



ANNOUNCEMENTS

There are signs that the transition to the wet season is gradually taking place. However, interest in the Windward Islands and Barbados should continue with their water conservation measures, as the dry impacts are expected to continue a bit longer. Due to training completed in late May, the region will have access to specific information on drought and its outlook via a regional bulletin recently released.

REGIONAL OVERVIEW ON WEATHER AND CLIMATE FOR MAY 2014

In the islands of the eastern Caribbean, conditions contrasted between the normal to above normal north and the normal to below normal south. Trinidad and Dominica were abnormally dry; Tobago and Antigua normal; Grenada and Barbados, St. Vincent and St. Lucia moderately dry. Rainfall totals in Guyana ranged from moderately wet in the northwest to severely dry in the east. Jamaica was predominantly normal apart from western areas that were abnormal to moderately wet. Conditions in Belize ranged from normal in the south to moderately wet in the north.

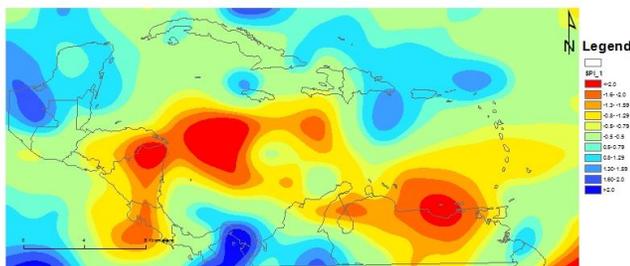


Figure 1. SPI for the Caribbean for May 2014. More information on the SPI can be viewed at <http://63.175.159.26/~cdpmn/spimonitor.html>.

Most annual cropping takes place over a period of about three months. For the three month period of March to May, the islands of the eastern Caribbean

were predominantly normal to below normal. Trinidad, Tobago, Barbados, St. Lucia and Dominica were moderately dry; Grenada and Antigua abnormally dry, St. Vincent severely dry. There was a stark contrast in rainfall across Guyana with the north being moderately wet, with declining rainfall toward the east resulting in exceptionally dry conditions. Jamaica was predominantly normal apart from western areas that were abnormal to moderately wet. Conditions in Belize ranged from abnormally dry in the south to moderately wet in the north.

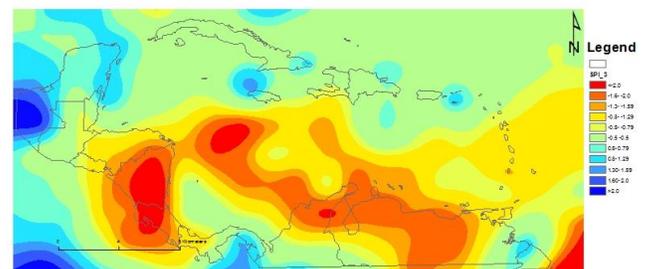


Figure 2. SPI for the Caribbean for March to May 2014. More information on the SPI can be viewed at <http://63.175.159.26/~cdpmn/spimonitor.html>

The atmosphere over the islands during the month of May saw occasional shallow moisture moving across the islands on the prevailing Trade Winds. The month also saw the passage of surface trough systems, which provided some instability and, in combination with available moisture, resulted in a few significant rainfall events across some of the islands. From the second week of May, tropical waves were significant influences on the rainfall in the southern portions of the region. Rainfall over the

Windward Islands and Barbados was for the most part less significant, taking the dry season concerns into the month of June.

