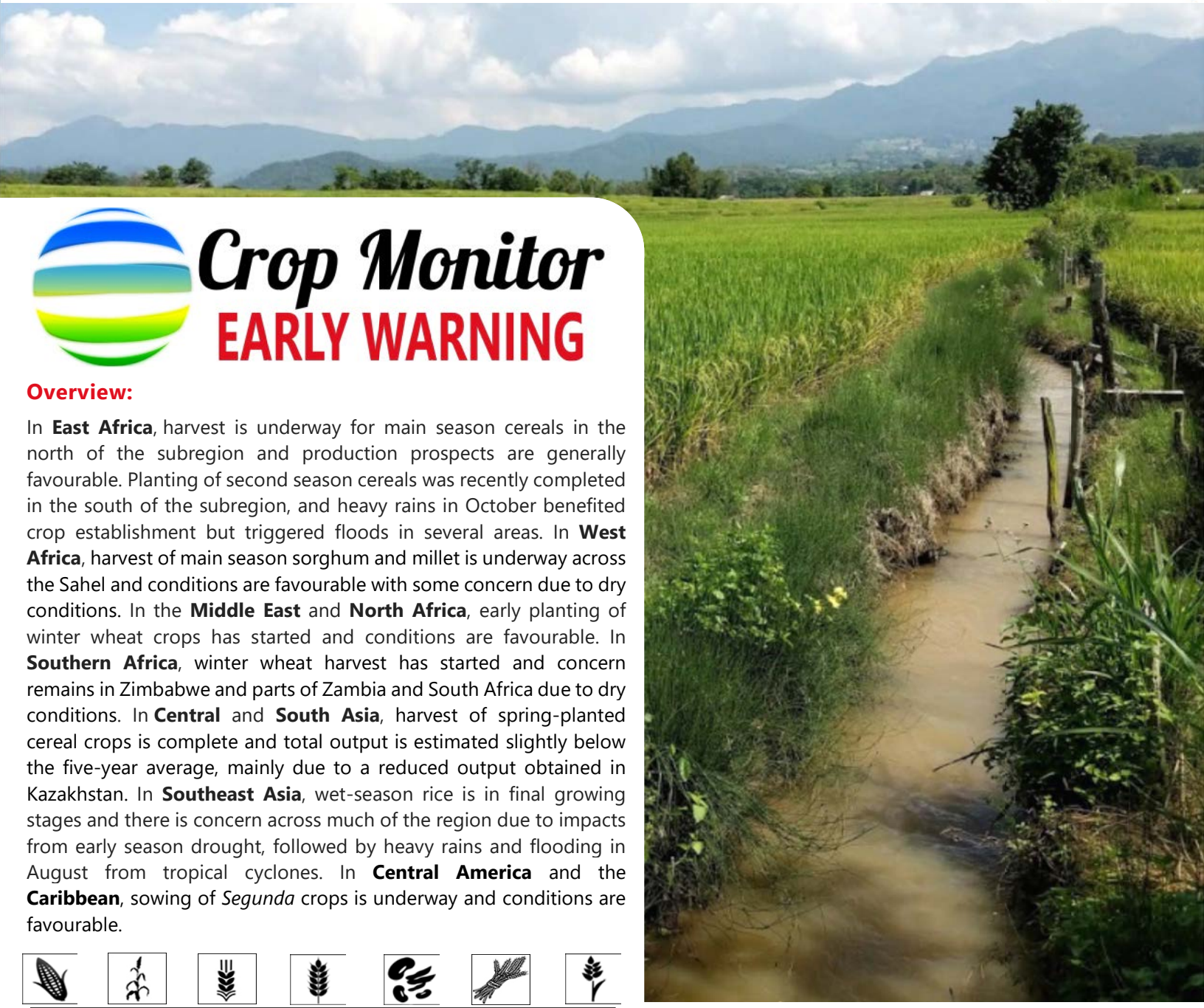
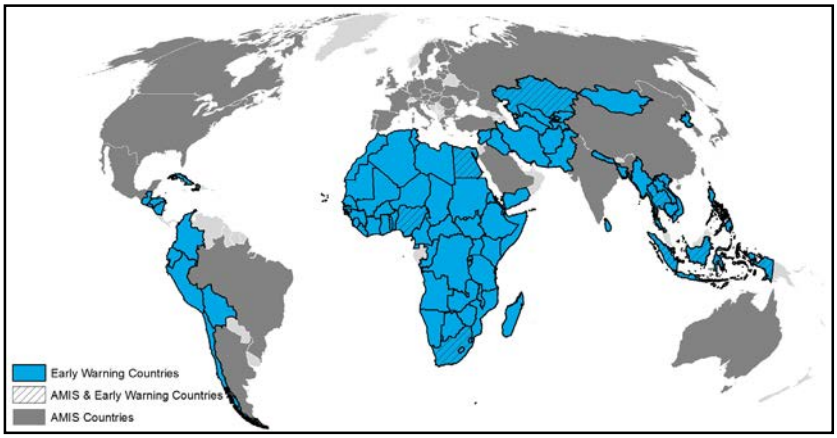
GEOGLAM
Global Agricultural Monitoring



Crop Monitor EARLY WARNING

Overview:

In **East Africa**, harvest is underway for main season cereals in the north of the subregion and production prospects are generally favourable. Planting of second season cereals was recently completed in the south of the subregion, and heavy rains in October benefited crop establishment but triggered floods in several areas. In **West Africa**, harvest of main season sorghum and millet is underway across the Sahel and conditions are favourable with some concern due to dry conditions. In the **Middle East** and **North Africa**, early planting of winter wheat crops has started and conditions are favourable. In **Southern Africa**, winter wheat harvest has started and concern remains in Zimbabwe and parts of Zambia and South Africa due to dry conditions. In **Central** and **South Asia**, harvest of spring-planted cereal crops is complete and total output is estimated slightly below the five-year average, mainly due to a reduced output obtained in Kazakhstan. In **Southeast Asia**, wet-season rice is in final growing stages and there is concern across much of the region due to impacts from early season drought, followed by heavy rains and flooding in August from tropical cyclones. In **Central America** and the **Caribbean**, sowing of *Segunda* crops is underway and conditions are favourable.



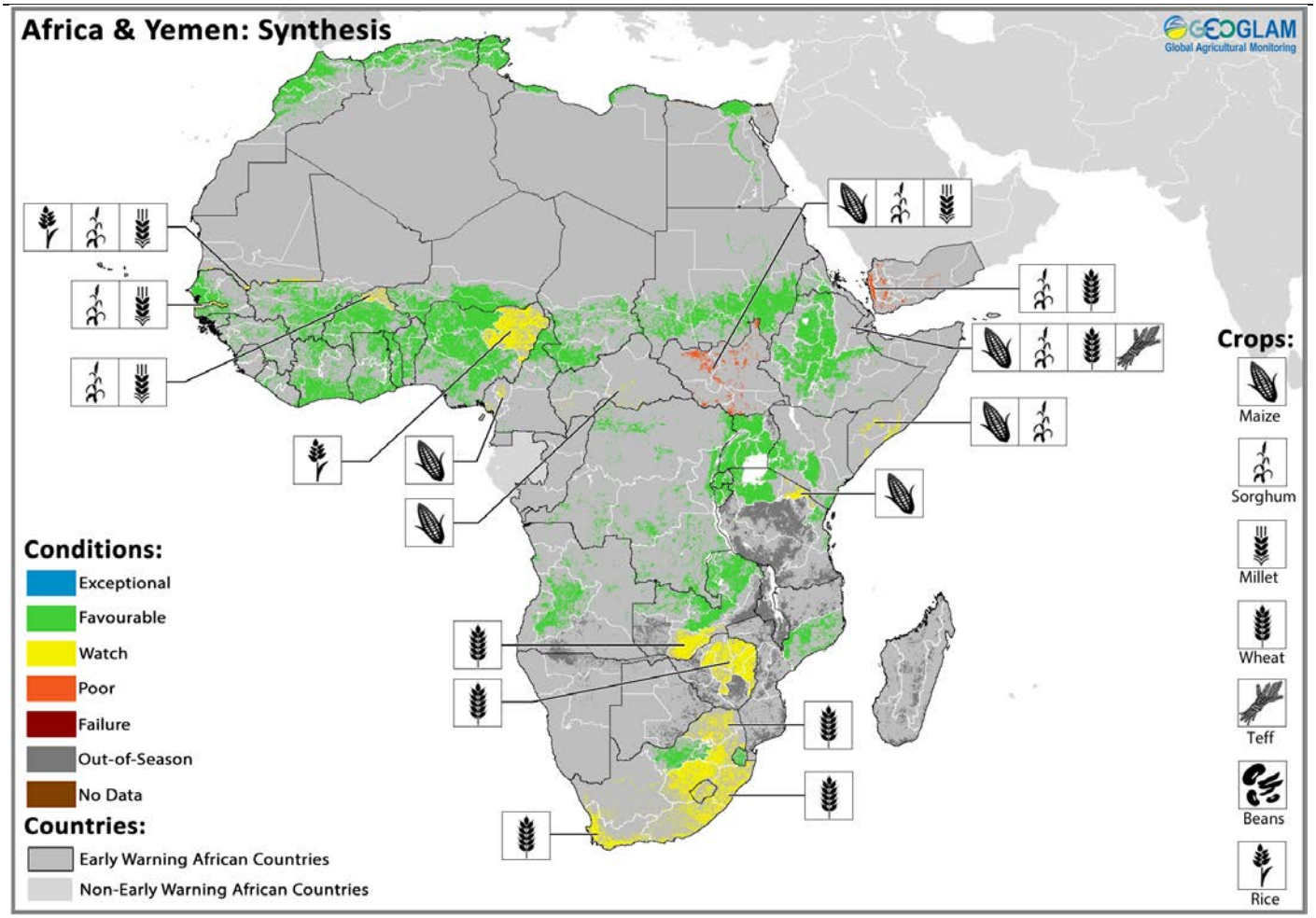
Contents:

