GEOGLAM Crop Monitor

December 2015

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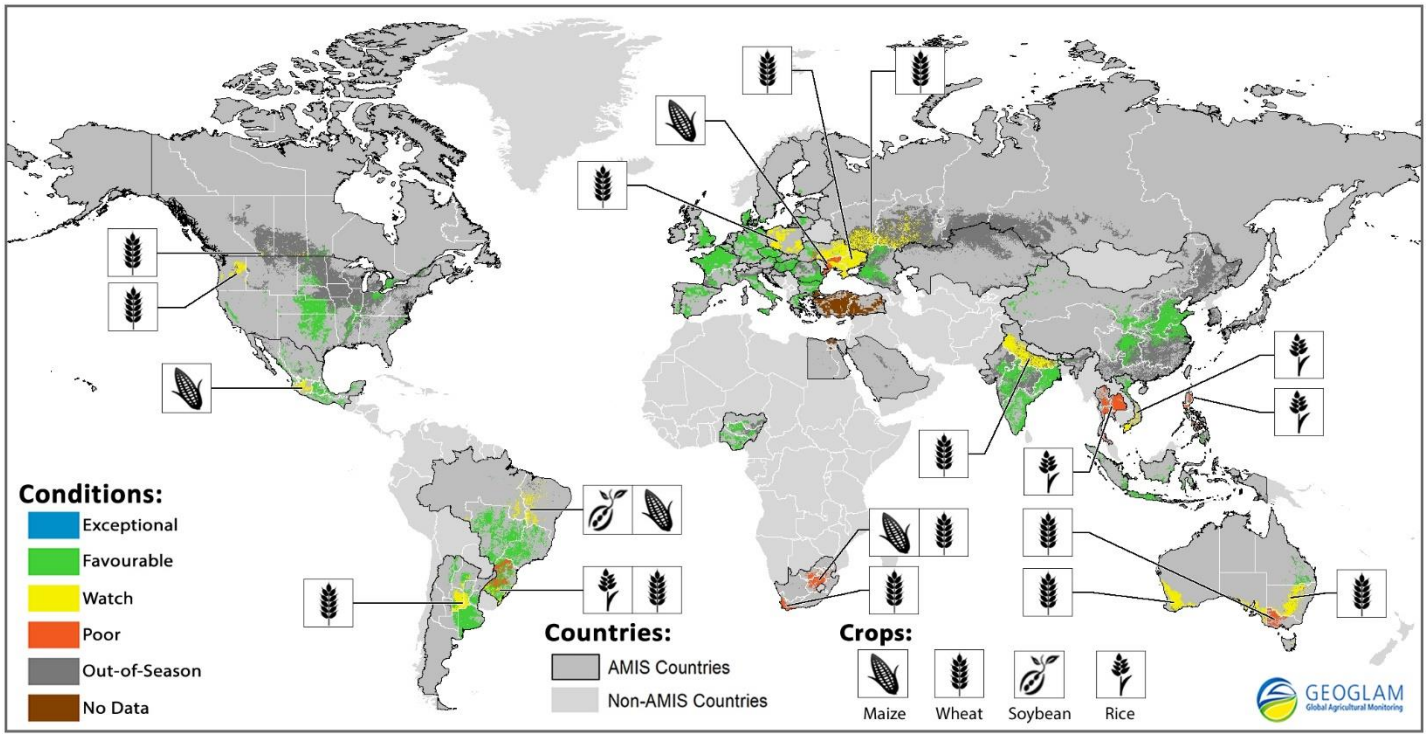
Global Agricultural Monitoring

Prepared by members of the GEOGLAM Community of Practice

Coordinated by the University of Maryland

Crop Conditions for AMIS Countries (As of November 28th)*



Crop condition map synthesizing information for all four AMIS crops as of November 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 less than favourable conditions are displayed on the map with their crop symbol.***

Highlights

Wheat - Conditions in the northern hemisphere are generally favourable at this early stage of the season. In the EU, conditions improved owing to beneficial weather. In China, conditions are favourable. In the US they are mostly favourable while in Russia and Ukraine, conditions have improved although some concern over establishment remains. In Canada, autumn rainfall has alleviated dry conditions. In India there is concern over dryness. In the southern hemisphere, conditions remain mixed. In Australia, conditions continued to deteriorate leading into harvest. In Argentina, conditions are favourable in most regions and in Brazil, harvesting is mostly complete but under poor conditions. In South Africa, production is expected to be below normal.

Maize - Conditions in the northern hemisphere are generally favourable as the season draws to a close. In the US, the crop is above average. In Ukraine, harvest is almost complete and yields are expected to be down. In India, Mexico, Canada and Nigeria, conditions are mostly favourable. In the southern hemisphere conditions remain mostly favourable at this early stage of the season. In Brazil and Argentina, conditions are generally favourable and in South Africa, there is concern over continued dryness.

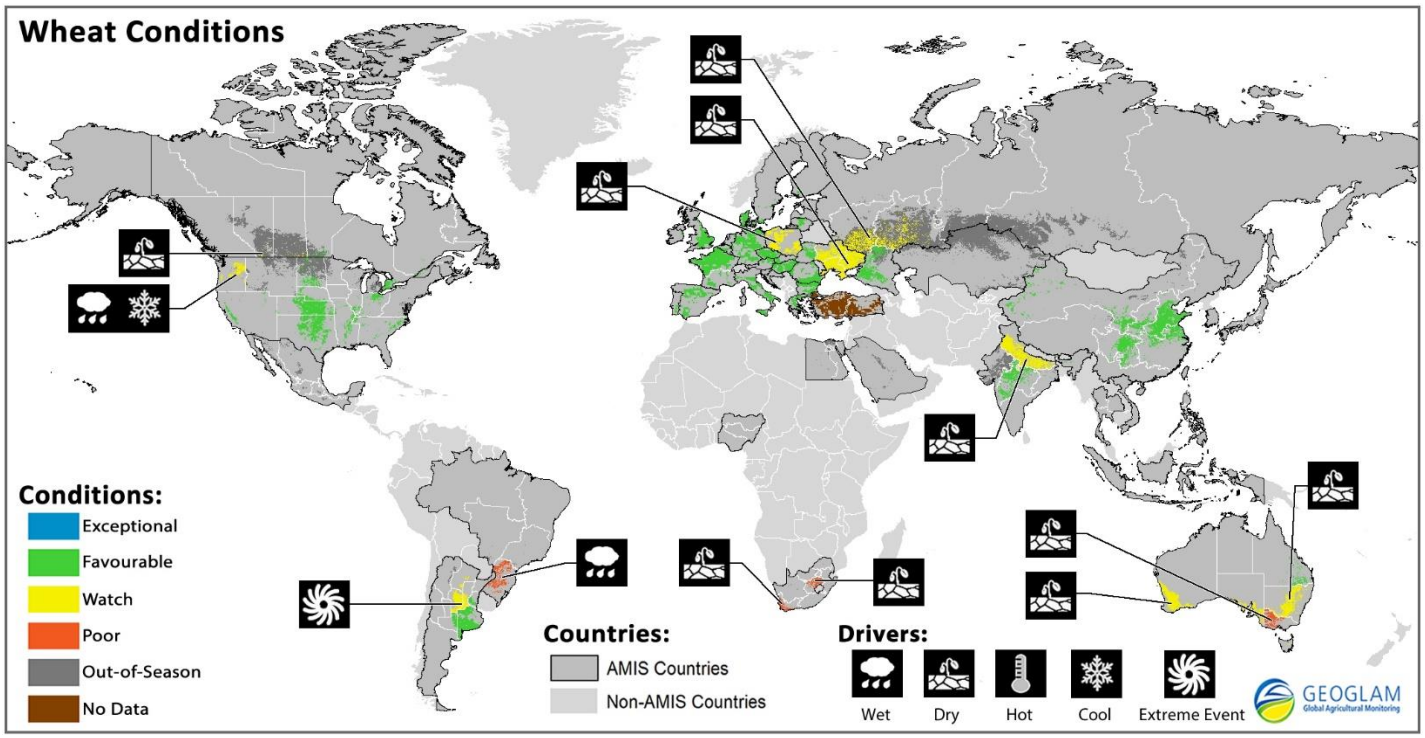
Rice - Conditions remain mixed in part due to the current El Niño event. In India and Indonesia conditions are generally favourable. In Thailand, conditions remain poor and in Viet Nam, conditions for the summer-autumn wet season crop are favourable, however they have deteriorated for the autumn-winter planted wet season crop. In the Philippines, conditions are poor in the northern and central regions but the rest of the country is generally favourable. In Brazil, conditions remain mixed.

