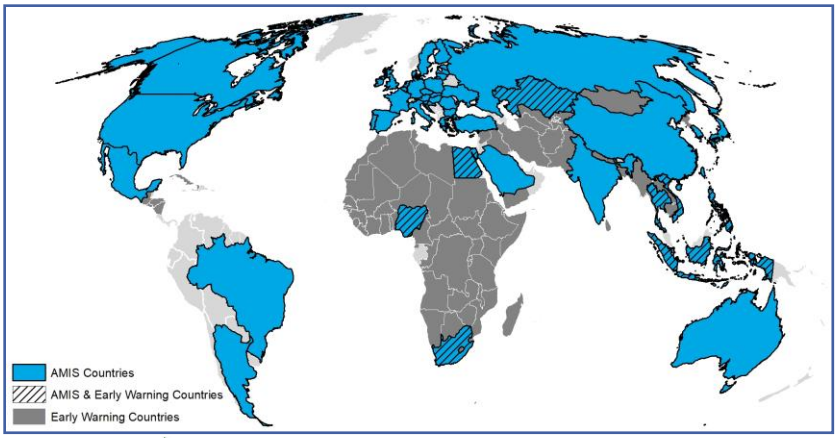
# Crop Monitor for AMIS

## Overview:

At the end of October, conditions remain favourable for soybeans while mixed for wheat, maize, and rice. For wheat, dry conditions persist in Argentina while persistent rains continue in eastern Australia. In the northern hemisphere, winter wheat gets off to a mixed start in the US, Ukraine, and the Russian Federation. Maize harvesting continues in the northern hemisphere with poor conditions in parts of Europe and the US. Rice conditions remain generally favourable except in parts of China. Soybean harvesting continues in the northern hemisphere under generally favourable conditions as sowing progresses in Brazil.

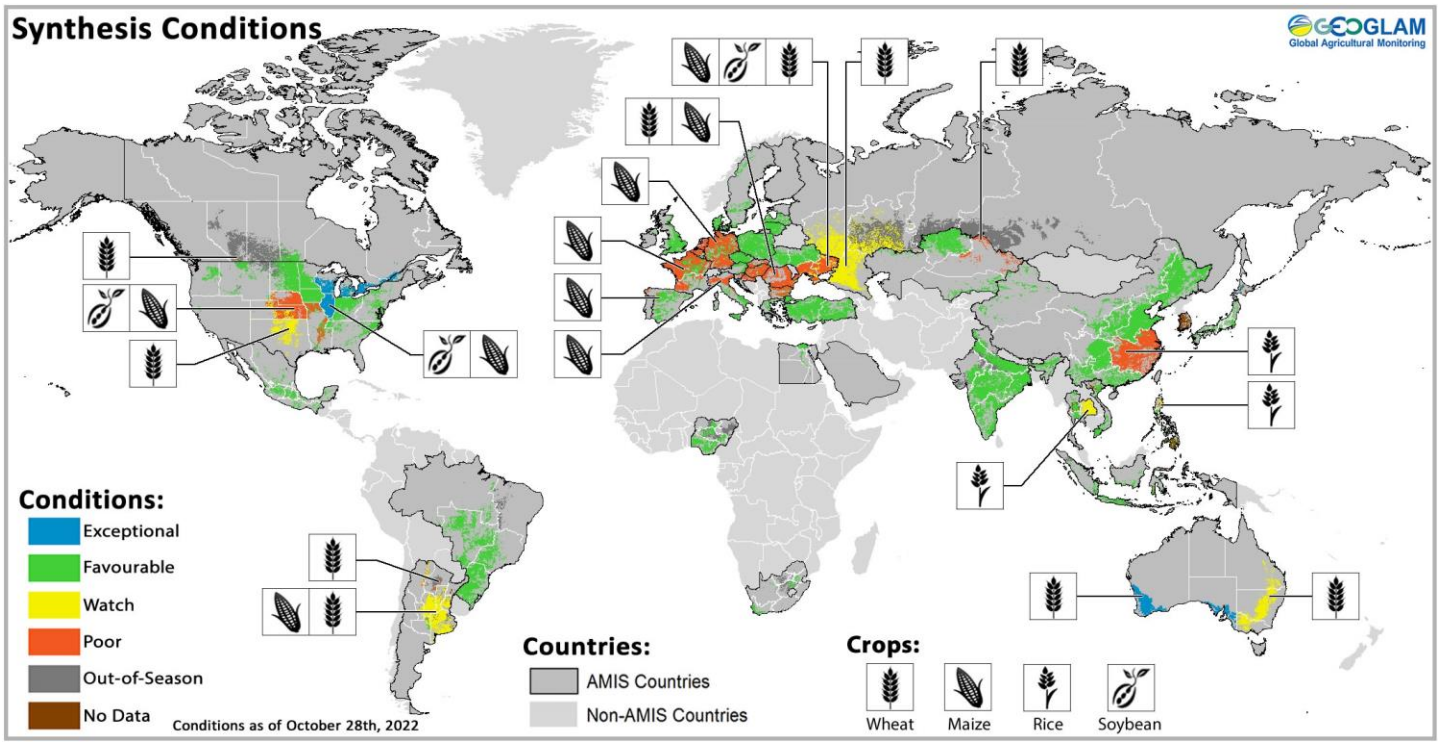



## Contents:



*Assessment based on information as of October 28th*

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




*Crop condition map synthesizing information for all four AMIS crops as of October 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.* ***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 sowing is ongoing under mixed conditions in the Russian Federation, Ukraine, and the US. In the southern hemisphere, dry conditions persist in Argentina, while flooding is impacting eastern Australia.

**Maize -** In the northern hemisphere, harvesting continues with poor yields in Europe and the western US. In the southern hemisphere, sowing continues in Argentina and Brazil while beginning in South Africa.

**Rice -** In China, harvesting of single-season rice is wrapping up. In India, Kharif rice is harvesting in the north. In Southeast Asia, several storm systems have impacted wet-season rice in the northern countries, while dry-season rice is harvesting in Indonesia.

**Soybeans -** In the northern hemisphere, harvesting is ongoing under mixed conditions in the US and Ukraine, while under favourable conditions in India and China. In the southern hemisphere, sowing is continuing in Brazil.

## Forecasts at a Glance

**Climate Influences –** Both La Niña and a Negative Indian Ocean Dipole (IOD) are currently present. La Niña conditions will likely continue into early 2023 (86% chance for November to January and 59% chance for January to March) while the Negative IOD is likely to continue through December (~55% chance).

**Argentina –** Both the short-term (two weeks) and long-term (three months) forecasts indicate a likely continuation of below-average precipitation across much of the agricultural areas.

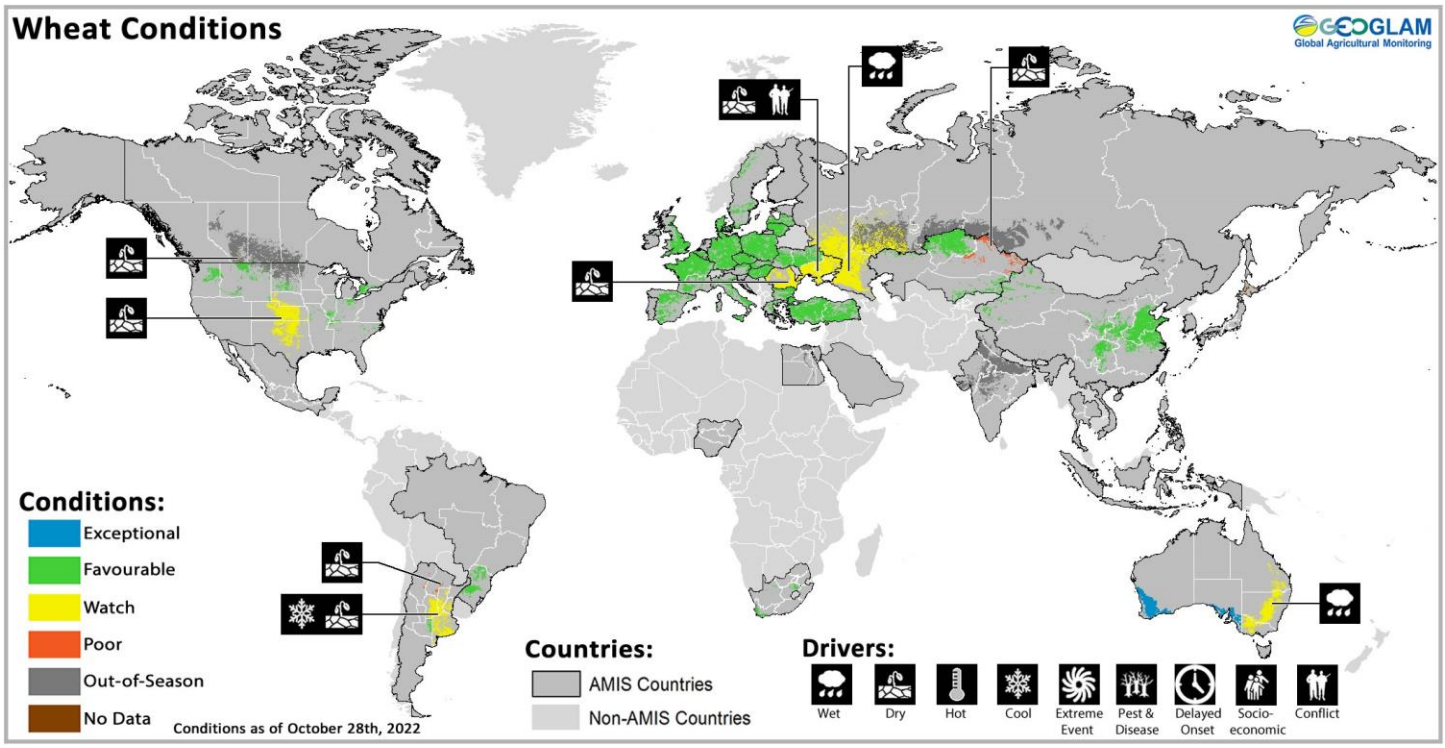
**Brazil** – Both the short-term (two weeks) and long-term (three months) forecasts indicate likely below-average precipitation across the south region, while above-average across most of the rest of the country.

**The United States** – Both the short-term (two weeks) and long-term (three months) forecasts indicate likely below-average precipitation over winter wheat growing areas in the southern and parts of the central Great Plains.

