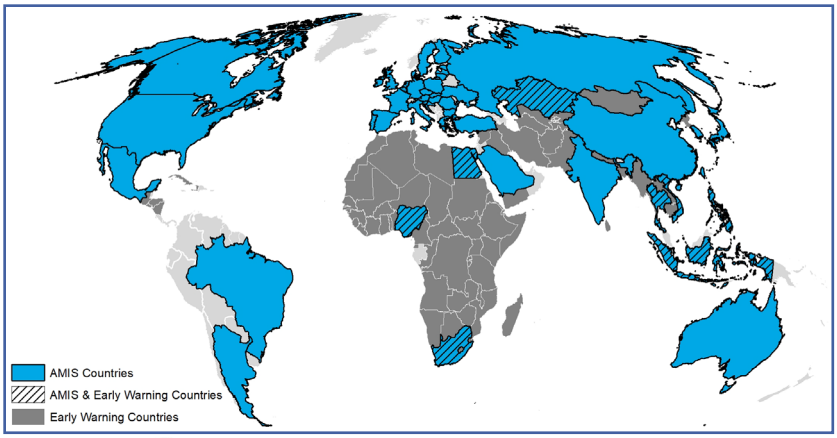
Crop Monitor for AMIS

Overview:

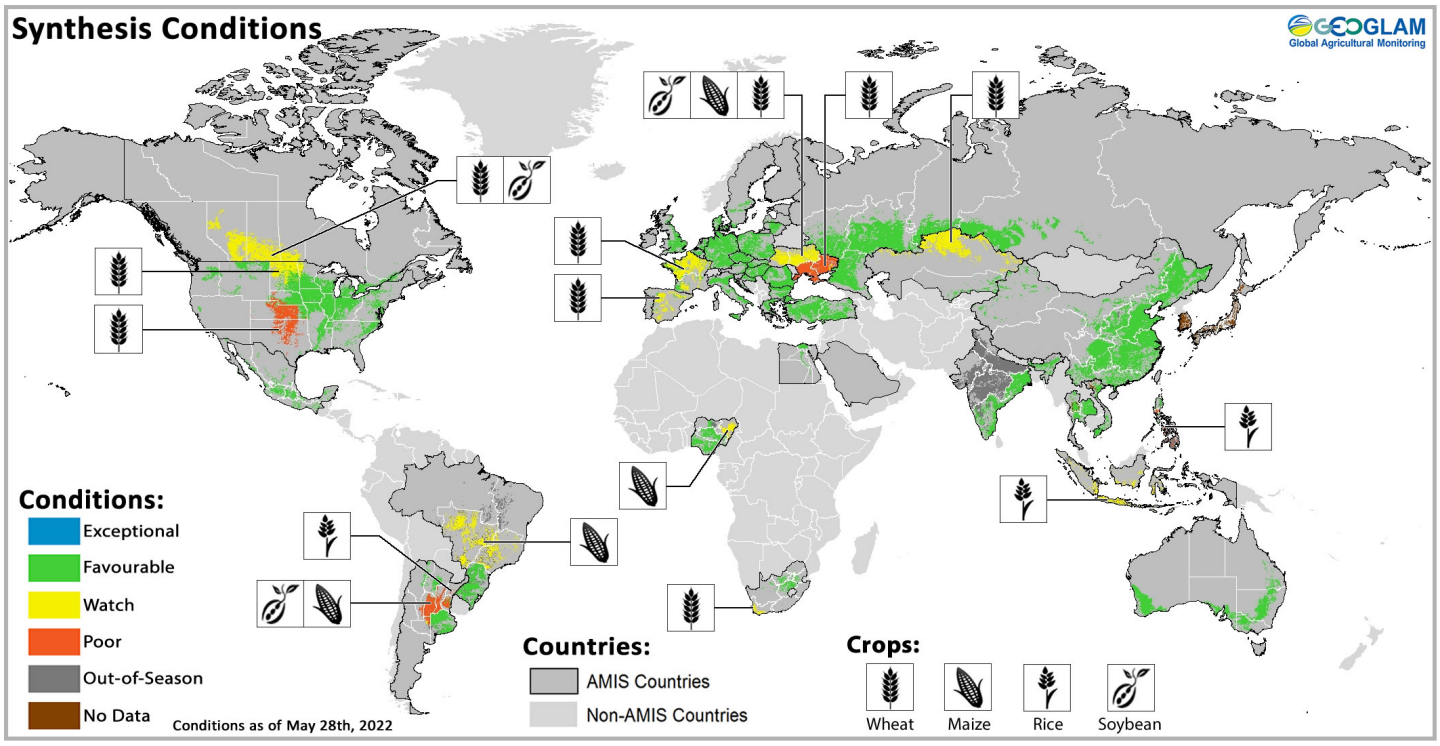
At the end of May, conditions are generally favourable for maize, rice, and soybeans while mixed for wheat. In the northern hemisphere, areas of concern for wheat remain in North America, Europe, and Central Asia. In the southern hemisphere sowing begins. Maize harvest continues in Argentina while sowing wraps up in the northern hemisphere. Rice conditions remain generally favourable in most countries as the crops switch between dry and wet-season rice. Soybean harvesting continues in Argentina while sowing continues in the northern hemisphere.



Contents:

Assessment based on information as of May 28th

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



Crop condition map synthesizing information for all four AMIS crops as of May 28th. Crop conditions over the main growing areas for wheat, maize, rice, and soybean are based on a combination of national and regional crop analyst inputs along with earth observation data. ***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, conditions are mixed in western Europe, Ukraine, the US, and Canada. Sowing has begun in the southern hemisphere.

Maize - In the southern hemisphere, harvesting continues in Brazil, Argentina, and South Africa. In the northern hemisphere, sowing is progressing in North America and China while wrapping up in Europe.

Rice - Rabi rice harvest is wrapping up in India. Single-Season and early-season rice development continues in China. In Southeast Asia, sowing of wet-season rice is beginning in the northern countries while dry-season rice sowing is delayed in Indonesia.

Soybeans - In the southern hemisphere, harvesting is ongoing in Argentina under mixed conditions. In the northern hemisphere, sowing is ongoing in the US, Canada, China, and Ukraine.

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 through at least August (69 percent chance) according to the IRI/CPC.

Australia – Borth the short-term (2-week) and the long-term (June-July-August) outlooks show likely below-average precipitation across the southwestern portion of the country. However, the long-term outlook shows likely above-average precipitation across much of the rest of the country.

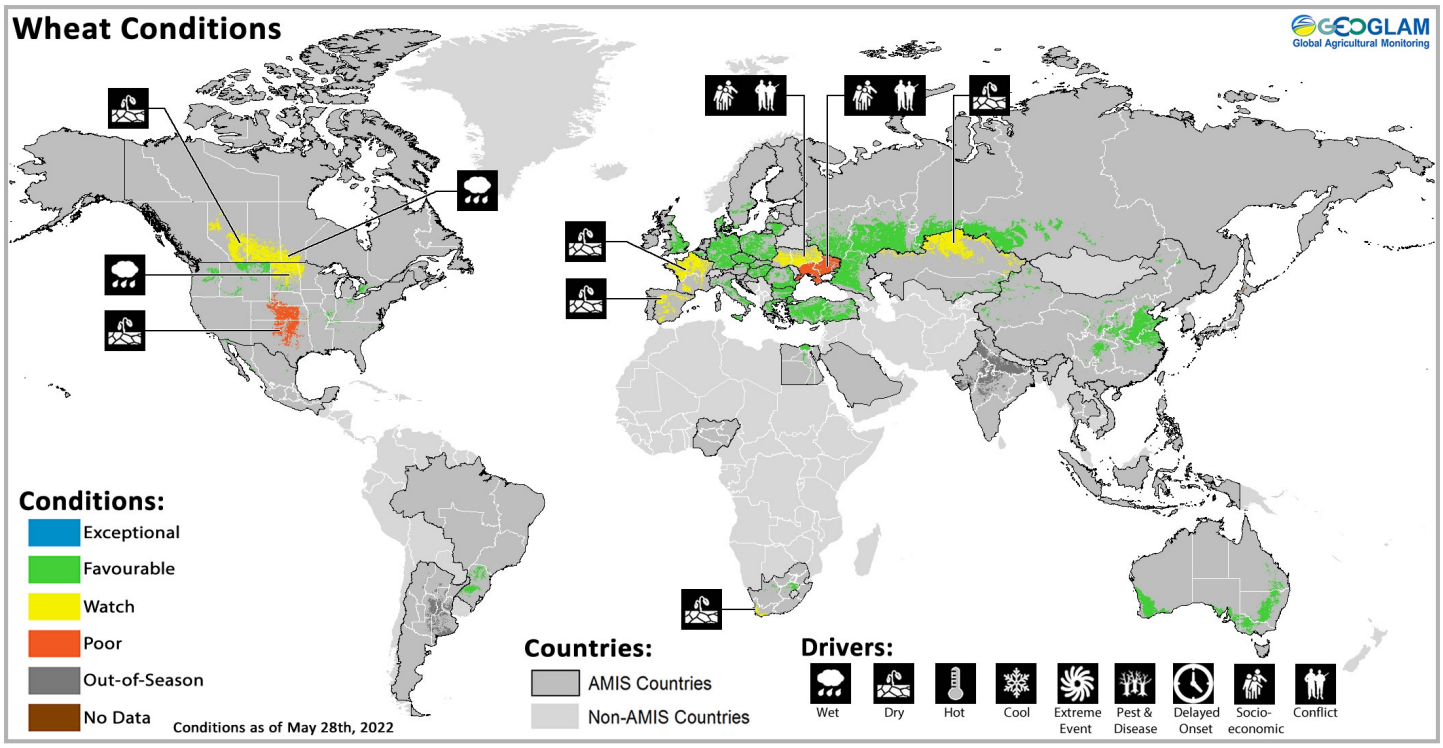
Europe – The short-term (2-week) rainfall is likely to be average across most countries. However, the extended June-July-August forecast shows likely below-average rainfall over much of Europe.

United States – The short-term (2-week) outlook shows possible above-average rainfall in the north while below-average in the southwest. The long-term (June-July-August) outlook shows possible below-average in the Northern Rockies and the 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.

