



**ANNOUNCEMENTS**

The weak La Niña is now over and neutral conditions exist. As the atmospheric conditions reset, there is still likely to be normal to above normal rainfall until about April except for in the countries in the west. Some models are indicating the possibility for a return to El Niño conditions around September to November, but this will be closely monitored and updates provided. **The portal of the Caribbean Society for Agro-Meteorology (CariSAM) is now open and functional. Agricultural interest can register and access relevant information and be part of future capacity building exercises, and more... (<http://carisam.cimh.edu.bb/>).**

**REGIONAL OVERVIEW ON WEATHER AND CLIMATE FOR JANUARY 2017**

Rainfall quantities were varied across the islands of the eastern Caribbean during January. Conditions in Trinidad ranged from slightly dry in the northwest to moderately wet in the southeast; Tobago slightly wet; Grenada, St. Lucia, Dominica and Antigua normal; Barbados from normal in the north to severely dry the southeast; and St. Vincent slightly dry. Conditions in Guyana ranged from normal in the north to very wet in the south. In Jamaica, conditions ranged from normal to moderately dry, but Belize was normal apart from in the north that was normal to moderately dry.

Most annual cropping takes place over a period of about three months. Predominantly normal to above normal rainfall was experienced in the islands of the eastern Caribbean for the period. Trinidad was normal to moderately wet; Tobago slight to moderately wet; Barbados moderately wet in the north to extremely wet in the south; St. Vincent exceptionally wet; St. Lucia moderate to exceptionally wet from north to south; Dominica from normal in the north to exceptionally wet in the south; and Antigua slightly wet. Conditions in Guyana ranged from normal in the vicinity of Georgetown to exceptionally wet in the south of Guyana and southwest Suriname. Aruba was

moderately wet, but Curacao moderate to very wet. Conditions in Puerto Rico and the Dominican Republic ranged from normal in the south to exceptionally wet in the north. Though much of Jamaica was normal, the west was slight to moderately dry and the north slight to moderately wet, but Belize ranged from moderately wet in the south to slightly dry in the north.

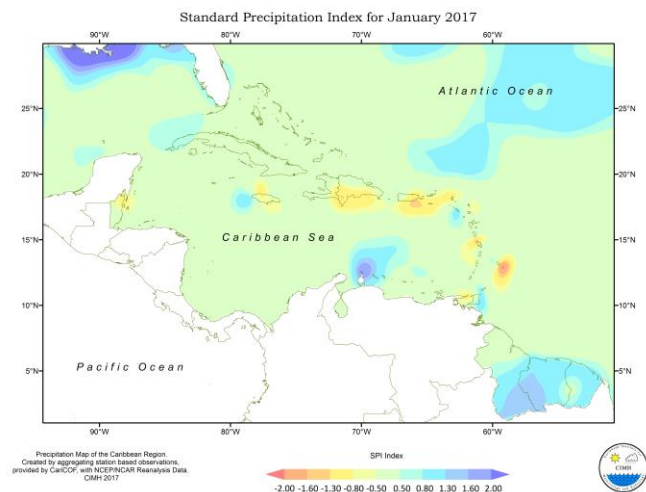


Figure 1. SPI for the Caribbean for January 2017. More information on the SPI can be viewed at <http://rcc.cimh.edu.bb/climate-monitoring/spi-monitor/>.

Subsidence due to a strong Bermuda-Azores High Pressure system remained fairly strong throughout the month thus limiting deep convective, and by extension rainfall, particularly heavy events. Occasional low level clouds moving across the region generated by the high pressure system were mainly responsible for the rainfall (light and at times,

moderate showers) during the month. A few trough systems also influenced the weather pattern across the Caribbean resulting in lower temperatures at those times.