Soybeans - Conditions in the northern hemisphere remain mostly favourable as harvest ends. In the US, harvest is complete and the crop hit a new record. In Canada, harvest is complete and end of season conditions are favourable. In the southern hemisphere, conditions are generally favourable in Brazil and Argentina at this early stage of the season.

El Niño update

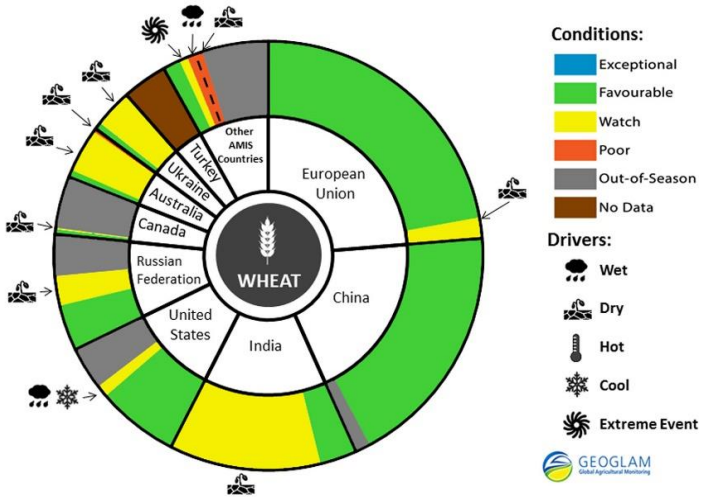
The current El Niño continues to strengthen, with a key weekly measure of Pacific sea surface temperature (SST) hitting a new record in late November. Peak strength of the El Niño is expected around the end of December. The growing season in South Africa is off to a dry start, with a second year of drought likely in 2015-2016. Conditions are drier than average as well in Thailand, Viet Nam, the Philippines, and Indonesia, and are forecast to continue. September-October rainfall was below average for most of Australia, but the outlook is now for average to above-average precipitation through February, thanks to Indian Ocean SST changes. Southern Brazil and northeastern Argentina have seen a generally wet beginning to the season, and the forecast is for above average rainfall throughout the growing season. In the U.S., rainfall has been above average for the last 30 days in the Southeast, but California is still firmly in the grip of drought.

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 November 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.

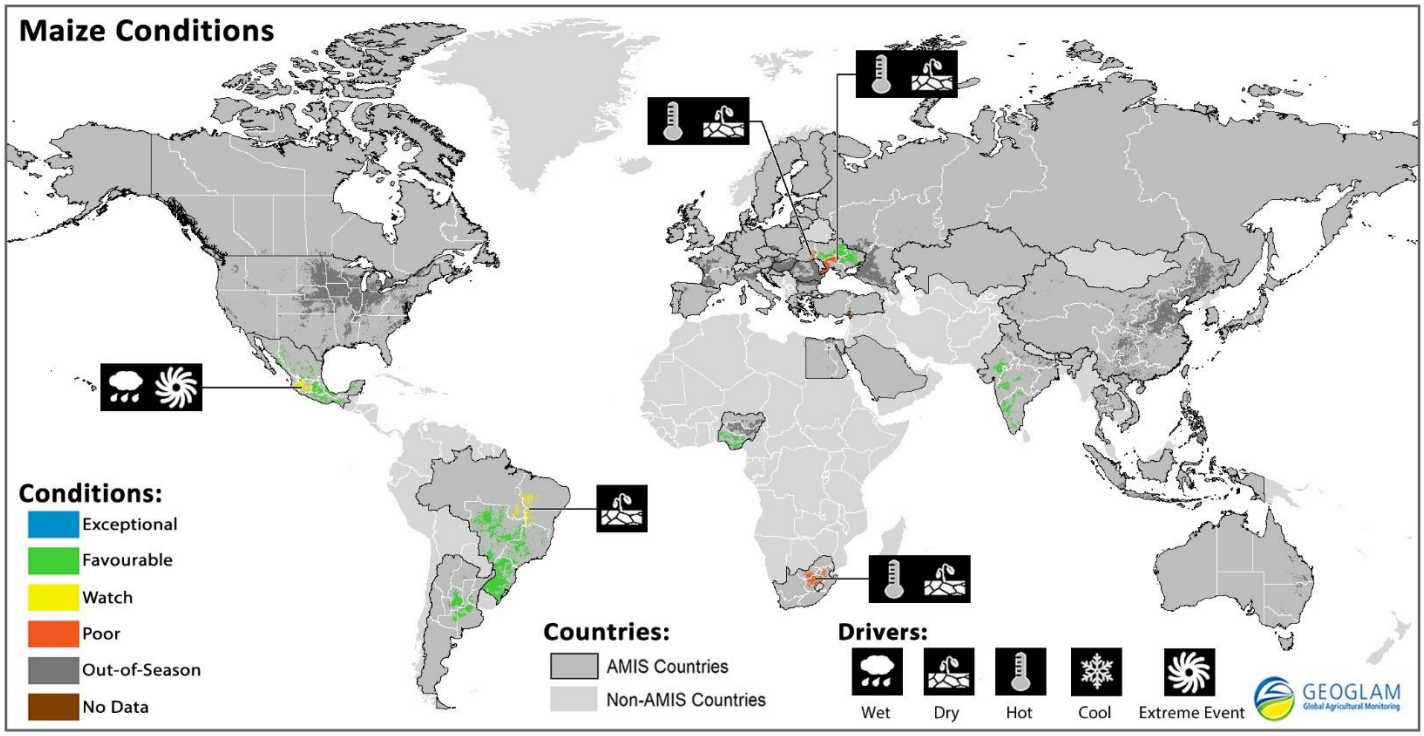
Wheat: Overall conditions in the northern hemisphere are favourable at this early stage of the winter wheat season. In the **EU**, conditions improved owing to favourable temperatures and rainfall which benefited development of the emerged crop. In the **US**, the crop has emerged and conditions are favourable throughout most of the country. However, there is some uncertainty in the Pacific Northwest due to highly variable weather conditions. In **China**, winter wheat is at the seedling to tillering stage. Overall, the crop is close to the recent 5-year average in most growing areas. However, in eastern Henan there are below average conditions due to continuously low radiation since the beginning of November. In contrast, conditions are slightly above average in eastern Sichuan. In the **Russian Federation**, winter wheat planting is almost complete. Agro-meteorological conditions for the start of wintering are generally satisfactory and in the southern regions moisture conditions have somewhat improved relative to last month. In **Canada**, autumn rainfall has alleviated dry conditions in many areas except parts of Alberta and British Columbia. However, there is concern that a strong El Niño combined with the anomalously warm waters off the coast of British Columbia will result in low snow cover on the prairies, raising the risk of winterkill for fall seeded crops. In **India**, planting has begun and the early-planted crop is emerging under mixed conditions in the main producing region due to dryness. In **Ukraine**, concern remains over winter wheat in the southern and eastern regions due to dryness, which has led to a decrease in planted area and some concerns over establishment conditions. However, conditions are favourable throughout the rest of the country. In the southern hemisphere, conditions remain mixed. In **Australia**, conditions have weakened leading into harvest owing to below average rainfall and above average



