

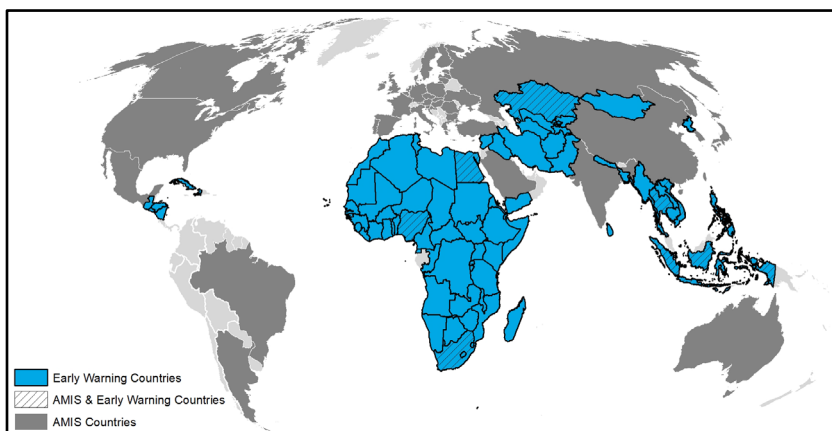


Crop Monitor

EARLY WARNING

Overview:

In northern **East Africa**, main season harvesting is ongoing under mainly poor conditions. In the south, second season harvesting continues under mixed conditions as previous heavy rains and flooding resulted in poor conditions in Somalia, and concern remains in parts of Kenya and the United Republic of Tanzania. In **West Africa**, harvesting of both main and second season cereals is complete or nearing completion in all countries with generally favourable yield outcomes expected. In the **Middle East and North Africa**, there is concern for wheat development across much of North Africa where deficit rains persist and are forecast to continue (See Regional Outlook Pg. 8), and socio-economic concerns continue to impact agricultural activities in Libya and Syria. Agro-climatic conditions remain favourable in Egypt and the Middle East. In **Southern Africa**, main season cereals continue to develop under mixed conditions with expanding dry areas despite brief rainfall improvements in late 2023, and rains are forecast to be below-average in February (See Regional Outlook Pg. 11). In **Central and South Asia**, prevailing dry conditions are a concern for crop development and yield prospects in most regions, and above-average temperatures are expected to continue and could contribute to increased vulnerability and moisture stress during the spring (See Regional Outlook Pg. 13). In southern **Southeast Asia**, conditions are generally favourable for wet-season rice harvesting. In the north, some areas of Thailand and Viet Nam may be impacted by a shortage of agricultural water despite currently favourable conditions for dry-season rice planting. In **Central America & the Caribbean**, *Segunda/Postrema* yields are likely to be affected by generally erratic rainfall distribution and high temperatures that affected normal crop development.



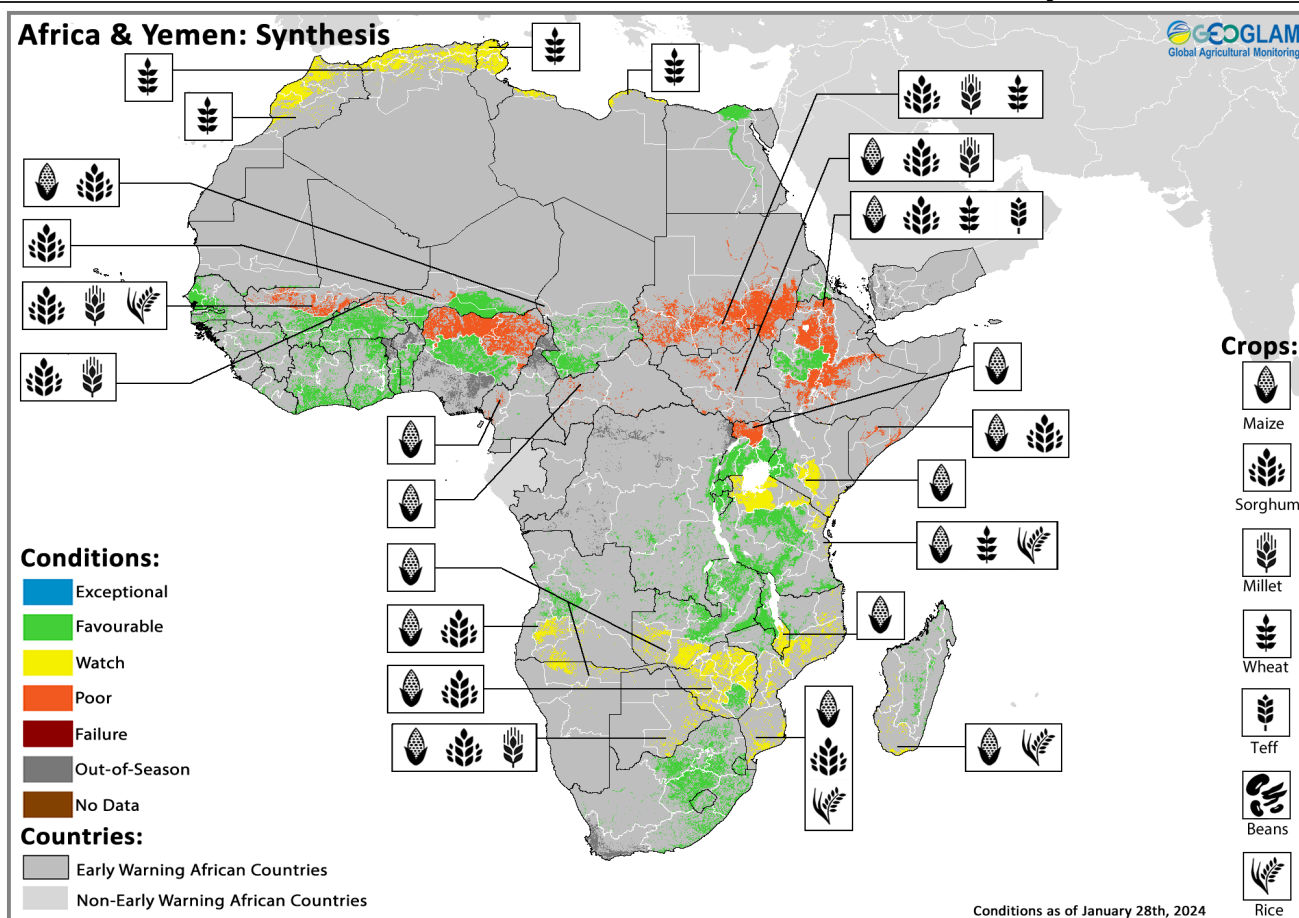
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GEOGLAM Crop Monitor for Early Warning

Crop Conditions at a Glance

based on best available information as of January 28th



Crop condition map synthesizing information for all Crop Monitor for Early Warning crops as of January 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, harvesting of main season cereals continues under generally poor conditions due to a combination of prior seasonal rainfall deficits, subsequent enhanced rains and resultant flooding, and ongoing conflict and socio-economic challenges in affected areas. In the south, previous heavy rains and flooding have impacted crops in parts of Somalia, Kenya, and the United Republic of Tanzania.

WEST AFRICA: Harvesting of both main and second season cereals is complete or nearing completion with near-average yields expected in most regions with the exception of conflict-affected areas.

MIDDLE EAST & NORTH AFRICA: Wheat continues to develop under mixed conditions with ongoing moisture deficits across much of North Africa, particularly in Morocco and Algeria, while agro-climatic conditions in Egypt and the Middle East remain mostly favourable (See Regional Outlook Pg. 8).

SOUTHERN AFRICA: Main season cereals are developing under mixed conditions as El Niño induced dry and hot weather continue to impact crops despite brief rainfall improvements in late 2023 (See Regional Outlook Pg. 11),

and final yields may be impacted in parts of Angola, Namibia, Botswana, Zambia, Zimbabwe, Malawi, Mozambique, and Madagascar.

CENTRAL & SOUTH ASIA: Conditions have been downgraded to watch in most regions due to prevailing dry conditions from October through January, with the exception of southwestern Tajikistan and the main producing regions of Pakistan where conditions remain favourable.

SOUTHEAST ASIA: Conditions are favourable for wet-season rice harvesting in the south except for rainfed crops in Brunei. In the north, harvesting of wet-season rice finalized in December in the north under generally favourable conditions except in Thailand where a combination of drought and flooding impacted final yields.

CENTRAL AMERICA & CARIBBEAN: Concern remains across the region for *Segunda/Postre* season maize and bean crops in Central America due to erratic rainfall distribution and high temperatures that affected the normal development of crops. Harvesting of *Été* season maize and beans finalized in Haiti in December under poor conditions due to generally dry and hot weather.

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 southern Prairies in Canada, the Great Plains and Southwestern US, northwestern Mexico, Columbia, western Venezuela, northeast Brazil, north-central Europe, western Belarus, Ukraine, the Russian Federation, northwestern Kazakhstan, Türkiye, northern and western Ethiopia, southeastern South Sudan, Kenya, southern Somalia, Rwanda, Burundi, western Tanzania, western Angola, and southern China.

There is also a likelihood of below-average precipitation over western and eastern Canada, the Pacific Northwest and eastern US, southern Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, northeast Venezuela, Guyana, Suriname, French Guiana, northern Brazil, southern Peru, central and southern Argentina, Portugal, Spain, Italy, Norway, Finland, Morocco, northern Algeria, Tunisia, Liberia, Côte d'Ivoire, Ghana, southern Togo, southern Benin, southern Nigeria, southern Cameroon, the Central Republic of Africa, northern Republic of Congo, northwest Democratic Republic of the Congo, southeast Angola, western Zambia, Zimbabwe, southern and central Mozambique, Botswana, Namibia, western South Africa, eastern Kazakhstan, Kyrgyzstan, Tajikistan, northern Afghanistan, northern Pakistan, northwest India, western and central China, the eastern Russian Federation, the Republic of Korea, central Thailand, and eastern Australia.

