

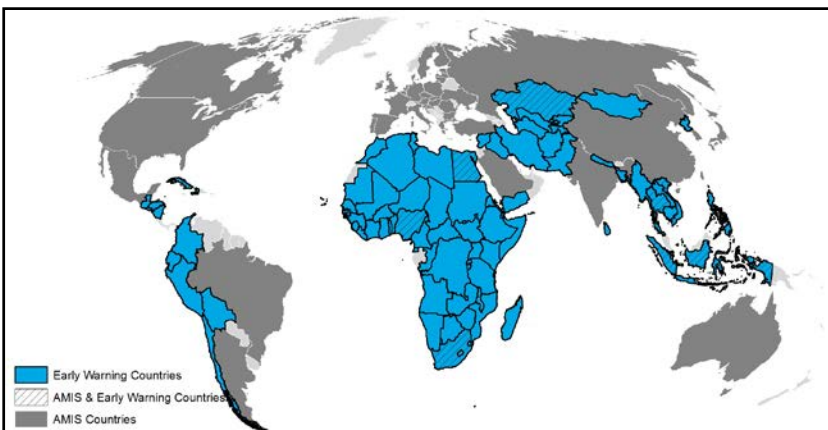


# Crop Monitor

## EARLY WARNING

### Overview:

In **East Africa** conditions are under watch due to dry conditions and impacts of fall armyworm infestation, while in **West Africa**, conditions are generally favourable despite some concerns due to ongoing conflict and dry conditions. There is some concern over winter wheat in **Southern Africa** due to dry conditions that are affecting the main producing areas. Crops are out of season across the **Middle East** and **North Africa** except in Egypt, where harvests have started and production prospects are favourable. In **Central and South Asia**, spring wheat harvest is complete and conditions are favourable with good yields received. In **Southeast Asia**, wet season rice harvest is ongoing with concerns from heavy rains and flooding during August and September. In **Central America** and the **Caribbean**, end of *primera* season conditions are favourable, with exceptional yields in eastern areas of El Salvador and Guatemala.



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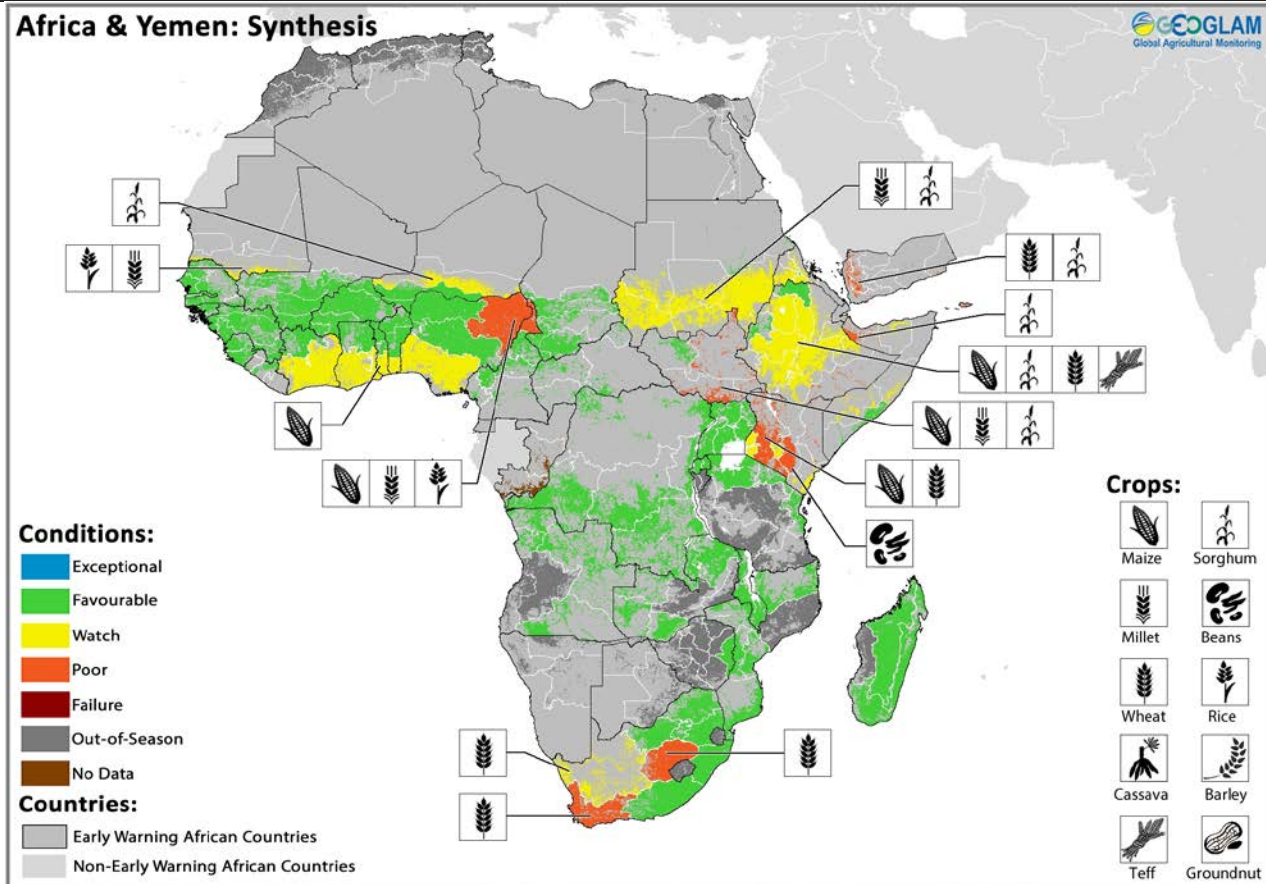
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Assessment based on information as of September 28<sup>th</sup>

# 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 of the subregion over Sudan, Ethiopia and parts of South Sudan the main season started in June under generally favourable conditions as seasonal rains had an early onset and average to above-average amounts however areas of concern remain in Ethiopia due to ongoing fall armyworm outbreaks and effects of early season dryness in Sudan. The main season ended last month across the south of the sub region with poor end of season conditions over most areas and failure conditions over Somalia and Kenya triggering increased food prices and food mobilization efforts for areas most affected.

