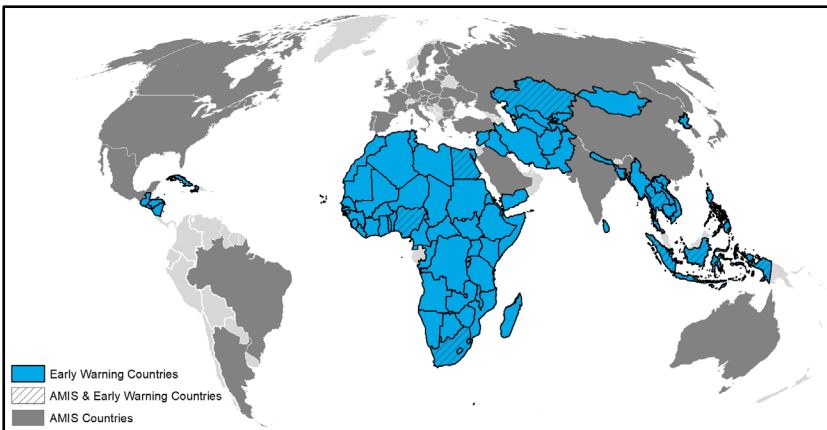


# Crop Monitor

## EARLY WARNING

### Overview:

In **East Africa**, harvesting of main/*Meher* season cereals is underway in the north with generally favourable conditions except in areas impacted by ongoing conflict, socio-economic challenges, and flooding. Conversely, there is concern in the south where persistent dry conditions are impacting crops and are forecast to continue through the October to December rainfall season. In **West Africa**, harvesting of main season cereals is wrapping up in the north and is just beginning in the south, and conditions are generally favourable except in regions impacted by persisting conflict and recent dryness. In the **Middle East and North Africa**, land preparation will begin next month for winter wheat, and conditions remain favourable for rice crops in Egypt, Iraq, and Iran. In **Southern Africa**, winter wheat crops are developing under favourable conditions, and land preparation and planting of main season cereals will commence in October. In **Central and South Asia**, harvesting of spring wheat crops is wrapping up under mixed conditions due to persistent dryness. Land preparation and planting of winter wheat crops has started with concern in areas due to dry conditions that are forecast to continue through Fall and Winter 2021/2022. In **Southeast Asia**, harvesting of wet-season rice is underway in the north while harvesting of earlier planted dry-season rice is underway in Indonesia, and overall conditions are favourable. In **Central America and the Caribbean**, harvesting of *Primera*/main season cereals finalized under favourable conditions except in parts of Honduras and localized areas in Guatemala. Planting of *Segunda/Postera* season crops began under favourable conditions.



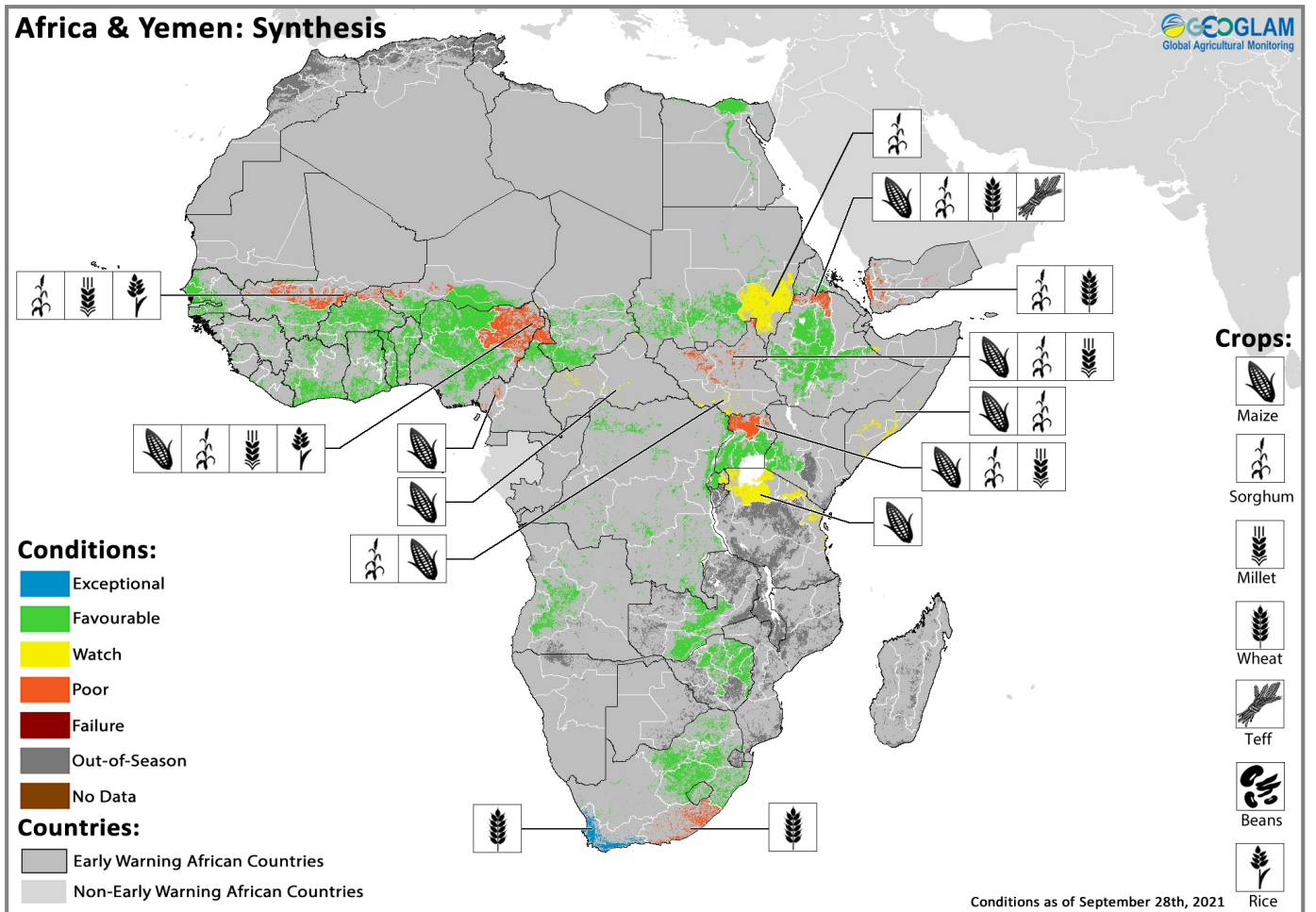
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# GEOGLAM Crop Monitor for Early Warning

## Crop Conditions at a Glance

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



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

**EAST AFRICA:** In the north, harvesting of main/*Meher* season cereals is underway, and conditions are generally favourable except in areas impacted by ongoing conflict, socio-economic challenges, and flooding. In the south, land preparation and planting of second season cereals is underway with concern in areas impacted by persistent dryness which is forecast to continue for the upcoming October to December 2021 rainfall season (See Seasonal Forecast Alert Pg. 5 and Regional Outlook Pg. 9).

**WEST AFRICA:** Harvesting of main season maize crops is wrapping up in the south while harvesting of main season cereals is underway in the north. Conditions are generally favourable except in areas impacted by ongoing conflict and recent dryness.

**MIDDLE EAST & NORTH AFRICA:** Land preparation and planting will begin next month for winter wheat across the region. In Egypt, conditions are favourable for the development of main season maize and summer-planted rice crops.

**SOUTHERN AFRICA:** Winter wheat crops are developing under favourable conditions across South Africa, Zambia, Zimbabwe, and Lesotho. Land preparation and planting of 2020/2021 main season cereals will start in full next month, and forecasts indicate

above-normal rainfall for central and southeastern areas (See Regional Outlook Pg. 12).

**CENTRAL & SOUTH ASIA:** Harvesting of spring wheat is wrapping up under mixed conditions as persistent dryness has impacted crops in Afghanistan, Kazakhstan, northern Kyrgyzstan, and eastern Turkmenistan. Land preparation and planting of 2020/2021 winter wheat crops is underway, and below-average precipitation is forecast for the Fall and Winter season, which may worsen irrigation deficits in some areas (See Seasonal Forecast Alert Pg. 14).

**SOUTHEAST ASIA:** In the north, harvesting of wet-season rice is underway in some areas, and conditions are generally favourable due to early onset and sufficient rainfall. In Indonesia, harvesting of earlier planted dry-season rice is underway with near-average yields despite seasonal delay due to the protracted wet-season.

**CENTRAL AMERICA & CARIBBEAN:** Harvesting of *Primera*/main season cereals finalized under generally favourable conditions except in eastern Honduras and localized areas of Guatemala. Planting of *Segunda/Postera* season beans and maize began under favourable conditions.

### **Global Climate Outlook: 30-day Forecast of Areas with Above or Below-Average Precipitation**

The 30-day precipitation forecast indicates a likelihood of above-average rainfall over western Canada, the central US, Costa Rica, Panama, Colombia, southern Venezuela, Guyana, Suriname, French Guiana, Ecuador, Peru, Brazil, northwestern Bolivia, southern Paraguay, southern Cameroon, Equatorial Guinea, Gabon, Congo, the Democratic Republic of Congo, western East Africa, eastern South Africa, Ireland, the UK, Norway, Sweden, Denmark, Belgium, France, northeastern Spain, eastern Georgia, Azerbaijan, northwestern Iran, western Yemen, western Uzbekistan, southern Pakistan, India, Nepal, Bhutan, eastern China, the Democratic People's Republic of Korea, Japan, Laos, Viet Nam, Cambodia, the Philippines, Indonesia, Papua New Guinea, and eastern Australia. There is also a likelihood of below-average rainfall in parts of eastern Canada, the northeastern US, southern Mexico, Guatemala, El Salvador, Honduras, Cuba, southern Brazil, Uruguay, northeastern Argentina, southern Chile, south of the Sahel, eastern East Africa, Portugal, Spain, southern China, Myanmar, western Malaysia, western Indonesia, and New Zealand.

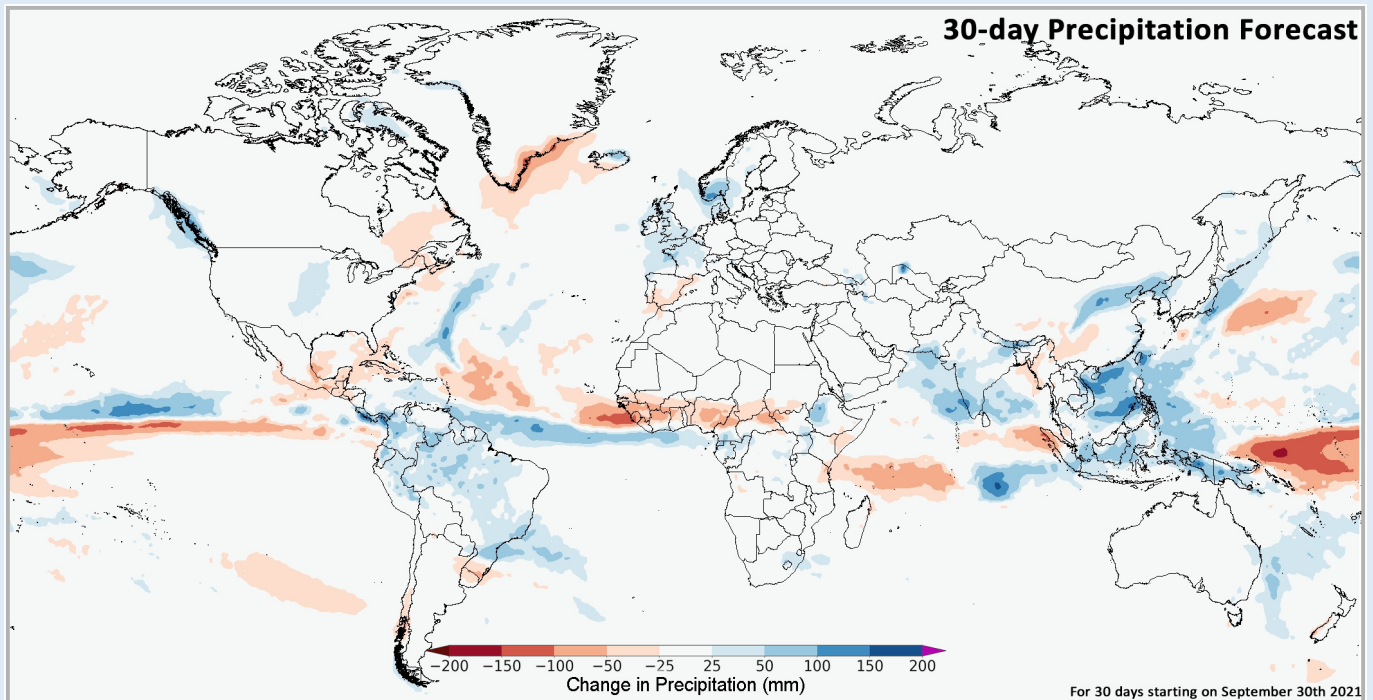


Figure 1. Forecast of areas with above or below-average precipitation over the next 30-days starting on September 30<sup>th</sup> 2021. The image is the multimodel mean of precipitations anomaly from the Subseasonal Experiment (SubX) model forecasts for that day. The anomaly is based on the 1999 to 2016 model average. Skill assessments of SubX can be accessed [here](#).

