



# AGROMET BULLETIN



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## HIGHLIGHTS

- + The majority of stations experienced above-normal rainfall in September.**
- + Above-normal rainfall is forecast for most areas for October through December.**
- + No parish experienced drought condition.**
- + Above normal temperatures are forecast for the next 3 months.**

### Weather Summary September 2017

During the month of September, the weather was dominated mainly by Troughs and then High Pressure Ridges.

September saw, Sangster in the northwest recording 187 mm of rainfall, while Norman Manley in the southeast recorded 138 mm of rainfall. Sangster received 141% of its 30-year mean rainfall, while Manley received about 96% of its 30-year mean rainfall. There were fourteen (14) rain days recorded for Sangster Airport and eight (8) rain days for Manley Airport.

The highest maximum temperature recorded for Sangster Airport was 35.0°C (on September 1st) meanwhile, Manley Airport recorded 34.4°C (on September 6th).



### 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.

Parish	Station	September Rainfall Total (mm)	Percent of 30-year Mean (%)	Observed SPI for July-August-September
Hanover	Mount Peto	286	77	-0.60
Westmoreland	Savanna-La-Mar	86	35	-0.99
Westmoreland	Frome	133	55	-1.96
Manchester	Sutton	568	240	1.16
St. Elizabeth	Y.S. Estates	152	59	-0.30
St. Elizabeth	Potsdam	311	188	0.31
Clarendon	Beckford Kraal	273	134	0.06
St. Catherine	Tulloch	327	140	0.13
St. Catherine	Worthy Park	192	102	-0.35
Trelawny	Orange Valley	83	80	-0.64
St. James	Sangster	187	141	0.40
St. Ann	Cave Valley	345	271	0.76
St. Mary	Hampstead	146	155	0.93
Portland	Shirley Castle	208	106	-0.40
St. Thomas	Serge Island	280	108	-0.77
KSA	Langley	199	72	-1.11
KSA	Manley Airport	138	96	-0.20

**Table 1: Observed SPI for Selected Stations across Jamaica during the July-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-September period, 10 of the 17 stations across the island, showed near-normal to extremely dry conditions, while the other 7 stations showed near-normal to moderately wet conditions. A comparison with the period June-August is showing that a majority of stations experienced near-normal to moderately wet conditions, while, at the end of September a majority of stations were experiencing near-normal to extremely dry conditions.

A comparison of the SPI figures at the end of September with those at the end of August showed that:

- Hampstead was still experiencing moderately wet conditions.
- Sutton, which experienced abnormally wet conditions, is experiencing wetter conditions as shown by the moderately wet ranking,
- Serge Island has seen improvement moving from exceptionally dry conditions to moderately dry conditions.
- Langley was still experiencing moderately dry conditions, while Orange Valley was still experiencing abnormally dry conditions.
- Frome has seen a worsening in drought conditions moving from moderately dry to extremely dry conditions.

In September, the below normal rainfall activity over western parishes has resulted in more areas experiencing drier conditions, which would now be of concern in farming communities, especially those in Westmoreland, Hanover and sections of St. Elizabeth. In contrast the above-normal rainfall received in other parishes means



that, eastern parishes along with Manchester which recorded drought conditions during the July/August period, were above drought conditions in the August/September period thereby, temporarily easing the concerns of farmers.

See Figure 1 below for the graphical representation of observed SPI values for the July-August-September period.

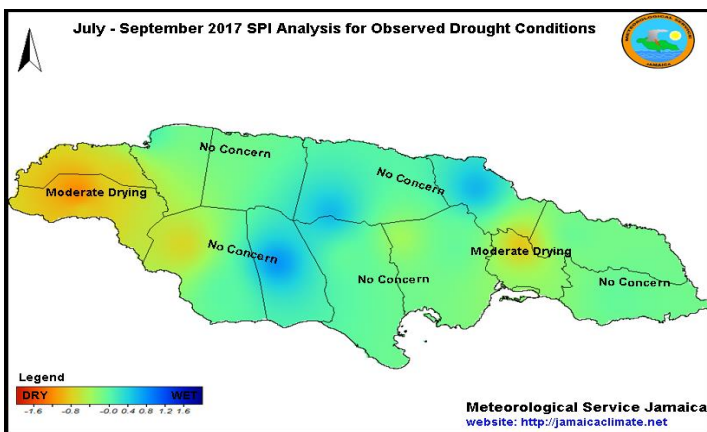


Figure 1: July-August-September SPI Analysis for Observed Conditions

The forecast through December (see Figure 2 below) which includes the primary rainfall season has determined that westernmost parishes as well as, the Blue Mountain area could receive less rainfall (by percentage) than some areas in central parishes. This outlook may be bad news for farmers in the west where dry conditions are already being observed.

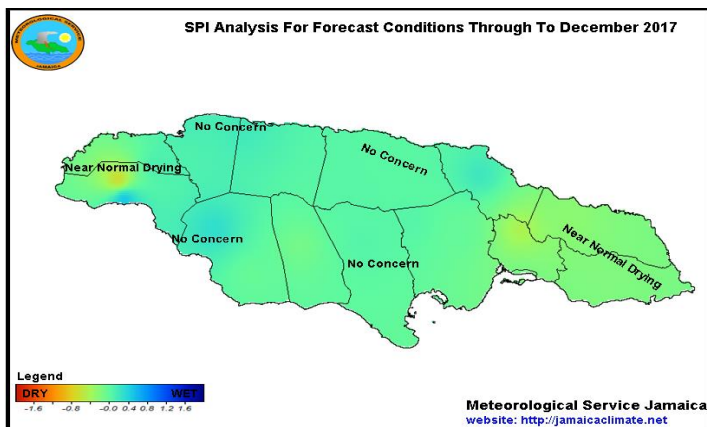


Figure 2: Forecast Drought Conditions through to December 2017



### Seasonal Forecast – October to December 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.

As we approach the next three months (October/November/December) which include the primary rainfall season, the forecast models are indicating above-normal rainfall across most stations, with below-normal to near-normal rainfall over the island's southwest; along with above-normal temperatures.

The projections for above-normal rainfall in many areas would be welcomed, especially by the farming communities in eastern parishes. However, the outlook of less than expected rainfall over southwestern parishes would be a concern for farming communities, primarily going into the traditional dry season (December-March).

	<b>% Below (B)</b>	<b>% Normal (N)</b>	<b>% Above (A)</b>
<b>Jamaica Rainfall Outlook</b>	25	35	40
<b>Jamaica Temperature Outlook</b>	15	25	60
<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 October to December 2017.

Table 4 below, shows the precipitation outlook for selected stations across Jamaica as analysed by the Climate Predictability Tool. Twelve (12) of the seventeen (17) stations are indicating higher probabilities for above-normal rainfall for the October to December 2017 period, while three (3) stations are indicating probabilities of normal rainfall and two (2) stations the probability of below-normal rainfall.



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

**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 2017.*



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

The CPT is indicating that most areas across the island are expected to experience above-normal rainfall, while southwestern areas should experience below-normal to near-normal rainfall during the October to December period.

If less than normal rainfall is realized especially in areas already having dry conditions there could be significant impact on plants and animals, therefore, farming interests should continue water management plans as well as cooling techniques for animals to minimize possible losses or damage. The Met Office will continue to closely monitor conditions and disseminate advisories as necessary.

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