

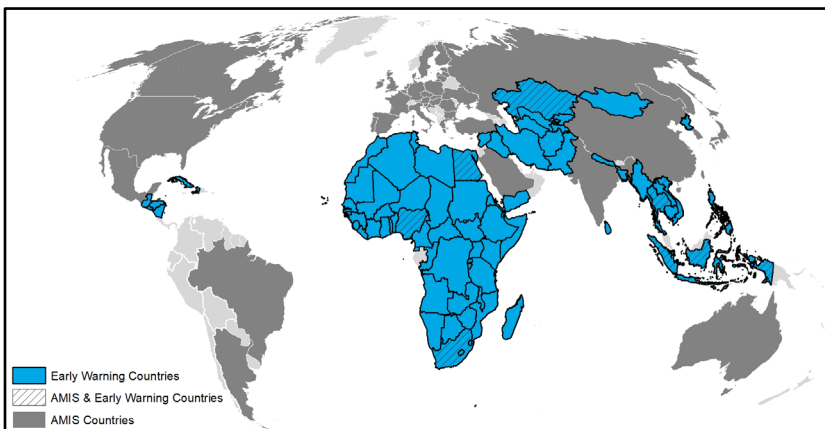


Crop Monitor

EARLY WARNING

Overview:

In northern **East Africa**, a combination of delayed rainfall onset and early season dryness is impacting planting in South Sudan while recent rains have mitigated dry concerns for *Belg* planting in most parts of Ethiopia. In the south, conditions are mixed for main season cereal development. While recent heavy rains have offset dry conditions in most areas, the rains have also resulted in flooding in some countries, and above-average precipitation is forecast to continue through the coming months (See Regional Outlook Pg. 7). In **West Africa**, planting of main season cereals is ramping up along the Gulf of Guinea countries while harvesting of second season rice is nearing completion in Mali and Mauritania, and agro-climatic conditions are generally favourable. In the **Middle East and North Africa**, wheat harvesting is just beginning, and conditions remain generally favourable in the east and below-average in the west as a result of prolonged dry and hot conditions throughout the growing season, although recent rains have brought minor crop recovery to parts of North Africa. In **Southern Africa**, harvesting of main season cereals is nearing completion under mostly poor to failure conditions due to El Niño-induced drought and high temperatures. In **Central and South Asia**, concern remains for winter wheat crops across parts of the region due to dry conditions earlier in the season, and planting is just beginning for spring wheat. In southern **Southeast Asia**, harvesting of wet-season rice continues with favourable yield outcomes. In the north, harvesting of dry-season rice reached its peak in April. Conditions are favourable in areas with abundant irrigation water, though some concern remains in areas where limited rainfall has been received. In **Central America and the Caribbean**, land preparation for *Primera* season cereals is underway, and farmers are mostly still awaiting the start of seasonal rains to begin planting.



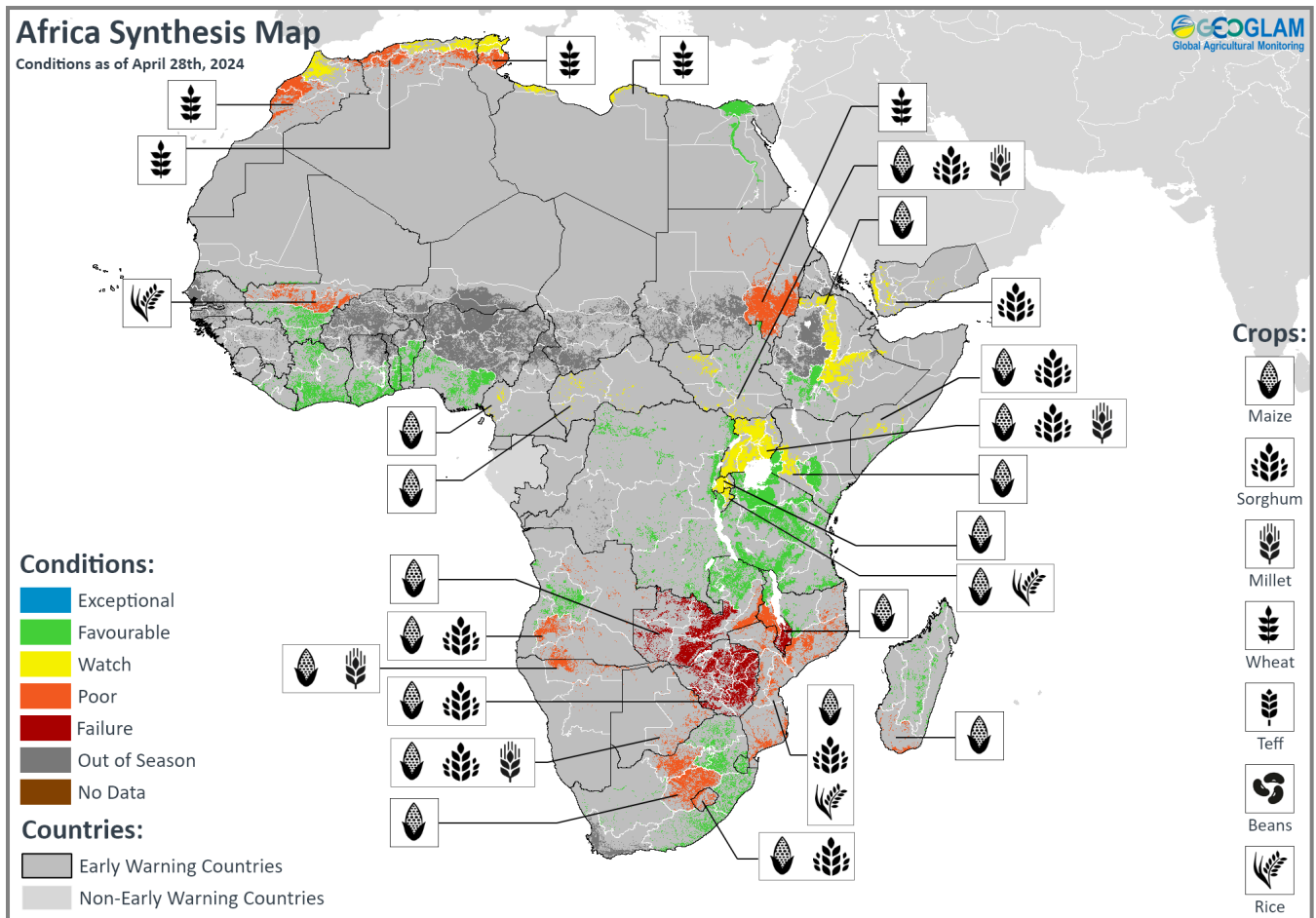
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GEOGLAM Crop Monitor for Early Warning

Crop Conditions at a Glance

based on best available information as of April 28th



Crop condition map synthesizing information for all Crop Monitor for Early Warning crops as of April 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: In the north, delayed rainfall onset and dry conditions are impacting planting in parts of South Sudan and central Ethiopia. In the south, heavy rains since the end of March have improved previously dry conditions in most areas but have also led to flooding in some countries. Most east and southern areas of the region are forecast to receive above-average rains through early May (See Regional Outlook Pg. 7).

WEST AFRICA: Planting of main season cereals is ramping up along the south while harvesting of second season rice is nearing completion in the north, and overall conditions remain favourable except in areas impacted by persisting conflict.

MIDDLE EAST & NORTH AFRICA: Dry and hot conditions are expected to result in below-average yields in parts of North Africa, though recent rains resulted in minor crop recovery in parts of Morocco, Algeria, and Tunisia. In the Middle East, agro-climatic conditions remain generally favourable, except in eastern Iran and central-eastern Iraq where recent dry conditions have degraded crop biomass.

SOUTHERN AFRICA: Dry and hot conditions throughout the season, linked to the presence of El Niño, in combination with a severe dry spell in February are expected to result in well below-average yields in parts of Zimbabwe, Zambia, and southern Malawi.

CENTRAL & SOUTH ASIA: Concern remains for winter wheat crops across parts of the region due to below-average precipitation received during the first half of the rainfall season. Spring wheat planting has commenced with some initial concern due to antecedent dry conditions, but above-average rains are forecast for the coming months (See Regional Outlook Pg. 13).

SOUTHEAST ASIA: In the south, conditions remain favourable for wet-season rice harvesting and dry-season rice planting, except in Malaysia due to limited rainfall and irrigation water supply. In the north, harvesting of dry-season rice continues under mixed conditions with ongoing concern in parts of Thailand, southern Viet Nam, and north and central areas of the Philippines due to a combination of limited rains received as well as saltwater intrusion in Viet Nam. Below-average rains and high temperatures are expected in northern areas through June (See Regional Outlook Pg. 16).

CENTRAL AMERICA & CARIBBEAN: Land preparation for Primera season rice and maize is now underway in Guatemala and Honduras, and early season dryness and low soil moisture are delaying planting activities. Rainfall deficits are forecast to continue in May followed by a switch to above-average rains from June to August (See Regional Outlook Pg. 19).

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 parts of the southern Prairies in Canada, central and southern Great Plains of the US, northeastern Mexico, the Dominican Republic, eastern Columbia, southern Chile, central Norway, central Sweden, southern Liberia, southern Côte d'Ivoire, eastern Ethiopia, southern Somalia, Kenya, northeastern Tanzania, northeastern Mozambique, western Yemen, eastern Türkiye, Syria, Iraq, western and central Iran, Kuwait, Afghanistan, western Pakistan, Tajikistan, southern China, western Indonesia, and parts of northern and western Australia.

There is also a likelihood of below-average precipitation over Mexico, Cuba, northern Guyana, Brazil, northern Bolivia, Paraguay, northern and central Argentina, Uruguay, eastern Romania, Moldova, eastern Ukraine, western Russian Federation, eastern Senegal, western Mali, western Guinea, southern Republic of Congo, western Democratic Republic of the Congo, northern Angola, southern Namibia, southern Botswana, central and western South Africa, central Tanzania, Kazakhstan, western Uzbekistan, Japan, southwest China, Myanmar, Thailand, northern Laos, Viet Nam, Cambodia, the Philippines, southern Indonesia, and southern Australia.

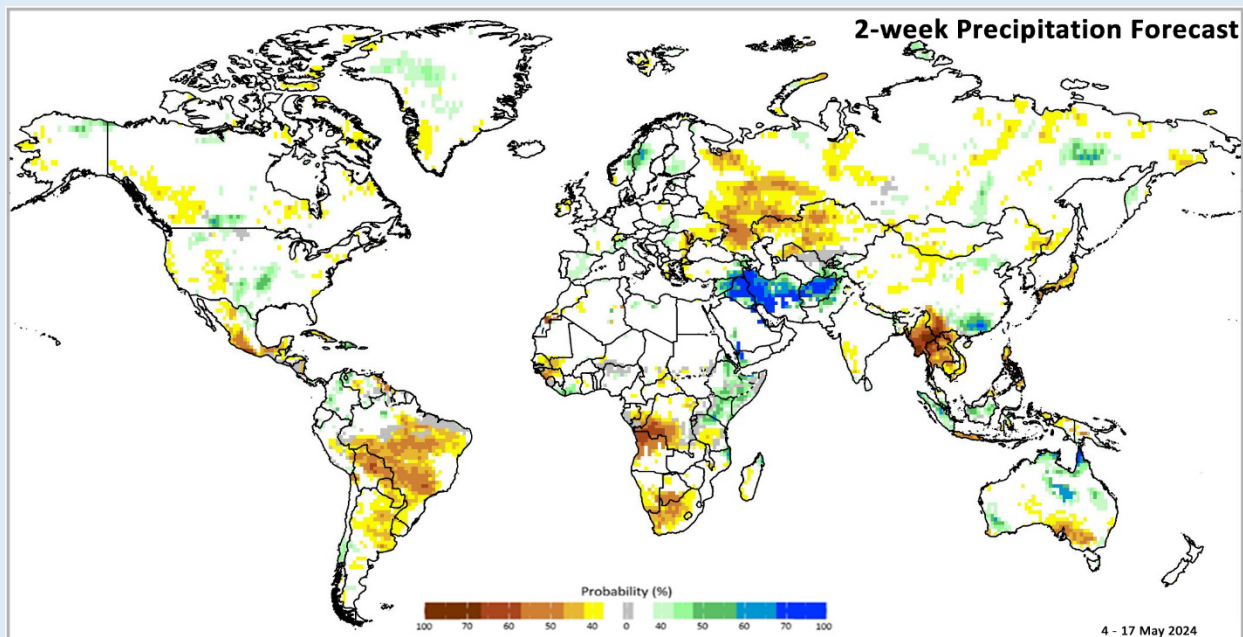


Figure 1: IRI SubX Precipitation Biweekly Probability Forecast for 4 – 17 May 2024, issued on 26 April 2024. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](#)

Climate Influences: Weakening El Niño event is expected to transition to neutral ENSO conditions by June and a quick shift to La Niña event is anticipated

The El Niño event has continued to weaken, and neutral ENSO conditions are likely by April to June (85% chance). A quick shift to persistent La Niña conditions is anticipated. The CPC/IRI predicts a 73% chance of La Niña by July to September 2024, and chances remain high throughout the forecast period.