*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.*

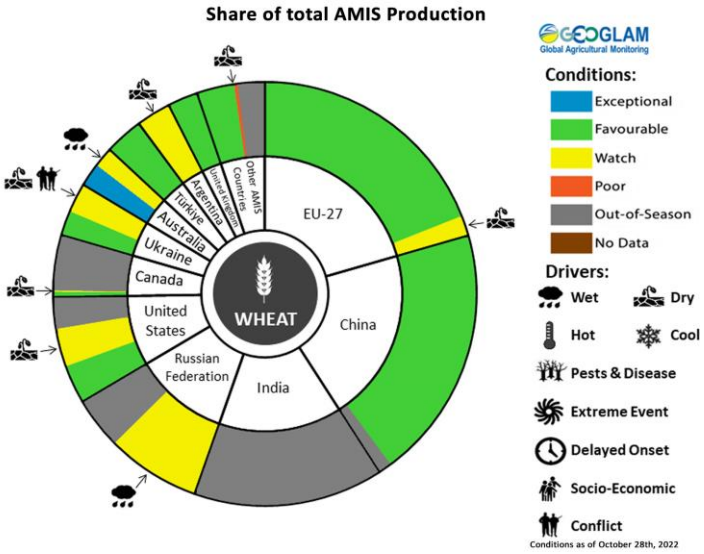
* Assessment based on information as of October 28th

# 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. Condition information is based upon information as of October 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.*

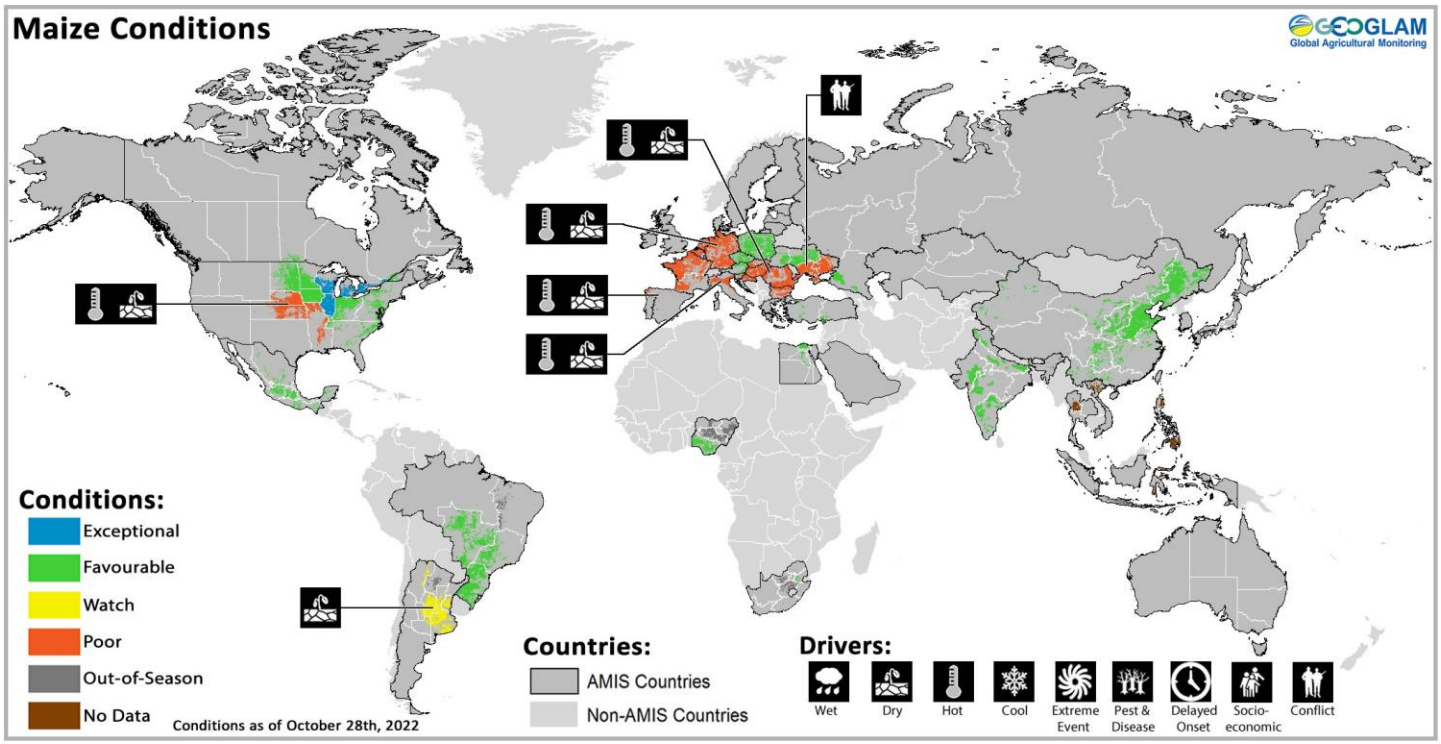
**Wheat:** In the **EU**, sowing is progressing well across the northern countries and beginning in the Mediterranean countries. In the **UK**, sowing and emergence are ongoing under favourable conditions owing to good soil moisture and temperatures. In **Türkiye**, sowing is beginning under favourable conditions. In **Ukraine**, sowing is continuing under mixed conditions due to the ongoing war and areas of dryness in the south. In the **Russian Federation**, heavy rainfall from late September to early October has delayed sowing activities, particularly in the southern and central districts. In **China**, winter wheat is sowing under favourable conditions. In the **US**, winter wheat sowing is continuing under dry conditions in the southern and central Great Plains. In **Canada**, winter wheat sowing continues under generally favourable conditions, despite dry conditions in the western Prairies. In **Australia**, as harvest begins, yields are expected to be exceptionally high across Western Australia and South Australia; however, heavy rainfall and flooding in the east may reduce yields. In **Argentina**, mixed conditions persist in the main producing areas due to prolonged dryness and recent frost events during critical development stages. Harvesting has begun in the north with poor yields expected.




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

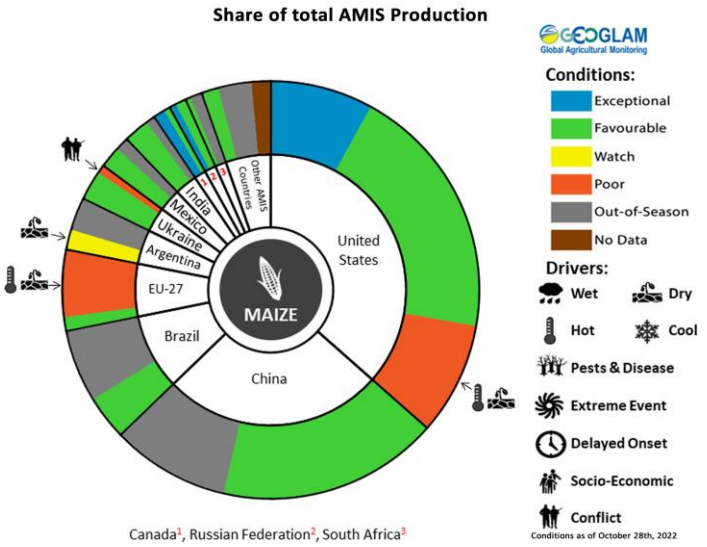
* Assessment based on information as of October 28th

# Maize Conditions for AMIS Countries



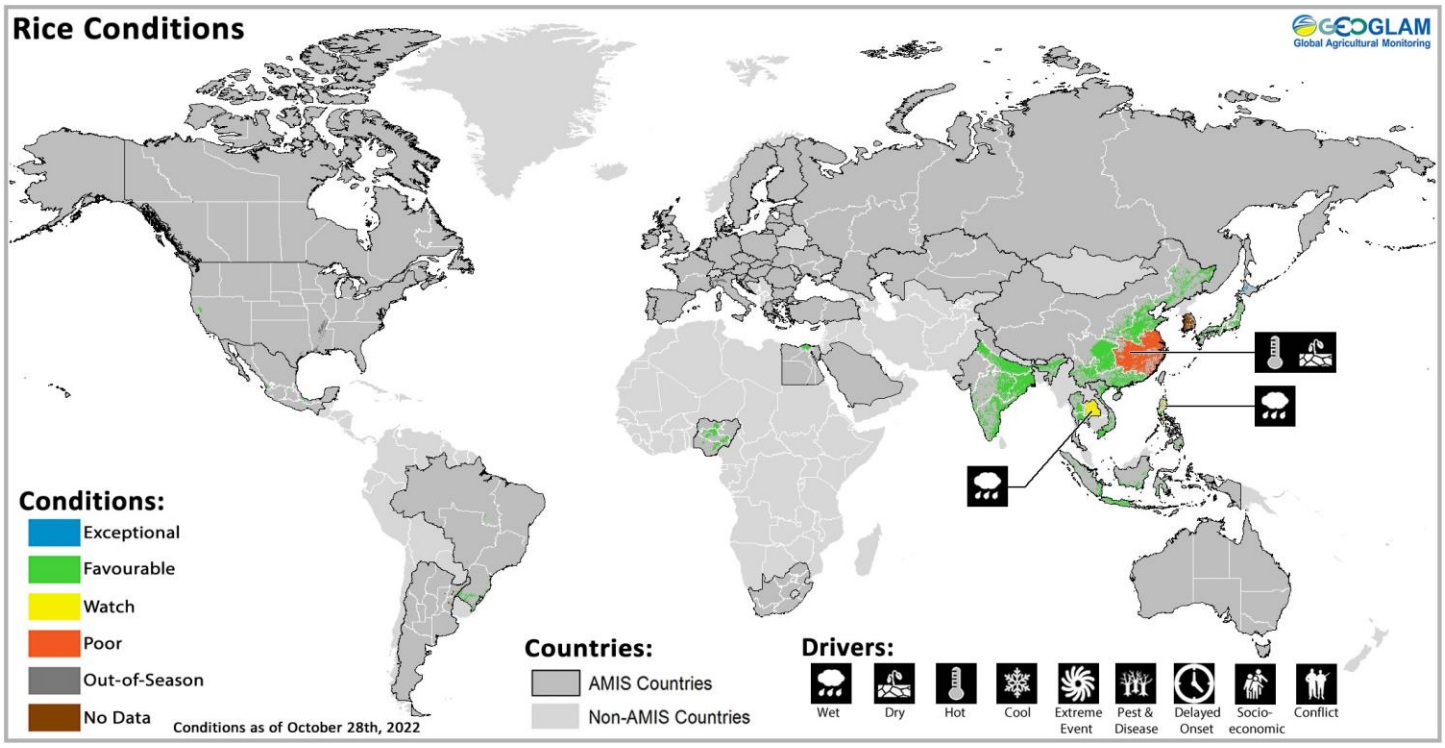

*Maize crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Condition information is based upon information as of October 28th. Where crops are in other than favourable conditions the climatic drivers responsible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

