

Central America: The 2015 Season



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HIGHLIGHTS

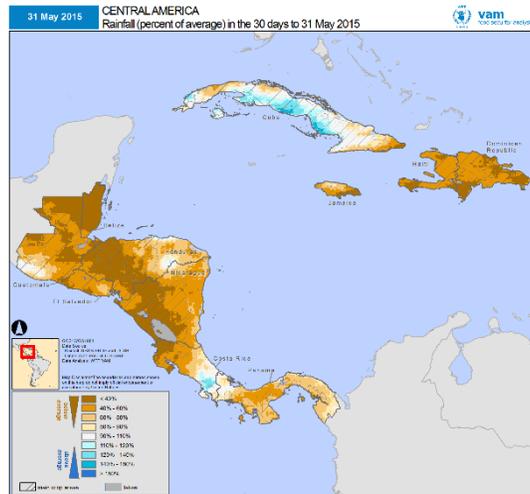
- Severe **rainfall deficits** across much of the region, exacerbated by the current El Nino event, affected the recently concluded **first growing season** (Primera) in Central America. The second growing season (Postrera) is also developing under the same El Nino influence.
- **Significant crop production shortfalls** are expected across much of the region, particularly in Haiti, Honduras, Salvador, Nicaragua and Guatemala. Maize production can decline by over 20 percent relative to the average of the last 5 years.
- Rainfall data analysis revealed large areas experiencing **extreme dry conditions** during both *Primera* seasons of 2014 and the 2015.
- The Postrera season has begun under unfavourable condition, with delayed start due to below average rainfall. Recent better rains will improve the situation, if they become well established.
- Seasonal forecasts for the *Postrera* indicate below average rainfall for the remainder of the season – increasing the possibility of two consecutive droughts affecting the region in 2015.

GCS: WGS1984
Data Source:
Rainfall: USGS-EROS and UCSB
Land Cover: FAO GLC-SHARE
Data Analysis: WFP VAM

Map Disclaimer: The boundaries and names shown on this map do not imply official endorsement or acceptance by United Nations



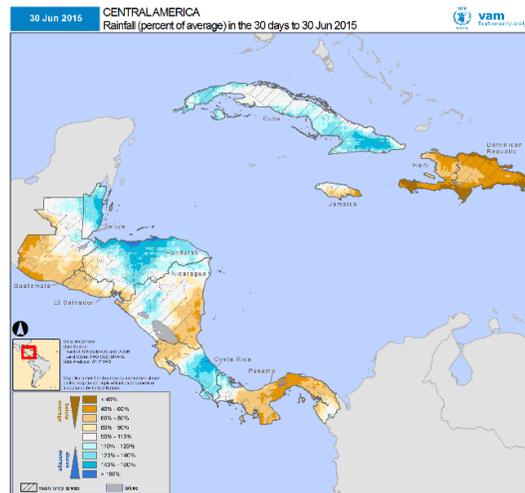
The Primera Season at a Glance...



May: A very poor start of the season...

May, a time when planting and early crop development takes place, was particularly dry with large rainfall deficits dominant across the whole region.

This led to delays in planting which meant that the sensitive phases of crop development occurred later in the drier stages of the season.



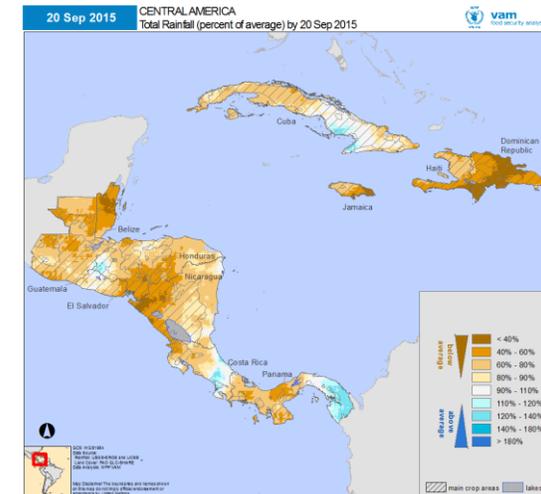
June: Short lived relief

The first half of June saw better rainfall across most of the region. However, drier than average conditions returned in the second half and continued into July



July: Primera ends in drought...

Markedly drier conditions dominated the whole region, with some areas receiving less than half of the usual rainfall.



August: No relief in early Postrera

Drier than average conditions continued through the *Canicula* and the early stages of the *Postrera* season.

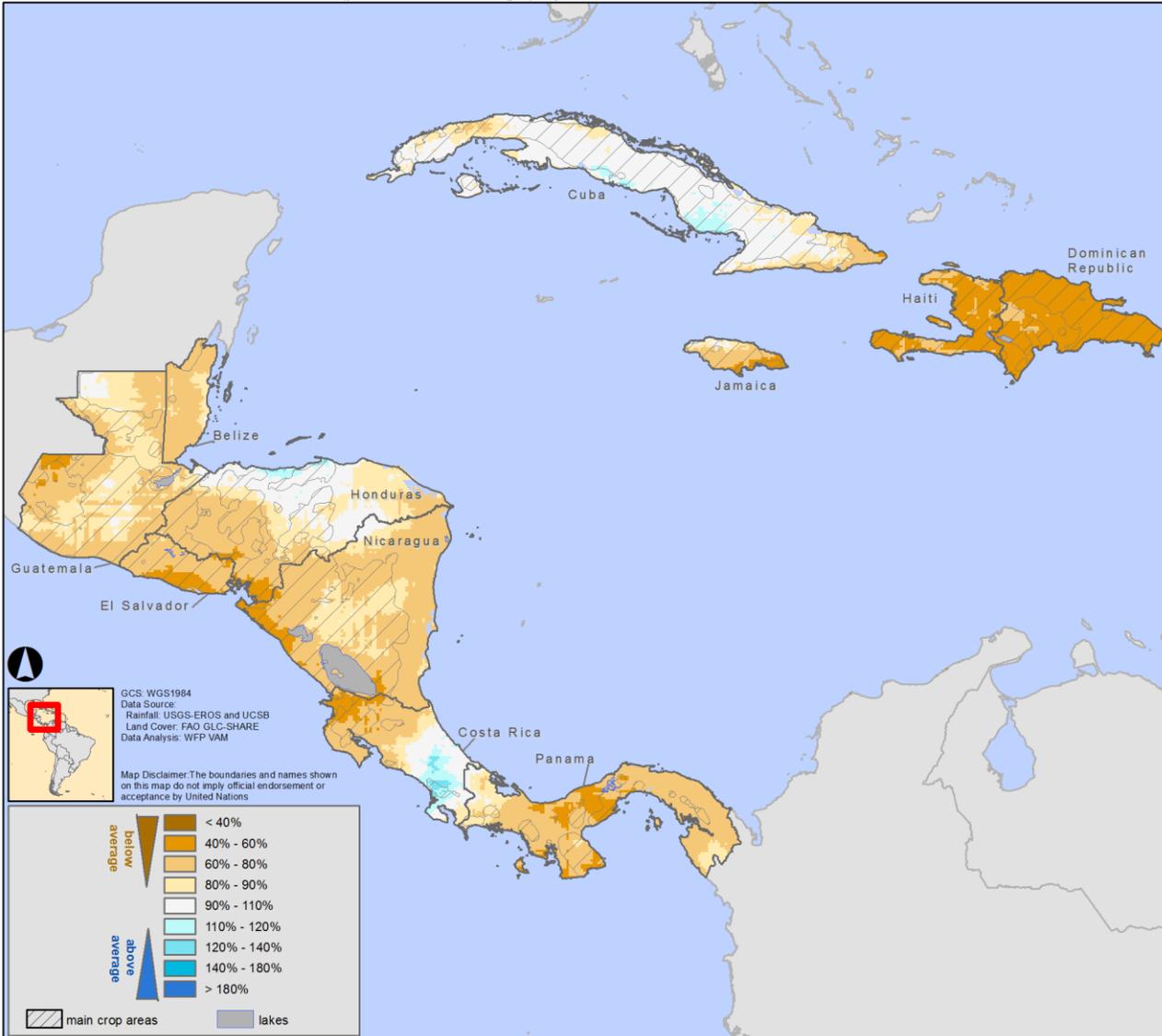
Although there is still time for recovery, it seem unlikely considering the pessimistic outlook in the seasonal forecasts for the region.

