



ANNOUNCEMENTS

Concerns about agricultural drought exists in the southern Caribbean, particularly in the vicinity of Grenada. If the pattern of below normal rainfall continues agricultural can be impacted significantly, particularly in late wet season/early dry season period. Temperatures are likely to continue to be above normal by up to 0.5 °C for at least until the end of 2012. Farmers' forums and development of Tri-partite committees continue in CAMI states.

REGIONAL OVERVIEW ON WEATHER AND CLIMATE FOR OCTOBER 2012

Conditions were very diverse in the eastern Caribbean islands for October. Trinidad and Barbados were moderately dry; Grenada extremely dry; Tobago, St. Vincent, St. Lucia and Dominica normal; Antigua very wet; Conditions in Guyana ranged from exceptionally wet in the north to moderately dry in the east. Jamaica was abnormally wet in the west and moderately wet in the east and Belize normal.

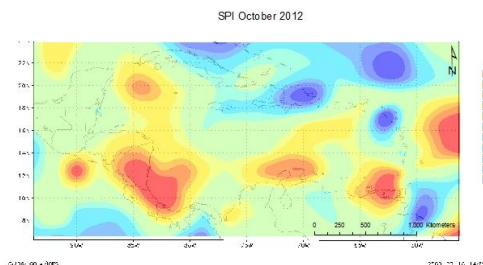


Figure 1. SPI for the Caribbean for October 2012. More information on the SPI can be viewed at <http://63.175.159.26/~cdpmn/spimonitor.html>.

Most annual cropping takes place over a period of about three months or just over. Trinidad and Dominica were moderately dry; Tobago, Barbados, St. Lucia and Antigua normal; and St. Vincent abnormally wet. Conditions in Guyana ranged from moderately wet in the north to moderately dry in the

east. Conditions in Jamaica were normal to moderately wet. Belize was moderately dry in the south and abnormally dry in the north. See Figure 2.

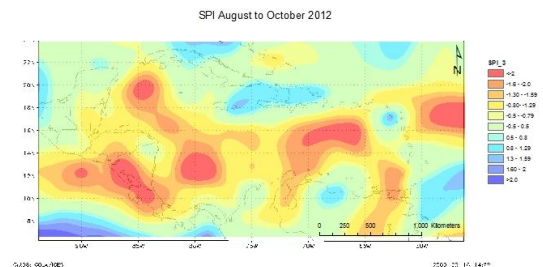


Figure 2. SPI for the Caribbean for August to October 2012 more information on the SPI can be viewed at <http://63.175.159.26/~cdpmn/spimonitor.html>

Concerns about agricultural drought exist in the southern Caribbean, particularly in the vicinity of Grenada; this is even if rains in the next few months become more normal. If the pattern of below normal rainfall continues, agriculture can be impacted significantly, particularly in late wet season/early dry season period. There is also some concerns about water resources in general if persistent.

Five tropical cyclones, (Oscar, Patty, Rafael, Sandy and Tony) developed over the Atlantic Basin during October with Sandy and Rafael in particular impacting out countries (the other tropical systems being generally weak and remained over open water).

NATIONAL OVERVIEWS

Antigua

Antigua experienced near record total rainfall during October. The average total for the month of 321.8mm was the second highest on record for October (1928 – 2012); this was 200% of the normal total (1981 – 2010). Only October 2008 had a higher total – 384.3 mm. At the airport, the 18 rainy days (≥ 1 mm) were also well above normal and tied for the third highest on record (1971 – 2012); further, there were five heavy rainfall days (≥ 10 mm), which accounted for 72% of the total rainfall. The mean temperature of 27.1°C was below normal. Further, the mean daily maximum and minimum temperatures were below normal and near normal respectively. The outlooks call for near normal rainfall and temperature for the period November to January. The meteorological drought, which started in February, ended with the showers of the month. Some showers were very heavy and caused some soil erosion and crop loss; however, the aftermath has been very positive, as it removed the huge rainfall deficit and spurred crop planting and growth.

Barbados

While Rafael was still being described as a strong tropical wave in combination with a low pressure system, it generated sustained tropical depression force winds across Barbados on 12th (46 TO 56 km/hr); some of these occasionally gusted to tropical storm force. It was finally up-graded to T.S Raphael that same day 12th

Rainfall was more evenly distributed across Barbados during October when compared with the previous month (September) but the total of 91.6mm at the Airport was only 50% of the long-term mean (1981-2010) and ranks as the 15th lowest October total based on records from 1942 to the present. The fourteen rain days (rainfall \geq 1.0mm) was just two short of the long-term mean with eleven of these occurring during the first two dekads of the month.

