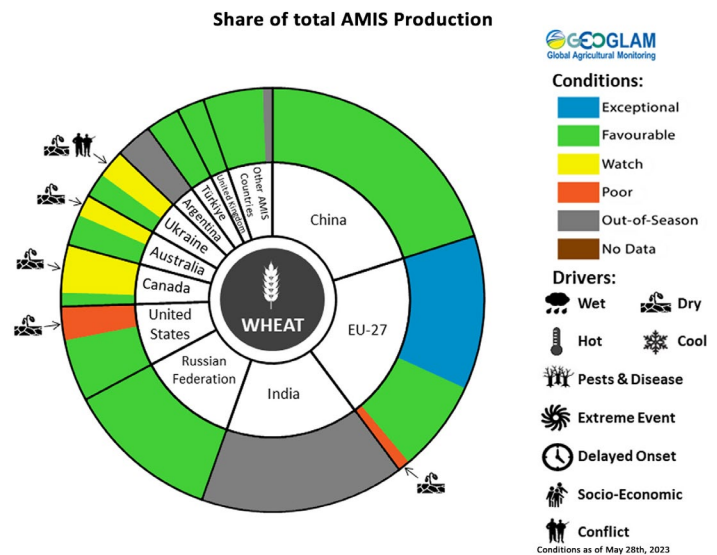
\* Assessment based on information as of May 28<sup>th</sup>

## Wheat Conditions for AMIS Countries



Wheat crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of May 28<sup>th</sup>. Where crops are in other than favourable conditions the climatic drivers responsible for those conditions are displayed. Crop Season Specific Maps can be found in Appendix 2.

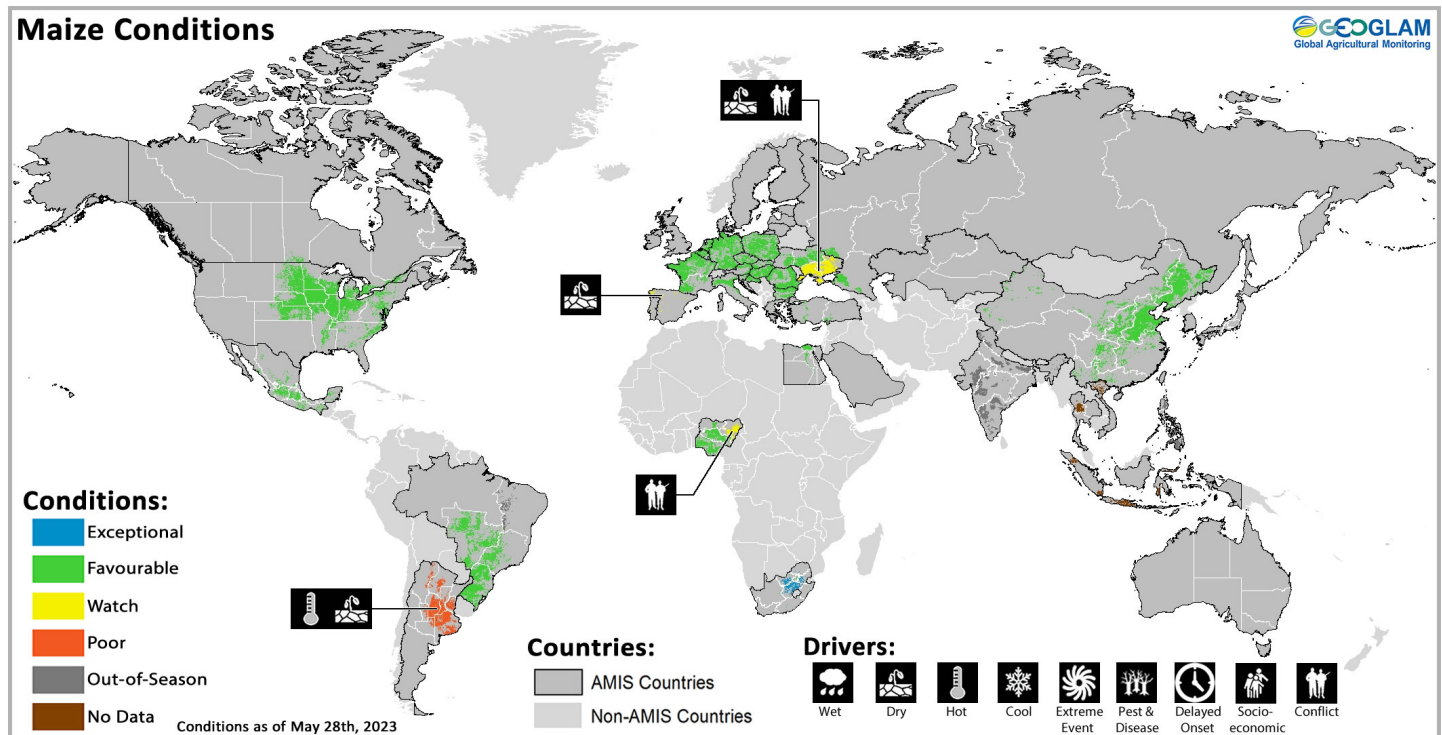
**Wheat:** In the **EU**, conditions are favourable to exceptional except for Spain due to a historic drought. In the **UK**, conditions are favourable. In **Türkiye**, conditions are favourable as crops enter the reproductive stage. In **Ukraine**, May was drier than average, however, the April rains were enough to maintain favourable conditions in most regions except in the south. The ongoing war continues to obstruct fieldwork and access to inputs in the east and south regions. In the **Russian Federation**, conditions are favourable for winter wheat and for the continued sowing of spring wheat. In **China**, harvesting of winter wheat is ongoing under favourable conditions as sowing of spring wheat wraps up. In the **US**, winter wheat in the central and southern Great Plains has suffered from prolonged drought, leading to reduced yields and higher-than-average abandonment levels. Sowing of spring wheat is continuing across the country. In **Canada**, winter wheat conditions are generally favourable while spring wheat sowing begins under drought conditions in Alberta and Saskatchewan. In **Australia**, sowing is continuing in the eastern states under mixed conditions due to low soil moisture levels.



For detailed description of the pie chart please see box on page 6.

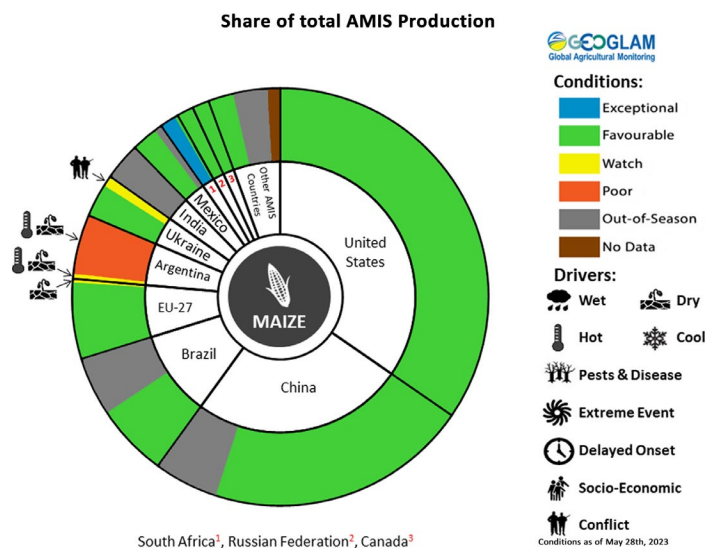
\* Assessment based on information as of April 28<sup>th</sup>

