



ANNOUNCEMENTS

Rainfall will continue to increase during June, removing drought concerns across the Caribbean by August at latest. There are concerns over the potential for flooding and soil erosion (and maybe even worse with landslides), particularly later in the year as La Niña is expected to be established during September to November. It is also possible for above normal temperatures to continue in some places, which can affect livestock, poultry, crops and human labour due to heat stress. CIMH is anticipating the launch of the Caribbean Society for Agrometeorology (CariSAM) shortly. CariSAM will be a platform for engagement, awareness and education, and sharing in areas related to weather, climate and water in the agriculture sector.

REGIONAL OVERVIEW ON WEATHER AND CLIMATE FOR MAY 2016

Mixed conditions were experienced in the eastern Caribbean and Guyana. Trinidad was slightly wet; Tobago, Barbados, St. Vincent, Dominica and Antigua, normal; Grenada slightly dry; and northern Guyana ranging from extremely wet in the north to slightly dry in the east. Jamaica was normal, while Belize was predominantly severely dry apart from the south that was extremely dry.

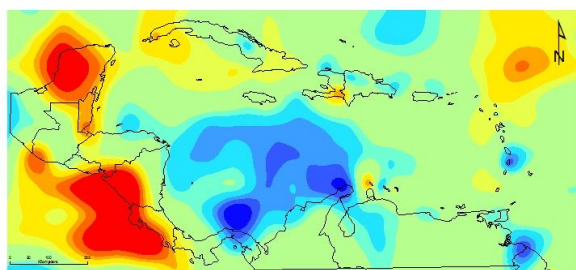


Figure 1. SPI for the Caribbean for May 2016. More information on the SPI can be viewed at <http://rcc.cimh.edu.bb/climate-monitoring/spi-monitor/>.

Most annual cropping takes place over a period of about three months. For the three month period, mixed conditions were experienced in the eastern Caribbean and Guyana. Trinidad and Dominica normal to slightly wet; Tobago, Grenada, and St. Vincent normal; Barbados, slightly dry; St. Lucia very

wet; and northern Guyana ranging from very wet in the north to normal in the east and south. Apart from northwestern areas that were slightly dry Jamaica was normal, but conditions in Belize ranged from severely dry in the south to exceptionally dry in the west.

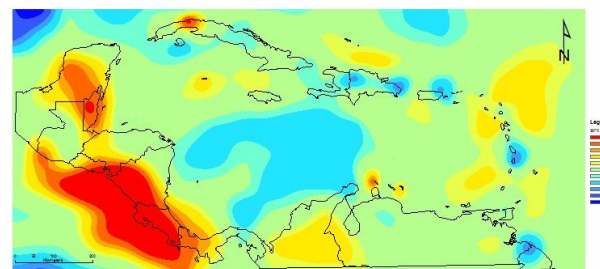


Figure 2. SPI for the Caribbean for March to May 2016. More information on the SPI can be viewed at <http://rcc.cimh.edu.bb/climate-monitoring/spi-monitor/>.

Trough systems and the Atlantic High Pressure System were the dominant features for May. Orographic lifting also helped to enhance rainfall in mountainous areas. Much of the Caribbean experienced above average temperatures.

NATIONAL OVERVIEWS

Antigua and Barbuda

As with the previous seven months, night-time temperatures for May were higher than usual across much of Antigua. At the V. C. Bird international

Airport (VCBIA), the mean daily minimum temperature of 24.9 °C, an indicator of night-time temperature, was above normal and tied with 2007, 1994 and 1980 for the seventh highest on record (1969-2016) for the month.

May 2016 was wetter than that of last year's; however, it was still drier than average. Notwithstanding, the meteorological drought remains at slight levels but the other droughts (agricultural, hydrological and socioeconomic) are moderate or worse. The island-average rainfall for the month was 37.1 mm. At the VCBIA, the number of wet days (days with rainfall \geq 1mm) and heavy rainfall days (days with rainfall \geq 10mm) were near average.

Potable water from desalination remains in excess of 90%, with a very small amount coming from aquifers. The country has been out of surface water for a month shy of one year. Surface water normally contributes about 30% to the water mix. According to an agricultural extension officer, farmers are seeing less water coming to their farms as there seems to be an intensification of water rationing. The officer further indicated that many farmers are only getting water, at most, once per week.

