

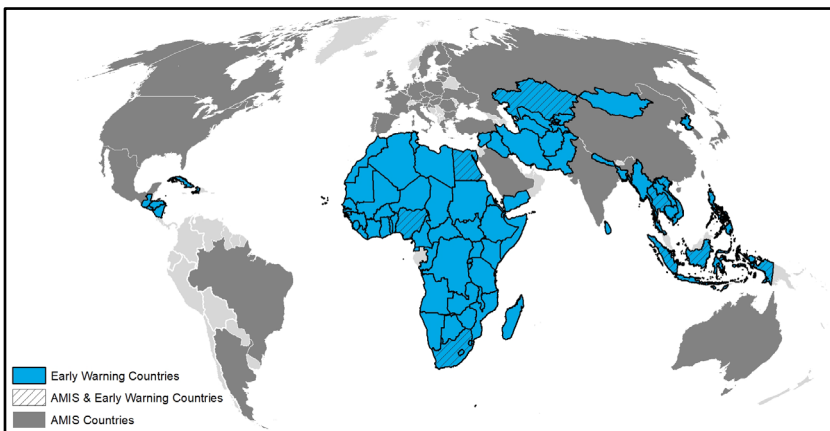


# Crop Monitor

## EARLY WARNING

### Overview:

In **East Africa**, planting is underway for *Belg* crops in Ethiopia with concerns due to dry conditions and ongoing conflict in the north. In Kenya, harvest has finalized for Short Rains crops under poor to failure conditions due to persistent dryness. There is increasing concern across parts of the region due to a possible fourth consecutive season of below-average rainfall forecast for the upcoming March to May rains (See Seasonal Forecast Alert Pg. 4). In **West Africa**, harvesting of main season cereals mostly completed last month under generally favourable conditions except in areas impacted by persistent dry conditions and in conflict-affected regions. In the **Middle East and North Africa**, winter wheat crops continue to develop under mixed conditions as dryness may impact crop outcomes in parts of Morocco, Algeria, Tunisia, Syria, and Iraq. In **Southern Africa**, conditions remain mixed for main season cereals as dry conditions have expanded in parts of the subregion, and the passage of several tropical storms and cyclones since January has impacted crops in southern Malawi, Mozambique, and Madagascar. In **Central and South Asia**, winter wheat crops continue to develop under mixed conditions due to persistent dryness in parts of Afghanistan, Turkmenistan, and Uzbekistan. Land preparation for spring wheat crops is underway in Afghanistan and Tajikistan. In **Southeast Asia**, dry-season rice crops are developing under generally favourable conditions in the north due to sufficient irrigation water supply. In **Central America and the Caribbean**, *Apante* season bean crops are developing under favourable conditions in Nicaragua while poor conditions have resulted in Haiti due to previous dry conditions and damage from recent torrential rainfall.



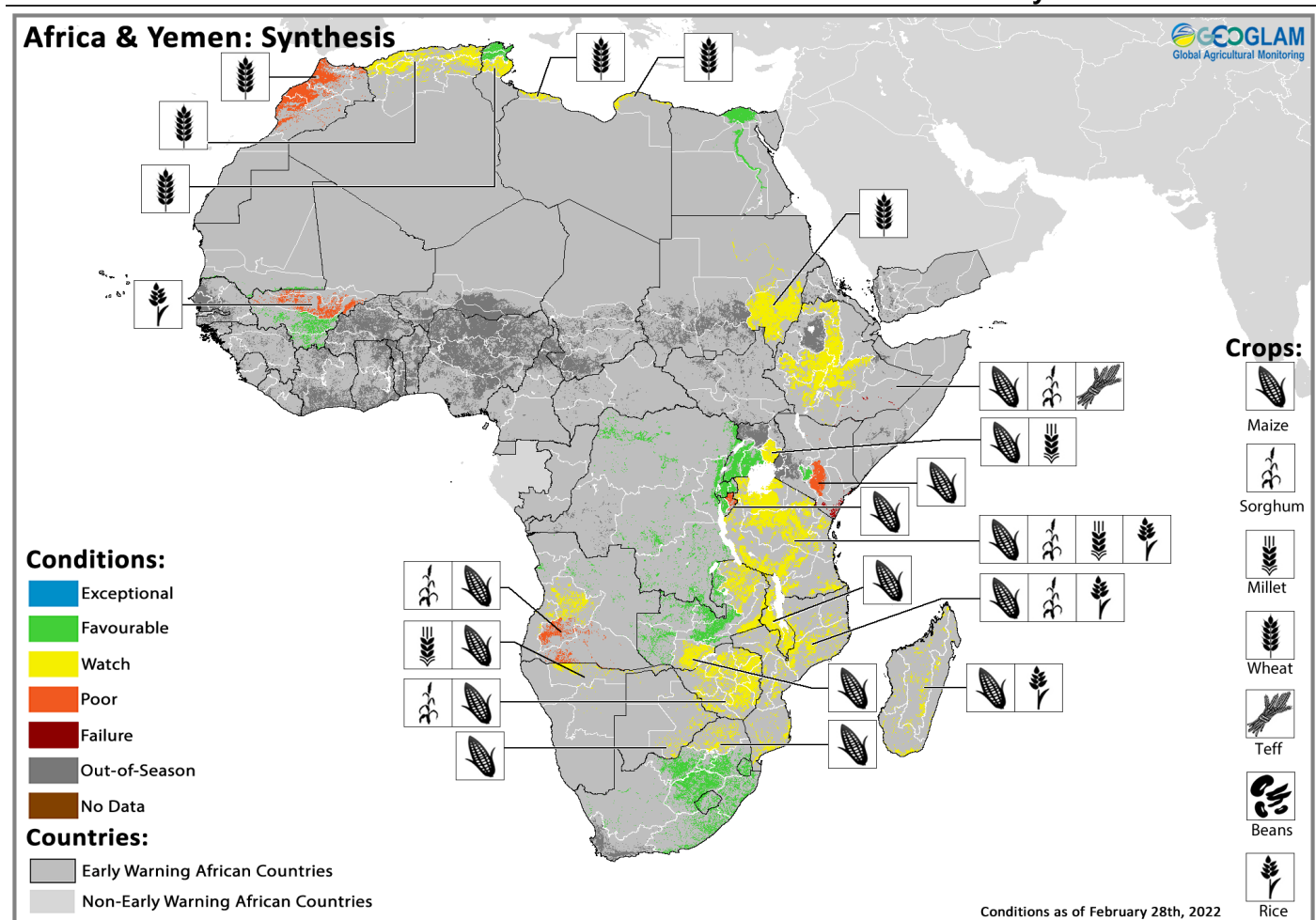
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# GEOGLAM Crop Monitor for Early Warning

## Crop Conditions at a Glance

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



Crop condition map synthesizing information for all Crop Monitor for Early Warning crops as of February 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Regions that are in other than favourable conditions are labeled on the map with a symbol representing the crop(s) affected.**

**EAST AFRICA:** Planting is underway for *Belg* season (Short Rains) cereals in Ethiopia, and there is some concern due to dry conditions in parts of the country and ongoing conflict in the north. There is also increasing concern in the south of the subregion due to a possible fourth consecutive season of below-average rainfall forecast for the upcoming March to May rains that could have significant implications for crop outcomes (See Seasonal Forecast Alert Pg. 4).

**WEST AFRICA:** Harvesting of main season cereals mostly completed last month under generally favourable conditions except in parts of Burkina Faso, Mali, and Mauritania impacted by persistent dry conditions and in conflict-affected regions.

**MIDDLE EAST & NORTH AFRICA:** Winter wheat crops continue to develop under mixed conditions as crops in Morocco are unlikely to recover, and there is concern in Algeria, central Tunisia, northern Syria, and northern Iraq due to persistent dryness that is forecast to continue for much of the subregion through May (See Regional Outlook Pg. 8). Concern remains throughout Libya and Syria due to ongoing conflict and socio-economic challenges at the national scale.

**SOUTHERN AFRICA:** Main season cereals are in vegetative to reproductive stage under mixed conditions as dryness is

impacting crops in parts of Angola, Botswana, Madagascar, Malawi, Mozambique, Namibia, South Africa, Zambia, and Zimbabwe, and concern remains in parts of Malawi, Mozambique, and Madagascar due to the passage of several tropical storms and cyclones. Dry conditions are forecast to continue through early March in much of the subregion (See Regional Outlook Pg. 11).

**CENTRAL & SOUTH ASIA:** Winter wheat crops continue to develop under mixed conditions due to dryness in Afghanistan, Mary and Chardzhou provinces in Turkmenistan, and highlands and plains regions in Uzbekistan. However, conditions in southern Kazakhstan have improved due to increased precipitation levels in January.

**SOUTHEAST ASIA:** Dry-season rice crops continue to develop under generally favourable conditions in the north with an expected increase in planted area due to sufficient irrigation water supply. In Indonesia, early harvesting of wet-season rice is underway under favourable conditions.

**CENTRAL AMERICA & CARIBBEAN:** *Apante* season bean crops continue to develop under favourable conditions in Nicaragua while in Haiti, crops are unlikely to recover from dry conditions throughout the season and damage from recent torrential rainfall.

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

The two-week forecast (Figure 1) indicates a likelihood of above-average rainfall over the Great Lakes region of North America, the pacific northwest of the US, the pacific coast region of Mexico, Costa Rica, Panama, northern Colombia, eastern Venezuela, Guyana, Suriname, French Guiana, southern Peru, southern Brazil, southern Uruguay, Ireland, western Norway, central Finland, central Tanzania, southern and eastern Kazakhstan, Kyrgyzstan, Tajikistan, southern Viet Nam, the Philippines, Tenggara in Indonesia, and northern Australia.

There is also a likelihood of below-average rainfall in Central and eastern Canada, southern US, northern Mexico, central Brazil, Portugal, Spain, France, Switzerland, Italy, Slovenia, Croatia, Bosnia and Herzegovina, Hungary, Slovakia, western Romania, Ukraine, Serbia, Kosovo, Albania, North Macedonia, central-west Russia, Cote d'Ivoire, Ghana, Togo, Benin, central and southern Nigeria, Cameroon, Central African Republic, northeast Democratic Republic of Congo, South Sudan, Ethiopia, northeast Kenya, southern Somalia, southeast Angola, Zambia, Zimbabwe, Mozambique, Botswana, Namibia, northeast and northwest South Africa, southern Iraq, southern and eastern Iran, southern Afghanistan, Pakistan, northern and central India, Sri Lanka, northeast China, Democratic People's Republic of Korea, Republic of Korea, southern Japan, Malaysia, and Indonesia.

