



ANNOUNCEMENTS

The first phase of farmers’ forums is now complete. A second round of forums will take place during 2012. The second round of forums will include crop simulation modeling, crop water use and soil water management, and more on the modeling outcomes in pests and diseases, with information on these being included in 2012 bulletins. CAMI continues to urge the National Meteorological Services to maintain regular contact with their farmers and extension services. The formation of tripartite (meteorologists, farmers and extension officers) committees to take this activity forward at the national level have been recommended and are being pursued. **A training workshop on crop simulation modeling takes place in January 2012 at the Caribbean Institute for Meteorology and Hydrology in Barbados.** CAMI will continue to encourage and assist its NMS 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 NOVEMBER 2011

Based on Standardised Precipitation Index (SPI) analysis, apart from Trinidad that was moderate to severely dry, rainfall in the eastern Caribbean and Guyana ranged from normal to above normal in November. Rainfall conditions in Tobago and Grenada were normal; Barbados, St. Vincent and Antigua moderately wet; St. Lucia and Dominica very wet; and Guyana ranged from normal to moderately wet. Rainfall in Jamaica was from normal in the west to moderately dry in the east; Belize ranged from abnormally dry in the south to extremely dry in the north.

Most annual cropping takes place for a period of about three months or just over. A look at the three month rainfall totals ending in November for the eastern Caribbean and Guyana, shows, apart from Tobago that was abnormally dry, rainfall for the eastern Caribbean and Guyana were generally normal to above normal for the period. Trinidad, St. Lucia and Antigua were normal; Grenada and St. Vincent abnormally wet; Barbados and Dominica, moderately wet; and Guyana ranged from moderately wet in the

west to normal in the east. Jamaica was normal, but Belize was normal to abnormally dry.

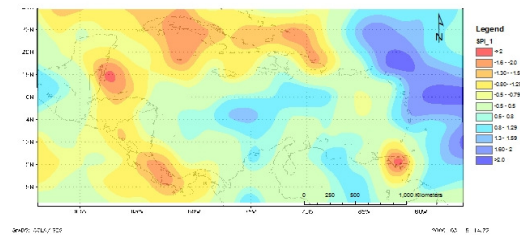


Figure 1. Standardised Precipitation Index (SPI) for the Caribbean for November. More information on the SPI can be viewed at <http://63.175.159.26/~cdpmm/spimonitor.html>.

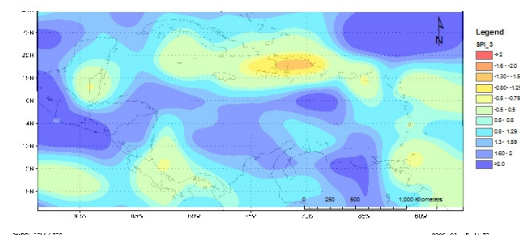


Figure 2. SPI for the Caribbean for September to November, 2011. More information on the SPI can be viewed at <http://63.175.159.26/~cdpmm/spimonitor.html>

Temperatures in the region were below normal in the north islands and above normal in the south.

NATIONAL OVERVIEWS

Antigua and Barbuda

The respite from excess rainfall, which started in April, only lasted for one month – October. The rain returned with a vengeance during November with well above normal totals experienced, as if to makeup for the break in October. The total for the month was 256.8 mm. This is the 8th highest total on record for the month. The main rain-producers were three trough systems, which were responsible for over 85% of the total. At Coolidge, the number of rainy days (≥ 1 mm) of 13 was near normal; however, the six heavy rainfall days (≥ 10 mm) were above normal. The mean temperature (temp) of 26.4°C was below normal, and the mean daily maximum and minimum temp were below and near normal respectively. The outlooks call for above normal rainfall and near normal temperature for December and for winter. The rainy weather has become fairly frustrating for farmers. The break in the rain in October allowed for a lot of field preparation and planting. However, a lot of this work may go to naught as young plants have been inundated by rainfall. Crop loss has been reported and further losses are anticipated. Not only young plants are being lost but also crops that are ready for harvesting but cannot be reached because of waterlogged fields. The weather has further exacerbated the scarcities of local agricultural products; notwithstanding, there was an abundance of a few things such as spinach, bananas, lettuce and pumpkin.