**Maize:** In the **US**, harvesting is progressing under a split of conditions, poor in the western and southern Corn Belt, while exceptional in Illinois, Michigan, and Wisconsin. In **Canada**, harvest is wrapping up under favourable to exceptional conditions. In **Mexico**, harvesting has begun for the spring-summer season (larger season) under favourable conditions. In the **EU**, harvesting is wrapping up with largely below-average yields across much of Europe due to a very dry season and heatwaves that hit during the critical flowering stage. In **Ukraine**, harvesting is now picking up with the cessation of rains in October. In the **Russian Federation**, harvesting is wrapping up under favourable to exceptional conditions. In **China**, harvest is wrapping up under favourable conditions. In **India**, harvesting of the Kharif crop is ongoing under favourable conditions. In **Brazil**, sowing of the spring-planted crop (smaller) is progressing with a slight reduction in the total sown area expected compared to last year, due to a switch over to soybeans. In **Argentina**, a lack of surface moisture continues to delay the sowing of the early-planted crop (larger season), which is now expecting area reductions as the window for sowing is closing. Frost damage has occurred in northern Buenos Aires and southern Santa Fe. In **South Africa**, sowing is beginning under favourable conditions.



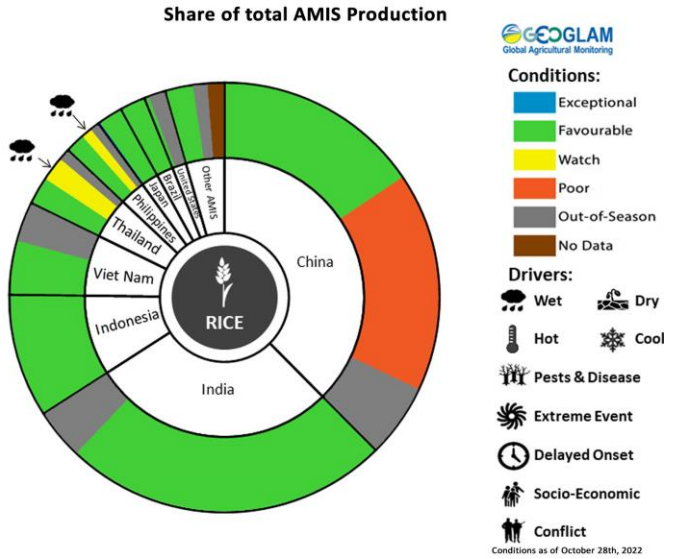

*For detailed description of the pie chart please see box on page 6.*

# 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. Condition information is based upon information as of October 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 **China**, harvesting is wrapping up for the single-season rice under mixed conditions due to hot and dry conditions earlier in the summer in the lower Yangtze River region. In **India**, the Kharif crop has reached maturity across most of the country as harvesting is progressing in the northern states. In **Indonesia**, harvesting of dry-season rice continues under favourable conditions while the sowing of wet-season rice begins. In **Viet Nam**, harvesting of wet-season rice has begun in the north. In the south, harvesting is wrapping up for summer-autumn rice (wet-season) as harvesting begins for the other wet-season rice (autumn-winter rice and seasonal rice). In **Thailand**, tropical Storm Noru caused widespread floods and damage to wet-season rice fields, most notably in the northeast region. In the **Philippines**, wet-season rice is under generally favourable conditions; however, super typhoon Nuro (Karding) brought heavy rainfall and flooding in most parts of Luzon. In **Japan**, harvesting is wrapping up under generally favourable conditions. In **Brazil**, sowing is continuing with a reduction in the total sown area expected. In the **US**, harvest is wrapping up in California.




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

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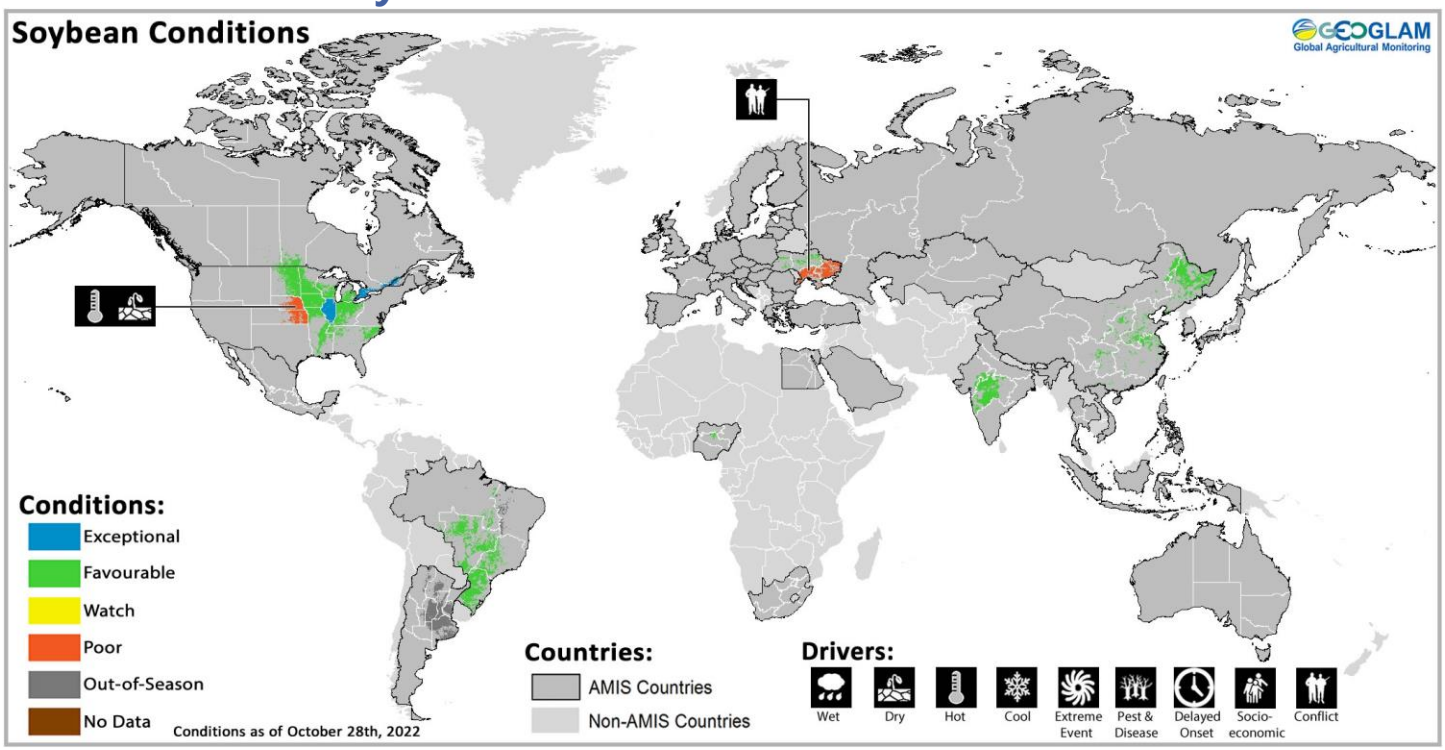
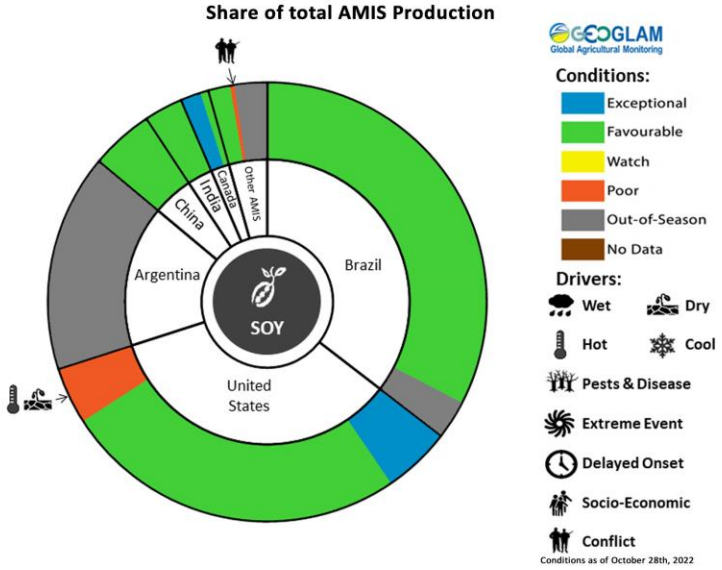
# Soybean Conditions for AMIS Countries




*Soybean crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Condition information is based upon information as of October 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 the **US**, harvesting is wrapping up under a mix of conditions. Most of the country is under generally favourable conditions; however, hot and dry weather earlier in the growing season has taken its toll on final yields, particularly in Kansas and Nebraska; conversely, parts of the eastern corn belt have above-average yields. In **Canada**, harvesting is wrapping up under exceptional conditions in Ontario and Quebec. In **China**, harvesting is wrapping up under favourable conditions. In **India**, harvesting is wrapping up under favourable conditions. In **Ukraine**, harvesting is over halfway complete, albeit under the shadow of the ongoing war in the southern and eastern regions. In **Brazil**, sowing is progressing under favourable conditions owing to good soil moisture levels. An increase in total sown area is expected compared to last year.