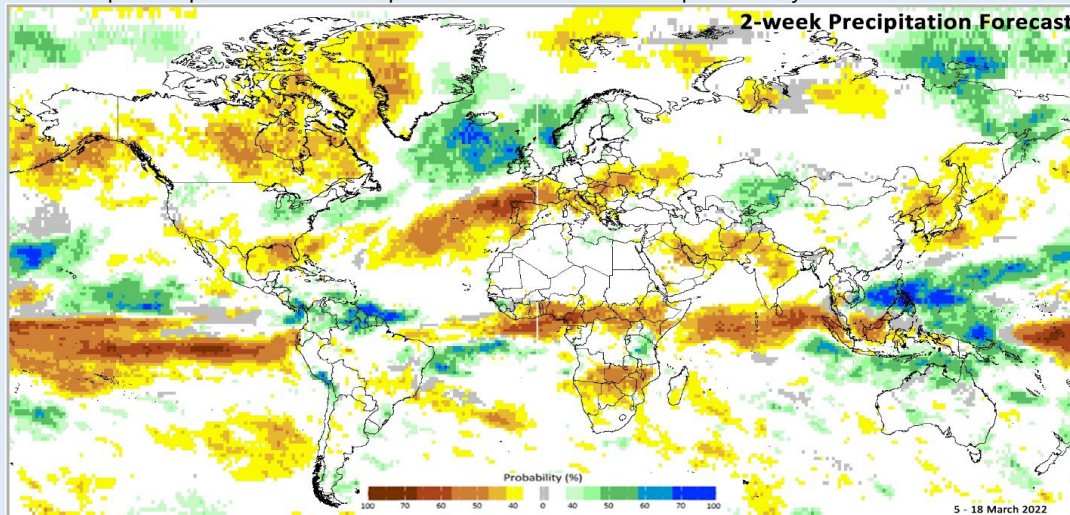


Figure 1: IRI SubX Precipitation Biweekly Probability Forecast for 5-18 March 2022, issued on February 25<sup>th</sup>, 2022. The forecast is based on statistically calibrated tercile category forecasts from three SubX models. Source: [IRI Subseasonal Forecasts Maproom](https://www.iri.columbia.edu/our-work-and-services/forecasts/subseasonal-forecasts-maproom/)

**Climate Influences: La Niña event present and expected to continue through April**

The El Niño-Southern Oscillation (ENSO) is currently in the La Niña phase and is expected to remain as La Niña for several more months. Forecast chances of La Niña conditions continuing through April are high, according to IRI/CPC (93% chance for February-March-April; 77% chance for March-April-May). Transition to ENSO-neutral conditions is likely during May-June-July (56% chance).

La Niña conditions typically increase the chances of below-average precipitation in East Africa, Central and South Asia, southern South America, the southern United States, northern Mexico, and eastern East Asia. There are elevated risks of a two-year sequence of dry conditions in these regions, associated with La Niña conditions last year and this year. La Niña conditions typically increase the chances of above-average precipitation in parts of Southeast Asia, Australia, Southern Africa, and northern South America. Source: UCSB Climate Hazards Center

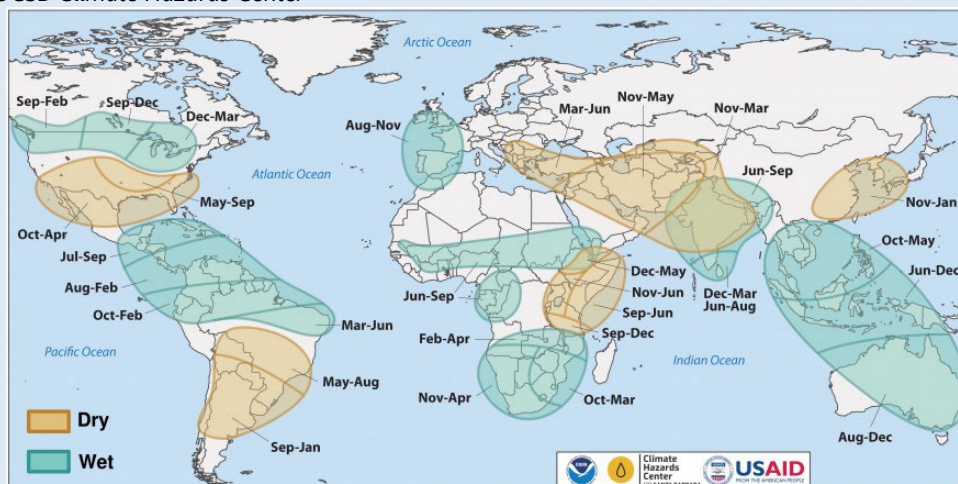


Figure 1. Timing of wet and dry conditions related to La Niña <https://fews.net/la-ni%C3%B1a-and-precipitation>. Source: NOAA & CHC & FEWS NET

### ***East Africa Seasonal Forecast Alert: Increased chances for a fourth consecutive poor rainfall season during MAM 2022***

Climate models are forecasting large-scale and regional-scale conditions that could result in another below-average March April May (MAM) rainfall season in eastern East Africa. [Three consecutive seasons](#) of below-average rains have produced severe impacts on household livelihoods, food security, and nutrition, amid conflict and economic challenges. According to the [recent FSNWG report](#), an estimated 12-14 million people in Kenya, Somalia, and Ethiopia are affected by ongoing drought impacts, and a fourth below-average season would acutely worsen the situation, potentially resulting in 15 to 20 million highly food insecure people. Recent CM4EW alerts have highlighted the long-lead predictability of past MAM droughts under similar circumstances (e.g., CM4EW August 2021 to February 2022), based on climate model sea surface temperatures (SST) forecasts for the “Western V” tropical-extratropical SST gradient across the Pacific Ocean and the tendency for dry conditions in the eastern Horn during recent La Niñas. The recent WMO multi-model ensemble forecasts a similar precipitation outlook for MAM in the eastern Horn, based on February initial conditions. The WMO forecast for MAM season SST, low-level winds, and precipitation (Figure 1-left and middle-left) depict the ongoing La Niña and a high likelihood of a strong “Western V” SST gradient during MAM 2022. Although the MAM 2022 forecast issued by ICPAC shows a ~40% likelihood for normal conditions over the eastern Horn, there are still high chances for below-normal rainfall (Figure 1 middle-right). For Somalia, even normal rains are typically associated with low yields, so there is a high probability of yet another consecutive poor season. According to the WMO ensemble, low-level winds will not be conducive to flow of moisture into eastern East Africa. The models also predict westerly wind anomalies across the tropical Indian Ocean and, correspondingly, elevated chances of below-normal MAM precipitation in the eastern Horn and the western Indian Ocean. Above-normal MAM land surface temperatures are also likely (not shown). The forecast winds and SST patterns are similar to recent observations. La Niña conditions are very likely to continue at least through April 2022 (93% chance for FMA and 77% chance for MAM, according to the CPC/IRI).

As we approach the typical onset of MAM season rains, observed climate conditions and shorter-range forecasts produced in mid-to-late February are not favoring a timely start to the season. Forecasts suggest continued enhanced rains in Tanzania, while northern and eastern East Africa may develop early-season rainfall deficits. Early indications for this come from CHC Early Estimates with the GEFS forecast [through March 5th](#), ECMWF [extended range](#) forecasts through late March, and the CFSv2 forecast for [March rainfall totals](#). Subseasonal SubX model forecasts from February 25th indicate elevated chances of drier-than-normal conditions in many areas from March 5th to March 18th (Figure 1-right) and through March 25th. Conditions should be closely monitored. Late seasonal rains have occurred under similar climate conditions and can reduce opportunities for cropping, particularly in marginal areas. Inconsistent early-season rains can benefit rangeland resources, but early-planting farmers could risk seed losses during the forecast drier-than-normal conditions in March. While large-scale climate conditions continue to indicate elevated odds for below-normal MAM seasonal rainfall, some abnormally wet seasons have developed under similar conditions. Short-range forecasts may provide critical information for extreme events during this MAM season.

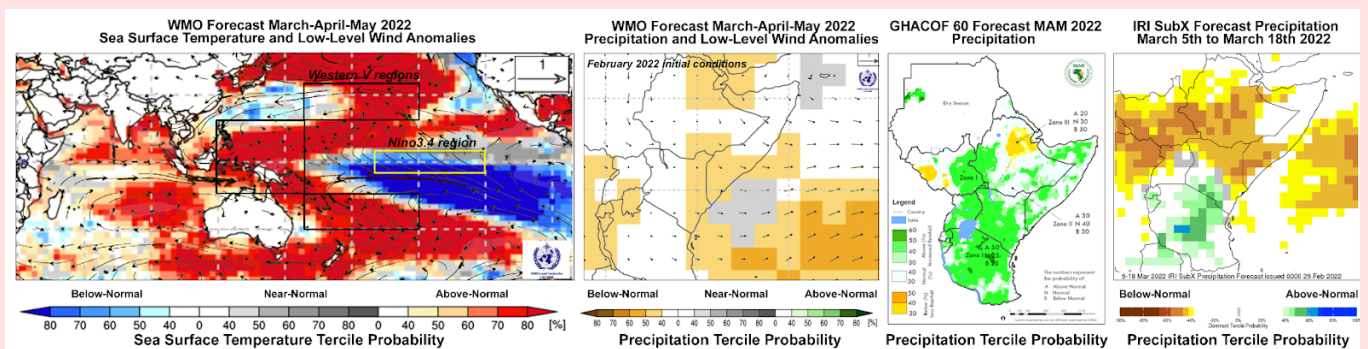
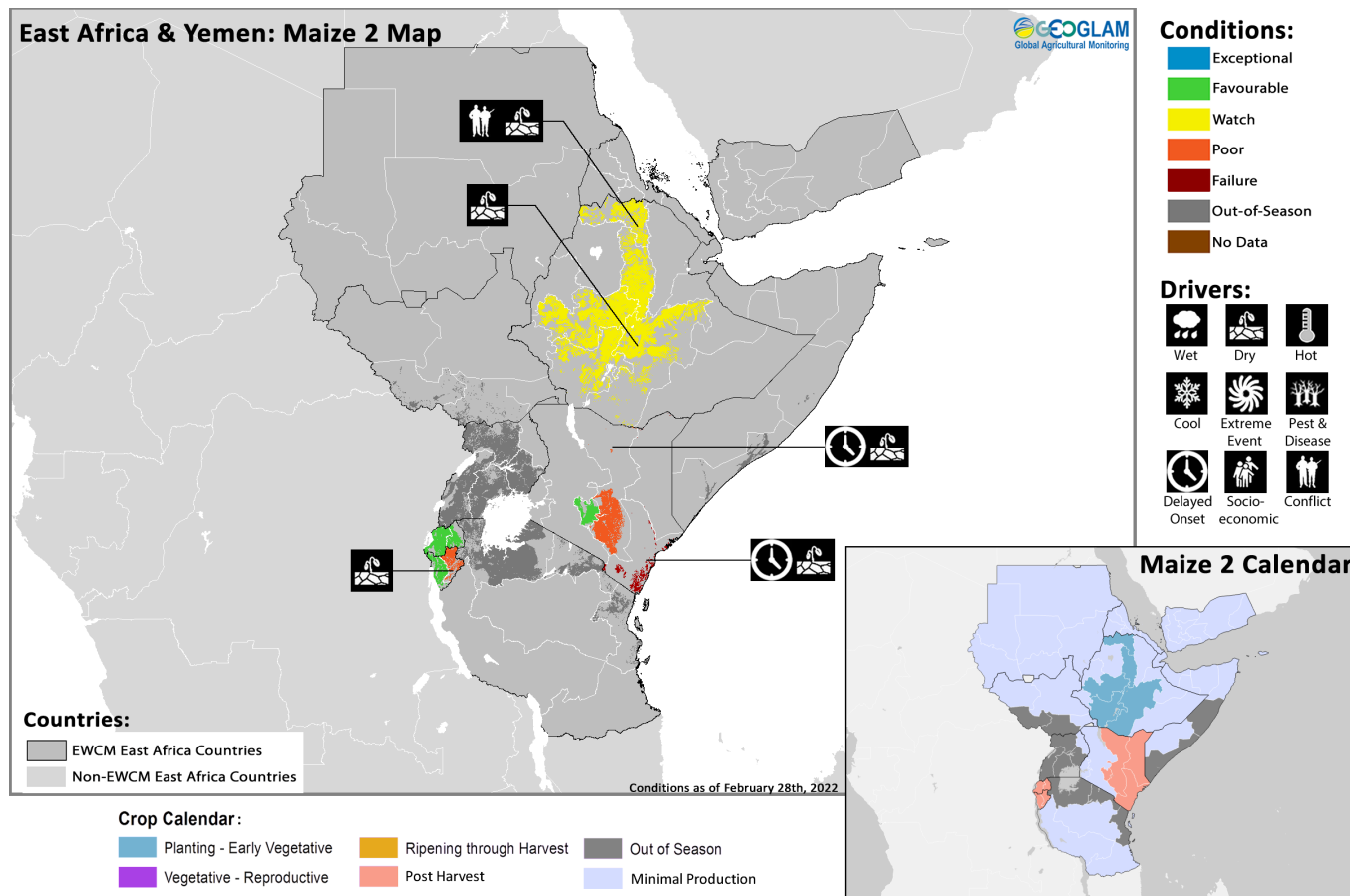


