

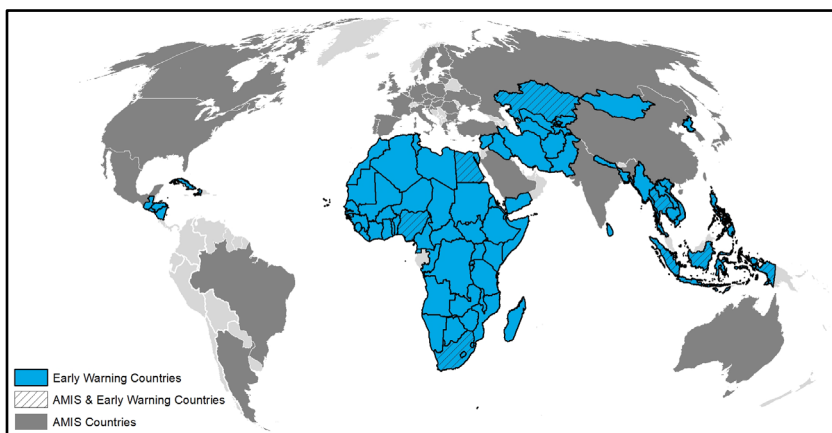


# Crop Monitor

## EARLY WARNING

### Overview:

In **East Africa**, planting of main season cereals is underway in the north under mixed conditions. In the south, harvesting of main season cereals has started, and conditions are mixed with concerns in parts of Uganda, Kenya, and the United Republic of Tanzania due to dry conditions (See Regional Outlook Pg. 6), and in Somalia due to a mix of dry conditions, recent widespread flooding in the south, and socio-economic challenges. In **West Africa**, planting and development of main season cereals is underway, and conditions are generally favourable except in conflict-affected areas and in Niger where rains are delayed and. In the **Middle East and North Africa**, wheat harvesting is nearing completion under mixed conditions due to seasonal drought in many areas. In **Southern Africa**, harvesting of main season cereals finalized under mixed conditions as below-average rainfall throughout the season resulted in poor conditions in parts of Angola, Namibia, Zambia, Botswana, and Mozambique. Additionally, crop failure resulted in parts of Namibia due to dry and hot conditions and in southern Malawi due to flooding. In **Central and South Asia**, wheat development and harvesting activities continues throughout the subregion under mixed conditions due to below-average cumulative rainfall amounts and vegetation levels, and conditions have degraded to watch in parts of Kazakhstan and Kyrgyzstan. In northern **Southeast Asia**, planting of wet-season rice is delayed due to late seasonal rains (See Regional Outlook Pg. 14), and planted area is expected to decrease due to the high costs of agricultural inputs. In Indonesia, harvesting of wet-season rice is nearing completion under favourable conditions. In **Central America and the Caribbean**, concern remains for *Primera* season planting in all regions due to dry and hot conditions (See Regional Outlook Pg. 17). In Cuba, conditions are favourable despite recent flooding.



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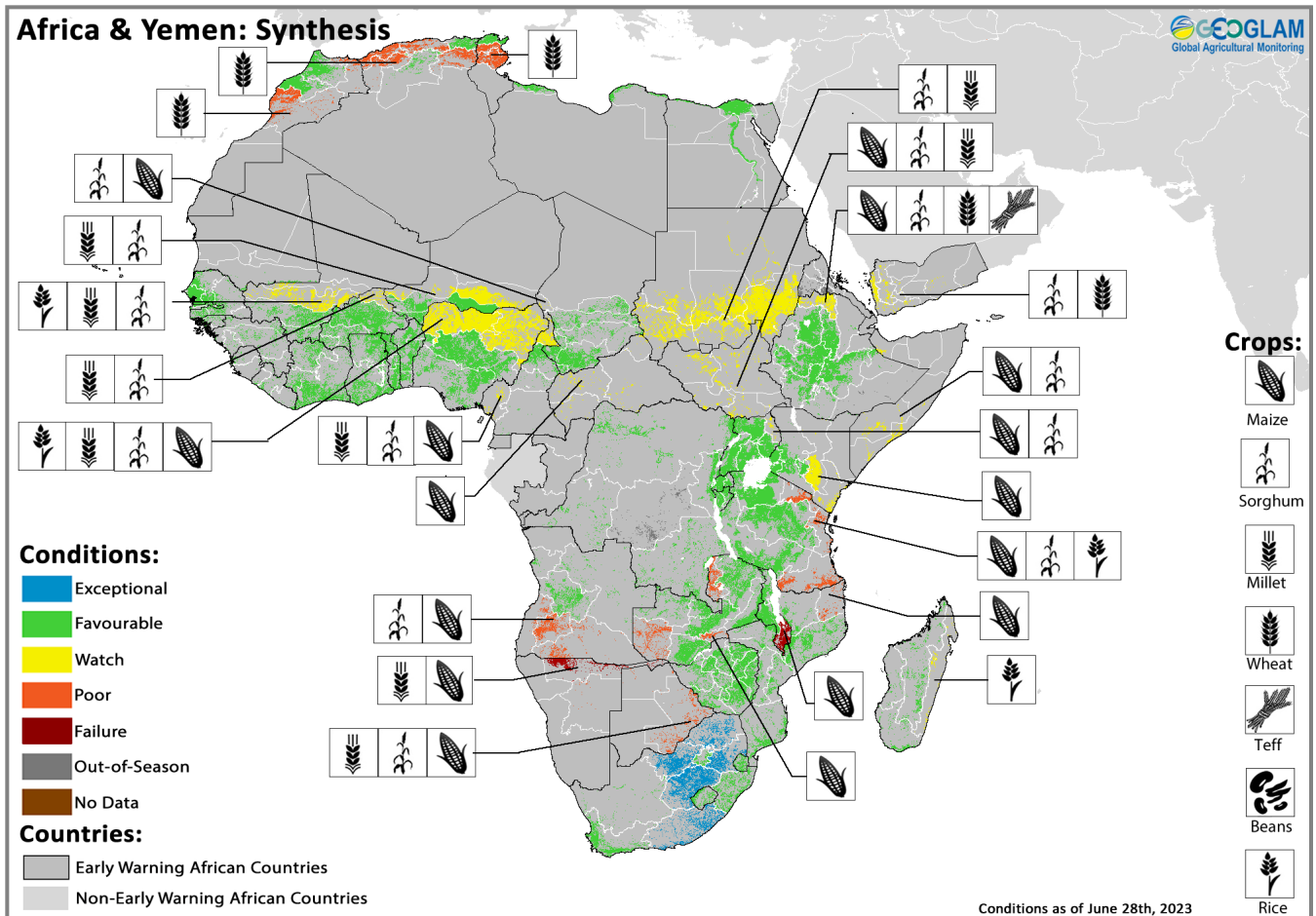
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# GEOGLAM Crop Monitor for Early Warning

## Crop Conditions at a Glance

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



Crop condition map synthesizing information for all Crop Monitor for Early Warning crops as of June 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:** In the north, planting of main season cereals has started, and there is some concern due to socio-economic challenges in South Sudan, Sudan, and Yemen. In Ethiopia, harvesting of *Belg* crops is underway while planting of the *Meher* season has started, and conditions are generally favourable. In the south, harvest has started for main season crops in some areas, and conditions are mixed with concern in parts of Uganda, Kenya, and the United Republic of Tanzania due to dry conditions (See Regional Outlook Pg. 6) and in Somalia due to a mix of dry conditions, socio-economic challenges, and flood impacts in the south.

**WEST AFRICA:** Planting and development of main season cereals continues throughout the subregion under generally favourable agro-climatic conditions, and crops in Guinea-Bissau have recovered from delayed rains. However, concern remains in conflict-affected areas.

**MIDDLE EAST & NORTH AFRICA:** Wheat harvesting is complete or nearing completion, and seasonal drought resulted in poor yields in parts of Morocco, Algeria, Tunisia, Syria, Iraq, and Iran. Crops in Syria were also impacted by persistent conflict and socio-economic challenges.

**SOUTHERN AFRICA:** Harvesting of main season cereals finalized under mixed conditions as below-average rainfall this

season impacted yields in southern Angola, central and northern Namibia, southwestern Zambia, Botswana, and northeastern Mozambique. Wheat planting continues under favourable conditions for harvest from September.

**CENTRAL & SOUTH ASIA:** Wheat harvesting finalized in Pakistan under favourable conditions and continues elsewhere under mixed conditions, with concern in Turkmenistan, Kazakhstan, and Kyrgyzstan due to below-average cumulative rainfall amounts and in Afghanistan due to high temperatures.

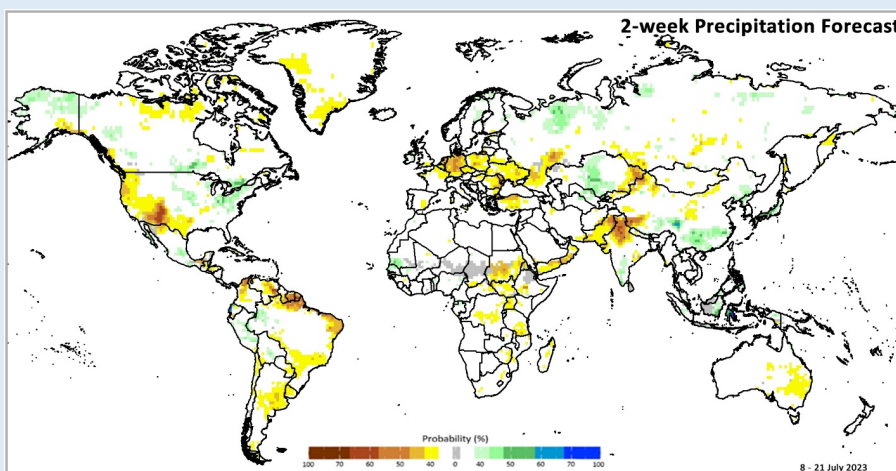
**SOUTHEAST ASIA:** Planting of wet-season rice is underway in the north, and planting work is likely to be delayed due to late seasonal rains (See Regional Outlook Pg. 14). There is concern in Thailand due to dry conditions and high input costs, and conditions are poor in western Myanmar due to prior impacts of Cyclone Mocha. In Indonesia, harvesting of wet-season rice is nearing completion with near-average yields expected.

**CENTRAL AMERICA & CARIBBEAN:** Planting and development of *Primera* season cereals continues with concern in all areas due to dry and hot conditions since late November. In Haiti, harvesting of *Printemps* season cereals is now underway with continuing concern due to generally dry and hot conditions despite recent rainfall received in June.

### 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 Ontario and Quebec in Canada, the eastern Mid-west and western New England in the US, central Mexico, eastern Peru, western Brazil, southwest Mauritania, northern Senegal, central Kazakhstan, central Uzbekistan, southern India, southern China, southern Philippines, eastern Indonesia, western Democratic Republic of Korea, and southern Japan.

