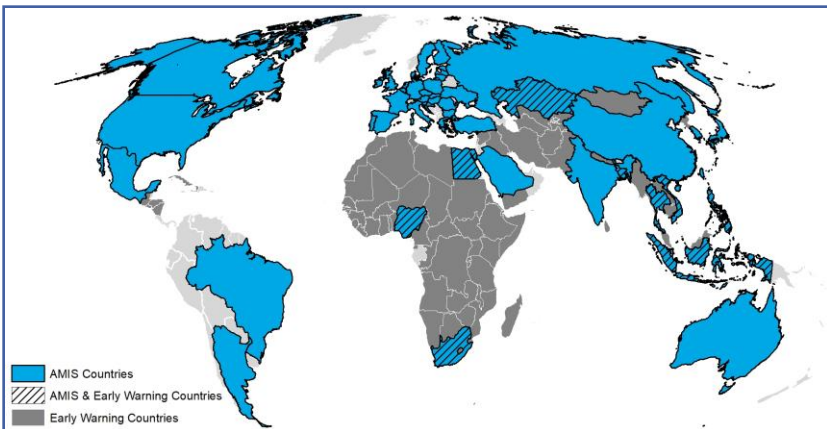


Crop Monitor for AMIS

Overview:

At the end of February, conditions are mixed for wheat, maize, and soybeans, while favourable for rice. Winter wheat in the northern hemisphere wheat begins to break winter dormancy in the southern regions. Maize conditions are mixed for Brazil, northern Argentina, South Africa, and Mexico. Rice conditions are generally favourable, albeit with some dry conditions in Thailand, the Philippines and southern India. Soybean conditions are mixed due to the impacts of earlier hot and dry weather in Brazil and northern Argentina.

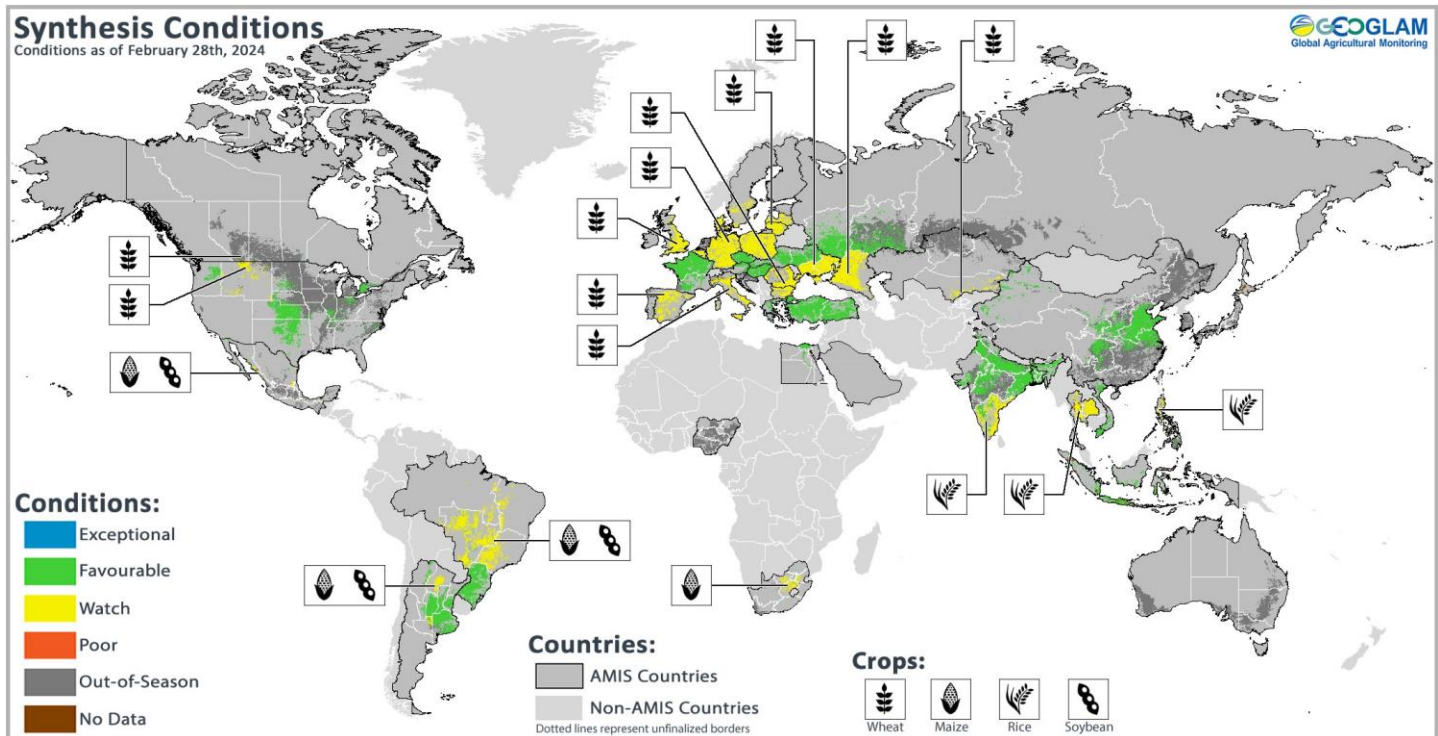


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Assessment based on information as of February 28th, 2024.

Conditions at a Glance (as of February 28th)



Global crop condition map synthesizing information for all four AMIS crops as of February 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 begins to break winter dormancy in the southern regions under mixed conditions in parts of Europe, Ukraine, the Russian Federation, and North America.

Maize – In the southern hemisphere, harvesting of the spring-planted crop is continuing under mixed conditions in Brazil as conditions improve in Argentina. Dry conditions develop in South Africa.

Forecasts at a Glance

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.

Argentina – Pockets of below-average and above-average precipitation are expected in the main agricultural areas over the next two weeks. The three-month forecast indicates above-average precipitation in the east.

Rice – In India, transplanting of the Rabi crop continues in the east. In Bangladesh, Boro season rice is favourable. In Southeast Asia, conditions are favourable in Indonesia as dry conditions develop in Thailand and the Philippines.

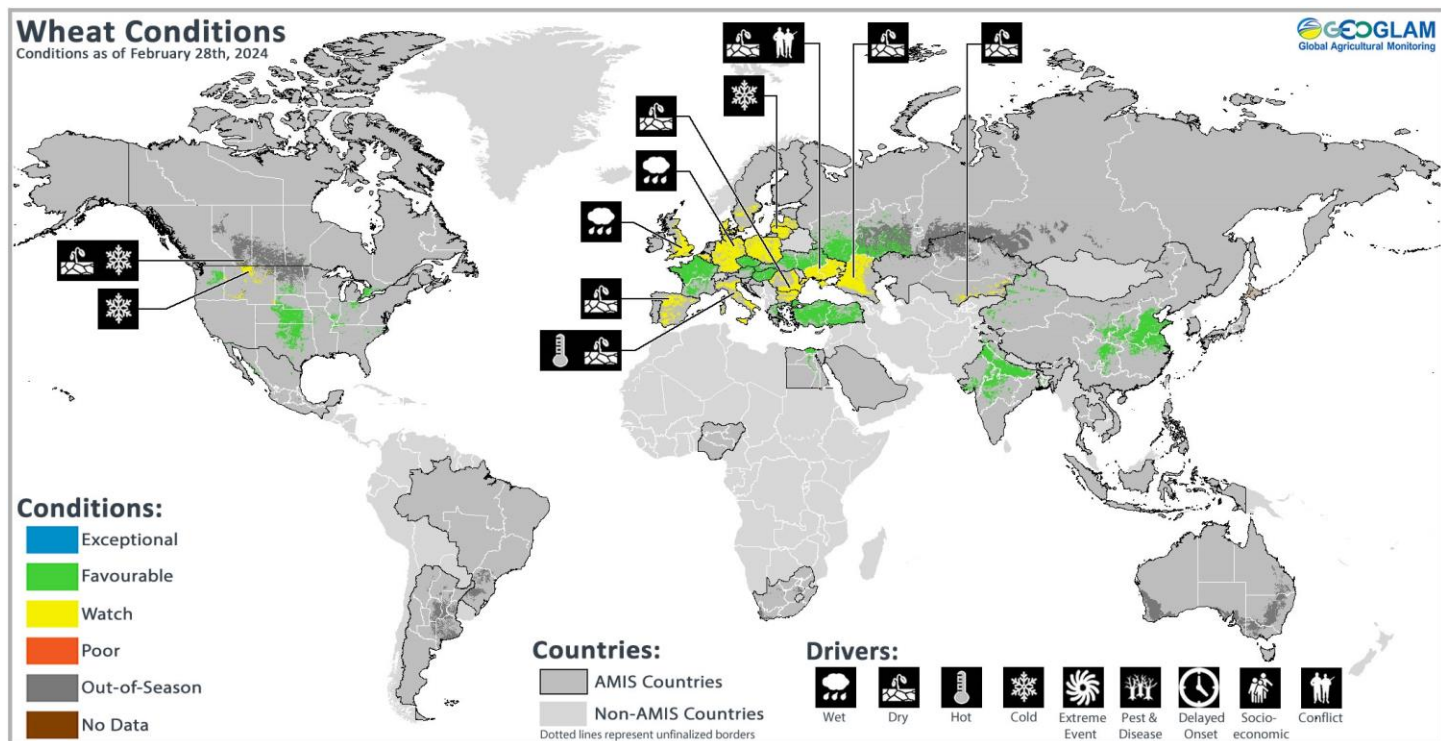
Soybeans – In the southern hemisphere, harvesting is continuing in Brazil under mixed conditions as recent rainfall improves crops in Argentina.

