

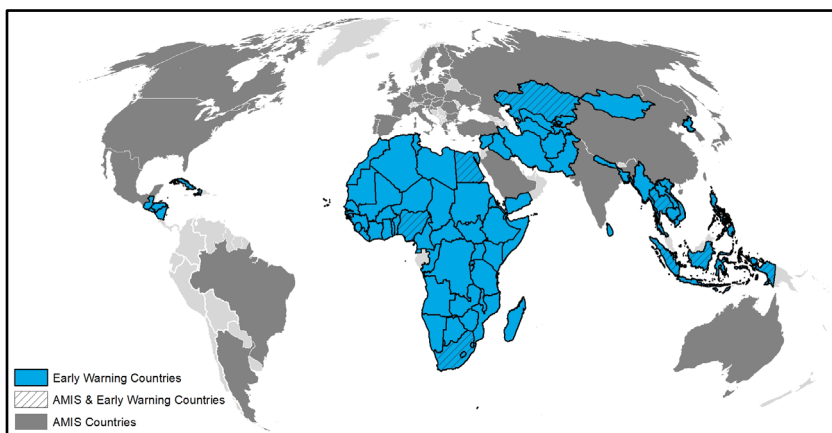


# Crop Monitor

## EARLY WARNING

### Overview:

In **East Africa**, there is concern in parts of the north due to dry conditions. In the south, above-average precipitation is forecast for the Short Rains and is expected to benefit crop production (See Regional Outlook Pg. 5). In **West Africa**, conditions are generally favourable for the ongoing harvesting of main season cereals. However, persistent conflict continues to impact agricultural activities in affected areas. In the **Middle East and North Africa**, rice conditions are generally favourable in Egypt and Iran and wheat planting will start from next month across the region. In **Southern Africa**, wheat prospects remain favourable while forecast dry and hot weather for the upcoming October to December main rainy season will likely impact upcoming planting activities (See Regional Outlook Pg. 12). In **Central and South Asia**, winter wheat harvesting mostly finalized last month with below-average yields in Afghanistan, Turkmenistan, and Kyrgyzstan due to generally poor rainfall performance and hot weather. In **Southeast Asia**, conditions are favourable for wet-season rice in the north, except in Thailand, and for dry-season rice in Indonesia despite minor drought damage. In Nepal, erratic and insufficient precipitation received in major producing areas impacted cropping outcomes. In **Central America & the Caribbean**, *Primera* season yield declines are expected in all regions due to irregular and below-average rains as well as high temperatures. In Haiti, delayed seasonal rains impacted *Printemps* season harvesting outcomes. Dry conditions and high temperatures are forecast to continue through December across much of the region (See Regional Outlook Pg. 17).



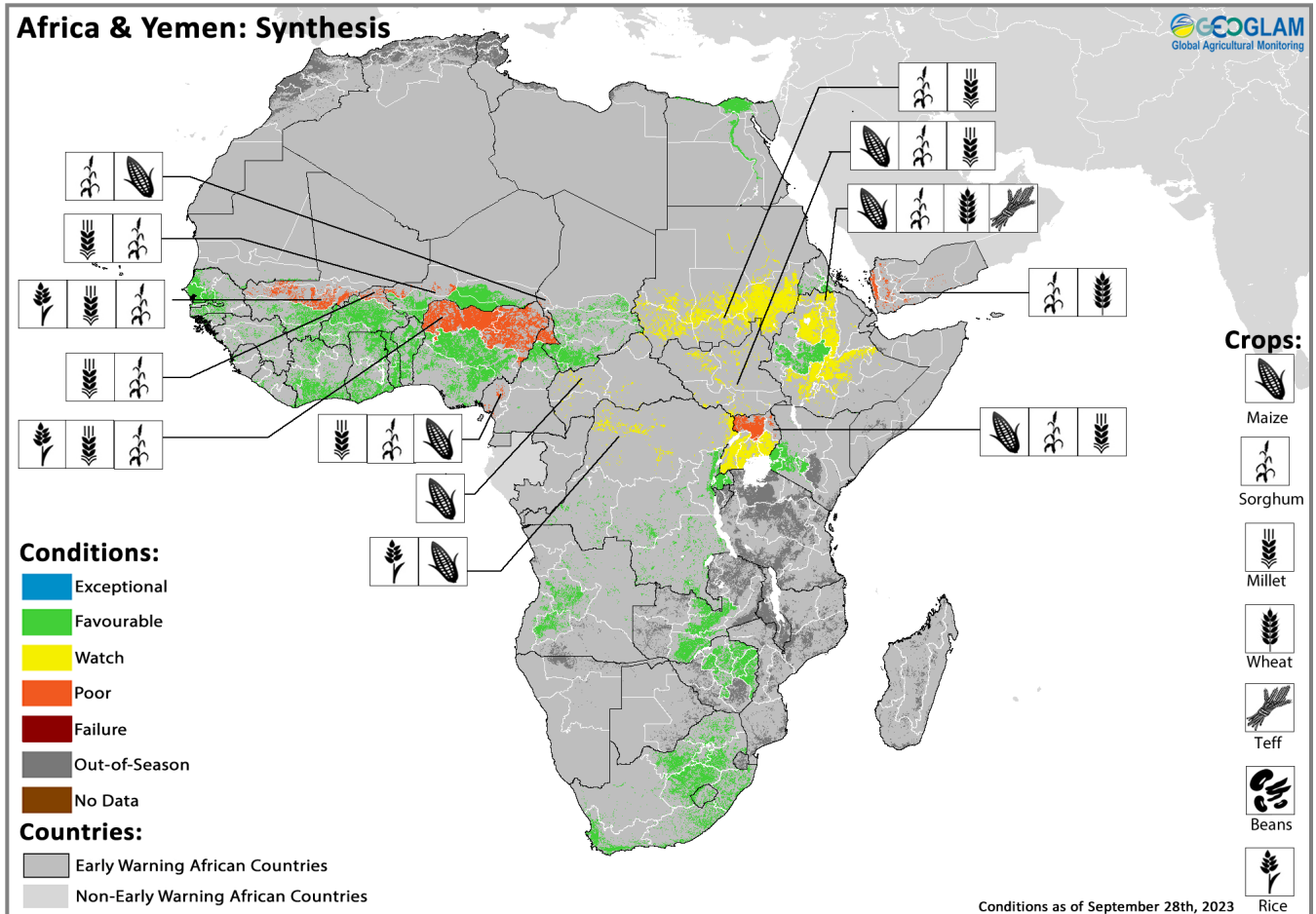
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# GEOGLAM Crop Monitor for Early Warning

## Crop Conditions at a Glance

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



Crop condition map synthesizing information for all Crop Monitor for Early Warning crops as of September 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:** Concerns remain for main season cereals in Yemen, South Sudan, and parts of Uganda and Ethiopia due to dry conditions. Unusually wet conditions are expected for the October to December Short Rains for most areas due to the influence of a strong El Niño and a positive IOD (See Climate Influences Pg. 3 and Regional Outlook Pg. 5).

**WEST AFRICA:** Harvesting of main season cereals is underway in most areas, and planting and development of second season cereals continues in areas south of the Sahel. Average to above-average rainfall has been generally conducive to cropping conditions despite localized deficits. However, below-average outcomes are expected in conflict-affected regions.

**MIDDLE EAST & NORTH AFRICA:** Conditions are favourable for rice crops in Egypt and Iran, and wheat planting will start from next month across the region.

**SOUTHERN AFRICA:** Conditions remain favourable for winter wheat development. Land preparation for main season cereals is underway, and forecast delayed and below-average October to December rains combined with above-average temperatures are likely to impact upcoming planting activities (See Regional Outlook Pg. 12).

**CENTRAL & SOUTH ASIA:** Persistent dry and hot conditions throughout the season resulted in poor outcomes in Afghanistan, Turkmenistan, and Kyrgyzstan for winter wheat. Spring wheat harvest is underway and concern remains in Kazakhstan and Kyrgyzstan. However, the region is expected to receive enhanced precipitation from October through March 2023/24.

**SOUTHEAST ASIA:** Wet-season rice continues to develop under mostly favourable conditions despite minor impacts of seasonal drought, except in Thailand where a decrease in yields is expected. In Indonesia, conditions are favourable for dry-season rice despite less precipitation received during the growing season.

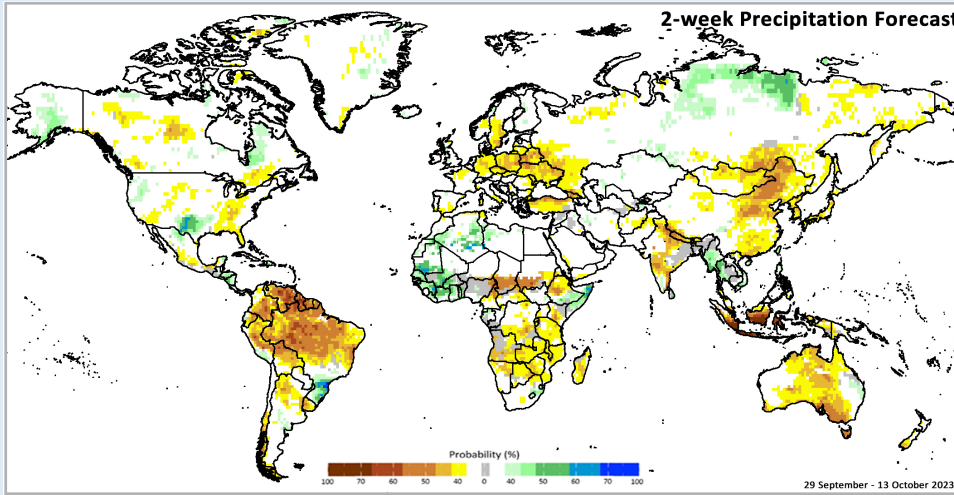
**CENTRAL AMERICA & CARIBBEAN:** Harvesting of *Primera* season cereals is nearing completion with expected yield declines in all regions due to irregular rainfall distribution and significant deficits, coupled with hot temperatures that exacerbated evapotranspiration. Farmers are mostly awaiting adequate rains to sow for the *Postrera/Segunda* season. In Cuba, Tropical Storm Idalia did not end up affecting agriculture.

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

The two-week forecast (Figure 1) indicates a likelihood of above-average rainfall over parts of central and northeastern Canada, the Pacific Northwest and Southern Plains of the US, northern Mexico, Honduras, Nicaragua, the Dominican Republic, southern Peru, southern Brazil, central Argentina, parts of North Africa, much of western West Africa, Gabon, eastern South Africa, southern South Sudan, southern Ethiopia, Somalia, the United Kingdom, Finland, north and central parts of the Russian Federation, Kazakhstan, western Iran, southern India, Sri Lanka, Myanmar, Thailand, southern Viet Nam, and central-eastern Australia.

