

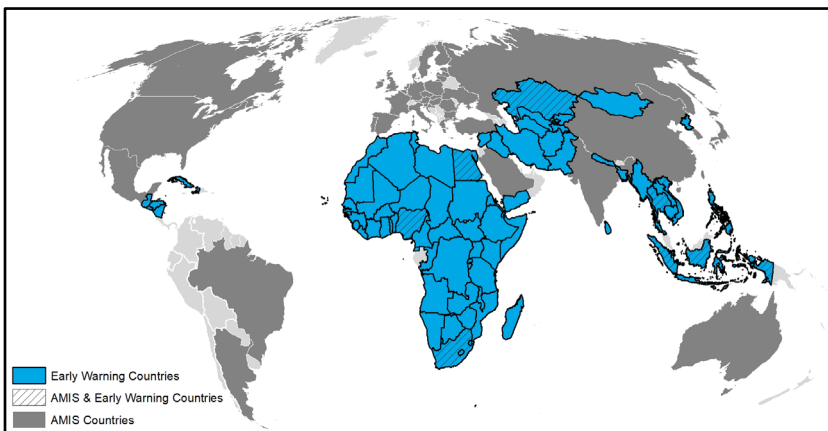


Crop Monitor

EARLY WARNING

Overview:

In **East Africa**, planting and development of main season cereals continues under mixed conditions due to a combination of early season rainfall deficits, El Niño-induced heavy rainfall and flooding across parts of the region, and an early cessation of the rains in the south. In **West Africa**, planting and development of main season cereals is underway in all countries, and conditions remain generally favourable except in conflict-affected regions and along parts of the Sahel where rains are delayed. In the **Middle East and North Africa**, wheat yields are expected to be well below-average in Morocco and below-average in Algeria, south-central Tunisia, and northwestern Libya due to prolonged seasonal drought. In the Middle East, agroclimatic conditions are generally favourable. Socio-economic challenges related to conflict continue to influence production potential in Libya and Syria. In **Southern Africa**, prolonged dry and hot conditions throughout the season in combination with a mid-season record dry spell resulted in below to well below-average yields in many areas for the end of the season. Conditions remain favourable for ongoing wheat planting. In **Central and South Asia**, conditions are mostly favourable for winter wheat harvesting and spring wheat development, except in parts of northern Kazakhstan impacted by catastrophic flooding since March. In southern **Southeast Asia**, harvesting of wet-season rice finalized in Indonesia under favourable conditions despite a decrease in harvested area. Across the north, there is emerging concern for wet-season rice due to delayed and limited rains received in some areas. In **Central America and the Caribbean**, conditions remain mixed for *Primera* season cereals due to a combination of delayed and below-average rains at the beginning of the season, followed by a shift to enhanced rains in June and resultant flooding, landslides, and seed washout.



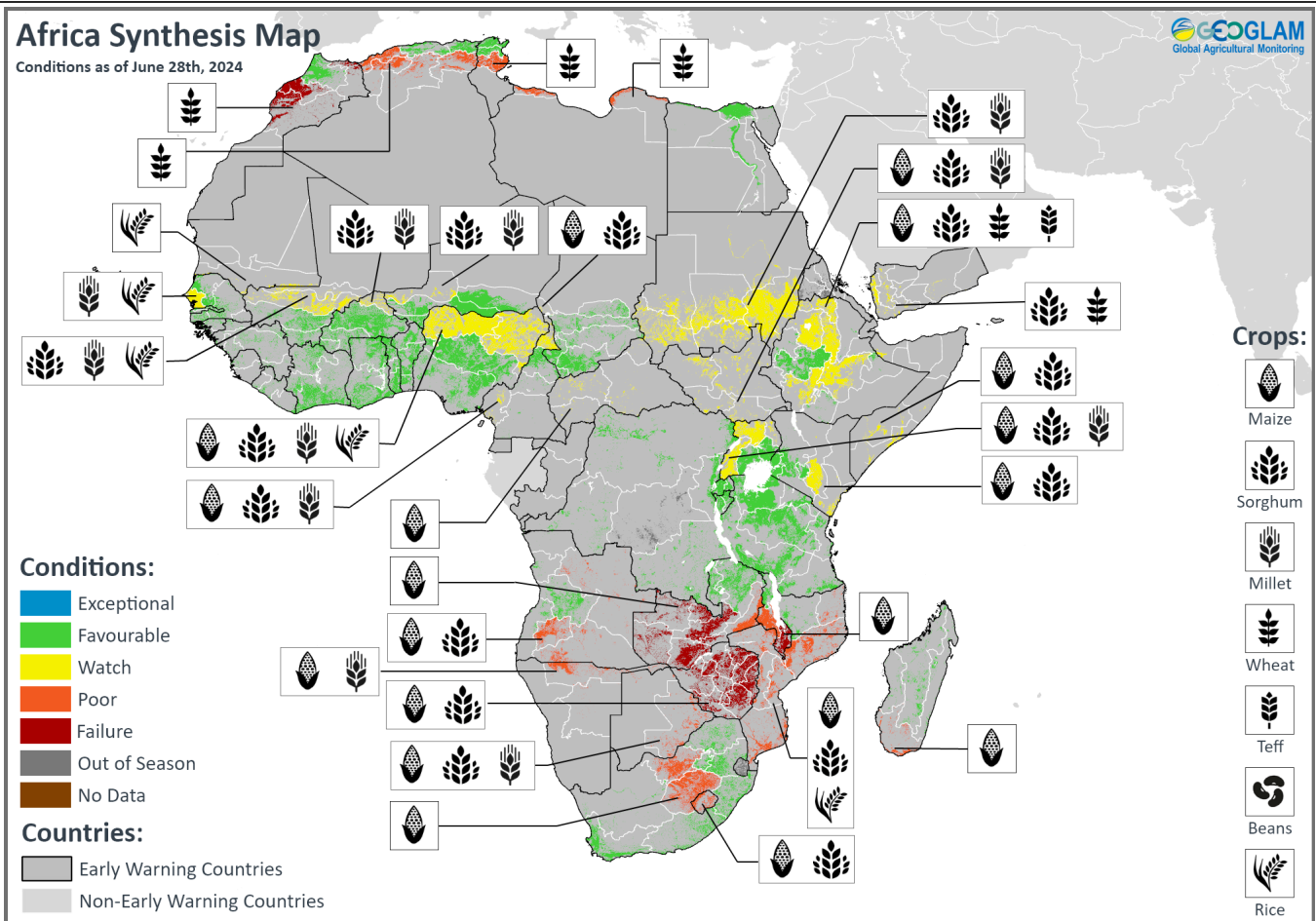
Contents:

Conditions at a Glance.....	2
Global Climate Outlook; Climate Influences.....	3
East Africa; Regional Outlook.....	4
West Africa; Regional Outlook.....	8
Middle East & North Africa.....	9
Southern Africa.....	10
Central & South Asia.....	11
Southeast Asia	12
Central America & Caribbean; Regional Outlook	14
Appendix – Terminology & Definitions.....	16

GEOGLAM Crop Monitor for Early Warning

Crop Conditions at a Glance

based on best available information as of June 28th



Crop condition map synthesizing information for all Crop Monitor for Early Warning crops as of June 28th. 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: Across East Africa, conditions for main season cereals are mixed due to a combination of early season rainfall deficits followed by heavy rainfall and resultant flooding in parts of Sudan, South Sudan, Ethiopia, and Somalia. Above-average rainfall is forecast for July to September across most areas while below-average rainfall is forecast for October to December (See Regional Outlook Pg. 6).

WEST AFRICA: Planting and development of main season cereals is now underway in all regions, and agro-climatic conditions remain generally favourable except in conflict-affected regions and parts of Senegal, Mauritania, Mali, and Chad where delayed rains are impacting typical planting schedules. Above-normal rainfall is forecast for July to September across the Sahel (See Regional Outlook Pg. 8)

MIDDLE EAST & NORTH AFRICA: Wheat harvesting is nearing completion under mixed conditions. Prolonged drought this season resulted in failed yields in most of Morocco and poor yields in most of Algeria, south-central Tunisia, and northwestern Libya. Elsewhere, enhanced rains in February and March benefitted crop development. In the Middle East, conditions are generally favourable, though there are pockets of below-average biomass in Iraq and Iran.

SOUTHERN AFRICA: Harvesting of main season cereals is now complete, and poor to failure outcomes resulted from this

season's El Niño-induced drought and high temperatures through April as well as a record mid-season dry spell. Wheat planting continues under favourable conditions.

CENTRAL & SOUTH ASIA: Winter wheat harvesting is underway while spring wheat continues to develop, and overall conditions are favourable due to good rains received in May and June, except in parts of northern Kazakhstan where catastrophic floods are impacting cropping activities. In Pakistan, a record-high wheat output resulted from the current season.

SOUTHEAST ASIA: In the south, conditions are favourable for planting and development of dry-season rice. In the north, conditions are mixed for wet-season rice as rainfall delays and deficits are impacting crops in parts of Cambodia, Viet Nam, and the Philippines.

CENTRAL AMERICA & CARIBBEAN: Planting and development of *Primera* season cereals continues under mixed conditions due to a combination of previous rainfall delays and deficits that resulted in planting delays, followed by a recent shift to heavy rains that are expected to continue through September (See Regional Outlook Pg. 15). In Haiti, the recent rains have led to crop improvement in the main producing centre.

Global Climate Outlook: Two-week forecast of areas of above or below-average precipitation

The two-week forecast (Figure 1) indicates a likelihood of above-average precipitation over the US southwest, southeast Brazil, central Burkina Faso, central Niger, Chad, northern Central African Republic, Sudan, eastern South Sudan, central Ethiopia, Uganda, northeastern and western Kazakhstan, eastern Afghanistan, Pakistan, western India, Oman, eastern Yemen, eastern Mongolia, northeastern and the North China Plain in China, The Democratic Republic of Korea, Laos, northern Viet Nam, and eastern and southeastern Australia.

There is also a likelihood of below-average precipitation over the Prairies and western Canada, the Pacific Northwest and southern Great Plains of the US, central Columbia, Suriname, northern and western and southern Brazil, Ecuador, Peru, Bolivia, Paraguay, Chile, northern Argentina, northern Ukraine, Moldova, eastern Romania, Bulgaria, Greece, western Türkiye, central and southern Russian Federation, eastern Mauritania, Liberia, Côte d'Ivoire, southern Ghana, southern Togo, southern Benin, southwest Cameroon, northern Gabon, western Democratic Republic of the Congo, southwest Mongolia, southern China, eastern India, southern Japan, Malaysia, and central Indonesia.

