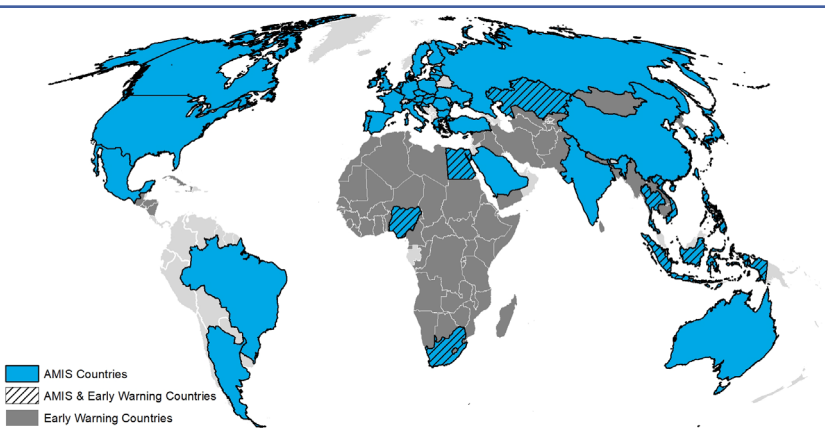GEOGLAM
Global Agricultural Monitoring

Crop Monitor for AMIS

Overview:

As of the end of January, conditions are generally favourable for wheat, maize, rice, and soybeans. For wheat in the northern hemisphere, crops are primarily in winter dormancy with only spot areas of concern. For maize in the southern hemisphere, dryness is affecting earlier sown crops while later sown crops are favourable. Rice conditions are generally favourable in all major growing areas except in the northern Philippines and Thailand. Soybean conditions are generally favourable in the southern hemisphere, except for some areas in Argentina.
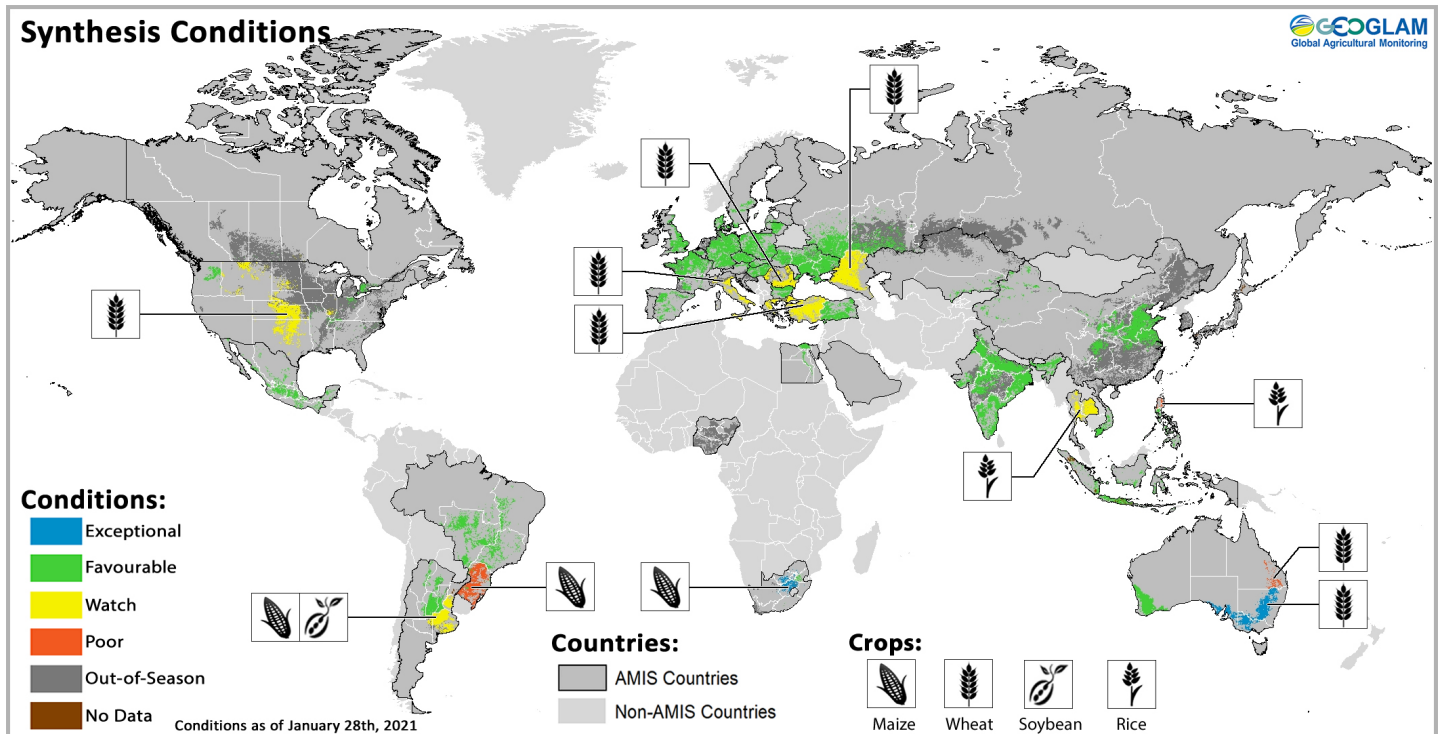
AMIS Countries
AMIS & Early Warning Countries
Early Warning Countries

Contents:

Assessment based on information as of January 28th

AMIS Agricultural Market Information System

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

GEO GROUP ON EARTH OBSERVATIONS

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

*Crop condition map synthesizing information for all four AMIS crops as of January 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 southern hemisphere, Australia's season wraps up under mostly favourable to exceptional conditions. In the northern hemisphere, winter wheat is showing spot areas of concern in parts of the EU, the Russian Federation, Turkey, the US, and Canada.

Maize - In the southern hemisphere, conditions are mixed in Argentina and Brazil as drought has impacted areas of the early-planted/spring-planted crops while the later-planted/summer-planted crops are under favourable conditions. South Africa's conditions are exceptional.
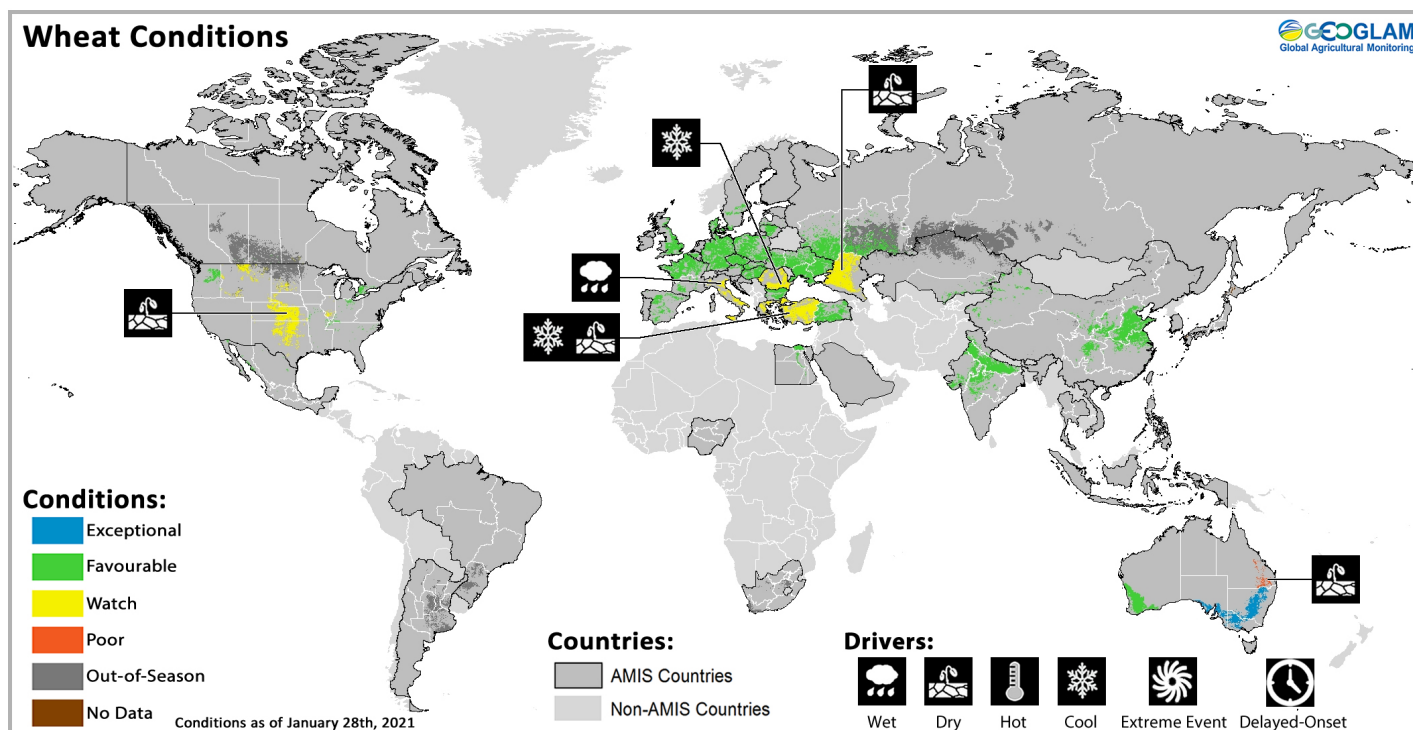
Rice - Transplanting of Rabi rice is ongoing in India. In Southeast Asia, wet-season rice in Indonesia and dry-season rice in the northern countries is progressing under generally favourable conditions with some issues in Thailand and the northern Philippines.