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

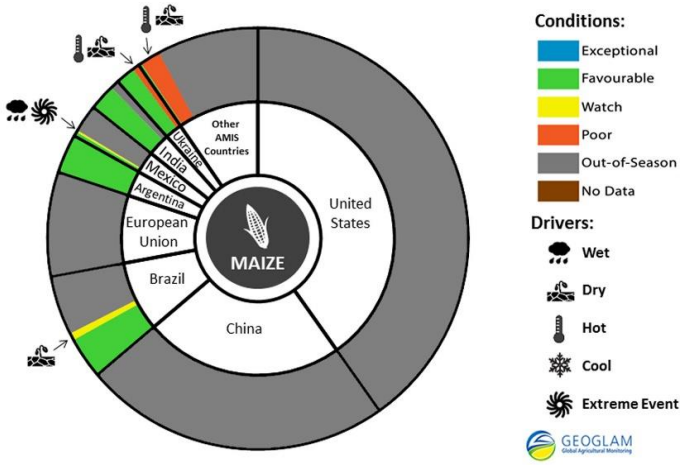
temperatures during spring in many cropping regions. In **Argentina**, conditions improved owing to showers in the main growing regions, and are favourable in most regions except in Santa Fe and Cordoba where damaging hail storms occurred. The crop is in flowering to ripening stages, and harvesting is ongoing in the north. In **Brazil**, harvesting is mostly complete and conditions are poor. Excessive rain in November and other adverse climatic conditions throughout the crop cycle caused loss of quality and productivity. In **South Africa,** production is expected to be below normal in the main production region due to dry conditions during late winter, while above normal over the secondary production regions.

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 November 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.

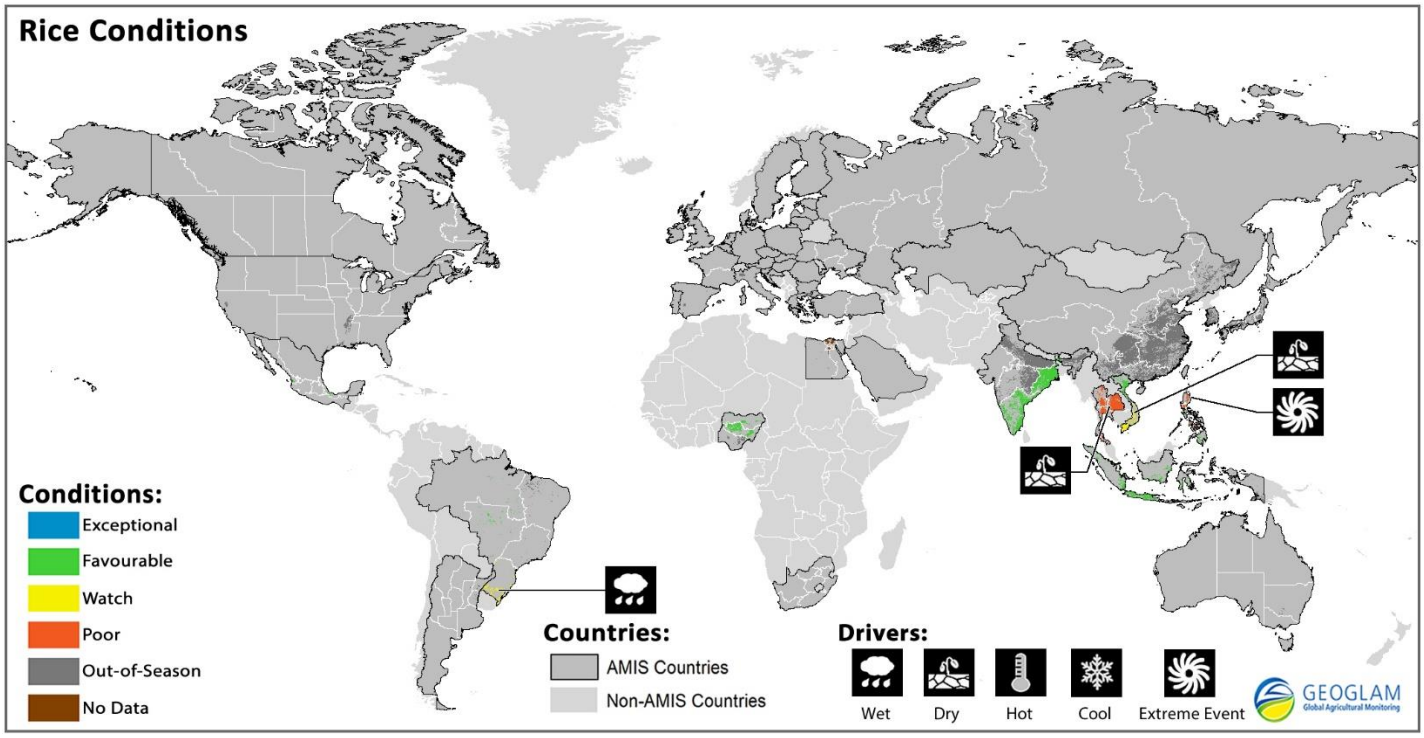
Maize: Conditions in the northern hemisphere are generally favourable as the season draws to a close. In the **US**, harvest is nearly complete with a good crop. In **Ukraine**, harvesting is almost complete and yields are expected to be down due to the persistent dryness and high temperatures in central and western regions in previous months. In **India**, conditions are mostly favourable. In **Mexico**, conditions for the spring-planted cycle are generally favourable except for some regions in the southwest due to a lack of moisture, followed by excess rainfall caused by Hurricane Patricia. The hurricane caused only minor damage. In **Canada**, harvesting is ongoing and conditions are favourable. In **Nigeria**, the harvest has begun and conditions remain favourable. In the southern hemisphere conditions remain mostly favourable at this early stage of the season. In **Brazil** conditions have improved and are mostly favourable owing to rains. Planting of the spring-planted crop (the smaller producing season) is ongoing in most regions. There is some concern in the northeastern region due to dry conditions, and planting will intensify



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

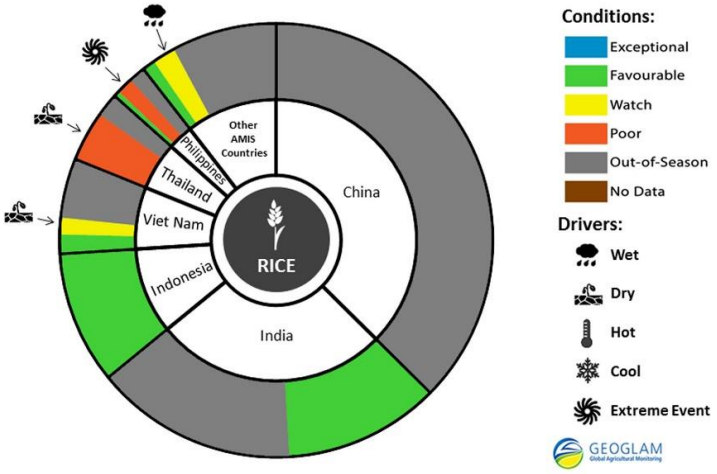
once regular rainfall commences. In **Argentina**, planting is almost halfway complete and conditions are generally favourable, however, there is some concern due to losses from a hail storm that affected early planted fields in Cordoba and Santa Fe. In **South Africa**, hot and dry conditions during spring and early summer had a large negative impact on early planting, which usually occurs over the eastern production regions. The planting window extends into December over the western parts, where conditions may improve in case of widespread rain.