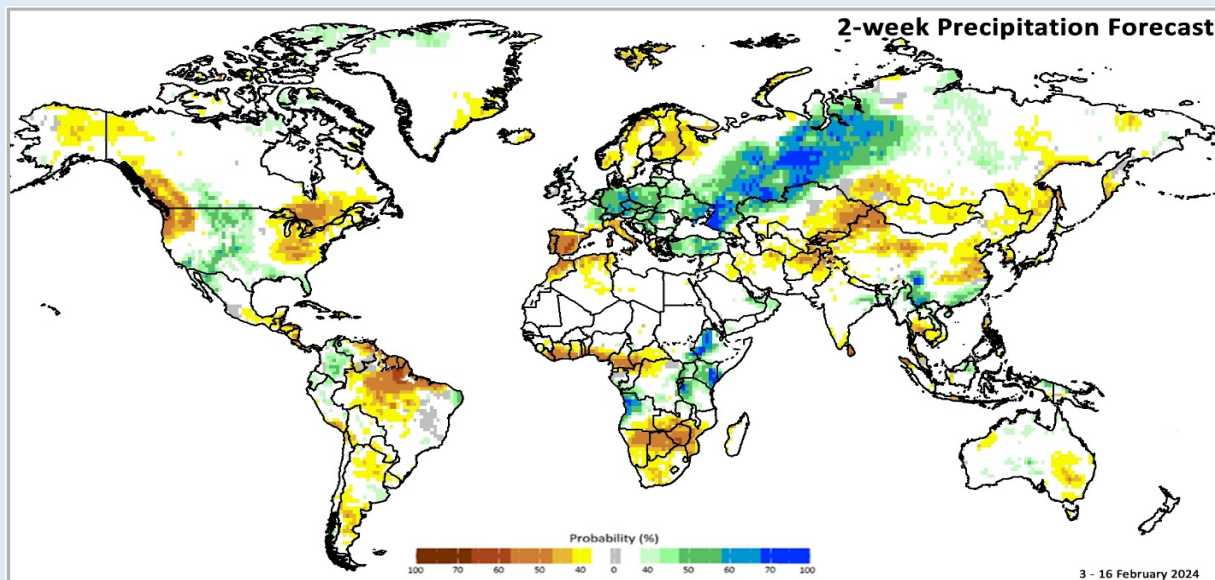


Figure 1: IRI SubX Precipitation Biweekly Probability Forecast for 3 – 16 February 2024, issued on 26 January 2024. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](#)

Climate Influences: Ongoing strong El Niño forecast to weaken during the next several months and ENSO-neutral conditions are likely during April to June with a possible transition to La Niña later this year

The ongoing strong El Niño event is forecast to weaken during the next several months. ENSO-neutral conditions are likely during April to June (73% chance). Long-range outlooks indicate a possible return to La Niña conditions later this year, with a 64% chance of a La Niña event by August to October 2024, based on the CPC/IRI forecast.

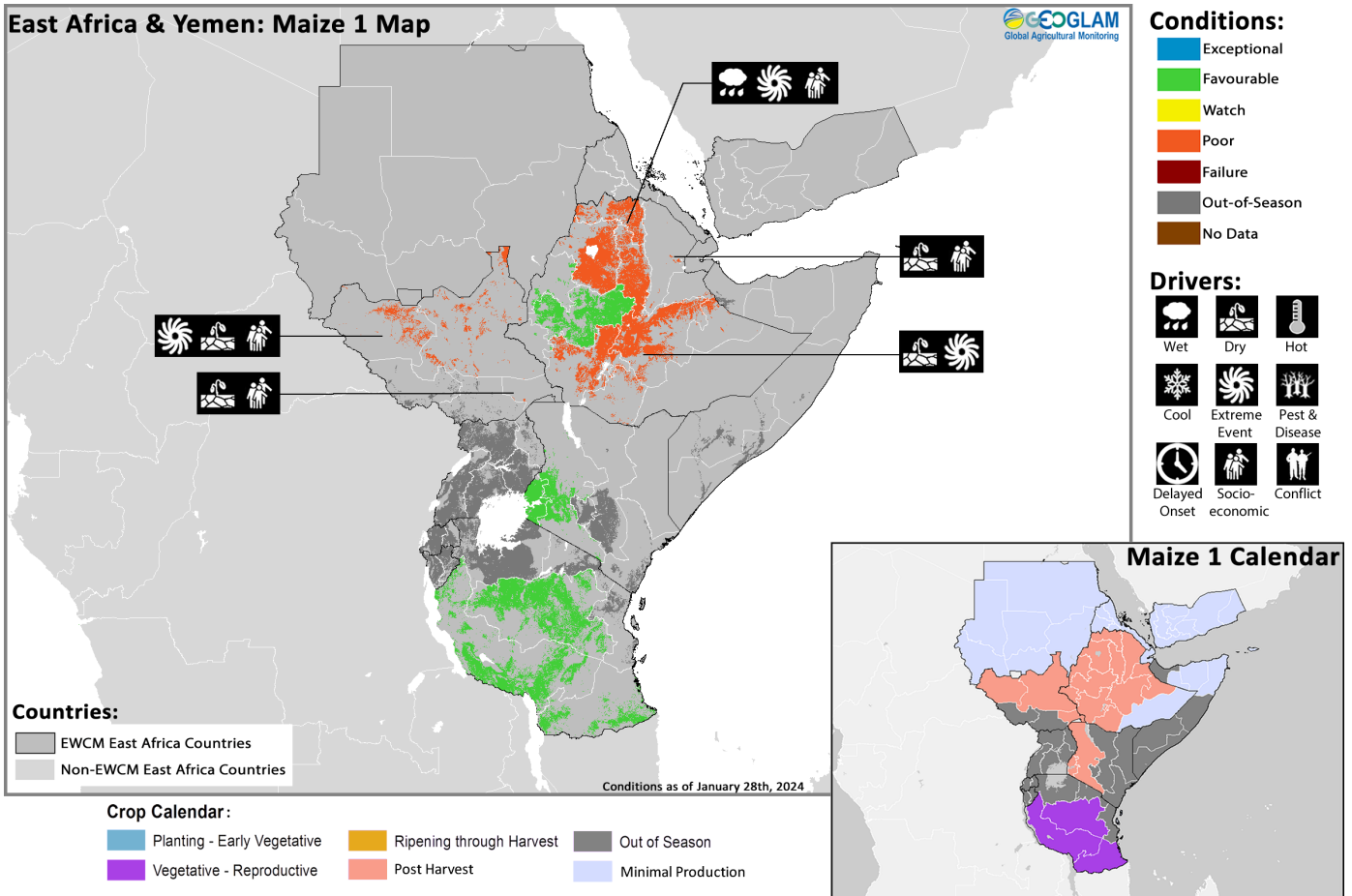
El Niño events tend to enhance precipitation in Central Asia, southern North America, south-eastern South America, and south-eastern China. Drier-than-average conditions tend to occur in northern South America, parts of the northern U.S. and Canada, Southern Africa, the Maritime Continent, and northern Australia.

Positive Indian Ocean Dipole (IOD) conditions continue to weaken and will likely return to neutral during February 2024.

Globally, 2023 was the warmest year on record, and the warming influence of El Niño will likely continue this upward trend into 2024. Warmer temperatures will exacerbate rainfall deficits.

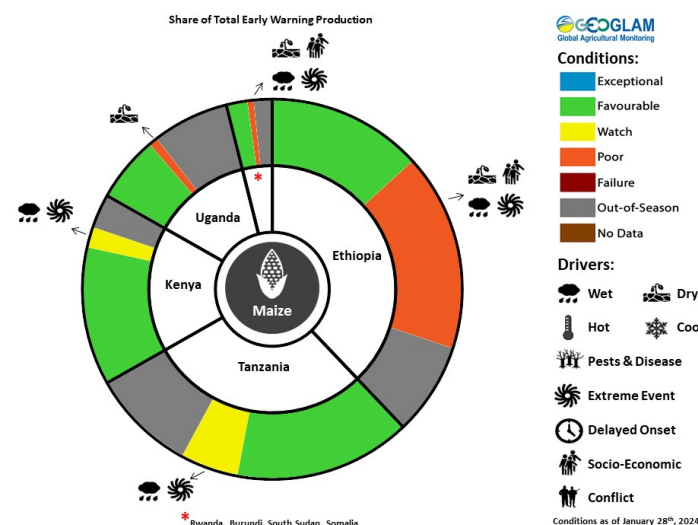
Source: UCSB Climate Hazards Center

East Africa



Crop condition map synthesizing Maize 1 crop conditions as of January 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, harvesting of main season cereals finalized in **Eritrea, Ethiopia, Sudan, and South Sudan** under mostly poor conditions. Dry conditions earlier in the season impacted crops in unimodal areas of **South Sudan** and southwest, central, north-central, and northeastern **Ethiopia**. Conversely, enhanced rains from October 2023 resulted in flooding across mostly the same areas, except in Kapoeta located in the southeast of **South Sudan** and in north-central and northeastern **Ethiopia**. Furthermore, a combination of conflict and related socio-economic challenges influenced poor conditions in **Sudan, South Sudan, and northern Ethiopia**. In **Eritrea** and parts of central-western **Ethiopia**, generally favourable agro-climatic conditions are expected to result in near-normal yields.