After an unprecedented town hall meeting with the Prime Minister, farmers are cautiously optimistic that their lot in farming will improve soon. They have been promised easier access to funds and storage for their produce among other things.

Despite the harsh dry conditions, farmers continue to produce. Cassavas and sweet potatoes, which are said to be drought tolerant, are being planted. Being harvested are butternut squashes, pumpkins and okras. A number of items are scarce including onions, yam and sweet peppers. Okras are in very low supply, and going for \$7.00 per pound when they are normally sold at \$2-\$3.00. The Giant African Snails continue to be a huge problem; however, Government has promised to provide the Plant Protection Division with funding to mount a credible fight against the pests.

Less unfavourable farming weather is likely over the next six months. The agricultural drought is forecast to end over the next six months, if not sooner.

Belize

May in Belize is considered the hottest month of the year. Indeed May 2016 was hot, but also dry.

From the 1st to the 3rd, dry and stable conditions prevailed. No rainfall was recorded at any of the stations. On the night of the 4th however, pre-frontal activities supported an outbreak of showers and thunderstorms which moved from north to south across the country. On the 5th, the cold front crossed the country with showers observed late that night over the extreme south of the country.

From the 6th to the 15th, a few isolated showers were all that were observed around the country. The bulk of these were observed over the extreme south. From the sixteenth, to the end of the month, fair, warm and mostly dry conditions prevailed.

In conclusion, high temperatures were recorded, but none record breaking. One cold front crossed the country between the fourth and fifth of the month. Even though pre-frontal activities supported showers and thunderstorms, all other days were mostly dry. The final rainfall data shows most of the stations recorded well below the average. In fact, data shows record breaking amounts far below the normal.

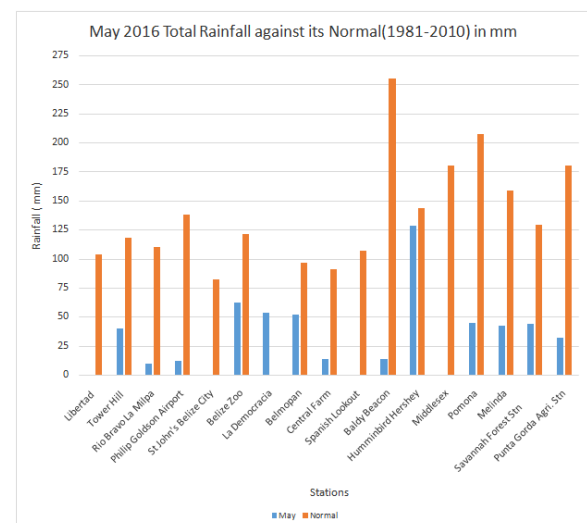


Figure 3. May 2016 rainfall versus the average (normal) for the month at select stations in Belize.

Dominica

An increase in rainfall activity in May resulted in normal to moderately wet conditions across Dominica.

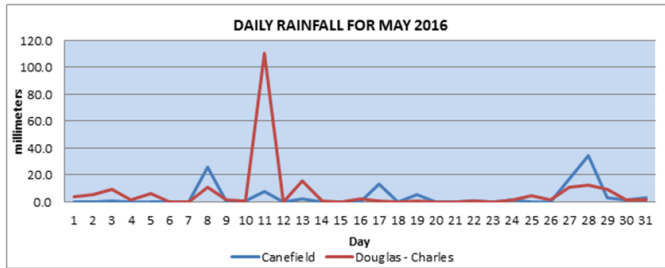


Figure 4 Daily rainfall at Canefield and Douglas-Charles Airports, Dominica during May 2016.

Above average rainfall of 118.8mm was recorded at the Canefield Airport. The highest 24-hour rainfall of 34.2mm was recorded on the 28th. There were 12 rainfall days, 2 days more than average. There was a 7-day dry spell at the beginning of the month. The average air temperature was 29.1°C (near average). The highest temperature recorded was 34.0°C on the 6th and 19th and the lowest 22.5°C on the 11th. The average wind direction was south easterly at 9km/h. Gusty winds were recorded throughout the month. The Atlantic High Pressure System generated the month’s highest gust of 69km/h on the 7th.