Seasonal Performance of *Primera* Season

31 Jul 2015

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Total Rainfall (percent of average) by 31 Jul 2015



Seasonal cumulative rainfall until late July 2015, as a percentage of the 20-year average.

Hashed pattern indicates main agricultural areas.

Brown shades indicate below-average rainfall; blue shades indicate above-average seasonal rainfall.

Large rainfall deficits and poor maize production

Rainfall during the *Primera* season has been below-average across the region, except for Cuba and parts of Costa Rica.

In Hispaniola (Haiti and Dominican Republic) drier than average conditions have prevailed throughout the agricultural season — rainfall in the first half of the year was less than half of the long term average.

In Central America, rainfall deficits are more moderate—60-80 percent of the average. These deficits resulted from very dry periods during May and from late June to end July.

Despite a wetter June, delays in the start of the season followed by drier conditions during the most sensitive crop development stage, particularly for maize, led to significant negative impacts on crop production.

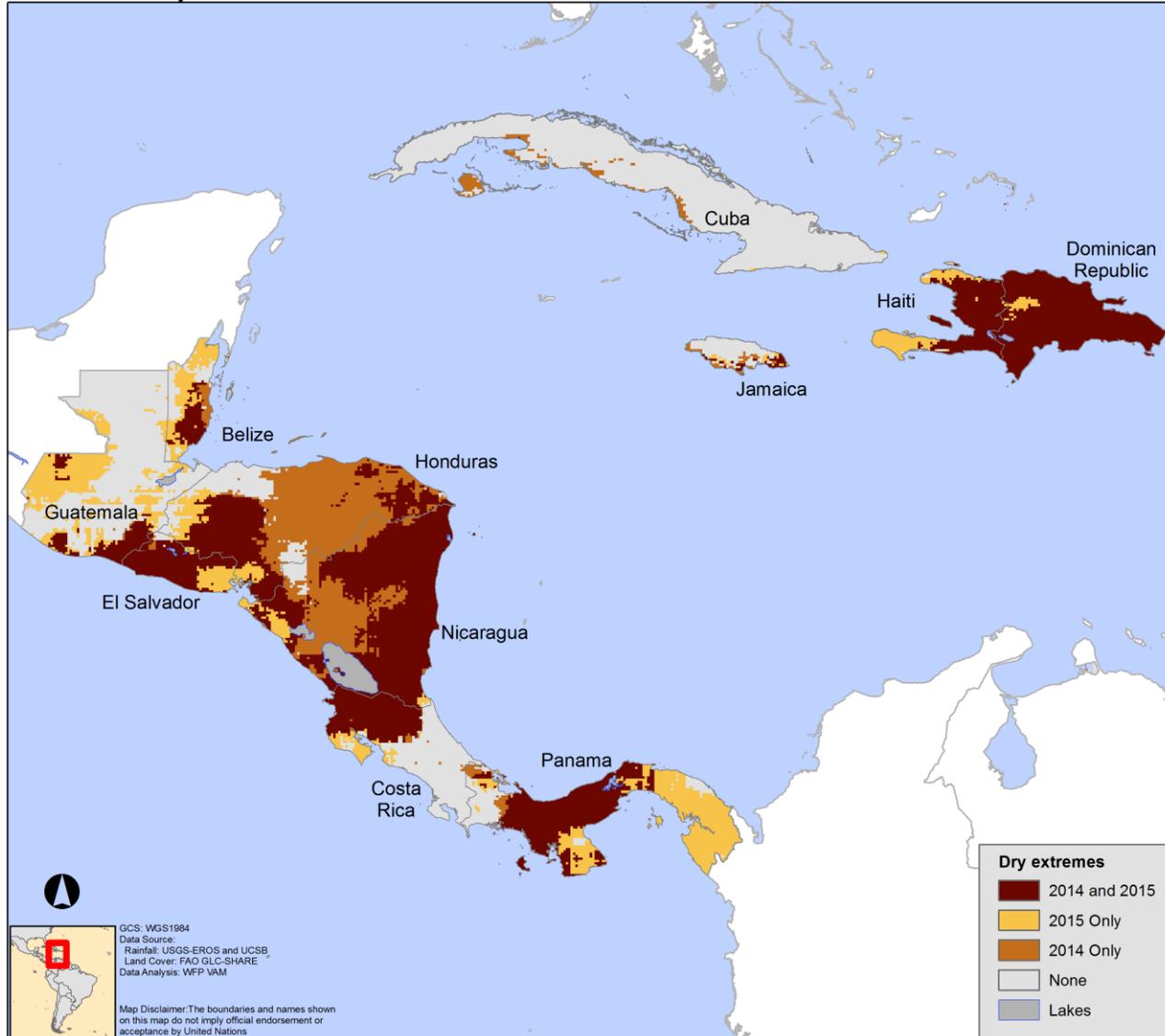
Worst affected areas include parts of Guatemala, Honduras, El Salvador, Nicaragua and Panama. The *Primera* season provides the bulk (two thirds) of the annual maize and half of the bean production. According to FAO, preliminary estimates suggest significant production losses relative to the average of the last 5 year—22% for Salvador, 21% for Nicaragua and 36% for Honduras. Guatemala's aggregate production is average but there are considerable localised losses in the *Corredor Seco* hitting the poorest and most vulnerable communities.

Note that the *Primera* season of 2014 was already affected by a severe drought whose consequences upon poor smallholders are still being felt.

Multi Year Impacts in Central America

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Occurrence of Dry Extremes in Primera 2014 and Primera 2015 seasons



Extreme dryness affects Central America in 2014 and 2015

The most severe impacts of drought are felt by smallholders dependent on rainfed crops and agricultural labour. Consecutive droughts magnify these impacts as households have no time to rebuild assets and savings depleted by previous events.