Figure 1. Forecast climate drivers and precipitation during the March-April-May (MAM) 2022 season. Left and middle-left: WMO multi-model ensemble probabilistic forecasts for MAM 2022 sea surface temperatures in the Indian Ocean and Pacific Ocean (left) and precipitation in East Africa (middle-left). Arrows on these maps are the ensemble mean forecast 850 hPa wind speed and direction, as compared to climatology (units: m/s). Eastward low-level wind anomalies in the tropical Indian Ocean acts against the normal flow of moisture-laden air into the eastern Horn. These [WMO Lead Centre for Long-Range Forecast Multi-Model Ensemble](#) forecasts are based on February 2022 initial conditions. Right-middle: Greater Horn of Africa Climate Outlook Forum (GHACOF60) forecast for March-April-May 2022 precipitation. Image from [ICPAC](#). Right: Probabilistic forecast for above- and below-normal precipitation during March 5th to 18th. From the [IRI SubX Precipitation Biweekly Probability Forecast](#) issued on February 25th. IRI SubX is based on statistically-calibrated tercile category forecasts from three SubX models.

Source: UCSB Climate Hazards Center

East Africa & Yemen

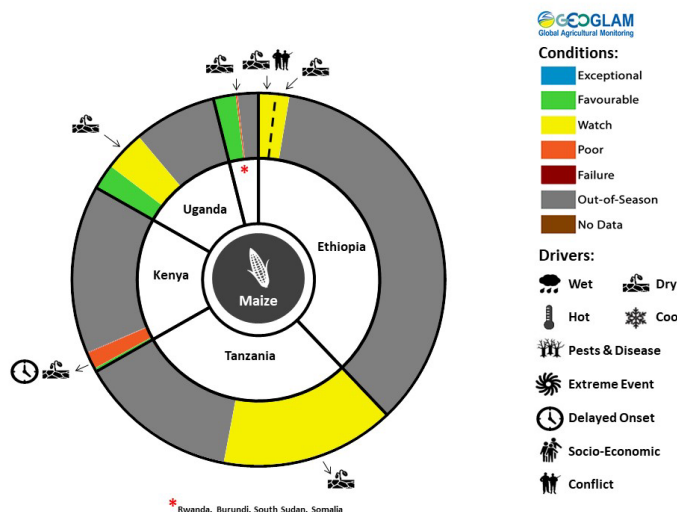


Crop condition map synthesizing Maize 2 crop conditions as of February 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Conditions that are other than favourable are labeled on the map with their driver.**

In the north of the subregion, harvesting of main season cereals finalized last month with near-average yields in **Eritrea** and **Sudan**. Conversely, final yields were mixed for *Meher* season (Long Rains) crops in **Ethiopia** with poor conditions in the north due to ongoing conflict, and in **South Sudan**, poor yields resulted due to ongoing conflict and a third consecutive year of flooding. Planting of *Belg* season (Short Rains) cereals in **Ethiopia** is underway with concern due to ongoing conflict in the north as well as dry conditions in parts of the country combined with indications for a lacklustre start to the rainfall season (See Seasonal Forecast Alert Pg. 4). Wheat crops are in vegetative to reproductive stage in **Sudan** with concern due to dry conditions and socio-economic challenges at the national scale.

In the south of the subregion, harvesting of second Season A maize crops finalized in **Rwanda** under favourable conditions. Harvesting of Short Rains maize crops is nearing completion in **Kenya**, and yields in the major producing central region are favourable while yields in the marginal producing northeast, east, southeast, and coast are below-average to well below-average due to a third consecutive poor rainy season. Planting and development of main season cereals is underway in **Rwanda**, **Uganda**, and the **United Republic of Tanzania** under mixed conditions as there is concern for previous and current dry conditions in eastern **Uganda** and parts of the **United Republic of Tanzania**. In other areas of the region, planting will start in March or with the onset of the March to May (MAM) rains.

Following three consecutive poor rainy seasons, the Horn of Africa is experiencing one of the most severe droughts in recent history, particularly in large areas of **Somalia**, south and southeastern **Ethiopia**, and north and eastern **Kenya**. The October to December rainfall season was characterized by delayed rainfall onset, erratic distribution, and below-average cumulative rainfall, and forecasts of continued below-average rainfall are threatening to compound the dire conditions. Additionally, forecasts indicate the potential

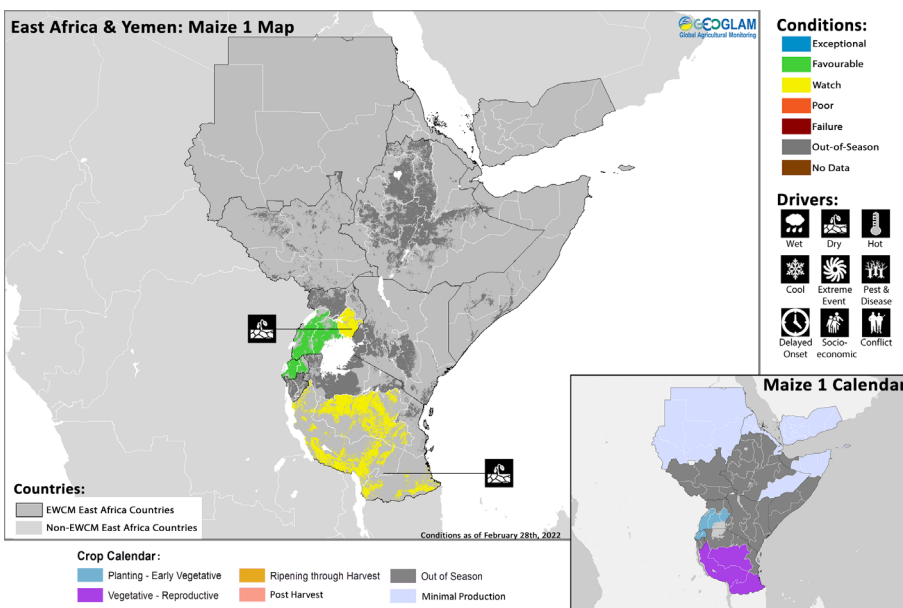


For detailed description of the pie chart please see description box on Pg. 16.

for a fourth consecutive below-average rainy season that could have significant implications for crop outcomes as the MAM season contributes up to 70 percent of total annual rainfall in equatorial areas (See Seasonal Forecast Alert Pg. 4).

### Northern East Africa & Yemen

In **Ethiopia**, harvesting of *Meher* season sorghum and teff crops finalized in the marginal producing southeast in February under failure conditions as three consecutive failed rainy seasons resulted in severe drought in the lowland areas, particularly in eastern Oromia and Somali regions. Planting of *Belg* Season (Short Rains) maize crops is just beginning with concern due to ongoing conflict in the north as well as current dry conditions that may continue into the MAM rainfall season, and harvesting activities will begin in June (See Seasonal Forecast Alert Pg. 4). In **Sudan**, wheat crops are in vegetative to reproductive stage for harvest from March, and there is concern in the north and east as crops may be impacted by current dry conditions as well as socio-economic challenges present at the national scale. Additionally, since October 2021, 99,000 people have been displaced due to inter-communal conflict in Central, North, and West Darfur. In **Yemen**, land preparation is underway for main season sorghum crops, and planting will begin in March.



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

development and resulted in near-normal yields in the central region. Land preparation is underway for Long Rains maize crops, and planting will begin in March. In **Somalia**, the *Deyr* season harvest finalized last month under poor conditions due to the poor performance of the rainy season that resulted in below-average planted area, germination failures, and crop stress. Only a few irrigated riverine areas along the Juba and Shabelle rivers were able to be harvested, though reduced river levels and water availability constrained production in these areas. Additionally, new river breakages have occurred as communities attempt to extract limited water resources, and 554,000 people remain displaced as of February due to the drought emergency. As a result, crop yields were below-average throughout the country. *Deyr* cereal production is estimated to be 58 percent lower than the long-term average in southern areas, the third lowest *Deyr* harvest since 1995. In **Burundi** and **Rwanda**, harvesting of second Season A maize crops finalized under generally favourable conditions except in northeastern **Burundi** where dry conditions resulted in below-average yields. Planting of main Season B crops is underway in **Rwanda** for harvest from June, and conditions are favourable. Land preparation for main Season B crops is underway in **Burundi**, and planting will begin in March. In northern bimodal areas of the **United Republic of Tanzania**, harvesting of *Vuli* season maize crops finalized last month under mixed conditions as erratic rains resulted in crop losses in some areas. Planting and development of *Masika* season cereals is underway, and harvest will begin in March. Conditions for *Masika* season wheat and sorghum crops are generally favourable due to a significant increase in precipitation levels from January while concern remains for rice crops due to previous dry conditions. In southern unimodal areas, *Msimu* season cereals are in vegetative to reproductive stage for harvest from April, and while there has been significant improvement in rainfall levels since late January, concern remains due to the dry start to the season followed by heavy rain and flooding.