Globally, record-high temperatures in the latter half of 2023 and 2024 reflect the influences of the strong 2023-2024 El Niño and climate change. Heat extremes will very likely continue during 2024. Associated with forecast La Niña conditions and abnormally warm ocean temperatures, the multi-year pattern of climate extremes may continue. The strong and impactful 2023-2024 El Niño was preceded by three years of La Niña and associated multi-year droughts, especially in eastern East Africa, central-southern Asia, and southern South America.

Source: UCSB Climate Hazards Center

Special Alert: La Niña likely to return as early as June and continuing high global temperatures are anticipated

Current Situation/La Niña Forecast:

After a record-setting year for global temperatures, we are approaching the end of a strong El Niño and are likely heading back into La Niña with continuing extremely high global temperatures. El Niño provided much-needed relief for some by improved precipitation after enduring three years of La Niña while it brought heartache to others, particularly in parts of northern South America, Central America, Southern Africa, Southeast Asia, and the northern Maritime Continent due to reduced precipitation.

The El Niño-Southern Oscillation (ENSO) remains in the weakening El Niño phase. The National Oceanic and Atmospheric Administration Climate Prediction Center (NOAA CPC) is forecasting a return to ENSO-neutral (neither El Niño nor La Niña) during the April-June period. The Australian Bureau of Meteorology (BoM) has already stated a return to ENSO-neutral conditions. However, NOAA has already issued a La Niña Watch. According to NOAA CPC forecasts, La Niña could develop as soon as June to August, with a 60 percent chance. After that, the chances of developing continue to rise with an 80 percent chance or greater beginning during the August to October period. While forecasts made during this time of the year tend to be less accurate than those later in the season, several signs suggest that La Niña is coming.

Precipitation Changes Coupled with High Temperatures:

Should La Niña materialize, drier-than-average precipitation is likely in East Africa, Central and South Asia, southern South America, the southern United States, northern Mexico, and eastern East Asia. Conversely, parts of Southeast Asia, Australia, Southern Africa, Central America, and northern South America might experience above-average precipitation.

Extreme high temperatures will also likely be a factor, particularly for those regions at risk of experiencing drier-than-average conditions given heat extremes can worsen drought stress. Last year was the warmest on record since global records began due to the influences of the strong El Niño and climate change. While La Niña events typically bring cooler global temperatures, it is unlikely to significantly change in 2024. This year is already breaking records, with January, February, and March all becoming the warmest respective months on record. The outlook for the rest of the year looks much the same, with a very high chance that 2024 will rank in the top five of warmest years on record.

Potential Crop Impacts:

La Niña events have historically led to slightly lower than average global-level yields for soybeans (up to 2 percent) and slightly higher than average global-level yields for rice (up to 2 percent), while not significantly impacting global-level yields of wheat or maize. How the current potential La Niña event will impact agricultural production is uncertain as no two events are the same. With global temperatures at unseen levels, the negative effects could potentially be exasperated. However, based on historical La Niña events, some crops in some regions will likely experience yield impacts. For wheat, yields tend to be positively impacted in Argentina, southern Brazil, Morocco, Portugal, Australia, China, and India, while negatively impacted in parts of the United States, East Africa, and Central Asia. For maize, yields tend to be positively impacted in parts of Southeastern Africa, China, India, and Thailand, while negatively impacted in Argentina, Paraguay, Bolivia, and the US. For rice, yields tend to be slightly positively impacted in China, India, Pakistan, Central Asia, Cambodia, Vietnam, Thailand, southern Brazil, and Central America, while negatively impacted in the Middle East, Bolivia, and the US. For soybeans, yields tend to be positively impacted in Brazil, Southern Africa, India, and China, while negatively impacted in Argentina, Uruguay, and the US. The negative impacts tend to be lessened for irrigated crops compared to rainfed crops. However, only when the likely La Niña event arrives in combination with likely extremely high global temperatures will its actual impacts on agriculture begin to be known.

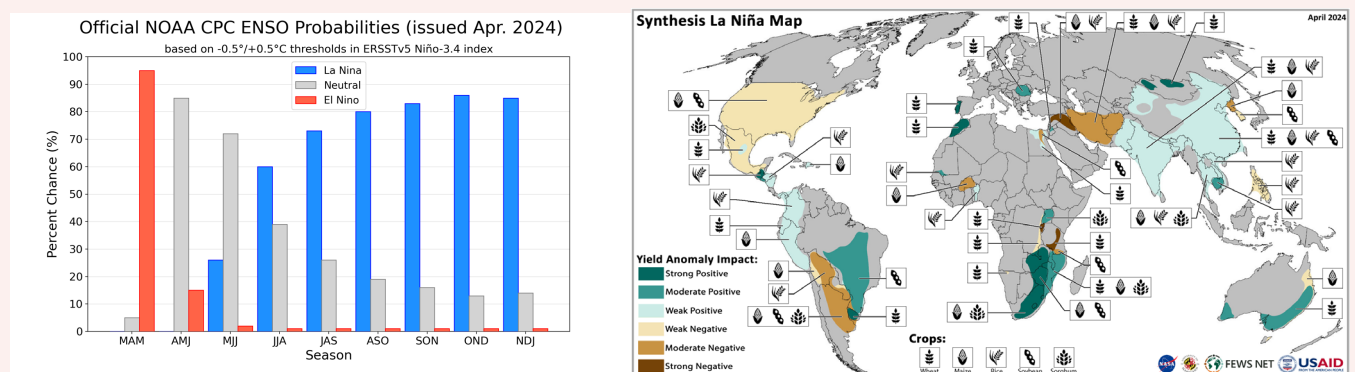
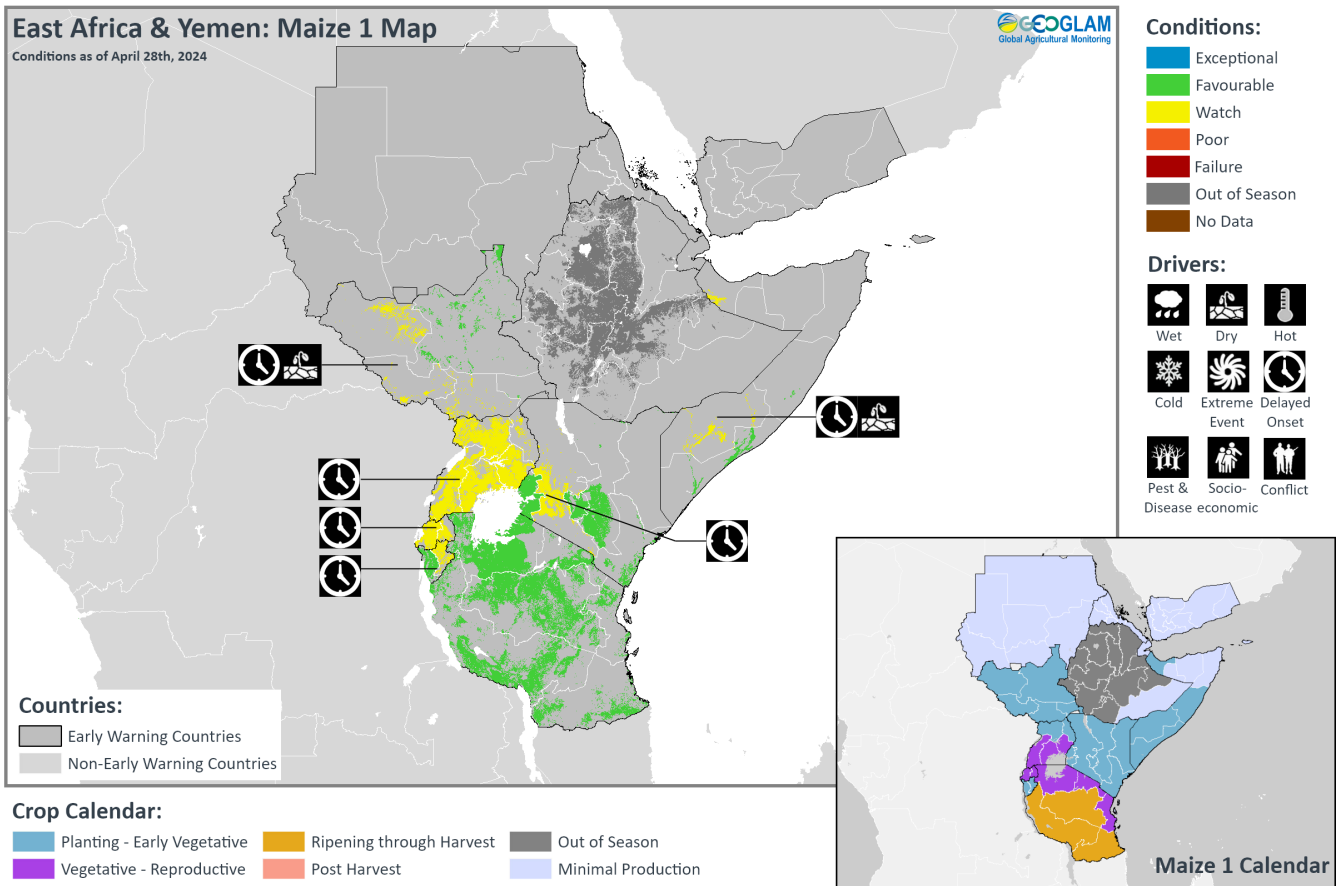


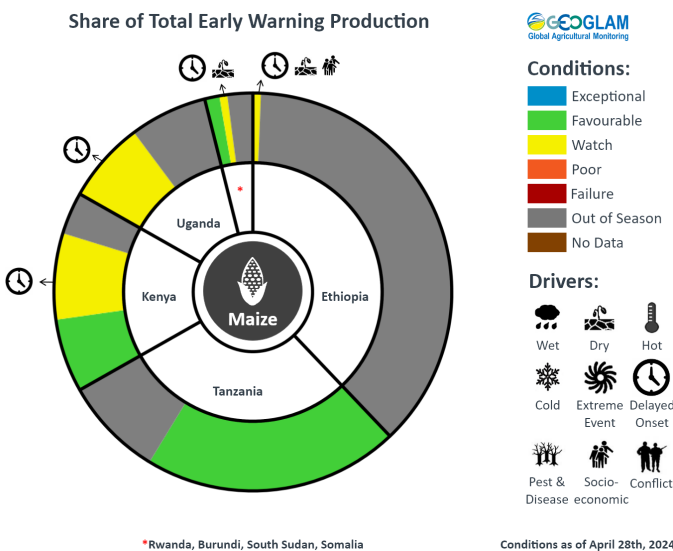
Figure 1: (Left) The official April 2024 NOAA CPC ENSO probability forecast, based on a consensus of CPC and IRI forecasters. Source: [International Research Institute](https://www.noaa.gov/enso). (Right) Historical crop yield conditions during La Niña events for wheat, maize, rice, soybeans, and sorghum using FAO country-level yield data and ERSSTv5 from 1961-2020. In countries with more than one crop affected, the color reflects the strongest effect. Note: FAO data is national and annual resolution, which masks expected relationships in areas with multiple crops (e.g. the Horn of Africa).

East Africa



Crop condition map synthesizing Maize 1 crop conditions as of April 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, wheat harvesting finalized in **Sudan** while planting of main season cereals is just beginning in **South Sudan** and **Yemen**. Socio-economic challenges relating to ongoing conflict continue to disrupt agricultural production outcomes in **Sudan** and **Yemen**. In **South Sudan**, conditions are favourable for planting activities in the east while delayed rainfall onset and early season dryness are impacting other areas of the country. In **Ethiopia**, Belg season maize crops are in vegetative to reproductive stage for harvest from June, and conditions in most areas have improved from concerns regarding insufficient rainfall and soil moisture levels in March. However, dry concerns remain in the centre, and socio-economic challenges continue to impact the north.



For detailed description of the pie chart please see description box on Pg. 19.