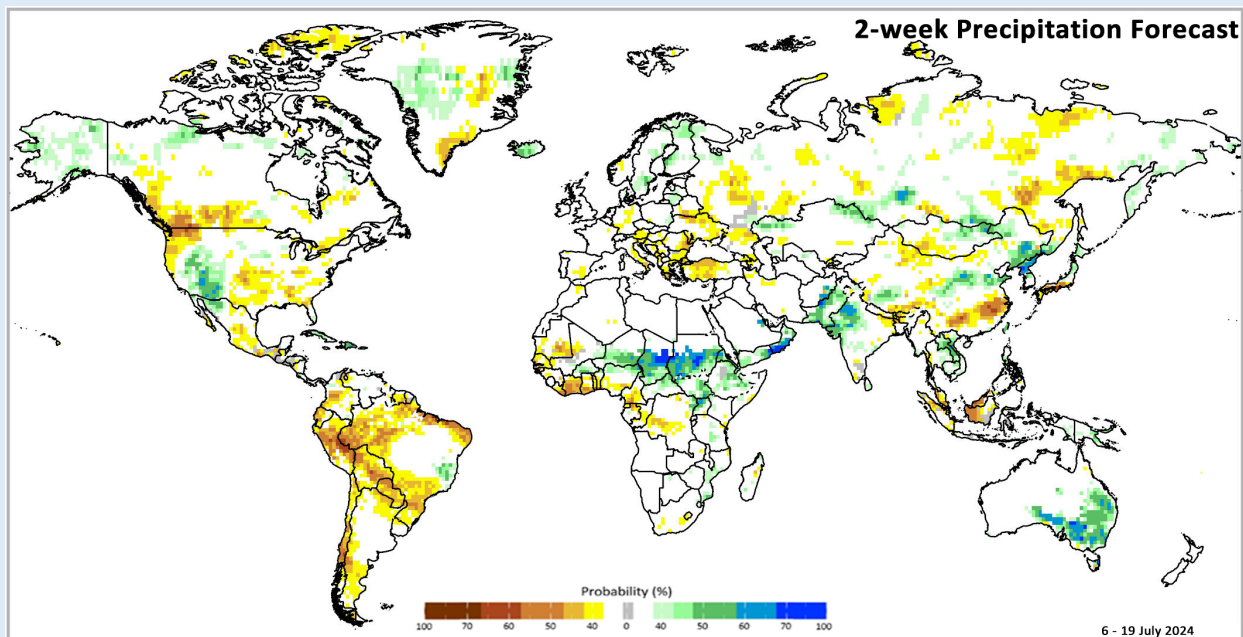


Figure 1: IRI SubX Precipitation Biweekly Probability Forecast for 6-19 July 2024, issued on 28 June 2024. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](https://www.iri.columbia.edu/our-work-and-services/forecasts/subseasonal-forecasts-maproom/)

Climate Influences: ENSO-neutral conditions are present and La Niña event is expected to develop during July to September

ENSO-neutral conditions are present. La Niña conditions may develop during the next several months. The CPC/IRI predicts a 65% chance of La Niña during July to September 2024, and chances remain high into early 2025.

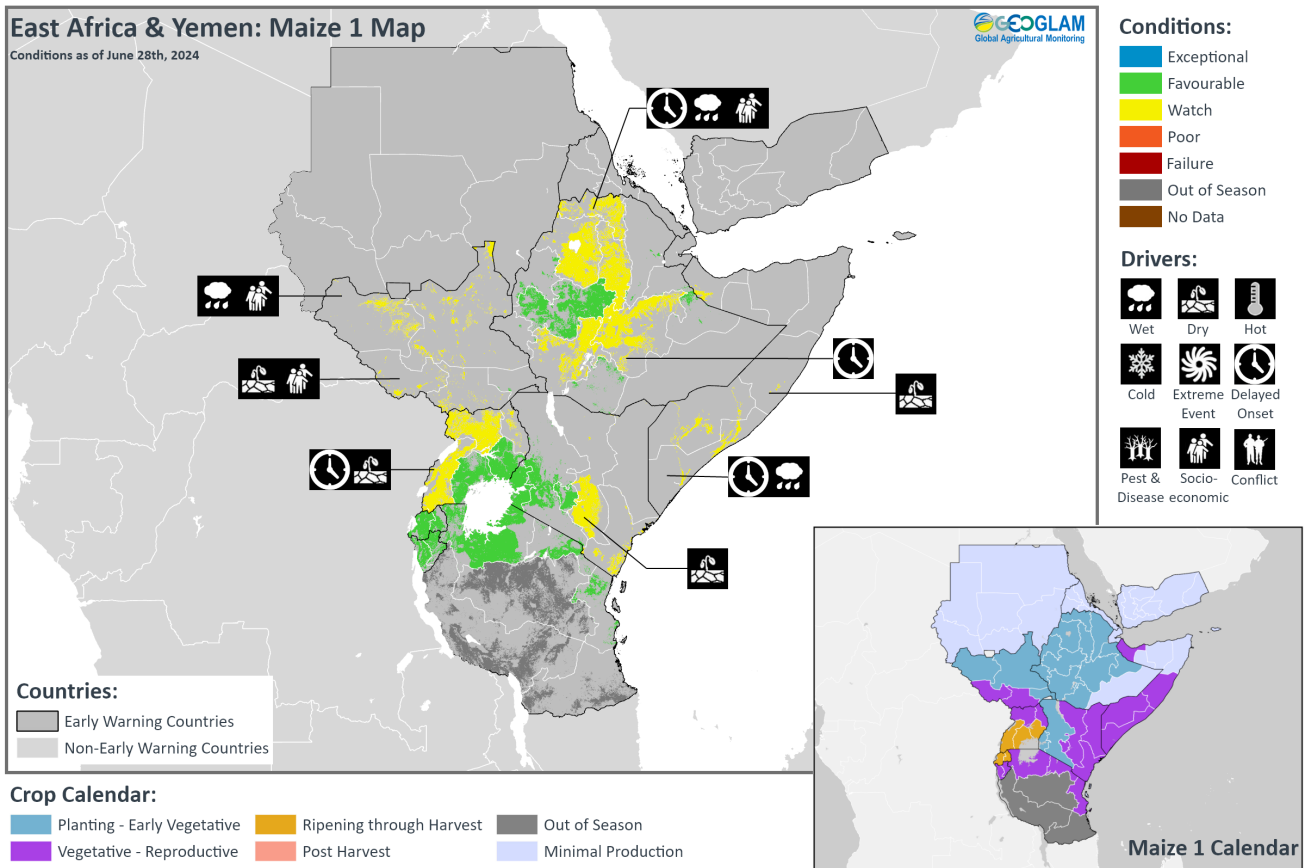
Reflecting a La Niña influence, the July to September seasonal forecasts indicate above-normal precipitation in India, the Maritime Continent, northern East Africa, the African Sahel region, and Central America. During late 2024 to early 2025, La Niña conditions would raise the chances of below-average precipitation in East Africa, central-southern Asia, southern South America, the southern United States, northern Mexico, and eastern East Asia. Above-average precipitation would become more likely in Southeast Asia, Australia, Southern Africa, and northern South America.

May 2024 was the hottest May on record, and the 12th consecutive month of record-breaking global temperatures. 2024 will be among the top five warmest years on record. There will likely be agricultural impacts from extreme heat, particularly if heat occurs during periods of moisture stress or the key reproductive stages that determine final yields.

Associated with the forecast La Niña and very warm ocean temperatures, the multi-year pattern of climate extremes may continue. A very active 2024 Atlantic hurricane season is anticipated.

Source: UCSB Climate Hazards Center

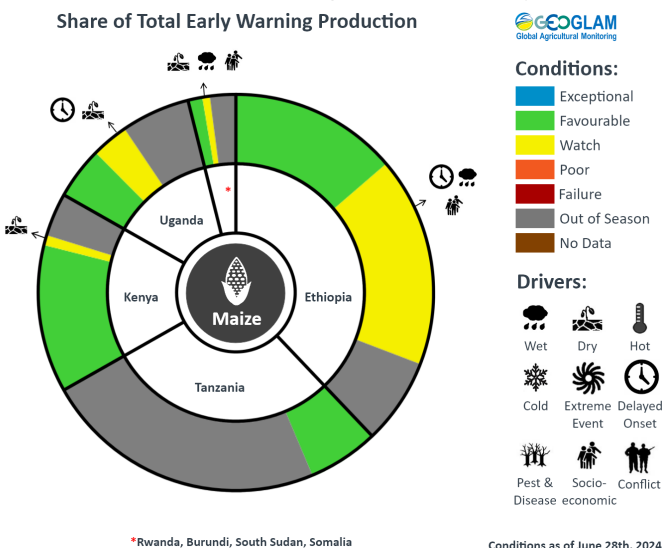
East Africa



Crop condition map synthesizing Maize 1 crop conditions as of June 28th. 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 northern East Africa, planting and development of main season cereals continues in **South Sudan, Sudan, and Yemen**. Continuing dry conditions are impacting first season crop development in southern **South Sudan** while wetter than normal conditions and related flooding are impacting main season crop planting in northern **South Sudan** and **Sudan**. Additionally, the anticipated release of water from the Jinja Dam located in southwestern **Uganda** is likely to increase waterflow of the Nile River and exacerbate flooding impacts in downstream areas of **South Sudan** and **Sudan**. Furthermore, a combination of prior/ongoing conflict and socio-economic challenges continue to influence production outcomes in **Sudan, South Sudan, and Yemen**. In **Ethiopia**, *Belg* harvesting is now underway while planting of *Meher* season cereals continues, and overall conditions remain mixed due to a combination of rainfall delays and ongoing deficits, flooding impacts, and socio-economic challenges in the north.

Across southern East Africa, harvesting of main season cereals continues in the **United Republic of Tanzania** and is just beginning in **Rwanda** and bimodal areas of **Uganda**. Additionally, crops continue to develop in **Burundi**, unimodal areas of northern **Uganda**, bimodal areas of eastern **Kenya**, and **Somalia**. Additionally, planting of Long Rains cereals continues in unimodal and major producing areas of western **Kenya**. Overall conditions remain mixed, and rainfall delays and deficits are impacting maize development in north and central **Somalia**, bimodal areas of **Kenya**, and **Uganda**. Conversely, in southern **Somalia**, prior delayed rains followed by wetter than normal conditions and resultant flooding are impacting crops. Elsewhere in the region, growing conditions remain favourable, including in **Burundi, Rwanda**, central and eastern bimodal areas of **Uganda**, unimodal areas of **Kenya**, and the **United Republic of Tanzania**.



* Rwanda, Burundi, South Sudan, Somalia

Conditions as of June 28th, 2024

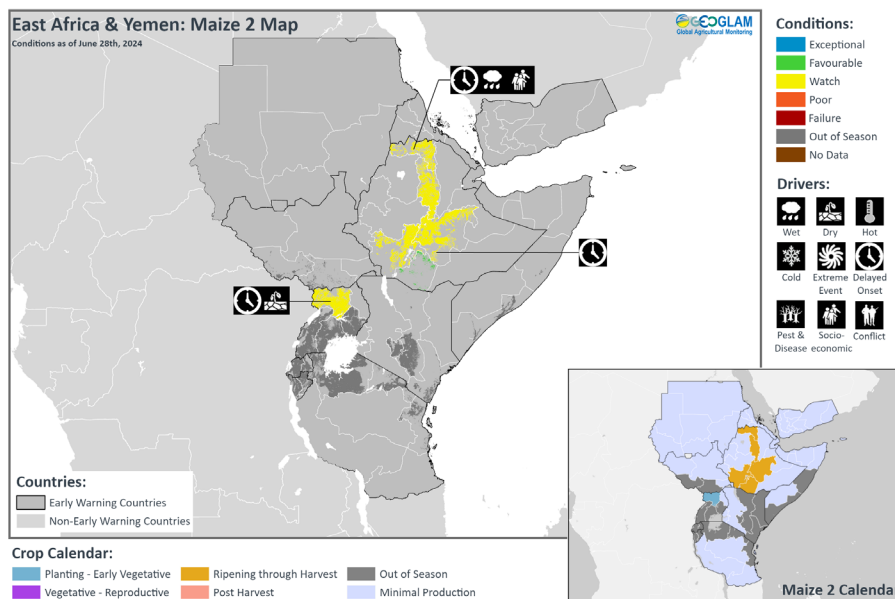
For detailed description of the pie chart please see description box on Pg. 16.