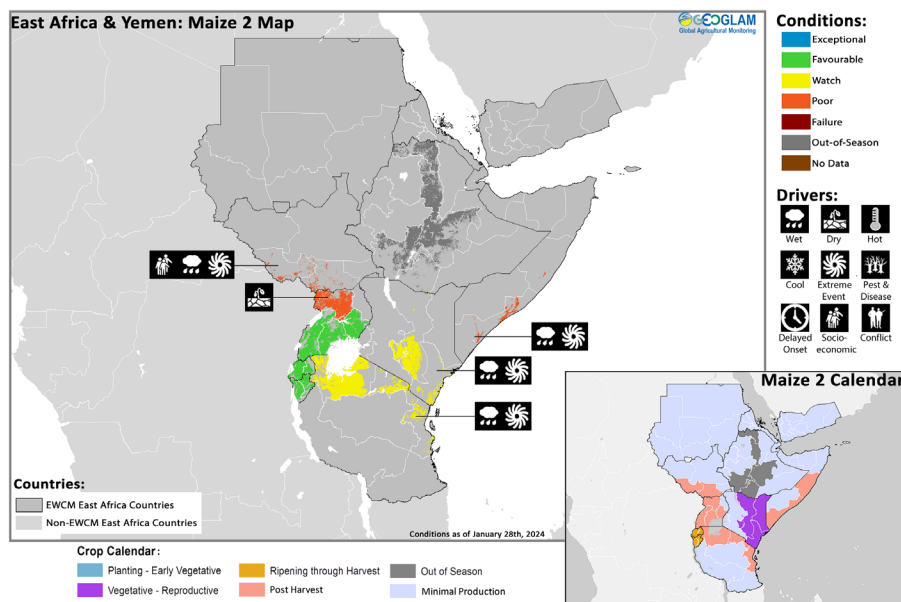


For detailed description of the pie chart please see description box on Pg. 17.

Across southern East Africa, harvesting of second season cereals is complete or nearing completion in **Uganda, Burundi, Rwanda, Somalia, and the United Republic of Tanzania** under mixed conditions. Persistent dry conditions are expected to result in below-average yields in northern **Uganda**. Additionally, conditions in **Somalia** have been downgraded to poor as the October to December *Deyr* rains continued to bring heavy rainfall and widespread flooding through December, particularly in the south.

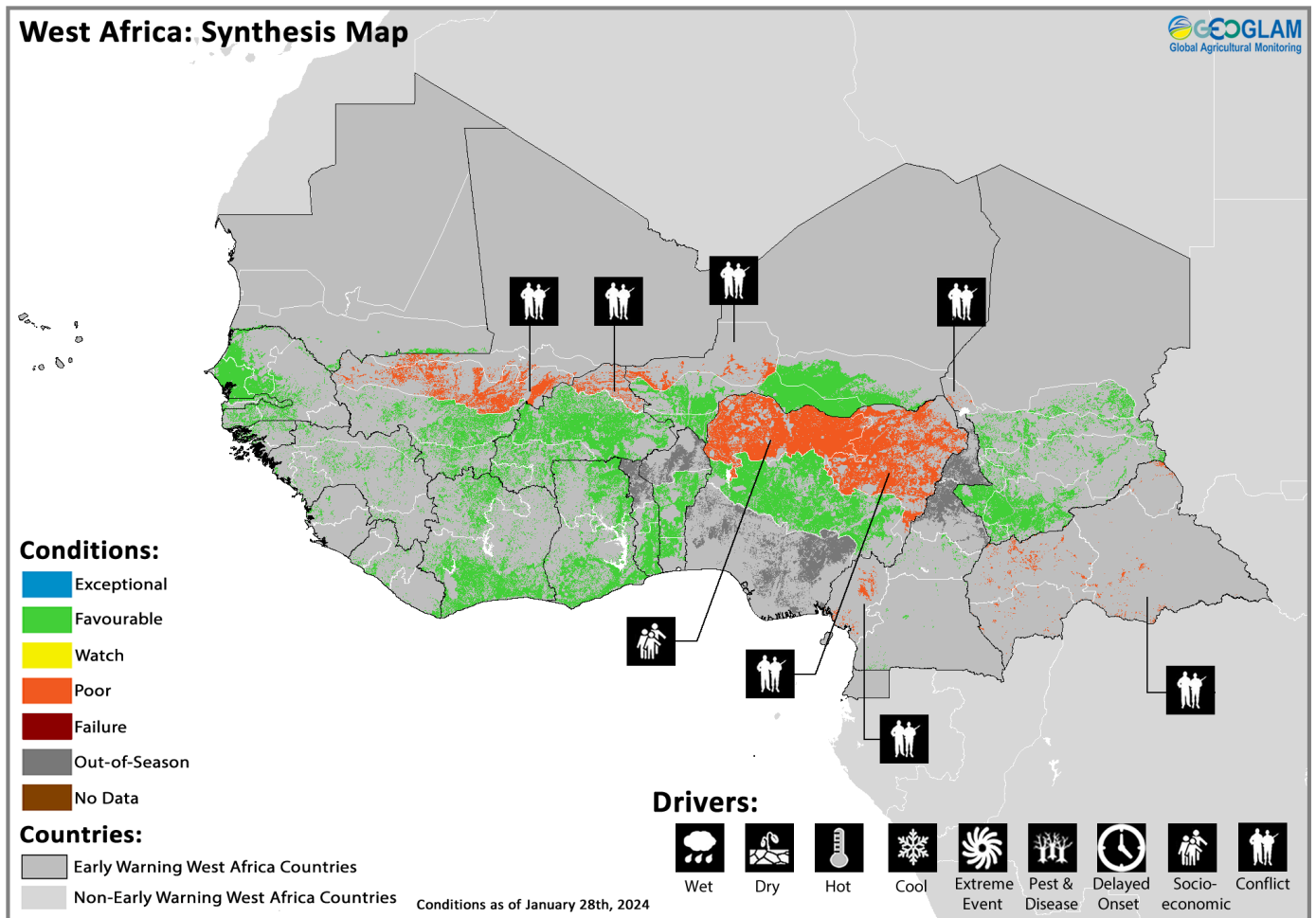
In **Burundi**, the 2024 Season A harvest is expected to be average due to a combination of timely rains, increased availability of fertilizers, and subsidized enhanced maize seeds. In **Kenya**, harvesting of Long Rains cereals finalized in the major producing unimodal areas in the western half of the country under favourable conditions. Conversely, in bimodal areas in the eastern half of the country where Short Rains maize crops are still in the vegetative to reproductive stage, concern remains due to heavy rainfall since early

November that impacted the eastern part of the country with flooding and river overflows, although some areas have since recovered. At the national level, the area under maize cultivation has increased significantly as expectations of good rainfall performance as a result of El Niño have prompted farmers to expand plantings. In **Somalia**, the October to December 2023 *Deyr* rainfall season was the second wettest on record, with heavy rainfall and flooding impacting central and southern areas and damaging 83,360 hectares of cropland, according to [December FEWS NET estimates](#). Agricultural activities for the *Deyr* season were delayed in the lowland areas of the south but started up again in December with the gradual recession of floodwaters. Harvesting activities from recessional cropping are likely to take place from February to March, and production is expected to be above-average as a result of the abundant soil moisture. In areas not affected by the flooding, the rains were beneficial for crop production, following in the wake of historic drought during the last three La Niña years from 2020 to 2023. However, the combination of several consecutive years of drought followed by extensive flooding have diminished household assets and typical support structures. In northern bimodal areas of the **United Republic of Tanzania**, harvesting of *Vuli* season cereals is nearing completion while planting and development of *Masika* season cereals continue under watch conditions as a result of heavy rainfall and flooding that impacted cropping activities. Conversely, in central and southern unimodal areas, *Msimu* season cereals have recovered with near-average yields expected.