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

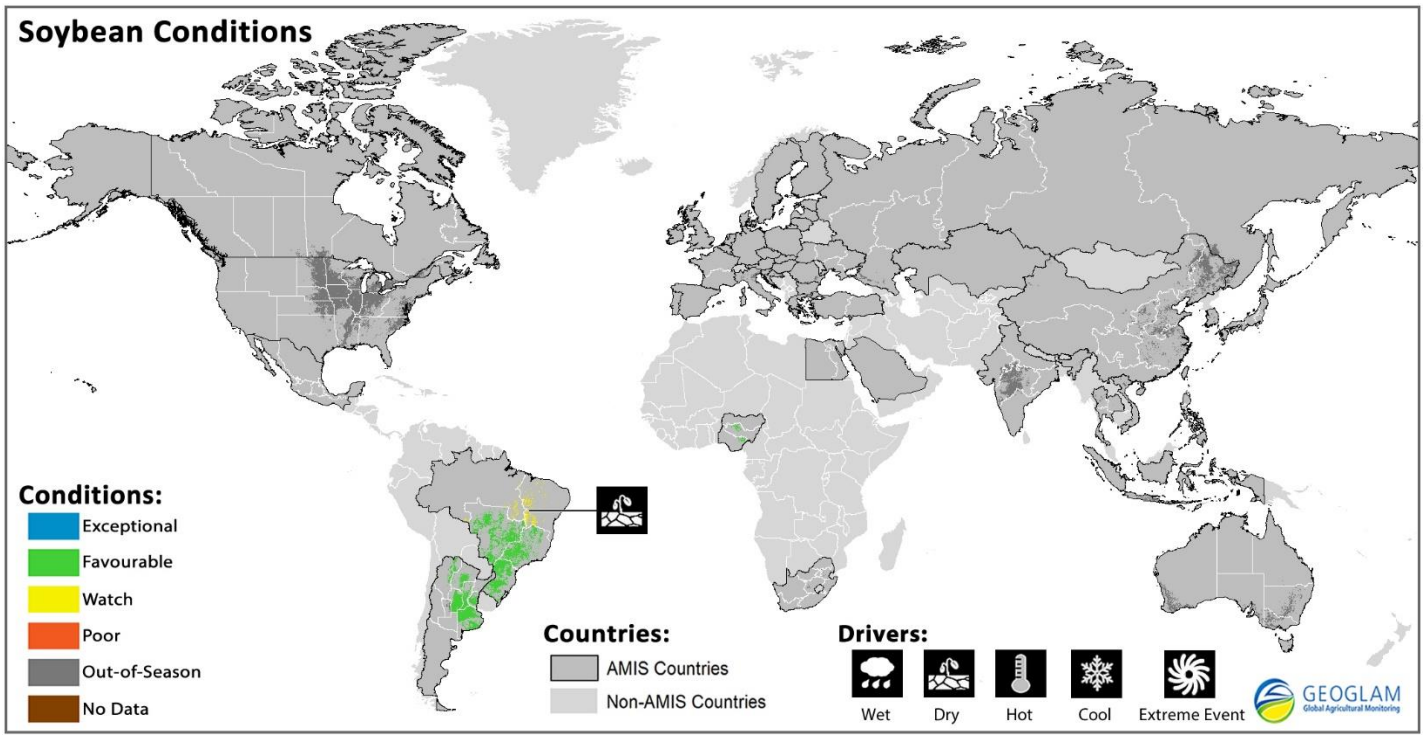
Rice: Conditions remain mixed in part due to the El Niño event affecting large parts of Asia. In **India**, harvest has begun and conditions are favourable for the kharif crop. In **Thailand**, conditions remain poor as a result of a lack of precipitation and shortage of irrigation water attributed to El Niño. In addition, weeds and pests are causing concerns in the northern and central regions. In **Viet Nam**, harvest of the summer-autumn wet season crop is ongoing and conditions are good. However, conditions have deteriorated for the autumn-winter planted wet season crop, due to ongoing dry conditions and lack of irrigation water. In **Indonesia**, the dry season crop condition has improved and is generally favourable through there are still some water shortages. In **Brazil**, conditions remain mixed due to excessive rainfall in the southern (main producing) region, which is delaying planting. In the **Philippines**, conditions are poor in large parts of the northern and central regions due to widespread damage caused by typhoon Kappopu. In the rest of the country conditions are generally favourable, however there is some concern in the south over dryness. In **Argentina**, conditions are favourable.



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

* Assessment based on information as of November 28th

Soybean Conditions for AMIS Countries



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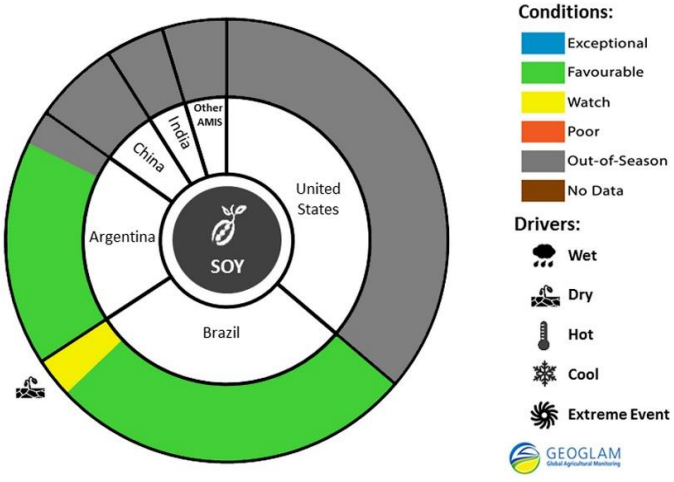
Soybeans: Conditions in the northern hemisphere are good as harvesting ends. In the **US**, the harvest is complete and based on both large planted area and good yields, the crop broke a production record. In **Canada**, harvesting is complete and end of season conditions are favourable. In the southern hemisphere, conditions are generally favourable. In **Brazil**, planting has begun in most regions and conditions are mostly favourable owing to consistent rainfall in the main producing regions. However, there are some concerns over irregular rainfall in the north and northeastern regions. In **Argentina**, planting is progressing slowly due to periodic rainfall events but conditions are generally favourable.



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Pie chart description: Each slice represents a country's share of total AMIS production (5-year average). Main producing countries (representing 90 percent of production) are shown individually, with the remaining 10 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.

Appendix 1: Definitions

Crop Conditions:

Exceptional: Conditions are much better than average* at 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 production.
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 November or November not result in production impacts and they can act as either positive or negative drivers of crop conditions.