Source: UCSB Climate Hazards Center

### **Climate Influences: La Niña event likely to develop in October or November and negative IOD event is currently underway**

Neutral El Niño-Southern Oscillation (ENSO) conditions are present. A La Niña event will likely develop in October or November and persist through early 2022 (78% chance for October to December; 79% to 60% chance for November to March). Climate forecasts also anticipate exceptionally warm west Pacific Ocean conditions, which can amplify the impact of cool La Niña conditions in the east Pacific.

La Niña-like conditions typically increase the chances of below-average precipitation in East Africa, Central Asia, southern South America, southern United States, northern Mexico, and eastern East Asia. La Niña-like conditions typically increase the chances of above-average precipitation in parts of Southeast Asia, Australia, Southern Africa, and northern South America.

The Indian Ocean Dipole (IOD) is in a weak-negative state. The ongoing negative IOD event weakened in recent weeks, and some models forecast it will strengthen in October. Most models forecast a return to neutral by December. Negative IOD conditions typically increase the chances of above-average precipitation in Southeast Asia and Australia, and below-average precipitation in East Africa.

Source: UCSB Climate Hazards Center

### ***Desert Locust Update: Swarm migration likely in Eritrea, Djibouti, eastern Ethiopia, and northern Somalia despite forecasts of below-average rainfall***

As of late September, remnants of small immature swarms remained present in eastern **Ethiopia** and on the plateau in northwest and northeastern **Somalia**. As vegetation dries out in northeast and northern **Ethiopia**, swarms are likely to move northwards towards the coastal plains in **Eritrea** and possibly through **Djibouti** and eastwards to Somali region in **Ethiopia** and northern **Somalia**. While October to November rains are forecast to be below-average in parts of the subregion, they may be sufficient in northern areas for swarms to mature and lay eggs, giving rise to hopper bands (See Seasonal Forecast Alert Pg. 5 and Regional Outlook Pg. 9). In particular, October rains in Somali region of **Ethiopia** and northern **Somalia** will allow swarms to mature and lay eggs, giving rise to band formation from November. Swarms that reach **Eritrea** are also likely to mature and lay eggs with the onset of winter rains. While the upsurge remains lower in scale compared to the previous year, conflict in **Yemen** and northern **Ethiopia** present a threat to effective control operations.

In northern **Ethiopia**, the ongoing conflict has hindered control operations, allowing for substantial breeding and threatening food production in other parts of Ethiopia and in Eritrea. As of mid-September, breeding was underway in southeastern Tigray, and hoppers were forming small bands. Early instar hopper bands were also reported in neighbouring areas of Afar and eastern Amhara. As of late September, summer-bred immature swarms began forming in Afar region where late instar hopper bands were present. While the scale of breeding is not well known, more small immature swarms are likely to form in Afar, Tigray, and Amhara regions in October. In **Yemen**, local breeding and hopper bands in the southern interior are resulting in small immature swarm formation. As of late September, additional immature swarms were forming from previous hopper band infestations in the interior. Swarms in the interior are likely to move to the Red Sea coast during October and possibly to northern **Somalia** and southwestern **Saudi Arabia**. Elsewhere in the subregion, only small-scale breeding is underway in areas of recent rainfall in **Chad** and **Sudan**.

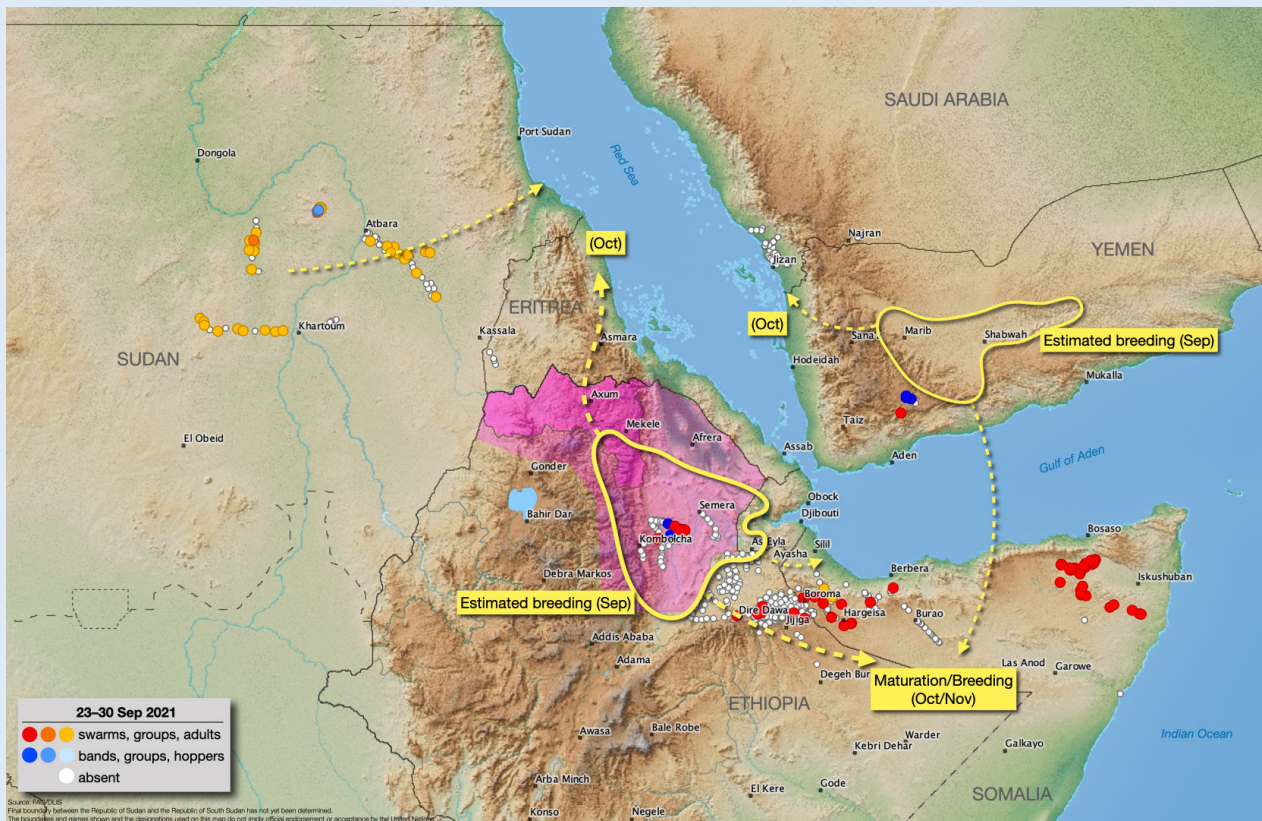


Figure 1. Desert Locust Situation September 23-30 2021. Source: FAO DLIS

### Seasonal Forecast Alert: Increased likelihood for a third and possibly fourth consecutive below-average rainfall season across eastern East Africa during OND 2021 and MAM 2022

Given that current sea surface temperature forecasts are very similar to those from last year, it appears likely that there could be a repeat occurrence of last year's consecutive poor rainfall seasons in eastern East Africa (Figure 1-left) during the October–November–December (OND) 2021 season and the March–April–May (MAM) 2022 season. These concerns are founded upon short and long-range model forecasts, prior research, and outcomes during previous analogous seasons. Climate models indicate elevated chances of large-scale climate conditions that are conducive to suppressed rainfall during OND and MAM seasons.

The pessimistic OND 2021 rainfall forecasts, from multiple international and regional forecasting centers (See Figure 1-middle and the Regional Outlook Pg. 9), are consistent with below-average outcomes during previous similar OND seasons with La Niña-like and negative Indian Ocean Dipole conditions. Based on recent atmospheric and ocean conditions and model forecasts, the Indian Ocean Dipole may be in a weak negative state, and La Niña conditions are predicted to emerge. Similar to last year, this La Niña event will likely be accompanied by exceptionally warm west Pacific Ocean conditions. In cases when the eastern Pacific (e.g. the Niño3.4 region) is only modestly cool, western Pacific sea surface temperatures (SSTs) can still help produce a strong tropical-extratropical Pacific SST gradient and La Niña-like rainfall impacts in eastern East Africa. Statistical analysis of predicted SSTs for these influential Indian and Pacific Ocean regions, based on NMME models initialized in early September, suggests a range of near-average to below-average potential outcomes for OND 2021, with moderate dry conditions (-0.8 SPI value) considered likely. Similar analyses are detailed in the September 2021 Crop Monitor [report](#) and in [CHC blogs](#).

For MAM 2022, the concerns are in line with historical outcomes during similar years. Climate models do not provide reliable long-range predictions for MAM rainfall in eastern East Africa. Useful long-range indicators include the forecast La Niña 2021–2022 event and the forecast Pacific Ocean “Western V” SST tropical-extratropical gradient (WVG) for MAM 2022. In Figure 1-right, 6-month lead NMME forecasts for WVG conditions during March–April–May are shown to be reasonably reliable due to the models’ skill at forecasting La Niña-related SST variations and the strong warming trends in the western Pacific. In years when climate models forecast a strong negative WVG, as they do for MAM 2022 (red circle), many MAM seasons had below-normal rainfall (orange circles show all below-normal seasons). Long-range MAM 2022 outlooks for the eastern Horn highlight the predictability of MAM droughts and are detailed [here](#). MAM composites based on recent La Niña events reach a similar pessimistic conclusion, as described [here](#). These concerns focus on eastern East Africa, where rains have been poor, and the OND 2021 outlook is pessimistic (Figure 1-left).

In short, forecast large-scale conditions are similar to last year. While there are limitations to accuracy and precision in climate model forecasts and historical comparisons, this information underscores the possibility that areas that recently endured challenging conditions for crops and livestock are again at risk for consecutive droughts.

