CAMI MONTHLYBULLETIN
Caribbean Agro-Meteorological Initiative
Enhancing Farming through Weather and Climate Information

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ANNOUNCEMENTS

Concerns remain for the western Caribbean for both short and long term drought and in the southern portion of the eastern Caribbean for long term drought. Some models suggest the possibility for the return of El Niño, and drier than normal conditions late in 2017, and into the 2018 dry season. This will be closely monitored. The portal of the Caribbean Society for AgroMeteorology (CariSAM) is now open and functional. Agricultural interest can register and access relevant information and be part of future capacity building exercises, access future agroclimatic bulletins, and more… (http://carisam.cimh.edu.bb/).

REGIONAL OVERVIEW ON WEATHER AND CLIMATE FOR FEBRUARY 2017

Apart from portions of Barbados and Dominica that were slightly wet, the islands of the eastern Caribbean were normal to below normal regarding rainfall for the month. Trinidad and Tobago were normal to slightly dry; Grenada normal; Barbados normal to slightly wet; St. Vincent extremely dry; St. Lucia moderate to extremely dry; Dominica from slightly wet in the southwest to severely dry in the northeast; and Antigua exceptionally dry. Conditions in Guyana ranged from normal in the north to very wet in interior areas. Jamaica was predominantly normal, but with parts that were slightly wet; while conditions in Belize ranged from normal in central areas to slightly wet in south to severely dry in the north.

Most annual cropping takes place over a period of about three months. For the period December 2016 to February 2017, Trinidad, Barbados, St. Vincent, St. Lucia, and Antigua were normal; Tobago slightly wet; Grenada moderately wet; and Dominica exceptionally wet in the southwest and moderately dry in the northeast. Conditions in Guyana ranged from normal in the north to very wet in south. Jamaica was predominantly normal apart from the extreme northwest and southeast that were slightly dry. Belize ranged from extremely wet in the south to moderately dry in the north.

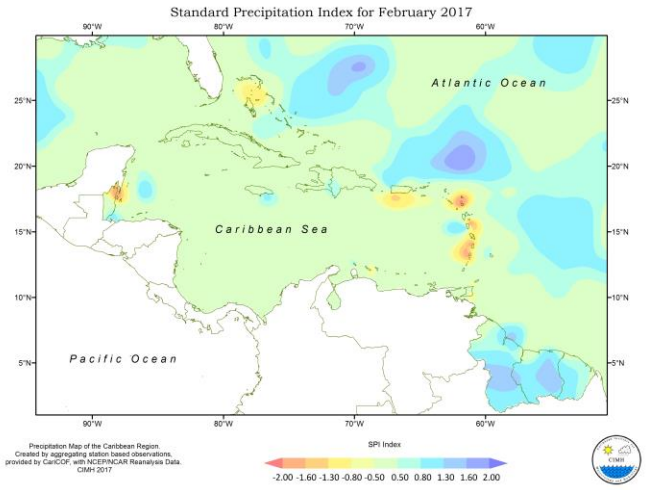

Figure 1. SPI for the Caribbean for February 2017. More information on the SPI can be viewed at http://rcc.cimh.edu.bb/climate-monitoring/spi-monitor/.

The weather was dominated by The Bermuda Azores High Pressure System, which peaked at 1035mb on the 18th and 28th, and was lowest on the 13th of the month at 1019mb. The High pushed patches of low level clouds across the area, and along with weak unstable conditions, contributed to the monthly rainfall across the eastern Caribbean.

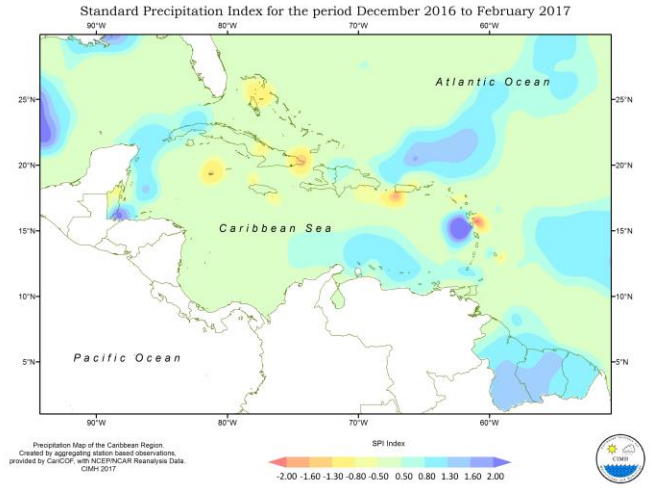

Figure 2. SPI for the Caribbean for December 2016 to February 2017. More information on the SPI can be viewed at http://rcc.cimh.edu.bb/climate-monitoring/spi-monitor/.

