AGROMET BULLETIN

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HIGHLIGHTS

- **Most stations experienced below-normal rainfall and dry conditions.**
- **Above-normal rainfall is forecast for October through to December.**
- **Little to no impact from drought conditions expected through December.**

Weather Summary September 2016

During the month of September, weather conditions were dominated by Troughs, Tropical Waves and High Pressure Systems.

Rainfall recorded at Norman Manley (located in the southeast of Jamaica) was 45.5 mm while Sangster (located in the northwest) recorded 125.7 mm. There were four (4) rain days reported for Norman Manley and eight (8) rain days reported for Sangster.

The highest maximum temperature recorded for Norman Manley was 34.4°C (28th September) and at Sangster, 36.4 °C (1st September).

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 July to September SPI for Selected Stations

Parish	Station	September Rainfall Total (mm)	Percent of 30-year Mean (%)	Observed SPI for July-August-September
Hanover	Mount Peto	431	116	0.03
Westmoreland	Savanna-La-Mar	176	79	-0.33
Westmoreland	Frome	331	137	-0.10
Manchester	Sutton	148	63	-0.12
St. Elizabeth	Y.S. Estates	162	63	-1.03
St. Elizabeth	Potsdam	40	74	-0.32
Clarendon	Beckford Kraal	42	21	-0.72
St. Catherine	Tulloch	167	71	-0.51
St. Catherine	Worthy Park	89	47	-0.50
Trelawny	Orange Valley	143	138	0.51
St. James	Sangster	126	95	0.84
St. Ann	Cave Valley	183	144	0.65
St. Mary	Hampstead	82	87	0.64
Portland	Shirley Castle	134	68	-0.16
St. Thomas	Serge Island	39	15	-0.50
KSA	Langley	190	68	-0.87
KSA	Manley Airport	46	32	-0.51

Table 1: Observed SPI for Selected Stations across Jamaica during the July-August-September 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 July-August-September period, the driest of all stations listed in Table 1 was Y.S. Estates in St. Elizabeth, which had an SPI value in the 'moderately dry' category. Langley in KSA also experienced 'moderately dry' conditions. Three (3) other stations experienced 'abnormally dry' conditions.

During the three month period, Sangster in St. James had an SPI value in the 'moderately wet' category. Three (3) other stations experienced 'abnormally wet' conditions. The remaining eight (8) stations were considered to be within near-normal bounds. However, the majority of stations (the greater number of which was on the southern section of the island) experienced near-normal to dry conditions for the three month period.

With moderately dry conditions being experienced in southwestern Jamaica and in particular St. Elizabeth, there are concerns for the farming sector. There also remains concern for other southern parishes which showed the greatest levels of drying. Portland also experienced near normal drying conditions during the period. Meanwhile, there were no concern for most northern parishes. See Figure 1 below for the graphical representation of observed SPI values for the July-August-September period.