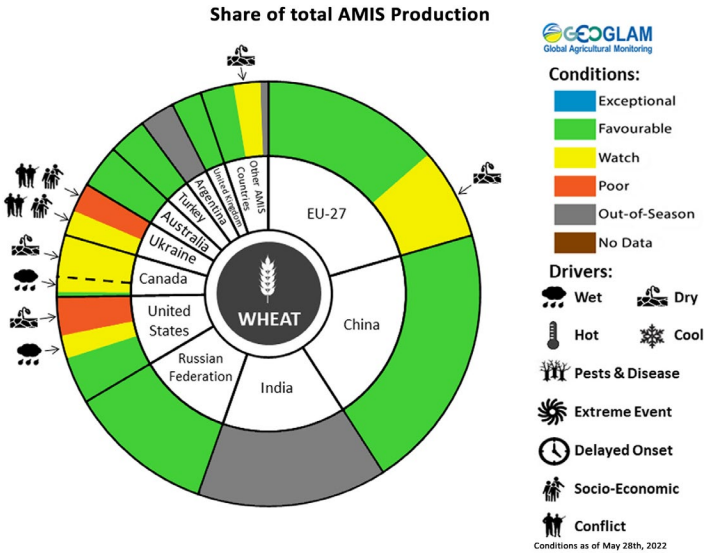
* Assessment based on information as of May 28th

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 May 28th. Where crops are in other than favourable conditions the climatic drivers responsible for those conditions are displayed. Crop Season Specific Maps can be found in Appendix 2.

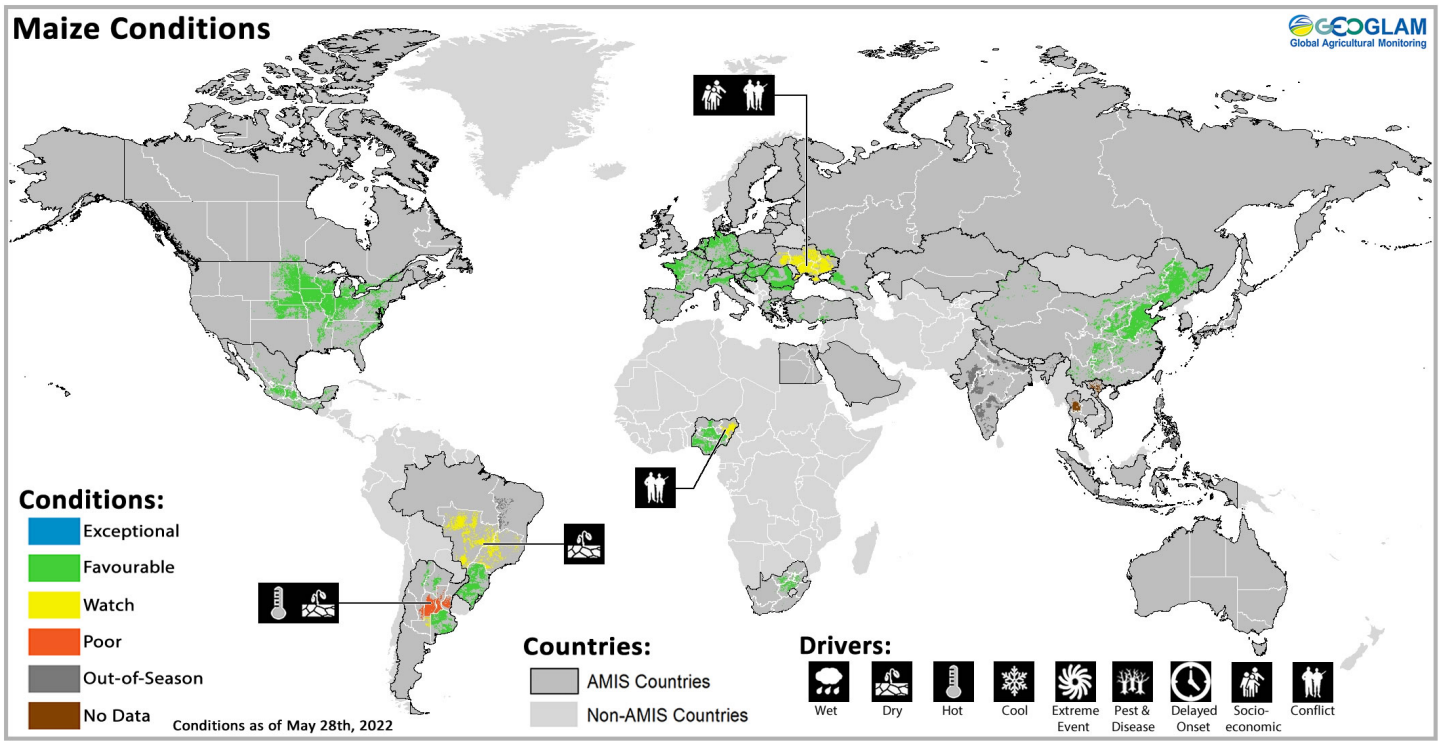
Wheat: In the **EU**, conditions are generally favourable; however, dry weather is impacting part of France, Spain, and Portugal. In the **United Kingdom**, winter wheat conditions are favourable. In **Ukraine**, weather conditions remain stable; however, the ongoing war continues to bring significant uncertainties, particularly in the south and east regions. In the **Russian Federation**, conditions are favourable for winter wheat and spring wheat, which is currently sowing. In **Turkey**, conditions are favourable despite the delays in crop development from the cold and dry weather earlier this season. In **China**, conditions are favourable for both winter and spring wheat. In the **US**, long-term dryness in the central and southern Great Plains is expected to have reduced winter wheat yields. Spring wheat sowing is ongoing, albeit delayed in North Dakota and Minnesota due to wet conditions. In **Canada**, winter wheat conditions remain favourable in Ontario but are mixed in the Prairies. Spring wheat sowing has begun under mixed conditions in the Prairies due to dryness in the west and excess moisture in the east. In **Australia**, sowing is ongoing under favourable conditions.



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

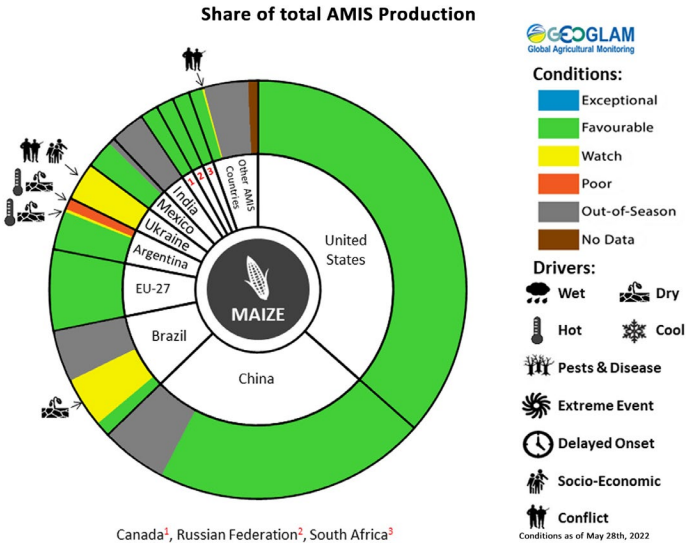
* Assessment based on information as of May 28th

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 May 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 **Argentina**, harvesting of the early-planted crop (larger season) and the late-planted crop (smaller season) is continuing slowly. A reduction in yields for the early-planted crop is expected due to previous hot and dry weather**.** In **Brazil**, conditions are mixed for the summer-planted crop (larger season) as a lack of rain in the Central-West and Southeast regions is likely to impact yields for later sown crops. There is an increase in sown area compared to last season. In **South Africa**, harvesting is wrapping up under favourable conditions. In the **US**, sowing is progressing under favourable conditions after earlier delays in the northern Corn Belt. In **Canada**, sowing is beginning under favourable conditions in the east and mixed conditions in the Prairies. In **Mexico**, harvesting is continuing for the autumn-winter crop (smaller season) while sowing begins for the spring-summer season (larger season) under favourable conditions. In the **EU**, sowing is wrapping up under favourable conditions. In **Ukraine**, sowing is wrapping up under mixed conditions due to the uncertainties of the ongoing war. In the **Russian Federation**, conditions are favourable. In **China**, conditions are favourable for the spring-planted crop as the sowing of the summer-planted crop begins.



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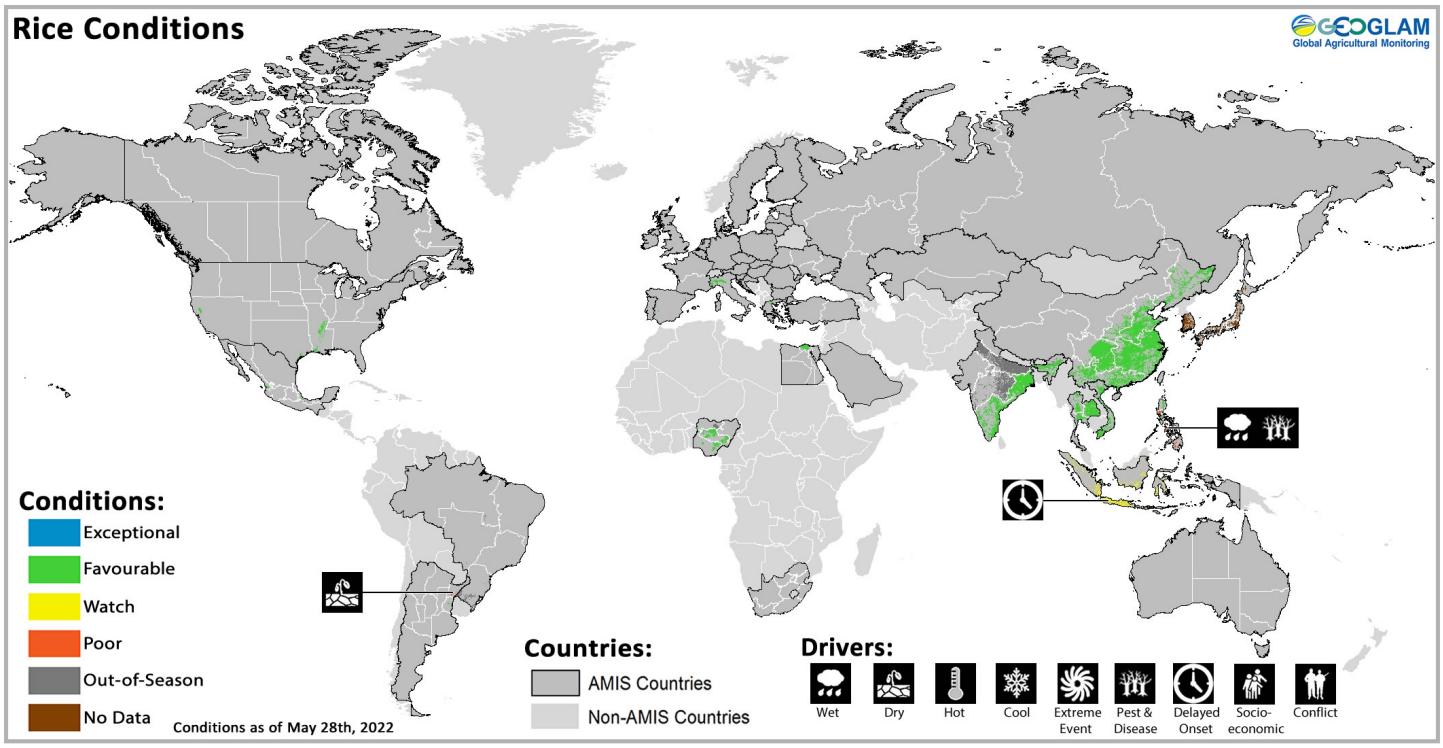
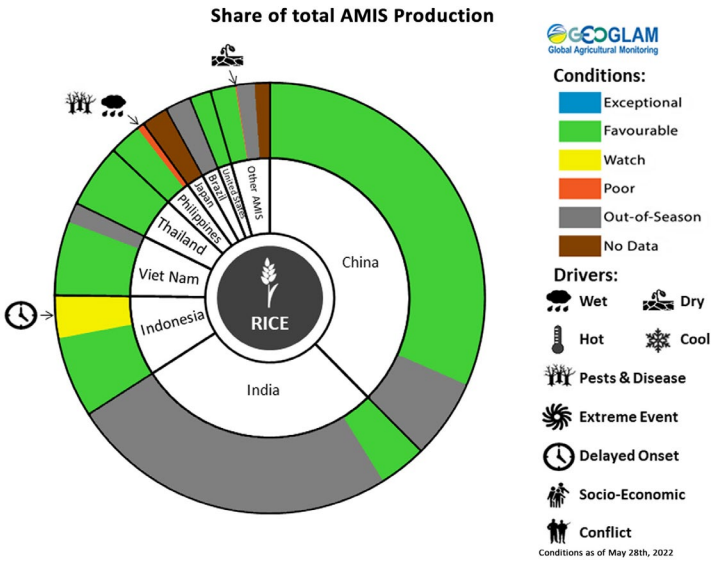
Rice Conditions for AMIS Countries