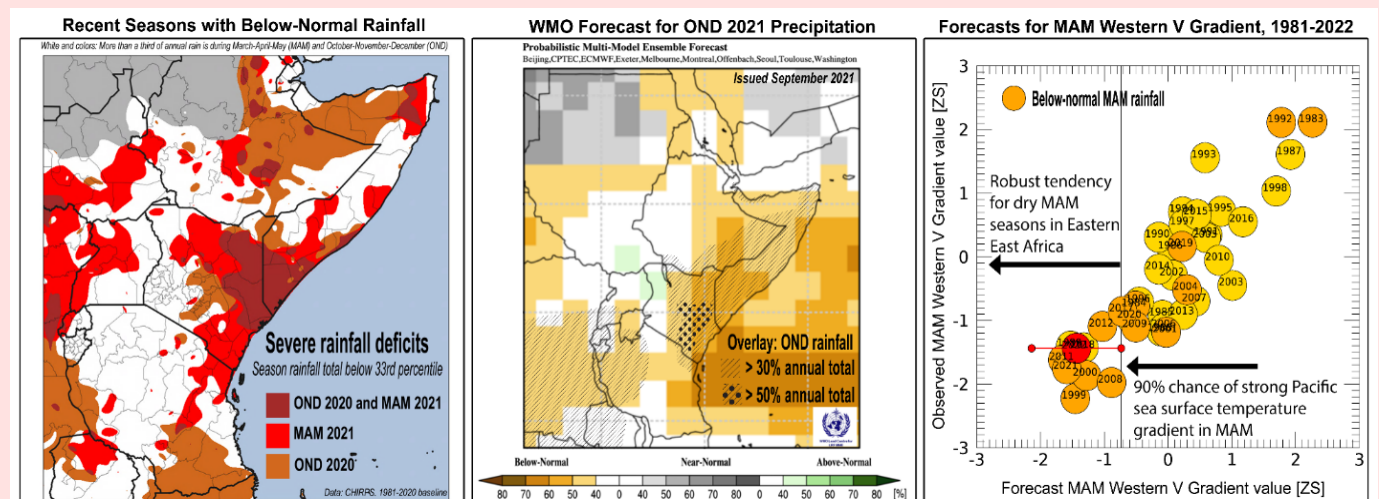
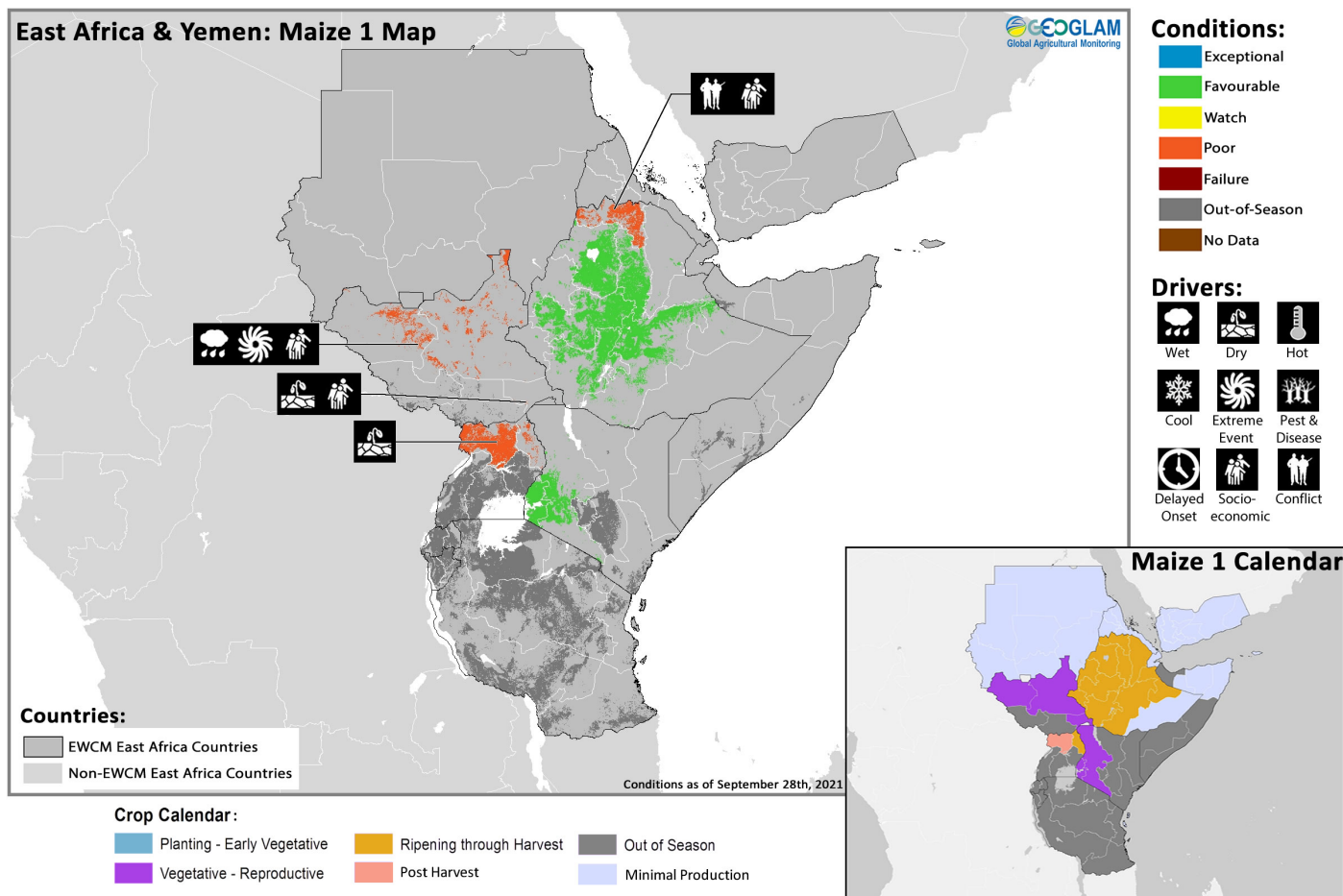


Figure 1. Consecutive droughts in eastern East Africa, forecast below-normal OND 2021 precipitation, and indications for a potential below-normal MAM 2022 season. Left— Map showing areas with severe rainfall deficits during OND 2020 (brown), MAM 2021 (bright red), and during both these seasons (dark red). Severe deficits are defined as totals being in the driest third of the 1981–2020 seasons, based on CHIRPS data. Middle — WMO probabilistic forecast for October–November–December (OND) 2021 precipitation, based on models initialized in September. The overlay shows the importance of OND rainfall to annual totals. Base image from [WMO Lead Centre Long-Range Forecast Multi-Model Ensemble](#). Right— Scatterplot of predicted and observed MAM Western V Gradient (WVG) values. Forecasts based on September NMME predictions. There is a 90% chance of strong Pacific Ocean sea surface temperature WVG gradient conditions. The red circle shows the 2022 forecast. All below-normal eastern East African MAM rainy seasons are noted with orange circles. When strong negative WVG values have occurred or been predicted, below-normal MAM rains have been likely. More details are provided in a Climate Hazards Center Blog (<http://blog.chc.ucsb.edu/?p=1030>).

Source: Climate Hazards Center

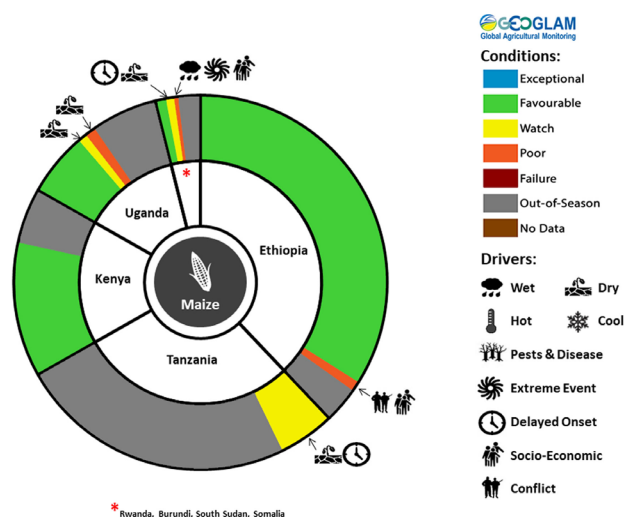
## East Africa &amp; Yemen



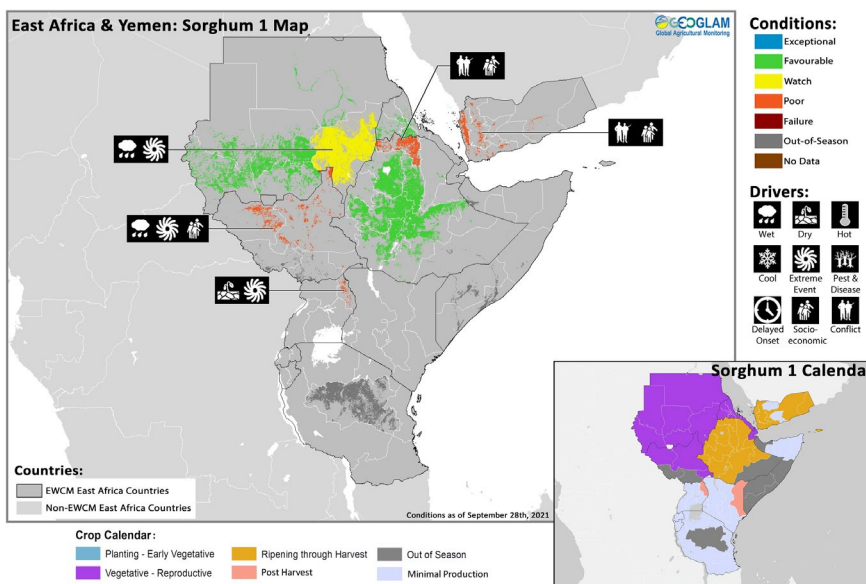
Crop condition map synthesizing Maize 1 crop conditions as of September 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Conditions that are other than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

In the north of the subregion, harvesting of main/*Meher* season cereals is underway in **Ethiopia** while crops continue to develop in **Djibouti, Eritrea, South Sudan, and Sudan**. Also, harvesting of wheat crops finalized in **Yemen**, and sorghum harvest is underway while planting of second season cereals is underway in southern **South Sudan**. Poor conditions resulted in Tigray **Ethiopia, Yemen, and South Sudan** due to conflict and socio-economic challenges, and there is continued concern in eastern **Sudan** and northern **South Sudan** due to recent heavy rainfall and flooding. Flooding in August and September is a regular problem throughout the region as monsoon rains in the **Ethiopian Highlands** flow down to the Blue Nile and White Nile, impacting adjacent areas through **Sudan** and **South Sudan**. This year, more than 700,000 people in **Sudan** and **South Sudan** have been affected by ongoing floods since the start of the rainy season in July. Across the south of the subregion, harvesting of main season cereals finalized last month, and below to well below-average yields resulted for main season cereals in northeastern **Kenya**,

northern **Uganda**, and **Somalia** while crops continue to develop in unimodal rainfall areas of **Kenya** under favourable conditions. There is concern for second season cereals in eastern **Rwanda**, northern **Uganda, Somalia**, and the **United Republic of Tanzania** currently under land preparation and planting due to persistent dryness. Throughout 2021, prolonged rainfall deficits have resulted in dry conditions over many central and southern parts of the subregion. For the upcoming October to December rainfall season, drier than normal conditions associated with the forecast La Niña event are likely in parts of eastern and southern East Africa, particularly in the cross-border areas of **Kenya** and **Somalia**. Furthermore, warmer than normal temperatures are expected in many parts of the subregion, particularly in eastern **Kenya to Somalia**, eastern **Ethiopia**, and eastern **Sudan**. Carryover dry conditions in



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



Crop condition map synthesizing Sorghum 1 conditions as of September 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.**

main season millet and sorghum crops are in vegetative to reproductive stage for harvest from November, and conditions are generally favourable due to above-average seasonal rainfall. However, there is concern in the east due to potential flood impacts. In 2020, record-breaking flooding affected 850,000 people across the country. From the start of this year's rainy season in July, heavy rains and flash flooding have compounded last year's impacts, affecting over 303,000 people in 13 states. River Nile, Al Jazirah, Gedaref, and White Nile states are the most affected. Water levels of the Nile River were above flood risk level as of mid-September; however, they appeared to have been falling as of September 22<sup>nd</sup>, and the extent of flood water was decreasing in some areas. Additional light rainfall is expected over southern areas, though the rainfall season typically ends in September (See Regional Outlook Pg. 9). In **South Sudan**, first season cereals are in vegetative to reproductive stage for harvest from October while planting of second season maize and sorghum crops continues in the south, and crops are unlikely to recover due to ongoing conflict and socio-economic challenges, dry conditions in the south, and impacts from flooding in the north. From May of this year, heavy rain and flooding has affected thousands along the river Nile, Sudd wetlands, and Lol and Sobat rivers, compounding the flooding from August to September of 2020 that affected over 600,000 people across the country. The most affected areas last year were in Jonglei, Pibor, Upper Nile, Unity, Western Equatoria, and Eastern Equatoria states. From May of this year, ongoing flooding has affected or displaced 426,000 people throughout the country, with Jonglei, Unity, Northern Bahr el Ghazal, Upper Nile, Warrap, and Western Equatoria being the most affected. Forecast heavy rains and flooding are expected to continue across the north in the coming months (See Regional Outlook Pg. 9). In **Djibouti**, main season millet and sorghum crops are developing under favourable conditions, and harvest will take place from November. In **Eritrea**, winter wheat and main season sorghum crops are developing under favourable conditions for harvest from November. The June to September *Kiremti* rainy season produced a timely rainfall onset and above-average precipitation in July, followed by below-average precipitation in August. However, vegetation conditions remain favourable, particularly in the major producing western Gash Barka region. Forecast above-average rainfall for the remainder of the *Kiremti* rainy season is likely to benefit yields (See Regional Outlook Pg. 9). In **Yemen**, harvesting of wheat crops finalized in September while harvesting of main season sorghum crops is underway, and conditions are poor throughout the country due to persistent socio-economic challenges and conflict. While previous torrential rainfall and flooding in the east and west resulted in localized damages, above-average rainfall also improved soil moisture reserves.