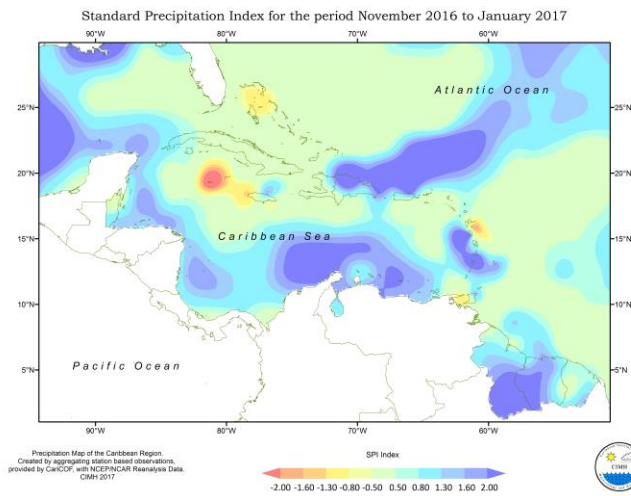


Figure 2. SPI for the Caribbean for November 2016 to January 2017. More information on the SPI can be viewed at <http://rcc.cimh.edu.bb/climate-monitoring/spi-monitor/>.

**NATIONAL OVERVIEWS**

**Dominica**

Dominica experienced normal rainfall amounts across the island during the month of January. Clouds pushed by the Bermuda-Azores High and southward dipping fronts contributed to the monthly rainfall total.

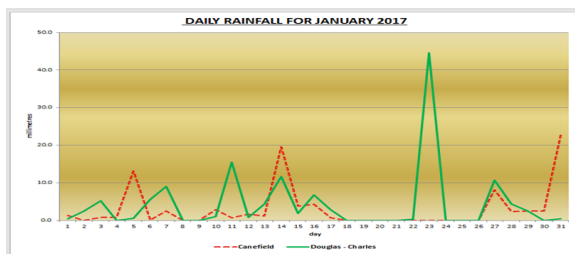


Figure 3 Daily rainfall at Canefield and Douglas-Charles Airports, Dominica during January 2017.

A total of 90.8mm was recorded at Canefield Airport. The highest 24-hour rainfall of 22.6mm, recorded on the 31<sup>st</sup>, was as a result of the High. There were 14 wet days (2 days below average). The second half of the month experienced a 10-day dry

spell. The average air temperature was 26.3°C (near average). The highest temperature for the month was 31.9°C recorded on both the 5<sup>th</sup> and 27<sup>th</sup>. The 13<sup>th</sup> had the lowest temperature of 18.8°C. The average wind direction was southeast at 7km/h. The High Pressure System generated the month’s highest gust of 67km/h on the 2<sup>nd</sup>.

A total of 130.7mm was recorded at Douglas-Charles Airport. The highest 24-hour rainfall of 44.6mm, recorded on the 23<sup>rd</sup>, was also as a result of the High Pressure System. There were 15 wet days (4 days below average). The second half of the month experienced a 5-day dry spell. The average air temperature was 26.0°C (near-average). The highest temperature for the month was 29.8°C recorded on the 6<sup>th</sup>. The 22<sup>nd</sup> had the lowest temperature of 18.5°C. The average wind direction was east-southeast at 15km/h. The Bermuda Azores High also produced the month’s highest gust of 63km/h on both the 16<sup>th</sup> and 29<sup>th</sup>.

Farmers continued the establishment of vegetables both by the open field and protected production methods. Prevailing weather conditions have resulted in a decline in production of certain vegetables like tomatoes. White yam establishments have begun decreasing because many farmers at lower elevations are moving to Ladies yam and other varieties which can withstand the expected dryer conditions. Root crops, pineapples and vegetables are the main crops currently being established. The main crops harvested for the month were: dasheen, yams, ginger, and string beans. Citrus is on the decline. The passionfruit season is now closing and the late avocado crops are being harvested.