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 May 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**, conditions are favourable for both single-season rice and early-season rice**.** In **India**, harvesting of the Rabi crop is wrapping up under favourable conditions. In **Indonesia**, harvesting of wet-season rice enters the fifth month with good yields and an increase in harvested area compared to last year. Sowing of dry-season rice is beginning but is limited as farmers wait for ideal conditions. In **Viet Nam**, winter-spring rice (dry-season) is continuing to develop in the north while harvesting in the south. Sowing of summer-autumn rice (wet-season) in the Mekong River Delta is ongoing under favourable conditions. In **Thailand**, dry-season rice harvesting is wrapping up with an increase in the total sown area compared to last year. Sowing of wet-season rice is beginning under favourable conditions. In the **Philippines**, dry-season rice harvesting is wrapping up under mixed conditions due to damaging rains in Visayas and pest infestations in Mindanao. Sowing of wet-season rice is beginning under favourable conditions. In the **US**, sowing is wrapping up under favourable conditions.



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

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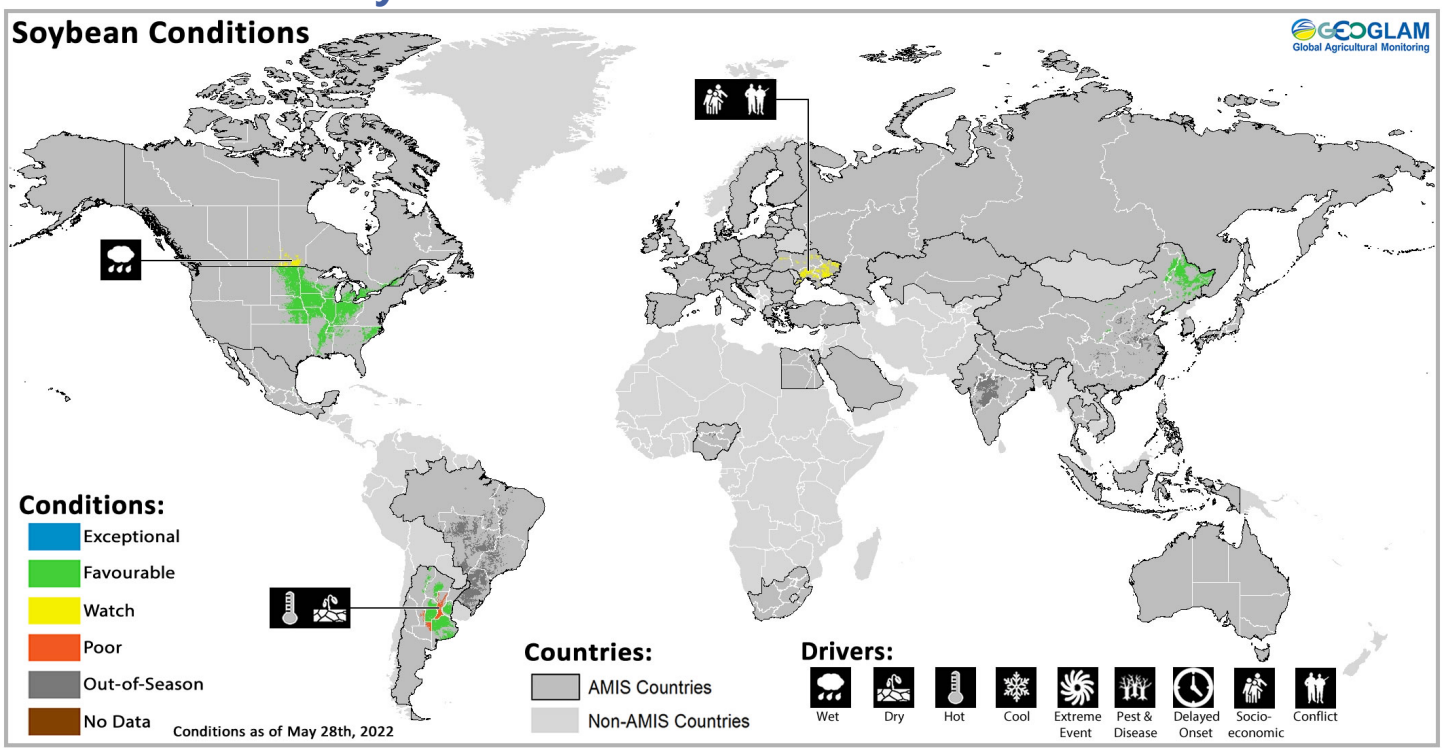
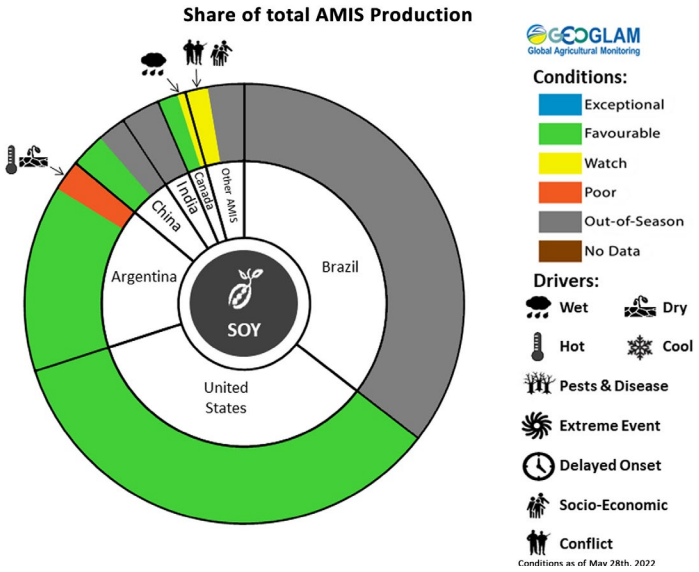
Soybean Conditions for AMIS Countries



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 May 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 **Argentina**, harvesting is progressing for both the early-planted crop (larger season) and the late-planted crop (smaller season). Dry conditions throughout the growing season have led to mixed yields across the different regions. National yields are still expected to be close to the previous year. In the **US**, sowing is catching up after earlier delays due to cold and wet weather in the northern Corn Belt; however, sowing remains behind in Minnesota and the Dakotas. In **Canada**, sowing is ongoing under favourable conditions in Ontario and Quebec, while excess moisture in Manitoba and eastern Saskatchewan, as well as dry conditions in western Saskatchewan, are of some concern. In **China**, sowing has begun in the northeast under favourable conditions. In **Ukraine**, sowing is continuing under the uncertainties of the ongoing war, while cooler weather in May has slowed crop development.



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

Information on crop conditions in non-AMIS countries can be found in the GEOGLAM Crop Monitor for Early Warning, published June 2nd

Pie chart description: Each slice represents a country's share of total AMIS production (5-year average). Main producing countries (representing 95 percent of production) are shown individually, with the remaining 5 percent grouped into the "Other AMIS Countries" category. The proportion within each national slice is coloured according to the crop conditions within a specific growing area; grey indicates that the respective area is out of season. Sections within each slide are weighted by the sub-national production statistics (5-year average) of the respective country. The section within each national slice also accounts for multiple cropping seasons (i.e., spring and winter wheat). When conditions are other than' favourable', icons are added that provide information on the key climatic drivers affecting conditions.

