



**ANNOUNCEMENTS**

The formation of tripartite (meteorologists, farmers and extension officers) committees to sustain activities at the national level have been recommended and are being pursued. Inaugural meetings are anticipated to begin in June, 2012. CAMI has begun an e-discussion that will embrace the suite of issues related to weather and climate influences on agriculture in the Caribbean, particularly issues that would have been raised in last years formers' forums. If interested in taking part, click on <http://mail2.cimh.edu.bb/camionlineforum/>. CAMI encourages and will assist its meteorological services in developing their own national bulletins. CAMI collaborators continue to encourage feedback from farmers and the wider agricultural community on this bulletin.

**REGIONAL OVERVIEW ON WEATHER AND CLIMATE FOR APRIL 2012**

In April 2012, conditions in the eastern Caribbean were normal to above normal. Trinidad was moderately wet; Tobago exceptionally wet; Grenada extremely wet; St Vincent, St. Lucia and Antigua abnormally wet; Dominica normal; and Barbados abnormally dry. Guyana was normal. Jamaica was extremely wet while Belize ranged from normal in the south to moderately wet in the north. These can be seen in the Standardised Precipitation Index (SPI) map in Figure 1.

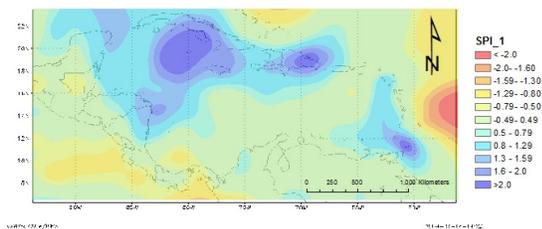


Figure 1. SPI for the Caribbean for April 2012. More information on the SPI can be viewed at <http://63.175.159.26/~cdpmn/spimonitor.html>.

There was a distinction in conditions in the eastern Caribbean between the largely normal north and above normal south. Trinidad was very to extremely wet; Tobago and Grenada exceptionally wet; St.

Vincent extremely wet, Barbados, St. Lucia, Dominica and Antigua. Guyana was normal in the west and abnormally wet in the east. Conditions in Jamaica ranged from abnormally wet in the west to extremely wet in the east; and but Belize was normal. See Figure 2.

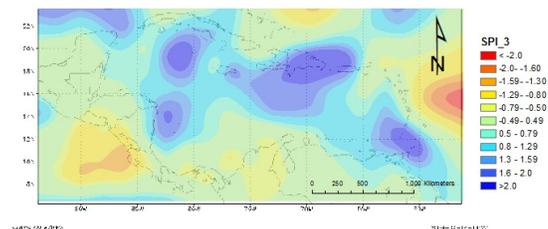


Figure 2. SPI for the Caribbean for February to April 2012 more information on the SPI can be viewed at <http://63.175.159.26/~cdpmn/spimonitor.html>

**NATIONAL OVERVIEWS**

**Antigua and Barbuda**

Antigua experienced above average of 80.8 mm rainfall during April. This is the third highest since 2002, but within the normal range of rainfall for the month. About half of the rainfall occurred in two days (April 19 and 20) due to a deep-layered trough; most of the rest of the rainfall were caused by three separate frontal troughs. At the airport, the 13 rainy days ( $\geq 1$  mm) were also above normal and the

most since 2002; Further, there was an above normal number of heavy rainfall days - three ( $\geq 10$  mm). The mean temperature of 25.9°C was below normal and the mean daily maximum and minimum temperatures were below and near normal respectively. The outlooks call for above normal rainfall and near normal temperature for May. Further, for the period May to July, above normal rainfall and near normal temperature are most likely. Mixed weather for the month allowed for a wide range of agricultural activities including land preparation, planting and harvesting. The above normal rainfall was welcome by farmers as February and March had below normal rainfall totals. Extension officers are indicating that productions were up for the month.

### Barbados

Spotty rain showers during the first twelve days of April generated just 10.3mm of rainfall with the most significant event producing 6.3mm on the 10<sup>th</sup>. While the next five days did not produce any measurable rainfall at the Airport, a deep-layered trough system resulted in some 45.5mm on day 18. A similar event on the last day of April generated another 24.5mm of rainfall which pushed the April tally to 93.0mm or 53% above the 30-year average. The cumulative total rainfall of 295mm at April 30<sup>th</sup> is also 41% above the long-term cumulative average for the same period. There were seven rain days (rain-day= $\geq 1$ mm) which is one short of the long-term average.

