AGROMET BULLETIN

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HIGHLIGHTS

- **All parishes received above-normal rainfall in January.**
- **Above-normal rainfall is forecast for February through April.**
- **No parish experienced drought.**
- **Above-normal temperatures are forecast for the next 3 months.**

Weather Summary January 2018

During January, the daily weather was dominated by Frontal Systems and Troughs. These weather features resulted in the two main international airports recording above-normal rainfall.

For the month, Sangster International Airport (SIA) in the northwest recorded 148.4 mm of rainfall, while Norman Manley International Airport (NMIA) in the southeast recorded 47.7 mm of rainfall.
SIA received 183% of its 30-year mean monthly rainfall, while NMIA received about 188 % of its 30-year mean monthly rainfall. There were seventeen (17) rain days recorded for SIA and eight (8) rain days for NMIA. These values were above the monthly means of thirteen (13) and four (4) rain days respectively, for the airports.

The highest maximum temperature recorded for SIA was 31.0 °C (on January 29th). This value is the lowest for a maximum temperature recorded at the station in January, since 2006. Meanwhile, the highest maximum temperature recorded for NMIA was 32.5°C (on January 29th). A look at the records from 1993 showed that, this value ranks 7th for a January highest maximum temperature, behind the 33.8°C recorded in 2013.

Standardized Precipitation Index (SPI)

The Standardized Precipitation Index (SPI), developed by T.B. McKee, N.J. Doesken, and J. Kleist in 1993, is a tool used to monitor drought conditions based on precipitation. The SPI can be used to monitor conditions on a variety of time scales namely 1-month, 3-month, 6-month, 9-month and 12-month periods. This temporal flexibility allows the SPI to be useful in both short-term agricultural and long-term hydrological applications by providing early warning of drought and for making assessments on the severity of a drought. The Meteorological Service, Jamaica (MSJ) calculates an observed SPI (see Table 1 and Figure1) and a forecast SPI (see Figure 2) using a 3-month and 6-month time interval, respectively.

Parish	Station	January Rainfall Total (mm)	Percent of 30-year Mean (%)	Observed SPI for November-December-January
Hanover	Mount Peto	316	368	1.68
Westmoreland	Savanna-La-Mar	165	222	0.49
Westmoreland	Frome	165	253	0.98
Manchester	Sutton	181	309	No SPI value due to unavailability of data for November.
St. Elizabeth	Y.S. Estates	40	48	0.45
St. Elizabeth	Potsdam	201	344	3.13
Clarendon	Beckford Kraal	115	189	0.67
St. Catherine	Tulloch	111	164	0.15
St. Catherine	Worthy Park	103	141	0.26
Trelawny	Orange Valley	81	101	0.31
St. James	Sangster Airport	148	183	2.20
St. Ann	Cave Valley	145	254	1.03
St. Mary	Hampstead	663	371	1.43
Portland	Shirley Castle	809	178	0.62
St. Thomas	Serge Island	170	192	1.38
KSA	Langley	No data	No data	No data
KSA	Palisadoes	48	188	1.22

Table 1: Observed SPI for Selected Stations across Jamaica during the November-January Period.

SPI Value	Category		SPI Value	Category
0.00 to -0.50	Near Normal		**0.00 to 0.50**	Near Normal
-0.51 to -0.79	Abnormally Dry		**0.51 to 0.79**	Abnormally Wet
-0.80 to -1.29	Moderately Dry		**0.80 to 1.29**	Moderately Wet
-1.30 to -1.59	Severely Dry		**1.30 to 1.59**	Severely Wet
-1.60 to -1.99	Extremely Dry		**1.60 to 1.99**	Extremely Wet
-2.00 or less	Exceptionally Dry		**2.00 or more**	Exceptionally Wet

Table 2: Severity Classes of the SPI

Standardized Precipitation Index Discussion

Based on the SPI figures for the November-January period, 15 stations across the island, showed near-normal (wet) to exceptionally wet conditions, while 2 stations had missing values.

A comparison of the SPI figures for Nov/Dec/Jan with those for Oct/Nov/Dec shows that:

- Conditions at Potsdam, Sangster Airport, Mount Peto, Hampstead, Serge Island, Frome and Shirley Castle became wetter with the range now extending to exceptionally wet while for the previous period the range was only up to extremely wet. In the case of Frome conditions moved from near-normal (dry) to moderately wet.
- Cave Valley and Beckford Kraal were still experiencing wet conditions as shown by the moderately wet and abnormally wet rankings respectively.
- Stations moving from near-normal (dry) conditions to near-normal (wet) conditions were Tulloch and Savanna-La-Mar.

In January, all parishes received above-normal rainfall and along with the rainfall received in December, this has resulted in the elimination of the dry conditions which were being observed in some farming communities, especially in western parishes. There were nine (9) parishes that received 200% or more of their mean monthly rainfall for January.

See Figure 1 below for the graphic representation of observed SPI values for the November-December-January period.