* Assessment based on information as of May 28th

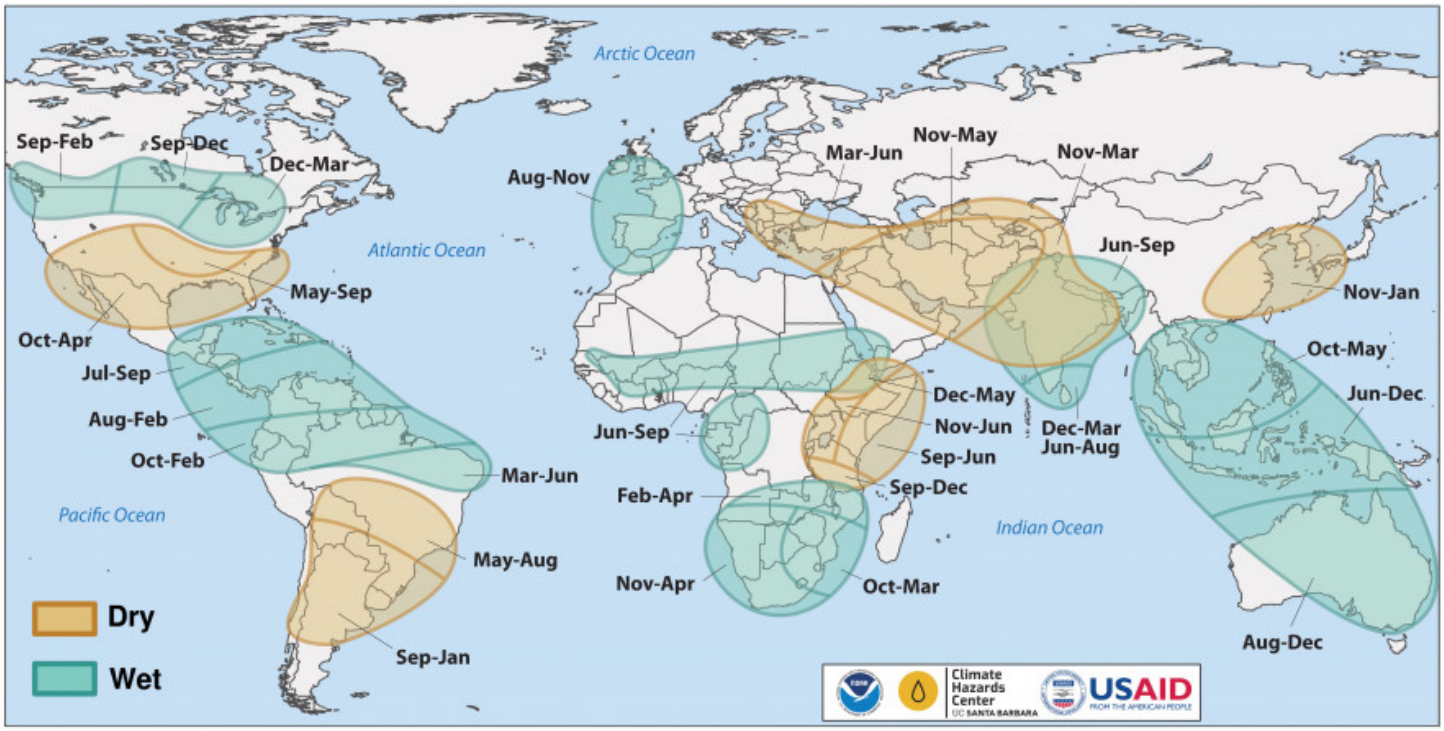
Climate Influences: La Niña Advisory and Likely Negative Indian Ocean Dipole

The El Niño-Southern Oscillation (ENSO) is currently in the La Niña phase and is expected to remain as La Niña through at least August (69 percent chance) according to the IRI/CPC. Long-range forecasts through the end of 2022 show higher-than a 58 percent chance of La Niña, and very low chances of El Niño.

If La Niña conditions persist or redevelop in late 2022, it would be the third year in a row with a La Niña event, which is uncommon. La Niña could elevate risks of repeated 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.

Negative Indian Ocean Dipole (IOD) conditions are forecast to develop in June and last through October or longer. Models indicate that this may be a strong IOD event. Negative IOD conditions often happen in tandem, and are associated with above-average rainfall in Australia and Southeast Asia, and below-average rainfall in East Africa. Severe drought impacts across the Horn of Africa, and heavy rainfall and flooding in Australia and southeast Asia, have occurred during La Niña and negative IOD conditions.

Source: UCSB Climate Hazards Center



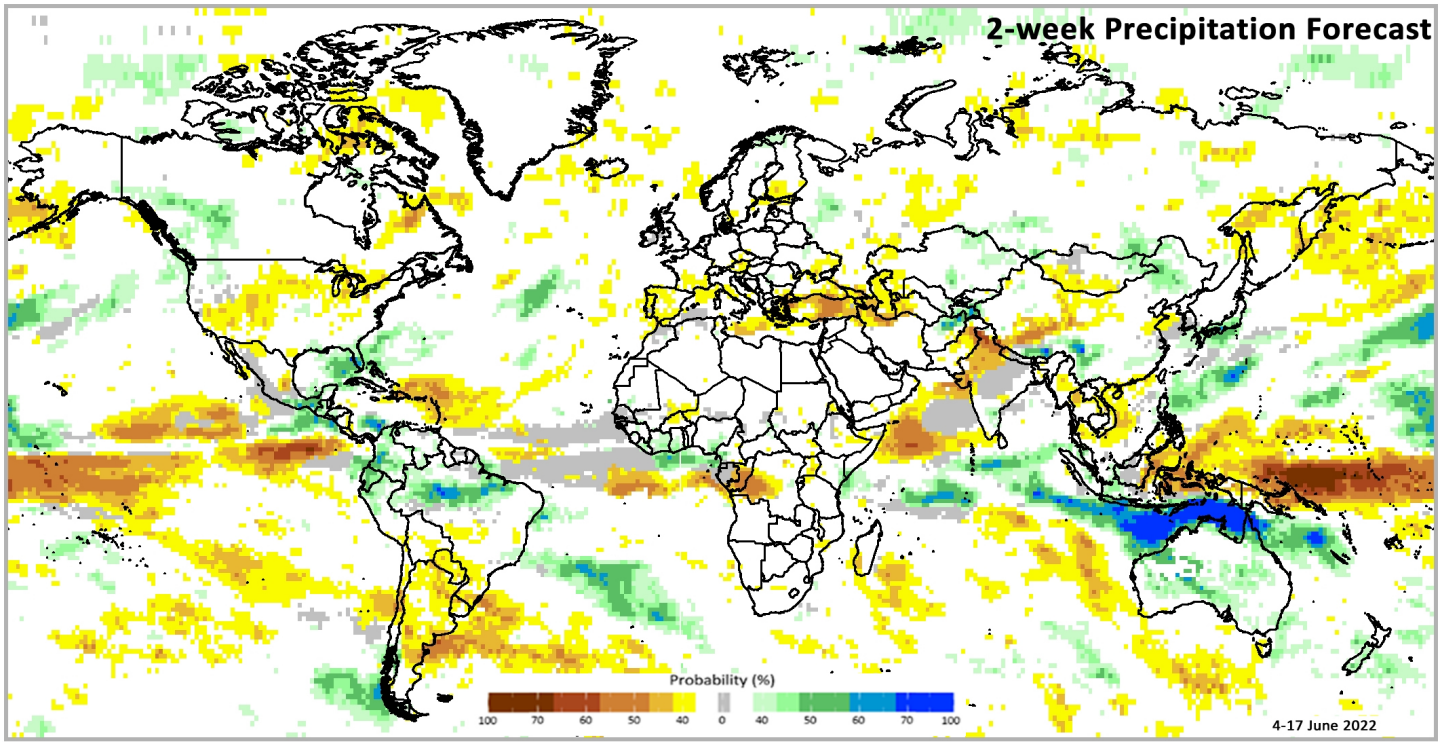
Location and timing of likely above- and below-average precipitation related to La Niña events. Based upon observed precipitation during 21 La Niña events since 1950, wet and dry correspond to a statistically significant increase in the frequency of precipitation in the upper and lower thirds of historical 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://fews.net/la-ni%C3%B1a-and-precipitation

* Assessment based on information as of May 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 northwest Prairies in Canada, Florida in the US, Southern Mexico, Nicaragua, Colombia, Ecuador, northern Peru, northern Brazil, Côte d'Ivoire, southern Ghana, southeast Nigeria, eastern Kenya, Tajikistan, northern and central Afghanistan, northeast and southwest China, southern Japan, Java in Indonesia, and northern and western Australia.

There is also a likelihood of below-average rainfall over the US southwest and northern plains, Haiti, the Dominican Republic, central Bolivia, Paraguay, southern Brazil, Uruguay, Argentina, central Chile, southern France, Spain, central Italy, Austria, eastern Ukraine, central and eastern Turkey, Georgia, Armenia, Azerbaijan, western Turkmenistan, northern Iran, northern Iraq, Republic of the Congo, the western Democratic Republic of the Congo, northern Pakistan, northern and western India, western China, northern Thailand, central Viet Nam, eastern Indonesia, and Papua New Guinea.



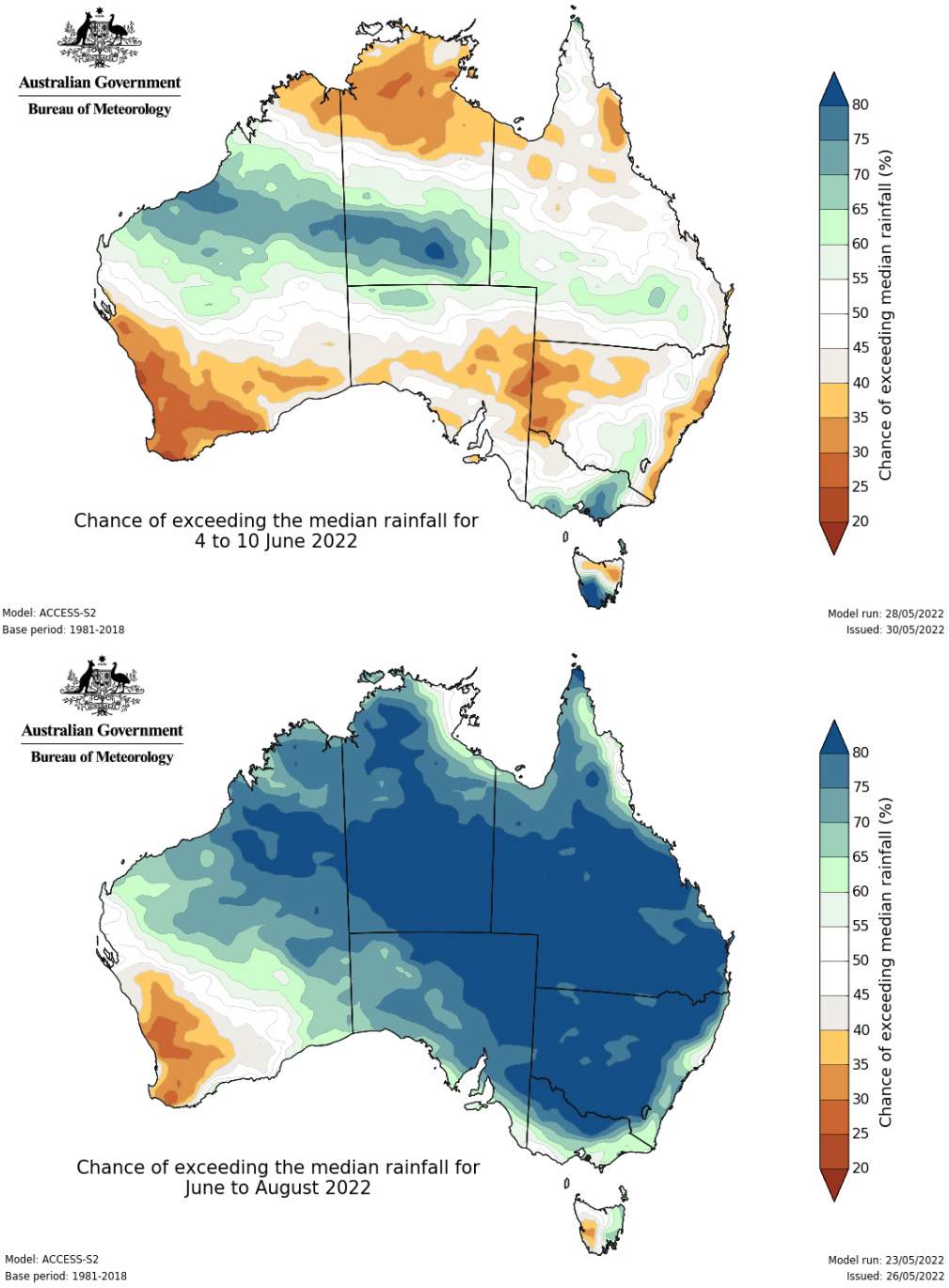
IRI SubX Precipitation Biweekly Probability Forecast for 4 – 17 June 2022, issued on May 27th, 2022. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: IRI Subseasonal Forecasts Maproom