Wind-speeds during April averaged 13 knots with a 22-knot wind maximum being recorded on the 23<sup>rd</sup>. Dry-bulb temperatures averaged 26.5°C while maximum temperatures averaged 29.6°C. The highest maximum of 30.6°C occurred on April 28<sup>th</sup>. and the lowest minimum of 21°C was observed on April 14.

The outlook for May suggests that the trough system and associated organized convection which dominated conditions during the first dekad in May are expected to give way to more stable conditions and spotty trade-wind showers for most of the remainder of the month as the high pressure ridge regains its dominance over the Atlantic.

### Belize

On Apr.9<sup>th</sup> evening a broad trough developed over the northwest Caribbean northwest to the Yucatan Peninsula and the central Gulf of Mexico. This feature supported showers and thunderstorms on the windward slopes of the Maya Mountains as well as over northern coastal areas. Isolated showers occurred over southern Belize.

On 17<sup>th</sup> Belize radar located showers clustered mainly in the north and across the border during the morning. Later, small showers were noted over western and southern Belize. Surface charts showed a cold front over the western Gulf of Mexico. The front reached the Bay of Campeche on 18<sup>th</sup>. Virtually the entire day was cloudy and several coastal showers occurred during the morning, then mainly offshore and along northern coastal areas during the afternoon. Considerable rain occurred along coastal Belize during night and early the 19<sup>th</sup> morning.

Hot daytime temperatures generated shower cells over the mainland on 21<sup>st</sup>. By evening showers and isolated thunderstorms developed over both land and northern coastal waters. A front crossed the country early Apr.,22<sup>nd</sup>.

### Dominica

66.6mm of rainfall and 8 rainfall days ( $>1$ mm) were recorded during the month of April at the Canefield Airport on the south-west coast. Total rainfall represents 122% of the mean (1982-2011) monthly total. The highest rainfall amount was 38.0mm on the 30<sup>th</sup> when more than half of the month's total was recorded as a result of the interaction between a trough system and frontal boundary. Average temperature was 27.6°C which was 0.3° lesser than the mean. Maximum temperature was 32.5°C recorded on the 23<sup>rd</sup> while the minimum temperature was 21.0°C recorded on the 14<sup>th</sup>.

Rainfall at the Melville-Hall Airport on the north-east coast was more widely distributed with 132.0mm being recorded. This is 77% of the monthly mean (1981-2010). A trough system contributed to the maximum daily rainfall of 25.0mm on the 20<sup>th</sup>. There were 19 rainfall days. Average temperature for the month was 26.2°C which is 1.0° lesser than the mean. The maximum temperature of

30.8°C was recorded on the 7<sup>th</sup> while the minimum of 21.0°C was recorded on the 14<sup>th</sup>.

Maximum gust at Canefield was 57km/h on the 11<sup>th</sup> and 48km/h at Melville Hall on the 29<sup>th</sup>.

### **Grenada**

At the beginning of April, fishermen on the west coast of Grenada and Carriacou observed that the wind and the seas were calm and the sea surface temperature appeared warmer than the beginning of the year. The fishing catch was quite good. In contrast, by the middle of the month, rough seas were experienced coupled with heavy rain and squalls causing poor visibility and lost of fishing days. Some improvements were notable in the weather conditions towards the ending of the month.

Despite the negative impacts of the flooding and landslides of last month, the saturated soils proved very beneficial to the farming community for the many growing crops. This was evident from the bumper harvest on display at the pre Good Friday Farmers Market. An assortment of fruits and vegetables of brilliant colors, shapes and sizes were bought by customers who expressed their deep satisfaction over the quality and corresponding prices.

The highest and lowest recorded temperatures at the Maurice Bishop International Airport were 30.0°C and 24.1°C respectively.

Total rainfall recorded at the Maurice Bishop International Airport for this month 88.8mm which was 55.2mm or 164% more than the mean for the period 1986-2012. This was the second highest total ever recorded in April. The highest total of 224.2mm was recorded in April 2004. Sixty eight percent (68%) or 61.0mm of this month's total was measured during a 6hr period on the 19<sup>th</sup>. Low level moisture and a dissipating shear line produced cloudy and overcast conditions across Grenada. A flood advisory was subsequently issued. Moderate to heavy showers and rain occurred for the entire morning and most of the afternoon.

On the 20<sup>th</sup>, a surface trough brought torrential rain across the northern parts of Grenada including St

Marks, St Patricks and St Andrews, which subsequently led to landslides and flashfloods. The National Water and Sewerage Authority (NAWASA) suffered significant damage to their dams, pipelines and blockages of the rivers due to heavy siltation. Many residents were left without running water for 5 days. By the end of the month only 50% progress was attained in the restoration of water to the St.Patricks and St. Marks. NAWASA rain gauges in Victoria measured 350mm for the month while in St. Patrick's the rain gauges at Peggy's Whim and Levera measured 224mm and 264mm respectively. The gauges in St Andrews at Belvedere Estate, Mt Alexander and Grand Etang measured 392mm, 370mm and 337mm.