GEO GROUP ON EARTH OBSERVATIONS

GEOGLAM Crop Monitor for Early Warning

Crop Conditions at a Glance

based on best available information as of October 28th



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 northern areas of the subregion, harvest of main season cereals is underway and production prospects are favourable due to above-average seasonal rains. In central and southern areas of the subregion, planting of second season crops, for harvest in early 2020, was recently completed. Abundant rains in October benefited crop establishment but triggered floods in several areas of Somalia, Kenya, Ethiopia, and South Sudan. Above-average rainfall is expected to continue through November in most of the subregion. (See Regional Outlook Pg. 5)

WEST AFRICA: Across the Sahel, harvesting of main season sorghum and millet crops has started and conditions are favourable except in Gambia and Mauritania where dry conditions have affected crops. Second season cereals are in planting stages across the south of the region under favourable conditions.

MIDDLE EAST & NORTH AFRICA: Land preparation and early planting has begun for the 2020 winter wheat season though a slight delay in the onset of the rainy season may delay planting in some areas.

SOUTHERN AFRICA: Harvest of the 2019 winter wheat crop has started and there is concern in Zimbabwe and parts of Zambia and South Africa due to dry conditions. Planting of early-season maize and sorghum has started under favourable conditions.

CENTRAL & SOUTH ASIA: Harvest is complete for spring-planted cereals, which account for the majority of regional cereal production, and output is estimated slightly below the five-year average due to reduced output obtained in Kazakhstan. Planting for 2019-2020 winter-planted wheat is expected to finalize in November and conditions are favourable.

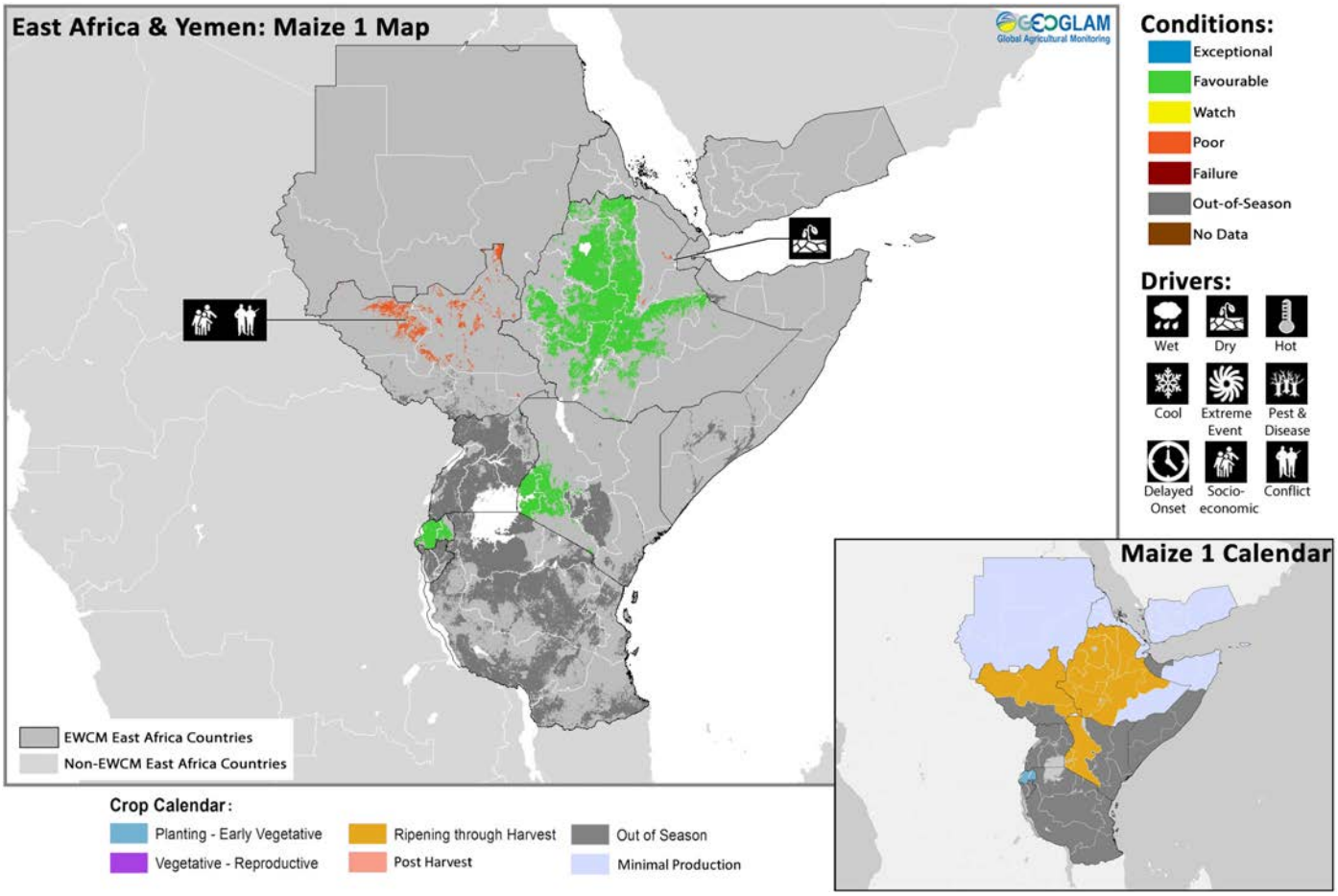
SOUTHEAST ASIA: Wet-season rice yields are expected to decrease due to early-season drought across parts of Laos, Viet Nam, northern Thailand, and Cambodia, followed by heavy rains and widespread flooding in August and September from tropical cyclones. In Indonesia, dry-season rice harvest is underway and planting is ongoing for wet-season rice with concerns due to rainfall deficits which are expected to continue through November (See Regional Outlook Pg. 11)

CENTRAL AMERICA & CARIBBEAN: *Segunda* (*Postrera)* season bean and maize crops are in vegetative to reproductive stages and crops are showing normal development due to sufficient and well-distributed rainfall across most areas.

Global Climate Outlook: ENSO neutral conditions likely to continue through Spring 2020

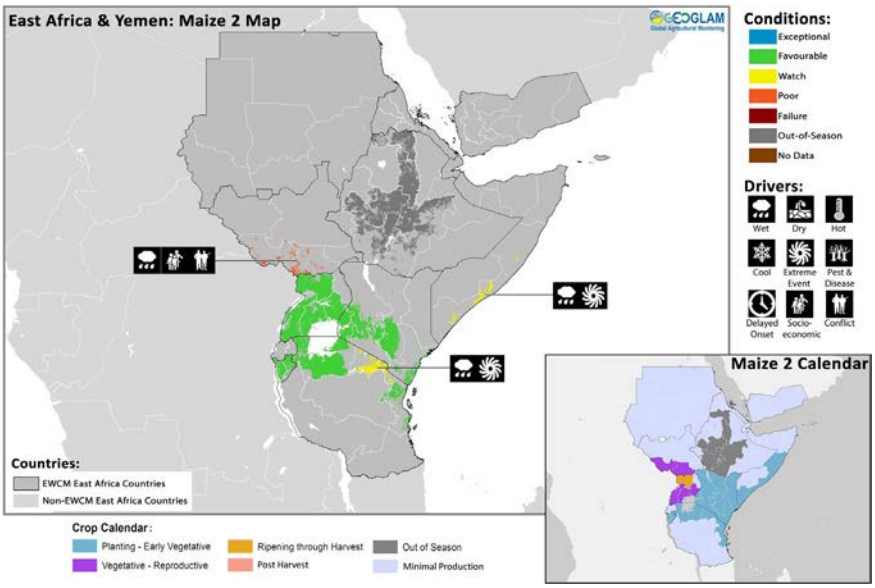
El Niño-Southern Oscillation (ENSO) conditions are neutral and are most likely to remain neutral through June 2020. The Indian Ocean Dipole (IOD) is in a strong positive state and is forecast to remain positive through the rest of 2019. A positive IOD tends to enhance rainfall in parts of East Africa and suppress rainfall in southern and central Australia.
Source: UCSB Climate Hazards Center

East Africa & Yemen



Crop condition map synthesizing conditions as of 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.***

