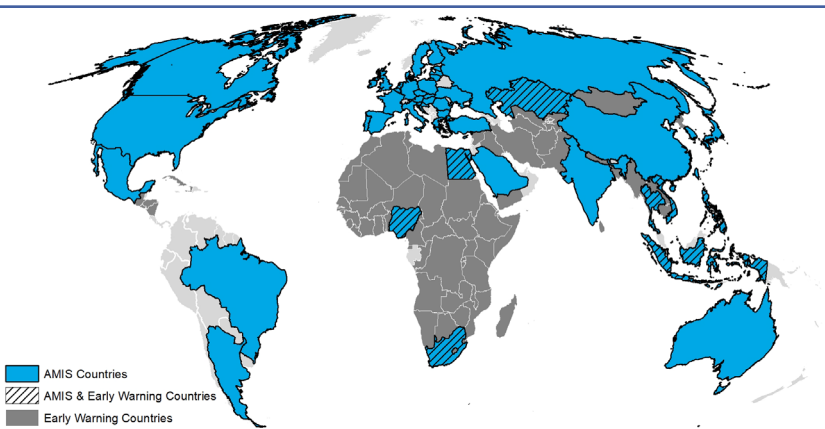


**Overview:**

At the end of March, conditions are generally favourable for maize and rice, while mixed for wheat and soybeans. Winter wheat is breaking dormancy in the northern hemisphere with some areas of concern in Europe, Ukraine, China, and the US. In the southern hemisphere, maize harvesting is beginning in Argentina and southern Brazil. In the northern hemisphere, sowing is beginning in the US and China. Rice conditions are favourable in most countries except for southern Brazil. Soybeans are harvesting in Argentina and Brazil under mixed conditions.

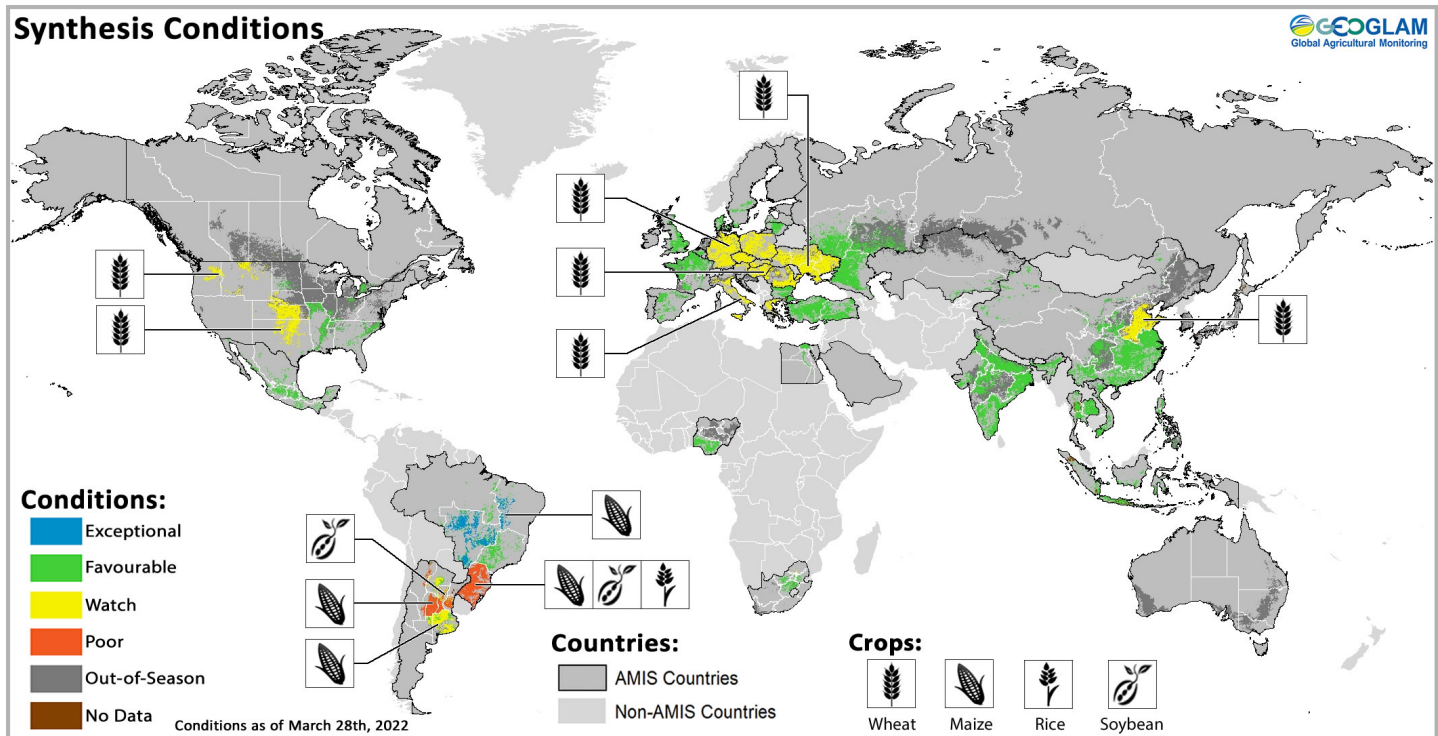


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*Assessment based on information as of March 28<sup>th</sup>*

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



Crop condition map synthesizing information for all four AMIS crops as of March 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, dry conditions persist in North America and are starting to be a concern in southern and eastern Europe. The war in Ukraine continues to bring uncertainties.

**Maize** - In the southern hemisphere, harvesting is ongoing in Brazil and Argentina with yield reductions due to the earlier in-season hot and dry conditions. In the northern hemisphere, conditions are favourable in India and Mexico as sowing begins in the US and China.

### Forecasts at a Glance

**Climate Influences** - The El Niño-Southern Oscillation (ENSO) is currently in the La Niña phase and is expected to remain as La Niña until at least June (80% chance) or July (65% chance), according to IRI/CPC. La Niña or ENSO-neutral conditions are equally likely after that.

**Europe** – The short-term (2-week), rainfall is likely to be below-average in the southern countries while above-average in the northern countries. The extended forecast shows likely below-average rainfall over much of southern and central Europe.

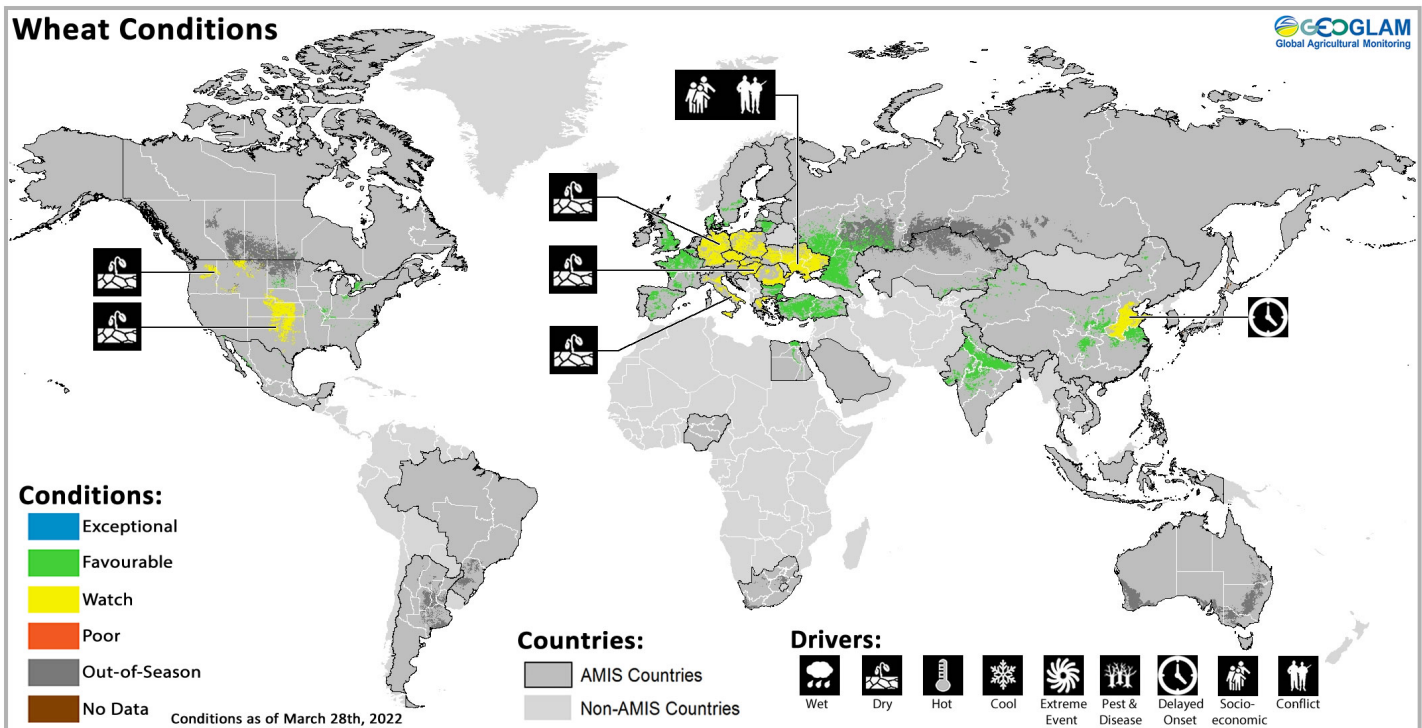
**Rice** - Sowing of early-season rice is beginning in China and transplanting of Rabi rice is complete in India. In Southeast Asia, harvesting is ongoing for dry-season rice in the northern countries and wet-season rice in Indonesia. Harvesting is ongoing in Brazil.

**Soybeans** - In the southern hemisphere, harvesting is ongoing in Brazil with reduced yields in the south region. Harvesting is beginning in Argentina with some improved prospects.