Normal rainfall was recorded at the Douglas-Charles Airport. A total of 215.8mm was recorded. Unstable conditions generated by a trough system produced the maximum daily rainfall total of 110.6mm on the 11th. There were 18 rainfall days, 1 day more than average. There was a 7-day dry spell during mid-month. The average air temperature was 28.2°C (near average). The highest temperature recorded was 31.0°C on the 21st and the lowest was 22.7°C on the 02nd and 12th. The average wind direction was east south easterly at 13km/h. Gusty winds were also recorded throughout the month. The Atlantic High Pressure System also generated the month’s highest gust of 44km/h on the 9th.

For the month of May the farming community experienced the transition from the dry/hot season into the wet season. Most farmers were able to conduct their land preparation activities such as land clearing, weeding, pest and disease management and harvesting. Harvesting of vegetables, root crops, bananas, plantains, passion fruit and pawpaw took place. Banana and plantain crop production is on the increase. Ginger farmers established their plots for the season. The majority of ginger acres were established during the month. Livestock farmers did

their livestock husbandry practices. Small ruminants and rabbits gave birth to their young for the season.

Guyana

Guyana experienced above average rainfall during the month of May, with a monthly average of 296mm with 21 rain days. The highest monthly rainfall total was recorded at Kaieteur Region 8 with 773.3mm and 29 rain days. The highest 24-hour total was recorded in Region 6 at Johanna South with 108.9 mm on the 16th. Most of the stations recorded rainfall totals above their long-term averages.

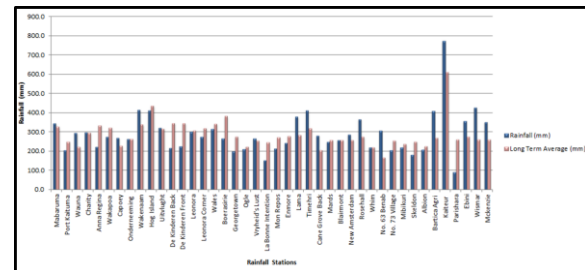


Figure 5 Rainfall totals for May 2016 compared with May averages at select stations in Guyana.

The highest maximum temperature was recorded at Lethem with 34.6^oC, as well as the highest mean maximum temperature of 32.4^oC. The lowest mean minimum temperature was recorded at Timehri in Region 4, with a value of 23.2^oC.

There were no reports of significant effects of the weather on Agricultural production.

Jamaica

Table 1 Rainfall Statistics for Manley and Sangster Airports, Jamaica, for May 2016.

Monthly Averages	Norman Manley	Sangster
Extreme Maximum Temperature	33.4 °C (33.7 °C)	35.0 °C (33.5°C)
Lowest Minimum Temperature	22.3 °C (23.1 °C)	22.2 °C (21.8 °C)
Rainfall Total	65.1 mm (67 mm)	107.6 mm (106 mm)
Rainfall days (≥1mm)	6 days (8.5)	11 days (14.2)

Values in red indicate the 1992-2011 (20-year) averages. Values in orange represent 1971-2000 (30-year) mean.

Sangster in the northwest recorded 107.6mm of rainfall, while Norman Manley in the southeast recorded 65.1mm. Both stations recorded rainfall

amounts close to their 30-year means. There were eleven (11) rainfall days reported for Sangster Airport while Manley Airport reported six (6) rain days.

The highest maximum temperature recorded for Norman Manley Airport was 33.4°C (16th). Meanwhile Sangster Airport reported 35.0 °C (18th), which exceeded the 1992-2011 mean of 33.5.

St. Vincent and the Grenadines

The warm weather experienced in March and April continued into May. However, much needed relief came as weak unstable conditions moved across the islands producing occasional cloud patches and scattered showers. Orographic lifting also helped to enhance rainfall in mountainous areas. Hazy conditions were experienced for a few days, reducing visibility. Light to moderate breeze flowed predominantly from an east-northeasterly direction, occasionally veering to the south-east. These winds generated moderate to rough swells. The highest wind gust recorded at the E.T. Joshua Airport was 52 km/h on the 7th.