NATIONAL OVERVIEWS

Dominica

The month of February varied from moderately dry on parts of the east coast to exceptionally wet in central areas and along the west coast.

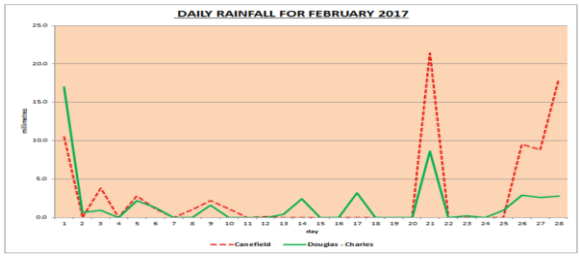

Figure 3 Daily rainfall at Canefield and Douglas-Charles Airports, Dominica during February 2017.

The rainfall total recorded at the Canefield Airport was normal at 80.3mm. Weak unstable conditions on the 21st produced the maximum 24-hour rainfall of 21.4mm. There were 11 rainfall days (about average). There was a 10-day dry spell during mid-month. The average air temperature was 26.4°C (near average). The maximum temperature recorded was 32.0°C on the 4th while the minimum was 19.4°C recorded on the 17th. Low relative humidity of 35% and 39% were recorded on the 16th and 17th respectively during midday. The average wind direction was south south east at 7km/h. The Atlantic High Pressure System generated the month's highest gust of 52km/h on the 28th.

Below normal rainfall total of 47.6mm was recorded at the Douglas-Charles Airport. Weak unstable conditions on the 1st produced the maximum 24-hour rainfall of 17.0mm. There were 10 rainfall days (5 days below average), and two 4-day dry spells during the latter parts of the first and second half of the month. The average air temperature was 26.4°C (above normal). The maximum temperature recorded was 30.5°C on the 21st while the minimum was 18.5°C recorded on both the 22nd and 23rd. The average wind direction was east south east at 15km/h. Breezy conditions were experienced during the month. The Atlantic High Pressure System generated the month's highest gust of 63km/h on the 28th.

In the north and northeast regions the weather conditions impacted negatively on onion crops. In high rain fed areas, crops established in poorly drained plots were washed away. The rehabilitation and expansion of passionfruit crop was undertaken in the northern region. In the south and northeast agricultural regions the Irish potato planting season began late. Farmers are undertaking their land preparation activities to include; clearing of weeds, tilling of soil, the application of fertilizers, white lime and sowing of potato seeds. The agricultural programme within schools received some attention for the month. Assistance was given to those who experienced negative impacts from weather conditions and they were taught how to practice climate smart agriculture. The scale insect is being controlled by the release of natural enemies. However, there are reports from the extension service that the insects are spreading to other nearby farming communities. The breadfruit crop is one of the crops currently being affected and the symptoms are clearly visible.

Grenada

For the second consecutive month, below average rainfall was recorded at MBIA. Rainfall for February was 28.2mm which was 22.3% or 8.1mm below the 30-year average of 36.3mm. Low level moisture surges on the 1st and 27th, enhanced showers, producing 6.9mm and 7.4mm of rainfall respectively. There were eleven (11) other days with measurable

rainfall (≥0.1mm). There were also eleven (11) days without rainfall and only four (4) days with a trace.

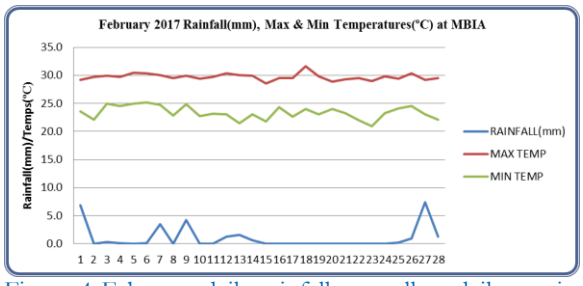

Figure 4 February daily rainfall, as well as daily maximum and minimum temperature at Maurice Bishop International Airport.

