



Overview:

As of the end of August, conditions are generally favourable for maize, rice, and soybeans while mixed for wheat. In the northern hemisphere, winter wheat harvesting is wrapping up under mixed conditions while spring wheat harvest is beginning under favourable conditions. In the southern hemisphere, winter wheat conditions are mixed due to dry and cool conditions. For maize, conditions are generally favourable except for some areas of concern main due to dry conditions. Rice conditions are generally favourable except for some areas in China, Indonesia, and Japan. Soybean conditions are generally favourable except for some areas in the US and Ukraine.







Contents:

Conditions and Forecasts at a Glance	2
Wheat Conditions	3
Maize Conditions	4
Rice Conditions	5
Soybeans Conditions	6
Climate Forecasts	7
Appendix I – Terminology & Definitions	12
Appendix II – Crop Season Specific Maps	13
Assessment based on information as of August 28 th	



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





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

Crop condition map synthesizing information for all four AMIS crops as of August 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 remain mixed for winter wheat particularly in parts of Europe, Ukraine, and the southern part of the Russian Federation as the season draws to a close. Spring wheat conditions are generally favourable. In the southern hemisphere, dryness and frosts are affecting Argentina, while Australia is having a predominantly good season.

Maize - In Brazil, harvesting is continuing for the summerplanted crop (larger season). In the northern hemisphere, conditions are generally favourable with some areas of concern in the US, France, Ukraine, and the Russian Federation.

Forecasts at a Glance

Climate Influences - El Niño-Southern Oscillation (ENSO) is currently neutral, however a transition to La Niña is likely (~60% probability) by the end of the year (October – December).

The United States - For September, warmer than average conditions are likely in the western United States and cooler than average conditions in the central and northern Great Plains. Below-average rainfall is likely in the north

Rice - In China, conditions are generally favourable albeit with some additional flooding in the southwest. In India, transplanting of Kharif rice is complete. In Southeast Asia, conditions are favourable for wet-season rice in the northern countries, while in Indonesia, dry-season rice remains delayed due to a protracted conclusion of the wet-season cycle.

Soybeans - In the northern hemisphere, conditions are generally favourable in the US, Canada, China, and India. Areas of concern exist in Iowa state in the US and central Ukraine.

and northwest, while above-average rainfall is likely in the southern Great Plains and the southeast.

Argentina - For the next two weeks (August 31st– September 13th), no significant rainfall is expected in the areas with current low levels of soil moisture except for northern Buenos Aires.

Southeast Asia - The three-month forecast shows an increased likelihood of above-average rainfall over much of the region from September to November.



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 August 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, harvest is wrapping up under mixed conditions, most notably in northern France and Romania, which are experiencing poor conditions due to hot and dry conditions earlier in the season. In the **UK**, harvesting is wrapping up under poor conditions after a season full of variable weather. In Ukraine, harvest of winter wheat is wrapping up under favourable conditions across most of the country except in the south, where dryness earlier in the season dryness resulted in below-average yields. In the Russian Federation, harvest is wrapping up for winter wheat with exceptional conditions in the Central and Volga districts while earlier in-season dryness has reduced yields in the southern regions. Spring wheat is under generally favourable conditions with some slightly drier than normal conditions developing. In



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

China, harvesting of spring wheat is ongoing under favourable conditions. In the **US**, conditions are favourable as winter wheat harvest wraps up in the northern states and spring wheat harvest begins. In **Canada**, winter wheat harvest is wrapping up under favourable conditions. Spring wheat is under generally favourable conditions, however, some dryness in Saskatchewan is causing premature ripening. In **Argentina**, conditions are mixed with favourable conditions in the provinces of Buenos Aires, Entre Ríos, and some parts of Santa Fe, however persistent dryness and frosts are lowering the prospects in the rest of the country. In **Australia**, conditions are generally favourable except for Queensland which experienced persistent dryness. By contrast, New South Wales is showing exceptional conditions with an expansion of sown area.



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 August 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 Brazil, harvest is continuing for the summer-planted crop (larger season) under good conditions in the Central-West and the Southeast regions. In the South region, conditions are mixed due to dryness during key developmental stages, however some late sown crops benefited from rainfall in June, potentially improving the region's overall yields to slightly below-average. In the **US**, conditions are very favourable except for lowa due to a drought and a recent major storm. Drought is also present in the western edge of the corn belt in Colorado. In Canada, conditions are favourable across the country with rainfall and warm temperatures in the east alleviating earlier spring stresses. In Mexico, harvest of the autumn-winter (smaller season) crop is wrapping up while the sowing of the spring-summer (larger season)



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

crop is continuing under favourable conditions. In the **EU**, conditions are generally favourable, however a prolonged hot and dry period is affecting crops in France. In **Ukraine**, conditions are mixed with prolonged dryness leading to soil drought in the central regions. In the **Russian Federation**, conditions are mixed as dryness during the flowering and early grain filling stages affected crops in the south. In **China**, conditions are generally favourable for both the spring-planted and summer-planted crops, except for some areas of flooding in Sichuan and Chongqing. In **India**, sowing of Kharif maize is complete under favourable conditions with total sown area in line with last year.