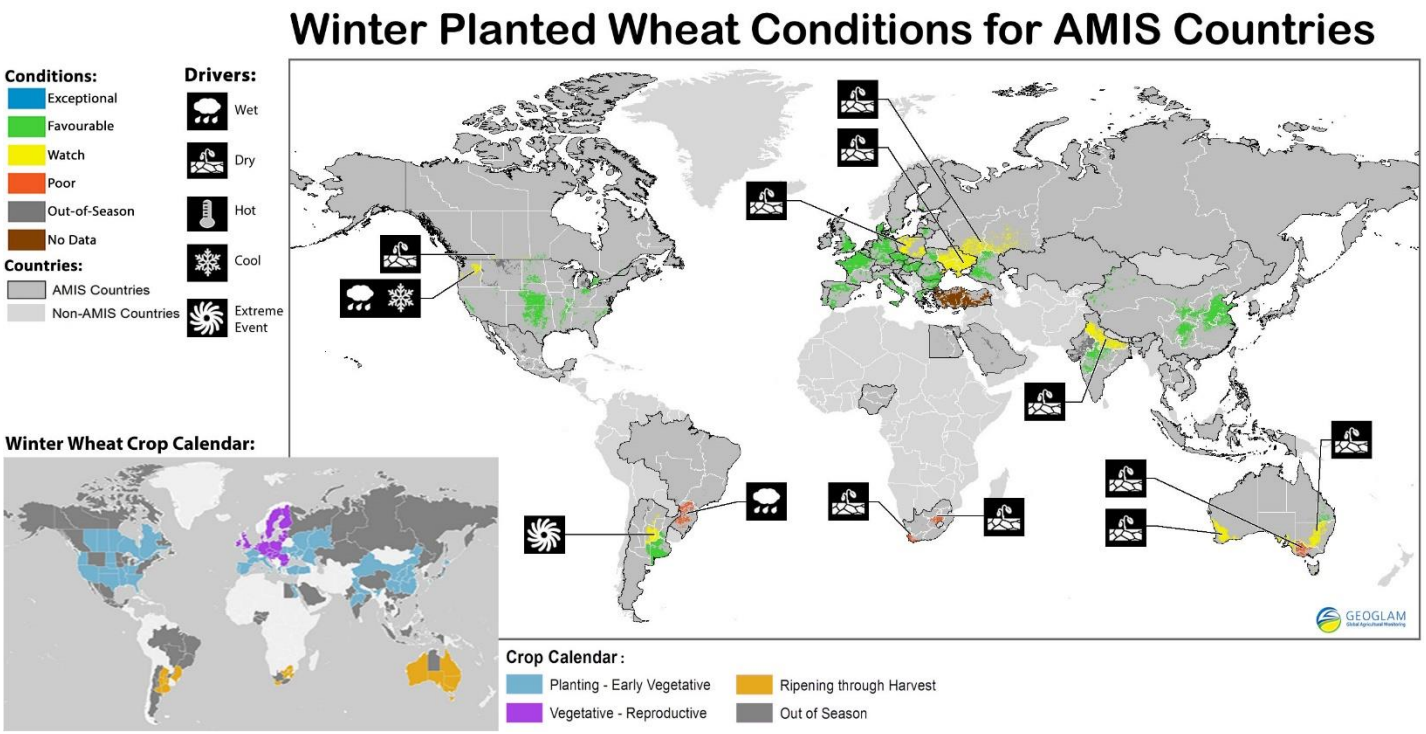
Wet: Higher than average wetness.
Dry: Drier than average.
Hot: Hotter than average.
Cool: Cooler than average or risk of frost damage.
Extreme Events: This is a catch-all for all other climate risks (i.e. hurricane, typhoon, frost, hail, winterkill, wind damage, etc.)

Sources & Disclaimer

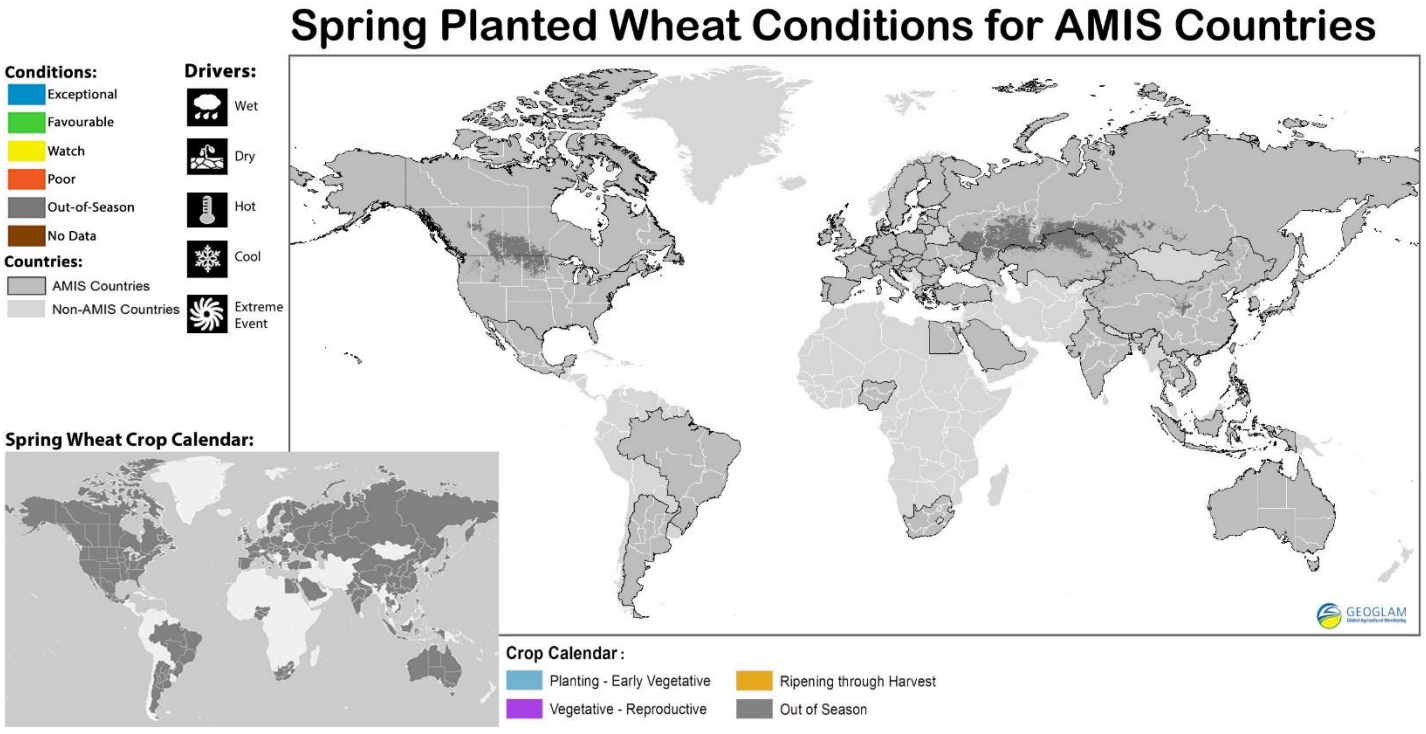
Sources and Disclaimers: The Crop Monitor assessment is conducted by GEOGLAM with coordination from the University of Maryland. Inputs are from the following partners (in alphabetical order): Argentina (Buenos Aires Grains Exchange, INTA), Asia Rice Countries (AFSIS, ASEAN+3 & Asia RiCE), Australia (ABARES & CSIRO), Brazil (CONAB & INPE), Canada (AAFC), China (CAS), EU (EC JRC MARS), Indonesia (LAPAN & MOA), International (CIMMYT, FAO, IFPRI & IRRI), Japan (JAXA), Mexico (SIAP), Russian Federation (IKI), South Africa (ARC & 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 multi-agency report are consensual statements from the GEOGLAM experts, and do not necessarily reflect those of the individual agencies represented by these experts. Map data sources: Major crop type areas based on the IFPRI/IIASA SPAM 2005 beta release (2013), USDA/NASS 2013 CDL, 2013 AAFC Annual Crop Inventory Map, GLAM/UMD, GLAD/UMD, Australian Land Use and Management Classification (Version 7), SIAP, ARC, and JRC. Crop calendars based on GEOGLAM partner crop calendars and USDA/FAO crop calendars.

