



# AGROMET BULLETIN



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## HIGHLIGHTS

- ✚ **Most stations experienced above-normal rainfall and wet conditions.**
- ✚ **Above normal rainfall resulted in repeat flooding in sections of central parishes.**
- ✚ **Above normal rainfall is forecast for most areas for July through September.**
- ✚ **Wet conditions in southern parishes still a concern for pest and disease outbreaks in farming areas.**
- ✚ **Above normal temperatures are forecast for July to September.**

### Weather Summary June 2017

During the month of June, the daily weather was dominated by High Pressure Ridges. During mid-month a Trough produced unstable weather conditions, which resulted in flooding and landslides across sections of eastern and central parishes.

During the month, Sangster in the northwest recorded 90.1 mm of rainfall, while Norman Manley in the southeast recorded 150.7 mm of rainfall. Sangster received 88% of its 30-year mean rainfall, while Manley received 230% of its 30-year mean rainfall. There were eight (8) rainfall days recorded for both Sangster Airport and Manley Airport.

The highest maximum temperature recorded for Sangster Airport was 35.7°C (on June 6) meanwhile Manley Airport reported 33.5°C (on June 21).



### 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	June Rainfall Total (mm)	Percent of 30-year Mean (%)	Observed SPI for April-May-June
Hanover	Mount Peto	271	89	1.00
Westmoreland	Savanna-La-Mar	128	66	0.90
Westmoreland	Frome	121	54	0.40
Manchester	Sutton	280	211	1.92
St. Elizabeth	Y.S. Estates	173	107	0.69
St. Elizabeth	Potsdam	244	249	1.46
Clarendon	Beckford Kraal	292	228	1.92
St. Catherine	Tulloch	312	198	2.02
St. Catherine	Worthy Park	336	213	2.30
Trelawny	Orange Valley	63	77	2.19
St. James	Sangster	90	88	1.63
St. Ann	Cave Valley	182	136	2.55
St. Mary	Hampstead	116	135	0.82
Portland	Shirley Castle	148	100	0.64
St. Thomas	Serge Island	54	27	0.89
KSA	Langley	100	63	0.93
KSA	Manley Airport	151	230	1.21

*Table 1: Observed SPI for Selected Stations across Jamaica during the April-June 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 April-May-June period all seventeen (17) stations experienced wet conditions. Four stations namely, Tulloch, Worthy Park, Orange Valley and Cave Valley recorded exceptionally wet conditions, while Sutton, Beckford Kraal and Sangster recorded extremely wet conditions. Potsdam was severely wet, while five other stations namely, Savanna-La-Mar, Hampstead, Serge Island, Langley and Manley Airport experienced moderately wet conditions, while Y.S. Estate and Shirley Castle experienced abnormally wet conditions and Frome experienced near-normal condition.

Analysis of the impact of rainfall activity for the seventeen stations across the island showed near-normal to exceptionally wet conditions for the three month period.

With wet conditions being experienced over the April/May/June period and especially over central and eastern parishes, the concern for farming communities was damage to crops and life stocks caused by flooding and landslides. These, along with the outbreak of pests will require urgent action by all stakeholders.

See Figure 1 below for the graphical representation of observed SPI values for the April-May-June period.

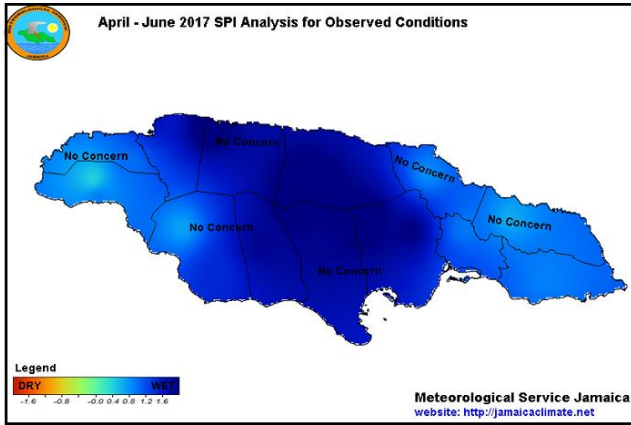


Figure 1: April-May-June SPI Analysis for Observed Conditions

The forecast through September (see Figure 2 below) has determined that there should still be wet conditions over central, as well as northwestern parishes, with some mild drying over eastern and southwestern parishes. This forecast for more rains over central parishes may not be welcomed by farmers, who would have fears of more damage from flooding as was experienced over the past three months. However, farmers over eastern and southwestern parishes may be looking forward to this drying, especially in areas where consecutive months of above-normal rainfall were experienced.