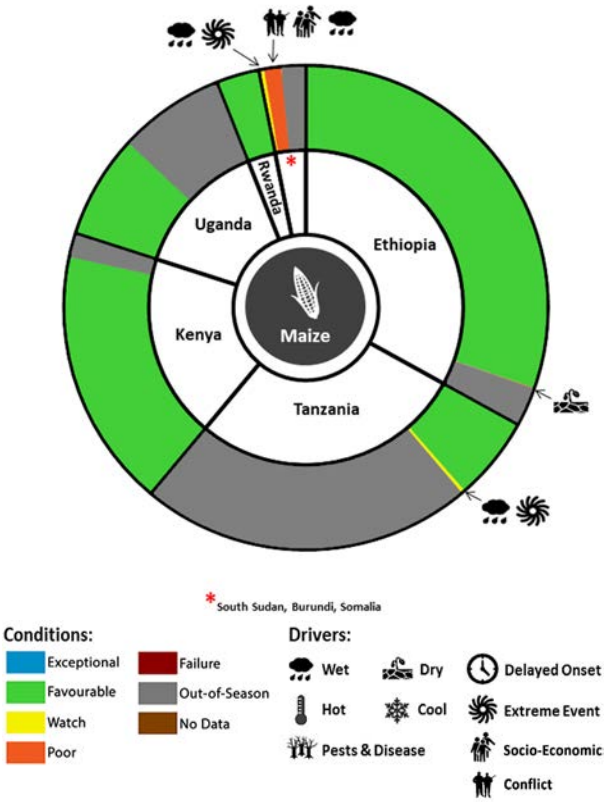
Across the north of the region, including, Ethiopia, Eritrea, Sudan, and central and northern South Sudan and western Kenya, main season cereals are in maturing to harvest stages and conditions are generally favourable, except in parts of southern **Ethiopia** and eastern **South Sudan** where heavy rainfall caused flooding. In **Ethiopia**, conditions of *Meher* crops, planted in June and July, are generally favourable due to above-average June-September *Kiremt* seasonal rains, especially in key-producing areas of the western highlands located in Western Amhara and Benishangul Gumuz regional states. However, heavy rainfall in September and October triggered floods in some parts of the country, which resulted in the displacement of about 200 000 people, with the highest numbers reported in the Somali region. In addition, there are reports of desert locust infestation in several areas, with the highest infestation levels recorded in agropastoral areas of Afar and Somali regions, where pasture losses have been reported. However, control operations are underway and will mitigate the impact of the infestation. There is a high risk that the locust infestation may spread into northern Kenya and the highlands of Eritrea, and continuous monitoring is warranted. In **Eritrea**, conditions are favourable for main season crops across key cropping areas of Anseba, Debub, Maekel and Gash Barka regions due to early-onset and sufficient *Kiremti* rains during most of the cropping period. In **Sudan,** harvest will start in November for main season cereals and conditions are generally favourable with high yields expected in rainfed areas due to abundant rainfall throughout the season. In central and northern unimodal areas of **South Sudan**, harvest is underway for main season cereals and in the bimodal south, second season crops are in vegetative to reproductive stages. While crop growing conditions have been generally favourable due to average to above-average



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.***

rainfall throughout much of the growing season, agricultural operations continue to be affected by the lingering impact of the prolonged conflict, which resulted in asset depletion and damage to infrastructures. In addition, heavy late-season rains in October led to widespread floods, especially in eastern areas of the Greater Upper Nile Region. A State of Emergency was declared on October 27th and according to the International Rescue Committee, more than 600 000 people have been forced to leave their homes. In key growing areas of **Kenya**'s Rift Valley and Western provinces, where the "long rains" season normally extends from March to August, improved rains from May onwards mostly offset rainfall deficits and resulted in a partial recovery of water-stressed and late-planted crops. Maize harvest began in late October and while yields are expected to be favourable due to improved rains from mid-May onwards, production prospects are below-average due to severe early season dryness, which caused an estimated 25 percent decrease in planted area.

In central and southern parts of the subregion, including Burundi, southeastern Kenya, central and southern Somalia, the United Republic of Tanzania, Uganda, and southern South Sudan, planting of second season crops, for harvest in early 2020, recently completed. The season started with heavy rains throughout October across most of the region, triggering widespread flooding in central and southern **Somalia,** northeast **Kenya**, eastern **South Sudan**, and northeast **Tanzania**. According to forecasts, heavy rains are expected to continue through November, boosting yields but resulting in further localized flood-related crop losses (See Regional Outlook Pg. 5). In addition, tropical storm Kyarr is expected to make landfall in Somaliland and Puntland, resulting in further damage to crops and infrastructures. Planting of "short rains" season crops has started in **Kenya** under favourable weather conditions, except in the northeastern region where flooding incidences may result in crop losses. In **Somalia**, planting of *Deyr* secondary season crops was recently completed. Heavy rains in October benefited crop establishment but resulted in severe flooding along the Shabelle and Juba rivers, damaging crops in Bay and Bakool regions and causing fatalities and displacement. According to the International Rescue Committee, approximately 273 000 Somalis have had to leave their homes due to flooding. In the **United Republic of Tanzania**, planting of the short season *Vuli* maize crop started in late September across the bimodal north and conditions are generally favourable except in the northeast Tanga region due to heavy rains and flooding. In **Uganda**, second season maize crops are in vegetative to reproductive stages under favourable conditions with some reports of flooding in the east over Bulambuli and Butaleja districts due to continuous heavy rainfall since mid-October. In Karamoja, harvest is underway for main season crops and a favourable outcome of the season is expected due to abundant mid and late-season rains which boosted yields, offsetting a reduced area planted due to early season dryness. In **Rwanda**, the main "A season" maize is in planting too early vegetative stages and conditions are favourable due to above-average rains at the start of the season. In **Yemen**, harvest is complete for main season wheat and sorghum crops. Due to conflict-related constraints as well as outbreaks of Fall Armyworm (FAW), total cereal production in 2019 further decreased compared to already below-average harvest last year.



For detailed description of the pie chart please see description box on pg. 13.

Regional Outlook: Above average rainfall is expected to continue across the region along with increased flood risk

Since the beginning of October, rainfall amounts have been much higher than normal over seasonal cropping areas of East Africa. Preliminary data show that October rainfall totals were more than 150% of average in most of the region and more than 200% of average in southern Somalia, southeastern Ethiopia, central and eastern Kenya, eastern Tanzania, and southeastern Uganda. While beneficial for many cropping areas and for replenishing water sources, very wet conditions have also been destructive causing floods, fatalities, and damage to croplands.

Previous forecasts for a wet October to December season have thus far materialized. A positive Indian Ocean Dipole, an important contributor to enhanced rains, is likely to persist through December. An updated outlook (Figure 1-left) shows the expectation for above average cumulative rainfall in most equatorial areas through November 15th. According to the latest 30-day forecast, November rainfall totals will be average to above average in southern Somalia, central to eastern Kenya, and parts of Uganda, northeastern DRC, and coastal Tanzania (Figure 1-right) and localized rainfall amounts are likely to be higher than indicated in the map. During the first 10 days of November models indicate a break in the atypically wet conditions for much of the region. The exception is southern Ethiopia, northeastern Kenya, and southern Somalia, where forecast continued above average rains would increase risk of flooding in low-lying and saturated ground areas. Models diverge in their forecasts for the second week, but tend to agree that the latter half of November will be wetter than average.