There is also a likelihood of below-average rainfall over western and southwest US, western Columbia, western Venezuela, southern Guyana, Suriname, French Guiana, northern and northeast Brazil, central Argentina, the Netherlands, Germany, Czechia, Poland, Ukraine, Moldova, Romania, northwestern Türkiye, southern Russian Federation, Yemen, Oman, Sudan, South Sudan, southwest Ethiopia, Uganda, southern Tanzania, eastern Kazakhstan, Pakistan, northern India, northwest and southwest China, and eastern Australia.



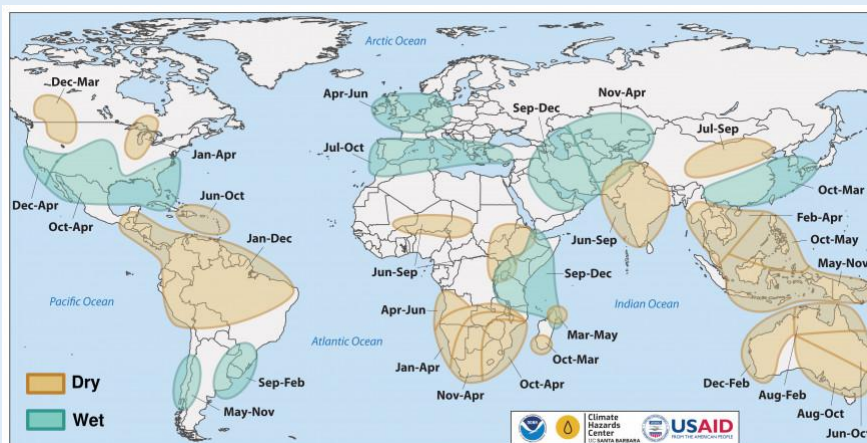
**Figure 1:** IRI SubX Precipitation Biweekly Probability Forecast for 8 – 21 July 2023, issued on 30 June 2023. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](#)

### Climate Influences: ENSO currently in El Niño phase that is expected to last through early 2024

The El Niño-Southern Oscillation (ENSO) is currently in the El Niño phase. Models predict that this will likely be a moderate or strong El Niño event that lasts through early 2024. According to the IRI/CPC forecast, there is a greater than 90% chance of El Niño conditions through January to March 2024.

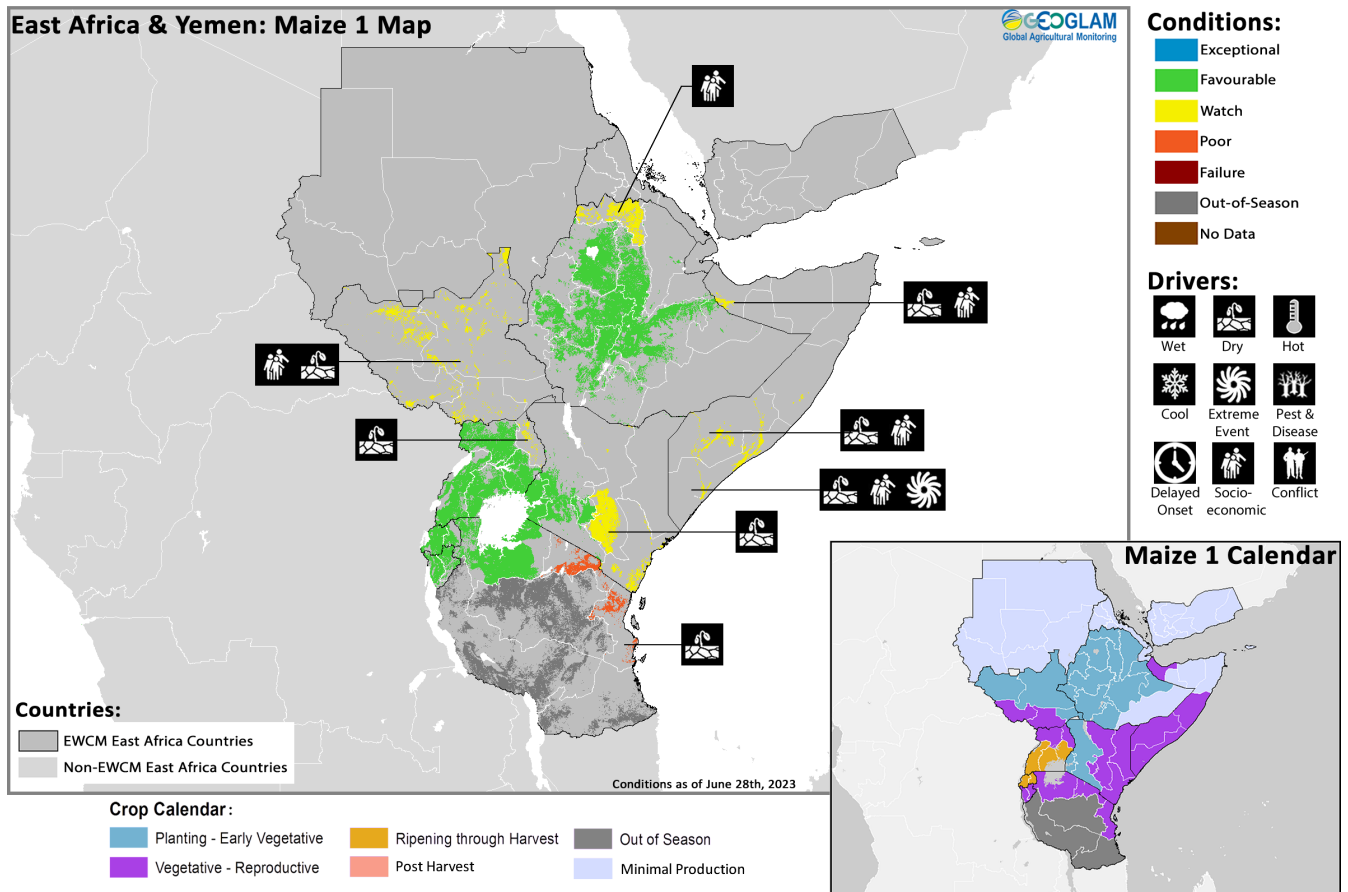
El Niño events tend to enhance rainfall in Central Asia, southern North America, south-eastern South America, southern Europe, eastern and southern East Africa, and southern and eastern China. Drier-than-average conditions tend to occur in Central America, the Caribbean, northern South America, parts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

Positive Indian Ocean Dipole (IOD) conditions may also develop during July to November, according to the Australian Bureau of Meteorology forecast. Positive IOD conditions can enhance El Niño-related drying influences in Australia and the Maritime Continent, and wetting influences during the East Africa short rains. Source: [UCSB Climate Hazards Center](#)



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

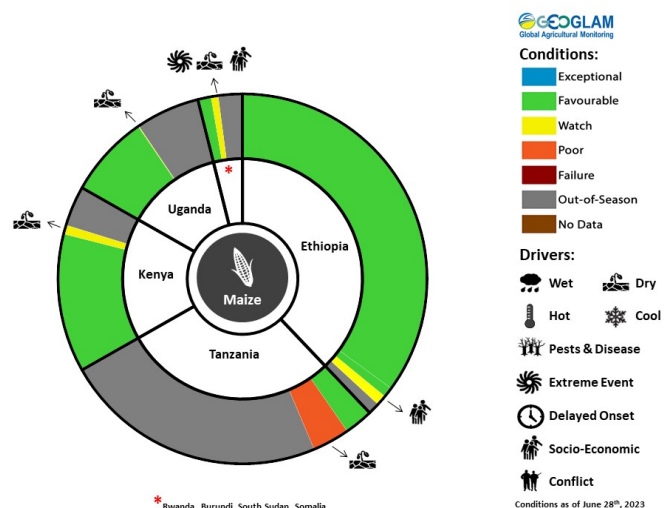
East Africa



Crop condition map synthesizing Maize 1 crop conditions as of June 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.**

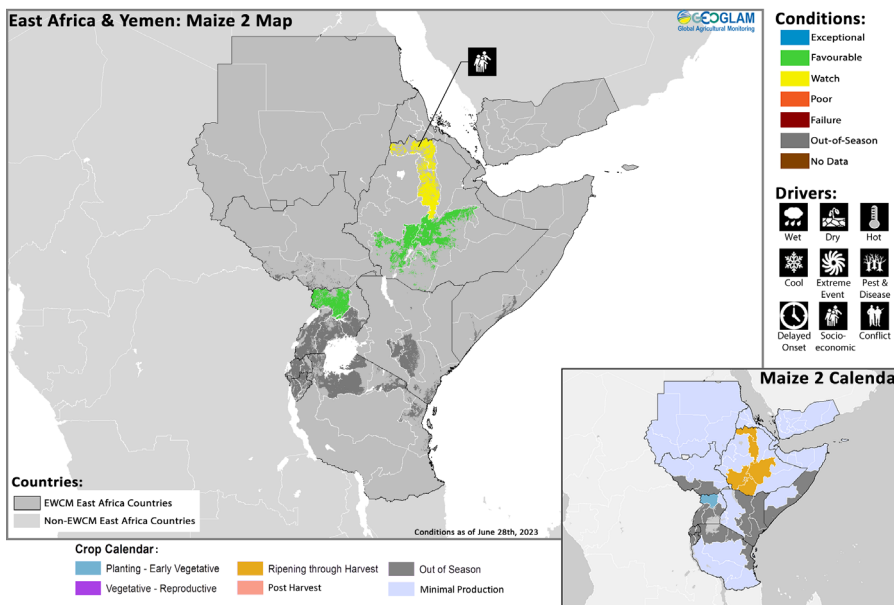
Across the north of the subregion, planting and development of main season cereals is underway while planting of spring wheat is just beginning in **Yemen**, and there is concern in all regions due to dry conditions in **South Sudan** and **Sudan** as well as ongoing socio-economic challenges and conflict in **South Sudan**, **Sudan**, and **Yemen**. In **Ethiopia**, harvesting of *Belg* season maize is now underway and will finalize next month, and planting of *Meher* season cereals continues throughout the country under mixed conditions. Despite generally favourable agro-climatic conditions throughout the country, concern remains in parts of Tigray due to socio-economic challenges relating to limited outbreaks of conflict. Additionally, there is some concern due to recent dryness in localized areas of southern Oromia. The June to September ICPAC seasonal forecast suggests a likelihood of drier than normal conditions over northern parts of the Greater Horn of Africa, particularly over southwestern **Ethiopia** and eastern **South Sudan** (See Regional Outlook Pg. 6).

Across the south of the subregion, harvesting of main season cereals is just beginning in central and southern **Uganda** and **Rwanda** while crops continue to develop in northern **Uganda**, **Burundi**, **Kenya**, **Somalia**, and the **United Republic of Tanzania** for harvest from July. Conditions are mixed with concern in northeastern **Uganda**, east and coastal **Kenya**, northeast and coastal areas of the **United Republic of Tanzania**, and parts of northwest and southern **Somalia** due to dry conditions. Furthermore, socio-economic challenges are impacting planting activities in **Somalia** due to prolonged drought. Conversely, concern remains in the Shabelle and Juba region in southern **Somalia** where there was recent widespread flooding. Elsewhere in southern East Africa, conditions remain favourable. However, FAO recently reported that Fall Armyworms have re-emerged in **Kenya**, **Eritrea**, **South Sudan**, **Ethiopia**, **Somalia**, and **Uganda**, which may be a concern for production outcomes in affected areas.