There were reports of pest problems in vegetables during the month. Mite and Aphid infestations were observed. The Scale Insect infestation levels are on the decline as natural enemies are being released. The Giant African Snail Program experienced some setbacks due to the lack of slug baits. However, Quarantine Officers conducted manual collection of snails. The population and spread of the snail is of concern to officers. The Black Sigatoka Disease is showing increase signs of infestation in areas experiencing high rainfall and moisture levels.

**Grenada**

For the second consecutive year, January’s rainfall was below average, and measuring 52.3mm. This amount was 15.24% or 9.4mm below the 30-year average of 61.7mm.

The highest 24-hour rainfall of 19.6mm was recorded on the 6<sup>th</sup>. However, conditions on the 21<sup>st</sup> produced 9.7mm of rainfall, with prolonged showers in the St. Mark, St. John and Balthazar area where a bridge was flooded.

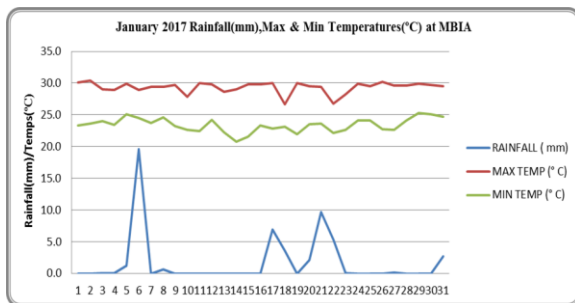


Figure 4 January daily rainfall, as well as daily maximum and minimum temperature at Maurice Bishop International Airport.

Frontal troughs resulted in 20.8°C, 21.6 °C and 21.9°C on the 14<sup>th</sup>, 15<sup>th</sup> and 19<sup>th</sup> respectively. The minimum of 20.8 °C was the lowest for the past 4 years and also lower than the 30-year average. The mean minimum temperature was 23.4 °C.

Daily mean temperature of 26.4 °C, was just below the average of 26.5°C. The highest maximum temperature of 30.4 °C was recorded on the 2<sup>nd</sup> and was below the average of 30.7°C, while the mean maximum of 29.3°C was also below the average of 29.7 °C.

Strongest winds, peaking on the 14<sup>th</sup>, were generally from the east-northeast to east at 24-40km/h with a gust of 60.8km/h. Fishermen experienced moderate to rough seas as a result of the strong winds and small craft and marine advisories were issued on the 1st – 3rd, 7th and 8th, 11th – 17th and 28th – 31st of the month. The monthly catch was limited to lobster, conch, red hind, barracuda and ballyhoo.

Despite the below normal rainfall, farmers were still able to produce good yielding crops like banana, plantain, pak choi, yams, tania, citrus, breadfruit, green peas, chive, thyme, cabbage and parsley.

**Guyana**

Guyana was predominantly wetter than normal for January, with a monthly average rainfall of 259.1mm across the country over 15 rain days on average. The highest monthly rainfall total was recorded at Fort Island Essequibo River station, Region 3, with 588.0mm over 25 rain days, while the lowest monthly rainfall was recorded at Lethem, Region 9, with a total of 10.3 mm over 4 rain days. The highest 24-hour rainfall total was recorded at the Bush Lot station, Region 5, with 180.3mm recorded on the 3<sup>rd</sup>. Most of the stations recorded above normal rainfall conditions, but stations in Regions 2, 6, 8 and 9 recording rainfall totals below their averages.

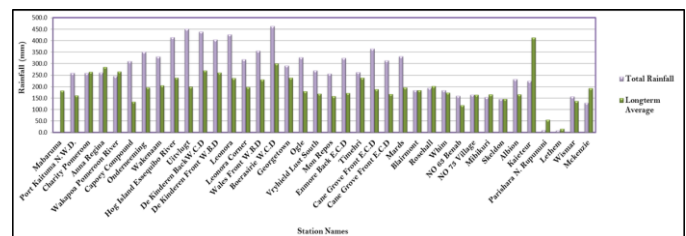


Figure 5 Rainfall totals for January 2017 compared with January averages at select stations in Guyana.