**United States** – The short-term (2-week) outlook shows possible above-average rainfall over the Mississippi River valley, while the long-term (3-months) outlook shows below-average rainfall over much of the southern and western states.

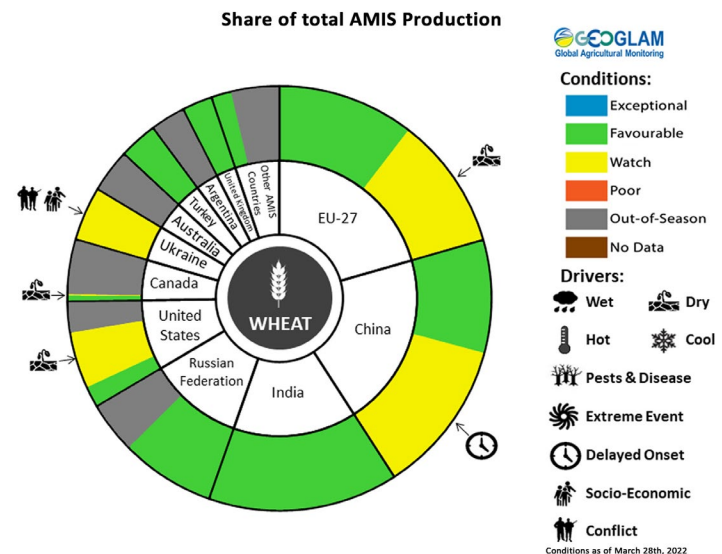


## Wheat Conditions for AMIS Countries



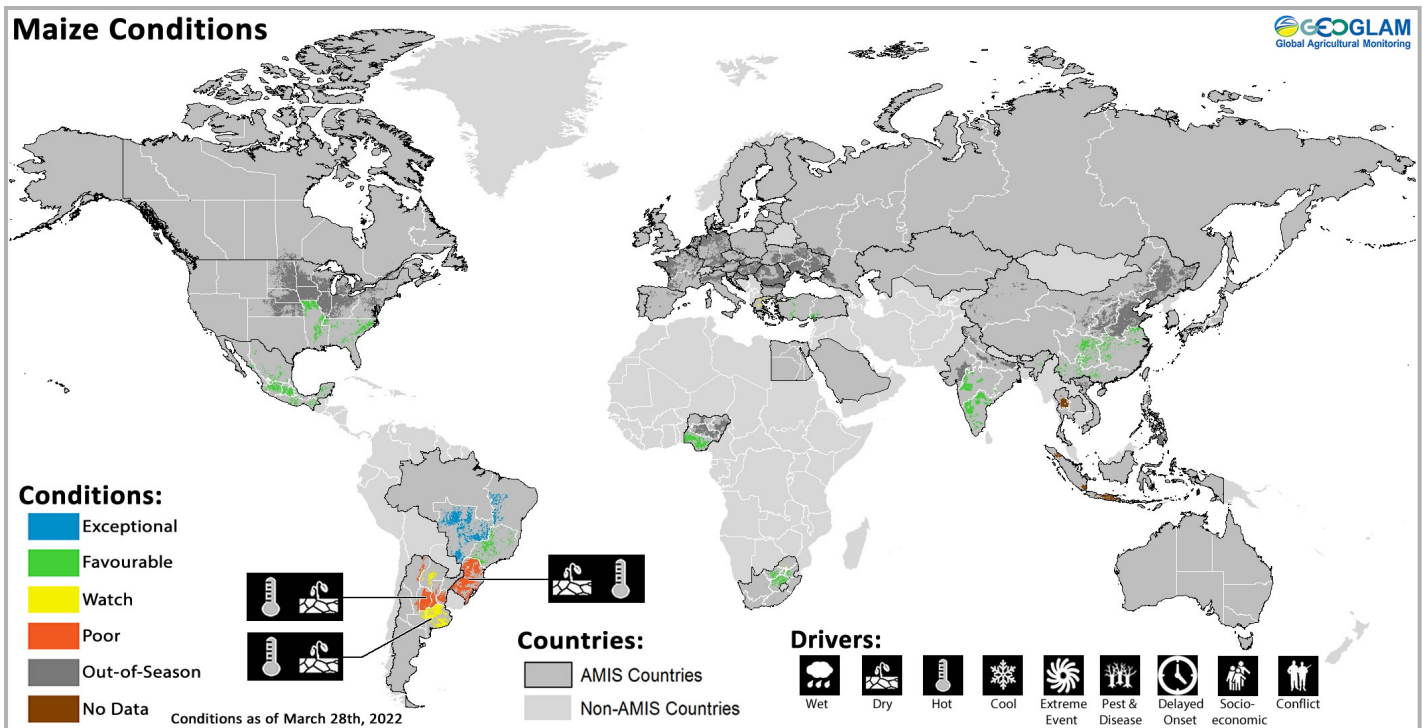
Wheat crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Condition information is based upon information as of March 28<sup>th</sup>. Where crops are in other than favourable conditions the climatic drivers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

**Wheat:** In the **EU**, conditions are mixed with rainfall deficits developing in southern and eastern Europe, while some countries in the west have benefited from some recent rainfall. In the **United Kingdom**, conditions are favourable after a mild winter. In **Ukraine**, winter wheat is emerging from dormancy under favourable climatic conditions, however, the ongoing war creates significant uncertainty. Farmers continue to be impacted by a lack of fertilizer, fuel, and personal safety to perform fieldwork. In the **Russian Federation**, ample rainfall over most winter wheat growing areas will support soil moisture levels going into spring. In **Turkey**, recent rainfall continues to support crop development. In **China**, conditions remain generally favourable for winter wheat albeit with some areas of possible concern along the Yellow River as a result of delayed and reduced sowing from flooding last fall. Spring wheat sowing has begun. In **India**, the crop is moving to the maturity stage under favourable conditions with the sown area above the five-year average. In the **US**, long-term dryness remains in the main producing winter wheat areas of the central and southern plains. In **Canada**, winter wheat conditions remain mixed in the central and western Prairies while being favourable in Manitoba and Ontario.



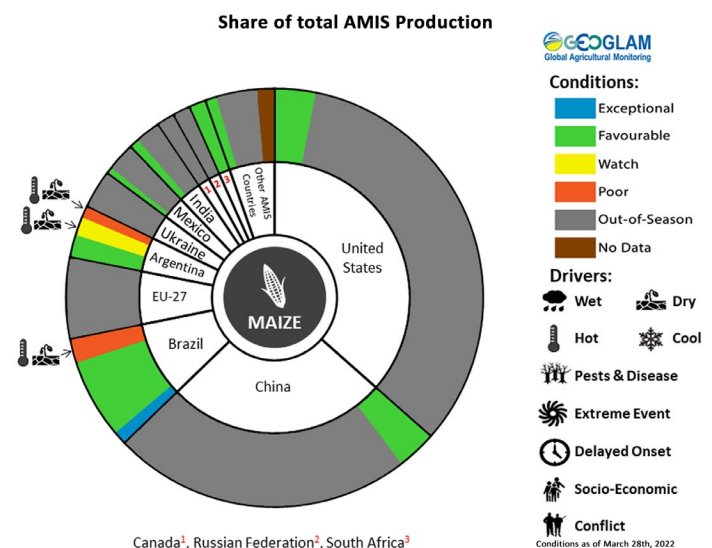
For detailed description of the pie chart please see box on page 6.

## 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 March 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**, harvesting of the spring-planted crop (smaller season) is halfway completed under mixed conditions. There is a slight increase in total sown area compared to last year, however hot and dry conditions during the reproductive stages in the main producing south region have reduced yields. Sowing of the summer-planted crop (larger season) is wrapping up under favourable conditions. An increase in total sown area is expected compared to last year. In **Argentina**, harvesting of the early-planted crop (larger season) is ongoing with reduced yields due to the in-season hot and dry weather. Conditions of the late-planted crop (smaller season) have continued to improve owing to the February and March rains. In **South Africa**, average to above-average rainfall over most of the main producing regions is supporting strong crop development. In **India**, the Rabi season crop is developing under favourable conditions with a total sown area increase compared to last year. In **China**, sowing of the spring-planted crop has begun in the south under favourable conditions. In **Mexico**, the autumn-winter crop (smaller season) is in the vegetative stage under favourable conditions. In the **US**, sowing is just beginning in the south under favourable conditions.