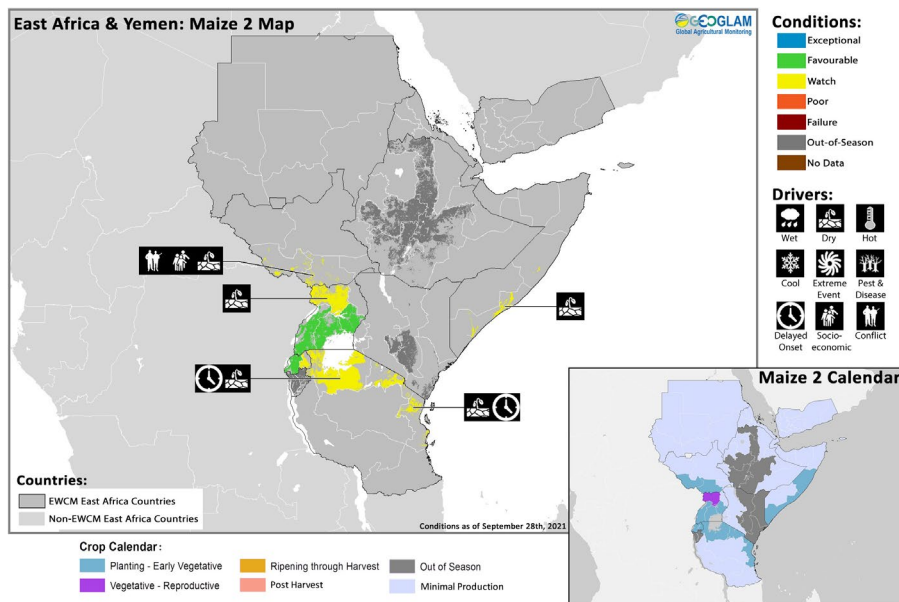
#### Southern East Africa

In **Uganda**, harvesting of main season cereals is complete or nearing completion with below-average yields expected in the North and Karamoja due to persistent dryness throughout the season. In Karamoja region, the April to September rainy season began with a delayed onset, negatively impacting planting and germination. Heavy rains in early May resulted in flooding and waterlogging and were followed by below-average precipitation in late May through June. Despite a slight improvement in vegetation conditions in July with above-average rainfall, rainfall was again below-average in August. Due to the impacts of erratic rainfall and flooding, planted area is below-average, and harvests are delayed by a month and are expected to be below-average. Similarly, in the northwest, overall production is estimated at below-average levels as delayed onset and erratic March to June rains resulted in abnormal dryness in some areas, significantly affecting yields. Conversely, torrential rains in July resulted in the overflow of Lake Kyoga, resulting in damaged infrastructure and localized crop loss. Throughout the country, planting and development of second season maize crops is underway for harvest from October, and overall conditions are favourable. However, from early September, heavy rain caused the Nyamwamba river to break its banks, and flooding has occurred in Kasese District in the southwest. Also, from mid-September, severe flooding and landslides impacted Sironko, Kapchorwa, Mbale, and Kween districts of the Eastern region.

combination with forecasts of continued dry conditions are a concern and may result in moderate to severe drought and water stress in parts of the subregion. (See Seasonal Forecast Alert Pg. 5 and Regional Outlook Pg. 9).

#### Northern East Africa & Yemen

In **Ethiopia**, harvesting of *Meher* season (Long Rains) cereals began under generally favourable conditions due to good rainfall. However, dams and reservoirs across the country have reached maximum capacity due to ongoing summer rainfall, including at Gilgel Gibe, Tana Beles, Fincha, and Keseme sites. Additionally, crops in Tigray region are unlikely to recover as ongoing conflict and socio-economic challenges continue to impact agricultural production. Only 25 to 50 percent of the normal cereal production is expected in Tigray this year as the planting season has been missed in many areas due to the protracted conflict. Limited fuel and cash is also hindering transportation of agricultural inputs. In **Sudan**,



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

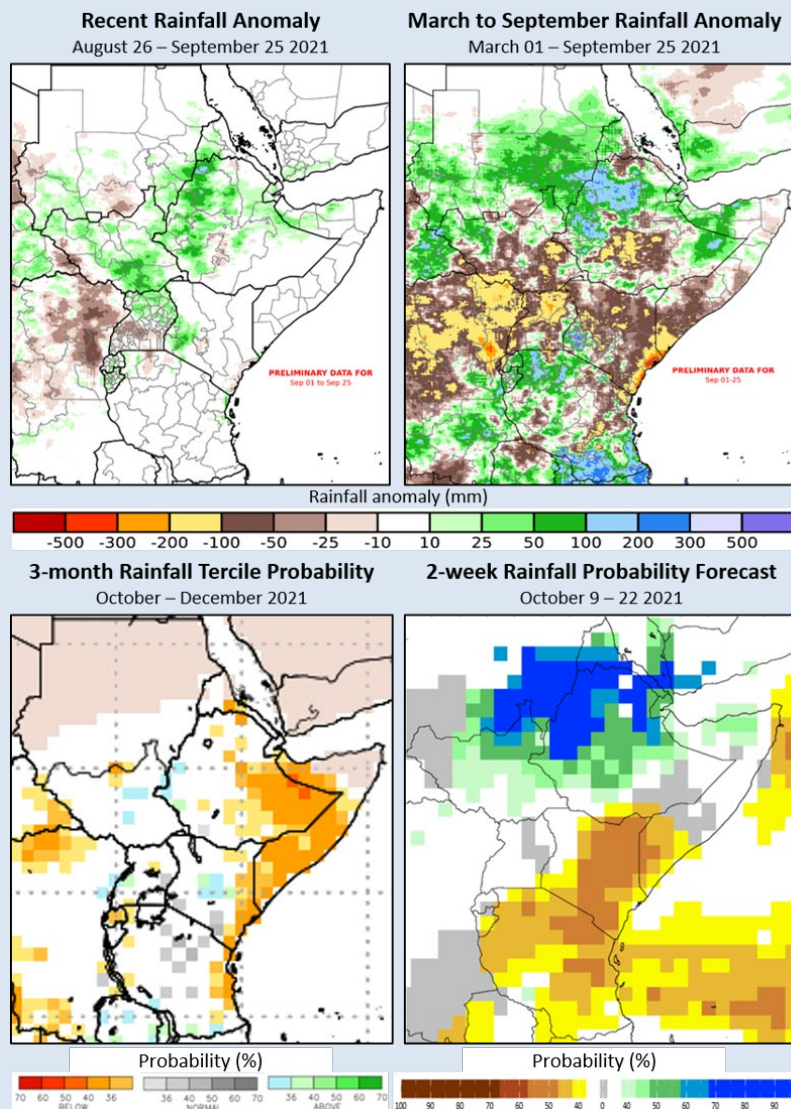
season (See Seasonal Forecast Alert Pg. 5 and Regional Outlook Pg. 9). In **Burundi**, harvesting of main season rice crops finalized in the northeast under favourable conditions. Land preparation is underway for second Season A maize crops, and planting will begin next month. In **Rwanda**, planting of second Season A maize crops is underway, and there is concern in the east as below-average rainfall is impacting planting activities. In the **United Republic of Tanzania**, planting of *Vuli* season maize crops is underway in northern bimodal rainfall areas, and there is concern as delayed rainfall onset and dry conditions are impacting planting activities. Rainfall amounts are expected to be below-average between October to December, which may have a negative impact on *Vuli* season crop development as well as planting and development of 2022 *Msimu* crops (See Seasonal Forecast Alert Pg. 5 and Regional Outlook Pg. 9).

In **Kenya**, harvesting of main season crops finalized in August in the marginal producing east, coast, and northeast with failure conditions for maize due to below-average and erratic rainfall. Conversely, favourable conditions resulted for sorghum crops as they are more resilient to drought stress. Current conditions are favourable for the ongoing development of Long Rains cereals in the main producing unimodal central, Rift Valley, and west regions. However, at the beginning of September, the country declared a state of disaster due to worsening drought conditions, and October to December rains are expected at below-normal levels (See Seasonal Forecast Alert Pg. 5 and Regional Outlook Pg. 9). In **Somalia**, planting of *Deyr* season sorghum crops is underway, and there is concern as dry conditions are impacting planting activities. Also, October to December *Deyr* seasonal rainfall is forecast to be below-average and is likely to impact crop development for a further consecutive



**Regional Outlook: Wet conditions expected to continue in the north while below-average rainfall is likely in parts of the east and south for the OND season**

In recent weeks, wetter-than-average conditions affected Ethiopia, South Sudan, northern Uganda, and western Kenya, as well as portions of eastern and southwestern Sudan and northwestern Somalia (Figure 1-left). Periodic heavy rains led to oversaturated ground conditions and elevated river levels in South Sudan and eastern Sudan, and there is a continued risk for flooding that has already caused widespread population displacement in recent months. Areas in Sudan, northern South Sudan, and northwestern Ethiopia received above-average rainfall through much of the March-to-September (Figure 1- right) and June-to-September seasons, while drier-than-average conditions affected many central and southern areas of the region. In northern Uganda, the recent wet conditions came after persistently below-average rainfall during the March-April and in June-July-August periods. Similarly, poorly distributed seasonal rains and historically very low amounts affected areas in Ethiopia's central Rift Valley and eastern Oromia region, as shown in Figure 1-middle and the [latest assessment](#) for Ethiopia's March-to-November season.