There were sixteen days on which the maximum temperature was \geq 31.0°C with the highest maximum temperature of 31.5°C occurring on October 11th. The 30-year mean for October is

30.7°C. The lowest minimum of 23.4° occurred on October 30th.

Belize

Due to a cold front, showers and thunderstorms occurred across the entire country on the morning of 3rd. Later in the morning, the rain subsided and retreated to northern coastal Belize. Barton Creek in western Belize recorded 78mm, while Big Falls Planation in the Toledo district measured 48mm. Libertad in the north measured 34mm. More showery weather continued the following morning with concentration along coastal Belize. Showers and thunderstorms established a pattern for two consecutive evenings of developing along and offshore of the coast before affecting coastal areas. Showers also developed along the coast on 5th.

On 9th skies were cloudy as showers occurred inland. On 11th showers and thunderstorms increased across the country. The showery weather continued until 13th ending in coastal areas. The coastal showers decreased on 14th although they continued to develop over northern and coastal Belize.

Table 1 Rainfall and Temperature Summary for October 2012 for stations in Belize

Station	Libertad	Zoo	PGIA	Belmopan	Central Farm	Savannah
Elevation (m)	12	30	5	90	90	13
Rainfall (mm)	166	204	311	442	185	37
Mean.	192	312	273	221	200	299
Max	34	50	55	158	23	15
Rain days	13	11	14	16	10	4
Temp (°C)						
Mean	21.3	20.9	23.1	22.1	21.7	23.5
Min.						
Mean	21.4	21.9	23.1	21.5	21.7	23.3
Lowest	15.8	19.4	19.4	16.5	16.5	23.0
Min.						
Mean	31.4	30.9	30.3	30.9	31.1	32.2
Max.						
Mean	31.6	31.2	30.4	30.9	31.2	31.0
Highest	35.0	34.3	32.9	33.9	35.0	33.0
Max.						

During 15th, weather conditions turned out mostly sunny prevailing for the remainder of the week. Hurricane Rafael's large rotation meant light surface winds and hot daytime temperatures for the country. A surface trough induced unstable conditions on 20th morning. Pomona in the south recorded the highest rainfall with 44mm. Several showers occurred over coastal and central Belize throughout the day.

Persistent rain during the night occasioned much flooding for city streets. The rains continued the following two days with virtually the entire coastal region of the country experiencing sustained rainfall. The International Airport measured 55mm.

On 23rd Hurricane Sandy's outskirts induced showers at sea which headed onshore. Showers occurred mainly inland and in the south during 24th afternoon.

Dominica

Rainfall totals were normal at the Canefield and Melville Hall Airports for October 2012.

During the month 190.1mm of rainfall was recorded at Canefield which is about 101% of the monthly mean. The maximum daily total was 43.8mm recorded on the 13th as Tropical Storm Rafael moved across the region resulting in thundershowers and the maximum wind gust of 44km/hr. There were 17 dry days, the majority of which occurred during the latter part of the month resulting in a dry spell length of 13 days. On average there are 15 dry days and a maximum dry spell length of 7 days at Canefield. The averaged air temperature was 28.6°C which is 0.1° greater than the monthly mean. The highest temperature was 33.8°C recorded on the 26th while the lowest temperature was 21.4°C recorded on the 21st.

303.0mm of rainfall was recorded at Melville Hall which is approximately 95% of the monthly mean. The maximum daily total was 78.5mm recorded on the 12th from the tropical wave which later developed into TS Rafael. There were 12 dry days and a maximum dry spell length of 6 days. The averaged air temperature was 28.0°C which is 0.2° below the monthly mean. The maximum temperature was 32.3°C recorded on the 28th while the minimum temperature was 22.0°C recorded on the 21st. The maximum wind gust was 70km/h which was recorded on the 12th.

The distribution of rainfall, especially on the west coast of the island, presented some challenge to farmers cultivating on open, rain-fed fields. Farmers were hesitant to plant and those whose crops were almost ready for harvesting saw a reduction in yields; particularly of vegetables. The weather however, favoured the control of *black sigatoka*.