Brazil – The March and the three-month forecasts both indicate a mix of above- and below-average precipitation across the country combined with likely above-average temperatures.

Mexico – During March and April, precipitation is likely to be below-average across most of the country while temperatures are likely to be above-average across the central and southern parts of the country.

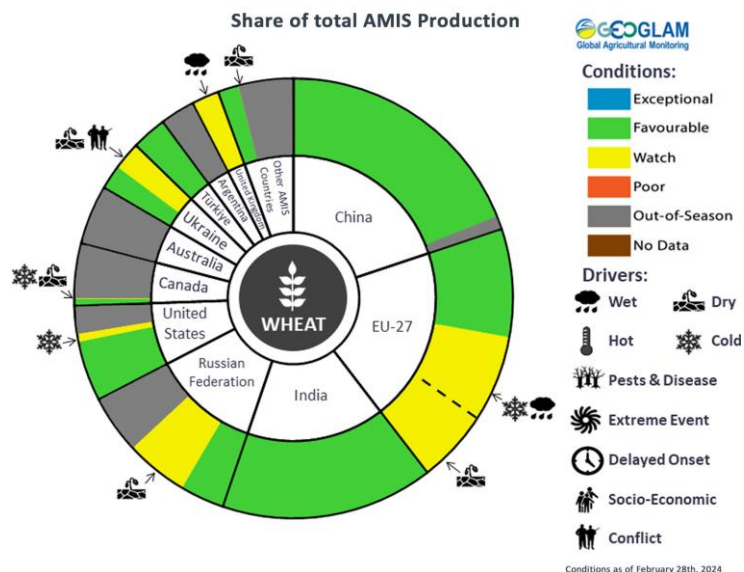
While the Crop Monitor for AMIS is primarily focused on documenting crop conditions based on environmental factors, the war in Ukraine and in other conflict areas will very likely negatively impact the ability of the crop to be harvested.

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 February 28th. 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.

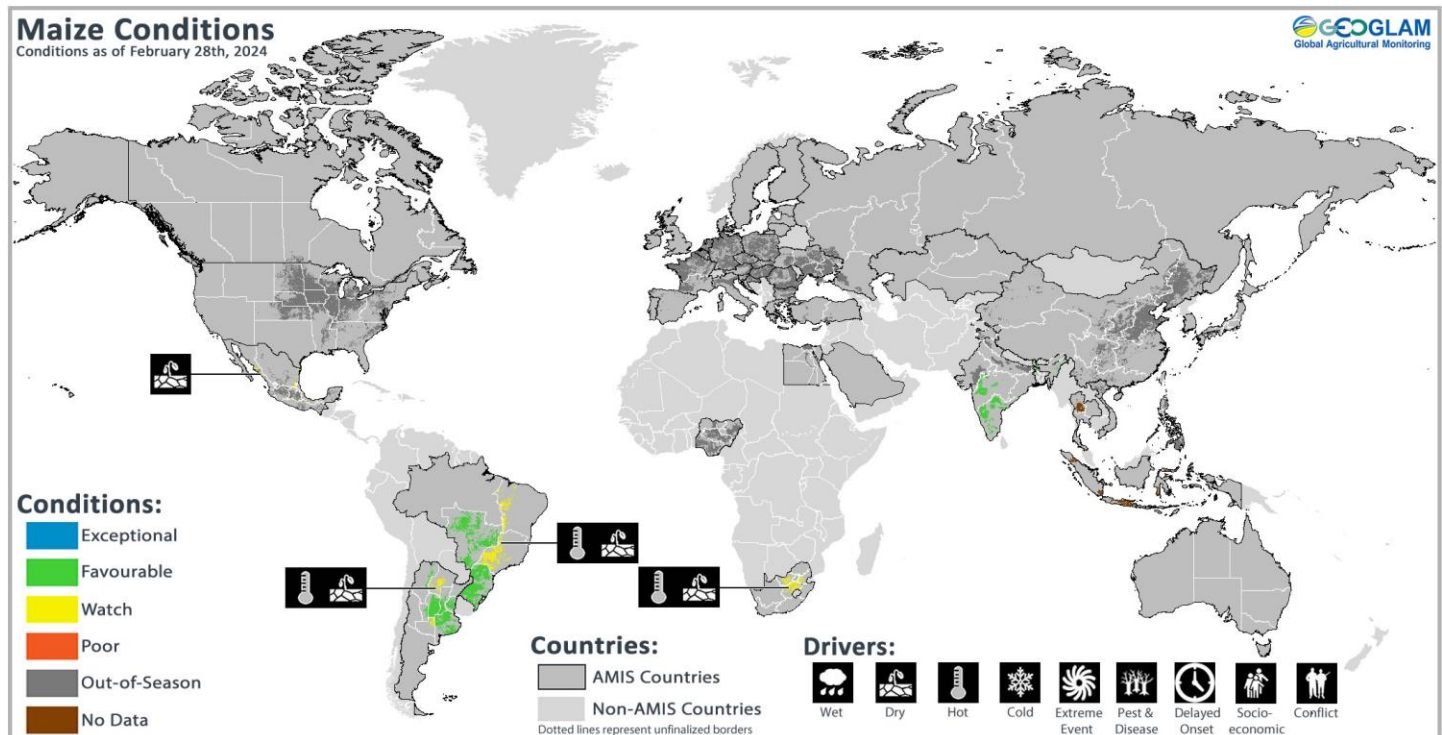
Wheat: In the **EU**, conditions are currently mixed due to cold and wet weather in northern Europe along with warmer and drier-than-average weather in the south. The spring weather will determine the final yields. In the **UK**, continuing excessive rainfall remains a concern. In **Türkiye**, conditions 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 **China**, conditions are favourable for winter wheat as spring green-up begins. In **India**, conditions are favourable with an increase in total sown area compared to last year. In the **US**, unseasonably warm weather in 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 in parts of the Prairies are at risk of winterkill.



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

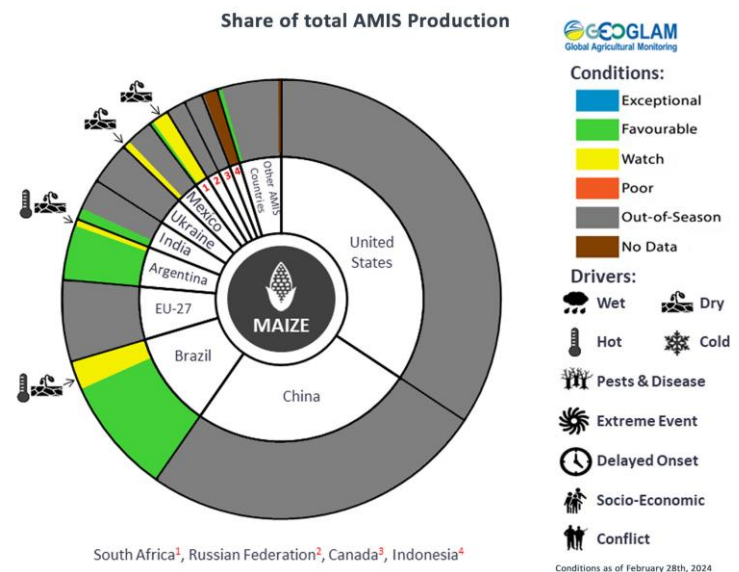
* Assessment based on information as of February 28th, 2024

Maize Conditions for AMIS Countries



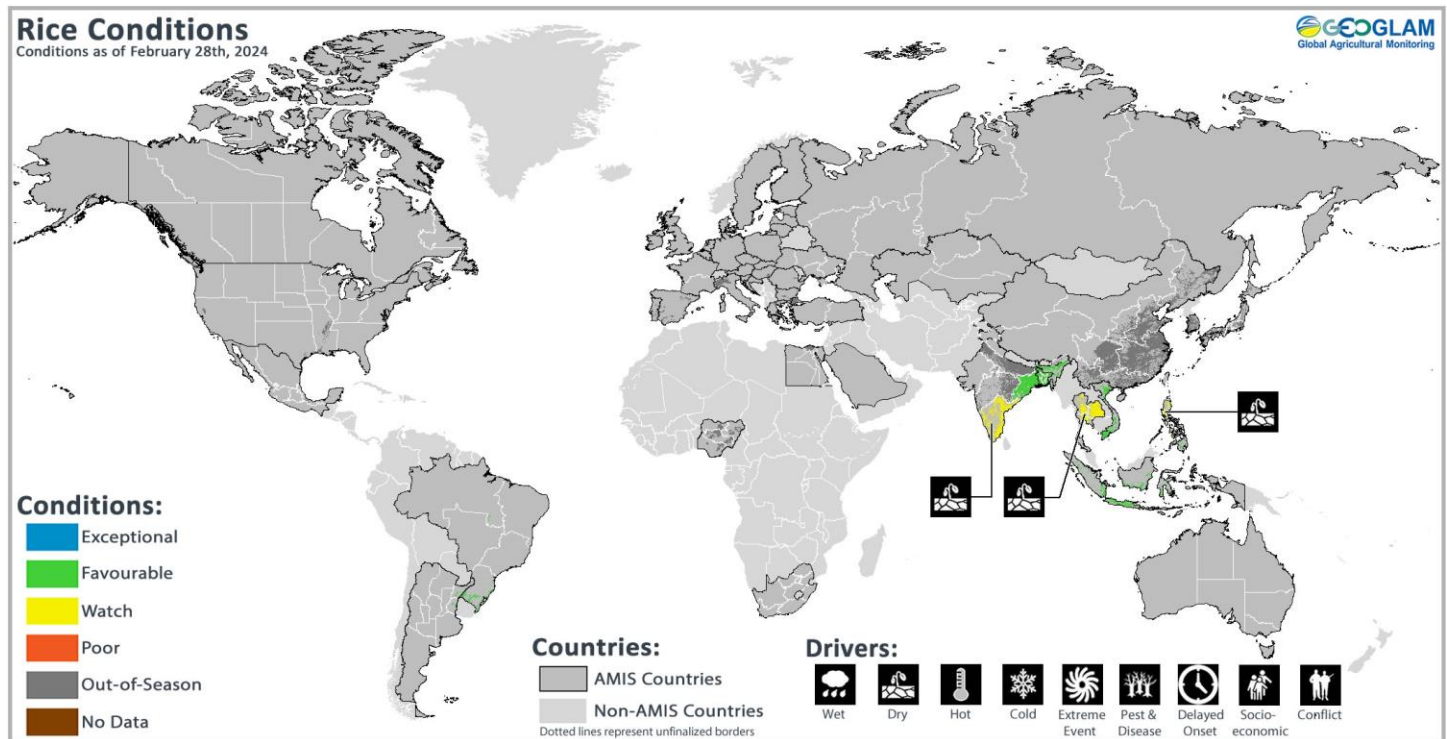
Maize crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of February 28th. Where crops are in other than favourable conditions the climatic drivers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

