

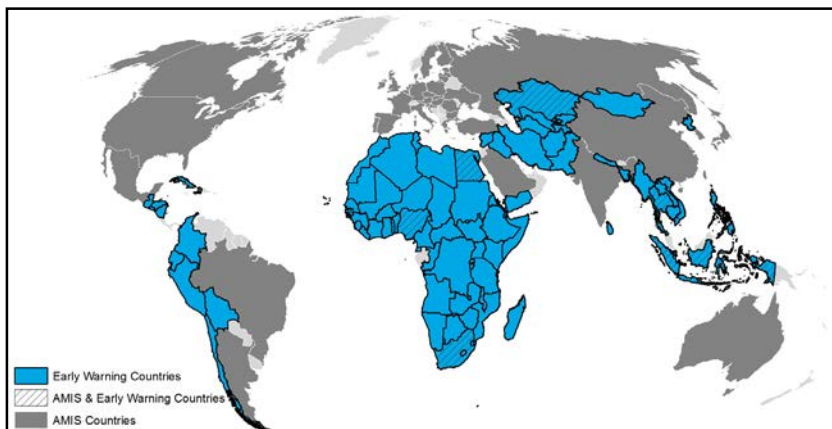


Crop Monitor

EARLY WARNING

Overview:

In **East Africa**, harvest of main season cereals is nearing completion across central and southern parts of the subregion and below-average yields are expected due to dry conditions during much of the season. In **West Africa**, main season maize harvest begins this month across the south of the region and average to above-average yields are expected, except in areas affected by civil unrest in Cameroon, Nigeria and the Central African Republic. In the **Middle East** and **North Africa**, harvest is complete for 2019 winter cereals and average to above-average yields are expected throughout most of the subregion due to exceptional seasonal rainfall, except in parts of drought-affected Morocco. In **Southern Africa**, conditions have worsened for winter wheat as low reservoir levels, caused by carryover dry conditions from the previous season, has impacted irrigation activities. In **Central** and **South Asia**, winter cereals for harvest in August are favourable despite below-average rainfall in May and June. In **Southeast Asia**, planting of wet-season rice is underway. There is concern for crops in Cambodia, Laos, Thailand and Vietnam due to below-average rainfall, and in Bangladesh and Nepal due to monsoon rains. In **Central America** and the **Caribbean**, harvest of the main “Primera” season maize will begin in August. There is concern due to irregular and below-average rainfall across Central America’s Dry Corridor and Haiti.



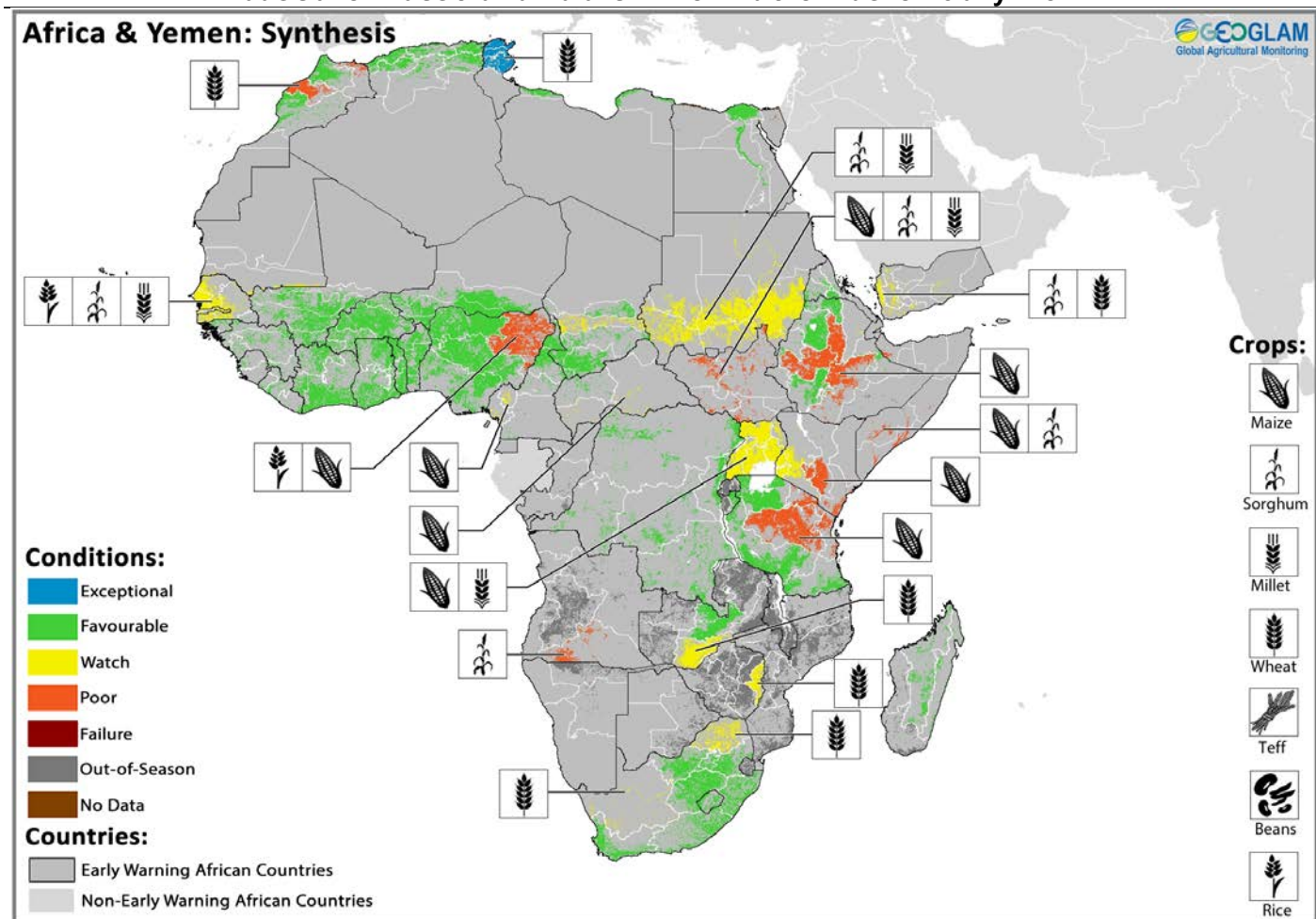
Contents:

Conditions at a Glance.....	2
Global Climate Outlook.....	3
East Africa & Yemen.....	3
West Africa.....	6
Middle East & North Africa.....	7
Southern Africa.....	8
Central & South Asia	9
Southeast Asia.....	10
Central America & Caribbean; Regional Climate Outlook	12
Appendix – Terminology & Definitions.....	13

GEOGLAM Crop Monitor for Early Warning

Crop Conditions at a Glance

based on best available information as of July 28th



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

EAST AFRICA: In East Africa, harvest of first main season cereal crops is nearing completion across central and southern parts of the subregion and delayed and below-average outputs are expected in several countries due to exceptionally dry conditions in March and most of April.

WEST AFRICA: Main season maize harvest begins in August across the south of the region and conditions are favourable due to timely onset of rains and ample rainfall, except in parts of Nigeria, Central African Republic and Cameroon where civil unrest continues to disrupt agricultural operations.

MIDDLE EAST & NORTH AFRICA: Exceptional conditions throughout the winter season resulted in average- to above-average cereal yields throughout the Middle East. However, in Syria and Iraq, ongoing conflict continues to constrain production. Yields were favourable in North Africa, except in marginal producing areas of Morocco where production was hampered by drought.

SOUTHERN AFRICA: Planting started in May for winter wheat crops and conditions are worsening due to carryover dry conditions from the previous season. Reduced water levels in the Kariba Dam have affected hydroelectricity production, resulting

in power-cuts and further affecting irrigation activities in Zambia and Zimbabwe.

CENTRAL & SOUTH ASIA: Harvest of winter wheat will complete in August and harvest of spring season wheat will begin. Average yields are expected due to adequate rainfall. In Pakistan, heavy monsoon rains in mid-July caused extensive damage to Kashmir province and impacted rice planting operations.

SOUTHEAST ASIA: Planting of wet-season rice is ongoing and rains have been below-average across Laos, Viet Nam, northern Thailand and Cambodia. In Bangladesh and Nepal, torrential monsoon rains in mid-July brought severe flood events, which damaged infrastructure and left many people in need of humanitarian assistance.

CENTRAL AMERICA & CARIBBEAN: "Primera" season harvest will begin in August, following one of the overall driest late-May to late-July seasons since 1981. Extended periods of drought are expected to affect final yields along Central America's Dry Corridor and in southern Haiti. Elsewhere in western El Salvador and Guatemala's Pacific Basin, flooding due to excessive rains is likely to affect crop production.