More detailed information on the GEOGLAM crop assessments is available at www.geoglam-crop-monitor.org.
For information on country coverage and criteria: http://geoglam-crop-monitor.org/pages/about.php?target=approach
For more information regarding the new crop monitor and pie charts: http://geoglam-crop-monitor.org/pages/about.php?target=maps-charts

Appendix 2: Crop Season Specific Maps



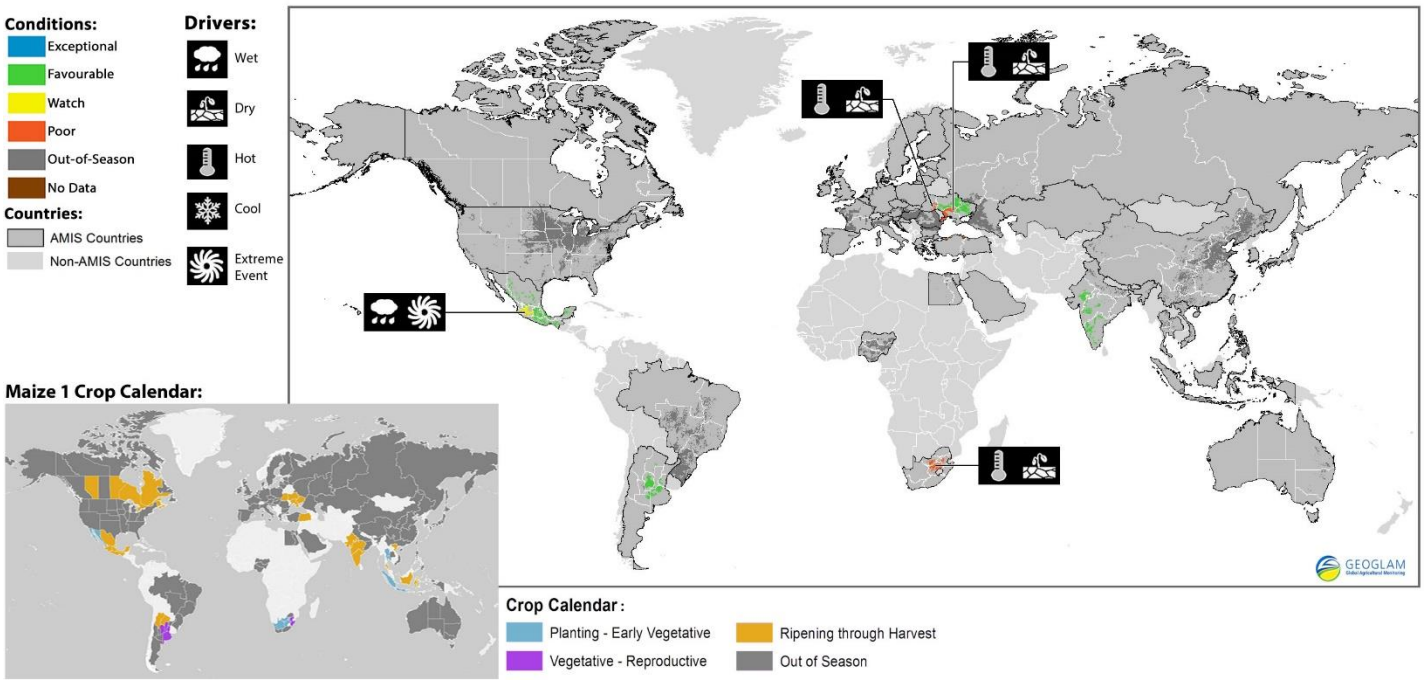
Winter wheat crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Condition information is based upon information as of November 28th. Where crops are in less than favourable conditions the climatic drivers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



Spring wheat crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Condition information is based upon information as of November 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 November 28th

Maize 1 Conditions for AMIS Countries



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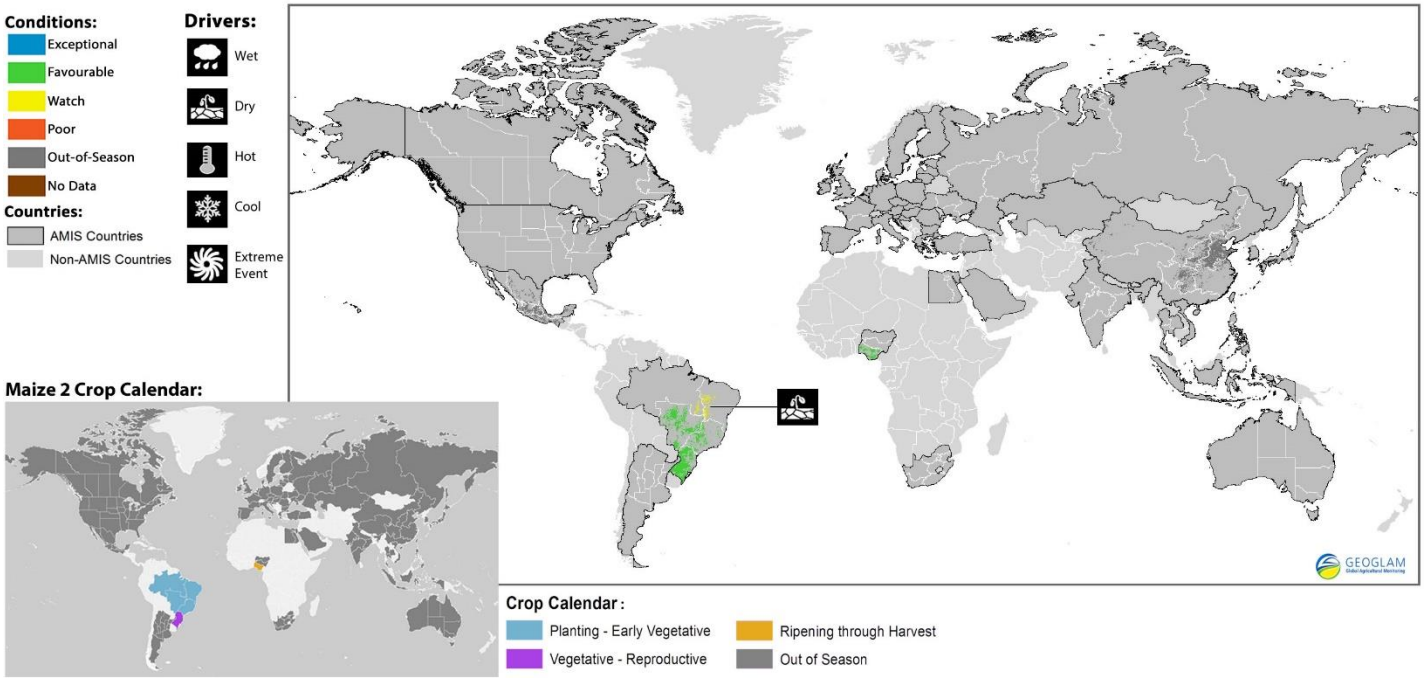