Maize: In **Brazil**, harvesting is continuing 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 **South Africa**, dry conditions since mid-January over large parts of the main maize-producing provinces have negatively impacted potential yields. Rainfall during the next week is critical to prevent further damage. In **Mexico**, sowing continues for the Autumn-winter season (smaller season) albeit with reduced irrigation water reserves. In **India**, conditions are favourable for the Rabi crop.



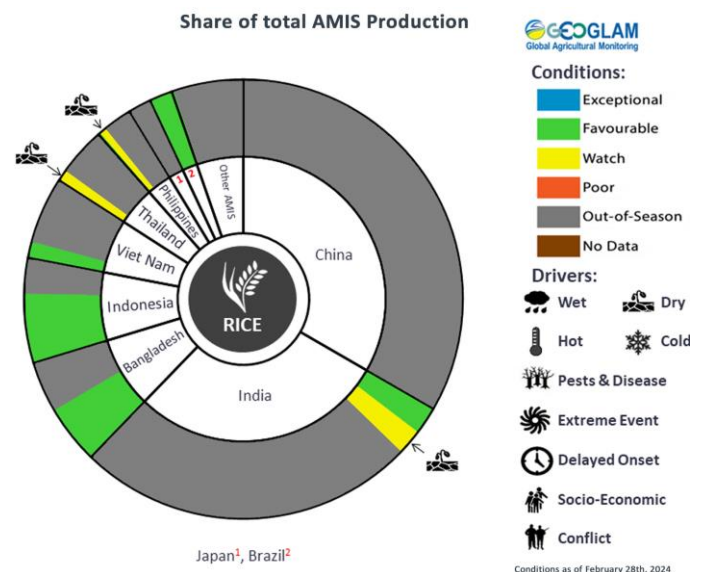
For detailed description of the pie chart please see box on page 6.

Rice Conditions for AMIS Countries



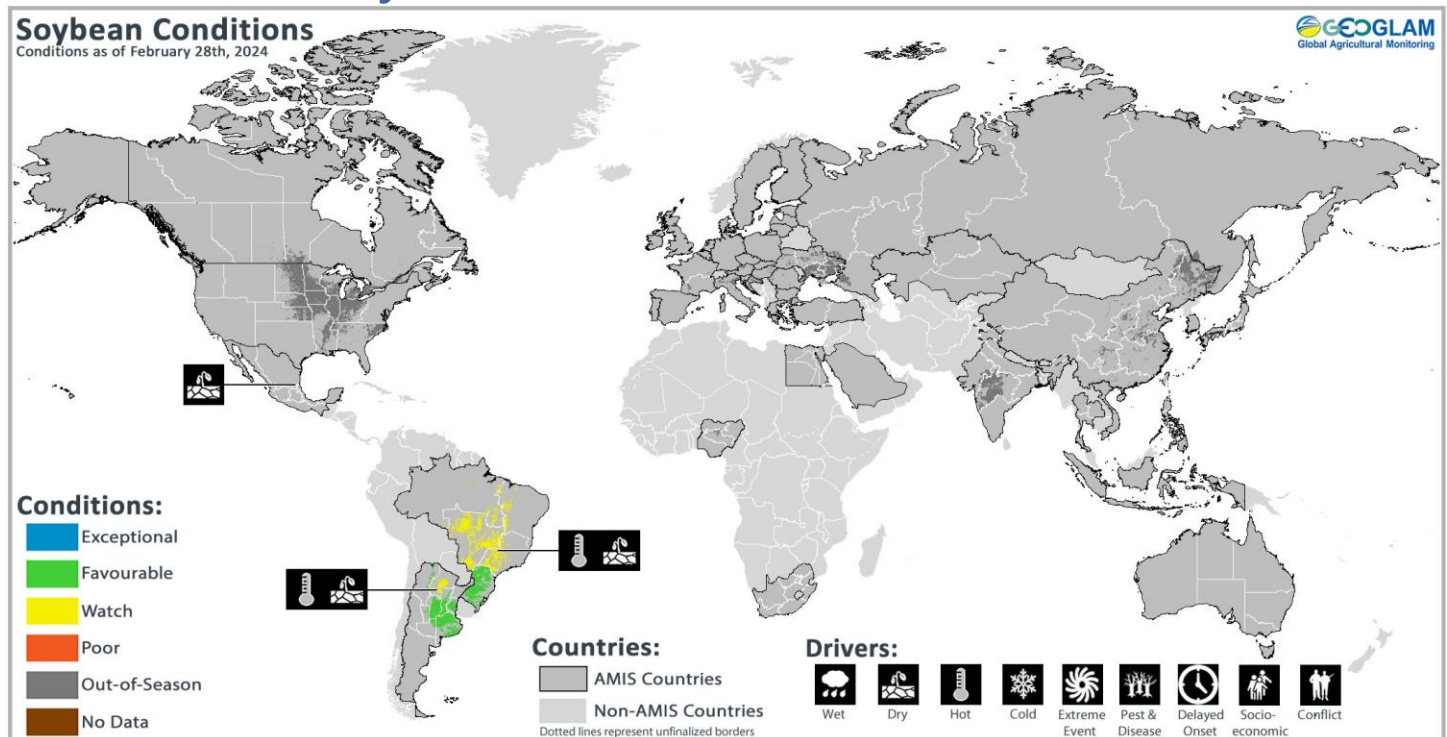
Rice crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of February 28th. Where crops are in other than favourable conditions the climatic drivers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

Rice: In **India**, the Rabi crop is under favourable conditions in the 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 **Indonesia**, conditions are favourable 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 **Brazil**, harvesting is beginning under favourable conditions.



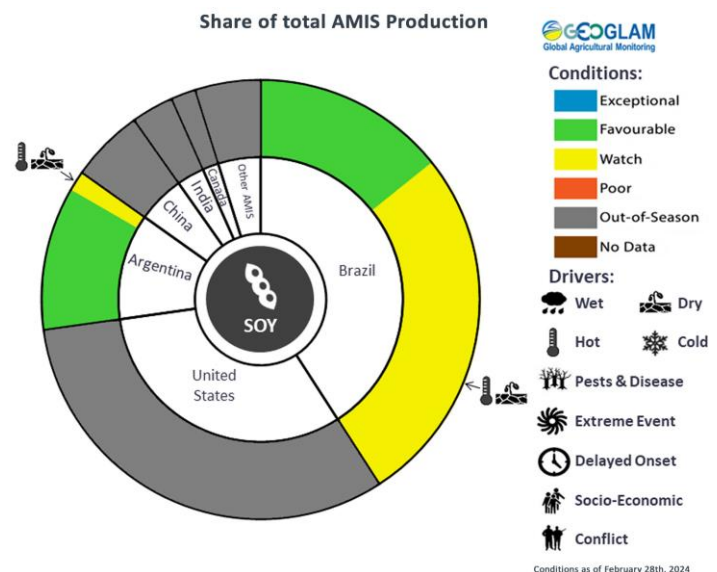
For detailed description of the pie chart please see box on page 6.

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 February 28th. 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 **Brazil**, harvesting continues 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.