The 2014 *Primera* season was also affected by a severe drought across many areas of Central America. The 2015 drought will put additional pressure on vulnerable communities.

The map shows areas that have experienced extreme dry conditions in both *Primera* seasons of 2014 and 2015, or only in one of the two years. It shows that extensive areas are affected during both years: Haiti and Dominican Republic, southern Guatemala, most of Salvador, western Honduras, most of Nicaragua as well as parts of Costa Rica and Panama. Note that even if extreme dry conditions have not been reached, most areas have had below average rainfall on both seasons.

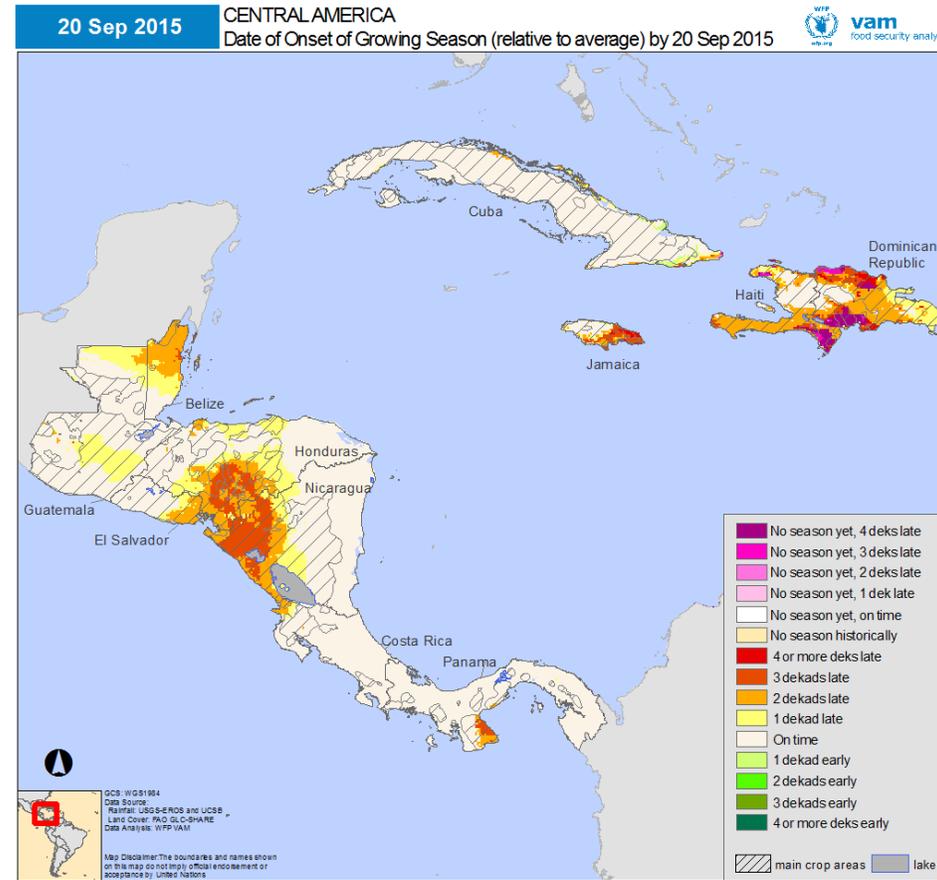
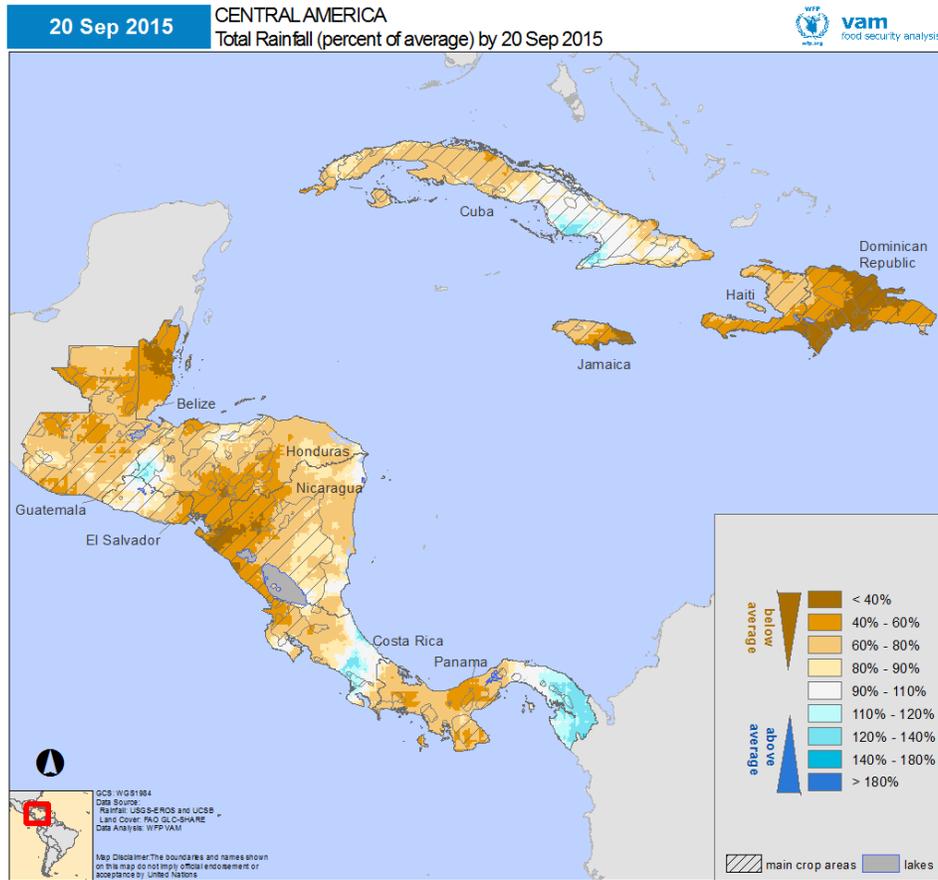
Between the 2014 and 2015 *Primeras*, the *Postrera* season of 2014 provided some relief as it developed normally. However, the perspectives for the *Postrera* season of 2015 are fairly pessimistic, raising the likelihood of yet another extreme dry season immediately after the last *Primera*.

Occurrence of extreme dry conditions in the *Primera* seasons of 2014-2015.

An extreme dry *Primera* season is defined as one with (February to July cumulative) rainfall in the driest three out of the 20 year period 1994-2013.

Map shows areas registering such extreme dryness in: both 2014 and 2015 *Primeras*, only 2014, only this current 2015 *Primera* season or in none of the two seasons.

Early Stages of the *Postrera* Season



Cumulative rainfall from early August to 20 September 2015, as a percentage of the 20-year average (left).

Date of start of the *Postrera* season compared to a 20 year average (right). Green shades represent earlier than average start dates, yellow to reds later than usual start dates. Pinks for delays in the start of the season but where the season has not yet started.

More rainfall deficits and delays in the onset of the planting season

The *Postrera* season started with planting activities occurring from August to mid-September—maize and then beans. The *Postrera* provides the majority of the bean crop.