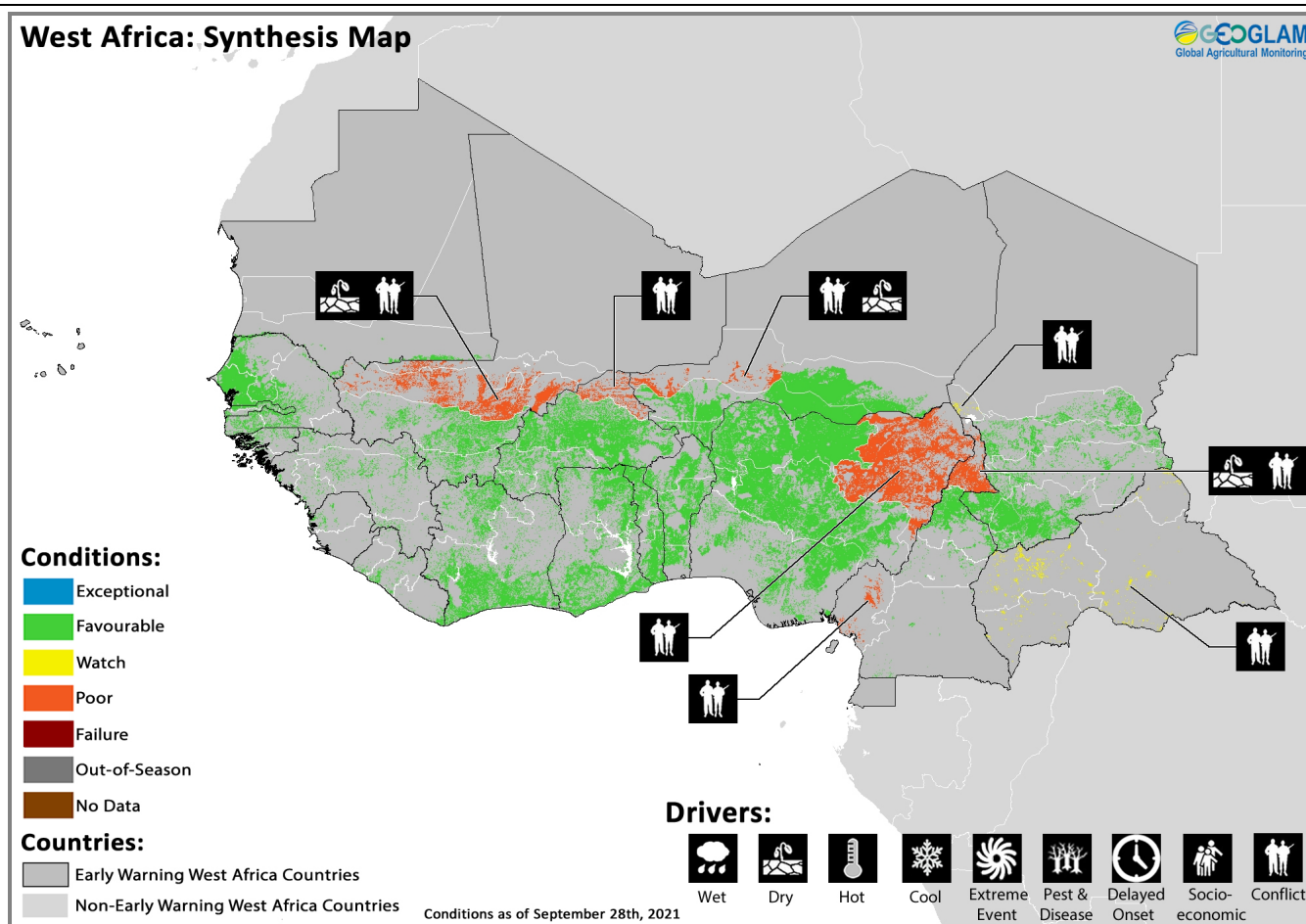


Importantly, a series of poor rainfall seasons recently impacted the eastern Horn, and there are presently elevated chances for this to transpire again during the October-November-December (OND) 2021 and March-April-May 2022 seasons (See Seasonal Forecast Alert Pg. 5). For the OND season, below-normal rainfall and above-normal temperatures are forecast in eastern areas of the region, including in eastern Kenya, southeastern Ethiopia, and southern Somalia. Climate models show some differences in the geographical extent of the elevated chances for below-normal rainfall. The NMME probabilistic ensemble forecast (Figure 1-bottom left) is more conservative in this regard, while WMO and ICPAC GHACOF forecasts also include central Kenya and other western and southern countries.

The latest SubX probabilistic forecast indicates increased chances for below-normal rainfall during October 9th to October 22nd in southern Somalia, Kenya, Tanzania, Burundi, and southern Ethiopia (Figure 1-bottom right). Continued wet conditions are forecast in northern Ethiopia, eastern Sudan, and northern South Sudan. Heavy rain may affect areas across central Ethiopia during September 27th to October 4th, based on the [ICPAC East Africa Hazards Watch](#).

**Figure 1. A 6-pentad rainfall anomaly, March-to-September rainfall anomaly, 3-month rainfall anomaly probability forecast, and a 2-week rainfall anomaly probability forecast.** The top panels are CHC Early Estimates, which compare 2021 rainfall amounts to the 1981-2020 CHIRPS average. These show the rainfall anomaly, in mm, for August 26<sup>th</sup> to September 25<sup>th</sup> (left) and March 1<sup>st</sup> to September 25<sup>th</sup> (right). The bottom-left panel shows the NMME probabilistic forecast for October-November-December (OND) 2021 precipitation, based on September initial conditions. Colors indicate the dominant tercile category forecast across models; white indicates no dominant category. NMME image from [NOAA CPC](#). The bottom-right panel shows the IRI SubX Precipitation Biweekly Probability Forecast for October 9th to 22nd, issued on October 1st. The forecast is based on statistically-calibrated tercile category forecasts from three SubX models. Image from the [IRI Subseasonal Forecasts Maproom](#). Source: UCSB Climate Hazards Center

## West Africa



Crop condition map synthesizing information as of September 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.**

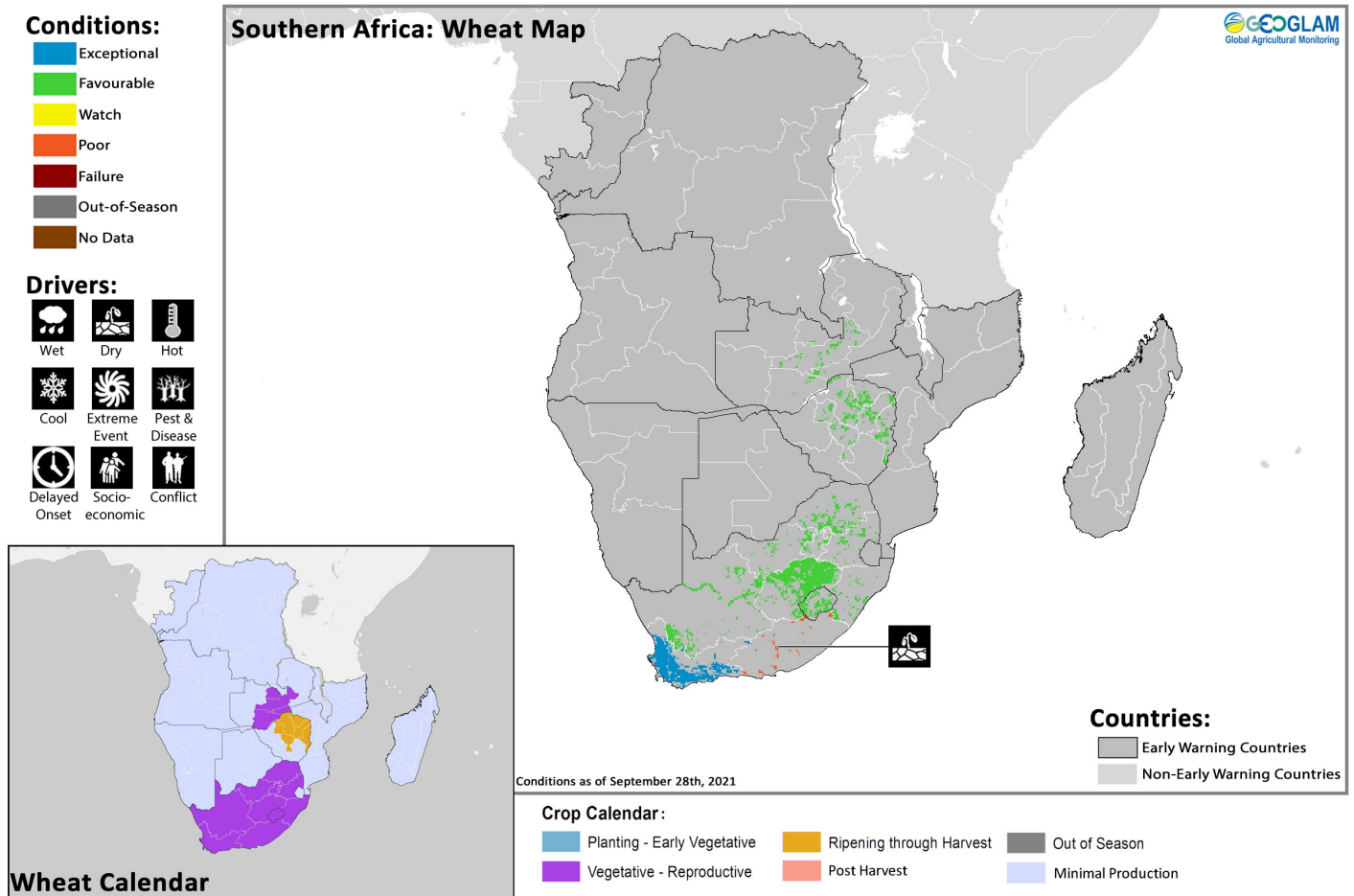
In the south of the subregion, harvesting of main season maize finalized in **Liberia, Cote d'Ivoire**, southern **Ghana**, southern **Togo**, central and southern **Benin**, and northeastern **Nigeria** while harvest continues in northern **Ghana**, northern **Togo**, northern **Benin**, northern **Cameroon**, and southwestern **Chad**. Main season sorghum crops continue to develop in **Cote d'Ivoire**, northern **Ghana**, **Togo**, central and northern **Benin**, and central **Cameroon** while harvest begins in northern **Cameroon** and the southern half of **Chad**. Planting and development of second season cereals is underway in **Cote d'Ivoire**, southern **Ghana**, southern **Togo**, southern **Benin**, **Nigeria**, and central **Cameroon** while harvest is now complete in southern **Cameroon**. In the north of the subregion, harvesting of main season cereals is underway in **Mali, Burkina Faso, Niger**, eastern **Senegal**, and **Guinea-Bissau** while crops continue to develop in **Guinea, Mauritania**, and **Gambia**. Throughout the subregion, conditions are generally favourable due to good rainfall received. However, there is concern in regions impacted by ongoing conflict, parts of northern **Cameroon**, central **Mali**, and western **Niger** affected by early season dryness and rainfall deficits, and in localized parts of southern **Chad** impacted by ongoing flooding. Drier-than-average conditions forecast across central and northern areas, from **Senegal** to northern **Nigeria**, indicate an early end to the main rainy season.

In northeastern **Nigeria**, the Southwest and Far North regions of **Cameroon**, northern **Burkina Faso**, central **Mali**, and western **Niger**, poor conditions resulted for main and second season maize crops due to persisting conflict. In northeast and northcentral **Nigeria**, protracted insecurity continues to impact prices of agricultural inputs and result in disruptions to farming and marketing activities. Concern also remains in Lac region in **Chad** and the **Central African Republic** where conflict continues to disrupt agricultural activities. Additionally, in the Far North region of **Cameroon**, dry weather conditions in some areas delayed sowing activities and reduced the area planted, and below-average precipitation in the second decade of September may negatively impact crop development in some areas. In central **Mali** and western **Niger**, rainfall deficits in July were compounded by a severe deficit in September, which is likely to impact crops at critical flowering and maturation stages and exacerbate poor conditions resulting from ongoing conflict. In **Mauritania**, yield prospects are near-average despite erratic and below-average precipitation from the beginning of the season. Improved rainfall in September is supporting rainfed crops, and high reservoir levels are supporting irrigated fields. Furthermore, heavy rainfall during the ongoing rainy season has resulted in flooding across parts of **Chad**, northeastern **Nigeria**, northwestern **Ghana**, southern **Benin**, and **Gambia**, hindering agricultural activities and leading to localized crop losses. In **Chad**, torrential rains in the southwest of the country triggered floods that caused localized crop losses and disruptions to agricultural activities, notably in Tandjilé and Mandoul regions. In **Guinea**, heavy rainfall fell over most parts of the country in late August, resulting in flooding in Siguiri and Guéckédou prefectures as well as the capital Conakry.

## Middle East & North Africa

In the Middle East and North Africa, land preparation for winter wheat is underway, and planting will begin next month in **Algeria, Iran, Iraq, Libya, Morocco, Syria, and Tunisia**. In **Egypt**, harvesting of summer-planted rice crops is underway while *Nili* season (Nile Flood) rice and main season maize crops continue to develop for harvest from October. Conditions remain favourable as there is sufficient irrigation water supply for mostly irrigated crops. In **Iraq**, harvesting of irrigated summer crops is ongoing with favourable prospects for rice. In **Iran**, harvesting of rice crops is underway earlier than normal due to high temperatures, and prospects are close to average except in Golestan and Khorasan in the northeast and in Esfahan due to reduction of the cultivated area.