## Maize Conditions for AMIS Countries



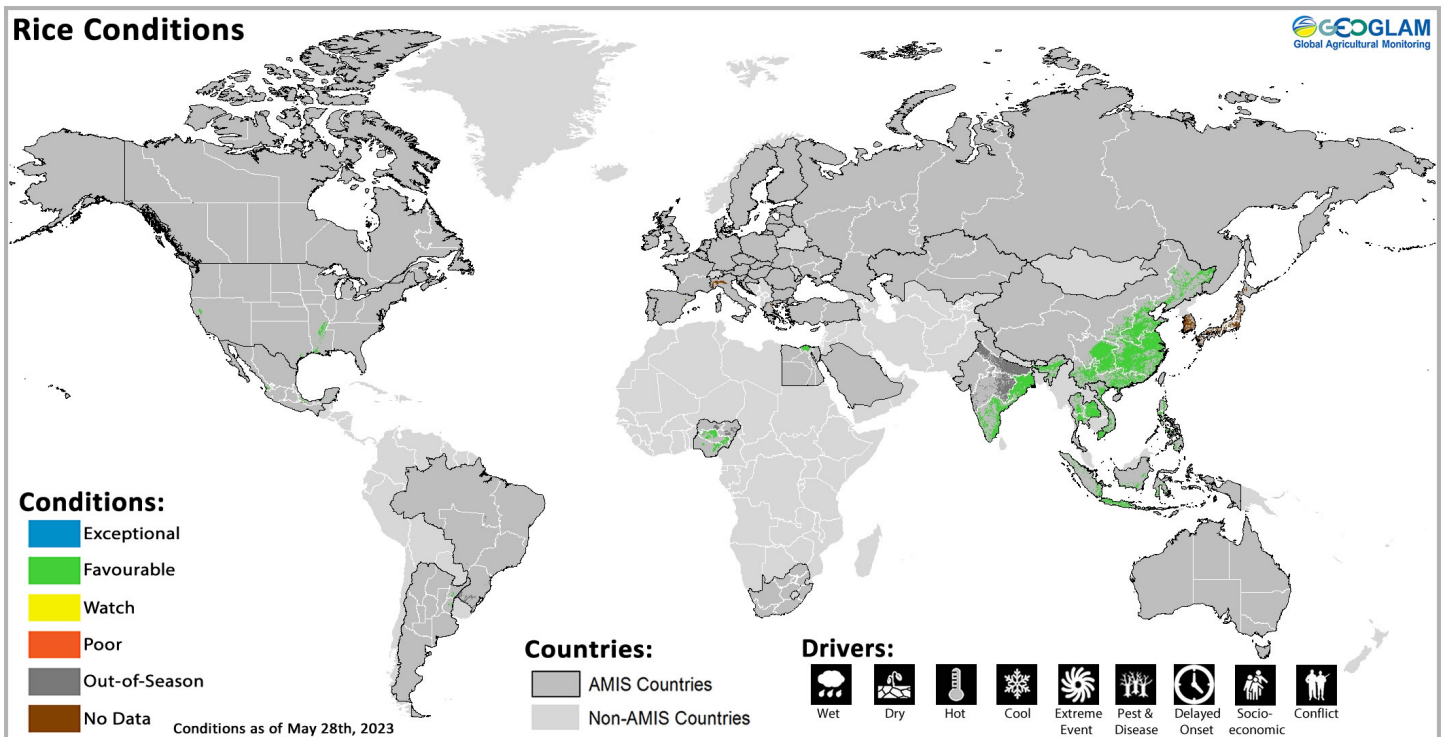
Maize crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of May 28<sup>th</sup>. Where crops are in other than favourable conditions the climatic drivers responsible for those conditions are displayed. Crop Season Specific Maps can be found in Appendix 2.

**Maize:** In **Brazil**, conditions are favourable with the majority of the summer-planted crop (larger season) is in the reproductive stage. In **Argentina**, harvest is continuing with significantly reduced yields for both the early-planted crop (typically larger season) and the late-planted crop (typically smaller season). The share destined for animal consumption has markedly increased due to the poor state of the crops. In **South Africa**, harvesting is wrapping up under exceptional conditions. In the **US**, sowing is wrapping up under favourable conditions. In **Mexico**, harvesting of the Autumn-Winter crop (smaller season) is continuing while sowing for the Spring-Summer crop (larger season) begins. In **Canada**, sowing is beginning under favourable conditions. In **China**, conditions are favourable for the spring-planted crop and the sowing of the summer-planted crop. In the **EU**, sowing is nearing completion under generally favourable conditions, albeit with dry conditions in Spain and Portugal. In **Ukraine**, sowing is wrapping up under favourable conditions away from the war zones. In the **Russian Federation**, sowing is over halfway complete under favourable conditions.



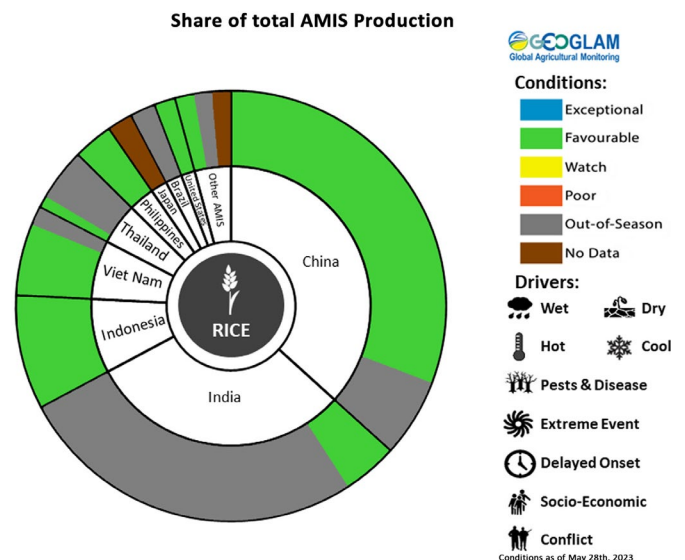
For detailed description of the pie chart please see box on page 6.

## Rice Conditions for AMIS Countries



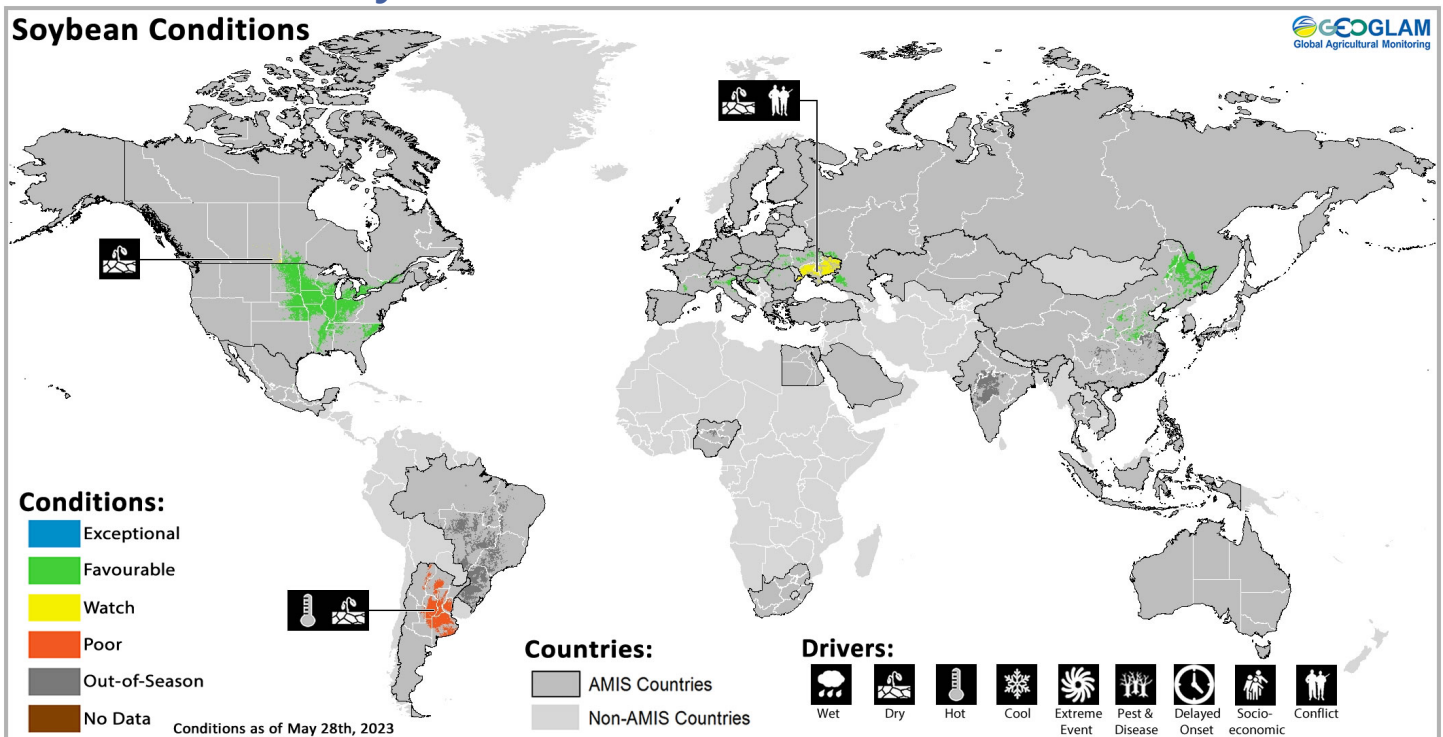
Rice crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of May 28<sup>th</sup>. Where crops are in other than favourable conditions the climatic drivers responsible for those conditions are displayed. Crop Season Specific Maps can be found in Appendix 2.

**Rice:** In **China**, conditions are favourable as early-planted rice enters the reproductive stage and the sowing of single-season rice continues. In **India**, harvesting of the Rabi crop is wrapping up under favourable conditions. In **Indonesia**, harvesting of wet-season rice is progressing under favourable conditions. Sowing of dry-season rice is continuing slowly as farmers wait for additional rainfall. In **Viet Nam**, conditions are favourable across the country for dry-season rice (Winter-Spring rice) as harvesting wraps up in the South. Sowing of wet-season (Summer-Autumn rice) is at the peak in the Mekong River Delta. In **Thailand**, harvesting of dry-season rice is nearing completion with good yields and an increase in total sown area compared to last year. In the **Philippines**, dry-season rice harvesting is wrapping up under favourable conditions. Sowing of wet-season rice is beginning under favourable conditions. In the **US**, sowing is wrapping up in the southern states while progressing in California under favourable conditions.