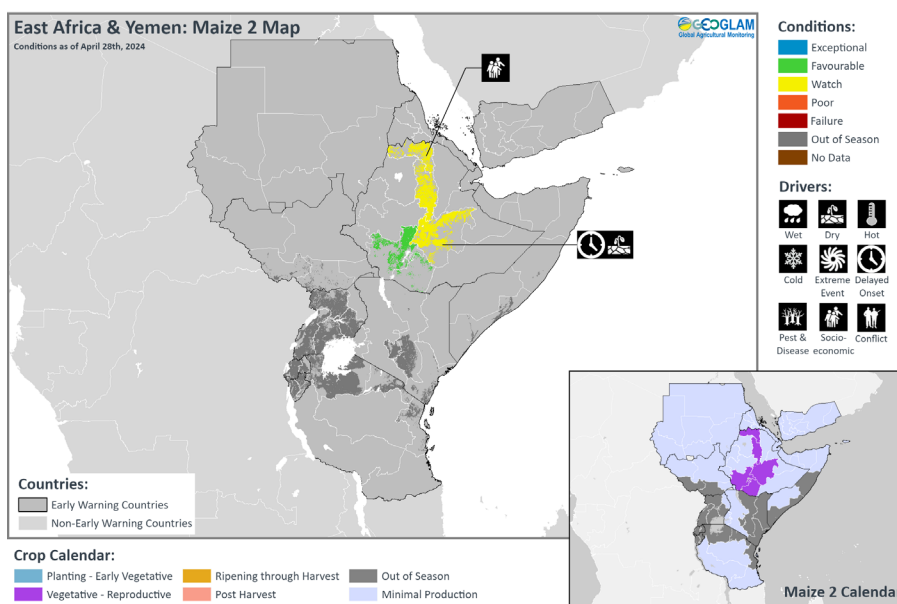
Across southern East Africa, main season cereals are now in vegetative to reproductive stage in **Rwanda**, **Uganda**, and northern **United Republic of Tanzania**, while planting activities continue in **Burundi**, **Kenya**, and **Somalia**, and overall conditions are mixed. Despite recent rainfall improvement, previously delayed seasonal rainfall onset and early season dryness continue to impact planting and crop emergence in parts of **Burundi**, **Rwanda**, **Uganda**, western **Kenya**, and western **Somalia**. Elsewhere, conditions are favourable, and recent heavy rains since March have mitigated dry and hot concerns in bimodal areas in the eastern half of **Kenya**. However, the heavy downpours have also led to localized flooding and related damage in parts of **Burundi**, **Uganda**, the **United Republic of Tanzania**, **Kenya**, and **Somalia**.

Most east and southern areas of East Africa have received above-average precipitation from March to April, particularly in parts of **Ethiopia**, **Somalia**, **Kenya**, **Burundi**, and the **United Republic of Tanzania**. The rains are expected to continue into early May across these same areas, including in eastern **Ethiopia**, southern **Somalia**, **Kenya**, northeastern **Uganda**, **Rwanda**, **Burundi**, and the **United Republic of Tanzania**. Furthermore, above-average rains are expected to impact most areas

through September, and forecast above-average streamflow during July could result in additional flooding (See Regional Outlook Pg. 7).

Northern East Africa & Yemen

In **Sudan**, wheat harvesting finalized in April under poor conditions. Despite generally conducive agro-climatic conditions, the ongoing conflict situation and related socio-economic challenges are expected to result in below-average yields. In **South Sudan**, planting of first season cereals is just beginning under mixed conditions. Conditions in the east are favourable where March and April rainfall was above-average (See Regional Outlook Pg. 7). Additionally, in March, light rains across parts of the Greater Equatoria region in the south of the country prompted land preparation activities for the main season. However, generally delayed and below-average rains are negatively impacting planting activities in most parts of the south and west. Floodwaters significantly decreased in March, though parts of the Sudd wetlands and other low-lying areas remained inundated. In **Ethiopia**, *Belg* season maize is in vegetative to reproductive stage for harvest from June. Heavy and extreme rains were received in April over many parts of the country from the southwest to the northeast, benefitting land preparation and initial planting. The recent rains have improved ground conditions in most areas, except in the centre where dry concerns remain. The June to September rainfall season is expected to be above-normal, likely benefitting water availability and crop development but also elevating risks of flooding (See Regional Outlook Pg. 7). Additionally, residual socio-economic challenges related to the prior conflict situation continue to impact parts of the north. Land preparation is underway for wheat crops, and planting will begin in May. In **Yemen**, sorghum planting is underway, and while recent rains have abated dry concerns from the previous month, ongoing conflict and socio-economic challenges continue to result in yields below the pre-conflict level.



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

The recent rains have improved ground conditions in most areas, except in the centre where dry concerns remain. The June to September rainfall season is expected to be above-normal, likely benefitting water availability and crop development but also elevating risks of flooding (See Regional Outlook Pg. 7). Additionally, residual socio-economic challenges related to the prior conflict situation continue to impact parts of the north. Land preparation is underway for wheat crops, and planting will begin in May. In **Yemen**, sorghum planting is underway, and while recent rains have abated dry concerns from the previous month, ongoing conflict and socio-economic challenges continue to result in yields below the pre-conflict level.

Southern East Africa

In **Somalia**, planting of *Gu* season maize and sorghum is now underway, and initial conditions are mixed with concern in the west due to continued impacts of delayed rainfall onset and dry conditions at the beginning of the season. Conversely, heavy rainfall has been affecting the country since mid-April, resulting in river overflows and flooding, particularly in Jubaland, Hirshabelle, and South West states. The southern half of the country is also expected to receive above-normal rains through early May, and while the rains are likely to benefit remaining planting activities and crop emergence, they increase the risk of additional flooding (See Regional Outlook Pg. 7). In **Kenya**, planting of long rains cereals is underway in all regions. Concern remains in the unimodal Rift Valley region where the rains are just starting to establish. Additionally, while recent torrential rains since late-March have mitigated dry and hot concerns from the previous month across eastern bimodal areas, the rains also resulted in instances of flooding across the central and western regions, which may warrant replanting. Heavy rains are forecast to continue through early May, which is expected to increase flood risk across parts of the country and could result in production losses across main producing areas (See Regional Outlook Pg. 7). Land preparation is underway for wheat crops in unimodal and major producing areas in the western half of the country, and planting will begin in May. In **Uganda**, planting of first season cereals is underway in all areas, and there is ongoing concern regarding impacts of delayed rainfall onset at the beginning of the season. However, recent heavy rains have led to flash floods in parts of the Northern Corridor, a major cross-border trade route between Rwanda and the Democratic Republic of Congo. Rainfall is expected to be near to below-normal through May, except in Karamoja region located in the northeast where above-normal precipitation is expected (See Regional Outlook Pg. 7). In **Rwanda** and **Burundi**, planting and development of Season B maize and rice crops is underway, and there is ongoing concern regarding delayed rains at the beginning of the season. Conversely, in **Burundi**, heavy March to April rains and resultant flooding have affected the north, bringing estimated Season B production levels to average in most areas. However, floods have impacted an estimated 40,000 hectares of crops along rivers and marshlands in some localized regions, which could slightly reduce harvest outcomes. Both countries are expected to receive above-normal rainfall through early May, which will likely benefit remaining planting activities and crop emergence but could increase the risk of flooding (See Regional Outlook Pg. 7). In the **United Republic of Tanzania**, harvesting of *Msimu* season cereals is now underway in central and southern unimodal areas while *Masika* and *Vuli* season cereals continue to develop in northern bimodal areas. While conditions are favourable for ongoing crop development, heavy rains have resulted in flooding and landslides along parts of the coast and low-lying areas. Rains are forecast to be above-average in most parts of the country through early May (See Regional Outlook Pg. 7).

Regional Outlook: Above-normal March and April rains in the east and south likely followed by continued increased precipitation across most areas through September

Recent heavy rains have resulted in widespread flooding across parts of the region. In Kenya, there were at least 38 fatalities and more than 110,000 people displaced in recent weeks, according to government officials and the Kenya Red Cross. Flooding in Nairobi [killed 11 people in 24 hours](#) and displaced 10,000 people living in informal settlements. In Tanzania, heavy rains and landslides have reportedly [killed 155 people](#) and displaced 200,000.

Livestock, croplands, and infrastructure damages are increasing this week, and the situation is likely to worsen. Rainfall estimates for March to late April are 125 to 200 percent of average in much of Somalia, Kenya, in western, northeastern, and eastern Tanzania, and in southwestern, central, and northeastern Ethiopia (Figure 1-left). GEFS and ECMWF forecasts from April 24th predict above-average rainfall during the next two weeks, with high 15-day rainfall totals forecast in Kenya- in Nairobi and the central region, coastal areas, and the northeast- and in portions of northeastern and southeastern Tanzania and southwestern Somalia. Some areas could receive rainfall that is 200 to 400 mm above typical amounts for late April-early May, based on the CHIRPS-GEFS (Figure 1 middle-left). [Flood warnings](#) were issued in Garissa, Tana River and Lamu counties, due to high levels at the Seven-Forks dams and the overflowing Masinga Dam, and in low lying and riverine areas in western Kenya and Lake Victoria basin. There are [concerns](#) that continued heavy rains and flood damages could result in crop losses in production areas in central and western Kenya and Rift Valley regions.

[ICPCAC](#)'s May to July 2024 outlook predicts wetter than usual conditions in "most parts of the northern sectors of the region, specifically in much of Sudan, South Sudan, Ethiopia, Eritrea, Djibouti, Somalia, Uganda, and western and coastal Kenya. Drier than usual conditions expected over isolated areas of southern Somalia, western Ethiopia, western Sudan and central Uganda."

In Ethiopia, seasonal rains have reportedly become very heavy and extreme, particularly in April over the Gu/Genna rainfall regions of southern and southeastern Ethiopia. In Belg rainfall areas of the southwest, central, east, and northeastern regions, rains have been above average. The rains have benefitted land preparation and planting, and long-range forecasts support positive outlooks for short and long-cycle (March-November) crops, water availability, and pasture resources in semi arid and arid regions. Ethiopia's June to September Kiremt rainfall season will likely be above-normal (Figure 1 middle-right), associated with a ~70% chance of La Niña. Along with this will be elevated risks of flooding along river catchments and flood-prone urban regions. The NASA forecast predicts above-average streamflow during August, including in White and Blue Nile River catchment areas and along the Awash, Juba, and Shabelle Rivers (Figure 1-right).

The forecast return of La Niña during mid 2024 means that climate extremes may continue through this year and into 2025 (See Global Climate Outlook Pg. 3). La Niñas often result in below-average rainfall during October to December and March to May in the eastern Horn, where communities have recently faced a multi-year La Niña drought followed by extreme rainfall and flooding during 2023 and early 2024. Specific impacts are uncertain at this time, and close monitoring is recommended— long-range NMME forecasts predict that this La Niña could have very strong Pacific sea surface temperature gradients during late 2024. Ongoing above-average rainfall should benefit longer term water resources that can help in a dry season, but can further displace communities and damage infrastructure, and multiple disasters can deteriorate livelihood resilience.