**WEST AFRICA:** Across the bimodal zone of West Africa harvest of main season crops is ongoing and will finish in December. Production prospects are generally favourable however there is some concern due to ongoing conflict and dry conditions. Planting of second season maize is ongoing across the southern bimodal zone and there is concern over dry conditions at the start of the season.

**CENTRAL AND SOUTH ASIA:** Harvesting of winter cereals completed in August under favourable conditions, while harvest of spring wheat finished at the end of September. Production

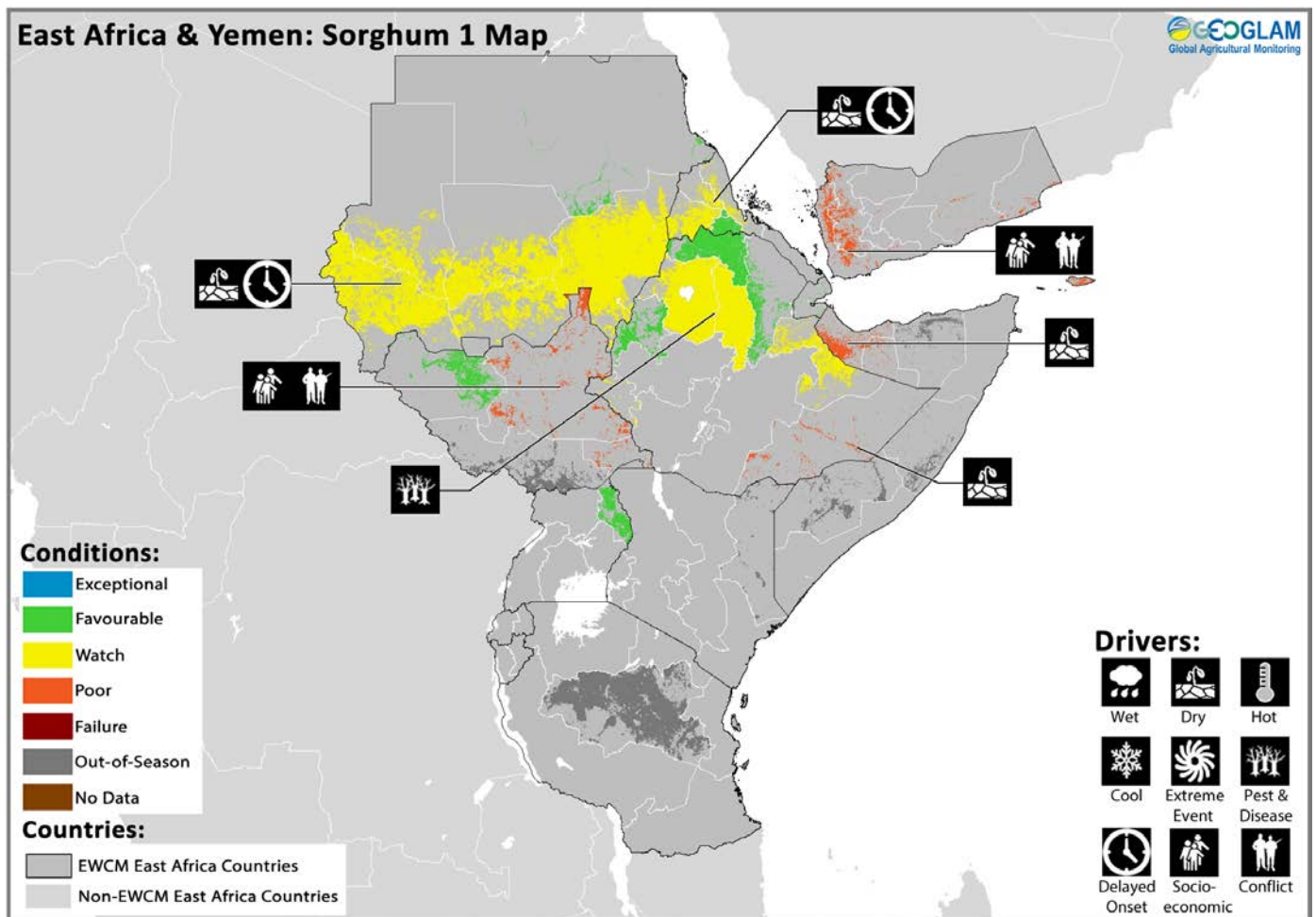
prospects for the total subregional cereal output is slightly below the 2016 output but remains above the five-year average.

**MIDDLE EAST AND NORTH AFRICA:** The season is complete and crops are out of season across all areas except in Egypt, where harvests have started and production prospects are favourable.

**SOUTHERN AFRICA:** Winter wheat harvest will commence in October and conditions are favourable however, production prospects are below average for South Africa due to dry conditions at the start of the season over the main producing areas.

**SOUTHEAST ASIA:** In northern SE Asia, harvesting of wet season rice is underway across Cambodia, Philippines, and southern Vietnam. Recovery is ongoing from damage due to heavy rain last month over parts of Thailand, Laos, Myanmar and North Vietnam. In Indonesia, the planting of dry season rice is nearing completion and yield prospects are above average.