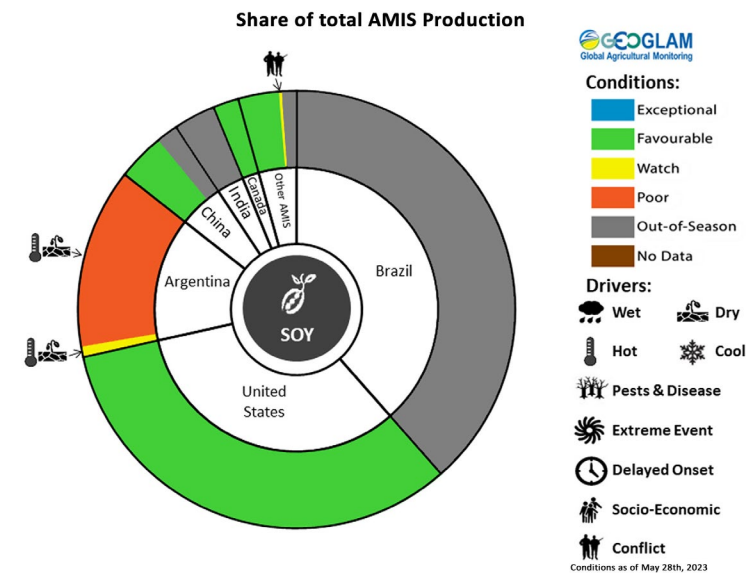
For detailed description of the pie chart please see box on page 6.

## Soybean Conditions for AMIS Countries



Soybean crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of May 28<sup>th</sup>. Where crops are in other than favourable conditions the climatic drivers responsible for those conditions are displayed. Crop Season Specific Maps can be found in Appendix 2.

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



For detailed description of the pie chart please see box below.

**Information on crop conditions in non-AMIS countries can be found in the [GEOGLAM Crop Monitor for Early Warning](#), published June 1<sup>st</sup>**

**Pie chart description:** Each slice represents a country's share of total AMIS production (5-year average). Main producing countries (representing 95 percent of production) are shown individually, with the remaining 5 percent grouped into the "Other AMIS 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 (i.e., spring and winter wheat). When conditions are other than 'favourable', icons are added that provide information on the key climatic drivers affecting conditions.

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

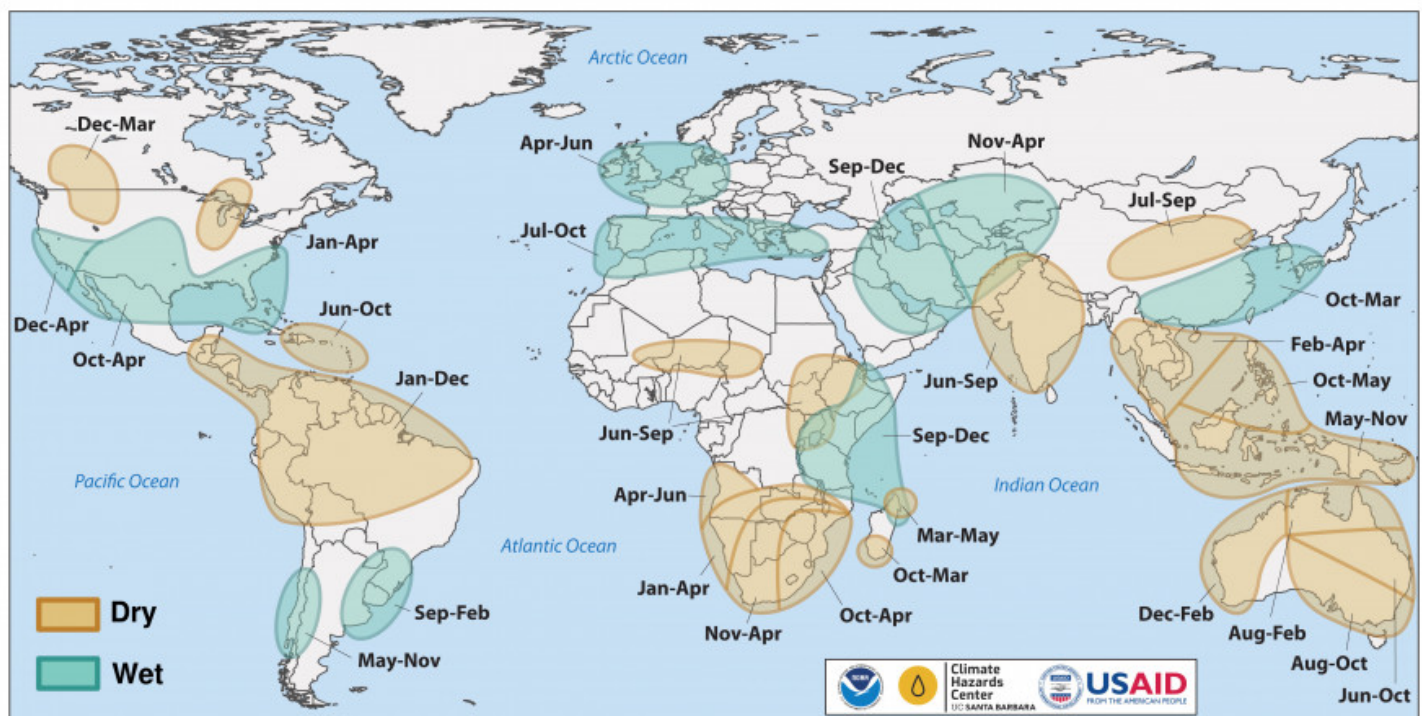
## Climate Influences: El Niño Watch

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

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

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

Source: UCSB Climate Hazards Center

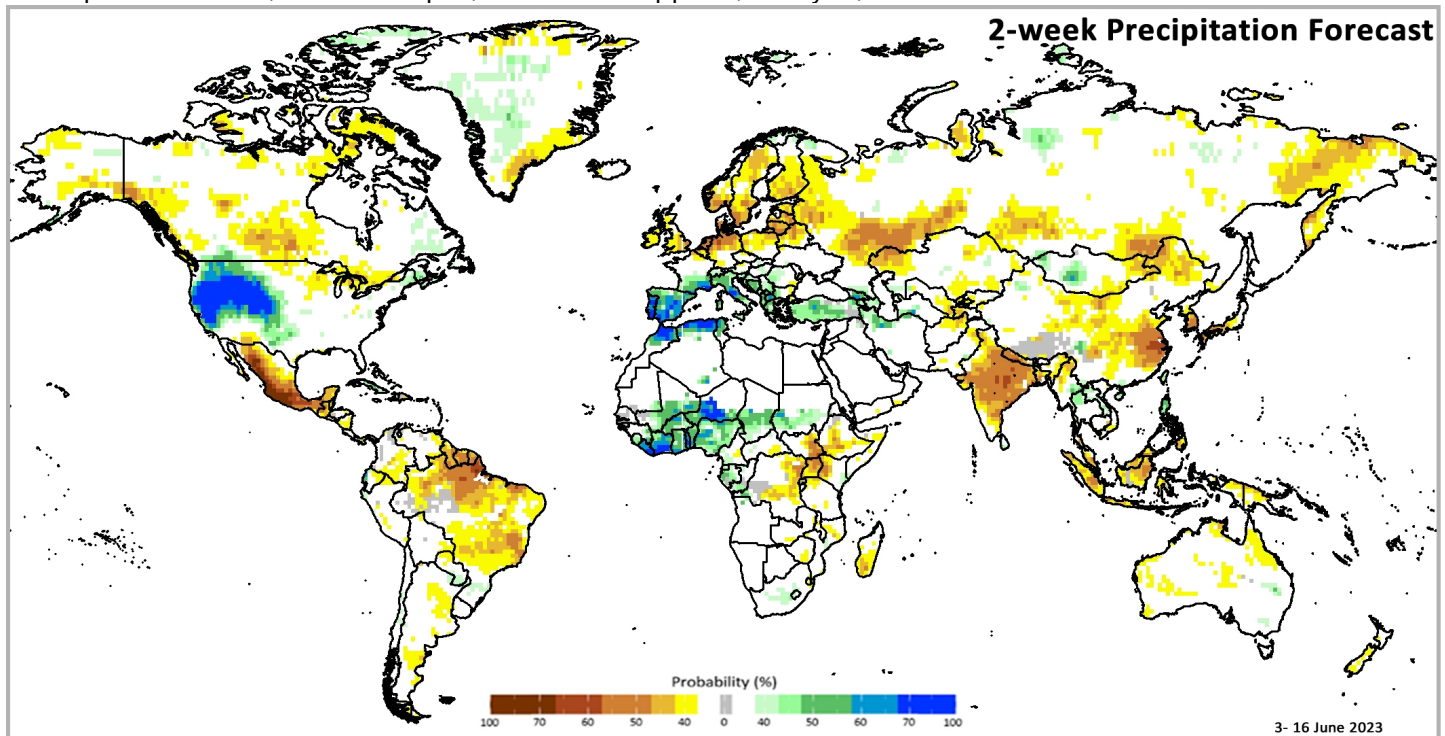


Location and timing of likely above- and below-average precipitation related to El Niño events. Based upon observed precipitation during 22 El Niño events since 1950, wet and dry correspond to a statistically significant increase in the frequency of precipitation in the upper and lower thirds of historical values, respectively. Statistical significance at the 95% level is based on the resampling of precipitation during neutral El Niño-Southern Oscillation conditions. Source: [FEWS NET & NOAA & CHC](#)