NATIONAL OVERVIEWS

Antigua and Barbuda

May's rainfall figures continued to be below average. During the first week of the month of May there was no measurable ($\geq 0.1\text{mm}$) rainfall, due to the persistence of relatively dry and stable atmosphere which restricted the formation of any significant clouds and showers over the island. On the 8th however, instability associated with a trough system, generated cloudy to overcast skies with a mixture of scattered showers and light to moderate rain resulting in 9.3mm of rainfall. Very similar conditions occurred on the days from the 11th to 15th, resulting in 9.4mm. During the 16th to the 26th 4.2mm of rainfall was measured, due mainly to patches of moisture travelling on the trade winds which produced shallow blanket of clouds with scattered showers over the island. From the 27th to the 30th a weak upper level trough coupled with a moderate easterly trade wind flow resulted in 12.7mm of measurable rainfall. The most significant period saw two (2) rainfall events that occurred on the 9th and the 10th, which were associated with a deep trough system along with an abundance of available moisture. This generated up to 36.0mm of rainfall.

Table 1 Weather summary at VC Bird Airport for May 2014.

Weather Summary for April at V.C Bird Int'l Airport	
Temperature (°C)	
Absolute Maximum	32.0°C
Mean Daily Maximum	29.2°C
Mean Daily	26.5°C
Mean Daily Minimum	24.2°C
Absolute Minimum	21.4°C
Warmest Day	27.3°C
Coollest Day	24.3°C
Rainfall	
Total	71.6 mm
Rainiest Day	21.3 mm
Measurable Rainfall Days (rainfall $\geq 0.1\text{mm}$)	16
Days ≥ 1.0 mm	10
Days ≥ 10.0 mm	02
Days ≥ 20.0 mm	0

Belize

On the 2nd a pre frontal trough resulted in showers and thunderstorms inland. Cloudy skies continued the following day, with showers and thunderstorms in the west spreading to coastal areas later in the day. Showers also developed over northern coastal Belize as the day wore on.

On the 5th, the now stationery cold front merged with another, with showers lingering over and offshore southern Belize. Sunny and dry weather prevailed for the remainder of the week, along with high daytime temperatures. The diurnal heating supported afternoon isolated thunderstorms mainly inland.

Much the same weather prevailed at the start of the second full week in May. On the 15th, a cold front caused cloudiness, with showers occurring mainly inland and along the frontiers with Mexico/Guatemala. Extensive rain showers and thunderstorms were witnessed over the Corozal, Orange Walk and Cayo districts. The next day's weather was cloudy and windy. With showers organized in lines along the coast roughly 70-80km northeast and southeast of Belize City. Several small clusters of showers were over the central Belize district and along the north facing slopes of the Maya Mountains by the afternoon. By the 18th most showers were occurring inland.

Showers in the south of the country started during the day on the 20th. Showers in the south and coastal areas in the morning followed by afternoon showers inland, occurred on the following two days. On the 24th, conditions were quite gusty. Sporadic showers occurred on the 25th as several small areas of showers were experienced along the coast and southern portions of the country.

The gusty winds continued on the 26th. Early on the 27th morning a line of cloudiness and showers extended from offshore northern Honduras to Belize City/Ladyville and Sandhill. The gusty east to southeasterly surface flow pushed these showers across the coastline. However, later in the day, weather conditions turned out quite sunny. On the 29th a tropical wave caused cloudy skies that continued into the next day, with showers developing in the south and west early in the

morning. Cloudy to overcast skies broke as showers and rain developed in the south of the country on the morning of the 31st. These showers and rain spread to central and some coastal areas later in the morning. Later in the afternoon, the showers and rain migrated to northern Belize.

Table 2 Rainfall and Temperature Summary for May 2014 for stations in Belize

Station	Liber tad	Zoo	PGIA	Belmopan	Central Farm	Savannah
Elevation (m)	12	30	5	90	90	13
Rainfall (mm)	130.8	144.9	240.6	141.3	144.1	159.9
Mean.	105.9	139.4	117.3	102.6	86.3	113.1
Max	29.4	53.2	82.5	23.7	35.9	38.2
Rain days	13	7	11	16	13	11
Temp (°C)						
Mean	23.0	23.3	25.3	23.4	23.4	24.3
Min.						
Mean	22.6	22.5	24.6	21.6	21.6	24.1
Lowest	20.3	20.3	21.9	17.5	21.0	22.0
Min.						
Mean	31.2	32.6	30.8	31.9	32.6	32.2
Max.						
Mean	33.0	34.5	31.8	34.1	34.6	32.7
Highest	33.0	38.3	31.7	34.0	34.5	34.3
Max.						