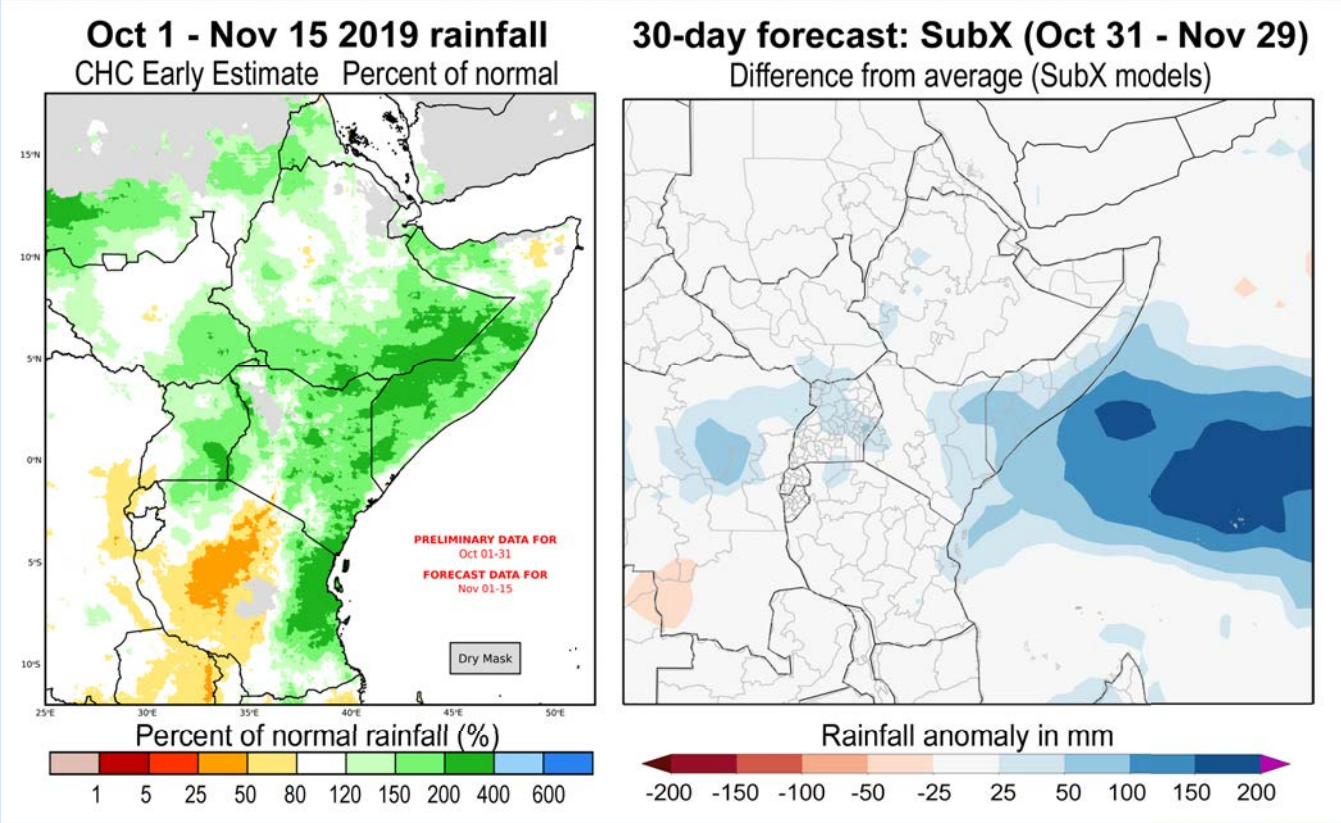
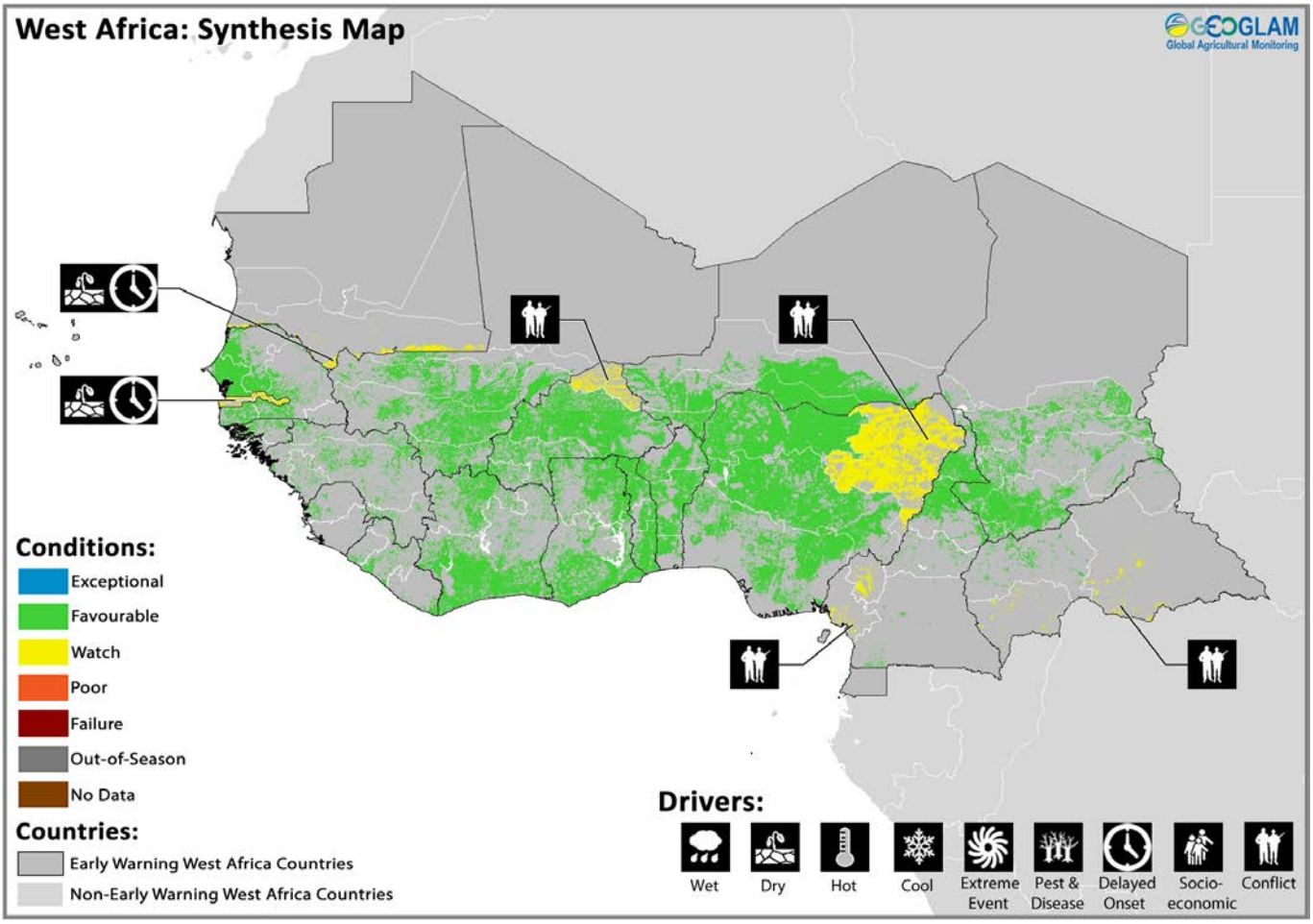


Figure 1. October through mid-November 2019 rainfall and the latest 30-day forecast. On the left is the UCSB Climate Hazards Center Early Estimate for October 1st to November 15th rainfall. This is based on preliminary CHIRPS for Oct 1st -31st and an unbiased GEFS forecast for Nov 1st - Nov 15th. The image shows this estimate in terms of the percent of the 1981-2018 CHIRPS average. On the right is a 30-day forecast from October 31st. The image shows the average across five Subseasonal Experiment (SubX) model forecasts available on Oct 31st. Localized rainfall amounts are likely to be higher than indicated due to averaging across multiple model forecasts. The anomaly is based on the 1999 to 2016 model average. Skill assessments of SubX can be accessed at http://cola.gmu.edu/kpegion/subx/index.html.
Source: UCSB Climate Hazards Center

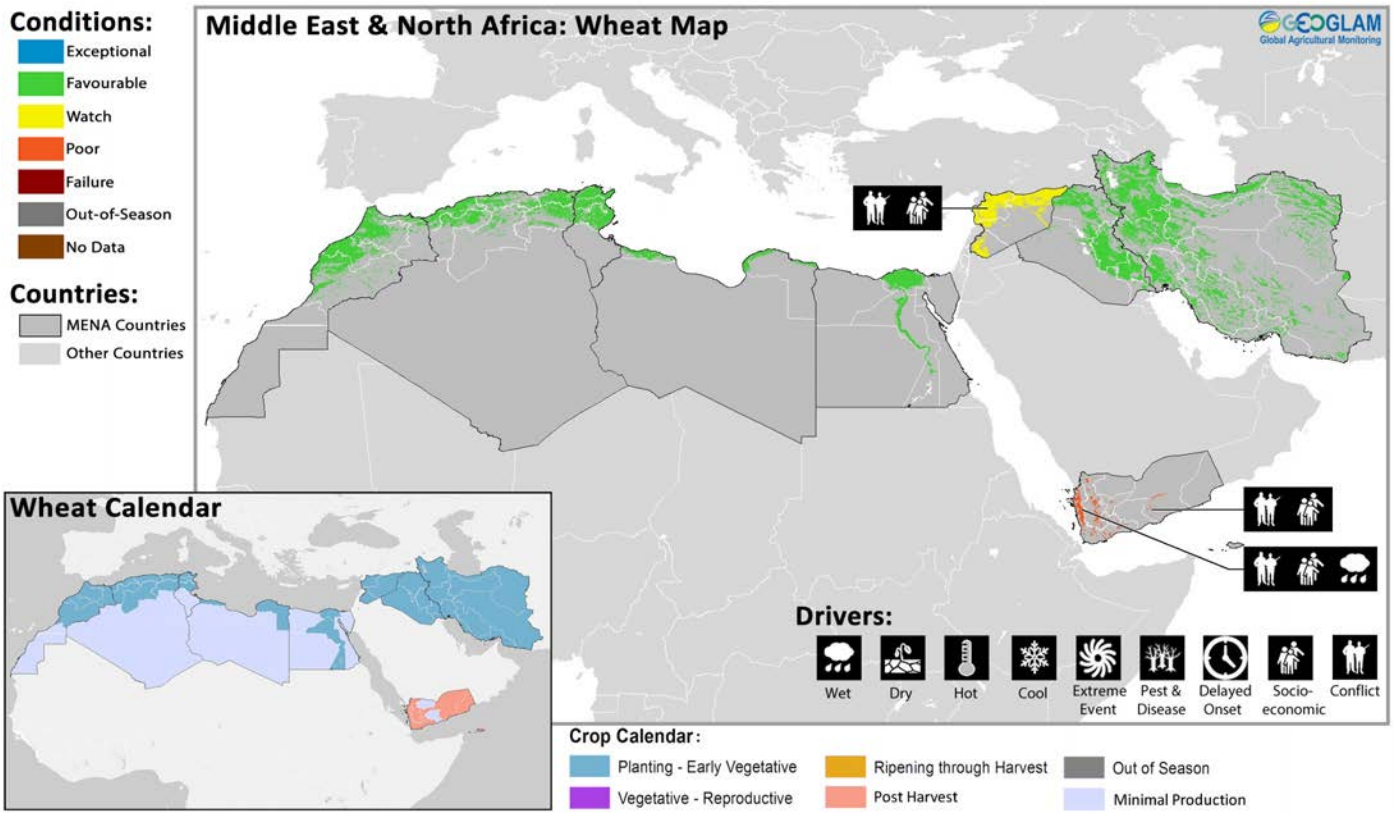
West Africa



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. ***Crops that are in other than favourable conditions are labeled on the map with their driver.***

