

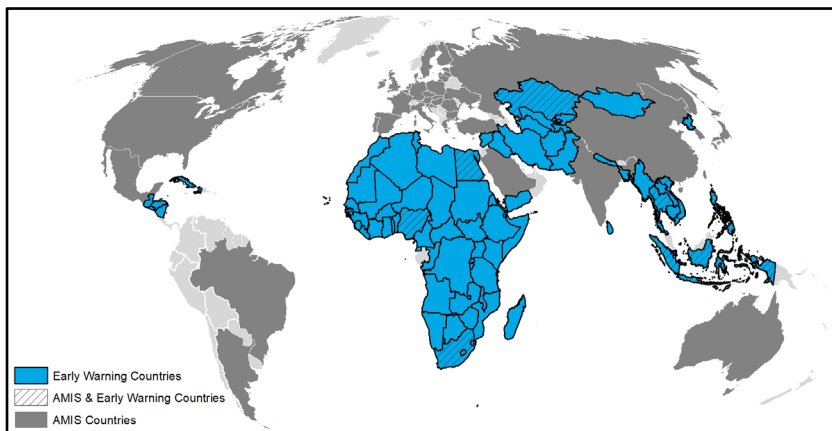


# Crop Monitor

## EARLY WARNING

**Overview:**

In **East Africa**, conditions are mixed for main season cereals in the north due to dryness, socio-economic challenges, and conflict, and below-average yields are expected in parts of South Sudan, Kenya, Somalia, and the United Republic of Tanzania. In Ethiopia, recent worsened rainfall performance is impacting *Meher* crops (See Regional Outlook Pg. 8). In **West Africa**, average to above-average seasonal rains for most of the subregion has contributed to generally favourable crop conditions except in the areas impacted by persistent conflict. In the **Middle East and North Africa**, wheat harvesting finalized in June under mixed conditions, and rice crops are developing under favourable conditions in Egypt and Iran. In **Southern Africa**, wheat crops are in vegetative to reproductive stage for harvest from September, and overall conditions remain favourable. In **Central and South Asia**, winter wheat harvesting is mostly complete with poor end of season conditions in many areas while spring wheat harvest has started in most areas with ongoing concern due to dry conditions, except in Tajikistan and Mongolia where rainfall performance has been adequate. In northern **Southeast Asia**, planting of wet-season rice continues under generally favourable conditions except in Thailand where El Niño induced drought is impacting crop development (See Special Alert Pg. 4). In Indonesia, conditions are favourable for dry-season rice. In **Central America and the Caribbean**, harvesting of *Primera* season cereals continues, and prolonged dry and hot weather is expected to impact yields in Guatemala, El Salvador, Honduras, Nicaragua, and Haiti while western Cuba was impacted by Tropical Storm Idalia.



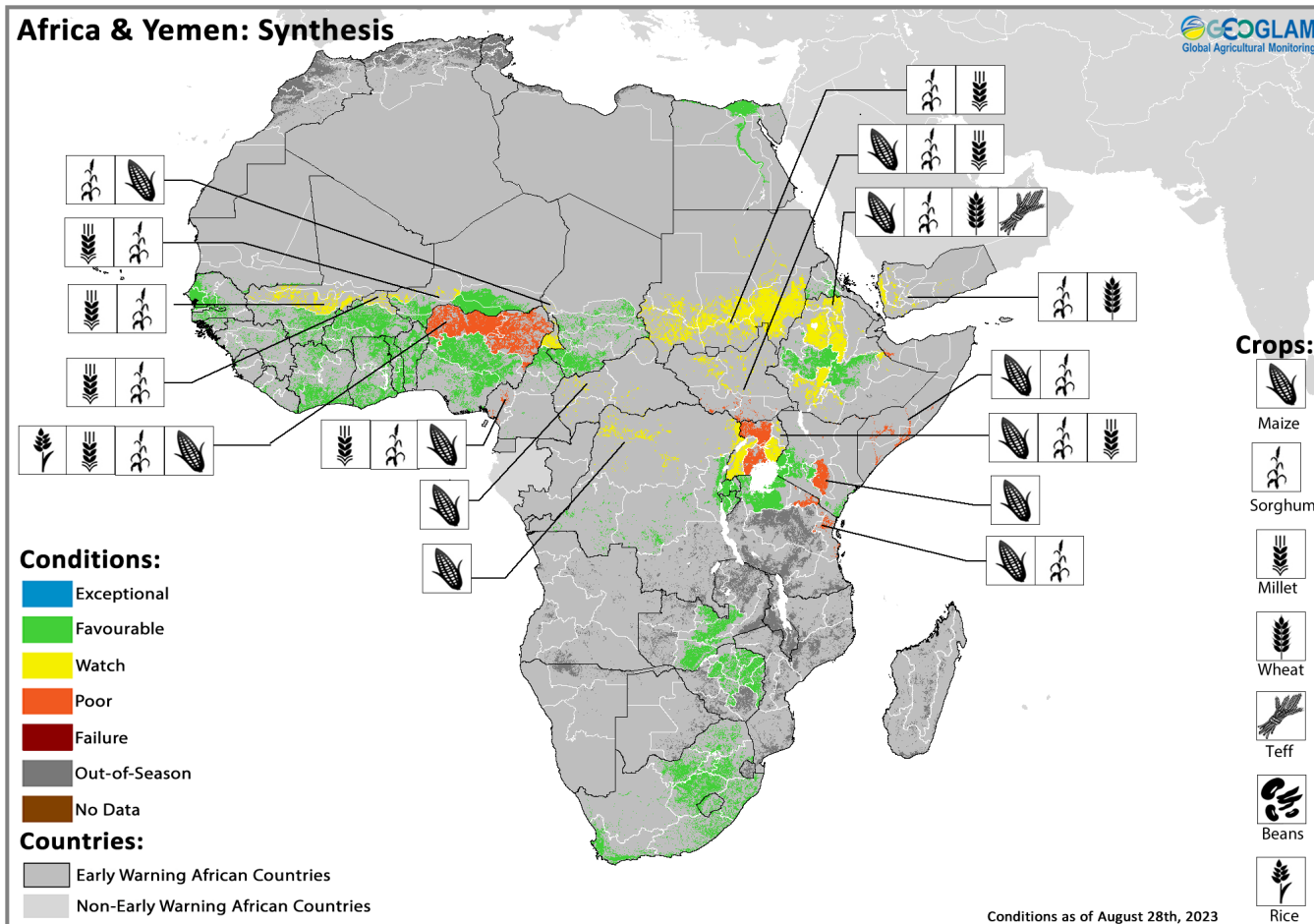
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# GEOGLAM Crop Monitor for Early Warning

## Crop Conditions at a Glance

based on best available information as of August 28<sup>th</sup>



Crop condition map synthesizing information for all Crop Monitor for Early Warning crops as of August 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Regions that are in other than favourable conditions are labeled on the map with a symbol representing the crop(s) affected.**

**EAST AFRICA:** Planting and development of main season cereals is underway in the north under mixed conditions regarding dry concerns and socio-economic challenges as well as conflict in Sudan and Yemen. In Ethiopia, *Meher* conditions have degraded due to recent worsened rainfall performance (See Regional Outlook Pg. 8). In the south of the subregion, harvesting of main season cereals finalized with poor conditions in parts of Kenya, Somalia, and the United Republic of Tanzania.

**WEST AFRICA:** Harvesting of main season cereals is underway in the south while planting and development continues in the northern Sahelian zone, and agro-climatic conditions are generally favourable except in localized areas impacted by July rainfall deficits.

**MIDDLE EAST & NORTH AFRICA:** Wheat harvesting finalized in June under mixed conditions due to erratic and insufficient rainfall in many areas. Rice crops are developing under favourable conditions in Egypt and Iran despite a lack of irrigation water in northeastern Iran.

**SOUTHERN AFRICA:** Wheat crops continue to develop under favourable conditions in Zambia, Zimbabwe, South Africa, and Lesotho with near-average yields expected.

**CENTRAL & SOUTH ASIA:** Wheat harvesting is complete or nearing completion throughout the subregion, and persistent seasonal dry conditions are expected to result in yield declines in Afghanistan and southern Kazakhstan and may impact yields in Turkmenistan, Uzbekistan, and Kyrgyzstan.

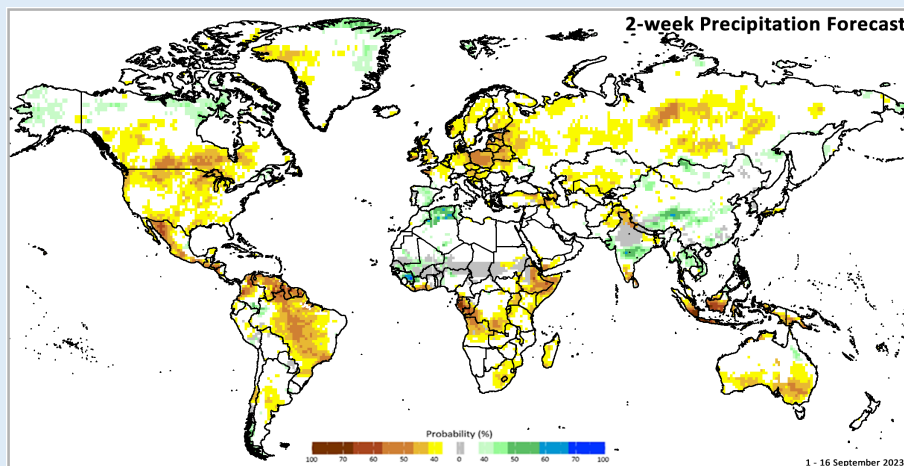
**SOUTHEAST ASIA:** In the north, delayed rains are likely to result in a slight planted area decrease for wet-season rice, but growing conditions are generally favourable except in Thailand where the water shortage is significantly impacting crops. In Indonesia, conditions are favourable for planting of dry-season rice.

**CENTRAL AMERICA & CARIBBEAN:** In Central America, harvesting of *Primera* season cereals is underway with significant concern for potential yield declines due to prolonged irregular and below-average rainfall and high temperatures (See Regional Outlook Pg. 17). In Cuba, the passage of Tropical Storm Idalia impacted crops in the west.

### Global Climate Outlook: Two-week Forecast of Areas with Above or Below-Average Precipitation

The two-week forecast indicates a likelihood of above-average rainfall over central-eastern Mexico, southern Colombia, northwestern Brazil, southern Peru, southern Chile, southwestern Uruguay, northern Morocco, Algeria, Tunisia, parts of the Sahel region in West Africa, Spain, southwestern France, eastern Ukraine, northeastern Kazakhstan, northern Mongolia, China, southern Pakistan, central India, Myanmar, Thailand, Laos, northeastern Cambodia, Viet Nam, the Philippines, and northeastern Australia.

There is also a likelihood of below-average rainfall over much of Canada, the United States, Mexico, Central America and the Caribbean, Peru, Ecuador, Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, central Chile, Argentina, the Gulf of Guinea in West Africa, northwestern and southeastern portions of Southern Africa, Madagascar, much of East Africa, Yemen, northern Europe, Turkey, Azerbaijan, northern Iran, Russia, Kazakhstan, Uzbekistan, southwestern Mongolia, southern Japan, eastern Afghanistan, northern Pakistan, south and northern India, Sri Lanka, Bangladesh, Malaysia, Indonesia, Papua New Guinea, and much of Australia.