Guyana

October 2012, based on the rainfall data collected from the ten (10) administrative was below normal. Guyana had an average of 54.7 mm of rainfall with an average of 5 rainfall days. The climatological average for October is 113.8mm with 10 rainfall days. Wauna Oil Mill in Region 1 (Barima Waini) recorded the highest rainfall with 156.0mm. The highest one day rainfall total was recorded at Wakenaam in Region 3 with a total of 97.1mm on the 13th. A total of thirty nine (39) rainfall stations across Guyana recorded rainfall values below their climatological normal, while five (5) stations recorded above their rainfall normal.

October was warmer than normal, with average maximum temperature for the month of 33.5°C when compared to the climatological average of 31.8°C. Lethem (Region9) recorded the highest average monthly maximum temperature of 35.6°C; also Lethem, also on the 14th, reported the highest one day maximum temperature with 36.9°C which implied that hot weather conditions prevailed over Guyana in October.

Jamaica

Jamaica continues to see a significant increase in the levels of rainfall. Throughout the month, the island was affected mainly by Low Level Troughs. However, on 24th, the island was directly impacted by category one Hurricane Sandy during the month, whose eye moved across the eastern sections of the island with wind speeds in excess of 118 km/hr. Extensive damage was reported across the island with more than 70% of the population left without piped water and electrical power.

During the month, Sangster in the northwest recorded 187.4 mm of rainfall, while Norman Manley in the southeast recorded 232.2 mm. There were fifteen rainfall days reported for Sangster, while Norman Manley International airports recorded eight rainfall days. Both Sangster and Manley recorded above average rainfall, Sangster was approximately 117% of the 1971-2000 meanwhile Norman Manley recorded 149% of the 1971-2000 mean.

The highest maximum temperature recorded for Sangster Airport was 33.8°C (2nd) while 34.3°C (21st)

was reported for Norman Manley Airport.

Table.2 Climatological Statistics for Manley and Sangster Airports for October 2012

Monthly Averages	Norman Manley	Sangster
Extreme Maximum Temperature	34.3 °C (34.1°C)	33.8 °C (33.8°C)
Lowest Minimum Temperature	22.5 °C (23.1°C)	22.5 °C (22.4°C)
Rainfall Total	232.2 mm	159.5 mm
Rainfall days (≥1mm)	8 days (9.5)	15 days (18.0)

Values in red indicate the 1992-2010(19-year) averages.

St Lucia

October this year produced above normal rainfall in the south of the island while rainfall in the north of the island remained near normal. At Hewanorra, there were 18 rainy days of which 5 produced rainfall in excess of 10 mm and 4 in excess of 20 mm. The highest daily rainfall was 74.3 mm on the 12th. George Charles recorded 238.2 mm (87% of the mean). There were 15 rainfall days with 6 days producing more than 10 mm and 4 days with rainfall greater than 20 mm. The highest daily rainfall was 62.4 mm on the 12th.

For Saint Lucia, November is usually drier and less humid than October. The seasonal precipitation outlook for the November, December and January period indicate the likelihood for rainfall to be near normal or to range from about 307 mm to 399 mm in Vieux-Fort and from 399 mm to 538 mm in Castries. At Hewanorra, the mean maximum temperature is 30.2 °C and range from 29.1 °C to 31.2°C while the mean minimum temperature is 24.4 °C and range from 21.0 °C to 25.6 °C.

Table 3 September monthly averages at Hewanorra

AVERAGE MONTHLY DATA FOR HEWANORRA					
Cloud Cover (oktas)	Wind Dir (o from N)	Wind Speed (kt)	Air Temp. (°C)	RH (%)	Rainfall (mm)
4	90	09	28.3	78	137.6
Temp (oC)	Min Temp (°C)	Daily Sunshine (Hrs)	Daily Evap (mm)	Soil 20 (°C)	
31.4	25.2	9.1	7.4	29.6	

Farmers should continue to employ best agricultural practices on their farms including proper drainage,

pruning and other field sanitation measures to minimise the occurrence of pests and diseases.

St Vincent and the Grenadines

Total rainfall for October, at E.T. Joshua Airport-Arnos Vale was 267.6mm; about 13mm less than the 30 year average (1981-2010) On the 14th, torrential rains associated with Tropical Storm Rafael triggered some landslides in the north of mainland St. Vincent. Then, unstable conditions from a trough system which was eventually named 'Sandy' resulted in 60.4mm of rainfall on the 18th, causing some localized flooding. There were 18 rain-days, the highest being 60.4mm on the 18th. The distribution showed the first dekad (ten day period) had ~15%, the second dekad had 69%, and the third dekad had 16% of the total monthly rainfall. The average maximum temperature was 31.2° C, and the average minimum temperature was 25.1° C. Extreme maximum temperature recorded for October was 0.9°C higher than the 30-year average, while extreme minimum temperature was 2.0°C lower than the average. The mean relative humidity of 75.5% was 2.5% below the average.