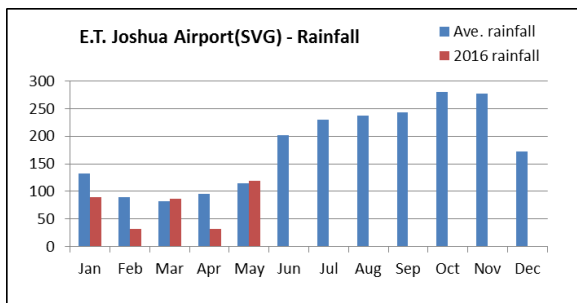


Figure 6 Average monthly rainfall compared with the January to May 2016 rainfall totals at E. T. Joshua Airport St. Vincent and the Grenadines.

On average, May receives 114.4mm rainfall. May 2016 rainfall at the E. T. Joshua Airport was slightly above this average, with 118.8mm. There were 17 rain-days; with the highest 24-hour rainfall (26.5mm) being recorded on the 1st. The 2nd to 7th was the longest period with days of less than 1mm of rainfall. The first dekad (ten-day period) had 32% of the rainfall, the second dekad had 35%, and the third dekad had 32%.

The average maximum temperature was 30.8°C, and the average minimum temperature was 25.7°C. The extreme maximum temperature recorded was 31.9°C; higher than the 30 year average by 0.3 °C. The

extreme minimum temperature was 0.4°C lower than the 30 year average of 23.2°C. The mean relative humidity was 75.5%, this was 0.5% higher than the 30 year average for this station.

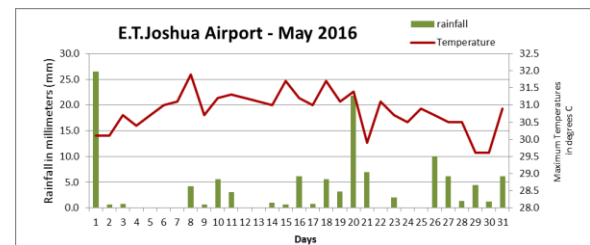


Figure 7 Daily rainfall and minimum temperature for April 2016 at E. T. Joshua St. Vincent.

Trinidad and Tobago

May’s rainfall total at Piarco in Trinidad was 169.0mm or 136.7% of the 1981-2010 average. At Crown Point in Tobago, the total was 56.9mm or 64.1% of the 1981-2010 average.

During the first ten days of May, conditions continued to improve as rainfall increased in occurrence, coverage and intensity. Despite the increase in rainfall, dry weather still occurred over a good portion of the period, as four consecutive dry-days were observed in both islands. Ten-day rainfall totalled 63.0mm at Piarco and 22.0mm at Crown Point. The 1st and 2nd were the wettest days in Trinidad while the 7th produced half of the rainfall in Tobago for the dekad. Even though temperatures were lower, overall, maximum temperatures still climbed above 33.0°C on four days, peaking at 34.2°C on the 6th in Trinidad. Maximum temperatures in Tobago climbed above 30.5°C on only two days. Nights remained warm in Tobago, with seven of the ten nights having minimum temperatures above 26.0°C, while Trinidad’s temperatures dipped below 24.0 °C on six nights.

In Trinidad, during the second dekad, significant rainfall occurred on the 2nd, 4th, 6th and 8th. Flash flooding occurred in a few areas on the 4th - the heaviest rainfall day. Ten-day rainfall amounted to 40.3mm at Piarco, but larger amounts would have occurred in other parts of the island. During the period, temperatures still managed to climb above 33.5°C on three days, peaking at 34.5°C on the 13th. In contrast, Tobago experienced warm and relatively dry weather, which favoured agricultural fieldwork. At Crown Point in the southwest, ten-day rainfall

amounted to only 6.2mm but this would have been slightly higher at a few areas in the northeast of the island. Tobago saw a return to relatively hot conditions with temperatures rising above 31.5°C on six of the ten days to peak at 32.6 °C on the 16th and 18th. Night-time minimum temperatures remained high, staying above 25.0°C on each night.