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 March 7th

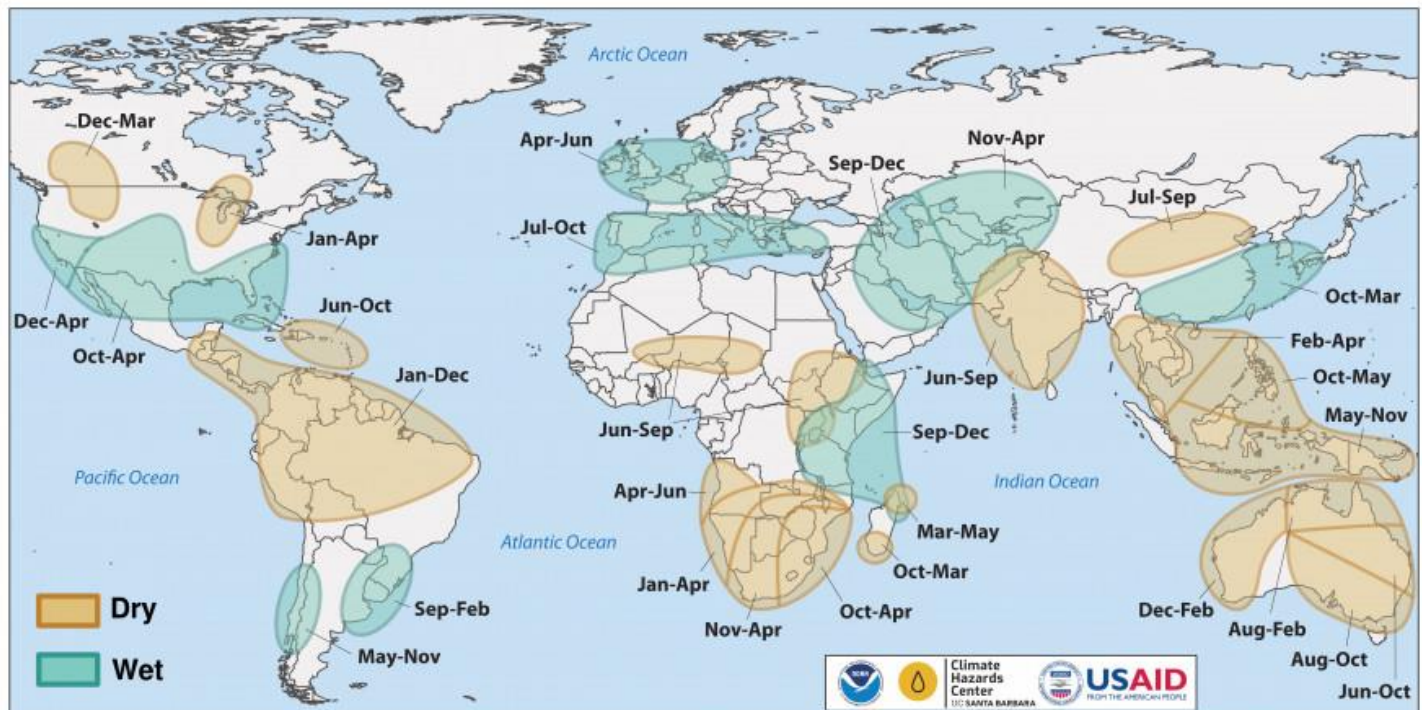
Pie chart description: Each slice represents a country's share of total AMIS production (5-year average). Main producing countries (representing 95 percent of production) are shown individually, with the remaining 5 percent grouped into the "Other AMIS Countries" category. The proportion within each 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 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 (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.

Weakening El Niño

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, 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 precipitation over the US southeast, central Columbia, northeast and southern Brazil, southern Peru, Portugal, southeast Kenya, the Russian Federation, central and southern Kazakhstan, central Uzbekistan, central Turkmenistan, southeast China, northeastern Indonesia, northern Papua New Guinea, and western and southeast Australia.

There is also a likelihood of below-average precipitation over the Prairies in Canada, the Pacific Northwest and Texas in the US, Mexico, Guatemala, Honduras, Cuba, Haiti, the Dominican Republic, northeast Venezuela, Guyana, Suriname, French Guiana, northern and central Brazil, central Peru, northern Bolivia, Chile, central and southern Argentina, Norway, Finland, Estonia, Croatia, Bosnia and Herzegovina, Serbia, southwest Romania, Bulgaria, Kosovo, Greece, western Türkiye, southern Iraq, 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, northeastern Afghanistan, Pakistan, India, Nepal, Bhutan, northwestern China, Mongolia, Thailand, northern Laos, Cambodia, southern Viet Nam, the Philippines, western Malaysia, western Indonesia, and northeastern Australia.

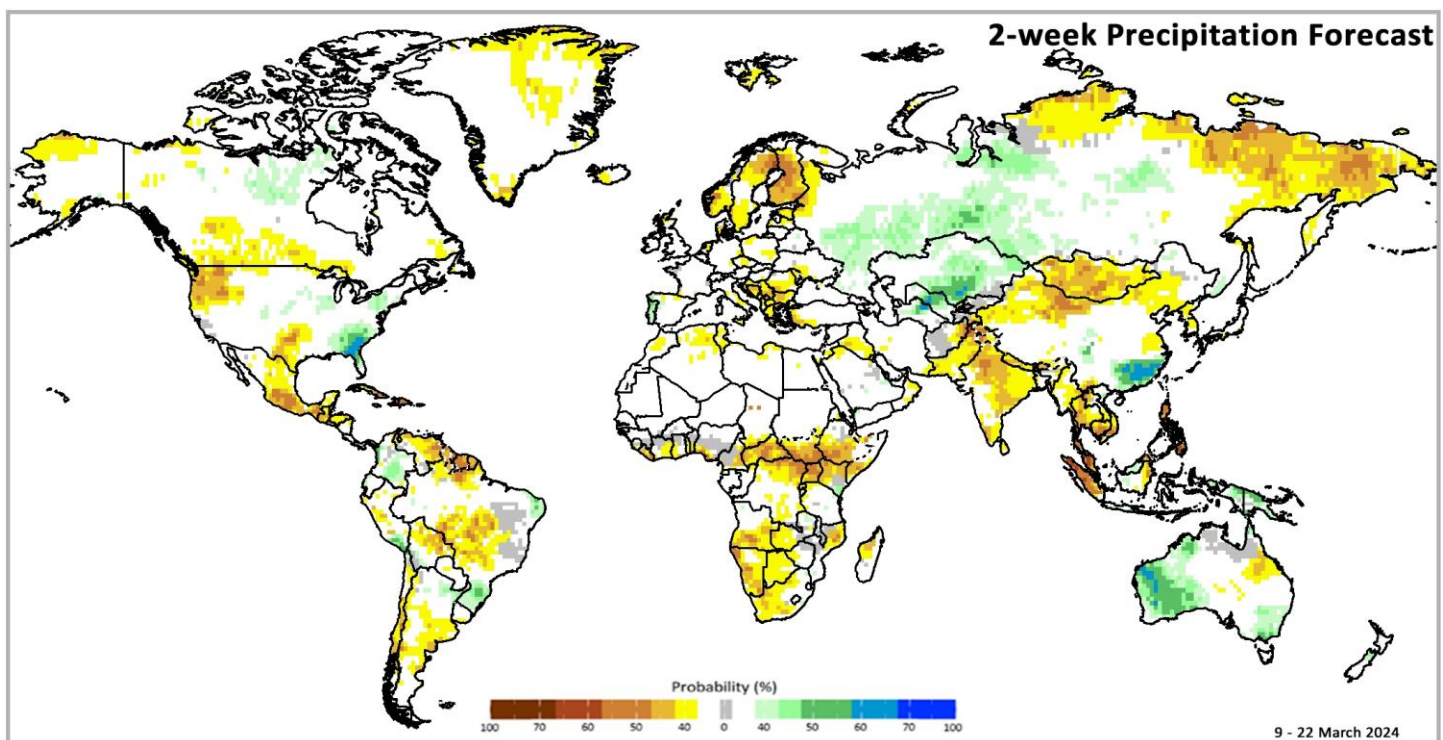


Figure 1: IRI SubX Precipitation Biweekly Probability Forecast for 9 – 22 March 2024, issued on 1 March 2024. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](#)

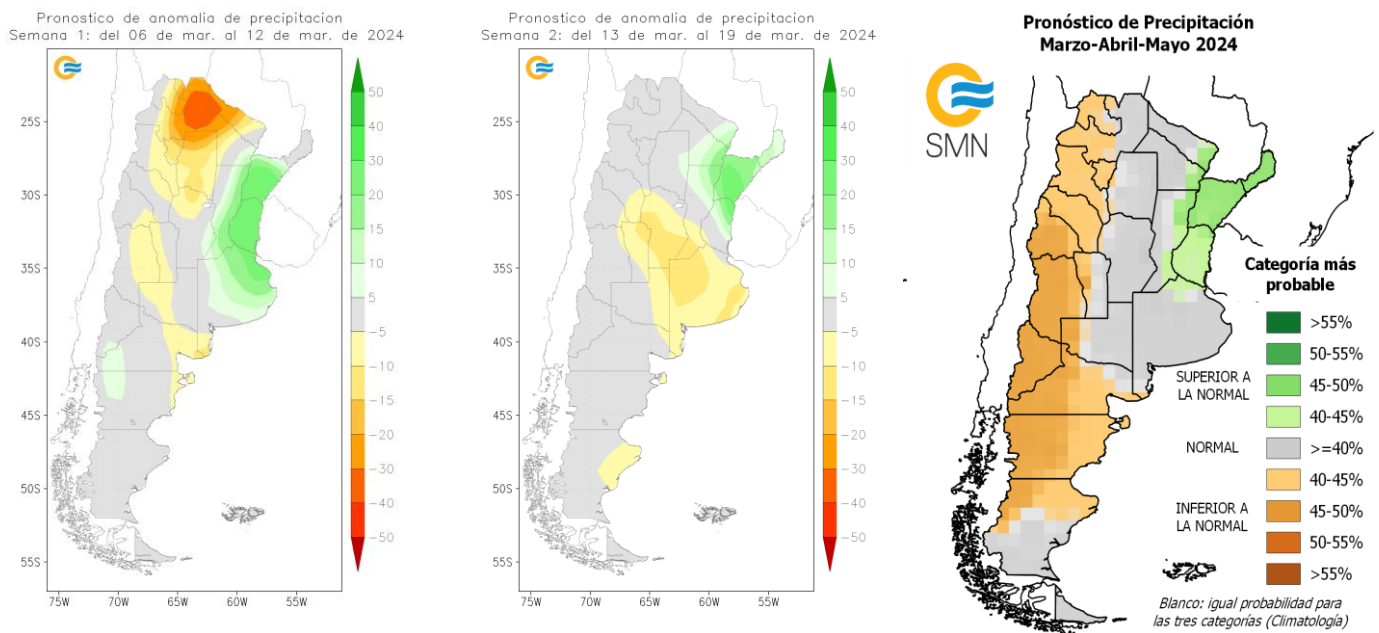
Argentina Outlook

The 6 to 12 March precipitation anomaly forecast (left) indicates a likelihood of below-average rainfall over the northern region, while above-average precipitation in the east over Corrientes, Entre Rios, Santa Fe, and northern Buenos Aires. During the same period, temperatures are likely to be above-average over the main agricultural areas.