There is also a likelihood of below-average rainfall over much of central, southwest, and southeastern Canada, central and eastern parts of the US, Mexico, much of northern South America, northern Argentina, Uruguay, southern Chile, northern Morocco, northern Algeria, northern Tunisia, southern Niger, northeastern Nigeria, Cameroon, Chad, the Central African Republic, southern Sudan, north and central Ethiopia, Eritrea, Uganda, Kenya, Rwanda, Burundi, the United Republic of Tanzania, much of Southern Africa, much of north and eastern Europe, Turkey, much of the Russian Federation, Mongolia, China, DPRK, the Republic of Korea,

Japan, Afghanistan, Pakistan, Nepal, Bhutan, much of India, Malaysia, Indonesia, Papua New Guinea, much of Australia, and New Zealand.



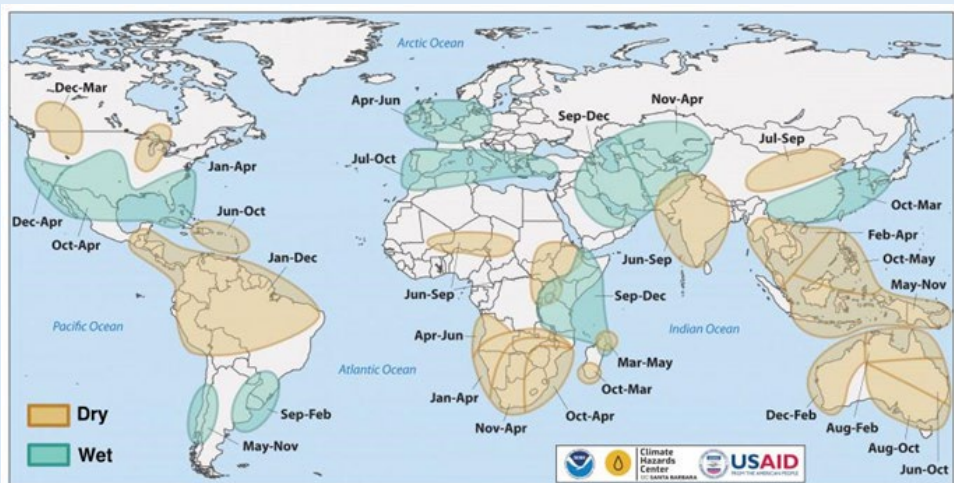
**Figure 1:** IRI SubX Precipitation Biweekly Probability Forecast for 29 September – 13 October 2023, issued on 22 September 2023. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](#)

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

The ongoing El Niño event will likely reach peak intensity during October 2023 to January 2024, and then remain active into March to May 2024 (78 percent chance), according to the IRI/CPC forecast. Very warm sea surface temperatures in the Niño3.4 region indicate this is already a strong event.

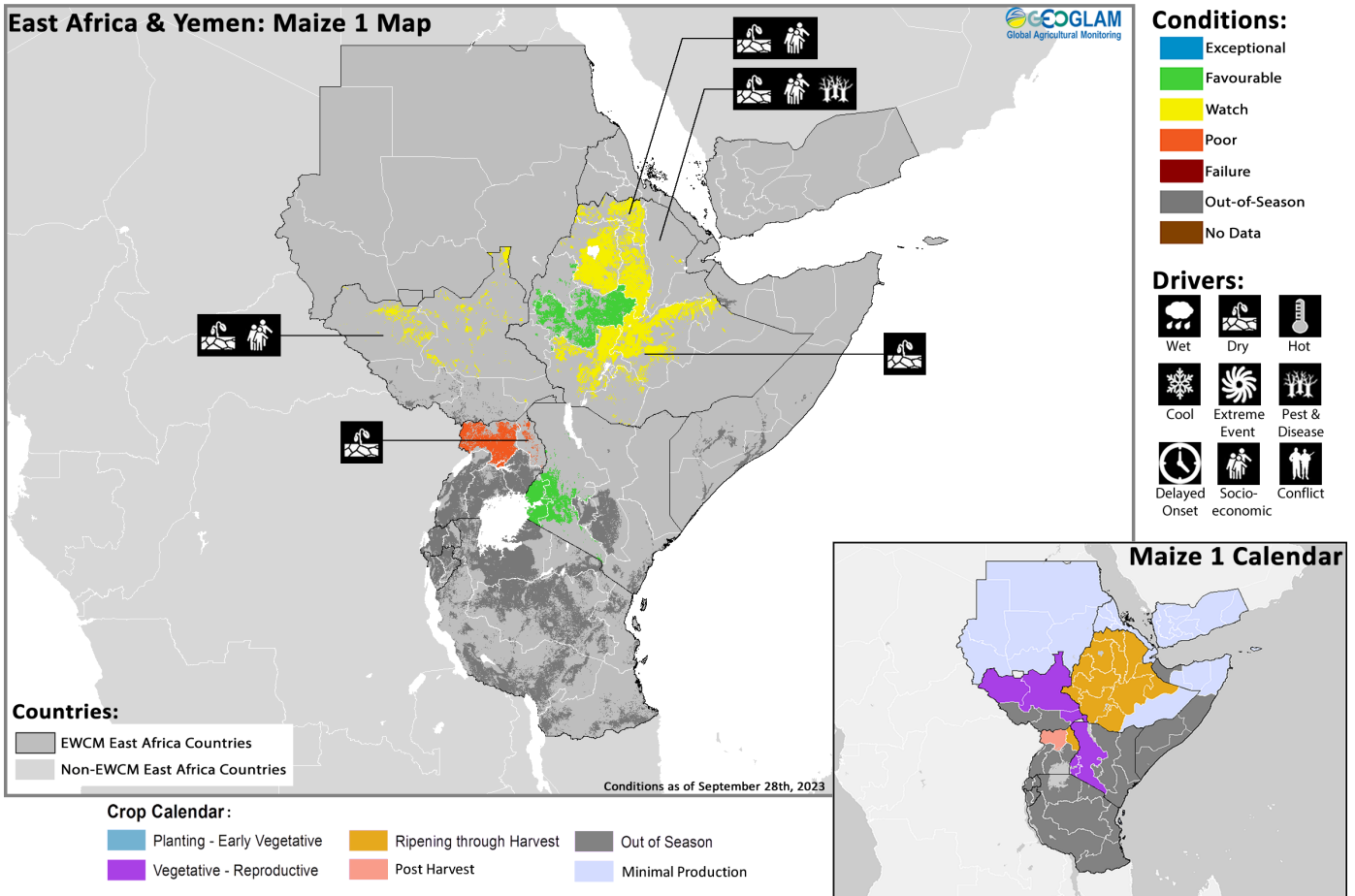
El Niño events tend to enhance precipitation in Central Asia, southern North America, south-eastern South America, southern Europe, east and southern East Africa, and south and eastern China. Drier-than-average conditions tend to occur in Central America, the Caribbean, northern South America, parts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

A positive Indian Ocean Dipole (IOD) event is also underway and will likely be strong and impactful with a peak in October and November and lasting until January, according to the Australian Bureau of Meteorology. 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. Source: UCSB Climate Hazards Center



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

East Africa

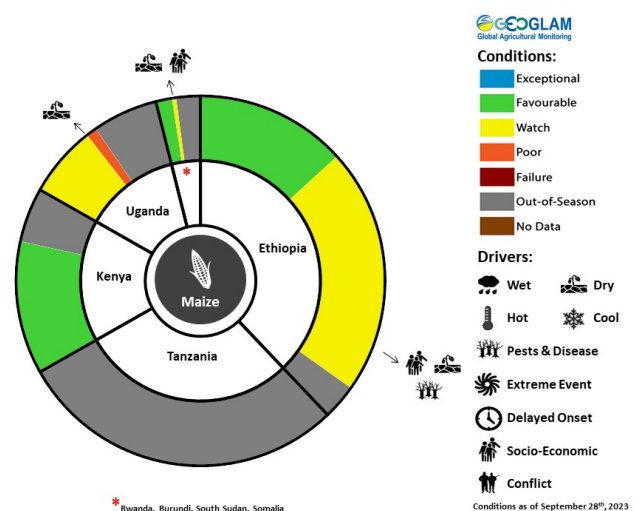


Crop condition map synthesizing Maize 1 crop conditions as of September 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Conditions that are other than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

Across the north of the subregion, harvesting of main season cereals is underway in **Yemen** while crops continue to develop in **Sudan**, **South Sudan**, and **Eritrea**. Dry concerns remain in southeastern **Sudan** and **South Sudan**, and a combination of conflict and socio-economic challenges continue to impact agricultural activities in **Sudan**, **South Sudan**, and **Yemen**. Conversely, prospects remain favourable in **Eritrea**. In **Ethiopia**, *Meher* season harvesting is just beginning, and concern remains in southwest, central, and northeastern areas impacted by rainfall deficits, in northern areas impacted by localized pockets of conflict and residual socio-economic challenges, and in Afar region located in the northeast where desert locusts are emerging.

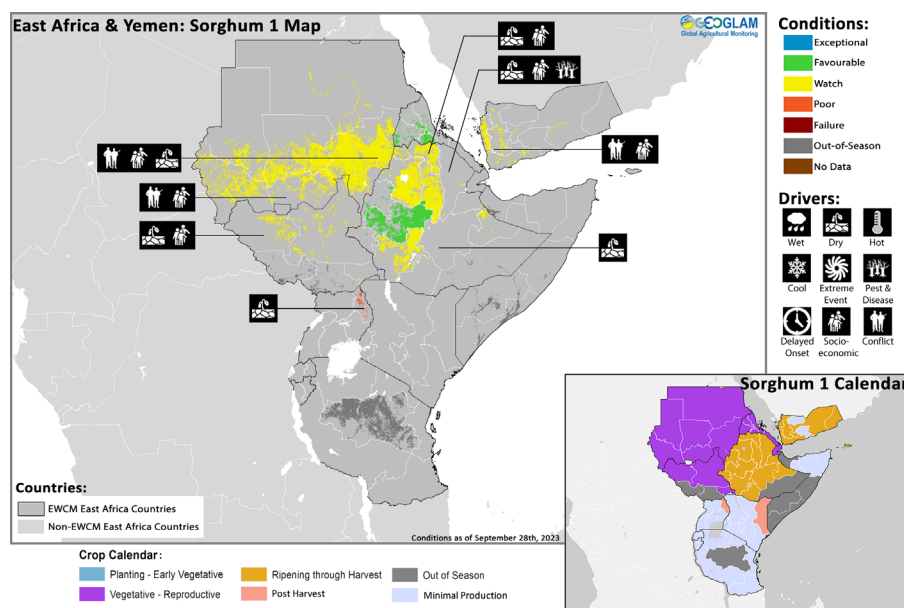
Across the south of the subregion, harvesting of main season cereals is complete or nearing completion in unimodal northern regions of **Uganda** under poor conditions due to persistent seasonal dryness. In **Kenya**, main season crops continue to develop in unimodal and major producing regions under favourable conditions. Planting of second season maize is underway in bimodal areas of **Uganda** and in **Rwanda** under mixed conditions.