For detailed description of the pie chart please see description box on Pg. 18.





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

of expanding dry areas, socio-economic issues relating to agricultural input access, and localized incidents of conflict in Central Equatoria. The March to May rains were slightly below-average in Central Equatoria and parts of Western Equatoria. Despite good rainfall performance in June, forecast below-average rainfall in the east may affect production outcomes (See Regional Outlook Pg. 6). In **Sudan**, planting of main season millet and sorghum crops has started, and there is concern throughout the country due to dry conditions as well as socio-economic issues relating to impacts from the recent eruption of conflict from April 15 that disrupted trade and markets. This season's rainfall performance is expected to be below-average with high temperatures (See Regional Outlook Pg. 6). The pessimistic forecast along with the conflict situation will hinder households from engaging in agricultural activities and accessing the required inputs. In **Yemen**, sorghum crops are in vegetative to reproductive stage while planting of spring wheat is now underway. Vegetation conditions are generally favourable with adequate rainfall amounts received, though flooding impacted localized areas in the centre, south, and west, and socio-economic challenges related to persistent conflict continue to impact agricultural activities and production. Dry weather from January to mid-March was followed by abundant rainfall in late March, leading to localized flooding in the Central Highlands and Southern Uplands. Then in mid-April, torrential rains impacted western areas and resulted in widespread flooding. Additionally, the overall security situation has partially improved following a truce agreement established in April 2022, which has since expired, though pockets of conflict and prolonged economic crises have hindered significant economic recovery.

#### Southern East Africa

In **Uganda**, harvesting of first season cereals is underway in the centre and south while crops continue to develop in the north for harvest from August. Additionally, planting of second season maize is just beginning in the northwest. Overall conditions are favourable with some concern in Karamoja in the northeast due to dry conditions. In **Kenya**, planting and development of Long Rains cereals continues in all regions under generally favourable conditions except in the minor bimodal central-eastern and coastal areas where ongoing dry conditions continue to impact crops. In June, rains declined along the coast (See Regional Outlook Pg. 6), and the rainfall season ended in parts of the east, resulting in deteriorating vegetation conditions. In **Rwanda**, harvesting of Season B maize crops is now underway, and conditions remain favourable. In **Burundi**, Season B maize and rice crops continue to develop under favourable conditions despite impacts of flooding and landslides from March to May in localized areas of the west and northwest. In **Somalia**, *Gu* season maize and sorghum crops continue to develop for harvest from mid-July. There is concern throughout the country due to expanding dry conditions, socio-economic challenges relating to prolonged drought, and recent widespread flooding in the southern Shabelle and Juba riverine areas. In May, below-average precipitation in some south and central regions worsened rainfall deficits for the April to June *Gu* season, particularly in Bay, Bakool, Hiiraan, and Middle Shabelle regions, leading to poor crop development and limited water and pasture availability. Conversely, after five seasons of drought, heavy rains and flooding have impacted parts of the country since March. Flooding of the Shabelle River in May further affected the Hiiraan and Middle Shabelle regions, causing crop damage and negatively impacting the upcoming *Gu* harvest. Additional rainfall is forecast with the recent transition to an El Niño event (See Regional Outlook Pg. 6). In northern bimodal areas of the **United Republic of Tanzania**, harvesting of both *Masika* season cereals and *Vuli* season sorghum is underway, and conditions are mixed. Crops in the northwest have recovered from previous dry concerns while conditions in the north centre and northern coast have been downgraded to poor as the season is nearing completion. In central and southern unimodal areas, harvesting of *Masika* season rice is underway with below-average yields expected in the southeast due to prolonged dry conditions and near-average yields expected in the centre and southwest.

#### Northern East Africa & Yemen

In **Ethiopia**, harvesting of *Belg* season maize crops is now underway and will finalize in July, and conditions are mixed as socio-economic concerns remain in Tigray and other localized areas where limited outbreaks of conflict have resulted in issues with accessing agricultural inputs. Elsewhere, conditions are favourable due to adequate performance of the February to May *Belg* rains. Planting of *Meher* season cereals continues for harvest from September under generally favourable conditions except in Tigray and localized surrounding areas where socio-economic challenges are impacting planting activities due to limited input access. Additionally, the start of the *Meher* rains in June was below-average in some areas, and forecasts indicate potential below-average seasonal rainfall outcomes (See Regional Outlook Pg. 6). In **South Sudan**, planting and development of first season cereals continues with concern throughout the country due to a combination

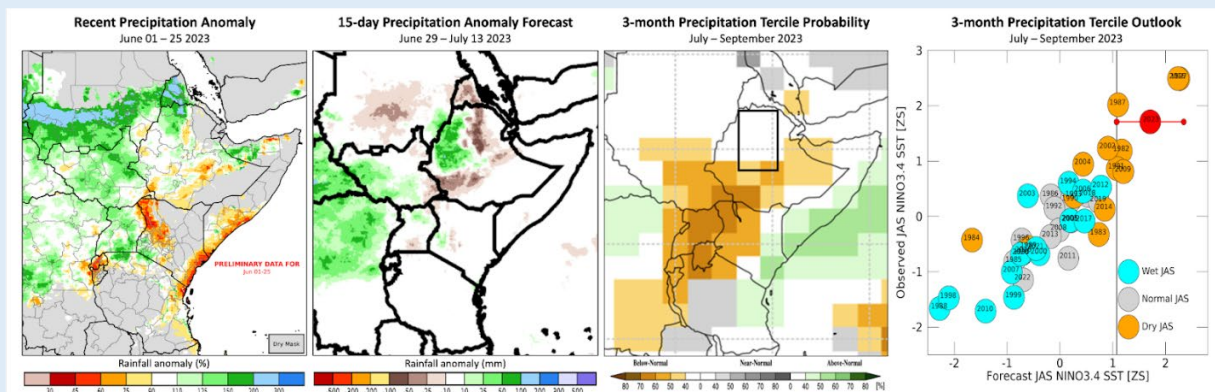
## **Regional Outlook: Increased likelihood for below-average July to September rainfall followed by potentially extreme precipitation during September to December 2023**

### **June to September 2023**

Rainfall between June 1st and June 25th was mainly above-average to average in western and far northern areas, in southern Sudan, northwestern Ethiopia, South Sudan, Uganda, southwestern Kenya, and northwestern Somalia. Conditions were drier than average in northwestern and coastal Kenya, southern coastal Somalia, and portions of central-western and southern Ethiopia (Figure 1-left). In South Sudan and Uganda, earlier rainfall deficits improved in recent weeks. Moderately below-average April 1st to June 25th rainfall totals (75-90% of average) occurred in portions of northeastern South Sudan, southeastern Sudan, western-central Ethiopia, and northwestern Tanzania. In south-central Somalia some locations experienced irregular rainfall distributions since March, with April-to-June rainfall totals that ranged from 45 to 90 percent of average. This area also experienced large positive Land Surface Temperature anomalies in June.

Monitoring for potential agricultural heat and water stress is recommended during July to September (JAS) 2023 in cropping areas in northern-central, northeastern, and southwestern Ethiopia, western Kenya, northern and southwestern Uganda, and South Sudan. Several multi-model ensembles predict increased chances of below-normal JAS rainfall, which is consistent with observed rainfall outcomes during many El Niño events. El Niño conditions emerged in June and are forecast to strengthen. The two-week unbiased GEFS forecast from June 29th predicts below-average rainfall in central-northern and southwestern Ethiopia and central Sudan, and above-average rainfall in central-western and northwestern Ethiopia and western South Sudan (Figure 1 middle-left). WMO (Figure 1-middle-right), C3S, and NMME forecasts from June highlight increased chances of below-normal JAS 2023 rainfall in central and southwestern Ethiopia, eastern South Sudan, Uganda, western Kenya, northwestern Tanzania, Rwanda, and Burundi, and above-normal temperatures throughout the region.

In central-northern Ethiopia, past El Niño rainfall outcomes also highlight a need for concern about below-normal JAS 2023 rainfall. While seasonal climate model rainfall forecasts do not show a clear signal for JAS 2023 in this region (black box overlaid on the WMO forecast in Figure 1 middle-right), central-northern Ethiopia received below-normal JAS rainfall in every year there were concurrent moderate-to-strong El Niño conditions (Niño 3.4 SST Z score > 1). NMME models predict moderate-to-strong conditions will develop during JAS 2023. Figure 1-right shows this using observed and forecast Niño3.4 SST since 1982 (scatterplot circles) and JAS CHIRPS rainfall (orange circles denote below-normal rainfall in central-northern Ethiopia). It should be noted that some of these seasons (1997, 2002, 2009 and 2015) were exceptionally dry, with 2015 being the driest season in fifty years. A positive aspect of the current season is that many agro pastoral and pastoral areas benefited from the very wet March to May and record-high rainfall, and mid-June NDVI data indicates strongly positive vegetation impacts.



