



ANNOUNCEMENTS

CAMI has issued initial notices on 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 farmers' forums. If interested in joining the discussion send an e-mail to atrotman@cimh.edu.bb. 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 sustain activities at the national level have been recommended and are being pursued. 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 FEBRUARY 2012

In February 2012 in the eastern Caribbean, there was a distinction between the normal to below normal north and the normal to above normal south (including Guyana). In the south, Tobago, Grenada and Barbados were moderately wet; St Lucia very wet; St. Vincent exceptionally wet; Trinidad normal to abnormally wet; and Guyana from abnormally wet in the west to exceptionally wet in the east. In the north, Dominica was abnormally dry; and Antigua moderately dry. To the west, Jamaica was moderately dry and conditions in Belize ranged from moderately dry in the south to normal in the north. These can be seen in the Standardised Precipitation Index (SPI) map in Figure 1.

Most annual cropping takes place over a period of about three months or just over. For the three month period of December 2011 to February 2012, much of the south of the eastern Caribbean was above normal and the north normal to below normal. St. Vincent, St. Lucia and Antigua were normal; Trinidad and Grenada abnormally wet; Tobago and Barbados moderately wet; and Guyana ranged from exceptionally wet in the northeast to moderately wet in the east. Rainfall in Jamaica ranged

from normal in the west to moderately dry in the east and Belize was normal. See Figure 2.

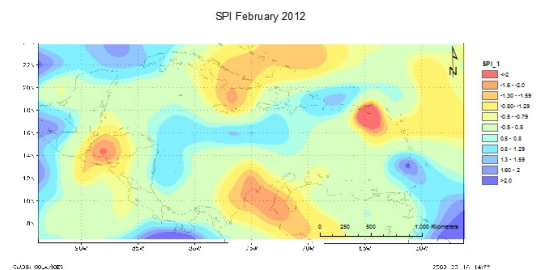


Figure 1. SPI for the Caribbean for February 2012. More information on the SPI can be viewed at <http://63.175.159.26/~cdpmn/spimonitor.html>.

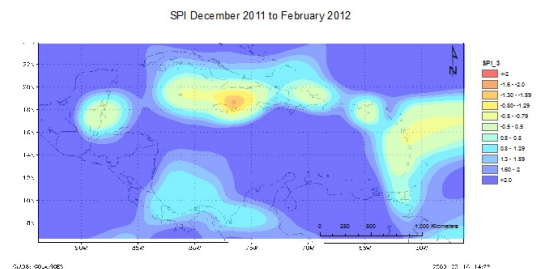


Figure 2. SPI for the Caribbean for December 2011 to February 2012 more information on the SPI can be viewed at <http://63.175.159.26/~cdpmn/spimonitor.html>

Most countries reported normal to above normal temperatures for the period.

NATIONAL OVERVIEWS

Antigua and Barbuda

Antigua experienced below normal rainfall during February. The total for the month was 30.7 mm; this was only 55% of the normal total (1981 – 2010). This is the second lowest since 2001. Low level troughs were responsible for about 60% of the rainfall. Notwithstanding the below normal rainfall, at the airport, the 9 rainy days (≥ 1 mm) were near normal; however, there were no heavy rainfall days (≥ 10 mm). The mean temperature of 25.2°C was near normal and the mean daily maximum and minimum temperatures were below and above normal respectively. The outlooks call for near normal rainfall and temperature for March. Further, for the period March to May, near normal rainfall and below normal temperature are most likely. For much of the month, conditions remained conducive for land preparation, planting and harvesting. However, with the below normal rainfall total for February, farmers have begun to observe dry conditions and the need to irrigate is increasing.

Barbados

Although a number of trough features moved across the eastern Caribbean during the month of February, these had little or no impact on the strength of the high pressure ridge which continued to dominate conditions across the region. Brisk easterly trade winds ranged between 28 and 46 km/hour across the island with a 53.7 km/hour wind maximum occurring on the 2nd of the month. The strong winds also contributed to above-normal sea-conditions, generating easterly swells which peaked near 3.5m around the coastal waters of the region.