The March to May season (MAM) started late in some areas before picking up later in the season, bringing heavy rains and flooding. The MAM season also ended on time, posing a challenge for the late planted crops. The June to September rainy season is just beginning, and rainfall is generally expected to be above-average across most northern areas

through September. Then a return to mixed performance is expected through November, with eastern and southern areas of the region mostly expected to experience below-average rainfall outcomes which are likely to extent into December (See Regional Outlook Pg. 6).

Northern East Africa & Yemen

In **Sudan**, planting of main season sorghum and millet is underway, and above-average rainfall received in the southeast and resultant flooding may impact production outcomes. The anticipated transition to La Niña is expected to result in above-average seasonal rainfall during the June to September period, heightening the risk of flooding during August and September. Additionally, yields are likely to be impacted by the spread of conflict into major producing areas in late 2023 as well as ongoing input shortages. In **South Sudan**, planting and development of first season cereals continues under mixed conditions, with ongoing dry concerns in Western and Central Equatoria located in the south of the country as well as impacts of flooding along the Sudd wetlands in the northern half of the country. In the southeast, conditions remain favourable. Most areas are expected to experience above-normal precipitation outcomes through November (See Regional Outlook Pg. 6) that will likely result in substantial flooding. Furthermore, acute malnutrition rates are already critically high in displaced population settlements. A combination of infrastructure damages and related transportation/supply constraints, local agricultural and livestock losses, disease outbreaks, further displacement, the unfavourable macroeconomic situation, and high food prices will continue to affect lives and livelihoods, increasing humanitarian needs. In **Ethiopia**, harvesting of *Belg* season maize crops began in June while planting of *Meher* season cereals continues, and overall conditions remain mixed. Delayed and erratic rainfall performance has resulted in a mix of deficit areas and flooding impacts, and socio-economic challenges related to the prior conflict situation continue to disrupt production in the north. In **Yemen**, planting is underway for sorghum and spring wheat crops, and agro-climatic conditions are generally favourable, particularly in the main producing western coast and in the far east. Some dryness was experienced in central areas, but use of irrigation is supporting crop development. The country is expected to experience wetter than normal conditions in most areas through November (See Regional Outlook Pg. 6). Additionally, conflict and related socio-economic challenges continue to constrain production outcomes.



*Crop condition map synthesizing Maize 2 conditions as of June 28th. 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.***

Southern East Africa

In **Somalia**, *Gu* season maize and sorghum crops continue to develop with concern in most areas. Above-average *Gu* rainfall in April was followed by mixed performance in May, with atypically low amounts received in most central and northern regions. Water resources remain generally adequate given the preceding well above-average October to December 2023 *Deyr* season and heavy rainfall in April, with the exception of some northern pastoral areas. However, the residual impacts of *Deyr* flooding and the erratic rainfall performance at the start of the *Gu* season disrupted the typical planting schedule and impacted planted crops. Furthermore, the southern regions have experienced moderate flooding along Shabelle and Juba riverine areas since late March, impacting crop planting and development. As a result, the *Gu* harvest is expected to be delayed and below-average. In **Kenya**, Long Rains cereal crops are in vegetative to reproductive stage in bimodal rainfall areas, and concern remains due to ongoing dry conditions, particularly along the coast. However, forecast above-normal rainfall through September could improve soil moisture conditions along the coastal strip (See Regional Outlook Pg. 6). Additionally, planting continues in unimodal rainfall areas in the west and Rift Valley region, and growing conditions remain favourable despite below-normal precipitation received over the past month. In **Uganda**, harvesting of first season cereals is just beginning in bimodal areas while crops continue to develop in unimodal areas of the north. Conditions remain favourable in central and eastern areas of the country, while rainfall delays and deficits continue to impact parts of the west and north. In **Rwanda**, harvesting of Season B maize crops is now underway, and conditions remain favourable. In **Burundi**, Season B maize and rice crops are in vegetative to reproductive stage, and overall conditions are favourable despite flooding impacts in the western plains as a result of rising water levels of Lake Tanganyika as well as landslides in the adjacent mountainous areas overlooking the plains. In the **United Republic of Tanzania**, harvesting of both *Masika* and *Vuli* season cereals is underway in northern bimodal areas, and harvesting of *Msimu* season cereals continues in central and southern unimodal areas of the country. Overall conditions remain favourable despite below-average rains received across north and coastal areas over the last month (See Regional Outlook Pg. 6).

Regional Outlook: Above-normal rainfall forecast for July to September across most areas followed by a likely transition to below-normal October to December rainfall

June to September 2024

During June and early July, rainfall totals are expected to increase in the north, while many southern locations will be drier-than-average, based on observations and a two-week forecast from June 20th (Figure 1-left). Areas with below-average rainfall include northern and eastern Tanzania, Burundi, Kenya, southwestern Somalia, Uganda, southeastern South Sudan, and southern and central-eastern Ethiopia. Rainfall totals during this period will likely be above-average in central and northern Ethiopia, western and eastern Sudan, and portions of central Somalia and southwestern South Sudan. The Kiremt rains have covered most parts of southwest, northwest, central, and northern Ethiopia. Isolated areas have experienced persistent dry spells and low rainfall since May– in Gambella and in eastern Oromia, particularly in some districts of West and East Hararghe Zones (Ethiopia Agroclimate Monitoring Report, [June 30th](#)). In western and northwestern Uganda and southwestern South Sudan, March to June rainfall was very low, and seasonal totals are forecast to remain below normal through [mid-July](#).

Abnormally hot conditions are forecast for the next several weeks. Semi-arid and arid zones could see more rapid deterioration of soil moisture and vegetation due to the heat. Extreme heat is forecast in South Sudan, where maximum temperatures could be several degrees higher than is typical for late June to early July. During early-to-mid June, abnormal heat occurred in central and northern Sudan, southeastern Kenya, southern Somalia, northeastern and northwestern Tanzania, Uganda, and portions of northern Ethiopia. Seasonal temperatures will be moderated by rainfall but there will be a strong tendency for hotter-than-normal conditions in dry southern and eastern areas.

Forecasts for July to September 2024 continue to indicate above-normal rainfall (Figure 1 middle-left). This supports a positive outlook for rainfall performance in northern areas, but there are elevated risks of riverine and flash flooding. Flooding could worsen serious conflict and displaced population situations in Sudan and South Sudan. Record-high water levels at Lake Victoria have prompted upstream dam releases, and above-normal rainfall could further increase White and Blue Nile River levels.

September to December 2024

La Niña conditions are highly likely during October to December (OND) 2024 (84% chance) and into early 2025, according to the CPC Official ENSO Forecast. La Niña conditions substantially increase the likelihood of below-average rainfall in eastern areas, while above-normal temperatures could worsen crop impacts during dry spells. According to a NOAA PSL forecast, September to November 2024 rainfall will most likely be below-normal in southeastern Ethiopia, Somalia, eastern Kenya, and eastern Tanzania (Figure 1 middle-right).

A UCSB CHC outlook for eastern East Africa (EEA) OND 2024 standardized precipitation index (SPI) indicates a 74% chance of below-normal rainfall, with moderate dry conditions (SPI value $-0.8 Z \pm 0.7 Z$; Figure 1-right). This outlook uses NMME forecast sea surface temperatures (June initial conditions) for several regions that influence OND season rainfall— Indian Ocean Dipole (IOD), western Pacific, and Niño3.4 regions. The statistical framework draws from a strong historical relationship between eastern East Africa OND SPI and an index that characterizes the heat released into the atmosphere over the western Indian Ocean and Indo-Pacific Warm Pool. Interannual spikes in this heating index indicate influential forcing regions, with positive values usually during El Niño/positive IOD and negative values usually during La Niña/warm Western Pacific events. Historically, some of the more negative OND rainfall outcomes have occurred during negative IOD events, and these often develop along with La Niñas. Neutral IOD conditions are currently forecast. Indian and Pacific Ocean conditions will be closely monitored.