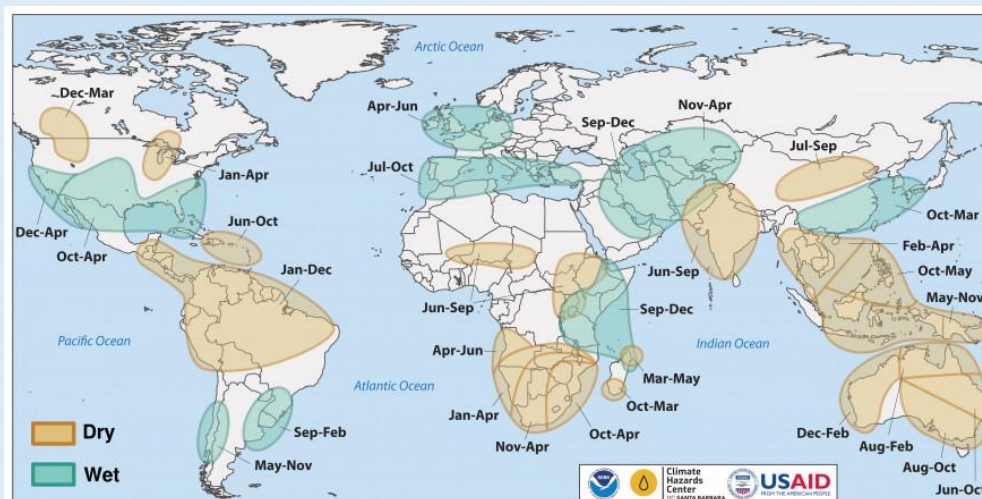
**Figure 1:** IRI SubX Precipitation Biweekly Probability Forecast for 1 – 16 September 2023, issued on 1 September 2023. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](#)

### Climate Influences: Strong El Niño advisory for Oct to Jan and forecast positive Indian Ocean Dipole

The El Niño-Southern Oscillation (ENSO) is currently in the El Niño phase. This event is forecast to reach a strong level of intensity during October to January (66% chance), and to remain active until March to May (82% chance), according to the IRI/CPC forecast.

El Niño events tend to enhance precipitation in Central Asia, southern North America, south-eastern South America, southern Europe, eastern and southern East Africa, and southern and eastern China. Drier-than-average conditions tend to occur in Central America, the Caribbean, northern South America, parts of western and northern East Africa, Southern Africa, India, Northern China, the Maritime Continent, and Australia.

Positive Indian Ocean Dipole (IOD) conditions are forecast for September to January, according to the Australian Bureau of Meteorology. Sea surface temperatures began showing signs of positive IOD development in August. Positive IOD conditions typically enhance the drying influences of El Niño in Australia and the Maritime Continent, and substantially increase the chances of a wet and intense East Africa short rains season during El Niño events. Source: [UCSB Climate Hazards Center](#)



**Figure 1.** Areas of dry and wet conditions during El Niño phase of ENSO. Source: [NOAA & CHC](#) & [FEWS NET](#)

### **Special Alert: El Niño 2023/2024 anticipated regional and global climate and agricultural yield impacts**

- The ongoing El Niño will likely be a strong event that will reach peak strength from October to January (See Climate Influences Pg. 3).
- **Wheat:** Historically, the impact of El Niño events on wheat yields has been modest at the country scale. Average yield declines relative to expected yields are around 5% or less in India, China, Australia, southeastern South America, and parts of Europe and North Africa (Figure 6), although Morocco tends to experience yield deficits of up to 15%.
- **Maize:** Past El Niño events have led to deficit maize production in India, China, southeastern Africa, and parts of Central America and northern South America. The effects tend to be strongest in southeastern Africa where average deficits are around 10 to 15% relative to expected yields in Zimbabwe and South Africa, with some events resulting in deficits of over 50%.
- **Rice:** Past El Niño events have reduced rice yields in major production regions of South and Southeast Asia. The strongest impacts of El Niño events have been in India and Thailand, which were the world's two leading rice exporters in 2022/2023. Average yield declines in India and Thailand during El Niño events have been 2 to 4% with declines of 5 to 10% possible.
- **Soybeans:** El Niño events tend to improve soybean yields in both the United States and Argentina, while reducing yields in India. Yields tend to be around 3% and 8% above expected levels in the United States and Argentina, respectively, while they are around 9% below expected levels in India on average.

Following three consecutive years of La Niña, the El Niño–Southern Oscillation (ENSO) is currently in the El Niño phase. The ongoing El Niño is forecast to be a strong event, reaching its maximum intensity in late 2023 and persisting through early 2024 (See Climate Influences Pg. 3). El Niño events are estimated to affect crop yields on at least 25 percent of global croplands. Characteristics of an El Niño, like its intensity, are related to the severity of the global climate impacts. The current forecast for a strong El Niño is expected to have significant impacts on regional precipitation patterns and agricultural yield outcomes at the regional and possibly global level.

While crop yield impacts vary from one El Niño event to another, average global-mean soybean yields generally improve during an El Niño event while global mean rice yields, and to a lesser extent wheat yields, slightly decrease (See Figure 1). The ongoing El Niño has already affected seasonal precipitation in different parts of the globe, impacting ongoing cropping seasons notably in Central America (See Regional Outlook Pg. 17), East Africa (See Regional Outlook Pg. 8), India, and Southeast Asia. This El Niño also raises concerns for upcoming cropping seasons in some areas, including parts of Southern Africa (See Crop Monitor Special Alert, August 2023), Southeast Asia (See Crop Monitor Special Alert, August 2023), Central America (See Regional Outlook Pg. 17), northern South America, Australia, and elsewhere.

For more information on El Niño impacts to ongoing and upcoming cropping seasons see the [Crop Monitor August Special Alert](#).

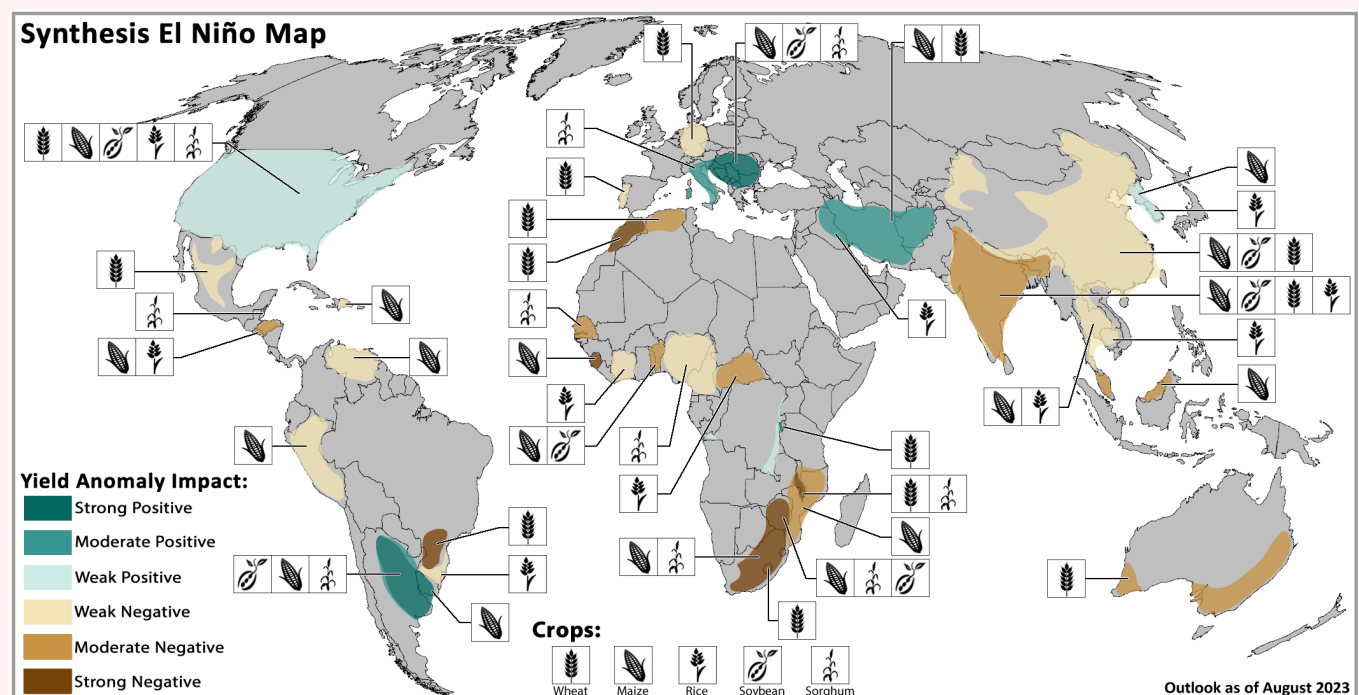
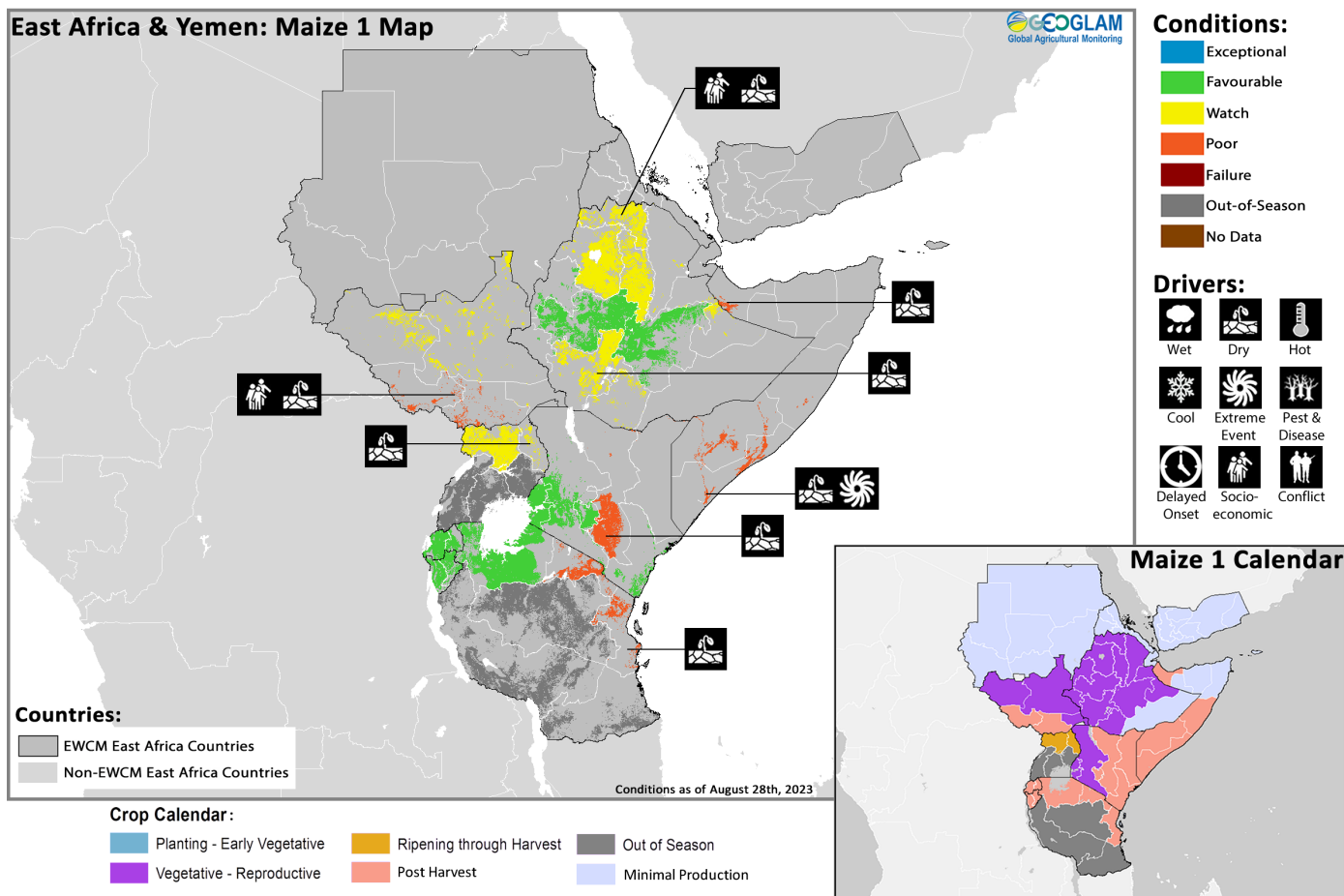


