



AGROMET BULLETIN



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HIGHLIGHTS

- Most southern stations experienced below-normal rainfall and dry conditions.**
- Near-normal to above-normal rainfall is forecast for some areas for November through to January.**
- Dry conditions could affect some areas after the wet season.**

Weather Summary October 2016

During the month of October, weather conditions were dominated by Troughs, along with the impact from Hurricane Mathew during the early days of the month.

Rainfall recorded at Norman Manley (located in the southeast of Jamaica) was 66.1 mm while Sangster (located in the northwest) recorded 149.0 mm. There were eleven (11) rain days reported for both Norman Manley and Sangster.

The highest maximum temperature recorded for Norman Manley was 34.0°C (4th October) and at Sangster, 34.5 °C (6th October).

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 Figure 1) and a forecast SPI (see Figure 2) using a 3-month and 6-month time interval, respectively.

Observed August to October SPI for Selected Stations

Parish	Station	October Rainfall Total (mm)	Percent of 30-year Mean (%)	Observed SPI for August-September-October
Hanover	Mount Peto	241	68	-0.67
Westmoreland	Savanna-La-Mar	223	93	-0.28
Westmoreland	Frome	170	68	-0.72
Manchester	Sutton	424	167	0.37
St. Elizabeth	Y.S. Estates	472	159	0.11
St. Elizabeth	Potsdam	372	151	0.43
Clarendon	Beckford Kraal	242	91	-0.49
St. Catherine	Tulloch	302	126	-0.39
St. Catherine	Worthy Park	266	118	-0.16
Trelawny	Orange Valley	200	135	1.06
St. James	Sangster	149	92	0.72
St. Ann	Cave Valley	415	208	0.94
St. Mary	Hampstead	565	406	2.16
Portland	Shirley Castle	846	215	1.34
St. Thomas	Serge Island	284	107	-0.01
KSA	Langley	302	84	-1.02
KSA	Manley Airport	66	57	-1.11

Table 1: Observed SPI for Selected Stations across Jamaica during the August-September-October 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 August-September-October period, two stations recorded moderately dry conditions, namely Langley and Manley, of which Manley was the driest recorded for the period (Table 1). Two (2) other stations experienced ‘abnormally dry’ conditions.

During the three month period, Hampstead in St. Mary had an SPI value in the ‘extremely wet’ category. This was followed by Shirley Castle in Portland in the ‘severely wet’ category and Orange Valley in Trelawny and Cave Valley in St. Ann, both in the ‘moderately wet’ category. Sangster in St. James was in the ‘abnormally wet’ category. The remaining eight (8) stations were considered to be within near-normal bounds. A slight majority of stations (nine of seventeen) and located mainly on the southern side of the island, experienced near-normal to dry conditions for the three month period.

With dry conditions being experienced in western and some southern parishes, there are concerns for the farming sector. In contrast, the concern for the northern parishes was damage to crops by flooding and possible land slippage, especially in sections of Portland and St. Mary, where wet conditions have prevailed. See Figure 1 below for the graphical representation of observed SPI values for the August-September-October period.

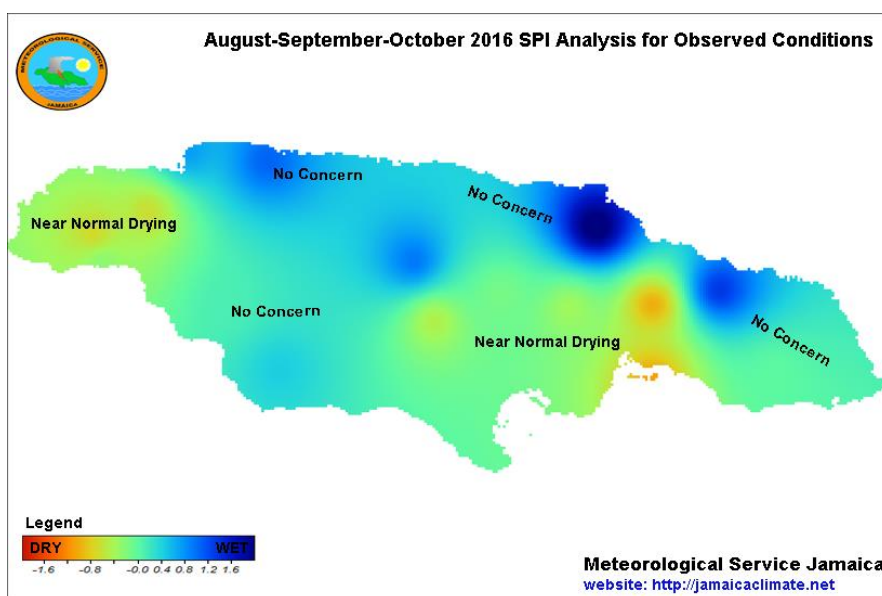


Figure 1: August-September-October 2016 SPI Analysis for Observed Conditions



The SPI analysis through January (see Figure 2 below) has determined that there may be some dry conditions over southern parishes going into the early part of the upcoming dry season. Therefore we will be closely monitoring conditions so that the relevant advice can be disseminated as necessary.