Across the Sahel region, harvesting of main season sorghum and millet crops is expected to complete in November. There is concern in **Gambia** and **Mauritania** where delayed rains and dry conditions continue to affect crops, and in north **Burkina Faso** where insecurity and increasing flows of internally displaced persons hamper agricultural activities. In **Burkina Faso**, worsening violence and insecurity in Nord and Centre Nord regions led to the internal displacement of 486 360 people on October 8- an increase of 68 percent since September 23, according to the United Nations Office for the Coordination of Humanitarian Affairs (OCHA). In **Cameroon**, harvesting of the 2019 main season maize crops was concluded by the end of October while harvesting of millet and sorghum is ongoing. Following favourable weather conditions during the season and the return of internally displaced persons (IDPs), harvests in the Far-North region are likely to reach average to above-average levels despite the ongoing civil unrest in the area. On October 1, the Logone River overflowed, flooding a valley in Zina district located within the Logone-et-Chari department of the Far North region, however, the impact is reported to be moderate. In the Northwest and Southwest Anglophone regions, the lack of access or abandonment of fields due to conflict is expected to result in below-average outputs for the third consecutive season. In these regions, the lean season is forecast to extend into May, beyond the normal February to April period. In the **Central African Republic**, harvesting of the 2019 maize crops was completed by the end of September. The 2019 cereal harvest at the national level is estimated to be above the recent five-year average, but still below the pre-crisis levels. Food supplies from October to March are expected to be better than the previous year in central and western prefectures. In **Mauritania**, improved rainfall in October benefited the main producing eastern region including Hodh Ech Chargi. However, in the low producing western areas of Barkna, Assaba, Hodh El Gharbi, Guidimakha and Gorgol, rains arrived too late in the season resulting in poor crop conditions. Pastoral areas in the southern part of the country have also affected by drought. In **Senegal**, weather conditions have improved at the end of the season with near-average rainfall received since August and extended rains through the end of October that have partially reduced the negative impacts of water deficits. In addition, the government of Senegal has put in place a farmer support program that has provided agricultural inputs to farmers that were impacted by early-season dryness and production prospects are now average to above average. However, rainfall deficits and dry conditions still remain in marginal pastoral areas of Matam and Podor and vegetation conditions are below average. Main season rice is in ripening through harvest across most of the region and conditions are favourable, except in **Mauritania** due to dry conditions. In northeast **Nigeria**, there is concern for main season crops due to ongoing conflict, which has limited access to farmland and inputs.

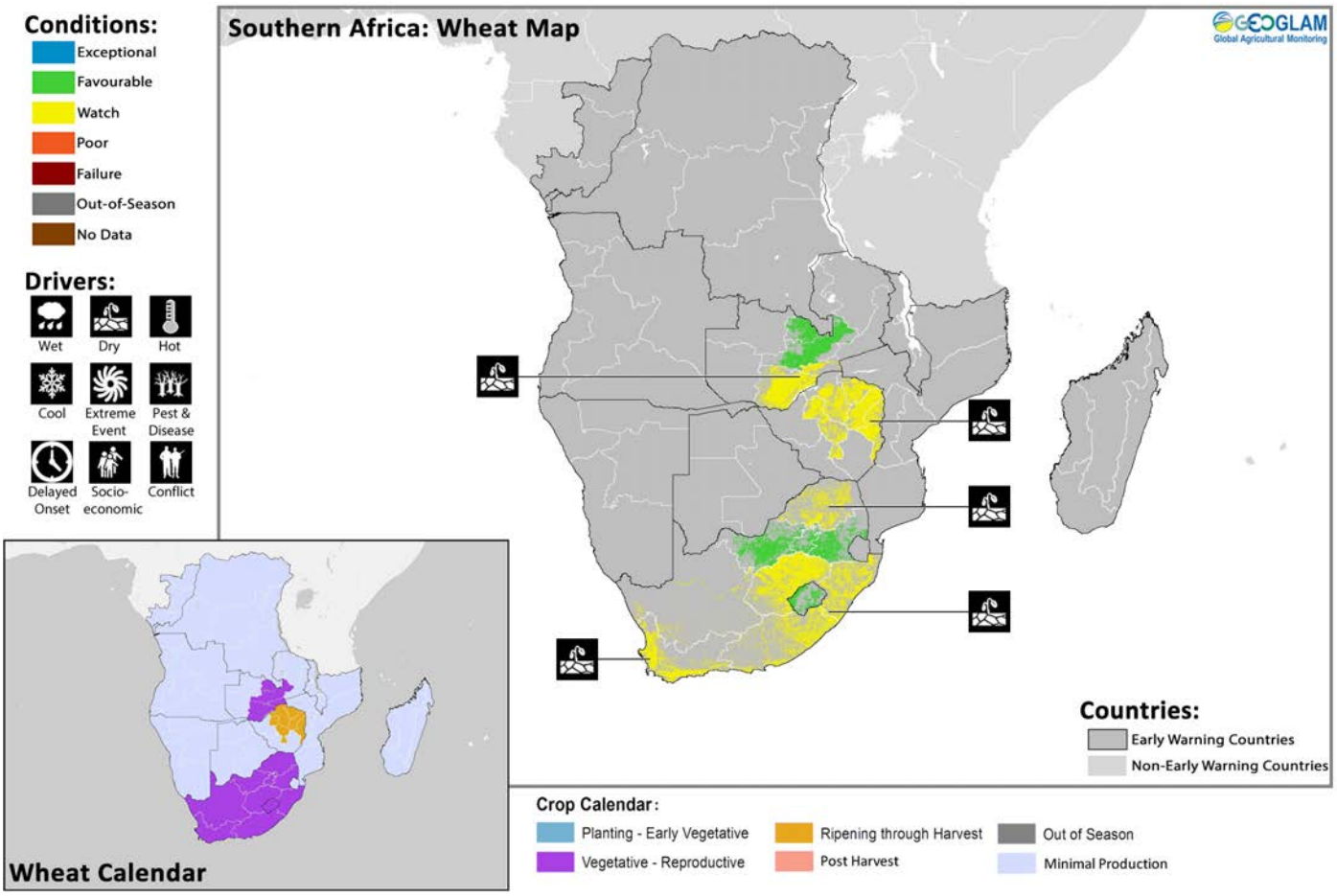
Middle East & North Africa



In North Africa, land preparation and early planting for the 2019-2020 wheat season has begun, however, delayed planting is expected in some parts of northwest Africa due to the late onset of rains. In **Morocco** and western **Algeria**, a slight delay in the onset of the rainy season and above-average temperatures in the last 30 days may cause a delayed start of winter crop planting. Throughout the region, the majority of crops will be planted when soil moisture is sufficiently replenished in November. In **Egypt**, harvest is wrapping up for main season maize and main summer-planted rice and despite an exceptional heatwave during much of the growing season, crops have not shown visible negative impact and production prospects remain favourable, though localized outbreaks of Fall Armyworm may impact final maize yields in southern Egypt. The winter season has started and a minor delay in winter crop planting can be observed for the central parts of the Nile delta, due to a slightly longer than average summer crop season.

In the Middle East, land preparation and early planting of the 2019-2020 winter cereals have started across the region and conditions are generally favourable. The majority of the crops will be planted in November once soil moisture has been replenished. In **Syria,** planting is expected to start from October however, concern remains due to conflict and socio-economic factors impacting agricultural production. In **Iraq**, winter wheat planting will start in November and the government plans to increase the total agricultural land for winter wheat planting to 2.25 million hectares this winter season- an increase of 500 000 hectares from the last season. In **Iran**, planting of winter wheat and barley started in October and conditions are favourable at the start of the season.