The early stages of the *Postrera* have experienced a continuation of the drier than average conditions that have prevailed during most of 2015 – rainfall deficits were the dominant feature across the region from August to mid September.

Consequently, the season has been delayed in western Nicaragua, eastern El Salvador, southern Honduras and Belize. Significant delays are also noticed in Hispaniola.

Still these are early days and there is time for recovery. Latest rains are improving the situation but need to persist for longer. Yet rainfall forecasts for the remaining season mostly indicate drier than average conditions, reinforcing the chances of a more pessimistic outcome.

El Nino and the 2015 Growing Seasons in Central America

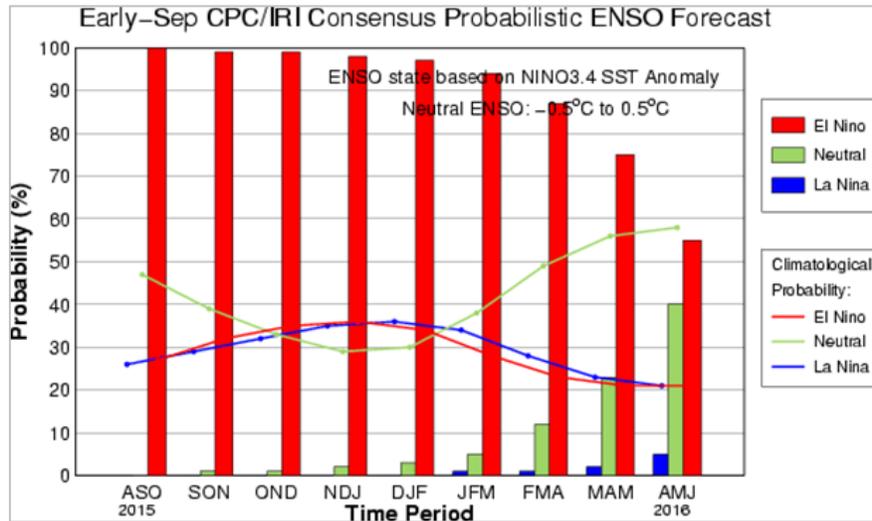
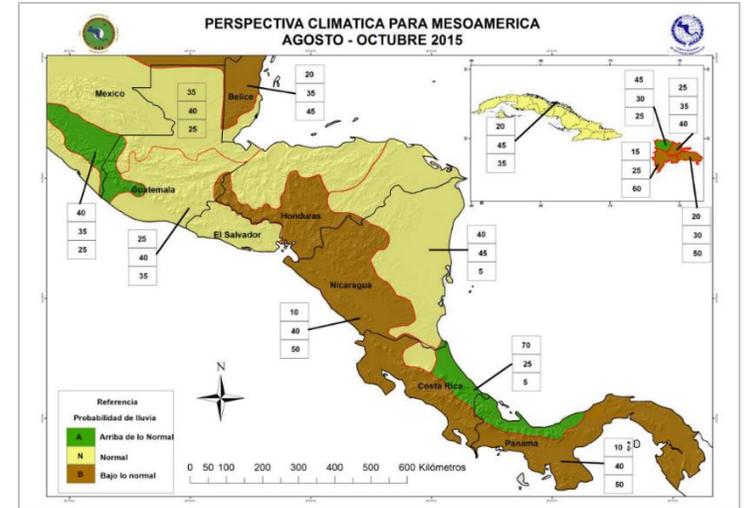
Pessimistic Perspectives for the Postrera Season

The current El Nino event continues its course, intensifying towards its expected peak around November 2015.

The event has already influenced the first cropping season (*Primera*) which was from April to August. The second cropping season (*Postrera*) which is from August to November has also been impacted thus far in the season.

A variety of seasonal forecasts for the *Postrera* season show a high likelihood of below average rainfall for the duration of the season. ECMWF forecasts are more pessimistic for Central America proper but relatively more optimistic for Cuba and Haiti.

If the forecasts continue to be as accurate as those made for the *Primera* season, there is a high likelihood that the region is going to face two consecutive poor growing seasons in 2015, adding to the lingering effects of the 2014 *Primera* season drought.



Probability of an El Niño developing (red bars) vs neutral conditions (green) and La Niña (blue). Probabilities they remain above 90% through to first quarter of 2016.



Seasonal Forecasts for Central America and Caribbean:

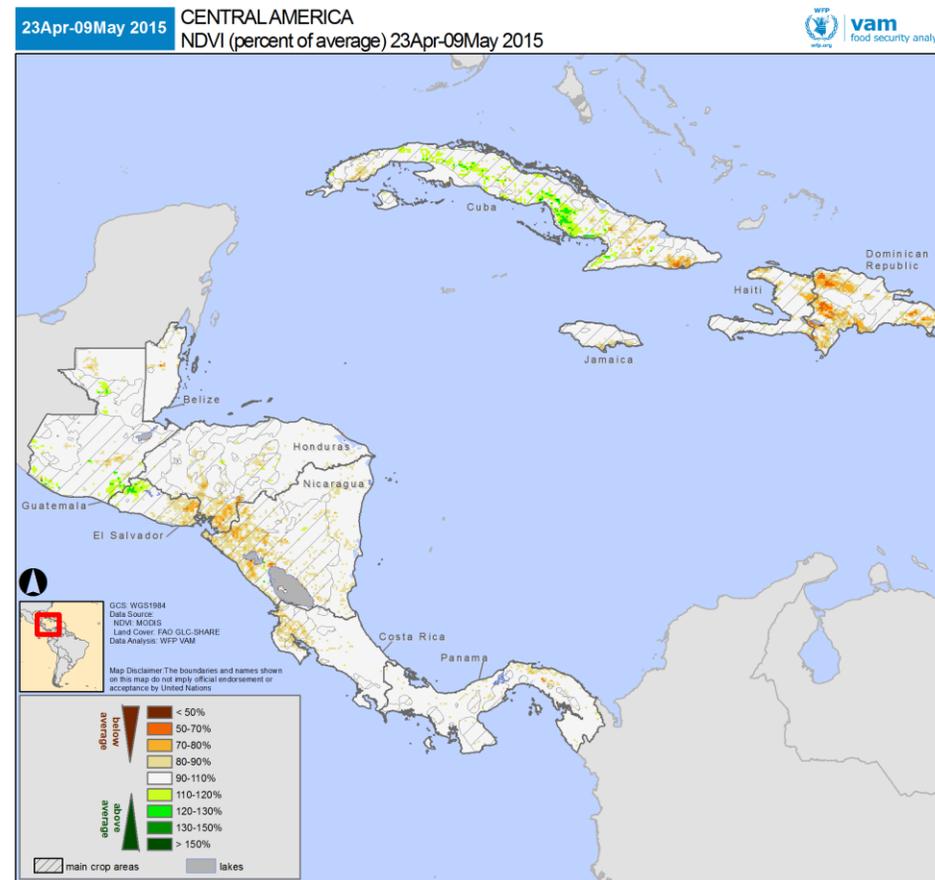
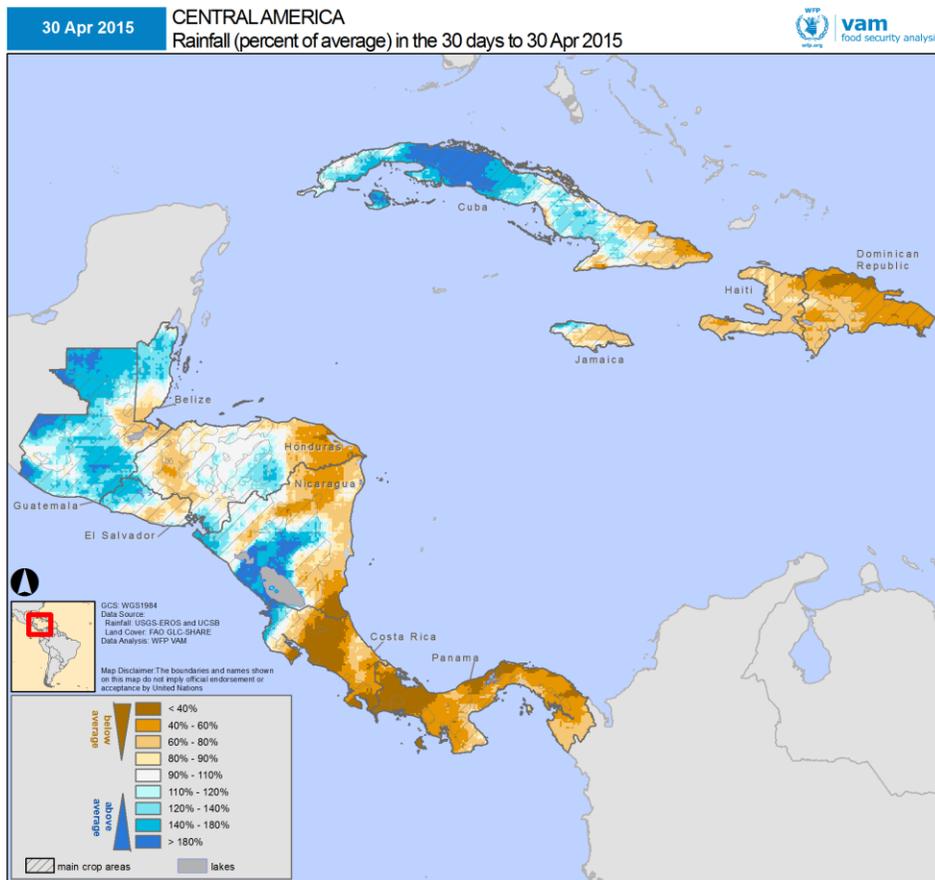
Above – Regional forecast showing areas of expected below average August-October rainfall in brown, near average in beige, above average in green.