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

Rice: In **China**, conditions are generally favourable for single-season and late-season rice, however continuous heavy rainfall over the summer has slightly reduced yields in the south. More recent heavy rainfall in August has led to further flooding in Sichuan and Chongging. In India, conditions are favourable for Kharif rice with the majority of transplanting completed except in the south. Sown area increased compared to last year. In Indonesia, sowing of dry-season rice continues into the fifth month after being delayed due to the protracted wet-season cycle. Harvest of earlier sown dry-season rice is ongoing with lower yields than last year expected. In Viet Nam, harvest of wet-season (summer-autumn) rice in the south is ongoing under favourable conditions with slightly lower yields compared to last year due to an in-season drought. In



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

the north, wet-season (summer-autumn) rice is in the sowing to tillering stages under favourable conditions. In **Thailand**, conditions are favourable for wet-season rice in the tillering stage. Tropical storm Sinlaku brought minor flooding to the north and northeast regions but left no significant damage to rice fields. In **the Philippines**, wet-season rice is under favourable conditions with crops sown in April-May undergoing harvest. In **Japan**, conditions are favourable in the north and mixed in the south due to cool weather and a lack of sunshine. In the **US**, conditions are favourable with harvest ongoing in the Mississippi Delta region.

EDGLAM Soybean Conditions Conditions: Exceptional Favourable Watch Countries: Poor Drivers: AMIS Countries Out-of-Season Non-AMIS Countries No Data Conditions as of August28th, 2020 Extreme Event Delayed-Onset Wet Hot Cool

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

Soybeans: In the **US**, conditions are favourable throughout the country with record yields expected, with the exception of lowa that experienced drought and a windstorm in early August. In Canada, conditions are favourable with recent rainfall and warmer temperatures in Ontario and Quebec continuing to alleviate most of the early spring stresses. There is a reduction in sown area compared to last year. In **China**, conditions are favourable with a slight increase in total sown area compared to last year. In India, conditions are favourable with sowing complete and an increase in total sown area compared to the average and last year. In Ukraine, conditions are mixed with a lack of substantial rainfall over the central regions leading to the development of dry soil conditions. However, the western, eastern, and northern regions received enough rainfall to maintain favourable conditions.



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

Information on crop conditions in non-AMIS countries can be found in the <u>GEOGLAM Crop</u> <u>Monitor for Early Warning</u>, published September 3rd

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

Climate Forecasts for AMIS Countries



Global 30-day Subseasonal (SubX) Rainfall Forecast Anomaly

Multimodel mean subseasonal forecast of global rainfall anomaly for the 30-days starting from August 27th showing areas of above or belowaverage rainfall. The image shows the average of four Subseasonal Experiment (<u>SubX</u>) model forecasts from that day. The anomaly is based on the 1999 to 2016 model average. Skill assessments of SubX can be accessed <u>here</u>. Source: UCSB Climate Hazards Center

The 30-day SubX forecast indicates a likelihood of above-average rainfall over eastern and central Canada, US great Lakes and Mississippi Valley regions, southern Mexico, Central America, Uruguay, Wales, northern Italy, northern West Africa, northeastern D.R.C., South Sudan, southern Sudan, western Ethiopia, Uganda, western Kenya, Pakistan, western and parts of central India, Indonesia, northeastern China, and D.P.R.K. There is also a likelihood of below-average rainfall across southern and Amazonas Brazil, coastal Nigeria, western China, Nepal, Bhutan, eastern India, Myanmar, the Philippines, and southern Japan.

Climate Influences: La Niña conditions likely by the end of the year

The El Niño-Southern Oscillation (ENSO) is currently neutral and is expected to remain so through the northern hemisphere summer. By the end of the year (October – December), however, a transition to La Niña conditions is likely (~60% probability). La Niña conditions during October-December typically reduce rainfall in East Africa, Central Southwest Asia, southern Brazil and central Argentina, and increase rainfall in Southern Africa, Australia, and eastern Brazil.

Source: UCSB Climate Hazards Center

United States Climate Outlook

In September 2020, the temperature outlook is for likely above-average temperatures across the western United States and Florida. There is a chance of below-average temperatures in the northern and central Great Plains along with the upper and central Mississippi Valley. The below-average temperature anomaly is expected to have an impact for at least the first 2-3 weeks of September. Some areas of the northern Great Plains will potentially have frosts and freezes, likely ending the growing season.

The precipitation outlook for September shows high potential for above-average precipitation in the southern Great Plains eastward across the southern Mississippi valley along with parts of the south and mid-Atlantic states. Parts of eastern Oklahoma and western Arkansas are forecast to receive 5-7 inches of rainfall within the first week of September. Below-average precipitation is most likely in the north and northwest, with areas of extending to the Great Lakes and the southwest.



September 2020 Temperature and Precipitation Outlooks

The official 30-day forecast as of 31 August 2020 from NOAA/National Weather Service, National Centers for Environmental Predictions, Climate Prediction Center.

