

Crop Monitor EARLY WARNING

Overview:

In West Africa, harvest has started for main season cereals and conditions are favourable due to good rains throughout the season. In East Africa, main season cereals in the north of the subregion are at harvest stage and although rains have been above average throughout the season, production prospects are mixed. In the Middle East and North Africa early planting of wheat crops has started and conditions are favourable. In Southern Africa, winter wheat harvest is underway and conditions are favourable due to sufficient rainfall. In Central and South Asia, planting of winter cereals will finish in November and conditions are favourable at the start of the season. In northern Southeast Asia, wet season rice harvest is underway and there is concern across many areas which suffered flood damage due to heavy rains from several typhoons and tropical depressions. In **Central** America and the Caribbean, segunda season crops are in vegetative to reproductive stage and conditions are generally favourable despite localized flooding in the Gulf of Fonseca.







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GEOGLAM Crop Monitor for Early Warning



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

EAST AFRICA: In the northern parts of the subregion main season cereals are at harvest stages and rainfall has been above average however, production prospects are mixed. In central and south of the subregion, land preparation and planting has started for second season crops however, it is still early in the season with full onset rains expected in November.

WEST AFRICA: Harvest has started for the 2018-2019 agro pastoral cropping season and conditions are favourable due to good rains since July across much of the region.

MIDDLE EAST & NORTH AFRICA: In the Middle East, planting has just commenced for the 2018-2019 winter wheat season due to recent rains at the end of October. In North Africa, land preparation and early planting of winter wheat is underway and above average moisture conditions have been observed.

SOUTHERN AFRICA: Harvest of the 2018 winter wheat crop has started across Southern Africa and prospects are favourable.

CENTRAL & SOUTH ASIA: Across Central Asia, planting of the 2018-2019 winter wheat crop (to be harvested June-August 2019) started in mid-August and should be finalized by mid-November and conditions are favourable.

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SOUTHEAST ASIA: In the northern side of Southeast Asia, harvest is underway for wet season rice and concern persists in many areas which suffered flood damage from heavy rains due to the influence of several typhoons and tropical depressions last month. Below average yields are expected in Laos and Philippines due to severe flood damage throughout the season and severe impacts from tropical storm Mangkhut in Northern Luzon regions in Philippines.

CENTRAL AMERICA & CARIBBEAN: The second season (segunda) is in vegetative to reproductive stage and development is normal across most areas, except where dry conditions persist from the previously poor primera season in



addition to some impacts from localized heavy rain and flooding in October along the Gulf of Fonseca.

Global Climate Outlook: Weak to moderate El Niño favored for winter 2018-19

ENSO conditions are currently neutral. Signs of El Nino development have been observed in the Pacific Ocean and are forecast to progress. Forecasts currently indicate a 70-75 percent chance of a weak to moderate El Nino during the Northern Hemisphere 2018-2019 winter. Associated with the El Nino event, between November and February, are increased chances of above normal rainfall in parts of Central Asia, East Africa, the southern U.S., Mexico, and southeastern South America. Drier than normal conditions are anticipated for the Indo- Pacific region, including parts of Southeast Asia, Indonesia, and Australia, and for parts of Central America, the Caribbean and northern Brazil. For Southern Africa, models are not forecasting below normal rainfall, potentially due to the weak anticipated El Nino and/ or other regional factors. The Indian Ocean Dipole (IOD) has tended towards a positive state. This increases potential for heavy rainfall in East Africa for warm, dry conditions in Australia. IOD is most likely to return to neutral during November and thus not expected to enhance El Nino related rainfall outcomes after that time.

Source: UCSB Climate Hazards Group

East Africa & Yemen



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

In northern parts of the subregion, including central and western Kenya, the northeastern Karamoja region in Uganda, Ethiopia, Eritrea, the Sudan, and central and northern South Sudan, the main season cereal crops are at ripening to harvest stage and the rains received so far were above-average over most cropping areas. In central and southern parts of the subregion, including Burundi, Rwanda, southeastern Kenya, central and southern Somalia, the United Republic of Tanzania, Uganda, and southern South Sudan, land preparation and planting has started for second season crops however, it is still early in the season with full onset rains expected in November. In western and central main key-cropping areas of **Ethiopia**, the June-September *kiremt* rainy season was characterized by an early onset in mid-May and by average to above-average precipitations until mid-July, which benefited crop establishment and development. Subsequently, rains between mid-July and mid-August were below-average, but the rainfall deficits did not have a significant impact on vegetation conditions. Harvest is now underway for the major *meher* crop and production is favourable. However, in the southwestern SNNPR and some areas of East Oromia, Afar and North Somali, adequate rains in June were followed by severe rainfall deficits in July through September, which affected crop conditions and are expected to result in reduced yields. In