Rainfall values in Green represent amounts above the monthly average; Temperature values in Red represent means above the monthly average; Temperature values in Blue represent means below the monthly average

Dominica

At the Canefield Airport a total of 66.2mm of rainfall was recorded which is 72% of the mean. The highest daily total recorded was 20.1mm on the 10th. This was associated with instability from a trough system which affected the area from the 8th to 12th. There were 10 rainfall days, which is normal, with two 5 days dry spells during the first and last dekad (10 day period). The average air temperature recorded was 27.9°C and this is 0.9°C below the mean. The highest daily temperature recorded was 33.5°C on the 26th with the lowest being 21.9°C recorded on the 10th. The average wind direction was from the south at an average speed of 6km/hr. The highest wind gust was 56km/hr recorded on the 11th.

Melville Hall Airport reported a monthly rainfall total of 101.7mm, 42% of the mean. This is the second consecutive month with below normal rainfall and the driest January to May since 2001. The highest daily total recorded was 28.8mm on the 9th. There were 13 rainfall days. This is 4 days below the monthly average. An 8-day dry spell during the beginning of the month, which continued from April

resulted in 17 straight days without rainfall at Melville Hall. The average air temperature recorded was 27.8°C, 0.2°C below the mean. The highest temperature recorded was 30.8°C on the 7th and the lowest was 21.1°C on the 6th. Winds maintained an east south east direction at an average speed of 15km/hr. The highest wind gust recorded was 63km/hr on the 10th.

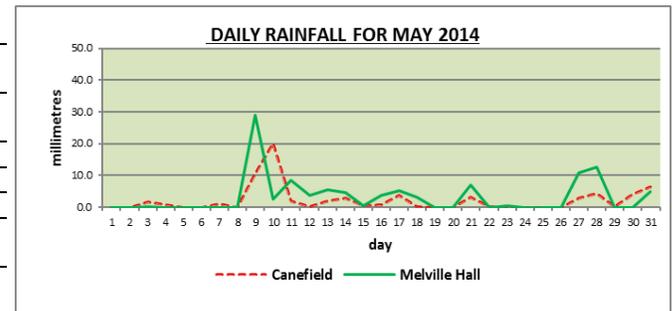


Figure 3 May 2014 daily rainfall at Melville Hall and Canefield

Near-normal rainfall conditions were reported across western, southern and eastern agricultural regions, resulting in bountiful vegetables such as tomatoes and cucumber, ground provisions and culinary herbs. There was also a reduction in Army worm infestation. However, the northern regions reported dry conditions which prevented the establishment of new crops and the harvesting of others such as yams and sweet potatoes. There were reports of plantain trees snapping due to the lack of moisture. Mostly land preparations continued to take place in this area during the month.

Grenada

Dry and hot conditions continued their dominance over the tri-island state of Grenada during the month with rainfall being approximately five (5) times below the 1986-2014 average of 49.5mm. The total rainfall for the month amounted to a mere 9.1mm, which is 18.38% of the average. This is the seventh lowest rainfall total for May over this period.

A surface trough brought some 1.3mm of light rain during the afternoon of the 10th and into the night; the first of the two (2) days with rainfall over 1mm. Cloudiness associated with a tropical wave, brought 6.1mm of rainfall on the evening of the 24th and into the morning of the 25th. There were also fifteen (15) days with no or insignificant amounts of rainfall.

Accompanying the hot and dry weather conditions, were higher than average temperatures. Mean daily temperatures exceeded that of last year's by an average of 0.2°C to reach a mean of 27.7°C, while the mean maximum and minimum temperatures were 30.4°C and 25.0°C respectively. The highest maximum temperature was 31.6°C and occurred on the 22nd while the lowest was 23.0°C and occurred on the 11th of the month.