Figure 1. Historical crop yield conditions during El Niño events for wheat, maize, rice, soybeans, and sorghum using FAO country level yield data and ERSSTv5 from 1961-2020. In countries with more than one crop affected, the color reflects the strongest effect. Source: [Crop Monitor Special Report, August 2023](#)

East Africa

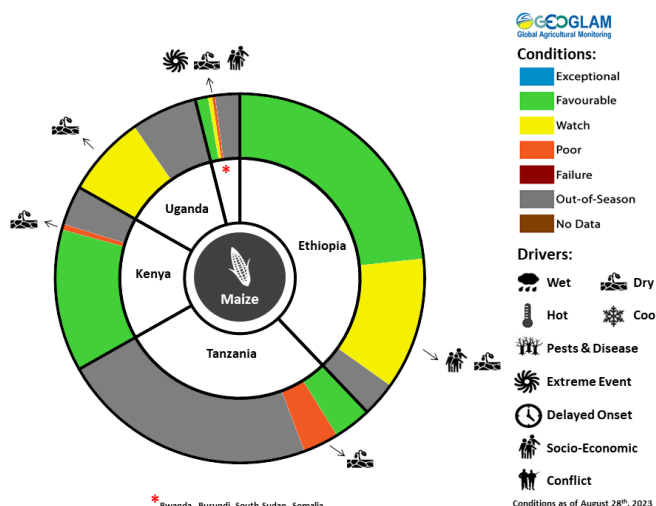


Crop condition map synthesizing Maize 1 crop conditions as of August 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Conditions that are other than favourable are labeled on the map with their driver.**

Across the north of the subregion, harvesting of main season cereals finalized in Western Equatoria and Central Equatoria Regions in southern **South Sudan** with below-average yields expected. Additionally, planting and development continues elsewhere in **South Sudan** as well as in **Sudan, Djibouti, Eritrea, and Yemen** under mixed conditions with concern regarding dryness in **South Sudan, eastern Sudan, and Yemen**, and persistent conflict and related socio-economic challenges in **Sudan and Yemen**. In **Ethiopia**, *Meher* season cereals are in vegetative to reproductive stage for harvest from September, and conditions have degraded in some areas due to worsened rainfall performance in recent weeks (See Regional Outlook Pg. 8) as well as ongoing socio-economic challenges related to the recent conflict situation.

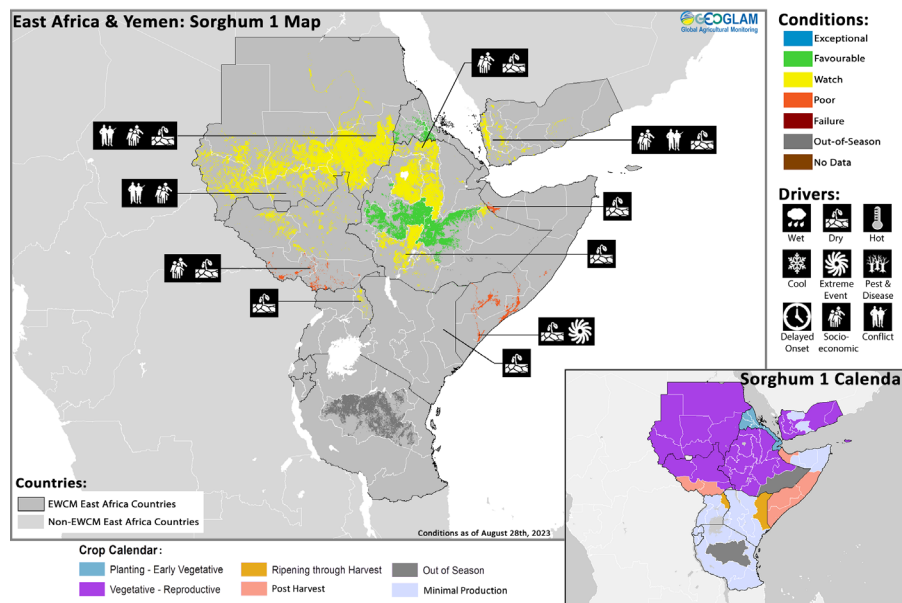
Across the south of the subregion, harvesting of main season cereals finalized in bimodal areas of **Burundi, Rwanda, Uganda, Kenya, Somalia, and the United Republic of Tanzania** under mixed conditions. Below-average yields are expected in some bimodal minor producing regions of **Kenya, Somalia**, and northeast and northern coastal areas of the **United Republic of Tanzania** due to seasonal dry conditions as well as flooding in the Shabelle and Juba riverine areas of **Somalia**, and concern remains in northern **Uganda**. Conversely, end of season conditions are favourable in **Burundi, Rwanda, central and coastal Kenya, and northwestern United Republic of Tanzania**.

The current El Niño event is expected to bring wetter than normal conditions across most parts of the Greater Horn of Africa for the October to December rainfall season, particularly in southern **Ethiopia, eastern Kenya, and southern Somalia** (See Climate Influences Pg. 3 and Special Alert Pg. 4). While the increased rainfall is expected to bring relief after three



For detailed description of the pie chart please see description box on Pg. 17.

years of consecutive La Niña and associated drought conditions, the increased precipitation may contribute to flooding and the proliferation of desert locusts. Additionally, the expected shift to positive IOD conditions will likely enhance the increased rains.



*Crop condition map synthesizing Sorghum 1 conditions as of August 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Conditions that are other than favourable are labeled on the map with their driver.***

Afar Region, including Abaala, Euwa, Kunneba, Megale, and Yalo. In **South Sudan**, below-average yields are expected for first season cereals in the south-centre and southwest, and concern remains elsewhere in the country due to continuing dry conditions and worsened rainfall performance in recent weeks. The main June to September rainy season has so far been characterized by poor distribution and below-average cumulative precipitation amounts, and seasonal rainfall performance has further worsened during recent weeks (See Regional Outlook Pg. 8). Conversely, increased rainfall in late July in other areas expanded the flood extent, primarily along the Sobat and Akobo catchment areas. Although current flood extents in the Sudd wetland areas are similar to 2022, generally below-average rainfall received thus far is expected to result in below-average levels of the Sobat and White Nile rivers through the remainder of the rainy season. Planting of second season maize and sorghum crops began in August under watch conditions in Western Equatoria and Central Equatoria due to antecedent dry conditions. In **Sudan**, main season millet and sorghum crops are in vegetative to reproductive stage with concern due to ongoing dry conditions in the east as well as production challenges regarding the recent conflict situation. The progress of the rainy season has been mixed, with slightly delayed onset and below-average July precipitation amounts in parts of the southeast and southern border areas (See Regional Outlook Pg. 8). Additionally, the current conflict continues to impact parts of the country, particularly in the cities. While rural areas have experienced less direct impacts, conflict-related market and financial disruptions have decreased household access to agricultural resources. Furthermore, existing high inflation intensified by the crisis is further disrupting markets and increasing agricultural input prices, particularly in the central and western regions. Semi-mechanized and irrigated areas are now shifting sorghum and millet production to traditional manual and rainfed systems, resulting in lower yields, and household participation in crop cultivation is expected to decrease in areas near the fighting and contested trade routes. Overall, the situation is likely to negatively impact production outcomes. In **Eritrea**, planting of main season sorghum and wheat crops continues under favourable conditions as the early onset of the June to September *Kiremti* rainfall season combined with abundant rains in early June is benefiting vegetation conditions. However, below-average precipitation from mid-June through mid-July over most cropping areas combined with forecasts of below-average rainfall amounts for the remainder of the season may negatively impact crops (See Regional Outlook Pg. 8). In **Djibouti**, planting of main season millet and sorghum crops continues under favourable conditions. However, a poor start to the July to September *Karan/Karma* rainfall season over inland areas, with the exception of the southwest, resulted in some moisture deficits, and below-average rainfall amounts are forecast for the remainder of the rainfall season (See Regional Outlook Pg. 8). In **Yemen**, spring wheat harvesting is now underway while sorghum crops continue to develop for harvest from September. Good rainfall received during the first rainy season from March to mid-June in combination with reduced fuel prices has supported the agricultural sector this season. However, below-normal precipitation received from July is now impacting soil moisture and vegetation conditions in most areas, and cumulative rainfall in the second season is now expected to be below-average. Furthermore, high agricultural input costs continue to limit production, and the risk of landmines in direct conflict areas continues to inhibit field access.

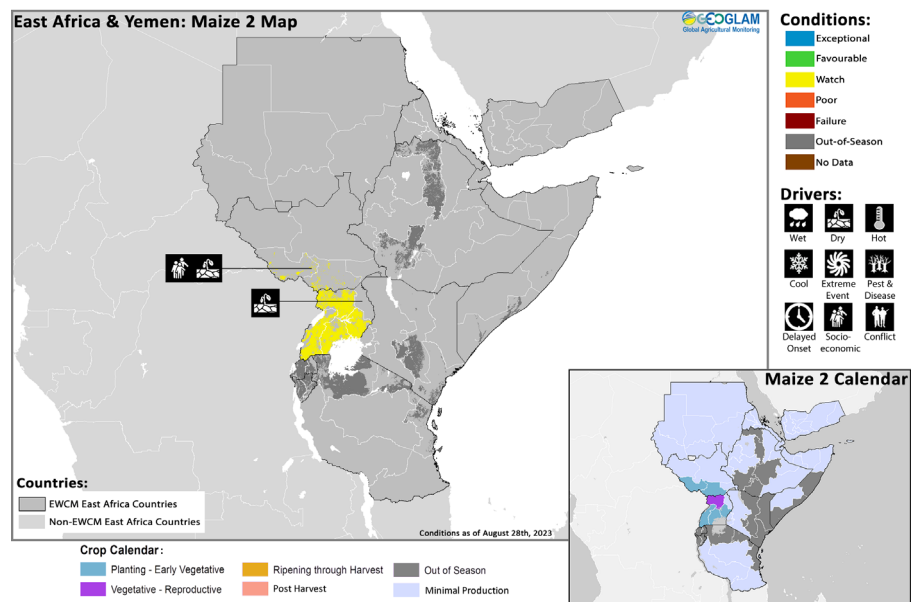
### Southern East Africa

In bimodal rainfall areas of **Uganda**, harvesting of millet crops finalized under mixed conditions as the timely onset of the March to May rainfall season was followed by prolonged dry spells in April and May. The situation resulted in severe drought conditions in cropland areas of the centre and irreversible crop damage despite improved rains in June. Planting of second season maize is just

### Northern East Africa & Yemen

In **Ethiopia**, *Meher* season cereals continue to develop under mixed conditions as below-average precipitation since July is impacting crops in the northeast. Recent worsened rainfall performance is also impacting parts of the central-east and southwest, and conditions are not expected to substantially improve in these areas before the end of the June to September *Kiremt* rainfall season (See Regional Outlook Pg. 8). Additionally, ongoing socio-economic challenges as well as a recent uptick in conflict in Amhara region are expected to impact production outcomes. Furthermore, there has been a recent invasion of solitary adult desert locusts in Tigray Region, where the population relies on *Meher*-planted crops. This has prompted efforts to prepare for pesticide application and logistical support for survey and control activities. The locusts have also spread to multiple areas in the neighboring

beginning under watch conditions due to the continued dry concerns. In unimodal rainfall areas in the north, harvesting of main season cereals is now underway. Crops in Karamoja are likely to be impacted by substantial seasonal deficits from June through mid-September, and there is also concern for dry conditions in other northern areas (See Regional Outlook Pg. 8). In bimodal and minor producing rainfall areas of eastern **Kenya**, below-average Long Rains maize yields resulted due to a combination of below-average rainfall performance throughout the season, poor spatial and temporal rainfall distribution, and cumulative effects of previous below-average seasons. Conversely, crops along the coast and in the unimodal centre finalized under favourable conditions with adequate rainfall received. In the coastal regions, overall production is expected to be above-average, though this positive outlook is limited to the coastal strip as inland counties are expecting poor yields. Long Rains cereals in the unimodal and major producing regions in the west continue to develop under favourable conditions despite worsened rainfall performance in recent weeks, and El Niño conditions are expected to bring heavy rains lasting for three months from October to December (See Climate Influences Pg. 3 and Regional Outlook Pg. 8). National production of Long Rains maize is expected to be 5 to 10 percent below-average. In **Rwanda** and **Burundi**, harvesting of Season B maize crops finalized under favourable conditions. In **Burundi**, enhanced rainfall is likely later in the season due to the anticipated peak of the current El Niño event between October and December during the start of Season A planting (See Climate Influences Pg. 3 and Regional Outlook Pg. 8), which could bring flooding along the main rivers in the centre and east of the country. In **Somalia**, harvesting of *Gu* season maize and sorghum finalized under poor conditions due to persistent drought in central and southern areas as well as flooding impacts in parts of the Shabelle and Juba catchment areas due to an early transition to the April to June *Gu* rains. In the northwest, the season started favourably, but mid-season dry spells are expected to impact production outcomes. The October to December *Deyr* rainfall season is expected to be above-average during the start of *Deyr* crop planting activities, based on the forecast El Niño and positive IOD events (See Climate Influences Pg. 3 and Regional Outlook Pg. 8). In northern bimodal areas of the **United Republic of Tanzania**, harvesting of both *Masika* season cereals and *Vuli* season sorghum finalized under mixed conditions with poor cropping outcomes in the northeast and northern coastal areas due to persistent dry concerns while crops in the northwest finalized under favourable conditions.