***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 November 3rd***

**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 October 28th

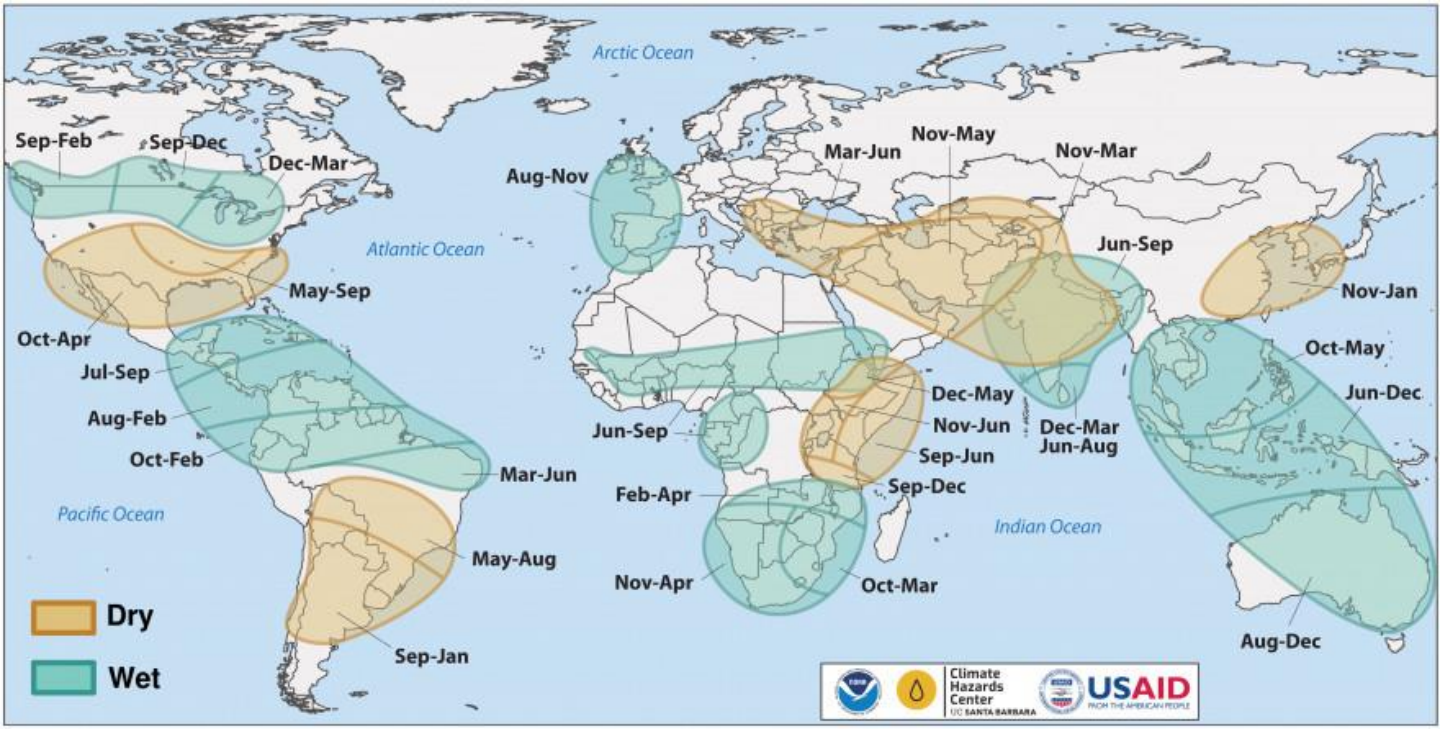
## Climate Influences: La Niña Advisory and a Negative Indian Ocean Dipole

The El Niño-Southern Oscillation (ENSO) is currently in the La Niña phase. La Niña conditions will likely continue into early 2023 (86% chance for November to January and 59% chance for January to March), according to the IRI/CPC.

Negative Indian Ocean Dipole (IOD) conditions are present and are expected through November. A transition towards neutral IOD is forecast for December (~55% chance), according to the Australia Bureau of Meteorology.

Associated with co-occurring La Niña and negative IOD conditions there are very high risks of severe drought impacts across the Horn of Africa, and heavy rainfall and flooding in Australia and Southeast Asia. Additionally, La Niña conditions for a third year in a row raise concerns about repeat dry conditions in 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. Historically, co-occurring La Niña and negative IOD events have led to very dry conditions in East Africa during boreal fall, and fall La Niñas are very often followed by poor spring rains as well, even if La Niña strength wanes.

*Source: UCSB Climate Hazards Center*



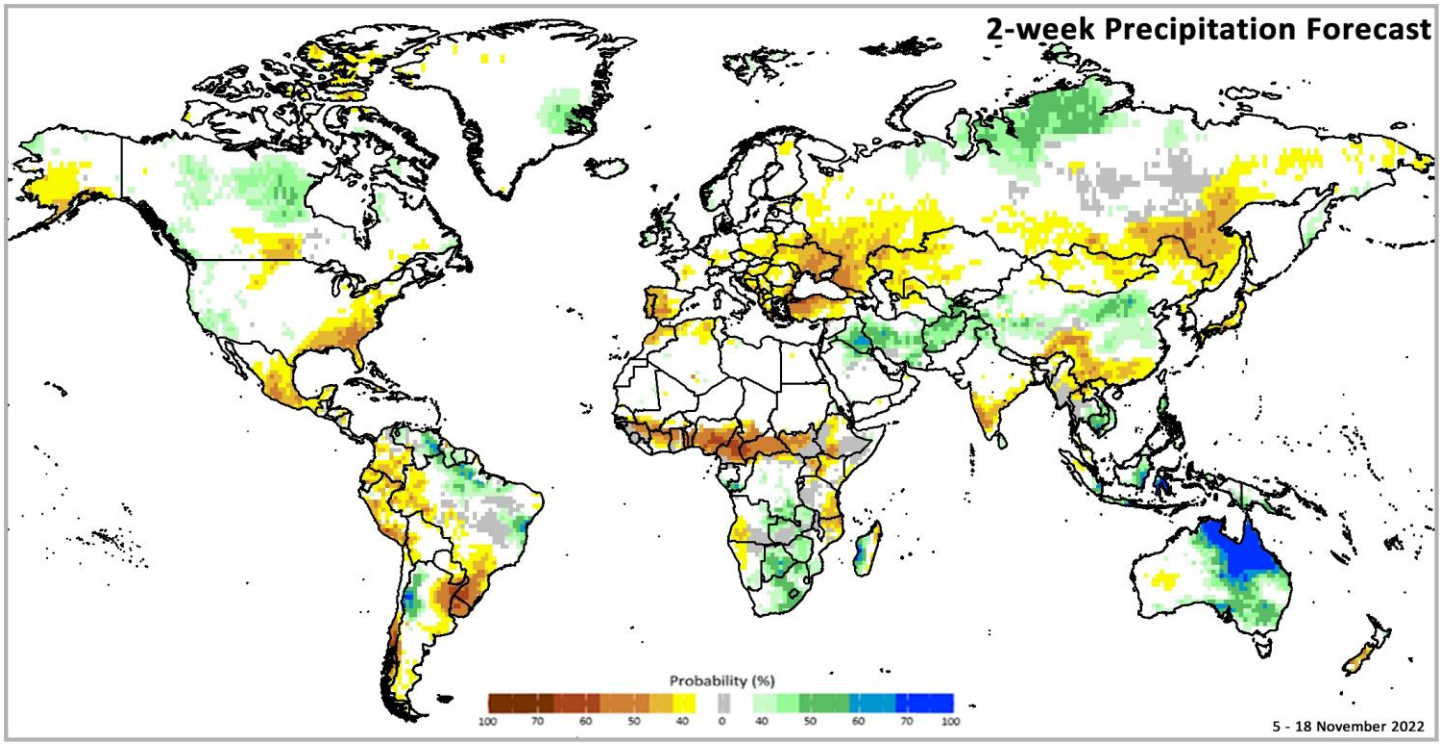

*Location and timing of likely above- and below-average precipitation related to La Niña events. Based upon observed precipitation during 21 La Niña events since 1950, wet and dry correspond to a statistically significant increase in the frequency of precipitation in the upper and lower thirds of historical 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*

* Assessment based on information as of October 28th

## 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 northcentral Canada, southwest United States, eastern Venezuela, Guyana, Suriname, northern and northeastern Brazil, western Argentina, South Africa, Botswana, Zimbabwe, southern DRC, western Madagascar, Iraq, Iran, Afghanistan, Tajikistan, northern Pakistan, northwest India, northern and central China, central Viet Nam, southern Laos, Cambodia, eastern Thailand, the Philippines, central Indonesia, and northern and eastern Australia.

There is also a likelihood of below-average rainfall over the central Prairies in Canada, southeast and mid-Atlantic United States, Mexico, eastern Cuba, Columbia, Ecuador, Peru, western Bolivia, western and southern Brazil, eastern Paraguay, eastern Argentina, Uruguay, southern Chile, Portugal, western Spain, southern and eastern Poland, Hungary, Bosnia and Herzegovina, Serbia, Bulgaria, Albania, North Macedonia, Greece, western and northern Türkiye, southern Belarus, Ukraine, the Russian Federation, Georgia, western Kazakhstan, western Uzbekistan, western Turkmenistan, northern Morocco, northern Algeria, southern Mali, northern Guinea, northern Côte d'Ivoire, northern Ghana, Togo, Benin, Nigeria, Cameroon, southern Chad, the Central African Republic, South Sudan, central Ethiopia, northern Uganda, northwest Kenya, southeast Tanzania, northern Mozambique, southwest Angola, western Namibia, northern Madagascar, southern India, southern China, northern Viet Nam, northern Laos, western Myanmar, Japan, and New Zealand.