Barbados

A number of trough systems stalled near the island chain and interacted with the I.T.C.Z to contribute to high rainfall levels across the island. The presence of these systems contributed to three significant rainfall events in November; the first which occurred between the 12th and the 13th produced some 38mm of rainfall at the Airport. The other two events between 26th and 27th and the 28th to 29th generated some 44.9 and 44.9mm respectively over the two 24-hour periods. The final total of 212mm of rainfall recorded at the Airport during the month of November represents approximately 30% above the long-term average of 165mm.

Belize

November began with a cool northwesterly airflow blowing across the country behind a stationary cold front. On Friday (Nov.4th) a high pressure ridge over the central Gulf of Mexico produced a moist northeasterly flow over Belize and coastal waters which produced some rainfall with Belmopan recording 29mm of rainfall, followed by Big Falls Plantation in the south with 25mm. A cold front, which headed southeast across the Gulf of Mexico, crossed Belize on Nov.5th. Another front crossed Belize early Saturday (Nov.12th) morning. Several showers occurred along coastal Belize Saturday afternoon and evening. The rainy weather continued into Sunday (Nov.13th). Middlesex in the Stann Creek district measured 23mm, followed by La Democracia with 20mm, and the International Airport with 16mm.

Another cold front reached the Yucatan Peninsula on Friday (Nov.18th) and became stationary creating several coastal showers. The showers continued to occur on Saturday (Nov.19th). Most stations across the country recorded some rainfall on Nov.21st as a consequence of moist Northeasterly flow. Belize Zoo recorded the highest rainfall with 27mm, followed by La Democracia with 25mm and Melinda with 23mm. By Tuesday (Nov.22nd) the cold front was over the northwest Gulf of Mexico aiding in light to moderate showers mainly over coastal Belize. The third cold front for the month crossed Belize early Monday (Nov.28th) morning. Cloudy skies and several bouts of showers and rain accompanied the front's passage across the country. Rainfall amounts ranged from 96mm at Hershey, 81mm at Baldy Beacon, Mountain Pine Ridge to 55mm at Belmopan, the nation's capital. The final two days in November turned out to cool and dry courtesy of the high pressure with its center over northern Mexico. The low temperature at the International Airport for Nov.29th was 16°C. Clear, cold and dry weather continued for the final day in November.

Dominica

282.7mm of rainfall was recorded at the Canefield Airport during the month of November. This represents 148% of the monthly average. 203.6mm was recorded during the last dekad (ten day period) as a result of an unstable atmosphere due to

interactions of moisture in the area and trough systems. Maximum rainfall amount was 61.4mm recorded on the 26th. 10 rain days, that is, rainfall above 1mm, were recorded. Average air temperature was 27.6C which is 0.2 below the monthly average. Maximum temperature was 33.4C on the 6th while the minimum temperature was 22.0C on the 15th.

On average, November is the wettest month at the Melville Hall Airport. This November there was 674.0mm of rainfall recorded, which is about 93% above average. Maximum rainfall amount was 158.9mm recorded on the 27th. On the 9th, a rain band from Tropical Storm Sean affected the northern part of the island. 102.6mm of rainfall was recorded at Melville Hall that day. There was a total of 20 rain days for the month. Averaged air temperature was 26.4C which is 1.0 below normal. Maximum temperature was 32.0C recorded on the 6th while the minimum temperature was 21.8C recorded on the 16th.

Grenada

Rainfall recorded for November 2011 at the Maurice Bishop International Airport (MBIA) was 122.8 mm which is below the month's average of 168.2 mm. Below average amount would not have been the same throughout the island as the rainfall distribution was uneven. A significant rainfall event occurred on the 29th of November in which the central eastern parish (St. Andrew's – where the majority of Grenada's farming occurs) received heavy downpours which resulted in major flooding and landslides. Some farmers were greatly affected, with one farmer indicating losses of near EC\$200,000.00 (~US\$74,000.00).

Weather observers noted the growth and development of a thunderstorm cell which for about 3 to 4 hours, practically "rained out" over a 3 km radius during the early morning of the 29th November. Three rainfall recording stations (within 2 km of each other) recorded 245 mm, 118 mm and 97 mm from that rainfall event. Flooding and landslides were recorded in these areas. Other parts of the island, were relatively rain free (Maurice Bishop Airport had no recorded rainfall).