Soybeans - In the southern hemisphere, conditions are generally favourable for Brazil, while mixed for Argentina due to the La Niña driven drought early in the season.

Forecasts at a Glance

Climate Influences - El Niño-Southern Oscillation (ENSO) is currently in the La Niña phase. La Niña conditions are expected to continue from January to March (~95% chance) and potentially through March to May (~55% chance).

The United States - For the February-March-April (FMA) 2021 period, warmer than average conditions are likely across the majority of the US. Wetter than average conditions are likely across the northern US down into the Ohio Valley, while the southern US is likely to be dryer than average.
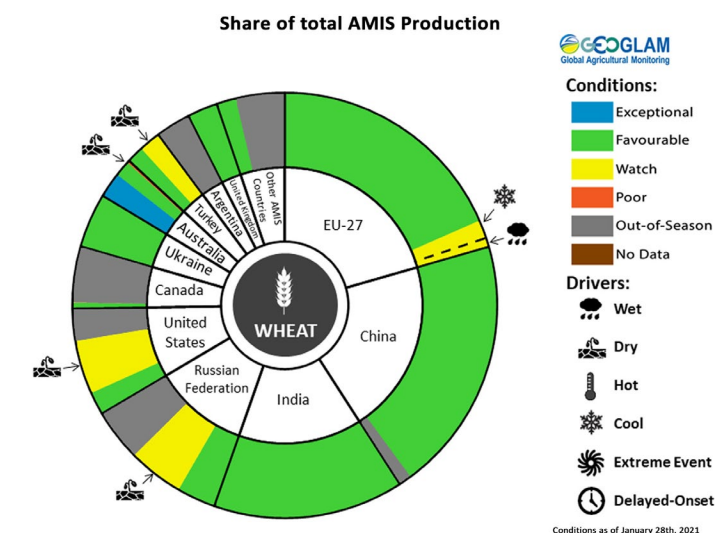
Southeast Asia - The three-month forecast indicates wetter-than-average conditions in the northern countries, particularly in the Philippines and southern Viet Nam, and average to below-average conditions in central and southern Indonesia.
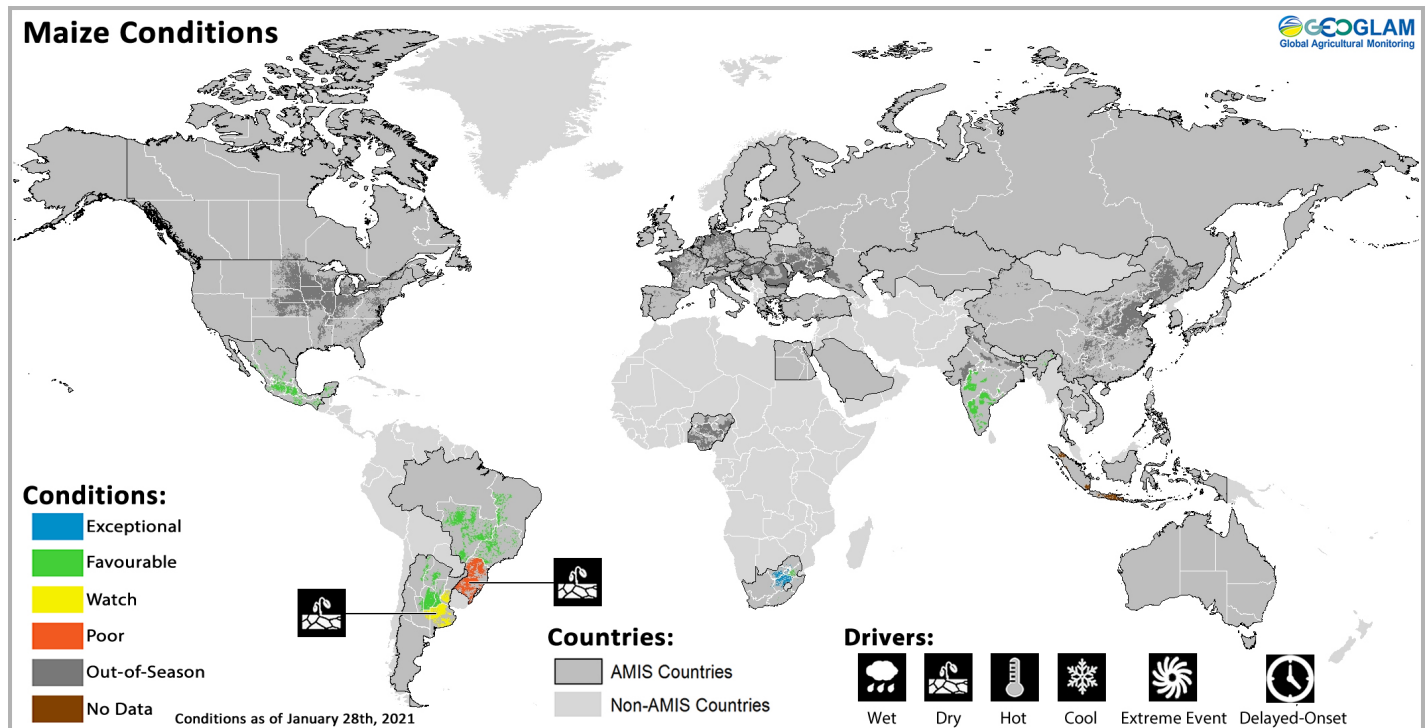
Wheat Conditions for AMIS Countries

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 January 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 **Australia**, harvesting is wrapping up with exceptional conditions in New South Wales, Victoria, and South Australia, while conditions are favourable in Western Australia and poor in Queensland. In the **EU**, conditions are generally favourable for winter wheat with some minor areas of concern in southern and south-eastern Europe for excess rainfall and lack of winter hardening against winterkill, respectively. In the **UK**, conditions are favourable. In **Ukraine**, conditions are generally favourable with adequate snow cover protection against recent severe frosts that only affected minor areas. In the **Russian Federation**, conditions are mixed for winter wheat due to the dry conditions last fall that may continue to impact the crop once it emerges from dormancy. In **Turkey**, conditions are mixed due to dry conditions combined with potential winterkill events in the west. In **China**, winter wheat is in dormancy under generally favourable conditions. In **India**, conditions are favourable with sowing completed in most areas. Total sown area is increased compared to last year and the average. In the **US**, winter wheat is under mixed conditions due to expanding dryness throughout the Great Plains. Total sown area is increased compared to last year. In **Canada**, conditions are favourable in the main producing province of Ontario, however, below-average snowfall in the Prairies leaves some areas vulnerable to winterkill.
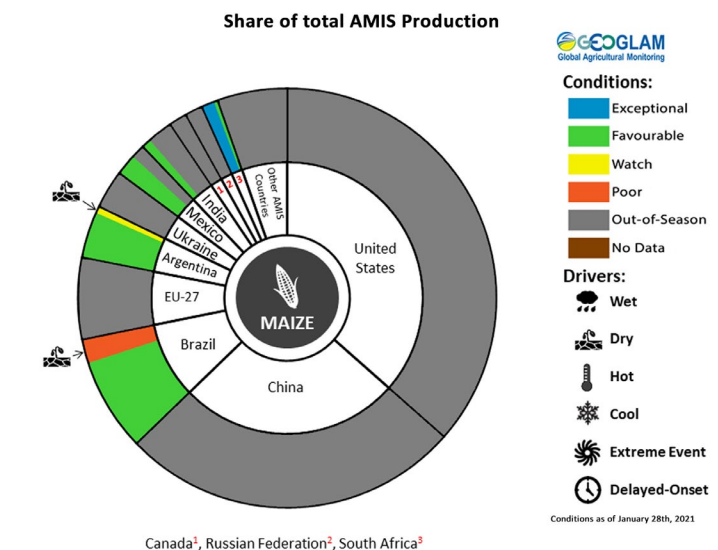

For detailed description of the pie chart please see box on page 6.