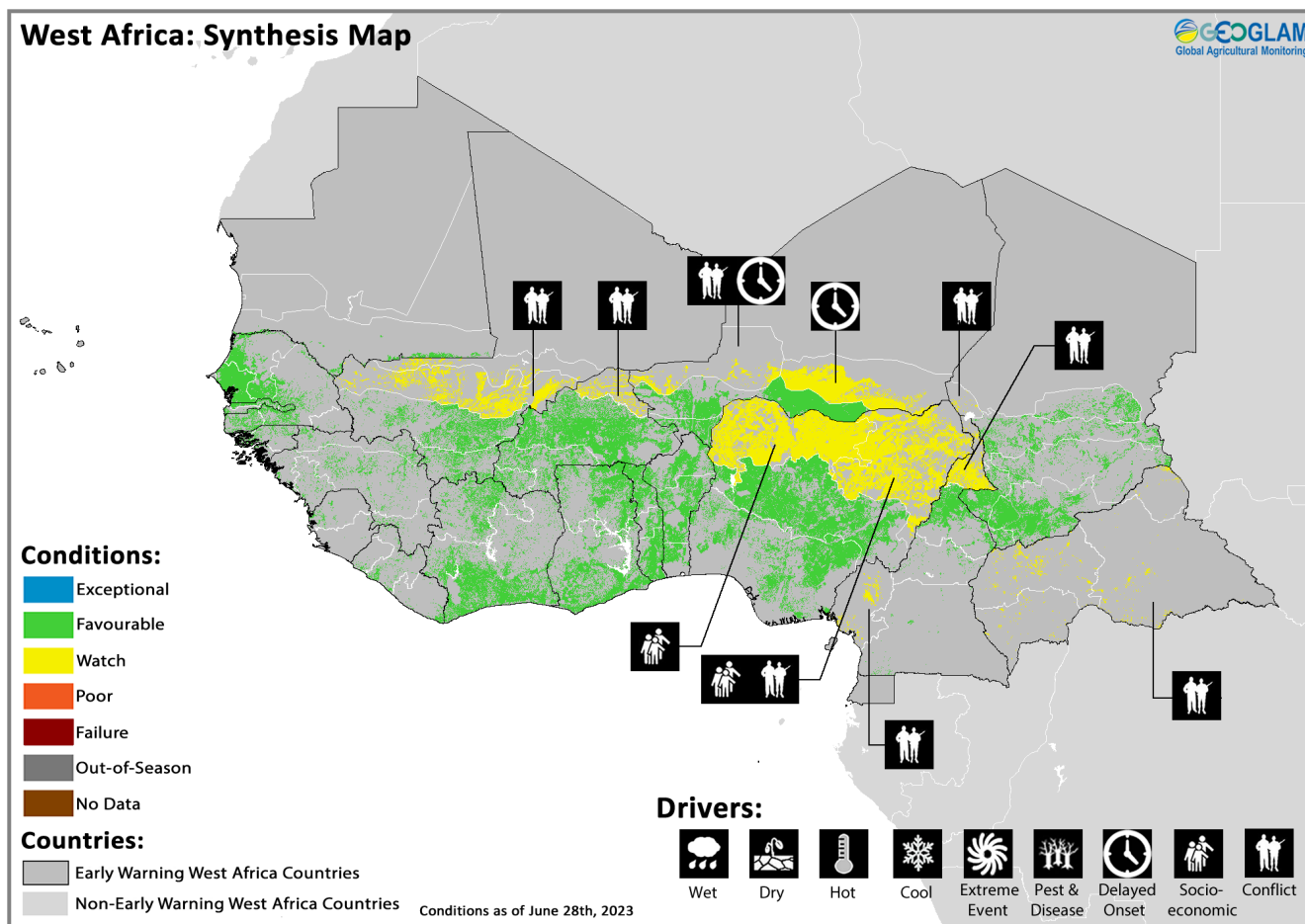
**Figure 1.** The left panel is a CHC Early Estimate, which compares current precipitation totals to the 1981-2022 CHIRPS average for respective accumulation periods. It shows the percent of average precipitation for June 1st to June 25th, 2023, using CHIRPS Prelim for June 1st to 25th. The middle-left panel shows a 15-day CHIRPS-GEFS (unbiased GEFS) forecast from June 29th, with values indicating how the forecast compares to the CHIRPS average for this period. The middle-right panel is a WMO probabilistic forecast for July to September 2023 precipitation based on models initialized in June. This image is from the WMO Lead Centre Long-Range Forecast Multi-Model Ensemble. Right: A scatterplot showing observed and predicted JAS standardized Niño3.4 sea surface temperatures. Source: UCSB Climate Hazards Center

### **September to December 2023**

For September to December 2023, CHC NMME SST forecasts indicate a conjunction of two extreme ocean states - a strong El Niño combined with a strong positive Indian Ocean Dipole (IOD) event. Acting together, very warm western Indian Ocean and eastern Pacific ocean conditions are very likely to produce extreme rains, similar perhaps to 1997, 2015 and 2019. This is particularly true in eastern areas of the Horn. Forecasts from NOAA's new hybrid NMME/machine learning-based forecast system have high skill levels for OND, and indicate extremely high probabilities of a 1-in-5 year wet season. In eastern Kenya, Somalia, and southeastern Ethiopia, this greatly raises the typical odds of highly above-average rainfall, to 70-90% according to forecasts derived from C3S precipitation and NMME SST forecasts ([Climate Hazards Center blog](#)). Source: UCSB Climate Hazards Center



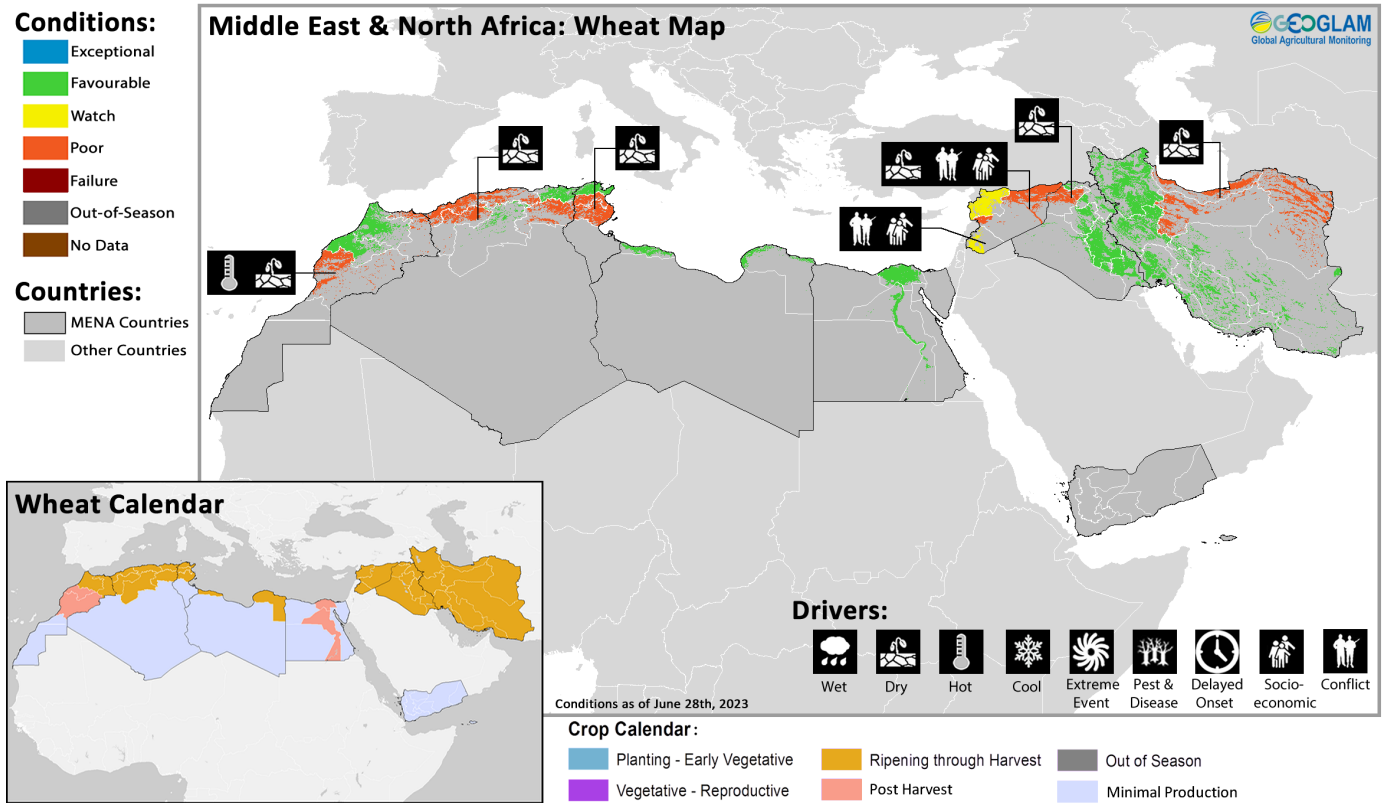
## West Africa



Crop condition map synthesizing crop conditions as of June 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 West Africa, planting of main season cereals is underway throughout the subregion, and crops in some areas have entered the vegetative to reproductive stage, including in **Sierra Leone, Liberia, Cote d'Ivoire**, southwestern **Burkina Faso, Ghana, Togo, Benin, Nigeria**, and central **Cameroon**. Planting and development of second season cereals is also underway in **Nigeria** and **Cameroon**. Agro-climatic conditions are generally favourable in the subregion, and crops in **Guinea-Bissau** have recovered from delayed rainfall onset in May. However, delayed rainfall onset is now impacting millet and sorghum crop planting in **Niger**. Concern also 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 limited resources in north-central **Nigeria**. Along the Sudanian Sahelian zone, forecasts suggest average to above-average cumulative rainfall amounts are expected through September, particularly over **Mali**, most of **Burkina Faso**, southeastern **Mauritania**, northern **Guinea**, and northwestern **Cote d'Ivoire**, which could benefit yields but also increases the risk of flooding. In **Mali**, planting began on time in May in central and southern cropping areas while land preparation continues in the north, and crops benefitted from adequate rainfall amounts from early May which contributed to favourable soil moisture conditions. Average to above-average rainfall is expected in these areas through September. In **Guinea-Bissau**, forecast average to above-average rains throughout most of the country are expected to benefit ongoing planting activities and crop development. In **Burkina Faso**, planting activities began in early May in southern cropping areas and benefitted from a timely onset of rains. In the north and centre, planting began in mid-June with the start of seasonal rains. In **Nigeria**, rainfall performance for the March to May season was mixed, with southern bimodal areas receiving a timely onset with near-average amounts and central areas receiving a timely onset with below-average amounts in May. In the north, seasonal rains have yet to begin, and land preparation and planting activities are underway despite ongoing insecurity and limited input access. Rainfall is expected to be average to above-average through September in the north and northeast which may lead to riverine flooding in the west. Conversely, central and southern areas are likely to experience below-average rains.

## Middle East &amp; North Africa



Crop condition map synthesizing wheat conditions as of June 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 the Middle East and North Africa, wheat harvesting finalized in **Egypt** and central and southern parts of **Morocco** and is nearing completion in northern **Morocco**, **Algeria**, **Tunisia**, **Libya**, **Syria**, **Iraq**, and **Iran**. Overall conditions are mixed due to poor seasonal rainfall performance in many areas.