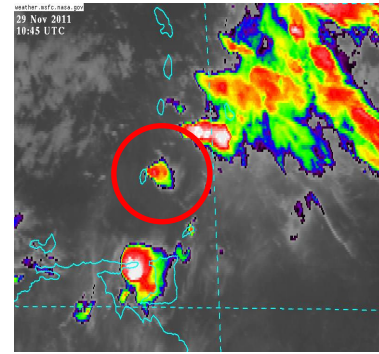


Figure 3. Thunderstorm cell over Northeast Grenada



Figure 4 Landslide near Mirabeau, St. Andrew's

Guyana

The month of November can be classified based on the rainfall observed across Guyana to be as moderately dry. Most stations recorded below their climatological average, with the exception of stations that just peak above their normal average... The climatological average rainfall for the month of October is 151.2 mm, with an average distribution total of 122.0 mm was recorded for this month across Guyana. The highest total rainfall recorded for the month was Mabaruma in Region 1 with 297.6mm. The highest daily rainfall recorded for November was Capoey (Region 2) with a total of 116.4mm on 16th. Other daily maximum rainfall amounts recorded during this month were Onderneeming (Region 2) 97.1mm on the 16th; Better Hope on the Essequibo Coast 82.9mm on the 16th, Lethem (Region 9) 80.8mm on the 1st. Most of the other stations recorded daily rainfall average for the month of November of approximately 5.0mm, which, based on the Climatology of Guyana's rainfall season to be a peak rainfall month is considered to be below average.

However although the rainfall was below average, it had considerable impact on farmers, both positive and negative ways. Positive in the sense that those farmers that were caught late on the rice industry in terms of getting their crops harvested were able to

do so in timely manner and on the other hand lack of water for farmers that wanted to start their crops early (both rice and cash crops). The shortage of rainfall water caused many farmers to seek artificial means of irrigation for their crops.

Table 1. **Rainfall across synoptic stations of Guyana.**

Synoptic Stations.	Total Monthly Rainfall (mm).	# of rain days (> 1 mm).	Average Daily rainfall (mm)
N.W.W.C	190.8	16	7.1
Georgetown	137.8	14	5.1
Ogle	97.8	12	3.5
Ebini	139.5	12	5.2
New Amsterdam	46.3	11	8.6
Lethem	258.7	8	1.8
Mabaruma	297.6	25	9.9

Jamaica

November generally signifies the end of the Atlantic hurricane season. Throughout the month the island was affected mainly by Troughs and High Pressure Ridges.

During the month, Sangster in the northwest recorded 45mm of rainfall, while Norman Manley in the southeast recorded 12.3mm. There were six (6) rainfall days for Sangster while only two (2) rainfall days were recorded for Norman Manley. Both stations recorded below the 30- year mean for rainfall. Radar reports and satellite images indicated that most of the rainfall activities for the month occurred mainly over northern and western parishes. The maximum temperatures was 32.7°C (14th November) for Sangster Airport and 33.0°C (14th November) for Norman Manley.

St Lucia

Above normal rainfall was recorded in November for Saint Lucia as opposed to September and October. This was reflected in the records for both the GFL Charles and Hewanorra airports. The total rainfall measured at Hewanorra was 299.7 mm, which is 168.4 per cent of the 1973-2011 mean and at GFL Charles the total was 280.6 mm which is 124.8 per cent of the 1967-2011 mean. There were 21 days >0.1 mm at Hewanorra with highest daily rainfall of 33.8 mm and 20 at GFL Charles with a highest daily measurement of 76.6 mm. Above normal rainfall and high humidity continue to support the proliferation of the Black Sigatoka disease in the banana and plantain fields. Banana

farmers in Saint Lucia should take all measures to minimize the spread of this disease on their fields.

Average dry bulb (27.7 C), average maximum (30.7 C) and average minimum (25.0) temperatures were all above normal at Hewanorra and this has been the trend for most of this year.