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

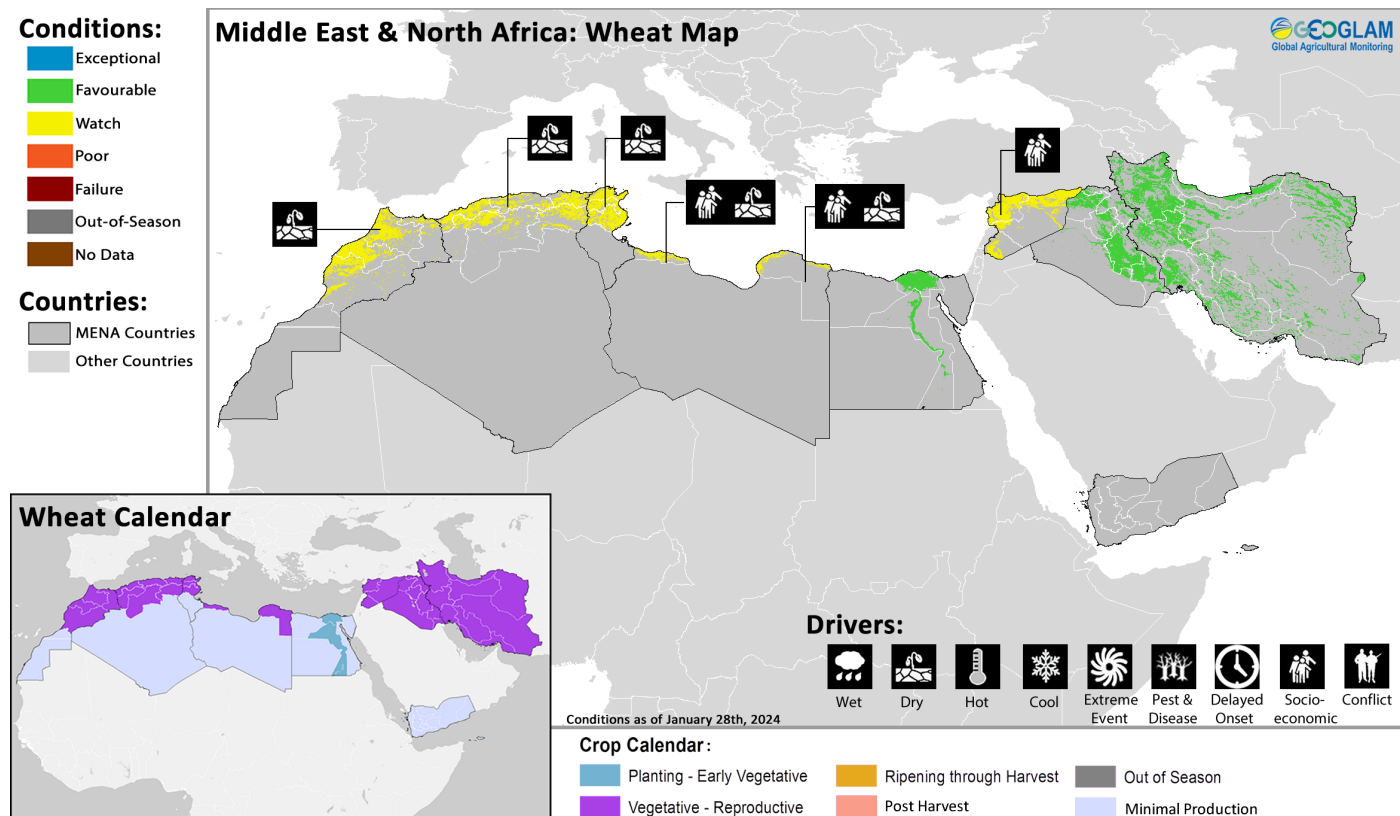
West Africa



Crop condition map synthesizing crop conditions as of January 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 West Africa, harvesting of both main and second season cereals is complete or nearing completion in all regions, including **Guinea-Bissau, Guinea, Sierra Leone, Liberia, Cote d'Ivoire, Ghana, Togo, Benin, Nigeria, Cameroon,** and the **Central African Republic** as well as in the Sahelian countries of **Senegal, Gambia, Mauritania, Mali, Burkina Faso, Niger,** and **Chad**. Additionally, second season rice is in the vegetative to reproductive stage in **Mali** and **Mauritania** for harvest from mid-February. Conditions have remained favourable throughout the season, and final yields are expected to be near-average in most countries, with the exception of conflict-affected areas of the region, including central **Mali**, northern **Burkina Faso**, western Niger, northern **Nigeria**, western **Chad**, the Southwestern region of **Cameroon**, and the **Central African Republic**.

Middle East & North Africa



Crop condition map synthesizing wheat conditions as of January 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 is developing under mixed conditions for harvest from April. In North Africa, dry concerns remain in most west and central areas, including in **Morocco, Algeria, Tunisia, and Libya** despite some precipitation received in early January. Vegetation conditions in **Morocco** and western **Algeria** have been particularly impacted by the deficit rains. This is the third consecutive year with persistent dryness in northwestern parts of the region, and the increasing drought frequency is negatively impacting wheat crops (See Regional Outlook Pg. 8). In **Egypt**, harvesting of *Nili* season (Nile Flood) rice finalized in January while wheat crops continue to develop, and conditions remain favourable.

In the Middle East, agro-climatic conditions remain generally favourable. However, currently below-average rainfall in **Iran**, particularly in Khorasan located in the northeast, may impact crops as the season progresses. Additionally, socio-economic challenges relating to insecurity continue to impact agricultural production throughout **Libya** and **Syria**.

Regional Outlook: Seasonal rainfall deficits are forecast to worsen across much of North Africa through February with unlikely improvement

Poor seasonal rainfall performance is expected to continue in North Africa through at least early February (Figure 1-left). There are limited opportunities for substantial improvement of seasonal totals in deficit areas. Due to earlier rainfall deficits and the below-average rainfall in recent weeks, Morocco, western Algeria, and eastern Libya received only 50 to 75 percent of average amounts for November 1st to January 20th. Dry conditions are forecast across much of North Africa during the next two weeks, according to the GEFS and ECMWF forecasts from January 24th.

Since most rain typically occurs during fall and winter, if the two-week forecast for dry conditions materializes, there will be greater-than 75 percent probabilities of below-normal November 2023 to July 2024 rainfall totals in Morocco, western Algeria, and eastern Libya. That assessment is based on rainfall from past years (1981-2023) as possible outcomes for early February to July 2024. Although they do not show strong signals, WMO, NMME, and C3S forecasts all show a tilt in the odds for below-normal rainfall for February to April 2024 (Figure 1-middle). During spring 2024, crops will likely be facing below-normal root zone soil moisture levels (Figure 1-right) and atypically hot temperatures, based on observed and forecast conditions which will likely exacerbate the impacts of the drier-than-average conditions.

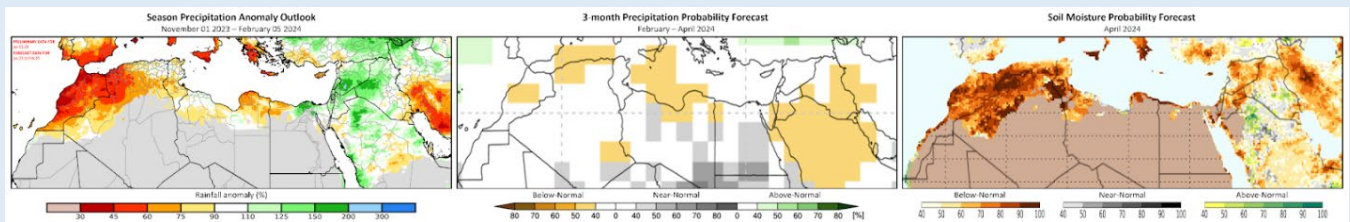
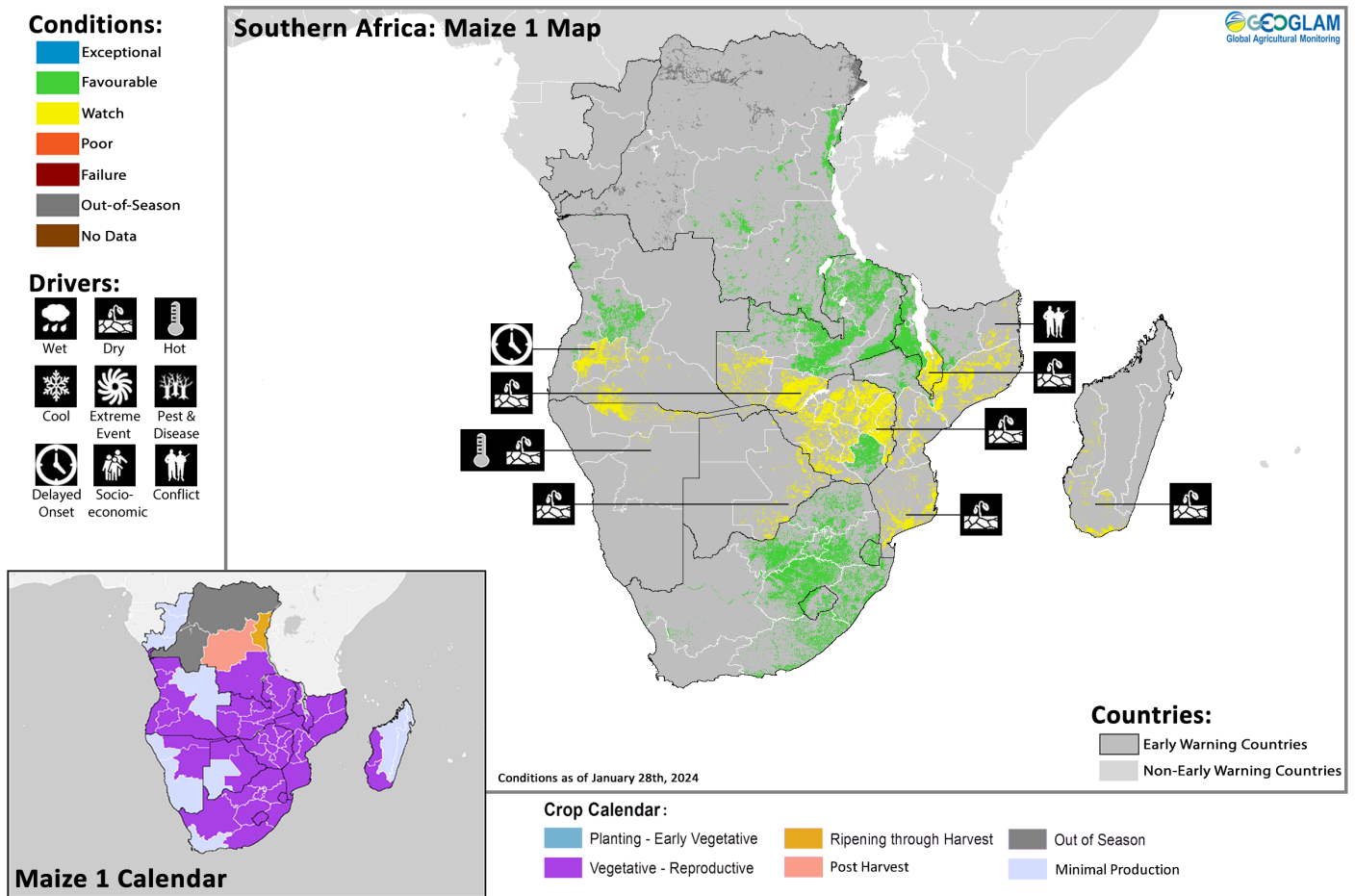


Figure 1. Seasonal rainfall anomaly outlook, a 3-month probabilistic precipitation forecast, and a probabilistic soil moisture forecast for April 2024.