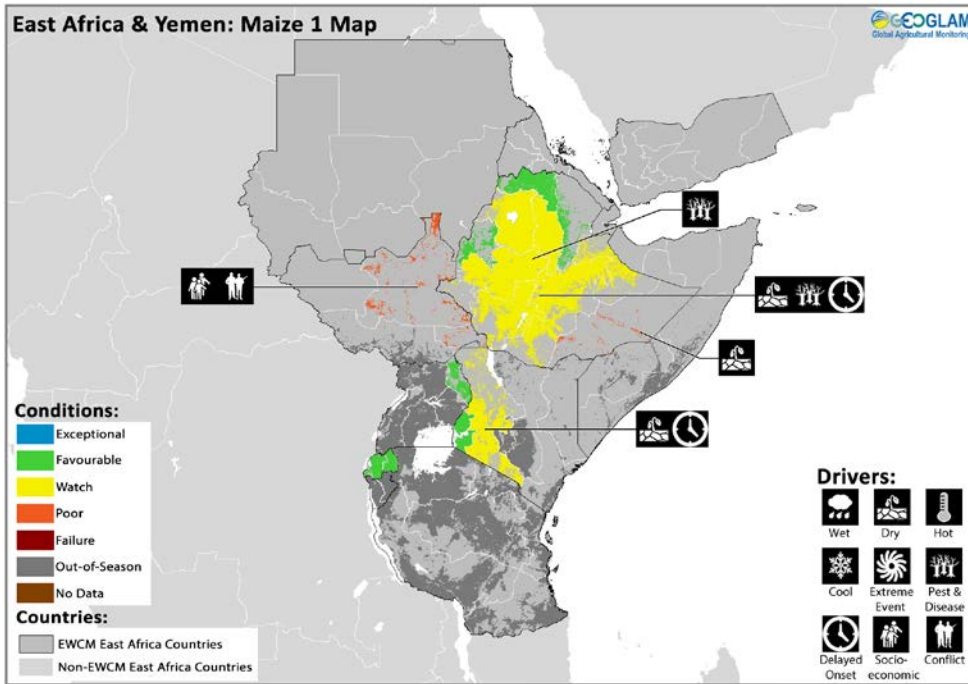
**CENTRAL AMERICA & CARIBBEAN:** The *primera* season is complete and end of season conditions are favourable across all areas with yields above the 4-year average. There is concern over Haiti where irregular rainfall is impacting main season crops.

**East Africa and Yemen:**

Crop condition map synthesizing 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.**

**East Africa**

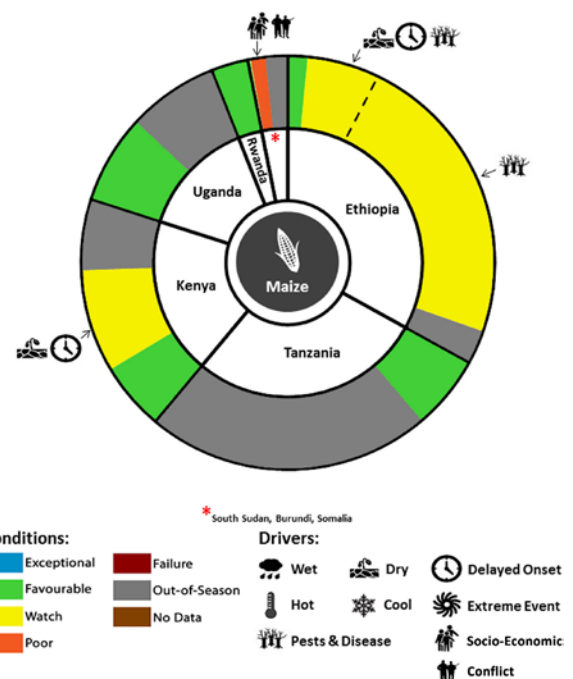
In the north of the subregion over Sudan, Ethiopia and South Sudan August/September rainfall was characterized by above to above-average amounts. However, fall armyworm incidences increased in September across Ethiopia and there is ongoing concern for main season production prospects. In Sudan the positive rainfall follows early season dryness in some areas and the final outcome of the cropping season will depend on degree of recovery. Across the south of the subregion planting of second season crops is expected to begin in October across parts of Somalia, Uganda, Rwanda, Burundi and Tanzania. Carryover effects of the poor main season production have continued to cause increasing food prices household stocks deplete and has left many areas in need of government assistance. In **Ethiopia**, despite generally abundant and well distributed seasonal *kiremt* rains there is increasing concern for *meher* crop production due to fall armyworm infestation. Fall armyworm (FAW) is currently present in Amhara, Benishangul Gumuz, Gambella, Oromia, SNNP and Tigray and up to 2.5 million ha of maize are at risk with 23% of the total area planted already infested. Control operations are underway however only around 41% of current infested area has been sprayed with pesticide and the full impact of FAW is still unknown. In **Eritrea**, main season crops are ongoing and there is concern over Anseba and most notably Gash Barka due to delay onset at the start of the season and ongoing dry conditions. In **Djibouti**, conditions are favourable for the ongoing season with good rains received. In **Sudan**, sorghum and millet crops, planted in June-July, will be harvested from November. Seasonal rainfall was characterized by above-average cumulative amounts throughout the country but had an erratic distribution in some areas, with dry spells in June and July over southern parts of Northern Darfur States, northern parts of Northern Kordofan and Gadaref States and over Kassala State having a negative impact on crop establishment and development. Subsequently, abundant rainfall in August and September triggered floods but eased moisture deficits and lifted crop prospects in the areas affected by early-season dryness. In the South of the country agro-climatic conditions are generally better but close to the border with South Sudan conflict is impacting agricultural activities. In **South Sudan**, despite favourable weather, conditions are poor for main season crops due to ongoing widespread insecurity disrupting agricultural activities. However, in North Bahr-el-Ghazal and Warrap where conflict has had reduced impact, perspectives for the sorghum crop being harvested now are favourable.