## Global Two-week Forecast of Areas with Above or Below-Average Precipitation

The two-week forecast (Figure 1) indicates a likelihood of above-average rainfall over the western US, Portugal, Spain, southern France, Italy, Bosnia and Herzegovina, Albania, North Macedonia, Greece, Türkiye, Georgia, Armenia, northern Morocco, northern Algeria, Liberia, Côte d'Ivoire, Mali, Burkina Faso, Ghana, Togo, Benin, Niger, Nigeria, Chad, Sudan, Gabon, northwestern Iran, central Mongolia, and the northern Philippines.

There is also a likelihood of below-average rainfall over the Prairies and Eastern Canada, western and southern Mexico, Guatemala, Guyana, Suriname, French Guiana, northern and central Brazil, Ireland, the United Kingdom, Belgium, Netherlands, northern Germany, southern Denmark, Norway, Sweden, Finland, Estonia, Latvia, Lithuania, northern Poland, Belarus, northwest and central Russian Federation, eastern South Sudan, central Ethiopia, Uganda, western Kenya, the eastern Democratic Republic of Congo, southern Madagascar, western Kazakhstan, eastern Uzbekistan, western Tajikistan, northeastern Afghanistan, India, Nepal, Bangladesh, eastern Mongolia, central and northeast China, the Republic of Korea, southern Japan, southern Philippines, Malaysia, and Indonesia.



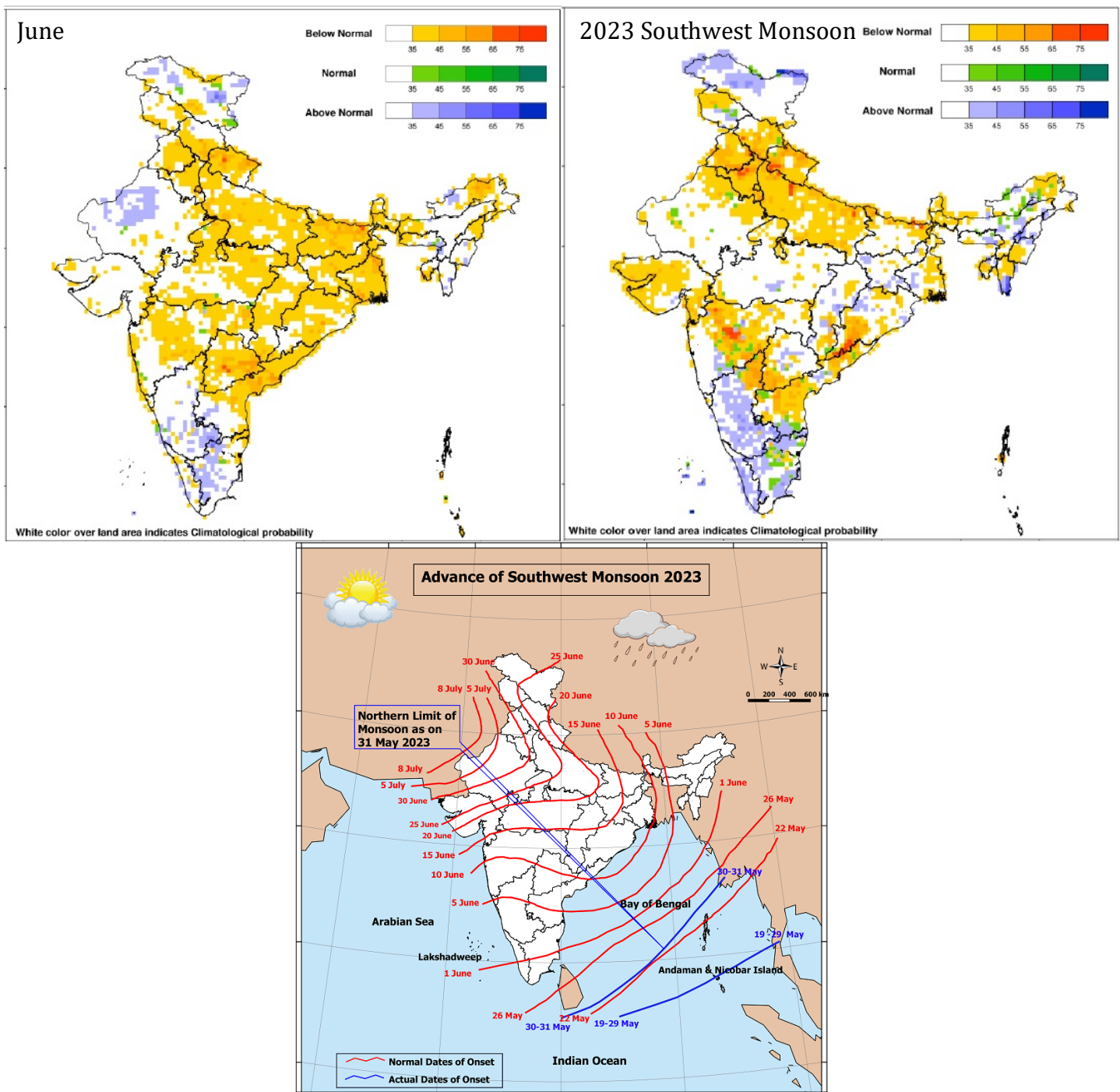
IRI SubX Precipitation Biweekly Probability Forecast for 3 – 16 June 2023, issued on 26 May 2023. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](#)



## India Outlook

In June, below-average rainfall is expected over most parts of the country except in some areas of the south peninsular, northwest, extreme north, and some isolated pockets of the northeast, where above-average rainfall is expected.

The Southwest monsoon (June to September) rainfall as a whole is forecast to likely be average (96%) compared to the Long Period Average (1971-2020), which is 87 cm. Average to above-average rainfall is likely over most areas of the south peninsular, some areas of east central, many areas of the northeast, and the extreme north. However, average to below-average rainfall is likely over many areas of northwest and adjoining west-central, northern parts of the peninsular, and along the foothills of the Himalayas.



**Upper Left:** Probability forecast of tercile categories (below normal, normal, and above normal) for the 2023 June rainfall over India. **Upper Right:** Probability forecast of tercile categories (below normal, normal, and above normal) for the seasonal rainfall over India during the 2023 southwest monsoon season (June-September). **Lower Left:** Current advancement of the Southwest Monsoon as of May 31<sup>st</sup> compared to the average.