The winds did have a cooling effect on the temperatures which averaged 28.8°C while the extreme maximum reached was 29.5°C on the 25th. The lowest minimum observed was 20.3°C on the 14th.

During the first seven days of February the pattern of mostly overnight to early morning shower activity was observed. However on Day 8, the first trough feature for the month resulted in 15.3mm of rainfall at the Airport. The second and most significant

rainfall event occurred on the 15th when 31.0mm of rainfall was recorded as yet another trough traversed the area. Other significant rainfall events were observed on the 18th and between the 27th and 29th when 10.0mm and 14.1mm, respectively were observed at the Airport. The total rainfall for February of 95.3mm was over twice the 30-year average for February of 41.3mm. In addition, there were 13 rain days (rainfall ≥ 1 mm).

While rainfall levels are expected to be about 50% above normal during the month of March, decreasing wind-speeds are anticipated during the latter half of the month when these are expected to range between 10 and 15 knots.

Belize

Showers at the start of the month extended to the south of the country on February 2nd and with increasing intensity up until the next day (3rd), eventually giving way to clearer skies.

On Feb.9th a light northeasterly surface flow was linked to a surface trough over the Central Caribbean resulting in showers inland and in the south, with Middlesex in the Stann Creek district recording 16.1mm and Savannah 13.5mm. By evening of 12th, large showery cells were noted along coastal Belize and Toledo districts due to a cold front, which resulted in a flurry of showers and gusty surface winds by midnight and a drop in the temperatures during the following day.

At the start of the final full week in February, there was typically dry weather for the country. Even though there were a few showers mainly over northeast Belize. This continued during the final three days of February, with some light to moderate showers on February 28th that occurred primarily over the southern parts of the country.

Dominica

During the month of February, Canefield Airport on the south-west coast recorded 75.5mm of rainfall and 15 rainfall days (>1 mm). The total rainfall amount represents 122% of the mean (1982-2011) monthly total. The 1st of the month was the wettest day when 26.2mm was recorded. The first dekad of the month was the wettest and the second dekad the driest. The month's average temperature was 26.9°C

which was 0.5°C greater than the mean. Maximum temperature was 31.3°C recorded on the 11th while the minimum temperature was 19.4°C recorded on the 18th.

Melville Hall airport on the north-east coast reported 67.0mm of rainfall. This is 69% of the monthly mean (1981-2010). There were 14 rainfall days. The highest daily rainfall amount was 9.7mm recorded on the 28th. Rainfall was more evenly distributed at Melville Hall. Average temperature for the month was 26.5°C which was 0.6° greater than the mean. The maximum temperature of 29.5°C was recorded on the 2nd, 13th, and 26th while the minimum of 19.7°C was recorded on the 18th.

There were days of fairly high and gusty winds at both airports with Canefield recording a maximum gust of 48.2 km/hour on the 5th and Melville Hall recording 63.0 km/hour on the 27th.

Grenada

Windy conditions prevailed across Grenada for the major part of the month; and intensified during the last week.. The tight pressure gradient across the tropical North Atlantic was attributable for this acceleration in wind speeds. This was evident by the Gale Force wind reports near Colombia and 37+ km/hour in the eastern Caribbean. Local fishermen confirmed increased wind speeds, rough and rolling sea swells especially in close proximity to Molliniere and Beauséjour on the Western side of Grenada.

Rainfall recorded at the Maurice Bishop International Airport totalled 52.2 mm, 16.4 mm above the average for February. Ninety percent (90%) of February's total or 47.1mm was realised on 8th, 9th, 14th, 16th, 23rd, and 29th. The other minimal amounts were sporadically distributed among 13 days while the other 10 days were rain free.

The rain gauge operated by the National Water and Sewerage Authority stationed at Mt Horne in St. Andrew's on the northern side of the island recorded 98.5mm for the 29th. This influenced the significant levels of landslides and flooding which ensued. Further details on this will be provided in the report for the month of March.

The maximum and minimum temperatures recorded for the month of February were 31.2 and 20.7 °C respectively. Comparing the lowest minimum February temperatures for 2012, 2011 and 2010, the coldest minimum temperatures were recorded in February 2012. Lowest minimum for 2011 and 2010 were 21.2 and 23.3 °C. The fisheries Authorities have postulated that the cold water patterns during this month have resulted in reduced fishing effort and catch thereby inducing economic losses.

