AGROMET BULLETIN

Volume 4. No. 7 | July 2016

HIGHLIGHTS

- **'Moderately dry' conditions reported in south St. Elizabeth**
- **Above-normal rainfall is forecast for August through to October.**
- **Above normal temperatures forecast to continue through October 2016.**

Weather Summary July 2016

During the month of July, weather conditions were influenced by Troughs, Tropical Waves and High Pressure systems.

Rainfall recorded at Norman Manley (located in the southeast of Jamaica) was 69.8 mm while Sangster (located in the northwest) recorded 54.0 mm. There were five (5) rain days reported for Norman Manley and ten (10) rain days reported for Sangster.

The highest maximum temperature recorded for Norman Manley was 35.5°C (17th July) meanwhile Sangster Airport reported 35.0 °C (12th July).

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 May to July SPI for Selected Stations

Parish	Station	July Rainfall Total (mm)	Percent of 30-year Mean (%)	Observed SPI for May-June-July
Hanover	Mount Peto	285	116	0.76
Westmoreland	Sav-La-Mar	168	96	0.11
Westmoreland	Frome	262	119	0.07
Manchester	Sutton	97	103	0.47
St. Elizabeth	Y.S. Estates	188	104	-0.55
St. Elizabeth	Potsdam	49	59	-1.07
Clarendon	Beckford Kraal	66	76	-0.47
St. Catherine	Tulloch	205	138	-0.37
St. Catherine	Worthy Park	101	96	-0.7
Trelawny	Orange Valley	9	17	-0.1
St. James	Sangster	54	104	-0.53
St. Ann	Cave Valley	202	233	1.12
St. Mary	Hampstead	24	38	-0.24
Portland	Shirley Castle	76	55	-0.09
St. Thomas	Serge Island	82	50	-0.43
KSA	Langley	110	114	1.01
KSA	Manley Airport	70	236	0

Table 1: Observed SPI for Selected Stations across Jamaica during the May-June-July 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 May-June-July period, the driest of all stations listed in Table 1 was Potsdam in St. Elizabeth, whose value fell in the 'moderately dry' class. Conversely, the wettest station was Cave Valley in St. Ann, which received more than two times as much rain as its 30-year mean and an SPI value in the 'moderately wet' category.

The current SPI values for this current May-June-July period denote a clear trend towards drier conditions when compared to the previous three-month period (April-May-June). There are now ten (10) stations exhibiting varying levels of dryness while only five (5) stations were in dry categories in the previous period.

Other stations such as Manley in Kingston received more than two times its 30-year mean in July but the resulting SPI value still falls in the 'near normal' category since rainfall from the previous six months has been so little in comparison to the mean. See Figure 1 below for the graphical representation of observed SPI values for the May-June-July period.

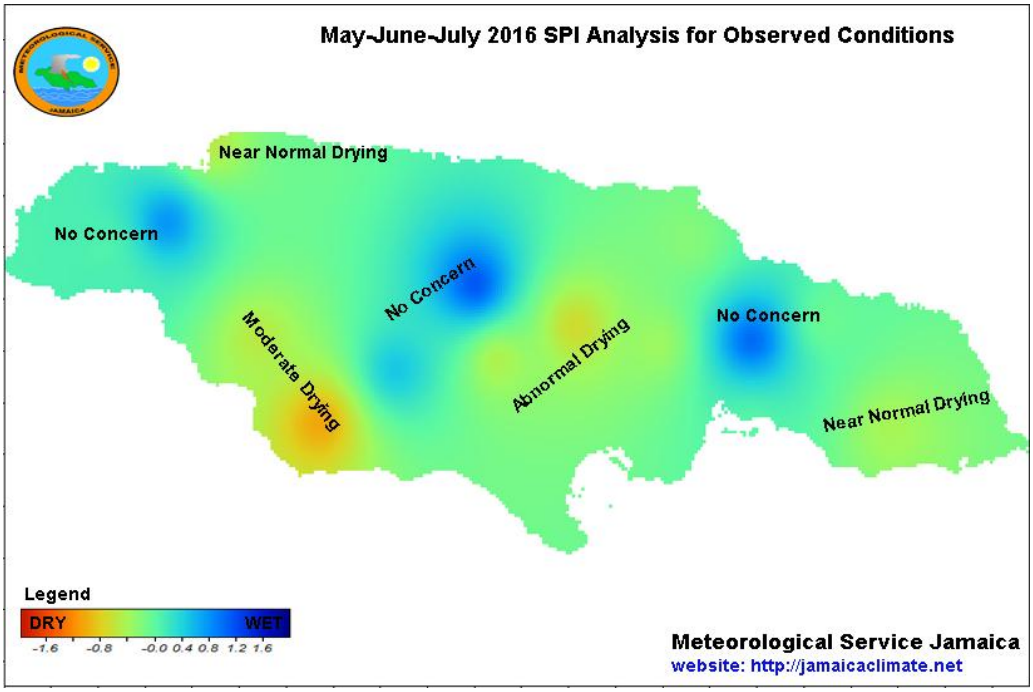

Figure 1: May-June-July 2016 SPI Analysis for Observed Conditions

As for drought conditions, the SPI analysis through October has determined that most central and western parishes should be without concern and that near normal conditions are possible for St. Thomas and northern St. Catherine in particular (see Figure 2 below).