* Assessment based on information as of May 28th

Australia Outlook

For the 7-10 June 2022 short-term outlook, precipitation is likely to be below-average across the north of Western Australia and the Northern Territory. Additionally, precipitation is likely to be below-average in the southwestern portion of Western Australia, and along the South Australia and New South Wales border. Precipitation is likely to be above-average in central Western Australia, southern Northern Territory, southern Victoria, and southern Tasmania. For the longer-term seasonal June-July-August (JJA) 2022 outlook, precipitation is expected to be above-average across much of the country except for the southwestern portion of Western Australia and western Tasmania.

Short-term and Extended Chance of Exceeding Median Rainfall



Top: *Chance of exceeding the median rainfall for 4 – 10 June 2022 time period, issued on May 26th, 2022, using the 1981-2018 base period.* ***Bottom****: Chance of exceeding the median rainfall for the June to August 2022 time period, issued on May 26th, 2022, using the 1981-2018 base period.*

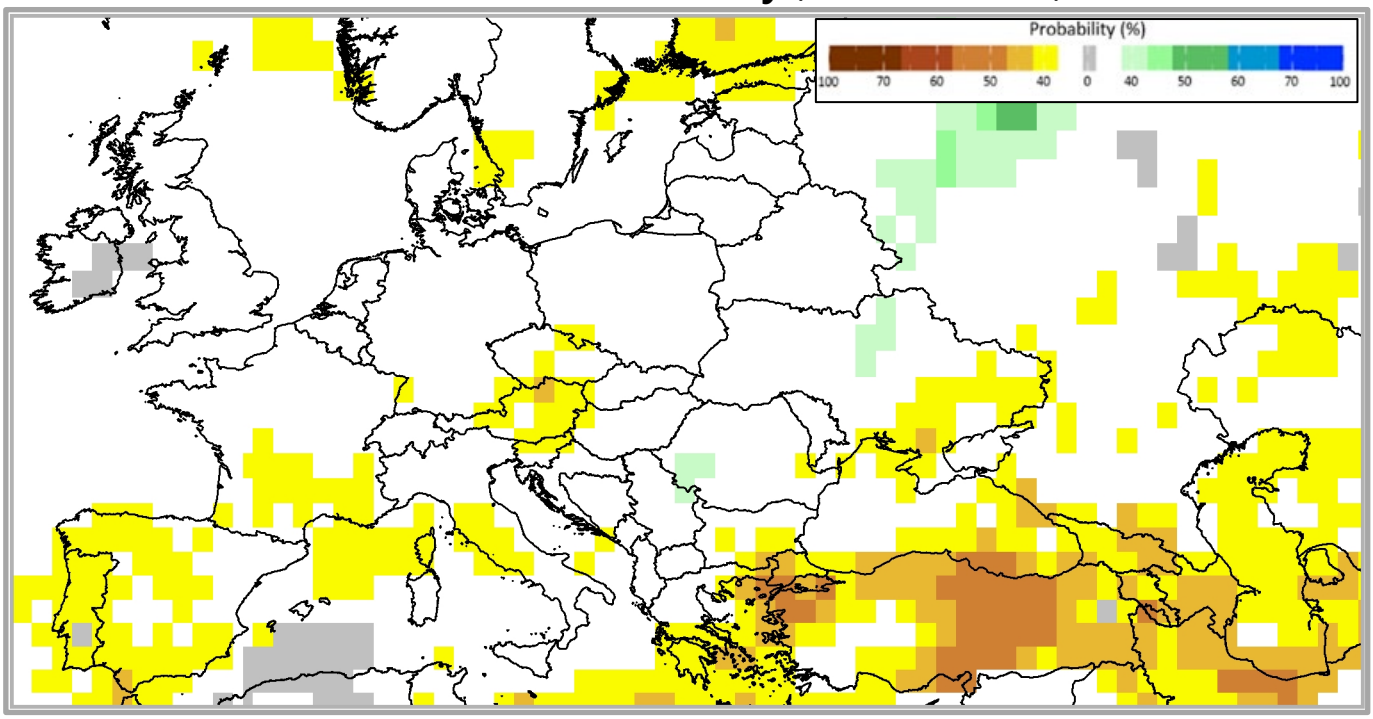
Source: Bureau of Meteorology of Australia

* Assessment based on information as of May 28th

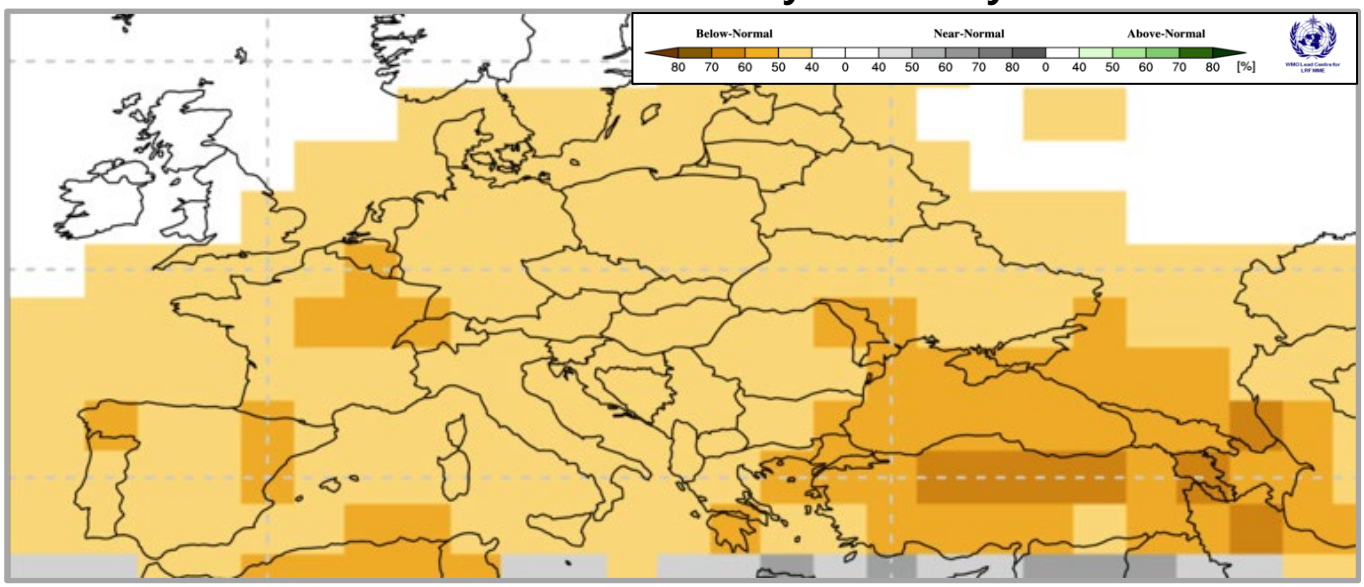
Europe Outlook

The two-week forecast (Figure 1) indicates likely below-average rainfall over Portugal, Spain., central Italy, Austria, Slovenia, southern and eastern Ukraine, southern Greece, most of Turkey, Georgia, Armenia, and Azerbaijan. The long-term June-July-August 2022 forecast (Figure 2) predicts likely below-average precipitation across all of Europe except for Ireland, northern and central United Kingdom, Norway, central Sweden, and the Volga district of the Russian Federation. The highest probabilities are for northern France, Belgium, Moldova, southern Russian Federation, and Turkey.

2-Week Rainfall Probability (4-17 June 2022)



3-Month Rainfall Anomaly Probability



Top: *IRI SubX Precipitation Biweekly Probability Forecast for 4-17 June 2022, issued on May 27th, 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 June-July-August (JJA) 2022 precipitation from the WMO Lead Centre for Long-Range Forecast Milt-Model Ensemble at https://www.wmolc.org/seasonPmmeUI/plot_PMME.*

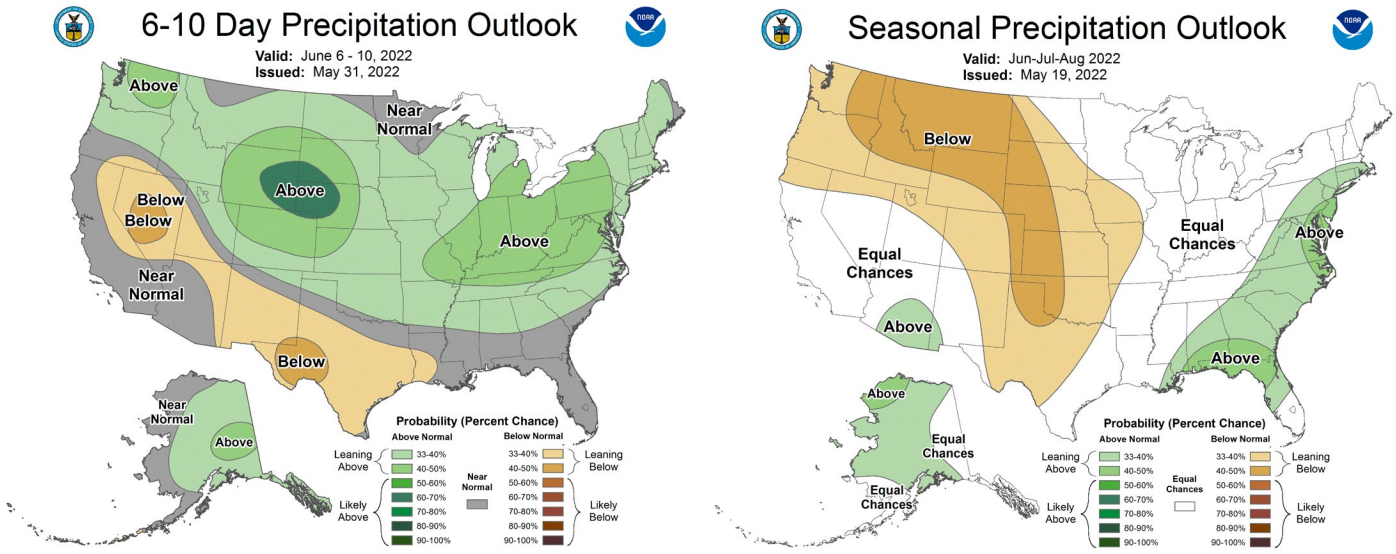
* Assessment based on information as of May 28th

United States Outlook

For the 6 – 10 June short-term outlook, there is the possibility of below-average precipitation in Nevada and southern Texas. Conversely, there is the possibility of above-average precipitation in the Pacific Northwest centered in Washington, the northern Great Plains centered over the Wyoming - Nebraska border. At the same time, temperatures are likely to be above-average across the southern United States, while temperatures are likely to be below-average in the northern Great Plains and the northern Corn Belt.