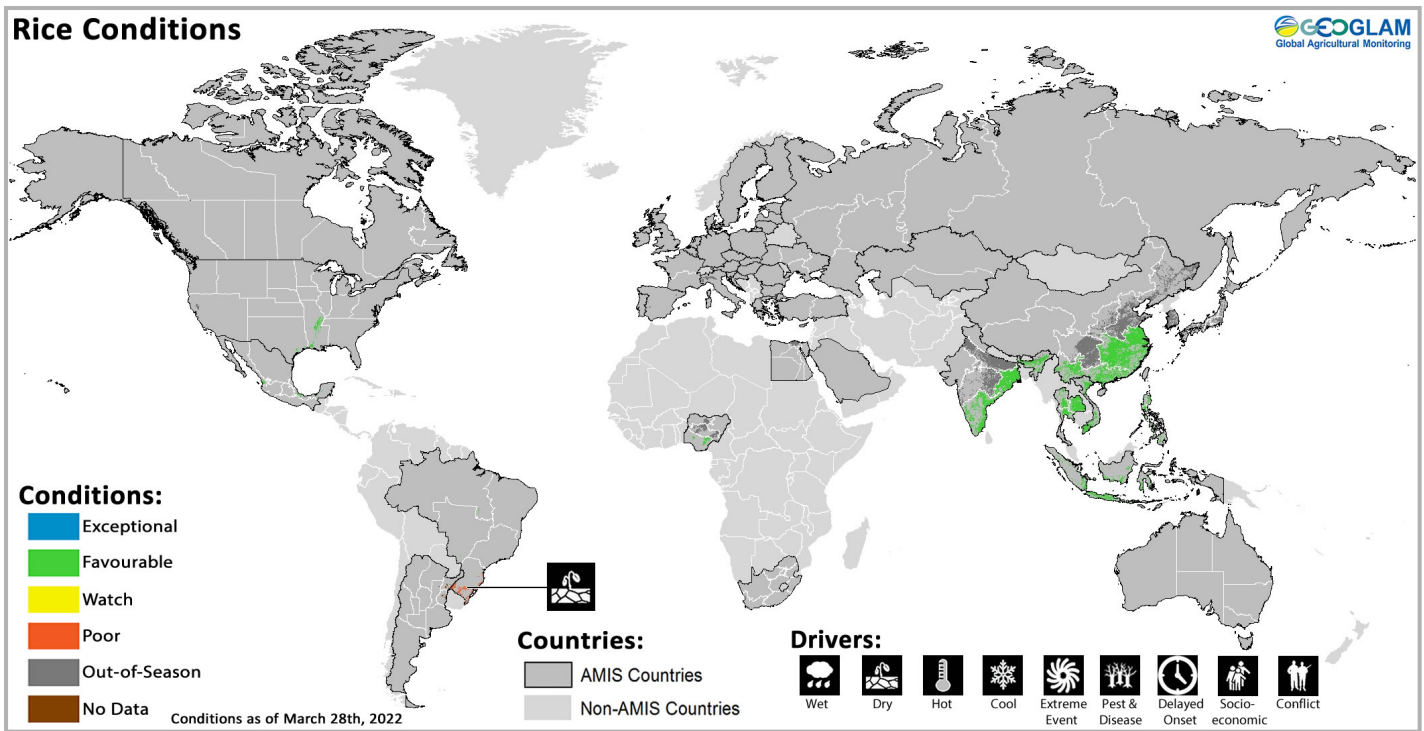


For detailed description of the pie chart please see box on page 6.

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

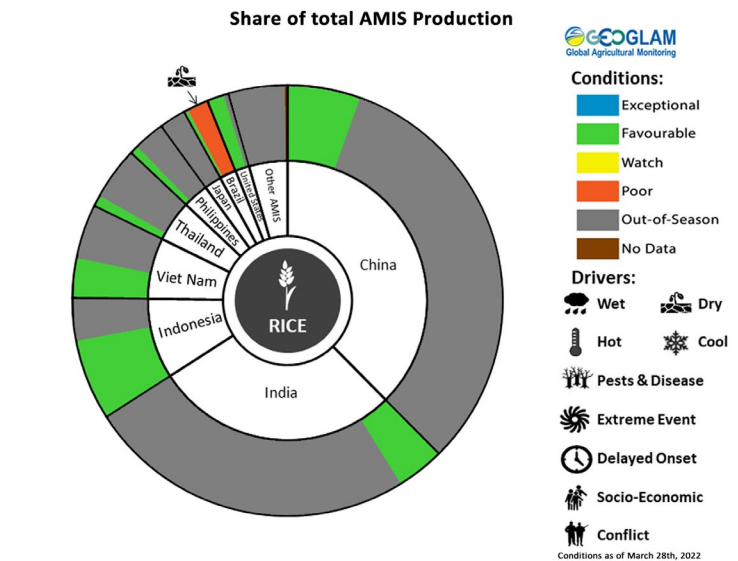


## Rice Conditions for AMIS Countries



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 March 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.

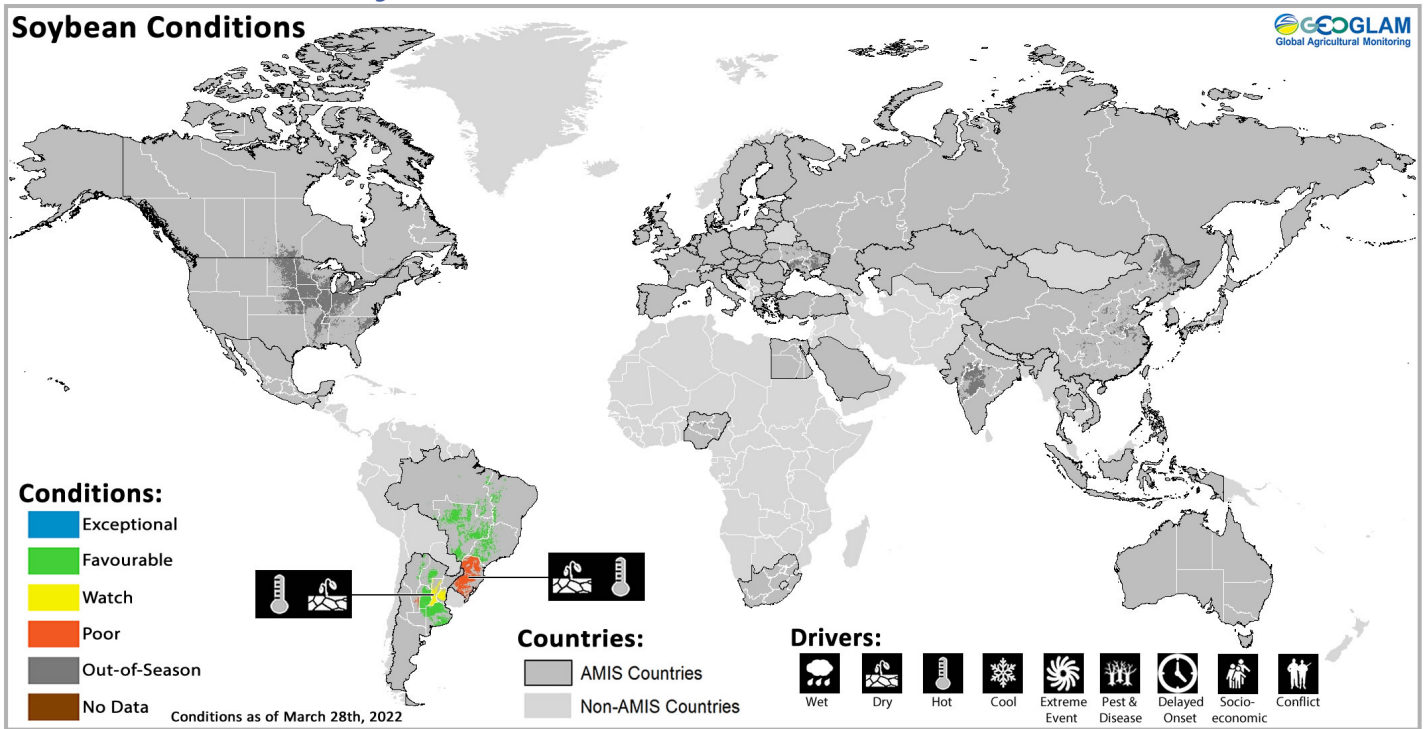
**Rice:** In **China**, sowing of early-season rice is beginning under favourable conditions. In **India**, the transplanting of the Rabi crop is complete, and the total sown area is above the five-year average. In **Indonesia**, wet-season rice continues to be harvested with good yields owing to ample rainfall and sunlight during the growing season. Total sown area is above last year’s total. In **Viet Nam**, winter-spring rice (dry-season) is in the early vegetative stages in the north, while harvesting has begun in the south with initial yields better than last year’s. In **Thailand**, dry-season rice is harvesting with an expected slight increase in yields compared to last year due to ample rainfall during the season. The total sown area is increased compared to last year. In the **Philippines**, harvesting of dry-season rice is halfway complete with average yields. In **Brazil**, harvesting is halfway complete with a reduction in yields due to hot and dry conditions during the reproductive stages. In the **US**, sowing has begun in the southern portion of the Mississippi Delta under favourable conditions.



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

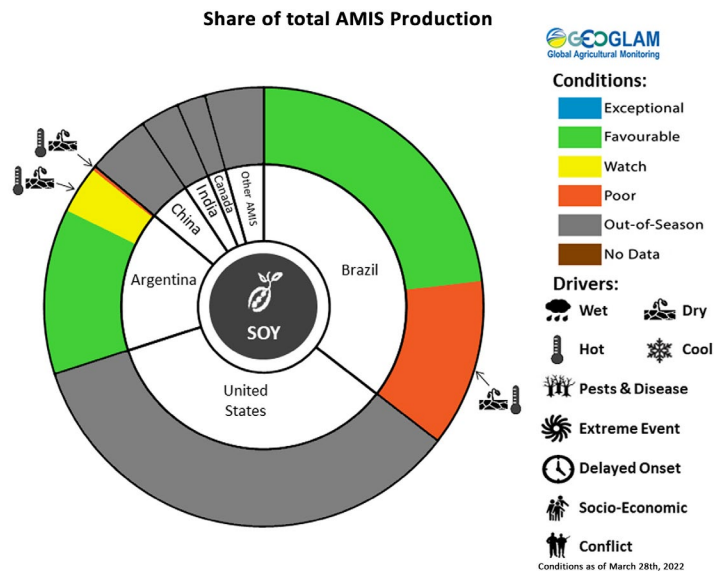
\* Assessment based on information as of March 28<sup>th</sup>

## 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 March 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 **Brazil**, harvesting is ongoing under mixed conditions. Despite an increase in sown area compared to last season, a reduction in yields is expected due to a lack of rainfall associated with high temperatures during the reproductive stages in the South region and Mato Grosso do Sul state. In **Argentina**, harvesting is beginning in some places for the early-planted crop (larger season) under mixed conditions. While rains in February and March have improved conditions for both the early-planted crop (larger season) and the late-planted crop (smaller season), the impact of the prolonged drought is still evident in places.