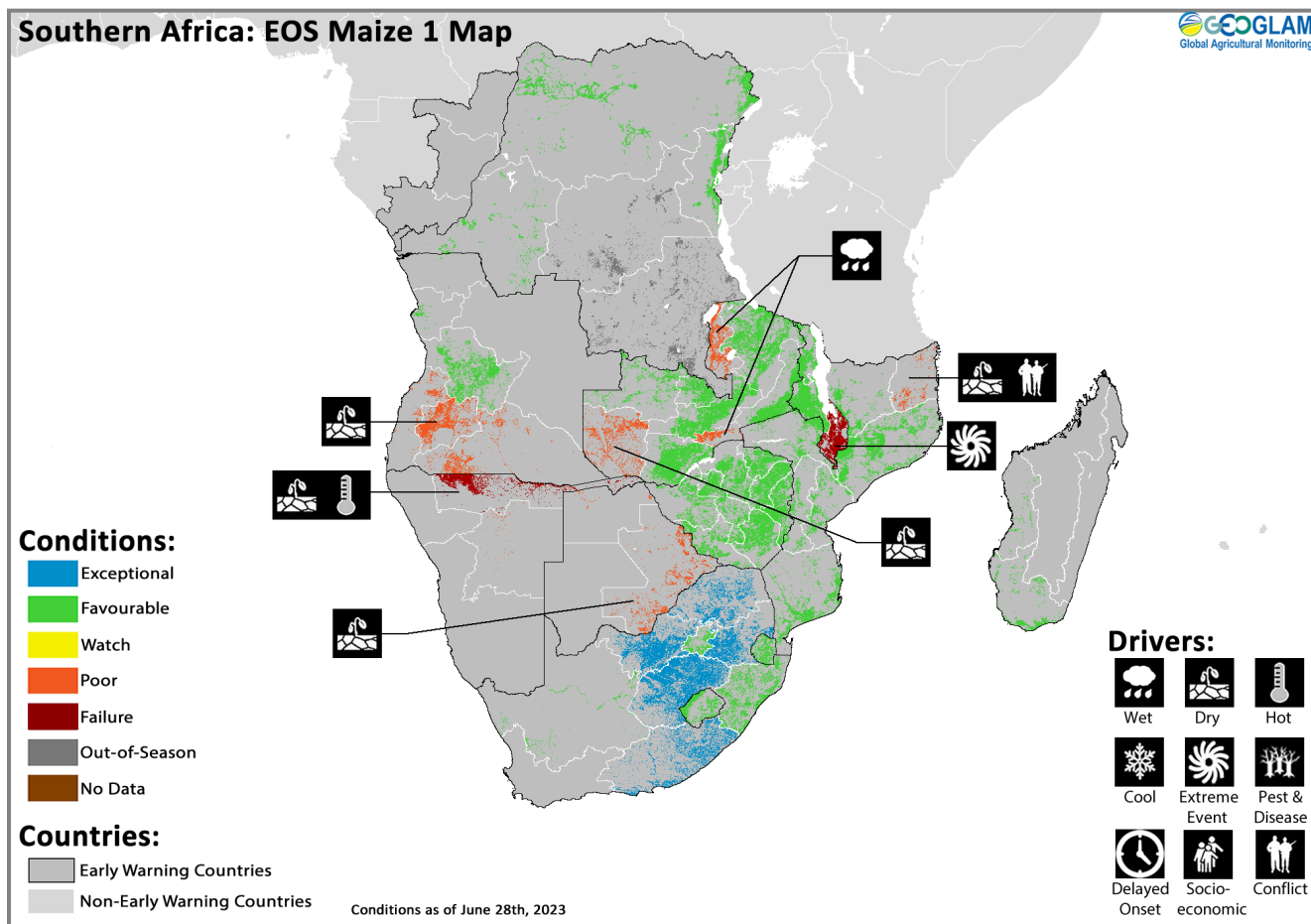
In North Africa, drought and high temperatures in March and April impacted most areas in **Morocco** excluding parts of the west and centre, most areas in **Algeria** excluding parts of the north and northeastern coast, and most areas in **Tunisia** excluding the irrigated Bizerte region in the north. In **Morocco**, large areas of the country experience below-average rainfall early in the season, particularly in January. Enhanced rains in February brought some improvement to the north and western areas of the country. However, rainfall returned to significantly below-average levels in March and April, and high temperatures in April accelerated the maturation of cereals which contributed to poor cropping outcomes. With the exception of regions in the west and centre, reduced planted area and below-average yields are anticipated due to the combination of sparse and irregularly dispersed rainfall, along with higher-than-average winter temperatures. Consequently, the national wheat yield is anticipated to fall 17 percent below the five-year average. In **Algeria**, the country experienced a third consecutive drought season in 2022/2023. Irregular and below-average rainfall earlier in the season was followed by below-average March and April rainfall in the north, resulting in delayed wheat growth and well below-average biomass in most regions, except for some areas along the north and northeastern coast. Consequently, the national wheat yield is anticipated to fall 24 percent below the five-year average. In **Tunisia**, dry and hot conditions in March and April deteriorated crop conditions in the central and northern areas of the country, excluding Bizerte along the northern coast where crops are irrigated. By late April, both the water balance and vegetation conditions in agricultural regions were among the worst in North Africa. Above-average rainfall in May arrived too late to significantly improve crop conditions. Consequently, the national wheat yield is anticipated to fall 19 percent below the five-year average.

In the Middle East, persistent seasonal dryness impacted yields in northeastern **Syria**, northwestern **Iraq**, and north-central and northeastern parts of **Iran**. In **Syria**, yields are expected to be generally near-average, except in Hassakeh governorate in the northeast where low rainfall received from December to early March resulted in below-average crop biomass despite some vegetation recovery from mid-March. As a result, production in Hassakeh is expected to be below-average but well above the previous year's level. However, production is still expected to be below pre-conflict levels, resulting in poor conditions. In **Iraq**, wheat prospects are favourable throughout most of the country due to above-average rainfall received over most regions from November. However, in the southern half of Ninewa governorate, which is the main cereal-producing governorate located in the northwest, yields and production of rainfed cereals are expected to be below-average due to dry conditions from December to February. Rice planting continues under favourable conditions. However, rice cultivation could be banned as a potential measure to conserve water supply. In **Iran**, conditions are favourable in western areas from West Azarbayegan and East Azarbayegan governorates located in the northwest



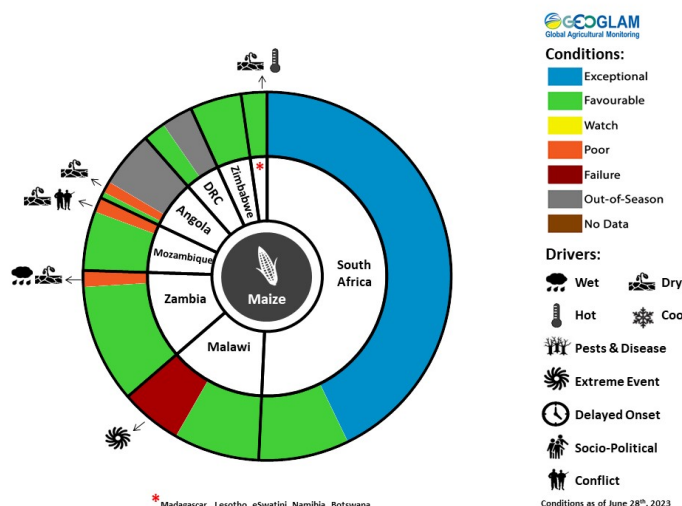
to Fars and Kerman governorates located in the southwest, with the exception of northern Ardebil governorate located in the northwest where crops were either not sown or failed despite near-average rainfall received. Conversely, conditions are poor in the northeastern governorates of Golestan and Khorasan and in the central governorates of Hamedan, Esfahan, Markazi, and Ghazvin. In Golestan, cumulative rainfall from October 2022 is the lowest of the last 32 years, resulting in reduced cropped area in the north compared to the previous year. Planting of main season rice crops continues under favourable conditions. In the main rice-producing regions of Mazandaran and Gilan, conditions are favourable with above-average crop biomass. In Khuzestan, planted area has increased compared to the previous year due to above-average rainfall received.

### Southern Africa



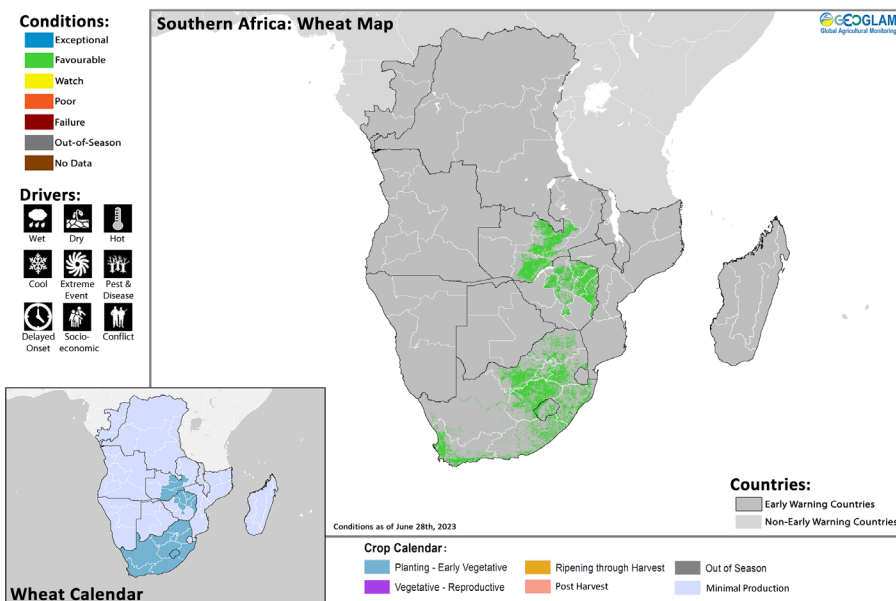
Crop condition map synthesizing End of Season (EOS) Maize 1 conditions as of June 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Crops that are in other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

In Southern Africa, harvesting of main season cereals finalized across the subregion under mixed conditions due to extended dry periods with above-average temperatures in some central and western areas. Parts of the subregion experienced below-average rainfall this season, particularly in **Madagascar** and northeastern **Mozambique**, and in parts of southern **Angola**, northern **Botswana**, northern **Namibia**, and southwest **Zambia** that experienced the driest season since 1981. This resulted in poor crop performance, severe water deficits, and permanent crop wilting in affected areas, culminating in crop failure in northern **Namibia** and below-average yields in southern **Angola**, central **Namibia**, southwestern **Zambia**, **Botswana**, and Cabo Delgado region of northeastern **Mozambique**. Persistent conflict also contributed to below-average yield outcomes in Cabo Delgado. Additionally, crops in the Southern Region of **Malawi** failed due to the impacts of Tropical Cyclone Freddy in the Southern Region combined with limited access to fertilizers which had significant negative impacts on crop yields.



For detailed description of the pie chart please see description box on Pg. 18.

Conversely, beneficial weather conditions during the 2022/23 summer and relatively dry and warm conditions through much of autumn resulted in exceptional conditions in parts of **South Africa**. Elsewhere, end of season conditions are favourable with near-average yields expected. In **Madagascar**, current below-average rains in the southeast in combination with high input costs may impact rice harvesting outcomes, which is expected to finalize next month.