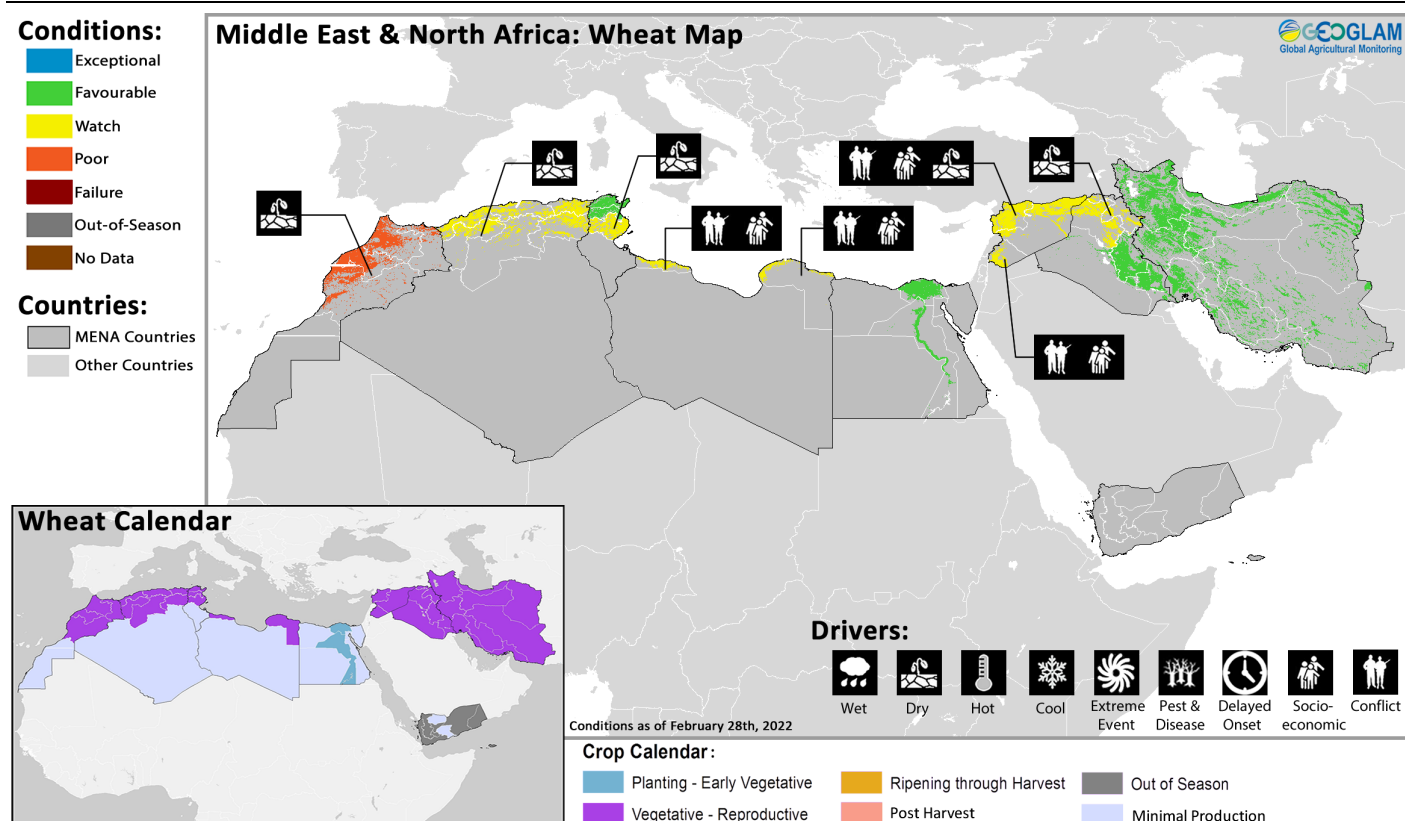
### Southern East Africa

In **Uganda**, planting of first season maize and millet crops is underway for harvest from June, and there is concern in the east due to current dry conditions. Conversely, conditions in the centre and west are favourable. In **Kenya**, harvesting of Short Rains maize crops is nearing completion and will finalize in March. In marginal producing southeastern and coastal areas, output of Short Rains crops is expected to be 70 percent below-average. While many households did not plant, those who did experienced germination failures and crop wilting. While late season rains in November and December allowed for late planting, crops were not able to reach maturity before the rains ended in late December. Conversely, yields remain near-average in the unimodal central region. Despite delayed rainfall onset and below-average precipitation in some areas, late rains in December and early January benefitted crop

## West Africa

Across the subregion, harvesting of main season cereals mostly completed last month under generally favourable conditions except in north and central **Burkina Faso**, central **Mali**, and **Mauritania** where dry conditions contributed to poor harvests as well as in conflict-affected regions. In **Mali**, harvesting of main season rice crops finalized in February under favourable conditions in the south and poor conditions in the centre due to ongoing conflict and persistent dry conditions throughout the season. Central areas experienced a period of drought in July followed by a severe rainfall deficit coupled with dry spells of 15 to 25 days in September, and the impact on crop performance is expected to be significant. Harvesting of second season rice crops is underway and will finalize in April, and concern remains in the centre due to ongoing conflict. In **Mauritania**, off-season rice crops are in vegetative to reproductive stage under favourable conditions, and harvesting will begin in March. Land preparation is underway for main season cereals in central and southern **Benin**, the **Central African Republic**, southern **Cote d'Ivoire**, southern **Ghana**, **Liberia**, southern **Nigeria**, and central and southern **Togo**, and planting will begin next month. Land preparation is also underway for second season maize crops in southern **Cameroon**.

## Middle East & North Africa



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

In the Middle East and North Africa, winter wheat crops are in vegetative to reproductive stage across **Morocco**, **Algeria**, **Tunisia**, **Libya**, **Syria**, **Iraq**, and **Iran** while planting activities continue in **Egypt**. Crops in **Morocco** are unlikely to recover, and there is concern in **Algeria**, central **Tunisia**, northern **Syria**, and northern **Iraq** due to persistent dryness. There is also concern in **Libya** and **Syria** due to ongoing conflict and socio-economic challenges at the national scale. Elsewhere, conditions are favourable. Precipitation is likely to be below-normal in parts of northern **Morocco**, northern **Algeria**, northern **Tunisia**, northeastern **Libya**, eastern **Egypt**, and the Middle East through May (See Regional Outlook Pg. 8).

Conditions in **Morocco** have degraded to poor due to persistent dryness, and there is little chance for crop recovery. Only 40 to 50 percent of average rainfall has been received over the last three months over most parts of the country, and crop biomass is below-average in most cereal growing regions. Additionally, conditions in central **Tunisia** have degraded to watch due to drought conditions, particularly in Le Kef, parts of Siliana, and Kairouan regions, though there is a chance of improvement if sufficient rainfall is received. Conversely, conditions remain favourable in productive regions of the north of the country. In northern **Iraq**, there are concerns in the northern governorates of Ninewa and Dahuk and the northeastern governorate of Sulaymaniyah as biomass is below-average, possibly due to below-average precipitation in the last dekad of January and first two dekads of February or recent snowfall that may have impacted crop development. In **Algeria**, crop performance is below-average in most producing areas, particularly in the

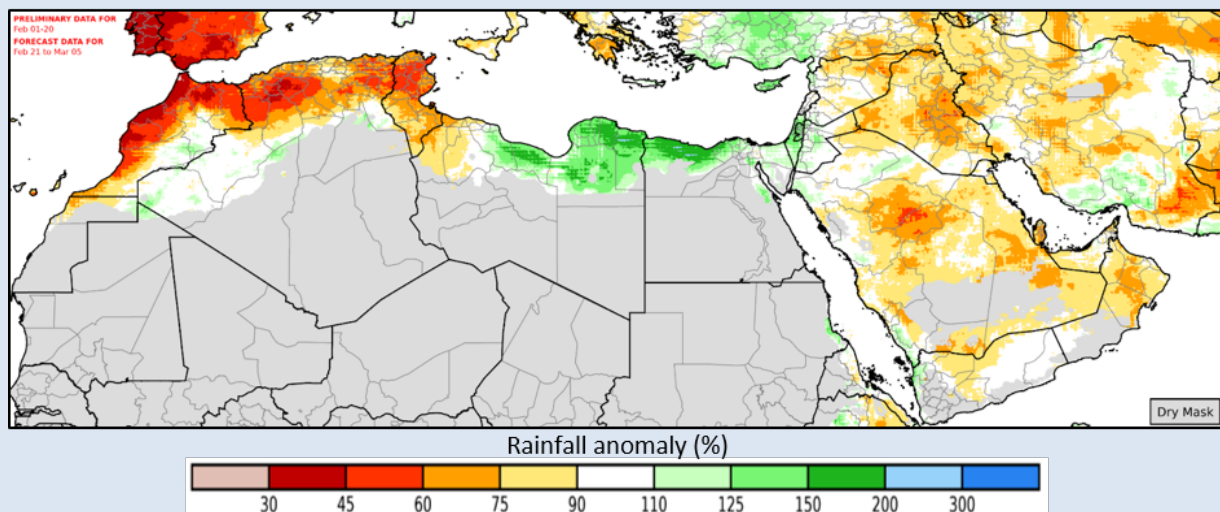
northwest and central regions. In northern **Syria**, rainfall deficits are present in the northern governorates of Aleppo and Raqqa. There is also a moderate rainfall deficit in Hassakeh governorate in the northeast, and water reservoirs are lower than the previous year, possibly due to an accumulation of rainfall deficits from the previous two seasons that did not allow for reservoirs to replenish their water supply. Furthermore, conflict remains a concern throughout **Libya** and **Syria** and continues to result in significant socio-economic challenges at the national scale. Elsewhere, crops continue to develop under favourable conditions. In **Egypt**, sowing of summer planted rice crops will begin in April for harvest from September.

***Regional Outlook: Elevated chances of below-normal March to May precipitation across much of the Middle East and the coast of North Africa***

The November-to-July rainy season has been well-below-average thus far in northwestern Africa and much of the Middle East. To date, much of coastal Morocco has received less than 60% of average precipitation, while western and eastern Algeria, Tunisia, and far-western Libya have received between 45 and 75% of average. Mixed conditions occurred farther east, with below-average precipitation in southeastern Turkey, Syria, Iraq, and northern Iran. In contrast, eastern Mediterranean coastal areas have above-average season totals at present. In northeastern Libya and northern Egypt, this is due to a wet December and January. Figure 1-top shows a November-to-early-March precipitation outlook that includes a two-week forecast from February 21st. Drier-than-average conditions are forecast during this period in coastal western north Africa and in some Middle Eastern areas, while wetter-than-average conditions are forecast in eastern Mediterranean coastal areas and Turkey. WMO's probabilistic forecast for March-April-May precipitation indicates elevated chances for below-normal precipitation in some of the ongoing deficit areas, and more broadly across the northern Mediterranean and the Middle East (Figure 1-bottom). There is higher confidence in this outlook during March, compared to later months, based on low WMO and NMME model agreement in those longer-range forecasts.