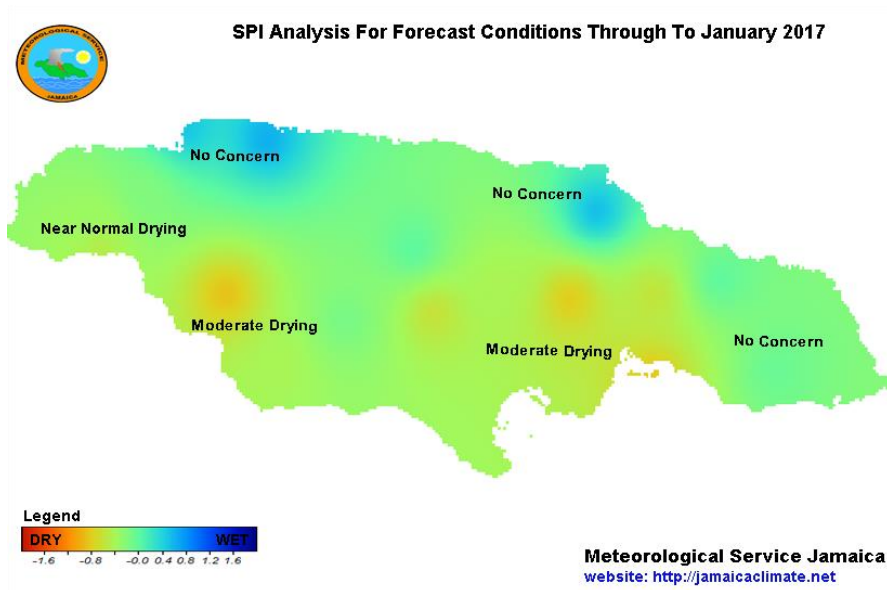


Figure 2: Forecast Drought Conditions through to January 2017

Seasonal Forecast – November 2016 to January 2017

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.

For the November to January period, precipitation models have indicated an expectation of near-normal to above-normal rainfall for most stations examined, while, temperature models are indicating warmer-than-normal values. Confidence in these models continues to be high as current environmental conditions are aligning with model predictions. These environmental conditions also coincide with an expectation of an increase in rainfall, as Jamaica transitions the primary wet season.



	% Below (B)	% Normal (N)	% Above (A)
Jamaica Rainfall Outlook	35	25	40
Jamaica Temperature Outlook	25	20	55
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 November 2016 to January 2017.

Table 4 below, shows the precipitation outlook for selected stations across Jamaica as analysed by the Climate Predictability Tool. Ten (10) of the seventeen (17) stations are indicating higher probabilities for above-normal rainfall for the November 2016 to January 2017 period, with exceptions for stations in sections of some eastern and western parishes.



Stations	Below (B) %	Normal (N) %	Above (A)%
Manley (Kingston)	25	35	40
Sangster (St. James)	40	25	35
Savanna-la-mar (Westmoreland)	45	30	25
Beckford Kraal (Clarendon)	20	30	50
Serge Island (St. Thomas)	40	25	35
Cave Valley (St. Ann)	20	30	50
Tulloch Estate (St. Catherine)	35	25	40
Y.S. Estate (St. Elizabeth)	25	30	45
Hampstead (St. Mary)	50	20	30
Orange Valley (Trelawny)	50	20	30
Langley (Kingston)	40	25	35
Mount Peto (Hanover)	35	25	40
Shirley Castle (Portland)	40	30	30
Suttons (Manchester)	20	30	50
Potsdam (St. Elizabeth)	20	30	50
Frome (Westmoreland)	30	30	40
Worthy Park (St. Catherine)	35	25	40
<p>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</p>			

Table 4: Precipitation Outlook for Selected Stations for November 2016 to January 2017.



Summary and Expected Agricultural Impacts

The SPI analysis tool is indicating that Jamaica is generally expected to experience near to above-normal rainfall, with a decline likely as the island exits the wet season and enters the early part of the dry season.

With this forecast there should be no immediate drought concerns for the island, but this could change with the transition to the dry season and therefore the farming communities should be aware of this possibility. The Meteorological Service will however, continue to monitor the findings from the models in order to advise accordingly, should action be required on their part.

Issued by the
Climate Branch
Meteorological Service, Jamaica
65 ¾ Half Way Tree Road
Kingston 10
Telephone: 929-3700/3706
Email: datarequest@metservice.gov.jm