For the month of January, the highest temperature was recorded at Lethem, Region 9, with a value of 34.5°C on the 6<sup>th</sup>. Lethem also recorded the highest mean maximum temperature of 32.9°C, along with the highest one day minimum temperature of 31.5°C on the 31<sup>st</sup>. Georgetown, Region 4, recorded the highest mean minimum temperature of 26.4°C.

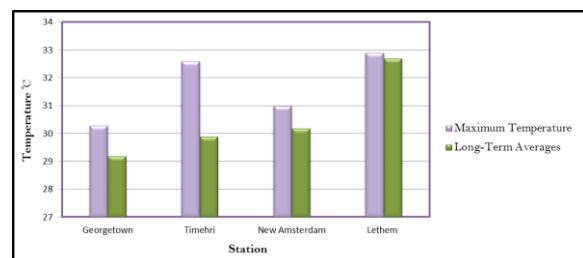


Figure 6 Maximum temperature for January 2017 compared with January averages at select stations in Guyana.

**St. Lucia**

Saint Lucia experienced near normal rainfall for the month of January. At Hewanorra Airport the monthly rainfall total was 72.2mm and at George Charles Airport the total was 110.4mm, which is near average. There were 9 rainy days at Hewanorra and 14 rainy days at GFL Charles. Three (3) dry spells occurred at Hewanorra with the longest lasting 6



days. There was only 1 dry spell at GFL Charles Airport, lasting 7 days.

February is one of the driest months in Saint Lucia. The mean rainfall for February at Hewanorra is 51.5mm and 75.5mm for GFL Charles Airport. The seasonal precipitation outlook for the February, to April period suggests the likelihood for rainfall to be in the above normal category or to range from 187mm to 531mm at Hewanorra and from 245mm to 580mm at George Charles.

Table 1 January 2017 monthly averages at Hewanorra Airport, St. Lucia.

Cloud Cover (oktas)	Wind Dir (° from N)	Wind Speed (kt)	Air Temp. (°C)	Rainfall Mean (mm)	Rainfall Total (mm)
5	80	13	26.3	79.3	72.2
RH (%)	Max Temp (°C)	Min Temp (°C)	Daily Sunshine (Hrs)	Daily Evap (mm)	Soil 20 (°C)
74	29.3	24.0	9.1	6.3	24.8

Table 2 January 2017 monthly averages at George Charles Airport, St. Lucia.

Cloud Cover (oktas)	Wind Dir (° from N)	Wind Speed (kt)	Air Temp. (°C)	Rainfall Mean (mm)	Rainfall Total (mm)
4	85	7	26.4	110.5	110.4
RH (%)	Max Temp (°C)	Min Temp (°C)	Daily Sunshine (Hrs)	Daily Evap (mm)	Soil 20 (°C)
75	28.6	22.7			

The average minimum and maximum air temperatures at Hewanorra and GFL Charles Airport were slightly above average for the month of January.

There is no concern with regard to drought. However, farmers should continue to monitor their water resources as the dry season continues, with impactful dry spells being likely.

**St. Vincent**

Dry and windy conditions persisted for the month. Total monthly rainfall recorded at the E. T Joshua airport was 105.6mm, approximately 27mm below the 30-year average of 132.2 mm. On the 19<sup>th</sup> heavy rainfall occurred in the north of the island resulting in flooding. Highest total monthly rainfall of 345.6mm was recorded in the Montreal area. There

were 16 rain-days; with the highest 24-hour rainfall (24.9mm) being recorded on the 1<sup>st</sup>. There were 15 days with rainfall < 1mm. The first dekad (ten-day period) had ~53.7%, the second dekad 24.2%, and the third dekad 22.1% of the month’s rainfall.