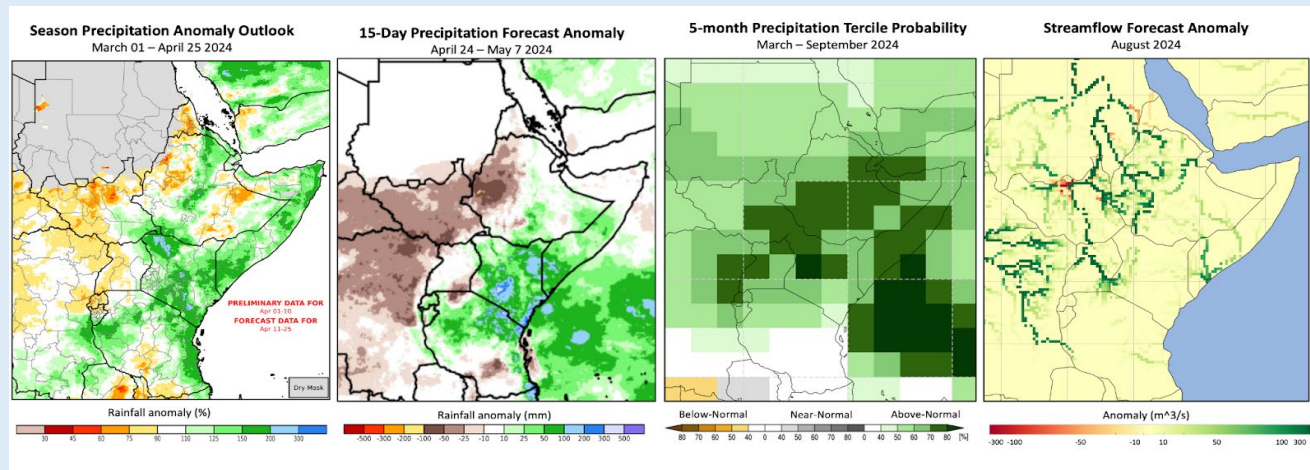
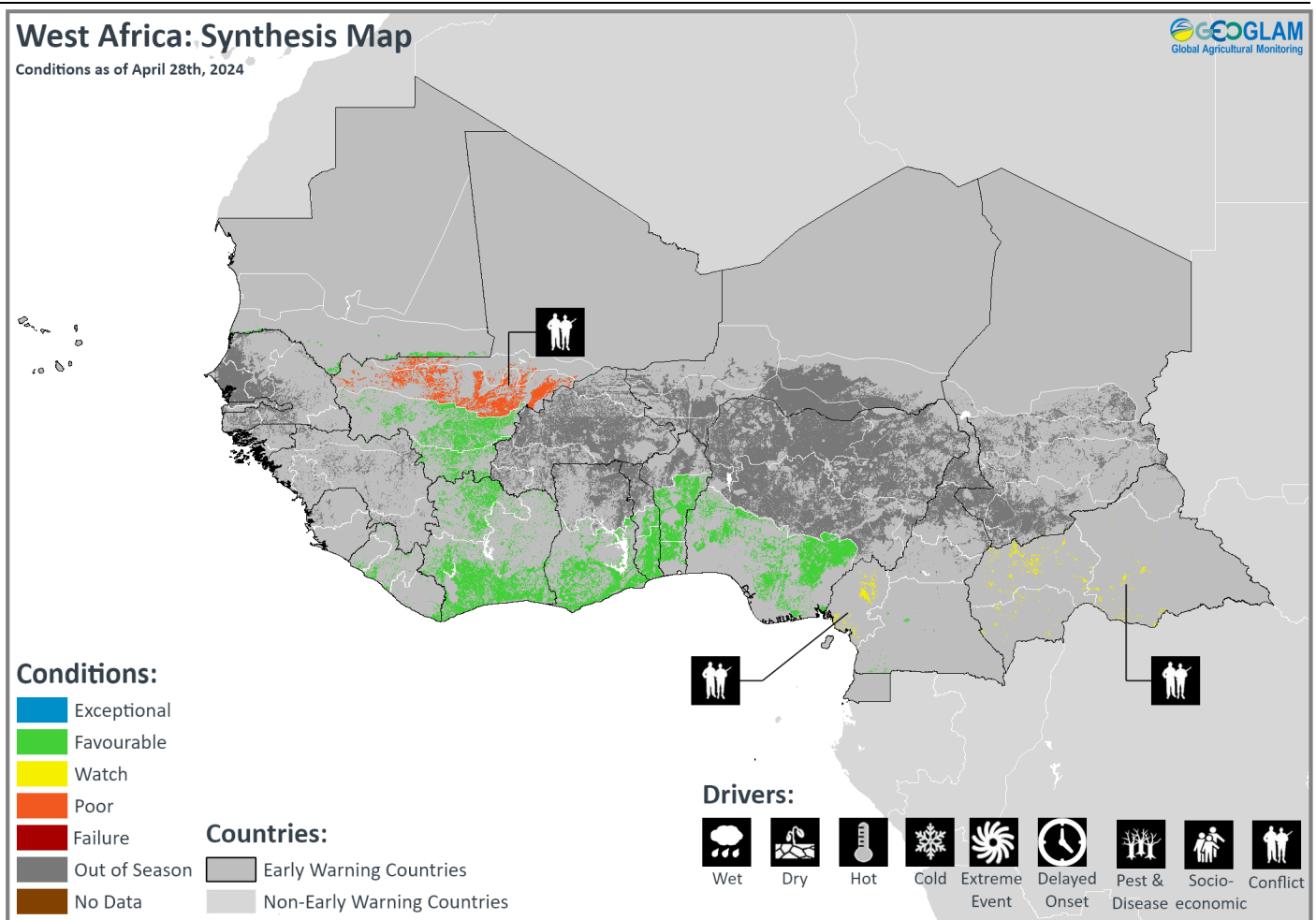


Figure 1. A seasonal rainfall anomaly outlook, a 15-day rainfall anomaly forecast, a 5-month probabilistic rainfall forecast, and a 1-month streamflow anomaly forecast. A [CHC Early Estimate](#), which compares recent and outlook precipitation totals to the 1981-2023 CHIRPS average for the same accumulation period. This uses CHIRPS Final for Mar. 1st to 31st, CHIRPS Preliminary for Apr. 1st to 10th and an unbiased CHIRPS-GEFS forecast for Apr. 11th to 25th to show rainfall percent of average. Middle-left: CHIRPS-GEFS forecast for Apr. 24th to May 7th. Difference from average precipitation, in mm. Middle-right: WMO probabilistic forecasts for March to September 2024 precipitation, based on models initialized in April, from the [WMO Lead Centre Long-Range Forecast Multi-Model Ensemble](#). Right: Forecast for August 2024 streamflow difference from average, in $m^3 s^{-1}$, from the [NASA Hydrological Forecast and Analysis System's FLDAS forecast](#). This outlook uses CHIRPS and MERRA-2 reanalysis data through March 2023, and forecasted meteorological conditions for April to July 2024 from the North American Multi-Model Ensemble (NMME) and the GEOSv2 model. Source: UCSB Climate Hazards Center

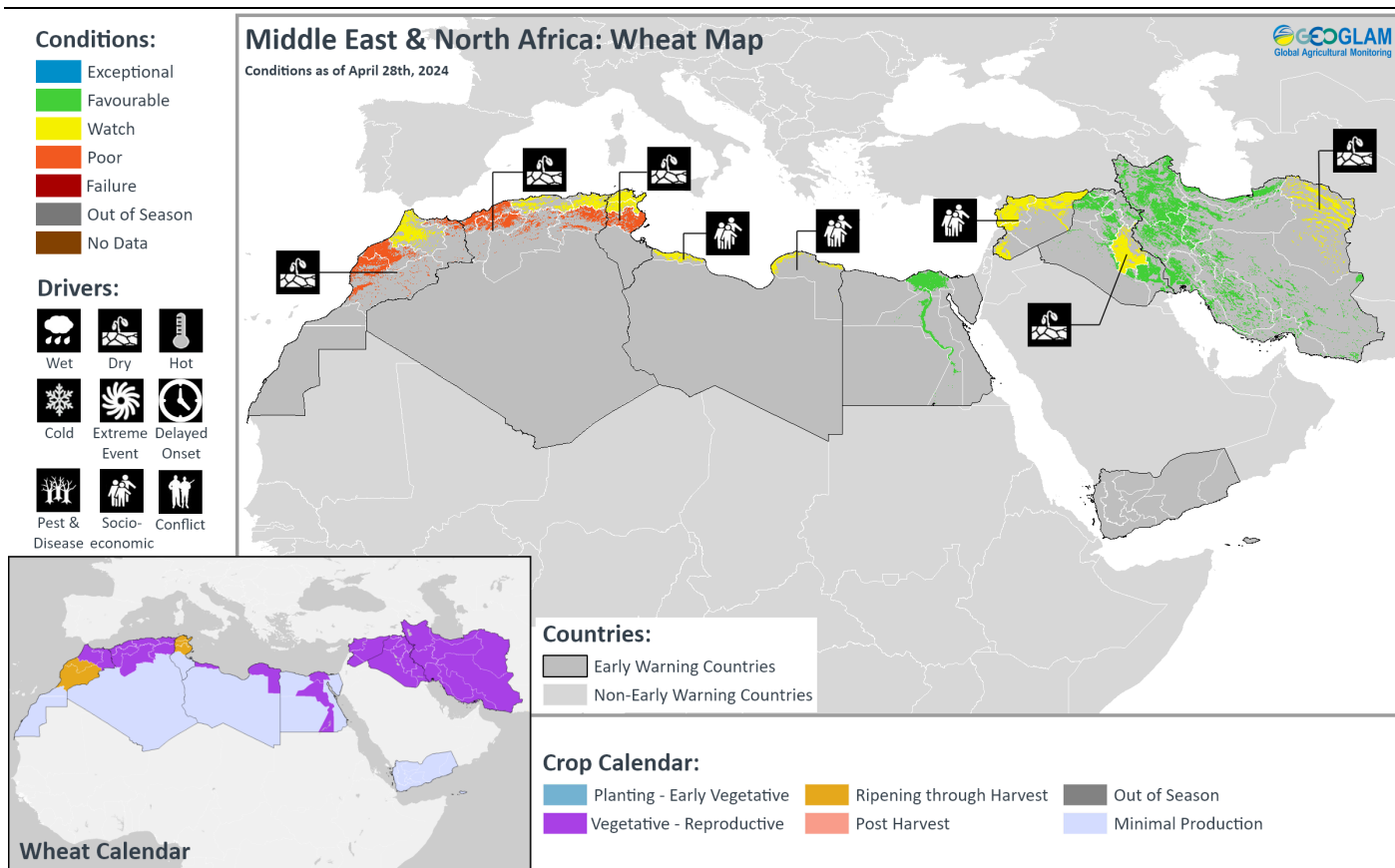
West Africa



Crop condition map synthesizing crop conditions as of April 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 of main season cereals is ramping up and is now underway in **Liberia, Cote d'Ivoire, Ghana, Togo, Benin**, southern **Nigeria**, southern **Cameroon**, and the **Central African Republic**. Along the Sahel, harvesting of second season rice finalized in **Mali** and is nearing completion in **Mauritania**. Throughout the region, vegetation conditions are favourable except in areas impacted by persisting conflict, including central **Mali**, the Southwest region in **Cameroon**, and the **Central African Republic**. Additionally, according to the CHIRPS rainfall totals from March 1 to April 10, the southern part of the region from **Liberia** to the **Central African Republic** has received above-average precipitation ranging from 75 mm to more than 200 mm with locally 300 mm in southwest **Cameroon**, though there are some areas with slight deficits.

Middle East & North Africa



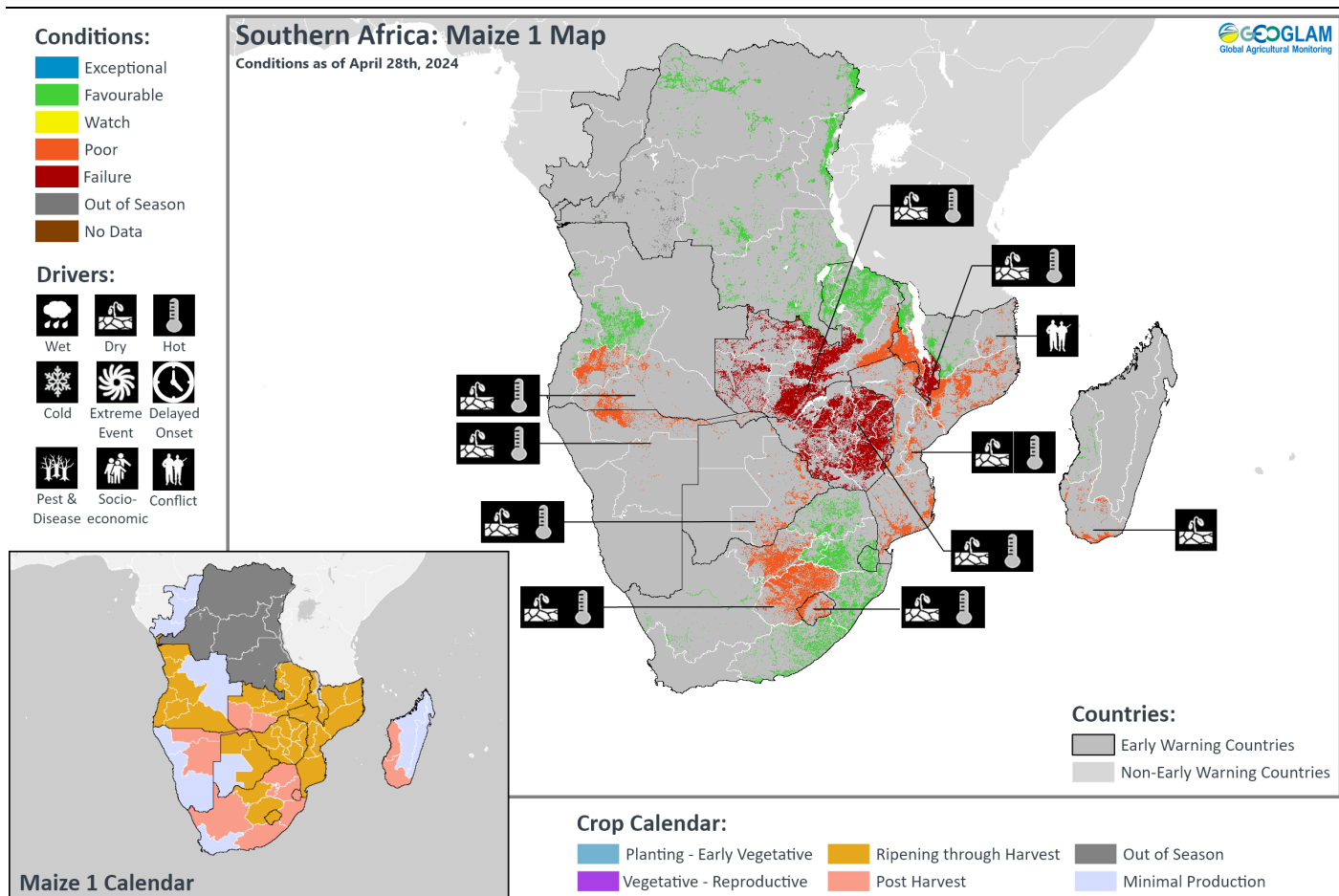
Crop condition map synthesizing wheat conditions as of April 28th. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Crops that are in other than favourable conditions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

In the Middle East and North Africa, wheat harvesting is now underway in **Morocco** and **Tunisia** while crops continue to develop elsewhere, and conditions remain generally below-average in the west and favourable in the east of the region. However, recent rainfall resulted in some crop recovery in parts of northern **Morocco**, north central and northeastern **Algeria**, and northern **Tunisia**. Additionally, recent dry impacts have degraded crop biomass in parts of eastern **Iran** and central-eastern **Iraq**.