The 13 to 19 March precipitation anomaly forecast (centre) shows above-average rainfall is expected in the northeast centered around Corrientes, while below-average precipitation is expected over Cordoba, eastern La Pampa, and Buenos Aires. During the same period, temperatures are likely to be near average across main agricultural areas, with above-average temperatures in the far north.

The March-April-May precipitation forecast indicates likely a continuation of the above-average precipitation in the east over Misiones, Corrientes, eastern Santa Fe, and Entre Rios. During this period, temperatures are likely to be below-average in Cordoba, San Luis, La Pampa, and western Buenos Aires, while above-average in the north and eastern Buenos Aires.

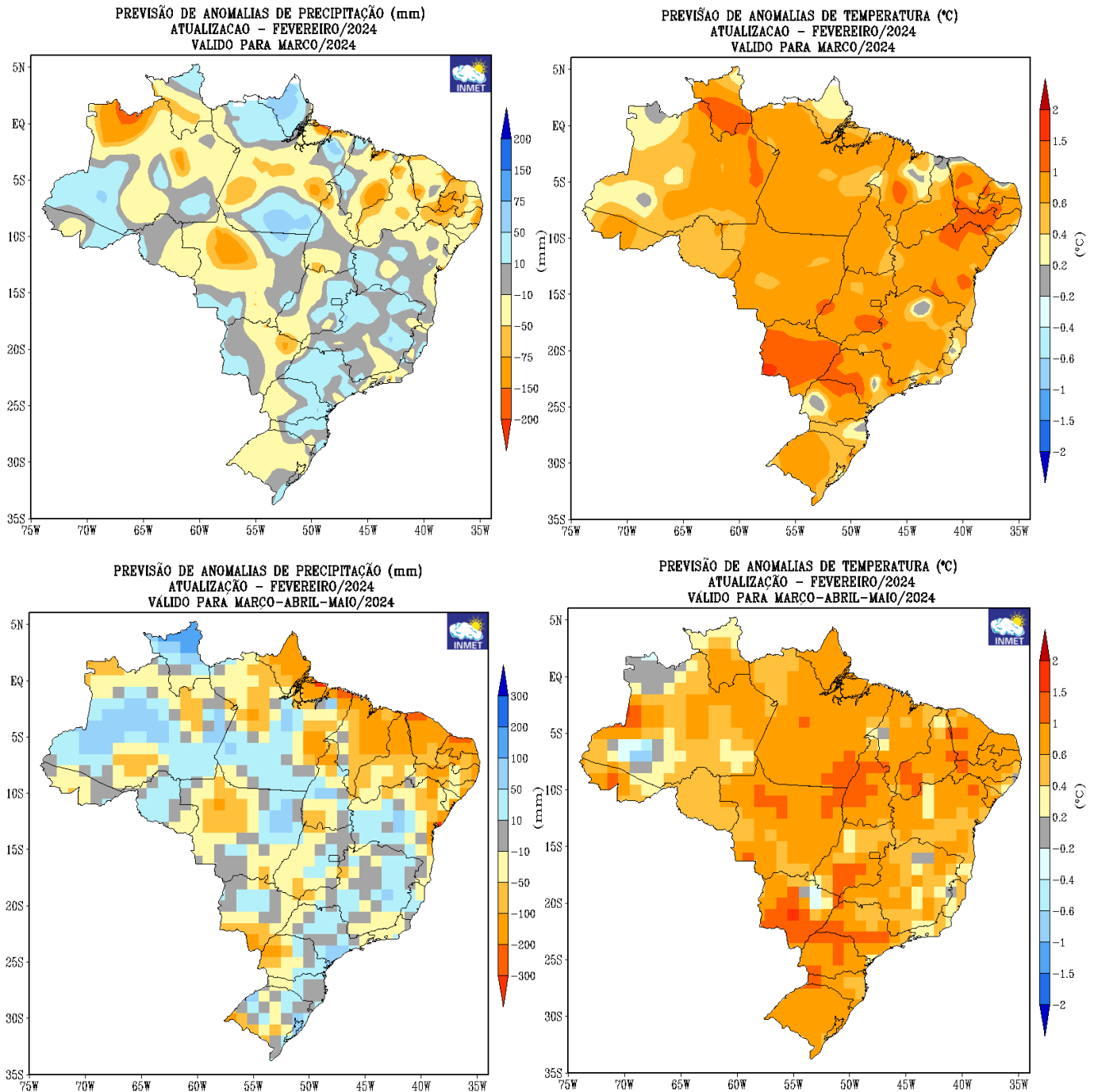
Precipitation Anomaly Forecasts



Left: 6 - 12 March 2024 forecast precipitation anomaly in mm. **Centre:** 13 - 19 February forecast precipitation anomaly in mm. **Right:** March-April-May precipitation probability. Images from the [National Meteorological Service of Argentina](#).

Brazil Outlook

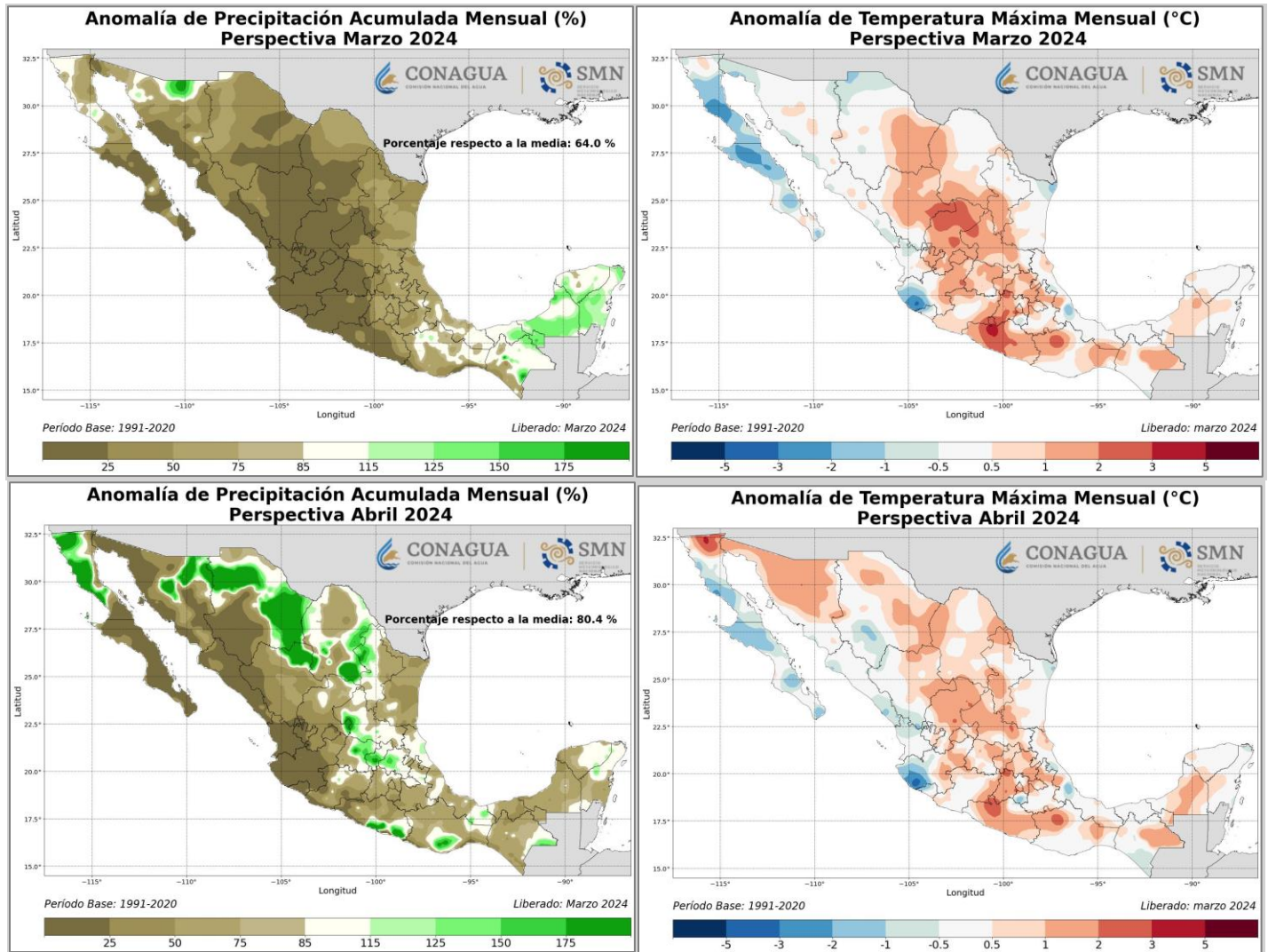
The March 2024 precipitation anomaly forecast (left) indicates a likelihood of a mix of above- and below-average precipitation across the country with a focus on below-average precipitation in the north and northeast, while above-average in the southeast. During the same time, temperatures (right) are likely to be above average across the entire country. The Long-term (March-April-May) forecast indicates much of the same pattern of mixed precipitation and above-average temperatures.



Upper Left: March 2024 precipitation anomaly forecast, issued in February 2024. **Upper Right:** March 2024 temperature anomaly forecast, issued in February 2024. **Lower Left:** March-April-May 2024 precipitation anomaly. **Lower Right:** March-April-May 2024 temperature anomaly. Images from the [National Institute of Meteorology](#)

Mexico Outlook

The March outlook indicates likely below-average precipitation across most of the country except for the Yucatan Peninsula. During the same time, temperatures are likely to be above-average across the central and southern parts of the country. During April, the outlook indicates an increase in precipitation in the northern and central regions of the country. During the same time, temperatures are likely to continue to be above-average across the central and southern parts of the country.