The Pest management unit of the Ministry of Agriculture has advised of the prevalence of the Red Palm Mite, *Raoilla Indica*, during this month. They are easily spread by wind, and during dry periods (and we are in the heart of the climatological dry season) mite activity increase and the population grows rapidly, leading to significant damage.

Guyana

February marks the beginning of Guyana's secondary dry season; however this was not reflected in the rainfall recorded. The first half of this month however was moderately dry, but the period from the 28th to 29th February was the most significant, when flood related events were reported across various locations of Guyana. The presence of the double Inter Tropical Convergence Zone, coupled with strong support from the Sub Tropical Jet in the upper atmosphere and large moisture plume increased rainfall over Guyana.

Guyana was classified as Very Wet for the month of February. All rainfall stations across Guyana recorded rainfall values above their Long Term average (see Figure 3) and coupled with the high tides over Guyana's sea shore provoked flood related events in various areas along Guyana's Coastline e.g. Georgetown, Anna Regina and other areas along Regions 2, 3 and 4. Other Stations across Guyana e.g. Mabaruma (Region 1) recorded rainfall values above the Climatological Normal but there was no report of flooding in these areas due to the topography.

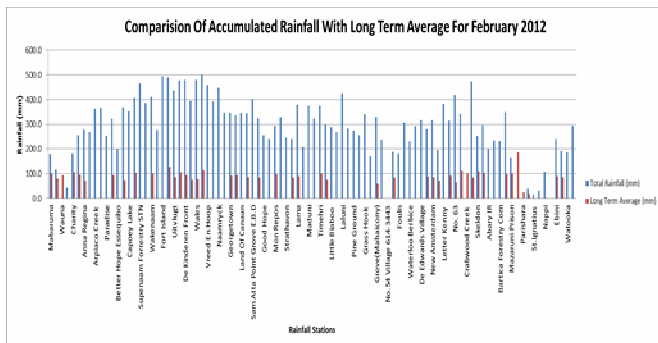


Figure 3 Graph Comparing the Rainfall for February 2012 with the Long Term Averages

On 28th and 29th there was significant rainfall across Guyana’s Coastline. A total of 45 stations in Guyana (Figure 1) have long term averages computed, 41 of these stations exceeded the long term average in February. For 28th to 29th February, a total of 16 rainfall stations exceeded the long term average within that period.

The average rainfall for the month of February was 280.4 mm (with an average of 14 rainfall days), far exceeding the long term average of 90.2mm. Boerasirie (Region 3) recorded 499.7mm, the highest ever for the month of February. Other rainfall maxima across Guyana were at Fort Island (Region 3) and Hog Island which recorded 494.0 mm and 489.0mm respectively. The highest 24 hour rainfall total recorded was 156.2 mm at Supernaam Forestry (Region 2). Other daily maximum rainfall recorded was 151.0mm at De Kinderen (Region 3) on the 28th February. Boerasirie also recorded 150.5mm on the 28th February, 2012.

February 2012 was warmer than average. All synoptic stations reported Mean Maximum Air Temperatures above their long term averages with the exception of Lethem which recorded below the long term average. The highest Maximum temperature recorded for the month was 34.0 °C on February 12 at Lethem.

Due to the high rainfall amounts, Guyana’s coastal areas were affected. Regions 2 to 4 experienced the most impact especially in the Capital of Georgetown in which flooding of all roadways and over topping of various drainage facilities made conditions impassable. Farmers along Regions 2 to 3 had to deal with cases of cash crops being damaged and

livestock being lost due to the water level increasing in these areas.



Figure 4 Images of flooding in Georgetown (Stabroek News)

Jamaica

Throughout the month of February, the island was affected mainly by Low Level Troughs and a few strong High Pressure Ridges. Sangster in the northwest recorded 4.5mm of rainfall, while Norman Manley in the southeast recorded 0.7mm. There were three (3) rainfall days for Sangster, while Manley had none (a rainy day ≥ 1 mm) one. Both stations recorded well below their average mean for the month with Manley recording **3%** of 30-year mean while Sangster recorded **7%** of its 30-year mean.

