



# AGROMET BULLETIN



Volume 5. No. 1 | January 2017

## HIGHLIGHTS

- Western stations experienced below-normal rainfall and extremely dry conditions.**
- Below normal rainfall is forecast for most areas for February through April.**
- Dry conditions could continue affecting western and some southern areas during the dry season.**

### Weather Summary January 2017

During the month of January weather conditions were dominated by High Pressure Ridges.

The Norman Manley Airport recorded a rainfall total of 2.0 mm, while Sangster Airport in the northwest recorded a rainfall total of 19.9 mm. These totals were below the Climatological means for both stations. There were five (5) rainfall days reported for Sangster Airport and one (1) rainfall day reported for Manley Airport.

The highest maximum temperature recorded for Norman Manley Airport was 32.7 °C (2nd January) meanwhile Sangster Airport reported a highest maximum of 32.6 °C (23rd January).



### 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.

### Observed November 2016 to January 2017 SPI for Selected Stations

Parish	Station	January Rainfall Total (mm)	Percent of 30-year Mean (%)	Observed SPI for November-December-January
Hanover	Mount Peto	64	74	-1.82
Westmoreland	Savanna-La-Mar	70	94	-1.50
Westmoreland	Frome	66	101	-1.86
Manchester	Sutton	7	13	-0.71
St. Elizabeth	Y.S. Estates	91	108	-0.24
St. Elizabeth	Potsdam	30	52	-0.03
Clarendon	Beckford Kraal	12	19	-1.00
St. Catherine	Tulloch	53	78	0.09
St. Catherine	Worthy Park	24	33	-0.62
Trelawny	Orange Valley	39	48	-1.16
St. James	Sangster	20	25	-1.86
St. Ann	Cave Valley	13	22	-1.84
St. Mary	Hampstead	93	52	0.98
Portland	Shirley Castle	301	66	0.93
St. Thomas	Serge Island	2	2	-1.28
KSA	Langley	114	60	-0.88
KSA	Manley Airport	2	8	-0.09

Table 1: Observed SPI for Selected Stations across Jamaica during the November-December-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-December-January period, four stations namely, Mount Peto, Frome, Sangster and Cave Valley recorded extremely dry conditions. Savanna-La-Mar was severely dry, Langely, Serge Island, Orange Valley and Beckford Kraal recorded moderately dry conditions while Sutton and Worthy Park recorded abnormally dry conditions.

During the three month period, Hampstead and Shirley Castle had SPI values in the moderately wet category. The remaining four (4) stations were considered to be within near-normal bounds. The majority of stations (fourteen of seventeen) which covered sections of western, central and southeastern parishes, experienced near-normal to very dry conditions for the three month period.

With very dry conditions being experienced across a majority of parishes, there are dire concerns for the farming sector. In contrast, there is no concern for the northeastern parishes of Portland and St. Mary along with sections of St. Catherine where, fairly wet conditions prevailed. See Figure 1 below for the graphical representation of observed SPI values for the November-December-January period.

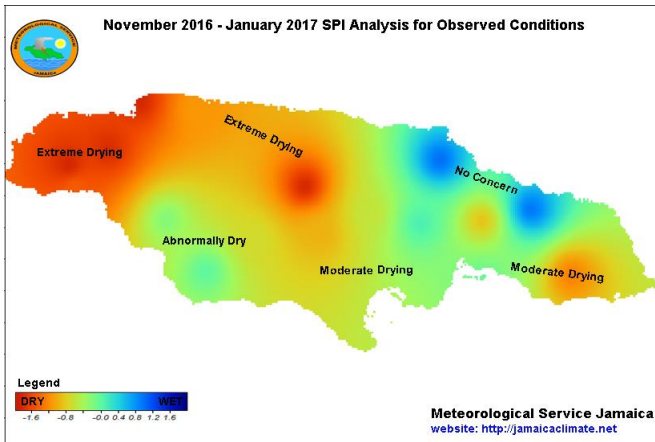


Figure 1: -November-December-January (2016-2017) SPI Analysis for Observed Conditions

The drought forecast through April (see Figure 2 below) has determined that there should be continued drying over most parishes, while, northeastern parishes should continue to experience fairly wet conditions. With this outlook, there should be concerns in the farming sector for the worsening of drought conditions and its impacts on crops and animals, as well as the possibility of drought conditions spreading to other areas which are not currently experiencing these conditions.