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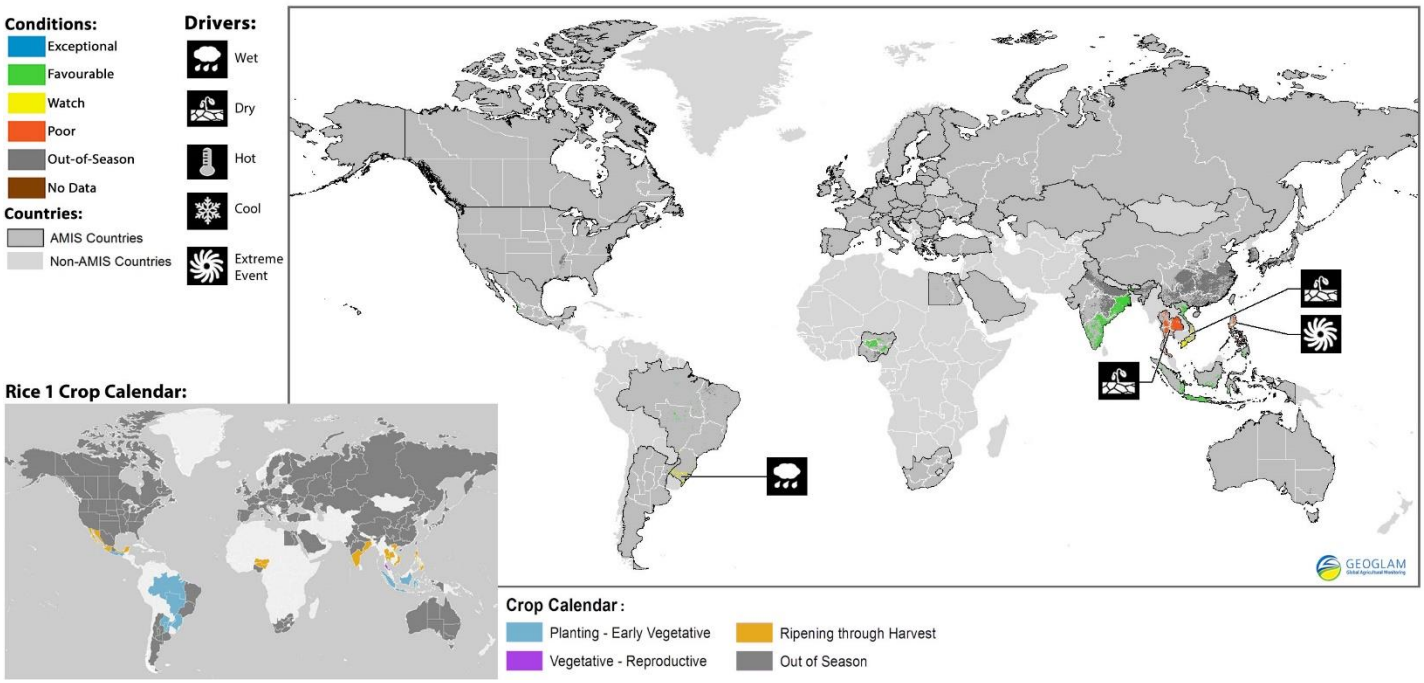

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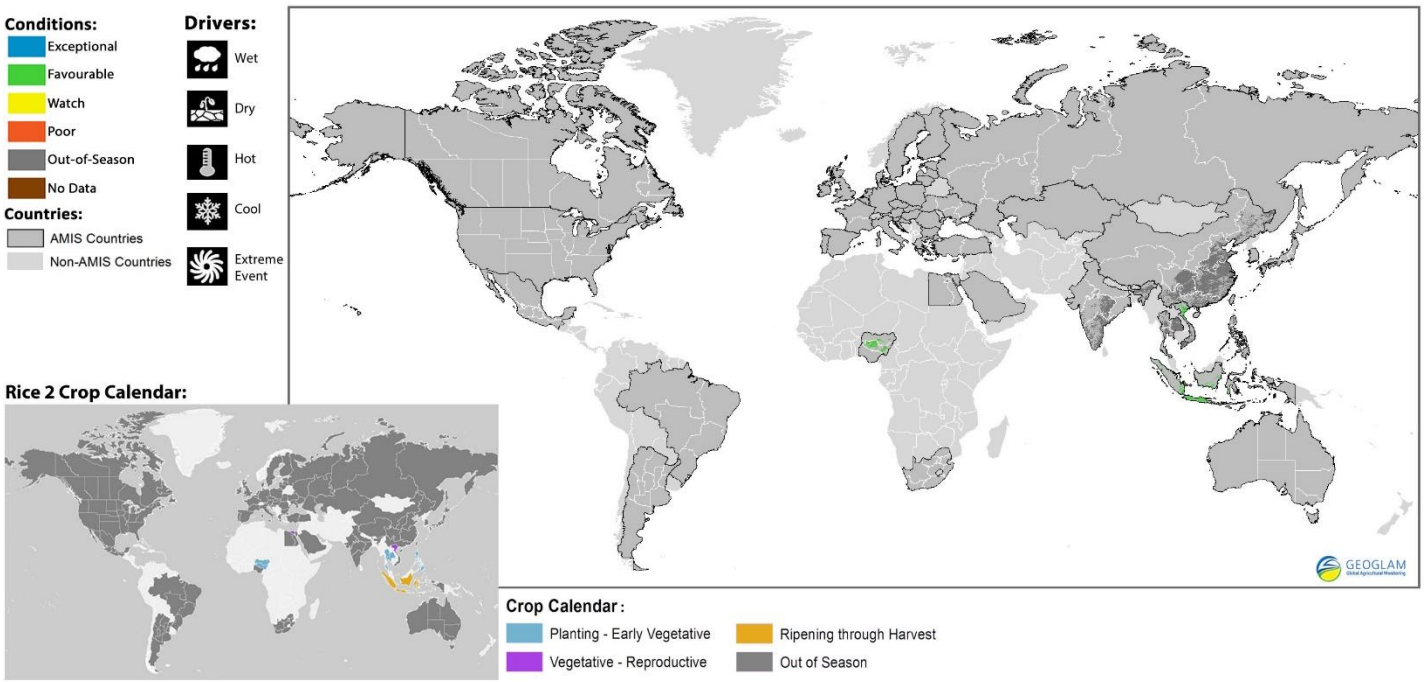

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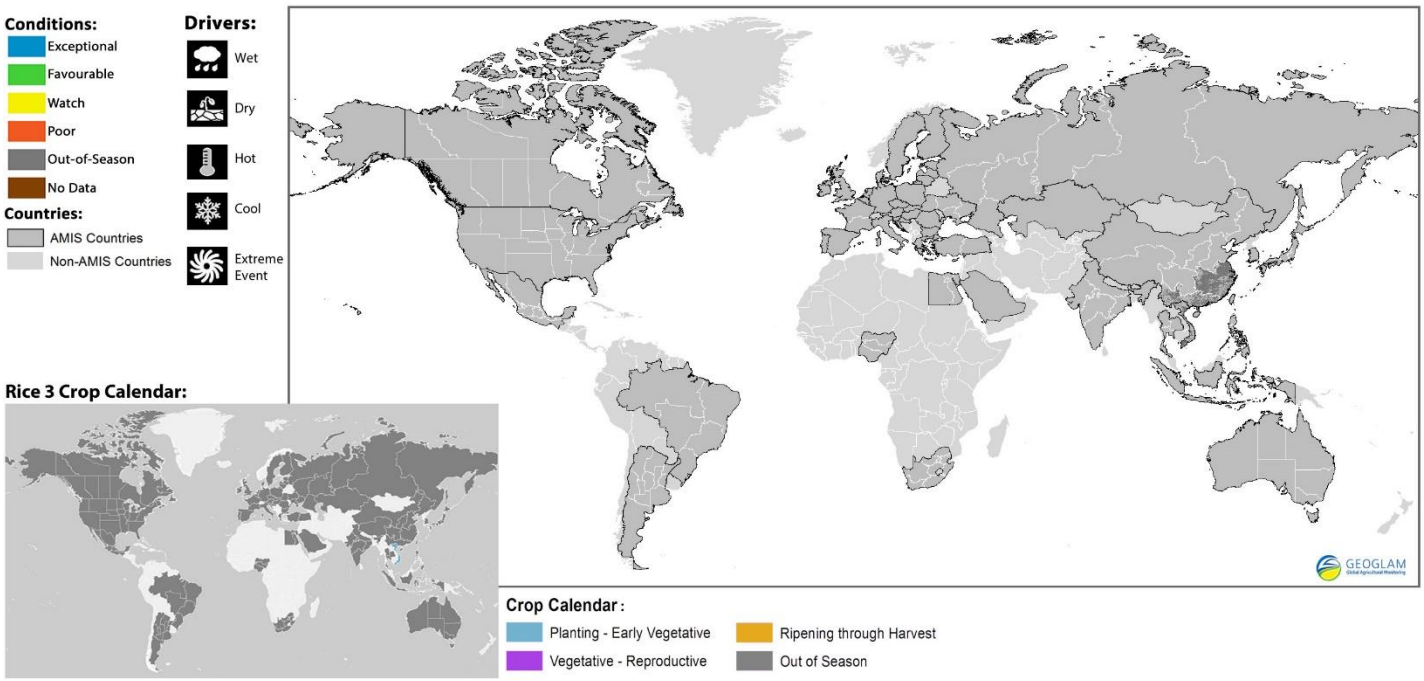
Rice 3 Conditions for AMIS Countries