In **Kenya**, late season harvests in the rift valley are ongoing with concern due to delay of onset rains at the start of the season and dry conditions. However, in the west, production prospects are favourable for crops harvested August through September with good rains received. In **Uganda**, the main season is complete across the country excepting the uni-modal rainfall region of Karamoja, where sorghum and millet are predominantly grown and harvest starts in October. Despite a delay onset of rains at the start of the season, steady and favourable rainfall from July onwards significantly improved production prospects. Planting of second season crops is now underway across the country and conditions are favourable. In **Rwanda**, planting started in September for season A maize and sorghum crops and conditions. In the **United Republic of**

Crop condition map synthesizing 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.**

**Tanzania**, the *vuli* season started in September over the bimodal north and conditions are favourable with good rainfall and temperatures supporting planting activities. In **Somalia**, planting of *deyr* season crops is expected in October and there is concern over possible impact on agricultural activities due to previous seasons drought and critical food security situation. The carryover effects of the failure of the previous *deyr* and low output of the 2017 *gu* season have led to large scale and ongoing displacement and crisis conditions that continue to worsen as household food stocks deplete. In **Yemen**, conditions are poor across all areas due to ongoing conflict impacting agriculture activities.

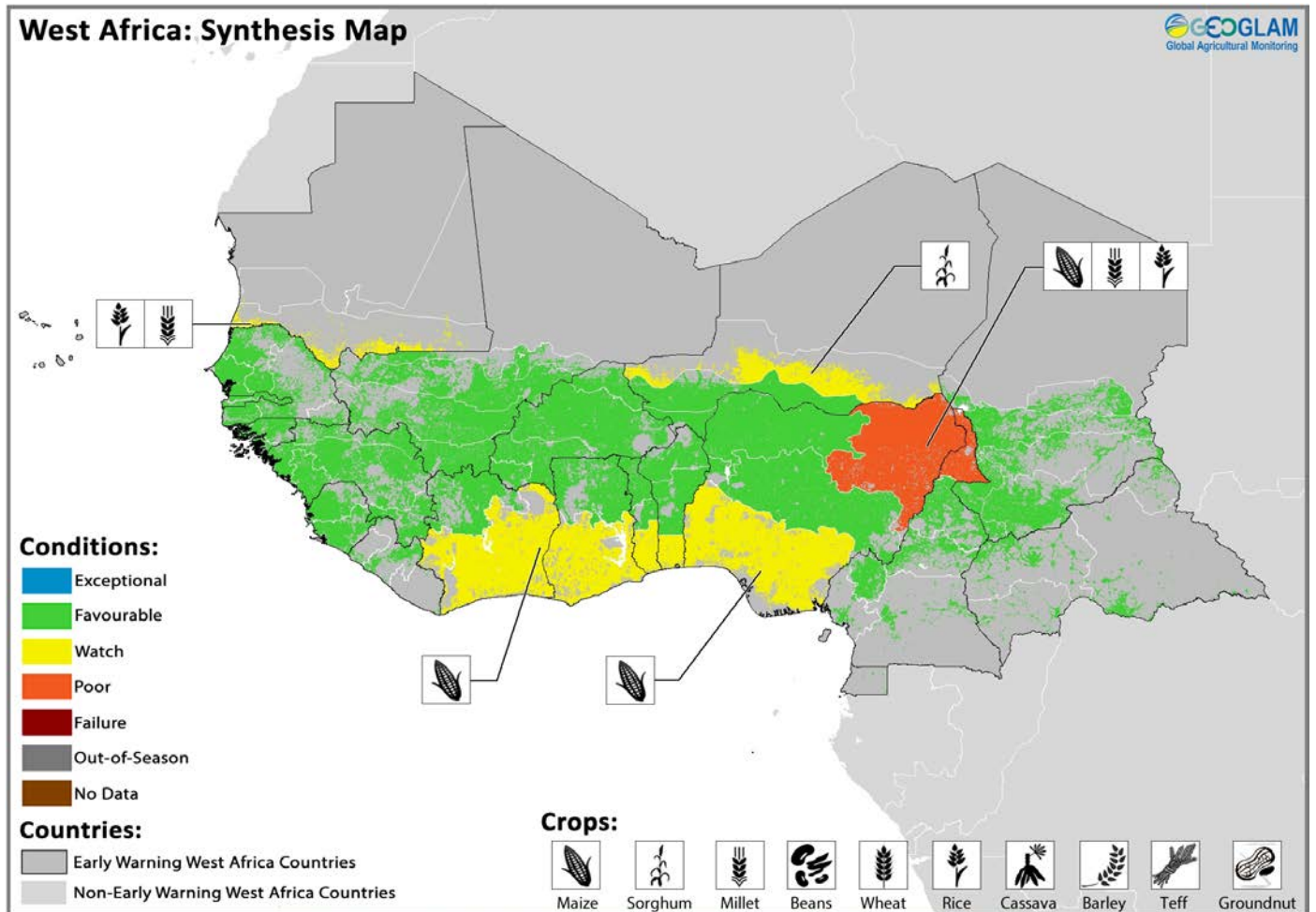


### Update: Fall armyworm infestation worsening across Ethiopia

Outbreaks of the non-native fall armyworm (FAW) continue across Ethiopia and its presence is reported in six regions of Amhara, Benishangul Gumuz, Gambella, Oromia, SNNP and Tigray with up to 2.5 million ha of maize crops at risk. It is currently estimated that roughly 23% of the total area planted is infested with the sharpest increase in the last three weeks of August accounting for 14%. Control operations are underway however only 41% of the total infested has been sprayed with pesticides with the remaining infested area using cultural treatment measures such as handpicking. The full impact of FAW is still unknown and continued monitoring is necessary.