*Crop condition map synthesizing Maize 2 conditions as of August 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Conditions that are other than favourable are labeled on the map with their driver.***

### ***Regional Outlook: Recent worsened seasonal rainfall performance and forecasts of El Niño and positive IOD induced wet conditions through OND 2023***

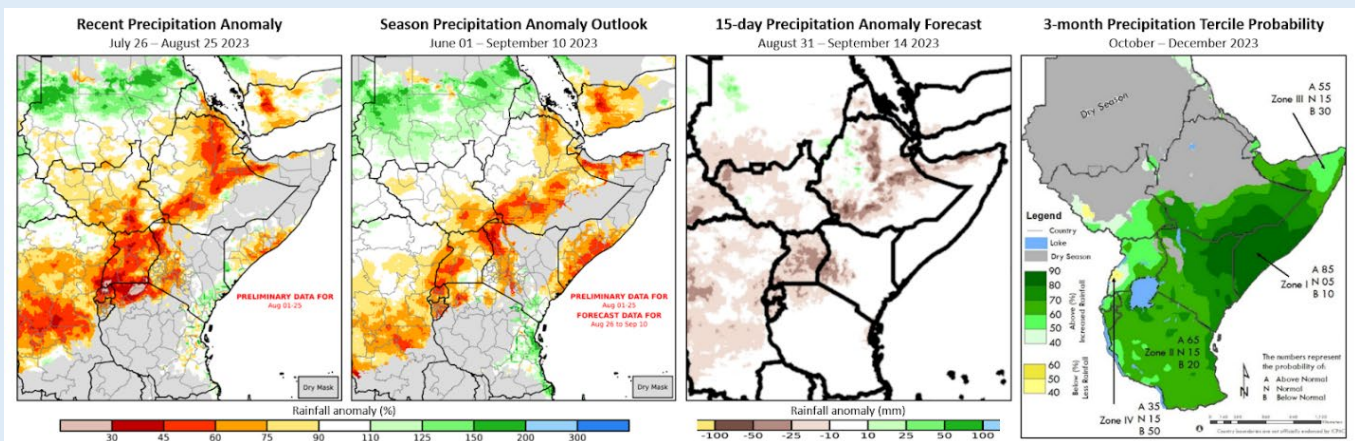
Seasonal rainfall performance worsened during recent weeks in Ethiopia, South Sudan, Uganda, and western Kenya. Rainfall during July 26th to August 25th was below-average across these areas, with many locations receiving only ~50% of typical amounts for this period (Figure 1-left). Above-average rainfall was observed in central-northern Sudan and localized areas of southeastern Kenya.

Rainfall totals for June 1st to September 14th, 2023, will likely be close to average in western and central-western Ethiopia and much of South Sudan, and average to above-average in Sudan. Uganda's Karamoja region is facing substantial seasonal deficits through this period (< 60% of average). Rainfall is below-average (< 75% of average) in southeastern South Sudan. In western Kenya, rainfall totals range from average to below-average in central-western areas.

In Ethiopia, areas in the northeast, southeast and southwest have been below-average since July. Conditions will likely not substantially improve before the Kiremt season ends, based on forecast average to below-average rainfall through mid-September (Figure 1 middle-right). According to the Ethiopia Monitoring Report from August 30th, it is very likely that "end-of-season rainfall totals will be below-normal in parts of eastern Tigray, the northern half of Afar, eastern and southern Oromia, northern Somali, and in Long and Kiremt-rain-receiving regions in the central and southern Rift Valley regions. Despite the fact that rangeland water resources have been sustained for ongoing pastoral and agro-pastoral practices, the current drier-than-normal conditions, which have been exacerbated by abnormally warm temperatures, have depleted pasture and water resources over the Rift Valley, northeastern, southern, and southeastern pastoral regions of Ethiopia." Across many of these areas, above-average temperatures are forecast to continue.

During October to December (OND) 2023, strong El Niño and positive Indian Ocean Dipole conditions are forecast, along with exceptionally warm temperatures in the western Indian Ocean. These conditions tend to enhance wet conditions in eastern East Africa, and the GHACOF65 consensus (Figure 1-right), and other analog-based and climate model forecasts highlight that there are very high chances of an above-normal short/Deyr rains season in eastern Kenya, southeastern Ethiopia, and southern Somalia. In western areas, while most forecasts indicate above-normal OND rains, confidence is relatively lower compared to eastern areas.

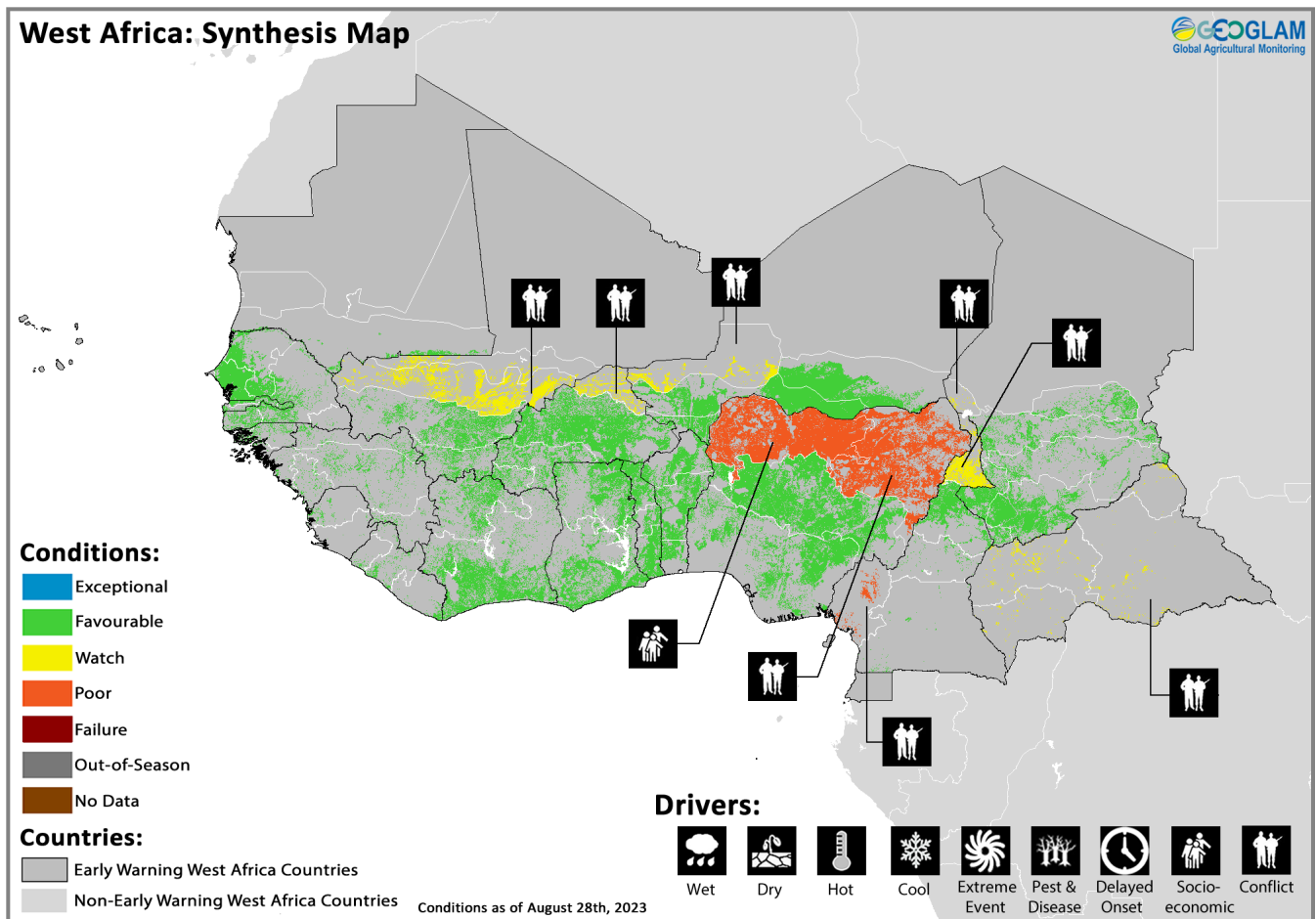
The OND 2023 rainfall outlook is anticipated to have positive impacts on short/Deyr rains crops and pastoralist resources, and could potentially help drive down the recent high levels of food insecurity. However, there are concerns about potentially excessive rainfall. The 1997 flooding disaster in Somalia erupted under strong El Niño and positive IOD conditions, when high river levels isolated tens of thousands of people, inundated croplands, and necessitated food and medical aid. While that is an extreme case, it is an important reminder of disruptions to settlements and transportation networks, disease outbreaks, and crop and livestock losses that can occur in high flood-risk areas.