The highest wind gust recorded at the E.T. Joshua Airport – Arnos Vale was 55km/h on the 2<sup>nd</sup>. Sea swells were moderate to rough in open waters.



Figure 7 Average monthly rainfall compared with the January 2017 rainfall totals at E. T. Joshua Airport, St. Vincent and the Grenadines



Figure 8 Daily rainfall and minimum temperature for January 2017 at E. T, Joshua St. Vincent.

The average maximum temperature was 29.2°C, and the average minimum temperature was 24.1°C. The extreme maximum temperature recorded was 30.0°C, same as the 30-year average. The extreme minimum was 21.1, 0.2°C lower than the 30-year average. The mean relative humidity was 72%.

**REGIONAL OVERVIEW ON SEASONAL CLIMATE FORECASTS**

The borderline to weak **La Niña** is over and neutral conditions currently exist, as sea-surface temperatures (SSTs) are less than 0.5°C below average in the equatorial E. Pacific (NINO3.4). Neutral conditions will likely exist until the summer, but some models are suggesting there can be return to El Niño conditions by September to November

2017, but this will be monitored and updates released. With conditions trying to re-adjust themselves after the weak La Niña, above normal rainfall might be possible initially with greater uncertainty in the longer term.

**Sea Surface Temperatures (SSTs)** are up to 0.5°C above-average within the Caribbean and east of the islands. SSTs north of the Greater Antilles are now near-average. Near normal SSTs are expected to return to the Caribbean by May to June. Until then, the above normal SSTs in the region is likely to result in normal to above normal rainfall. The strength of the trade winds is hardly predictable at seasonal time scales.

**February to July 2017**

Apart from in the northwest around Cuba, The Bahamas and Belize that should experience normal to below normal rainfall, the majority of the Caribbean should have normal to above normal rainfall for the period February to April 2017. There is however, much uncertainty for Jamaica, Guyana and the ABC islands.