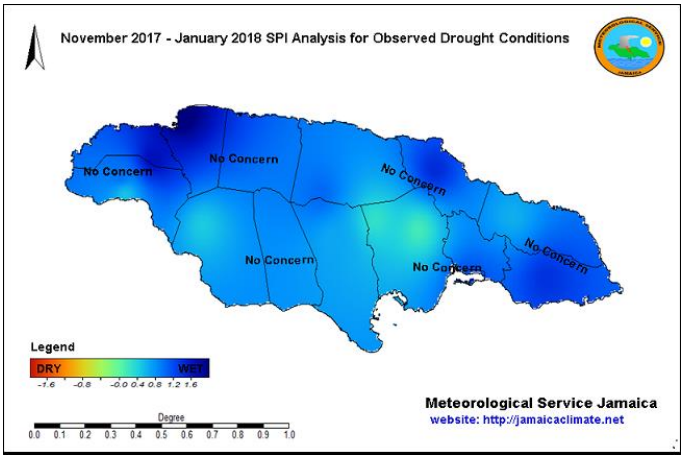

Figure 1:November2017- January 2018 SPI Analysis for Observed Conditions

The forecast through April (see Figure 2 below) which includes the remainder of the dry season, has determined that the island should receive sufficient rainfall, ahead of the traditional early rainfall season (May/June). While eastern and central parishes may not receive as much rainfall percentage-wise as those in the west, there should be no concerns for drought conditions developing over the next three (3) months, once the forecast is achieved.

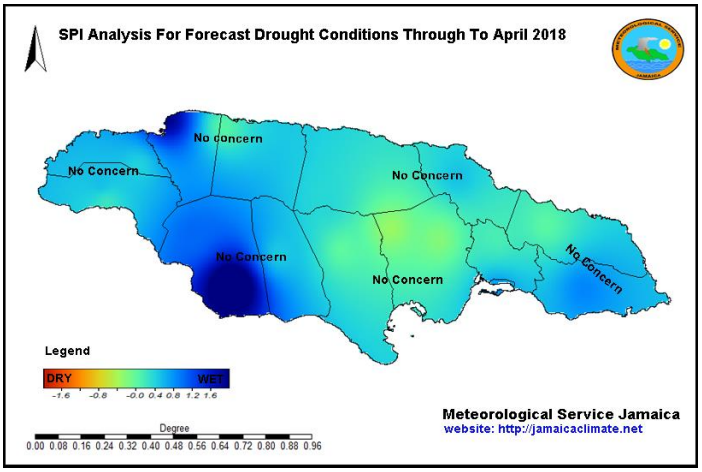

Figure 2: Forecast Drought Conditions through to April 2018

Seasonal Forecast – February to April 2018

The MSJ makes seasonal climate forecasts using the Climate Predictability Tool (CPT). The CPT was developed by the International Research Institute for Climate and Society (IRI) in order to create and communicate seasonal forecasts that address the needs of different user groups.

During the next three months (February-April), the forecast models are indicating that Jamaica should receive above-normal rainfall, that is, wetter-than-normal conditions as the end of the dry season approaches. The forecast for above-normal temperatures remains consistent for the February-April 2018 period.

	% Below (B)	% Normal (N)	% Above (A)
Jamaica Rainfall Outlook	20	30	50
Jamaica Temperature Outlook	20	30	50

Key
A: Above-normal rainfall means greater than 66 percentile of the rank data
N: Near-normal rainfall means between 33 and 66 percentile of the rank data
B: Below-normal rainfall means below 33 percentile of the rank data

Table 3: Jamaica Rainfall and Temperature Probability for February to April 2018.

Table 4 below, shows the precipitation outlook for selected stations across Jamaica as analysed by the Climate Predictability Tool. For the February to April 2018 period, all seventeen (17) stations are indicating higher probabilities for above-normal rainfall.

Stations	Parishes	Below (B) %	Normal (N) %	Above (A)%
Beckford Kraal	Clarendon	25	30	45
Mount Peto	Hanover	20	30	50
Palisadoes	Kingston	20	30	50
Langley	Kingston	20	30	50
Suttons	Manchester	10	20	70
Shirley Castle	Portland	20	30	50
Cave Valley	St. Ann	10	20	70
Tulloch Estate	St. Catherine	20	30	50
Worthy Park	St. Catherine	15	25	60
Y.S. Estate	St. Elizabeth	15	25	60
Potsdam	St. Elizabeth	10	20	70
Sangster Airport	St. James	20	30	50
Serge Island	St. Thomas	10	20	70
Hampstead	St. Mary	30	30	40
Orange Valley	Trelawny	20	30	50
Savanna-La-Mar	Westmoreland	10	30	60
Frome	Westmoreland	15	25	60

Key
A: Above-normal rainfall means greater than 66 percentile of the rank data
N: Near-normal rainfall means between 33 and 66 percentile of the rank data
B: Below-normal rainfall means below 33 percentile of the rank data

Table 4: Precipitation Outlook for Selected Stations for February to April 2018.

Summary and Expected Agricultural Impacts

The CPT is indicating that most areas across the island are expected to experience above-normal rainfall over the February to April period.

The above-normal rainfall received especially over western parishes in December and January, was sufficient to reverse the dry conditions which were being experienced in farming communities.

The current forecast for above-normal rainfall approaching the end of the dry season should be welcome news for farming communities; therefore, farmers across the island could experience significant increases in crop yields.

Of concern however, would be the forecast for continued above-normal temperatures, which could cause heat stress for livestock and other animals; therefore, close monitoring would be required for them.

The Met Office will continue to closely monitor conditions and disseminate advisories as necessary.

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