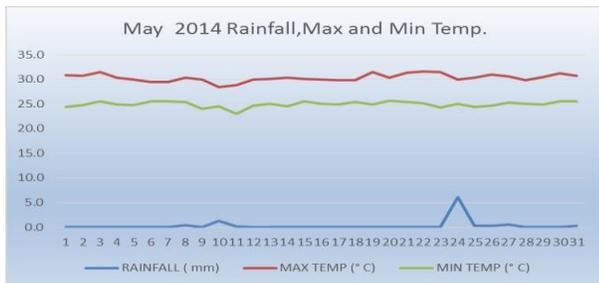


Figure 4 May 2014 daily maximum and minimum temperatures and rainfall at Maurice Bishop International Airport.

Strong winds generated moderate to rough seas causing small craft advisories to be issued on the 13th and 23rd of the month. Despite the moderate to rough seas at times, fishermen were able to venture out at sea bringing in some yellow fin Tuna, Jacks and Bonita.

With dry weather dominating the country from April, water for agriculture and soil moisture content would have been seriously affected during May. Crop growth and development would have been impacted severely by the lack of adequate water supply. NAWASA (National Water and Sewage Authority) was forced to regulate water as a result of this lack of rainfall. Nevertheless, farmers were still able to harvest plantains, dasheen, green bananas, red plums and water melon.

Guyana

Based on rainfall data collected from the ten (10) administrative Regions, there were 11 rain days, with an average of 135.6 mm. Region 1 recorded the highest average rainfall total of 176.1mm within an average of 13 rain days. The highest 24 hour rainfall total was recorded at Kabakaburi in Region 2 with 105.6mm on 26th. Wakenaam in Region 2 recorded the highest monthly rainfall total of 277.9 mm. Rainfall in Guyana was well below its long term average.

Lethem in Region 9 recorded the highest mean maximum temperature for the month with 33.2°C; this station also recorded the highest 24 hour temperature of 34.6°C on the 26th. The lowest mean minimum temperature was recorded at Kaieteur with 21.1°C; the lowest minimum temperature for the month was recorded at Timehri with 19.3°C on the 8th.

During the month of May, below average rainfall was recorded over most parts of Guyana. Nevertheless, generally fair weather prevailed which supported most agricultural activities. However, it has been reported that several of the conservancies along the Coast of the country currently have below normal water levels; this situation is currently being monitored by the Ministry of Agriculture. No adverse effect of the weather on agriculture was reported.

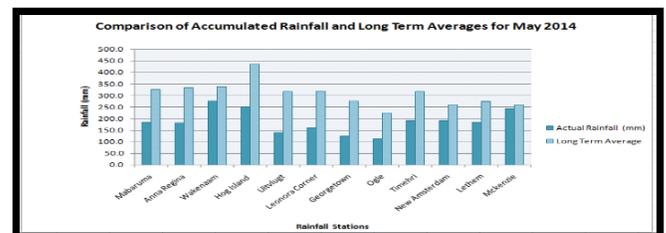


Figure 5 Actual versus long term average of maximum temperatures for May 2014 in Guyana

Jamaica

Throughout the month, the island experienced an increase in rainfall activity especially over western parishes. One major rainfall event was reported during the month, which resulted in life threatening thunderstorms and flash flooding over parts of western parishes. In excess of 100mm was reported at Sangster Airport on the 19th. The severe flash floods in the Montego Bay area on the 19th also resulted in the death of two boys from the parish.

Throughout the month surface troughs were associated with the increase in rainfall activity across the island. During the month, Sangster in the northwest recorded 272.8 mm of rainfall, while Norman Manley in the southeast recorded 31.8 mm. There were eleven and eight rainfall days reported for Sangster and Norman Manley International airports respectively. Sangster recorded above average rainfall or approximately 257% of the 1971-

2000 mean, while Norman Manley recorded below average or about 47% of the 1971-2000 mean.