East Africa has generally experienced average to above-average rainfall between June and September, although there are notable deficits in parts of southern **Sudan**, **South Sudan**, southwest to northeastern **Ethiopia**, **Somalia**, the Rift Valley in western **Kenya**, northeast and southwestern **Uganda**, **Rwanda**, and northwestern **United Republic of Tanzania** (See Regional Outlook Pg. 5). The mixed conditions are largely influenced by hotter-than-normal temperatures and dry conditions. Forecasts indicate a strong likelihood for abnormally wet conditions during the October to December (OND) Short Rains period for most areas due to the influence of a strong El Niño and a positive IOD, particularly across



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

equatorial and southern parts of the region. A peak is expected in October and November, and the widespread above-average rains are likely to extend into early 2024 (See Climate Influences Pg. 3). The enhanced rains are expected to benefit crop development and provide much-needed moisture relief in deficit areas after three consecutive dry La Niña years. However, the forecast also poses potential challenges, increasing the likelihood of flooding and waterlogging due to heavy rains, notably for riverine and low-lying cropping areas, as well as potentially increasing post-harvest losses due to an inadequate field drying period (See Regional Outlook Pg. 5). Additionally, desert locust swarms are emerging as a risk in northern **Ethiopia**, parts of northwest **Somalia**, and **Yemen**.



*Crop condition map synthesizing Sorghum 1 conditions as of September 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.***

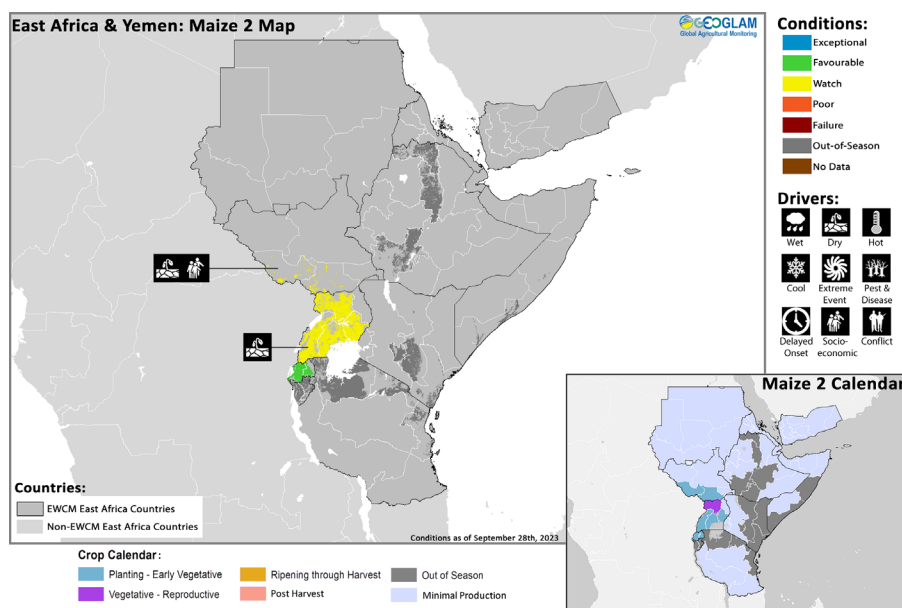
Concern remains throughout the country due to limited precipitation received across most areas during the growing season (See Regional Outlook Pg. 5). Below-average rainfall levels in July and August resulted in worsened deficits in the southeast, affecting both crop and pasture conditions in parts of Central Equatoria and Eastern Equatoria, though these areas are more dependent on pasture resources for food and livelihoods. Furthermore, unevenly distributed rainfall since July has resulted in seasonal rainfall deficits in Western Equatoria, though the area has recently received enhanced rains. Conversely, parts of the north and west received more mixed rainfall performance and slightly improved precipitation in September, though below-average cumulative rains are still expected to impact yields in these areas. Cumulative rainfall from July to November is expected to be below-average in the eastern half of the country and average in the western half, and overall yields are expected to be similar to last year and slightly below-average due to the rainfall patterns contributing to worsened harvests in the east. There is also an increased likelihood of southern bimodal zones experiencing additional rainfall in November and December. Furthermore, ongoing socio-economic challenges continue to impact agricultural outcomes. In **Sudan**, main season millet and sorghum crops are in vegetative to reproductive stage, and while agro-climatic conditions have improved with enhanced rains, concern remains regarding the ongoing conflict situation and related socio-economic challenges. The country has experienced mostly average to above-average rainfall from June to September, although there are deficits in some southern regions, and warmer temperatures are contributing to the negative effects on vegetation development in these areas. Below-average rainfall is expected to continue through October in localized areas of the south with a low risk of flooding, though episodes of intense rainfall may still flood some central-eastern areas that receive flows from the Ethiopian Highlands. Afterwards, above-average rainfall is expected across the south of the country in November and December which could result in localized flooding and prevent adequate drying for harvesting activities (See Regional Outlook Pg. 5). Furthermore, cultivation has been widely disrupted as the conflict situation entered its fifth month in September, and in areas close to the conflict, minimal to no planting has been reported due to restricted field access. In less impacted semi-automated and irrigated production areas in the southwest, farming activities were also impacted by financial constraints resulting from a deteriorated economic situation as well as the delayed availability of costly inputs. As a result, the area planted is expected to be below-average for the ongoing main agricultural season, and overall output and yields are also expected to decline. In **Eritrea**, main season sorghum and wheat crops are developing under favourable conditions with good rains received in September that are likely to continue through the end of the year (See Regional Outlook Pg. 5). In **Djibouti**, main season millet and sorghum crops are developing under favourable conditions. In **Yemen**, harvesting of the spring wheat crop finalized in September while harvesting of sorghum continues. While beneficial rains contributed to favourable vegetation conditions in the western highlands, persistent conflict and socio-economic challenges continue to result in yield declines below the pre-conflict level. However, the active conflict situation remains relatively suppressed following a slight uptick in late July, while economic warfare between the major parties continues.

#### Northern East Africa & Yemen

In **Ethiopia**, harvesting of *Meher* season cereals is just beginning, and concern remains in the southwest, centre, and northeast where drought conditions continued through September. The country experienced a mixed June to September *Kiremt* rainfall season. Along the Rift Valley, rainfall deficits from July impacted crops in parts of eastern Tigray, eastern Amhara, the Rift Valley, and SNNPR, and replanting efforts were minimal due to the high fuel and farm input prices. Additionally, concern remains in areas of the north impacted by ongoing pockets of conflict and residual socio-economic challenges. Desert locusts have emerged in areas of Afar bordering Tigray region but are not expected to spread. In **South Sudan**, first season cereals are in vegetative to reproductive stage for harvest from October while planting of second season maize and sorghum crops continues.

## Southern East Africa

In unimodal rainfall areas of **Uganda**, harvesting of first season cereals is complete or nearing completion, and conditions have been downgraded to poor as the region experienced consistent below-average rainfall from March to September. In bimodal rainfall areas, planting and development of second season maize crops is underway, and concern remains in most areas as below-average and erratic rainfall during the first rainy season from March to June has been followed by a particularly dry July to September dry period, despite some improved rains in September, resulting in delays in land preparation and planting as well as seasonal rainfall deficits across the southwest (See Regional Outlook Pg. 5). While the enhanced rains through December are expected to benefit crop production, the situation could result in flooding and waterlogging. In **Kenya**, Long Rains cereals are developing in the unimodal and major producing regions in the western half of the country under favourable conditions. June to September rainfall deficits were recorded in the Rift Valley, and there is also a deficit area along the Kenya-Uganda border (See Regional Outlook Pg. 5). However, vegetation conditions remain favourable. For October to December, forecasts indicate above-average rainfall throughout the country, which may result in flooding and waterlogging (See Regional Outlook Pg. 5). In **Rwanda**, planting of Season A maize crops is underway, and conditions are favourable despite below-average rains received. However, a shift is anticipated with likely above-average rainfall from October to December (See Regional Outlook Pg. 5). In **Burundi**, a timely onset of the Short Rains season in September benefitted land preparation activities for the upcoming Season A crop. Also, despite a recent increase in fertilizer costs, subsidized fertilizer and maize seeds are expected to influence planting for the upcoming season. The combination of likely conducive weather outcomes and government support is expected to benefit crop performance. In **Somalia**, land preparation is underway for the *Deyr* season crop, and planting will begin in October. Above-average precipitation is expected from October to December, which could lead to further flooding along the Shabelle and Juba river basins in addition to flash floods in localized areas across the country (See Regional Outlook Pg. 5). In the **United Republic of Tanzania**, land preparation is underway for *Masika* season wheat and *Vuli* season maize in bimodal areas of the north, and planting will begin in October. Rains are forecast to be above-average through the end of the year (See Regional Outlook Pg. 5).



*Crop condition map synthesizing Maize 2 conditions as of September 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.***

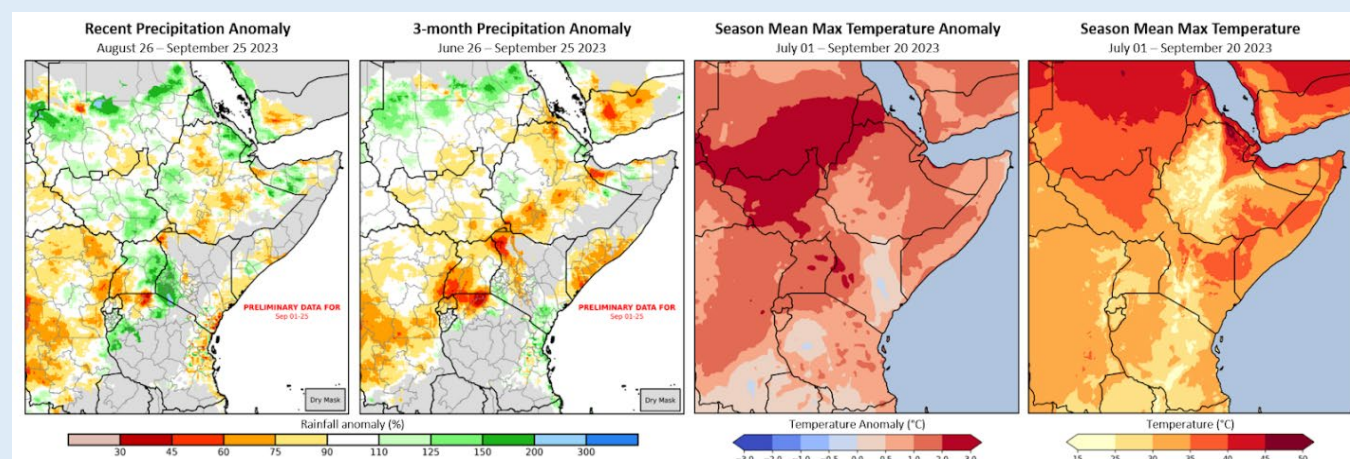
**Regional Outlook: Recent high temperatures and dryness impacted parts of the region through September while above-average precipitation is forecast for the October to December period**

**July to September**

During late August to late September (Figure 1-left), above-average rainfall occurred in western Kenya, central Uganda, South Sudan, portions of central Sudan, northern Eritrea, northern Somalia, and central-western and northeastern Ethiopia. In central Ethiopia, rainfall was below-average.