**Figure 1. A recent rainfall anomaly, a seasonal rainfall anomaly outlook, a 15-day forecast, and a 3-month probabilistic rainfall forecast.** Left and middle-left: CHC Early Estimates, which compare current precipitation totals to the 1981–2022 CHIRPS average for respective accumulation periods. These show the percent of average precipitation for July 26th to August 25th, 2023 and June 1st to September 10th, respectively. Both panels use CHIRPS Prelim for Aug 1st to 25th; the second panel includes a CHIRPS-GEFS forecast for August 26th - September 10th. Middle-right: CHIRPS-GEFS forecast precipitation anomaly for August 31st - September 14th. Right: GHACOF65 consensus probabilistic forecast for OND 2023 precipitation from ICPAC. Source: UCSB Climate Hazards Center



## West Africa



Crop condition map synthesizing crop conditions as of August 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Crops that are in other than favourable conditions are labeled on the map with their driver.**

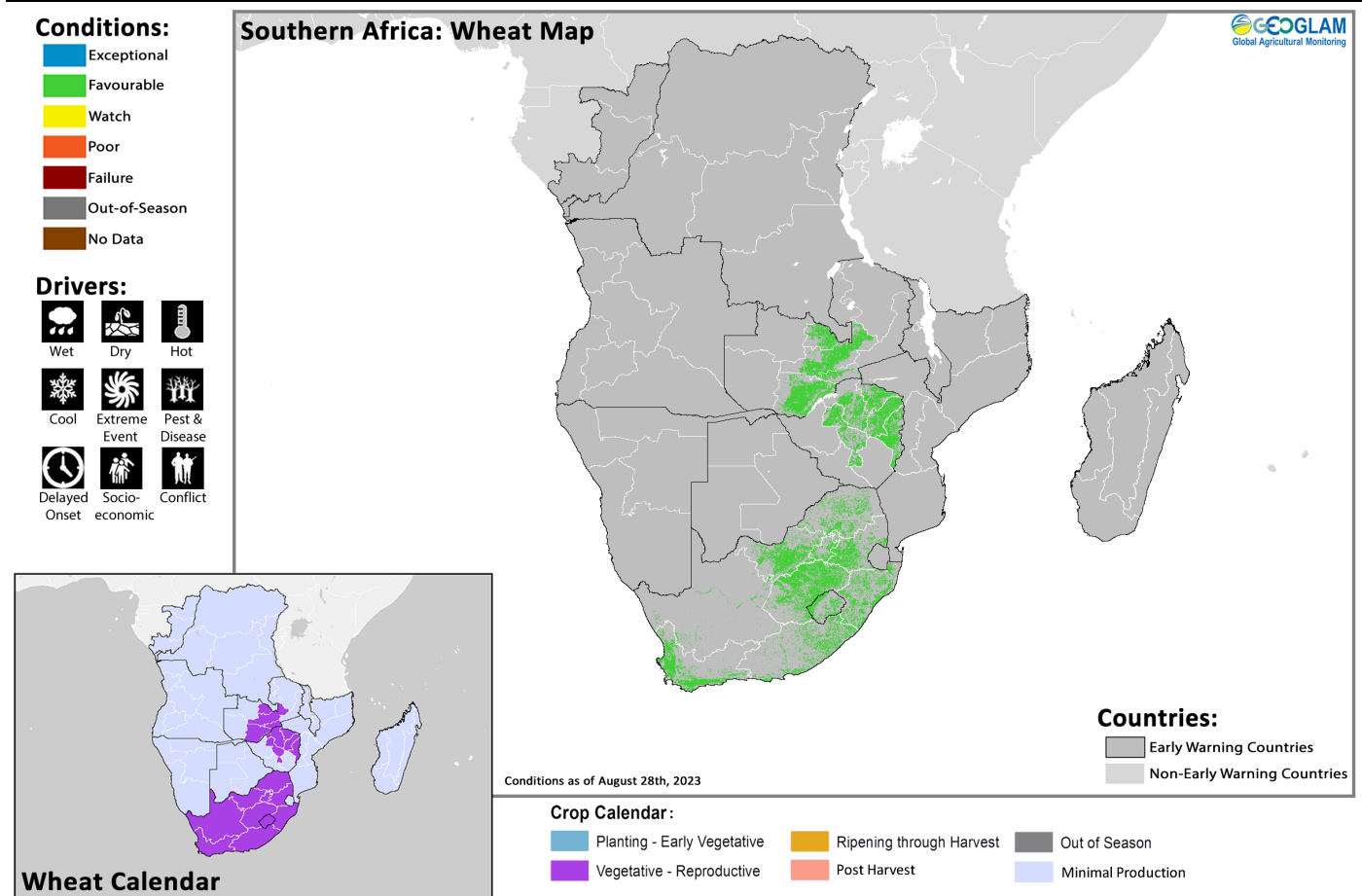
In southern West Africa, harvesting of main season cereals is underway in **Sierra Leone, Liberia, Cote d'Ivoire, Ghana, Togo, Benin, and Nigeria** while planting and development continues in **Gambia, Guinea-Bissau, Guinea, and the Central African Republic**. Cultivation of second season maize crops is underway along the Gulf of Guinea. In the northern Sahelian zone, planting and development of main season cereals continues in **Senegal, Mauritania, Mali, Burkina Faso, Niger, and western Chad**. Mostly average to above-average April to August rainfall performance has contributed to generally favourable agro-climatic conditions throughout the subregion. In bimodal southern areas along the Gulf of Guinea, average to above-average production is expected for the main season harvest, particularly in southern **Benin** where above-average yields are likely. Conversely, rainfall deficits in parts of the Sahelian zone in July may contribute to localized crop production shortfalls in southern **Mali**, northern **Nigeria**, and potentially other localized areas that experienced deficits. Additionally, concern remains in the conflict-affected areas of central **Mali**, northern **Burkina Faso**, western **Niger**, northeastern **Nigeria**, western **Chad**, the Far North and Southwestern regions of **Cameroon**, and the **Central African Republic**. There is also ongoing concern regarding socio-economic challenges relating to inter-communal conflict and limited resources in northwest and north-central **Nigeria**.

In **Niger**, a timely onset of the seasonal rains was followed by average to above-average rainfall amounts in most producing areas, with the exception of localized areas of Dosso, Tahoua and Tillaberi located in the west where erratic rainfall distribution resulted in water deficits and some crop damage. However, heavy rains and floods have impacted many parts of the country since the beginning of the rainy season in June, and average to above-average rainfall is expected through September. Additionally, high prices are resulting in limited fertilizer access, particularly in Maradi region located in the south-centre. In **Chad**, average to above-average cumulative rainfall received since the start of the seasonal rains in May has benefitted soil moisture conditions and crop establishment, except in localized southern areas where delayed onset of rains and prolonged dry spells resulted in planting delays and crop wilting. Furthermore, the use of mechanized agriculture has resulted in a slight increase in planted area in Ouaddaï and Sila regions located in the east, whereas limited availability of equipment and inputs led to a decrease in Logone Oriental and Mandoul regions located in the south. In **Nigeria**, northcentral and northeastern regions experienced rainfall deficits and extended dry spells in July and August, leading to crop wilting in localized areas of the northeast and prompting some farmers to replant in late July. In **Cameroon**, crops mostly benefitted from average to above-average July to August rainfall. While the delayed onset of the June rains and erratic performance has led to delayed flowering in some localized fields, the provision of subsidized fertilizers is expected to boost overall crop production in the Far North region.

## Middle East & North Africa

In the Middle East and North Africa, wheat harvesting finalized in June and July under mixed conditions due to erratic and insufficient rainfall in many areas with below-average yields in central, east, and northeastern **Morocco**, northwest and central-eastern **Algeria**, north-central **Tunisia**, the main producing wheat governorate of Hassakeh in northeastern **Syria**, northwestern **Iraq**, and north-central and northeastern parts of **Iran**. Elsewhere, end of season conditions were favourable. In **Egypt**, summer-planted rice is in the vegetative to reproductive stage while planting of *Nili* season (Nile Flood) rice continues, and overall conditions remain favourable. In **Iran**, prospects for rice crops are generally favourable in the main producing regions of Mazandaran and Gilan located in the north as well as in Khuzestan located in the centre-west. Conversely, planted area has decreased in Golestan located in the northeast due to a lack of irrigation water.

## Southern Africa

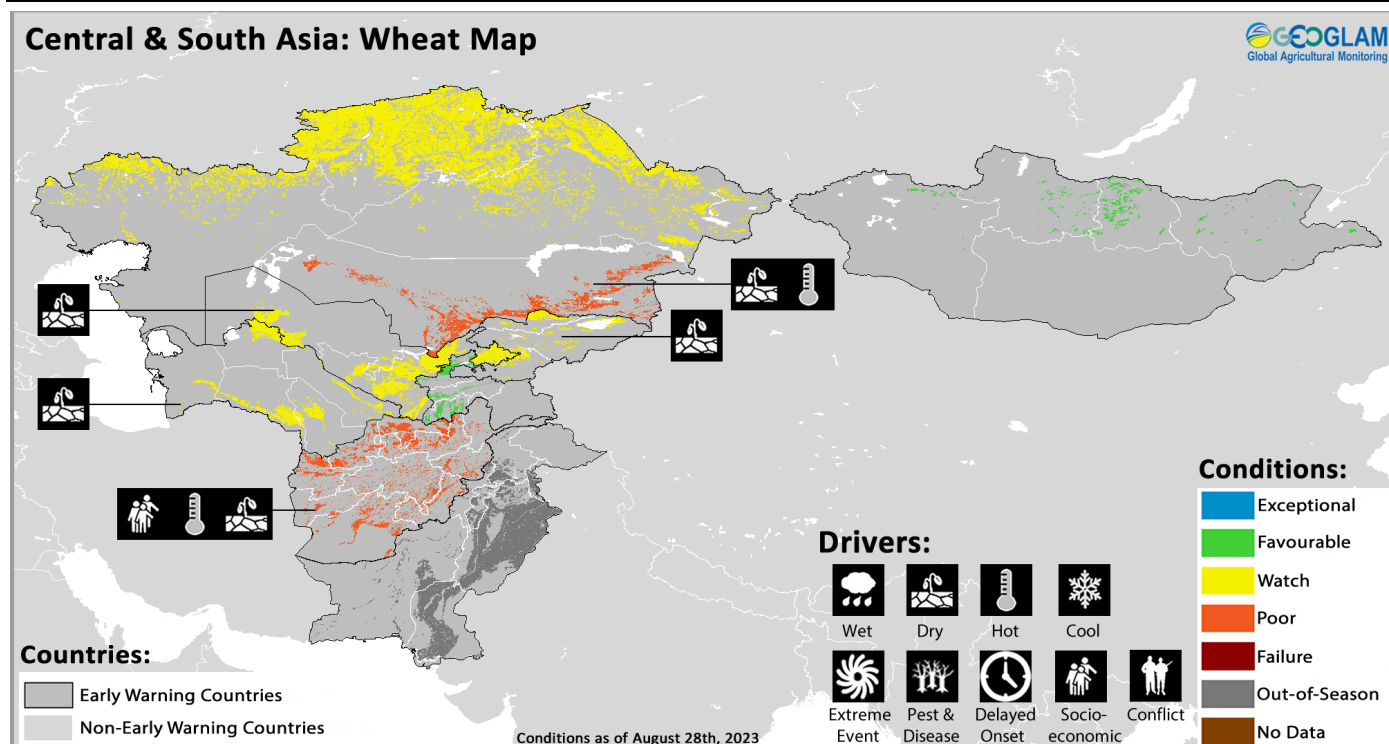


Crop condition map synthesizing wheat conditions as of August 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Crops that are in other than favourable conditions are labeled on the map with their driver.**

In Southern Africa, wheat crops continue to develop in **Zambia, Zimbabwe, South Africa, and Lesotho** under favourable conditions, and harvesting will begin in September in **Zimbabwe**. In **South Africa**, above-normal rainfall during the summer and the winter rainy seasons supported dryland and irrigated production of wheat across the major production areas. The Western Cape received above-normal rainfall from December through June, followed by near-normal rainfall in July and August. Widespread precipitation in May also benefitted soil moisture over large parts of the interior region. Overall, above-normal rainfall during the last three years has supported major river systems and irrigation water supply.

In the **Democratic Republic of the Congo**, planting and development of main season cereals continues while harvesting of second season maize finalized in August. Overall conditions are favourable except in the north where erratic rainfall since July has resulted in below-average soil moisture and vegetation conditions, though enhanced rains in August led to some improvement.