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adequate, except in some eastern areas, where rainfall in August was belowaverage. Across the country, agricultural activities continue to be affected by the protracted and widespread insecurity, which is constraining access to fields and continues to cause large-scale and recurrent displacement of people and damage to households' productive assets. In addition, Fall Armyworm outbreaks are likely to further constrain yields. In Djibouti, rainfall in September improved previously dry conditions and production prospects for main season crops are now favourable. In Eritrea, the June-September kiremti rains had a timely onset, with abundant and welldistributed rains received so far over most key cropping areas in central and western Anseba, Debub, Maekel and Gash Barka regions and vegetation conditions are above average. In Yemen, failure has resulted for main season crops due to ongoing and worsening conflict impacting agricultural operations and market functioning which hindered access to farm inputs and labour. In addition, western Yemen suffered from drought conditions further worsening yields. In central and southern parts of the region including **Burundi**, **Rwanda**, southeastern Kenya, central and southern Somalia, the United Republic of Tanzania and Uganda, land preparation and planting is underway for second season cereals. In Kenya, harvest is underway in key-growing areas of Rift Valley and Western provinces for "long-rains" crops and production is expected to be 10-15% above average due to exceptionally abundant seasonal rains despite some localized crop losses due to floods. In Somalia, the northwest Agropastoral of Wogoyi Galbeed Region, long cycle sorghum to be harvested in November is at crop establishment stage and conditions are favourable.

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southern Tigray and eastern Amhara while rainfall has been favourable, planting of the meher crop was delayed due to late harvesting of the belg which may result lowered meher production in these areas due to a shortened crop development period. In Sudan, the rainy season, after an early onset, has been characterized so far by above-average precipitations over most cropping areas. However, yields are expected to be constrained across the country due to fuel shortages disrupting agricultural operations and by the low availability and very high prices of agricultural inputs, due to sustained inflation and dwindling foreign currency reserves constraining imports. In addition, flooding over West Kordofan, Kassala, Gezira, Sennar, and Northern States in August may result in localized crop production shortfalls. In northern and central uni-modal rainfall areas of South Sudan, planting operations started in mid-May, about two weeks later than normal, due to a delayed onset of seasonal rains. Subsequently, seasonal rainfall was generally



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

Regional Outlook: Below average rainfall forecast for November

As East Africa's October to December 'short' rainy season approaches its midpoint in many areas, parts of Kenya, southeastern Ethiopia, and much of southern Somalia have seen substantial rainfall deficits. While some areas may receive relief in November, poor crop outcomes should be a concern in short growing season areas, such as Somalia. Model forecasts for November rainfall vary widely. Outlooks based on historical November and December rainfall indicate a higher than 60% chance of below normal OND totals in southern Somalia and southeastern Ethiopia.



The Climate Hazards Center Early Estimate is a monitoring data resource that provides early indications of sub-seasonal to seasonal rainfall performance. The CHC Early Estimate combines CHIRPS final and preliminary rainfall estimates with a compatible (unbiased) version of the 10-day GEFS ensemble mean forecast (http://chg.geog.ucsb.edu/forecasts/gefs-chirps/). Figure shows a composite of past 30-day rainfall and the 10-day forecast in terms of the difference from average for that period. Note that October data is preliminary and subject to change in the final version of CHIRPS, which will be available mid-November. In CHIRPS final, Somalia data includes FAO SWALIM reports and Ethiopia data includes Ethiopia National Meteorological Agency reports.

Source: UCSB Climate Hazards Group

West Africa



Harvest has started for the 2018-2019 agro pastoral cropping season and conditions are favourable due to good rains since July across much of the region. Across the central and eastern Sahel, harvest started in September and conditions have been good over most the region. For the few early season dryness affected areas, improvement came on time with good rains received and production prospects are favourable. In southern **Mauritania**, while the main producing eastern portion has been improving from early season dryness the low producing western areas have been worsening are not recovering because relief came too late and concern remains. In **Senegal**, while poor distribution of precipitation was a concern, conditions are now favourable due to sufficient rainfall in August and a slight extension of the season in early October that made up for water deficits early in the season. In **Nigeria**, while conditions are improving, production prospects are poor in the northeast due to ongoing conflict affecting agricultural activities. Harvest finished at the start of October for main season maize crops in the southern parts of Liberia, Cote d'Ivoire, Ghana, Togo, Benin, Nigeria, Cameroon and the Central African Republic and yields were favourable due to good rainfall throughout the season.