*IRI SubX Precipitation Biweekly Probability Forecast for 5 – 18 November 2022, issued on October 28th, 2022. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: IRI Subseasonal Forecasts Maproom*

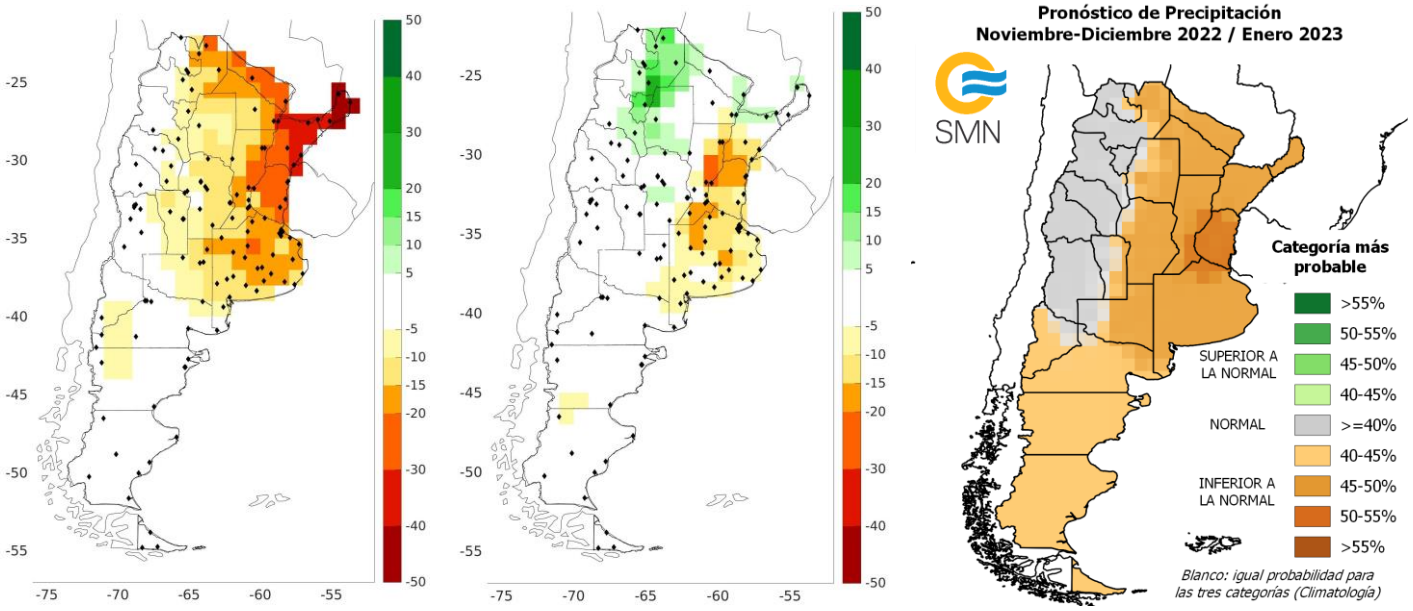
* Assessment based on information as of October 28th

## Argentina Outlook

The November 2 – 8 precipitation forecast anomaly (left) indicates likely below-average rainfall over the majority of growing areas with the highest levels of difference over Entre Ríos, Corrientes, and Misiones. During the same period, temperatures are likely to be below-average over much of the northern agricultural areas, while above-average over Buenos Aires, La Pampa, San Luis, and southern Cordoba. The November 9 – 15 precipitation forecast anomaly (center) shows a continuation of negative anomalies over Buenos Aires, Santa Fe, and Entre Ríos. During the same period, temperatures are likely to be above-average across much of the agricultural areas.

The long-term November-December-January 2022/2023 forecast (right) predicts below-average precipitation across much of the country. The largest negative anomalies are over Entre Rios, Santa Fe, and northern Buenos Aires. During the same period, temperatures are likely to be above-average across the central and southern agricultural areas.

### Precipitation Anomaly Forecasts




***Left:*** *November 2 – 8, 2022 forecast precipitation anomaly in mm.* ***Center*** *November 9 – 15, 2022 forecast precipitation anomaly in mm. Images from the National Meteorological Service of Argentina.* ***Right:*** *November-December-January 2022/2023 forecast rainfall anomaly. Image from the National Meteorological Service of Argentina.*

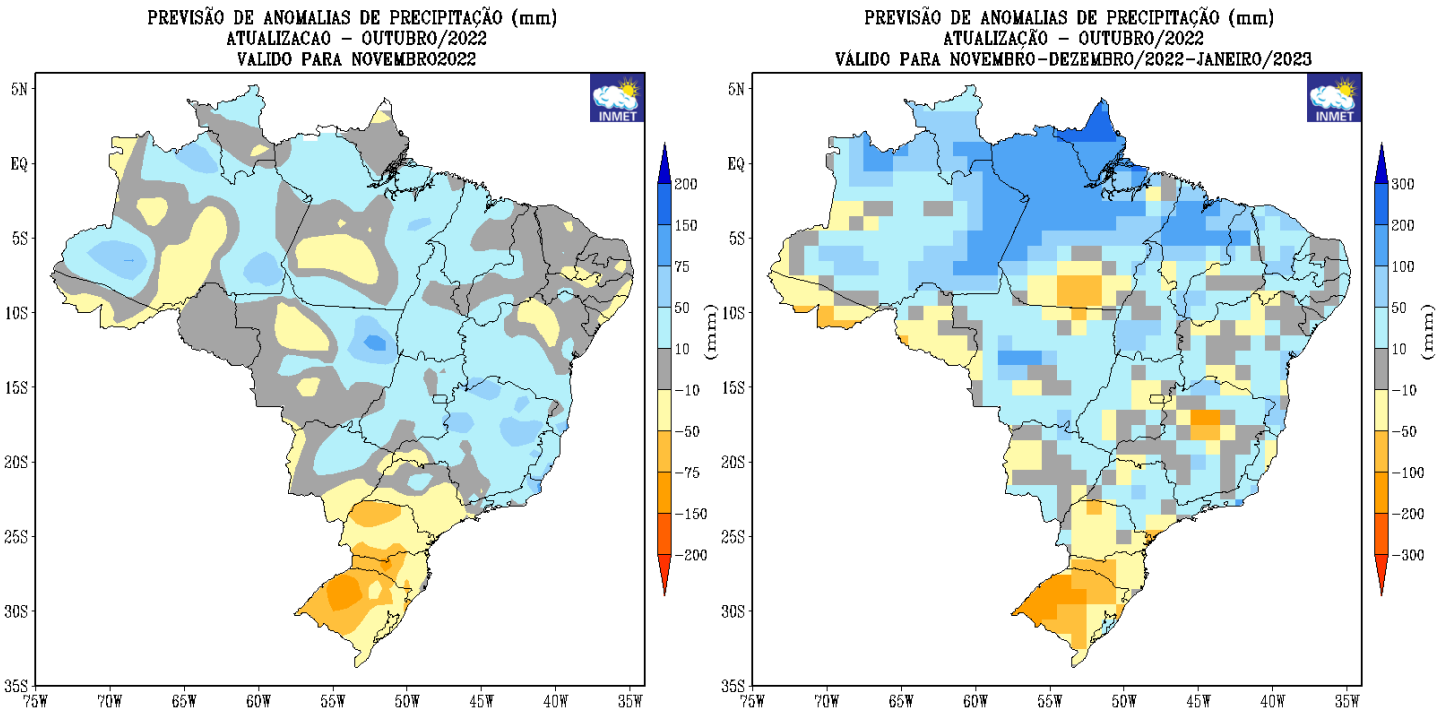
* Assessment based on information as of October 28th

## Brazil Outlook

The November precipitation anomaly forecast (left) indicates possible below-average precipitation over parts of cropping areas in Rio Grande do Sul, Santa Catarina, Paraná, and Sao Paulo, while possible above-average precipitation over parts of agricultural areas in Mato Grosso, Goiás, Minas Gerais, southern Tocantins, and southern Bahia. During the same period, temperatures are likely to be below-average in the southeast region while above-average across much of the north and northeast regions of the country.

The long-term November-December-January 2022/2023 forecast (right) indicates likely continued below-average precipitation in Rio Grande do Sul, Santa Catarina, and Paraná. Above-average is likely across much of the rest of the country, specifically in the north region. During the same period, temperatures are likely to be near average across the country.

### October and 3-month Precipitation Forecast Anomalies




***Left:*** *November 2022 precipitation anomaly forecast, issued in October 2022.* ***Right:*** *November-December-January 2022/2023 precipitation anomaly forecast, issued in October 2022. Images from the National Institute of Meteorology.*

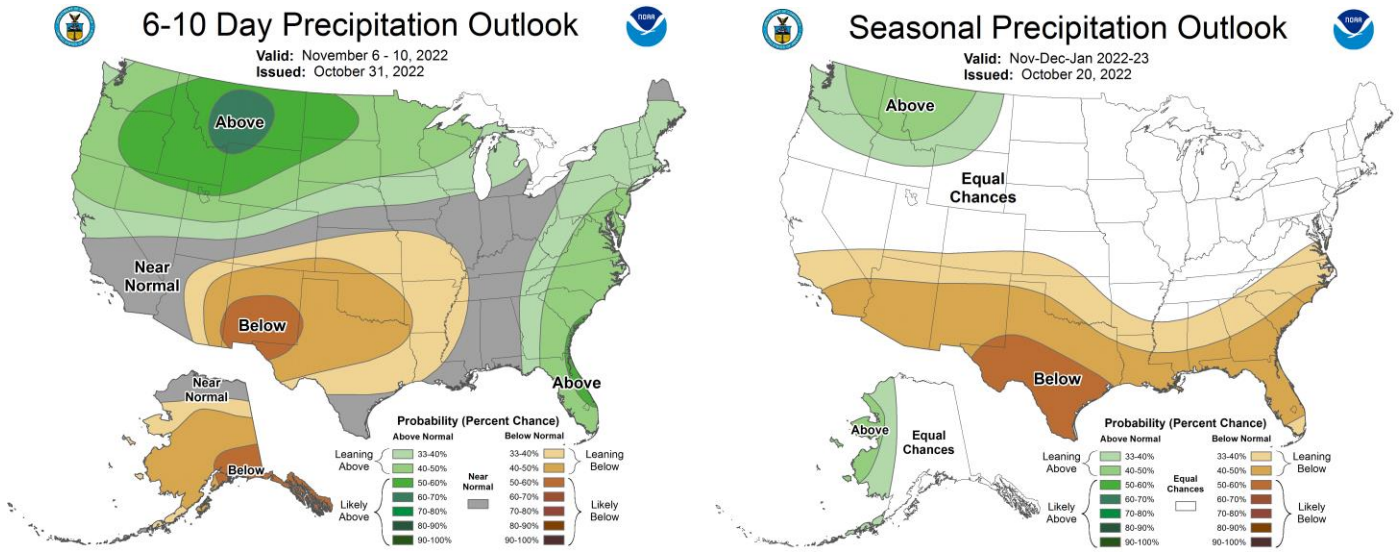
* Assessment based on information as of October 28th

## United States Outlook

The 6 – 10 November outlook indicates there is the possibility of above-average precipitation from the Pacific Northwest across the northern Great Plains towards the Great Lakes. Below-average precipitation is also likely across the southern Great Plains over to the Mississippi. During this period, temperatures are likely to be above-average along the eastern half of the country extending into the southern Great Plains while below-average in the Pacific Northwest and the northern Great Plains.

For the longer-term seasonal November-December-January (NDJ) 2022-2023 outlook, below-average precipitation is possible across the entire southern part of the country and reaching up into the Central Great Plains. Conversely, above-average precipitation is likely in the Pacific Northwest. During this period, temperatures are likely to be above-average across most of the country except for the Mid-West, northern Great Plains, and the Pacific Northwest.