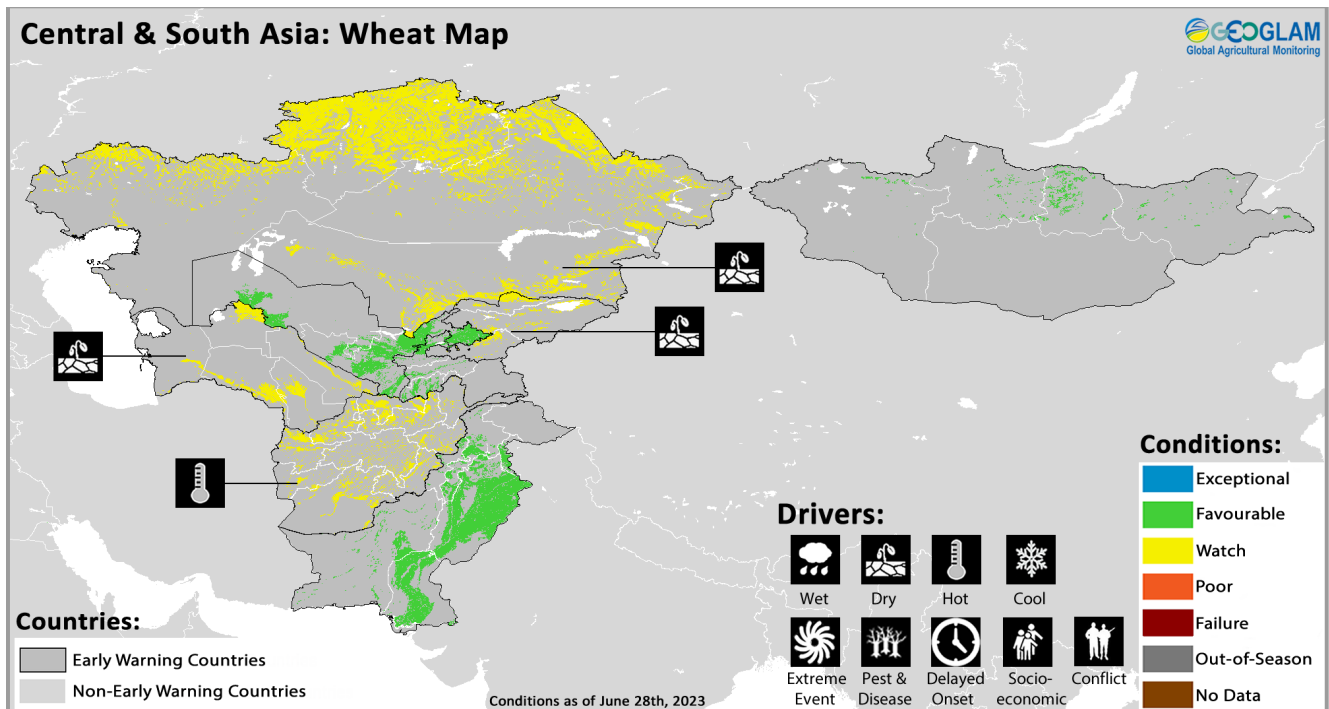
Crop condition map synthesizing wheat conditions as of June 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Conditions that are other than favourable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

In the **Democratic Republic of the Congo**, harvesting of main season sorghum finalized in Katanga while crops continue to develop in the north. Additionally, harvesting of second season maize crops has just begun in the north while crops continue to develop in the east, and planting of first season maize is just beginning in the north and west. Overall conditions are favourable, and maize crops in the east have recovered from previous heavy rains in South Kivu region in May. However, there is currently an uneven distribution of rainfall that will require further monitoring.

Wheat planting continues in **Zambia, Zimbabwe, South Africa, and Lesotho** for harvest from September, and overall conditions are favourable. In **South Africa**, widespread above-normal rainfall since December over the winter rainfall region is supporting dryland wheat production. In the summer rainfall region, water resources and soil moisture conditions are adequate following several wet summers and recent widespread autumn rain.



## Central &amp; South Asia

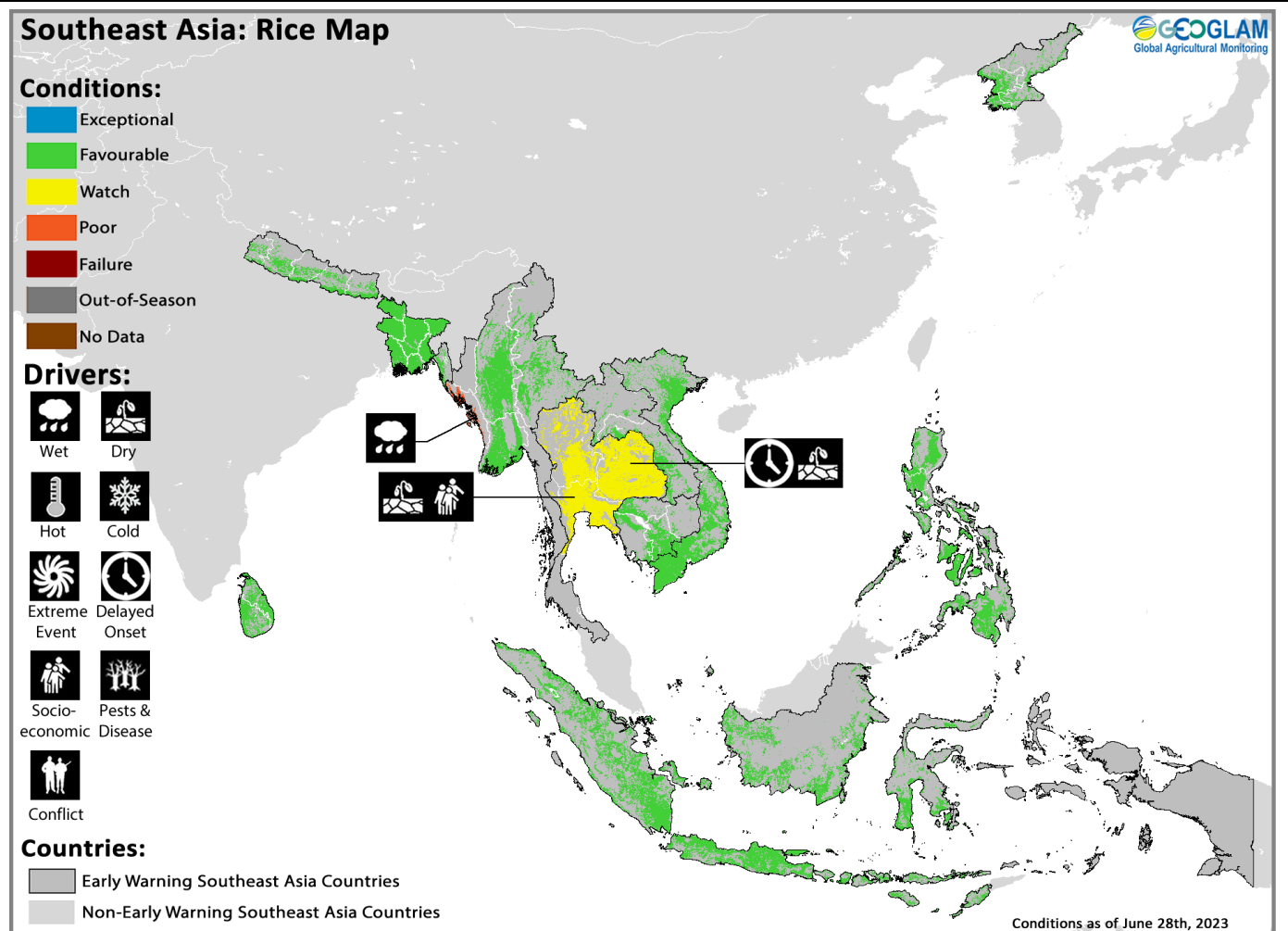


Crop condition map synthesizing wheat conditions as of June 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Crops that are in other than favourable conditions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

In Central and South Asia, wheat development and harvesting activities are underway in **Turkmenistan, Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan, Afghanistan, and Mongolia** under mixed conditions. Concern remains throughout **Afghanistan** and **Turkmenistan** and conditions have been downgraded to watch in **Kazakhstan** and **Kyrgyzstan** due to a combination of below-average cumulative rainfall amounts and vegetation levels as well as above-average temperatures in **Afghanistan**. Elsewhere, conditions remain favourable.

In **Kazakhstan**, winter wheat continues to develop in the south, and harvesting is now beginning under favourable conditions. Spring wheat sowing was completed in early June in the north, where 95 percent of the country's wheat production occurs, and crops are now developing across the country under watch conditions. Irregular and below-average rainfall since the end of March have degraded vegetation conditions in many areas. However, rainfall improvement is expected in July, which could result in some recovery. According to the Ministry of Agriculture, 2023 wheat production is expected to be near-average at 16 million tonnes, a slight decrease compared to the previous year. In **Uzbekistan**, despite below-average rainfall across the country from March, crop biomass is above-average in all regions, except for Kashkadarya in the south which was most impacted by the water deficit. In **Tajikistan**, crop prospects are favourable despite a rainfall deficit since March. In **Afghanistan**, 85 to 90 percent of the wheat crop has been harvested, and concern remains due to previous rainfall deficits as well as anticipated hot weather conditions. The October to May wet season had generally below-average precipitation in most of the country, except for some central, south, and eastern areas that experienced near-average rainfall amounts. As a result, vegetation conditions are below-average in the north, west, centre, and southwest due to a combination of insufficient precipitation, low snow water volumes and early snow melt that reduced the availability of irrigation water, and below-normal soil moisture. Snow water volumes in the Panj, Khanabad, Kokcha-Ab\_i\_Rustaq, and Kabul basins are below-average but improved compared to last year, while most other basins have experienced close to record minimums since late March. Conversely, the anticipated transition to an El Niño event is typically associated with above-average rainfall across the country (See Climate Influences Pg. 3), which could potentially benefit the second crop production. Additionally, above-average temperatures are also forecast across the country starting in July and are likely to continue through early 2024, which could hinder crop prospects. Furthermore, a large-scale invasion of Moroccan Locusts was reported in May in eight provinces in the country's wheat basket along the north and northeast, including Badakhshan, Badghis, Baghlan, Balkh, Kunduz, Samangan, Sar-e-Pul, and Takhar. The presence of high humidity and temperatures also increases the risk of other pests and diseases that could impact crops adversely. Conversely, a ban on poppy cultivation has resulted in a crop shift primarily to wheat and cotton, particularly in the previous main producing province of Helmand, which is expected to increase wheat planted area and production. In **Pakistan**, the ongoing 2023 wheat harvest is officially estimated at an above-average level, owing to favourable weather conditions that resulted in above-average planted area and yields. In **Mongolia**, current cropping conditions are generally favourable throughout the country. A severe snowstorm from May 19 to May 20 impacted eastern regions, including Dornod, Sukhbaatar, and Khentii provinces, as well as some Gobi areas located in the south and southeast. While early planted wheat production in these areas might be affected at the national level, the overall impact is expected to be minimal since the above-mentioned provinces together account for around 5 percent of the total wheat planted area.

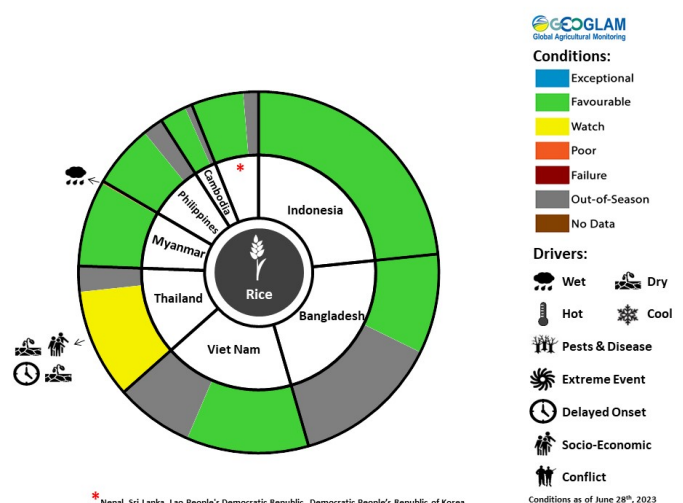
Southeast Asia



Crop condition map synthesizing rice conditions as of June 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 now underway in all regions, and crops are mostly in the seeding to young panicle forming stage. Planting work is likely to be delayed due to the delayed onset of seasonal rains. Total planted area is also expected to decrease compared to the previous year due to below-average April to June precipitation totals (See Regional Outlook Pg. 14) and increasing costs of agricultural inputs. However, growing conditions of early planted rice are generally favourable except in **Thailand** due to dry conditions and high input costs. Forecasts indicate dry conditions are likely for the July to September period in parts of **Malaysia** and **Indonesia** while above-average rainfall is expected for mainland areas and the **Philippines**. Above-average temperatures are very likely across the subregion for the same period (See Regional Outlook Pg. 14).