Below – ECMWF forecast for October to December rainfall: green shades for wetter than usual, orange shades for drier than usual.

The Season: Month by Month



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April 2015 rainfall as a percentage of the 20-year average (left).

Brown shades for drier than average, blue shades for wetter than average conditions.

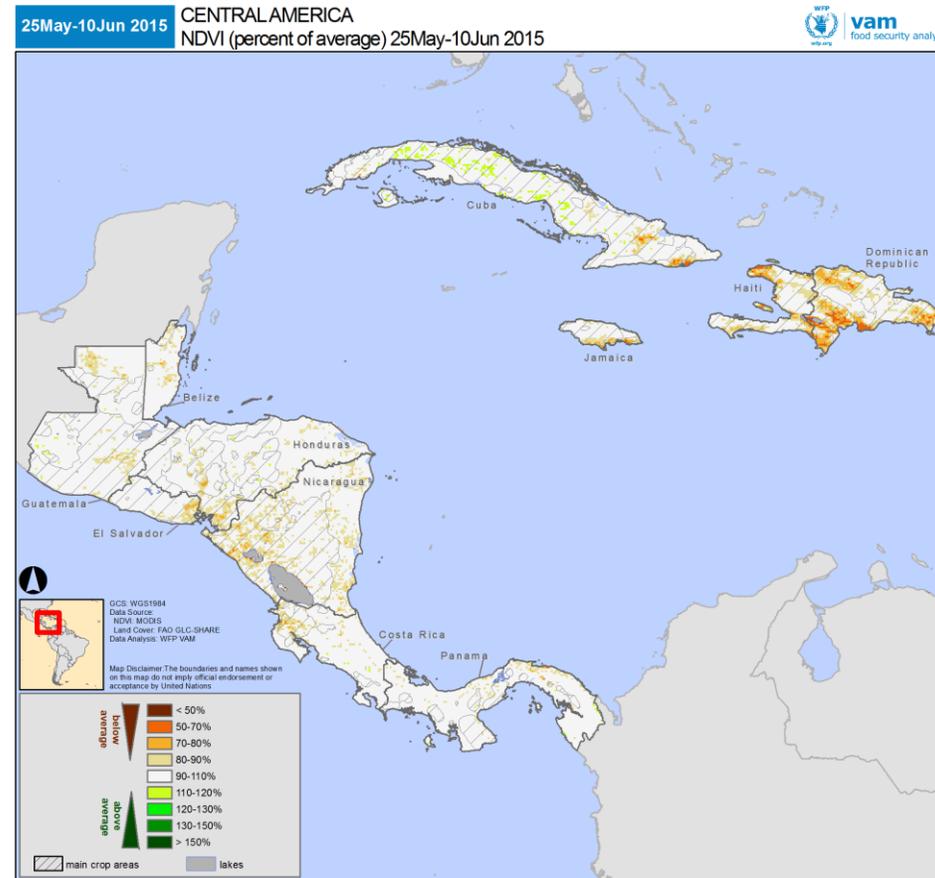
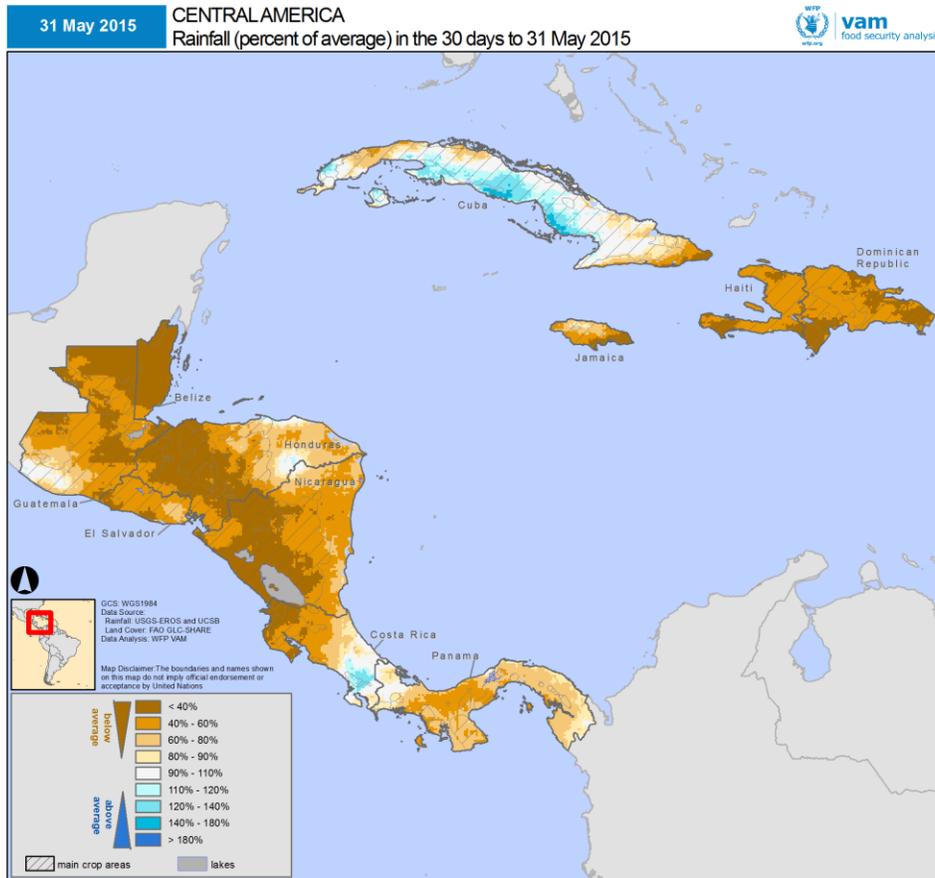
Early May 2015 vegetation index as a percentage of the 12-year average (right).