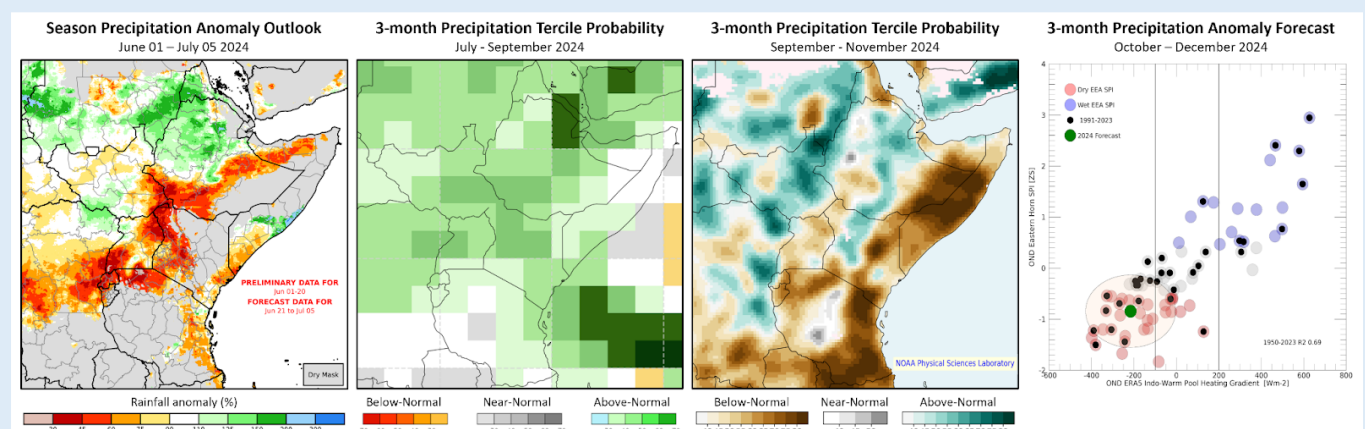
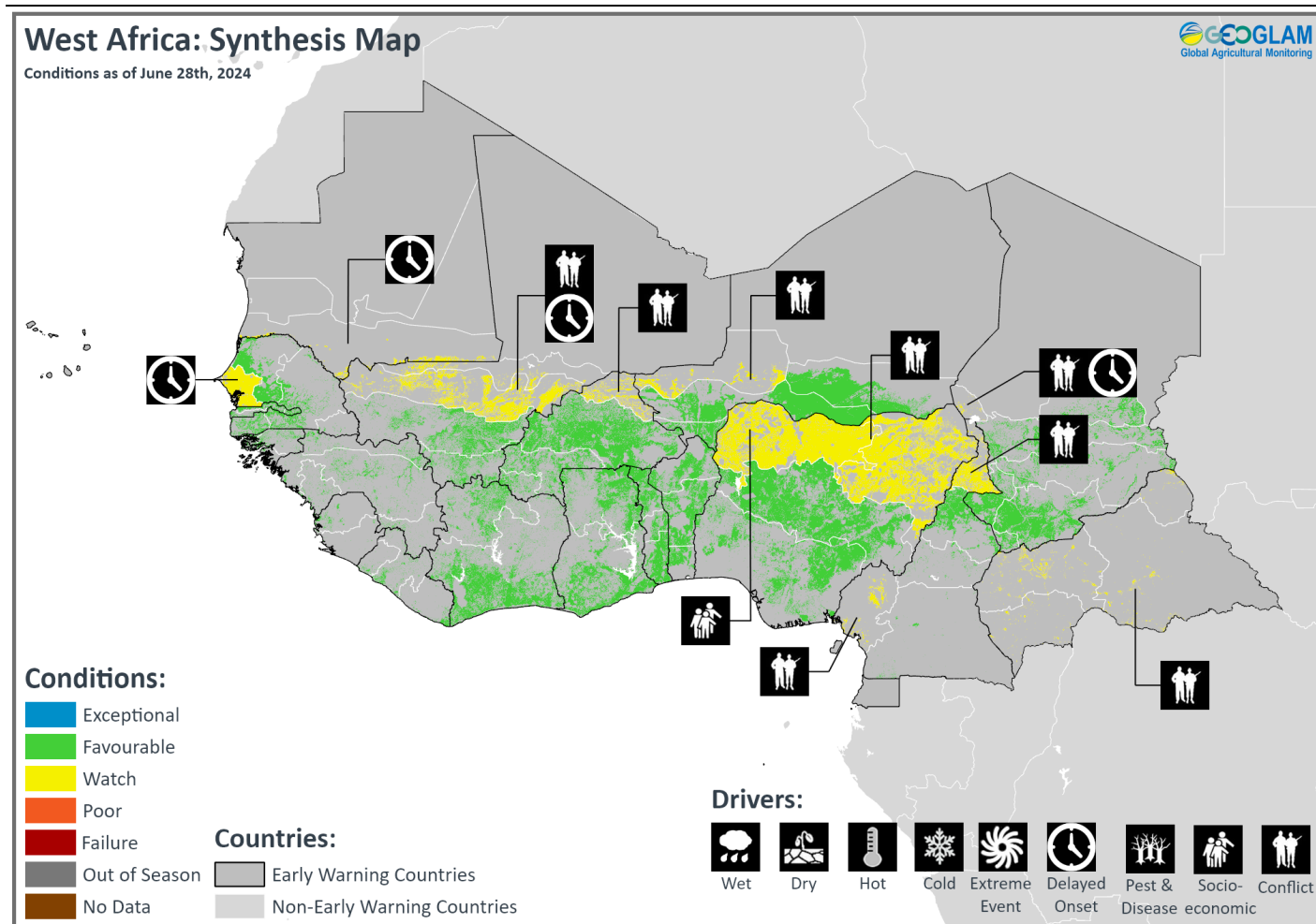


Figure 1. Seasonal rainfall anomaly outlook, probabilistic rainfall forecasts for July to September 2024, and September to November 2024, and 3-month rainfall anomaly forecast for October to December 2024.

Left: An outlook for percent of average rainfall for June 1st to July 5th, 2024, based on CHIRPS preliminary data for June 1st to 20th and a 15-day CHIRPS-GEFS forecast from June 21st. The anomaly is relative to the 1981–2023 CHIRPS average for the same accumulation period. From [CHC Early Estimates](#). Middle-left: WMO probabilistic forecast for JAS 2024 precipitation terciles, based on models initialized in June, from the [WMO Lead Centre Long-Range Forecast Multi-Model Ensemble](#). Middle-right: Probabilistic forecast for SON 2024 precipitation terciles, based on models initialized in June, from the [NOAA PSL hybrid prediction system](#) using dynamical (C3S) and machine learning models. Right: OND 2024 Standardized Precipitation Index (SPI) (CHIRPS and CenTrends data) for eastern East Africa (EEA: Ethiopia, Kenya, and Somalia east and south of 8°N, 36°E) based on an OND Indo-Warm Pool Heating Gradient index (IWHG; calculated from ERA5 reanalysis data), and the historical statistical relationship between these two variables (1950–2023, $R^2 = 0.69$). Green circle shows a NMME SST-based forecast for IWHG from June, for OND 2024. The gray ellipse shows an 80th percentile confidence interval. Source: UCSB Climate Hazards Center

West Africa



Crop condition map synthesizing crop conditions as of June 28th. 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, planting and development of main season cereals continues in all countries, including **Guinea, Sierra Leone, Liberia, Cote d'Ivoire, Ghana, Togo, Benin, Nigeria, Cameroon**, and the **Central African Republic**. Additionally, planting and development of second season cereals continues in central and southern **Cameroon** and **Nigeria**. Along the Sahel, planting and development of main season cereals is now underway in all countries, including in **Senegal, Gambia, Guinea-Bissau, Mauritania, Mali, Burkina Faso, Niger**, and **Chad**. Throughout the region, agro-climatic conditions remain generally favourable for ongoing crop development, except in parts of the Sahel, including western **Senegal**, southern **Mauritania**, central **Mali**, and western **Chad**, where delayed rains are impacting typical planting schedules. Additionally, ongoing conflict continues to impact agricultural outcomes in central **Mali**, northern **Burkina Faso**, western **Niger**, northeastern **Nigeria**, the Far North and Southwest regions of **Cameroon**, western **Chad**, and the **Central African Republic**. Furthermore, socio-economic challenges related to inter-communal conflict continue to impact northwestern **Nigeria**. July to September rainfall is expected to be above-normal along the Sahel and below-normal along the Gulf of Guinea, which is consistent with the anticipated La Niña development (See Regional Outlook Pg. 8 and Climate Influences Pg. 3).

Regional Outlook: Above-normal rainfall forecast for July to September along the Sahel and below-normal rains along the Gulf of Guinea consistent with anticipated La Niña development

As of the end of June, the onset of rains were early-to-normal in the central Sahel and late-to-normal in the western and eastern Sahel. Rains in the northern parts of the region, along the Sahel, usually begin in July and have not yet started. During May to mid-June, rainfall was generally below-average along the Guinea coast, with the largest deficits in Sierra Leone, southeastern Liberia, and southern Cote d'Ivoire, where rainfall totals are less than 75% of average. In the central parts of the region, including southwestern Mali, eastern Burkina Faso, and northern Nigeria, rainfall conditions have been favourable and seasonal totals are average to above-average.

Short-term forecasts indicate that relatively dry conditions will continue during late June and early July along the Guinea coast, and will likely be average to above-average elsewhere. An outlook of seasonal rainfall totals from May 1st to July 5th (Figure 1-left), which incorporates a two-week forecast, is largely consistent with recent rainfall patterns (below-average rainfall along the Guinea coast; average to above-average rainfall in the central Sahel). According to the 2024 Forum on Seasonal Forecasts of Agro-hydro-climatic characteristics of the rainy season for Sudanian and Sahelian zones of West Africa (PRESASS, 2024), the 2024 rainy season is expected to be average to above-average over the Sahelian strip. Model forecasts indicate increased chances of above-normal July to September rainfall (Figure 1-middle) and correspondingly favourable seasonal soil moisture (Figure 1-right), which is consistent with anticipated La Niña development and a historical tendency for above-normal rainfall in the central and eastern Sahel.

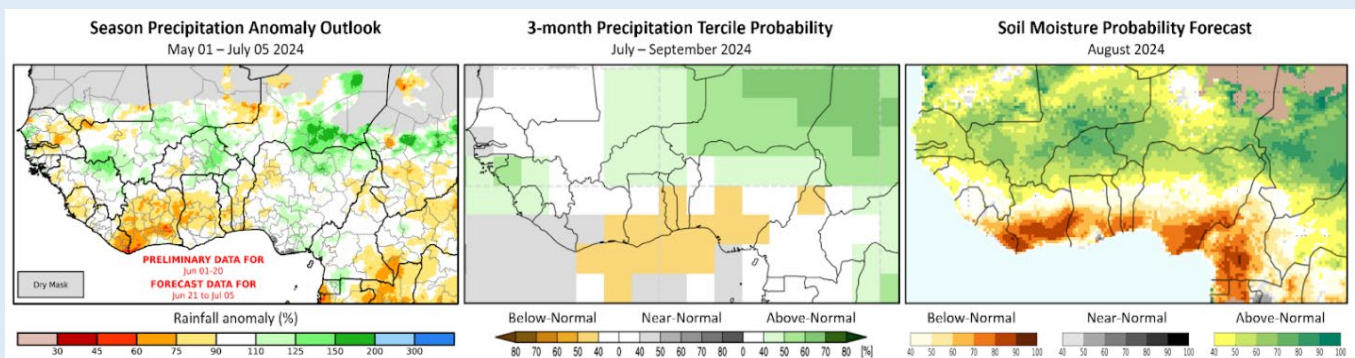
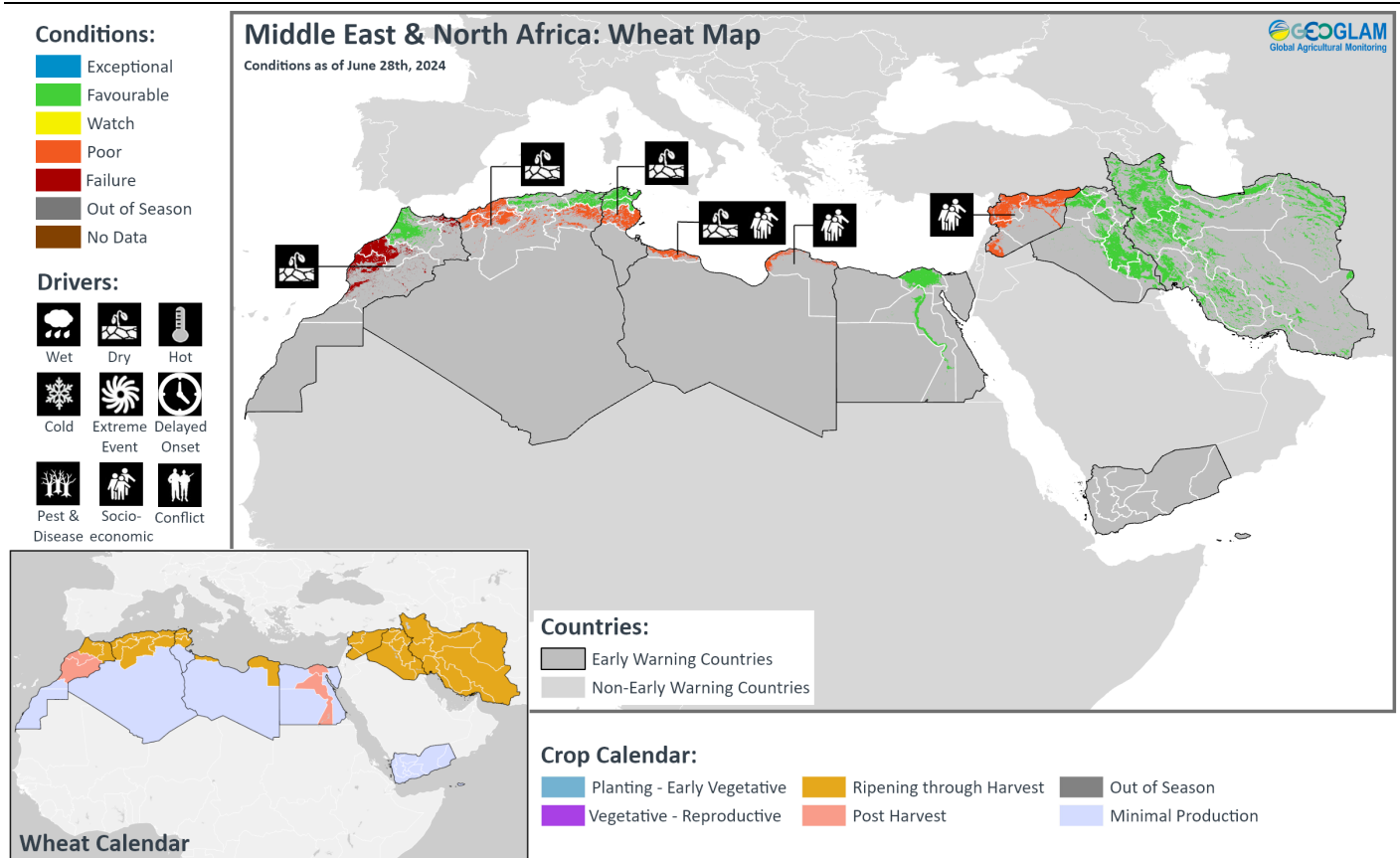