Source: India Meteorological Department

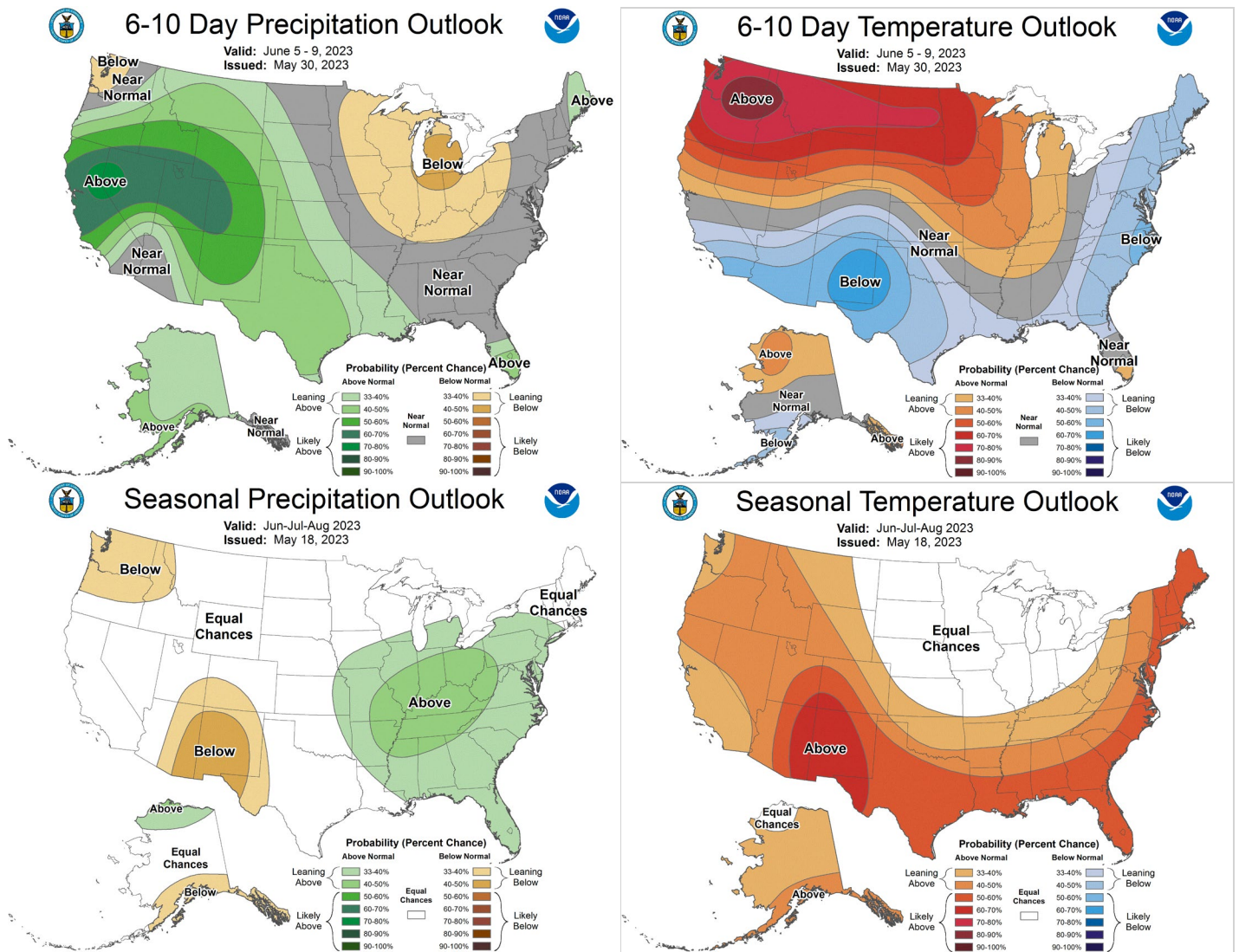
\* Assessment based on information as of May 28<sup>th</sup>

## United States Outlook

The 5 – 9 June 2023 outlook indicates there is likely above-average precipitation across the western half of the country, while a leaning to below-average precipitation over the Mid-West. During the same time, temperatures are likely to be above-average across the northern part of the country from the Pacific Northwest to the Mid-west, while likely below-average temperatures across the southern and eastern regions.

For the long-term seasonal June-July-August (JJA) 2023 outlook, there is a leaning toward below-average precipitation in the Pacific Northwest and the Southwest, while leaning toward above-average precipitation across the eastern parts of the country. During the same period, temperatures are likely to be above-average across most of the country except for the Mid-West and the northern Great Plains, where there are equal chances of above and below-average temperatures.

### Short-term and Seasonal Outlooks



**Upper Left:** 6 - 10 precipitation outlook issued on 30 May 2023. **Upper Right:** 6 - 10 precipitation outlook issued on 30 May 2023. **Lower Left:** Extended June-July-August precipitation outlook issued on 18 May 2023. **Lower Right:** Extended June-July-August temperature outlook issued on 18 May 2023. Maps from NOAA/National Weather Service, National Centers for Environmental Predictions, and Climate Prediction Center <https://www.cpc.ncep.noaa.gov/products/forecasts/>.

Source: NOAA Climate Prediction Center

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

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

**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.

### Conditions:

	Exceptional
	Favourable
	Watch
	Poor
	Out-of-Season
	No Data

### Drivers:

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

	Wet
	Dry
	Hot
	Cool
	Extreme Event
	Delayed-Onset

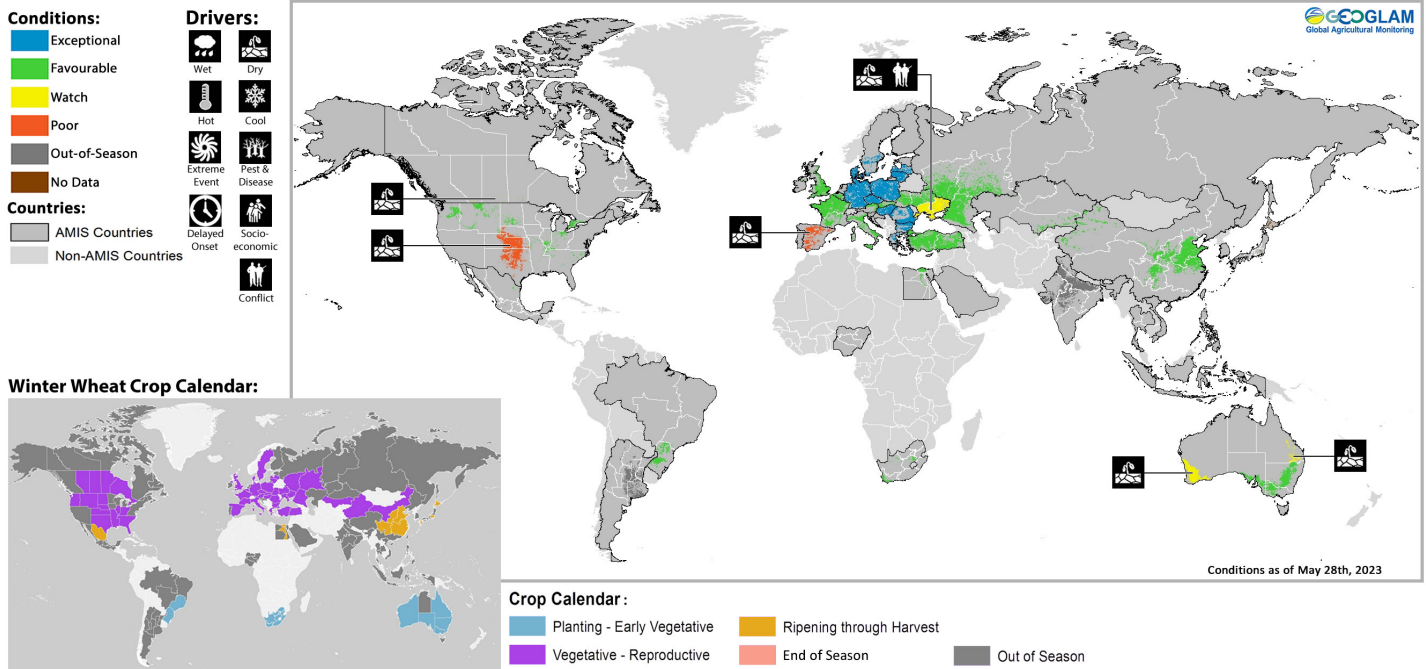
### Crop Season Nomenclature:

In countries that contain multiple cropping seasons for the same crop, the following chart identifies the national season name associated with each crop season within the Crop Monitor. Within the Crop Monitor for AMIS countries, the larger producing season (most recent 5 years) has been assigned to the first season.

Crop Season Nomenclature				
Country	Crop	Season 1 Name	Season 2 Name	Season 3 Name
Argentina	Soybean	Spring-planted	Summer-planted	
Brazil	Maize	Summer-planted (larger producing season)	Spring-planted (smaller producing season)	
Canada	Wheat	Winter-planted	Spring-planted	
China	Maize	Spring-planted	Summer-planted	
China	Rice	Single-season	Late-season	Early-season
China	Wheat	Winter-planted	Spring-planted	
Egypt	Rice	Summer-planted	Nili season (Nile Flood)	
India	Maize	Kharif	Rabi	
India	Rice	Kharif	Rabi	
Indonesia	Rice	Wet-season	Dry-season	
Mexico	Maize	Spring-planted	Autumn-planted	
Nigeria	Maize	Main-season	Short-season	
Nigeria	Rice	Main-season	Off-season	
Philippines	Rice	Wet-season	Dry-season	
Russian Federation	Wheat	Winter-planted	Spring-planted	
Thailand	Rice	Wet-season	Dry-season	
United States	Wheat	Winter-planted	Spring-planted	
Viet Nam	Rice	Wet-season	Dry-season	