For the longer September-October-November (SON) 2020 period, temperatures are likely to be above-average across the contiguous United States (CONUS) with the highest likelihood in the southwest and northeast. Below-average precipitation is likely from the southern Sierra Nevada mountain to the southern Great Plains. However, above-average precipitation is likely for the Northwest and the Southeast.

Source: NOAA Climate Prediction Center

Argentina Current Water Reserves for Wheat and Short-term Forecasts



At the national scale, sowing has been completed below the intended area. In the province of Córdoba and much of Santa Fe, the sown wheat had a poor emergence or is badly damaged by the combination of lack of soil moisture and very low temperatures.

The areas with low or regular reserves have expanded to the provinces of Santa Fe, Entre Ríos, La Pampa, and west of Buenos Aires, where the evolution of wheat is between good and fair. Reserves are adequate or optimal in the south of the province of Buenos Aires, and east of Entre Ríos, where the evolution of wheat is mostly favourable.



Source: Office of Agricultural Risk. http://www.ora.gob.ar/descargas.php

For the next two weeks, no significant rains are expected in the area with current low levels of soil moisture (Córdoba, Santa Fe, northern La Pampa). The north of Buenos Aires has some chances in the second week. Rains of up to 20mm could take place in the second week in areas of Buenos Aires. If they are materialized, the good water conditions for the development of wheat in that area will be kept.

Based upon the most recent forecast for the next 30-days, probabilities of water stress have been identified over the main wheat areas as follows:

- Cordoba, Santa Fe, and northern Buenos Aires wheat growing areas have a 100% probability of developing • water stress.
- Entre Rios wheat growing areas have a 90% probability of developing water stress.
- La Pampa wheat growing areas have an 80% probability of developing water stress. .

Based upon the most recent forecast for the next 40-days, probabilities of water stress have been identified over the main maize sowing areas as follows:

- Western Cordoba and San Luis maize growing areas have a 100% probability of developing water stress.
- Northern Santa Fe maize growing areas have a 95% probability of developing water stress.



Short Term Precipitation Forecast

Source: Argentina National Meteorological Service. https://www.smn.gob.ar/clima/perspectiva



30-day Wheat Probability Scenarios

The scenarios were developed based on the weather forecast of the SMN <u>https://www.smn.gob.ar/pronostico-trimestral</u>

Southeast Asia Current Seasonal Conditions plus 3-month Forecast

Rainfall from late-July to late-August was average to above-average across much of the region, with monthly totals ranging from 120-200% of average in Myanmar, Thailand, northern Laos, northern Vietnam, Malaysia, Indonesia, and the Philippines (Figure 1-left). This increase in rainfall was particularly beneficial in the northern areas of the region, where the wet season rainfall had been well-below-average since April. However, rains returned to below-average throughout the region in late August.

The 15-day forecast indicates below-average rainfall is expected to continue through the end of August, particularly in the north. Figure 1-middle indicates how the forecasted rainfall could contribute to increasingly below-average seasonal totals in Laos, central and southern Vietnam, and the northern Philippines (Figure 1-middle). Overall, the below-average rainfall forecast for August is unlikely to have a significant effect on rice growth. Meanwhile, dry season rainfall conditions have been favourable in the south. Lastly, the 3-month forecast indicates an increased likelihood of above-normal rainfall, over much of the region, from September to November (Figure 1-right).



Figure 1. Estimated percent-of-average anomaly for July 26th to August 25th, estimated and forecast percent-of-average anomaly since April 1st, and a 3-month probability forecast. The left and middle panels are UCSB Climate Hazards Center Early Estimates. They compare 2020 rainfall amounts to the 1981-2019 CHIRPS average. The left panel shows the estimated percent-of-average anomaly from July 26th to August 25th. The middle panel indicates what the post-April 1st percent-of-average anomaly would be if the 15-day unbiased GEFS forecast from August 26th materializes. On the right is the 3-month NMME experimental probabilistic forecast for September to November 2020, based on August 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).

Source: UCSB Climate Hazards Center

Appendix 1: Terminology & Definitions

Crop Conditions:

Exceptional: Conditions are much better than average* at the time of reporting. This label is only used during the grain-filling through harvest stages.

Favourable: Conditions range from slightly lower to slightly better than average* at reporting time. **Watch:** Conditions are not far from average* but there is a potential risk to final production. The crop can still recover to average or near average conditions if the ground situation improves. This label is only used during the planting-early vegetative and the vegetative-reproductive stages.

Poor: Crop conditions are well below average*. Crop yields are likely to be more than 5% below average. This is only used when conditions are not likely to be able to recover, and 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	.a.
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	





Wet

Dry

Cool

Extreme Event

Delayed-Onset

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 August 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 August 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.

Winter Planted Wheat 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 August 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

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 August 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 August 28th



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 August 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 August 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

* Assessment based on information as of August 28th

GEOGLAM Crop Monitor



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 August 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 August 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 August 28th



Soybean 2 crop conditions over main growing areas are based upon a combination of national and regional crop analyst inputs along with earth observation data. Condition information is based upon information as of August 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 2 Conditions for AMIS Countries



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 Shellie 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, INTA, Agroindustry ministry), 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