Wetter and cooler weather dominated the last ten days of May in Trinidad and continued the recent wet trend. Significant rainfall on 21st, 22nd, 23rd, 29th and 30th accounted for the most of the dekad's rainfall in Trinidad. Piarco received just about 50.0mm for the period, but rainfall would have been greater in other parts of the island, especially in the northeast. Meanwhile, much-needed relief from the recent dryness in Tobago occurred during the last ten days with significant rainfall occurring on five days. Ten-day rainfall amounted to 20.0mm at Crown Point, but totals in excess of this were likely elsewhere in the island. Despite the rainy weather, temperatures still managed to peak at 34.5°C on the 26th in Trinidad, and at 32.1°C in Tobago. Night-time temperatures remained above 24.5°C on eight nights in Trinidad and on each night in Tobago.

In some areas, soil moisture supplies for short and medium term crops were more favourable for much of the month. These conditions would have also slowed fieldwork in the wettest areas but the dry periods would have provided good opportunities to continue with planting and other fieldwork.

REGIONAL OVERVIEW ON SEASONAL CLIMATE FORECASTS

El Niño has now weakened toward neutral, as Sea-Surface Temperatures (SSTs) in Niño 3.4 drops below 0.5°C. There continues to be a good chance of a La Niña later in the year. As the El Niño is phased out, normal to above normal rainfall is likely over the islands of the eastern Caribbean and the Guianas. La Niña increases chances of wetter than usual conditions over much of the region during September to November, alleviating long-term drought, but also increasing flash flood, long-term flooding and landslide potential. La Niña is also likely to enhance rainfall activity into the 2017 dry season.

Caribbean Sea Surface Temperatures (SST) are currently up to about 1°C above-average across the Caribbean. **Trade winds** speeds are stronger than average. The higher than average SSTs in the Caribbean are likely to increase convection even further, but should there be stronger than normal trade winds there could be some negating of this effect.

June to November 2016

With El Niño weakened and tending toward neutral, normal to above normal rainfall is expected during June to August for most of the Caribbean. Exceptions to this include Belize where normal to below normal is expected, and The Bahamas, Trinidad and Tobago and the ABC islands where there is great uncertainty. During the September to November period normal to above normal rainfall is also expected for most of the Caribbean. Exceptions to this are likely to be Trinidad and Tobago, Suriname and French Guyana, that are likely to be normal to below normal, and Guyana where there is great uncertainty. Increasing rainfall will likely remove concerns over drought all across the Caribbean by the end of August, though conditions in southwestern Haiti should continue to be monitored.