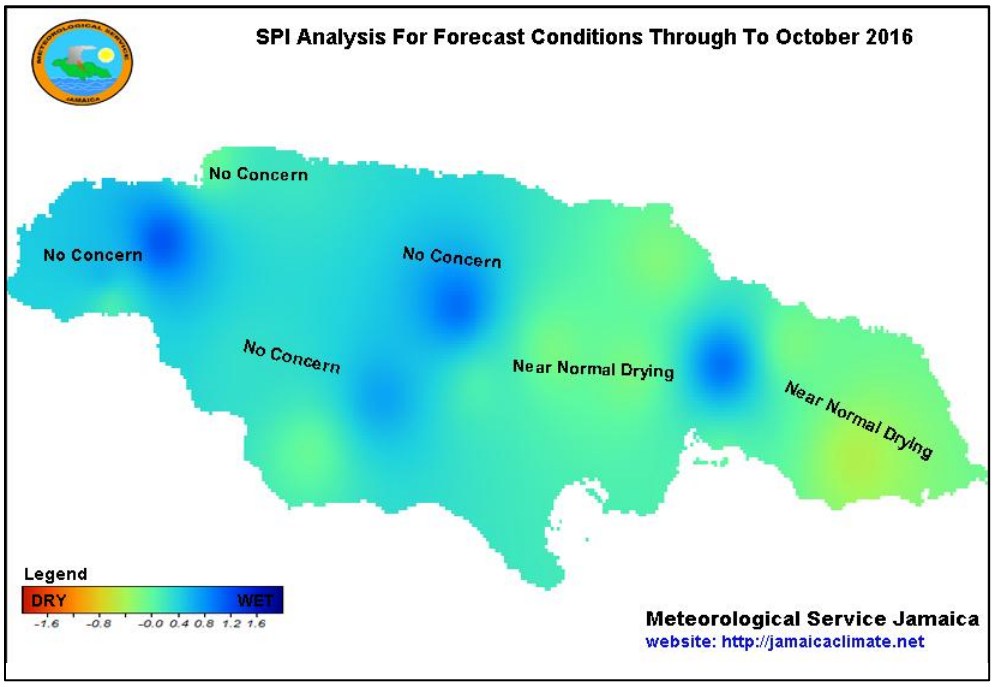

Figure 2: Forecast Drought Conditions through to October 2016

Seasonal Forecast – August to October 2016

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 August to October period, precipitation models have indicated an expectation of normal to above-normal rainfall across most areas while temperature models are indicating warmer-than-normal temperatures (see Table 3 below).

	% 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 August to October.

Specifically, each month's forecast is as follows:

August -------→ Above Normal

September --→ Above Normal

October-------→Above Normal

Figure 3: August-September-October Rainfall Outlook

With the forecast that August, September and October are expected to receive above-normal rainfall for most places, there should be little to no impact from drought conditions. The Meteorological Service will continue to monitor the findings from the models in order to advise farming communities should the situation change and action is required on their part.

Table 4 below, shows the precipitation outlook for selected stations across Jamaica as analysed by the Climate Predictability Tool. All seventeen (17) analysed stations are indicating greater probabilities for above-normal rainfall for the August to October period.

Stations	Below (B) %	Normal (N) %	Above (A)%
Manley (Kingston)	20	35	45
Sangster (St. James)	20	30	50
Savanna-la-mar (Westmoreland)	20	30	50
Beckford Kraal (Clarendon)	20	35	45
Serge Island (St. Thomas)	20	30	50
Cave Valley (St. Ann)	15	25	60
Tulloch Estate (St. Catherine)	15	30	55
Y.S. Estate (St. Elizabeth)	20	30	50
Hampstead (St. Mary)	20	30	50
Orange Valley (Trelawny)	35	25	40
Langley (Kingston)	15	25	60
Mount Peto (Hanover)	15	25	60
Shirley Castle (Portland)	35	25	40
Suttons (Manchester)	15	25	60
Potsdam (St. Elizabeth)	25	35	40
Frome (Westmoreland)	15	25	60
Worthy Park (St. Catherine)	15	30	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 4: Precipitation Outlook for Selected Stations for August to October.

Summary and Expected Agricultural Impacts

The CPT has projected that Jamaica is expected to experience above-normal rainfall and temperature conditions for August, September and October 2016. The SPI analysis also makes a similar conclusion but has additionally indicated that places such as St. Thomas and northern St. Catherine would likely experience near normal conditions through to October. Consequently, there should be little to no agricultural impacts due to drought conditions in this period.

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