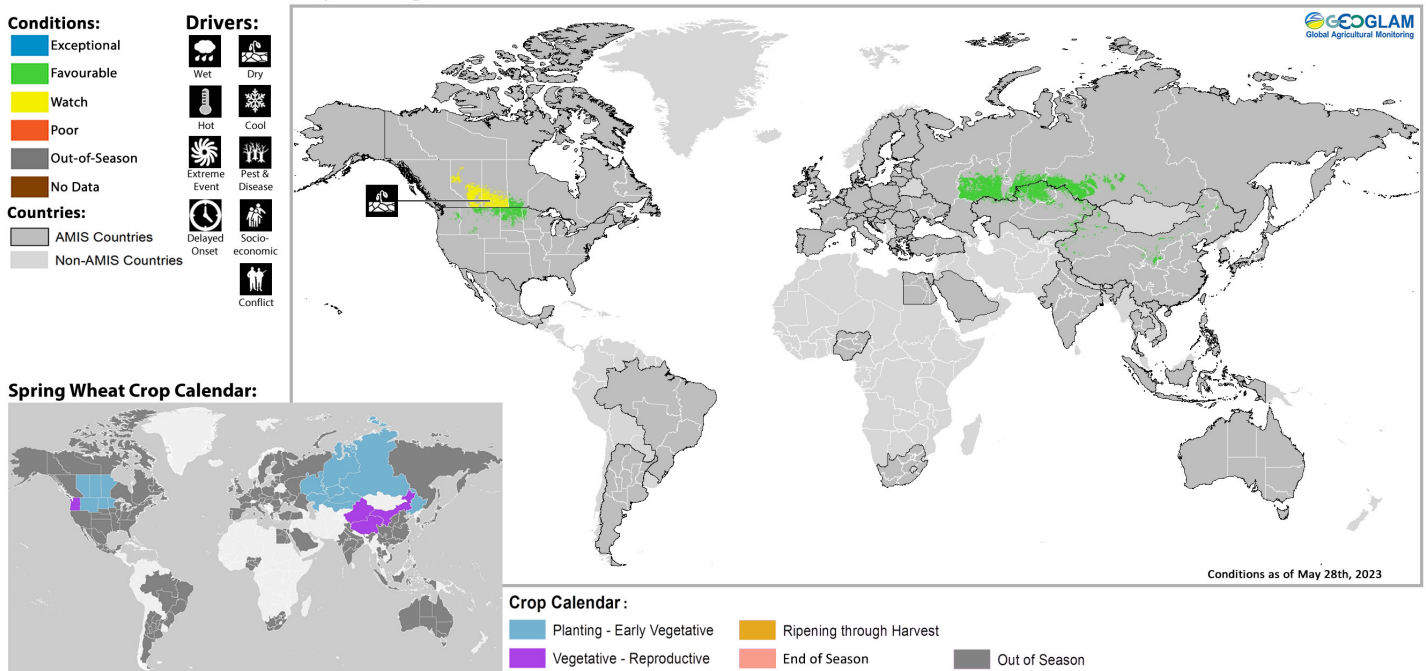
## Appendix 2: Crop Season-Specific Maps

### Winter Planted Wheat Conditions for AMIS Countries



Winter wheat crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of May 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

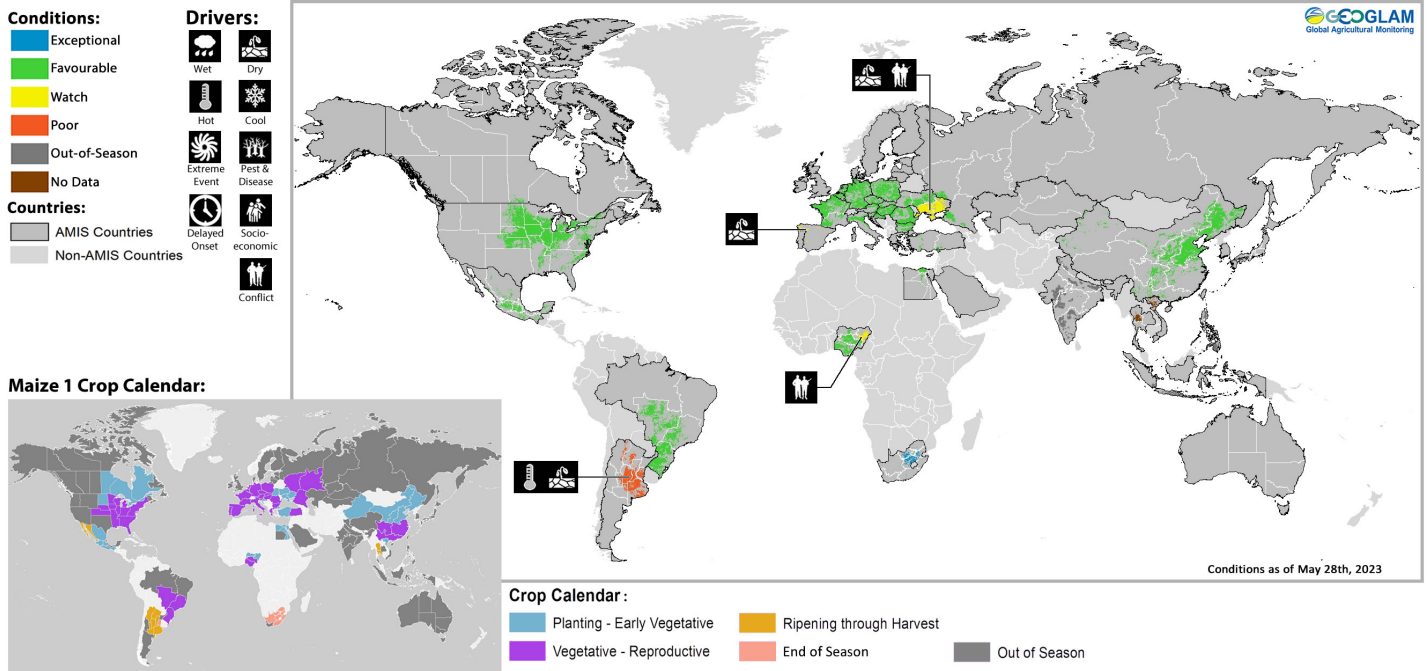
### Spring Planted Wheat Conditions for AMIS Countries



Spring wheat crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of May 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

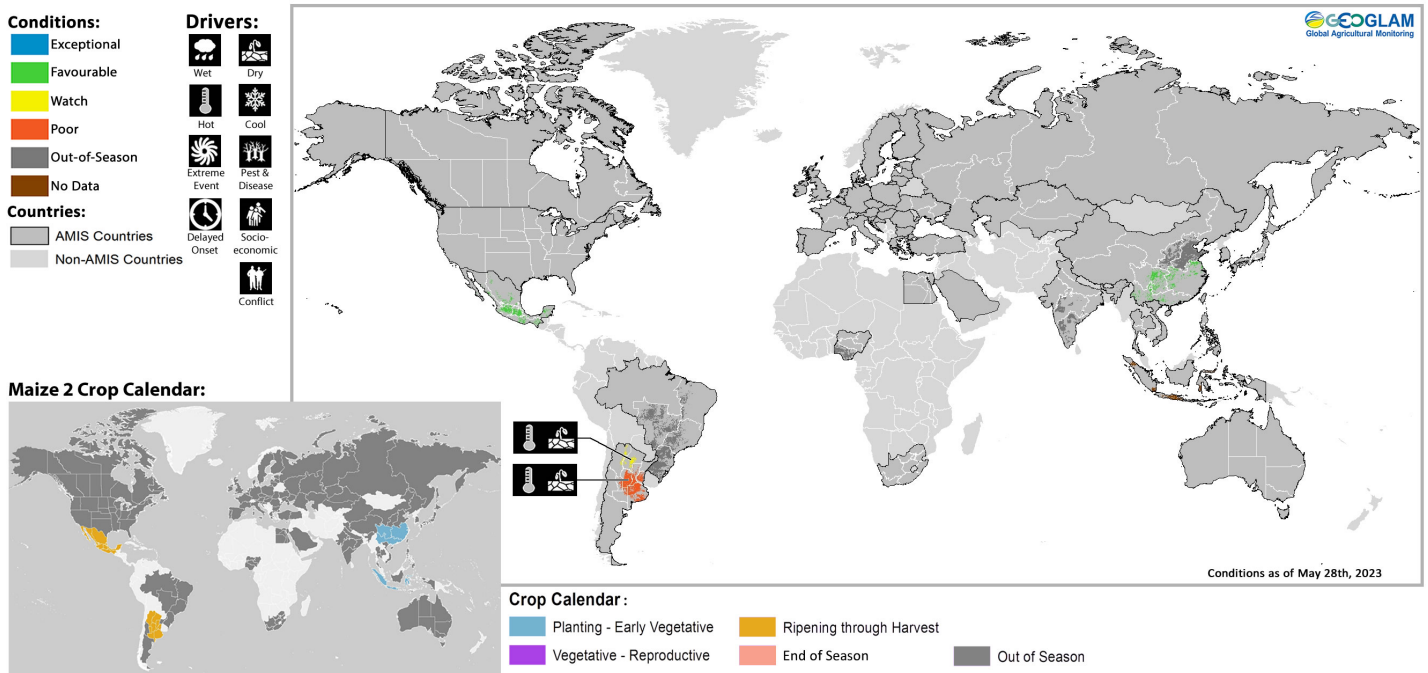
\* Assessment based on information as of May 28<sup>th</sup>