### Short-term and the October-November-December Precipitation Outlooks




*The official 6 - 10 precipitation outlook issued on October 31st, 2022, and the extended November-December-January outlook issued on October 20th, 2022, from NOAA/National Weather Service, National Centers for Environmental Predictions, and Climate Prediction Center.*
*Images from https://www.cpc.ncep.noaa.gov/products/forecasts/.*

*Source: NOAA Climate Prediction Center*

# 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% 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.*

## Drivers:

These represent the key climatic 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

## 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 | |

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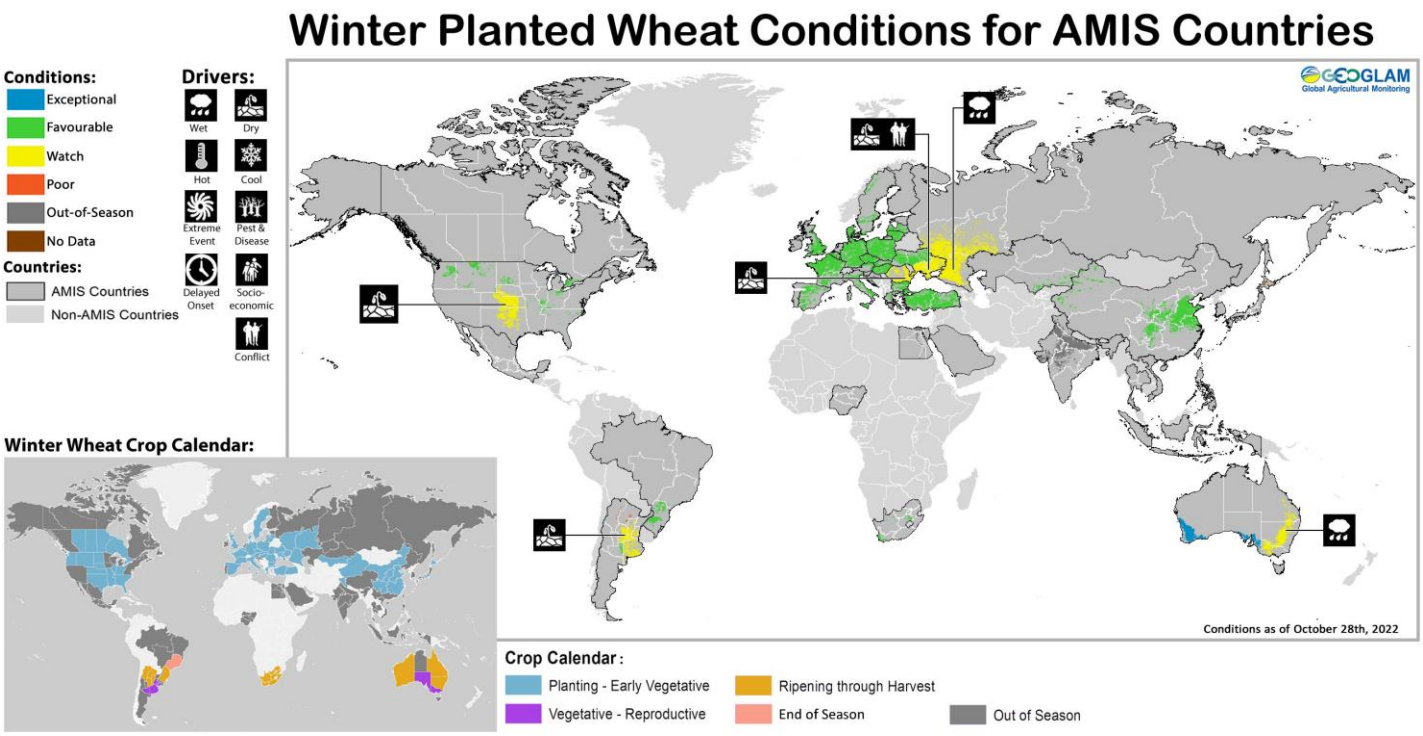
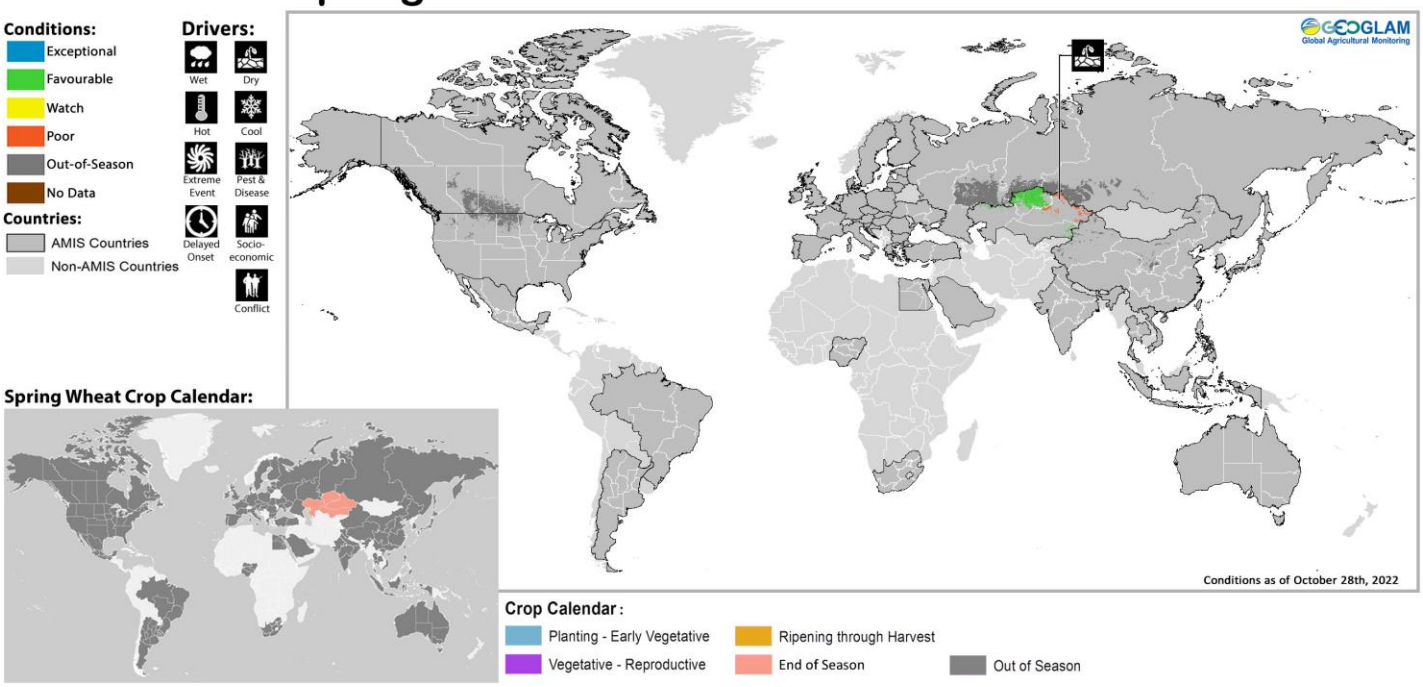
# Appendix 2: Crop Season-Specific Maps




*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. Condition information is based upon information as of October 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 wheat crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Condition information is based upon information as of October 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.*

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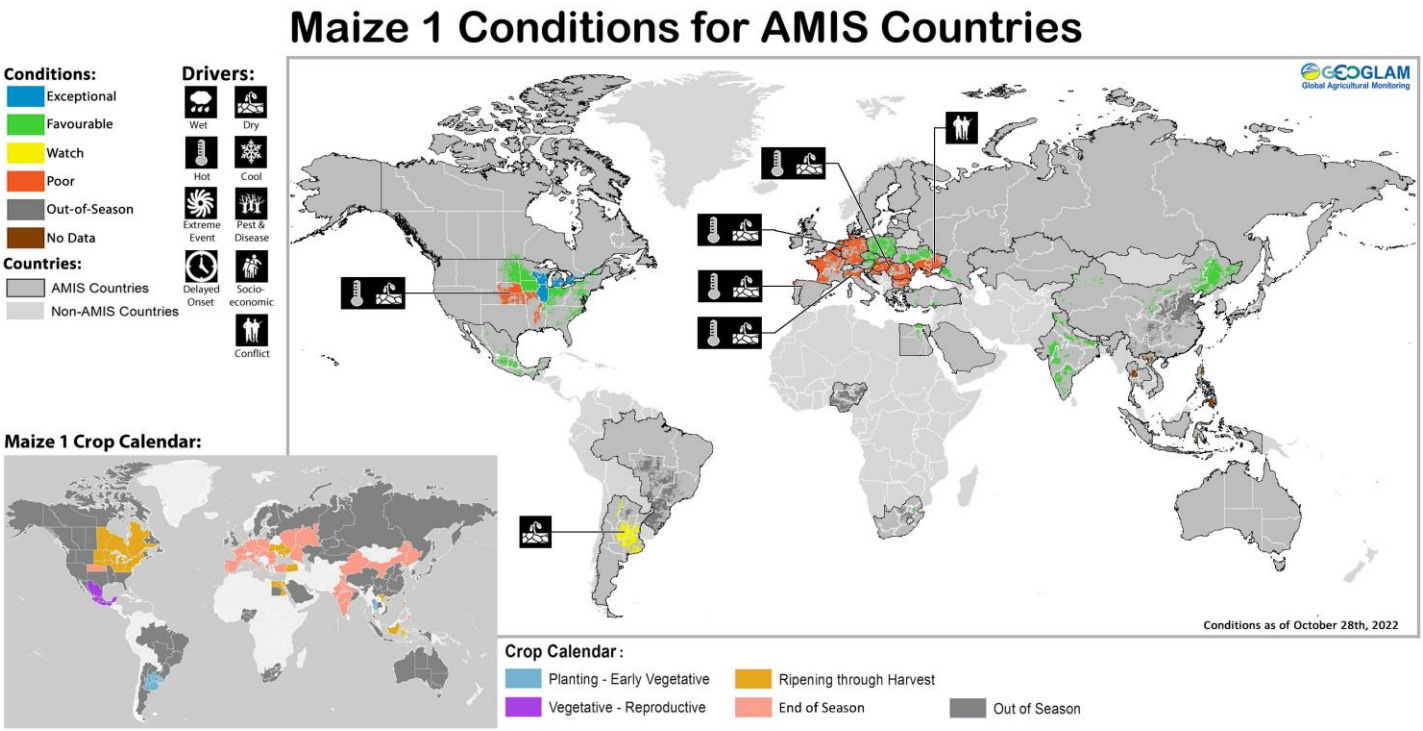
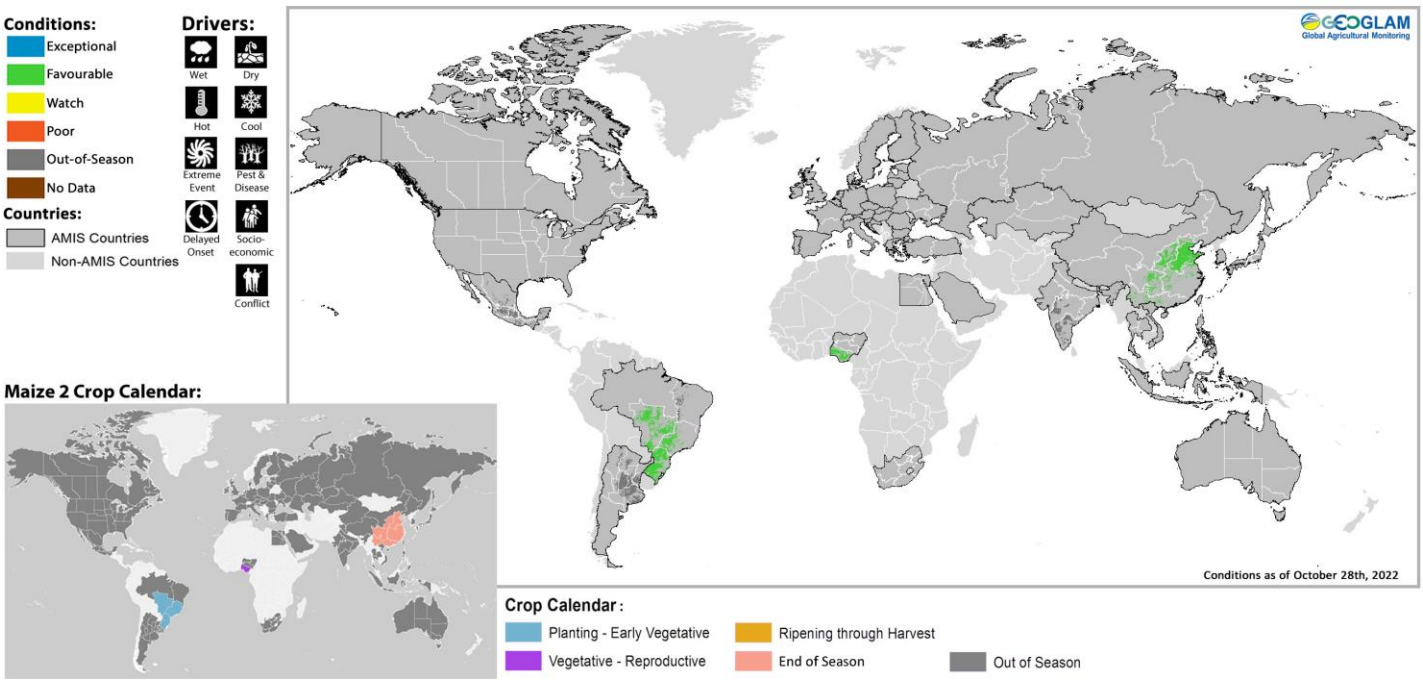