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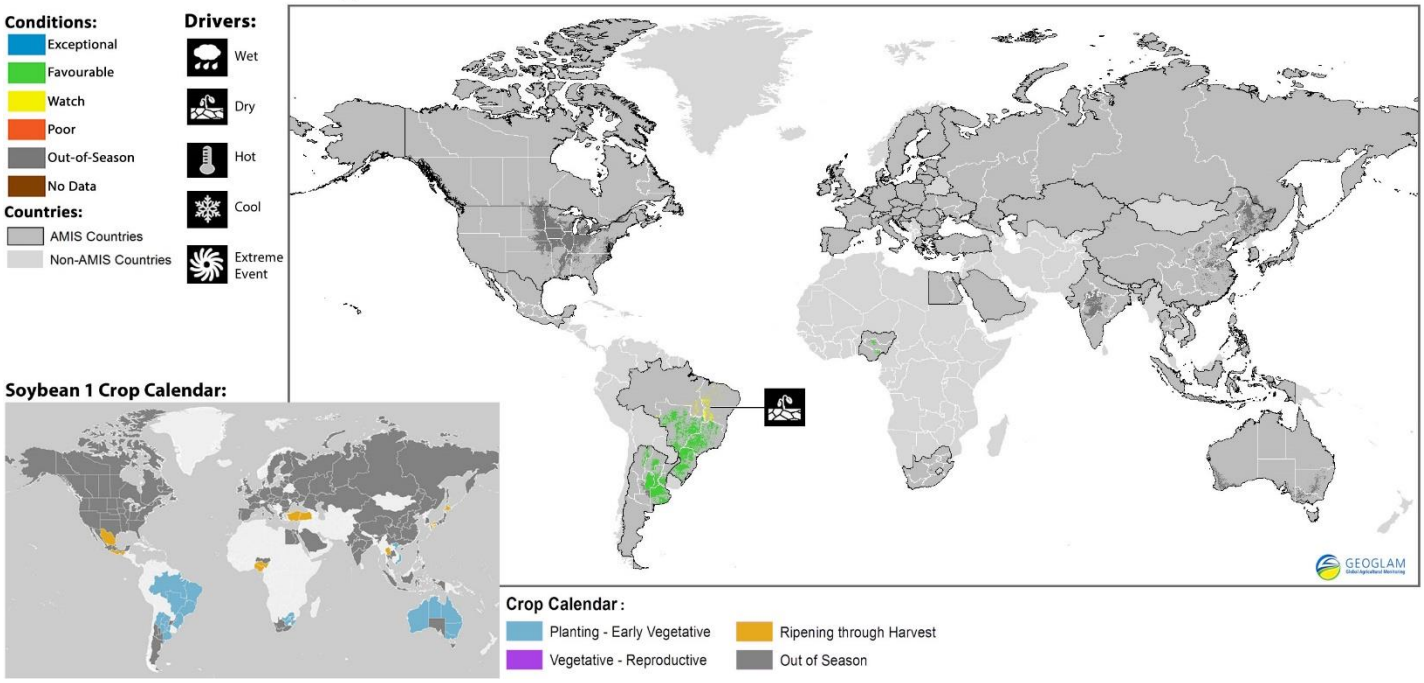
Soybean 1 Conditions for AMIS Countries



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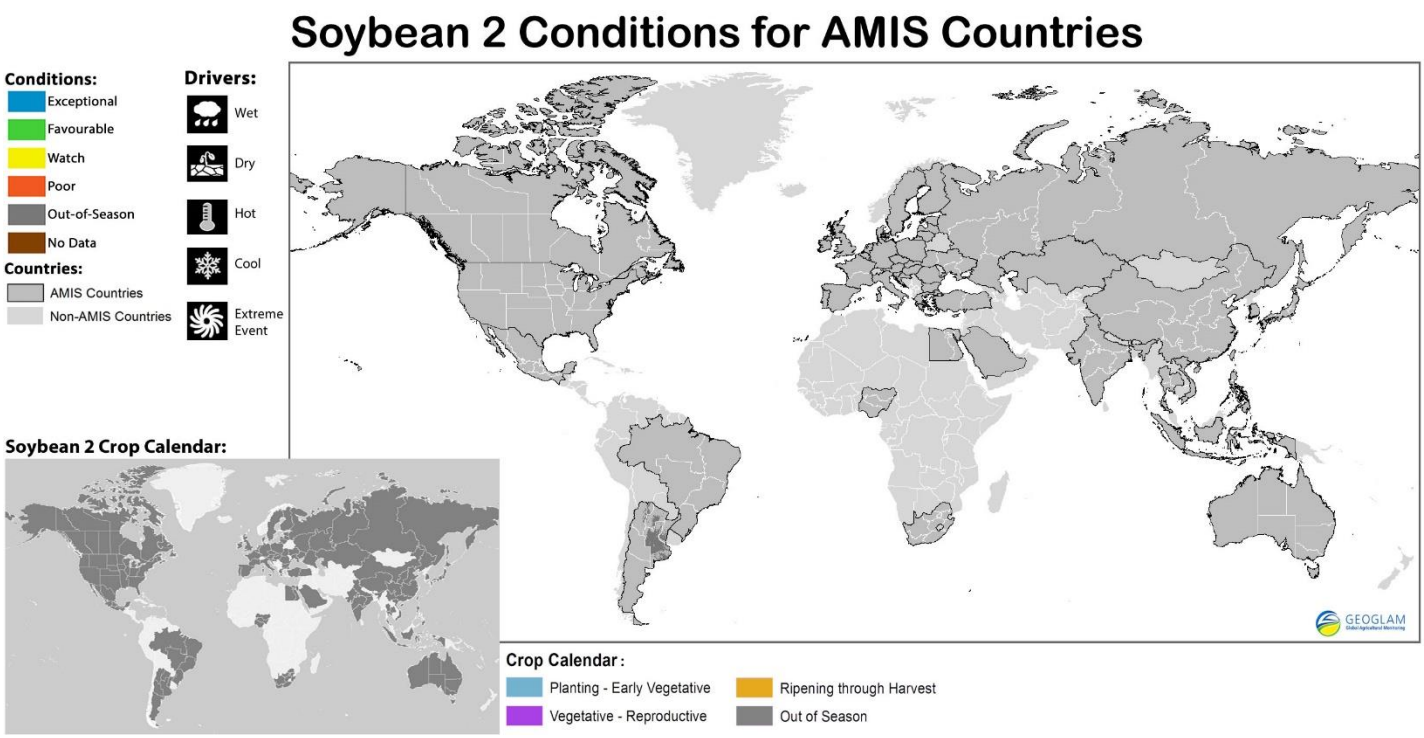

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