Crop condition map synthesizing information as of October 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.**

Middle East & North Africa



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In the Middle East, planting has just commenced for the 2018-2019 winter wheat season in northern Syria, Iraq and Iran due to recent rains at the end of October; however, it is still very early in the season with full onset expected in November. Land preparation and early planting of winter wheat is underway across North Africa where above average moisture conditions were observed in Morocco, Algeria (especially the eastern part) and Tunisia. In Egypt, harvest started in mid-October for main season maize and rice and hiah temperatures compounded by water shortage and soil degradation in some areas of the northern delta are likely to constrain yields. Early planting of the 2019 wheat crop has started, although the bulk is normally planted in November

Southern Africa



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Harvest of the 2018 winter wheat crop has started across Southern Africa and prospects are favourable. In **Zimbabwe**, and Zambia winter wheat yields are favourable despite above average temperatures in September. However, in Zambia, while weather has been favourable, production is expected to decrease by 41 percent from last year and about 50 percent of the average due to a decrease in planted area. In South Africa, production prospects are favourable following widespread rain since early winter, more significant rain occurred during the latter half of August and September over the main production region (the western winter rainfall area) while thundershowers also occurred over the interior where wheat is also produced.

Planting of early season maize has just started across early onset areas of Angola, Democratic Republic of Congo, and South Africa. In the **Democratic Republic of**

Congo, conditions are generally favourable for main season maize and sorghum due to significant rainfall over the eastern areas. In **Angola**, planting has started for main season maize and conditions are favourable despite dryness at the start of October with some rains received over the south. In **South Africa**, only the far eastern parts (Mpumalanga) have started planting and conditions are favorable with good rains during September and October which enabled planting in many areas.

Central & South Asia



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Across Central Asia, planting of the 2018-2019 winter wheat crop (to be harvested June-August 2019) started in mid-August and should be finalized by mid-November. Conditions have been favourable across all areas due to good snow levels and in some cases above average precipitation. In **Tajikistan**, the second and third dekads of October were characterized by abundant snowfalls in mountainous areas, unusual in this period, but this should not affect planted areas. In **Afghanistan**, planting started in September for 2018/2019 winter wheat crop and conditions are favourable at the start of the season. In **Pakistan**, harvest started in October for the main *kharif* rice crop and there is concern in Balochistan and Sindh due to dry conditions during the season that may constrain yields. In **Mongolia**, harvest is complete for spring wheat planted in April and production was favourable with good rains throughout the season.



Southeast Asia

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In the northern side of Southeast Asia, harvest is underway for wet season rice and concern persists in many areas which suffered flood damage from heavy rains due to the influence of several typhoons and tropical depressions last month. Below average yields are expected in Laos and Philippines due to severe flood damage throughout the season and severe impacts from tropical storm Mangkhut in Northern Luzon regions in Philippines. In contrast, growing and harvest conditions for areas that were not affected by the flood are favourable due to good irrigation amounts. In Viet Nam, harvest of the summer-autumn rice (wet-season rice) has begun with yields reported slightly above last year's. Earlier in season flooding in the south noticeably reduced total sown area this year. In **Thailand**, conditions of wet-season rice are generally favourable owing to good rainfall and enough sunlight. However, earlier flooding in the northeastern region remains a concern. In Laos, harvest is underway for wet season rice and production prospects are poor due to the serious flood situation that occurred from late July to August which caused damage across the entire country and notably the center. The flood affected 151 thousand hectares over 11 provinces and the damage area amounting to 12 percent of planted area. Subsequent pest outbreaks and landslides caused further damage to crops. Upland rice also suffered damage from heavy rain, landslides and pest outbreak and production prospects are poor. In Cambodia, planted area is almost 10 percent above the national plan due to sufficient irrigation water and