For the longer-term seasonal June-July-August (JJA) 2022 outlook, above-average precipitation is possible in the coastal section of the Mid-Atlantic states and along the eastern Gulf of Mexico. Below-average precipitation is possible along the northern Rockies and extending down into the southern Great Plains. At the same time, temperatures will likely be above-average across most of the country, with the highest likelihood in New England and the Southwest.

Short-term and the June-July-August Precipitation Outlooks



The official 6 – 10 June precipitation outlook issued on May 31st, 2022, and the extended June-July-August outlook issued on May 19th, 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 May 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.*

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:

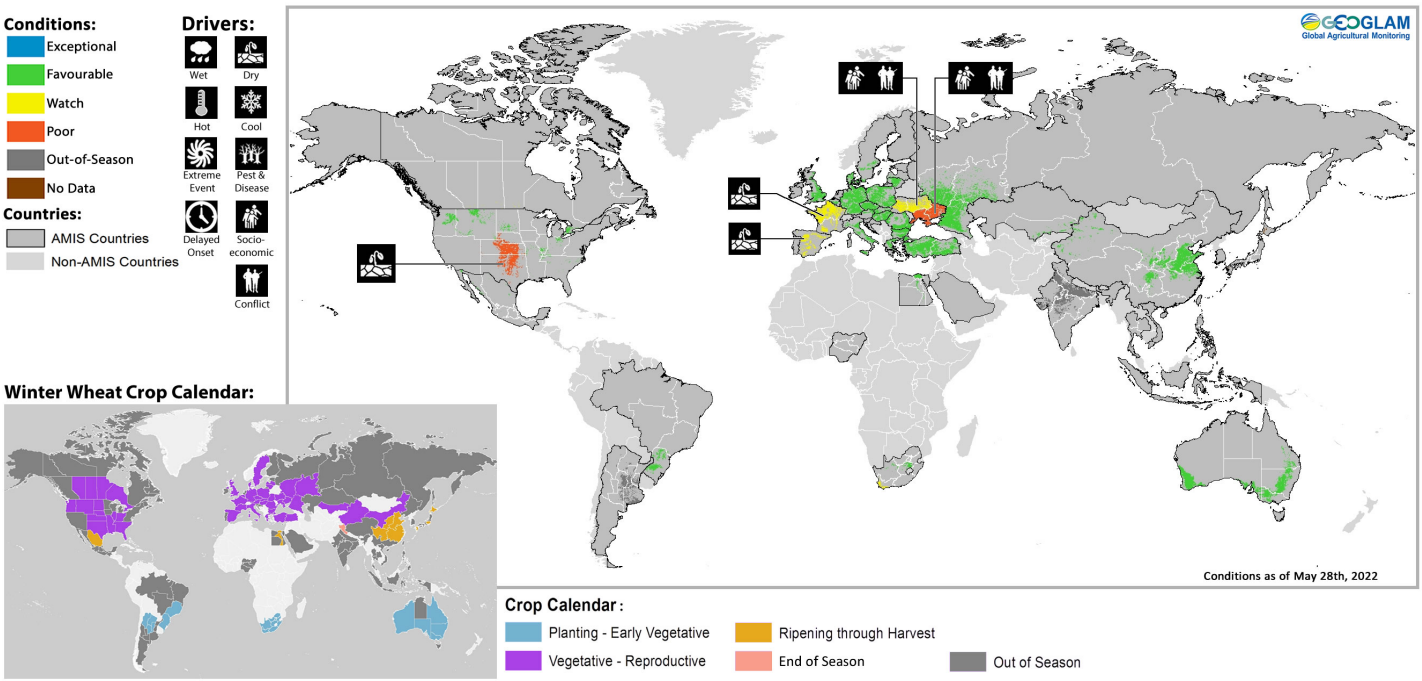
In countries that contain multiple cropping seasons for the same crop, the following chart identifies the national season name associated with each crop season within the Crop Monitor. Within the Crop Monitor for AMIS countries, the larger producing season (most recent 5 years) has been assigned to the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

* Assessment based on information as of May 28th

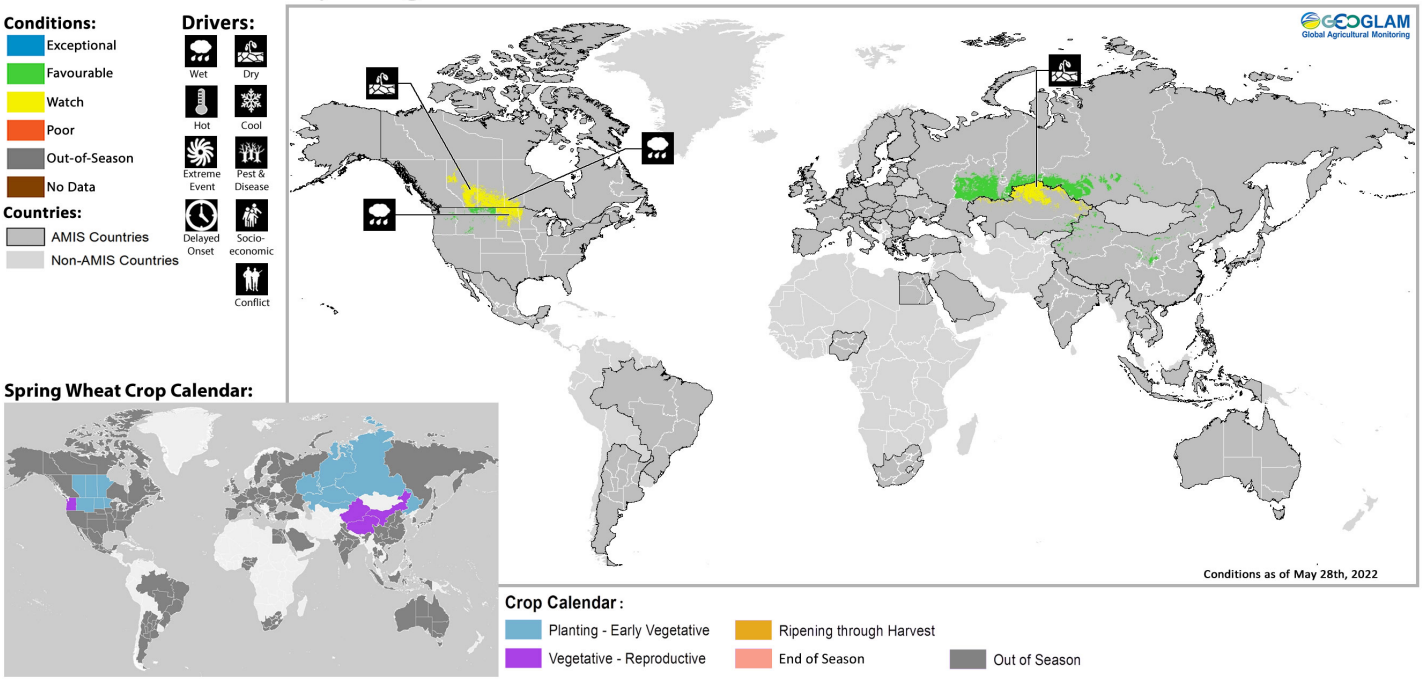
Appendix 2: Crop Season Specific Maps

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 May 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

Spring Planted Wheat Conditions for AMIS Countries



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

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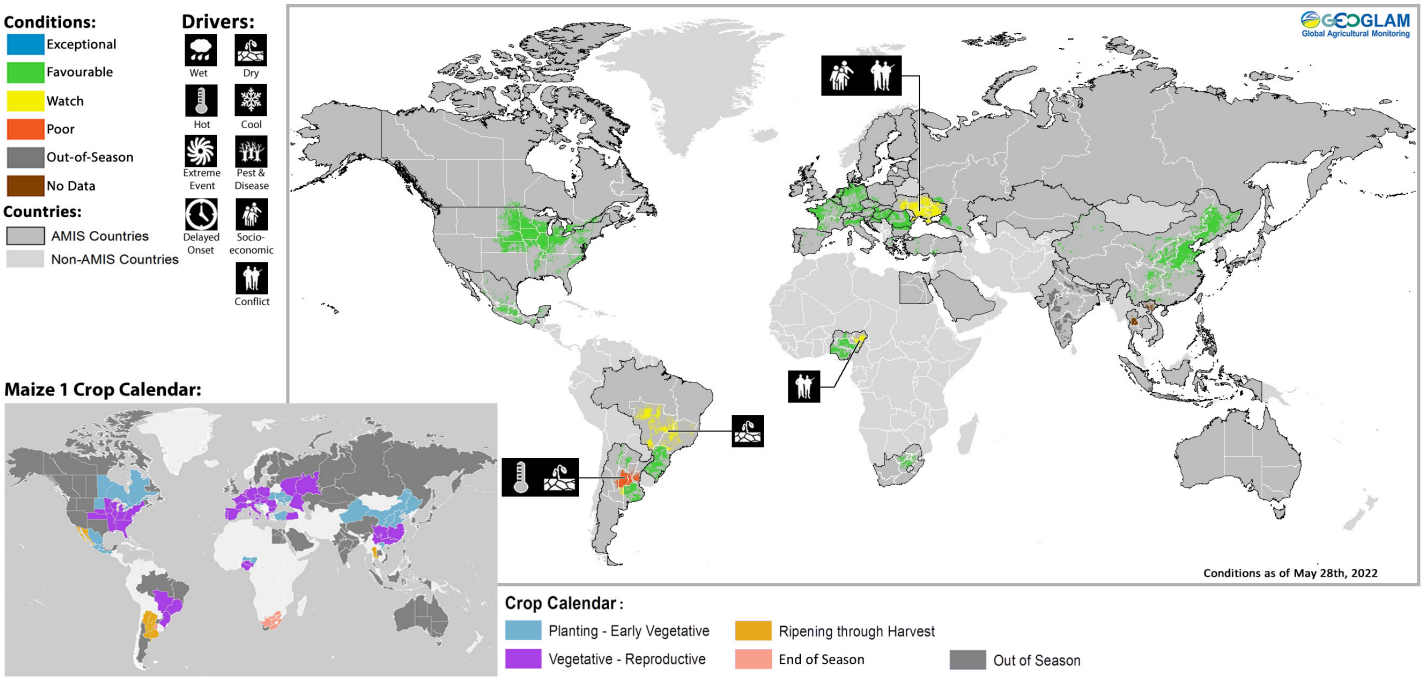
Maize 1 Conditions for AMIS Countries