The highest maximum temperature recorded for Sangster Airport was 33.6°C (on the 13th), while 33.3°C (on the 23rd) was reported for Norman Manley Airport.

Table 3 Climatological Statistics for Manley and Sangster Airports for May 2014.

Monthly Averages	Norman Manley	Sangster
Extreme Maximum Temperature	33.3 °C (33.7 °C)	33.6 °C (33.5 °C)
Lowest Minimum Temperature	23.5 °C (23.1 °C)	22.5°C (21.8 °C)
Rainfall Total	31.8 mm (67.0)	272.8 mm (106.0)
Rainfall days (≥1mm)	8 days (8.5)	11 days (14.2)

Values in red indicate the 1992-2010(19-year) averages. Values in orange represent 1971-2000 mean.

St. Lucia

Hot and dry conditions continued across Saint Lucia. There is compelling evidence island-wide that the heat and lack of moisture are severely affecting the natural vegetation. Preliminary estimates have losses in the agricultural sector as a result of the drought to be in excess of EC \$2 million. The local Flood and Drought Mitigation Committee has been meeting regularly. A water related emergency which was declared for the north of the island from March continued through May and is expected to continue into June and has been extended to the rest of the island. An aggressive public sensitization campaign continues advocating harvesting and conservation of water.

Table 4 May monthly averages at Hewanorra Airport

Cloud Cover (oktas)	Wind Dir (o from N)	Wind Speed (kt)	Air Temp. (°C)	RH (%)	Rainfall (mm)
4	90	15	27.6	74	25.0
Max Temp (°C)	Min Temp (°C)	Daily Sunshine (Hrs)	Daily Evap (mm)	Soil 20 (°C)	
30.8	25.5	9.4	8.9	29.7	

The Saint Lucia Met. Services has been issuing reports based on its SPI drought monitor. The

report at the end of May indicates that the meteorological drought has now spread to the south of the island.

Table 5 May 2014 monthly averages at George Charles Airport

Cloud Cover (oktas)	Wind Dir (o from N)	Wind Speed (kt)	Air Temp. (°C)	RH (%)	Rainfall (mm)
5	100	09	28.1	70	37.1
Max Temp (°C)	Min Temp (°C)	Daily Sunshine (Hrs)	Daily Evap (mm)	Soil 20 (°C)	
31.0	24.5				

St Vincent and the Grenadines

There were a few days where patches of low level clouds and light sprinkles helped to ease dry conditions. Occasional brisk breezes were observed throughout the month, with the highest wind gust being recorded on the 11th and 21st as 44 km/hr in the Arnos Vale area. Sea-swells were most times moderate in open waters; with above normal swells being triggered by brisk winds. Hazy conditions were experienced a few days during the second and third weeks, intermittently reducing visibility

Total rainfall for May 2014, at E.T. Joshua Airport-Arnos Vale was 42.1 mm, which is 72 mm less than the mean (1981-2010 at the E.T. Joshua Airport). Rain-days (13) were 3 days below the average for this station; with the highest 24 hour rainfall (5.3 mm) being recorded on the 29th. There were two periods of four (4) consecutive days with rainfall <1mm (3rd to 6th and 9th to 12th). The first dekad (ten-day period) had 30%, the second dekad 27%, and the third dekad ~43% of the month's rainfall.

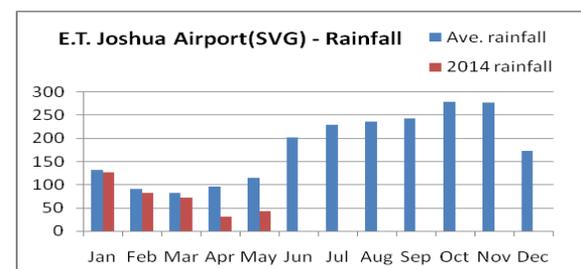


Figure 6 Monthly rainfall at E.T. Joshua Airport until May 2014 and the averages for each month..