## Central &amp; South Asia



Crop condition map synthesizing wheat conditions as of August 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Crops that are in other than favourable conditions are labeled on the map with their driver.**

In Central and South Asia, wheat harvesting is complete or nearing completion throughout **Turkmenistan, Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan, Afghanistan, and Mongolia**. Yield declines are expected in **Afghanistan** and southern **Kazakhstan**, and concern remains in **Kyrgyzstan, Turkmenistan, and Uzbekistan** due to below-average precipitation and above-average temperatures in most areas throughout the growing season, with particularly dry conditions in central and northeastern areas of the subregion and hot conditions in most cropping areas. Conversely, favourable yield outcomes are expected in **Tajikistan** and **Mongolia** where rainfall performance has been adequate. Additionally, a likely warmer than normal spring increases the risk of snowmelt limiting the availability of irrigation water supply for the next cropping season (See Regional Outlook Pg. 12). In **Kazakhstan**, winter wheat harvesting finalized in the south while spring wheat harvesting continues, and generally below-average rainfall and soil moisture levels are likely to result in yield declines despite above-average rainfall in some north, south, and eastern areas in July and August (See Regional Outlook Pg. 12). In **Afghanistan**, the wheat harvest has now concluded with below-average cropping outcomes for cultivated area, yield, and production due to the prolonged dry conditions and high temperatures. Conversely, instances of heavy rainfall since late July impacted Nangarhar, Kunar, Laghman, and Nuristan in the east, Kabul, Parwan, Wardak, and Ghazni in the centre, and Zabul in the south. The eastern area benefited from monsoon rains, supporting the growth of maize and rice, though the depletion of unregulated groundwater reserves is impacting the irrigated standing crops (See Regional Outlook Pg. 12). In **Mongolia**, conditions are favourable except in some localized western areas where below-average precipitation resulted in minor wheat crop losses. In **Pakistan**, *Kharif* (summer) season maize and rice crops are in vegetative to reproductive stage for harvest from mid-September, and overall conditions are favourable, including in the main producing Punjab province.

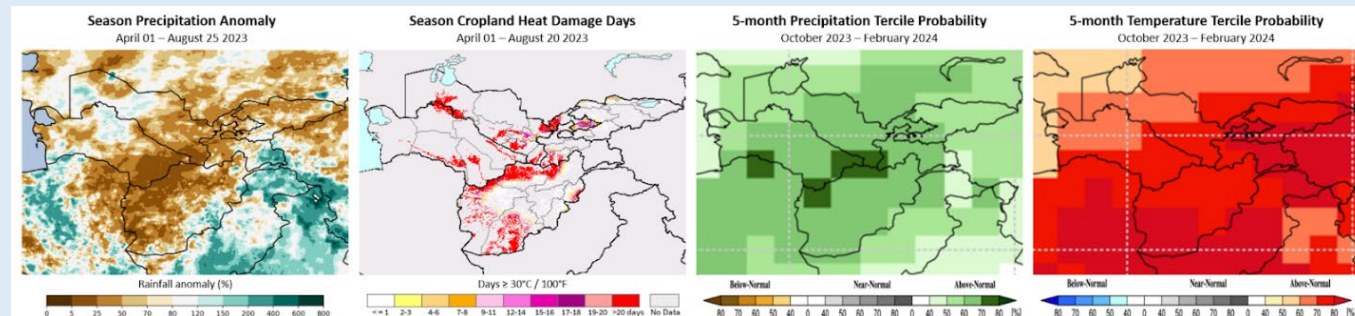
**Regional Outlook: Below-average rainfall performance and hot temperatures this season likely to be followed by above-average rainfall and temperatures through Feb 2024**

The 2023 crop growing season was characterized by below-average precipitation (Figure 1-left) and above-average temperatures (Figure 1 middle-left) in most areas. In central and northeastern portions of the region, the spring-summer was [extremely dry](#), with large areas registering the [driest April-to-August season in the last ~40 years](#). Summertime heat began early in 2023, with heat waves during June and from mid-July to early August. Frequent very high temperatures (Figure 1 middle-left) led to severe crop damage in areas with already water-stressed conditions.

In Kazakhstan, below-average precipitation and above-average temperatures have been a concern for yield and production. In April, the three regions leading in wheat production—Kostanay, North Kazakhstan, and Akmola—reported surface and subsurface soil moisture levels were higher than the previous year, but above-normal temperatures rapidly dried out soils. In crop growing areas where the impacts of ongoing dry conditions were already a concern, rainfall conditions during late July to late August were mixed. Below-average rainfall occurred in western and northern areas (Zapadno-kazachstanskaya, Akmolinskaya, and Severo-kazachstanskaya) and in portions of the southeast, based on IMERG-Late data. Above-average rainfall was observed in some northern areas (Kustanayskaya) and in portions of the east and south. In summer rainfall-receiving areas of Kyrgyzstan and southeastern Afghanistan, late-July to late-August rainfall was below-average.

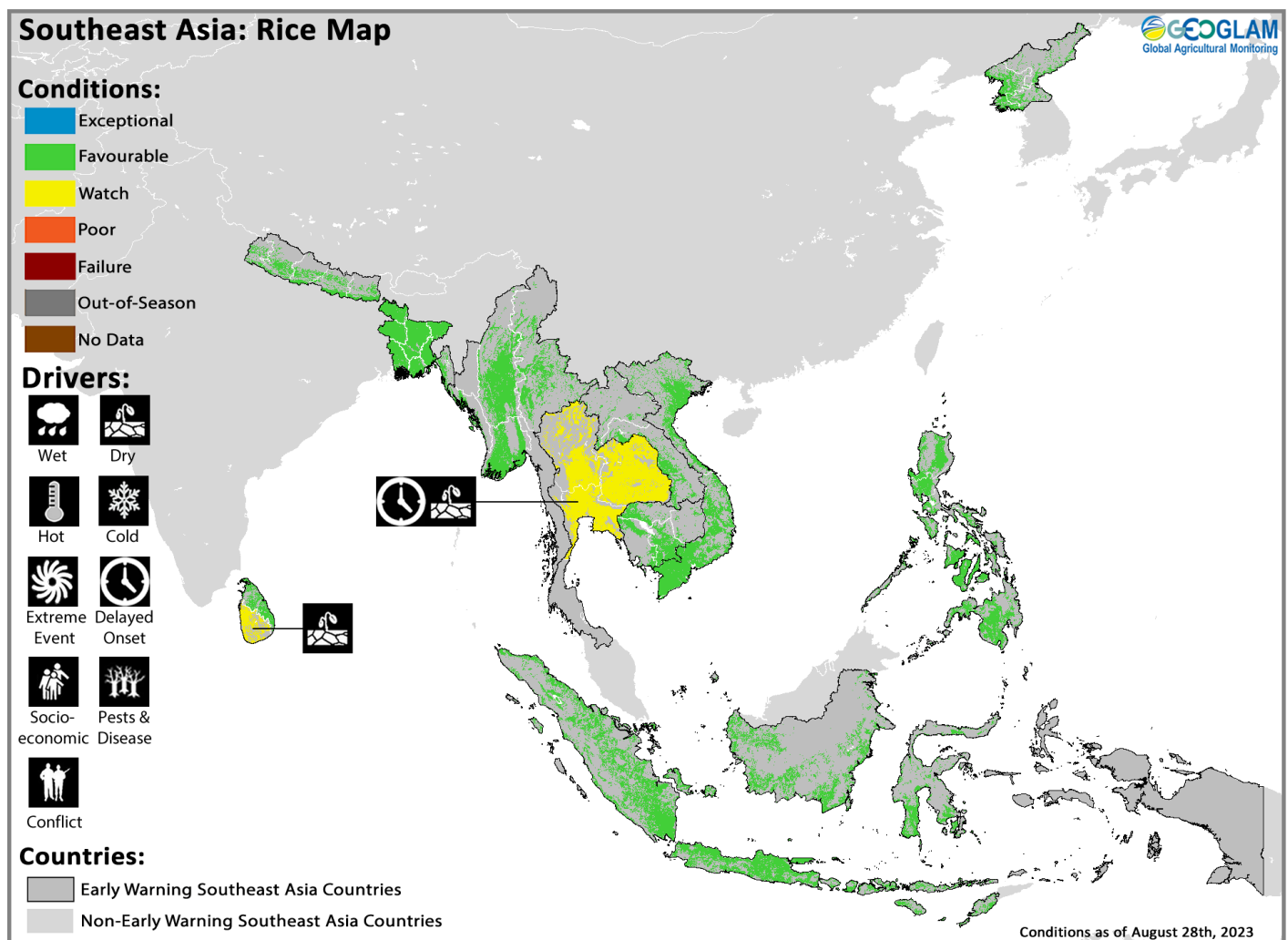
There are elevated chances of above-normal fall and winter precipitation across the region associated with El Niño. According to several multi-model ensembles, including the WMO forecast for October 2022 to February 2023 (Figure 1 middle-right), and the NMME and C3S, there are 50-60+% chances of above-normal precipitation. Above-normal temperatures are also forecast through February (Figure 1-right). In addition to the positive aspects of forecast above-average precipitation, there are also hazards to consider. A warmer-than-normal spring could increase risks of rapid snow melt, and [locust](#) invasions could be a threat to wheat production in 2024.

The forecasted above-average precipitation in Afghanistan's major crop production areas in the north and northeast, an area where models tend to predict relatively high chances, raises hope that better conditions might be ahead and may aid recovery from three years of drought. Groundwater has been seriously impacted by low precipitation and high extraction for sustaining agriculture, and a wet season would help recharge both surface and groundwater levels. However, given the prolonged dry conditions, early depletion of snowmelt this year, and below-average streamflow forecast into November, it may take time for water availability to substantially improve, and that could potentially impact the planting of irrigated winter crops.



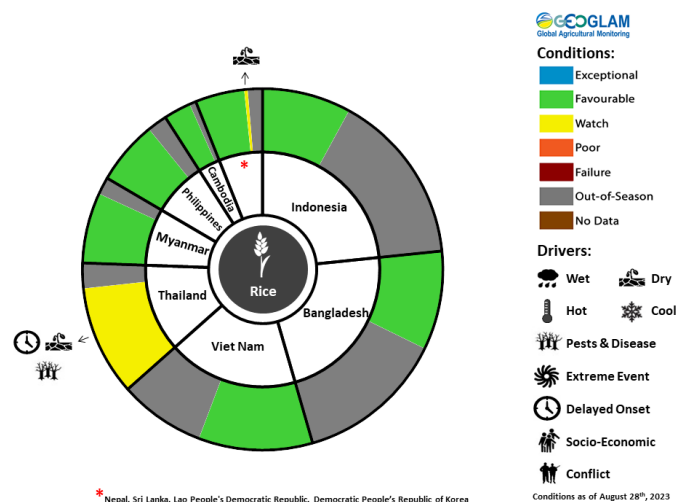
**Figure 1. A seasonal precipitation anomaly, heat damage in croplands, and 5-month probabilistic forecasts for precipitation and temperature.** Left: Percent of average precipitation for April 1st to August 25th, 2023, based on NASA IMERG-Late v6 data and a 2001-2020 baseline. Middle: For spring cropping areas, the number of days this season, from April 1st to August 20th, in which the daily temperature max exceeded 38°C/100°F. Based on NOAA CPC data. Image from the USDA FAS Crop Explorer. The right two panels are WMO probabilistic forecasts for October to February 2024 precipitation (middle-right) and 2-m temperature (right), based on models initialized in August. Images from the [WMO Lead Centre Long-Range Forecast Multi-Model Ensemble](#). Source: UCSB Climate Hazards Center

Southeast Asia



Crop condition map synthesizing rice conditions as of August 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Crops that are in other than favourable conditions are labeled on the map with their driver.**