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 April 7<sup>th</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 March 28<sup>th</sup>



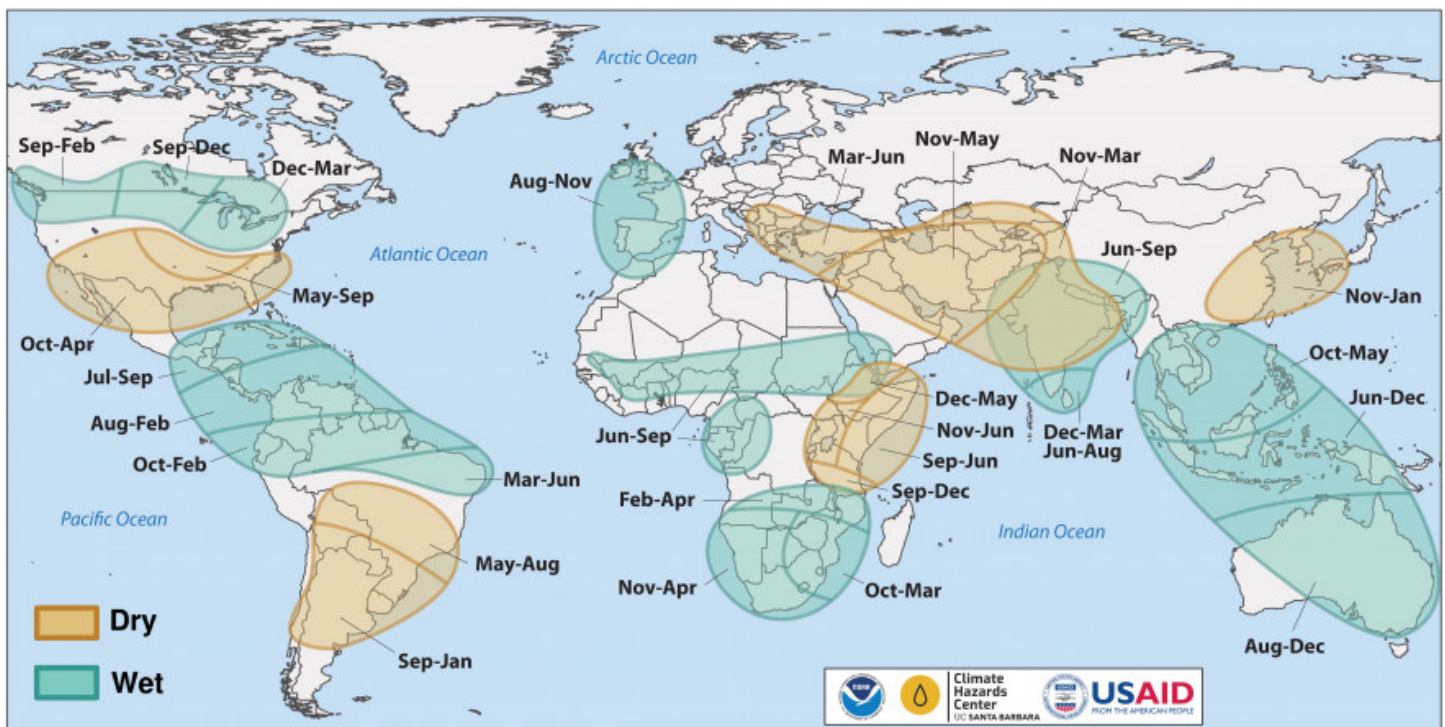
## Climate Forecasts

### Climate Influences: La Niña Advisory

The El Niño-Southern Oscillation (ENSO) is currently in the La Niña phase and is expected to remain as La Niña until at least June (80% chance) or July (65% chance), according to IRI/CPC. La Niña or ENSO-neutral conditions are equally likely after that.

La Niña conditions typically increase the chances of below-average precipitation in parts of East Africa, Central and Southern Asia, southern South America, the southern United States, and northern Mexico. There are elevated risks of a two-year sequence of dry conditions in these regions, associated with La Niña conditions last year and this year. La Niña conditions typically increase the chances of above-average precipitation in parts of Southeast Asia, Australia, India, Southern Africa, Central America, and northern South America.

Source: UCSB Climate Hazards Center

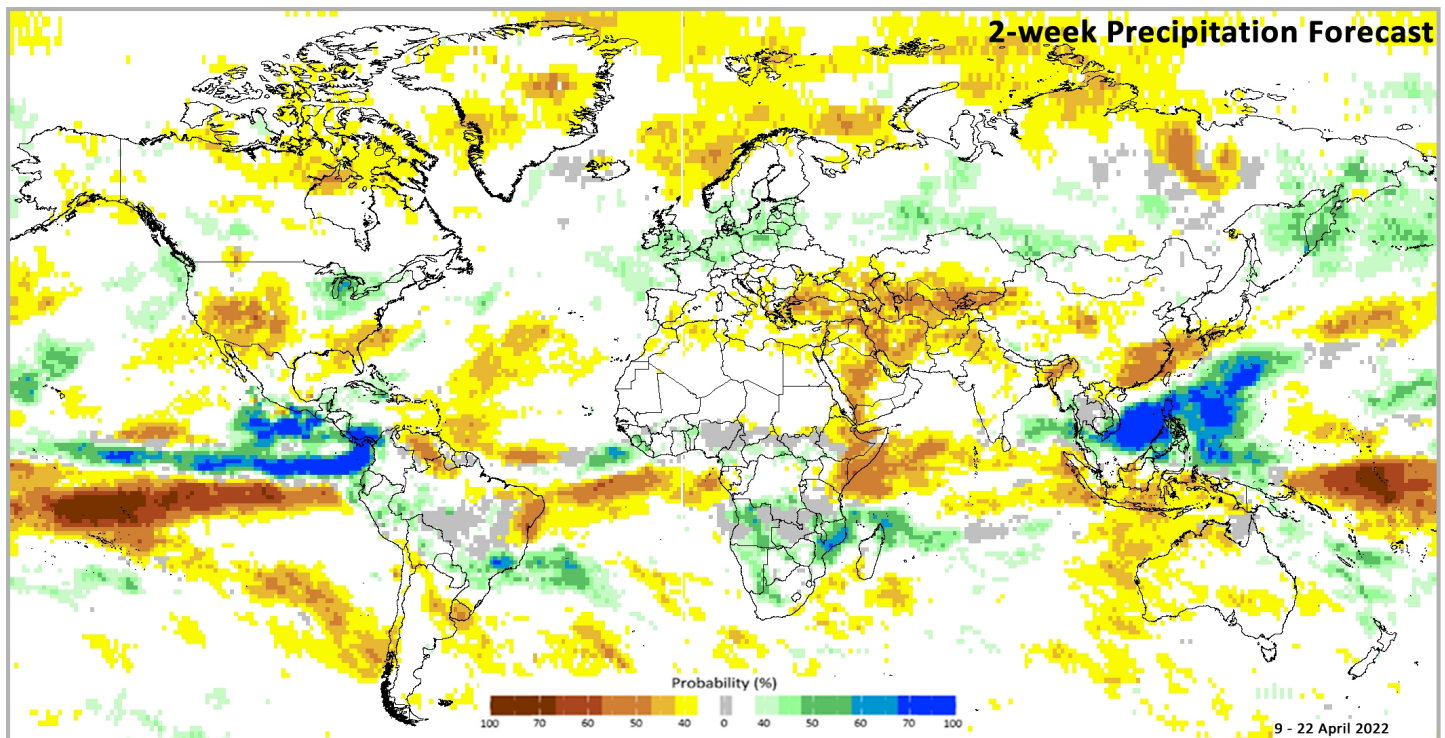


Location and timing of likely above- and below-average precipitation related to La Niña events. Based upon observed precipitation during 21 La Niña events since 1950, wet and dry correspond to a statistically significant increase in the frequency of precipitation in the upper and lower thirds of historical values, respectively. Statistical significance at the 95% level is based on the resampling of precipitation during neutral El Niño-Southern Oscillation conditions. Source: FEWS NET & NOAA & CHC <https://fewsn.net/la-ni%C3%B1a-and-precipitation>

## 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 Great Lakes region of North America, the pacific northwest of the US, the pacific coast region of Mexico, Costa Rica, Panama, northern Colombia, eastern Venezuela, Guyana, Suriname, French Guiana, southern Peru, southern Brazil, southern Uruguay, Ireland, western Norway, central Finland, central Tanzania, southern and eastern Kazakhstan, Kyrgyzstan, Tajikistan, southern Viet Nam, the Philippines, Tenggara in Indonesia, and northern Australia.

There is also a likelihood of below-average rainfall Central and eastern Canada, southern US, northern Mexico, central Brazil, Portugal, Spain, France, Switzerland, Italy, Slovenia, Croatia, Bosnia and Herzegovina, Hungary, Slovakia, western Romania, Serbia, Kosovo, Albania, North Macedonia, central-west Russia, Cote d'Ivoire, Ghana, Togo, Benin, central and southern Nigeria, Cameroon, Central Africa Republic, northeast Democratic Republic of Congo, South Sudan, Ethiopia, northeast Kenya, southern Somalia, southeast Angola, Zambia, Zimbabwe, Mozambique, Botswana, Namibia, northeast northwest South Africa, southern Iraq, southern and eastern Iran, southern Afghanistan, Pakistan, northern and central India, Sri Lanka, northeast China, Democratic People's Republic of Korea, Republic of Korea, southern Japan, Malaysia, and Indonesia.