### **Guyana**

The Month of April 2012 for Guyana can be classified as moderately wet. The average rainfall across Guyana was 167.1mm and an average of 11 raindays. The highest monthly rainfall total recorded across Guyana was 328.5mm which was recorded in Letter Kenny in Region 6. Bush Lot in Region 5 recorded the highest one day total of 130.3mm on the 26<sup>th</sup> April, 2012. A total of 24 rainfall stations across Guyana reported rainfall values above their climatological average, while 17 reported rainfall values below their Climatological Average. Regional classification of rainfall across Guyana showed that Region 6 (East Berbice Corentyne) for the month of April recorded the highest average rainfall values of 225.1mm for Guyana.

The low and mid-levels had significant influence on the weather across Guyana for April. Low to Mid-level troughs with strong support from the upper levels provided ideal conditions for rainfall across Guyana. A smooth North Easterly flow pattern was mostly observed across Guyana. The ITCZ did in the latter part of the month have some influence on the weather pattern as this was responsible for increase in the Rainfall values for the month of April.

April was warmer than average, which was due to prevalence of less cloud cover in the first period of the month but temperatures decreased at the end of the month as cloudy conditions became prevalent. The highest average maximum temperature for April was recorded at Lethem in Region 9 with a value of

31.9° C. on the 16<sup>th</sup> April, 2012; Mabaruma recorded the highest one day maximum temperature of 34.4°.

### Jamaica

Above average rainfall was recorded at both Norman Manley and Sangster International Airport compared to the climate mean from 1971 to 2000. Throughout the month, the island was affected mainly by **Low Level Troughs**. There were two major rainfall events for the month (April 19-23 and 26-29) that resulted in flash flooding in some eastern and central parishes.

During the month, Sangster in the northwest recorded 189.2mm (305% of 30-year mean) of rainfall, while Norman Manley in the southeast recorded 83.8mm (279% of mean). There were nine (9) rainfall days for Sangster, while Norman Manley recorded three (3) rainfall days.

The maximum temperature recorded for Sangster Airport was 34.5°C (22<sup>nd</sup> April) while 32.2°C (25<sup>th</sup> April) was reported for Norman Manley Airport. Satellite imageries and automated rainfall data loggers confirmed significant cloud development and rainfall activities affected most parishes, especially towards the latter part of the month.

Table.1 Climatological Statistics for Manley and Sangster Airports for April 2012

Monthly Averages	Norman Manley	Sangster
Extreme Maximum Temperature	32.2 °C <b>(33.2°C)</b>	34.5 °C <b>(32.8°C)</b>
Lowest Minimum Temperature	22.9 °C <b>(21.7°C)</b>	21.9 °C <b>(21.1°C)</b>
Rainfall Total	83.8 mm	189.2 mm
Rainfall days (≥1mm)	3 days <b>(4.2)</b>	9 days <b>(9.6)</b>

Values in red indicate the 1992-2011 averages

### St Lucia

The rainfall was poorly distributed throughout the month. There were only 10 rainfall days and two dry spells, the first started on 26 March and ended on 3 April and the second was from 21<sup>st</sup> to 27<sup>th</sup>. The total monthly rainfall (113.2 mm) represents 152.1% of the long term mean of 74.4 mm. At George Charles, a similar situation existed in terms of rainfall days

and dry spells, but the total rainfall (63.0 mm) was well below the mean of 88.6 mm.

Mean dry bulb temperature (27.2° C) and the mean maximum temperature (30.1° C) were equal to the long term means while the average minimum temperature (24.7 °C) was lower than the long term mean (25.5 °C) for Hewanorra.

May is usually wetter than April and has on average 14 rainfall days, a mean of 75 mm at Hewanorra and 134.1 mm at George Charles. The seasonal precipitation outlook for the May, June and July period indicate the likelihood for rainfall to be near normal or to range from about 298 mm to 413 mm in Vieux-Fort and 398 mm to 556 mm in Castries.

### St Vincent and the Grenadines

Total rainfall for April 2012 at E.T. Joshua Airport-Arnos Vale, was 120.6 mm. This was more than the April mean of 97mm. The longest dry spell/period of consecutive days with rainfall less than 1mm was from 2<sup>nd</sup> to 6<sup>th</sup>, five days.