## Southern Africa



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

In Southern Africa, harvesting of winter wheat crops is underway in **Zimbabwe** while crops continue to develop in **Lesotho, South Africa, and Zambia** for harvest from October. Overall conditions are generally favourable, particularly in **Zimbabwe** where a record crop is expected as well as in the major producing Western Cape of **South Africa** where rainfall has been beneficial for crop development. However, crops in the minor producing Eastern Cape of **South Africa** are unlikely to recover from dry conditions. Also, in **Lesotho**, area planted is reported to be below-average due to limited availability of inputs. In the **Democratic Republic of Congo**, harvesting of main season sorghum crops is underway in the north while planting and development of main season cereals continues throughout the country. While agrometeorological conditions have generally been conducive for crop development, there are reports of limited agricultural inputs.

Land preparation of main season cereals is underway, and planting has begun in **Angola** under favourable conditions. Next month, planting will begin in **eSwatini, Lesotho, Mozambique, and Zambia**. Early forecasts suggest a likelihood of average or above-average rains during key rainfall months of the cropping season, which is likely to benefit production prospects in some of these areas (See Regional Outlook Pg. 12).

**Regional Outlook: Above-normal rainfall forecast for central and southeastern areas during December 2021 to February 2022**

During December 2021 to February 2022, key rainfall months for the main growing season, long-range forecasts from the SARCOF (Figure 1-left) and the NMME (Figure 1-right) indicate elevated chances for above-normal rainfall in some central to southeastern areas, including in Zimbabwe, Botswana, northeastern South Africa, eSwatini, and southern Mozambique. This is consistent with a historical tendency for La Niña-like conditions to enhance rainfall in this part of the region. La Niña-like conditions appear to be developing, and a La Niña is forecast to emerge and continue into early 2022 (See Climate Influences Pg. 3). Last year, during similar climate conditions, many of these areas experienced above-average rainfall and some experienced damages from severe weather and flooding. According to SubX 30-day and ECMWF extended-range forecasts (not shown), there are increased chances for above-average rainfall in some southeastern areas of the region in coming weeks.

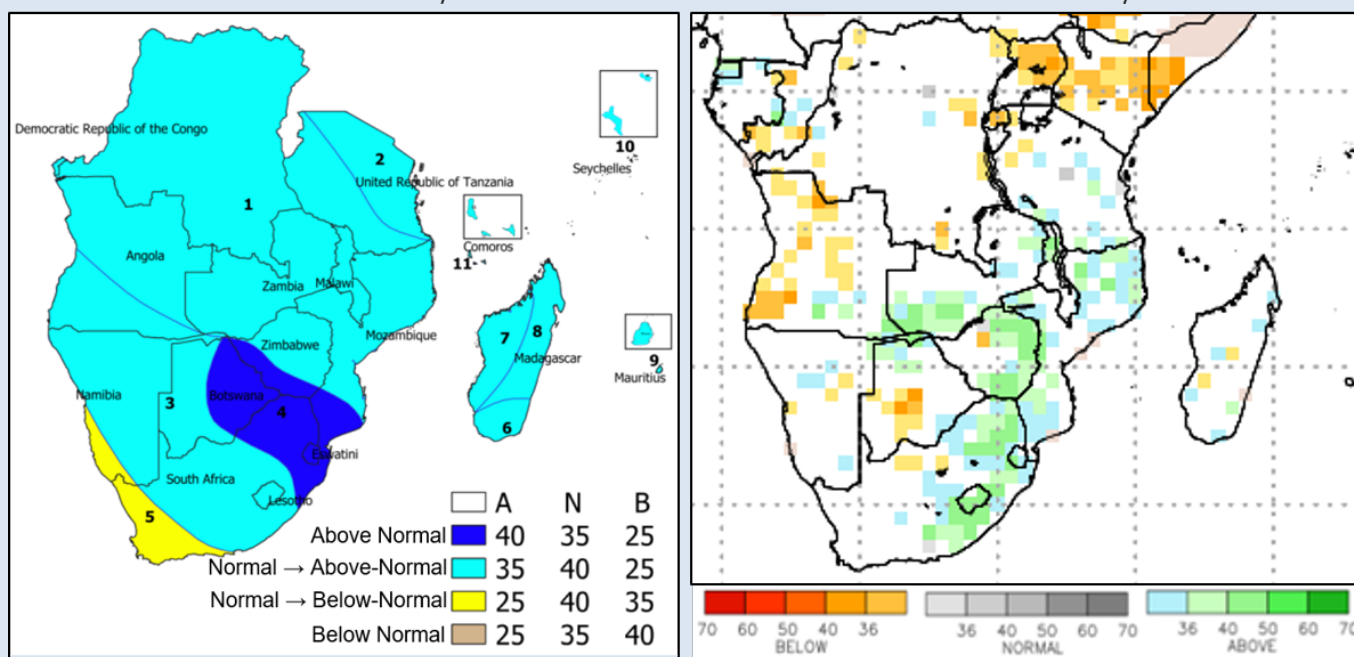
An area of concern for a poor 2021-2022 season is southwestern Angola, where extremely dry conditions prevailed during the 2020-2021 season and where the NMME, C3S, and WMO forecasts show increased chances for below-normal DJF 2021-2022 rainfall.

**3-month Rainfall Quartile Probability**

December 2021 – February 2022

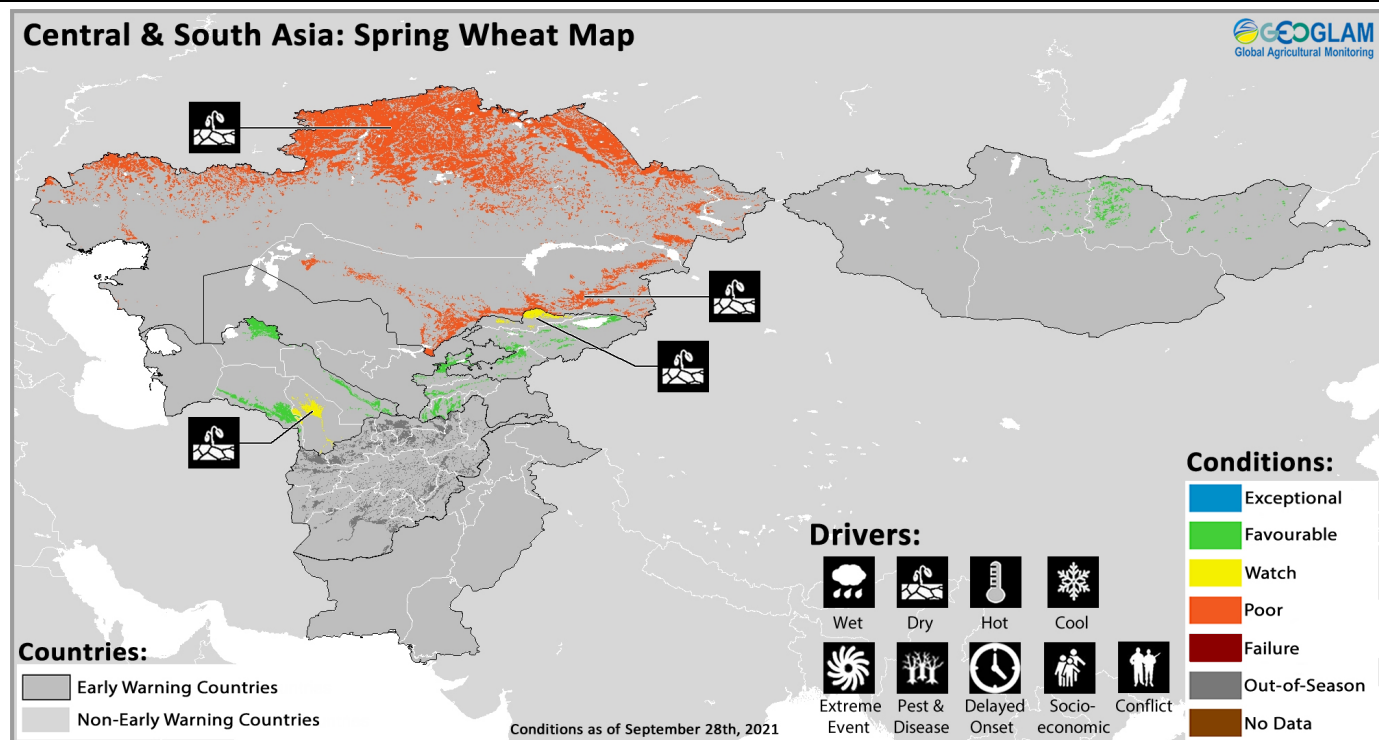
**3-month Rainfall Tercile Probability**

December 2021 – February 2022



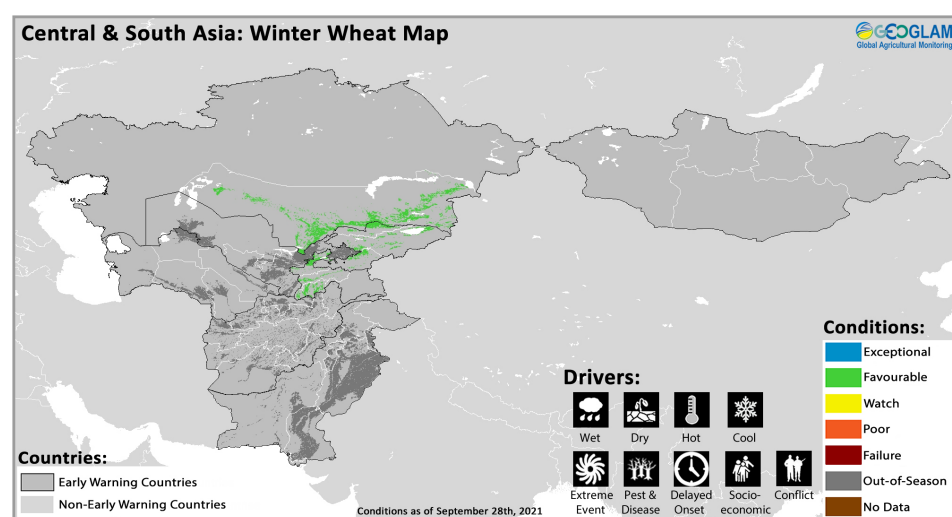
**Figure 1. Forecast probabilities for above- and below-normal December-January-February (DJF) 2021-2022 rainfall.** On the left is the Southern Africa Regional Climate Outlook Forum (SARCOF) forecast for DJF 2021-2022. Image from the Southern Africa Development Community's Statement from the 25th Annual SARCOF, held on 30-31 August, 2021. On the right is the NMME probabilistic forecast for DJF 2021-2022, based on September initial conditions. The forecast probability is calculated as the percentage of all 79 NMME ensemble members that fall in a given tercile (above/below/near-normal). White color indicates there is no dominant category across the model forecasts. NMME image from [NOAA CPC](https://www.noaa.gov/cpc). Source: UCSB Climate Hazards Center

## Central &amp; South Asia



Crop condition map synthesizing Spring Wheat information as of September 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, harvesting of winter wheat crops finalized last month under mixed conditions due to persistent dryness throughout the season. Land preparation and planting of winter wheat crops is underway in **Kyrgyzstan, Tajikistan** and southern **Kazakhstan** under favourable conditions. Land preparation and planting will begin next month in **Afghanistan, Pakistan, Turkmenistan, and Uzbekistan**; however, forecasts indicate an increased likelihood of below-average precipitation through February 2022 (See Seasonal Forecast Alert Pg. 14). In **Pakistan**, *Kharif* (summer) season rice crops continue to develop under favourable conditions for harvest from October. In Punjab, production prospects are near-average while prospects in Balochistan and Sindh are slightly below-average due to reduced irrigated area.