Source: FAO

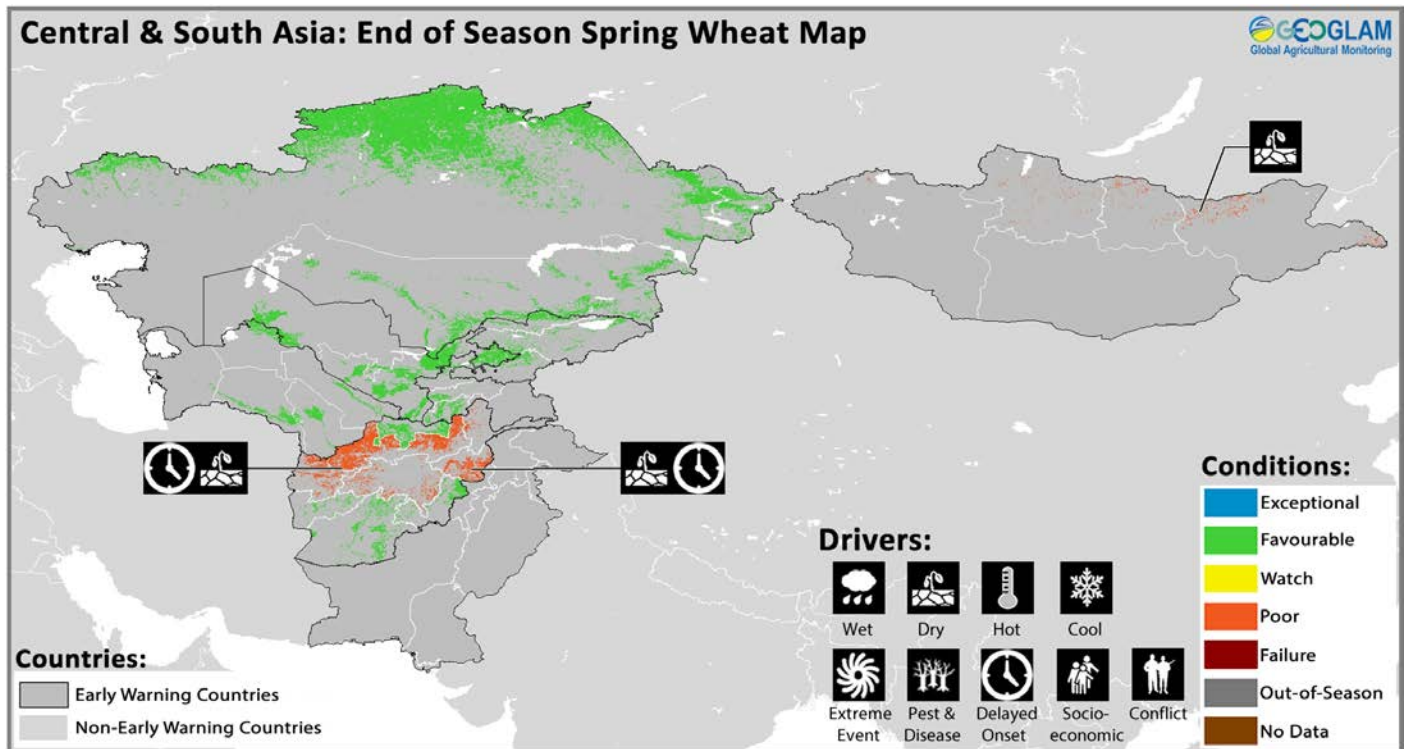
## West Africa



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. **Regions that are in other than favourable conditions are labeled on the map with a symbol representing the crop(s) affected.**

Across the bimodal zone of West Africa harvest of main season crops is ongoing and will finish in December. Production prospects are favourable excepting parts of Nigeria and Cameroon where ongoing conflict is impacting agricultural practices and Niger, Mauritania, and Chad where dry conditions in September cause concern for main season crops. Planting of second season maize is ongoing across the southern bimodal zone extending from Liberia to Cameroon and there is concern due to delay onset of rains and dryness at the start of the season over parts of Liberia, Cote d'Ivoire, Togo, Benin, Nigeria, and southern Cameroon. In **Cameroon**, conditions are favourable for main season crops excepting Extreme Nord where there is concern over conflict impacting agricultural activities. In **Nigeria**, overall conditions are favourable for main season crops however, concern remains in the northeast Borno state from ongoing conflict impacting agricultural practices. In **Mauritania**, there is concern across all areas with a delayed start to the season due to declining rainfall amounts from mid-July onwards causing dry conditions across the region excepting the east where rainfall is average. In **Niger**, conditions are generally favourable for main season sorghum excepting Zone 3 rainfall has been 40% below the average since August. This is the third consecutive year with below average rainfall over the region impacting production. In addition, ongoing conflict in the region is impacting agricultural activities and compounding concern for the 2017 main season production. In **Chad**, main season conditions are favourable excepting the region of Lac and portions of Bahr el Ghazel, Batha Est and Wadi Firra where there is concern due to dry conditions.