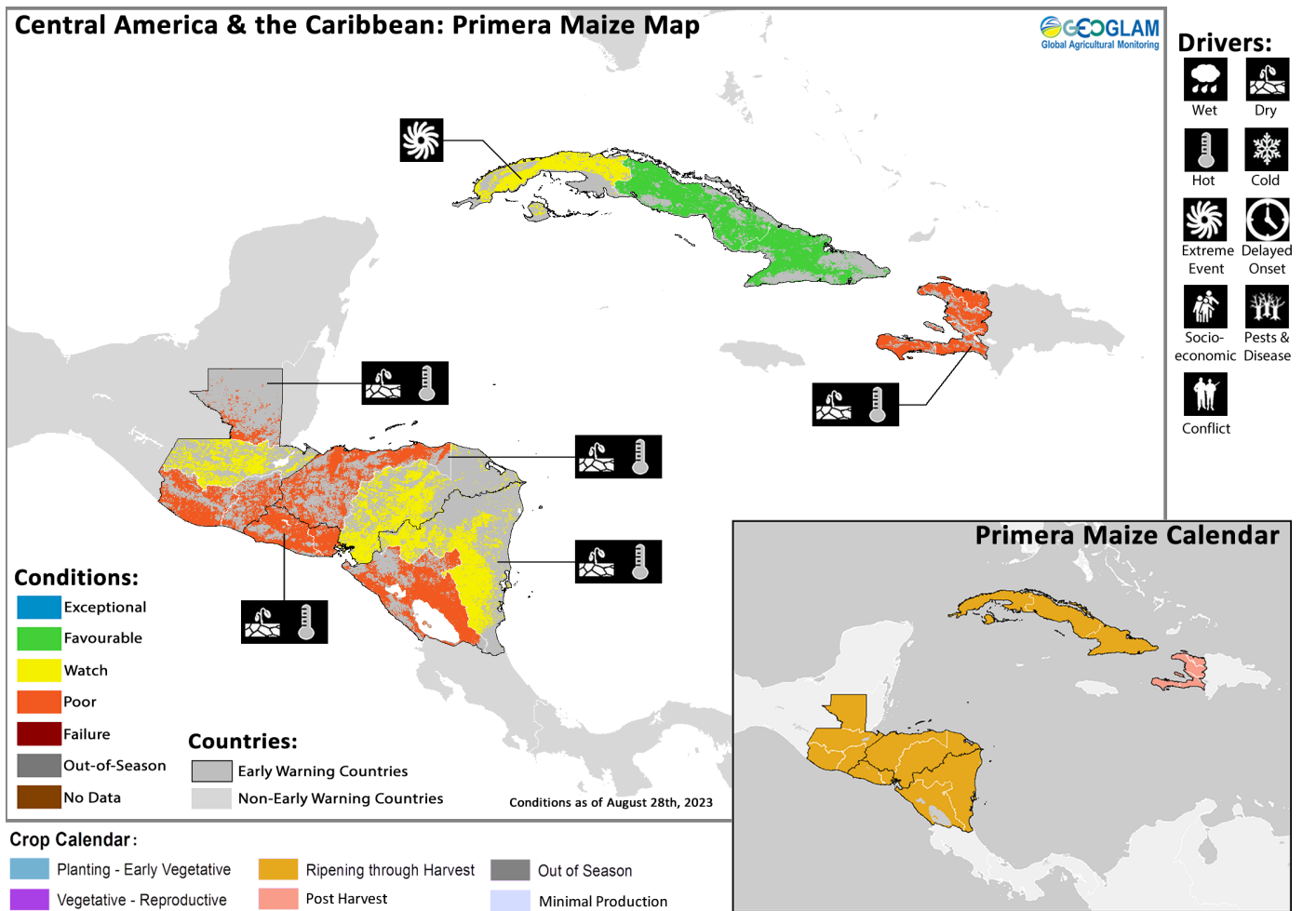
In northern Southeast Asia, planting of wet-season rice is nearing completion, and the total planted area is forecast to decrease slightly as the delayed start of the rainy season resulted in a shortage of agricultural water. Crops are now in the tillering to harvesting stage, and growing conditions are generally favourable except in **Thailand** where the water shortage is significantly impacting crops. Additionally, heavy rainfall and typhoons resulted in flooding in some areas, but crop damage was minimal. In **Indonesia**, planting of dry-season rice continued in August. Farmers are still preparing their fields following the end of the wet-season harvest in July, and overall growing conditions are favourable. The current total planted area is 3.9 million hectares, which is 6.1 percent lower than last year. Harvesting activities for earlier planted crops continued into the second month in August with a current harvested area of 1.7 million hectares, which is slightly delayed compared to last year, and yields are near-normal despite less precipitation received during the growing season. In the **Philippines**, wet-season rice is in the maturing to harvesting stage under favourable conditions despite the passage of three tropical cyclones in July. In late July, Super Typhoon Doksuri (locally named Egay) made landfall twice in the northern tip of the country and triggered floods in parts of Central Luzon. The storm affected most regions of the country, causing damage to infrastructure and the agricultural sector. Around 115 thousand hectares of paddy fields were affected with a volume loss of 42.8 thousand metric tons, according to a report from the Department of Agriculture. In **Thailand**, wet-season rice is in the tillering stage, and approximately 55 percent of the expected area has been planted. Total planted area is expected to



For detailed description of the pie chart please see description box on Pg.17.

decrease from last year due to ongoing drought conditions as rainfall received from May to July was less than the previous year in all regions due to the presence of El Niño conditions (See Special Alert Pg. 4). A continuation of poor precipitation performance in August is expected to reduce the number of tillers, raising concern for a high risk of damage from pests and disease. As a result, yield and total production are expected to decrease compared to last year. In northern **Viet Nam**, the main wet-season (seasonal) rice is in the seeding stage while the other wet-season (summer-autumn) rice is in the young panicle forming stage, and growing conditions are favourable due to adequate irrigation preparation. In the south, the main wet-season (summer-autumn) rice is in the harvesting stage with a harvested area of 0.49 million hectares out of 1.73 million hectares planted. Yield is forecast to be slightly higher than last year due to warm weather and better irrigation preparation. However, forecast below-average precipitation through October over central and southern areas may curb production of the wet-season (summer-autumn) crop and may impact irrigation water availability for the 2024 dry-season (winter-spring) crop. The other wet-season (autumn-winter) rice is in the growing stage under favourable conditions. However, heavy rains from late July triggered flooding and landslides in localized areas, resulting in 2,900 hectares of rice being submerged, according to the August 2 European Commission report. In lowland areas of **Laos**, planting of wet-season rice has been completed in all regions with a total planted area of 763 thousand hectares, and crops are now in the young panicle-forming stage. Weather conditions and irrigation water supply were generally adequate in August, though some localized areas were impacted by heavy rains that resulted in flooding and landslides. The total affected area is about 30 thousand hectares and the damaged area is 1.2 thousand hectares. Conversely, below-average precipitation in the northwest since late April may affect localized production outcomes. In upland areas, wet-season rice is in the young panicle-forming stage with a total planted area of 100 thousand hectares, and conditions are favourable despite some reports of pest outbreaks. In **Myanmar**, planting of wet-season rice reached its peak period in August with favourable monsoon rains received. Planting progress has reached 4.5 million hectares accounting for 73.8 percent of the national plan of 6.07 million hectares and is slightly faster than last year. Additionally, monsoon flooding impacted several areas, particularly in the lower and river basin regions. About 22 thousand hectares of planted crops are reported to have been affected by the flooding, and over 11 thousand hectares have been damaged. Replanting operations are underway for 560 hectares of damaged fields. Despite flooding impacts, most crops are now in the tillering to panicle-forming stage under favourable conditions. Furthermore, the August to October monsoon season is expected to be below-average in the north. In **Cambodia**, earlier planted wet-season rice is in the grain filling to harvesting stage under favourable conditions. Planted area reached around 2.57 million hectares accounting for 98 percent of the national planting plan, and heavy rains in early August impacted around 3,000 hectares of paddy fields. Around 20 percent of the planted area has been harvested with a current yield estimated at around 4.38 tons per hectare. Overall yield is expected to increase slightly compared to the previous year if weather conditions remain stable. In **Sri Lanka**, harvesting of *Yala* season rice and maize crops is beginning under mixed conditions with concern in Matara district located in the Southern Province and Kurunagala district located in the North Western Province as below-average rainfall in the first half of 2023 resulted in drought-like conditions and water shortages in some reservoirs. According to the August 9 European Commission report, around 50,000 farmers were affected by the lack of irrigation water, and farmers in the southwest have been protesting and demanding water access for crops. In **Nepal**, maize harvesting is underway while rice crops continue to develop for harvest from November, and conditions remain favourable. In **Bangladesh**, harvesting of *Aus* season rice (smaller producing season) finalized in August while planting of *Boro* season rice (larger producing season) as well as sorghum crops is underway, and overall conditions are favourable. However, heavy rains in early August triggered river overflows and flash flooding in the Chittangon Division located in the southeast. In the **Democratic People's Republic of Korea**, maize harvesting is underway while rice crops continue to develop for harvest from September, and overall conditions remain favourable with well above-average crop biomass as a result of good rainfall received.

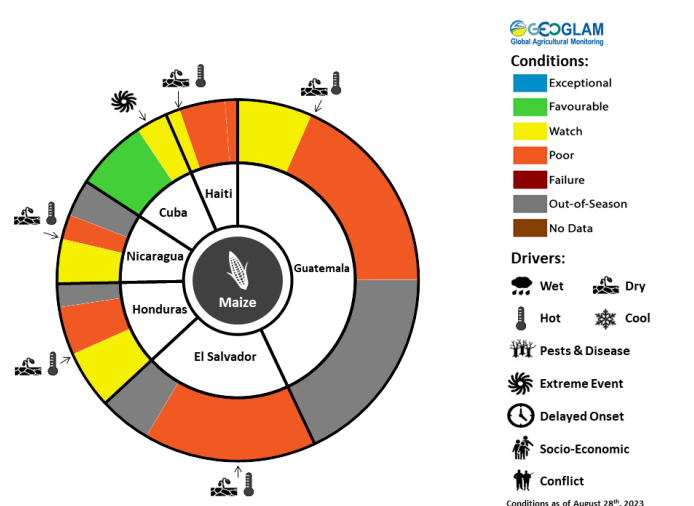
Central America & Caribbean



Crop condition map synthesizing Primera Maize conditions as of August 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Conditions that are other than favourable are labeled on the map with their driver.**

In Central America, harvesting of *Primera* season cereals is underway in all regions with significant concern for potential yield declines due to prolonged irregular and below-average rainfall as well as high temperatures that prevented soils from maintaining adequate moisture levels. Precipitation has been low and irregular since May, and seasonal rainfall totals are extremely low in northern **Guatemala**, western **El Salvador**, and northwestern **Nicaragua**. The high temperatures have intensified heat stress, further depleting available soil moisture (See Regional Outlook Pg. 17). Field trips and official information confirm that crops were impacted in multiple stages of growth during the *Primera* season, and reports also confirmed that crop damage is irreversible despite the recent rainfall improvements. Small-scale and subsistence farmers will be particularly affected by the likely yield declines. The lack of rainfall required subsistence farmers to sow crops multiple times, and in **Honduras**, the dry and hot conditions were severe enough to crack soils. Even large farms were affected by the irregular temporal distribution of rainfall, and in some worst-affected areas, farmers abandoned their crops. In addition to impacts on local crop production, there are concerns that drought conditions in Panama, in combination with restrictions on ship transit through the Panama Canal, could potentially have ripple effects on regional and global commerce.

Conversely, crops in parts of central-western **Guatemala**, southern **Honduras**, and southeastern areas of **Nicaragua** are less severely impacted by the drought conditions, and flash rains were received in **El Salvador** and **Guatemala**, but yield reductions are still likely. El Niño events are typically related to drier than average conditions in parts of Central America and the Caribbean (See Climate Influences Pg. 3 and Regional Outlook Pg. 17), and other atmospheric conditions such as warmer sea temperatures can promote storm development.



For detailed description of the pie chart please see description box on Pg.17.

There is now a 70 percent chance of above-normal activity during the 2023 Atlantic hurricane season (see Regional Outlook Pg. 17). Additionally, land preparation of *Segunda/Postre* season maize and bean crops is now underway across **Guatemala**, **El Salvador**, **Honduras**, and **Nicaragua**, and planting will begin in September. However, the dry and cracked soils will necessitate more moisture than usual before sowing can begin.