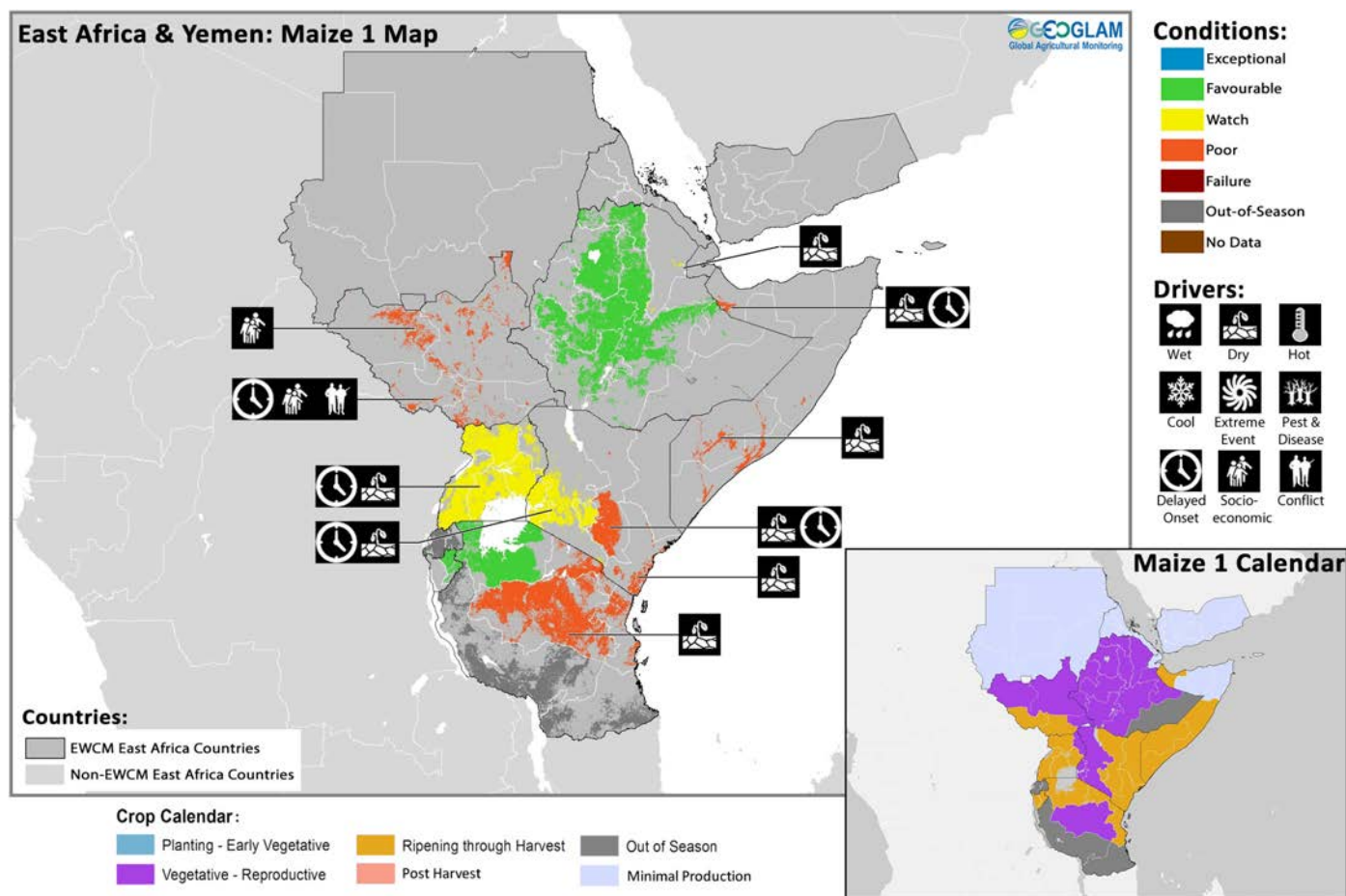
Global Climate Outlook: Transition from weak El Niño to ENSO-neutral conditions.

El Niño-Southern Oscillation (ENSO) conditions have transitioned from a weak El Niño to ENSO-neutral, which is forecast to continue through early 2020 (50-55% chance). The chances for the return of El Niño (30% chance) are double that of La Niña starting in November.

The Indian Ocean Dipole is forecast to be in a positive state during August and through most of the remainder of 2019. A positive IOD tends to enhance rainfall in parts of East Africa and suppress rainfall in southern and central Australia.

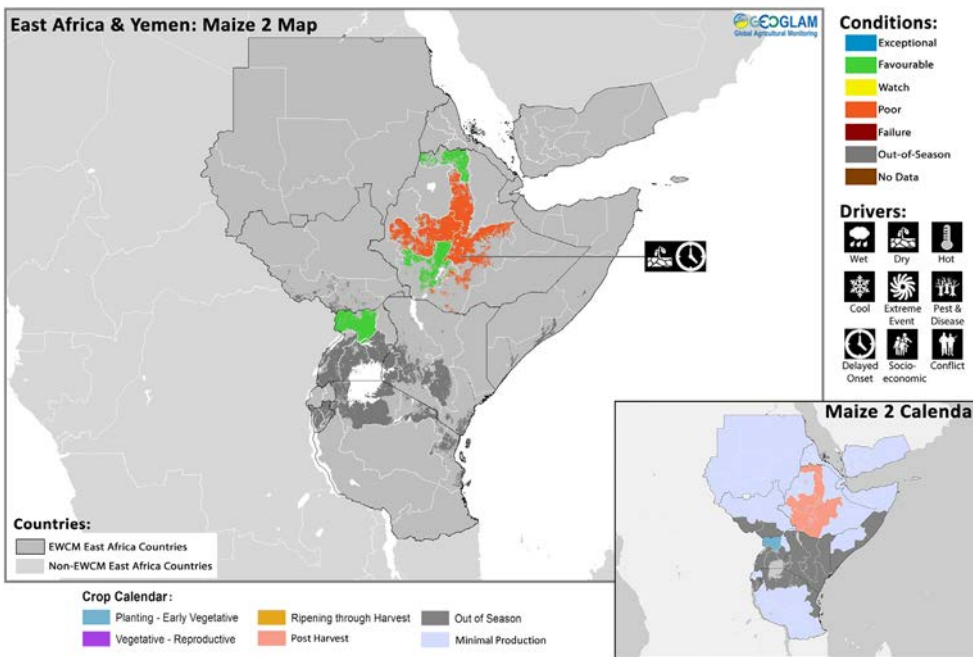
Source: UCSB Climate Hazards Center

East Africa & Yemen



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

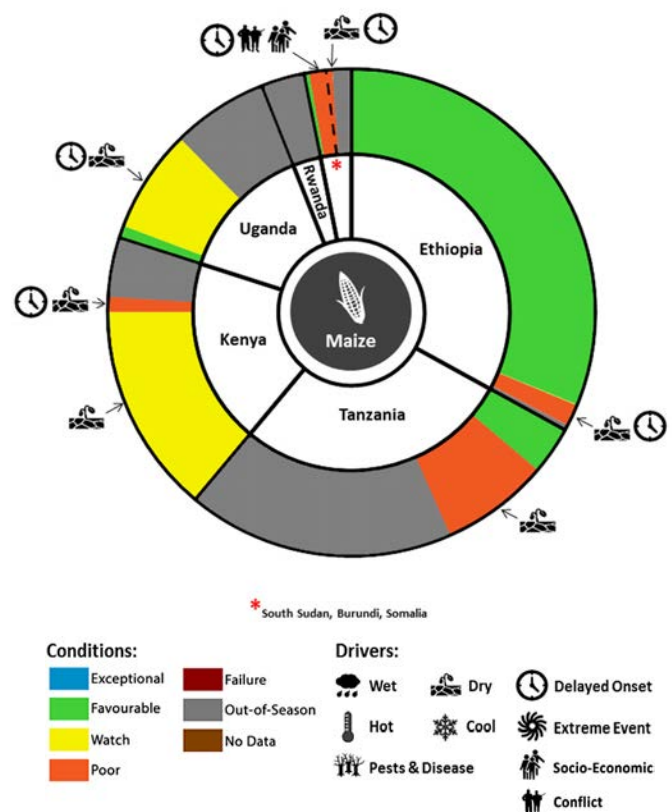
Harvest is nearing completion for first/main season crops across central and southern parts of the subregion and below-average crop production is expected in Somalia, Kenya, Uganda, bimodal rainfall areas in Tanzania, and in “Belg” receiving areas in eastern Ethiopia due to dry conditions. In southern bimodal rainfall areas of **South Sudan** the output of first season harvest is expected to be around or above the average of the previous five years, but still below the pre-conflict levels due to the lingering impact of the conflict. Despite above-average late- and mid-season rains, first/main season crops in Somalia, Kenya, Uganda, northeastern Tanzania and “Belg” secondary season crops in central and eastern Ethiopia did not recover from severe dryness and above-average land surface temperatures at the start of the March-May rainy season, which caused substantial planting delays and crop wilting. In **Somalia**, the August “Gu” harvest, which accounts for about 60 percent of the country’s total annual cereal output, is estimated at 50 percent below-average due to severe early season dryness and below-average precipitation as the 2019 “Gu” season through mid-April was among the top three driest on record. Planting in Somalia’s northwest region was also delayed, though the impact has not been as severe as in the south. At the start of the season, river levels throughout Somalia were relatively low due to limited rainfall in Ethiopia, which led to low planted areas of irrigated crops. Subsequently, above-average rains in the second and third dekad of May reduced the water deficits and resulted in marginal improvements of vegetation conditions but did not significantly improve crop prospects,