Mean daily temperature for the month was lower than last years (2016) by an average 0.6ºC, reaching 26.5ºC. The mean maximum temperature was 0.1°C higher than that of February 2016 reading 29.7°C. The mean minimum temperature was 23.4ºC which was 1.1°C lower than 2016 and 0.2°C higher than the 30-year average. The highest maximum temperature recorded was 31.6ºC on the 18th, compared with 30.8ºC for 2016 and the 30-year average. The lowest minimum was 20.9ºC recorded on the 23rd, compared with 21.5ºC for 2016 and 21.1ºC for the 30-year average.

Even though there were a few calm periods, The Bermuda-Azores High produced winds which were generally from east north easterly to east south easterly, with wind speeds reaching up to 40.7km/h, with a gust of 59.3km/h on the 8th. The strong winds generated moderate to rough seas and marine advisories were issued on the 2nd-4th, 8th-15th, 20th, 24th and 26th – 28th of the month. Thus, the choppy seas made fishing difficult, and fishermen had catches in big jacks, marlin, tuna, sword fish, king fish and albacore.

Even though February's rainfall was below normal, Farmers continued to do well. Crops like banana, plantain, yam, tania, sweet potato, breadfruit, chive thyme, cabbage, tomato, green pea and parsley did exceptionally well on the market.

Guyana

For February, Guyana had a monthly average rainfall of 155.4mm across the country with 13 rain days on average. The highest monthly rainfall total was recorded at Marias Lodge, Region 2, with 253.1mm and 13 rain days; while the lowest monthly rainfall total was recorded at Deer Creek, Region 9, with 20.3mm and 3 rain days. The highest 24-hour rainfall was recorded at Good Hope, Region 4, with 175.2mm on the 22nd. Most of the stations recorded above average rainfall. Stations in Region 1 and 2 recorded rainfall below their averages.

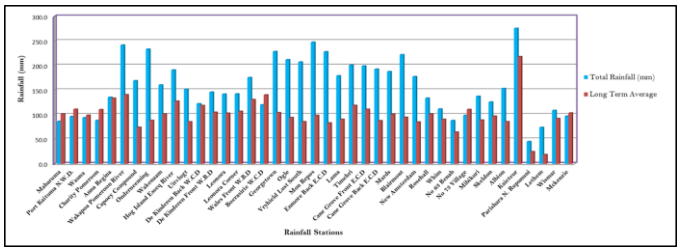

Figure 5 Rainfall totals for February 2017 compared with February averages at select stations in Guyana.

For the month of February, the highest mean temperature was recorded at Lethem, Region 9, with 34.5°C on the 19th. Lethem also recorded the highest mean maximum temperature of 32.6°C. While Georgetown, Region 4, recorded the highest minimum temperature of 25.6°C on the 13th, along with the highest mean minimum temperature of 24.0°C. Timehri in Region 4 recorded the temperature of 19.0°C on the 12th.

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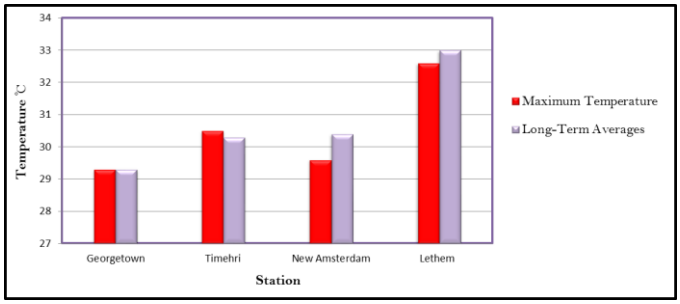

Figure 6 Maximum temperature for February 2017 compared with February averages at select stations in Guyana.

Guyana has transitioned out of its Secondary Wet season (the short wet season) into its Secondary Dry season of 2017 (the short dry season). There were no reports of significant effects caused by the weather on agricultural production.

Jamaica

During the month of February, Sangster Airport in the northwest recorded 37.6mm of rainfall, while Norman Manley Airport in the southeast recorded 27.8mml. Manley received more than its mean rainfall for the month, while Sangster received less

than its mean rainfall based on the thirty year (1971-2000) rainfall means. There were four (4) rainfall days reported for Sangster Airport while Manley Airport reported five (5). The highest maximum temperature recorded for Norman Manley Airport was 33.7°C (17th). Meanwhile, Sangster Airport reported 32.3°C (on the 23rd and 24th).