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while some areas in the Mekong region suffered from flood damage, impact on production is minimal and prospects are borderline favourable. In **Myanmar**, wet season rice is in high season and conditions are generally favourable however, rice crops in the river basin, delta and coastal regions were affected by flood and pest outbreak due to continuous heavy rain in September following flood events in August. In total 257 thousand hectares were affected with 172 thousand suffering severe damage and 90 thousand hectares were replanted. In the **Philippines**, harvest of wet-season rice sown during April-June was interrupted due to the landfall of typhoon Mangkhut, which impacted crop conditions and resulted in severe crop losses especially in Northern Luzon. In **Indonesia**, harvest of dry-season rice continues with yields remaining above last year's. Sowing of wet-season rice has begun with areas of concern in Java and Lesser Sunda Islands due to low levels of rainfall. In the **Democratic People's Republic of Korea**, harvest is complete for main season rice and maize crops and a one-month dry spell from July to mid-August combined with high temperatures may have caused localized crop damages to crops if at key growth stages. However, from remote sensing analysis only, vegetation conditions are favorable and field information will be needed to confirm the extent of the damage. In **Nepal**, harvest will begin in November for main season rice and conditions are favourable with good rains received throughout the season. In **Bangladesh**, production prospects are favourable for the *aman* rice crop to be harvested from December due to good rainfall throughout the season. In **Sri Lanka**, harvest is complete for the *yala* rice crop and production was favourable due to good rains in August through September.

Central America & the Caribbean: Maize 2 Map **⊜**G€DGLAM Drivers: 1 꽾 11 Maize 2 Calendar Conditions: Exceptional Favourable Watch Poor Failure Countries: Out-of-Season Early Warning Countries No Data Non-Early Warning Countries Crop Calendar: Planting - Early Vegetative Ripening through Harvest Out of Season Vegetative - Reproductive Post Harvest Minimal Production

Central America & Caribbean

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The second season (sequnda) is in vegetative to reproductive stage across Central America and development is normal across most areas, except where dry conditions persist from the previously poor primera season in addition to some impacts from localized heavy rain and flooding in October along the Gulf of Fonseca. In Guatemala, while conditions are favourable across many areas, concern remain in the central areas where despite the increase in the rainfall in the first dekad of October, the accumulated rainfall is much lower than the historic average, and in some areas 55 percent below average. In El Salvador, conditions are generally favourable however, there have been some reports off flooding due to localized heavy rainfall along the Gulf of Fonseca. The government reported losses of 8,400 tonnes of maize due to torrential rain. In Honduras, despite localized heavy rainfall along the Gulf of Fonseca, dry conditions remain in the South. In Nicaragua, heavy rain in October as a result of two low pressure systems connected with Tropical cyclone Michael caused flooding and there is concern in the South over inundated bean crops however, in the North conditions are



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favourable. In **Haiti**, consecutive weeks of rainfall in October improved the soil moisture deficits affecting second season planting and conditions are now favourable. In **Cuba**, harvest has started for main season maize crops and there is ongoing concern due to below average rainfall and persisting dry conditions across the country that may impact production.

Regional Outlook: Below average rainfall forecast for November

Some segunda season cropping areas have struggled with seasonal moisture deficits while other hurricane-affected regions experienced irregular rainfall conditions. For November as a whole, near to below normal rainfall and near to above normal temperature are expected for much of the region. Forecasts for the first two weeks of November show some variations, with the Caribbean, Honduras, southern Guatemala, El Salvador, Nicaragua, Costa Rica, and northern South America being drier than normal and parts of southern Mexico, Guatemala, Panama, and Colombia being wetter than normal. Multi-model forecasts for November to January range from near normal to moderately below normal rainfall throughout the region with elevated temperatures. A generally negative rainfall outlook is typical during El Niño.



Rainfall forecast for November 2018 from National Center for Environmental Prediction (NCEP) coupled forecast system model version 2 (CFSv2) issued on October 30th. Figure shows the forecast rainfall amount as compared to the 1982-2010 mean. Red depicts below average and blue depicts above average amounts. Data source: NWS/NOAA/CPC.

Source: UCSB Climate Hazards Group

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 slide 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 AMIS Market Monitor, published November 1st 2018.



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.









Extreme Delaye Event Onset



economic Disease





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 | |
| Тодо | 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 | |

Sources and Disclaimers:

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 & Carribean | | | | |
|-----------------------------|-------|---------------|---------------|---------------|
| 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 |

Sources and Disclaimers:





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