Southern Africa

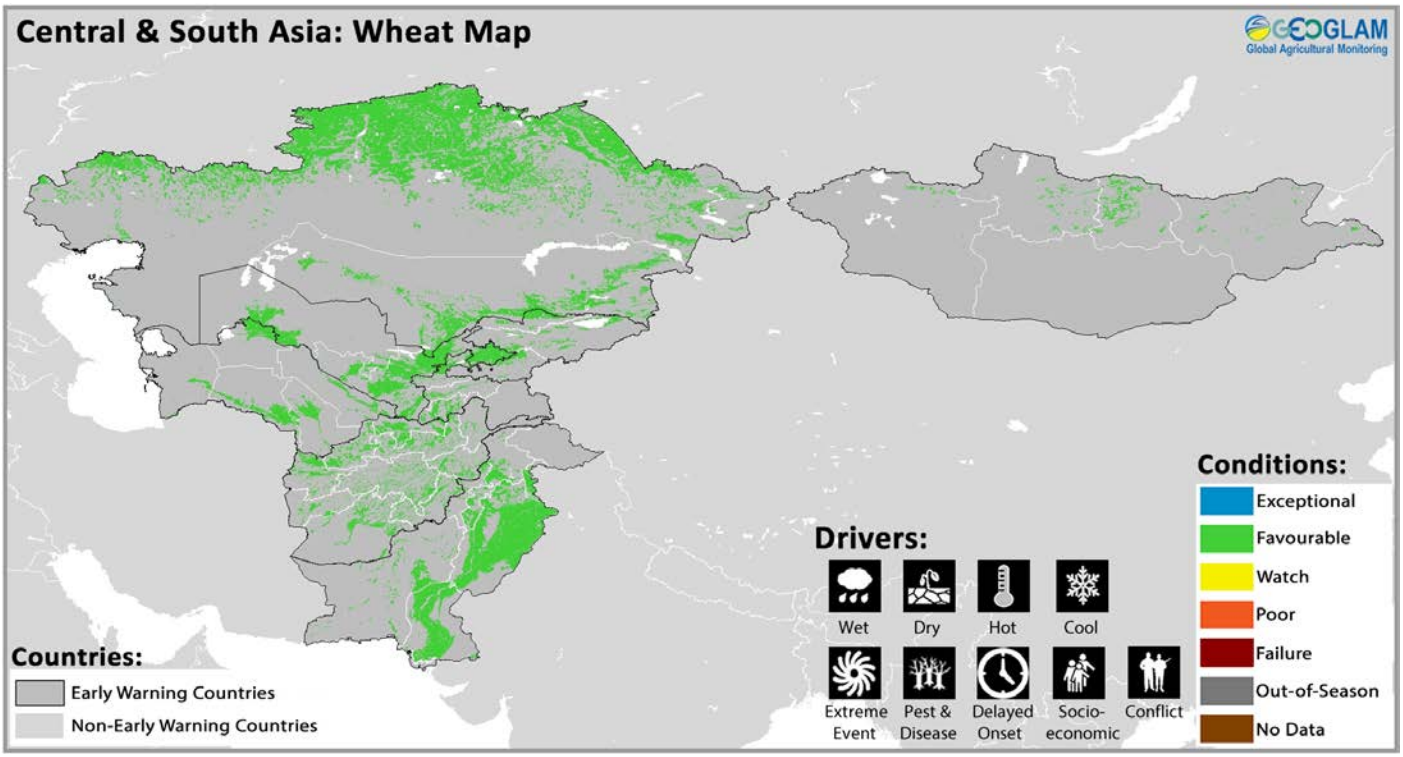


Crop condition map synthesizing information as of October 28th. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. ***Crops that are in other than favourable conditions are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

In Southern Africa, harvesting of the 2019 winter wheat crop has begun in South Africa, Lesotho, Zambia, and Zimbabwe. In **Zimbabwe**, power cuts negatively affected the availability of irrigation water for the main winter growing season, reducing the area planted and increasing the incidences of crop losses, which has significantly curtailed production prospects. Food insecurity levels are high across the country and the number of people in need of food assistance is expected to increase through the end of the year and beginning of 2020. The high levels of food insecurity are due to the poor cereal harvest following the severe 2018/2019 drought, significantly high food prices and adverse macroeconomic conditions. In **Zambia**, current conditions point to a below-average winter wheat output. Moreover, reduced water levels in the country's reservoirs in the south remain a concern moving into the start of the main summer cropping season that is anticipated to start next month. Similarly, in **Lesotho**, production prospects are below average for winter wheat crops due to a decrease in the planted area and below-average yield expectations reflecting low soil moisture levels. 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, where about 30 percent of national wheat production occurs. Over the winter rainfall region, where about 70 percent of production occurs, above-normal rainfall in July was followed by dry conditions in both August and September, resulting in a downgrading of the production outlook in October. Overall, national production is currently forecast at a comparable level to the five-year average, reflecting reduced yield prospects in the main wheat-producing province of the Western Cape compared to earlier expectations.

Land preparation for planting of the main cereal crops for harvest in 2020 has started across **Angola, Democratic Republic of Congo, eSwatini**, **Lesotho** and **Zambia.** However, concern remains for the upcoming main season due to carryover dry conditions from the previous season, low reservoir levels and ongoing food insecurity across the region. With the full onset of main season rains expected in November, rainfall in the coming months will be key to replenish soil moisture and reservoir levels. Good rains were received in the last two dekads over the northern and highland regions of Angola and across much of the **Democratic Republic of Congo**. Eastern **South Africa** has already experienced some delays in the onset— about a 20-day delay in the most-affected areas, and a 30-day delay in a few areas further east.

Central & South Asia

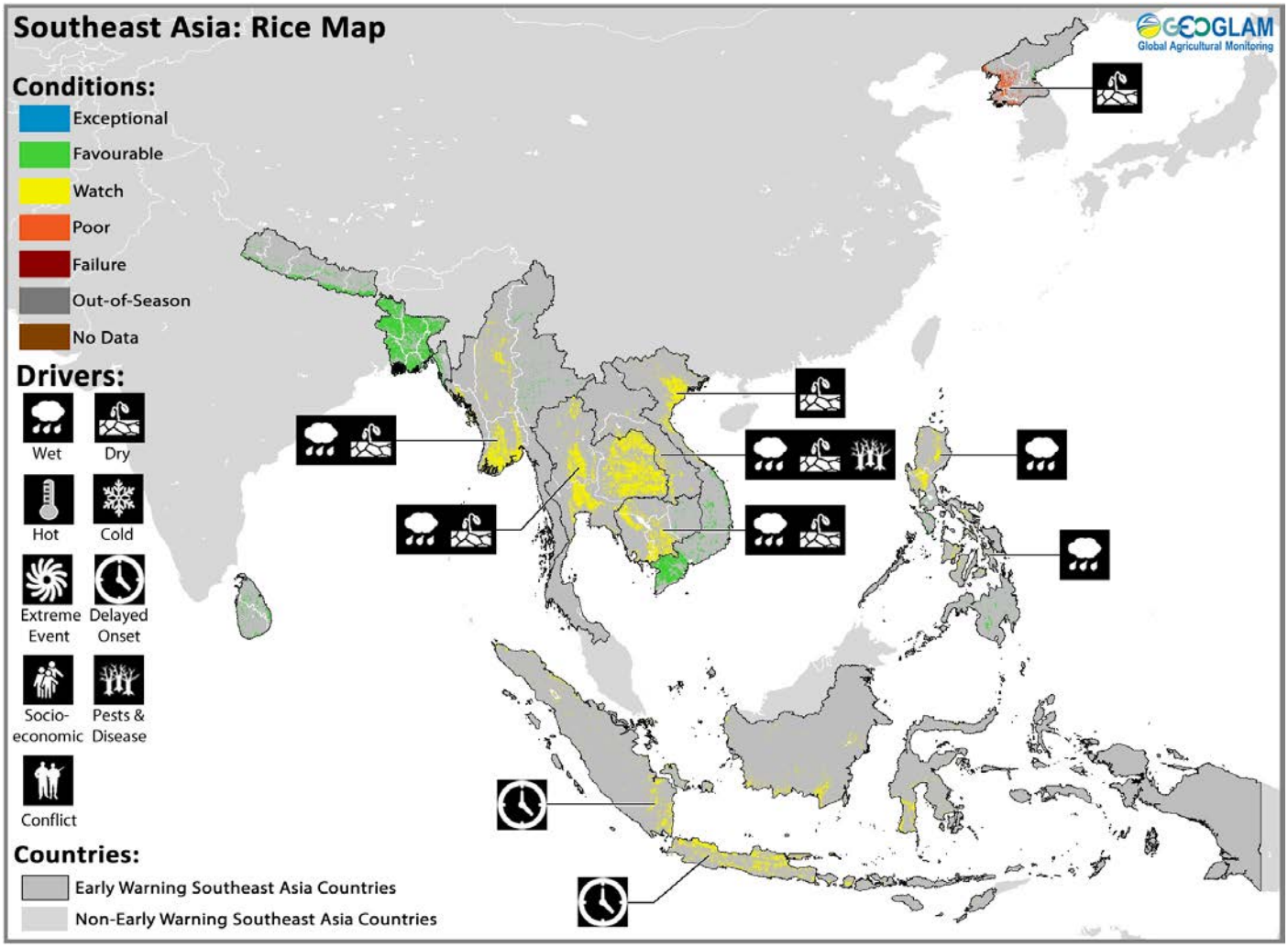


Crop condition map synthesizing information as of October 28th. Crop conditions over the main growing areas are based on a combination of inputs including remotely sensed data, ground observations, field reports, national, and regional experts. ***Crops that are in other than favourable conditions are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

In Central Asia, harvesting of the 2019 spring crops is generally complete across all areas. The total aggregate winter and spring wheat crop output for the subregion in 2019 is estimated slightly below the 2018 level and the five-year average, mainly due to a 15 percent reduced output obtained in Kazakhstan. In **Kazakhstan**, more than half of spring wheat has been harvested and the low output is due to reduced plantings reflecting the government directive to progressively reduce area sown with wheat in favor of more profitable oil crops. In addition, dryness between June and mid-August negatively affected yields in key producing northern provinces. Similarly, production is estimated slightly below the five-year average in **Kyrgyzstan**, mainly on account of a reduction in area planted. In **Uzbekistan** and **Tajikistan**, wheat outputs are set at near-average levels, while, in **Turkmenistan**, reports indicate above-average wheat production in 2019, following favourable weather conditions during the season.