The recent deficits in Ethiopia amplified the impact of poor rains in July and August, resulting in below-normal July-to-September totals across many areas (Figure 1 middle-left). According to the [Ethiopia Monitoring Report from September 29th](#), there were moderate-to-severe drought conditions in parts of southern, central-northern, north-eastern and western Ethiopia, with water deficits arising during key periods of the growing season. In southeastern Kenya, southwestern Somalia, and eastern Tanzania, mid-to-late September rains were light and are expected to increase in October.

A striking feature of the July to September 2023 period was recurrent and widespread high temperatures across the region. Many locations experienced record warmth during this time, according to historical estimates. Maximum temperatures were, on average, 1 to +3 °C warmer than during a typical season in western, northern, and inland eastern Horn areas (Figure 1 middle-right). In southern Sudan and central and northern South Sudan, many areas had prevailing above-average and very high daytime temperatures exceeding 35 °C, indicating high chances of heat-related crop stress during the 2023 growing season (Figure 1-right).



**Figure 1. Recent and 3-month precipitation anomalies, and season mean max temperature and anomaly.** 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 August 26th to September 25th, 2023 (left) and June 26th to September 25th (middle-left), respectively. Both panels use CHIRPS Prelim for September 1st to 25th. The right two panels are from the experimental CHIRTSmax-ERA5 dataset. Middle-Right: Mean July 1st to Sept 20th, 2023 pentadal maximum temperature ( $T_{max}$ ) anomalies, relative to the 1991–2020 average. Right: Mean July 1st to Sept 20th, 2023 pentadal maximum temperature ( $T_{max}$ ). Source: UCSB Climate Hazards Center

**October to December**

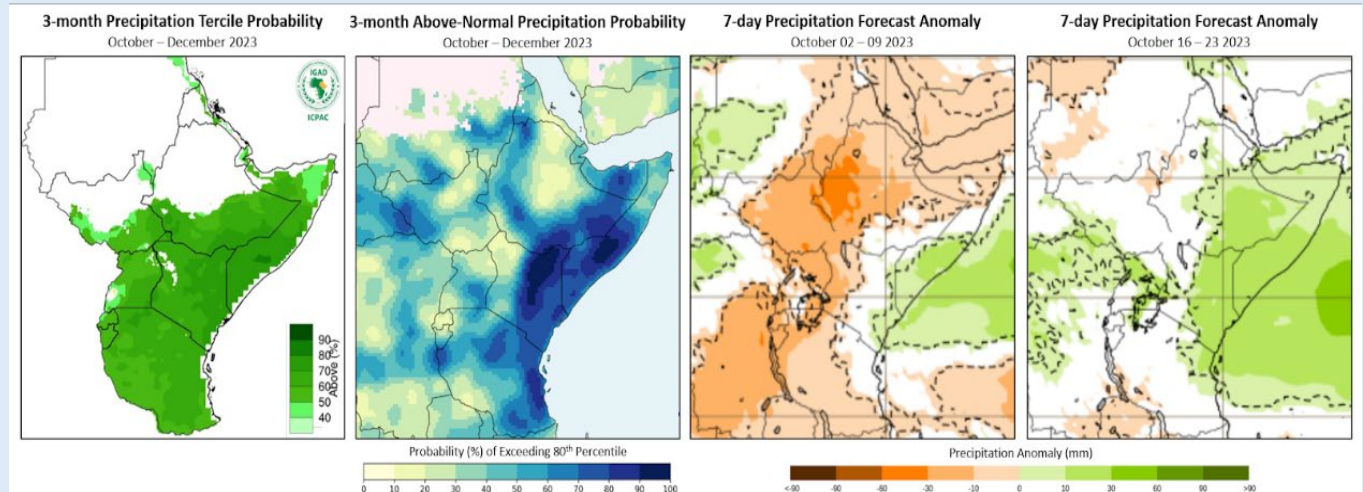
Above-normal rainfall is forecast for October to December (OND) 2023 (Figure 2-left), and along with this are expectations for overall positive outcomes for agriculture, livestock reproduction, and food security. There is a high level of agreement among major international and national forecasting centers for OND 2023, and these are consistent with observed outcomes when strong El Niño and positive Indian Ocean Dipole conditions have been previously forecast. Sea surface temperatures indicate that both climate modes are already at strong levels, with weekly Niño3.4 region and IOD index values around +1.5°C and +1.7°C, respectively, during late September. Recently updated Niño3.4 forecasts indicate substantial increases in Niño3.4 SSTs between October and January, with multi-model ensemble average anomalies of +2.2°C. Updated IOD forecasts indicate modest increases during October and November, and then a decline in strength (See Climate Influences Pg. 3).

Strong El Niño and positive IOD conditions elevate the chances of extreme rainfall, particularly in eastern areas. Riverine and low-lying areas could experience severe flooding, including in northern Kenya, eastern Kenya along the Tana River, and in southern Somalia along downstream areas of the Juba and Shabelle Rivers. There are 70 to +90% chances that OND 2023 seasonal totals in and upstream of these locations will be much higher than average (Figure 2 middle-left). Flood risks associated with extreme rainfall are expected to peak in late October to November for eastern Ethiopia and southern Somalia and extend into Kenya in late October to January 2024. According to the FEWS NET October 3rd Alert, the impact would be *“the short-term displacement of hundreds of thousands of people, crop and livestock losses, and increased livestock and human disease incidence. The rains also present a risk of favorable conditions for desert locusts, as witnessed in 2019.* (Regional Outlook Continued on Pg. 8)

**Regional Outlook (continued)**

Furthermore, there is a risk of a more severe scenario in which extreme flood extent limits flood-recession agriculture and prolongs infectious disease outbreaks, leading to higher levels of acute food insecurity than currently projected.”

During early October, below-average rainfall is forecast in most western and northern areas, with the exception of southwestern Sudan, based on CHIRPS-GEFS and ECMWF forecasts from September 27th. Above-average rainfall is forecast in southern Somalia, eastern Kenya, and southeastern Ethiopia, while average to below-average rainfall may result in a slow onset of the OND season in portions of southern Ethiopia. According to the ECMWF forecast, wet conditions will become more widespread in mid-late October (Figure 2 middle-right and right); these are expected to establish seasonal rains across the east.

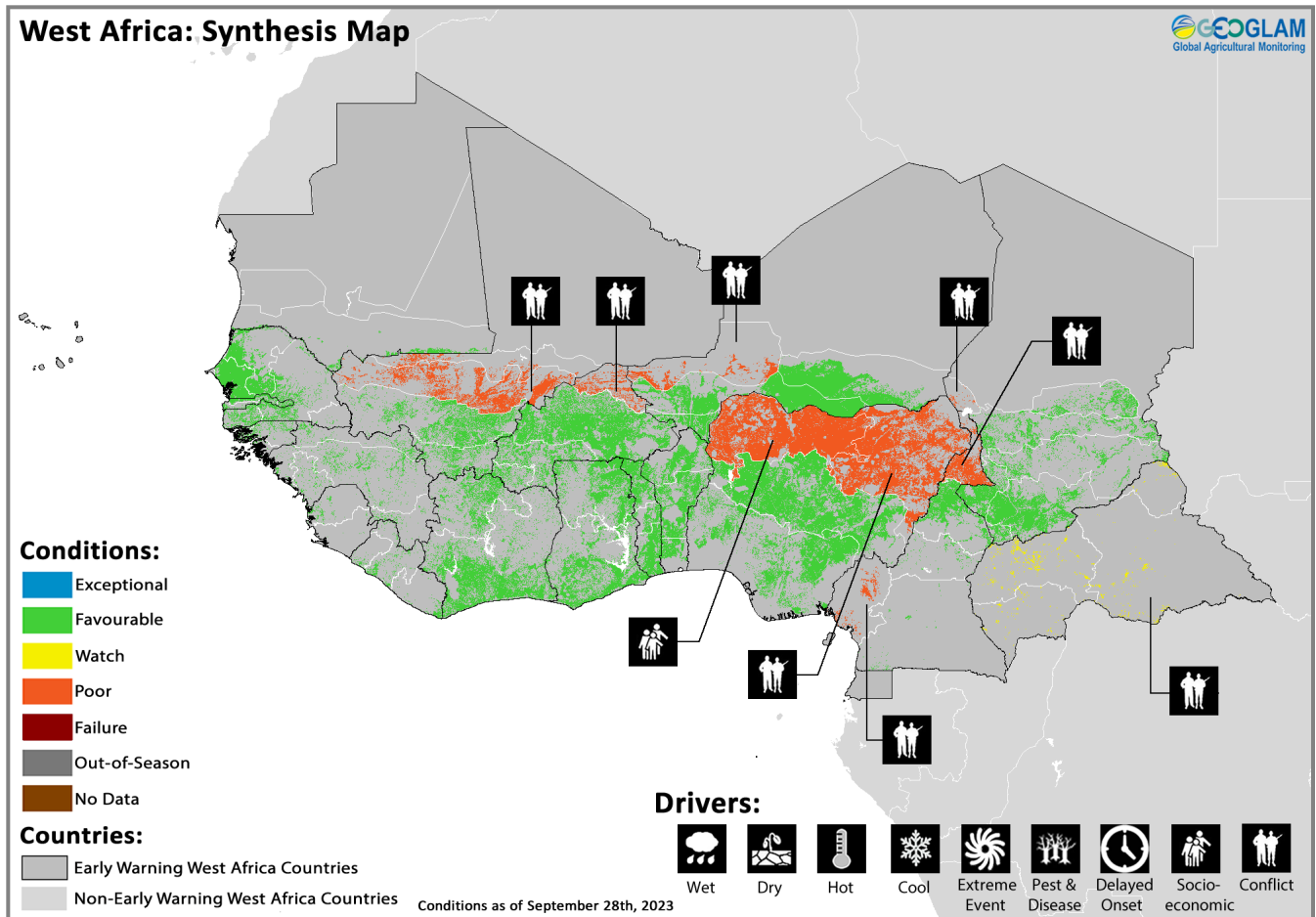


**Figure 2. Probabilistic forecasts for OND 2023 rainfall and early and mid-October anomaly forecasts** Left: Probabilistic forecast for OND 2023 precipitation tercile from the *ICPAC seasonal forecast update*, issued September 27th. Middle-left: Probabilistic forecast for the probability of OND rainfall exceeding the 80th percentile, from the *NOAA PSL hybrid prediction system* using dynamical (C3S) and machine learning models. Middle-right and right: 7-day mean precipitation anomaly forecasts for October 2nd-9th and 16th-23rd, 2023, from the *ECMWF extended range ensemble*, issued September 27th.