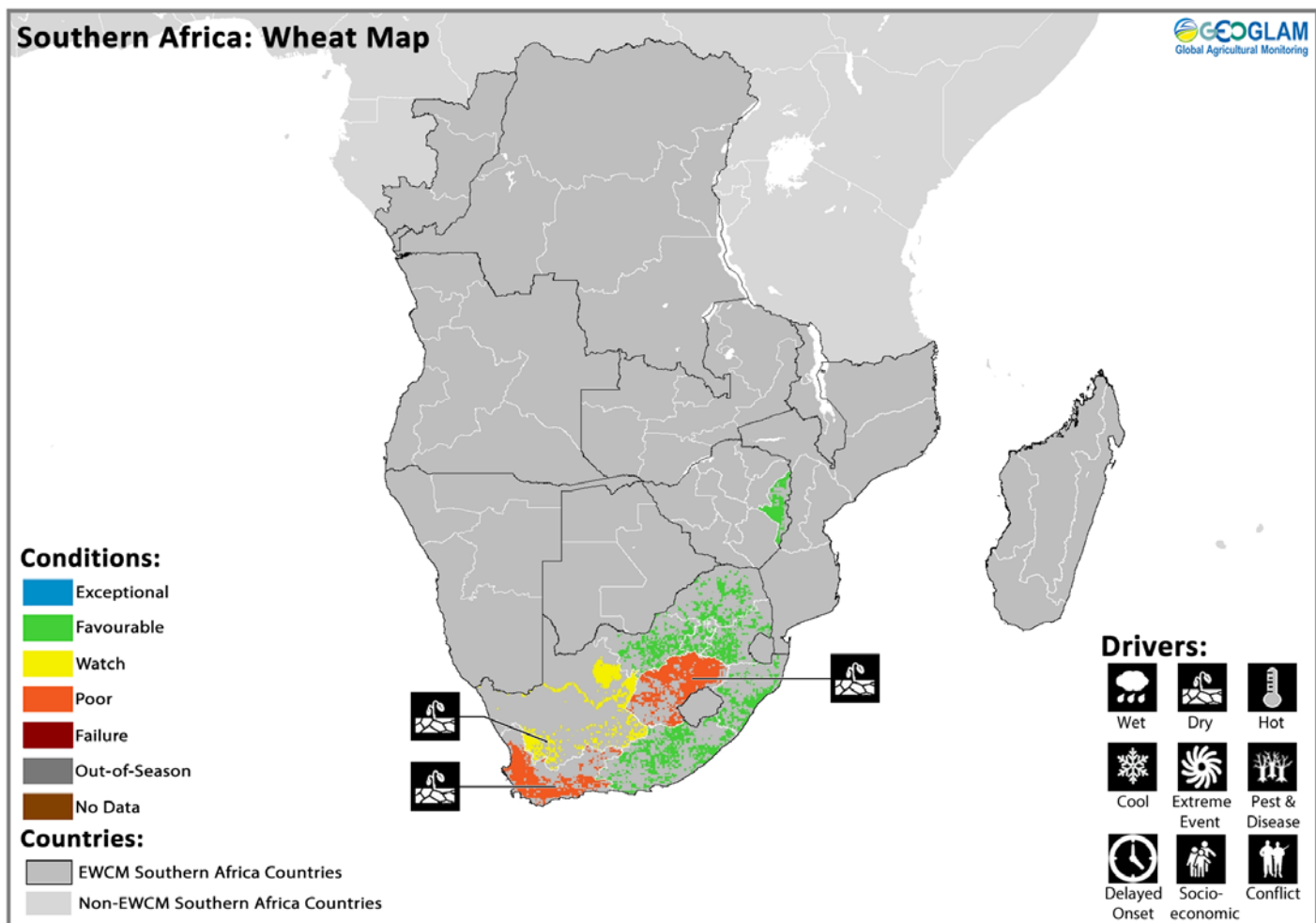
## Central and South Asia:



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.**

Across Central and South Asia, harvesting of winter cereals completed in August under favourable conditions, while harvest of spring wheat finished at the end of September, with exception of Kyrgyzstan where harvests will complete in October. With the 2017 harvest nearing completion, production prospect for the total subregional cereal output is slightly below the 2016 output but still above the previous five-year average. This slight decrease from 2016 production is due to a decrease in wheat output in Kazakhstan, the largest producer and exporter of the subregion. In **Kazakhstan**, total wheat production is expected to fall to 14 million tonnes, however this still remains above average. This year's decline reflects a reduced planted area, following farmers' decision to switch to more profitable crops. Production of barley, which is the second most important cereal crop, is forecast at slightly above the already high level of 2016. In **Kyrgyzstan**, harvest will continue through the end of October and under favourable conditions with total cereal production forecast to be near-average, but slightly below last year's level, following a small decrease in plantings. In **Turkmenistan**, production outlook is favourable and at the same level as the good 2016 production following beneficial weather conditions during the growing season. In **Uzbekistan**, the aggregate cereal output in 2017 is anticipated to remain close to the previous year's high level. In **Tajikistan**, aggregate cereal production is reported as 7 percent higher than the below-average output of 2016. Wheat production is expected to increase by 16 percent compared to the lower-than-average output obtained in 2016, following favourable weather conditions during the spring season. Planting of the 2018 winter crops, which constitutes only a small fraction of total annual cereal production, started in mid-August under generally favourable weather conditions. In **Afghanistan**, harvest is complete for spring wheat and end of season conditions are poor across the Badakshan, Northern Mountains and Foothills, Herat, and the Central and Eastern Mountains due to delay onset of the rains at the start of the season and ongoing dry conditions as the season progressed. In **Pakistan**, harvest of the kharif rice and maize is ongoing and will finish at the beginning of December for the main season rice crop and conditions are favourable. In **Mongolia**, poor end of season conditions resulted for the 2017 spring wheat crop due to dry weather and above average temperatures throughout the summer months of June and July. Production estimates show a 45% decrease in wheat production from 2016 production levels and 35% percent below the 5-year average.