Table 1 Rainfall Statistics for Manley and Sangster Airports, Jamaica, for February 2017.

Monthly Averages	Norman Manley	Sangster
Extreme Maximum Temperature	33.7 °C (32.6 °C)	32.3 °C (31.6 °C)
Lowest Minimum Temperature	21.4 °C (21.0 °C)	19.0 °C (19.7 °C)
Rainfall Total	27.8 mm (21 mm)	37.6 mm (62 mm)
Rainfall days (≥1mm)	5 days (3.6)	4 days (9.2)

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

REGIONAL OVERVIEW ON SEASONAL CLIMATE FORECASTS

In recent months, sea-surface temperatures (SSTs) in the equatorial eastern Pacific (NINO3.4) warmed from 0.5°C below-average, or borderline La Niña conditions, to near average or ENSO neutral. Models are suggesting that ENSO-neutral conditions should continue until May 2017, but with increasing possibility for a return to El Niño by August (currently equal chance for neutral and El Niño by that time). ENSO is not expected to impact conditions through May. However, should an El Niño develop later in the year, reduced rainfall relative to normal is likely, with lower chances of extreme, intense rainfall events.

Sea Surface Temperatures (SSTs) are up to 0.5°C above-average within the Caribbean and the Tropical North Atlantic east of the islands. SSTs in the far northwest of the region are far above average. Trade winds have been slightly stronger than usual over the Tropical North Atlantic. SSTs are expected to return to values closer to average in the Caribbean Sea and further east by August; but the strength of trade winds is hardly predictable at seasonal time scales. As SSTs continue to be above normal until May, there is likely to be some shift to above normal rainfall, with this influence declining by August.

March to August 2017

The northwest Caribbean is likely to experience normal to above normal rainfall during March to May, along with Trinidad and Tobago, Suriname and French Guiana. There is, however, much uncertainty in the Windward and Leeward Islands, the ABC Islands, Jamaica, Puerto Rico and Belize. By June to August, the Windward and Leeward Islands, Guyana and Belize shift toward a greater chance for normal to above normal rainfall; while Suriname, French Guiana and the Cayman Islands are more uncertain. Trinidad and Tobago and the ABC islands are likely to experience normal to below normal rainfall during June to August. The majority of the northwest Caribbean is again likely to experience normal to above normal rainfall.

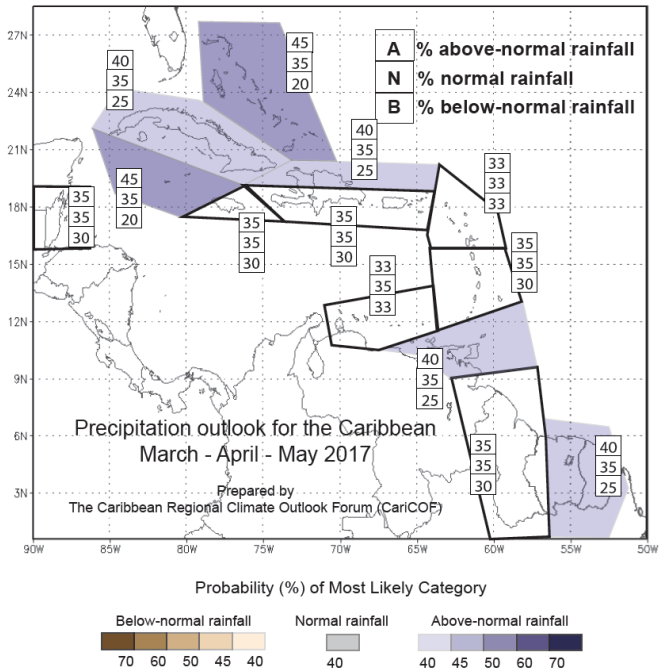

Figure 7 The March to May 2017 rainfall forecast

There are concerns over short and long term drought in some parts of the northwest Caribbean, with the greatest concern centred over the Cayman Islands, and southeast Belize (in the case of long term drought). In the remainder of the Caribbean, concerns over longterm drought (which tends to suggest lower water availability in groundwater and

large rivers) exist in the southern portion of the eastern chain, including Grenada and Trinidad and Tobago. There are also concerns in parts of Puerto Rico. The parts of the region should continue to monitor their water resources and supplies, while some areas should actually be taking measures against low water availability.