In North Africa, below-average yields are expected in **Morocco**, parts of **Algeria**, and central **Tunisia** as a result of poor rainfall performance and high temperatures throughout the growing season. While vegetation conditions are slightly better across the northern tip of **Morocco**, north central and northeastern **Algeria**, and northern **Tunisia**, concern remains due to dry conditions and possible yield declines. In **Morocco**, above-average rainfall was received in parts of the centre and north from mid to late March, which resulted in some crop recovery in the northern tip where vegetation conditions are above-average. Elsewhere, a combination of irregular rainfall, below-average cumulative precipitation, and moderate to severe drought is expected to result in below-average yields for wheat and barley. In **Algeria**, precipitation at the end of March and in early April brought some crop recovery to the north centre and northeast, though concern remains due to previous dry conditions. Elsewhere, severe drought and above-average temperatures resulted in below-average vegetation conditions with poor yields expected. In northern **Tunisia**, rainfall received in mid-March and above-average temperatures resulted in some crop recovery, while below-average yields are expected in the centre. In **Libya**, ongoing socio-economic challenges related to the conflict situation are expected to result in below-average yields despite better weather outcomes compared to western parts of North Africa. In **Egypt**, conditions remain favourable for wheat development, and sowing is now underway for summer-planted rice crops. Land preparation is underway for maize crops, and planting will begin in May.

In the Middle East, overall conditions remain mostly favourable for wheat development, except in eastern **Iran** and central eastern **Iraq** where recent dry conditions have resulted in slightly degraded biomass. Harvesting activities will commence in June and will finalize in July. In **Iran**, biomass is below-average in central Khorasan province located in the east where conditions have been downgraded to watch due to a combination of below-average rainfall and limited irrigation water. Additionally, biomass is degrading in Fars province located in the southwest as well as Ghazvin, Tehran, and Marzaki provinces located in the central-north. Additional monitoring is required in these regions. Furthermore, land preparation is underway for main season rice crops, and planting will begin in May. In **Iraq**, there are some recent dry impacts in the central-eastern regions of Qadissiya and Babil, and biomass is below-average due to irrigation restrictions. In recent years, there has been a ban on rice cultivation, which is typically sown in April and May, in an effort to save water for other purposes. While agro-climatic conditions are favourable in **Syria**, socio-economic challenges continue to disrupt agricultural production.

Southern Africa

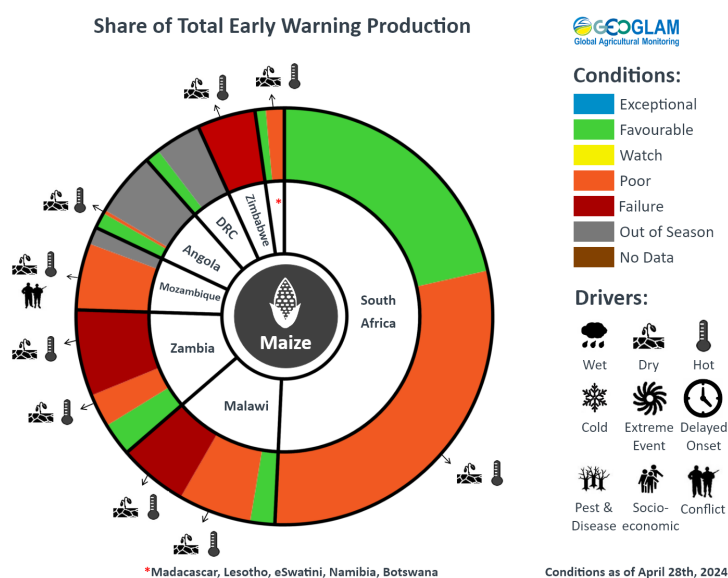


Crop condition map synthesizing Maize 1 conditions as of April 28th. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Crops that are in other than favourable conditions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

In Southern Africa, harvesting of main season cereals is nearing completion under mostly poor to failure conditions as a result of persistent dry and hot weather outcomes linked to the presence of El Niño throughout most of the season as well as a severe dry spell during the critical development stage in February and early March. Crops have failed in most of **Zimbabwe**, most of **Zambia**, and the southern region of **Malawi**, and below-average yields are expected in southern and central **Angola**, **Namibia**, **Botswana**, eastern **Zambia**, central **Malawi**, most of **Mozambique**, central **South Africa**, **Lesotho**, and southern **Madagascar**. Conversely, conditions have improved from the previous month in east and western **Madagascar** and parts of **South Africa**, and conditions remain favourable in western **Angola**, northern **Zambia**, northern **Malawi**, northwestern **Mozambique**, central **Madagascar**, **eSwatini**, and parts of **South Africa**.

Cumulative rainfall from October 2023 through early April 2024 was below-average in most areas, particularly in the centre of the region including areas of eastern **Angola**, southwestern **Zambia**, northern **Botswana**, and most of **Zimbabwe**. In late April, little to no rainfall was received across previously dry areas, raising concern for farmers who were relying on late season rainfall improvements to plant short-cycle crops. Conversely, cumulative rainfall was above-average in coastal **Angola**, eastern **South Africa**, **eSwatini**, northern **Mozambique**, northern **Zambia**, and parts of west and northeastern **Madagascar**. Most areas are expected to receive normal to below-normal rainfall through early May, except for northeastern **Mozambique** and eastern **Madagascar**. At the regional level, 2023/2024 cereal production is expected to be below-average and insufficient to cover regional requirements. Below-average national production is expected across most countries in the region, and severely below-average production is expected in **Malawi**, **Mozambique**, **Zimbabwe**, and **Zambia**. Food insecurity is likely to increase and there is significant concern for household food availability and access.

In **Angola**, below-average cumulative rainfall and above-average temperatures resulted in poor conditions across the centre, south, and east of the country. March rainfall was recorded to be around half the long-term average, and cumulative seasonal rainfall is only 60 to 75 percent of average in Cuando Cubango and southern Moxico, as of the end of March. The dry conditions and resultant low soil moisture are expected to result in a below-average harvest. Elsewhere, conditions remain generally favourable due to relatively better rainfall outcomes received throughout the season, except in Bie province located in the centre of the country. In **Zambia**, delayed and below-average October to December 2023 rains were followed by the driest and hottest February on record since 1981. The country is now facing severe El Niño-induced drought in most areas, except across parts of the north. Areas of Western, North-



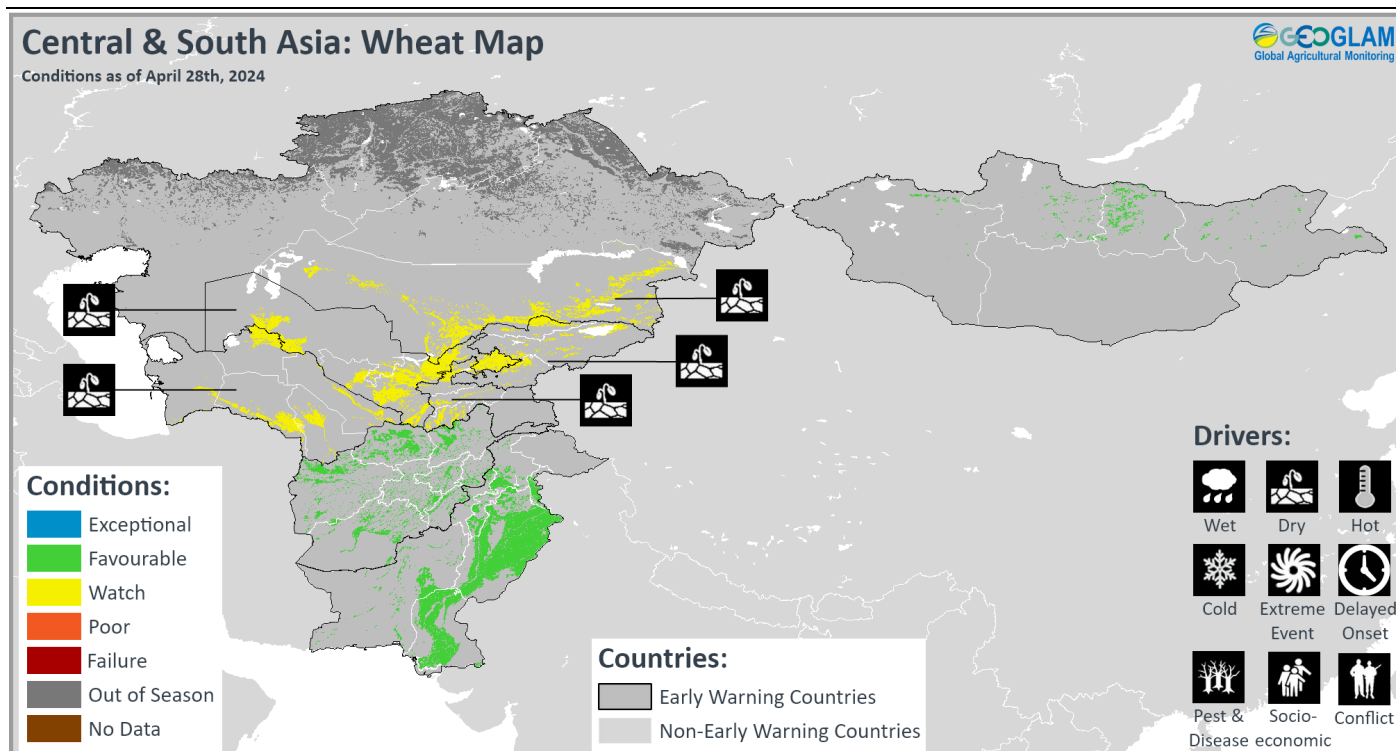
For detailed description of the pie chart please see description box on Pg. 19.

Western, Copperbelt, Southern, Lusaka, Central, and Eastern have been most impacted and received less than 50 percent of typical rainfall amounts. In **Zimbabwe**, an early cessation of seasonal rains combined with historically dry and hot conditions resulted in failed harvests with well below-average yield outcomes expected in all areas. On April 3, a state of disaster was declared regarding the impacts of El Niño-induced drought on crop production. In **Mozambique**, approximately 690,000 hectares of crops representing around 15 percent of the total planted area have been damaged by the extreme weather events, primarily due to El Niño-induced drought but also as a result of heavy rains and flood occurrences, the passage of Tropical Storm Filipo, and resultant pests and diseases. Poor yield outcomes are expected in all areas, and well below-average yields are possible for some areas as the country nears the end of the season. In **Madagascar**, below-average rains at the start of the season were followed by El-Niño-induced irregular rainfall over the past several months that resulted in severe drought over the Grand Sud region. While conditions improved towards the

middle to end of the season and while crop prospects are better than the previous year, poor yield outcomes are expected in the south. However, initial estimates suggest slightly improved production this season compared to last season for the southern region. Conversely, the passage of Tropical Storm Alvaro in January followed by excessive rainfall in February resulted in flooding across the north and southwestern regions. Then in late March, Tropical Cyclone Gamane impacted northeast and central-eastern areas of the country, particularly in Analanjirofo, Atsinanana, Diana, and Sava regions, with severe weather and related incidents. However, the rains generally benefitted crop development, and conditions have been upgraded to favourable in the west and east. In **South Africa**, dry conditions between mid-January and late March had a significant negative impact on production in the central regions of Free State and North West, and yields in these areas are expected to be below-average. Elsewhere, conditions are favourable, and crops in Mpumalanga and the Eastern Cape have recovered from previous dry and hot concerns. In **Lesotho**, despite adequate crop development from the start of the season in October through mid-January and near-average seasonal rainfall totals, a shift to dry and hot conditions in February in combination with erratic rainfall performance and dry spells resulted in poor crop conditions, and production prospects are expected to be 70 to 80 percent of normal. In the **Democratic Republic of the Congo**, harvesting of main season sorghum and second season maize is underway in the centre and southeast while planting and development continue in the north and east, and overall conditions remain favourable.