*Maize 1 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Condition information is based upon information as of October 28th. Where crops are in less than favourable conditions the climatic drivers responsible 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 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Condition information is based upon information as of October 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.*

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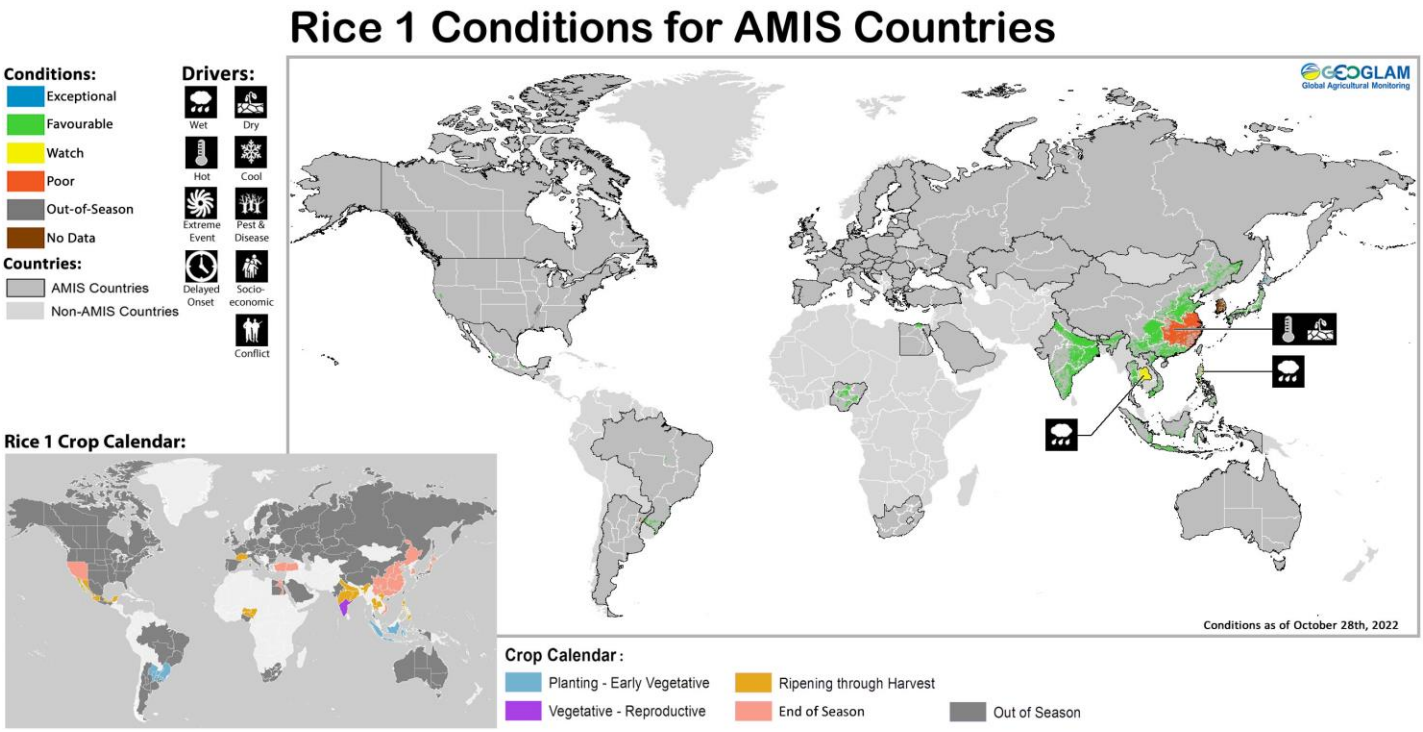
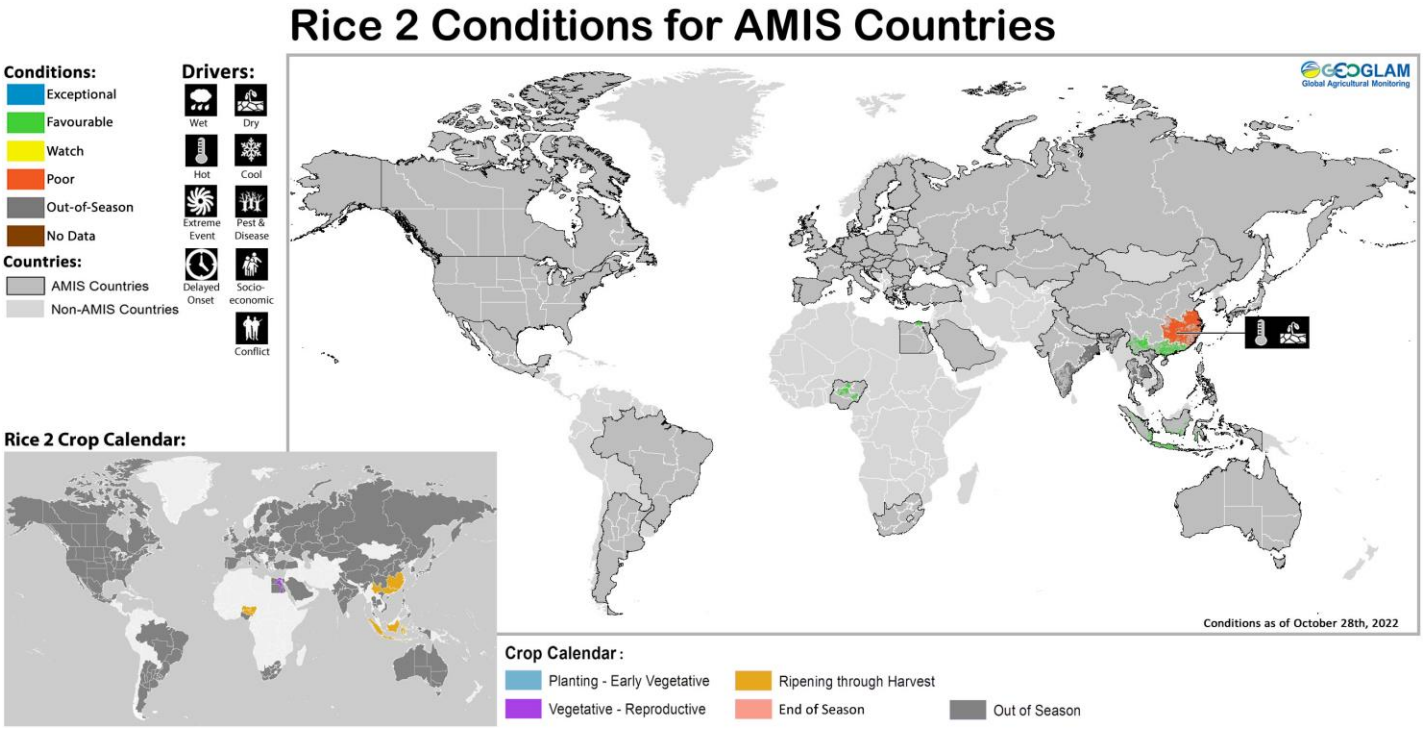
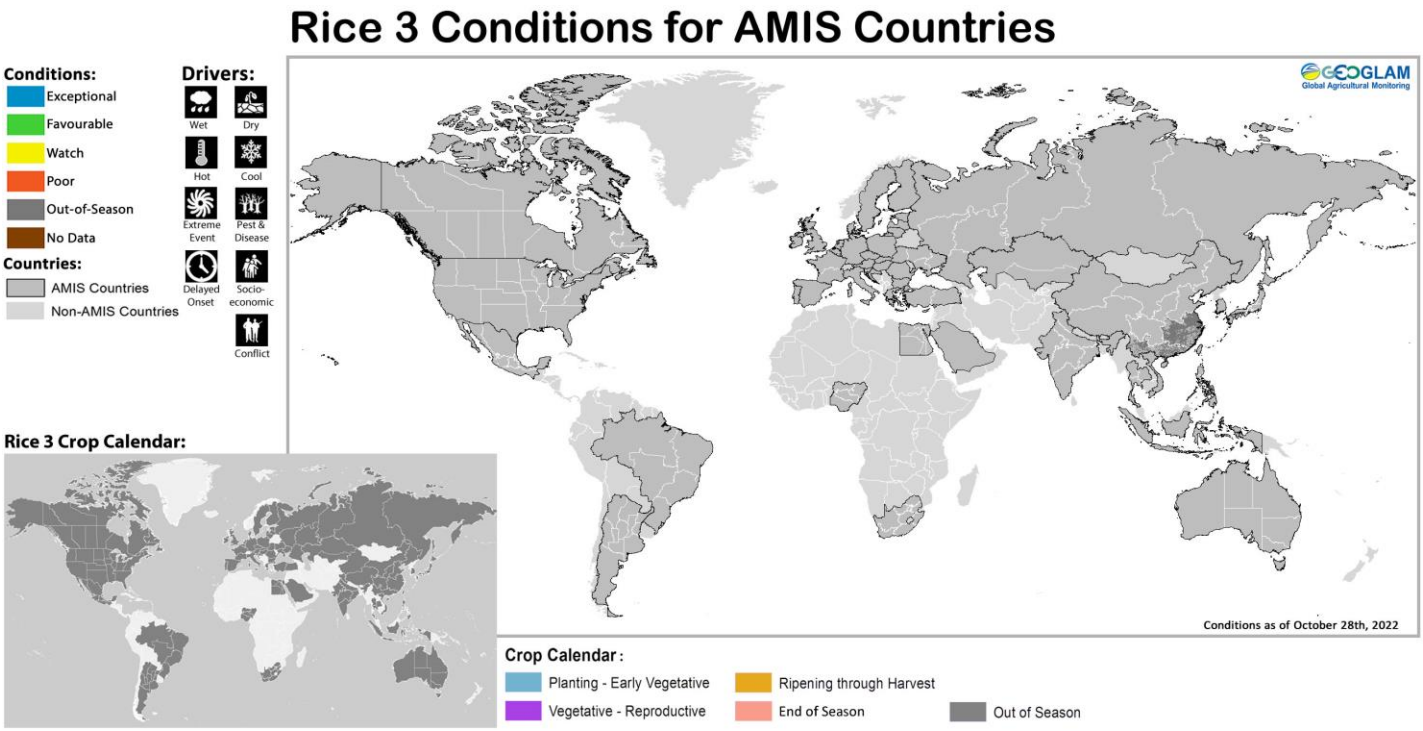