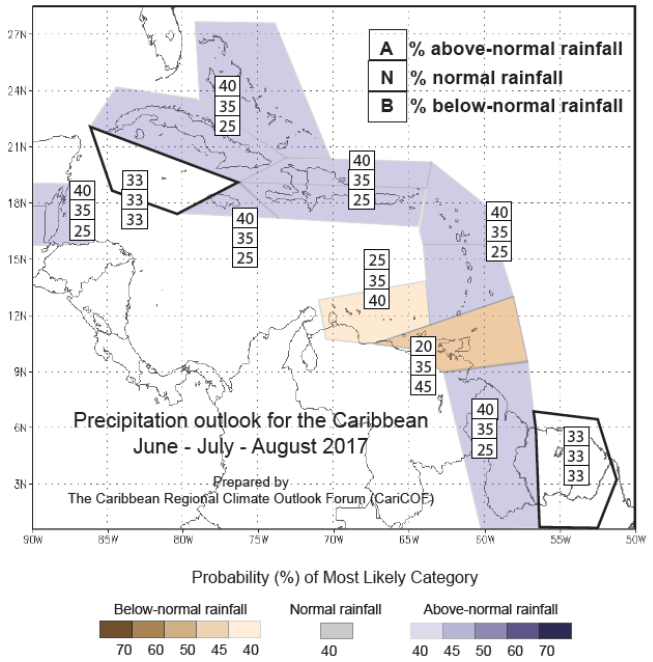

Figure 8 The June to August 2017 rainfall forecast

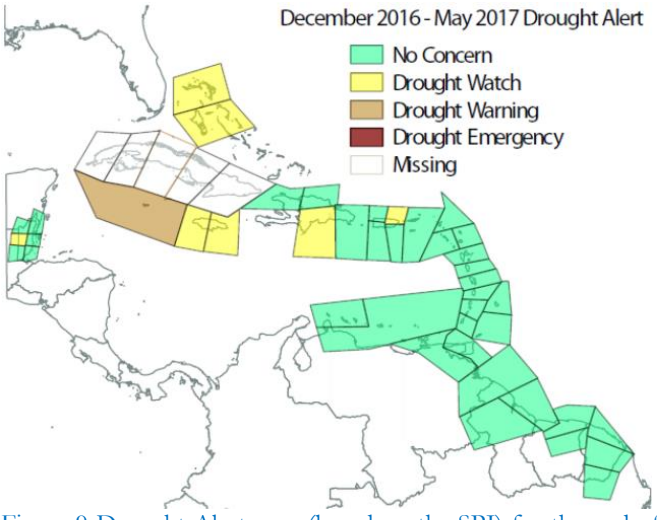

Figure 9 Drought Alert map (based on the SPI) for the end of May 2017, based on actual and forecasted rainfall for the period December 2016 to May 2017.

Forecast Implications for Agriculture

Most of the eastern Caribbean, along with northern Belize and the eastern islands of the Greater Antilles experienced below normal rainfall during January and February 2017. These areas would begin March with lower than normal water availabilities, and the need for irrigation where crops are in the field. As the region plays out the second half of the dry season, inadequate water for rainfed agriculture would continue to be a problem into May, though not as worrying in the western Caribbean. What may be worrying in the Caribbean is availability of irrigation water sources until May.

The region would have entered or be entering its rainy season by June. With normal to above normal rainfall likely over the majority of the region, concerns over low water availability would likely be eliminated (except for Trinidad and Tobago, most probably during the early weeks of the season) during June to August. Should El Niño develop later in 2017, below normal rainfall could be quite likely during the second half of the wet season, which may be a positive, as it would be less likely to have flood or water logging conditions, while at the same time having a significant enough water availability to allow for cropping. What could be a concern, if El Niño does develop, is an early end to the wet season, followed by a more intense dry season. Of course, this will be monitored as the end of the year approaches.

Apart from minimum temperatures being below normal during March to May in the Leeward Islands, warmer than normal conditions are likely through August in most of the Caribbean. Should El Niño develop, temperatures across the region could be as high as 1°C warmer than normal. This would be monitored as the end of the year approaches, and any implications for heat stress of crops, poultry and livestock updated.

Prepared by
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