Maize Conditions for AMIS Countries

Maize Conditions

Conditions as of January 28th, 2021

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 January 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.
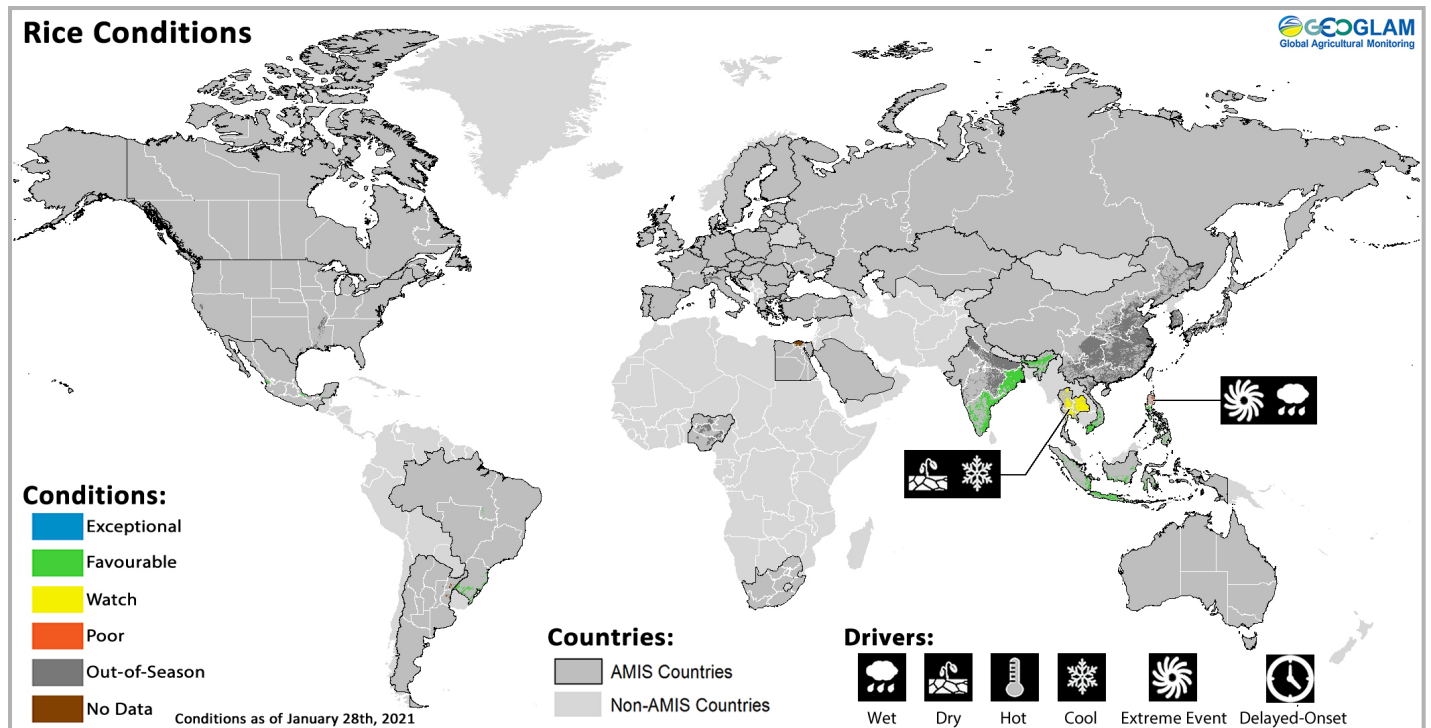
Maize: In **Mexico**, harvesting of the spring-summer crop (larger season) is over two-thirds done under favourable conditions. In **Brazil**, conditions are mixed for the spring-planted crop (smaller season) as a lack of rains in the South Region during October and November affected the crop during the critical grain-filling stage, noticeably reducing yields. However, across the remaining regions, the lack of rains only delayed sowing. Sowing of the summer-planted (larger season) crop has begun under favourable conditions. In **Argentina**, conditions are mixed for the early-planted crop (larger season) as prolonged drought in the central agricultural region has impacted crops. The drought has also driven farmers to shift from sowing during the early-planted crop to sowing later during the late-planted crop, increasing the size of the second crop this cycle. Conditions are generally favourable for the late-planted crop (smaller season) as future rainfall can still benefit final crop yields. In **South Africa**, conditions are exceptional owing to continuous widespread above-average rainfall and normal temperatures since the start of the season. In **India**, the Rabi crop is under favourable conditions.

Share of total AMIS Production

Canada[1], Russian Federation[2], South Africa[3]

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

* Assessment based on information as of January 28th

Rice Conditions for AMIS Countries

Rice Conditions

Conditions:
- Exceptional
- Favourable
- Watch
- Poor
- Out-of-Season
- No Data

Conditions as of January 28th, 2021

Countries:
- AMIS Countries
- Non-AMIS Countries

Drivers:
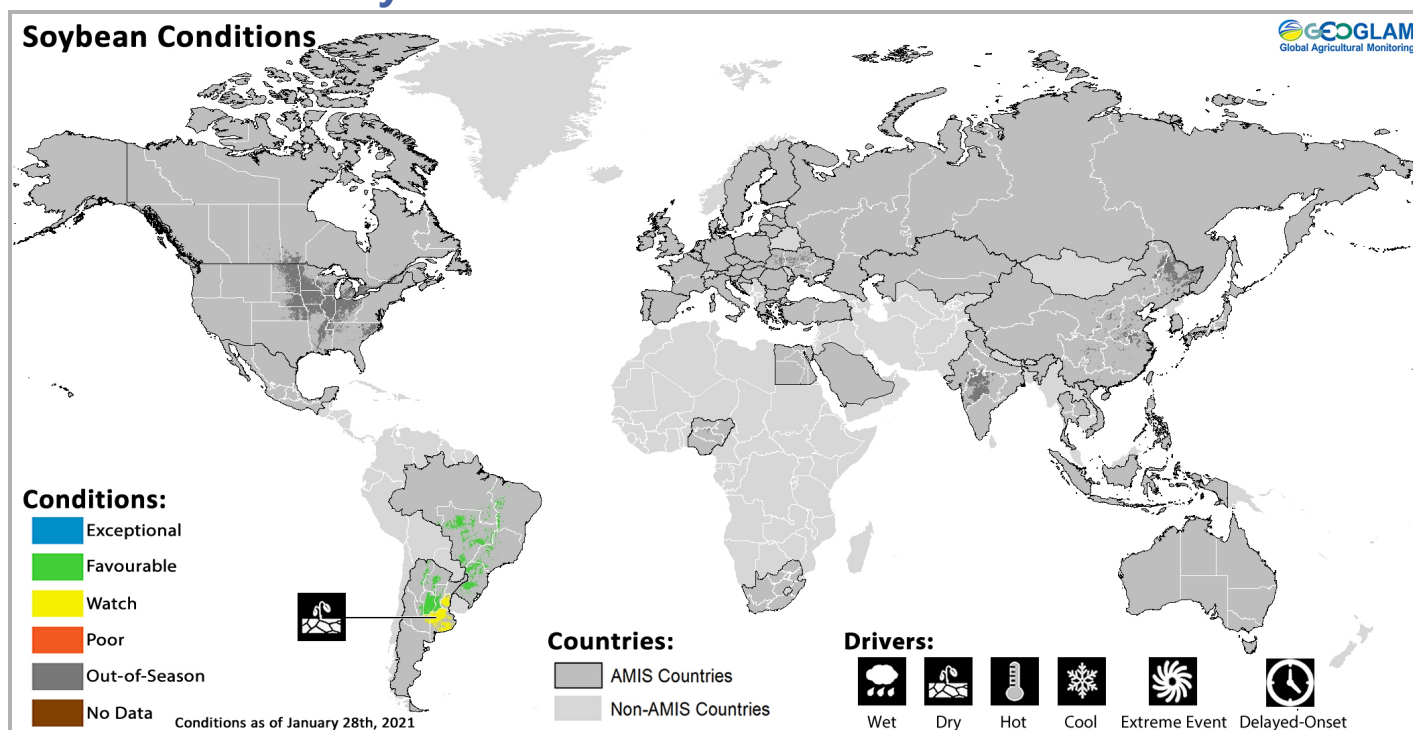Wet   Dry   Hot   Cool   Extreme Event   Delayed-Onset

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 January 28th. Where crops are in other than favourable conditions the climatic drivers responsible for those conditions are displayed.

Rice: In **India**, conditions are favourable as transplanting of Rabi rice is ongoing in the eastern states and wrapping up in the southern states. Total sown area is in line with last year's season. In **Indonesia**, conditions are favourable as the harvesting of dry-season rice is wrapping up with a large increase in harvested area compared to last year. Conditions are favourable for wet-season rice as sowing enters the fourth month and the harvesting of earlier sown crops begins. Total sown area of wet-season rice is also significantly increased this year compared to last year. In **Viet Nam**, conditions are favourable in the south for both the harvest of the autumn-winter (wet-season) crop and the sowing of the winter-spring (dry-season) crop. In **Thailand**, wet-season rice harvest is wrapping up under favourable conditions. Dry-season rice is

Share of total AMIS Production

Conditions:
- Exceptional
- Favourable
- Watch
- Poor
- Out-of-Season
- No Data

Drivers:
- Wet
- Dry
- Hot
- Cool
- Extreme Event
- Delayed-Onset

Conditions as of January 28th, 2021

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

under mixed conditions as a result of recent prolonged cold weather and a lack of irrigation water, which is also expected to reduce the total sown area this year compared to last year. In the **Philippines**, wet-season rice harvesting is wrapping up under favourable conditions except for Northern and Southern Luzon, which was impacted by flooding from three typhoons. Dry-season rice is under generally favourable conditions with some areas of concern remaining in North Luzon Agribusiness due to earlier lodging and flooding.
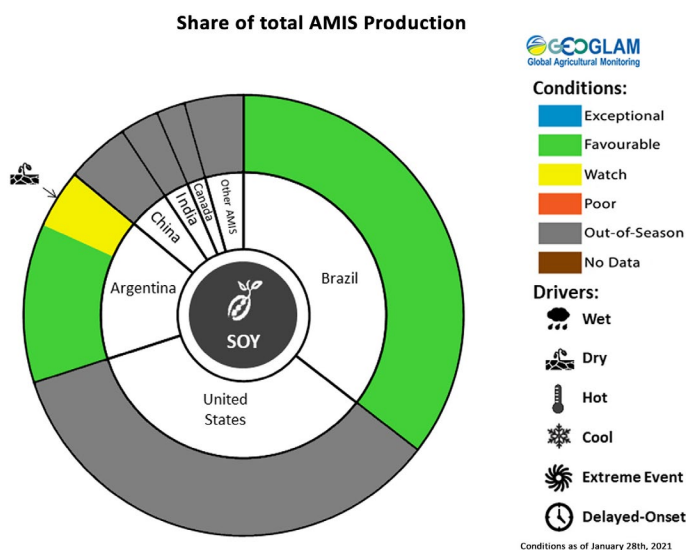
* Assessment based on information as of January 28th

Soybean Conditions for AMIS Countries

Soybean Conditions

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 January 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**, despite initial delays in sowing due to a lack of rains in October and November, a better volume and distribution of rainfall since December has allowed the completion of sowing under favourable conditions. There is an estimated increase in total sown area compared to last year. Harvesting is also beginning in parts of the country, most notably Mato Grosso. In **Argentina**, conditions are mixed as the prolonged drought has impacted the early-planted crop (larger season) particularly in the central agricultural region. Conversely, conditions are generally favourable for the late-planted crop (smaller season), which has not yet reached the critical developmental stages.