as they occurred too late during the growing season, with seasonally dry conditions establishing in the first dekad of June. Light to moderate rainfall was reported at the start of June in parts of the south and central areas and moderate to heavy rainfall in the north; however, this did not significantly improve production prospects. In riverine areas, the “Gu off season” crops, to be harvested in September, may have benefited from increased river levels late in the season. In northwestern areas, the “Gu/Karan” harvest, to be gathered in late 2019, has also been affected by poor rains and is expected at below-average levels. In **Kenya**, seasonal rains in March and April were generally very poor, with the most severe rainfall deficits recorded in southeastern and coastal marginal agriculture livelihood zones. Improved rains from May onwards

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

largely offset the moisture deficits and improved vegetation conditions. If rains, as forecasted, are above-average between June and September in major southwestern growing areas, a substantial albeit partial recovery of water-stressed crops is still possible, as the growing season continues up to October. However, despite the improvement of crop prospects following adequate mid-season rains, according to early forecasts, cereal production will still be 10 to 20 percent below average. By contrast, in southeastern and coastal marginal agriculture areas where seasonally dry conditions established in June, damage to crops was irreversible and the harvest is forecast to be 45 percent below average. Similarly, in **Uganda**, exceptionally dry conditions prevailing in March and April delayed planting by one month and severely affected crop germination and establishment, and planted area has been estimated at 20 to 40 percent below-average. Abundant rains in May and June offset rainfall deficits and improved vegetation conditions, but the heavy precipitations also resulted in localized floods and crop damage and elevated the risk of post-harvest losses. As a result, the harvest is expected to be 30 percent below-average. In the Karamoja Region in northeastern Uganda, the April-September rains did not fully establish until mid-May, substantially delaying planting. Subsequently, torrential rains in June offset the moisture deficits, but excessive soil moisture hindered ploughing and sowing activities in some areas. As a result, the planted area is estimated to be below-average and a reduced output is expected, despite rains continuing at average levels in July. In central and southern uni-modal rainfall areas of the **United Republic of Tanzania**, the major “Msimu” harvest was completed in June. The November-April rainy season began in mid-November with about a two-week delay. Subsequently, near-average rainfall volumes were received until February while precipitations were slightly above-average for the remainder of the cropping season. Overall cumulative seasonal rainfall was average over most cropping areas. Adequate and well-distributed precipitations benefited yields and resulted in good vegetation conditions over key-cropping areas of the southern highlands, which account for about 60 percent of the aggregated yearly cereal production. However, in parts of central Tabora, Singida and Dodoma regions, an erratic temporal distribution of rains had a negative impact on vegetation conditions and yields. By contrast, in northern, northeastern and coastal bi-modal rainfall areas, where the “Masika” crops, are currently being harvested, the March-May

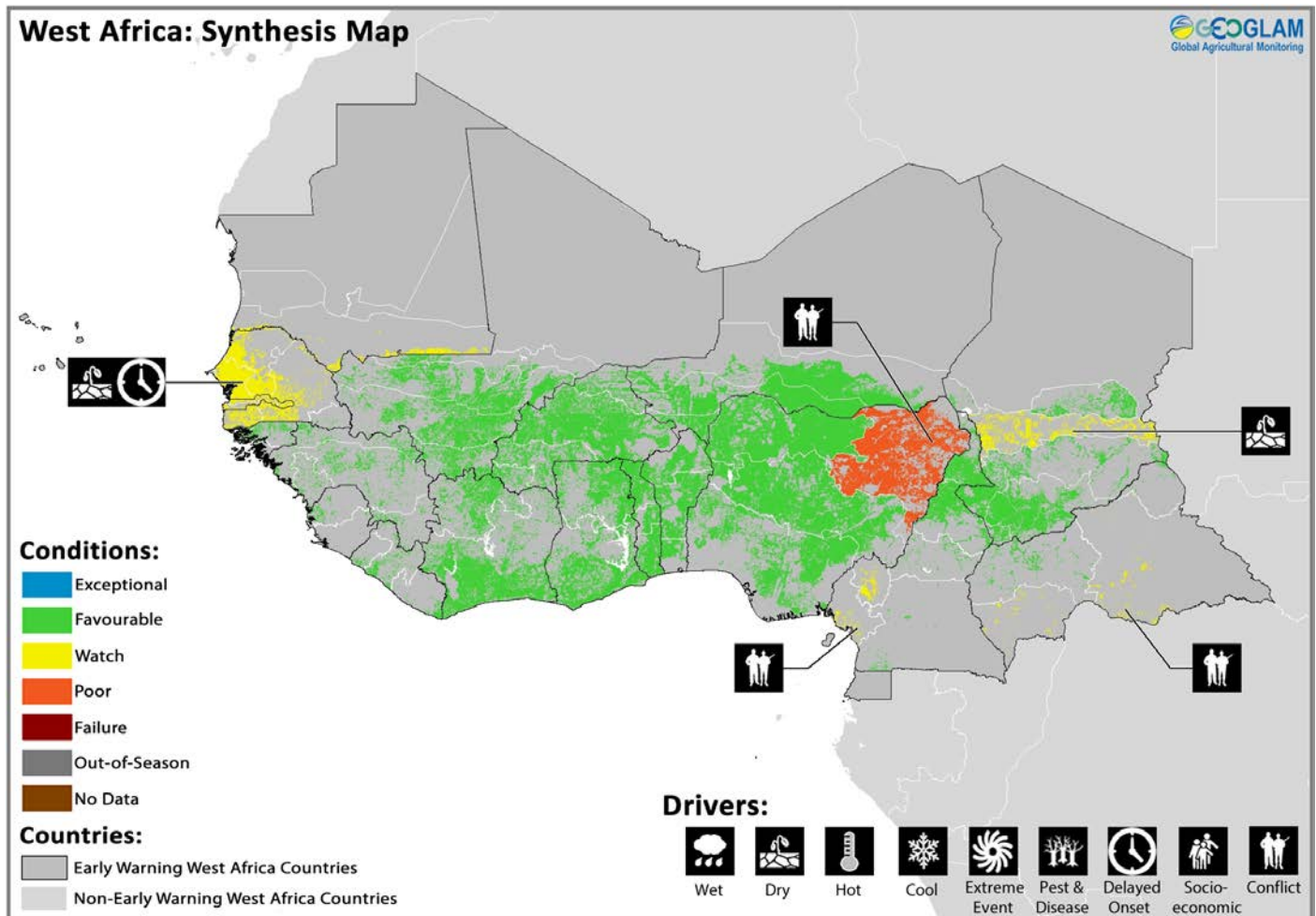


For detailed description of the pie chart please see box below.

rainy season was characterized by inadequate precipitation amounts received over several cropping areas, and cereal production is expected at below-average levels. In particular, significant crop production shortfalls are expected in northeastern Arusha, Kilimanjaro and Tanga regions, where cumulative seasonal rains were about 40 percent below average. In **Ethiopia**, harvesting of secondary “Belg” season crop will be completed in August with about a one-month delay and cereal production is expected at below-average levels as seasonal rains have been delayed, erratically distributed, and below-average over most “Belg” receiving areas of Eastern Oromia, Southern Tigray, eastern SNNPR and eastern Amhara regions. In particular, substantial crop production shortfalls are expected in the eastern Oromia region, where seasonal rains were 30 to 60 percent below-average. In **South Sudan**, a recent improvement of the security situation resulted in better access to fields and, in some regions, the voluntary return of displaced farmers, thus leading to increased plantings. However, planted area remains below the pre-conflict levels due to the lingering impact of the prolonged conflict, which has caused damage and destruction of productive assets and the displacement of large numbers of farming households. In addition, soaring prices of inputs continue to severely affect agricultural activities. In southern bi-modal rainfall areas of the Greater Equatoria Region, which is comprised of traditionally cereal surplus producing areas in former Central and Western Equatoria states, harvesting of first season crops will be completed in August with about a one-month delay. Planting operations, which usually begin in March, started in April due to a late onset of seasonal rains. Subsequently, average precipitations in May and above-average rains in June and July benefited crop establishment and development and had a favourable impact on vegetation conditions and yields. As a result, the output of the first season harvest is expected to be around or above the average of the previous five years, but still below the pre-conflict levels. In **Rwanda** and **Burundi**, cumulative rains in February and March were up to 50 percent below-average, but above-average rains in April and May offset the moisture deficits and the “B season” harvests, recently completed, are expected at average to above-average levels.