The average maximum temperature was 30.4°C, and the average minimum temperature 24.9°C. The extreme maximum temperature was 31.2°C, which was 0.4°C lower than the 30 year average, while the

extreme minimum temperature of 23.4°C was 0.2°C more than the 30 year average. The mean relative humidity was 1.1% lower than the 30 year average of 75.1%.

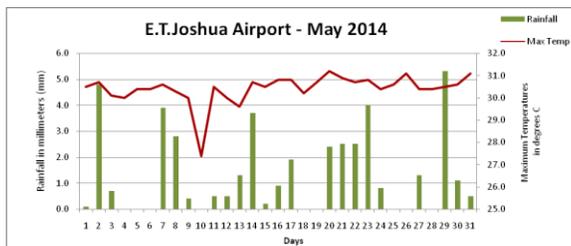


Figure 7 May 2014 daily rainfall and temperature at ET Joshua Airport.

Trinidad and Tobago

Hot weather continued to dominate as the dry conditions towards the end of April strengthened and took greater control across the country during the first two weeks of May. Total rainfall for the month amounted to 24.8 mm or 20% of the 1981-2010 average at Piarco, while at Crown Point it totaled a meager 53.7 mm or 84% of the normal. At Piarco, mean daily temperatures exceeded the 1981-2010 normal by 0.6°C to reach a mean of 28.0°C, while the mean maximum and minimum temperatures were 33.5°C and 24.4°C respectively. Crown Point observed mean temperature of 27.3 °C while the mean maximum and minimum temperatures were 28.5°C and 25.1°C respectively.

During the final dekad, moderate to very heavy rainfall developed on days two to five in Tobago and days three and seven in Trinidad, bringing much relief to the dry conditions. The final ten-day rainfall total at Piarco amounted to 19.7 mm but this may have been larger in other areas. At Crown Point, the final ten-day rainfall amounted to a significant 53.1 mm.

The rainfall in the third dekad was sufficient to increase water available for agriculture, boost soil moisture content especially in the root zone areas and reduce the demand for irrigation. It would have also supported growth and development of crops and would have provided residual moisture for the next ten days, especially if mulching practices were used. The mixed conditions would have also been favourable to newly planted and developing crops, transplanted seedlings and newly planted seeds; and

would have also caused some green-up in pastures, increased grass foliage area and grazing areas for livestock. At the same time, the combination of significant rainfall with high temperatures would have provided favourable conditions for some agricultural insect pests, fungal spores and diseases to thrive. The drier periods in between would have promoted ripening and harvesting of mature crops.

REGIONAL OVERVIEW ON SEASONAL CLIMATE FORECAST

ENSO Conditions

ENSO-neutral conditions persist, but with Eastern Pacific equatorial Sea Surface Temperatures (SSTs) now at 0.5 °C. Most models indicate a continued upward trend to about 0.5-1.5°C above average between September and November, initiating an El Niño event by this period. This is a development the region should continue to monitor closely, as it may have implications for rainfall during the late wet season and into the 2015 dry season. Due to ENSO, there is a real chance for a shift to below-normal rainfall south of 20°N for June to August, including a delay of onset of wet season, with the likelihood for below normal rainfall increasing substantially into September to November.

Conditions in the Tropical North Atlantic and Caribbean

SSTs are 0.5-1.5°C above average around the northern islands, and below-average to the east of the Antilles. The above average SSTs are forecasted to remain in the north, while a rise in SST to slightly below-average is possible according to some models, to the east of the islands by the September to November period. The Trade Winds are expected to be stronger than average, at least until September to November. Warm SSTs from around the Cayman Islands to far north-east of the Bahamas is expected to shift rainfall somewhat to above normal. Cool Atlantic temperatures slow down strong convection, thus potentially reducing precipitation, especially in the Eastern Caribbean.