Share of total AMIS Production

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 February 4th***

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 January 28th
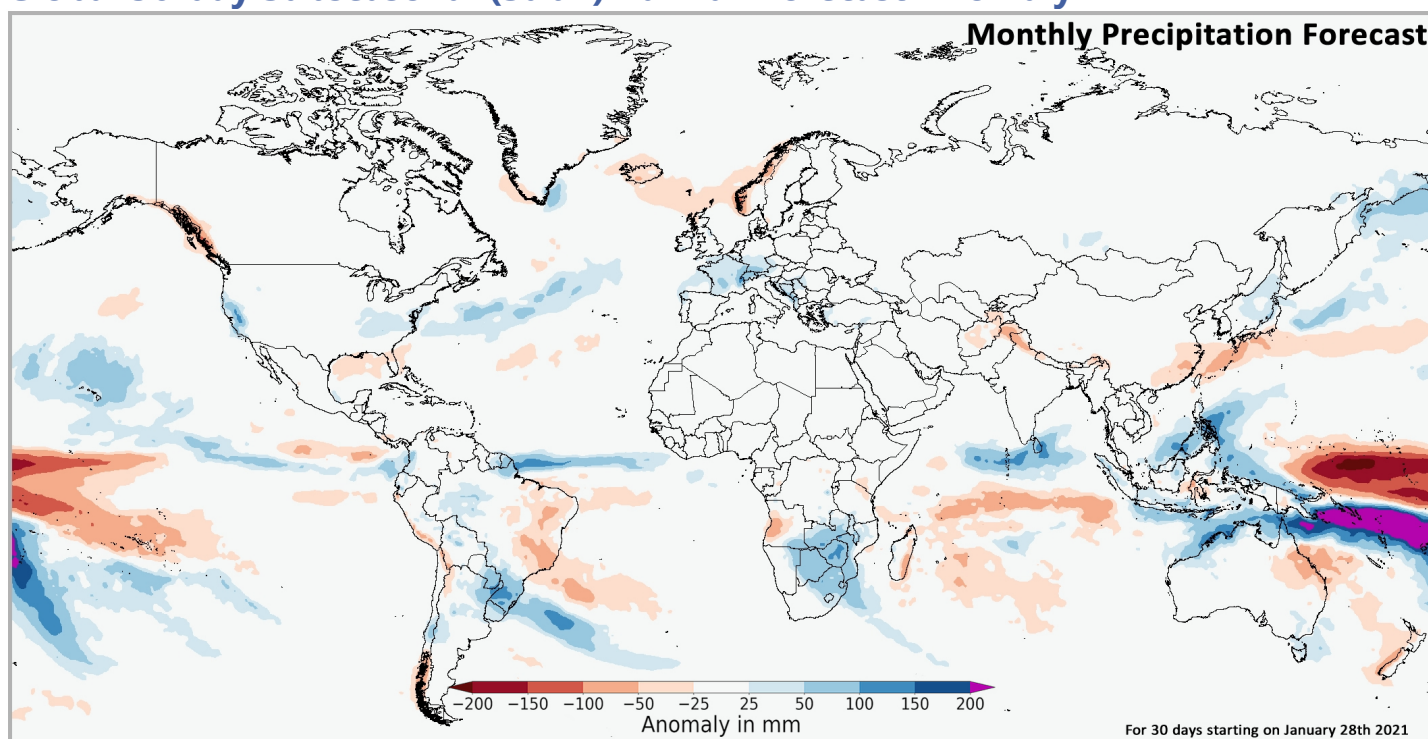
Climate Forecasts for AMIS Countries

Climate Influences: La Niña Advisory

The El Niño-Southern Oscillation (ENSO) is currently in the La Niña phase. This La Niña event is well-developed and moderate-to-strong, with very cool ocean conditions in the eastern equatorial Pacific. La Niña conditions are expected to continue (95% chance for January to March and 55% chance for March to May) and then transition to ENSO neutral (55% chance for April to June).

La Niña conditions typically reduce February to March/May rainfall in East Africa, the southern United States, the northern Middle East, southern Central Asia, Afghanistan, Pakistan, and India. La Niña conditions typically increase February to March/May rainfall in Southeast Asia, Southern Africa, and in southernmost India and Sri Lanka. Southern Central America and northern South America typically see increased rainfall into February.
Source: UCSB Climate Hazards Center

Global 30-day Subseasonal (SubX) Rainfall Forecast Anomaly

Multimodel mean subseasonal forecast of global rainfall anomaly for the 30-days starting from January 28th showing areas of above or below-average rainfall. The image shows the average of four Subseasonal Experiment (SubX) model forecasts from that day. The anomaly is based on the 1999 to 2016 model average. Skill assessments of SubX can be accessed here. Source: UCSB Climate Hazards Center
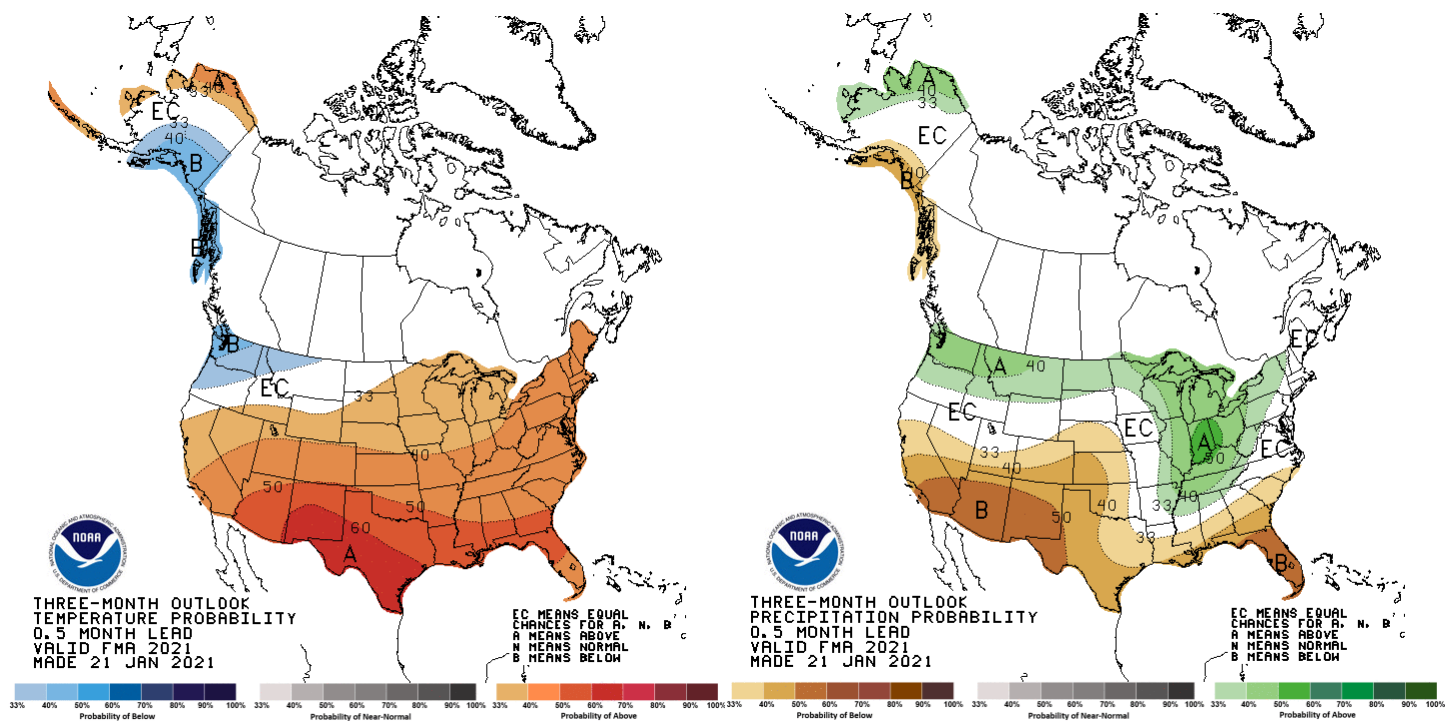
The 30-day SubX forecast indicates a likelihood of above-average rainfall over California and the mid-Atlantic states US, Suriname, French Guiana, east Paraguay, Southern Brazil, Uruguay, northeastern Argentina, central Chile, France, southern Germany, Switzerland, Bosnia and Herzegovina, Montenegro, Albania, Botswana, Zambia, Zimbabwe, southern Mozambique, eSwatini, central and eastern South Africa, Sri Lanka, the Philippines, and Indonesia. There is also a likelihood of below-average rainfall across northeastern and southeast Brazil, Iceland, eastern Angola, eastern Madagascar, Afghanistan, northern Pakistan, northwest India, southeast China, southern Japan, Sulawesi Indonesia, and northern Queensland Australia.

Assessment based on information as of January 28th

United States Climate Outlook

For the longer February-March-April (FMA) 2021 period, temperatures are likely to be above-average across the majority of the Contiguous United States (CONUS) with the highest likelihood in the Rio Grande Valley and extending northward from California to Minnesota and New England. Below-average temperatures are likely for the Pacific Northwest.