In Ethiopia, the Sudan, and northern unimodal areas of South Sudan, planting of the June–September 2019 main season crops is complete or nearing completion under generally favourable weather conditions, as the rainy season has been so far characterized by above-average rainfall amounts. However, the heavy rains resulted in localized floods in **South Sudan** (lowland cropping areas of former Northern Bahr el Ghazal, Warrap and Abyei states) and in the **Sudan** (parts of North Darfur, South Darfur, Sennar, and Kassala state). In **South Sudan**, despite an increase in planted area due to an improved security situation, the lingering impact of the conflict is likely to keep crop production well below the pre-conflict levels, while in the **Sudan**, land preparation, planted areas and yields of 2019 and 2020 crops are likely to be affected by fuel shortages and soaring prices of inputs. In **Ethiopia**, planting is complete for the main “Meher” season which started in June and conditions are favourable with adequate rains received rains across Tigray, Gambela, Benishangul Gumuz, western Amhara, western Oromia, and western SNNP regions.

West Africa



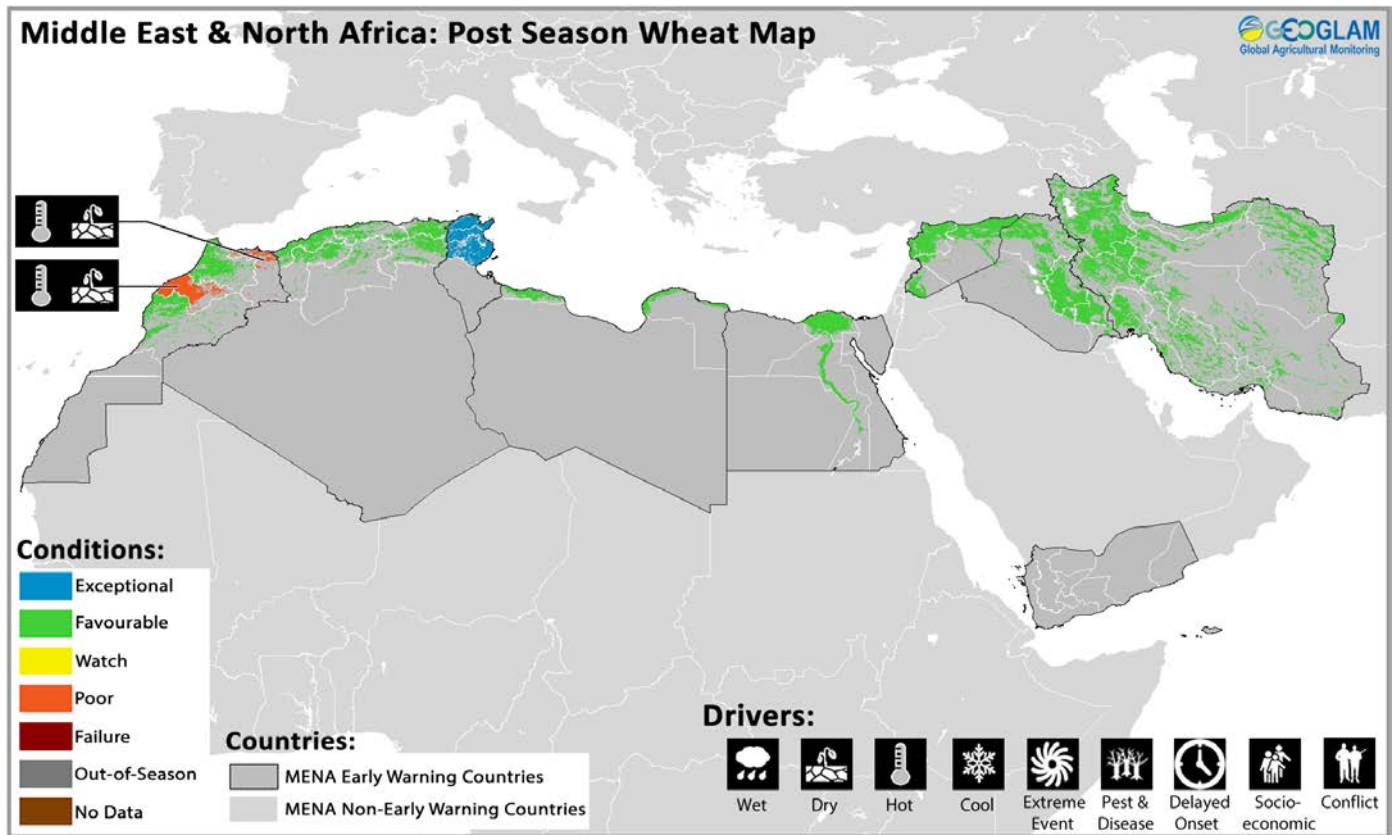
Crop condition map synthesizing information as of July 28th. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Crops that are in other than favourable conditions are labeled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

Main season maize harvest will begin in August across the south of the region, with average- to above-average outputs expected, except in **Cameroon's** West and Plateau regions and the **Central African Republic**, where ongoing civil unrest continues to hamper access to fields and is expected to result in reduced harvests. In the **Central African Republic**, rainfall was below-average in June in most croplands, however, above-average rainfall in the first two dekads of July improved conditions and, by the middle of the month, cumulative rain levels were close to average across most of the country, except for some southwestern parts. Despite the conflict, access to agricultural production activities and humanitarian food assistance is reported to be relatively better than in 2018. As a result, if agrometeorological conditions remain favourable for the rest of the season, the 2019 cereal production is expected higher than last year, but still well below the pre-crisis levels. In **Cameroon**, harvesting of main season maize started in July and it is expected to finalize by the end of October, while sowing of millet and sorghum was completed at the end of July. The Far North region continues to be affected by civil unrest, which spread from neighboring Nigeria in late 2014. Rains have been abundant since late-May and cumulative precipitations were well above-average as of mid-July. In the Northwest and Southwest Anglophone regions, precipitation was below-average in May and June, which caused some localized dryness. However, abundant rains in early July benefited soil moisture. In **Burkina Faso**, **Chad**, and **Guinea**, main season maize crops are in vegetative to reproductive stages and conditions are favourable. In **Nigeria**, harvest of main season maize and rice crop is nearing completion and final yields are expected to be average except in the northeast region where ongoing conflict continues to affect farming activities. While neither a resolution nor escalation in conflict is expected before the end of the season, the harvest in this region is expected to be below-average due to limited access to farmland and lack of inputs due to the conflict. Sowing of short-season maize has also begun in Nigeria under favourable agrometeorological conditions. Sowing of second season maize begins in August in **Cote d'Ivoire**, **Ghana**, **Togo**, **Benin**, and **Cameroon** and conditions are favourable.

Throughout the Sahel region, sorghum and millet crops are in vegetative to reproductive stages and conditions are generally favourable due to good rainfall continuing through July– with a few notable exceptions in parts of Chad, Mauritania, Senegal and Gambia. In **Chad**, there is concern for sorghum and millet crops in Zone 3 due to dry conditions and in **Mauritania**, where sorghum and millet crop are still in planting to early vegetative stages, there is concern due to below-average cumulative rainfall and uneven

rainfall distribution. There is also concern for main season millet and sorghum in the South and Zone 1 regions of **Gambia** and in east and southwestern parts of **Senegal** due to delayed rains at the start of the season, though improved rainfall since the first decade of July has improved crop prospects. To date, the cumulative rainfall received in these areas is likely sufficient to support crop germination and establishment, however short term and seasonal rainfall forecasts show a potential for below-average precipitation, and harvest conditions will rely on adequate rainfall in the coming months.