In **Indonesia**, harvesting of wet-season rice is nearing completion with a total harvested area of 6.1 million hectares, which is 1.2 percent lower than the previous wet-season. Yield is expected to be near-average due to sufficient irrigation water supply and sunlight during the flowering phase. Planting of dry-season rice continues under favourable conditions due to sufficient irrigation water supply, particularly in the north. Planted area has reached 2.9 million hectares, which is 8.4 percent higher than the previous dry-season. In the **Philippines**, wet-season rice is now in the tillering to young panicle forming stage under favourable conditions. Super Typhoon Betty impacted the country in late May, enhancing the southwest monsoon which brought heavy rains in some areas of western Luzon and Visayas, leading to landslides and flooding. However, no crop damage was reported. In **Thailand**, wet-season rice is in the sowing to early tillering stage with concern due to delayed rainfall onset in the east, developing dry conditions, and limited input access. This year's rainy season onset was later than



For detailed description of the pie chart please see description box on Pg.18.

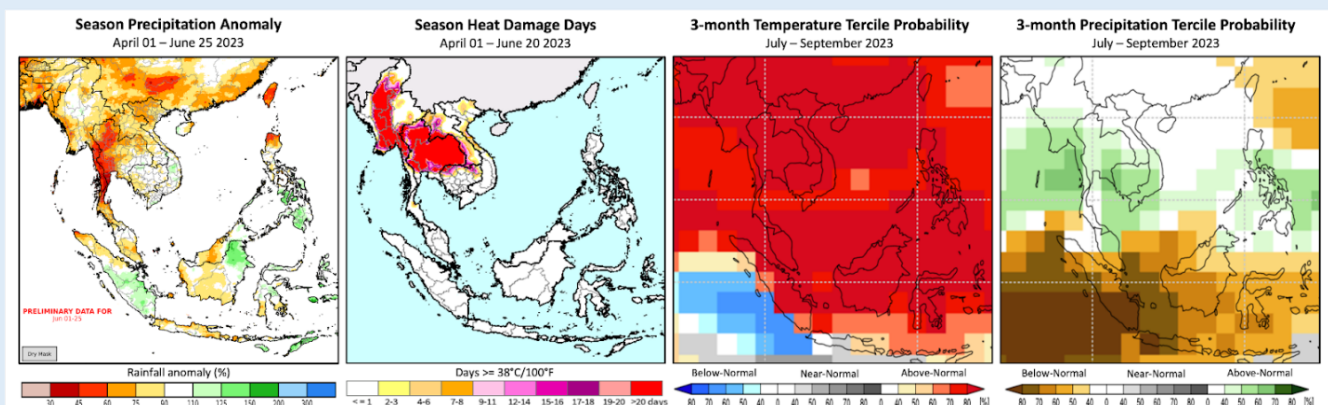
normal, and total planted area is expected to decrease due to limited irrigation water supply as well as the high cost of fertilizers and pesticides. Some farmers have also switched their fields from paddy rice in favour of other crops such as cassava and sugarcane that can earn a higher income, which may further reduce planted area. Both yield and production are also expected to decrease due to impacts of drought and reduced agrochemical usage which increases the risk of damage from disease and pests. Furthermore, cultivation tends to be below-average during El Niño years (See Climate Influences Pg. 3 and Regional Outlook Pg. 14). In northern **Viet Nam**, harvesting of winter-spring (dry-season) rice is underway with a harvested area of 0.372 million hectares. Conditions remain favourable with an estimated yield of 6.33 tons per hectare which is 0.7 percent higher than the previous year due to adequate weather conditions and improved irrigation preparation. Sowing of summer-autumn (wet-season) rice is now underway, but rainfall amounts remain low. In the south, summer-autumn (wet-season) rice is in the seeding to tillering stage under favourable conditions and has a current sown area of 1.14 million hectares. In lowland areas of **Laos**, wet-season rice is in the land preparation and seeding stage under favourable conditions with sufficient irrigation water supply due to adequate rainfall received across the country. The national planting plan is approximately 736 thousand hectares, a slight increase from the previous year, and production is expected to be 3 million tons. Approximately 350 thousand hectares have been planted so far. In upland areas, the planting plan is approximately 87 thousand hectares with expected production of 178 thousand tons. In **Myanmar**, over 80 percent of dry-season rice has been harvested, equating to 873 thousand hectares harvested of 1.05 million hectares planted. This has produced 4.2 million tons of paddy so far with a yield of 4.99 tons per hectare, an increase compared to the previous year. However, Cyclone Mocha impacted western parts of the country in mid-May, causing losses to standing crops. Approximately 1,650 hectares of dry-season rice were damaged, and June brought additional monsoon rains and strong winds to the country. Planting of wet-season rice is now underway with a national planting plan of 6.07 million hectares. Over 150 thousand hectares have been planted so far, accounting for 2.5 percent of the national plan. However, planting progress is slightly slower than the previous year due to comparatively less availability of irrigation water. In **Cambodia**, early planted wet-season rice is now in the tillering to young panicle forming stage under favourable conditions. Planted area has reached 1.2 million hectares, accounting for 49 percent of the national plan, and is slightly higher than the previous year due to adequate irrigation water supply. In **Sri Lanka**, *Yala* season maize and rice crops are in vegetative to reproductive stage for harvest from August, and agro-climatic conditions are favourable. However, aggregate paddy production for 2023 is estimated to be below-average as a result of low yields from the 2022/23 *Maha* season production as crops were impacted by limited availability and high prices of fertilizers, according to the May 25 FAO/WFP CFSAM report. In **Nepal**, harvesting of winter wheat finalized in June and output is estimated at a near-average level, while planting and development of main season rice crops is underway with favourable conditions. In **Bangladesh**, harvesting of irrigated dry-season *Boro* rice, which represents 55 percent of total rice production, is now complete with good prospects and above-average crop biomass. *Aus* season rice, which represents 10 percent of total rice production, continues to develop for harvest from July. Planting continues for *Aman* season rice, which accounts for 35 percent of total production. Growing conditions are favourable for both *Aus* and *Aman* season rice with adequate moisture conditions. Furthermore, harvesting of summer season maize is nearing completion while sorghum planting is underway, and overall conditions are favourable. In the **Democratic People's Republic of Korea**, planting and development of main season maize and rice continues under favourable conditions with adequate precipitation received.



**Regional Outlook: Below-average rainfall and above-average temperatures are present across parts of the region and are forecasted to continue in the south through September**

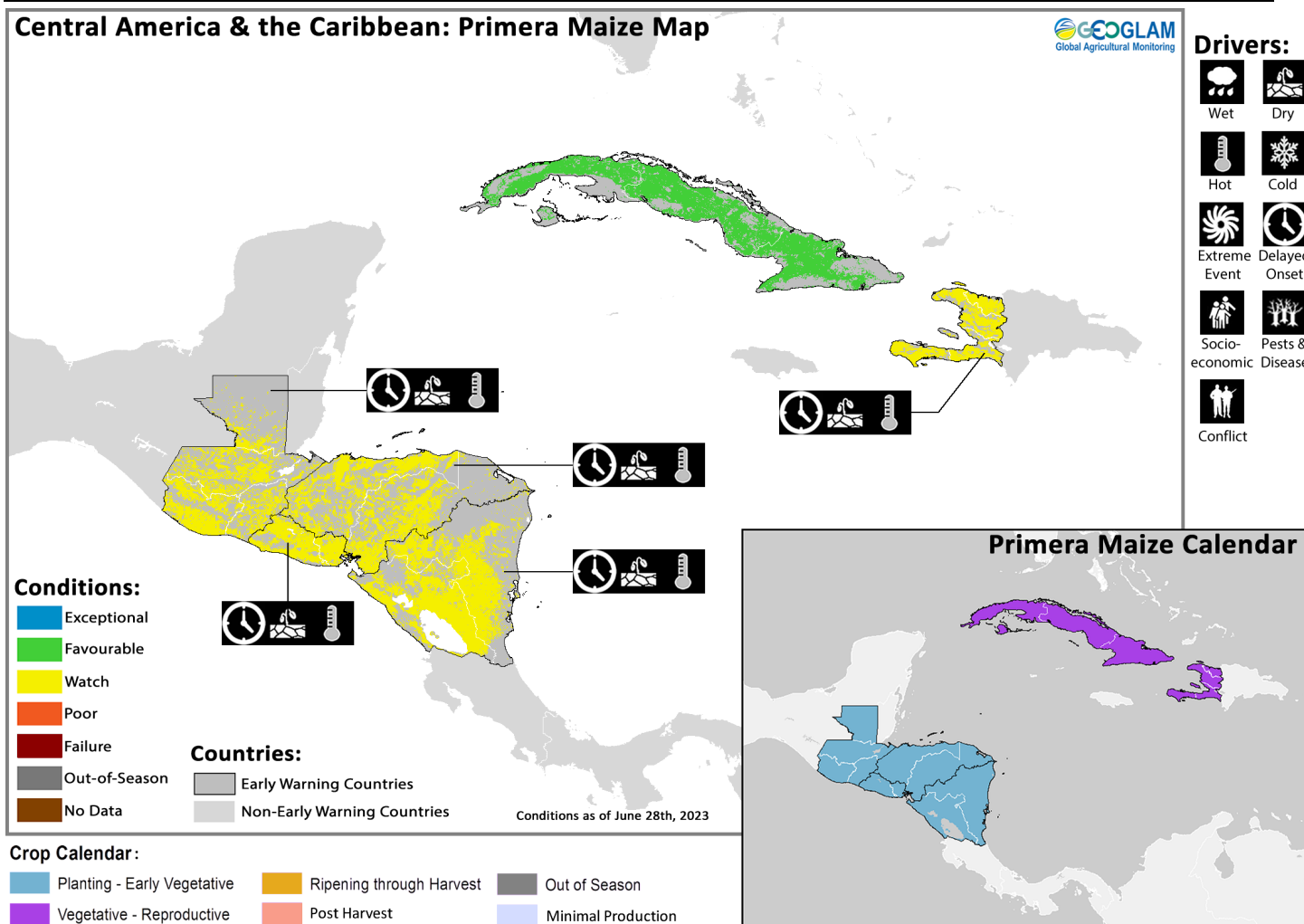
Below-average rainfall and above-average temperatures impacted northern areas during the past several months. April 1st to June 25th rainfall was historically very low—around half of what is typical for these months—in northern and southwestern Thailand and southern Myanmar (Figure 1 left). In many areas, daytime highs frequently exceeded 35 degrees Celsius, and temperatures in northern Thailand and northern-central Myanmar exceeded 38 degrees Celsius for more than 20 days (Figure 1 middle-left). Such high temperatures are capable of damaging crops, especially in combination with ongoing dry conditions such as in northern Thailand. Thailand rice harvests tend to be below-average during El Niño years.