## Maize 1 Conditions for AMIS Countries



Maize 1 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of May 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

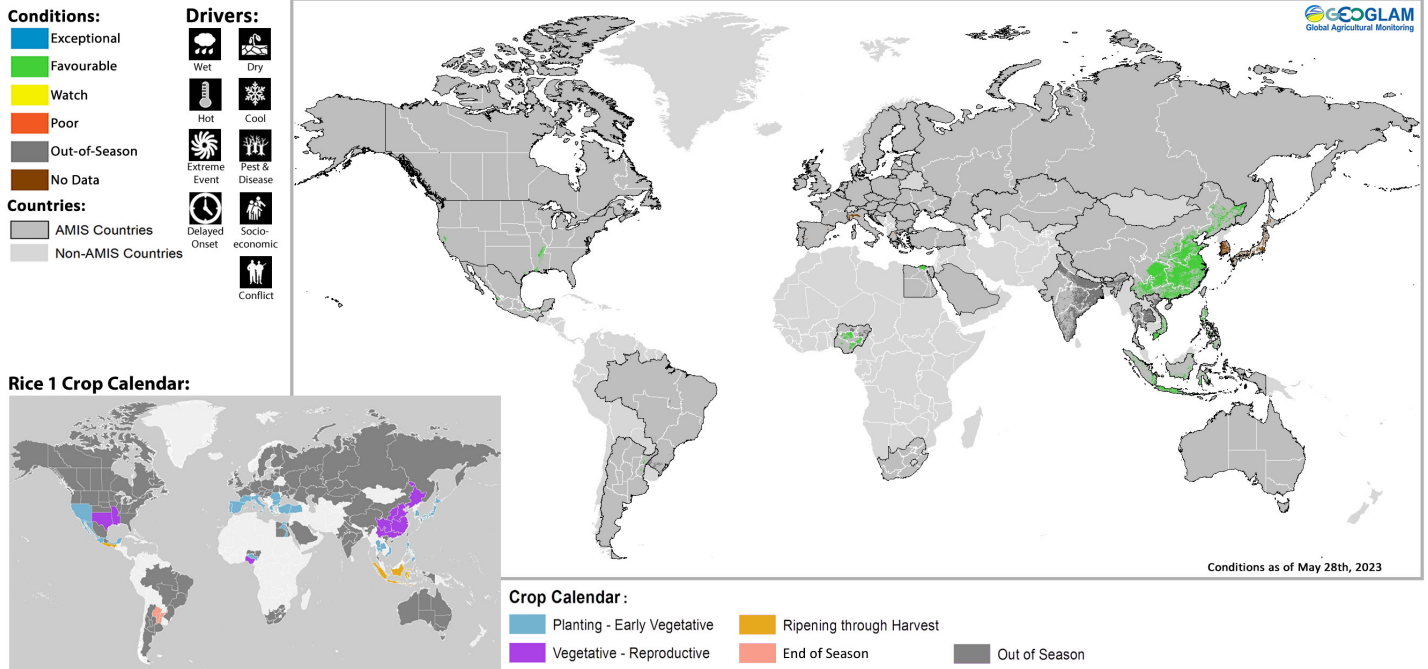
## Maize 2 Conditions for AMIS Countries



Maize 2 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of May 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

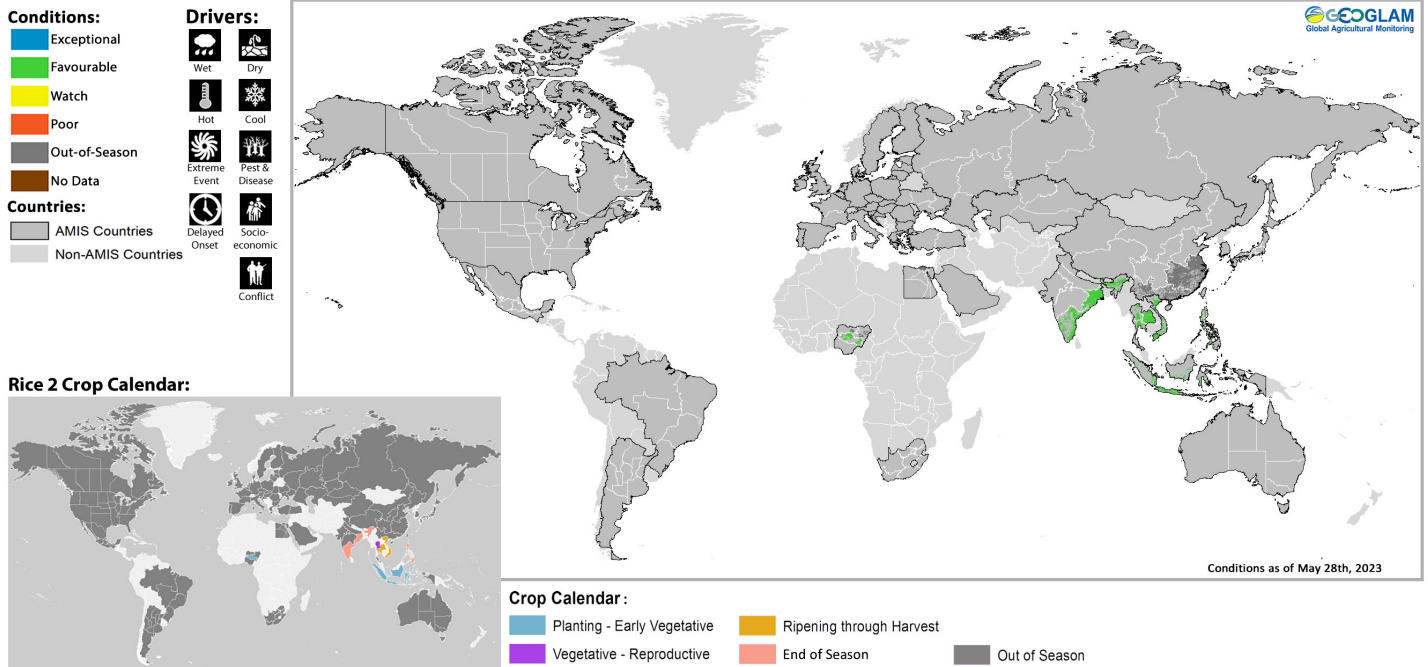
\* Assessment based on information as of May 28<sup>th</sup>

## Rice 1 Conditions for AMIS Countries



Rice 1 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of May 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

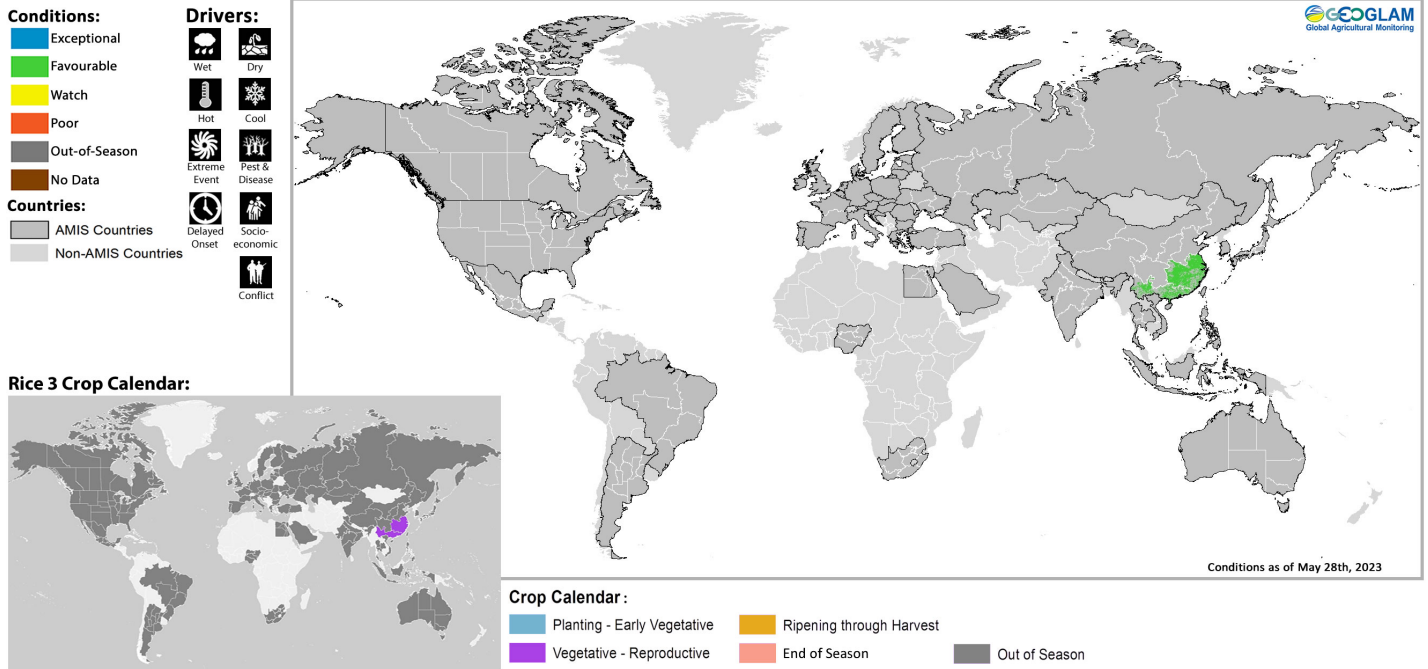
## Rice 2 Conditions for AMIS Countries



Rice 2 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of May 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