Source: UCSB Climate Hazards Center



## West Africa



Crop condition map synthesizing crop conditions as of September 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 complete or nearing completion in **Sierra Leone, Liberia, Cote d'Ivoire, Ghana, Togo, Benin, Nigeria**, and northern **Cameroon** while planting and development continues in **Guinea** and the **Central African Republic**. Harvesting of second season cereals finalized in southern **Cameroon** while planting and development continues in **Cote d'Ivoire, Ghana, Togo, Benin, Nigeria**, and central **Cameroon**. Along the Sahel, harvesting of main season cereals is underway in **Senegal, Guinea-Bissau, Mali, Burkina Faso, Niger, and Chad** while crops continue to develop in **Mauritania** and **Gambia**. In **Mauritania** and **Mali**, land preparation is underway for second season rice crops, and planting will begin in October.

Average to above-average rainfall throughout the season for most of the region, with the exception of mostly localized deficit areas, has led to generally favourable moisture conditions for crop growth and development, and harvests are expected to be near-average in most countries. However, along the extreme north of the Sahel, rainfall deficits could result in localized yield reductions. Additionally, in eastern **Niger**, currently below-average vegetation conditions may impact cropping outcomes, and in **Chad**, poor rainfall and long dry spells in the Sahel region across the central part of the country have resulted in crop water stress and delayed development. However, the forecast through December suggests average to above-average rainfall across the Sahel and the Gulf of Guinea, which could improve conditions in deficit areas.

Only areas impacted by persistent conflict or socio-economic challenges are currently expected to see yield declines, including in central **Mali**, northern **Burkina Faso**, western **Niger**, northern **Nigeria**, western **Chad**, the Far North and Southwestern regions of **Cameroon**, and the **Central African Republic**.

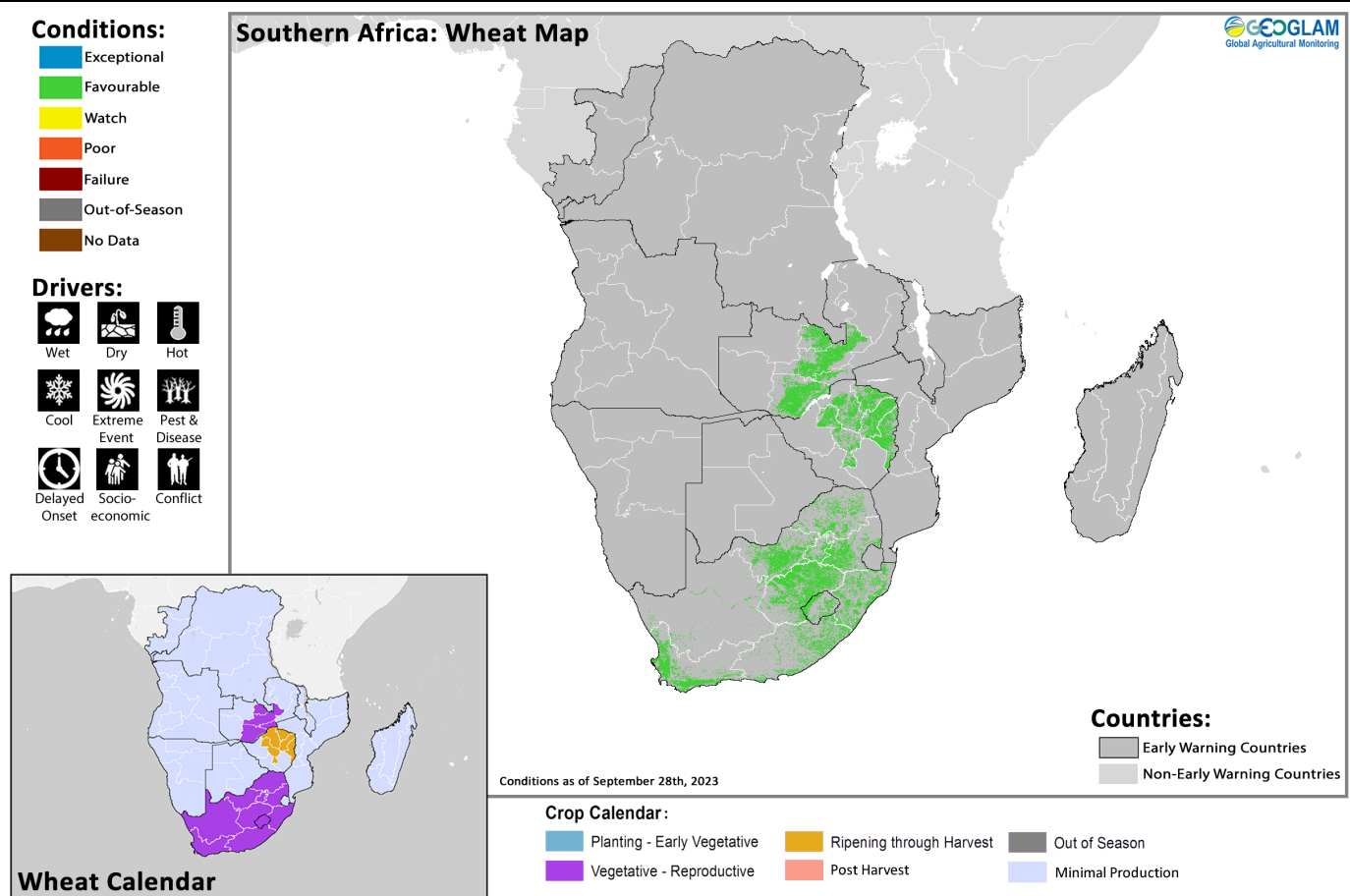
## Middle East & North Africa

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In the Middle East and North Africa, land preparation is underway for wheat planting, which is mostly expected to begin in October. In **Libya** and **Morocco**, recent extreme events are not expected to impact upcoming planting activities. In **Libya**, Tropical Storm Daniel impacted the country on September 10, bringing strong winds, heavy rains, and devastating flooding to the northeastern areas. Two dams collapsed in Derna, and two more were overwhelmed by rapidly rising water in the northeast, raising concern for potential additional collapses. However, water pumps are being installed to relieve pressure, and irrigated crops are not expected to be impacted for the upcoming planting in October. In **Morocco**, a 6.8 magnitude earthquake impacted the country on September 8 with an epicentre in the High Atlas Mountains, 71km southwest of the city of Marrakesh located in the central-west of the country. Additionally, forecasts of incoming rains heighten the risk of landslides. However, crops for the upcoming season are not expected to be impacted as the effects were largely isolated to the mountain areas. In **Egypt**, summer-planted rice harvesting is now underway while *Nili* season (Nile Flood) rice as well as maize crops continue to develop, and overall conditions are favourable as flows of the Nile remain adequate.

In **Iran**, rice harvesting finalized under mostly favourable conditions with average to above-average prospects in the main producing northern provinces of Mazandaran and Gilan as well as in Khuzestan in the west. However, prospects are below-average in the northeastern province of Golestan. Regarding the upcoming wheat season, farmers are still awaiting subsidy payment from the Iranian government for last year's wheat harvest. The delayed reimbursement will likely impact their production capacity for the upcoming season. In **Iraq**, rice is primarily grown with irrigation from the Euphrates River, and limited rainfall in recent years as well as low outflows from neighboring countries have resulted in near-record low water levels in both the Tigris and Euphrates Rivers. A reservoir in the north was constructed to manage water flows and collect excess water during flood periods for use during dry periods. However, in May 2022, the Iraqi government announced restrictions on rice cultivation to preserve water resources, and the government renewed restrictions for 2023 as water shortages remain. Rice production is forecast at 20,000 metric tons, the same as last year and 89 percent below the five-year average. Yield is projected at 3.75 metric tons per hectare, the same as last year and 10 percent below-average, according to the [September USDA FAS Global Market Analysis](#) update.

## Southern Africa



Crop condition map synthesizing wheat conditions as of September 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 harvesting is underway in **Zimbabwe** while crops continue to develop in **Zambia, South Africa, and Lesotho** for harvest from October, and overall conditions remain favourable. Over the winter rainfall region in **South Africa**, prevailing wet conditions since December 2022 have been conducive to wheat development. Over the summer rainfall region, wet conditions during the previous summer have provided sufficient water supply for irrigation.

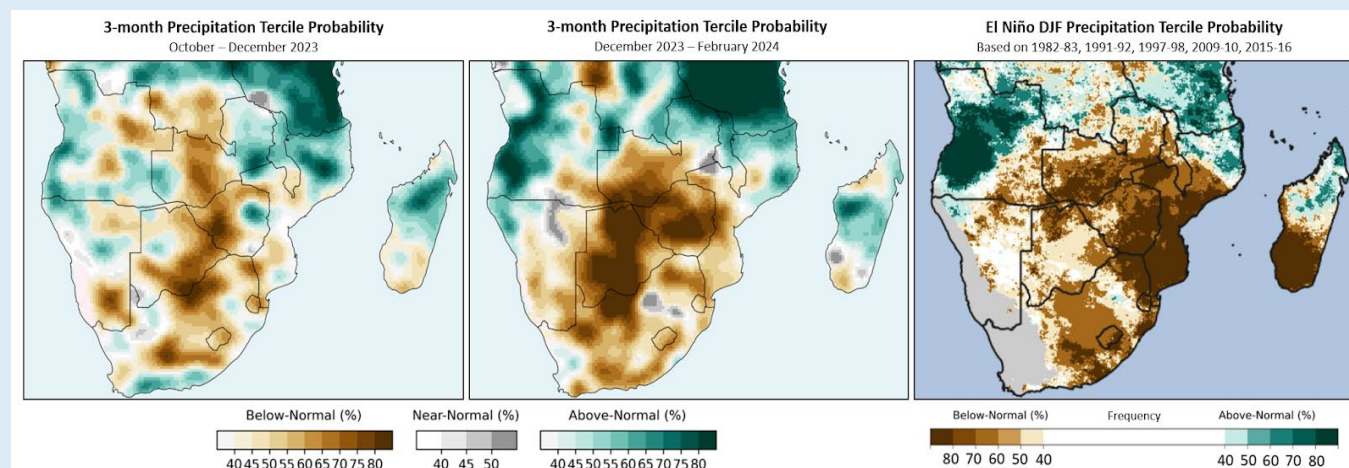
Land preparation for main season cereals is underway in some countries, and planting will begin next month. Limited rains have been received in southern areas, associated with low pressure systems which can bring rains in winter and spring periods. However, the coming months indicate both above-average temperatures combined with delayed onset and generally below-average precipitation for the October to December main rainy season, influenced by factors like El Niño and a positive IOD, which is likely to result in below-average soil moisture conditions. In **Angola**, limited rains have been received in recent weeks, and planting of summer cereals has begun, particularly in the north. However, El Niño linked forecasts of a below-average October 2023 to April 2024 rainfall season could impact the main agricultural season (See Regional Outlook Pg. 12). In **Malawi**, the El Niño event is expected to result in delayed and below-normal seasonal rains in the south, which will likely negatively impact crop performance for the upcoming season (See Regional Outlook Pg. 12). Additionally, most districts impacted by Tropical Cyclone Freddy continue to have limited access to agricultural inputs and equipment. In **Madagascar**, the El Niño event is expected to result in a delayed and mixed performance rainy season during November and December, particularly in the south where some areas experienced significant crop losses due to impacts of cyclones and dry spells in the past two years (See Regional Outlook Pg. 12). Additionally, a near-average number of tropical cyclones are expected to impact the country from December to March. In the **Democratic Republic of the Congo**, planting and development of main season cereals continues with ongoing dry concerns in the north as uneven rainfall since July has resulted in seasonal deficits in some central and northeastern areas. However, enhanced rains were received in these regions from August through early September, and cropping outlooks remain mostly favourable as northeast and eastern bimodal areas are likely to experience above-average rainfall in the coming months. In the northwest, heavy rainfall led to flooding and landslides along areas of the Congo River.