Figure 1. May 1st to July 5th rainfall anomaly outlook, a probabilistic rainfall forecast for July to September 2024, and probabilistic soil moisture forecast for August 2024

Left: An outlook for percent of average rainfall for May 1st to July 5th, 2024, based on CHIRPS preliminary data for June 1st to 20th and a 15-day CHIRPS-GEFS forecast from June 21st. The anomaly is relative to the 1981-2023 CHIRPS average for the same accumulation period. From [CHC Early Estimates](#). Middle: WMO probabilistic forecast for JAS 2024 precipitation terciles, based on models initialized in June, from the [WMO Lead Centre Long-Range Forecast Multi-Model Ensemble](#). Right: Probabilistic forecast for August 2024 root zone soil moisture tercile, from the [NASA Hydrological Forecast and Analysis System's FLDAS forecast](#). This outlook uses CHIRPS and MERRA-2 reanalysis data through May 2024, and forecasted meteorological conditions for June to August 2024 from the North American Multi-Model Ensemble (NMME) and the GEOSv2 model.

Source: UCSB Climate Hazards Center

Middle East & North Africa



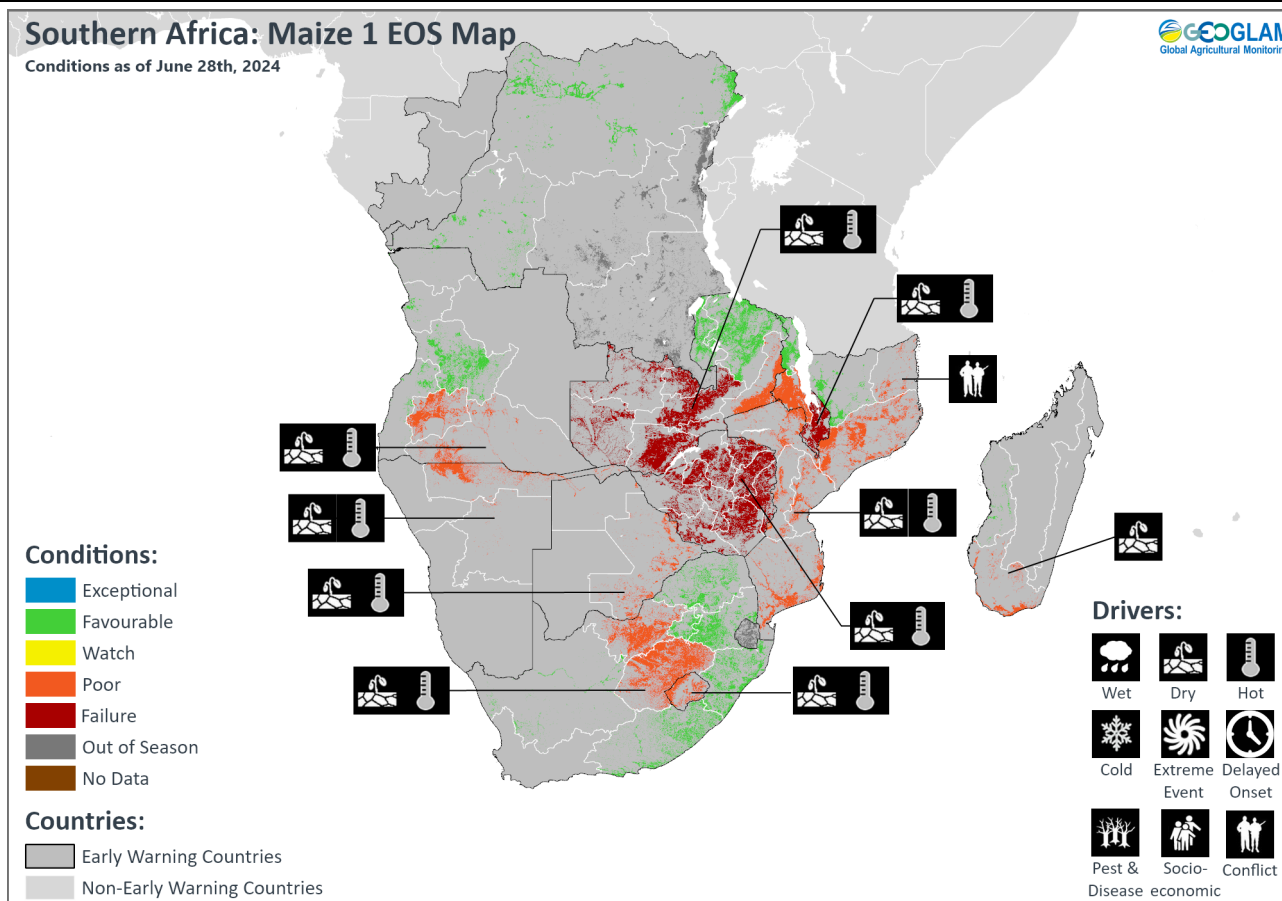
Crop condition map synthesizing wheat conditions as of June 28th. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Crops that are in other than favourable conditions are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

In the Middle East and North Africa, wheat harvesting is nearing completion in all countries and will finalize in July. Overall conditions are mixed, and ongoing socio-economic concerns relating to protracted conflict continue to impact harvesting outcomes in **Libya** and **Syria**.

In North Africa, drought has resulted in severe yield declines in most of **Morocco** and poor conditions in most of **Algeria**, south-central **Tunisia**, and northwestern **Libya**. Elsewhere, rainfall improvement in February and March benefitted crops, and favourable yield outcomes are expected in the northern tip of **Morocco**, northeast and north-central **Algeria**, north and north-central **Tunisia**, and **Egypt**. In **Morocco**, wheat yields are expected to be well below-average in most areas. Limited rainfall distribution at the beginning of the season delayed sowing activities, and prolonged dry conditions impacted crop growth and development in most areas of the country, except for the north where abundant and evenly distributed rains from February sustained crop growth. In the northwest and central growing areas of **Algeria**, limited rainfall and high temperatures persisted throughout the season, and below-average yields are expected in these areas. Conversely, in the northeast and north-centre, continuous precipitation throughout the season in combination with the use of existing irrigation systems sustained crop growth and development. At the national scale, yields are expected to be near-average. In **Tunisia**, delayed rains at the beginning of the season were followed by enhanced rainfall from December to February that replenished soil moisture in most areas, except in the south-centre. Continuing favourable weather outcomes from April further enhanced crop development in the main producing northern region, accounting for 60 percent of wheat production, as well as the central region. Conversely, erratic rains and high temperatures negatively impacted crops in the south-centre. In northwestern **Libya**, below-average precipitation negatively affected crop growth and yields. Conversely, in the northeast, adequate irrigation water supply supported near-average yields despite low cumulative precipitation. Overall production is expected to be near-average despite generally high temperatures in May which shortened the crop development period. However, ongoing socio-economic challenges related to protracted conflict continue to constrain production potential. In **Egypt**, overall conditions remain favourable for wheat harvesting and for the development of summer-planted rice and maize.

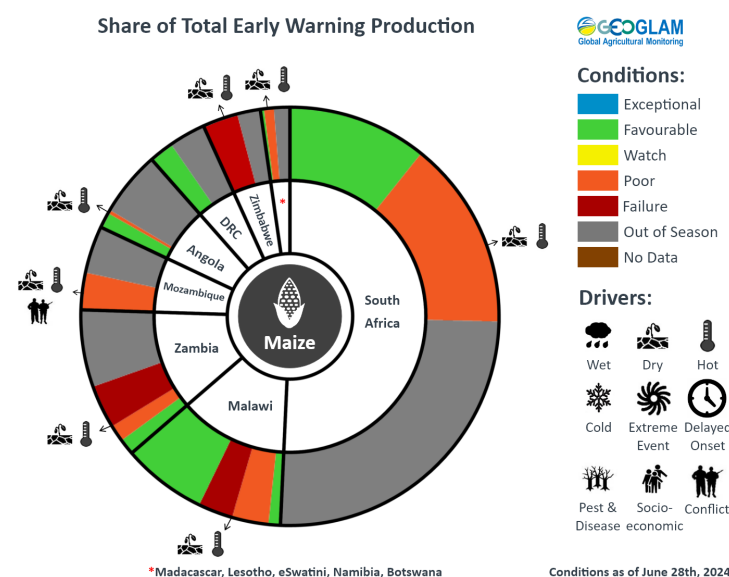
In the Middle East, agro-climatic conditions are generally favourable. In **Syria**, prospects are favourable for winter cereals, though socio-economic challenges relating to the protracted conflict situation continue to constrain agricultural outcomes. In **Iraq** and **Iran**, prospects are generally favourable. However, there are pockets of below-average biomass in Qadissiya province in **Iraq** and in Fars, Ghazvin, and Khorasan provinces in **Iran**, possibly due to limited irrigation water availability or restrictions. Additionally, rice planting continues in **Iran** under favourable conditions for harvest from August. In **Lebanon**, harvesting activities began in June in the Bekaa area, and early harvesting is underway in the southern region of the country due to conflict.