For precipitation, La Niña is the main driver of the forecast. Below-average precipitation is likely to be focused across the southwest extending up into the central Great Plains, then in the southeast focusing over Florida. Conversely, above-average precipitation is likely across northern CONUS from the Pacific Northwest across to the Great Lakes and down into the Ohio Valley region.

February-March-April Temperature and Precipitation Outlooks

The official DJF forecast as of January 21st, 2021 from NOAA/National Weather Service,
National Centers for Environmental Predictions, Climate Prediction Center.

Source: NOAA Climate Prediction Center

* Assessment based on information as of January 28th

Southeast Asia Current Seasonal Conditions plus 3-month Forecast

Apart from central areas, much of the maritime South East Asia region received average or above-average rainfall between December 1st and January 25th (Figure 1-left). In the northern Philippines, rainfall totals are presently higher than 200% of average, in part due to Tropical Storm Krovanh in mid-December and a tropical depression in mid-to-late January. Totals are above 150% of average in parts of southern Vietnam, southern Thailand, northern Malaysia, and Indonesia's central-eastern Java region.

December 1st to January 25th rainfall was lower than average in Indonesia's Kalimantan and western central Sumatra regions and Malaysia's southern Borneo region. However, most of these areas received amounts that were at least 80% of average, and forecast rains may bring season-to-date totals closer to average by early February. As of January 26th, mixed rainfall conditions are forecast across the region for the next two weeks (not shown), with potential for above-average amounts in some of the Philippines and Indonesia's eastern Java region. For February to April, the NMME forecast indicates wetter-than-average conditions in some northern and southern areas, and average to below-average conditions in central areas, similar to recent conditions (Figure 1-right). There is a higher than 60% chance for above-normal February-to-April rainfall in the Philippines and southern Vietnam.
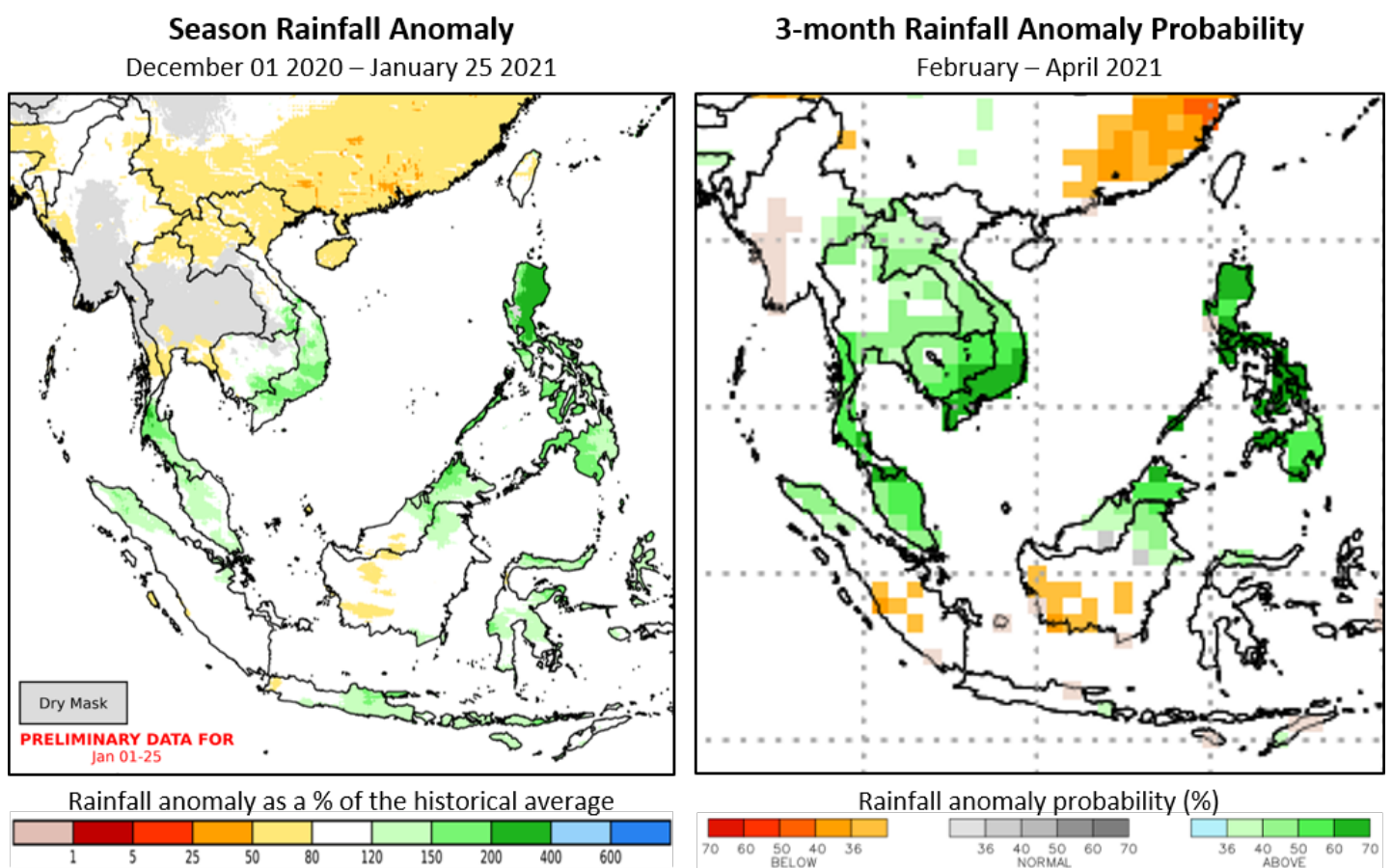

Figure 1. Estimated rainfall since December 1st, 2020, and a 3-month probability forecast. The left panel is a UCSB Climate Hazards Center Early Estimate, which compares 2020/21 rainfall amounts to the 1981-2019 CHIRPS average. The map shows the difference from average for December 1st, 2020 to January 25th, 2021. On the right is the 3-month NMME experimental probabilistic forecast for February to April 2021, based on January 2021 initial conditions. The forecast probability is calculated as the percentage of all 79 NMME ensemble members that fall in a given tercile (above/below/near normal). White color indicates that there is no dominant category across the model forecasts. NMME image from https://www.cpc.ncep.noaa.gov/products/international/nmme/nmme_seasonal.shtml
Source: UCSB Climate Hazards Center

* Assessment based on information as of January 28th

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
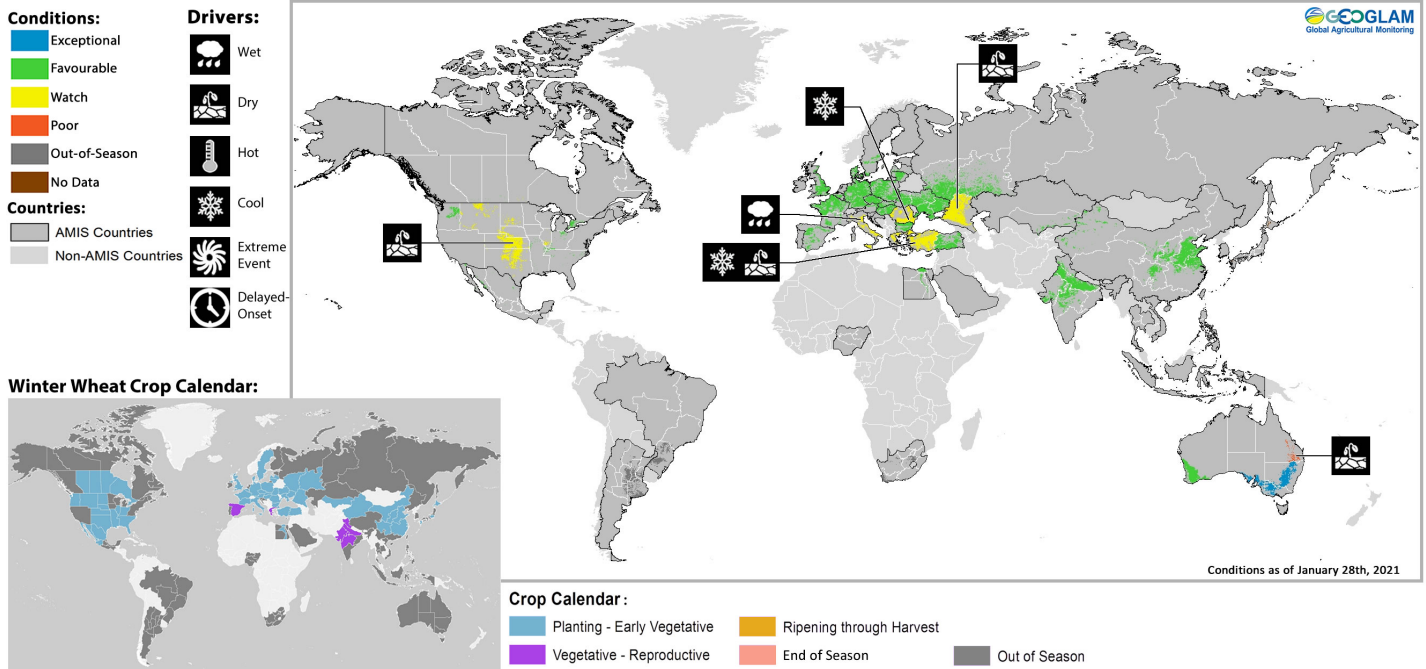- Extreme Event
- Delayed-Onset