**November to February Rainfall Outlook**

November 01 2021 – March 05 2022



**3-month Rainfall Tercile Probability**

March – May 2022

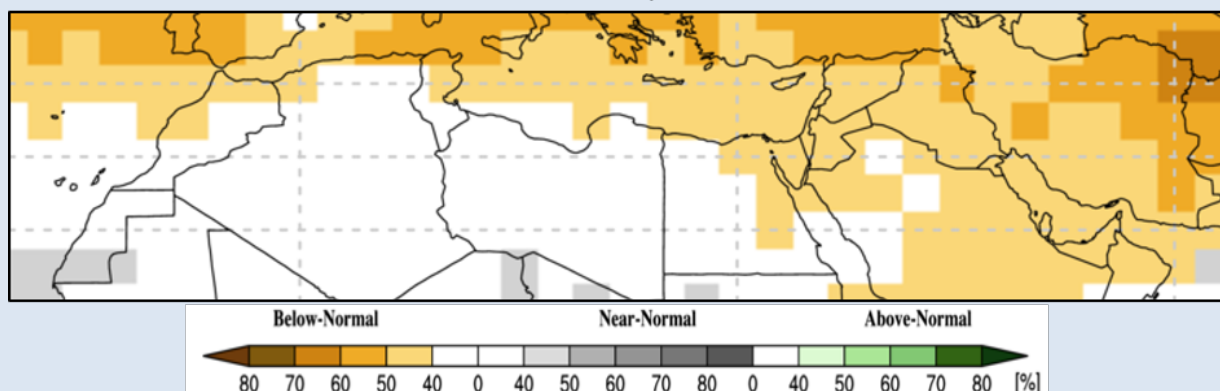
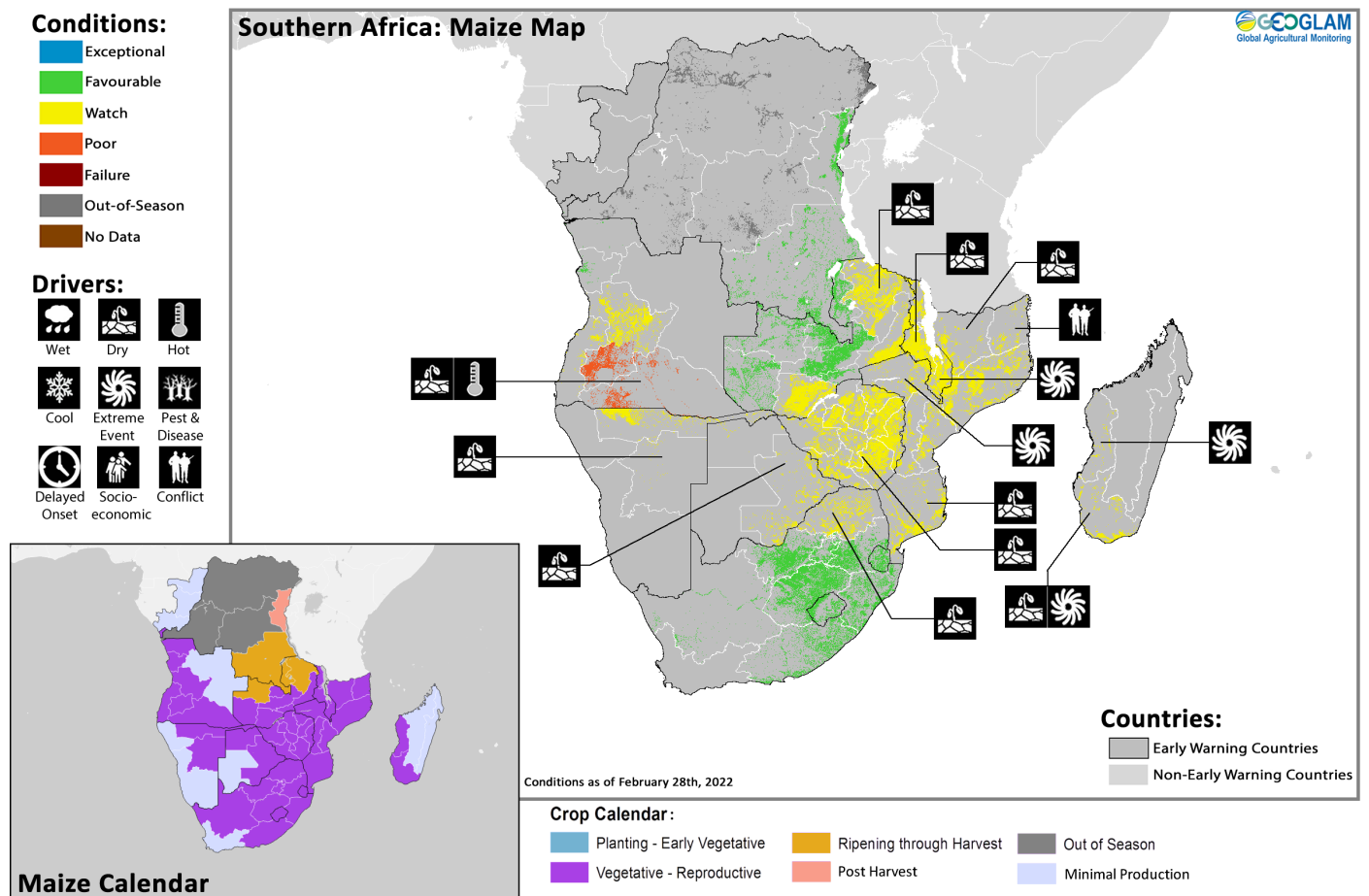


Figure 1. November-to-March 5th rainfall anomaly outlook and a 3-month rainfall probability forecast for March-April-May 2022. The top panel is a CHC Early Estimate, which compares the outlook for November 1st, 2021 - March 5th, 2022 rainfall amounts to the 1981-2021 CHIRPS average. This outlook uses CHIRPS final data through January, preliminary data for February 1st-20th, and a forecast for February 21st-March 5th. The bottom panel is the WMO probabilistic forecast for March-to-May 2022 precipitation, based on models initialized in February. From [WMO Lead Centre Long-Range Forecast Multi-Model Ensemble](#). Source: Climate Hazards Center



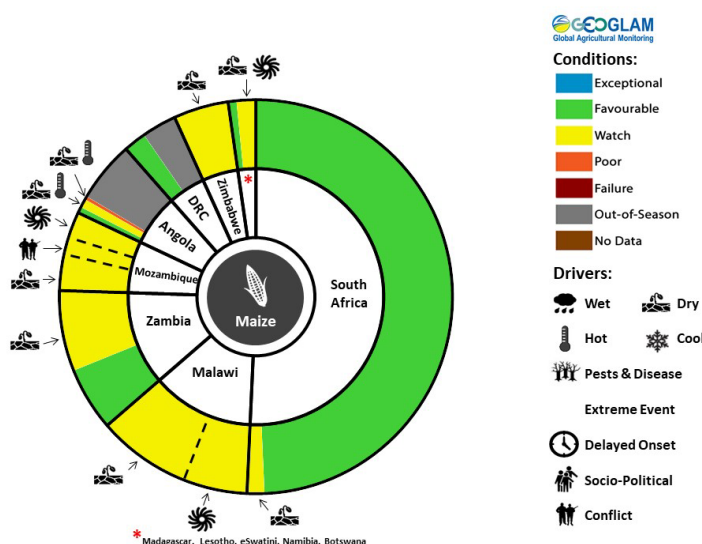
## Southern Africa



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

In Southern Africa, main season crops are mostly in vegetative to reproductive stage across **Angola, Botswana, eSwatini, Lesotho, Madagascar, Malawi, Mozambique, Namibia, South Africa, Zambia, and Zimbabwe**. Overall conditions are mixed as dryness continues to impact parts of coastal **Angola**, southern **Madagascar**, central and northern **Malawi**, northwestern **Mozambique, Namibia**, northeastern **South Africa**, eastern **Zambia**, and **Zimbabwe** and has degraded conditions in southwestern **Angola, Botswana**, central and southern **Mozambique**, and southern **Zambia**. Additionally, concern for crop development remains in southern **Malawi**, Zambezia, Nampula, and Tete provinces in **Mozambique**, and across **Madagascar** due to the passage of several tropical storms and cyclones since the beginning of the year. In late January, Tropical Storm Ana impacted parts of **Madagascar**, central and northern **Mozambique**, southern **Zambia**, northern and eastern **Zimbabwe**, and southern **Malawi** with strong winds and torrential rains. In **Madagascar**, several additional extreme storm events have impacted the country in February, particularly along the northeast and eastern coastal provinces (See Regional Outlook Pg. 11). Elsewhere in the subregion, vegetation conditions remain favourable.

In **Angola**, hot and dry conditions have degraded crop prospects in southwestern parts of the country with some provinces experiencing one of the worst droughts in 40 years and a fifth consecutive year of drought conditions. In some areas, the rains have yet to start as of early February. While rainfall improvements were received in the second decade of February in some areas, more rainfall is needed to offset previous moisture deficits. However, short term forecasts through early March indicate that precipitation deficits are expected to continue, and significant recovery is unlikely (See Regional Outlook Pg. 11). Elsewhere in the country, conditions are favourable despite erratic and below-average rainfall in some areas. In **Botswana**, conditions have degraded due to erratic rainfall since late January. In **eSwatini**, growing conditions remain favourable despite recent instances of below-average rainfall. In **Lesotho**, heavy rainfall in January resulted in some waterlogging in localized areas. Additionally, despite recent below-average rainfall, soil moisture levels and vegetation conditions are favourable. In **Madagascar**, concern remains due to previous dry conditions in the south as well as significant damage from the passage of several weather systems in January and February. While significant rainfall received brought much needed moisture over the previously dry southern and south-western areas, several extreme weather events have impacted the country with heavy rains, strong winds, and flooding and have resulted in widespread damage to agricultural land. From January 17<sup>th</sup>, torrential rains resulted in flooding in the Analamanga region. Then on January 23<sup>rd</sup>, Tropical Depression Ana



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

erratic October to December rainfall. While the country received substantial rainfall in January, particularly in southern areas impacted by Tropical Storm Ana, concern remains in central and northern areas due to previous dry conditions. On January 24<sup>th</sup>, Tropical Storm Ana impacted Southern and Central regions with strong winds and heavy rains and resulted in flooding and crop damage. According to the Government of Malawi, 115,388 hectares of crops have been destroyed as of early February, and more than 190,429 people have been displaced by the floods. The southern districts of Chikwawa, Nsanje, Phalombe, and Mulanje, which contribute less than 10 percent of total national cereal output, were the most affected by flooding from Ana. In central and northern regions not impacted by the floods, heavy rains helped to reduce soil moisture deficits and benefit vegetation conditions despite localized flooding. Heavy rains continued in February, and waters have been slow to recede with an increased likelihood of waterlogging further impacting production outcomes. In **Mozambique**, concern remains in the northwest due to poor rainfall performance since the beginning of the season. Conditions have degraded in the centre and south of the country as erratic rainfall in January and below-average rainfall in February has resulted in moisture deficits and wilting in some areas. Short term forecasts show a higher likelihood of continued below-average rainfall in these areas (See Regional Outlook Pg. 11). Additionally, concern remains in Cabo Delgado as a recent upsurge in conflict has displaced 14,000 people since late January. Furthermore, on January 24<sup>th</sup>, Tropical Storm Ana made landfall in Nampula province, resulting in immediate flooding of the Licungo and Luazi Rivers and bringing significant rainfall to northern and central regions of the country. The storm also resulted in flooding and localized crop damage, particularly in Zambezia, Nampula, and Tete provinces. Many of the areas impacted by Tropical Storm Ana, particularly Sofala, Manica, and Zambezia Provinces, were also impacted by Cyclone Idai and Kenneth in 2019 and Tropical Storm Eloise in 2021 and are likely facing compounding issues from the previous storms. In northern **Namibia**, concern remains due to below-average rainfall conditions since the start of the season. In some areas, the season had yet to start as of the first dekad of February. In **South Africa**, conditions remain favourable over most areas except in the northeast as ongoing uneven rainfall distribution may negatively impact crop development. In **Zambia**, planting activities are now complete, and early harvesting activities are underway. Overall cereal production is expected to decline compared to the near-record 2021 output to a near-average level due to an expected output reduction in eastern areas. In November and December 2021, below-average rainfall amounts and above-average temperatures in the east impacted planting and crop germination. Concern remains in north and eastern provinces, which together contribute 30 percent to national maize output, due to below-average rainfall totals. Rainfall improvements in January helped reduce deficits and improve vegetation conditions but also resulted in localized flooding in the Southern Province. Rainfall returned to below-average levels in February, and there are forecasts of below-average rainfall for the remainder of the critical development period during March in most areas (See Regional Outlook Pg. 11). Elsewhere, conditions remain favourable despite suppressed rainfall from early February, though extended dry conditions may negatively impact production. In **Zimbabwe**, concern remains in most areas as rainfall has remained below-average, further increasing moisture deficits across much of the country. In the **Democratic Republic of the Congo**, harvesting of main season maize and sorghum crops is underway in the southeast and east under favourable conditions, and harvesting activities will finalize in March and April. Planting and development of second season maize crops continues under favourable conditions, and harvesting activities will begin in March.