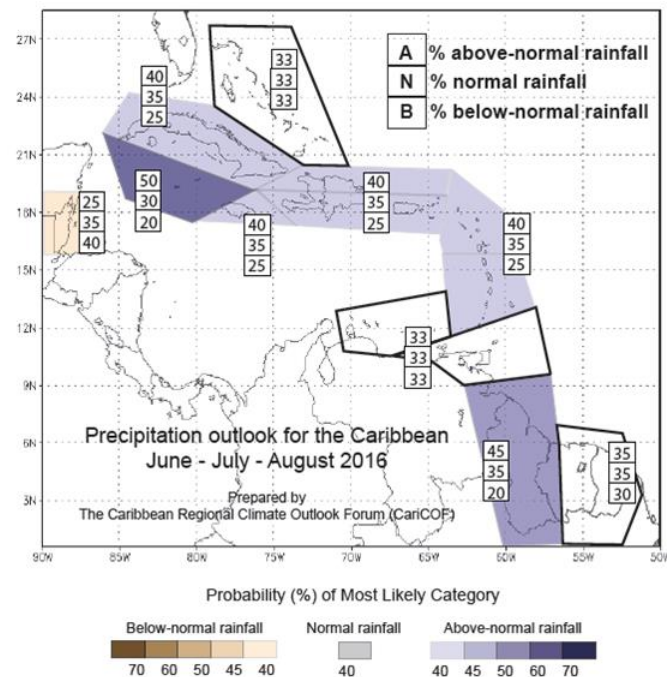


Figure 8 The June to August 2016 rainfall forecast

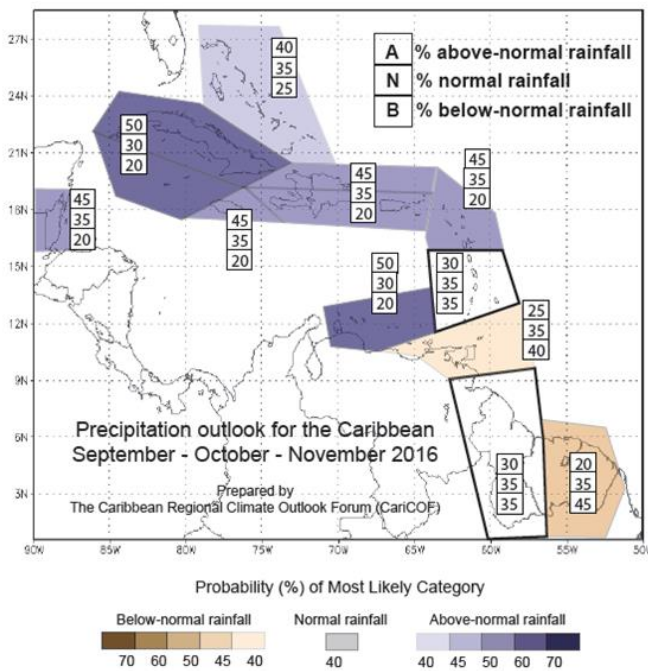


Figure 9 The September to November 2016 rainfall forecast

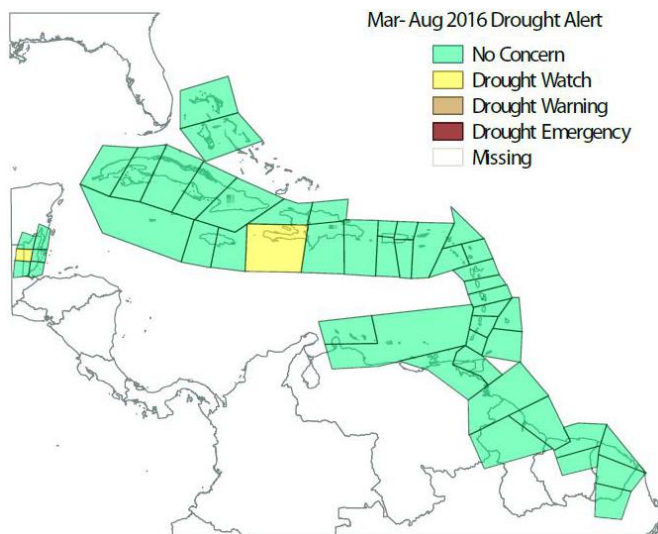


Figure 10 Drought Alert map (based on the SPI) for the end of August 2016, based on actual and forecasted rainfall for the period March to August 2016.

Forecast Implications for Agriculture

With rainfall likely removing concerns over drought all across the Caribbean by the end of August, conditions would be good for cropping and pasturelands across the Caribbean at least until August. Though soil moisture and irrigation availability are expected to be high for the remainder of the year, with La Niña likely; the chance of excessive rains with flooding increases. Such episodes are likely to cause flooding and soil erosion where mitigating efforts, such as properly drained fields and soil cover, are not implemented.

There should still be monitoring of ground water and large reservoirs due to some lingering concerns over long term drought. However, should La Niña develop as is expected later in the year, it is likely that the longer term concerns over drought would be alleviated. Monthly updates will continue regarding these.

The agriculture community should also note that, after experiencing above normal temperatures for significant times during the year so far, this is likely to continue a bit longer in parts of the Caribbean, potentially affecting livestock and poultry, and flowering in some plant species. Farmers out in the fields should also take precaution against high temperatures.

Prepared by
Caribbean Institute for Meteorology and Hydrology (CIMH) and the National Meteorological Services of Antigua and Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St Lucia, St Vincent and the Grenadines and Trinidad and Tobago
CAMI is funded by the European Union in partnership with the institutions that have prepared this bulletin, along with the Caribbean Agricultural Research and Development Institute and the World Meteorological Organization