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	

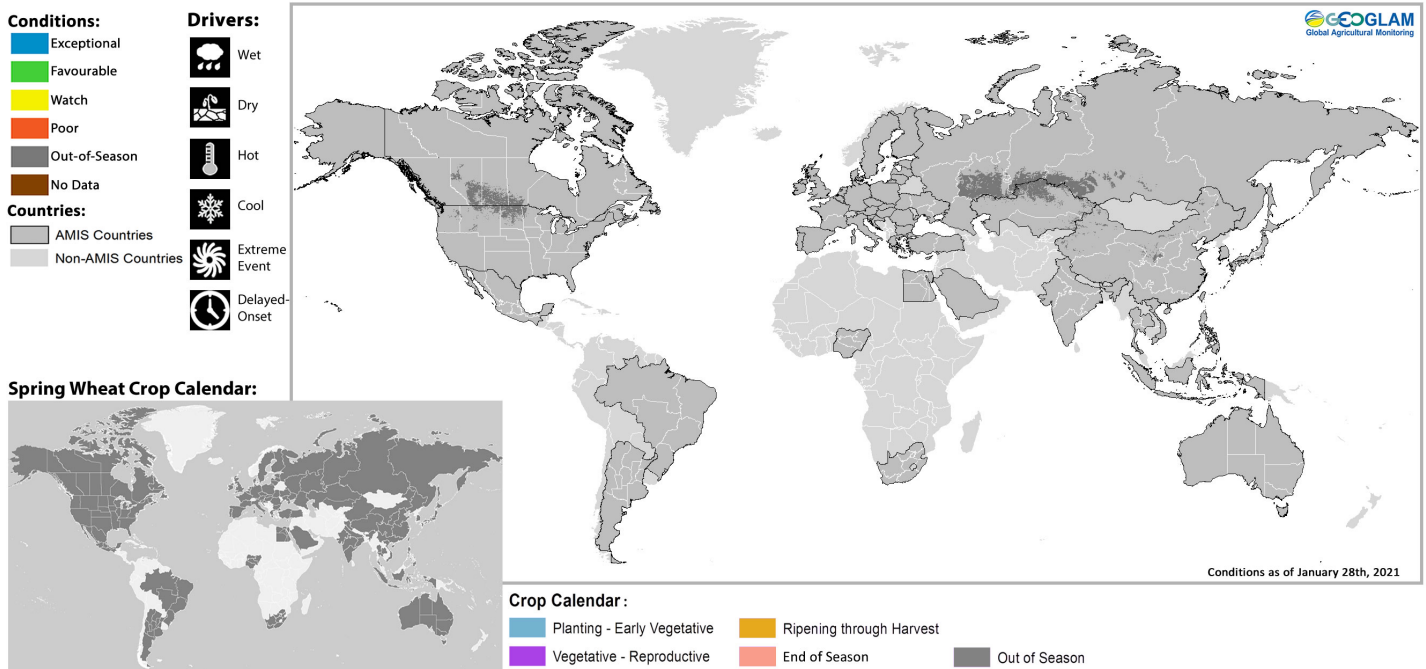** Assessment based on information as of January 28th*

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 January 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 January 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.
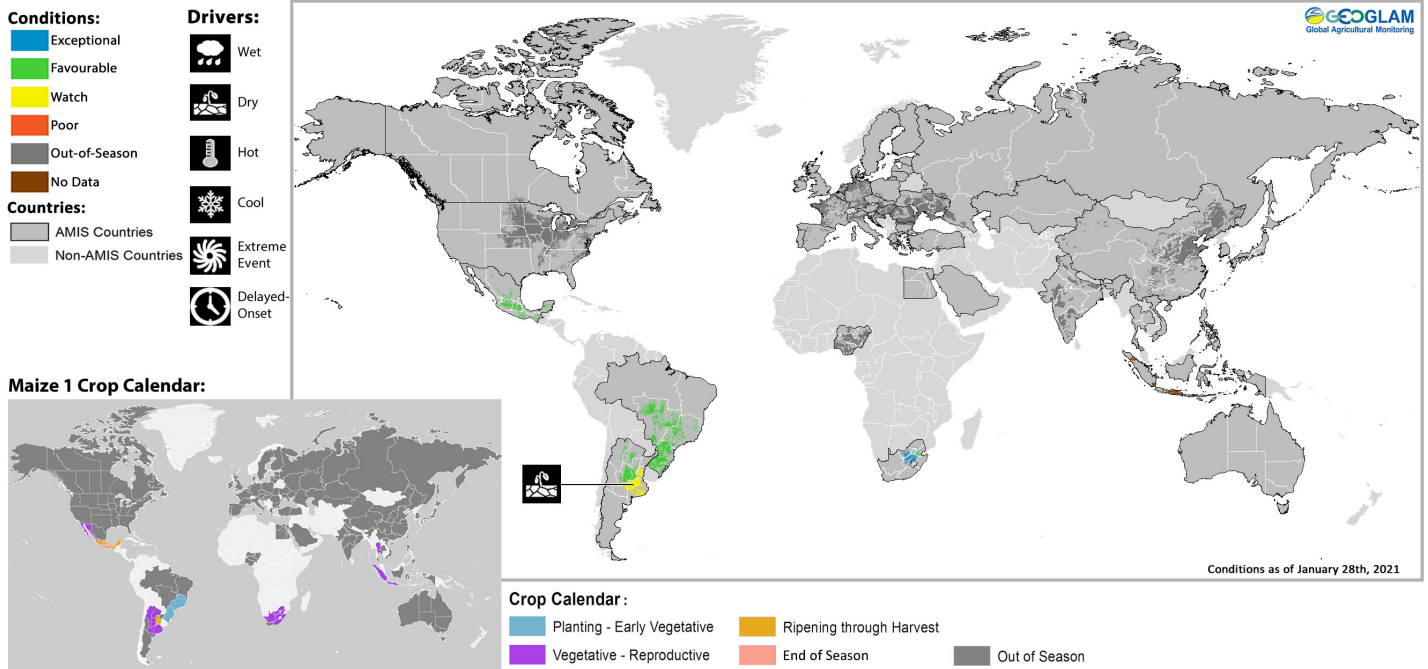
* Assessment based on information as of January 28th

Maize 1 Conditions for AMIS Countries

Conditions:
- Exceptional
- Favourable
- Watch
- Poor
- Out-of-Season
- No Data

Countries:
- AMIS Countries
- Non-AMIS Countries

Drivers:
- Wet
- Dry
- Hot
- Cool
- Extreme Event
- Delayed-Onset

Maize 1 Crop Calendar:

Conditions as of January 28th, 2021

Crop Calendar:
- Planting - Early Vegetative
- Vegetative - Reproductive
- Ripening through Harvest
- End of Season
- Out of Season

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 January 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.
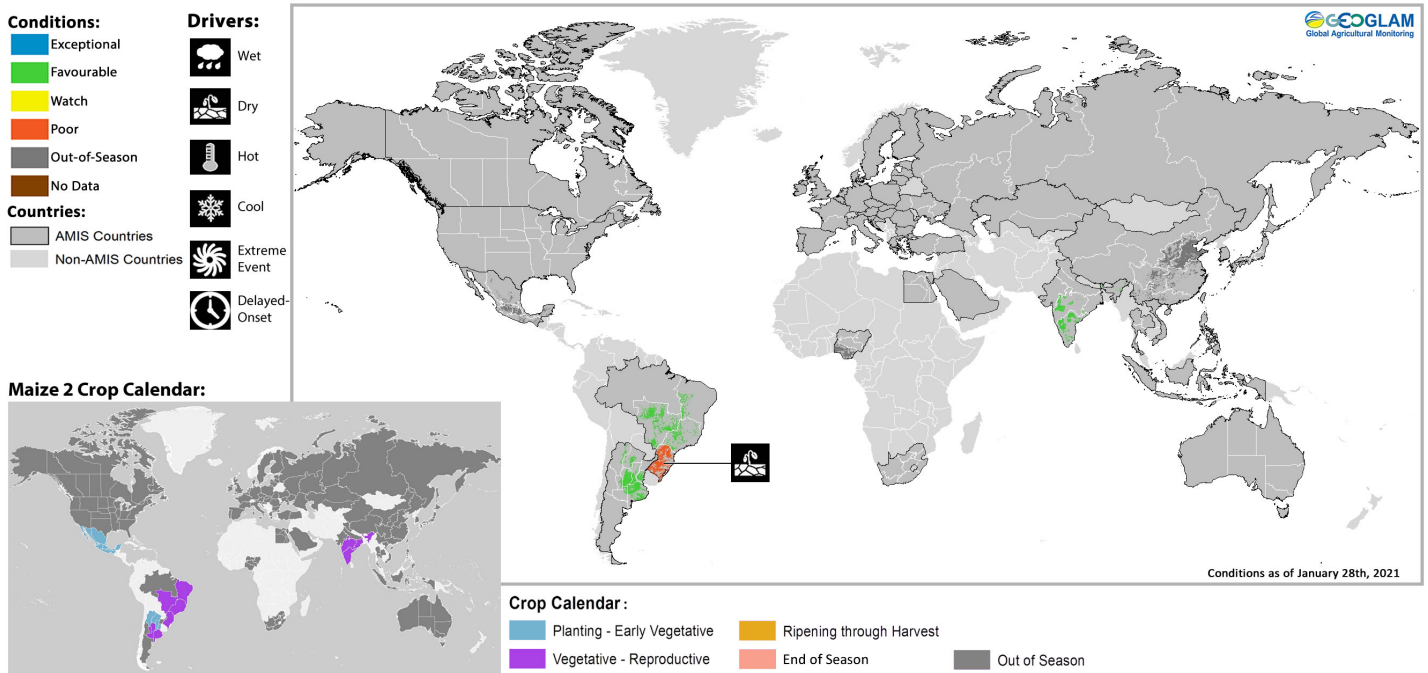
Maize 2 Conditions for AMIS Countries