Middle East & North Africa

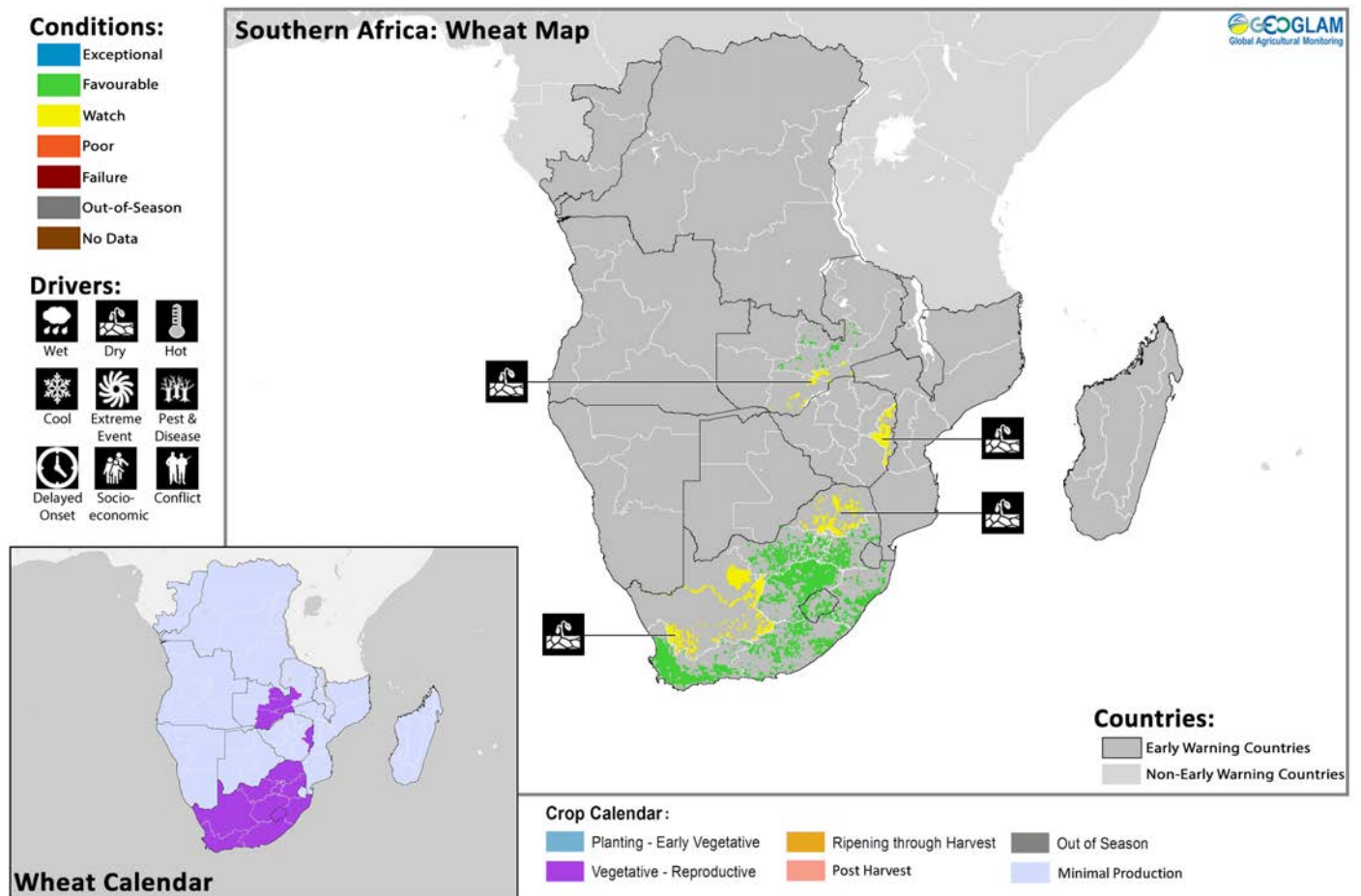


Crop condition map synthesizing information as of July 28th. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Crops that are in other than favourable conditions are labeled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

In the Middle East, harvest of 2019 winter wheat is complete and final yields are expected to be average to above-average across **Iran, Iraq, and Syria**. Based on remote sensing data and modelled weather observations, the conditions for winter cereals were exceptional because of the good winter rains. However, production potential across both **Syria** and **Iraq** has been constrained by ongoing or recently ceased conflict, which continues to impact availability of agricultural inputs and affect agricultural production. In **Syria**, timely and abundant rains supported cereals, but overall production was constrained by conflict-related constraints including lack of quality seeds and other inputs.

In North Africa, the crop season was generally favourable across the central and eastern parts of the region, whereas production in **Morocco** was hampered by drought in several parts of the country. According to the latest MARS bulletin in June, average national yields in Morocco are 23 and 28 percent below the five-year average for wheat and barley, respectively. The western part of **Algeria** also experienced drought conditions but this was well compensated for by above-average production in the center and east. In **Egypt**, crop conditions are close to average. In **Tunisia**, favourable weather conditions resulted in an exceptional harvest, specifically for wheat crop, which produced a yield 20 percent above the 5-year average.

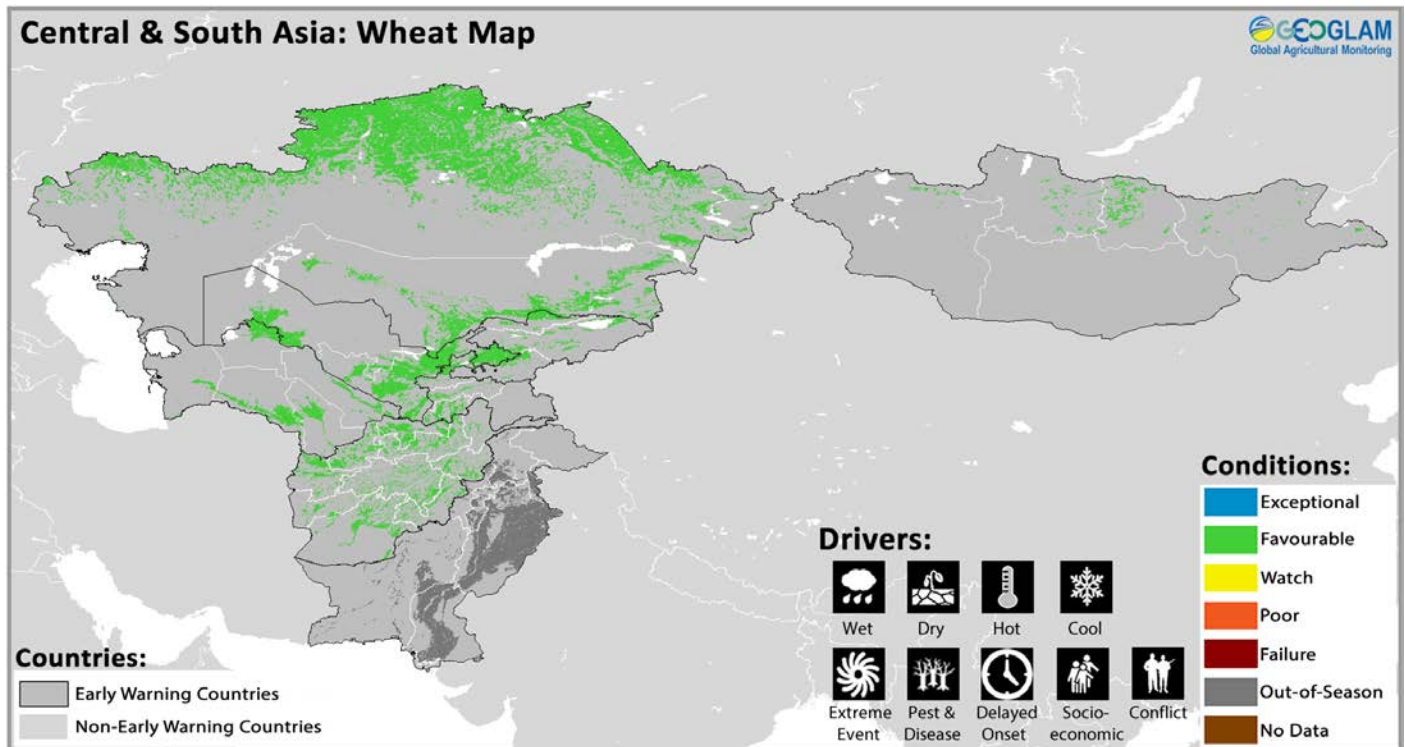
Southern Africa



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

Planting of winter wheat crops started in May over South Africa, Zimbabwe and Zambia. In **Zambia**, there is concern for wheat crops due to carryover dry conditions from the previous season, which has resulted in low reservoir levels across the western half of the country and has directly affected irrigation activities as well as hydroelectricity production in the Kariba Dam. Power cuts have been introduced, further affecting irrigation. In **Zimbabwe**, water sources across the country are well below normal and reduced dam levels has resulted in power cuts extending up to 20-hours in many areas and affecting irrigation activities. In **South Africa**, widespread rain over the central parts of the country in April resulted in favorable conditions to cultivate wheat over the summer rainfall region. More rain is possible over this area by early August. Rainfall since late May over the winter rainfall region– where about 70 percent of production occurs– together with normal rainfall in June and above-normal rainfall in July has had a positive impact.