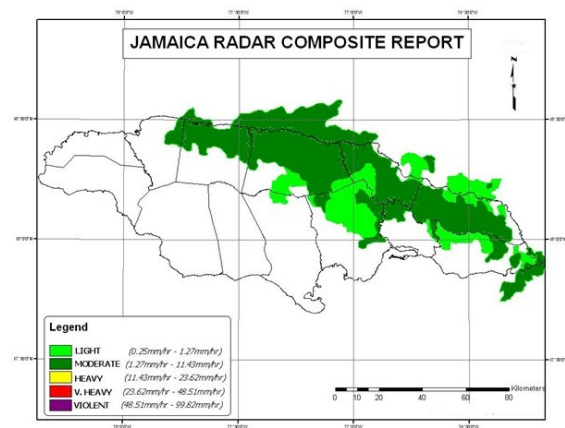


Figure 5 Radar composite report for February 2012.

The maximum temperatures recorded for Sangster Airport was 31.4°C (29th February) while 32.0°C (15th February) was reported for Norman Manley Airport. No significant rainfall was recorded at the synoptic stations but radar reports and satellite imageries confirmed that rainfall which was heavy at times was concentrated mainly over northeastern parishes (Figure 5).

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

Monthly Averages	Norman Manley	Sangster
Extreme Maximum Temperature	32.0 °C (32.6°C)	31.4 °C (31.6°C)
Lowest Minimum Temperature	21.7 °C (21.0°C)	20.9 °C (19.7°C)
Rainfall Total	0.7 mm	4.5 mm
Rainfall days (≥1mm)	0 days (3.6)	3 days (9.2)

Values in red indicate the 1992-2011 average

St Lucia

Saint Lucia experienced a relatively wet February this year. Both Hewanorra and George Charles stations recorded values above the long term means. Hewanorra measured 104.7 mm which is 199.2 percent of the mean (1973-2012) of 52.6 mm, while George Charles measured 94.6 mm or 119.3 percent of the mean (1971-2012) of 79.3 mm. For Hewanorra there were 12 rainy days with the highest value of 37.8 mm which occurred on the 29th. George Charles had 16 rainy days and the highest was 29.6 mm which also occurred on the 29th day of the month.

Average dry bulb (26.3 °C), average maximum (29.0°C) and average minimum (23.8°C) temperatures were all above the long term means for Hewanorra. The average daily sunshine hours were 9.3 hours and the average soil temperature at a depth of 20 cm was 29.6°C for Hewanorra.

March which is statistically wetter than February has on average 9 rainfall days. The seasonal precipitation outlook for the March, April and May period indicate the likely for rainfall to be in the above normal category or to range from 216 mm to 596.2 mm in Vieux-Fort and 289.3 mm to 609.9 mm in Castries.

St Vincent and the Grenadines

Total rainfall for February 2012 at E.T. Joshua Airport-Arnos Vale, was 210.3 millimeters (mm). This was more than two times the February average of 92mm. There were seventeen days with rainfall more than 1mm, and twelve days with rainfall less than 1mm. The longest dry spell (period of consecutive days with rainfall less than 1mm) was from 19th to 23rd; five days (See figure 6). The second day of the month had the most rainfall (43.7mm). There were isolated thunderstorm clouds, which is not normal for February. Strong breezes occurred during the last five days, generating moderate to rough seas in open waters.

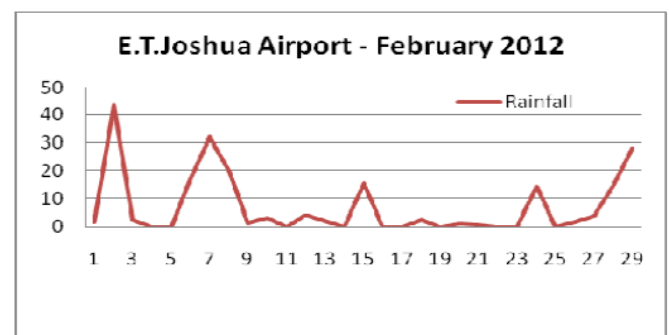


Figure 6 Rainfall at E. T. Joshua Airport St. Vincent in February 2012

Extremes for December, 2011 (date of occurrences): Barometric Pressure – highest 1018.7 mb (27th), lowest 1012.0 mb (3rd); Air Temperature – highest 30.2 °C (18th), lowest 21.3°C (7th); Relative Humidity – highest 91 % (7th, 13th, 29th), lowest 55 % (14th, 24th)