### **Regional Outlook: High likelihood of below-average rainfall from October through March across much of Southern Africa**

Below-average October 2023 to March 2024 rainfall is anticipated across much of Southern Africa, associated with expectations for strong and sustained El Niño conditions. During El Niño, consistent seasonal rains tend to arrive later than usual in central and southeastern areas and then are often below-average during December-January-February (DJF), a critical period for rainfall and crop development. Above-normal temperatures also tend to occur, raising the chances of crops being negatively impacted by low soil moisture and heat stress.

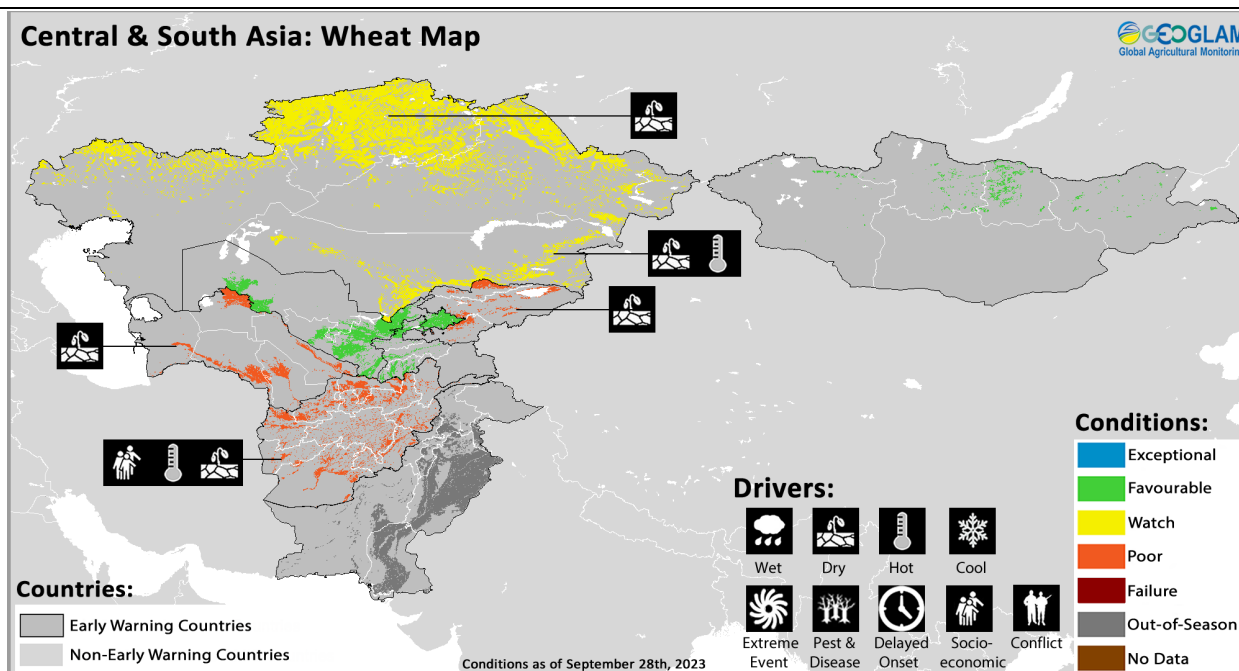
During October to December 2023, there are moderate-to-high probabilities of drier-than-normal conditions in central and northeastern South Africa, eastern Botswana, western and northern Zimbabwe, and central Zambia, based on the NOAA PSL forecast (Figure 1-left). There are moderate-to-very high probabilities of below-normal DJF 2023-24 rainfall forecast across central, southern, and southeastern areas (Figure 1-middle), including in Zimbabwe, southern Zambia, Botswana, South Africa, and central-western and southern Mozambique. Elevated chances of above-normal rainfall are forecast in northern Zambia, northern Mozambique, and western and northern Angola. The NOAA PSL forecast is a hybrid prediction system that is based on the C3S multi-model ensemble. NMME and WMO multi-model forecasts have similar regional outlooks and weaker probabilities. Above-normal temperatures are forecast across the region.

DJF rainfall during previous strong El Niño events show a high frequency of below-normal outcomes in Zimbabwe, South Africa, southern and central Mozambique, and southern Madagascar (Figure 1-right). While no two El Niño events nor their impacts are identical, historical outcomes and model forecasts for rainfall collectively support the need for concern during the 2023-24 season. According to the [FEWS NET October 3rd Alert](#), “A below-average October to March rainfall season is highly likely to lead to below-average cereal and cash crop harvests and exacerbate [already-inflated maize prices](#)...The areas of highest concern include southern and western deficit-producing areas of Zimbabwe, southern Malawi, southern and central Mozambique, and southern Madagascar, where the 2023 maize harvest already performed poorly due to various cyclone events and irregular rainfall – a trend that ran counter to regional aggregate maize performance, which was over 10 percent above average. While agricultural production in 2024 is broadly expected to be below average, the severity of El Niño’s effects will depend on the magnitude of rainfall deficits and patterns of rainfall distribution, especially between December and February.”



**Figure 1. Probabilistic rainfall forecasts for OND 2023 and DJF 2023-24 and outcomes during previous strong El Niños.** Left and middle: Probabilistic forecasts from the [NOAA PSL hybrid prediction system](#) for October to December 2023, and December 2023 to February 2024, respectively. Right: The frequency of above- and below-normal rainfall in analog years with strong El Niño conditions (1982-83, 1991-92, 1997-98, 2009-10, and 2015-16), based on 1981-2022 CHIRPS data. Source: UCSB Climate Hazards Center

## Central &amp; South Asia



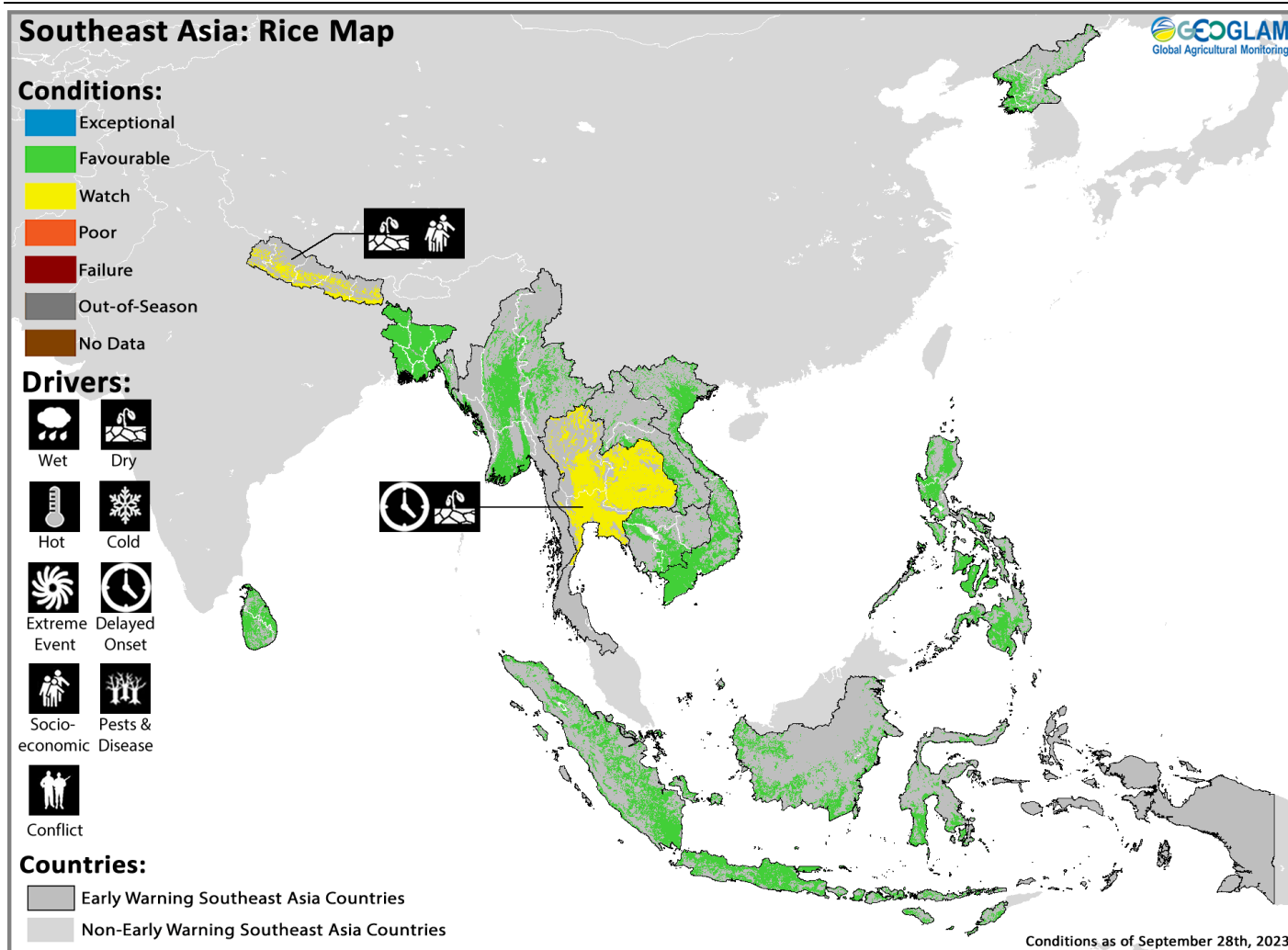
Crop condition map synthesizing wheat conditions as of September 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Crops that are in other than favourable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

In Central and South Asia, winter wheat harvesting mostly finalized last month across the region with below-average yield and production outcomes in **Afghanistan** and poor end of season conditions in **Kyrgyzstan** and **Turkmenistan** due to generally poor rainfall performance throughout the season and high temperatures in most growing areas. Conversely, favourable outcomes resulted in **Uzbekistan**, southern **Kazakhstan**, **Tajikistan**, and **Mongolia**. Spring wheat harvesting is underway and nearing completion in **Kazakhstan**, **Kyrgyzstan**, **Tajikistan**, and **Mongolia**, and conditions are mixed due to dry impacts during parts of the season in **Kazakhstan** and **Kyrgyzstan**. In **Uzbekistan**, irrigation systems for winter wheat development provided adequate moisture for crop development, and end of season conditions are favourable. In **Kazakhstan**, winter wheat production is expected at an above-average level of 16.4 thousand tons despite some dry concerns late in the season. Conversely, spring wheat was impacted by instances of drought, particularly in the southeast as well as in the main producing north-central oblasts of Akmola and North Kazakhstan where biomass is below-average. Conversely, biomass levels are adequate in Kostanay, which is also located in the main producing north-centre region. In **Mongolia**, 2023 wheat production is officially forecast at an above-average level of 427,000 tonnes as record high domestic prices and high demand coinciding with planting time drove an increase in planted area. In the major producing Central Region, conducive weather outcomes and adequate irrigation supply resulted in average to above-average yields. Conversely, poor rains between June and August impacted yields in the minor-producing provinces in the Western Region.