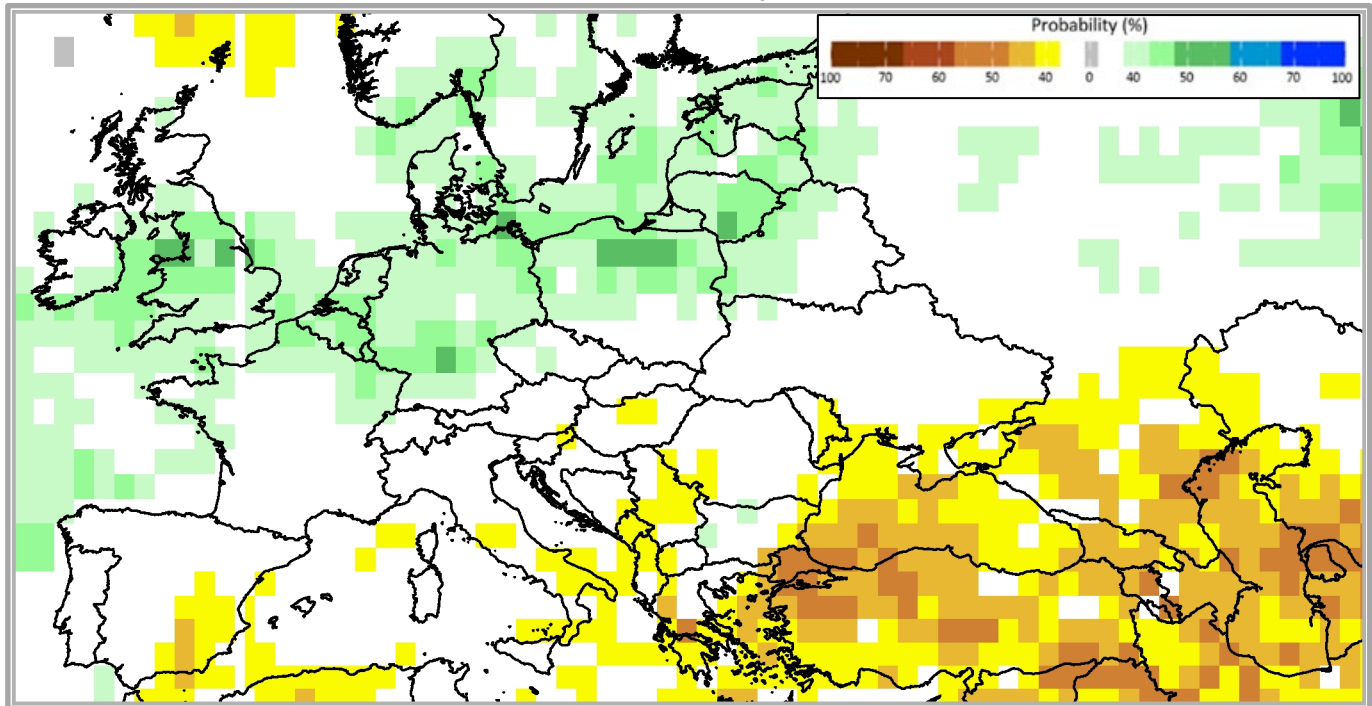
IRI SubX Precipitation Biweekly Probability Forecast for 9-22 April 2022, issued on April 1st, 2022. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](#)



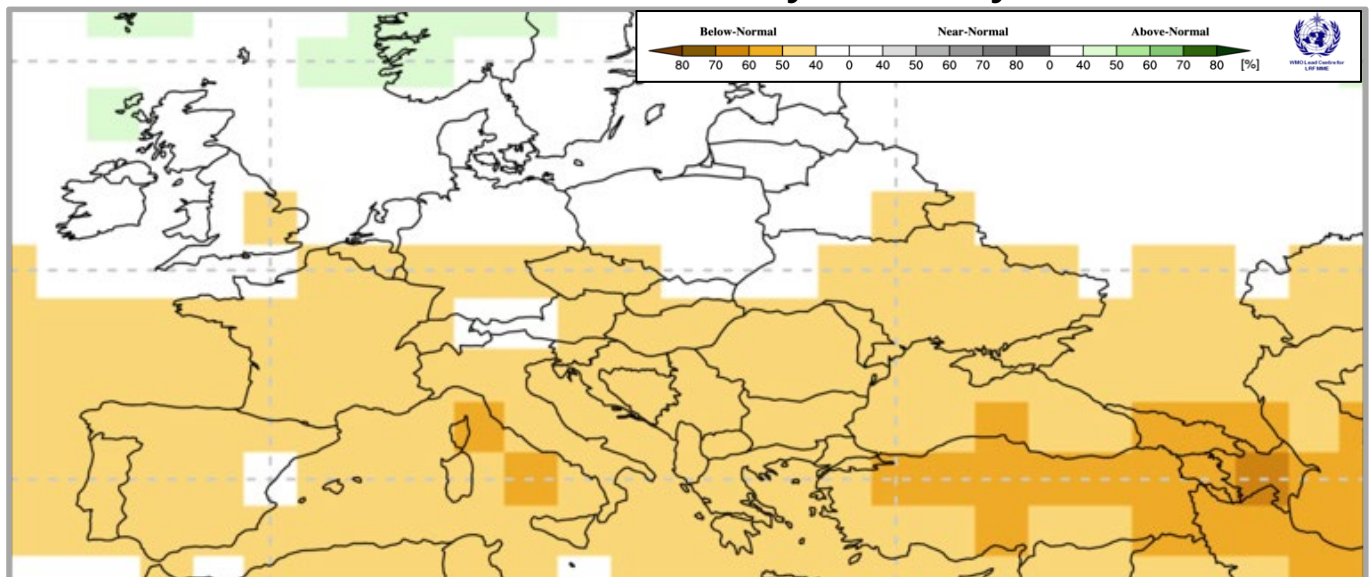
## Europe Outlook

The two-week forecast (Figure 1) indicates likely below-average rainfall is likely in southeast Spain, southern Italy, Serbia, Greece, Turkey, southern Ukraine, the southern Russian Federation, Georgia, Armenia, and Azerbaijan. Above-average precipitation is likely in The United Kingdom, northern France, Belgium, the Netherlands, Germany, Denmark, southern Norway, northern Poland, Estonia, Latvia, Lithuania, western Belarus, and central Russian Federation. The long-term April-May-June 2022 forecast (Figure 2) predicts likely below-average precipitation across most of southern and central Europe from Portugal to the southern Russian Federation and as far north as northern France and northern Ukraine.

### 2-Week Rainfall Probability (April 9-22, 2022)



### 3-Month Rainfall Anomaly Probability



**Top:** IRI SubX Precipitation Biweekly Probability Forecast for 9-22 April 2022, issued on April 1st, 2022. The forecast is based on statistically-calibrated tercile category forecasts from three SubX models. Image from the [IRI Subseasonal Forecasts Maproom](#).

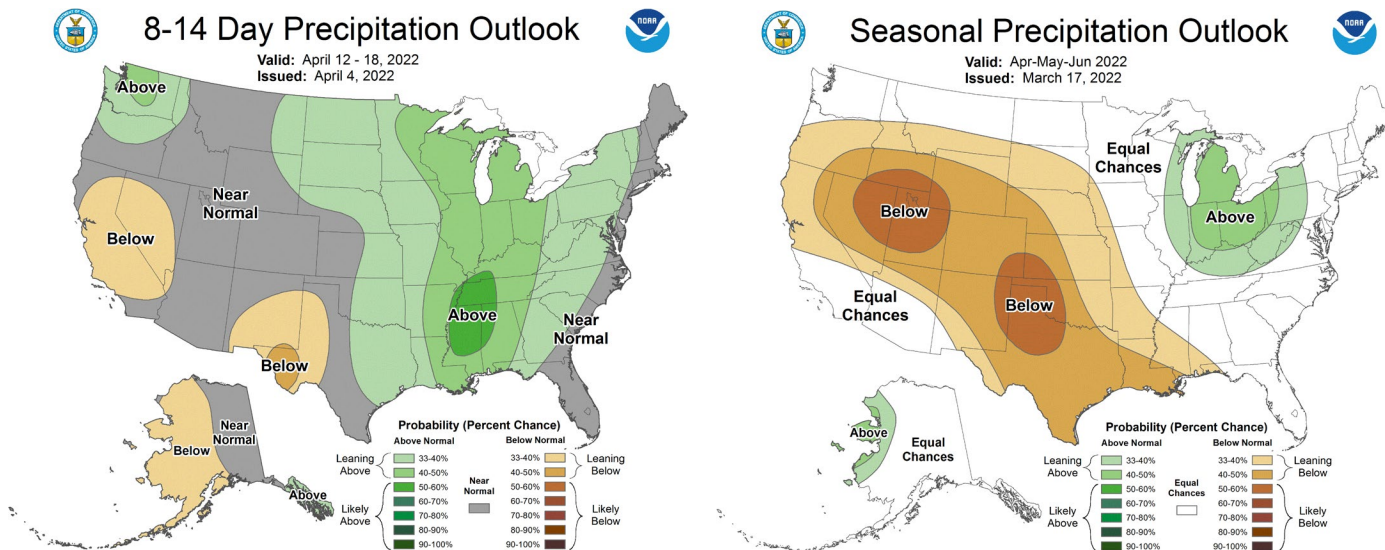
**Bottom:** Multi-model ensemble probabilistic forecast for April-May-June (AMJ) 2022 precipitation from the WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble at [https://www.wmolc.org/seasonPmmeUI/plot\\_PMME](https://www.wmolc.org/seasonPmmeUI/plot_PMME).

## United States Outlook

For the April 12-18 short-term outlook, there is the possibility of below-average precipitation in California, Nevada, New Mexico, and western Texas. Conversely, there is the possibility of above-average precipitation in the Pacific Northwest and across the Mississippi river valley extent from North Dakota to Louisiana and extending northeast into New England. At the same time, temperatures are likely to be above-average on the East Coast focused on the mid-Atlantic and New England states. The western half of CONUS will see likely below-average temperatures focused over Wyoming and extending to the Mississippi River and the Pacific coast.