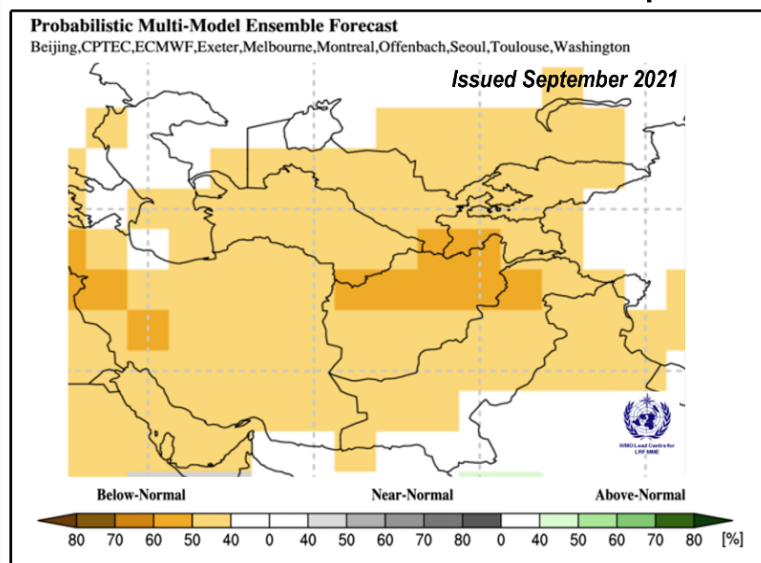
Crop condition map synthesizing Winter Wheat conditions as of September 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Conditions that are other than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

affected vegetation conditions in the Chui region. In **Mongolia**, area planted is estimated at an above-average level, supported by Government programmes aiming to increase local production and prevent shortages of wheat flour during the COVID-19 pandemic. Similarly, yields are estimated at an above-average level, reflecting generally favourable conditions and adequate irrigation water supply. Production is also estimated to be well above-average at 500,000 tonnes.

Harvesting of spring wheat crops finalized last month in **Afghanistan** and is wrapping up in **Kazakhstan, Kyrgyzstan, Mongolia, Tajikistan, and Turkmenistan** under mixed conditions. Poor conditions resulted in north, west, and southern **Afghanistan** and in **Kazakhstan**, and there is ongoing concern in northern **Kyrgyzstan** and eastern **Turkmenistan** due to persistent dryness throughout the growing season. In **Kazakhstan**, total production (winter and spring crops) is estimated to be 13 percent below-average due to insufficient rains in the north, where spring wheat is cultivated and where 95 percent of total annual wheat is produced. In **Kyrgyzstan**, there is continued concern in the north as below-average precipitation amounts during the growing season negatively

**Seasonal Forecast Alert: Increased risk of second consecutive season of below-average precipitation forecast for Fall and Winter 2021-2022**

**WMO Forecast for ONDJF 2021-2022 Precipitation**



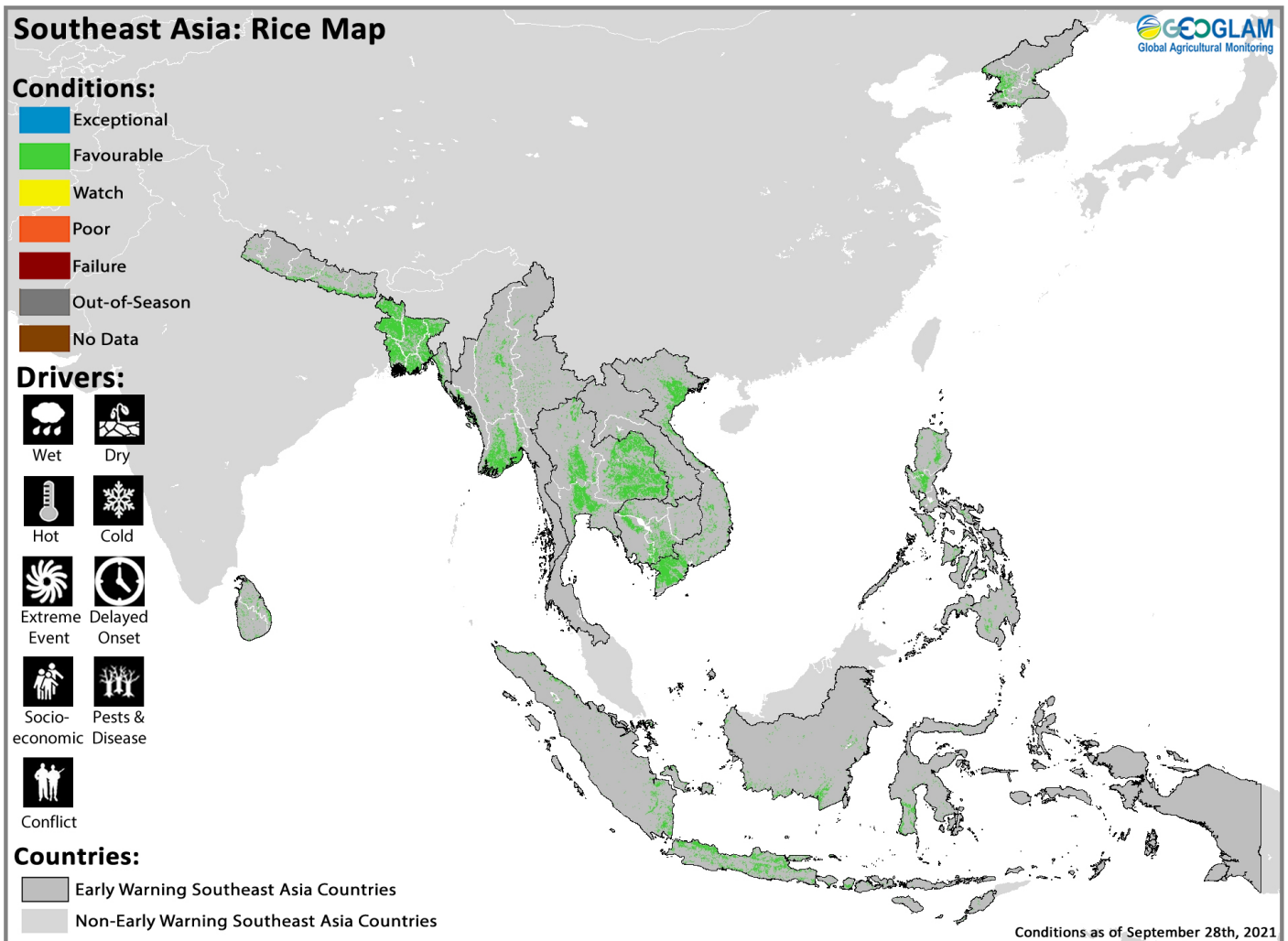
**Figure 1.** WMO probabilistic forecast for October-to-January 2021-2022 precipitation, based on models initialized in August. From [WMO Lead Centre Long-Range Forecast Multi-Model Ensemble](#). Right-- Model estimates for 2021 streamflow at the Helmand River. The green line shows 2021 streamflow rates below the 25th percentile, indicating rates among the lowest of 2001 to 2020. From the [USGS FEWS NET Data Portal](#) "Afghanistan Streamflow and Runoff." Source: Climate Hazards Center

There is an increased risk of another season of below-average precipitation in Central and Southwest Asia during the Northern Hemisphere fall and winter of 2021-2022, according to multiple forecasting centers. The at-risk regions include areas that were negatively impacted by dry weather conditions during the 2020-2021 winter wheat and spring wheat growing seasons.

The WMO forecast from September (Figure 1) indicates greater-than-50% chances of below-normal precipitation in central and northern Afghanistan, southern Turkmenistan, southern Uzbekistan, and southern Tajikistan. Similar to other forecasts, there are elevated chances for below-normal precipitation across Central and Southwest Asia. This is consistent with the typical drying impacts of La Niña conditions, which are forecast to develop and continue into early 2022. Even in the absence of a full La Niña, however, La Niña-like climate can lead to dry conditions over this region.

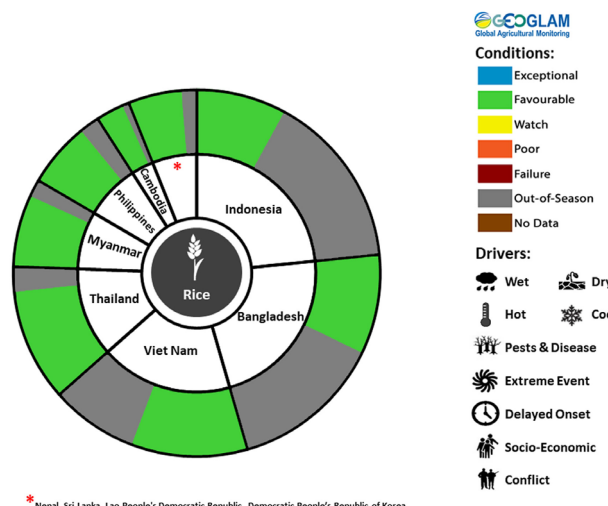
The possibility of below-normal precipitation during the upcoming season is highly concerning. During 2020-2021, low precipitation impacted soil moisture and irrigation supply, leading to water deficits during key months of crop development and resulted in poor and failed crop conditions for winter wheat across parts of the region. Poor or mediocre early to mid-season precipitation performance this year could produce lasting negative impacts on crops, low snowpack levels, and limited irrigation and could prolong recovery from 2020-2021 drought impacts in affected areas of the region.

Southeast Asia



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

In northern Southeast Asia, planting of wet-season rice is now complete, and crops are in young panicle forming to harvesting stage under favourable conditions. Overall planted area has increased compared to the previous year due to early onset and sufficient rainfall. Growing conditions are expected to remain stable with forecasts of continued normal to above-normal rainfall. Harvesting of earlier planted crops is underway in some areas with near-average yields. In **Indonesia**, harvesting of earlier planted dry-season rice is underway with yield slightly higher than the previous year due to sufficient precipitation received during the growing season. While September is typically the last month of planting, progress is lower than last year due to the protracted wet-season. Additionally, while recent rainfall has decreased in the South, it continues in the North with average to above-average levels. In the **Philippines**, harvesting of wet-season rice planted in April to May is now complete with production slightly higher than the previous year's level. Crops planted in July and August are now in the tillering stage, and growing conditions are favourable as most parts of the country are likely to benefit from near to above-average rainfall. Tropical cyclone and southwest monsoon rains continue to affect the country, particularly in Luzon and Visayas provinces. In **Thailand**, wet-season rice is in young panicle forming stage, and planted area has increased due to favourable weather conditions and good paddy prices. Growing conditions have improved from the previous year due to abundant rainfall from April, and final yield and production are expected to increase. However, continuous heavy rainfall from the end of August to September in the Northern and Northeastern regions