June to August 2014

There is a high predictability of normal to below normal rainfall, with greater likelihood for below normal from the southeastern Caribbean all across to

Belize. The highest certainty for below normal rainfall exists over Barbados, the Windward and the Leeward Islands. This is not the same over Guyana, for which there is likely to be normal to above normal rainfall, with the highest probability for above normal. Low predictability continues for the remainder of the Guianas, but if anything with slightly better than average change of normal to above normal rainfall.

Temperatures are expected to be normal to above normal, over the Leeward Islands, Greater Antilles and Belize with high confidence. Over the Guianas, the confidence for normal to above normal is only slightly better than average.

September to November 2014

Normal to below normal rainfall is expected from the south eastern Caribbean to the Greater Antilles. There is less certainty of this over the Guianas, however. There is no clear rainfall signal for this period over Belize and The Bahamas.

Temperatures are expected to be normal to above normal, over the Leeward Islands and Greater Antilles for this period. There is slightly better than average chance that the southern islands of the eastern Caribbean would be normal to below normal, but over the Guianas, the slightly better than average chance is for normal to above normal.

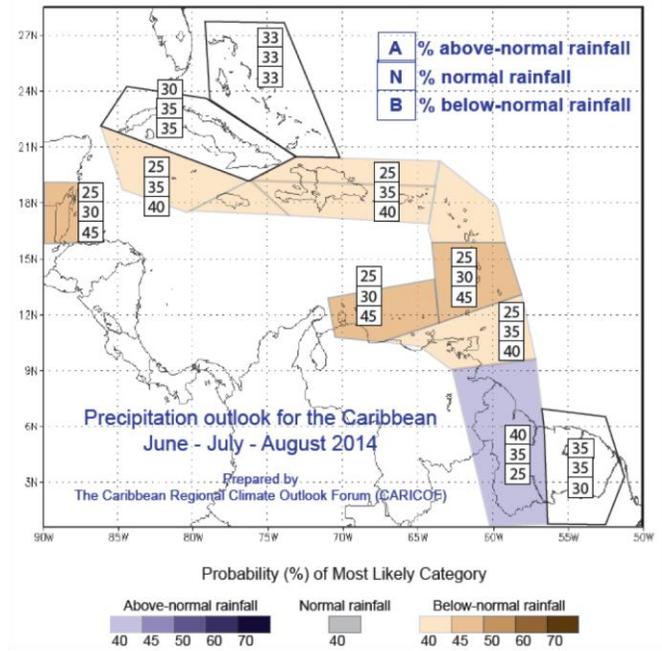


Figure 8 The June to August 2014 rainfall forecast

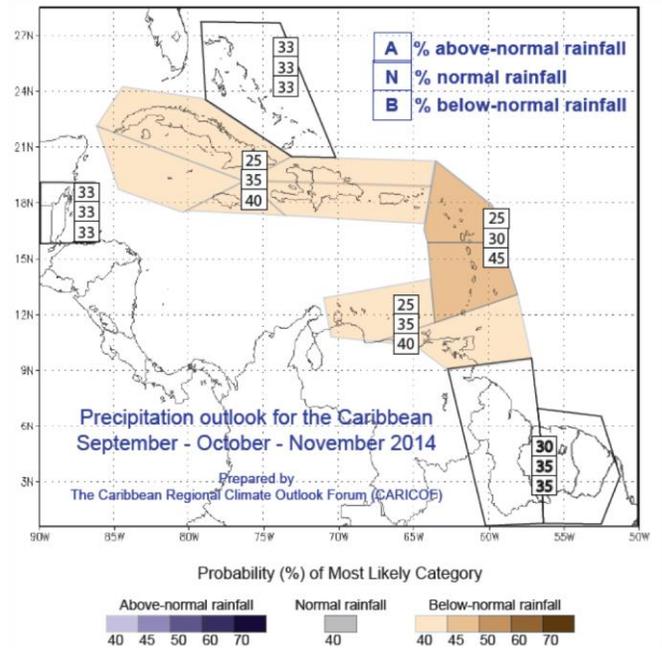


Figure 9 The September to November 2014 rainfall forecast

Prepared by
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