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EARLY WARNING

Overview:

In West Africa, main season cereals are in vegetative stage and conditions are favourable due to good rains. In East Africa, harvest is complete for main season cereals in the south of the subregion and production is favourable despite losses early in the season due to heavy rains and flooding. In the Middle East and North Africa winter cereal harvest completed last month and crops are now out of season. In Southern Africa, winter wheat is favourable due to sufficient rainfall. In Central and South Asia, winter cereal harvest is complete and production is favourable however, poor conditions resulted in Afghanistan. In northern Southeast Asia, wet season rice is in ripening stage 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, primera season harvest is nearing completion and poor production has resulted and in some cases complete crop failure over subsistence farming areas in Guatemala, El Salvador and Honduras due to the poor rainfall amounts received during key growth stages. Over less affected areas, concern remains due to dry conditions and persisting rainfall deficits.





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



Crop condition map synthesizing information for all Crop Monitor for Early Warning crops as of August 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 north of the subregion main season cereals are at vegetative or maturing stages and rainfall has been above average. In central and south of the subregion, harvest of the 2018 main season cereal crops is complete and production prospects are favourable due to above average rainfall despite localized losses due to severe flood events.

WEST AFRICA: Conditions have improved for main season cereals due to good rains in July through August across much of the region.

MIDDLE EAST & NORTH AFRICA: In the Middle East, the 2017-18 winter wheat season completed last months and crops are now out of season.

SOUTHERN AFRICA: Planting of the 2018 winter wheat crop is complete across Southern Africa and conditions are favourable due to good rains throughout the start of the season.

CENTRAL & SOUTH ASIA: Winter cereal harvest is complete and spring cereal harvest is underway and production prospects are near average except in Afghanistan where poor and failure conditions have resulted due to lack of precipitations during the winter and spring period.

SOUTHEAST ASIA: In northern SE Asia wet season rice is in ripening stage and there is concern due to flood damage from heavy rains across Philippines, Laos, Cambodia, Thailand and Myanmar. In contrast, dry season rice in Indonesia has been affected by below average rainfall.

CENTRAL AMERICA & CARIBBEAN: Primera season harvest is nearing completion and poor production has resulted across many areas with and notable failure conditions over the dry corridor of Guatemala, El Salvador and Honduras. Over less affected areas, concern remains and production prospects are below average due to persisting rainfall deficits.



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Global Climate Outlook: Neutral El Nino with potential for development

Current ENSO conditions are neutral. Models indicate that a weak to moderate strength El Niño may develop during the northern hemisphere 2018 fall season and be present through the northern hemisphere 2018-19 winter (60-70% chance). This event is forecast to be substantially weaker than the most recent El Niño in 2015-16.

While there is uncertainty as to how the 2018-19 event will develop, El Niños are linked to below normal October through March precipitation in Central America, the Caribbean, northern South America, the Maritime Continent, Australia, and Southern Africa. El Niños are linked to above normal precipitation in Central Asia, southern North America, southeastern South America, and East Africa. However, uncertainty for these precipitation outcomes is high due to the expectation of a mild El Nino and since its development so far has been weak.

East Africa & Yemen



Crop condition map synthesizing conditions as of August 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 vegetative or maturing stages 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**, harvesting of the 2018 main season cereal crops has recently been completed, and production prospects are favourable in most countries despite localized flood-induced production shortfalls. In key-growing areas of Rift Valley and Western provinces of **Kenya**, *long-rains* crops, for harvest from October, benefited from exceptionally abundant seasonal rains, and despite some localized crop losses due to floods, crop prospects are favourable. In agro-pastoral areas of the Karamoja Region of **Uganda**, the cereal harvest, currently underway, was delayed by one month and crop production is estimated at below-average levels on account of excessive early-season rains between April and June resulting in flooding and waterlogging in lowland areas, where approximately half of the region's crops are grown. 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 belowaverage, but the rainfall deficits did not have a significant impact on vegetation conditions, and prospects for the major meher harvest, to be gathered from October, are favourable. However, in the southwestern SNNPR and some areas of East Oromia, adequate rains in June were followed by severe rainfall deficits in July and August, which affected crop conditions and are expected to result in reduced yields. In southern Tigray and eastern Amhara, 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 the 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 by 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 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 adequate, except in some eastern