Left: An outlook for percent of average rainfall for November 1st, 2023, to February 5th, 2024, based on CHIRPS preliminary data for Jan. 1st to 20th and a 16-day CHIRPS-GEFS (bias-corrected GEFS) forecast from Jan. 21st. Average is the 1981-2023 CHIRPS average for this period. From [CHC Early Estimates](#). Middle: WMO probabilistic forecast for FMA 2024 precipitation tercile, based on models initialized in January, from the [WMO Lead Centre Long-Range Forecast Multi-Model Ensemble](#). Right: Probabilistic forecast for April 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 December 2023, and forecasted meteorological conditions for January to April 2024 from the North American Multi-Model Ensemble (NMME) and the GEOSv2 model. Source: UCSB Climate Hazards Center

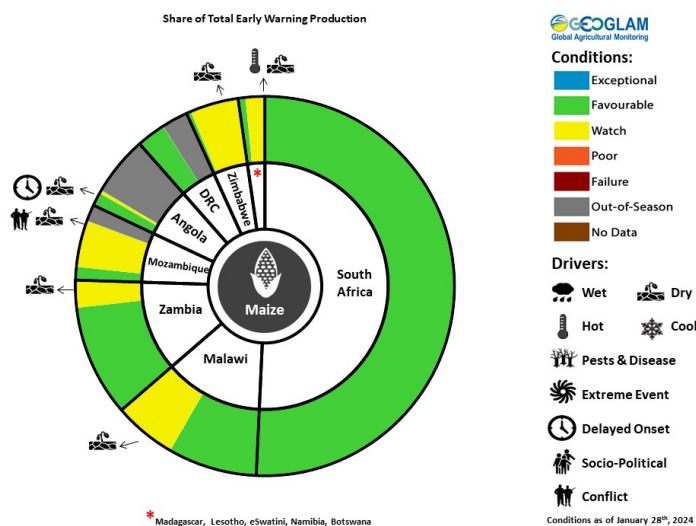
Southern Africa



Crop condition map synthesizing Maize 1 conditions as of January 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, main season cereals are mostly in vegetative to reproductive stage across **Angola, Namibia, Botswana, Zambia, Zimbabwe, Malawi, Mozambique, South Africa, Lesotho, eSwatini, and Madagascar** under mixed conditions with expanding dry areas. The season thus far has been characterized by strong fluctuations between wetter and drier periods. Erratic rains in October were followed by dry and hot conditions in November and early December in central and western areas, contributing to crop wilting, a shortened agricultural season, and a likely reduced planted area. The November dry spell likely contributed to the failure of sowing efforts in October and early November. Conversely, a shift to above-average rains in mid-December resulted in some localized flooding but also supported replanting efforts, particularly in central and southern areas including parts of **Zambia, Malawi, northwestern United Republic of Tanzania, parts of Zimbabwe, central and eastern Madagascar, central and eastern South Africa, Lesotho, eSwatini,** and portions of southeastern **Angola**. Despite the improved rains in late 2023, dry conditions returned in early to mid-January, and seasonal rainfall totals remain below-average across most central and western areas. Severe drought conditions are now present in central **Namibia, Botswana,** and parts of western **Zimbabwe**. Forecasts indicate a continuation of below-average rains through mid-February that could result in large two-week rainfall deficits, posing a high risk to crops during critical growth phases in affected areas (See Regional Outlook Pg. 11). Additionally, elevated temperatures are indirectly affecting crops by exacerbating the dry conditions through increased evaporation. Furthermore, Fall Armyworms are currently present in eastern **Botswana,** western **Angola,** northeastern **eSwatini,** north and central **Mozambique,** and parts of **Zambia,** but their impact is currently localized.

In **Angola,** rainfall improvements in November and December 2023 benefitted soil moisture, particularly in the coastal areas where conditions have been upgraded to favourable, though concern remains in parts of the south and centre still experiencing impacts from a late onset of seasonal rains that delayed planting activities as well as erratic rains in January. El Niño linked forecasts of continued below-average precipitation and warmer temperatures through March are expected to impact the main cereal producing areas of the centre and south. Conversely, rainfall forecasts are more favourable in the minor producing north where conditions remain favourable (See Regional Outlook Pg. 11). In **Zambia,** dry concerns remain in the south and have expanded into the west with below-average rains received in these areas from December to January. Elsewhere, conditions remain borderline favourable with delayed and erratic rains impacting some localized areas. In **Zimbabwe,** dry concerns remain in most areas with the exception of the southeast where good rains in December 2023 have led to significant vegetation improvement. In **Malawi,** concern remains in the south where below-average cumulative rains continue to impact crop development despite generally above-normal precipitation



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

received from mid-December to mid-January. In the centre and north, erratic rainfall in late November and December 2023 may have affected planting and early development. However, conditions remain favourable in these areas as the recent enhanced rains are contributing to increased agricultural activities such as weeding and fertilizer application. Overall, close monitoring is required in central and southern regions where forecasts indicate below-average rains through February (See Regional Outlook Pg. 11). In **Mozambique**, concern remains in the centre and south, and conditions have been downgraded to watch in the east due to expanding dry areas. The delay of the November and December rains by over 20 days in most areas is likely to shorten the crop growing season as the rains are expected to cease before the crops are ready for harvest. However, enhanced precipitation received in mid to late December initiated planting activities in most areas (See Regional Outlook Pg. 11). There is also concern in the Cabo Delgado region located in the northeast as new attacks are affecting agricultural activities in the province, particularly in

Mocimboa da Praia and Macomia districts. In **South Africa**, following dry conditions during early summer, widespread rains since early December have supported planting, emergence, and early crop development over most maize producing areas. Rainfall and temperature outcomes in February will be critical for production outcomes. In **Madagascar**, concern remains in areas of the south due to poor rainfall received in December 2023. Conditions have also been downgraded to watch in the west due to similar dry concerns, while rice planting in the centre and east continues under favourable conditions. While the passage of Cyclone Alvaro in early January improved seasonal rainfall totals, soil moisture and vegetation conditions remain below-average in the south and west. In the **Democratic Republic of the Congo**, harvesting of main season maize finalized in the centre and is underway in the east while planting of second season maize continues in the centre and southeast. Overall conditions remain favourable with some heavy rainfall received in the northeast in December 2023 and in the south during early January 2024, which may impact harvesting activities.

Regional Outlook: Below-average rainfall and above-average temperatures forecast through mid-February across parts of the region

Rainfall conditions were mixed during recent weeks, and there was notable improvement from the drier-than-average conditions in November and early December (Figure 1-left). Above-average December 21st to January 20th rainfall was observed in Zambia, Malawi, northwestern Mozambique, western Zimbabwe, central and eastern Madagascar, central and eastern South Africa, Lesotho, eSwatini, and portions of southeastern Angola. Despite the wetter conditions in these areas, October 1st to January 20th rainfall totals are below-average in many central and western areas—in central and southeastern Angola, Namibia, Botswana, western Zambia, western and northeastern Zimbabwe—as well as in portions of southwestern and northern South Africa, western Mozambique, and western and southern Madagascar. Late onset of consistent rains delayed planting by 10 to 30 days across many central locations.

Forecasts for the next several weeks are highly concerning. There will be several consecutive weeks of substantially below-average rainfall and above-average temperatures, based on GEFS, ECMWE, and SubX model forecasts for late January through mid-February. Forecast dry conditions could result in large two-week rainfall deficits of 50 mm to over 100+ mm (for Jan. 25th to Feb. 8th) in southeastern Angola, southern and central Zambia, Zimbabwe, northern Botswana, central and southern Malawi, Mozambique, and western Madagascar, based on the CHIRPS-GEFS forecast from January 25th (Figure 1 middle-right). Many crops will be in vegetative or entering reproductive growth stages during this period, so if prolonged dry and hot conditions materialize, rainfed crop development could be adversely impacted.

Most central and southern locations will have below-average rainfall totals for October to early February (Figure 1 middle-left), based on preliminary January 1st to 20th rainfall estimates and a two-week forecast (Figure 1 middle-right). Through the remainder of the season, the chances of drier-than-normal (Figure 1-right) and hotter-than-normal conditions will remain elevated, according to WMO, NMME, and C3S probabilistic forecasts for February to April.

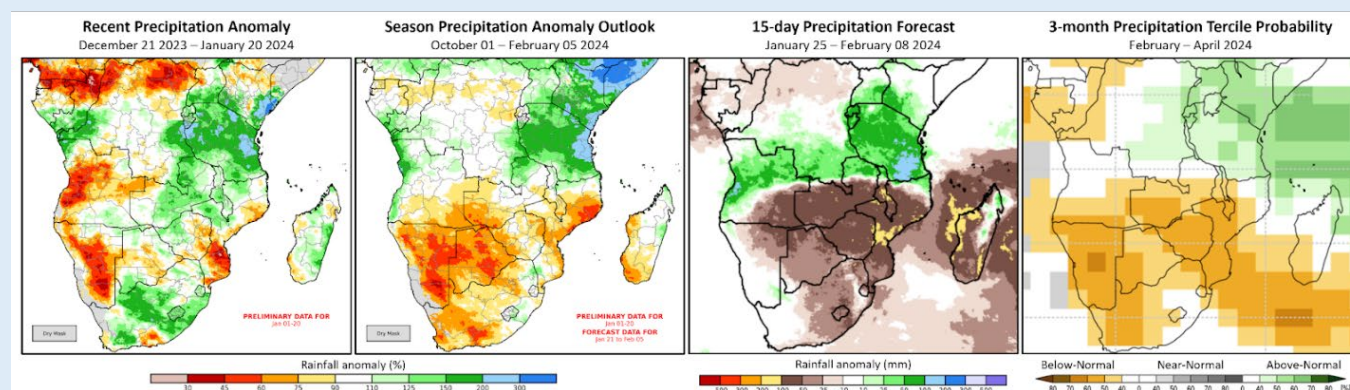
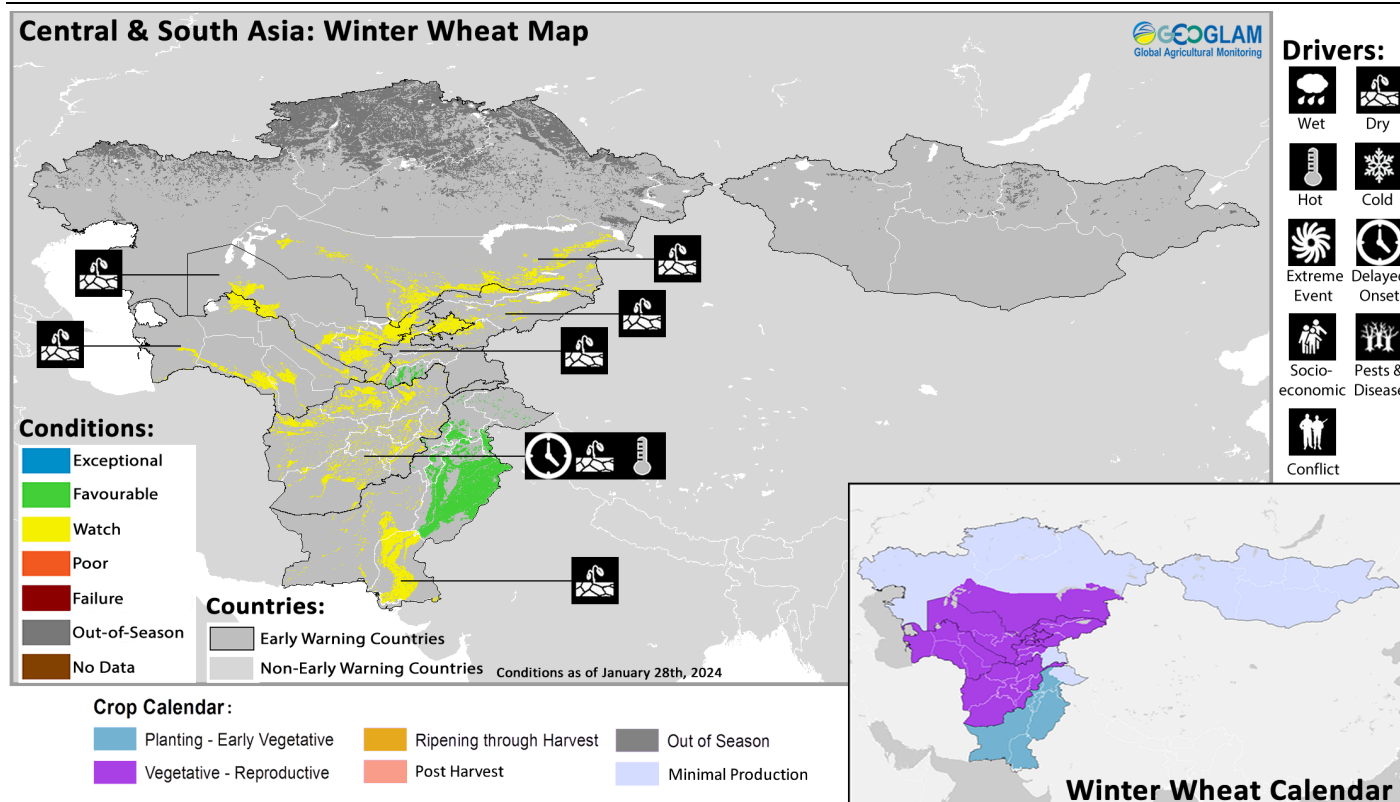