Trinidad and Tobago

Dry Season in Trinidad and Tobago has continued to be above normal. Rainfall totals for both islands showed that February 2012 continued the wet start to the Dry Season. Rainfall recorded at the Observing station in Piarco International Airport, Trinidad was 60.9 mm. This amount was 135% of the long-term average (1971 to 2000). Rainfall at the A.N.R. International Airport, Crown Point, Tobago was 82.9 mm, 173% of the long-term average. There were no significant dry spells for both islands.

By the end of the third dekad, rainfall amounts at Piarco were above the long-term average. While in Tobago, rainfall amounts was above the long-term average by the middle of the third dekad. There were

no reports of damages to the Agricultural community.

REGIONAL OVERVIEW ON SEASONAL CLIMATE FORECAST

The distinction in rainfall between the above normal southeastern Caribbean and the below normal northwest continues during the period March to May, but with decreasing certainty. **Some regional data suggest that the eastern Caribbean may be moving toward a period of normal to below normal rainfall**, but it is believed, that as the many global models indicate, the eastern Caribbean will maintain its normal to above normal characteristic for a bit longer. Normal conditions are expected in the northernmost portion of the eastern chain, but there is no clear signal in the region of Jamaica and Belize. However, most models agree on the below normal conditions persisting in the northwest Caribbean.

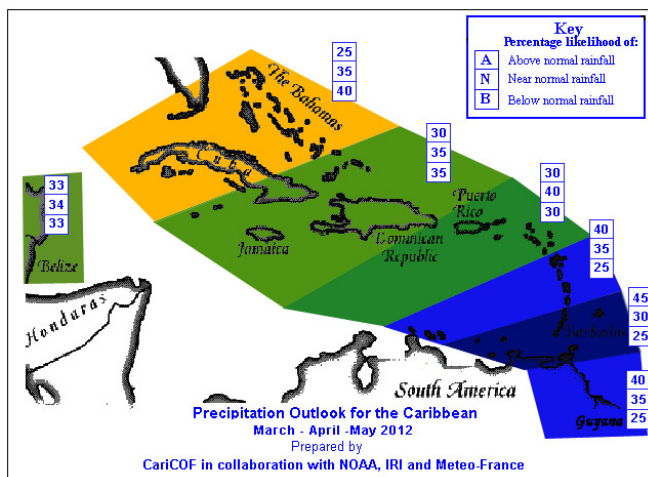


Figure 7. Precipitation Outlook for the Caribbean March-April- May, 2012

There is much uncertainty as to the development of rainfall activity in the region beyond May and until August 2012. With ENSO neutral conditions in the Pacific and near-normal SSTs being forecasted in the Caribbean and wider tropical Atlantic, it is likely that

the extent and the certainty of the area forecasted for above normal rainfall in the eastern Caribbean will diminish. This certainly does not contradict the regional data that suggests that the region may well begin entering a normal to below normal regime during Mar to May (which we believe would not begin until the latter part of that period or after).

Air temperature at 2 m should be near normal in the region for the period March to May. It likely that above normal temperatures will again encroach the region after May and up until August, 2012, particularly in the eastern Caribbean.

Model suggests that Sea Surface Temperatures (SST) in the region should be near normal up until August 2012.

ENSO Conditions:

Despite equatorial sea surface temperatures (SST) remaining at least 0.5°C below average in the central Pacific, considerable warming has taken place in the eastern Pacific over the past two weeks. Atmospheric conditions remain consistent with La Niña, with the possibility that La Niña-like conditions will persist for a bit longer in the Caribbean. These developing conditions in the Pacific support the suggestion from most models that La Niña should transition to ENSO-neutral conditions during the period March-May 2012. There is, however, much uncertainty beyond this period.

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