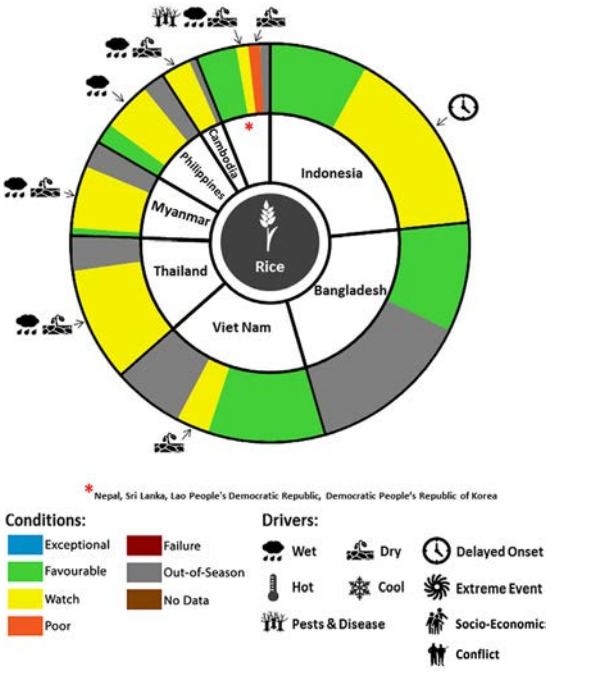
Throughout the region, sowing of the 2020 winter cereals is ongoing under slightly drier-than-average but overall favourable weather conditions and it is expected to end in late November. In **Afghanistan**, winter wheat planting operations have just begun under favourable conditions. Good rainfall is expected in the coming fortnight and the pace of planting activities is expected to pick up significantly in November. In **Pakistan,** harvest will finish in early December for main season rice and maize and average yields are expected. Planting of the 2020 *Rabi* wheat crop (mostly irrigated), started in October and progressing at a normal pace, supported by near-average rains and adequate irrigation water supplies. Overall conditions of crops in the fields are favourable. In **Mongolia,** wheat harvest is complete and is estimated at an above-average level following favourable weather conditions throughout the season.

Southeast Asia



Crop condition map synthesizing rice 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. ***Crops that are in other than favourable conditions are labeled on the map with their driver.***

In northern Southeast Asia, early harvest of wet-season rice is underway and significant flood damage is evident across the region due to heavy rains from tropical cyclones in August and September. Widespread flooding resulted across northern, northeast and central Thailand, north Vietnam, the northern Luzon region in the Philippines and northern Cambodia. Wet-season rice yields are expected to decrease due to early growing season drought damage in June and July, followed by recent flooding. In **Indonesia**, conditions are generally favourable for the fourth month of the dry-season harvest with yields slightly lower than last year due to drought. Wet-season rice sowing is beginning albeit delayed due to water shortages at the end of the dry-season and below-average October rainfall. Water shortages across central, south, and west Indonesia are expected to continue with rainfall deficits forecast to continue through November (See Regional Outlook Pg. 11). In the **Philippines**, conditions are mixed due to strong winds and flash floods brought by the southwest monsoon "Habagat" and the passage of five tropical depressions in northern Luzon. In **Thailand**, wet-season rice conditions are mixed due to dry conditions during early development, followed by damage from heavy rainfall and flooding of fields in August and September. In **Viet Nam**, harvest of summer-autumn rice (wet-season rice) has begun in the north under mixed conditions due to less precipitation that reduced total sown area and is forecast to reduce final yields. In the south, harvesting is progressing under generally favourable conditions with only minor reduction in



For detailed description of the pie chart please see description box on pg. 13.

yields compared to last year. In **Laos**, the lowland wet-season rice is in grain filling and early harvesting stage and damage resulted to over 78 thousand ha in the south due to early-season drought followed by floods and pest infestation. In the northern upland rice region, yield decreases are expected due to drought and pest damage during the growing season. In **Myanmar**, wet-season rice planting has progressed slower than in previous years and is expected to complete by the end of November. Heavy rains resulted in flood impacts over 118 thousand ha across the whole of the country expect Chin state, 73 thousand of which were damaged and 33 thousand ha have been replanted. In addition to flood impacts, early-season drought, strong wind, and pest impacts have reduced yield prospects for the country. In **Cambodia**, planted area of wet-season rice reached 2.71 million ha, 105 percent of the national plan. This season, 14 percent of crops were affected by drought and floods in the northwest and lowland areas of the Mekong basin and around 2.3 percent of planted area was completely damaged. Close to 15 percent of wet-season rice has been harvested by this month and yield is estimated slightly below average, at 2.9t/ha. In the **Democratic People's Republic of Korea**, harvest of the 2019 main season crop is complete and below-average production is estimated in main cereal producing areas located in the south (South and North Hwanghae and South Pyongan locally knows as the "Cereal Bowl") due to irregular rainfall and low reservoir levels during the summer. Overall, a below-average output is estimated for the 2019 main season crops. Given the expectations of a below-average output, the overall food security situation in 2019/20 is not expected to improve. In **Sri Lanka** the harvest of the 2019 *Yala* (second season) maize and rice crop, is complete and below-average rains during the cropping season decreased yields in Uva, Northern, North Central, and Eastern provinces. Land preparation and planting of the main *Maha* season are underway and conditions are favourable with good rains at the start of the season. In **Nepal**, harvest started in mid-October for rice crops and production prospects are favourable. In **Bangladesh**, growing conditions of the 2019 *Aman* crop, which accounts for 35 percent of the annual output, is good reflecting generally favourable weather conditions since the start of the season.

Regional Outlook: Rainfall deficits are expected to continue across Indonesia

Indonesia's primary rice growing season started in October and early season rainfall was below average. Drier than average conditions are forecast to continue through November (Figure 1). Preliminary estimates indicate that in central and southern Indonesia, October rainfall was 50 mm to 200 mm lower than is typical. Looking ahead, these areas are forecast to see deficits again through November. Models forecast Indonesia's western and southern coast areas to be generally more affected. Drier than normal conditions are likely related to a strong positive Indian Ocean Dipole climate mode and its tendency to suppress rainfall in the eastern Indian Ocean region and enhance rainfall activity to the west.