made landfall in Atsinanana region, resulting in additional rainfall and widespread flooding in northern areas. On February 5<sup>th</sup>, Tropical Cyclone Batsirai made landfall in the eastern coastal provinces between Mahanoro and Manajary with winds of 165km per hour, resulting in further destruction of infrastructure. The most affected regions are Atsinanana, Fitovinany, Vatovavy, and Atsimo-Atsinanana in central and southern coastal areas of the country. On February 12<sup>th</sup>, a new tropical weather system evolved into a tropical depression that hit the northeastern coast on February 15<sup>th</sup> as Tropical Storm Dumako. Furthermore, on February 22<sup>nd</sup>, Tropical Cyclone Emnati made landfall between the cities of Mananjary and Manakara, impacting many of the same areas as Tropical Cyclone Batsirai in the central and southern coastal areas (See Regional Outlook Pg. 11). There is a high risk of flash flooding in southern areas due to the previously dry ground conditions. In **Malawi**, planting of main season maize crops finalized in early January, and planted area is expected to decline due to delayed rainfall onset that delayed sowing activities as well as below-average and

**Regional Outlook: Drier than average conditions expected across much of the Central and South through early March.**

Seasonal precipitation deficits have persisted in portions of western Angola, northern Namibia, central and southern Mozambique, and western and southern Madagascar. Figure 1-left shows percent-of-average rainfall for October 1st, 2021 to February 20th, 2022. While recent rains improved conditions in some areas, seasonal totals are 75% to less-than 60% of average, according to estimates using preliminary data for February. Data also indicates below-average rainfall in some northern areas of Zambia, Malawi, and Mozambique. Southwestern areas have had a much wetter-than-average season, with seasonal totals that are [among the wettest](#) of the past 40 years in western South Africa. Multiple severe storms have impacted Madagascar since late January, producing heavy rainfall, damaging winds, floods, and fatalities. Tropical Cyclone Batsirai, Tropical Storm Dumako, and Tropical Cyclone Enmati made landfall in February.

Drier-than-average conditions are expected in many central and southern areas of the region between late February and early March. Much higher-than-average daytime temperatures may also increase risks for crop stress. According to a NOAA CPC outlook from February 22nd, areas with elevated chances for two weeks of suppressed rainfall include southeastern Angola, southern Zambia and Malawi, central and southern Mozambique, much of Namibia, Botswana, and Zimbabwe, and portions of northern South Africa and eSwatini. The unbiased GEFS mean precipitation forecast for February 23rd to March 10th rainfall totals (Figure 1-middle) indicates that if the dry spell materializes, many areas will receive much-lower amounts than is typical for this period. This could exacerbate impacts of drier-than-average conditions that occurred in recent weeks in some areas, including portions of southwestern Zambia, western and central Zimbabwe, Botswana, southern Mozambique, and eSwatini.

Substantial improvement to growing-season precipitation conditions in deficit areas in Angola, Mozambique, and Madagascar appears unlikely, based on elevated chances for below-normal rainfall forecast by the WMO multi-model ensemble (Figure 1-right). Portions of South Africa and southern Botswana may continue to receive higher-than-average rainfall, based on WMO, NMME, and C3S probabilistic forecasts.

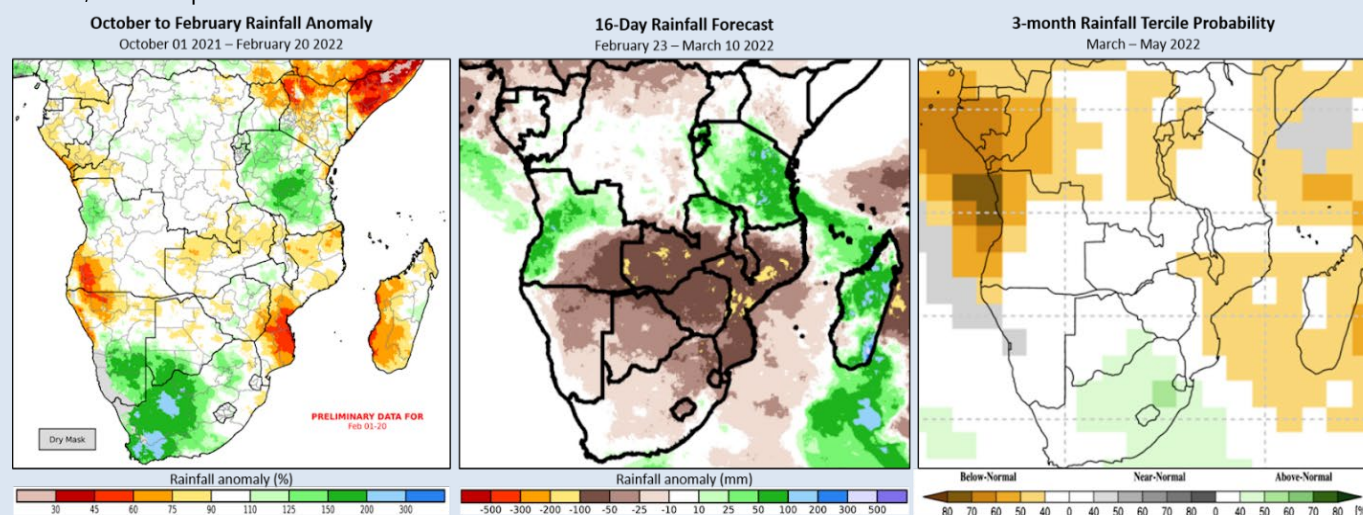
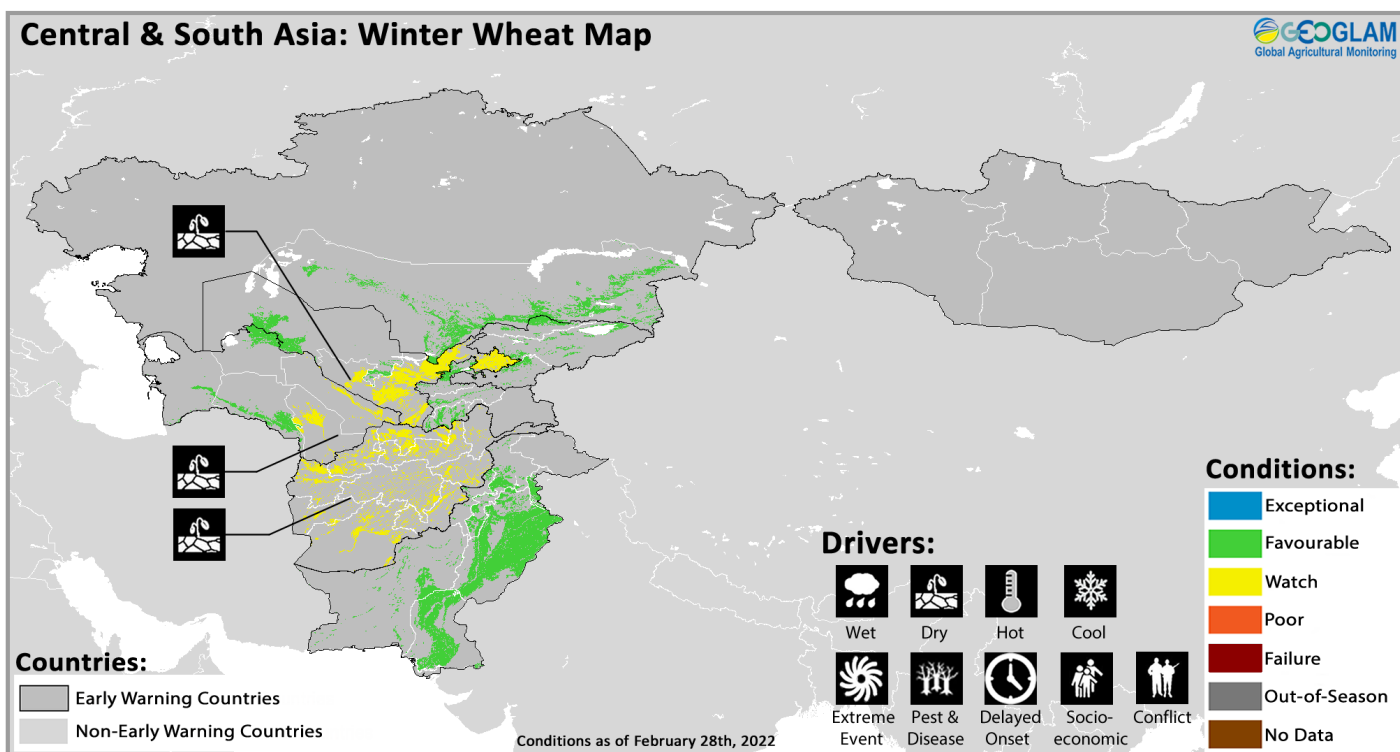


Figure 1. A seasonal rainfall anomaly, a 16-day rainfall anomaly forecast, and a 3-month rainfall probability forecast. The left panel shows the seasonal rainfall performance, represented as a percent of the 1981-2020 CHIRPS historical average, for October 01, 2021 to February 20, 2022. The middle panel shows a 16-day CHIRPS-GEFS (unbiased GEFS) forecast from February 23rd, with values indicating how the forecast compares to the CHIRPS average for this period. The right panel is a WMO probabilistic forecast for March-to-April 2022 precipitation, based on models initialized in February. From the [WMO Lead Centre Long-Range Forecast Multi-Model Ensemble](#). Source: UCSB Climate Hazards Center

## Central &amp; South Asia



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

In Central and South Asia, winter wheat crops are developing under mixed conditions. Despite improved precipitation from late December to late January, previous dry conditions continue to impact **Afghanistan**, Mary and Chardzhou provinces in **Turkmenistan**, and highlands and plains regions in **Uzbekistan**. Elsewhere, conditions remain favourable, and crops in southern **Kazakhstan** have recovered from previous dryness. However, irrigation will be critical throughout the subregion as forecasts of below-average rainfall during the next several months may impact crop performance (See Regional Outlook Pg. 13). Land preparation is underway for spring wheat crops in **Afghanistan** and **Tajikistan**, and planting will begin in March. In **Turkmenistan**, abundant precipitation in early November and from late December helped improve soil moisture levels. While vegetation conditions have improved compared to January, concern remains in south-eastern areas of Mary and Chardzhou provinces due to continued dryness. In **Uzbekistan**, above-average precipitation in January helped reduce soil moisture deficits and benefited crop development; however, vegetation conditions remain below-average in some croplands in the highlands and plains as of the second dekad of February. In **Afghanistan**, improved precipitation in January resulted in sufficient snowpack in medium to low elevations in the southwest and southern basins that will likely be sufficient to provide irrigation water supply for irrigated wheat from March to April. However, there is concern as higher than normal temperatures may lead to flash floods and landslides that could result in crop damage (See Regional Outlook Pg. 13). In **Kazakhstan**, increased precipitation levels in January have improved vegetation conditions in the south. In **Kyrgyzstan**, conditions remain favourable as thick snow cover in mountainous areas from late November has protected crops from winterkill and temperature drops. Additionally, snow cover will provide water reserves for irrigation water during the June to September summer months. In **Tajikistan**, growing conditions remain favourable as below-average rainfall during onset in October 2021 was followed by abundant precipitation in early November and from late December that helped to improve soil moisture levels. In **Pakistan**, adequate water availability and agricultural inputs have supported a high level of plantings and good yields, and the Government forecasts a record wheat production at 28.9 million tonnes. However, heavy rainfall since January 3<sup>rd</sup> also resulted in localized flash flooding in low-lying coastal areas of Gwadar, Killa Abdullah, and Kech districts.