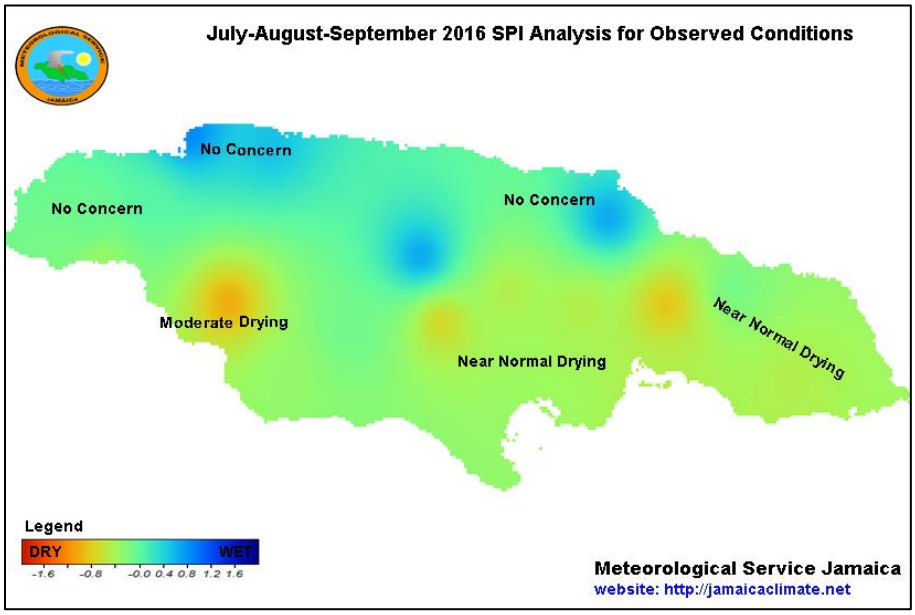

Figure 1: July-August-September 2016 SPI Analysis for Observed Conditions

The SPI analysis through December (see Figure 2 below) has determined that there should be no concern for drought conditions as we begin the dry season. This situation could change as the dry season progresses, but, will be closely monitored so that relevant advise can be disseminated as necessary.

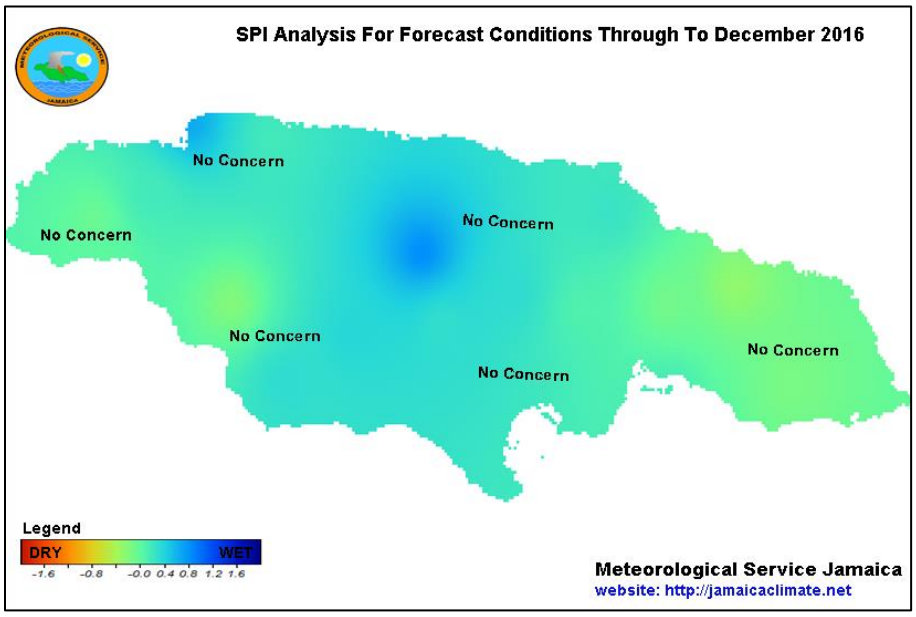

Figure 2: Forecast Drought Conditions through to December 2016

Seasonal Forecast – October to December 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 October to December period, precipitation models have indicated an expectation of above-normal rainfall across most areas, while, temperature models are indicating warmer-than-normal values. Confidence in these models continues to improve as current environmental conditions are aligning with model predictions. These environmental conditions also coincide with the expected increase in rainfall, as Jamaica transitions the primary wet season.

	% Below (B)	% Normal (N)	% Above (A)
Jamaica Rainfall Outlook	25	35	40
Jamaica Temperature Outlook	25	15	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 3: Jamaica Rainfall and Temperature Probability for October to December.

Table 4 below, shows the precipitation outlook for selected stations across Jamaica as analysed by the Climate Predictability Tool. The majority of the seventeen (17) stations are indicating higher probabilities for above-normal rainfall for the October to December period, except for sections of southwestern parishes (Westmoreland and St. Elizabeth).

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

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 October to December.

Summary and Expected Agricultural Impacts

Both the CPT and SPI analysis tools are in agreement that Jamaica is generally expected to experience above-normal rainfall for the October to December period. Both also agree that southwestern parishes could tend toward below-normal rainfall (CPT) or drier conditions (SPI), but even with this forecast, there should be no concerns for drought conditions impacting the agricultural sector.

With this forecast of above-normal rainfall for most places, there should be no drought concerns for the island. The Meteorological Service will however, 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.

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