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

areas, where rainfall in August was below-average. 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, there is concern for main season crops now in vegetative to reproductive stage. In Eritrea, the June-September kiremti rains had a timely onset, with abundant and well-distributed rains received so far over most key cropping areas in central and western Anseba, Debub, Maekel and Gash Barka regions, which resulted in above-average vegetation conditions. In Yemen, conditions are poor for main season crops due to ongoing and worsening conflict impacting agricultural operations and market functioning which might hinder access to farm inputs and labour. In central and southern parts of the region including Burundi, Rwanda, southeastern Kenya, central and southern Somalia, the United Republic of Tanzania and Uganda, harvesting of the 2018 main season cereal crops is complete. The March-May rainy season has been characterized by exceptionally high precipitation amounts across the subregion, with cumulative rainfall estimated at up to twice the long-term average. Abundant rains had a positive impact on yields, and production prospects are generally favourable. However, the heavy rains also triggered widespread floods, mainly in central and southern Somalia, southeastern Ethiopia, northeastern Uganda, Kenya, and lowlands of Rwanda and Burundi. The floods resulted in loss of life, displacement, livestock deaths, and localized crop production shortfalls, especially of pulses, particularly vulnerable to excessive moisture. In key-growing areas of Rift Valley and Western provinces of Kenya, "long-rains" crops, for harvest from October, benefited from exceptionally abundant seasonal rains despite some localized crop losses due to floods, and production is expected to be 10-15 percent above average. In Somalia, the wettest April-June gu season in nearly two decades resulted in significant flood-induced crop damages in high potential riverine irrigated areas along the Shabelle River in Hiran, Middle and Lower Shabelle and Middle Juba regions. However, the high moisture levels boosted yields in rainfed areas, and the off-season harvest, currently underway in riverine areas, is expected at above-average levels, as crops benefited from ample areas available for recession agriculture and increased irrigation water availability due to high river levels. As a result, aggregated qu cereal production is estimated at 147 000 tonnes, 58 percent above the average of the previous five years. In Northwest Agropastoral of Wogoyi Galbeed Region, long cycle sorghum to be harvested in November is at crop establishment stage and conditions are favourable. In southern bi-modal rainfall areas of South Sudan, harvesting of first season crops has just been completed. Seasonal rains were above average in the "green belt", including the former Central and Western Equatoria states, while in parts of the former Eastern Equatoria State (Magwi and East Kapoeta counties) moisture deficits resulted in wilting of maize and groundnut crops, and lower yields are expected. Farming activities continue to be hampered by widespread insecurity and massive displacements. In Burundi and Rwanda, excessive moisture and flood damage resulted in a below-average pulse and rice output. However, this decline was offset by an increased production of more moisture tolerant crops including cereals, sweet potatoes, bananas and cassava, and the aggregate crop production is expected at average levels.

West Africa



Crop condition map synthesizing information as of August 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.

The 2018-2019 agro pastoral cropping season continues and conditions have improved due to good rains in July through August across much of the region. Across the central Sahel, harvest will begin in September and conditions have improved from early season dryness with good rains received. In southern **Mauritania**, while the eastern portion has been improving from early season dryness the western major producing areas are worsening and concern remains. In **Senegal**, there is concern due to below average precipitation across the north central and west although recent rainfall over the west is expected to improve conditions. In **Nigeria**, while conditions are improving, concern remains in the northeast due to ongoing conflict affecting agricultural activities.

Middle East & North Africa

In the Middle East and North Africa the 2017-18 winter wheat season completed last month and crop are now out of season except for main season maize and rice in **Egypt** is now in vegetative stage and conditions are favourable.