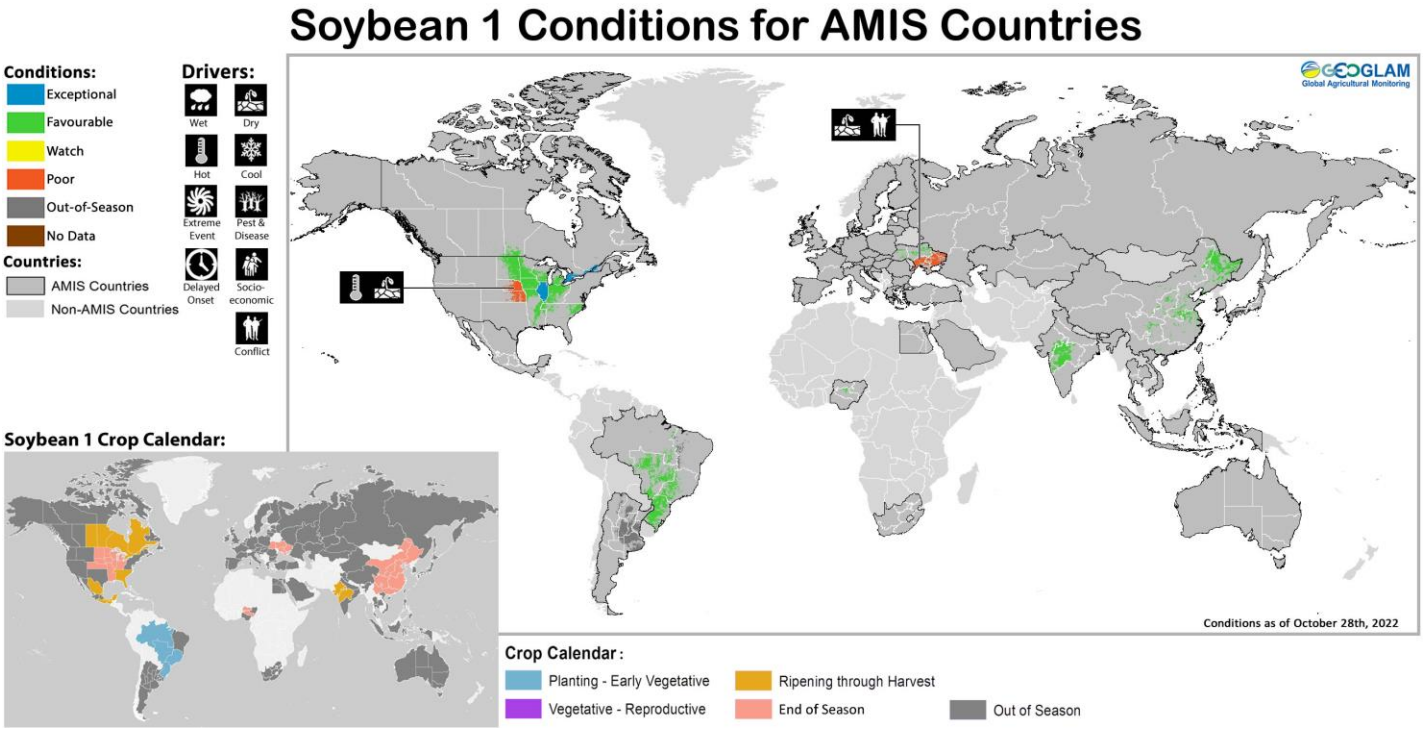

*Rice 1 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Condition information is based upon information as of October 28th. Where crops are in less than favourable conditions the climatic drivers responsible 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 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Condition information is based upon information as of October 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.*

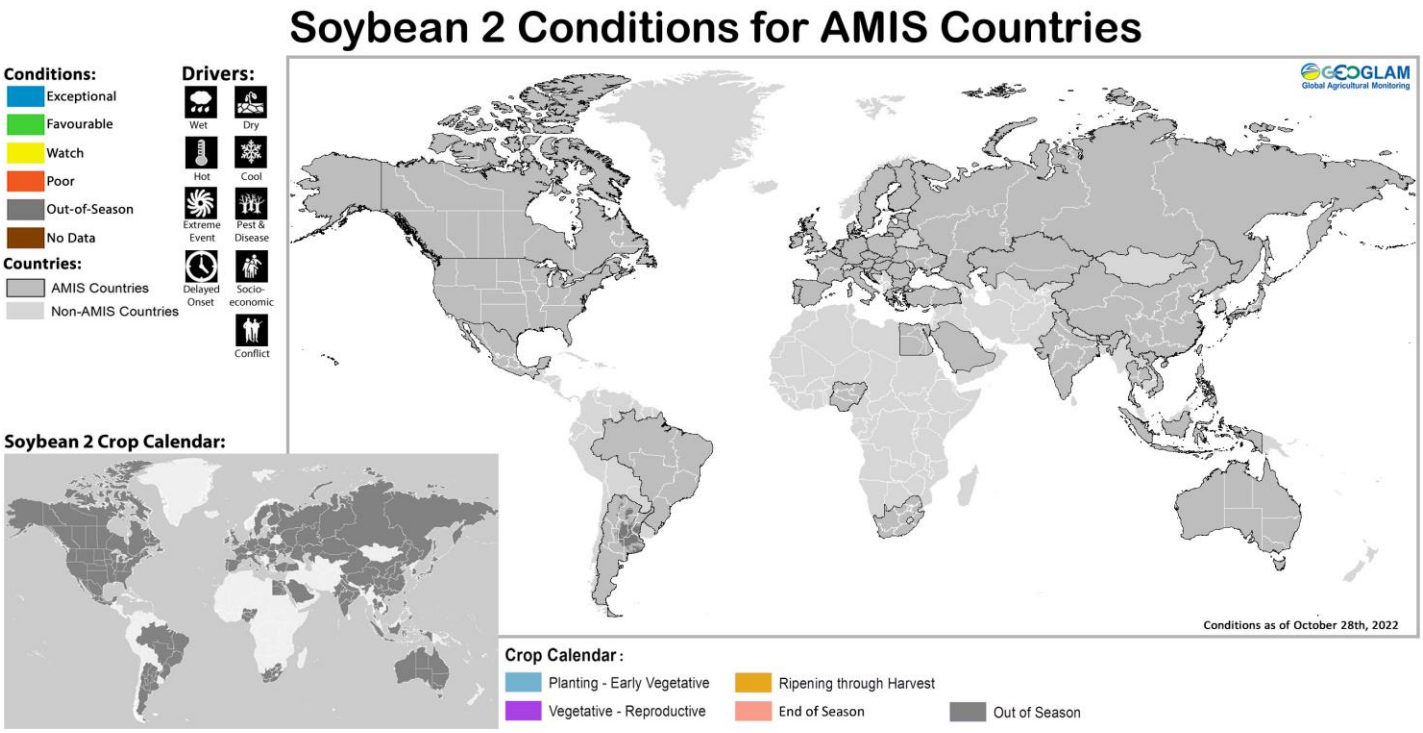



*Rice 3 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Condition information is based upon information as of October 28th. Where crops are in less than favourable conditions the climatic drivers responsible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




*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. Condition information is based upon information as of October 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.*



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*Photo courtesy of Brian Barker*

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## Sources & Disclaimer

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