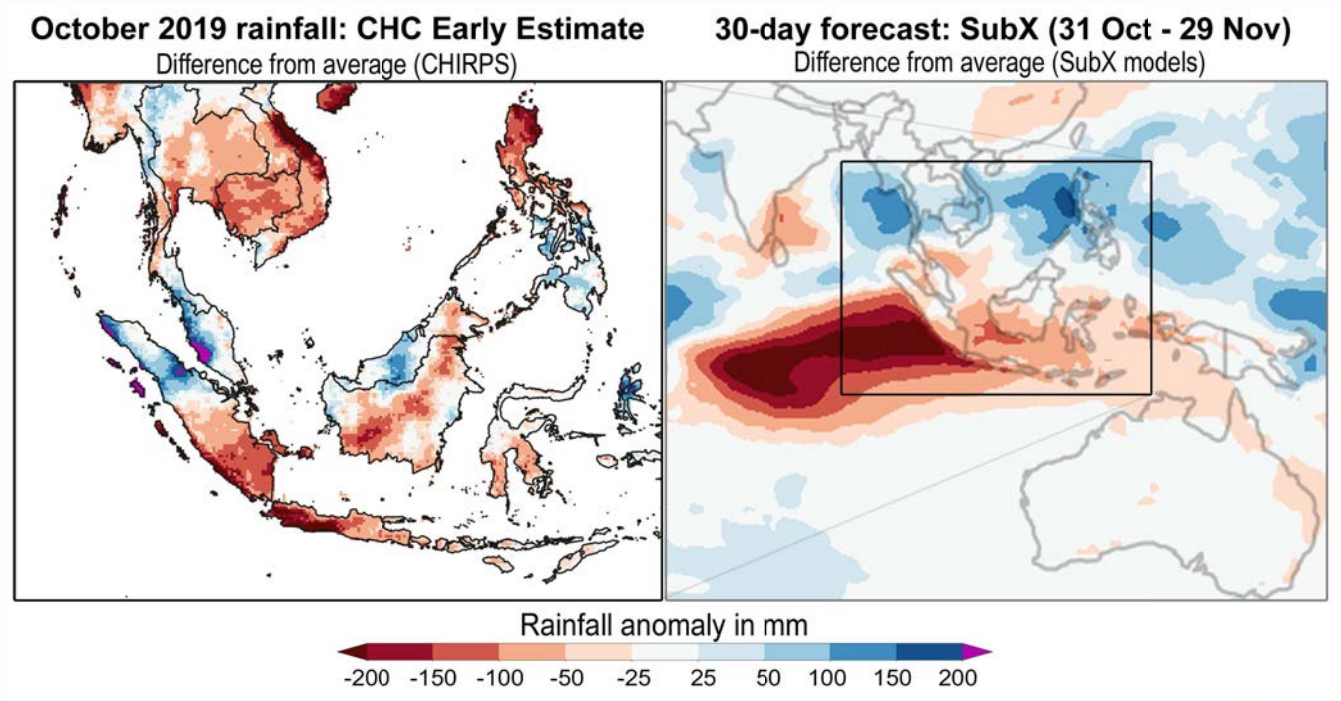
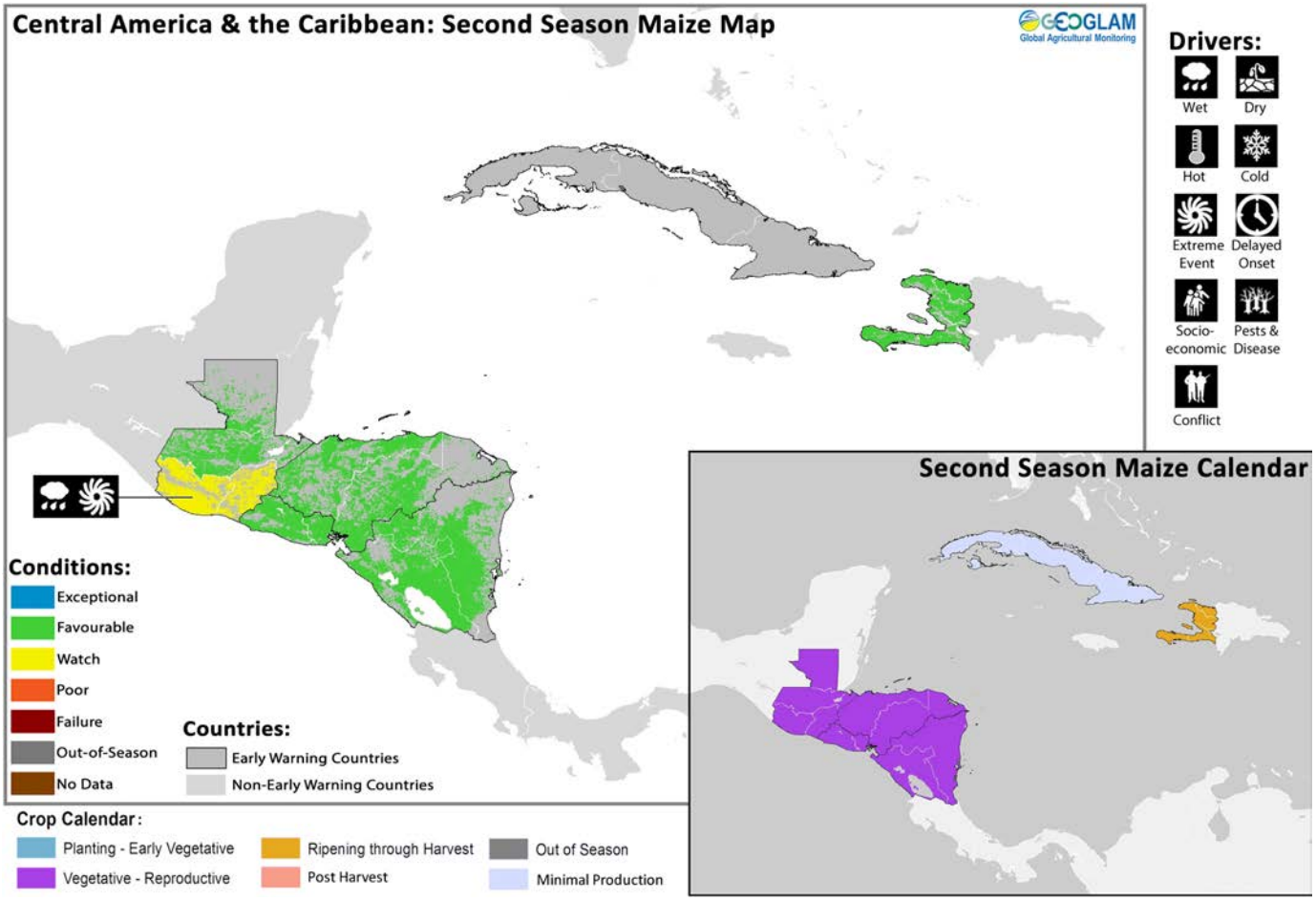


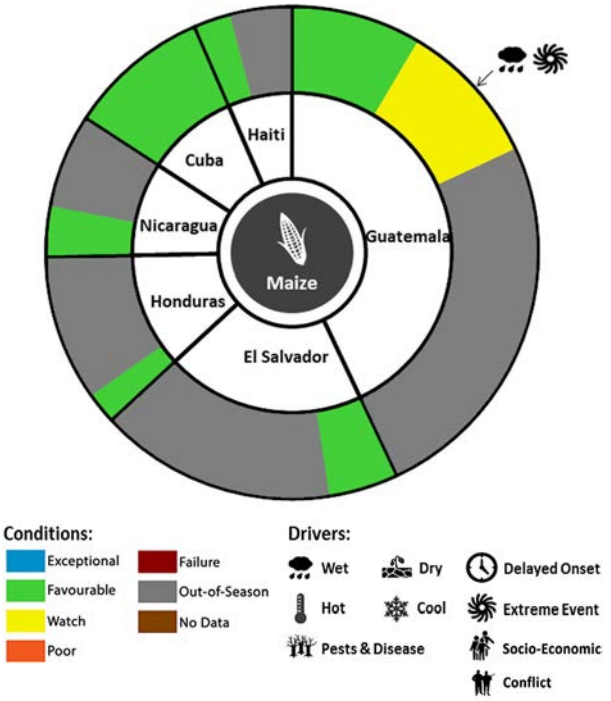
Figure 1. October 2019 rainfall and next 30-day forecast in terms of the difference from average. On the left is the UCSB Climate Hazards Center Early Estimate for October 1st to 31st rainfall. This is based on preliminary CHIRPS for Oct. 1st -25th and an unbiased GEFS forecast for Oct. 26th- Oct 31st. The image shows how the October 2019 estimate compares to the 1981-2018 CHIRPS average. On the right is a 30-day forecast from October 31st. The image shows the average across five Subseasonal Experiment (SubX) model forecasts available on Oct. 31st. The anomaly is based on the 1999 to 2016 model average. Skill assessments of SubX can be accessed at http://cola.gmu.edu/kpegion/subx/index.html.
Source: UCSB Climate Hazards Center

Central America & Caribbean



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. ***Conditions that are other than favourable are labeled on the map with their driver.***

In Central America and the Caribbean, *Segunda* (*Postrera)* season bean and maize crops are in vegetative to reproductive stages and crops are showing normal development due to sufficient and well-distributed rainfall across most areas. Notably, the dry corridor of Guatemala and El Salvador has received above-average rainfall, replenishing the below-average soil moisture from the previous dry season and crop conditions are favourable for many subsistence agriculturalists. In **El Salvador**, while soil moisture in the coastal areas is adequate, excessive rainfall and soil moisture was observed throughout the rest of the country during late October which may lower yield potential for beans due to impacts from pest and disease. Maize crops are showing normal development despite the high cumulative rainfall. Some focalized losses have been reported and in Retalhuleu and Escuintla, losses have been significant but without impact on national production. **Guatemala** experienced above-average rainfall in October, notably in the central region where rainfall was 120 to 150 percent higher than average. Due to the cumulative rainfall in Santa Rosa and Zacapa departments, rivers rose to above-normal levels prompting flood warnings across the southern and central regions. These abundant rains are expected to be beneficial to maize development but will have a negative effect on beans that are currently in maturation stages in the eastern and



For detailed description of the pie chart please see description box on pg. 13.

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 producing areas and will likely be affected by pests and diseases due to the excessive rainfall. Flooding and landslides caused some focalized crop losses in central, east and south Guatemala. In east Guatemala, more than 200 hectares of maize and beans were affected by floods and landslides, mainly in the departments of Chiquimula and Jutiapa and in south Guatemala, more than 8,000 hectares were affected, primarily in the Retalhuleu department. In **Honduras** and **Nicaragua**, while some areas have received below-average rainfall in October, cumulative rainfall since the start of the season has been sufficient for crop development and conditions are favourable. In **Haiti**, second season crops are showing normal development thanks to above-average rainfall in September. In October, precipitation was below-average, but crop conditions remain favourable. Harvesting of main season rice is expected to complete in November and there is concern in the Nord and Sud regions due to dry conditions. However, about 80 percent of national rice production is obtained in the Artibonite department where crop conditions are generally favourable so the overall effect on national yield is expected to be minimal. In **Cuba**, harvesting of main season maize and rice has started under and conditions are generally favourable, despite above-average rainfall in the first dekad of October.

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 cnditions in the main production and export countries can be found in the Crop Monitor for AMIS, published November 7th 2019.

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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.

Crop Season Nomenclature:

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

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

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

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

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

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

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

Crop Season Nomenclature:

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

Central America & 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

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Global Agricultural Monitoring

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GROUP ON EARTH OBSERVATIONS

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Cover Photo by: Christina Justice

Contributing partners

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