Conditions:
- Exceptional
- Favourable
- Watch
- Poor
- Out-of-Season
- No Data

Countries:
- AMIS Countries
- Non-AMIS Countries

Drivers:
- Wet
- Dry
- Hot
- Cool
- Extreme Event
- Delayed-Onset

Maize 2 Crop Calendar:

Conditions as of January 28th, 2021

Crop Calendar:
- Planting - Early Vegetative
- Vegetative - Reproductive
- Ripening through Harvest
- End of Season
- Out of Season

Maize2 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 January 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.
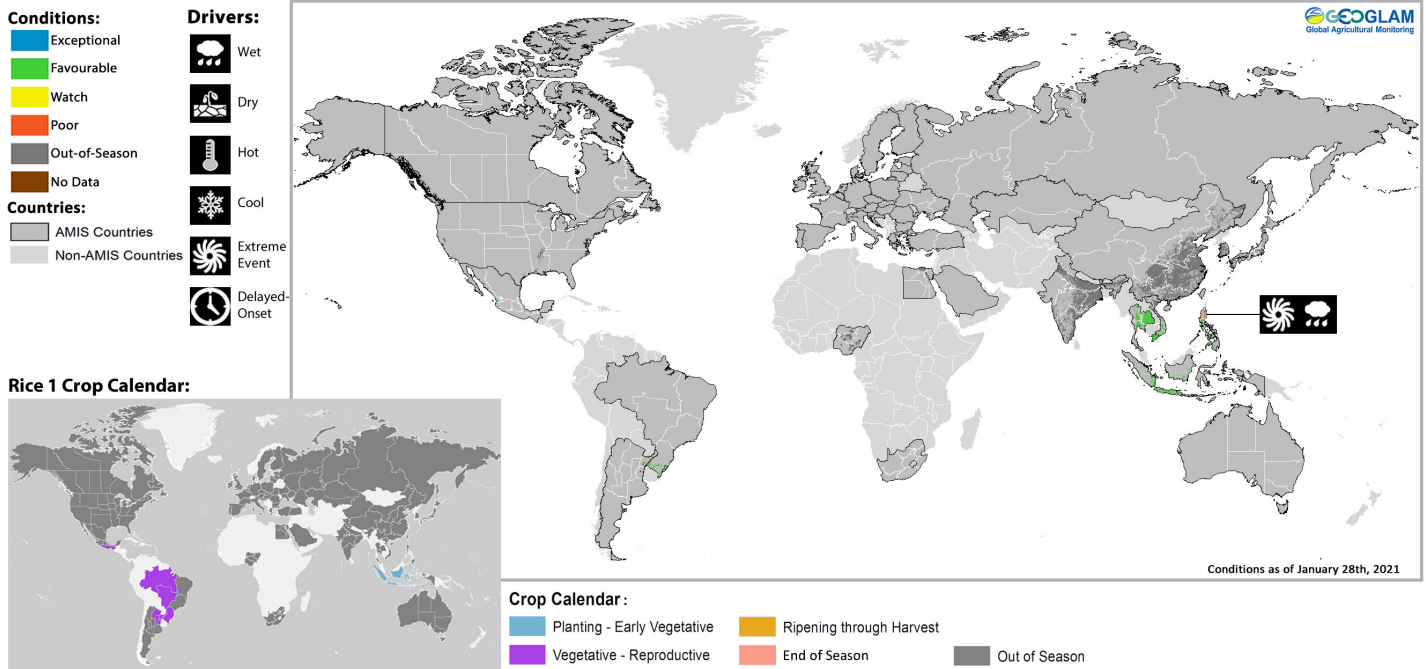
* Assessment based on information as of January 28th

Rice 1 Conditions for AMIS Countries

Conditions:
- Exceptional
- Favourable
- Watch
- Poor
- Out-of-Season
- No Data

Countries:
- AMIS Countries
- Non-AMIS Countries

Drivers:
- Wet
- Dry
- Hot
- Cool
- Extreme Event
- Delayed-Onset

Rice 1 Crop Calendar:

Conditions as of January 28th, 2021

Crop Calendar:
- Planting - Early Vegetative
- Vegetative - Reproductive
- Ripening through Harvest
- End of Season
- Out of Season

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 January 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.
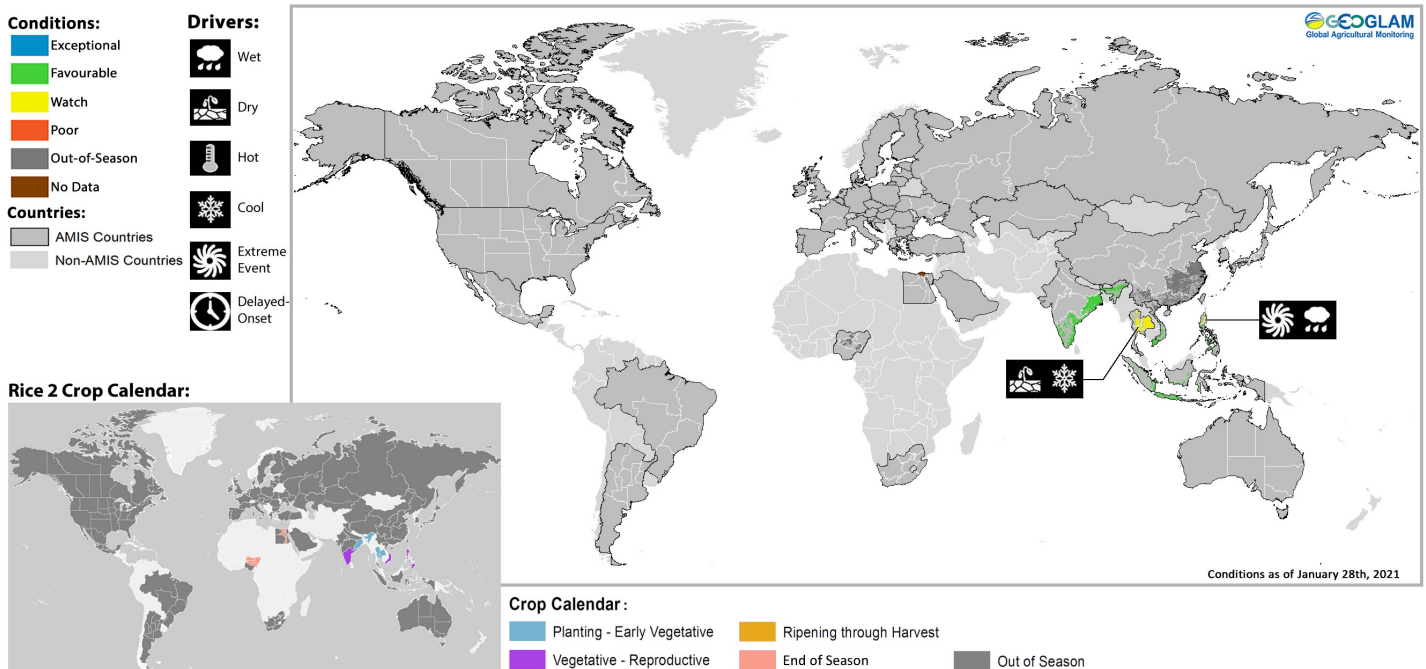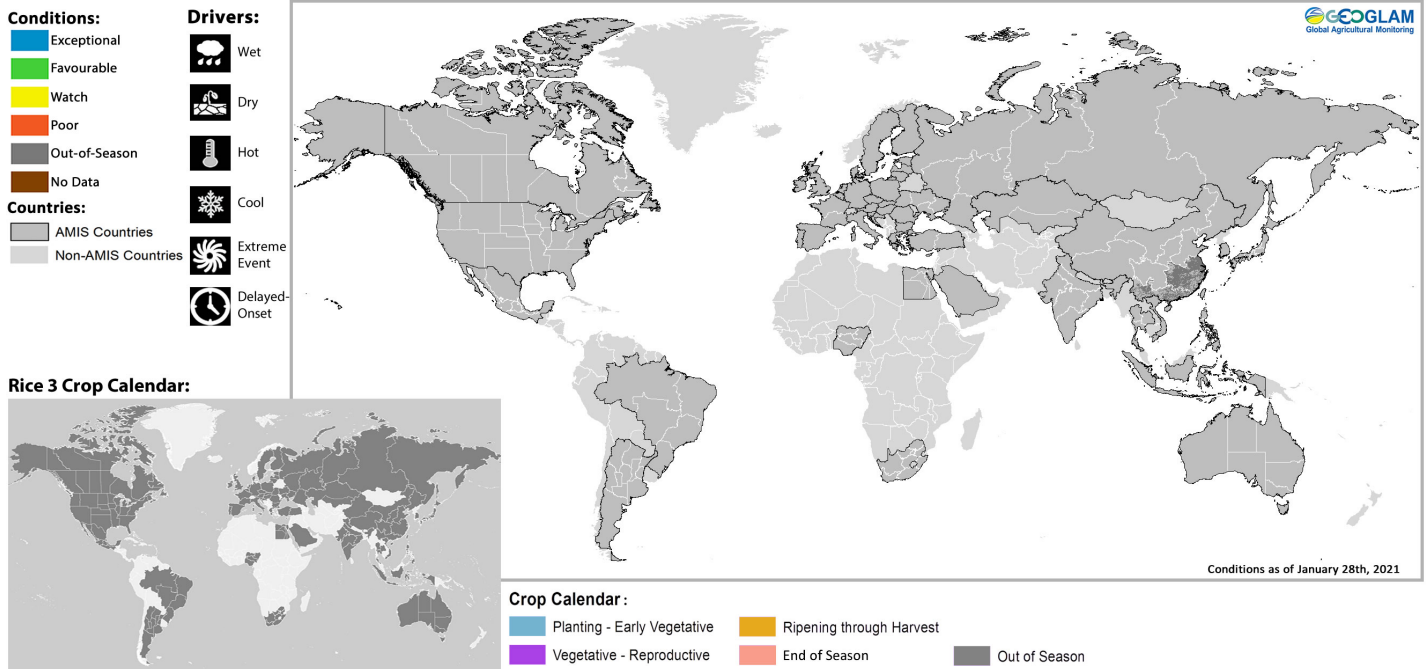
Rice 2 Conditions for AMIS Countries