Land preparation is underway for wheat crops in **Zambia** and **South Africa**, and planting is just beginning in **Lesotho** and **Zimbabwe** under favourable conditions. However, in **Zimbabwe**, soil moisture levels are below-average, and irrigation use may be impacted by the below-average reservoir water availability due to drought conditions during the summer season. Throughout Southern Africa, antecedent dry conditions are also likely to impact both irrigation water availability and electricity use, raising potential concern as wheat is largely irrigated in the region.

Central & South Asia



Crop condition map synthesizing wheat conditions as of April 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 now underway in **Pakistan** and **Afghanistan** while crops continue to develop in southern **Kazakhstan**, **Kyrgyzstan**, **Tajikistan**, **Turkmenistan**, and **Uzbekistan** for harvest from June. Spring wheat planting has started across **Kyrgyzstan**, **Tajikistan** and southern **Kazakhstan** and will begin in May in the northern half of **Kazakhstan**. Concern remains across parts of the region as cumulative precipitation in the first half of the wet season from October 2023 to January 2024 was below-average. Conversely, the rains started to pick up from the second half of the season in February with average to above-average amounts received, and heavy rainfall and severe storms impacted **Afghanistan** and **Pakistan** in April. Despite the recent rainfall improvement and near-average biomass in many areas, concern remains across southern **Kazakhstan**, **Kyrgyzstan**, **Tajikistan**, **Turkmenistan**, and **Uzbekistan** as total cumulative precipitation from October through early April is still below-average, particularly in **Tajikistan** and **Kyrgyzstan**, with negative impacts to irrigation water supply. High rainfall amounts are expected across most areas of the region through July, which could lead to crop condition improvements but could also result in additional flood impacts for affected areas (See Regional Outlook Pg. 13).

In **Afghanistan**, while the well-distributed and above-normal precipitation received over the last month has reduced precipitation deficits, the rains also resulted in devastating floods, landslides, and erosion. Thousands of hectares of agricultural areas, including wheat crops, have been destroyed. The situation may negatively impact final yields and could result in slightly reduced production levels. While cumulative seasonal precipitation is near to slightly below-average in most parts of the country, including the north and northeast, recent abnormal snowfall in Badakhshan, Baghlan, Samangan, Nuristan, Parwan, Panjshir, Ghazni, Wardak, Bamyán, Daykundi, and Urozgan provinces coupled with flooding impacts in most parts of the country are a cause for concern. The situation could significantly impact the yield and production of wheat, orchard crops, and vegetables in affected areas. However, conditions remain generally favourable for wheat development at the national scale, and the increased rains improved snowpack levels and reservoir supply, except in parts of the centre and the northeast where snowpack levels remain below-average. In the northwest, biomass is slightly below-average as a result of delayed planting and a period of low temperatures, though conditions remain generally favourable with a delayed but good harvest expected. Additionally, cool temperatures and high soil moisture levels may result in spring wheat planting delays in the Badakhshan area and central highlands. In general, harvesting activities may be delayed by two to three weeks throughout the country, depending on elevation and temperature, which may also delay planting of second season crops. The country is expected to receive above-normal precipitation through July with a likely positive impact to soil moisture conditions, snow water volumes, and groundwater supply. However, the forecast rains increase the risk of flooding and landslides. Furthermore, the combined forecast high rainfall amounts and hot temperatures during late spring and early summer increase the risk of crop disease (See Regional Outlook Pg. 13). In **Kazakhstan**, below-average September to February precipitation was followed by below-average rains in April that are likely to negatively impact production outcomes (See Regional Outlook Pg. 13). Additionally, warm temperatures in early April resulted in rapid snow melting and subsequent severe flooding across northwestern areas. In **Pakistan**, harvesting of *Rabi* season wheat continues, and conditions in Balochistan and Sindh provinces in the southern half of the country have been upgraded to favourable as concerns regarding previous dry conditions in the minor-producing rainfed areas have

abated due to heavy rains and storms received in April (See Regional Outlook Pg. 13). Additionally, maize planting is just beginning under favourable conditions. In **Mongolia**, spring wheat planting is now underway, and conditions are favourable for the start of the season. The area planted is expected to increase to above-average levels supported by record domestic prices. However, the country is still dealing with impacts from the severe *Dzud* this winter, which consisted of extreme cold temperatures and extensive snow and ice coverage. The *Dzud* conditions resulted in the deaths of about 7 million heads of livestock, representing 11 percent of the country's total livestock, with the highest losses recorded in Sukhbaatar, Dornogovi, Govisumber, and Hentii provinces (locally known as *aimags*) located in the east and central parts of the country.

Regional Outlook: Below-average rains during the first half of the rainfall season followed by a shift to average to above-average rains from February which are likely to continue through July

The winter wheat season began late and experienced widespread below-average precipitation from [October 2023 through January 2024](#). Although conditions improved in February and March, with average to above-average precipitation in Afghanistan and in southern areas, seasonal totals are still average to below-average throughout the region (Figure 1-left). In April, heavy rainfall and severe thunderstorms in Afghanistan and Pakistan caused more than 140 fatalities. Pakistan declared a state of emergency on April 15th. Afghanistan reportedly lost thousands of livestock and thousands of acres of agricultural land. April rainfall was below average in southern Kazakhstan and central and northern portions of Uzbekistan, Turkmenistan, and Kyrgyzstan (Figure 1 middle-left). Winter wheat harvests in Afghanistan were reportedly delayed by a cold wave and wet conditions. This may also delay spring planting in northeast and central areas.

The recent storms improved snowpack in central Afghanistan, and improved reservoir supply and runoff across Afghanistan, particularly the Kajiki Reservoir. However, snow water equivalent amounts remain below average in northeastern Afghanistan, Tajikistan, and Kyrgyzstan (Figure 1 middle-right). This could reduce the availability of water for second season crops unless forecast above-normal rains materialize. Continuation of above-average rainfall is forecast in Afghanistan during late April to early May (based on the GEFS forecast from April 24th) and throughout the region from May to July (Figure 1-right). While the favorable conditions are likely to enhance vegetative productivity, there are some secondary concerns. The combination of above-average precipitation and above-average temperatures during the remainder of the 2023/24 agricultural season elevates the risk of yellow rust, which may reduce yield and productivity of wheat in the eastern, northern, northeastern, and southern provinces. These conditions may also contribute to the growth of locust populations, particularly in the northern and northeastern provinces.

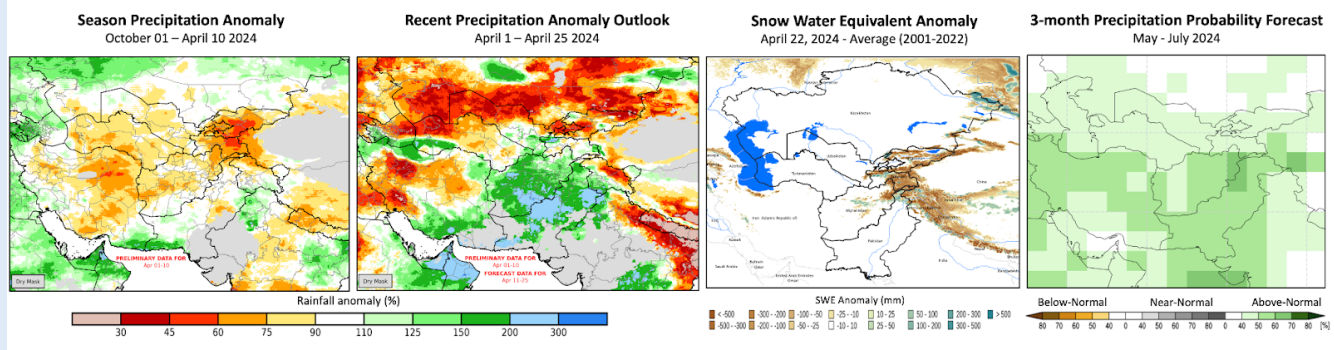
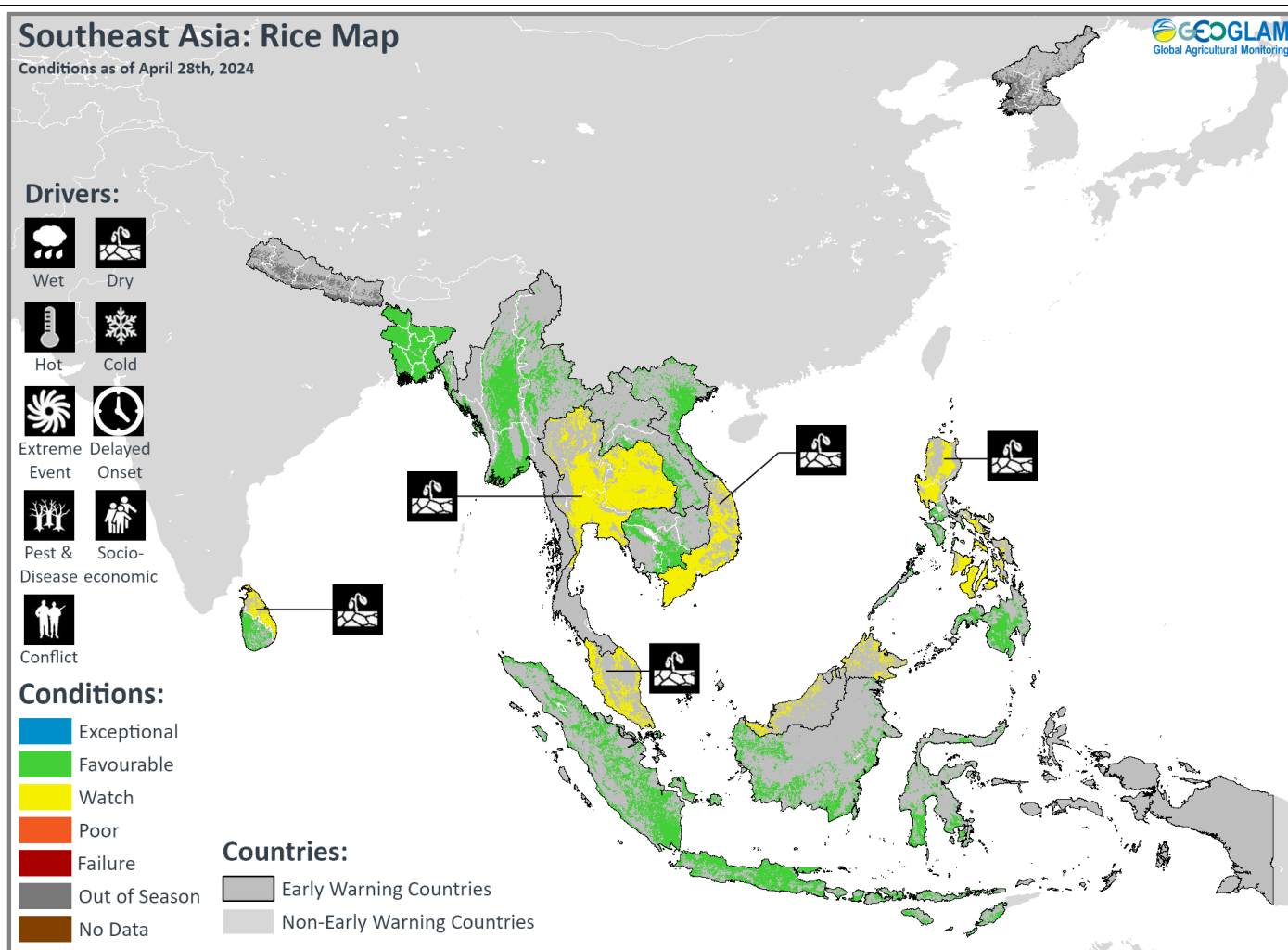


Figure 1. Season rainfall anomaly, recent rainfall anomaly outlook, snow-water equivalent anomaly, and a 3-month probabilistic precipitation forecast. The left and middle-left panels are CHC Early Estimates, which compare current precipitation totals to the 1981-2023 CHIRPS average for respective accumulation periods. These show the percent of average precipitation for Oct. 1st 2023 to Apr. 10th, 2024 (left), using CHIRPS Prelim for Apr. 1st to 10th and a CHIRPS-GEFS forecast for Apr. 11th - Apr. 25th. From [CHC Early Estimates](#). Middle-right: Snow water equivalent (SWE) anomaly for April 22, 2024, compared to the 2001-2022 average for the same date, from [NASA/USGS/FEWS NET](#). Right: WMO probabilistic forecasts for May to July 2024 precipitation, based on models initialized in April, from the [WMO Lead Centre Long-Range Forecast Multi-Model Ensemble](#). Source: UCSB Climate Hazards Center

Southeast Asia



Crop condition map synthesizing rice conditions as of April 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 continues with favourable yields due to sufficient sunlight received during the growing period. Dry-season rice is in the land preparation to seeding stage, and growing conditions are mostly favourable except in **Malaysia** due to limited rainfall and irrigation water supply. Most southern areas are expected to receive above-normal precipitation through June, except for southern parts of **Indonesia** (See Regional Outlook Pg. 16). In northern Southeast Asia, April is the peak month of dry-season rice harvesting. While the harvested area has decreased due to a shortage of irrigation water in some countries, it is still expected to remain at a normal level due to the high trade price. Yield conditions are favourable in countries with abundant irrigation water, and conditions in **Cambodia** and some central areas of the **Philippines** have been upgraded to favourable despite previous dry concerns. Conversely, some concern remains in areas where limited rainfall has been received, including **Thailand**, southern **Viet Nam**, and north and central areas of the **Philippines**. Furthermore, sowing of wet-season (summer-autumn) rice is now underway in South **Viet Nam**. Below-average rains and above-average temperatures are expected in all northern areas of the region through June (See Regional Outlook Pg. 16). Elsewhere in Southeast Asia, conditions remain generally favourable except in the northeast of **Sri Lanka** where early season dryness is impacting *Yala* season planting. Additionally, maize planting is just beginning in the **Democratic People's Republic of Korea** under favourable conditions.