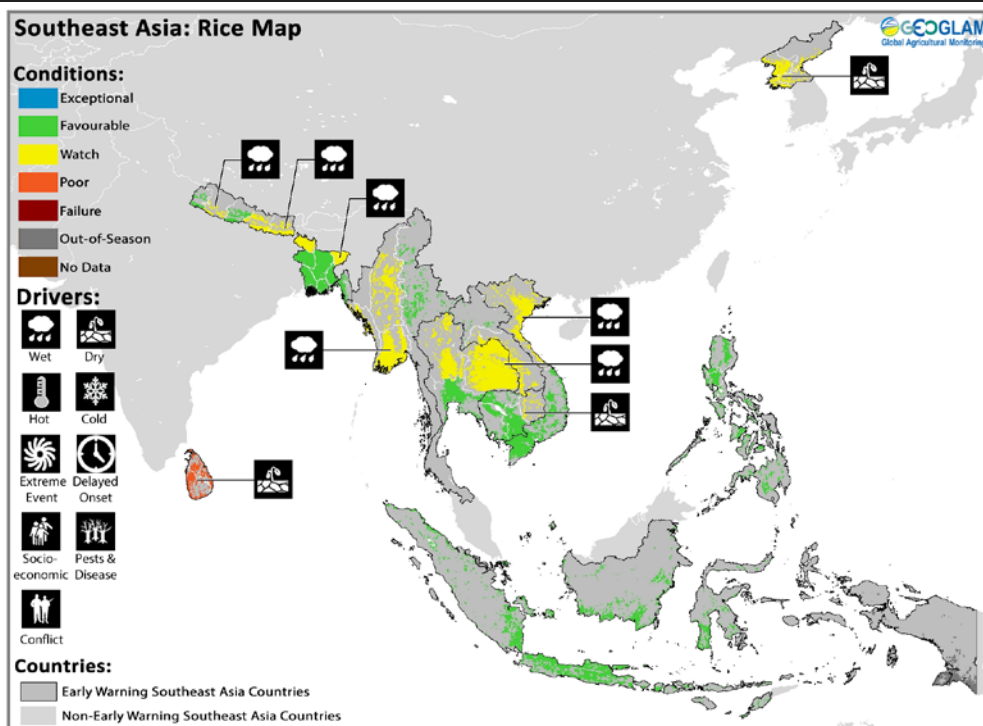
## Southern Africa:



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.**

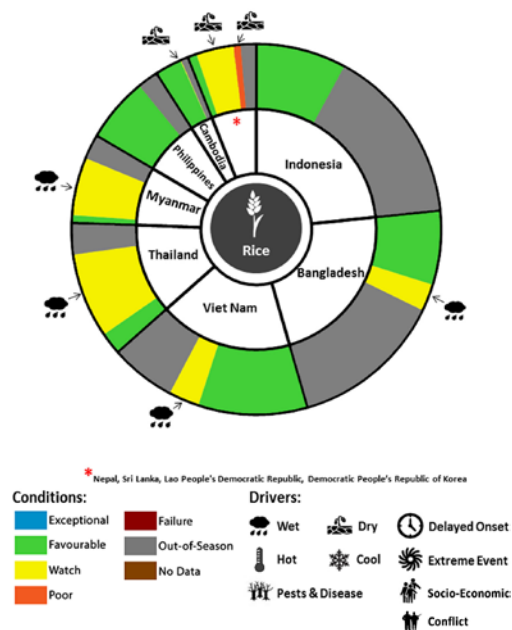
In Southern Africa, the winter wheat harvest will commence in October and conditions are generally favourable. In **South Africa**, production prospects point to a near-average output, with a recent increase in the estimated area planted resulting in an upward revision to the production forecast compared to earlier expectations. However, continuing dry conditions, following a delayed start of the season, in the main producing Western Cape and Free State dampened yield prospects, curbing overall production expectations. In **Zambia** and **Zimbabwe**, harvests will start in October and conditions are favourable with good rainfall in September supporting crop development.

## Southeast Asia:



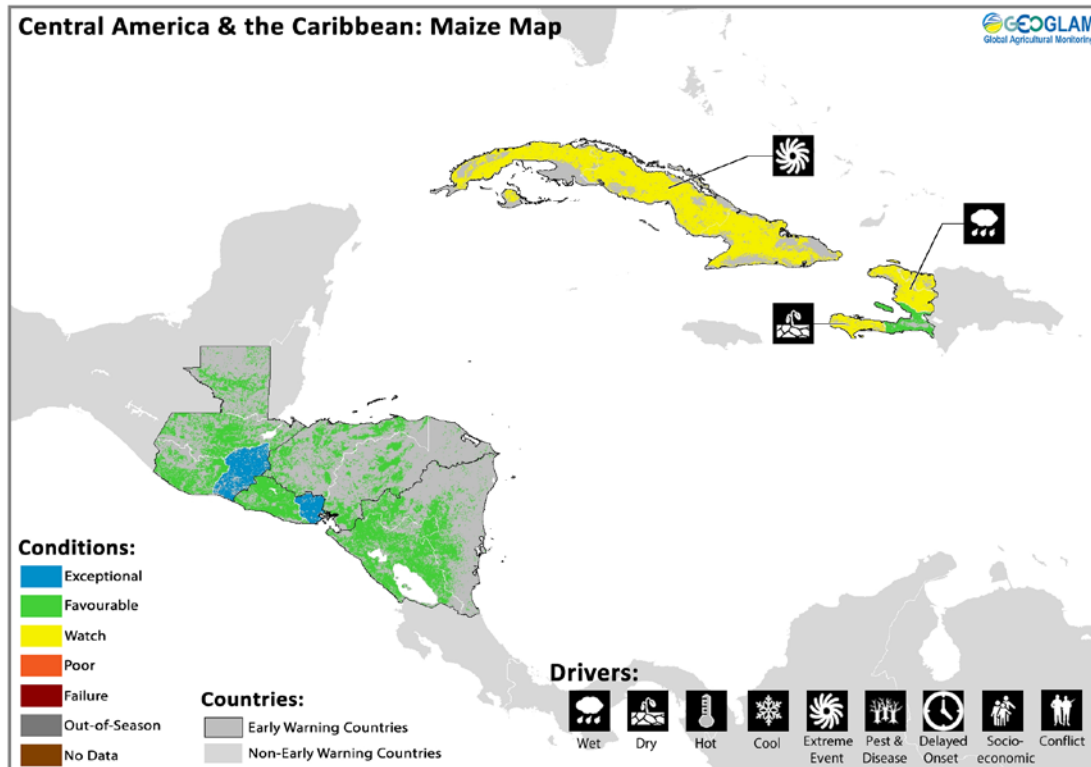
Crop condition map synthesizing information for rice as of September 28<sup>th</sup>. Crop conditions over the main growing areas are based on a combination of inputs, including remotely sensed data, ground observations, field reports, national, and regional experts. **Conditions that are other than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