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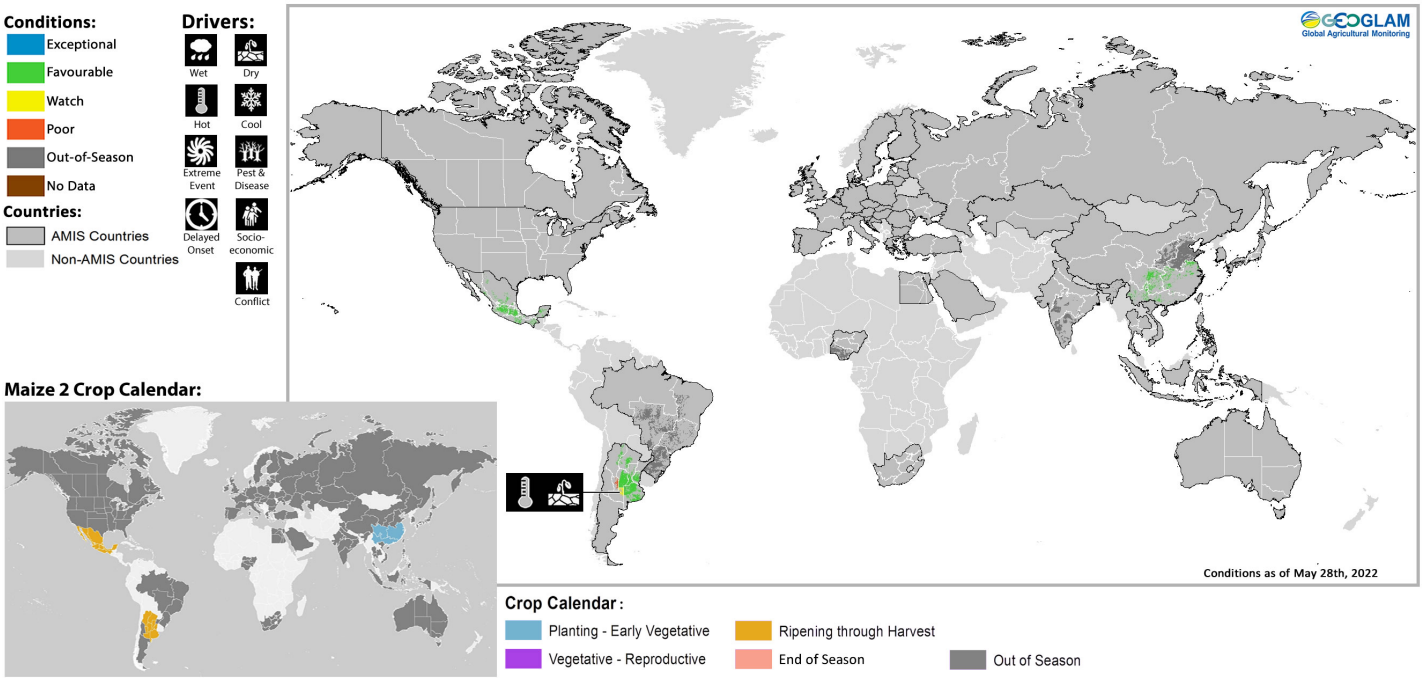
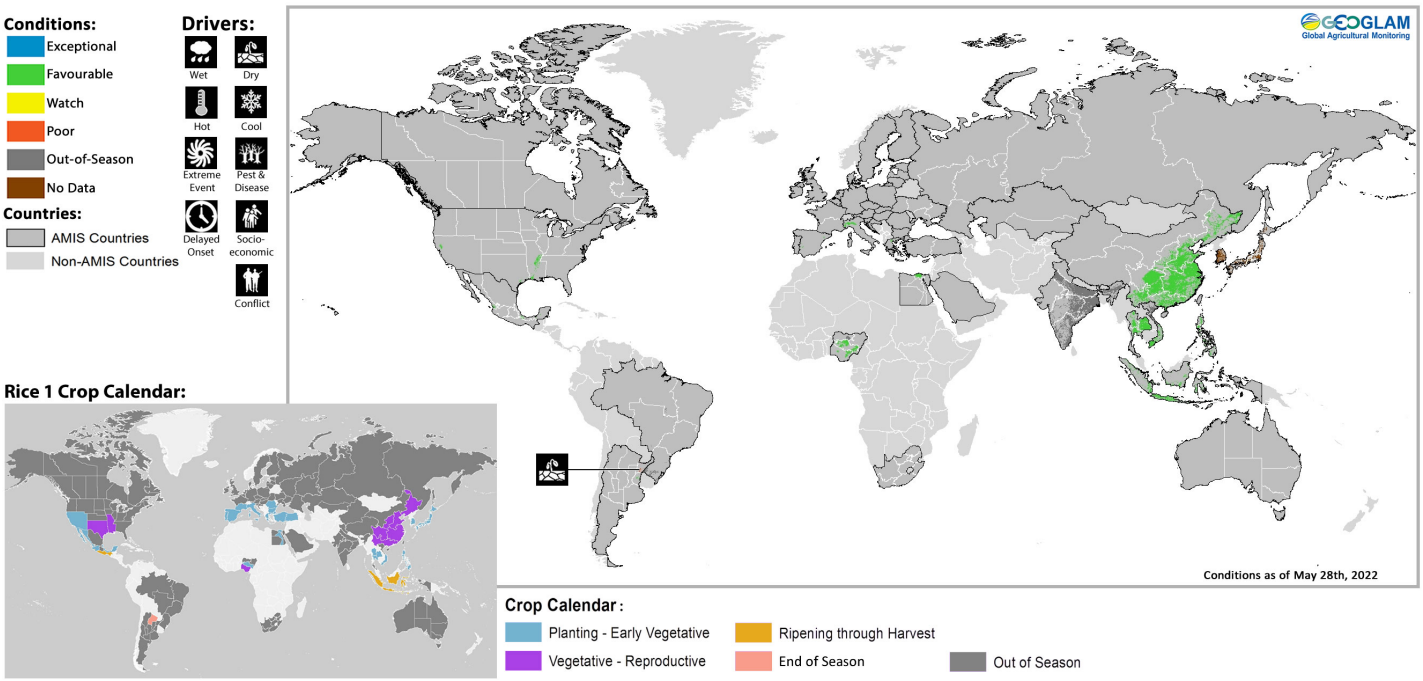
Maize 2 Conditions for AMIS Countries



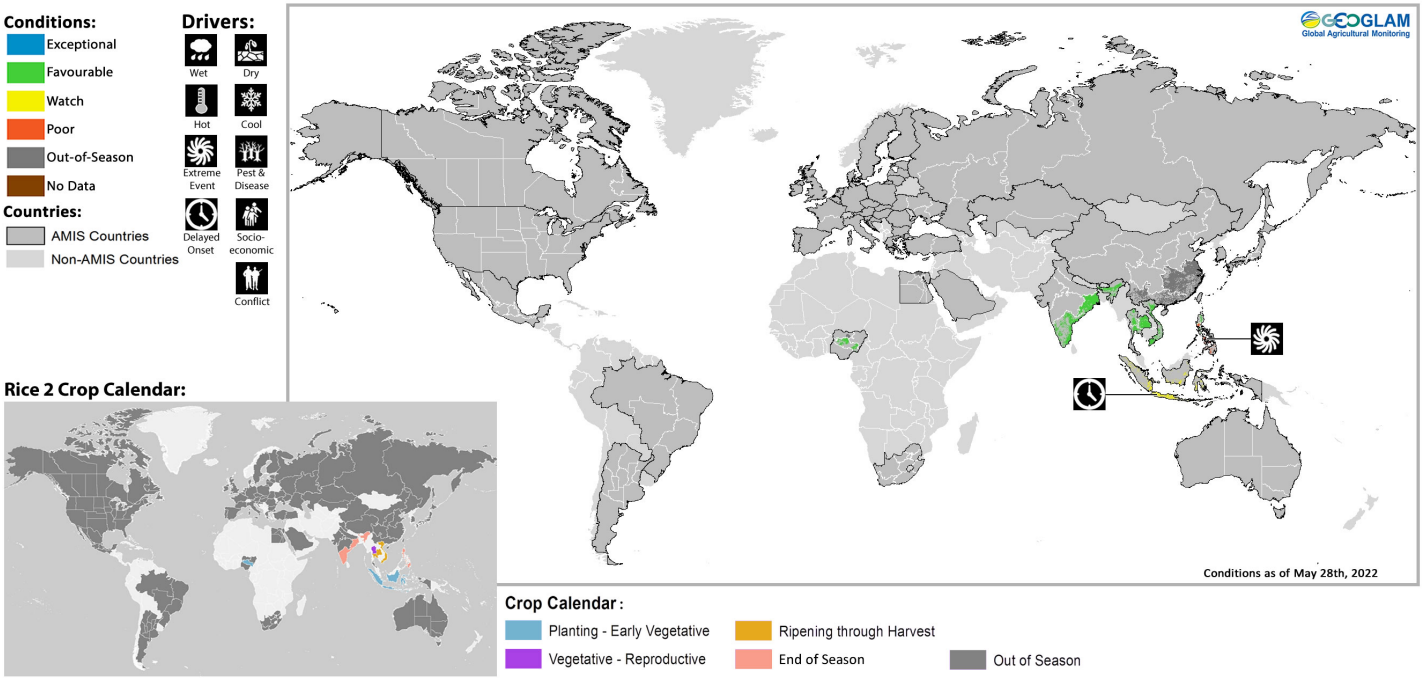
Maize 2 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Condition information is based upon information as of May 28th. Where crops are in less than favourable conditions the climatic drivers responsible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