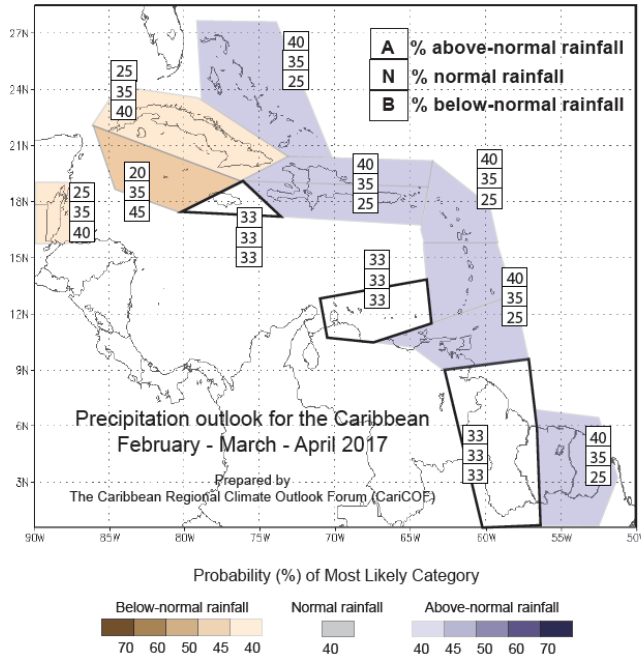


Figure 9 The February to April 2017 rainfall forecast

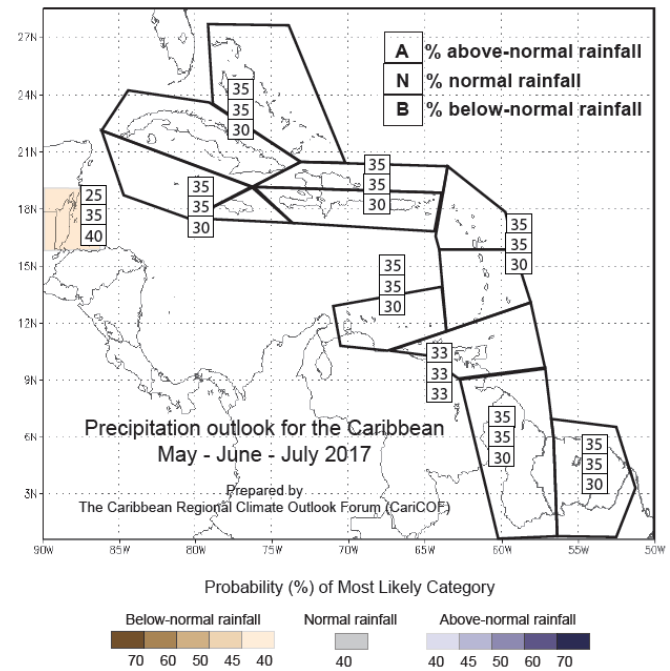


Figure 10 The May to July 2017 rainfall forecast

With the atmosphere trying to adjust after a weak El Niño, and apart from Belize where there is greater likelihood for normal to below normal rainfall, there is much uncertainty in what will happen for the May to July period. These months, however represent the transition and early wet season months, so increases in rainfall from the heart of the dry season is highly likely. An update for this period would come later and should offer much greater certainty.

Forecasted conditions would suggest that short term drought concerns would mainly exist in the western Caribbean in parts of Cuba and the Cayman Islands, with parts of The Bahamas, western Cuba, Jamaica and Haiti needing to monitor water resources, particularly from irrigation ponds and smaller river. It is also suggested that southern French Guiana also monitor its resources. The west is also a concern regarding long term drought until the end of May, but concerns also exist for parts of the southern Caribbean, particularly Tobago. Trinidad, Grenada and French Guiana should closely monitor their groundwater and large-rivers.

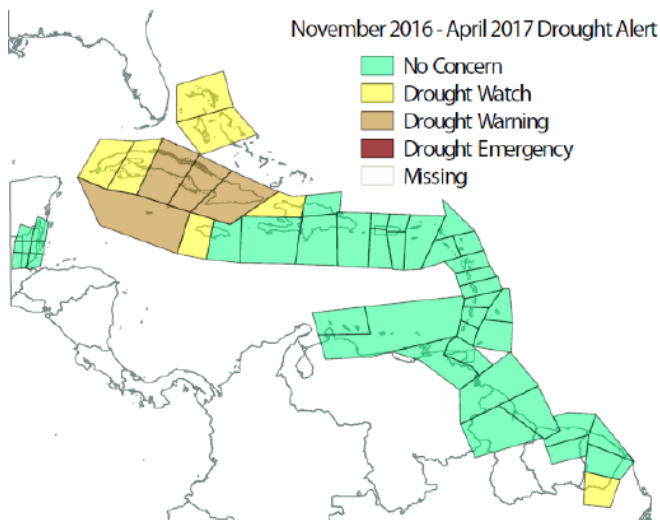


Figure 11 Drought Alert map (based on the SPI) for the end of April 2017, based on actual and forecasted rainfall for the period November 2016 to April 2017.

### Forecast Implications for Agriculture

Concerns over water availability is normal for the dry season period across the Caribbean. However, concerns are heightened in the western Caribbean over short- and long-term drought until April/May 2017. Where irrigation water is available in those areas, farmers would have to be prepared to use more water than normal at this time, and producing would likely be more costly. In those areas in the west and in the southern Caribbean where watches are recommended, agricultural interests should closely monitor water supplies. In some areas where irrigation water is available, it may be necessary to decide on whether or not to cultivate entire farm areas or portions.

Though the majority of the eastern Caribbean is not expected to experience drought impacts before April/May, farmers in these parts must still give consideration to having dry spells that could reduce yield to their crops, even if rainfall is normal to above normal, as this is the dry season.

*Prepared by*

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