In **Indonesia**, April marks the fourth month of wet-season rice harvesting, and overall conditions remain favourable as a result of sufficient sunlight received during the growing period. The final planted area is 3.6 million hectares, which is 14.8 percent lower than the last wet season. Additionally, planting of dry-season rice began in April with a planted area of 1.0 million hectares, which is 12.9 percent higher than the same time last year. Prior concerns regarding water shortages and limited irrigation water were abated by rainfall received from late March to early April. Growing conditions are favourable, particularly in northern Java Island where the rice fields are managed with technical irrigation systems. In **Malaysia**, about 93 percent of the wet-season rice area has been harvested, and while progress is slower than last year, conditions remain favourable with a forecast yield of 4.4 tons per hectare as a result of sufficient sunlight received during the growing period. Planting of dry-season rice has reached 6 percent of the planned area, and there is some initial concern as progress is slower than last year due to a shortage of irrigation water and no rainfall received. Currently, rice cultivation is mostly carried out in granary areas. In **Brunei**, wet-season rice has been fully harvested in both irrigated and rainfed areas, and end of season conditions are favourable despite a lack of rainfall received during the growing season. Dry-season rice is in

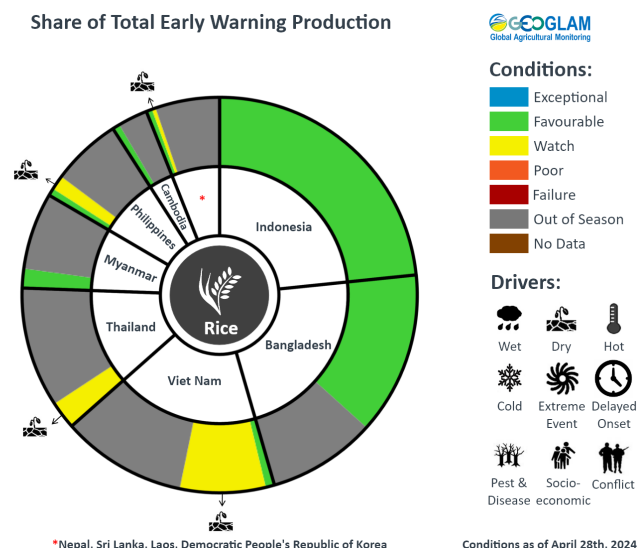
the land preparation stage, though planting activities may be slightly delayed due to low precipitation received over the past several months. However, rainfall levels are expected to return to normal from May onward (See Regional Outlook Pg. 16).

In the **Philippines**, dry-season rice planted from November to December 2023 is now in the harvesting stage. Yield is expected to decrease as much of the country experienced below to well below-average rainfall, except for parts of the centre where near to above-normal rainfall conditions were observed and where conditions have been upgraded to favourable. Elsewhere, low rainfall amounts in combination with warmer than normal temperatures resulted in dry spells and drought conditions. In **Thailand**, harvesting of dry-season rice continues with ongoing concern in most areas due to drought and temperature variations. Planted area is 1.54 million hectares, and about 70 percent of the planted area has been harvested. Final production is expected to decline compared to the previous year due to reduced planted area and yield. In northern **Viet Nam**, dry-season (winter-spring) rice is in the tillering and young panicle forming stages under favourable conditions, and yield is expected to increase due to conducive weather outcomes and better irrigation preparation. In the south,

harvesting of dry-season (winter-spring) rice is underway. Harvested area reached 0.92 million hectares out of 1.89 million hectares planted with a yield of 6.8 tons per hectare. There is some ongoing concern as production is expected to decrease as a result of saltwater intrusion along the Mekong Delta provinces. In April, several provinces declared an emergency regarding severe drought and saltwater intrusion impacts. Additionally, sowing of wet-season (summer-autumn) rice is now underway in the Mekong Delta under favourable conditions with a sown area of 0.24 million hectares. Throughout the country, forecast below-average rainfall and high temperatures through June are likely to impact development of late-planted rainfed crops as well as planting operations for the main wet-season (summer-autumn) in the south (See Regional Outlook Pg. 16). In **Laos**, dry-season rice is in the grain filling to harvesting stage under favourable conditions with adequate irrigation water and beneficial rains received in March and April. Final planted area is around 91 thousand hectares, of which 12 percent has been harvested with 470 thousand tons produced and a yield of 5 tons per hectare. In **Myanmar**, planting of dry-season rice is now complete with an area of 1.04 million hectares accounting for 99 percent of the national plan. Total planted area is higher than last year due to the use of irrigation water and a higher rice market price. Additionally, about 400 thousand hectares have been harvested, primarily in the delta region, with 2.15 million tons produced and a favourable yield of 5.38 tons per hectare, which is higher than last year. In **Cambodia**, dry-season rice is in the late harvesting stage, and conditions have been upgraded to favourable throughout the country despite previous concerns regarding water shortages and high temperatures. The estimated final harvested area is 825 thousand hectares, which is 22 percent higher than last year due to the rising paddy market price. Production is also expected to be higher than last year due to the increase in sown area. Additionally, field preparation is underway for wet-season rice, and planting will begin in May depending on rainfall outcomes. However, forecast low rainfall and high temperatures are expected to delay planting activities (See Regional Outlook Pg. 16).

In **Sri Lanka**, planting of *Yala* season rice and maize crops is just beginning, and conditions are generally favourable except in the northeast where there is some early season dryness. In **Nepal**, wheat harvesting continues while planting of main season maize is underway, and overall conditions remain favourable. In **Bangladesh**, harvesting of winter/*Rabi* season maize and winter wheat finalized in April under favourable conditions. Harvesting of *Boro* season rice (55 percent of rice production) continues and will finalize in May. Furthermore, planting of summer/*Kharif* season maize and *Aus* season rice (10 percent of rice production) is now underway, and planting conditions are favourable. Land preparation is underway for *Aman* season rice crops, which account for 35 percent of rice production, and planting will begin in May. In the **Democratic People's Republic of Korea**, maize planting is just beginning under favourable conditions.

Share of Total Early Warning Production



For detailed description of the pie chart please see description box on Pg. 19.

Regional Outlook: Below-average rains and high temperatures expected in northern areas while above-average rains expected in most southern areas through June

Drier and hotter-than-average conditions could pose challenges for the first part of the wet season rice cultivation period in mainland areas of Southeast Asia and in the Philippines. Rainfall has been below average in these areas since January, and forecasts indicate that these dry conditions will persist during the next two weeks and likely through June (Figure 1 top). Maximum temperatures in April were hot and highly above normal. SubX models forecast that extreme heat (Figure 1 bottom) will also continue into at least May, in Thailand, Laos, Cambodia, Vietnam, and the northern Philippines.

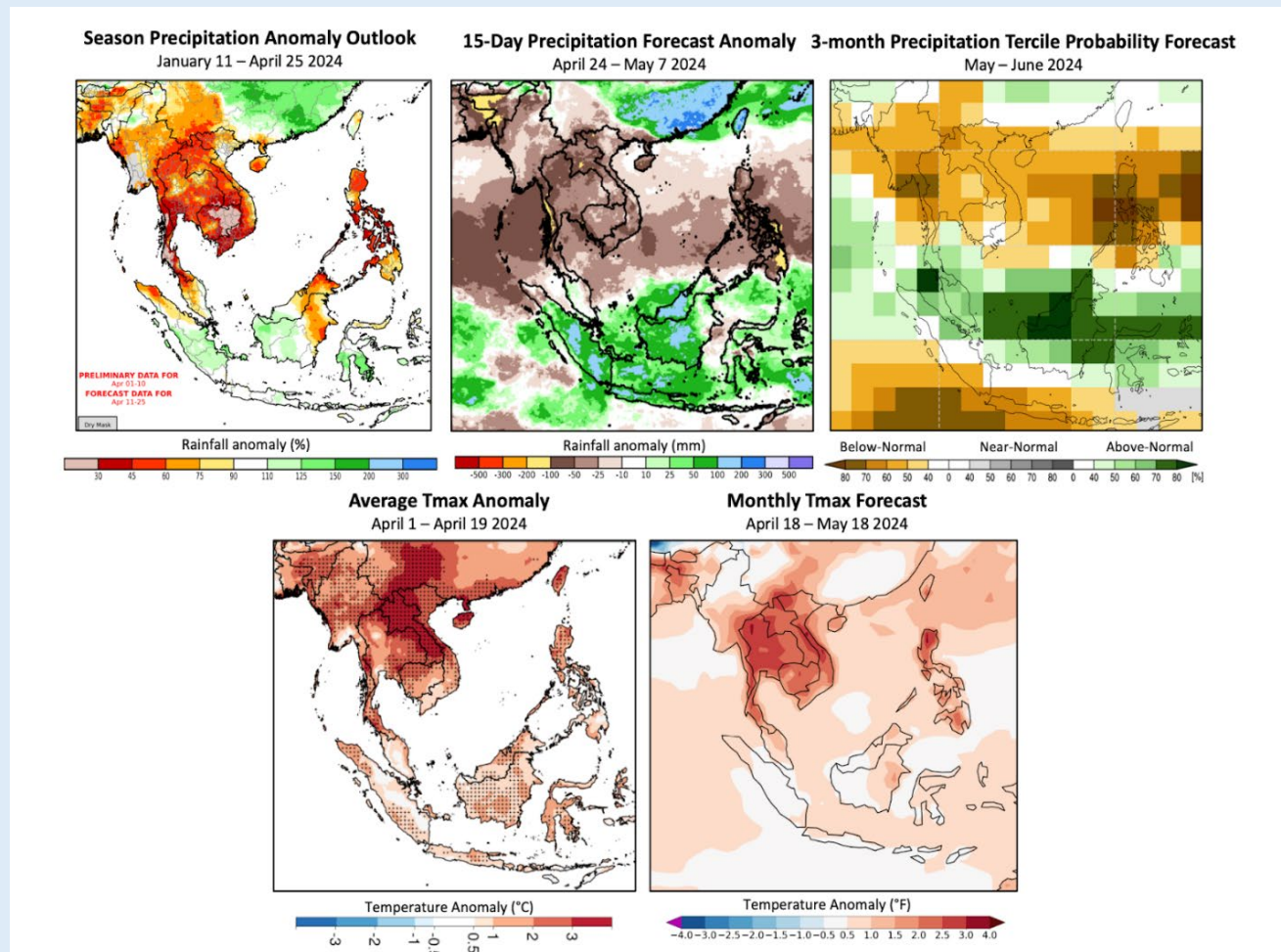
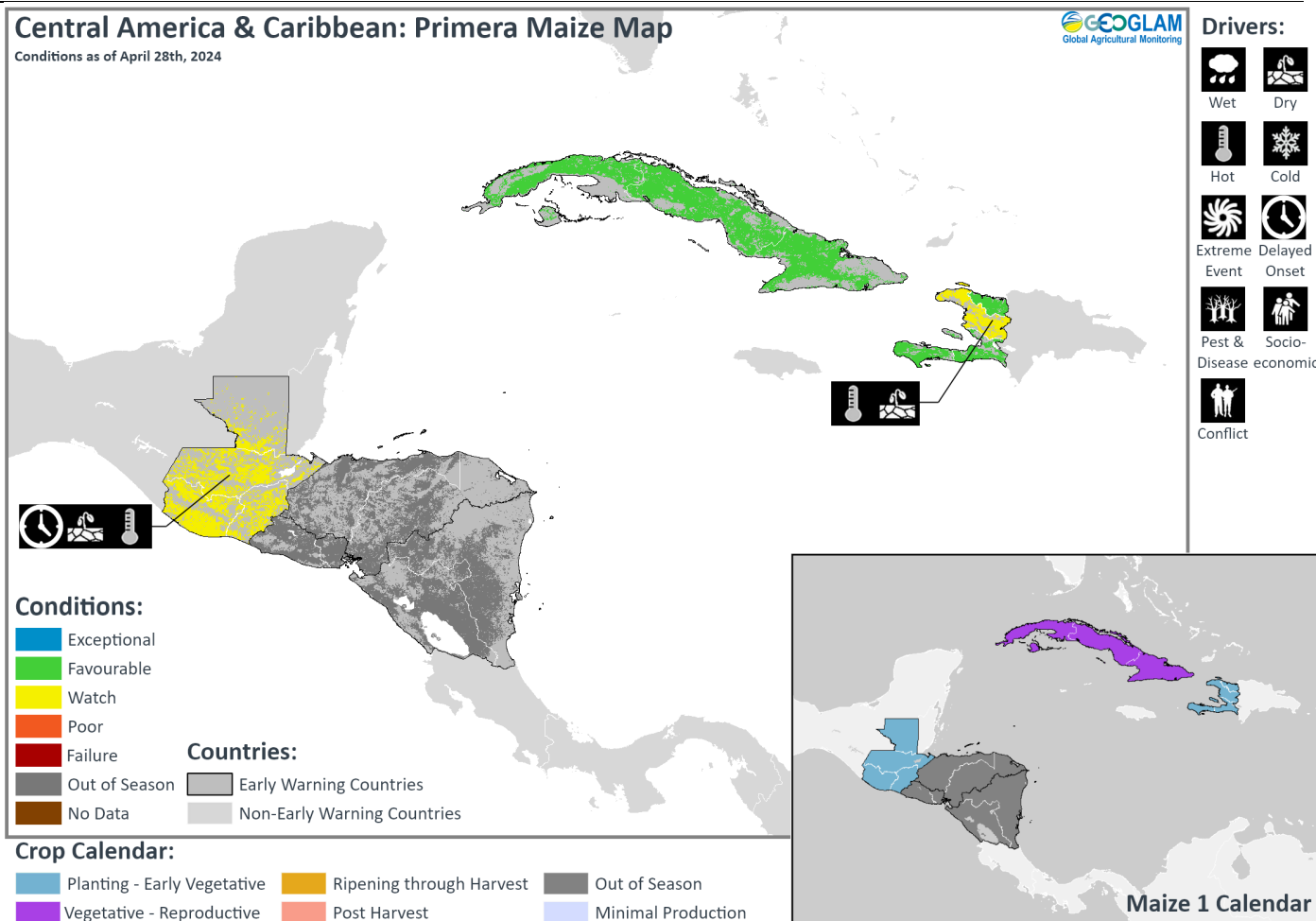