Orange shades for below-average, green shades for above-average vegetation.

Hashed pattern indicates main agricultural areas.

This month brings the first substantial rains in the region. As the season developed, drier than average conditions extended into parts of Nicaragua and Honduras and were maintained over Costa Rica, Panama and Haiti (Hispaniola) where delays in the onset of the growing season were noticed.

Vegetation tended to be below average in Haiti and Dominican Republic, due to sustained drier than average conditions.



May 2015 rainfall as a percentage of the 20-year average (left).

Brown shades for drier than average, blue shades for wetter than average conditions.

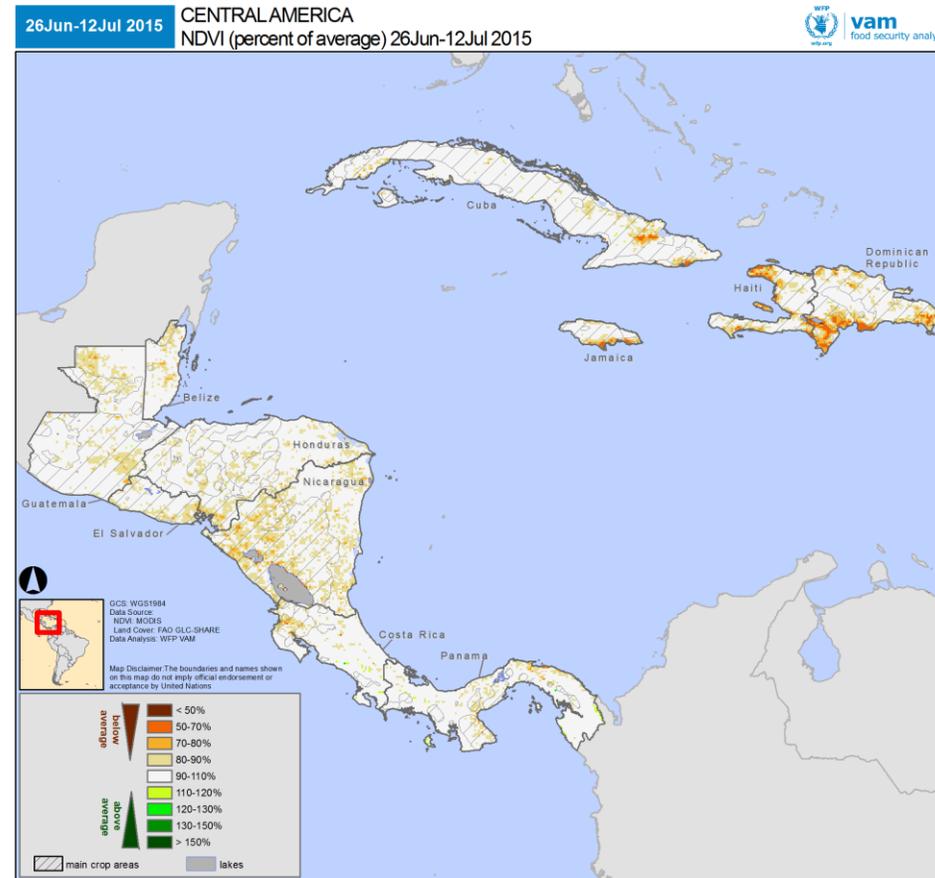
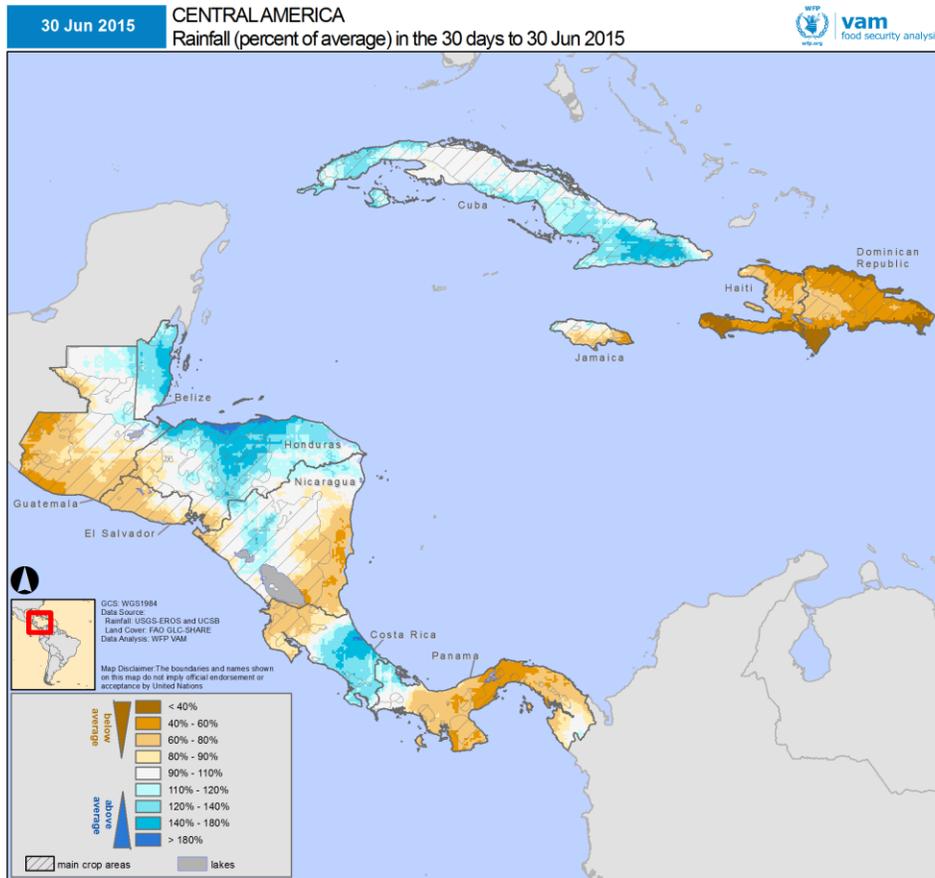
Early June 2015 vegetation index as a percentage of the 12-year average (right).