Cloudiness and shower activity associated with a frontal boundary lingered across the area from the 18<sup>th</sup> to the 21<sup>st</sup>; on the 20<sup>th</sup> April the highest daily rainfall for the month, 54.8 mm was recorded at the E.T. Joshua Airport. On the last day of the month, the country experienced a trough system with associated cloudiness, showers and thunderstorm activity.

Extremes for April, 2012 (date of occurrences): Barometric Pressure – highest 1017.0 mb (11<sup>th</sup>), lowest 1011.3 mb (9<sup>th</sup>); Air Temperature – highest 30.7°C (18<sup>th</sup>), lowest 22.8°C (21<sup>st</sup>); Relative Humidity – highest 93 % (21<sup>st</sup>), lowest 56 % (16<sup>th</sup>).

### Trinidad and Tobago

Dry Season in Trinidad and Tobago has continued to be above normal. Rainfall recorded at the Observing station in Piarco International Airport, Trinidad was 71.1 mm. This amount was 139% above the long-term average (1971 to 2000). Rainfall at the A.N.R. International Airport, Crown Point, Tobago was 165.0 mm, 401% above the long-term mean. There was a dry spell during the first week.

On the 18<sup>th</sup> and 20<sup>th</sup> of April, rainfall amounts were 25.1mm and 16.6mm respectively. The rainfall totals leading up to 20<sup>th</sup> April was 100% of the long-term average. There were no reports of damages to the Agricultural community.

### REGIONAL OVERVIEW ON SEASONAL CLIMATE FORECAST

Across the Caribbean, rainfall is likely to be near normal for May-June-July, which in general, marks the onset of the wet season. Nonetheless, a slight tendency is noted towards above normal in the extreme northern and western portions. Similarly, Trinidad and Tobago and Guyana maintain better odds for normal to above normal rainfall. By contrast, climate models and regional data suggest that the smaller Antillean islands show a slight tendency towards below normal rainfall.

There is still much uncertainty as to the development of rainfall activity in the region over the next six months. With ENSO neutral conditions in the Pacific and near-normal SSTs being forecasted in the Caribbean and wider tropical Atlantic, it is likely that rainfall in the eastern Caribbean will be normal. This certainly does not contradict the regional data that suggests that the region appears to be entering a normal to below normal regime during May to July. Note that, as the wet season in the Caribbean continues, a clearer ENSO signal beyond June is likely. As many global climate models seem to converge towards weak to moderate El Niño conditions by the latter part of the wet season, the suggestion is that the rainfall will more likely to be below normal as the end of the six month period approaches.

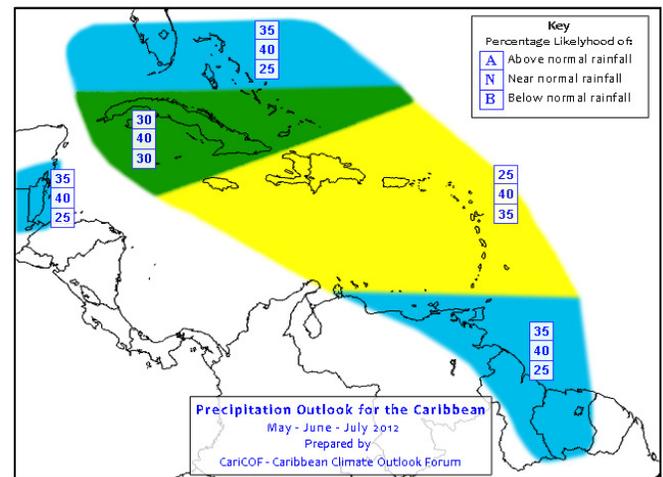


Figure 3 The May to July 2012 Rainfall Forecast

Air temperature at 2 m should be trending from slightly above normal down to slightly below normal as one moves from north to south across the region for the period May to July. Current SST observations and predictions further suggest that surface waters in the region will be cooler than in past two years, possibly suppressing some convective activity this time around.

A clear pattern of above normal air temperatures over most of the Caribbean emerges from the European climate models in the latter part of the six month period May to October, with the possible exception of the extreme west and south of the region.

#### **ENSO Conditions:**

The La Nina that existed in the Pacific for the past year and half has now officially moved into ENSO-neutral phase. Some models do suggest a change to El Niño by the latter part of Caribbean wet season. Atmospheric conditions consistent with La Niña have consequently disappeared from climate observation and forecast maps. It should be noted, though, that ENSO predictability is relatively poor until about July/August, leaving us with considerable uncertainty beyond this period.

#### **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**