Upper Left: March precipitation anomaly issued February 2024. **Upper Right:** March maximum temperature anomaly issued February 2024. **Lower Left:** April precipitation anomaly issued February 2024. **Lower Right:** April maximum temperature anomaly issued February 2024. Maps from Mexico's [National Meteorological Service \(SMN\)](#).

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:

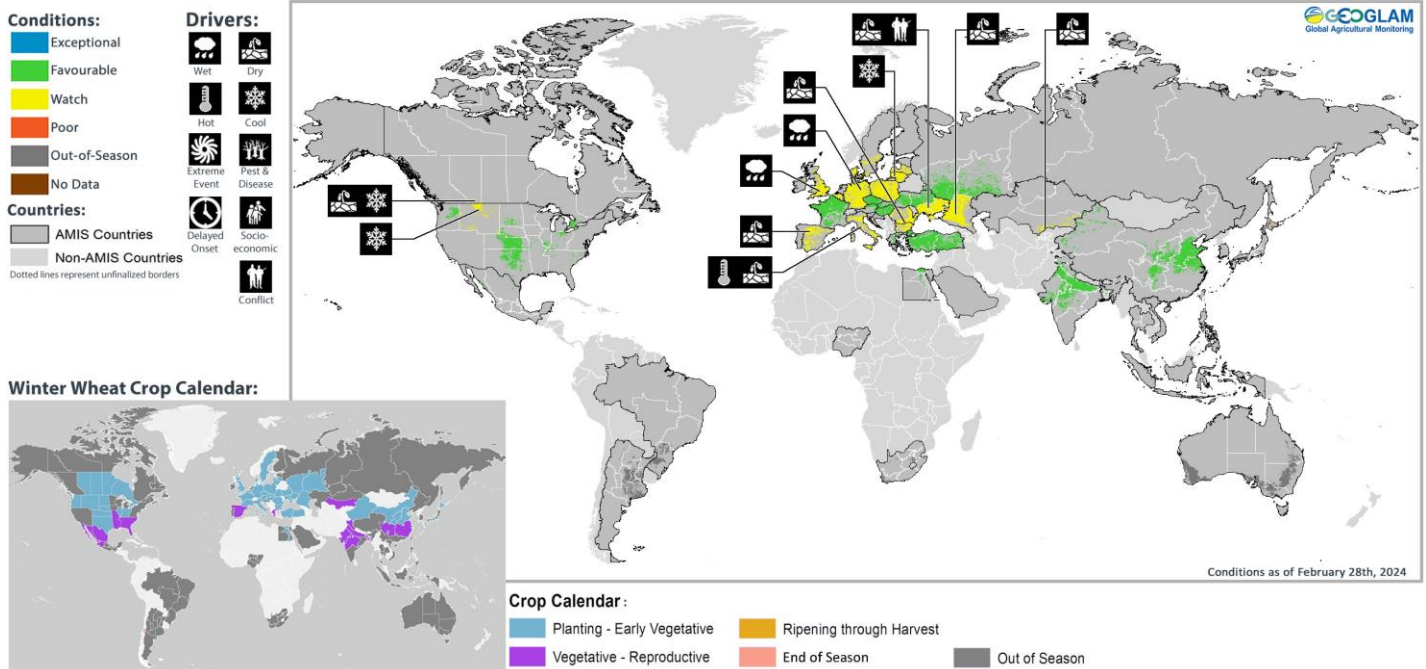
In countries that contain multiple cropping seasons for the same crop, the following chart identifies the national season name associated with each crop season within the Crop Monitor. Within the Crop Monitor for AMIS countries, the larger producing season (based upon the most recent 5-years of statistics)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

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

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

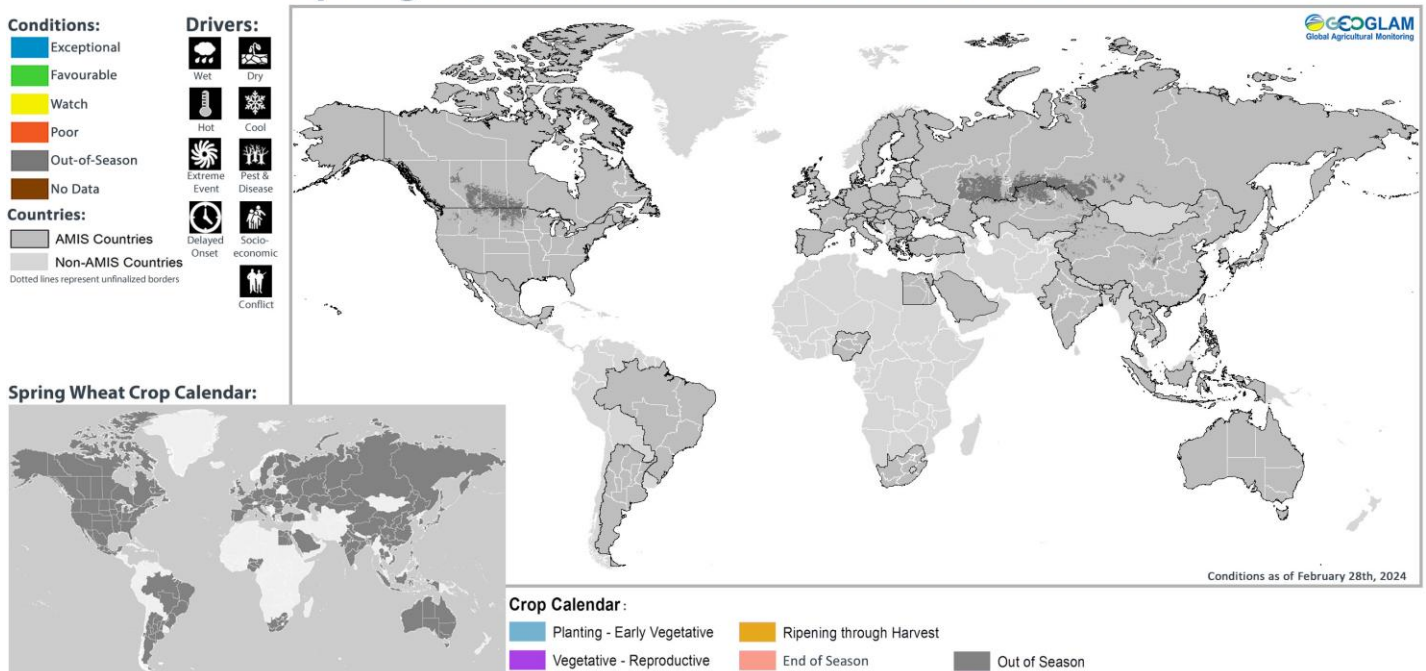
Appendix 2: Crop Season-Specific Maps

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 February 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.

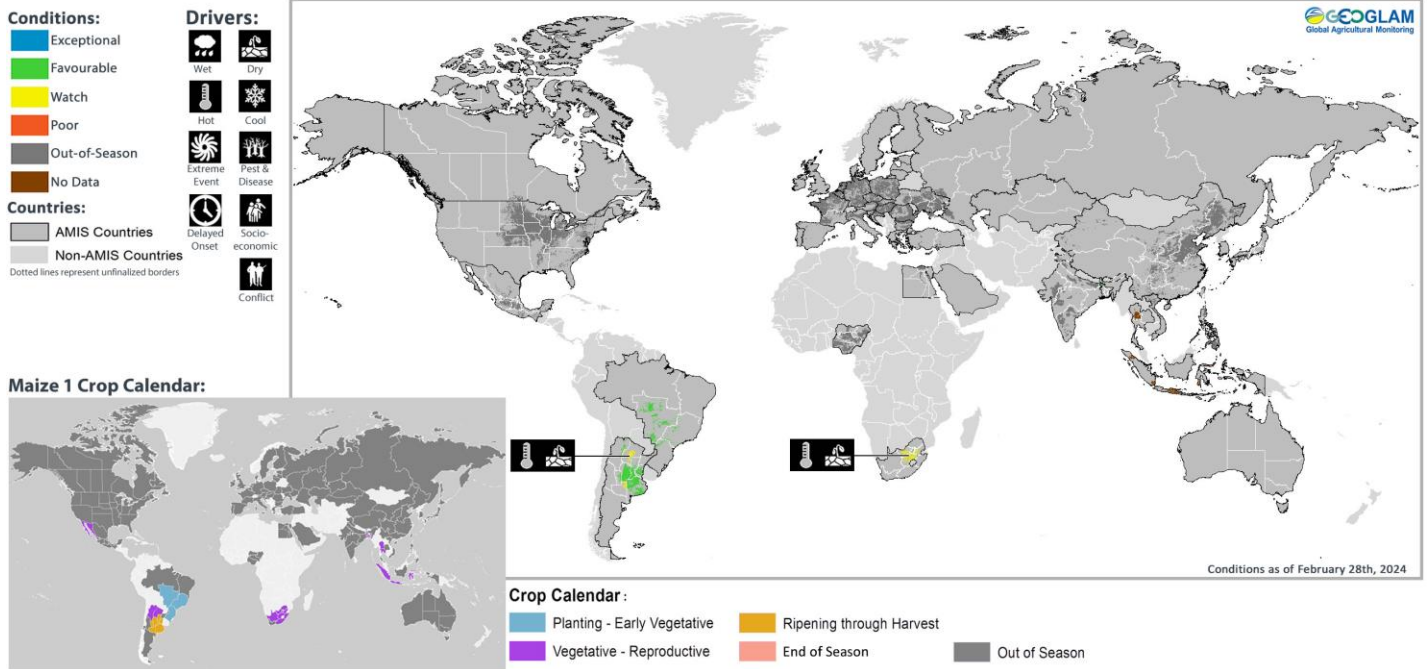
Spring Planted Wheat Conditions for AMIS Countries



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 February 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.