St Vincent and the Grenadines

The total rainfall for November at the airport was 366.0 mm. This was above the climatological average for this station. The first dekad (ten day period) had 28.6%; the second dekad had 22%, while the third dekad had 49.4%, of the total rainfall. Towards the end of the first dekad, a combination of troughs and unstable conditions associated with Tropical Storm SEAN resulted in 56.4mm (> 2 inches) of rainfall in three days. Landslides in the north of the mainland blocked off residents. A large bolder was dislodged in the suburban area of Arnos Vale causing traffic delays. There were six days with less than 1 mm of rainfall; with three of those days running consecutively from the end of the second dekad to the first two days of the third dekad. Thereafter, another combination of troughs from the east and west, along with ITCZ activity resulted in an abundance of moisture across the region. Almost half the total rainfall for November was captured in the third dekad. This included two consecutive days with more than 50 mm of rainfall. The highest 24 hour rainfall was 61.0 mm, the second highest was 55.2 mm recorded over the last weekend of the month. There were twenty four rainy days (> 1mm).

Extremes for November, 2011 (date of occurrences): Barometric Pressure - highest 1015.9 mb (22nd), lowest 1007.0 mb (28th); Air Temperature – highest 31.3 °C (4th), lowest 23.3 °C (16th)

Trinidad and Tobago

Rainfall recorded at the Observing Station at Piarco International Airport, Trinidad was 102.9 mm. This amount was 56% below the long-term average (1971 to 2000). Rainfall at the A.N.R. International Airport, Crown Point, Tobago was 175.6 mm, 16% below the long-term average. There were no significant dry spells (consecutive dry days) for both stations

On November 19th and 21st there were major flooding and landslides in northwestern parts of Trinidad. Rainfall recorded at Piarco, Trinidad on 21st November was however only 0.2 mm, indicating more regional/localised convective activity. There were rivers breaking their banks which led to infrastructural damages. There were no reports of damages to the Agricultural community.

With time, the distinction between wet southeast and dryer northwest mentioned in last months bulletin will become clearer as we move closer to March to May 2012.

Above normal SSTs will peter out toward the southern portion of the eastern chain by February 2012 and result in normal SST across the basin.

REGIONAL OVERVIEW ON SEASONAL CLIMATE FORECASTS

The rainfall outlook for the Caribbean for November, 2011 to January 2012 suggested that the eastern Caribbean and Guyana are to expect above normal rainfall conditions with highest certainty in the region of southern portion of the chain, including Windward Islands, Barbados and Trinidad and Tobago. This is now likely to continue into April to May 2012. Jamaica is more likely to receive closer to normal rainfall and Belize normal to above normal rainfall for the next three months with higher certainty of near normal conditions into the new year.

ENSO Conditions:

The majority of the models predict a weak or moderate strength La Niña to continue through the Northern Hemisphere winter and then gradually weaken after peaking during the December – January period. Abnormal atmospheric circulation and rainfall patterns are also consistent with La Niña in other parts of the globe. These developments may have implications for climate conditions in the Caribbean basin. During the six month period December 2010 to May 2011, La Niña conditions translated into above normal rainfall and currently this is what is expected for much of the Caribbean basin, including Guyana.

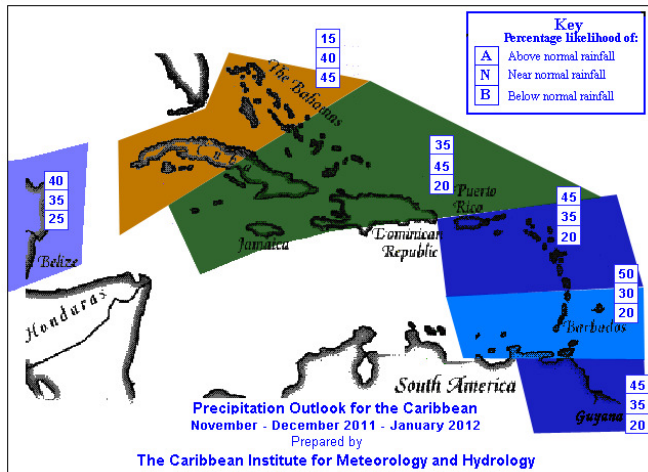


Figure 6. Precipitation Outlook for the Caribbean November–December, 2011- January, 2012

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