During July to September (JAS) 2023, multi-model ensemble seasonal forecasts strongly agree that regional temperatures will likely be warmer-than-normal (Figure 1 middle-right). For JAS 2023 rainfall, WMO, C3S, and NMME forecasts generally all indicate a pattern of above-normal rainfall in the north and below-normal rainfall in the south (Figure 1 right). There is notably low confidence in the JAS rainfall outlook in areas farther in the north, due to model disagreement. During June 29th to July 13th, above-average rainfall is likely in southern areas, based on the two-week unbiased GFS forecast from June 29th. Below-average rainfall is forecast in some northern deficit areas, including central and northern portions of Thailand, Laos, and Vietnam, as well as in central Myanmar.



**Figure 1. A seasonal rainfall anomaly, seasonal heat damage days, and 3-month probabilistic forecasts for 2m temperature and precipitation.** The left panel is a CHC Early Estimate, which compares current precipitation totals to the 1981-2022 CHIRPS average for respective accumulation periods. It shows the percent of average precipitation for April 1st to June 25th, 2023, using CHIRPS Prelim for June 1st to 25th. The middle-left panel shows the number of days this season, from April 1st to June 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 middle-right and right panels are WMO probabilistic forecasts for July to September 2023 2m temperature and precipitation, respectively, based on models initialized in June. These images are from the [WMO Lead Centre Long-Range Forecast Multi-Model Ensemble](#). Source: UCSB Climate Hazards Center

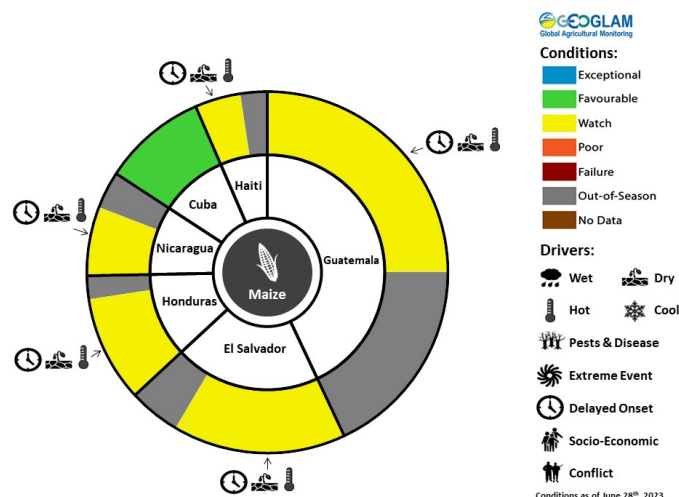
Central America & Caribbean



Crop condition map synthesizing Primera Maize conditions as of June 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, planting and development of *Primera* season cereals continues with concern in all countries as below-average rainfall amounts and distribution as well as above-average temperatures have been impacting much of the region since late November. Conditions in **El Salvador**, southern **Honduras**, and southern **Nicaragua** have degraded from the previous month, and concern remains elsewhere in the region. Recent rainfall helped to reduce deficits but was not sufficient for significant crop recovery.

In **Guatemala**, rainfall in May was below-normal throughout most of the country, particularly in southwestern areas. Rainfall deficits and high temperatures are expected to remain a concern through July and August, and the dry conditions are causing difficulties in the Dry Corridor communities where agriculture is crucial for food security. A significant number of small-scale farmers in Chiquimula reported being unable to plant their crops in May, with some experiencing losses due to poor germination. The departments of Alta Verapaz, Baja Verapaz, Chiquimula, Huehuetenango, Izabal, Petén, Quiché, Sololá, and Totonicapán are expected to be most affected by El Niño (See Climate Influences Pg. 3 and Regional Outlook Pg. 17). In **El Salvador**, planting activities were delayed by one month and are continuing at a slow pace due to soil moisture deficits. Vegetation conditions are below-average in the centre and east, and planted area is expected to be below-average due to dry conditions and high production costs. Forecast increased precipitation amounts from July is likely to benefit yields, and planted area of second season crops is likely to increase if soil



For detailed description of the pie chart please see description box on Pg. 18.

moisture levels are adequately replenished (See Regional Outlook Pg. 17). Additionally, the government is distributing free maize seeds and fertilizers to over 500,000 farmers to improve the production capacity of smallholder farms. In **Honduras**, while soil moisture levels are adequate in the main producing Olancho and El Paraíso departments, below-average rains in April and May impacted northern areas. Additionally, about 10 of the country's 18 departments have been placed under red alert due to ongoing drought and potential impacts from the El Niño event (See Climate Influences Pg. 3). Below-average rains and high temperatures are forecast during the June to August period and may negatively impact crop yields, particularly in the southern Dry Corridor area as well as in Yoro and Atlántida departments in the north (See Regional Outlook Pg. 17). Furthermore, limited fertilizer imports have reduced domestic availability and increased prices. The government has initiated a program that plans to distribute free seeds to benefit at least 300,000 smallholder farmers. In **Haiti**, harvesting of *Printemps* season cereals is now underway with continuing concern as generally dry and hot conditions negatively affected vegetation conditions throughout the country. Conversely, heavy rainfall in early June resulted in severe flooding and landslides across the country, particularly in the Ouest department and in the capital city of Port Au Prince. The agricultural sector in the Centre department was also affected. However, the average to above-average rainfall in recent weeks has helped to reduce rainfall deficits. Average to above-average precipitation and high temperatures are forecast through August, and the June to November Atlantic hurricane season is likely to be more active than normal (See Regional Outlook Pg. 17). In **Cuba**, harvesting of main season rice and maize is nearing completion while planting of second season rice is underway, and overall conditions are favourable. Heavy rainfall and flooding in mid-June impacted eight provinces in the centre and east, particularly in Granma, Camagüey, Santiago de Cuba, and Guantánamo. Many of these provinces were experiencing hydrological and agricultural drought prior to the flooding which has resulted in further negative impacts on crops. However, damages were not severe.



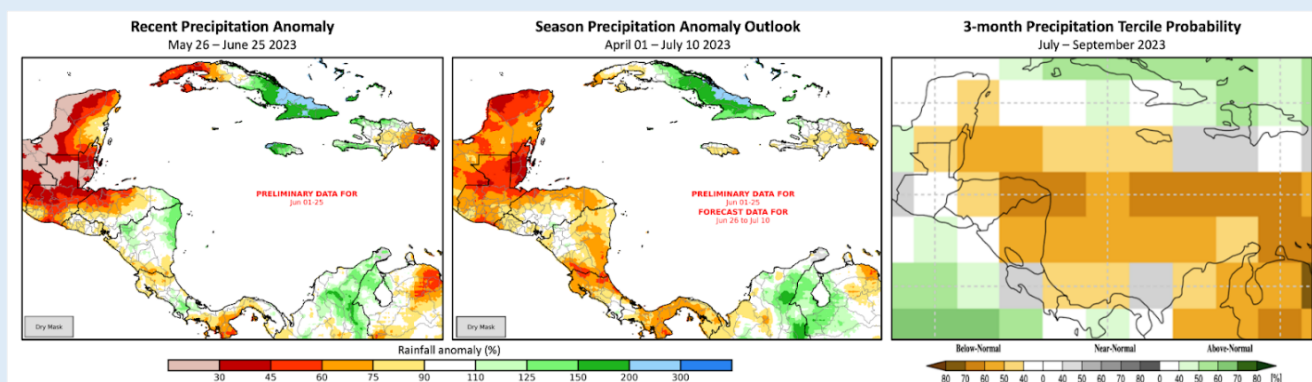
**Regional Outlook: Above-average rainfall is forecast through the start of July in parts of the region, however, seasonal rainfall deficits are still expected to persist**

Very poor rainfall performance and high temperatures continued to impact Primera season cropping areas. During recent weeks, severely below-average rainfall was observed across most of Guatemala and in northeastern Honduras (Figure 1-left). Preliminary data indicates these areas received 30 to 60 percent of average rainfall between May 26th and June 25th, with less-than 30 percent of average in northern Guatemala. Low rainfall, fewer rainy days, and high temperatures between rainfall events have reduced soil moisture in locations across Central America. Haiti received average to above-average rainfall in recent weeks.

The dry conditions resulted in a major expansion of areas undergoing severe rainfall deficits in Guatemala and Honduras. As of late May, prominent rainfall deficits were along Pacific coast areas in Guatemala and western El Salvador, while in other parts of Guatemala irregular rainfall distributions, and high temperatures reportedly damaged crops. The dry conditions in recent weeks, which were indicated by forecasts, resulted in very low April 1st to June 25th rainfall totals- between 30 to 75 percent of average- across Guatemala, northern Honduras, and western El Salvador. While CHIRPS final data for June 2023 will better gauge the historical severity of this season, available preliminary data for June 1st to 25th suggests that many areas in Guatemala experienced one of the driest April 1st to June 25th periods in the last 42 years. In Nicaragua, April 1st to June 25th rainfall totals were below-average to average, following mixed conditions during recent weeks. Less than 75 percent of average rainfall occurred in Nicaragua's southern and Pacific coast areas. Recent rainfall reduced the seasonal rainfall deficits, but crop conditions over the area have not improved due to continuing soil moisture deficits.

Above-average rainfall is forecast in Guatemala, western and southern Honduras, El Salvador, and western Nicaragua between June 29th and July 13th. The unbiased GEFS forecast from June 29th indicates very wet conditions are possible, in excess of 100 mm in some areas. If this forecast materializes, landslides and localized flooding are possible. While wet conditions would improve seasonal rainfall totals, substantial April 1st to July 10th deficits are anticipated in most areas due to earlier and longer-lasting poor rainfall performance. If above-average rainfall occurs it will be useful for the sowing activities of Segunda season crops. Figure 1 (middle) shows an outlook for percent of average rainfall for this period using preliminary June data and a forecast from June 26th. In Haiti, it suggests mixed conditions overall, with moderate rainfall deficits in southern areas.

El Niño conditions emerged in June, and these often result in a longer and more severe “mid-summer drought” period than usual. WMO, NMME, and C3S model forecasts for July to September (JAS) 2023, from June, indicate that temperatures will likely be hotter than normal. These generally indicate increased chances for below-normal rainfall along southern and Atlantic coast areas, but not in northern Pacific coast areas. In Haiti, these ensembles indicate average to above-average conditions in JAS 2023.



**Figure 1. A recent rainfall anomaly, a seasonal rainfall anomaly with a two-week outlook, and a 3-month probabilistic rainfall forecast.** The left and middle-left panels are 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 May 26th to June 25th, 2023 (left) and for Apr. 1st to July 10th (middle). Both panels use CHIRPS Prelim for June 1st to 25th; the middle panel also includes a CHIRPS-GEFS forecast for June 26th - July 10th. The right panel is a WMO probabilistic forecast for July to September 2023 precipitation, based on models initialized in June. This image is from the [WMO Lead Centre Long-Range Forecast Multi-Model Ensemble](#). 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 July 6<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.*

	Exceptional
	Favourable
	Watch
	Poor
	Failure
	Out-of-Season
	No Data

**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  
EventDelayed  
OnsetSocio-  
economicPests &  
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



# GEOGLAM

## 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*