Rice 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 May 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

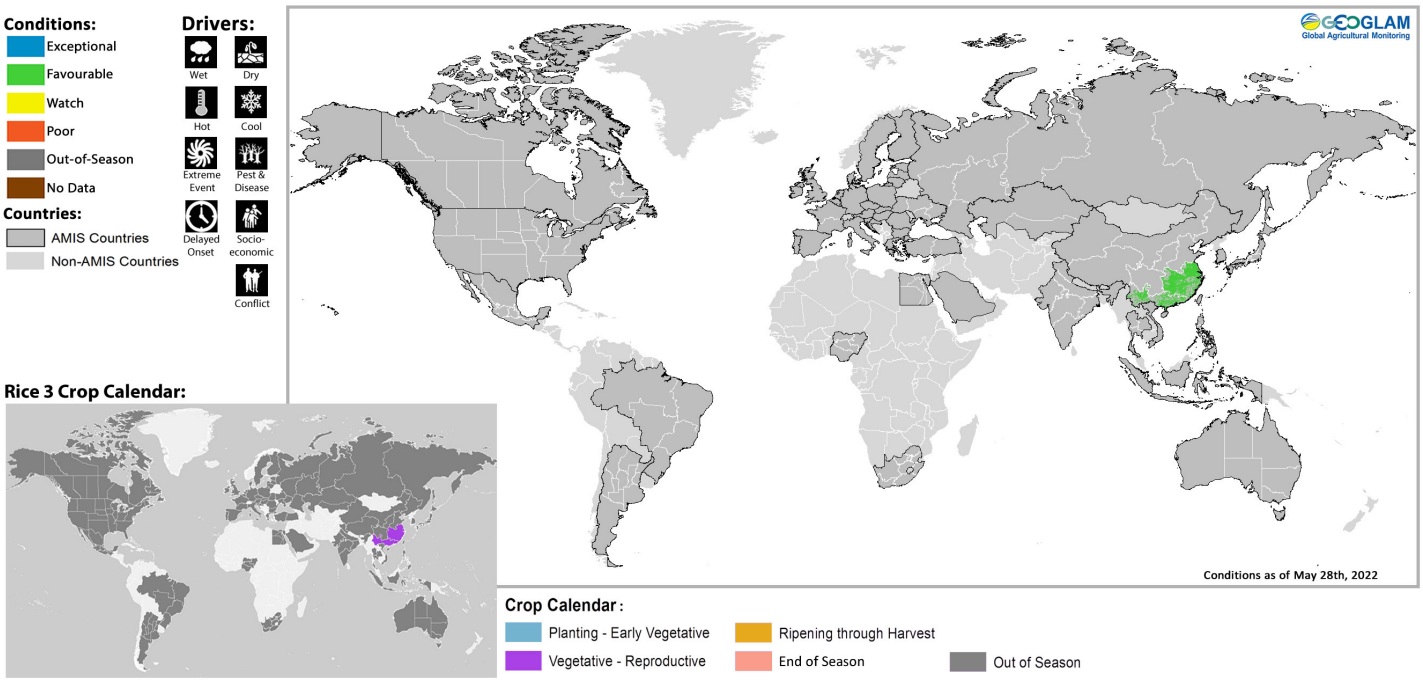
Rice 2 Conditions for AMIS Countries



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

* Assessment based on information as of May 28th

Rice 3 Conditions for AMIS Countries



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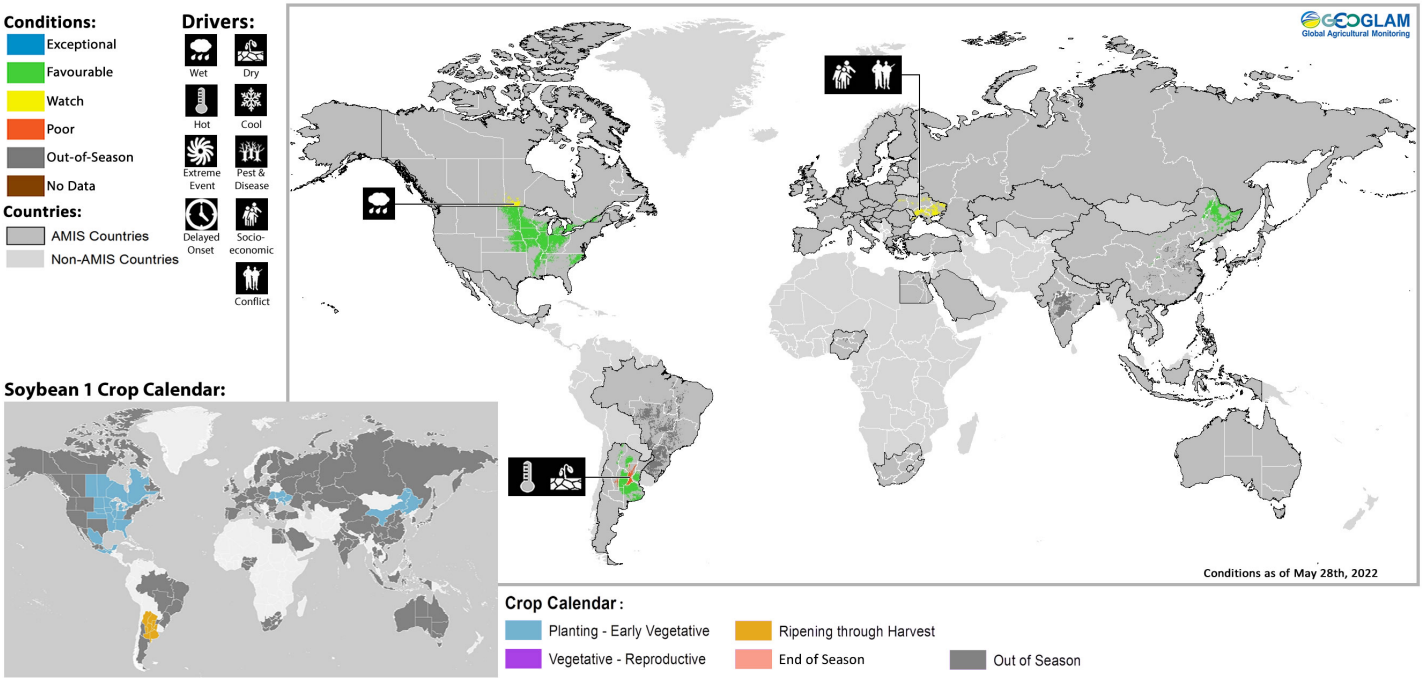
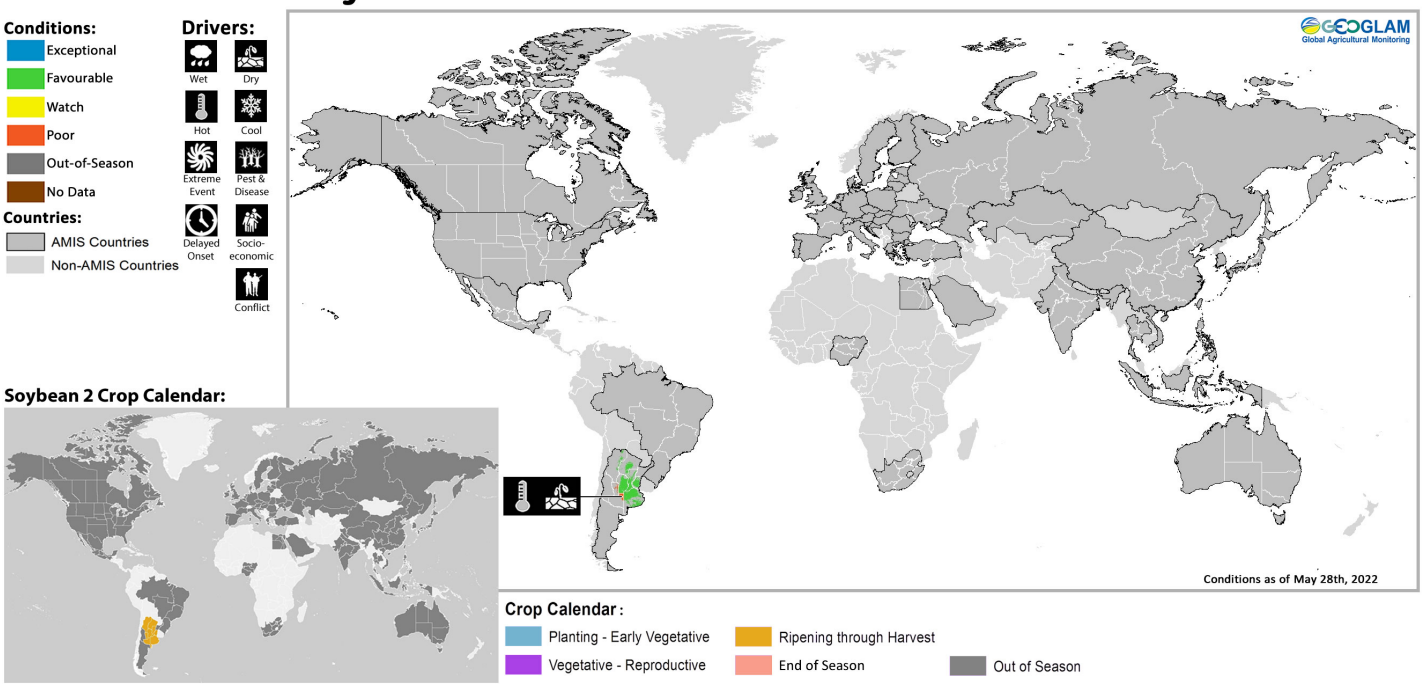
Soybean 1 Conditions for AMIS Countries



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 May 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

* Assessment based on information as of May 28th

Soybean 2 Conditions for AMIS Countries



Soybean 2 Crop Calendar:

Crop Calendar :

Planting - Early Vegetative
Ripening through Harvest
Vegetative - Reproductive
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 May 28th. Where crops are in less than favourable conditions the climatic drivers responsible for those conditions are displayed. The crop calendar is provided as a point of reference to provide information on what part of the life cycle the crops are currently in for each area.

Prepared by members of the GEOGLAM Community of Practice
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Climatic Influences by Climate Hazards Center of UC Santa Barbara

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

Photo courtesy of Brian Barker

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Sources & Disclaimer

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