Figure 1. Recent rainfall anomaly, an outlook for October 1st to February 5th, a 15-day rainfall anomaly forecast, and a 3-month probabilistic precipitation forecast.

The left and middle-left panels are CHC Early Estimates, which compare current precipitation totals to the 1981-2022 CHIRPS average for respective accumulation periods. These show the percent of average precipitation for Dec. 21st 2023 to Jan. 20th, 2024 (left), using CHIRPS Prelim for Jan. 1st to 20th, and for Oct. 1st to Feb. 5th (middle-left), using a CHIRPS-GEFS forecast for Jan. 21st - Feb. 5th. From [CHC Early Estimates](#). Middle-right: A 15-day CHIRPS-GEFS (unbiased GEFS) forecast from January 25th, with values indicating how the forecast compares to the CHIRPS average for this period. Right: WMO probabilistic forecasts for FMA 2024 precipitation, based on models initialized in January, from the [WMO Lead Centre Long-Range Forecast Multi-Model Ensemble](#).

Source: UCSB Climate Hazards Center

Central & South Asia



Crop condition map synthesizing Winter Wheat conditions as of January 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 is in the vegetative to reproductive stage across southern **Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Turkmenistan, and Afghanistan**. Conditions have been downgraded from favourable to watch in most regions due to prevailing dry conditions and despite El Niño typically being associated with above-average precipitation for the region. Conversely, conditions remain favourable in northwestern **Tajikistan** and in the major producing regions of **Pakistan** where planting of *Rabi* wheat continues.

In **Afghanistan**, the onset of the winter wet season was delayed by up to ten weeks, and the country experienced persistent dry and hot weather from October to mid-January, particularly in the north and northeast, culminating in low soil moisture levels and near minimum record snow water volumes. While the planting window typically finalizes in December across the country, this season they were extended into the end of January due to above-average temperatures and the absence of ground snow that prevented timely sowing. In areas that were not planted by the end of the winter wheat planting window, the same areas will be used for spring wheat planting. This could lead to a significant reduction in winter wheat production and could potentially reduce the total area dedicated to wheat cultivation at the national level. For irrigated crops, farmers carried out planting activities in areas where sufficient surface water was available, and irrigated planting progress was near-average at the country level as of December. The current forecast indicates improved rainfall into mid-February. However, likely above-average temperatures through April could contribute to early snowmelt, increased risk of flash flooding, moisture stress in rainfed crops, and germination issues for irrigated crops (See Regional Outlook Pg. 13). In **Pakistan**, harvesting of *Kharif* (summer) season rice finalized in January under favourable conditions while planting of *Rabi* wheat continues under mixed conditions as the country has not received rainfall since early December. The situation could be mitigated if rains are received soon; however, conditions in the minor producing Sindh and Balochistan provinces have been downgraded to watch for the time being as the regions are experiencing minor drought. Conversely, conditions in the main producing Punjab province remain favourable as the majority of crops are irrigated. The discharge of reservoirs is currently sufficient for irrigation water supply, but availability is waning. At the national level, the total planted area for wheat is currently well above-average as a result of record prices as well as government support to incentivize planting. However, if the rains do not improve in the next two to three months, both rainfed and irrigated wheat crops could be affected.

Regional Outlook: Below-average October through January precipitation raise concerns for winter wheat production across parts of the region

Substantially below-average October 1st to January 20th precipitation (Figure 1-left) and above-average temperatures have severely impacted snowpack development across Southern and Central Asia (Figure 1 middle-right). Strong winter storms are necessary to bring current [record-low snow water equivalent](#) levels up to normal amounts. The drier-than-average conditions throughout much of October to mid-January also raise concern about the viability of winter wheat production.

Precipitation and snowpack typically increase during January to March, so there should be opportunities for improvement. A measured optimistic outlook is supported by the latest GEFS and ECMWF forecasts, which indicate above-average precipitation during late January to early February. If the GEFS forecast materializes, ample precipitation could bring central and northern Afghanistan October 1st to February 5th precipitation totals up to average and localized above-average amounts (Figure 1 middle-left). Precipitation deficit areas across southern areas of the region—where only 50 to 75 percent of average amounts have been observed—could potentially reach near-average amounts if this forecast materializes. However, there is a high level of uncertainty regarding how sustained these more favourable conditions will be in southern areas of the region. Seasonal precipitation forecasts lack agreement in most of Afghanistan, Turkmenistan, and Uzbekistan (Figure 1-right). Models are favouring above-normal February-to-April precipitation in eastern and more northern locations—in Tajikistan, Kyrgyzstan, and Kazakhstan, and in northeastern Afghanistan.

Temperatures have been several degrees warmer than average during the past several months and above-average temperatures will likely continue. Warm temperatures in northern, northeastern, and western Afghanistan have reportedly caused almond crops to bloom early, which makes these more susceptible to damaging frosts. Regionally, higher winter and spring temperatures will more quickly melt snow, increasing the chances of early flooding and loss of seasonal snowpack. If hydrologic conditions do not improve, there will be high risks of moisture and heat stress in rainfed crops during spring, particularly during dry spells. Irrigated crops in downstream areas that do not have access to groundwater irrigation could also be impacted.

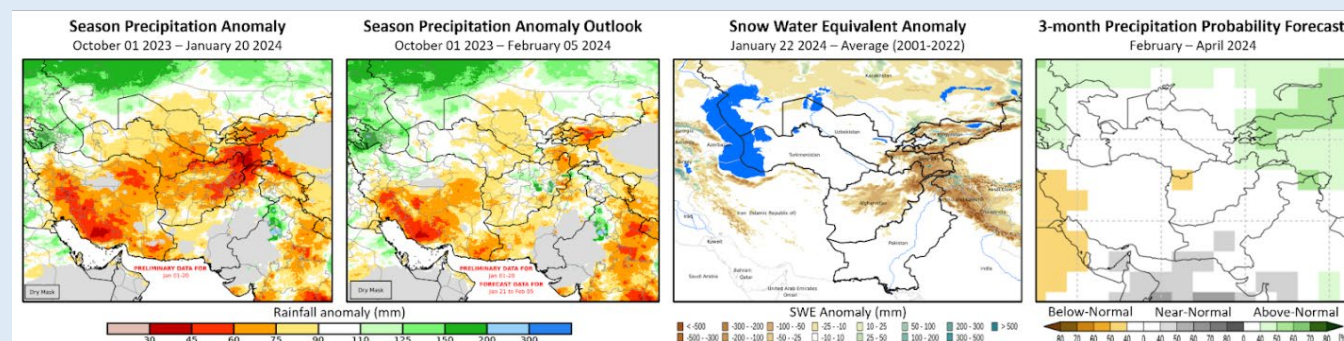
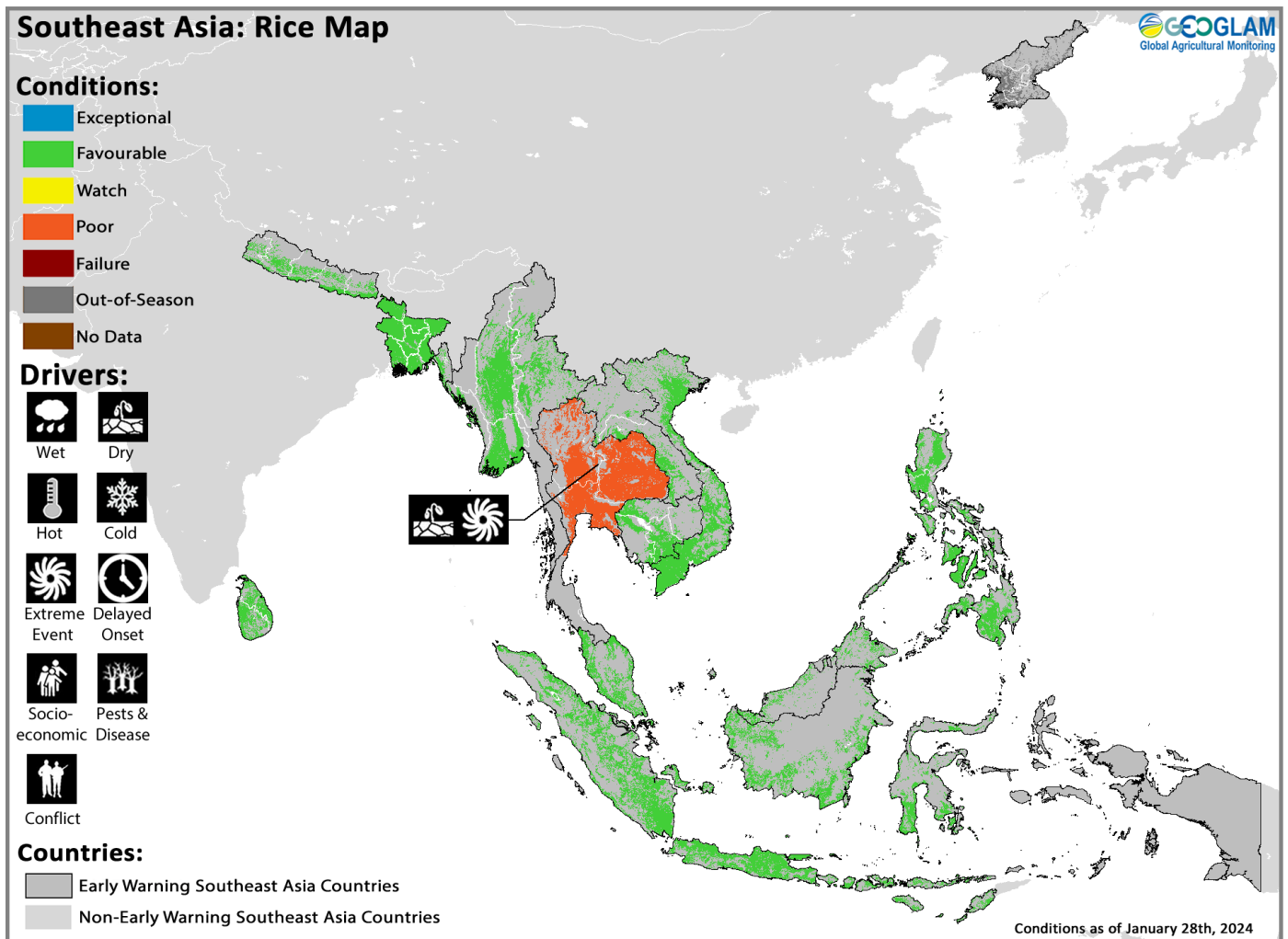