Extremes for October (date of occurrences): Barometric Pressure – highest 1016.6 mb (2nd, 8th), lowest 1009.0 mb (11th); Air Temperature – highest 33.3°C (7th), lowest 21.0 °C (25th); Relative Humidity – highest 96% (21st,24th), lowest 55% (31st).

Trinidad and Tobago

In October 2012, rainfall recorded at the Observing station in Piarco International Airport, Trinidad was 104.4 mm. This amount was 52% below the long-term average (1971 to 2000). Rainfall at the A.N.R. International Airport, Crown Point, Tobago was 217.7 mm, 9% above the long-term average. There were reports of flooding and strong winds in parts of Trinidad and Tobago on 13th October associated with the passage of Tropical Storm Rafael.

No reports of damages to the Agricultural community were received.

REGIONAL OVERVIEW ON SEASONAL CLIMATE FORECAST

Rainfall in the Caribbean during November-December-January will likely be generally consistent with a combination of neutral to borderline El Niño conditions combined with above normal tropical and sub-tropical North Atlantic sea surface temperatures (SSTs). This means an increased likelihood of normal to above normal rainfall over the north-eastern Antilles, mostly normal rainfall over the remainder of the Antilles, but with increasing chances of below normal rainfall towards the southernmost islands. Following this North to South trend, rainfall in the Guianas is expected to likely be below normal to normal. With an El Niño relatively likely suppressing excessive rainfall especially in the eastern Caribbean, the effect of an El Niño will either dominate (below normal rainfall) or not (normal rainfall) the southernmost Antilles.

With this understanding, and with the southern portion of the Caribbean already experiencing below normal rainfall (and in the case of Grenada well below) there needs to be careful monitoring of water resources and soil water availability over the next three months.

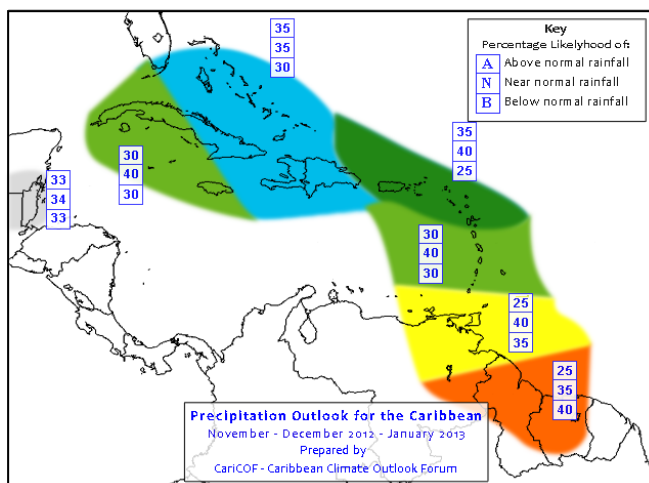


Figure 3 The November 2012 to January 2013 Rainfall Forecast

Warmer than average conditions are also expected over the eastern Caribbean and the Guianas during the period. The western part of the Caribbean is expected to also experience slightly above normal air temperatures.

Currently, Caribbean SSTs hover around average, while North Atlantic SSTs are up to 1°C above average. Such conditions are expected to last through Nov-Dec-Jan. Depending on how El Niño manifests and affects rainfall, air temperatures could be either slightly above normal over the Antilles if not, or significantly above normal if so does happen as dryer conditions settle.

As in any six month forecast, there is considerable uncertainty as to the development of rainfall activity in the region, although forecasting confidence is expected to improve as the Caribbean approaches and enters the dry season. It is somewhat likely that rainfall in the south-eastern Caribbean may generally be below normal, whereas north-eastern portions may experience above normal rainfall, but increasingly likely that rainfall would become more normal across the basin in the latter part of the period (which represents the heart of the 2013 dry season). The possibility of a normal dry season following a below normal wet season (if this continues for the rest of the calendar year) in countries like Grenada may suggest that the possibility for insufficient water for agriculture would be of great concern.

ENSO Conditions:

After a summer with equatorial SSTs above 0.5°C, El Niño appeared to be in place, but has surprisingly largely dissipated. Since slightly less than 50% of climate models are predicting a re-emergence of borderline El Niño conditions in the next months, a below normal rainfall scenario is expected to possibly manifest to a modest degree.

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