Central & South Asia

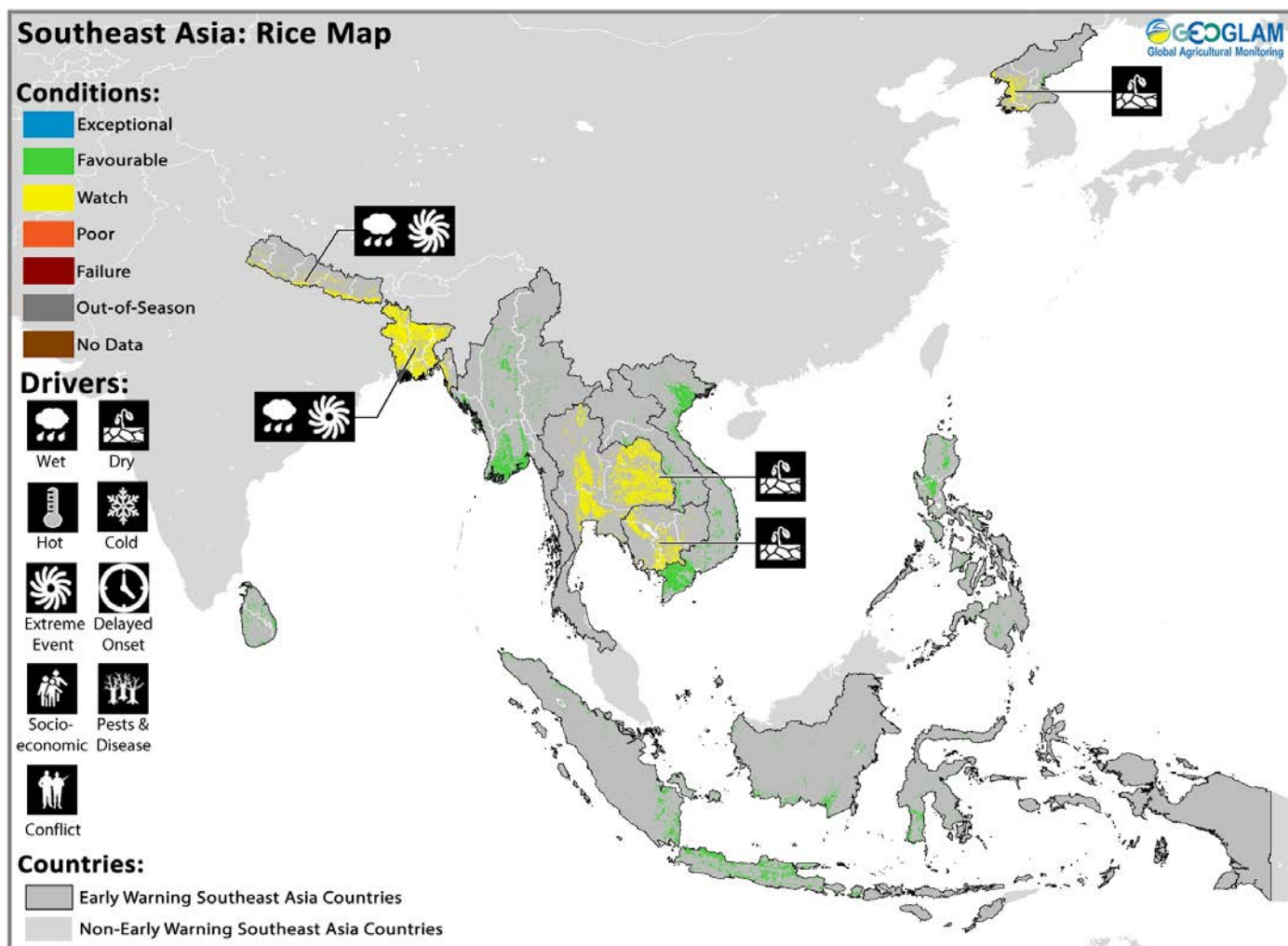


Crop condition map synthesizing information as of July 28th. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Crops that are in other than favourable conditions are labeled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

In Central Asia, harvest of 2019 winter cereals is ongoing and is expected to be finalized by mid-August. Overall, adequate precipitation and temperatures during the winter and spring months in **Tajikistan**, **Turkmenistan** and **Uzbekistan** has positively affected yields for winter crops, which are forecast at average to above-average levels. Although rain amounts were below-average since June in most croplands of these three countries, cumulative rains as of the second dekad of July were above-average. Winter wheat crop conditions are reported to be favourable in southern **Kazakhstan**, where cumulative rains were above-average as of mid-July. In **Kyrgyzstan**, rain levels were below-average since May and, despite abundant precipitation in early-June, cumulative rainfall amounts remained below-average as of mid-July. According to satellite data, however, crop conditions were still close to average and the 2019 total cereal output is forecast at slightly above the five-year average.

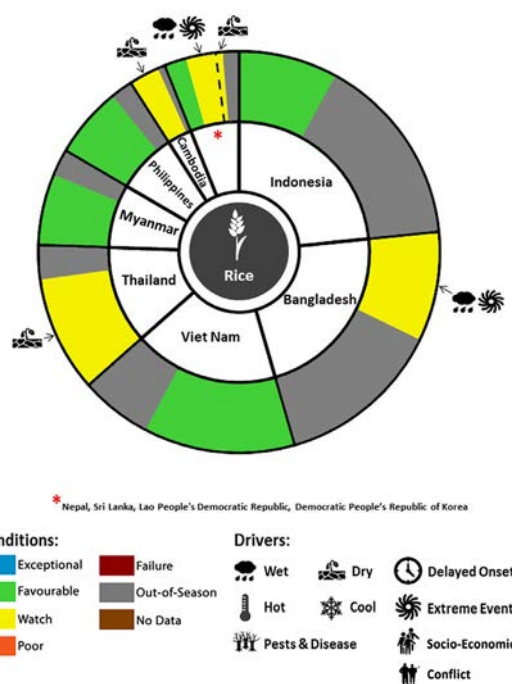
Planting of 2019 spring cereals was completed in June under generally favourable weather conditions and harvesting is expected to take place between August and October. In **Kazakhstan**, cumulative rainfall amounts were near-average as of mid-July in North Kazakhstan and Akmola provinces, while they were below-average in Kostanay. However, current crop conditions are officially reported to be favourable in all Kazakhstan croplands. In **Mongolia**, as in the rest of the subregion, spring wheat for harvest in September is growing under overall favourable agrometeorological conditions. In **Afghanistan**, harvest of spring-planted wheat is complete throughout most of the country except in Badkashan and in parts of Bamiyan, Ghor, Panjsher, Ghazni, Logar, and Wardak provinces where wheat has reached maturity and senescence stages and will be harvested in early- to mid-August. Overall, crop health is average. In **Pakistan**, main season rice is in vegetative to reproductive stages and conditions are favourable. While Pakistan's northeastern regions experienced monsoon rains, flash floods and landslides in early July, particularly in the Azad, Jammu and Kashmir Administrative territory, these are minor rice-producing areas and therefore rice crop damage was negligible.

Southeast Asia



Crop condition map synthesizing rice conditions as of July 28th. All dry season rice crops are complete except in Indonesia where dry season rice sowing is underway. 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 the wet-season rice crop is underway. Growing conditions are generally favourable but there is some concern due to low precipitation in Laos, Viet Nam, Thailand, and especially in Cambodia where drought-damaged areas are expanding into the northwest. Heavy monsoon rains in Bangladesh and Nepal resulted in widespread flooding and significant crop damage. Further south in Indonesia, conditions are favourable as sowing of dry-season rice continues for the fourth month and the harvesting of earlier sown dry-season rice begins. In Thailand and Cambodia, where planting of main season rice is underway, rainfall is well below-average. In **Thailand**, wet-season rice is now in the tillering stage with some concern in the north and northeast due to below-average rainfall and dry conditions. Rainfall forecasts are mixed for August with the potential for above-average rainfall across the northeast and below-average rainfall in the northwest. In **Cambodia**, the early wet-season rice is in flowering to grain-filling stages. Rainfall shortages, first observed in June, have continued throughout July and the main producing areas located in the northwest and south have received below-average rainfall, resulting in lower planted area compared to the same time in the previous year. In areas unaffected by drought damage, growing conditions remain favourable. Rainfall shortages have delayed the planting of maize crops, as well. In **Viet Nam**, conditions are generally favourable for summer-autumn (wet-season) rice as sowing is now complete in the south. Harvesting of the early