Southern Africa



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

Planting of the 2018 winter wheat crop finished at the start of July across Southern Africa and conditions have improved and are favourable due to good rains in August. In **Zimbabwe**, winter wheat is in vegetative stage and conditions are favourable. In **Zambia**, conditions for winter wheat are favourable however production is expected to decrease by 41% from last year and about 50% of the average due to a decrease in planted area. In **South Africa**, the crop outlook for wheat remains positive. Following widespread rain since early winter, more significant rain occurred during the latter half of August over the main production region (the western winter rainfall area) while showers also occurred over the interior where wheat is also produced. In the **Democratic Republic of Congo**, planting of main season maize is complete and conditions are generally favourable at the start of the season despite patches of below average rainfall.

Central & South Asia



Crop condition map synthesizing information as of August 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 winter cereals has been finalized, while harvesting of spring cereals is ongoing. In **Tajikistan**, **Turkmenistan** and **Uzbekistan** lack of precipitations during winter and spring periods has negatively affected yields of winter crops, while in **Kyrgyzstan**, excessive precipitations just before the start of the start of the harvest (at the end of May) had negative impact on winter cereals. In **Kazakhstan**, harvesting of winter wheat is ongoing under favourable weather conditions, however the forecast for aggregate wheat production is set below the last year due to decline in area planted as farmers switch to more profitable crops. As a result, aggregate cereal output is estimated to decline by 4 percent on yearly basis to 34 million tonnes. Planting of winter cereals for harvest in 2019 started under favourable conditions. In **Afghanistan**, a national report estimates that the rainfed (spring) wheat production as a whole will be down 71% from last year and that major cropping areas in Herat, Badghis,



Faryab, and Sari-e-Pul (very western portion of the northern mountains and foothills region) sustained the most damage. Remote sensing data also supports these severe impacts. Although not as severe as the northwestern provinces, poor production is expected across remaining areas, contributing to the significant reductions expected for this year compared to last. Only the southern and eastern mountains and foothills had favourable production. Winter wheat production is estimated to be 6% lower than last year however, areas in the north and northwest are expected to have much steeper declines. The worst affected provinces being Badghis, Faryab, Jawzjan, and Sare-e-Pul. Despite an overall reduction in irrigated production for

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the country, areas in central and southern portions of the country are expected to experience normal to above normal winter wheat outcomes. In **Pakistan**, sowing of main season rice crops which started in June is now complete and conditions have improved with good rainfall in August. In **Mongolia**, spring wheat planted in April is favourable with good rains throughout the season and harvest will commence at the start of September.

Southeast Asia



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

In the northern side of Southeast Asia, wet season rice is in ripening stage and there is concern in many areas which suffered flood damage from heavy rains due to the influence of several typhoons and tropical depressions. In contrast growing and harvest conditions for areas that were not affected by the flood are favourable due to good irrigation amounts. In Indonesia, planting of dry season rice has been below average due to low precipitation levels and some drought damage has resulted in Java. In Viet Nam, summer-autumn rice (wetseason rice) is under favourable conditions with a slight reduction in total sown area in the south. Harvest is slightly delayed due to rain storms, but has begun in some southern provinces. In Thailand, wet-season rice is under generally favourable conditions with a slight increase in total sown area. Continuous and heavy rainfall in the northeastern region has caused some flooding. In Laos, wet season rice is in transplanting stage and there is concern in the central and south due to heavy rains at the end of July causing flood events that affected an estimated 83,000 hectares over 8 provinces with serious damage incurring to 24,000 hectares making up 5% of planted area. Additionally, a dam accident in Attapeu province damaged surrounding villages causing many farmers to replant. In Cambodia, wet season rice is in high season and conditions are generally favourable however, heavy rain in August caused flooding across the north west to lowland areas of the Mekong basin damaging planted rice crops. Early wet season rice is now in maturing to harvest stage and yields are



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

favourable. In **Myanmar**, conditions across the drylands and inland mountains are favourable however, continuing heavy rain and winds in August from the monsoon impacted the delta and river basin area, flooding wet season rice crops in this region and causing large areas to be replanted. In addition, pest outbreak has been reported over flooded areas causing further damage to crops. In the