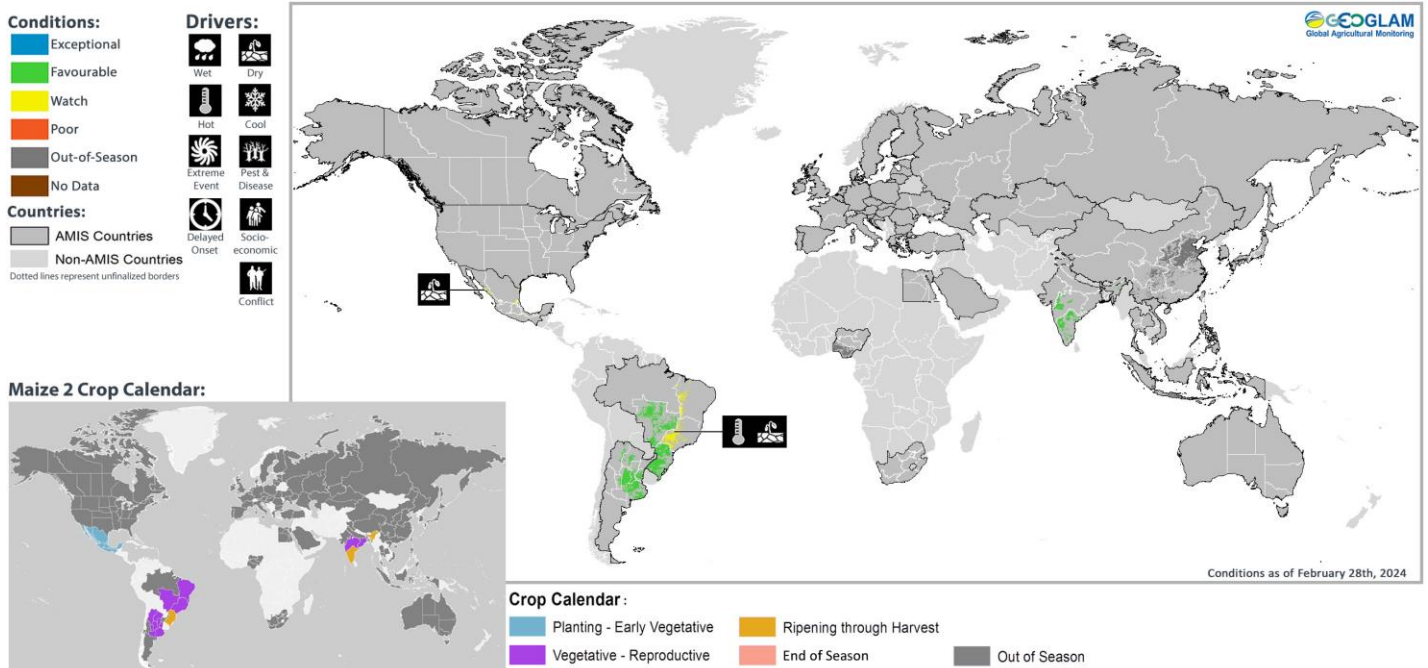
* Assessment based on information as of February 28th, 2024

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 February 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.

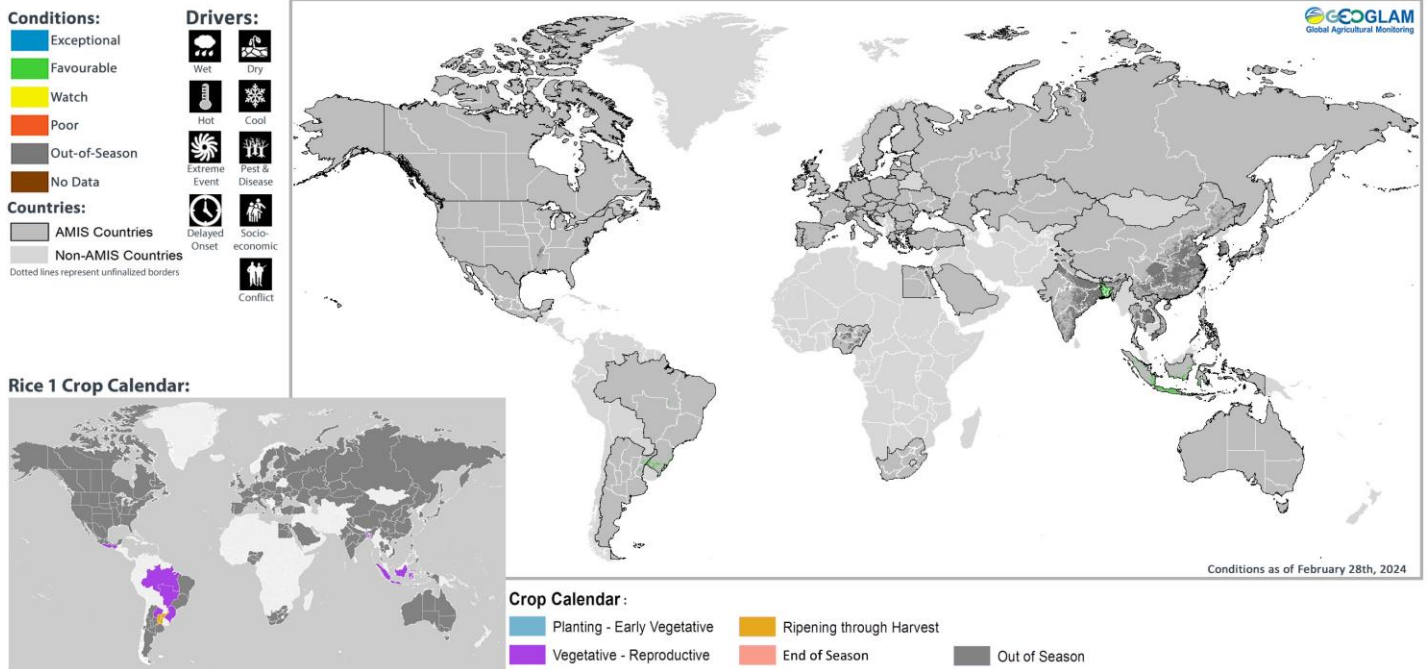
Maize 2 Conditions for AMIS Countries



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 February 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.

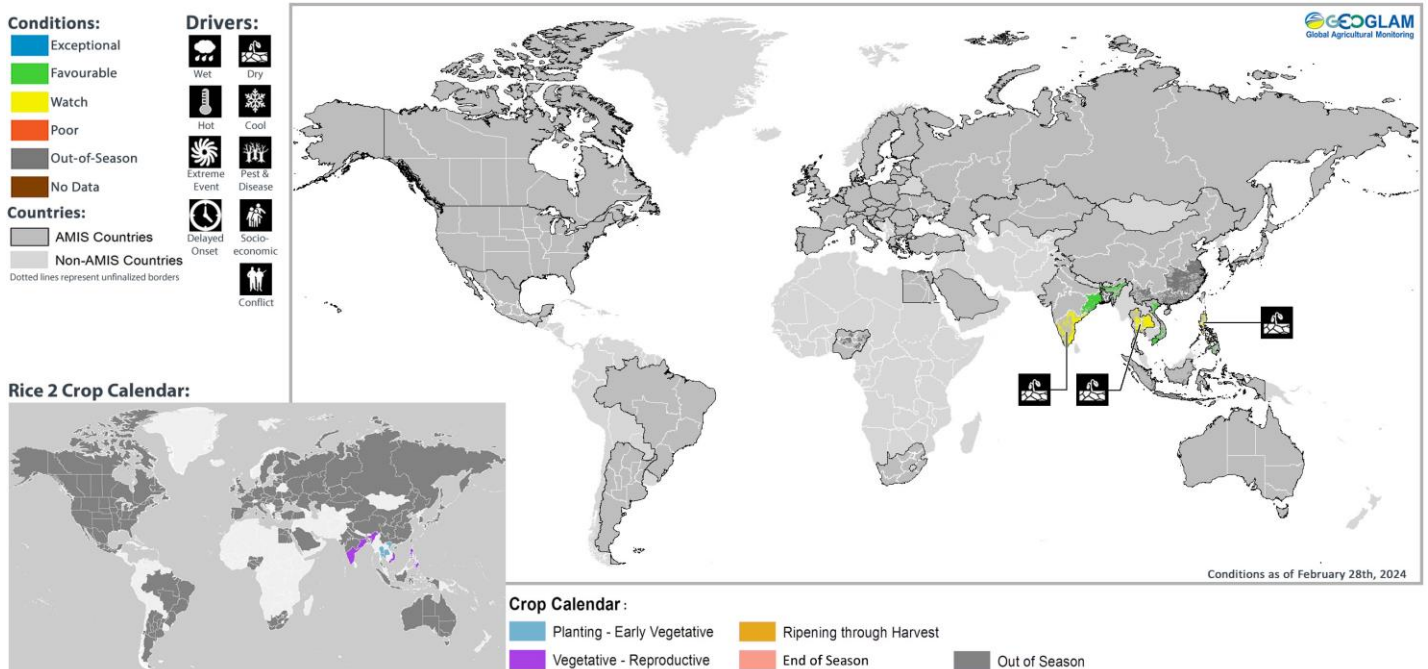
* Assessment based on information as of February 28th, 2024

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 February 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.