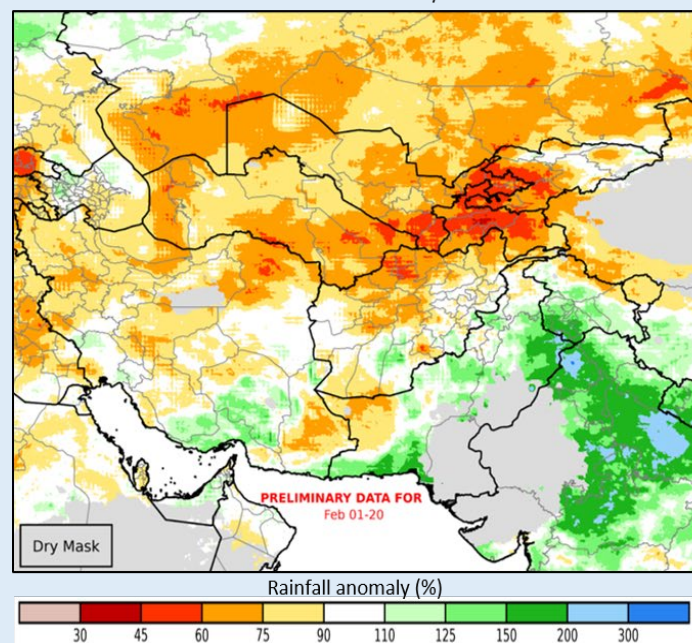
**Regional Outlook: Elevated chances for above-normal precipitation in early March across parts of northern Afghanistan and Kazakhstan, followed by below-normal precipitation forecast through May**

Cumulative precipitation for October 1st, 2021 to February 20th, 2022 is below-average in most central and northern areas (Figure 1-left), despite the improvements provided by wetter conditions in late December to late January. Much of the region was drier than average between late January and late February. Season-to-date precipitation totals are less than 75% of average in most areas between northern Afghanistan and southeastern Kazakhstan, and are less than 60% of average in some central areas. Conditions have been mixed in southern areas of the region, with deficits in portions of central and southern Afghanistan, and mainly average to above-average precipitation in Pakistan's winter wheat growing areas. Snow water equivalent is substantially below-average in eastern Afghanistan, northeastern Pakistan, eastern and northwestern Tajikistan, Kyrgyzstan, and southeastern Kazakhstan, based on [estimates](#) from February 23rd. More information can be found in the [FEWS NET Seasonal Monitor](#). While it is possible that preliminary February CHIRPS data is not fully reflecting localized variations, other data also depict drier-than-average conditions across much of the region in recent weeks. One difference is in central-eastern Afghanistan, where CPC Unified Gauge data indicates average to above-average precipitation and CHIRPS preliminary estimates are drier.

In the next few weeks, areas from northeastern Afghanistan to southeastern Kazakhstan may see improved conditions, as SubX models are indicating elevated chances for above-normal precipitation from [March 5th to March 18th](#) in those areas. Western and southern Afghanistan and central and southern Pakistan are forecast to be drier-than-normal during this time. Below-average precipitation is expected during the next several months across the region, based on the forecast persistence of La Niña and on model forecasts. The WMO multi-model ensemble forecast indicates elevated chances for below-normal March-April-May precipitation across the region, particularly in central region areas (Figure 1-right). Most models also predict above-normal spring and summer temperatures.

**October to February Rainfall Anomaly**

October 01 2021 – February 20 2022



**3-month Rainfall Tercile Probability**

March – May 2022

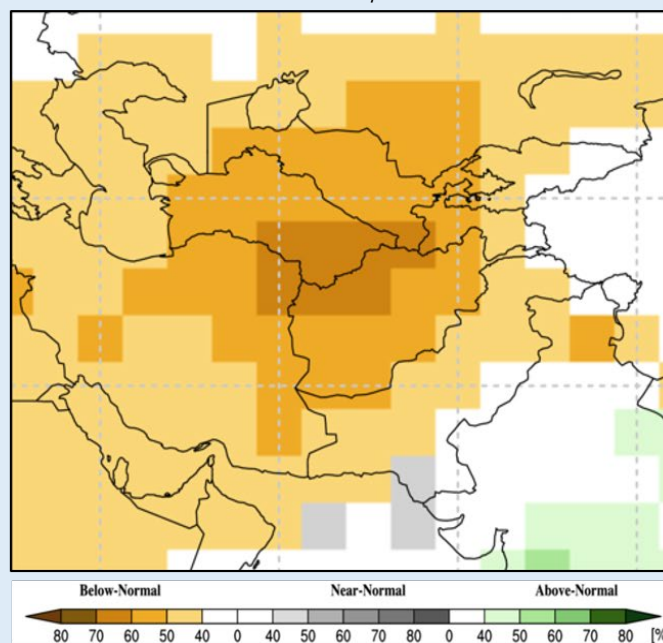
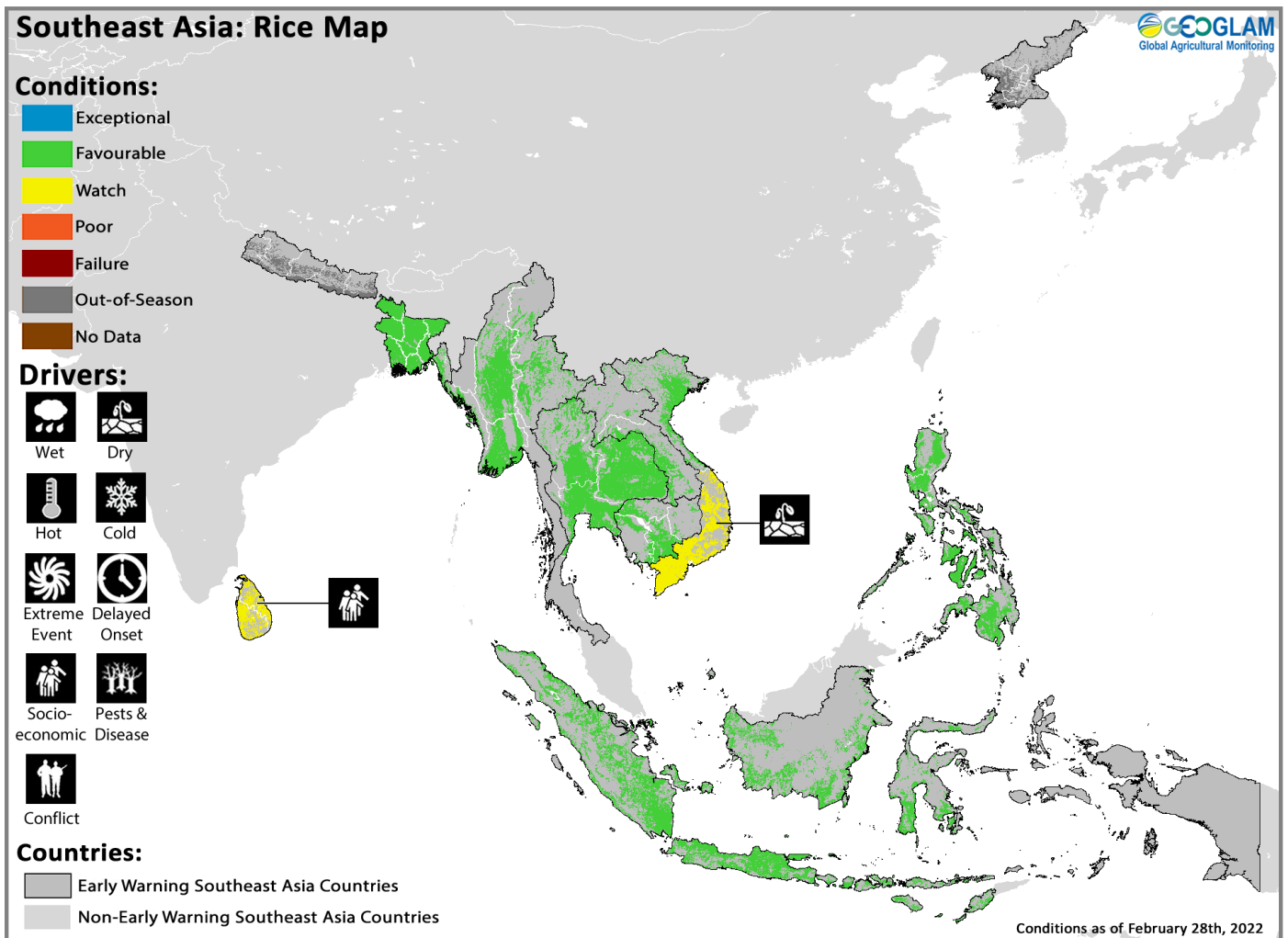


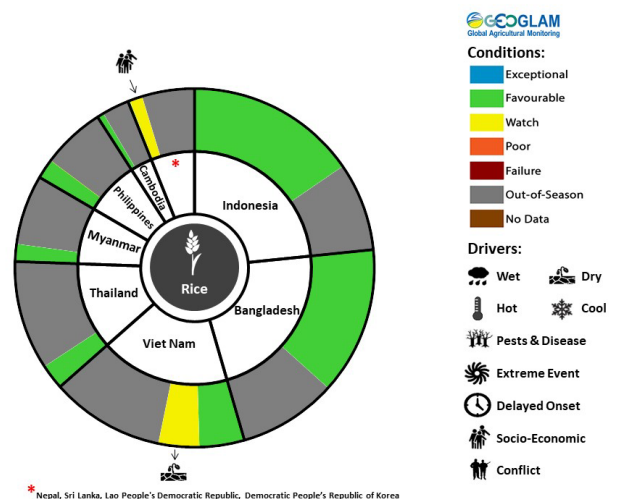
Figure 1. October-to-February 20th rainfall anomaly and a 3-month rainfall probability forecast for March-April-May 2022. The left panel is a CHC Early Estimate, which compares the outlook for October 1st, 2021 - February 20th, 2022 rainfall amounts to the 1981-2021 CHIRPS average. This outlook uses CHIRPS final data through January and preliminary data for February 1st-20th. The right panel is the WMO probabilistic forecast for March-to-May 2022 precipitation, based on models initialized in February. From the [WMO Lead Centre Long-Range Forecast Multi-Model Ensemble](#). Source: Climate Hazards Center