For the longer-term seasonal April-May-June (AMJ) 2022 outlook, above-average precipitation is likely over the Ohio River valley region and Michigan. Below-average precipitation is likely in the southern and central plains along with the central Rockies. At the same time, temperatures will lean slightly below-average in the Pacific Northwest. Conversely, temperatures will be likely-above average over much of the south, from California to Florida and Georgia. Additionally, temperatures will lean to above-average across much of the Central Plains, Mid-West, Mid-Atlantic, and New England regions.

### Short-term and the April-May-June Precipitation Outlooks



The official 8-14 day outlook issued on April 4<sup>th</sup>, 2022, and the extended April-May-June outlook issued on March 17<sup>th</sup>, 2022 from NOAA/National Weather Service, National Centers for Environmental Predictions, Climate Prediction Center. Images from <https://www.cpc.ncep.noaa.gov/products/forecasts/>.

Source: NOAA Climate Prediction Center

\* Assessment based on information as of March 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 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 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 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

	Wet
	Dry
	Hot
	Cool
	Extreme Event
	Delayed-Onset

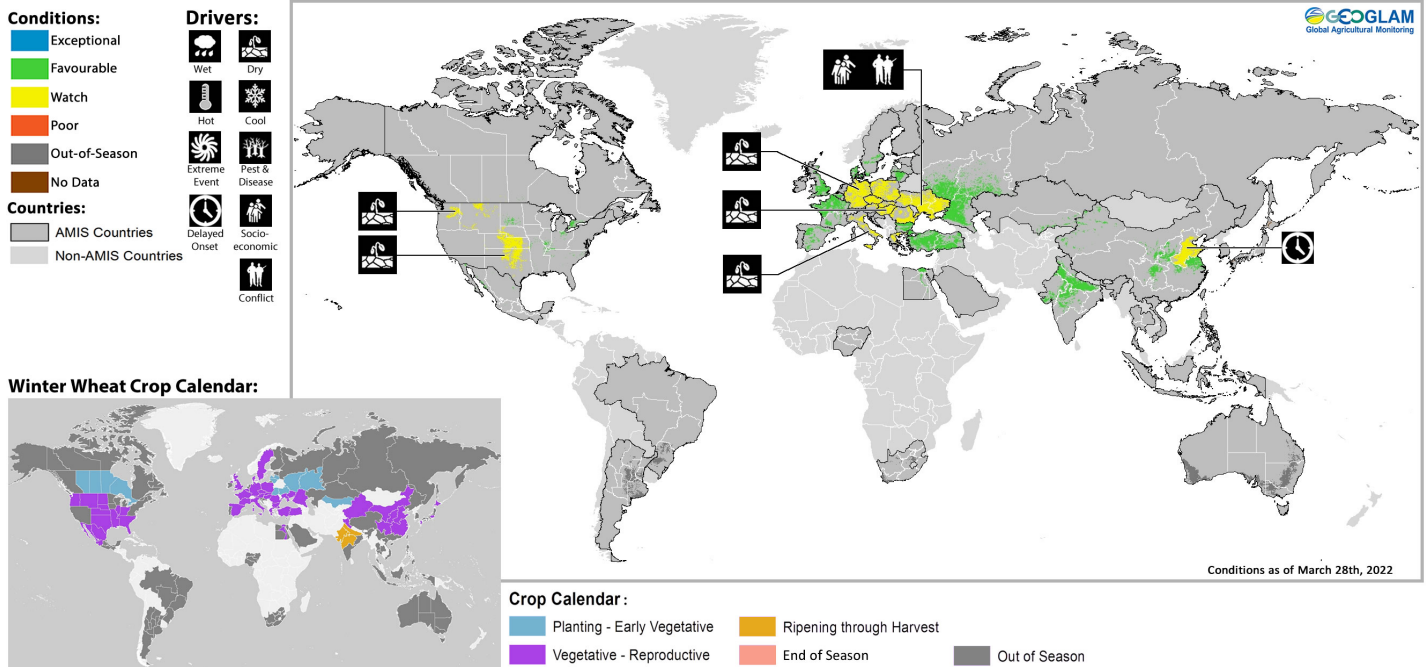
### Crop Season Nomenclature:

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	

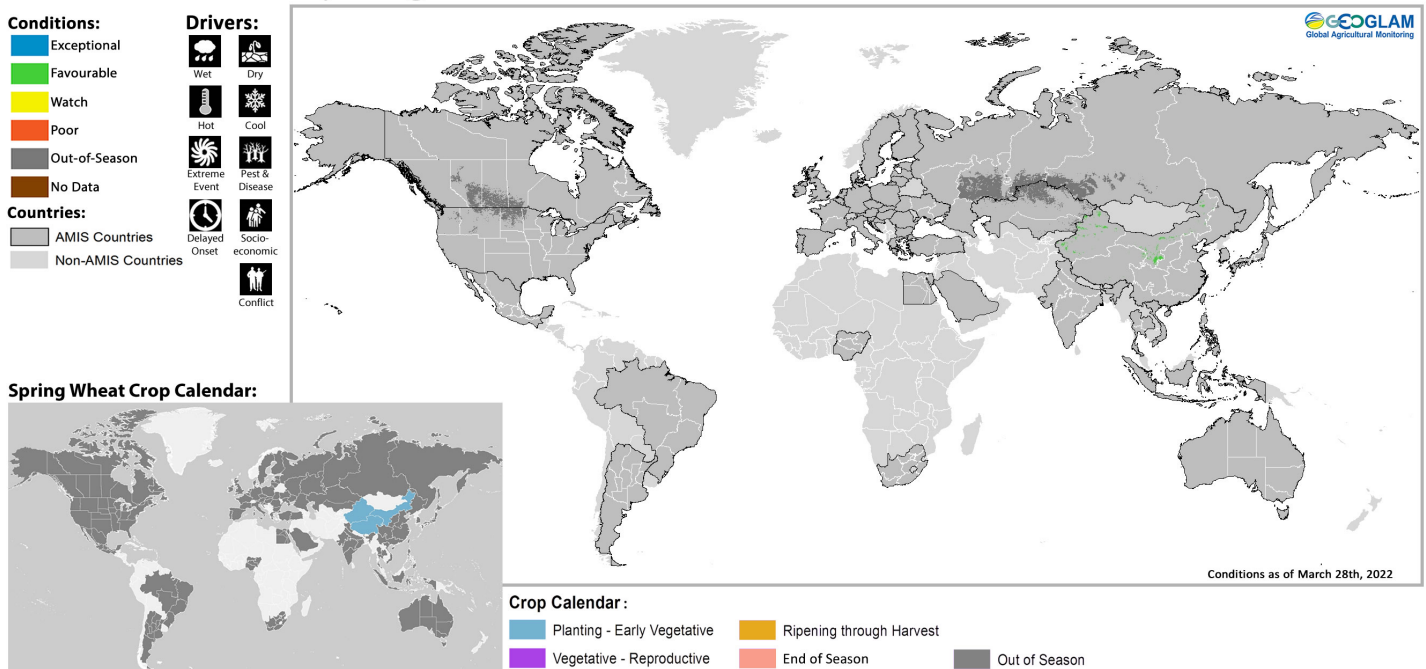
## Appendix 2: Crop Season Specific Maps

### 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. Condition information is based upon information as of March 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.

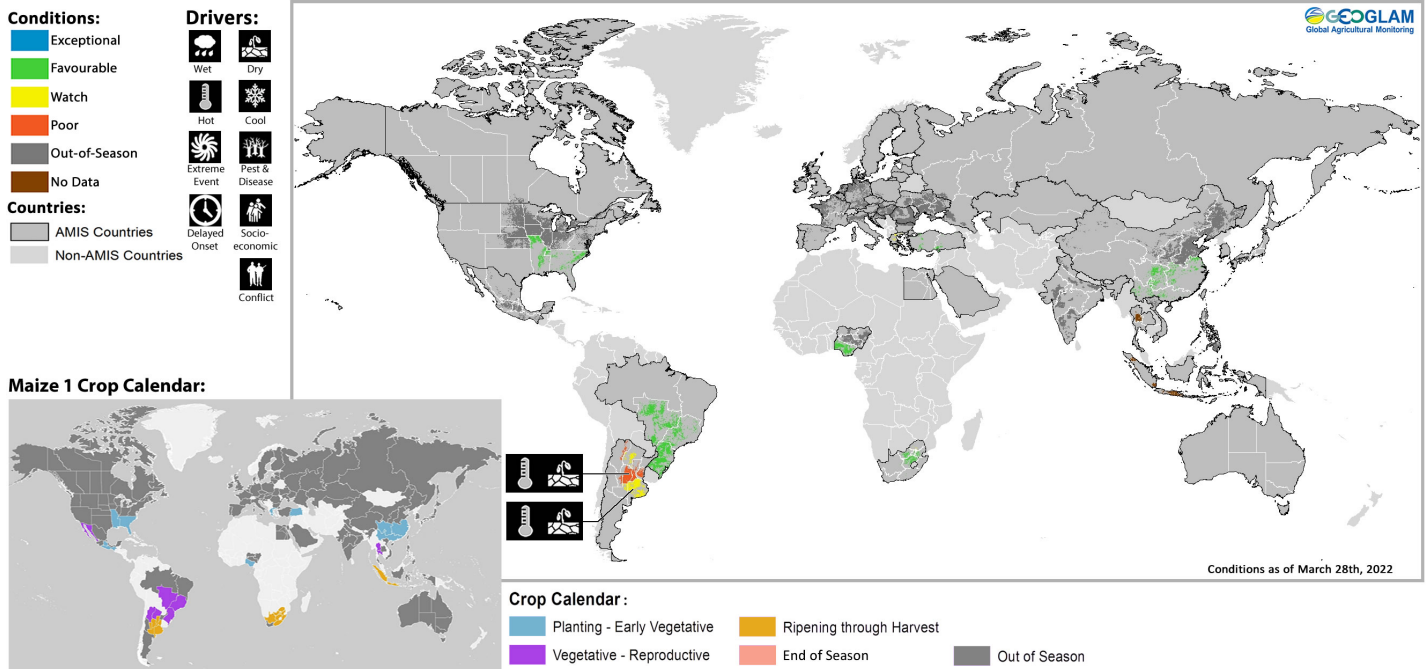
### Spring Planted Wheat Conditions for AMIS Countries



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. Condition information is based upon information as of March 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.