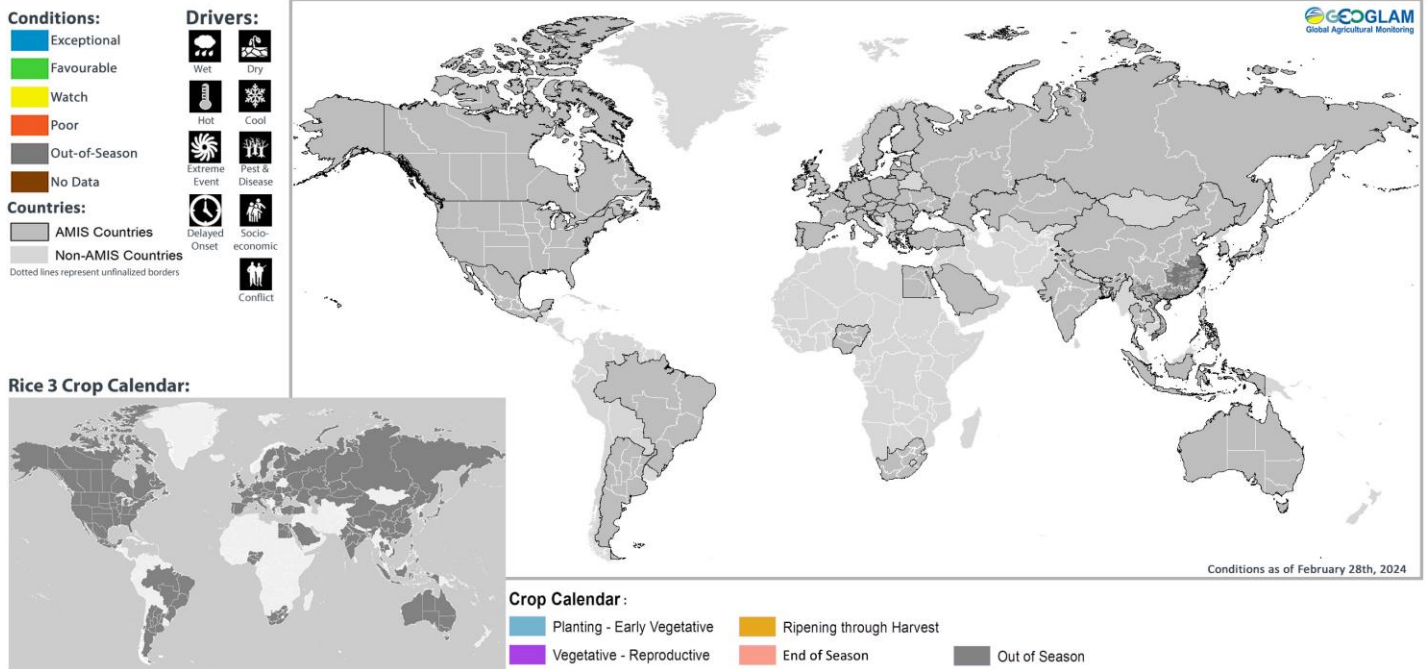
Rice 2 Conditions for AMIS Countries



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 February 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.

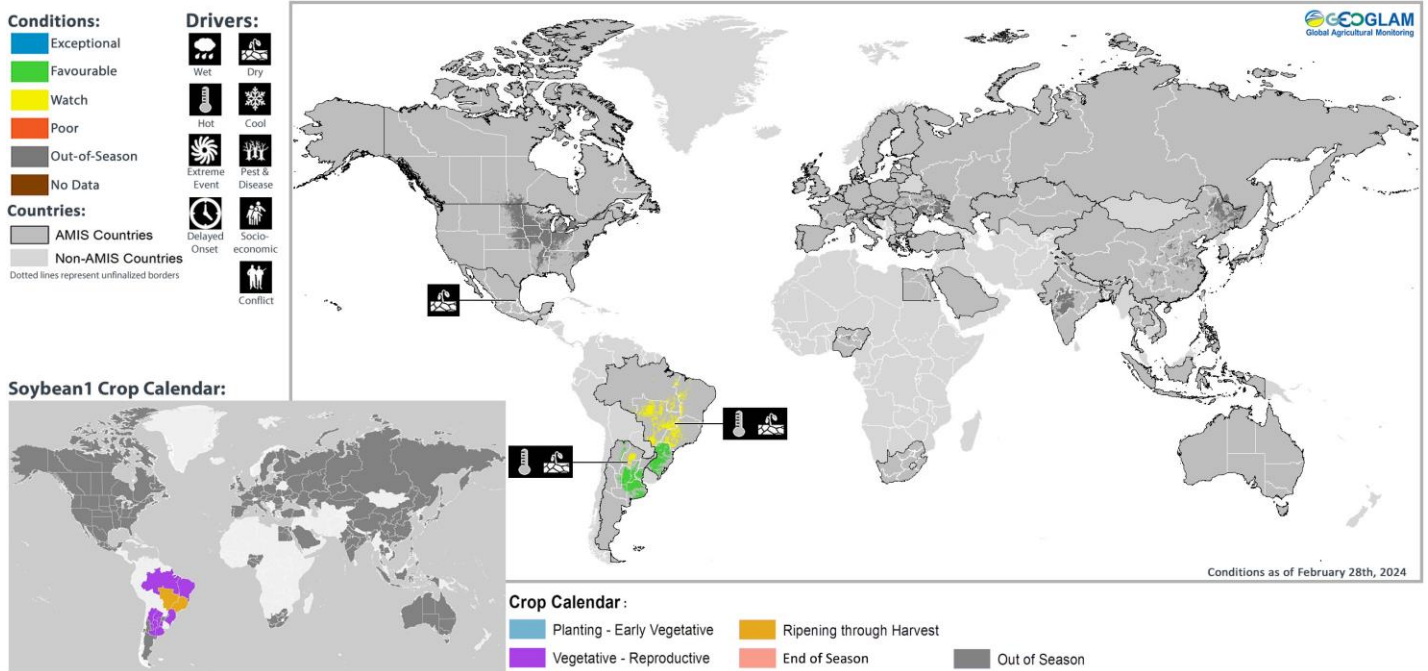
* Assessment based on information as of February 28th, 2024

Rice 3 Conditions for AMIS Countries



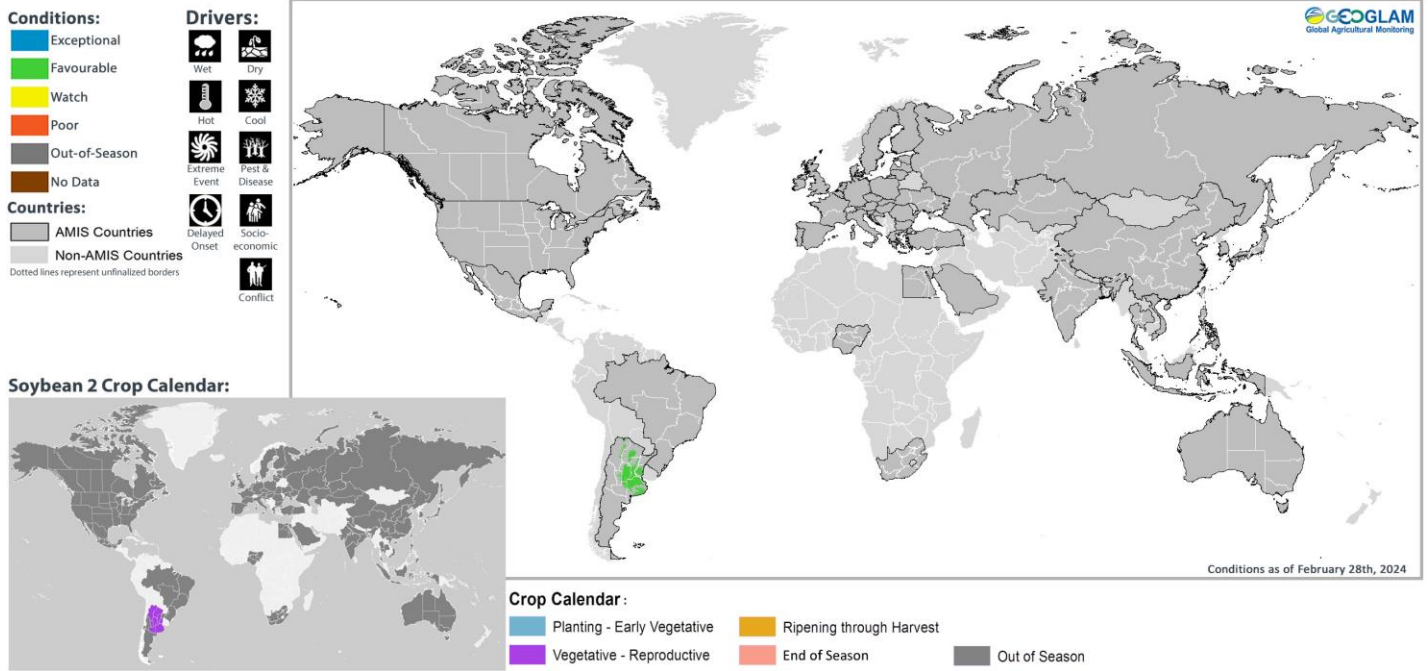
Rice 3 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Crop condition information is based upon information as of February 28th. Where crops are in less than favourable conditions the climatic drivers 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 February 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 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 February 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 February 28th, 2024



The Crop Monitor is a part of GEOGLAM, a GEO global initiative.
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Coordinated by the University of Maryland with funding from NASA Harvest
Climatic Influences by Climate Hazards Center of UC Santa Barbara

2024 Crop Monitor for AMIS release dates:

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

Cover 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>