In **Guatemala**, generally below-average rainfall and high temperatures significantly impacted the start of the season and promoted the presence of crop pests and diseases, and flash flooding in August further impacted crops. While higher than average rainfall was observed in some areas in July with likely improvements in seasonal totals, irregular distribution of rainfall due to the El Niño event is currently impacting crop health to a greater degree than seasonal totals. The occurrence of flash floods and landslides in August posed further challenges to crop recovery, particularly in subsistence farming regions. Additionally, elevated temperatures are negatively impacting soil conditions, making it difficult to retain moisture. In the main producing departments of Petén located in the north and Alta Verapaz located in the centre, a continuation of dry and hot weather forecast through September is likely to negatively impact main season production. Elsewhere, forecast average to above-average rainfall may be conducive to some minor crop improvement. However, preliminary estimates suggest that persistent dry conditions are expected to result in below-average seasonal yields and output at the national level. The government expanded the 2023 coverage of agricultural insurance to compensate for expected crop losses. In **El Salvador**, maize crops are unlikely to recover from irregular rainfall distribution and hot weather with below-average yields expected, and there is also concern for bean crop yield declines. Additionally, a report by the Chamber of Small and Medium Agricultural Producers (CAMPO) indicated significant crop losses nationwide due to El Niño-induced drought conditions from May to June, along with the peak of the summer heat in July known as the *canícula* period. The report indicated a loss of 54.5 million kg of maize, representing an 18 percent decline in production, along with a loss of 1.8 million kg of beans, representing a 15 percent decline in production. In **Honduras**, cropping outcomes are likely to be affected by irregular and below-average rains and above-average temperatures, including in the main paddy-producing departments of Comayagua, Cortés, and Intibucá. An ongoing Red Alert has been declared across 140 municipalities due to meteorological drought in June. In **Haiti**, harvesting of *Printemps* season cereals is complete or nearing completion under poor conditions as irregular and below-average rains throughout the season and hot weather impacted the normal development of crops, particularly for small-scale and subsistence farmers. Planting of second season maize and bean crops is underway with ongoing concern due to the residual dry conditions. In **Cuba**, harvesting of main season maize continues under mixed while second season rice crops continue to develop for harvest from September. Conditions have been downgraded to watch in the west as Tropical Storm Idalia passed over western regions on August 29, bringing strong winds and heavy rainfall.



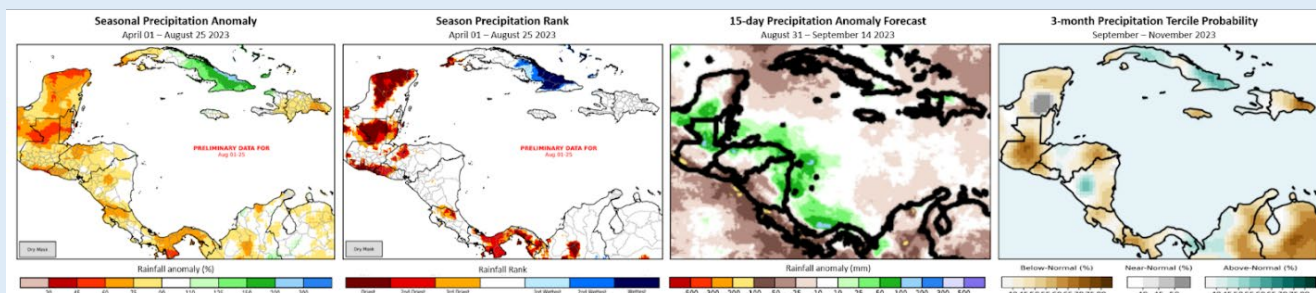
### ***Regional Outlook: Hot and dry Primera season and forecasts of wet conditions in Caribbean areas, continued dry conditions in Pacific areas, and hot temperatures***

The hot and dry 2023 Primera rainfall season completed with yet another month of below-average rainfall across most areas of Guatemala, El Salvador, Honduras, northern Nicaragua, and Haiti, from July 26th to August 25th. April to August 2023 rainfall totals ranged from 45% to less-than 90% of average across most areas, with historically low seasonal rainfall in Pacific coast and northern areas of Guatemala, western El Salvador, and northwestern Nicaragua, based on preliminary data through August 25th (Figure 1 left and middle-left). In these locations, as well as in northern-central Costa Rica and Panama, April to August 2023 rainfall was among the lowest on the 43-year CHIRPS data record.

Dry soils due to irregular rainfall distribution and high temperatures have been delaying sowing activities for the Segunda season. In Pacific-side areas, forecast drier and hotter-than-normal conditions during September could prolong those issues. Below-average rainfall is forecast during the first half of September in these areas and in Costa Rica, Panama, and Haiti, according to the 15-day GEFS from August 31st (Figure 1 middle-right). Longer-range SubX forecasts from September 1st suggest that below-normal rainfall may continue throughout September in these areas, and that above-normal temperatures are likely throughout the region. Above-average rainfall is forecast for August 31st to September 14th along the Caribbean coast of Central America, extending into northern Guatemala (Figure 1 middle-right), which could support planting activities in these areas. There are also potential risks of localized flooding in portions of central Guatemala, where heavy rains occurred in late August. Recent extreme rainfall events also produced flash floods over many areas of Central America.

According to the latest NOAA PSL C3S-based forecast (Figure 1 middle-right), there are 60% or higher chances of below-normal September-to-November (SON) rainfall in southern and central Guatemala, El Salvador, eastern Honduras, and mixed or low-confidence forecasts elsewhere. NMME and WMO forecasts also predict increased chances of below-normal SON rainfall in eastern Honduras, Nicaragua, and northern Guatemala.

El Niño conditions will be an ongoing concern for the segunda/postera cropping seasons. Below-normal precipitation often occurred during past moderate-to-strong El Niños, mainly on the Central America Pacific side but also in other locations (see details in the [CM4EW Special Report](#) on the 2023-2024 El Niño). Forecast above-normal Atlantic and eastern Pacific hurricane activity also raises the threat of high-impact storms through November.



**Figure 1. A seasonal rainfall anomaly, a seasonal rainfall rank, a 15-day precipitation anomaly forecast, and a 3-month probabilistic rainfall forecast.** Left and middle-left: CHC Early Estimates, which compare current precipitation totals to the 1981-2022 CHIRPS average for respective accumulation periods. Both panels use CHIRPS Prelim for August 1st to 25th. The left panel shows the percent of average precipitation for April 1st to August 25th, 2023. The middle-left panel shows how the season-to-date precipitation totals rank respectively to the CHIRPS historical record. The middle-right panel is a 15-day CHIRPS-GEFS (unbiased GEFS) forecast from August 31st, with values indicating how the forecast compares to the CHIRPS average for this period. The right-most panel is a probabilistic forecast of above and below-normal September to November 2023 rainfall from [NOAA PSL Experimental Forecasts](#). Source: UCSB Climate Hazards Center

**Pie Chart Description:** Each slice represents a country's share of total regional production. The proportion within each national slice is colored according to the crop conditions within a specific growing area; grey indicates that the respective area is out of season. Sections within each slice 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) and are a result of combining totals from multiple seasons to represent the total yearly national production. When conditions are other than favourable icons are added that provide information on the key climatic drivers affecting conditions.

**Information on crop conditions in the main production and export countries can be found in the Crop Monitor for AMIS, published September 7<sup>th</sup>, 2023.**

#### **i Sources and Disclaimers:**

The Crop Monitor assessment is conducted by GEOGLAM with inputs from the following partners FEWS NET, JRC, WFP, ARC, AFSIS, MESA, ICPAC, FAO GIEWS, Applied Geosolutions and UMD. 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. More detailed information on the GEOGLAM crop assessments is available at [www.cropmonitor.org](http://www.cropmonitor.org)

# Appendix

## 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 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 10-25% below-average. This is used when crops are stunted and are not likely to recover, and impact on production is likely.

**Failure:** Crop conditions are extremely poor. Crop yields are likely to be 25% or more below-average.

**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.*

*Note: In areas where conflict is a driver of crop condition, crop conditions are compared to the pre-conflict average rather than the average conditions over the past 5 years. In areas where conflict is protracted and based on expert analysis on a case by case basis, crop conditions will be compared to the average conditions over the past five 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:** 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.)

**Delayed-Onset:** Late start of the season.

**Pest & Disease:** Destructive insects, birds, animals, or plant disease.

**Socio-economic:** Social or economic factors that impact crop conditions (i.e. policy changes, agricultural subsidies, government intervention, etc.)

**Conflict:** Armed conflict or civil unrest that is preventing the planting, working, or harvesting of the fields by the farmers.



Wet



Dry



Hot



Cold



Extreme  
Event



Delayed  
Onset



Socio-  
economic



Pests &  
Disease



Conflict

**Crop Season Nomenclature:**

In countries that contain multiple cropping seasons for the same crop, the following charts identifies the national season name associated with each crop season within the Crop Monitor for Early Warning.

MENA				
Country	Crop	Season 1 Name	Season 2 Name	Season 3 Name
Egypt	Rice	Summer-planted	Nili season (Nile Flood)	

East Africa				
Country	Crop	Season 1 Name	Season 2 Name	Season 3 Name
Burundi	Maize	Season B	Season A	
Ethiopia	Maize	Meher Season (long rains)	Belg Season (short rains)	
Kenya	Maize	Long Rains	Short Rains	
Somalia	Maize	Gu Season	Deyr Season	
Somalia	Sorghum	Gu Season	Deyr Season	
Uganda	Maize	First Season	Second Season	
United Republic of Tanzania	Maize	Long Rains	Short Rains	
United Republic of Tanzania	Sorghum	Long Rains	Short Rains	

West Africa				
Country	Crop	Season 1 Name	Season 2 Name	Season 3 Name
Benin	Maize	Main season	Second season	
Cameroon	Maize	Main season	Second season	
Cote d'Ivoire	Maize	Main season	Second season	
Ghana	Maize	Main season	Second season	
Mauritania	Rice	Main season	Off-season	
Nigeria	Maize	Main season	Short-season	
Nigeria	Rice	Main season	Off-season	
Togo	Maize	Main season	Second season	

Southern Africa				
Country	Crop	Season 1 Name	Season 2 Name	Season 3 Name
Democratic Republic of the Congo	Maize	Main season	Second season	
Mozambique	Maize	Main season	Second season	

Southeast Asia				
Country	Crop	Season 1 Name	Season 2 Name	Season 3 Name
Bangladesh	Rice	Boro	Aman	
Cambodia	Rice	Wet season	Dry season	
Indonesia	Rice	Main season	Second season	
Lao People's Democratic Republic	Rice	Wet season	Dry season	
Myanmar	Rice	Wet season	Dry season	
Philippines	Rice	Wet season	Dry season	
Sri Lanka	Rice	Maha	Yala	
Thailand	Rice	Wet season	Dry season	
Viet Nam	Rice	Wet season (Autumn)	Dry season (Winter/Spring)	

Central & South Asia				
Country	Crop	Season 1 Name	Season 2 Name	Season 3 Name
Afghanistan	Wheat	Winter-planted	Spring-planted	
Kazakhstan	Wheat	Winter-planted	Spring-planted	
Kyrgyzstan	Wheat	Winter-planted	Spring-planted	
Tajikistan	Wheat	Winter-planted	Spring-planted	


**Crop Season Nomenclature:**

*In countries that contain multiple cropping seasons for the same crop, the following charts identifies the national season name associated with each crop season within the Crop Monitor for Early Warning.*

Central America & Caribbean				
Country	Crop	Season 1 Name	Season 2 Name	Season 3 Name
Cuba	Rice	Main season	Second season	
El Salvador	Beans	Primera	Postrera	
El Salvador	Maize	Primera	Segunda	
Guatemala	Beans	Primera	Postrera	Apante
Guatemala	Maize	Primera	Segunda	
Haiti	Maize	Main season	Second season	
Honduras	Beans	Primera	Postrera	
Honduras	Maize	Primera	Segunda	
Nicaragua	Beans	Primera	Postrera	Apante



# Global Agricultural Monitoring

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

Cover Photo by: Christina Justice

## Contributing partners



*\*EC contribution is provided by the Joint Research Centre of the European Commission*