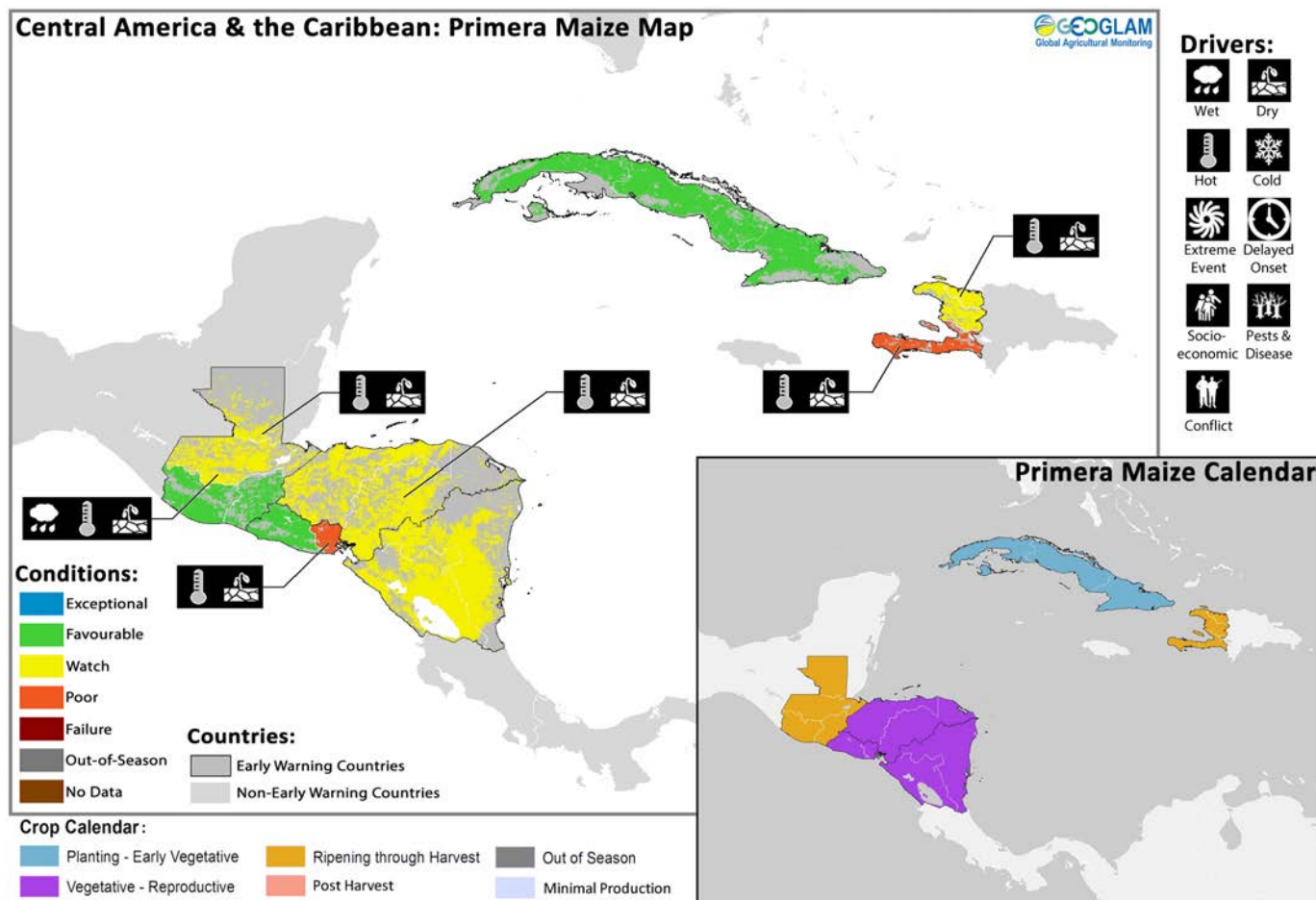
For detailed description of the pie chart please see box below.

wet-season rice of Mekong River Delta has begun and yields are projected to be slightly lower than last year due to drought. In northern **Laos**, lowland rainfed rice is in transplanting and tillering stages and conditions are generally favourable, though there is slight concern due to insufficient water for transplanting. In southern Laos, growing conditions are favourable for upland rice. In **Myanmar**, the harvesting of dry-season rice is almost complete in all regions and final yield is expected to be average. The planting of wet-season rice has started under favourable conditions. Heavy rains in southern Myanmar in July did not cause significant crop damage. In the **Philippines**, wet-season rice is in the maturing stage under favourable conditions, owing to sufficient rainfall at the start of the season. In **Indonesia**, sowing of second season (dry-season) rice continued with favourable conditions for a fourth month into July, yet planted area is still low due to the delay of agricultural work. Harvesting of earlier sown second season rice has begun and average yield is expected. In the **Democratic People's Republic of Korea**, main season maize and rice crops are in growing phases and drought conditions worsened in July, primarily in central and southern parts of the country. The southern part of the rice bowl area (Hwanghae Namdo, Hwanghae Bukto and partly Pyongyang Si) shows low biomass levels of rainfed maize crops, delayed rice growth and much lower levels of water in dams than in July 2018 due to inadequate rainfall over the last three months. Hwanghae Namdo, for instance, received only 35 percent of average rainfall during the period from June 21st–July 20th and 50 percent of average rainfall from April 21st–July 20th. The last month was also dry in the north where less than 50 percent of average rainfall was received. If rains don't improve before the end of the July–September rainy season, planted area– which was already lower than last year–could be reduced and yields will be affected. In **Nepal**, torrential monsoon rains in July resulted in localized flooding and landslides in central and eastern parts of the country. The most affected districts are central Sarlahi, Mahottari, Saptari, and eastern Rautahat, which are all located in the low lands of the Terai Plains where the bulk of the rice crops are planted. The floods occurred at the peak of planting activities for main paddy rice crop and at a moment of critical development for the already-planted maize crops. Currently, there are not preliminary assessments of damages to agriculture, but concerns remain as the displacement of farmers and disturbances to main rural roads might hamper planting operations of the paddy crops in the Terai plains, which account for 70 percent of the national output. In **Bangladesh**, torrential monsoon rains disrupted the sowing of *aman* rice paddy crop and the harvesting of minor *aus* paddy crop, which account for a combined 47 percent of annual production. The heavy monsoon rains occurred in the last week of June and first week of July and caused severe floods and landslides, mostly concentrated in the northern and eastern parts of the country. Particularly affected were several districts in the Rangpur region in the north where officials have reported that the Brahmaputra River has risen 40 inches above the "danger level." Also heavily affected was the Sylhet region in the northeast and some districts in the Dhaka and Chittagong regions in the south. Initial estimates indicate about 100,000 hectares of cropped land were affected, which represent about 1.5 percent of the total area planted on average with the *aus* and *aman* paddy crops. In **Sri Lanka**, conditions are favourable for the secondary *yala* rice paddy and maize crops, which benefited from adequate rainfall in July and will be harvested in August and September.

 **Sources and Disclaimers:**

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

Central America & Caribbean



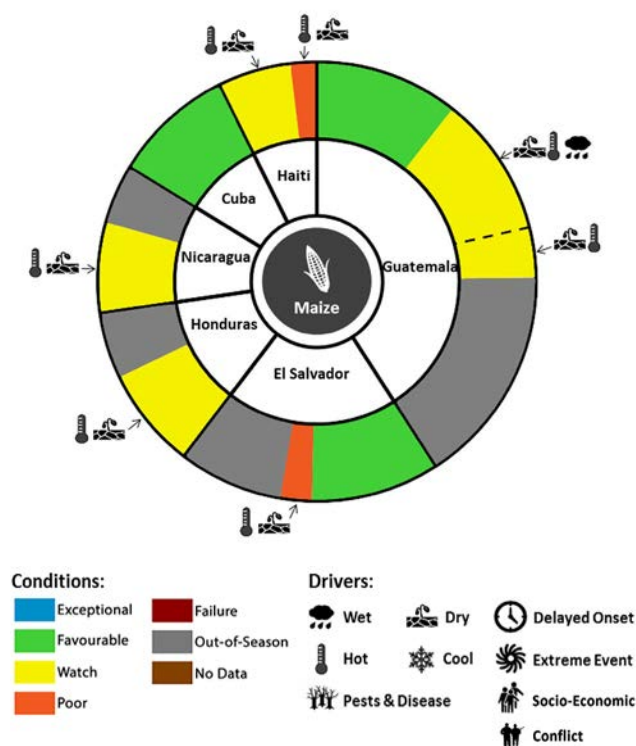
Crop condition map synthesizing information as of July 28th. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. **Conditions that are other than favourable are labeled on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