Figure 1. Season rainfall anomaly, season rainfall anomaly outlook, snow-water equivalent anomaly, and a 3-month probabilistic precipitation forecast.

The left and middle-left panels are CHC Early Estimates, which compare current precipitation totals to the 1981-2022 CHIRPS average for respective accumulation periods. These show the percent of average precipitation for Oct. 1st 2023 to Jan. 20th, 2024 (left), using CHIRPS Prelim for Jan. 1st to 20th, and for Oct. 1st to Feb. 5th (middle-left), using a CHIRPS-GEFS forecast for Jan. 21st - Feb. 5th. From [CHC Early Estimates](#). Middle-right: Snow water equivalent (SWE) anomaly for January 22, 2024, compared to the 2001-2022 average for the same date, from [NASA/USGS/FEWS NET](#). Right: WMO probabilistic forecasts for FMA 2024 precipitation, based on models initialized in January, from the [WMO Lead Centre Long-Range Forecast Multi-Model Ensemble](#).

Source: UCSB Climate Hazards Center

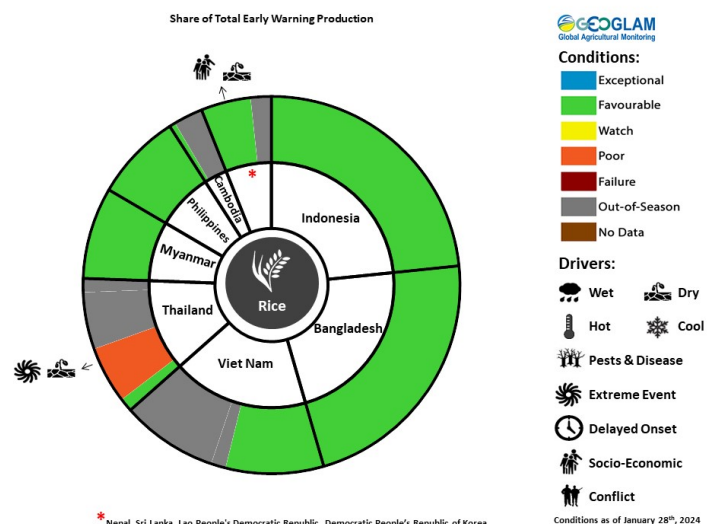
Southeast Asia



Crop condition map synthesizing rice conditions as of January 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, including **Indonesia, Malaysia, and Brunei**, harvesting of wet-season rice began in January under favourable conditions due to adequate weather outcomes during the growing period, and planted area is steadily expanding in **Indonesia** due to intensive rainfall received from late December to mid-January. However, rainfed crops in **Brunei** may be impacted by current high temperatures and low rainfall amounts. In northern Southeast Asia, including **Myanmar, Thailand, Laos, Cambodia, Viet Nam**, and the **Philippines**, harvesting of wet-season rice finalized in December 2023 under generally favourable conditions except in **Thailand** due to a combination of drought and flood damage. Planting of dry-season rice is underway, and early growing conditions are favourable. Total planted area is expected to be the same as last year, but a shortage of agricultural water may impact production outcomes in some areas of **Thailand** and **Viet Nam**. Elsewhere in Southeast Asia, including **Nepal, Bangladesh, and Sri Lanka**, conditions remain generally favourable.

In **Indonesia**, harvesting of dry-season rice finalized in December 2023 under favourable conditions with sufficient sunlight received during the growing period. Total harvested area is 4.0 million hectares and 6.9 percent lower than the previous year. January marks the fourth month of wet-season rice planting and the first month of harvesting, and crops are growing under favourable conditions due to sufficient irrigation water supply. Planted area has reached 4.1 million hectares, which is 6.8 percent lower than the last wet season but is steadily expanding due to intensive rainfall received from late December to mid-January. Harvesting has reached



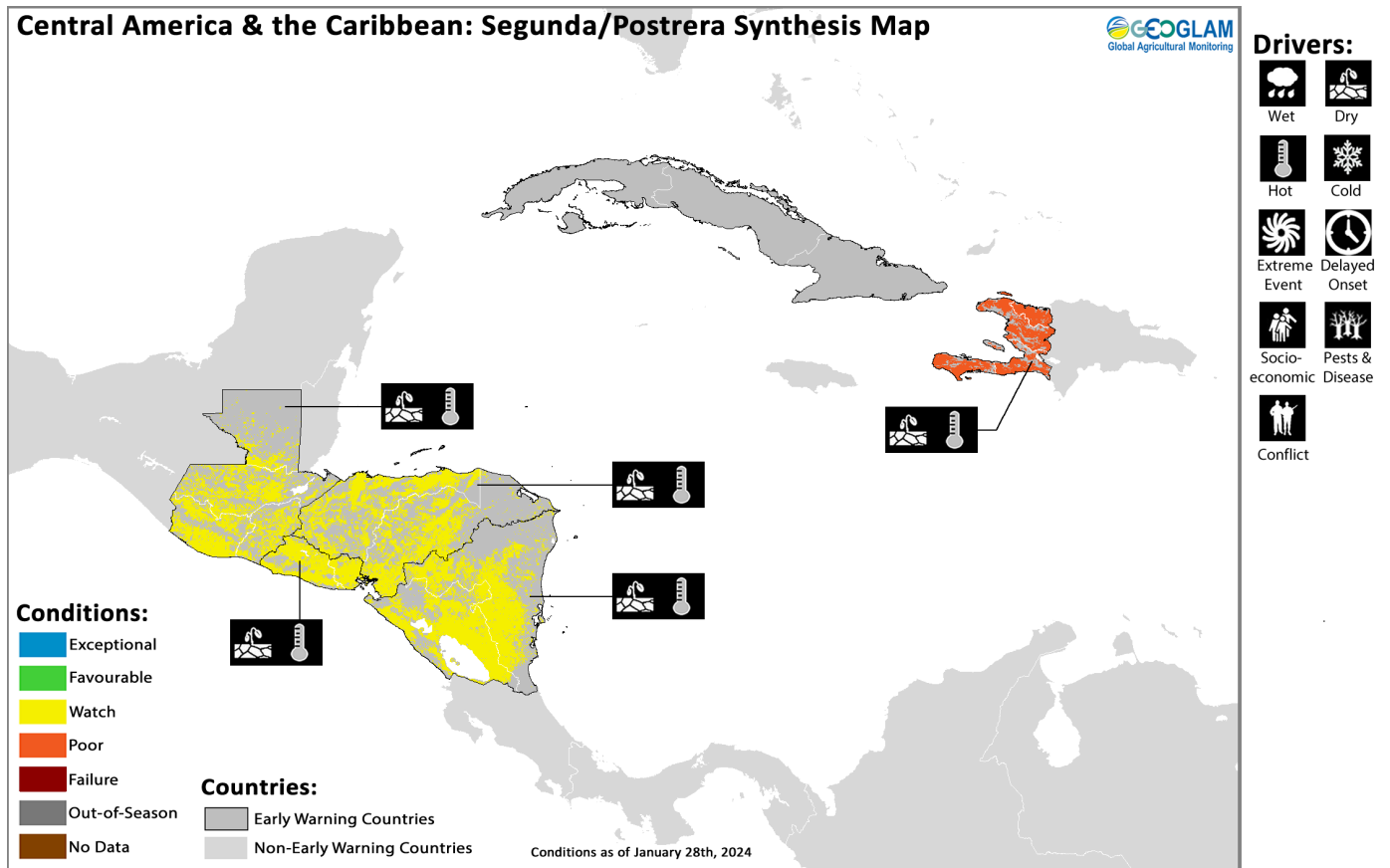
For detailed description of the pie chart please see description box on Pg. 17.