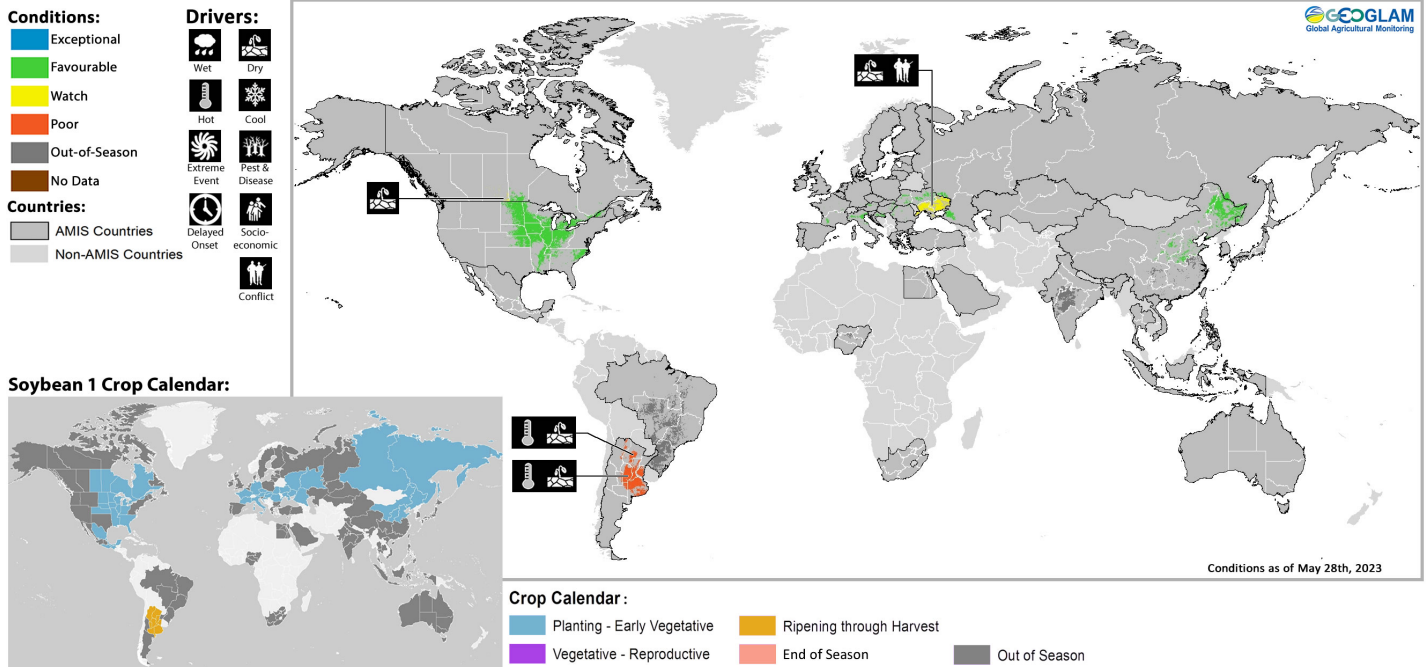
\* Assessment based on information as of May 28<sup>th</sup>

## Rice 3 Conditions for AMIS Countries



Rice 3 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of May 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

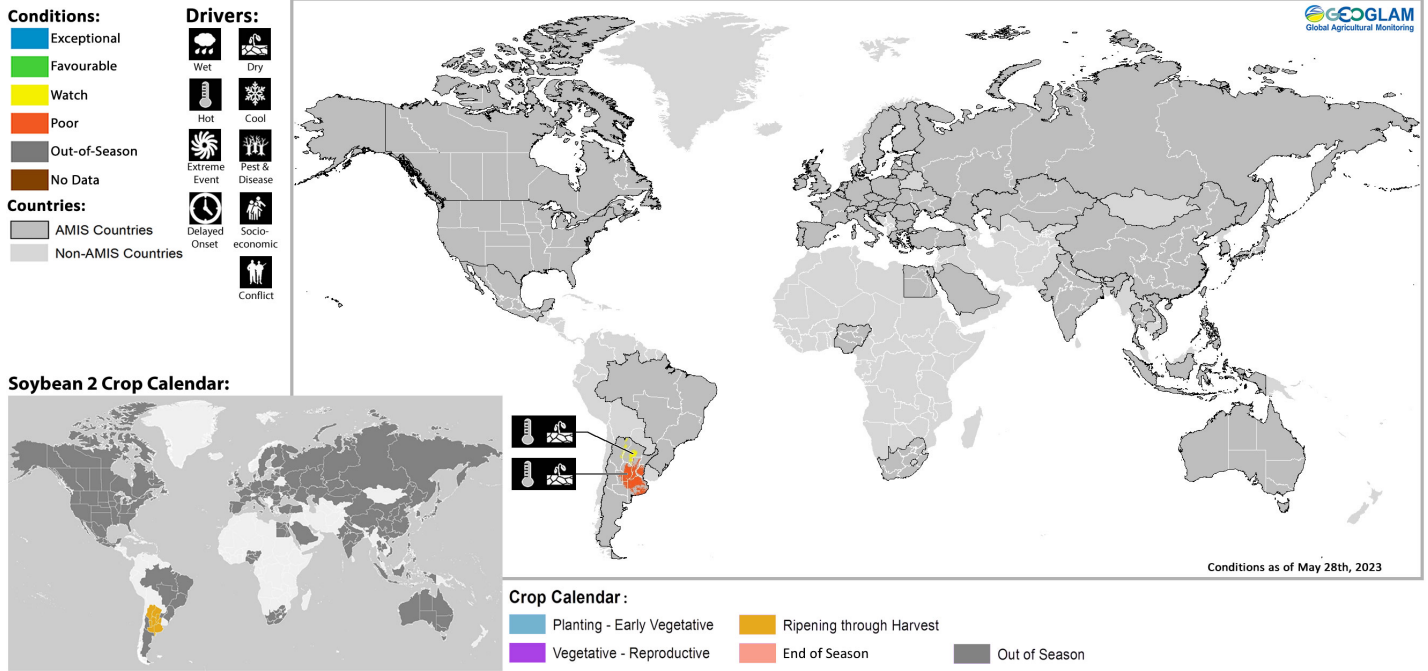
## Soybean 1 Conditions for AMIS Countries



Soybean 1 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of May 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

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

## Soybean 2 Conditions for AMIS Countries



Soybean 2 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of May 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

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





Prepared by members of the GEOGLAM Community of Practice  
Coordinated by the University of Maryland with funding from NASA Harvest  
Climatic Influences by Climate Hazards Center of UC Santa Barbara

The Crop Monitor is a part of GEOGLAM, a GEO global initiative.

*Photo courtesy of Brian Barker*

<https://cropmonitor.org/>

[@GEOCropMonitor](#)

#### Sources & Disclaimer

Sources and Disclaimers: The Crop Monitor assessment is conducted by GEOGLAM with inputs from the following partners (in alphabetical order): Argentina (Buenos Aires Grains Exchange, MAGyP), Asia Rice Countries (AFSIS, ASEAN+3 & Asia RiCE), Australia (ABARES & CSIRO), Brazil (CONAB & INPE), Canada (AAFC), China (CAS), EU (EC JRC MARS), Gro Intelligence, India (NCFC), Indonesia (LAPAN & MOA), International (CIMMYT, FAO GIEWS, IFPRI & IRRI), Japan (JAXA, MAFF), Mexico (SIAP), Russian Federation (IKI), South Africa (ARC & CSIR & GeoTerraImage & SANSA), Thailand (GISTDA & OAE), Ukraine (NASU-NSAU & UHMC), USA (NASA, UMD, USGS – FEWS NET, USDA (FAS, NASS)), Viet Nam (VAST & VIMHE-MARD). The findings and conclusions in this joint multiagency report are consensual statements from the GEOGLAM experts, and do not necessarily reflect those of the individual agencies represented by these experts.

More detailed information on the GEOGLAM crop assessments is available at <https://cropmonitor.org>