Southern Africa



Crop condition map synthesizing End of Season (EOS) Maize 1 conditions as of June 28th. 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.**

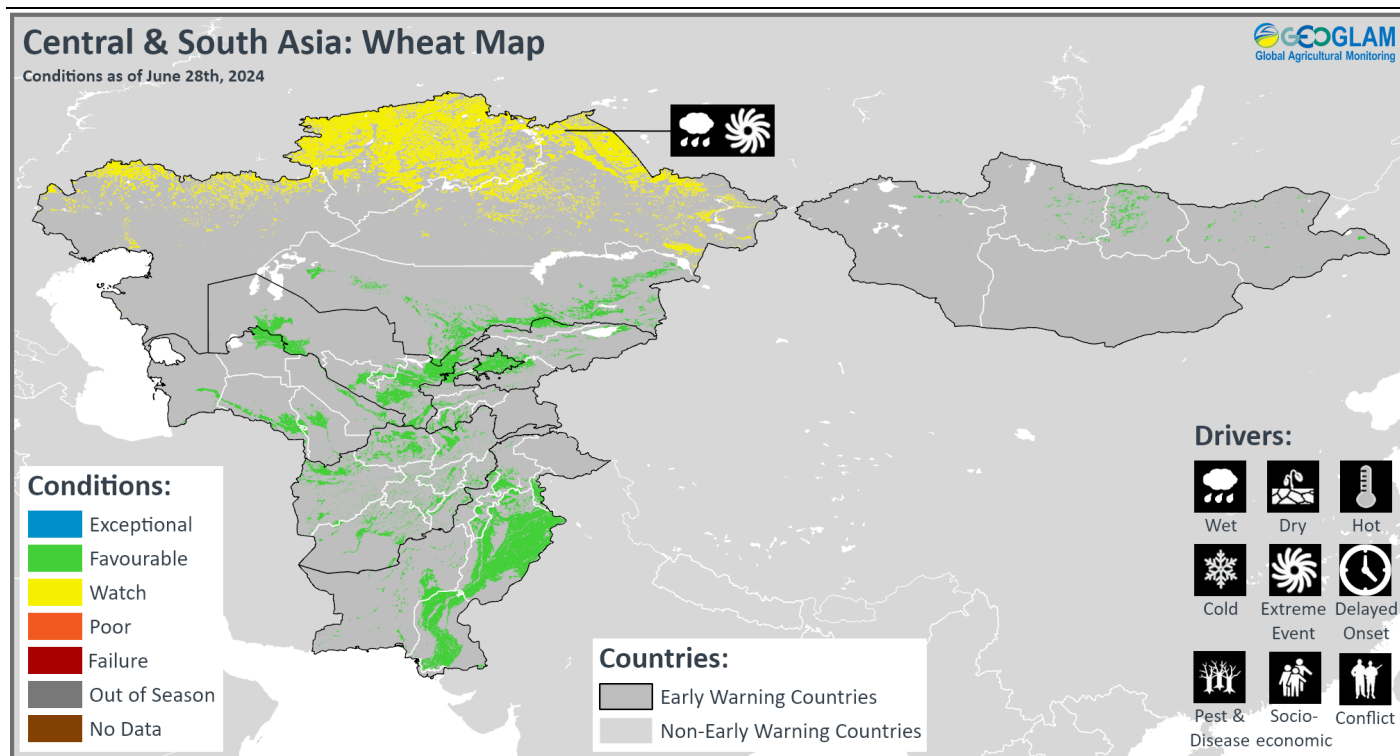
In Southern Africa, harvesting of main season cereals finalized in May and June under mostly poor to failure conditions. El Niño-induced drought and high temperatures affected most areas through April, and a record mid-season dry spell affected parts of **Angola, Namibia, Botswana, Zambia, Zimbabwe, Malawi, and Mozambique**. Crop failure and severe below-average yield outcomes resulted in much of **Zimbabwe, Zambia, and southern Malawi**. Similarly, poor yield outcomes resulted in east and southern **Angola, Namibia, Botswana**, eastern **Zambia**, central **Malawi**, most of **Mozambique**, southern **Madagascar**, central **South Africa**, and **Lesotho**. Elsewhere, final yield outcomes are favourable, except in northeastern **Mozambique** where conflict continues to impact agricultural activities in Cabo Delgado. In **Namibia**, the government declared a state of emergency on May 22 following the worst drought experienced in a century, and yields throughout the country are expected to be below to well below-average. In **Zambia**, 1 million hectares out of 2.2 million hectares of planted maize area were affected by the drought conditions. Yields are expected to be well below-average in most areas, except in the north where rainfall outcomes were near-average. In **Malawi**, an estimated 44 percent of the national cropping area has been affected by this season’s well below-average rainfall. In the **Democratic Republic of the Congo**, harvesting of main season sorghum finalized in the southeast. Elsewhere, planting and development of both main and second season cereals is underway, and overall conditions remain favourable.



For detailed description of the pie chart please see description box on Pg. 16.

Wheat planting continues in **Zambia, Zimbabwe, South Africa, and Lesotho** under favourable conditions, and harvesting operations will begin in September. However, low levels of the Kariba Dam are resulting in lengthy load shedding and negative impacts on irrigation in **Zambia**. In **South Africa**, wheat is mostly irrigated, and water levels in river systems remain adequate.

Central & South Asia

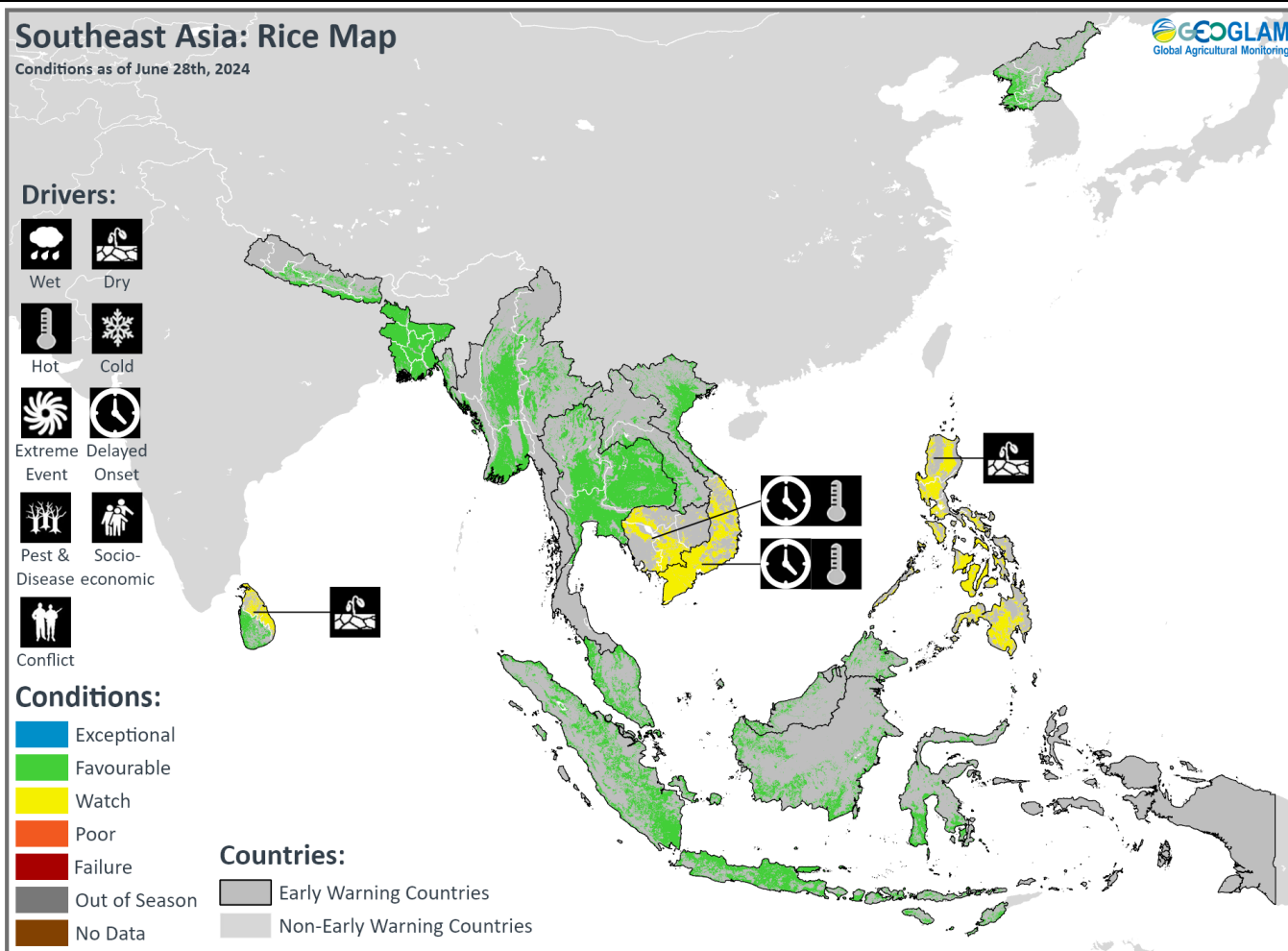


Crop condition map synthesizing wheat conditions as of June 28th. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Crops that are in other than favourable conditions are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

In Central and South Asia, winter wheat harvesting is complete or nearing completion in **Afghanistan** and **Pakistan** and continues in southern **Kazakhstan**, **Kyrgyzstan**, **Tajikistan**, **Turkmenistan**, and **Uzbekistan**. Additionally, spring wheat is developing in **Kazakhstan**, **Mongolia**, and **Tajikistan**. In **Afghanistan**, wheat is developing in the higher elevations of Central Highlands and Badakhshan province. Throughout the region, overall wheat conditions are generally favourable as good rainfall from mid-May through early June resulted in above-average crop biomass, except in **Kazakhstan** where devastating flooding is impacting north and western parts of the country.

In **Afghanistan**, limited precipitation amounts at the beginning of the winter wheat season contributed to reduced soil moisture levels, resulting in reduced plantings and negative impacts to rainfed crop establishment. Enhanced rains from February benefitted late crop emergence but also resulted in flooding and damage to crops and irrigation infrastructure in some areas. As of late June, around half of the area under wheat has been harvested, and yields are favourable despite challenges posed from various weather extremes this season, including a mix of dry spells, floods, frost, above-average temperatures, and pests and disease. Most areas will complete harvesting by the end of July, but some higher elevation areas will be harvested by August or mid-September. While the wet season is typically over by April, an early onset of monsoon precipitation is expected to bring rains in late June and July. Conversely, the anticipated transition to La Niña is expected to bring a return to below-average rains which could negatively impact planting of winter wheat (See Climate Influences Pg. 3). In **Turkmenistan**, last month's dry concerns have been mitigated by recent improved rains. In **Kyrgyzstan**, conditions have improved from last month's concerns regarding heavy rainfall and resultant landslides and flooding as crop yields are not likely to be significantly impacted. In **Kazakhstan**, torrential rainfall and rapid snowmelt resulted in catastrophic flooding across several parts of the country, and north and western areas have been impacted by flooding since March. In **Mongolia**, wheat planting finalized in May, and sowings are estimated to be near last year's below-average level as farmers opted for growing more remunerative crops, particularly vegetables. However, growing conditions remain favourable as good precipitation between April and May in combination with adequate irrigation water supply supported crop establishment and early development. In **Pakistan**, harvesting of *Rabi* season wheat, which is mostly grown in Punjab and Sindh provinces and is almost entirely irrigated, finalized in June under favourable conditions as good weather outcomes and adequate irrigation water supply, coupled with widespread use of high-yielding seed varieties, benefitted yields. This season produced a record-high wheat output of 31.4 million tonnes, primarily due to large plantings driven by the strong local demand for wheat-based products. Additionally, planting of *Kharif* (summer) season rice and maize is now underway. Early season conditions are favourable, and harvesting will begin in September. However, an early onset of strong monsoon rainfall this year and likely above-average rainfall from June to August could possibly cause devastating floodings, similar to what was experienced in 2022. Balochistan, Khyber Pakhtunkhwa, Punjab, and Sindh provinces are most susceptible to severe flooding and will need to be monitored closely.