Orange shades for below-average, green shades for above-average vegetation.

Hashed pattern indicates main agricultural areas.

The bulk of the growing season across Central America starts during May. This period was characterized by severe rainfall deficits across most of the region, particularly in Guatemala, Honduras, Nicaragua and western Costa Rica. Similar conditions were also evidenced in Haiti and Dominican Republic. Consequently, the region experienced further delays in the start of the growing season.

The rainfall deficits reinforced the pattern of below average vegetation. It was more pronounced in Nicaragua and Honduras as well as across Hispaniola.



June 2015 rainfall as a percentage of the 20-year average (left).

Brown shades for drier than average, blue shades for wetter than average conditions.

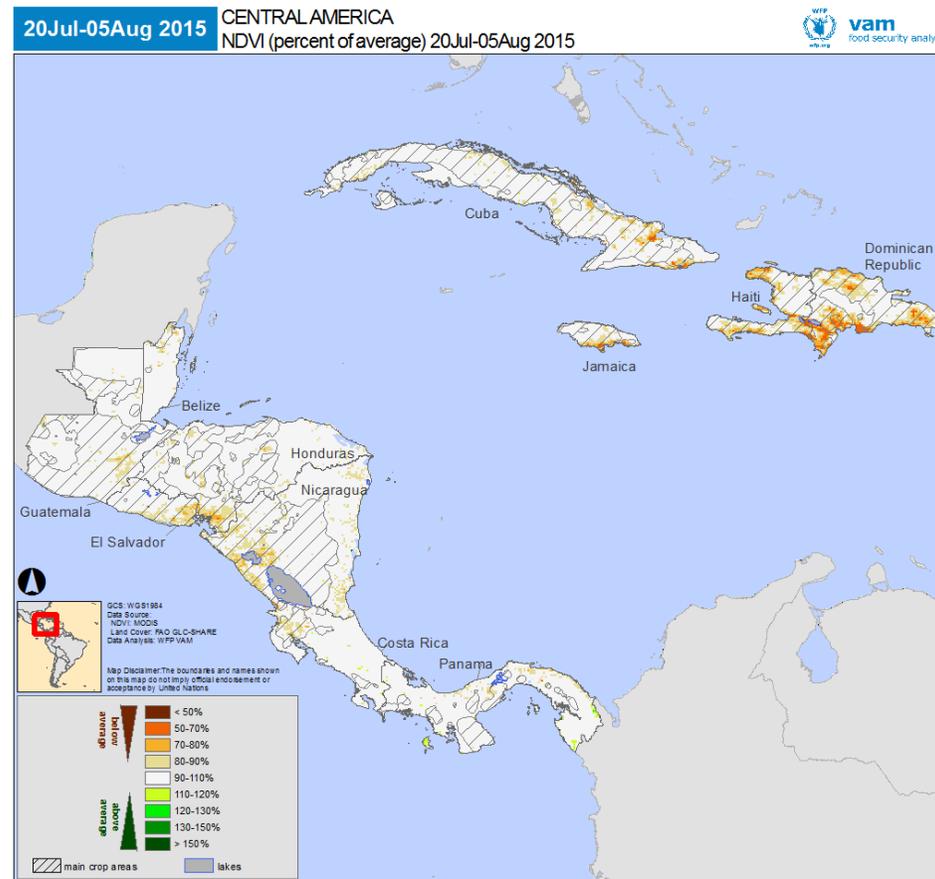
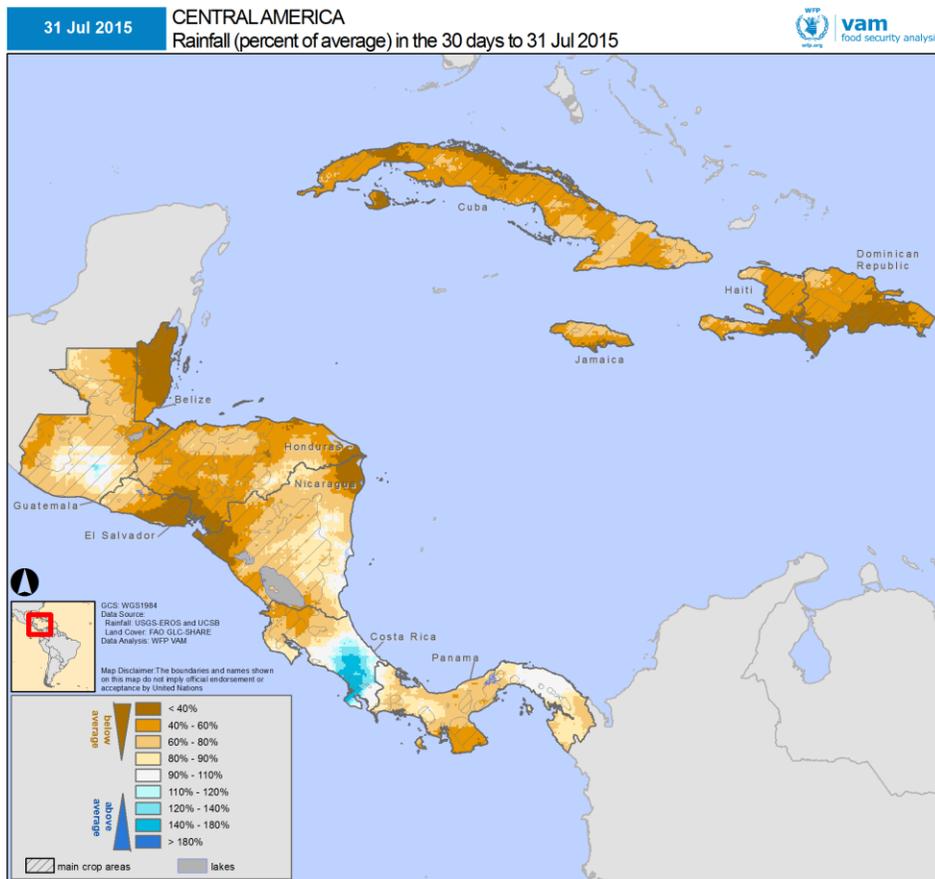
Early July 2015 vegetation index as a percentage of the 12-year average (right).

Orange shades for below-average, green shades for above-average vegetation.

Hashed pattern indicates main agricultural areas.

Good rains during the first half of June decreased the seasonal rainfall deficit confirmed at the end of May. Relief was short lived as drier than average conditions returned thereafter, leading to another month of overall rainfall deficits for south and western Guatemala, Salvador, eastern Nicaragua and Panama. In Hispaniola, drier than average conditions remained throughout the month, leading to even more intense deficits.

The persistent deficits and delays in the onset of the season will lead to significant negative impacts for the worst affected countries.



July 2015 rainfall as a percentage of the 20-year average (left).