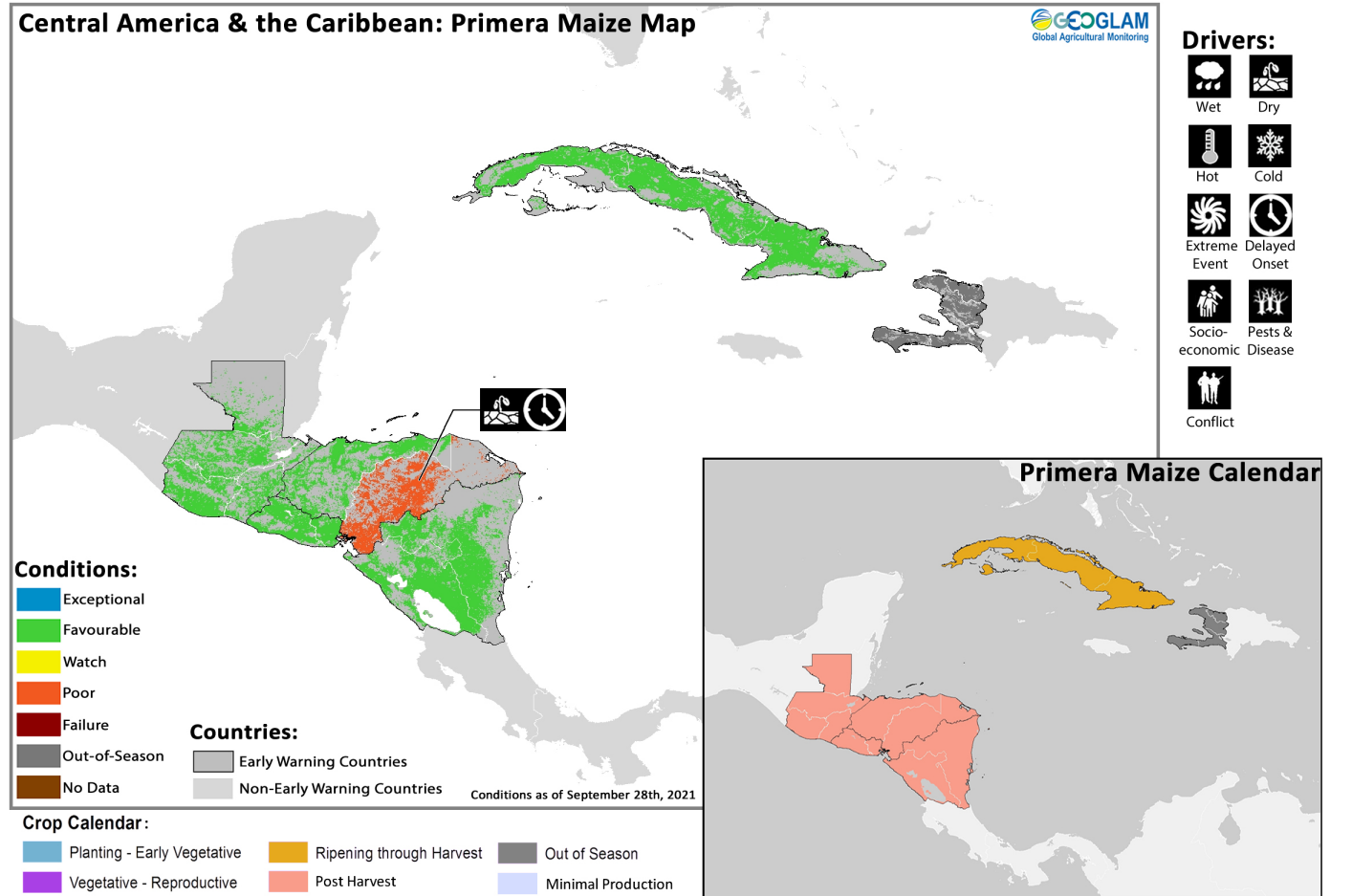
\* Nepal, Sri Lanka, Lao People's Democratic Republic, Democratic People's Republic of Korea  
For detailed description of the pie chart please see description box on Pg. 18.

resulted in flooding and affected 1,600 hectares of crop area. In northern **Viet Nam**, wet-season rice is in young panicle forming to grain filling stage under favourable conditions due to better irrigation preparation than the previous year. In the South, harvesting of summer-autumn (wet-season) rice is underway, and yield is slightly improved from the previous year due to sufficient irrigation water supply. Harvested area has reached 1.02 million hectares out of 1.77 million hectares planted. Autumn-winter (wet-season) rice is in seeding, tillering, and young panicle forming stages under favourable conditions. In **Laos**, wet-season rice is in young panicle forming to grain filling stage. In lowland areas, growing conditions remain favourable as weather conditions and irrigation water availability are sufficient for paddy development. Growing conditions are also favourable in upland areas, and the rainy season is expected to produce adequate precipitation. In **Myanmar**, planting of wet-season rice is nearing completion, and crops are in panicle forming stage under favourable conditions. Planting progress is slightly faster than the previous year due to good monsoon rainfall. However, heavy rains also resulted in monsoon flooding in most areas. Approximately 15,000 hectares were affected, and 7,000 hectares were damaged. Replanting activities will be carried out for damaged fields. In **Cambodia**, planted area of wet-season rice reached 2.77 million hectares, accounting for 106 percent of the national planting plan. Despite drought conditions in some areas, last month's rainfall was sufficient for adequate crop growth, and crops in drought-affected areas are recovering. For early planted crops, 44 percent of the cultivated area was harvested, and yield is estimated to be near-average at 4 tons per hectare. In **Sri Lanka**, harvesting of *Yala* season rice and maize crops is wrapping up under favourable conditions, and production is estimated at an above-average level. Land preparation is underway for planting of *Maha* season rice and maize crops, and planting will begin next month. In **Bangladesh**, *Aman* season rice crops are developing under favourable conditions despite flooding in July and August that resulted in localized crop losses. In **Nepal**, harvesting of main season maize crops finalized in September while main season rice crops continue to develop, and overall conditions are favourable. Production of rice and maize crops is forecast to be above the five-year average, reflecting above-average planted area and yields that were supported by generally favourable weather conditions, high-yielding seed varieties, and use of fertilizers. However, from late August, an intensification of monsoon rains inundated the southern plains, affecting 11 districts with localized flooding and landslides. In the **Democratic People's Republic of Korea**, harvesting of main season maize crops finalized under favourable conditions with above-average biomass. Harvesting of main season rice crops continued under favourable conditions and will finalize in October. While below-average rainfall was received in the southern rice bowl area, crop biomass is above-average as there was sufficient water supply to irrigate crops, benefitting crop development.



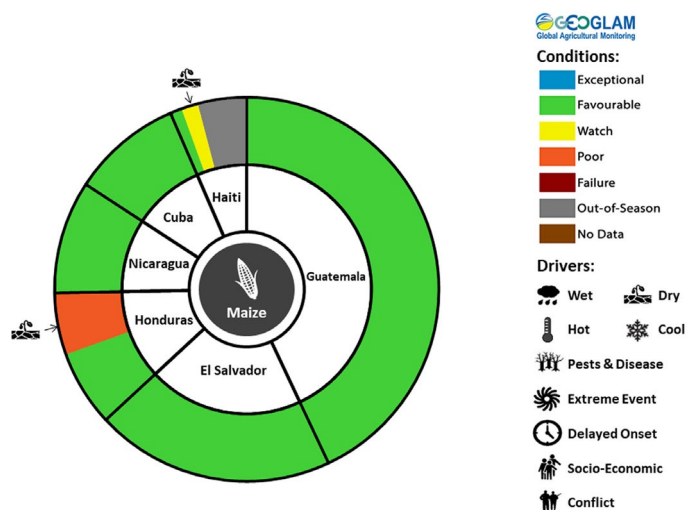
Central America & Caribbean

Central America & the Caribbean: Primera Maize Map

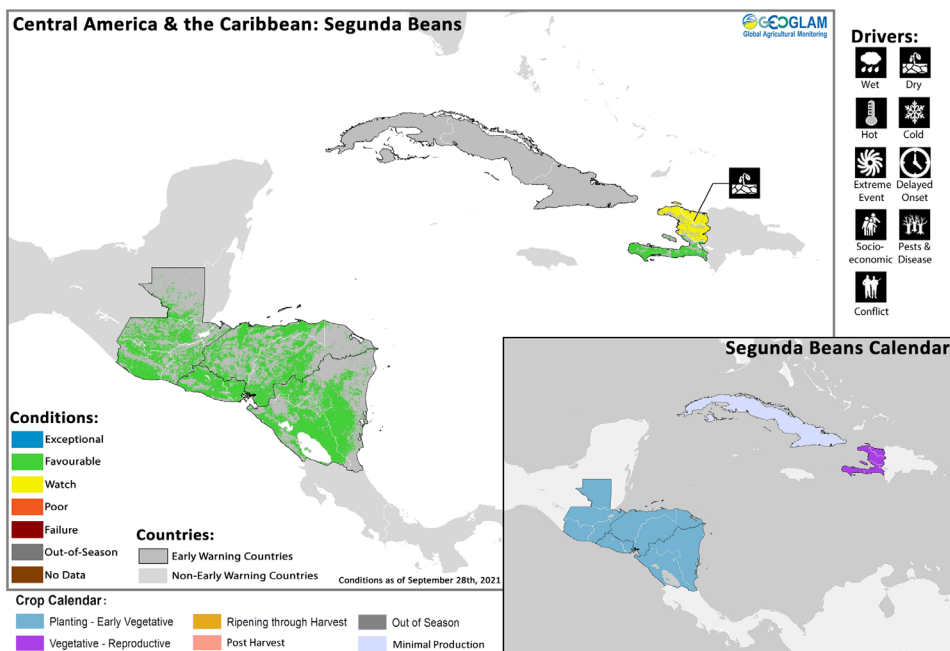


Crop condition map synthesizing information as of September 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Conditions that are other than favourable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

In Central America, harvesting of *Primera* season maize and bean crops finalized in **El Salvador, Guatemala, Honduras, and Nicaragua** under generally favourable conditions except in eastern **Honduras** where delayed rainfall onset and seasonal dryness resulted in below-average yields. In **Guatemala**, end of season conditions for *Primera* season crops are favourable despite delayed onset and irregular distribution of rainfall. While localized crop losses were reported in Zacapa, Escuintla, Chiquimula, Guatemala, Jalapa, Baja Verapaz, Suchitepéquez, Jutiapa, and Santa Rosa departments, the government estimated the losses have not affected production at the national level. However, subsistence farmers in lowland areas have reported yield reductions due to rainfall deficits during the July to August period followed by flash floods in late August and early September. In **Honduras**, favourable conditions resulted for *Primera* season maize and bean crops in the west while delayed seasonal rainfall onset by 30 days affected crop yields and caused crop losses in the east, including parts of Olancho, El Paraiso, Francisco Morazán, Choluteca, and Valle departments. While precipitation improvements from the third dekad of June helped restore moisture deficits, crops were affected by erratic rainfall distribution throughout the season, and production is expected to be average to below-average for both large and subsistence farmers in affected regions. However, national production is expected to remain near-average. Harvesting of main season rice crops continued in September while planting of second season rice crops is underway, and overall conditions are favourable. In **Nicaragua**, *Primera* season maize and bean crop yields are forecast to be slightly below-average in localized central northern areas as significantly below-average precipitation in May affected crops. However, national production is expected to be average. Planting of *Segunda/Postera* season maize and bean crops commenced in **El Salvador, Guatemala, Honduras, and Nicaragua** under



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



Crop condition map synthesizing Segunda season conditions as of September 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.**

Second season maize and bean crops, representing about 20 percent of annual production, are in vegetative to reproductive stage with ongoing concern in north and central areas of the country where dry conditions have prevailed since the third dekad of August and where erratic rainfall distribution is affecting the normal development of crops. Seasonal forecasts show increased chances for below-normal October to December rains in areas with ongoing deficits. In addition, impacts from the August earthquake and Tropical Depression Grace, which together resulted in poor end of season conditions last month for main season crops in Sud, Grand'Anse, Nippes, and Sud-Est departments, are likely to have affected the livelihoods of subsistence farmers in these areas. Additionally, forecast below-average rains could exacerbate the impacts of the August disasters. In **Cuba**, harvesting of main season maize and second season rice crops is underway. Despite slightly below-average precipitation, especially in the eastern region, crop conditions are observed to be favourable.

generally favourable conditions. In **Guatemala** and **El Salvador**, reduced precipitation in the second dekad of September helped to reduce soil moisture saturation from above-average rains in August, benefitting planting activities for *Segunda/Posrera* season crops. In **Nicaragua**, irregular distribution of rainfall, including above-average rainfall in the west and below-average rainfall in the centre, has impacted plantings in localized areas of the central northern region.

In the Caribbean, harvesting of main season cereals continued in **Haiti** and **Cuba** while harvesting of second season rice crops began in **Cuba**, and overall conditions are mixed due to prevailing dryness in north and central **Haiti**. In **Haiti**, harvesting of main season rice crops is underway with ongoing concern as recent dry weather could affect crop yields in the main producing Artibonite and Nord-Est departments.

**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 October 7<sup>th</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.

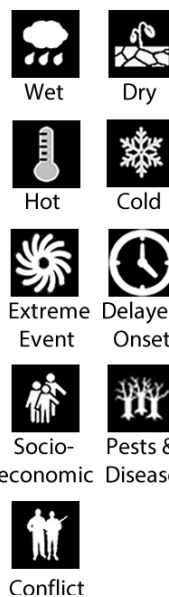
**Extreme Events:** This is a catch-all for all other climate risks (i.e. hurricane, typhoon, frost, hail, winterkill, wind damage, etc.)

**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



# Global Agricultural Monitoring

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



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

Cover Photo by Inbal Becker-Reshef

## Contributing partners



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