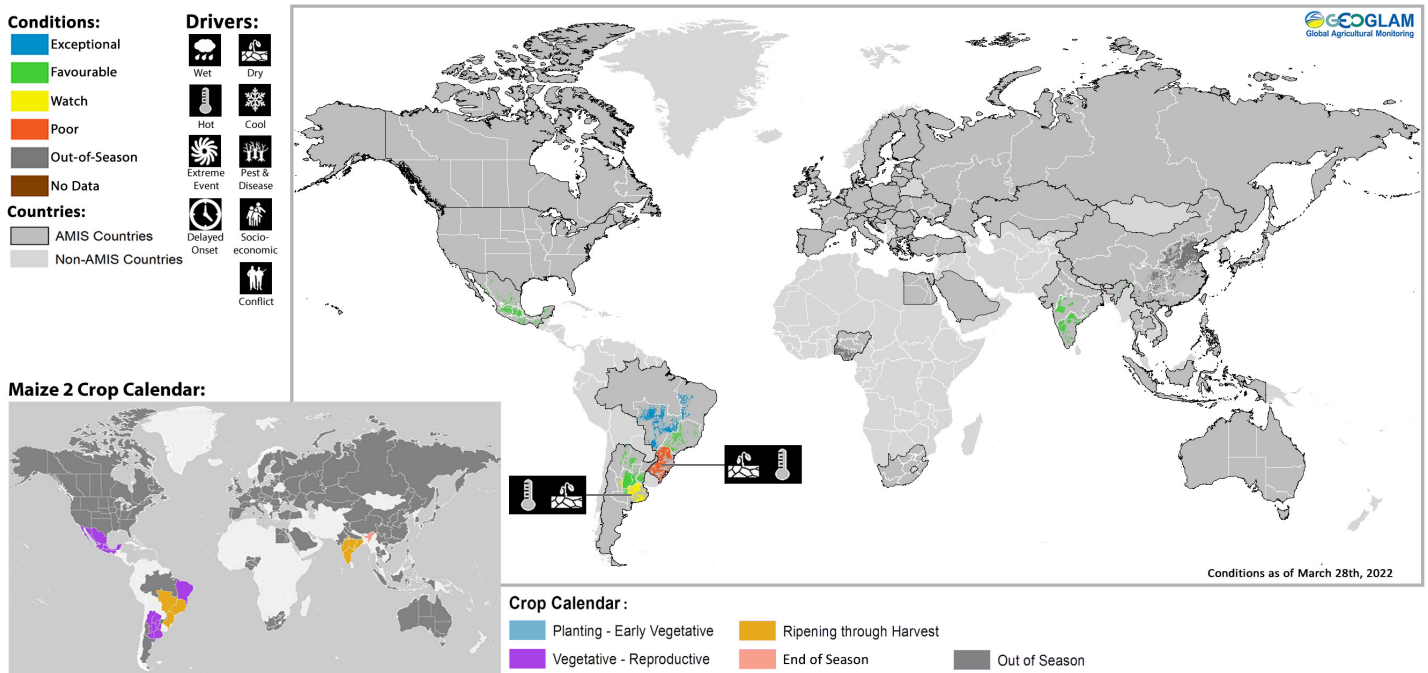
\* Assessment based on information as of March 28<sup>th</sup>

## 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. Condition information is based upon information as of March 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

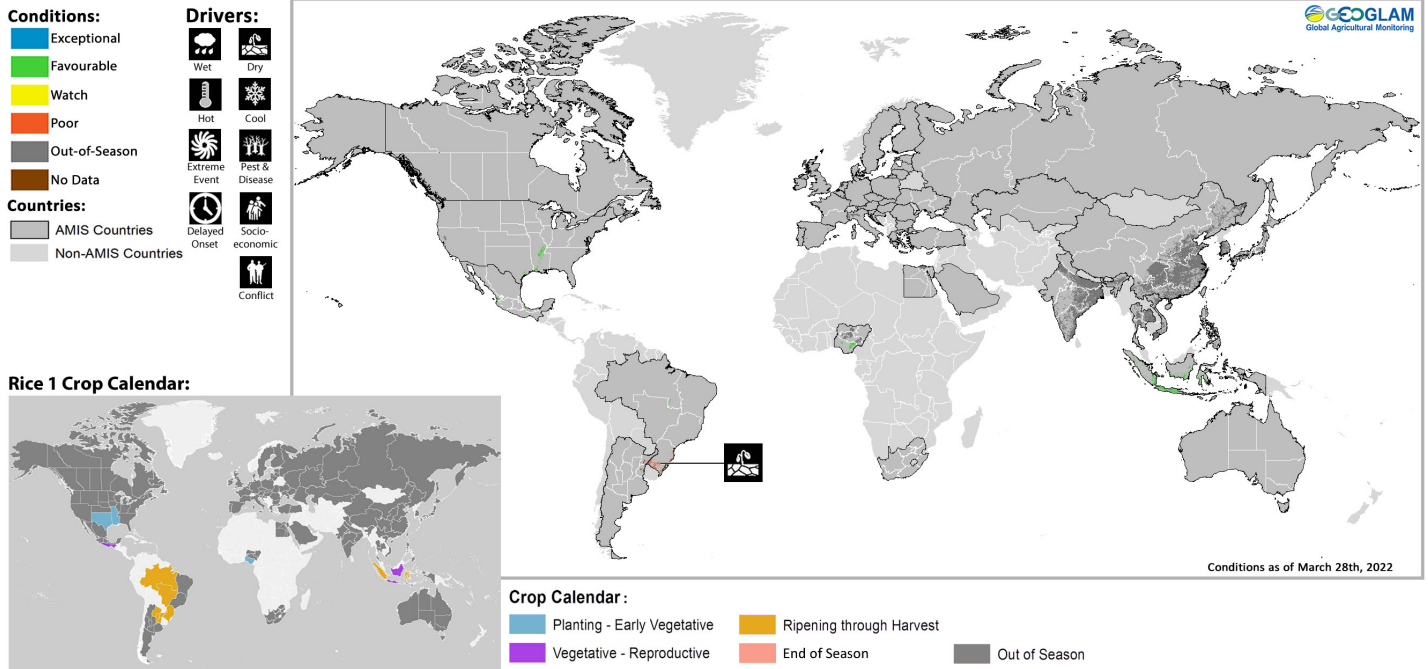


Maize 2 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Condition information is based upon information as of March 28th. Where crops are in less than favourable conditions the climatic drivers responsible 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 March 28<sup>th</sup>

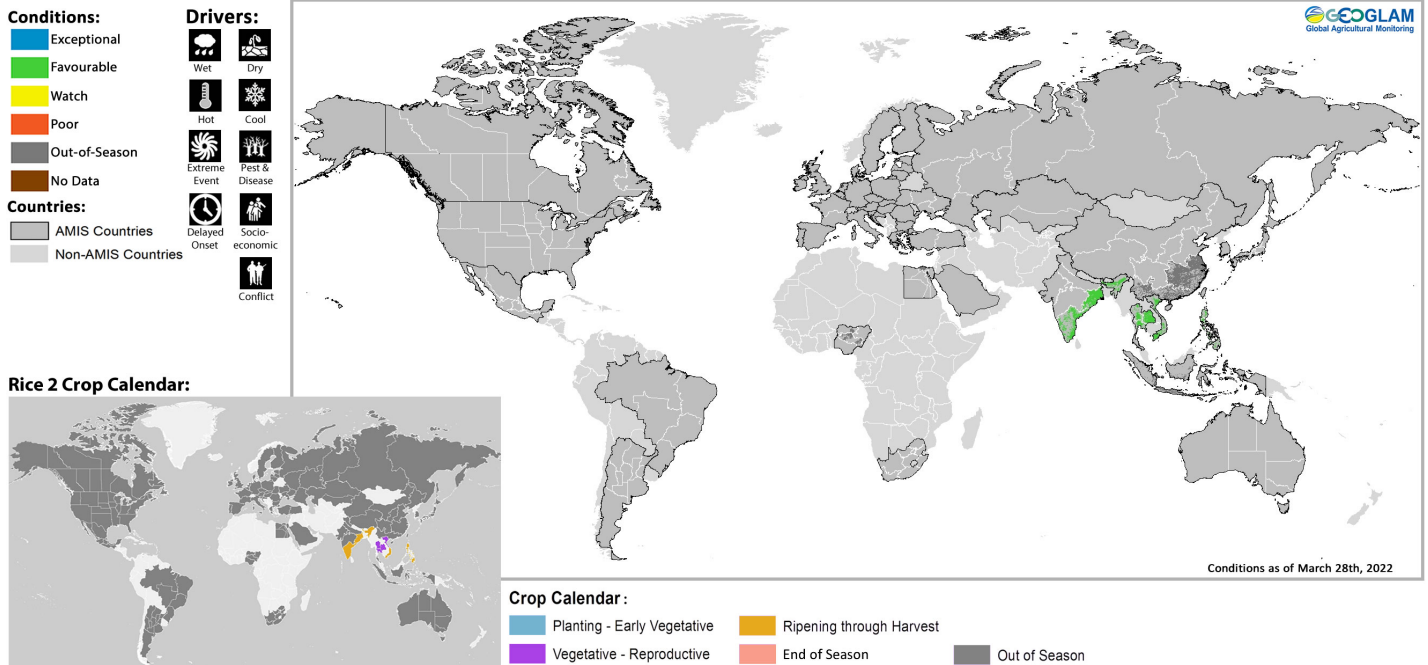


## Rice 1 Conditions for AMIS Countries



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. Condition information is based upon information as of March 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.