Brown shades for drier than average, blue shades for wetter than average conditions.

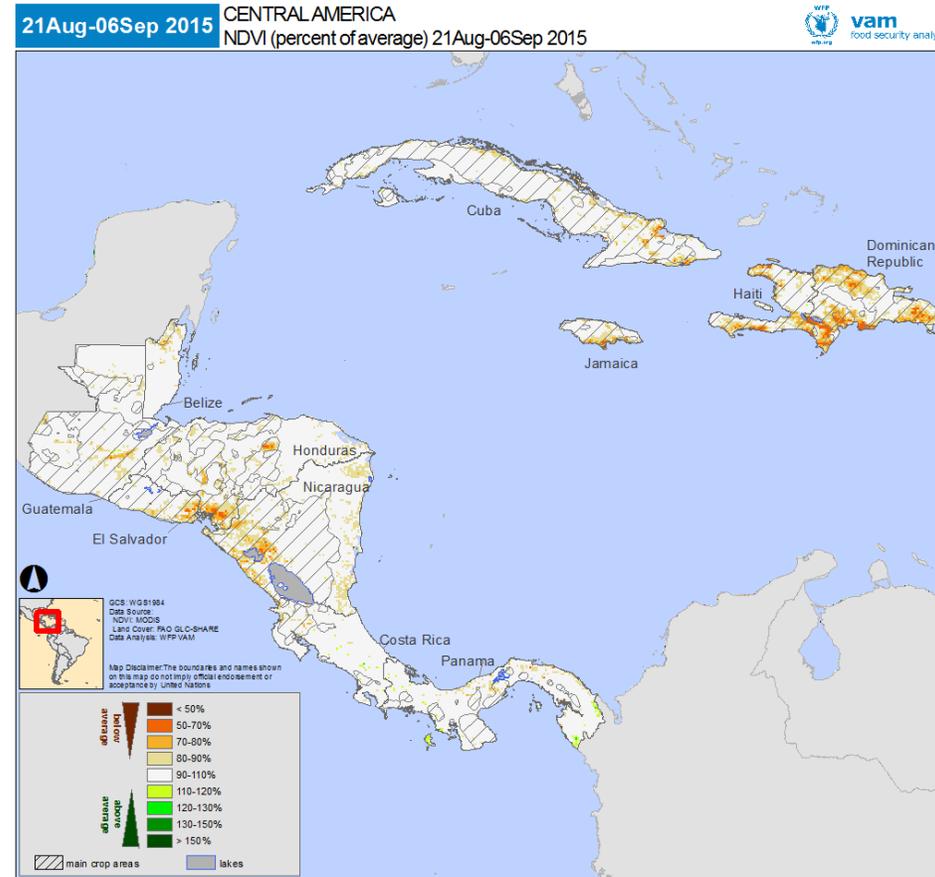
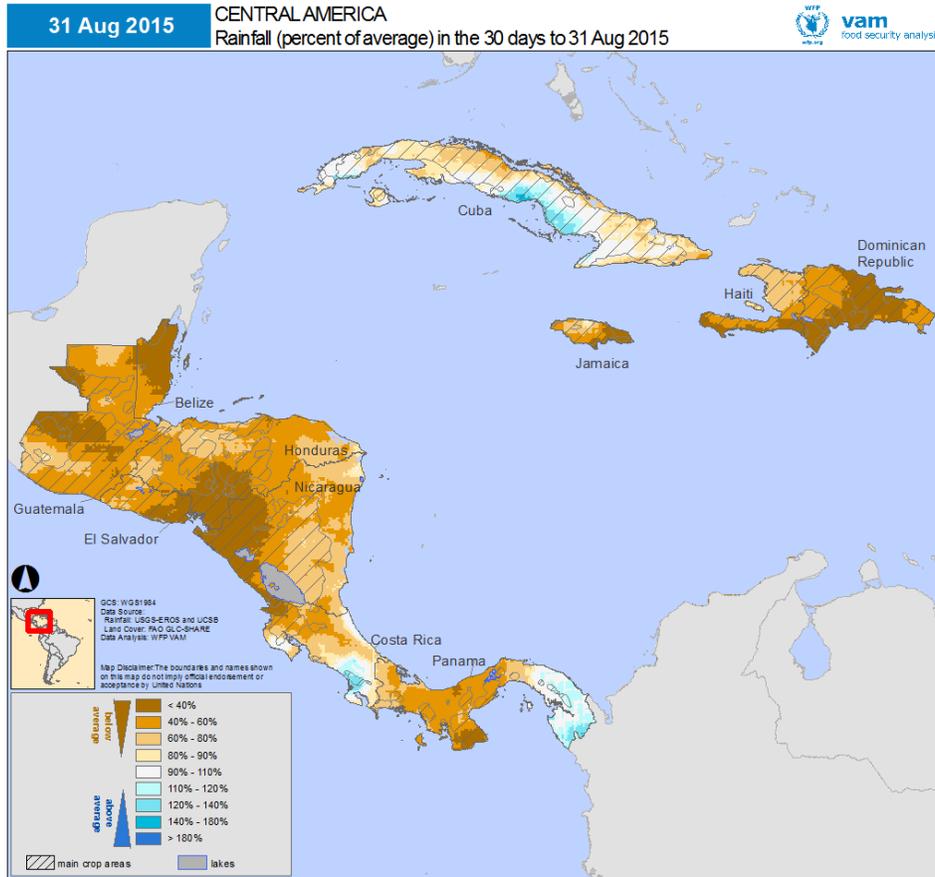
Early August 2015 vegetation index as a percentage of the 12-year average (right).

Orange shades for below-average, green shades for above-average vegetation.

Hashed pattern indicates main agricultural areas.

This month marks the last stage of the first cropping season (*Primera*) and is typically characterised by the start of the mid-season dry period (the *Canicula*) towards its end. Poorly distributed and below-average rainfall throughout the season led to an early *Canicula* dry-period commencing before crops matured.

Worst affected areas include parts of Guatemala, Belize, El Salvador, Nicaragua, Panama, Haiti and Dominican Republic. Sustained drier than average conditions had the greatest impact on vegetation conditions in Haiti and Dominican Republic where clear vegetation problems can be identified.



August 2015 rainfall as a percentage of the 20-year average (left).
Brown shades for drier than average, blue shades for wetter than average conditions.

Early September 2015 vegetation index as a percentage of the 12-year average (right).
Orange shades for below-average, green shades for above-average vegetation.
Hashed pattern indicates main agricultural areas.

This month marks the beginning of the *Postrera* season, with maize typically being planted first followed by beans.

August was dominated by very severe rainfall deficits across the region, particularly in the borders of El Salvador, Nicaragua and Honduras, leading to delays in the onset of the *Postrera* season. Vegetation deficits worsened further as a result.

These early unfavourable tendencies are in line with a number of seasonal forecasts.

Data Sources:

Rainfall: CHIRPS, Climate Hazards Group, UCSB

Vegetation: MODIS NDVI, EOSDIS-NASA

Land Cover: FAO GLC-Share

Processing:

VAM software components, ArcGIS

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