Conditions:
- Exceptional
- Favourable
- Watch
- Poor
- Out-of-Season
- No Data

Countries:
- AMIS Countries
- Non-AMIS Countries

Drivers:
- Wet
- Dry
- Hot
- Cool
- Extreme Event
- Delayed-Onset

Rice 2 Crop Calendar:

Conditions as of January 28th, 2021

Crop Calendar:
- Planting - Early Vegetative
- Vegetative - Reproductive
- Ripening through Harvest
- End of Season
- Out of Season

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 January 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.
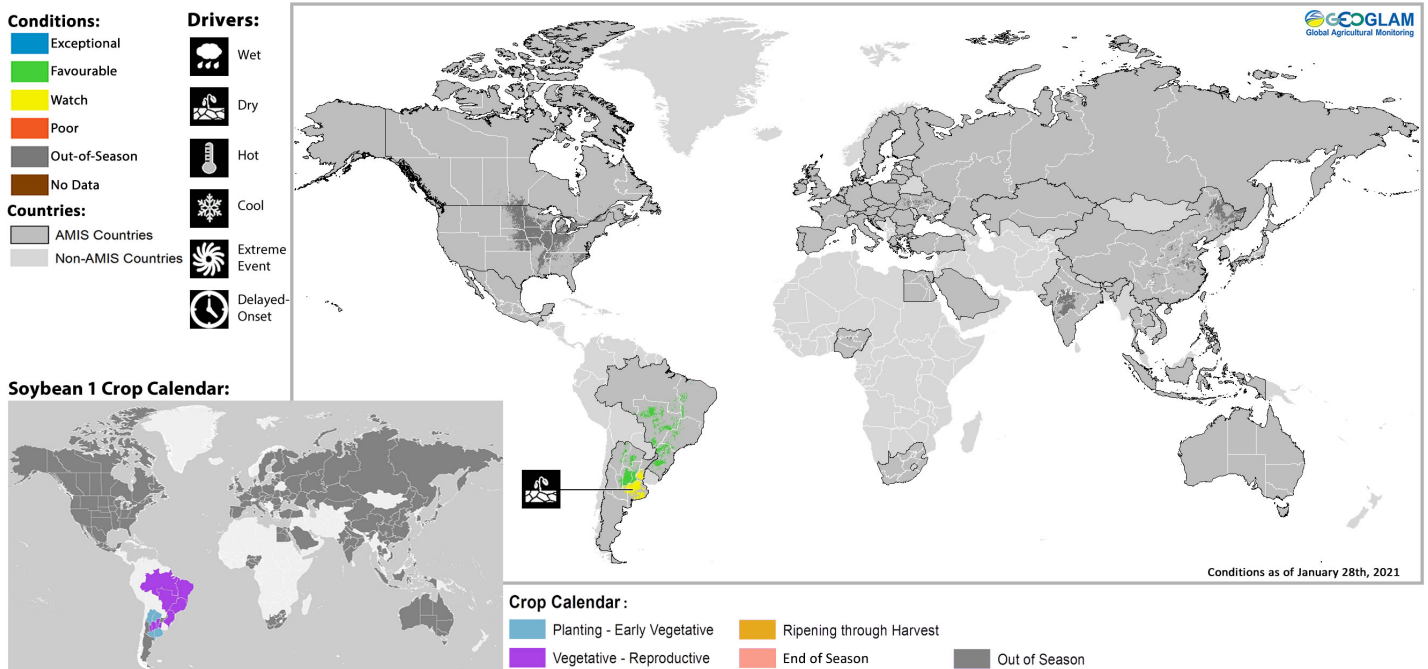
* Assessment based on information as of January 28th

Rice 3 Conditions for AMIS Countries

Conditions:
- Exceptional
- Favourable
- Watch
- Poor
- Out-of-Season
- No Data

Countries:
- AMIS Countries
- Non-AMIS Countries

Drivers:
- Wet
- Dry
- Hot
- Cool
- Extreme Event
- Delayed-Onset

Rice 3 Crop Calendar:

Conditions as of January 28th, 2021

Crop Calendar:
- Planting - Early Vegetative
- Vegetative - Reproductive
- Ripening through Harvest
- End of Season
- Out of Season

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 January 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.
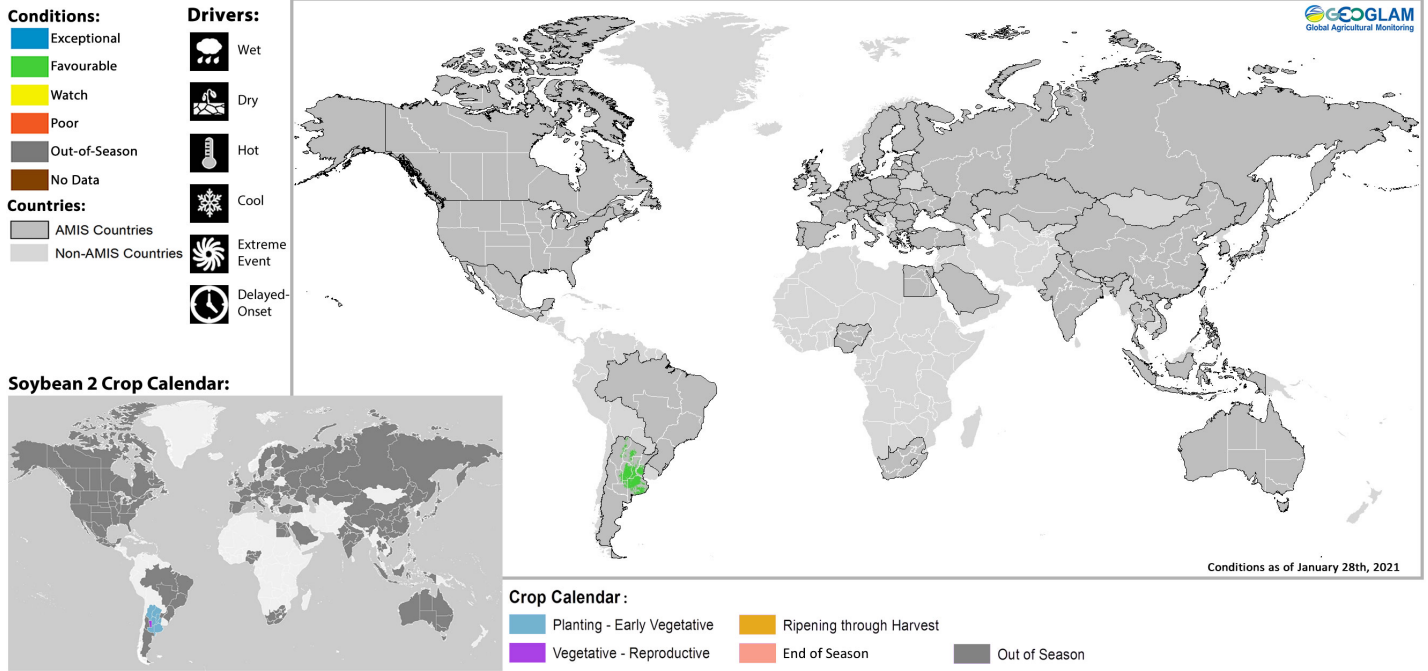
Soybean 1 Conditions for AMIS Countries

Conditions:
- Exceptional
- Favourable
- Watch
- Poor
- Out-of-Season
- No Data

Countries:
- AMIS Countries
- Non-AMIS Countries

Drivers:
- Wet
- Dry
- Hot
- Cool
- Extreme Event
- Delayed-Onset

Soybean 1 Crop Calendar:

Conditions as of January 28th, 2021

Crop Calendar:
- Planting - Early Vegetative
- Vegetative - Reproductive
- Ripening through Harvest
- End of Season
- Out of Season

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 January 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 January 28th

Soybean 2 Conditions for AMIS Countries

Conditions:
- Exceptional
- Favourable
- Watch
- Poor
- Out-of-Season
- No Data

Countries:
- AMIS Countries
- Non-AMIS Countries

Drivers:
- Wet
- Dry
- Hot
- Cool
- Extreme Event
- Delayed-Onset

Soybean 2 Crop Calendar:

Conditions as of January 28th, 2021

Crop Calendar :
- Planting - Early Vegetative
- Vegetative - Reproductive
- Ripening through Harvest
- End of Season
- Out of Season

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 January 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.

Prepared by members of the GEOGLAM Community of Practice
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Photo courtesy of Brian Barker

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