Figure 1. A seasonal rainfall anomaly outlook, a 15-day forecast, a 3-month probabilistic precipitation forecast, and recent and forecast maximum temperatures. Top left: [CHC Early Estimates](#) percent of average rainfall outlook for Jan. 11th to Apr. 25th, 2024, based on CHIRPS Final for Jan. 11th to Mar. 31st, CHIRPS Preliminary for Apr. 1st to 10th, and an unbiased CHIRPS-GEFS forecast for Apr. 11th to 25th. Top middle: CHIRPS-GEFS forecast for Apr. 24th to May 7th. Difference from average precipitation, in mm. Top right: WMO probabilistic forecasts for May to June 2024 precipitation, based on models initialized in April, from the [WMO Lead Centre Long-Range Forecast Multi-Model Ensemble](#). Bottom left: Average daily maximum temperatures for Apr. 1st to 19th, 2024, presented 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. Bottom right: Multimodel mean of NMME SubX [next 30-day forecast](#) maximum temperature anomalies. Source: UCSB Climate Hazards Center

Central America & Caribbean

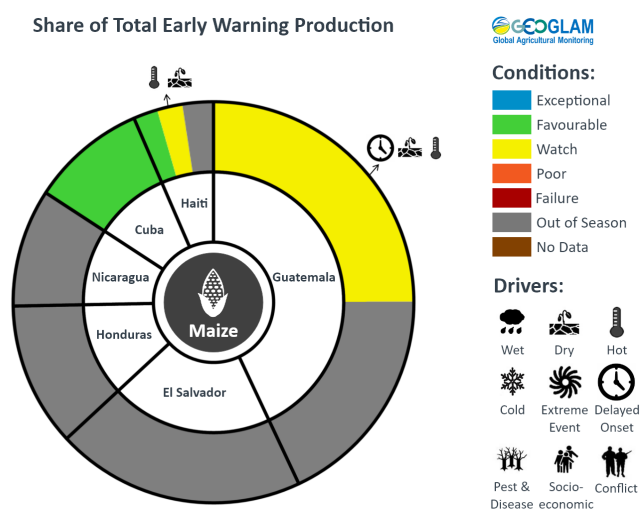


Crop condition map synthesizing Primera Maize conditions as of April 28th. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Conditions that are other than favourable are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

In Central America, harvesting of second season rice finalized in northern **Honduras**. Conditions have improved from previous concerns regarding dry and hot conditions in some key producing areas of **Honduras** during March, and near-average yields are expected. While instances of short-lived heavy rains have been received in some areas due to the influences of high temperatures, the soils are still very dry. Land preparation of *Primera* season maize and rice is now underway in **Guatemala** and **Honduras**, and below-average rains and high temperatures are resulting in abnormal dryness and very low soil moisture which is delaying planting activities. Farmers are still mostly waiting for the start of seasonal rains to begin sowing.

Above-average rains are expected in northern **Honduras** and the northeastern tip of **Nicaragua** through early May, which could prompt planting activities, and above-average rains are forecast across the region for the June to August period. Additionally, record warm sea surface temperatures in the Atlantic in combination with forecast La Niña development are likely to result in a very active 2024 hurricane season (See Climate Influences Pg. 3 and Regional Outlook Pg. 18).

In **Guatemala**, below-average rainfall since mid-March and high temperatures have resulted in low soil moisture levels and delayed planting activities in most areas. While below-normal rains are likely to continue through early May, the country is expected to receive a shift to above-normal precipitation for the June to August period (See Regional Outlook Pg. 18). In **Honduras**, harvesting of second season rice finalized under favourable conditions, and above-average yields are expected in the major producing provinces of Colón and Atlántida located along the northern coast. Land preparation of main season rice is now underway, and while hot temperatures in the west and abnormal dryness in the east are



For detailed description of the pie chart please see description box on Pg. 19.

delaying planting activities, forecast near-average rainfall for April and May is expected to replenish soil moisture deficits from the previous season. The likely rainfall improvement in combination with lower fertilizer prices is expected to result in an above-average planted area, though slightly lower than last year due to comparatively lower market prices. Additionally, forecast above-average rainfall for the June to August period is likely to benefit crop development during the grain filling and maturation stages but also increases the risk of inundation during the start of harvest which could reduce yields (See Regional Outlook Pg. 18). In **Haiti**, planting and development of *Printemps* season cereals is underway under mixed conditions as crops in the southwest have improved from previous dry concerns. However, concern remains in parts of the main producing centre where high temperatures and below-average rainfall have affected more than 90 percent of active cropland. Irrigation has also been affected by irregular and below-average rains received. In **Cuba**, harvesting of second season rice, which accounts for a third of annual production, is now underway under favourable conditions. Additionally, planting and development of main season maize and rice continue under favourable conditions. In the east, crop conditions have worsened slightly due to reduced April precipitation. Though conditions remain near-average, more moisture is needed for germination and early development. Conversely, in late March, intense rains impacted west and central regions of the country, particularly in Artemisa, Mayabeque, Matanzas, and Havana provinces. Havana province experienced an overflow of the Luyano River and subsequent severe flooding. Forecasts indicate lower than normal precipitation across some western and central areas through the end of May, followed by a shift to above-normal rainfall from June (See Regional Outlook Pg. 18).

Regional Outlook: Drier than average start to the Primera season likely followed by a shift to above-average rains in all regions from June to August

Primera season rainfall is off to a slow start, with drier-than-average conditions during April (Figure 1-left) and multiple forecasts pointing to below-average rainfall during coming weeks. Moderate rainfall deficits are forecast to continue into early May in Guatemala (Figure 1 middle-left), and longer-range [SubX](#) and NMME (Figure 1 middle-right) forecasts suggest drier-than-average conditions could last through May. Above-average temperatures are also likely, especially in central and northern Guatemala, based on the SubX forecast for the [next 30-day mean maximum temperatures](#). Farmers may delay planting due to the dry and hot conditions. Haiti received below-average rainfall in recent weeks, and the wet season is forecast to begin in late April, based on the wet conditions forecast by the GEFS forecast from April 24th (Figure 1 middle-left).

According to the [CARICOF](#) outlook, Haiti will likely receive above-normal April to September rainfall, and unusually high temperatures and humidity levels in the Caribbean will pose risks of significant to potentially record-breaking heat stress during July to September and increased frequency of extreme rainfall and floods. An active Atlantic 2024 hurricane season is anticipated, due to the expected La Niña influence and very warm tropical North Atlantic Ocean sea surface temperatures. Seasonal forecasts from NMME (Figure 1-right), WMO, and C3S ensembles similarly indicate above-normal rainfall across Central America and the Caribbean during June to August and lasting into November.

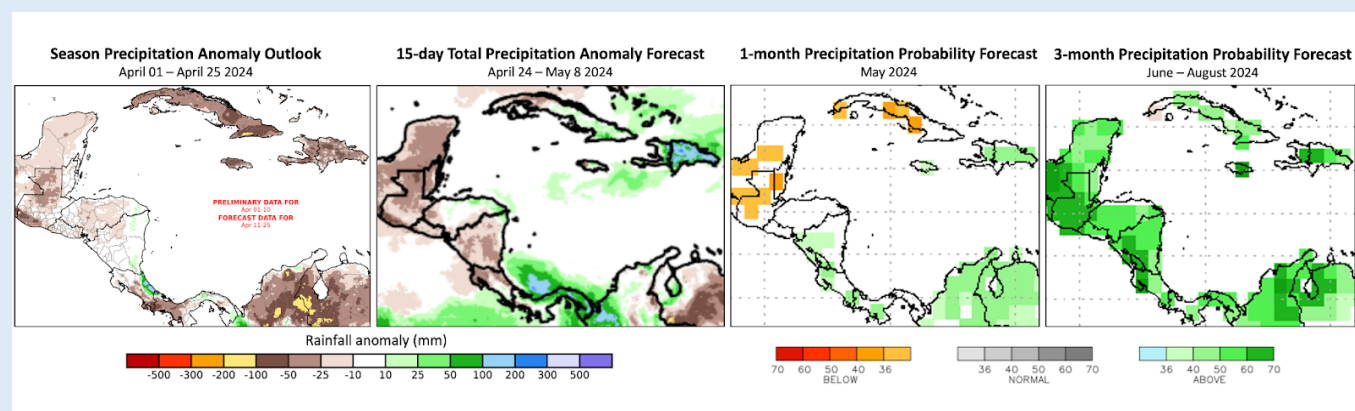


Figure 1. Recent rainfall anomaly, a 15-day rainfall anomaly forecast, and probabilistic rainfall forecasts for May 2024 and June to August 2024. Left: A [CHC Early Estimate](#), which compares recent and outlook precipitation totals to the 1981-2023 CHIRPS average for the same accumulation period. This uses CHIRPS Preliminary for Apr. 1st to 10th and an unbiased CHIRPS-GEFS forecast for Apr. 11th to 25th. Middle-left: CHIRPS-GEFS forecast for Apr. 24th to May 8th. These panels show the difference from average precipitation in mm. Middle-right and right: NMME probabilistic tercile precipitation forecast for May and June to August, 2024, based on April 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). White color indicates there is no dominant category across the model forecasts. 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 May 2nd, 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, ICPCAC, 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.

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

"Average" refers to the average conditions over the past 5 years.

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

Drivers:

These represent the key climatic drivers that are having an impact on crop condition status. They result in production impacts and can act as either positive or negative drivers of crop conditions.

Wet: Higher than average wetness.

Dry: Drier than average.

Hot: Hotter than average.

Cool: Cooler than average or risk of frost damage.

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

Delayed-Onset: Late start of the season.

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

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

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



Wet



Dry



Hot



Cold

Extreme
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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Prepared by members of the GEOGLAM Community of Practice, coordinated by the University of Maryland Center for Global Agricultural Research and funded through NASA Harvest.



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

Cover Photo by: Kara Mobley

Contributing partners



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