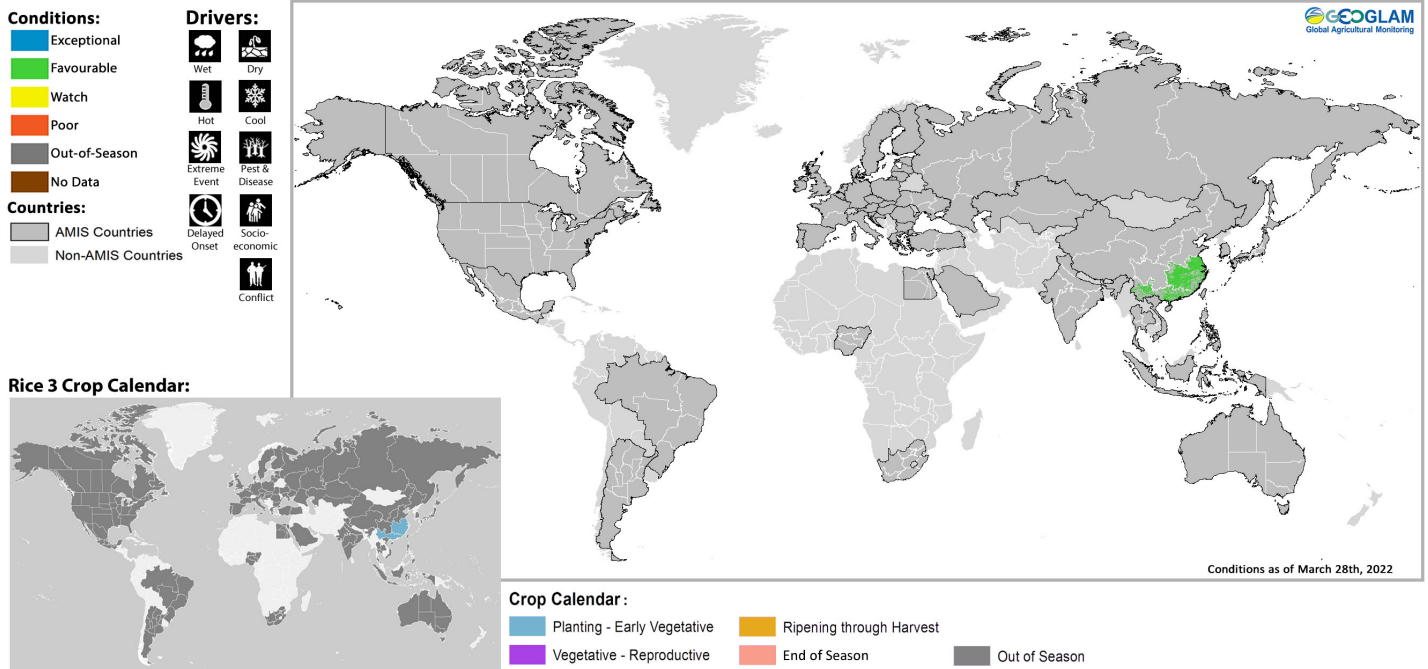
## Rice 2 Conditions for AMIS Countries



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. Condition information is based upon information as of March 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.

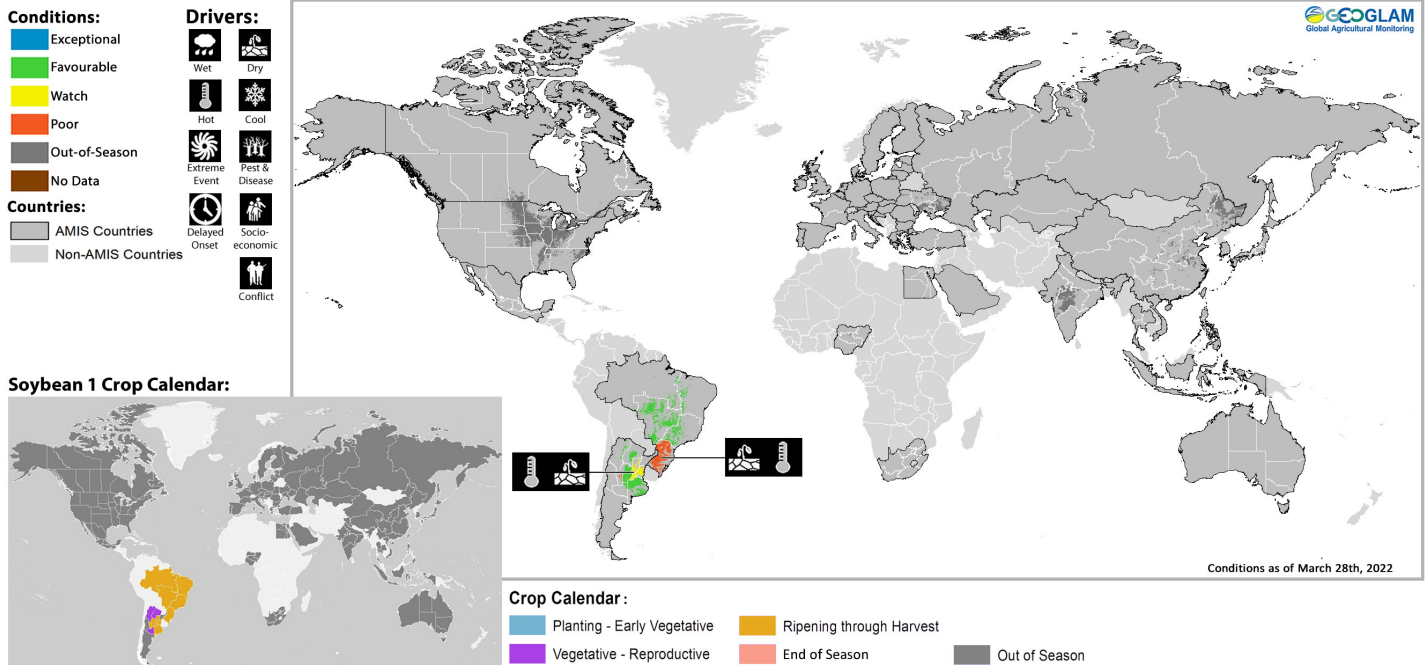
\* Assessment based on information as of March 28<sup>th</sup>

## 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. Condition information is based upon information as of March 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.

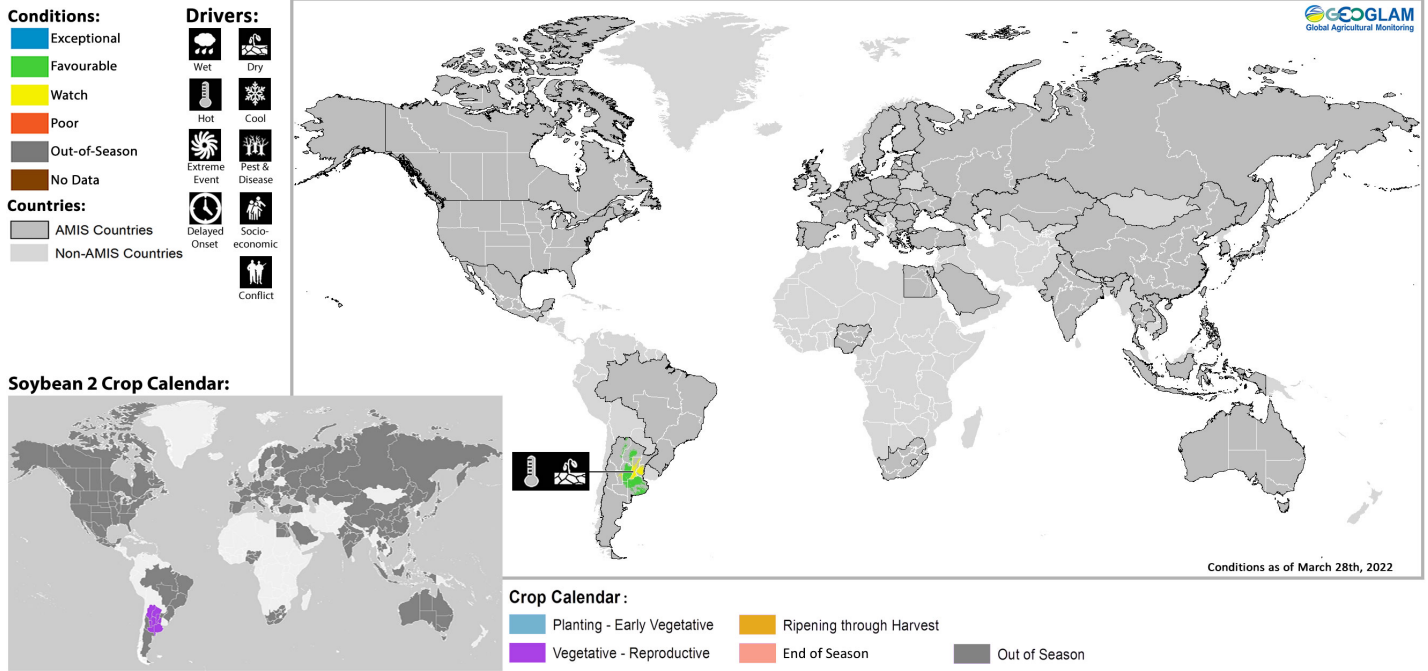
## Soybean 1 Conditions for AMIS Countries



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. Condition information is based upon information as of March 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 March 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. Condition information is based upon information as of March 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 March 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 Richelle 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>