In the northern side of SE Asia, the harvesting of the main (wet) season rice has started in Cambodia, Philippines and South Vietnam and production prospects are favourable. Recovery is ongoing from damage due to heavy rain last month over parts of Thailand, Laos, Myanmar and North Vietnam. In Indonesia, the planting of dry season rice is nearing completion and yield prospects are above average. In **Viet Nam**, conditions in the north are generally favourable with an increase in planted area compared to last year, with only minor losses from flooding earlier in the season. While in the south, harvest of wet-season rice continues under favourable conditions with yields slightly below last year. In **Laos**, wet season rice in the lowland is under development and damage from heavy rains in August is ongoing with total damaged area from flood and associated disease outbreak estimated at 9700 ha. Upland rice is in grain filling stage and minor damage has been reported from locust outbreak in some provinces. In **Thailand**, conditions are mixed due to two tropical storms earlier in the season that impacted the northern part of the country, resulting in flood damage and disease outbreaks. In **Cambodia**, wet season rice crops have recovered from flood events last month however, there is now concern in the east over dry conditions affecting rice crops. In **Myanmar**, wet season rice is in tillering stage and recovering from heavy rains last month damaging an estimated 114,800 ha with the largest affected area of the Delta and Lower Myanmar requiring government assistance for replanting efforts. Food security concerns have worsened in Rakhine with ongoing conflict in the region impacting agriculture practices. In the **Philippines**, conditions are favourable for wet-season rice planted July-August currently in tillering stage. Earlier planted wet-season rice completed harvesting under favourable conditions. In **Indonesia**, conditions continue to be favourable as harvest of dry-season rice is at its peak and planting is almost finished. Higher yields than last dry-season are still expected due to favourable weather conditions over the last three months. In the **Democratic People's Republic of Korea**, rains improved over large parts of the of the country in August, reducing the adverse impact of the earlier drought substantially. However, yields of the 2017 main season paddy in the central and western main producing areas are expected to decrease compared with last year's good level, due to the dry conditions between May and June. In **Bangladesh**, *aman* rice crop is ongoing and under favourable conditions excepting Sylhet and Rangpur where crops are still recovering from ongoing above average rainfall in September and flood damage. In **Nepal**, conditions are generally favourable for main season rice however there is some concern over the east and central areas due to heavy rainfall in September damaging rice crops. In **Sri Lanka**, harvests are complete for the main *yala* crop and production was poor due to severe dry conditions throughout the start of the growing season and continuing dry conditions in September.



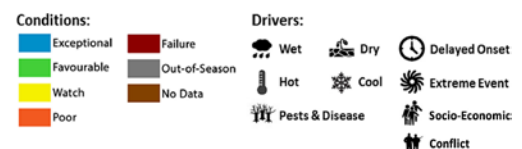
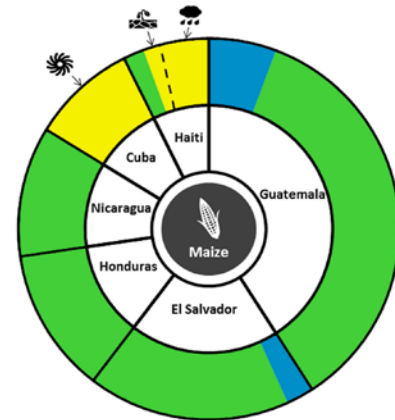


## Central America &amp; Caribbean:



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.**

Harvest of *primera* season beans and maize is now complete across the region and conditions are favourable with yields reported above the 4-year average in many areas notably in Guatemala and Nicaragua due to good rains and temperatures throughout the season. Areas with subsistence farmers now have enough crops until the end of the Segunda season and the major producers also have sufficient production to supply markets. Despite some focalized problems from floods throughout the season, yields remain good and damage was limited. In **Nicaragua** and **Honduras**, the *primera* season was favourable and yields were average. In **El Salvador** and **Guatemala**, *primera* season production was average with exceptional yields in the east reporting above the 4-year average. In **Haiti**, irregular distribution of rains caused dryness across some areas and flooding over Nord and Transversale damaging maize and bean crops.



**Information on crop conditions in the main production and export countries can be found in the [AMIS Market Monitor](#), published October 5<sup>th</sup> 2017.**

**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). When conditions are other than favourable icons are added that provide information on the key climatic drivers affecting conditions.

# 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.*

## 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.



## 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](http://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 (Winter/Spring)	Dry season (Autumn)	

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	

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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

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Prepared by members of the GEOGLAM Community of Practice,  
Coordinated by the University of Maryland Center for Global  
Agricultural Research



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

Cover Photo by: Christina Justice

### Early Warning partners



ICPAC  
IGAD Climate Prediction  
& Applications Centre



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