0.3 million hectares, which is 27.4 percent lower than last year, but yield is expected to be favourable with adequate sunlight received during the growing period. In **Malaysia**, January marks the sixth month of wet-season rice planting and the first month of harvesting, and conditions are favourable with sufficient water and sunlight received during the growing period. Planting progress is 90 percent complete, and about 15 percent of the cultivated area has been harvested with a yield of 4.4 tonnes per hectare. In **Brunei**, most areas planted with both rainfed and irrigated paddy are now in the grain filling stage, and earlier planted irrigated areas have begun harvesting. Growing conditions are currently favourable for irrigated areas, but there is concern in the rainfed areas as high temperatures and low rainfall are impacting crop development.

In the **Philippines**, harvesting of wet-season rice finalized in December 2023 under favourable conditions due to sufficient rainfall received during the reproductive stage and continued government support programs. Dry-season rice planted from November to December is now in the tillering to young panicle forming stage under mostly favourable conditions due to conducive weather outcomes and the provision of high yielding seeds from the government. The passage of a tropical storm in December brought occasional rains in the eastern parts of Visayas and Mindanao, but no significant crop damage was reported. In **Thailand**, harvesting of wet-season rice finalized in December 2023 under poor conditions due to a combination of drought from June to August and flood damage from September to October. Total harvested area declined 1.8 percent compared to the previous year as a result of insufficient water supply for rice cultivation, and final production is expected to decrease by 5.3 percent compared to a normal year. Dry-season rice is mainly in the tillering stage, and conditions have improved from previous dry concerns as farmers have access to reserved water supply for their crop fields. Planted area has reached 1.3 million hectares, accounting for 96 percent of the national plan. However, the final planted area is expected to be slightly reduced this year as both rainfed and irrigated agricultural water supply are less than during the same period last year. In northern **Viet Nam**, planting of dry-season (winter-spring) rice has not yet begun due to the ongoing sowing of other winter season crops such as maize, potatoes, sweet potatoes, peanuts, and vegetables. In the south, harvesting of the other wet-season (autumn-winter and seasonal) rice finalized in December 2023 under favourable conditions. Harvested area reached 0.57 million hectares out of 1.21 million hectares planted, and yield is expected to be higher than the previous year due to warm weather and better irrigation preparation. Sowing of dry-season (winter-spring) rice continues under favourable conditions with a current sown area of 1.22 million hectares, mainly in the Mekong River Delta. However, forecast high temperatures and reduced rainfall in the first quarter of 2024 are expected to result in a shortage of agricultural water that could impact production outcomes. In **Laos**, wet-season rice harvesting finalized in December 2023 under favourable conditions. Lowland areas had a final harvested area of 796 thousand hectares, yield of 4.4 tonnes per hectare, and production of 3.5 million tonnes. Upland areas had a harvested area of 100 thousand hectares and forecast production of 205 thousand tons, which is slightly higher than the previous year. Planting of dry-season rice began in January under favourable conditions, and crops are in the land preparation to seeding stage with adequate weather conditions and irrigation water supply. The national production plan is 98 thousand hectares and 506 thousand tons. Additionally, planting has progressed to 18 thousand hectares accounting for 16 percent of the national production plan. In **Myanmar**, harvesting of wet-season rice reached 3.65 million hectares and 60 percent of the planted area of 6.07 million hectares in December 2023. Harvesting conditions were mostly favourable, producing 15.27 million tons of paddy with a yield of 4.18 tons per hectare. Planting of dry-season rice has reached 45 percent of the national plan of 1.05 million hectares, and crops are mostly in the early vegetative growth stage under favourable conditions. Progress is similar to the previous year and may increase due to better availability of irrigation water and conducive weather this year. In **Cambodia**, dry-season rice is in the young panicle to heading stage, and growing conditions are favourable with adequate sunlight levels. Planted area has increased to 692 thousand hectares and 12 percent compared to the previous year due to the high market price of rice. However, currently hot temperatures may influence growing conditions if rains are not received going forward.

In **Sri Lanka**, *Maha* season maize and rice crops are in the vegetative to reproductive stage for harvest from February, and growing conditions remain favourable. In **Nepal**, rice harvesting finalized in January with near-average yields expected. Wheat crops are developing under favourable conditions for harvest from mid-March with an increased availability of agricultural inputs compared to the previous year. In **Bangladesh**, harvesting of *Aman* season rice crops finalized in January while planting and development of maize, wheat, and *Boro* season rice crops continues, and overall conditions remain favourable.

Central America & Caribbean

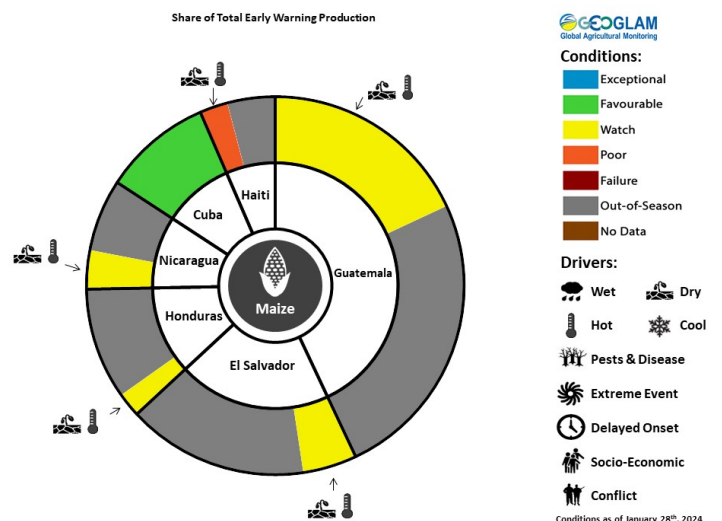


Crop condition map synthesizing Segunda (Maize 2) and Postrera (Beans 2) conditions as of January 28th. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Conditions that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

In Central America, harvesting of *Segunda* season maize crops and *Postrera* season bean crops is complete or nearing completion in **El Salvador, Guatemala, Honduras, and Nicaragua** under mixed conditions as crops were impacted by erratic rainfall distribution and high temperatures that affected normal development in some areas, particularly in the main producing areas of northern **Guatemala**, eastern **Honduras**, and eastern **Nicaragua**. While *Segunda* season maize crops were previously not expected to recover, current national level production estimates suggest yields could have rebounded in some areas, and a final assessment will be provided next month. In **Guatemala**, overall production of basic grains in 2023 was not severely affected by the dry conditions. Maize output is expected to be higher than the previous year, and bean production is above the 2020 level, according to official estimates. In **Honduras**, overall grain production is expected to be near-average, with the exception in areas of Atlántida, Santa Bárbara, and Olancho adversely impacted by above-average rains in early November. Elsewhere, the higher than normal precipitation in November increased irrigation water availability. In **Nicaragua**, the 2023 *Segunda* season maize production is 2 percent above the 2022 *Segunda* harvest, and *Postrera* season bean production is similar to the previous year's harvest, according to official estimates.

Apante season bean crops are in vegetative to reproductive stage for harvest in March, and there is concern for potential yield declines due to the same dry and hot conditions that impacted the *Postrera* season.

In **Haiti**, harvesting of *Été* season maize and beans finalized in December under poor conditions, and there is concern for both *Hiver* season beans and second season rice, which are in the vegetative to reproductive stage for harvest from mid-



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

February. After torrential rains in mid-November caused localized flooding, the country has received average to below-average precipitation and above-average temperatures. In localized areas of l'Artibonite, Ouest, Grand'Anse and Sud departments, slightly below-average crop conditions were observed in mid-January. In **Cuba**, planting of main season rice and second season maize continues under favourable conditions following adequate rainfall from November 2023, resulting in above-average vegetation conditions throughout the country.

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 February 1st, 2024.

i Sources and Disclaimers:

The Crop Monitor assessment is conducted by GEOGLAM with inputs from the following partners FEWS NET, JRC, WFP, ARC, AFSIS, MESA, ICPAC, FAO GIEWS, Applied Geosolutions and UMD. The findings and conclusions in this joint multi-agency report are consensual statements from the GEOGLAM experts, and do not necessarily reflect those of the individual agencies represented by these experts. More detailed information on the GEOGLAM crop assessments is available at www.cropmonitor.org

Appendix

Crop Conditions:

Exceptional: Conditions are much better than average* at time of reporting. This label is only used during the grain-filling through harvest stages.

Favourable: Conditions range from slightly lower to slightly better than average* at reporting time.

Watch: Conditions are not far from average* but there is a potential risk to final production. The crop can still recover to average or near-average conditions if the ground situation improves. This label is only used during the planting-early vegetative and the vegetative-reproductive stages.

Poor: Crop conditions are well below-average. Crop yields are likely to be 10-25% below-average. This is used when crops are stunted and are not likely to recover, and impact on production is likely.

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

Out of Season: Crops are not currently planted or in development during this time.

No Data: No reliable source of data is available at this time.



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

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

Drivers:

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

Wet: Higher than average wetness.

Dry: Drier than average.

Hot: Hotter than average.

Cool: Cooler than average or risk of frost damage.

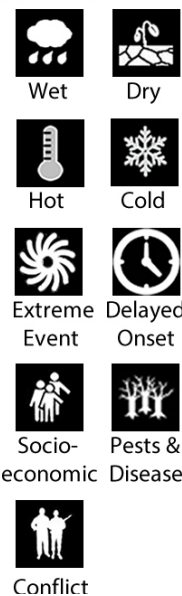
Extreme Events: This is a catch-all for all other climate risks (i.e. hurricane, typhoon, frost, hail, winterkill, wind damage, etc.)

Delayed-Onset: Late start of the season.

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

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

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



Crop Season Nomenclature:

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

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

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

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

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

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

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


Crop Season Nomenclature:

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

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



Global Agricultural Monitoring

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Contributing partners



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