Land preparation and limited planting of the winter wheat crop is underway and will mostly begin in October. The region is projected to experience elevated levels of precipitation during October through March 2023/24, extending into the spring wet season from March to May 2024. Consistent forecasts across multiple models indicate a strong likelihood of extreme precipitation and a potential doubling of the heaviest rainfall events compared to the average. This is expected to result in an unusually high risk of flooding and snowmelt between February and May 2024. Forecasts also indicate an elevated likelihood of above-average temperatures for October to December (OND) and December to February (DJF) 2023/24, though slightly less so for the DJF period. In general, the region has been experiencing a recent trend of warmer temperatures compared to historical averages.

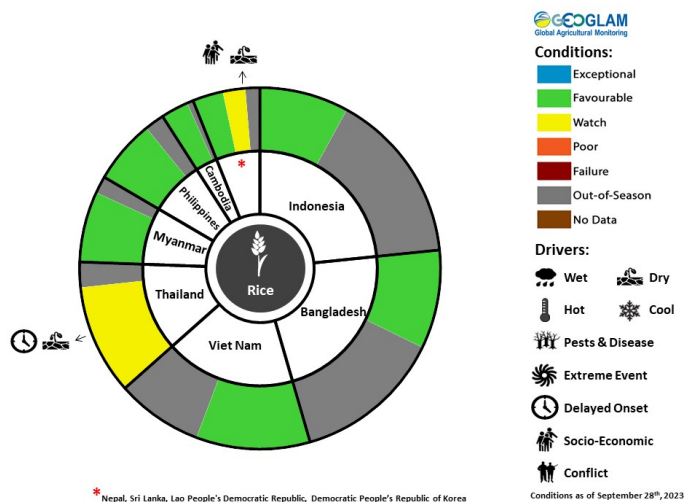
In the north, northeast, and eastern areas of **Afghanistan**, second-season crops such as maize and rice are being impacted by drought, and farmers are using the groundwater for irrigation purposes, especially in the north and northeast. Production is expected to be below-average as a result of high temperatures and subsequent early snowmelt. Additionally, Lake Kajakai, a reservoir in the central part of the country, has displayed higher water levels this year despite antecedent dry conditions stemming from the previous three consecutive years of La Niña, suggesting a reservoir management decision to retain more water for irrigation and other water use purposes. Land preparation is underway, and farmers will begin cultivating winter irrigated wheat from mid-October through mid-November and winter rainfed wheat from mid-November through December, depending on precipitation outcomes and availability of inputs such as wheat seeds and fertilizer. Farmers will be using traditional wheat varieties due to a shortage of improved seeds, and while the cost of fertilizer remains elevated, it's less severe compared to recent years. Farmers are optimistic for the upcoming season as forecasts are particularly confident about above-average precipitation for the wet season, especially in the north and northeastern provinces. In **Pakistan**, maize harvesting is underway while *Kharif* (summer) season rice crops continue to develop for harvest from October, and conditions remain favourable. Planting of the *Rabi* season wheat crop will begin next month. Water storage is currently at optimal levels, and 2023/24 rice and wheat production are expected to be above-average.

Southeast Asia



Crop condition map synthesizing rice conditions as of September 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.**

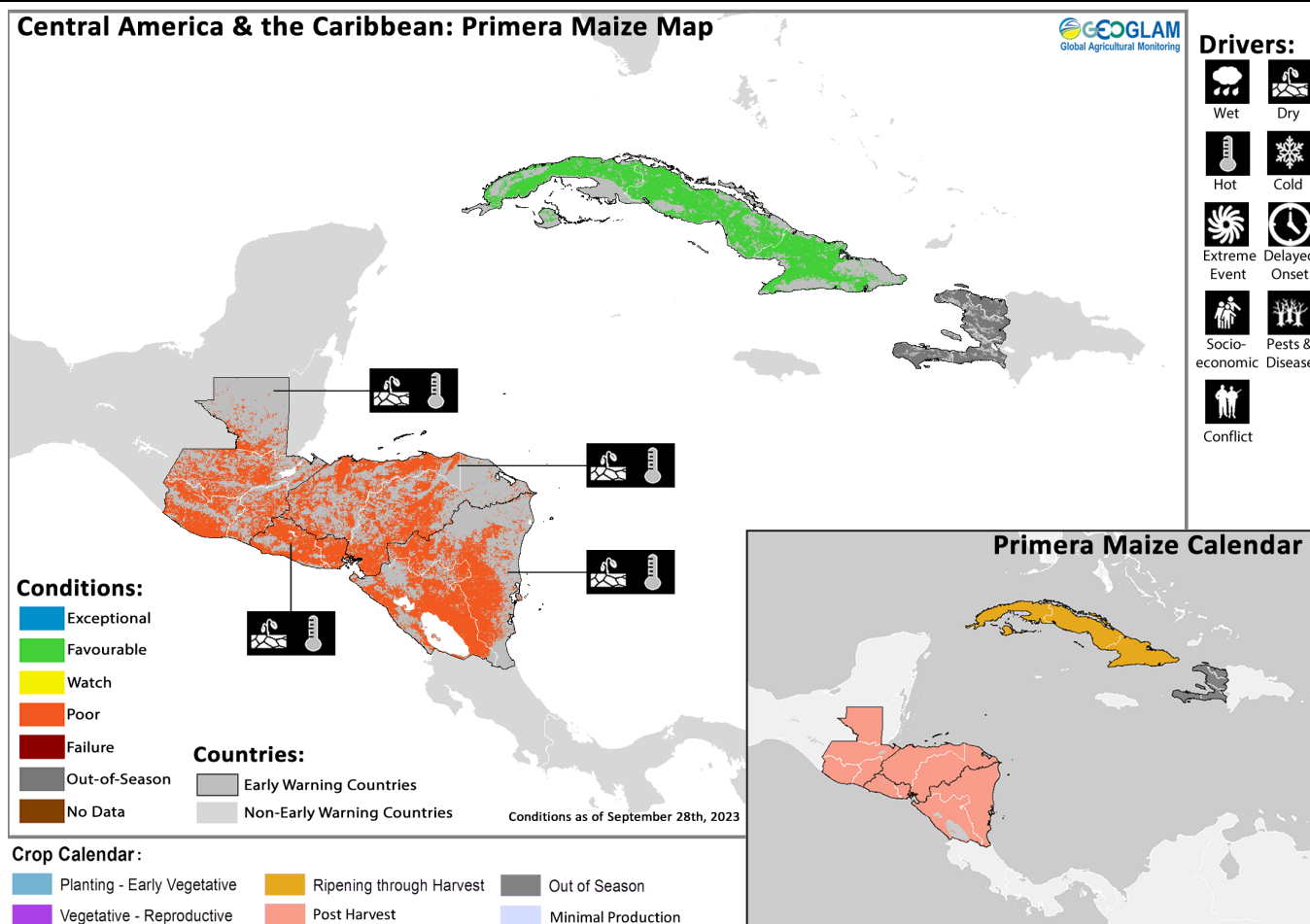
In northern Southeast Asia, wet-season rice is in the growing to harvesting stage under generally favourable conditions with the exception of **Thailand** where a significant reduction in planted area is expected due to water shortages, and a decrease in yields is also expected due to drought damage. In **Indonesia**, planting of dry-season rice is almost complete with a total planted area of 4.3 million hectares, which is 5.3 percent lower than last year due to less precipitation received and planting delays. A previous lack of irrigation water has been recovered by the creation of an irrigation system using pumps from water wells or irrigation channels. September marked the third month of harvesting activities with a current harvested area of 2.5 million hectares, 4.1 percent lower than last year, and a favourable yield despite generally less precipitation received during the growing season. Most southern areas have now entered the dry season, and typical irregular and low-intensity rainfall is continuing in these regions. A prolonged dry season connected to the current El Niño event has resulted in drought conditions in localized sub-districts located in Central Papua Province. However, the minor drought damage is currently not a significant concern for rice development. The forecast of a moderate to strong El Niño event is expected to impact much of the country through November with below-normal precipitation expected, and the conditions may result in water scarcity in Java, Bali, and southern Sumatra. In the **Philippines**, wet-season rice planted from April to May is now fully harvested with a slightly lower production output compared to the previous year due to the passage of three tropical cyclones and the enhanced southwest monsoon. Crops planted from July to August are now in the tillering stage under favourable growing conditions in most



\* Nepal, Sri Lanka, Lao People's Democratic Republic, Democratic People's Republic of Korea  
For detailed description of the pie chart please see description box on Pg.17.