Southeast Asia



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

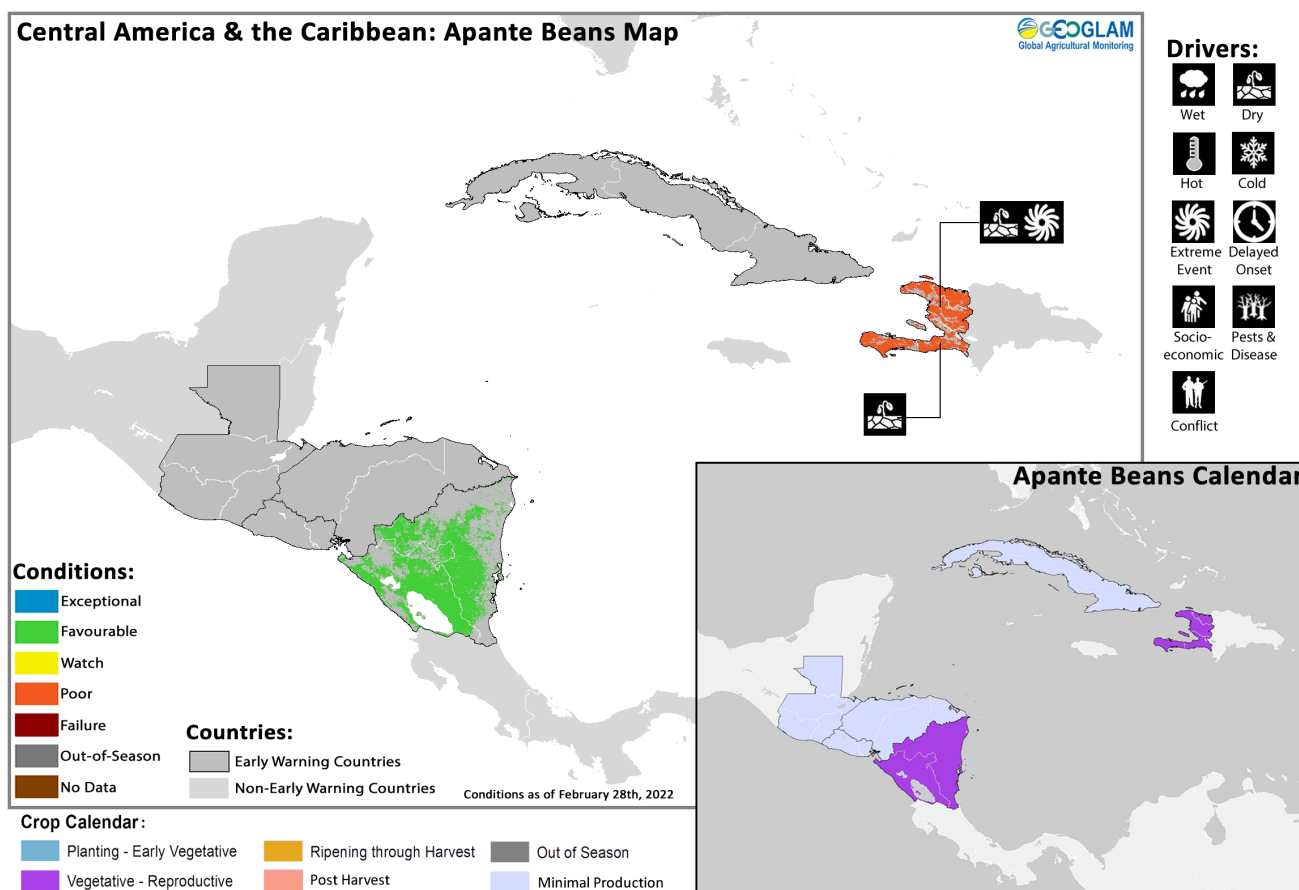
In northern Southeast Asia, dry-season rice is developing under generally favourable conditions, and planted area is expected to increase due to sufficient irrigation water supply and favourable weather conditions. However, there are concerns regarding saline intrusion in southern **Viet Nam** as well as lack of agricultural water in some localized areas of the subregion. In **Indonesia**, wet-season rice sowing enters the final month with the total sown area at 6.2 million hectares and 14.4 percent higher than the previous wet-season due to intensive and beneficial rainfall from late January to mid-February. Earlier sown wet-season rice is being harvested with good yields owing to ample rainfall and sunlight during the growing season. In the **Philippines**, dry-season rice sown between November and December is in the young panicle forming to heading stage under favourable conditions. Despite high precipitation in the second half of January in northern regions, no crop damage was reported in these areas. However, more than a month after Super Typhoon Rai (locally named Odette) made landfall in the south of the country across areas of Mindanao and Visayas on December 16<sup>th</sup>, 133,000 people remain displaced due to the impacts of torrential rains, violent winds, floods, and storm surges. In **Thailand**, dry-season rice is in the young panicle forming to grain filling stage under favourable conditions. The total sown area is expected to be above last year's level, and yield and production are expected to increase due to adequate water supply and favourable weather conditions. In **Viet Nam**, winter-spring rice (dry-season) is sowing across the country with an increase in sown area to date in the north due to ample rainfall. Total sown area in the north is estimated at 133,600 hectares and 48.6 percent higher



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

than the previous year. Earlier sown plots in the south are beginning to harvest under mixed conditions due to saline intrusions in the Mekong River Delta provinces, though impacts are still uncertain. Current sown area is 1.79 million hectares. In **Laos**, dry-season rice is in seeding to tillering stage under favourable conditions due to sufficient irrigation water supply, and forecast average to above-average rainfall for the remainder of the month is expected to benefit paddy development. Planted area has reached 87,000 hectares and 94 percent of the national production plan, and final planted area is expected to be slightly lower than the national plan. In **Myanmar**, dry-season rice is mostly in tillering growth stage under favourable conditions despite unexpected rainfall in February. Over 740,000 hectares of dry-season rice accounting for 76.5 percent of the national planting plan has been planted, and progress is slightly slower compared to the previous year. Transplanted rice accounts for 17.6 of the total planted area, and direct seeded rice accounts for 82 percent of the total planted area. In **Cambodia**, planting of dry-season rice reached 624,000 hectares and 135 percent of the national planting plan due to sufficient irrigation water supply and despite unseasonable rains in February. Harvesting activities are now underway with an estimated yield of 4.40 tons per hectare. In **Sri Lanka**, harvesting of *Maha* season maize and rice crops is underway and will finalize in March, and concern remains due to agrochemical input shortages. Planted area for the 2022 main *Maha* season paddy crop, accounting for 70 percent of annual production, is estimated to be close to the previous year's above-average level, driven by high prices and favourable weather conditions at planting. However, shortages and high prices of agrochemical inputs resulted in reduced application and negative yield impacts in most parts of the country. Maize output is also likely to be affected by agrochemical shortages. In **Bangladesh**, the mostly irrigated *Boro* season rice crop, which accounts for approximately 55 percent of annual output, is in vegetative to reproductive stage for harvest from mid-April, and growing conditions are favourable. Planted area is estimated to be near-average, reflecting steady demand, and yields are also expected to be near-average, reflecting adequate irrigation water supply and agricultural inputs such as fertilizer and pesticides. In **Nepal**, the mostly irrigated winter wheat crop is developing under favourable conditions following above-average May to September monsoon rains that resulted in ample supplies of irrigation water which supported planting activities and crop germination. Planted area is estimated at an above-average level, driven by strong local demand, and harvest will begin in March. Planting of main season maize crops has just begun, and conditions are favourable.

## Central America & Caribbean



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

In Central America, harvesting of *Segunda/Postre* season maize and bean crops finalized last month under mixed conditions with below-average yields in central and southern **Guatemala** and southern **Honduras** due to significant rainfall deficits earlier in the season. Additionally, heavy rainfall resulted in floods and landslides in some areas, affecting farmers in Petén, Alta Verapaz, and Izabal departments in **Guatemala**, and a tornado affected localized and mainly subsistence crop production areas in Morales municipality

of Izabal department. The Ministry of Agriculture is conducting field reports to determine the losses in affected areas. In **Nicaragua**, *Apante* season bean crops continue to develop under favourable conditions for harvest from the last week of February and the first week of March. Despite below-average rainfall in the northeast and above-average rainfall in the southeast, growing conditions remain favourable due to adequate rainfall distribution. In **Honduras**, harvesting of second season rice crops continues under favourable conditions as improved precipitation from mid-January has restored prospects for near-average yield, and harvesting activities will finalize in April. Land preparation for the *Primera* season will begin soon in **Guatemala, Honduras, El Salvador, and Nicaragua** for planting from mid-April. However, recent earthquakes resulted in damage to irrigation systems that could affect *Primera* season crop production over the pacific area of **Guatemala**.

In **Haiti**, second season rice and third season bean crops are in vegetative to reproductive and early harvesting stage, and harvesting activities will finalize next month. Crop yields are expected to be below-average due to previous rainfall deficits followed by recent heavy rainfall that resulted in landslides and flooding in some areas. In late January and early February, torrential rainfall resulted in flooding in Nord, Nord-Est, and Nippes departments and river overflow in Centre department. Elsewhere, reduced soil moisture during planting and persistent dry conditions during crop emergence and vegetative stage adversely affected planted area and crop development. While increased rainfall since mid-January resulted in some crop improvement, it is too late in the season for significant crop recovery. In **Cuba**, planting and development of main season maize and rice crops continues under favourable conditions for harvest from April. Despite below-average precipitation in January and February, recent rainfall improvements have benefitted crop development.

**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 March 3<sup>rd</sup>, 2021.**



# Appendix

## Crop Conditions:

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

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

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

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

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

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

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

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

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

## Drivers:

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

**Wet:** Higher than average wetness.

**Dry:** Drier than average.

**Hot:** Hotter than average.

**Cool:** Cooler than average or risk of frost damage.

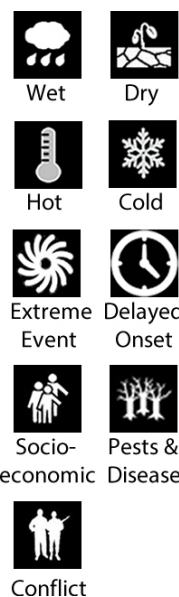
**Extreme Events:** This is a catch-all for all other climate risks (i.e. hurricane, typhoon, frost, hail, winterkill, wind damage, etc.)

**Delayed-Onset:** Late start of the season.

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

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

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



## Crop Season Nomenclature:

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

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

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

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

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

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

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

**Crop Season Nomenclature:**


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

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



# GEOGLAM

## Global Agricultural Monitoring

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

### Contributing partners



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