Harvesting of “Primera” season maize and bean crops will begin in August across Guatemala, El Salvador, Honduras and Nicaragua and throughout the region, recent dry spells and high temperatures are expected to impact final yields. Across some parts of the region, late-May to late-July rainfall has been among the driest since 1981 (See Regional Outlook pg. 14), and forecasts indicate rainfall shortages may continue through the start of August along the Caribbean coast of Central America, while rainfall improvements are likely along the Pacific coast areas and in the northern Caribbean. In eastern **El Salvador**, irregular rainfall distribution, higher than average temperatures and consecutive days with no rain are expected to result in yield reductions. Some crop losses have already been reported in Morazán and La Unión departments. In western El Salvador, high rainfall in July over a short amount of time may have affected crops due to excess moisture and localized flooding. However, national production is expected to reach average levels as subsistence and medium farmers are likely to be most affected by these irregular weather conditions. In **Guatemala**, the total rainfall received in July was less than 80 percent of average levels, except along some southern coastal pacific zones and the Izabal department. Nearly half the country received just 41 to 60 percent of the average rainfall for July. This, together with prolonged periods with no rainfall, has affected the normal development of crops, primarily in areas of subsistence farming and in some large production areas of Peten department. In San Marcos, Retalhuleu, Suchitepéquez and Escuintla departments, excess rainfall in short periods of time and strong winds have affected crop production. For the moment, overall national production is not expected to decrease in Guatemala. However, food security should be carefully monitored, notably across the East-Central “dry corridor”, as the prolonged dry spells during the current “Primera” maize season are present for the second consecutive year. In **Honduras**, rainfall has been below-average throughout the country since early June, including in main producing departments of El Paraiso, Olancho, Comayagua, Yoro and Santa Barbara, as well as across parts of Francisco Morazán, Choluteca, La Paz and Intibuca. High temperatures have further exacerbated moisture deficits. The government is currently conducting an impact assessment of major producing areas and more information will be known in the coming month. In **Nicaragua**, July rainfall was well below-average in Madriz, Nueva Segovia, Estelí, Chinandega, Jinotega, Matagalpa, León and Boaco departments with soil moisture values observed at 20-40 percent below-average. Losses have already been reported in the aforementioned departments and below-average yields are expected. In **Haiti**, the main season maize harvest will finish in August and final yields are expected to be below-average due to dry conditions.

i Sources and Disclaimers:

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

Main season rice harvest started this month and prospects are favourable across the main rice producing Artibonite, Ouest and Centre departments– which account for 80 percent of the national rice production– despite the erratic rainfall and high temperatures observed across the north, south and west throughout the season. In these areas, rice yields and preparation for second season maize planting, which will take place in August, may be adversely affected. While the impact on national production may be limited, food access and security will need to be monitored as rice prices could sustain at a high level due to high inflationary pressures and the weaker currency. In **Cuba**, while July rainfall was slightly below-average across the main maize producing La Habana and Matanzas departments, crop conditions remain generally favourable. Rice growing conditions are favourable in the main rice-producing Granma, Matanzas and Holguin departments due to good sunlight and high temperatures.



For detailed description of the pie chart please see box below.

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 August 8th 2019.

i Sources and Disclaimers:

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

Regional Outlook: Late May-June rainfall in parts of Central America were among the driest since 1981 with mixed rainfall expected in August

Season-to-date rainfall, from late May to July 2019, has been below-average in a number of areas in northern Central America and Hispaniola. The worst affected areas, with rainfall totals less than 80 percent of average, are in Belize, central Guatemala, eastern Honduras, northern Nicaragua, the Dominican Republic, and parts of southern Haiti. Preliminary rainfall estimates show some locations experienced one of the driest late-May to late-July periods since 1981. (Figure 1-top).

According to the next-two week forecast (Figure 1-bottom), released August 1st, rains are expected to continue across the region but to be lower than average along some Caribbean coast areas of Central America. Average or wetter-than-average conditions are more likely in Pacific coast areas and in the northern Caribbean. For August rainfall totals, there are mixed tendencies forecast across the region, with higher than average amounts mainly in southern Central America.

The influence of El Niño, which tends to suppress rainfall in the region, is expected to wane as ENSO-neutral conditions are most likely through the rest of 2019. Some areas could see slow establishment of second season rains during August to November. While there is considerable uncertainty in the long-term forecasts, they point to mixed conditions across the region, with some areas having below-normal season totals and other areas closer to average or above-average.

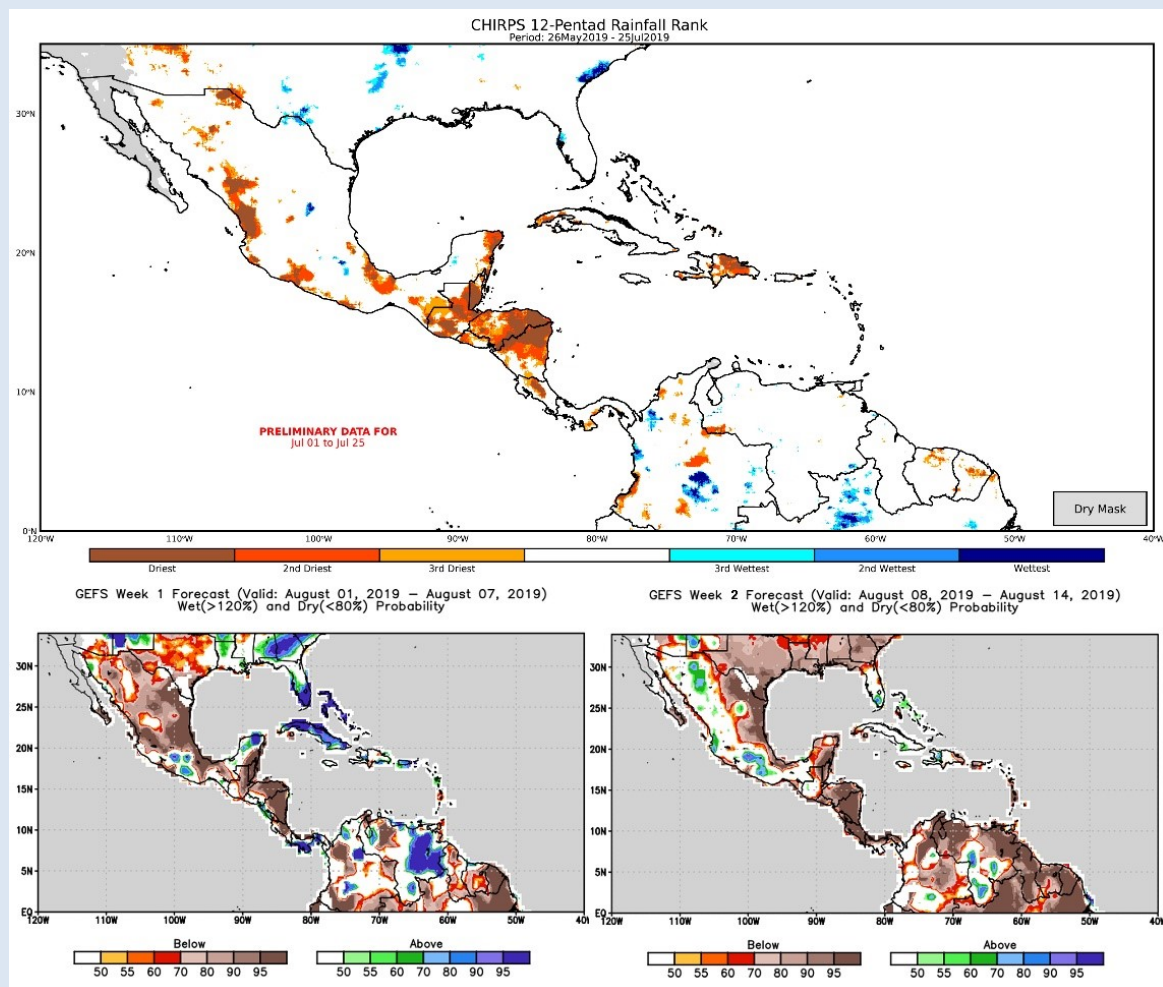


Figure 1. On the top, an early estimate for the May 25th to July 25th, 2019 rainfall rank. Based on CHIRPS data for 1981-2019 and preliminary CHIRPS data for July 2019. Red (blue) colors show where preliminary totals for this period are among the lowest (highest) since 1981. (Source: UCSB CHC) On the bottom, the Global Ensemble Forecast System (GEFS) probabilistic forecast for rainfall being less than 80 percent of average or greater than 120 percent of average for August 1st- 7th (left) and August 8th-14th (right). (Source: NOAA/NCEP/CPC).
Source: UCSB Climate Hazards Center

Sources and Disclaimers:

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

Appendix

Crop Conditions:

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

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

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

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

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

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

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

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

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

Drivers:

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

Wet: Higher than average wetness.

Dry: Drier than average.

Hot: Hotter than average.

Cool: Cooler than average or risk of frost damage.








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

Delayed-Onset: Late start of the season.

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

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

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

	
Wet	Dry
	
Hot	Cold
	
Extreme Event	Delayed Onset
	
Socio-economic	Pests & Disease
	
Conflict	

Sources and Disclaimers:

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

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.

i Sources and Disclaimers:

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

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

i Sources and Disclaimers:

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



GEOGLAM

Global Agricultural Monitoring

www.cropmonitor.org
 @GeoCropMonitor



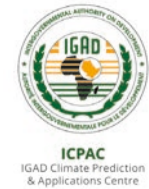
Prepared by members of the GEOGLAM Community of Practice, coordinated by the University of Maryland Center for Global Agricultural Research and funded through NASA Harvest.



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

Cover Photo by: *Kenneth Mwangi*

Early Warning partners



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