areas. In **Thailand**, wet-season rice is in the young panicle forming stage with ongoing concern due to seasonal drought that continued in many areas through the end of August. Planted area has reached only 60 percent of the expected area and is forecast to decrease as received rainfall amounts are 20 percent below-normal. Growing conditions are poor, and an estimated 70,000 hectares of crops will be damaged. As a result, both production and yield outcomes are expected to decrease compared to last year. In northern **Viet Nam**, both the main wet-season (seasonal) rice and other wet-season (summer-autumn) rice crops are in the young panicle forming to grain filling stage under favourable conditions due to adequate irrigation preparation. In the south, the main wet-season (summer-autumn) rice is in the harvesting stage, and current yield is the same as last year at about 5.7 tons per hectare. The other wet-season rice (autumn-winter and seasonal) is developing under favourable conditions. In **Laos**, wet-season rice is in the young panicle forming to grain filling stage under favourable conditions despite the southwest monsoon bringing heavy rainfall across central and southern parts of the country and resulting in flooding and landslide incidents since early August. According to the [August 16 IFRC](#) report, Borikhamxay and Khammuan in the centre of the country were the hardest hit provinces, and an embankment of the Mekong River in Vientiane province located in the northwest collapsed and resulted in localized flooding along low-lying farmlands. According to the follow-up [September 16 IFRC](#) report which includes updated information from the government, flooding and landslides resulted in 190,467 hectares of damage to agricultural lands, 106 barns used for rice storage, and 79 irrigation systems. However, the overall damage to wet-season rice was relatively minor. In lowland areas, the irrigation water supply is adequate due to sufficient rainfall received for all regions and despite some flooding in late August. In upland areas, some localized northern areas were affected by pest outbreaks, but the damage was not severe. In **Myanmar**, planting of wet-season rice is mostly complete with a planted area of 5.7 million hectares, which is slightly faster than last year. While monsoon rain generally favoured planting activities, flooding impacted some river basin areas in September, affecting over 32 thousand hectares of crops and damaging over 15 thousand hectares. Replanting operations are underway for damaged fields. Crops are mostly in the panicle forming to maturity stage, and growing conditions are favourable. In **Cambodia**, the final planted area of wet-season rice reached around 2.74 million hectares and 104 percent of the national plan. Earlier planted crops are now in the harvesting stage, and 48 percent of the planted area has been harvested with a current yield of 4.2 tons per hectare. Despite a drought trend during the season, growing conditions are favourable due to rainfall received across the country in September. In **Sri Lanka**, harvesting of *Yala* season rice and maize continues, and crops in the southwest have recovered from drought-like conditions and water shortages in some reservoirs. Overall conditions are favourable, and harvesting activities will finalize in October. Land preparation is underway for *Maha* season rice and maize, and planting will begin in October. In **Nepal**, maize harvesting mostly finalized under poor conditions, and there is also concern for the ongoing rice development, which is the country's main staple crop. Despite previously favourable outlooks for both crops, erratic and insufficient precipitation received in some major producing areas impacted both sowing and yield expectations. Costly inputs further impacted yields due to reduced applications of agrochemicals. As a result, cereal output for 2023 is estimated to be 5 percent below-average, with the maize output forecast at a below-average level of 2.8 million tonnes and the rice output forecast at a below-average level of 5.3 million tonnes. Land preparation is underway for the wheat crop, and planting is expected to begin in October. However, in eastern areas, forecasts of below-average precipitation through the end of the year may negatively influence planting and crop establishment. Conversely, in western areas, rainfall is expected to be above-average with a likely positive impact on crops. In **Bhutan**, harvesting of main season rice and maize crops, which make up 90 percent of annual production, is expected to take place from October. Adequate rainfall has positively impacted yields, with the exception of some minor growing regions in the southwest and northeast where reduced rains affected plantings and yields as well as in the northeast where flash floods and landslides resulted in localized crop damage. Rice and maize production are both expected at a below-average level of 40,000 and 26,000 tonnes, respectively, despite favourable yields. In **Bangladesh**, sowing of both *Aman* season rice as well as sorghum crops continues under favourable conditions despite monsoon rains and flash flooding in Chattogram Division located in the southeast that caused widespread damage in Chattogram, Cox's Bazar, Rangamati, and Bandarban districts. In the **Democratic People's Republic of Korea**, maize harvesting finalized in September while rice harvesting is nearing completion, and overall conditions remain favourable with near-average yields expected this season.

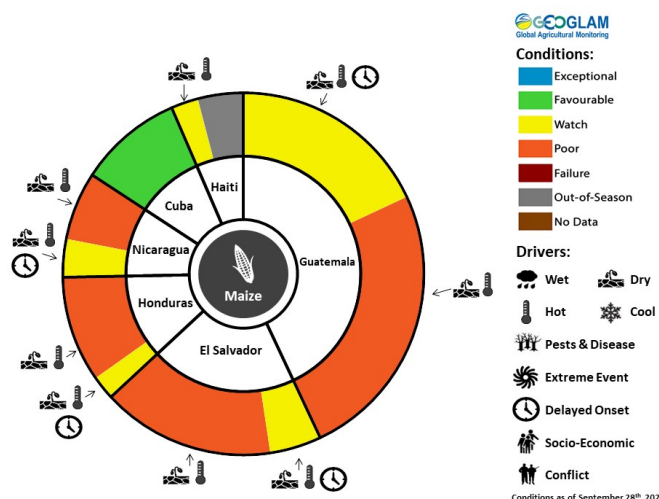
Central America & Caribbean



Crop condition map synthesizing Primera season Maize conditions as of September 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 nearing completion with expected yield declines in all countries, particularly for smallholder and subsistence farmers, as the region experienced irregular rainfall distribution and significant deficits throughout the season combined with hot temperatures which drove higher rates of evapotranspiration. In some areas, like the Pacific region of **Nicaragua**, only 30 percent of the expected rainfall has been recorded. While enhanced precipitation is expected in some Pacific areas during October, the rains will not improve crop conditions due to the impacts of persistent dryness during the planting period, and re-sowing is not an option in many areas (See Regional Outlook Pg. 17). While **El Salvador** and **Honduras** are expecting near-normal outputs at the national level, drought conditions have had a significant impact on yields, particularly for smallholder and subsistence farmers in the Dry Corridor, which includes southern **Guatemala**, **El Salvador**, western **Honduras**, and western **Nicaragua**, as well as the Gulf of Fonseca region. For the *Postrera/Segunda* season, sowing is delayed due to inadequate rainfall, and those who have already sown in dry conditions are not expecting good outcomes. Furthermore, the 2023 Atlantic and Eastern Pacific hurricane seasons are also predicted to be above-average, adding another climatic challenge to production prospects (See Regional Outlook Pg. 17).

In **Guatemala**, sporadic precipitation received in July and August slightly benefitted the development of basic grain crops. However, water stress due to rainfall deficits and high temperatures resulted in delayed *Primera* season harvests and yield declines, and output is expected to be near-average for maize and below-average for beans at the national level. Deficits experienced from late August to early September have delayed sowing for the *Postrera* season, with only a few farmers beginning to sow under dry conditions. In **Honduras**, enhanced precipitation in August has slightly improved crop conditions in the main producing provinces of Comayagua, Cortés, and



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



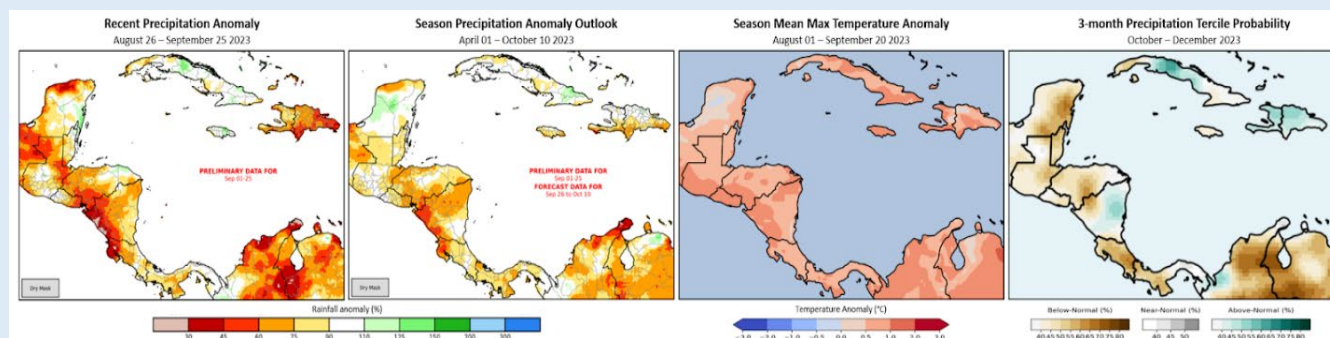
Intibucá. However, the previous rainfall deficits are still expected to result in below-average *Primera* season yields as the current crops are largely rainfed. In **Nicaragua**, the *Postrera* and *Apante* seasons are expected to be particularly affected by below-average rainfall. Conversely, above-average rainfall for the coming months is expected to increase irrigation water supplies (See Regional Outlook Pg. 17). In **Haiti**, the country experienced a long dry period at the beginning of the April to June first rainy season. As a result of the late rains, *Printemps* season harvesting is delayed in some central, south-coastal, and northern regions, contributing to a decline in harvests and below-average yields. Land preparation and planting activities are underway in most regions, and despite some improvements in vegetation due to some rains received, particularly in the centre, cumulative amounts remain below-average. Furthermore, planting activities for the summer-autumn season may be affected by the limited availability of inputs such as seeds, which are normally sourced from spring harvests. In **Cuba**, harvesting of main season maize and second season rice continues under favourable conditions with an improvement in the west as the passage of Tropical Storm Idalia at the end of August did not affect agricultural production.

**Regional Outlook: Severe dry conditions and high temperatures have prevailed across much of the region and are expected to continue across most areas through December**

During late August to late September, extremely below-average rainfall was observed in Central America and Haiti (Figure 1-left). Rainfall was ~45 to 75% of average in northern, eastern, and western Guatemala, southern and western Honduras, eastern El Salvador, western and northern Nicaragua, northwest Costa Rica, and southern Haiti, based on preliminary data. During the next several weeks, above-average rainfall is forecast in Pacific coastal areas, western Honduras, and northern Guatemala, according to the GEFS. Longer-range SubX and ECMWF forecasts also indicate improved rainfall performance in Pacific areas during October.

Prevailing dry conditions have been severe in many areas. The outlook for August 1st to October 10th, which includes forecasted rainfall, shows below-average amounts in most areas and substantial deficits continuing in eastern Guatemala, eastern El Salvador, Honduras, Nicaragua and southern Haiti (Figure 1 middle-left). Maximum temperatures were atypically high in August and September (Figure 1 middle-right) and these are forecast to continue. In southern Honduras and western and northern Nicaragua, very high temperatures are exacerbating the impacts of extended dry spells and low soil moisture. In these areas and other deficit areas in Honduras and eastern Guatemala, there are elevated chances of below-normal October to December rainfall, according to the NOAA PSL forecast (Figure 1 right).

Despite the long-term dry conditions, there has also been localized extreme rainfall. In late September, flash floods in Guatemala City washed away homes and killed at least 6 people. Forecast above-normal Atlantic and eastern Pacific hurricane activity raises the threat of high-impact storms through November. Strong El Niño conditions will continue to be a concern through the *Segunda/Postrera* cropping seasons, due to below-normal precipitation and high temperatures that have occurred in the past.



**Figure 1. A recent rainfall anomaly, a seasonal rainfall outlook, seasonal maximum temperature anomalies, and a 3-month probabilistic rainfall forecast.** Left and middle-left: Percent of average precipitation for August 26th to September 25th and for August 1st to October 10th, 2023, respectively. These CHC Early Estimates use CHIRPS Prelim for September 1st to 25th and a 1981-2022 baseline. The left-middle includes the 15-day CHIRPS-GEFS forecast from Sept. 26th. Middle-right: Mean August 1st to Sept 20th, 2023 pentadal maximum temperature (Tmax) anomalies, relative to the 1991-2020 average; from the experimental CHIRTSmax-ERA5 dataset. Right: Probabilistic forecast for October to December 2023 rainfall tercile, from the NOAA PSL hybrid prediction system using dynamical (C3S) and machine learning models. 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 October 5<sup>th</sup>, 2023.

### 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.

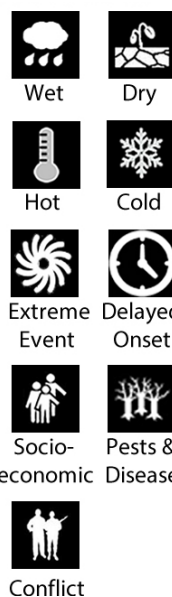
**Extreme Events:** This is a catch-all for all other climate risks (i.e. hurricane, typhoon, frost, hail, winterkill, wind damage, etc.)

**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.



**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



# GEOGLAM

## Global Agricultural Monitoring

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

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### Contributing partners



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