Southeast Asia



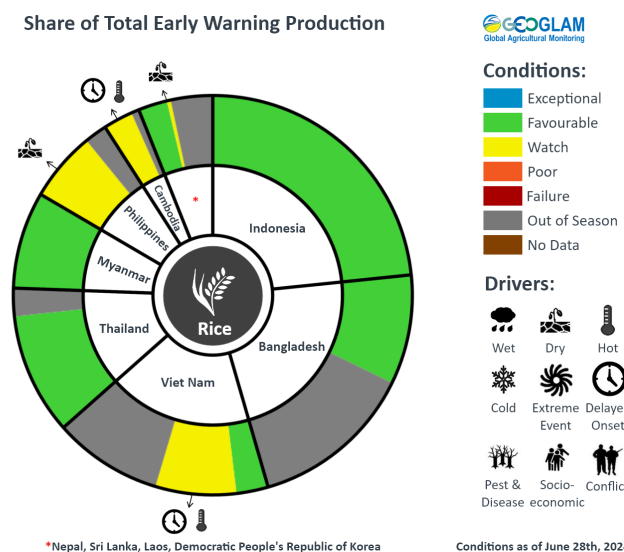
Crop condition map synthesizing rice conditions as of June 28th. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Crops that are in other than favourable conditions are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

In southern Southeast Asia, harvesting of wet-season rice finalized in June in **Indonesia**. Despite a decrease in harvested area, yields are near-average due to sufficient water and sunlight availability during the growing period, and total production is the same as the previous year. Planting and development of dry-season rice is underway in **Indonesia, Malaysia, and Brunei**, and growing conditions are favourable.

In northern Southeast Asia, wet-season rice cultivation is underway in all countries, and most regions are in the seeding to young panicle forming stage. The start of this year’s rainy season is delayed, and planting work is likely to be marginally impacted by a lack of irrigation water. Total planted area is expected to be lower than the previous year as farmers change cultivation to other crops. Growing conditions are mixed with emerging concern in **Cambodia**, southern **Viet Nam**, and the **Philippines** where delayed and limited rains have been received.

Elsewhere in Southeast Asia, including **Sri Lanka, Nepal, Bangladesh**, and the **Democratic People’s Republic of Korea**, overall conditions remain generally favourable except in northeastern **Sri Lanka** where there are ongoing dry concerns and in localized areas of **Bangladesh** where there were impacts of Cyclone Remal in late May.

In **Indonesia**, harvesting of wet-season rice finalized in June under favourable conditions. Total harvested area is 5.5 million hectares, which is 9.9 percent lower than the last wet season. However, adequate water and sunlight received during the growing period contributed to good yields, and production is expected to increase slightly compared to last season. Planting of dry-season rice reached its third month with a total planted area



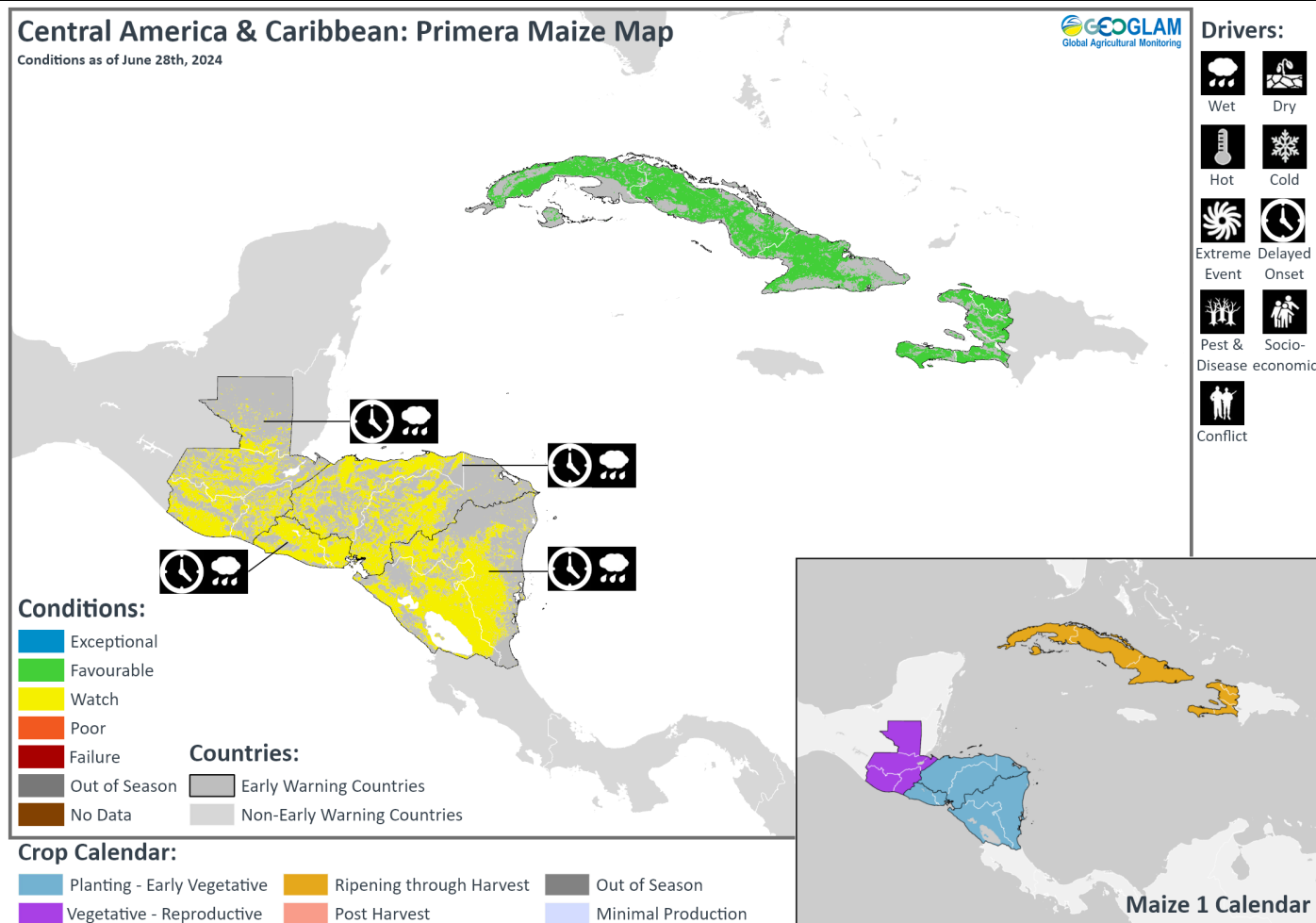
For detailed description of the pie chart please see description box on Pg. 16.

of 2.7 million hectares, which is 2.5 percent higher than last year. High intensity rainfall, particularly in the south, is generally benefitting growing conditions. However, in some areas, rainfall is beginning to decline as the dry season approaches. In **Malaysia**, about 80 percent of dry-season rice has been planted, and planting activities are expected to be completed by the end of July. Growing conditions are favourable, and harvesting is just beginning mostly in the granary areas. In **Brunei**, about 95 percent of the dry-season rice irrigated area has been planted, and about 40 percent of the planted area is in the reproductive and ripening stages. There are emerging concerns for crop development due to a combination of heavier than normal rainfall patterns expected in the coming months during harvesting as well as high humidity levels, which increase the risk of crop disease.

In the **Philippines**, wet-season rice planted in April and May is in the tillering to young panicle initiation stage, and there is emerging concern regarding below-normal rainfall in most parts of the country. Conversely, weather systems such as the southwest monsoon as well as Typhoon Ewiniar affected the country in May, causing minimal damage to rice cropping areas. In **Thailand**, wet-season rice is in the sowing and early tillering stage, and yields are expected to increase compared to the previous year due to forecast good rains from June. However, the first half of this year experienced less rainfall than normal. To mitigate the risk of crop loss due to drought, some farmers are changing their rice fields to cassava, and some also plan to cultivate sugarcane due to high prices and subsidies provided by the sugar factories. In northern **Viet Nam**, harvesting of dry-season (winter-spring) rice is underway with a harvested area of 0.37 million hectares. Yield is estimated to be slightly higher than last year at 6.34 tons per hectare due to favourable weather and adequate irrigation water supply. Additionally, sowing of wet-season (summer-autumn) rice is just beginning. In the south, wet-season (summer-autumn) rice is in the seeding and tillering stages with a current sown area of 1.1 million hectares. Planting progress is slower than last year mainly due to hot temperatures and delayed rains. In **Laos**, wet-season rice is in the land preparation and seeding stage. In lowland areas, the national planting plan is around 765 thousand hectares, a slight increase from the previous year, and production is expected at over 3 million tons. Planting progress has reached 100 thousand hectares, and weather conditions and irrigation water supply are adequate for early-stage paddy growth. In upland areas, the national planting plan is 87 thousand hectares with an expected production around 180 thousand tons. Planting progress has reached 79 percent of the national plan, and growing conditions are favourable. In **Myanmar**, harvesting of dry-season rice reached 81 percent of the total planted area of 1.11 million hectares. About 4.89 million tons have been harvested with a good yield of 5.44 tons per hectare, which is higher than last year. Planting of wet-season rice is underway with a plan of 6.07 million hectares. Over 100 thousand hectares accounting for 1.65 percent of the national plan have been seeded. Growing conditions are favourable as the monsoon rains are not disrupting planting activities. In **Cambodia**, about 40 percent of the planned area for wet-season rice has been planted, and crops are mostly in the seeding to tillering stage. There is emerging concern as delayed and limited rains compared to the previous season as well as high temperatures between January and mid-June resulted in soil moisture deficits, particularly in the main producing northwest and south-central regions. The deficits are impacting planting progress and could negatively impact yields for early planted crops. However, forecast average to above-average rainfall through September could potentially allow plantings to reach last years above-average level and improve soil moisture conditions for the remainder of the season.