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Philippines, wet-season rice conditions are mixed due to continued adverse weather conditions over the past month, including four tropical cyclones. Damage is particularly noted in Luzon and some parts of Visayas. Impacts from these systems, earlier in-season damage, and delayed sowings, have led to a reduction in estimated harvest area and final yields. In **Indonesia**, sowing of dry-season rice continues slowly into the fifth month due to below average rainfall. Minor drought damage has occurred in Java. Harvest has begun in early planted plots with higher yield expectations relative to last year. In the **Democratic People's Republic of Korea**, conditions are favourable in the north however, there is concern in the south due to above average temperatures and below average rainfall in August that may impact rice crops. In **Bangladesh**, sowing of the *aman* rice crop started in June and conditions are favourable with good precipitation amounts. In **Nepal**, conditions are favourable for main season crops with good rains received throughout the season. In **Sri Lanka**, *yala* rice crop, making up 35% of national production, is in vegetative stage and conditions are favourable in the south have improved in the north with good rains in August.

Central America & Caribbean



Crop condition map synthesizing information as of August 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 Central America, the primera season is nearing completion with poor production resulting across many areas and persisting rainfall deficits. Field reports indicate that across the most affected areas of Guatemala, Honduras and Nicaragua near total losses have been sustained. With the recent rain in August short term rainfall deficits have been lessened and some farmers have started sowing activities for segunda crops which will be important to food security following the poor primera season. In the minimal production dry corridor of Guatemala, El Salvador and Honduras, the main primera season was severely affected by an extended dry spell during the critical crop development stage starting from the end of June through the start of August that resulted in maize and bean losses from 75-100 percent across the most affected areas. Primera season harvest, normally from August through September will not occur across many areas and food security is a concern. Subsistence farmers in these areas will rely on the upcoming segunda season to support livelihoods and food security moving forward. Across the less affected areas of northern Honduras and central and south Guatemala there is still concern due to dry conditions however, the impact has been much lower and production may still recover. In Nicaragua, despite slight



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

precipitation deficits throughout the season, conditions are favourable due to timely rainfall and in adequate quantities, field information indicates some losses in very localized areas. In **Cuba**, main season maize is in vegetative to reproductive stage and there is concern due to below average rainfall and persisting dry conditions. In **Haiti**, poor conditions have resulted for main season bean and maize crops due to irregular rainfall distribution and poor quantity, notably over the southern and eastern regions where permanent wilting has occurred considerable losses were incurred. Planting of second season crops is now being delayed due to continuing drought conditions. Farmers are waiting for soil moisture levels to improve and rains to come before they can start planting activities.

Regional Outlook: Average to below average rains forecast in September through November

As of August 30th, models are not showing a major positive change in weather during the next 10 days or for September as a whole. Near or below normal September precipitation is expected for northern areas of Central America. Some areas of southern Mexico, Belize, Guatemala, El Salvador, and northern Honduras could be both drier and warmer than normal.

Given the poor performance of the *primera* season in Central America, the *segunda* season, starting from September, will be important to food security in the region. The most recent North American Multi-Model Ensemble (NMME) climate forecast gives a negative precipitation outlook for some of Central America for September to December. Maize yields are sensitive to moisture deficits and high temperature during this period. Below normal precipitation is consistent with the current outlook for El Niño development. Historically, the largest impacts to September to November (SON) precipitation occurred during strong El Niños. However, below normal precipitation also occurred during previous weak to moderate events (similar to the predicted 2018-19 El Niño) in parts of southern Mexico, central-northern Guatemala, central-northern Honduras, Haiti, and Pacific coast areas of Costa Rica and Panama. The NMME forecast for SON issued in August shows a 40-50% chance of below normal precipitation and a 50-70% chance of above normal temperature in these areas. Most models were in agreement, which adds some confidence to these outlooks.



Precipitation forecast for September 2018 from National Centers for Environmental Prediction (NCEP) coupled forecast system model version 2 (CFSv2) issued on August 31st. Figure shows the September forecast precipitation amount as compared to the 1982-2010 average. Data source: NWS/NOAA/CPC

Source: UCSB Climate Hazards Group

Information on crop conditions in the main production and export countries can be found in the <u>AMIS Market Monitor</u>, published September 6th 2018.

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.

Sources and Disclaimers:

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.









Event Onset



economic Disease



i 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.

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

i Sources and Disclaimers:





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Cover Photo by: Christina Justice

Early Warning partners



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