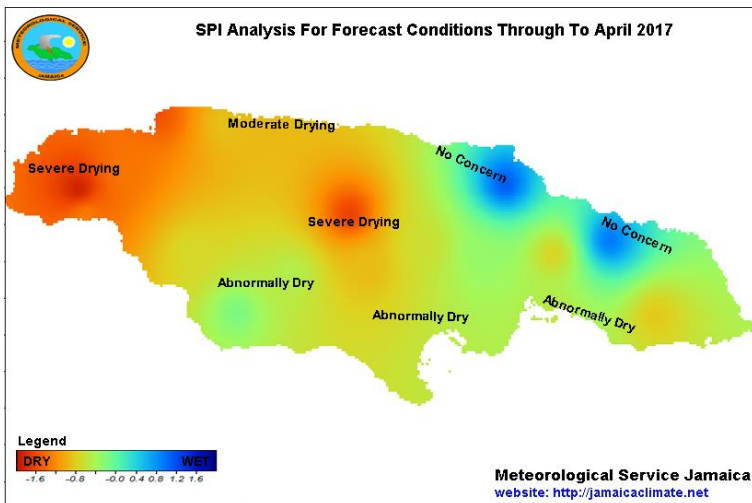


Figure 2: Forecast Drought Conditions through to April 2017



### Seasonal Forecast – February to April 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.

The rainfall outlook for February to April 2017 is indicating below-normal (or less than expected) activity, along with warmer days. Therefore, no significant relief is likely from the dry conditions over the next three months and therefore could spread to more areas, especially those areas not experiencing these conditions.

Given this situation, plans should have begun for drought alleviation for those farming communities now experiencing dry conditions. We will however continue to monitor the findings from the models in order to better advise our farmers.

	<b>% Below (B)</b>	<b>% Normal (N)</b>	<b>% Above (A)</b>
<b>Jamaica Rainfall Outlook</b>	40	30	30
<b>Jamaica Temperature Outlook</b>	20	35	45
<b>Key</b> 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 2017.

Table 4 below, shows the precipitation outlook for selected stations across Jamaica as analysed by the Climate Predictability Tool. Thirteen (13) of the seventeen (17) stations are indicating higher probabilities for below-normal rainfall for the February to April 2017 period, another three (3) stations are indicating probabilities for near-normal rainfall while, one station, Suttons is indicating above-normal activity.



Stations	Below (B) %	Normal (N) %	Above (A)%
Manley (Kingston)	33	33	33
Sangster (St. James)	33	33	33
Savanna-la-mar (Westmoreland)	33	33	33
Beckford Kraal (Clarendon)	40	30	30
Serge Island (St. Thomas)	40	30	30
Cave Valley (St. Ann)	40	30	30
Tulloch Estate (St. Catherine)	40	30	30
Y.S. Estate (St. Elizabeth)	40	20	40
Hampstead (St. Mary)	40	30	30
Orange Valley (Trelawny)	40	35	25
Langley (Kingston)	40	30	30
Mount Peto (Hanover)	40	30	30
Shirley Castle (Portland)	40	30	30
Suttons (Manchester)	35	20	45
Potsdam (St. Elizabeth)	40	30	30
Frome (Westmoreland)	40	30	30
Worthy Park (St. Catherine)	40	30	30
<b>Key</b>			
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 2017.



### **Summary and Expected Agricultural Impacts**

The CPT is indicating that Jamaica is generally expected to experience below-normal rainfall during the February to April period.

With this forecast and the current deficit in rainfall over western and central parishes, there should be concerns for the possible worsening and spreading of drought conditions over other sections of the island. Farming communities should therefore have started plans for drought alleviation as this dry season continues.

We will continue to closely monitor conditions and disseminate the necessary advice.

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](mailto:datarequest@metservice.gov.jm)