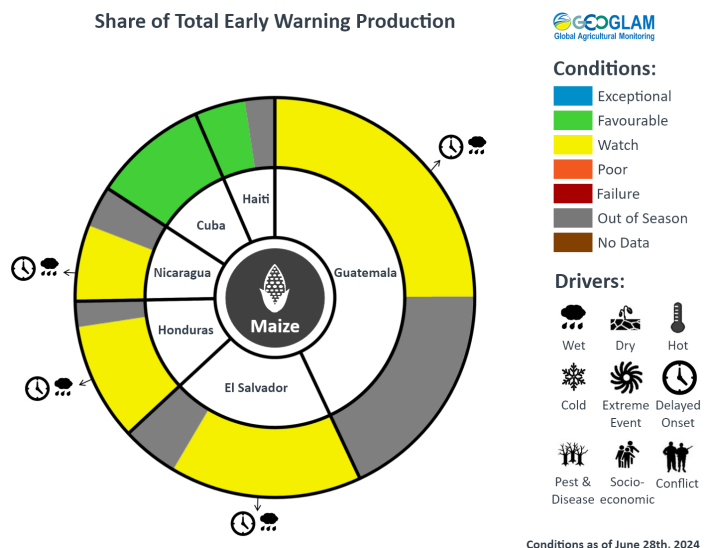
In **Sri Lanka**, *Yala* season rice and maize crops are in vegetative to reproductive stage, and harvesting will begin in August. Conditions remain favourable except in the northeast where there are ongoing dry concerns. However, from mid-May, the southwest monsoon brought heavy rains and strong winds to most parts of the country. In **Nepal**, harvesting of both wheat and second season rice finalized in June under favourable conditions. Planting and development of main season rice and maize is now underway, and growing conditions remain favourable. In **Bangladesh**, harvesting of summer/*Kharif* season maize (15 percent of annual maize production) is underway and will finalize in July. Additionally, *Aus* season rice (10 percent of annual rice production) is in vegetative to reproductive stage while planting of *Aman* season rice (35 percent of annual rice production) and main season sorghum is underway. Overall conditions are favourable, and planting activities are supported by good soil moisture conditions. However, the passage of Cyclone Remal in late May impacted over 62,783 hectares of land with resultant damage to crops. In the **Democratic People's Republic of Korea**, maize crops are in vegetative to reproductive stage while rice planting continues, and overall conditions remain favourable. Harvesting activities will begin in August.

Central America & Caribbean



Crop condition map synthesizing Primera Maize conditions as of June 28th. 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 is underway in all countries including **El Salvador, Guatemala, Honduras, and Nicaragua**, and there is concern in most areas due to mix seasonal rainfall outcomes. This year’s rainy season was delayed, and precipitation deficits and prolonged high temperatures resulted in planting delays for the *Primera* season by two to three dekads over many areas, particularly in the dry corridor. Conversely, some areas experienced a shift to wetter-than-normal conditions in June, including the passage of Tropical Storm Alberto, which brought a lot of precipitation over a short time. The increased rains benefitted soil moisture levels, but torrential rains also resulted in flooding and landslides in many areas with potential negative impacts to cropping outcomes in **El Salvador, Guatemala, Honduras, and Nicaragua**. The rains also washed away seeds in areas where planting had begun, and resowing efforts will depend on seed availability. Limited seed availability is particularly expected to impact subsistence farmers who typically rely on seed store from the previous season, which was below-average for small and medium scale producers. Despite the recent enhanced rains, there are still some areas with deficits due to prolonged dry conditions at the beginning of the season, including in central and eastern **Guatemala**, western **El Salvador**, west and eastern **Honduras**, and northeastern **Nicaragua**. Precipitation is likely to be above-average through September, and the enhanced rains are generally expected to improve conditions for the remainder of the season. However, a forecast very active 2024 Atlantic hurricane season increases the risk of storm damage (See Regional Outlook Pg. 15). Hurricane Beyrl is currently progressing across the region, and continuous rainfall over affected areas increases the risk of potential damage, especially over the Caribbean Basin.



Conditions as of June 28th, 2024

For detailed description of the pie chart please see description box on Pg. 16.

In **Haiti**, harvesting of *Printemps* season cereals is just beginning, and recent rains over the last month and a half helped to reduce the prior deficits, maintain adequate soil moisture, and increase river levels for irrigation. The rains have led to crop improvement in the main producing centre from last month's dry and hot concerns. In **Cuba**, harvesting of second season rice, accounting for about a third of annual rice production, finalized in June under favourable conditions. Harvesting of main season maize is now underway while planting of main season rice continues, and overall conditions remain favourable.

Regional Outlook: Transition to above-average rainfall is forecast for July to September paired with a very active Atlantic hurricane season

During recent weeks, from May 21st to June 20th, rainfall was below-average in central and southern Guatemala, western and eastern Honduras, northern El Salvador, and northern and eastern Nicaragua. Rainfall was above-average along Guatemala's Pacific coast, in central-southern Honduras, southwestern Nicaragua, and across Hispaniola. In central and northern areas of Guatemala, Honduras, and Nicaragua past 30-day mean maximum temperatures were much higher than average (Figure 1 middle-left), although temperatures have cooled since mid-June.

A transition to abnormally wet conditions for the summer months may be starting. The GEFS forecast from June 25th (Figure 1 middle-right) indicates expansive above-average rainfall for the next two weeks across most of Central America and in southern Haiti. During June 21st and 22nd, despite the below-average conditions of 30 days heavy rain and strong winds from Tropical Storm Alberto caused floods and landslides. As of June 24th, there were multiple fatalities—19 in El Salvador, 10 in Guatemala, and 1 in Honduras. Flooding impacted crops in early phenology stages, in extensive areas of the Pacific basin in Guatemala, El Salvador, and Honduras. Seasonal forecasts continue to indicate above-normal July to September rainfall (Figure 1-right).

A very active 2024 Atlantic hurricane season is anticipated, due to near record-high Atlantic sea surface temperatures and forecast development of La Niña conditions along with weak Atlantic trade winds and vertical wind shear. NOAA confidently forecasts an above-normal season with 17-25 named storms, and 8-13 of these becoming hurricanes (70% chance). Temperatures are expected to remain highly above-normal during the next several months, according to the C3S forecast. These forecasts pose a threat to agricultural areas that continue to receive insufficient moisture and increase the chances of intense storms and flash floods.

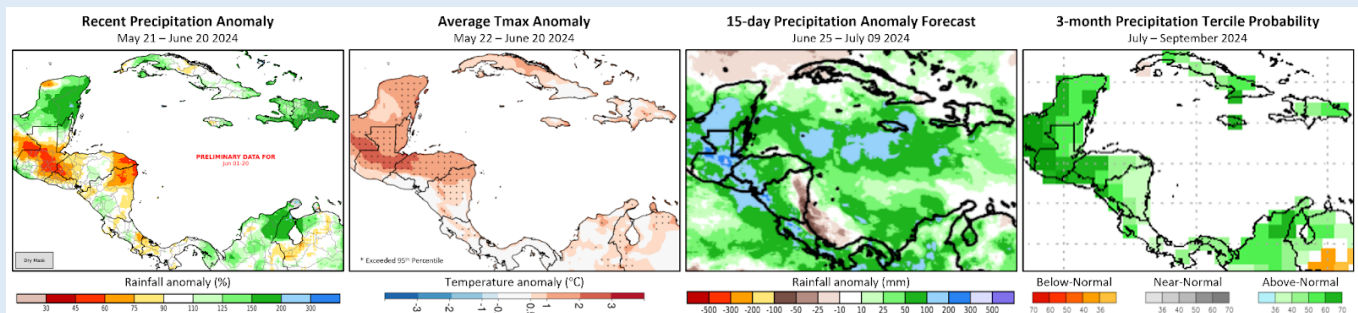


Figure 1. Recent rainfall and maximum temperature anomalies, a 15-day rainfall anomaly forecast, and a probabilistic rainfall forecast for July to September 2024.

Left: Percent of average rainfall for May 21st to June 20th, 2024. Based on CHIRPS Final for May and CHIRPS Preliminary for June 1st to 20th. The anomaly is relative to the 1981-2023 CHIRPS average for the same accumulation period. From [CHC Early Estimates](#). Middle-left: Average daily maximum temperatures for May 22nd to June 20th, 2024, shown as the difference from average for this period. Stippling shows locations with temperatures above the 95th percentile. Based on 1991-2020 data from the CHIRTS-ERA5 Tmax product, which uses ECMWF ERA5 operational and [CHIRTSmax monthly](#) historical data. Middle-right: CHIRPS-GEFS forecast for June 25th to July 9th, shown as the forecast difference from average precipitation in mm. Right: NMME probabilistic precipitation tercile forecast for July to September, 2024, based on June initial conditions. The forecast tercile probability is calculated as the percentage of all NMME ensemble members that fall in a given tercile (above/below/near-normal). NMME image from the [NOAA CPC Climate Forecasts](#).

Source: UCSB Climate Hazards Center

Pie Chart Description: Each slice represents a country's share of total regional production. The proportion within each national slice is colored according to the crop conditions within a specific growing area; grey indicates that the respective area is out of season. Sections within each slice are weighted by the sub-national production statistics (5-year average) of the respective country. The section within each national slice also accounts for multiple cropping seasons (i.e. spring and winter wheat) and are a result of combining totals from multiple seasons to represent the total yearly national production. When conditions are other than favourable icons are added that provide information on the key climatic drivers affecting conditions.

Information on crop conditions in the main production and export countries can be found in the *Crop Monitor for AMIS*, published July 4th, 2024.

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

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.

East Africa				
Country	Crop	Season 1 Name	Season 2 Name	Season 3 Name
Burundi	Maize	Season B	Season A	
Burundi	Rice	Season B		
Ethiopia	Maize	Meher season	Belg season	
Kenya	Maize	Long Rains	Short Rains	
Rwanda	Maize	Season B	Season A	
Somalia	Maize	Gu Season	Deyr Season	
Somalia	Sorghum	Gu Season	Deyr Season	
South Sudan	Maize	First Season		
South Sudan	Millet	First Season		
South Sudan	Sorghum	First Season		
Uganda	Maize	First Season	Second Season	
United Republic of Tanzania	Maize	Bimodal: Masika Unimodal: Msimu	Vuli	
United Republic of Tanzania	Millet	Bimodal: Masika Unimodal: Msimu		
United Republic of Tanzania	Rice	Bimodal: Masika Unimodal: Msimu		
United Republic of Tanzania	Sorghum	Bimodal: Masika Unimodal: Msimu	Vuli	
United Republic of Tanzania	Wheat	Bimodal: Masika Unimodal: Msimu		

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	

Middle East & North Africa				
Country	Crop	Season 1 Name	Season 2 Name	Season 3 Name
Egypt	Rice 1	Summer-planted	Nili season (Nile Flood)	

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.

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	

Central and 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	
Pakistan	Rice	Kharif (summer)		
Pakistan	Wheat	Rabi		
Tajikistan	Wheat	Winter-planted	Spring-planted	

Southeast Asia				
Country	Crop	Season 1 Name	Season 2 Name	Season 3 Name
Bangladesh	Maize	Winter (Kharif)	Summer (Rabi)	
Bangladesh	Rice	Boro	Aman	Aus
Cambodia	Rice	Wet-season	Dry-season	
Indonesia	Rice	Wet-season	Dry-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	Maize	Maha		
Sri Lanka	Rice	Maha	Yala	
Thailand	Rice	Wet-season	Dry-season	
Viet Nam	Rice	North: Other wet-season (summer-autumn) South: Other wet-season (autumn-winter and seasonal)	Dry-season (winter-spring)	North: Main wet-season (seasonal) South: Main wet-season (summer-autumn)

Central America & Caribbean				
Country	Crop	Season 1 Name	Season 2 Name	Season 3 Name
El Salvador	Beans	Primera	Postrera	
El Salvador	Maize	Primera	Segunda	
Guatemala	Beans	Primera	Postrera	Apante
Guatemala	Maize	Primera	Segunda	
Haiti	Beans	Printemps	Été	Hiver
Haiti	Maize	Printemps	Été	
Honduras	Beans	Primera	Postrera	
Honduras	Maize	Primera	Segunda	
Nicaragua	Beans	Primera	Postrera	Apante
Nicaragua	Maize	Primera	Segunda	



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Contributing partners



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