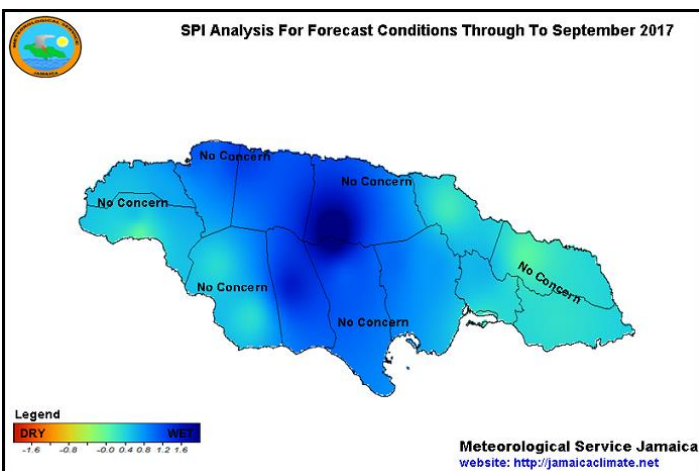


Figure 2: Forecast Drought Conditions through to September 2017



### Seasonal Forecast – July to September 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 month (July/August/September) which includes the mid-Summer dry month of July, the forecasts are indicating near-normal to above-normal rainfall across most stations, with above-normal temperatures.

Over the past four months (March to June) the island recorded significant increases in rainfall amounts, which offset the deficit in rainfall that was observed over most central and western parishes during the period of December through to February.

The current projection is indicating no significant reductions in rainfall amounts over sections of the island over the next three months (July-September). The rains experienced from March to June and which caused wet/flooding conditions in many farming areas, have also resulted in crop losses with outbreak of pests affecting some areas. Should the projections of more rains especially over central parishes materialize, this could result in more concerns for crop damage in farming areas, however, the projections for less rains would be welcomed by farmers in eastern and southwestern parishes.

	<b>% Below (B)</b>	<b>% Normal (N)</b>	<b>% Above (A)</b>
<b>Jamaica Rainfall Outlook</b>	25	30	45
<b>Jamaica Temperature Outlook</b>	20	25	55
<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 July to September 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 July to September 2017 period, while four (4) stations are indicating probabilities for below-normal rainfall and one (1) the probability of normal rainfall.

Stations	Parishes	Below (B) %	Normal (N) %	Above (A)%
Beckford Kraal	Clarendon	20	30	50
Mount Peto	Hanover	25	30	45
Manley Airport	Kingston	25	30	45
Langley	Kingston	20	30	50
Suttons	Manchester	15	20	65
Shirley Castle	Portland	45	30	25
Cave Valley	St. Ann	15	25	60
Tulloch Estate	St. Catherine	35	25	40
Worthy Park	St. Catherine	35	25	40
Y.S. Estate	St. Elizabeth	25	35	40
Potsdam	St. Elizabeth	25	35	40
Sangster	St. James	20	30	50
Serge Island	St. Thomas	55	30	15
Hampstead	St. Mary	35	40	25
Orange Valley	Trelawny	50	30	20
Savannah-La-Mar	Westmoreland	50	30	20
Frome	Westmoreland	20	25	55
<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 July to September 2017.



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

The CPT is indicating that Jamaica is generally expected to experience near-normal to above-normal rainfall during the July to September period.

With the rainfall received from March to June, the concerns would be for wet/flooding conditions and loss of crops in many farming communities therefore, the current forecast of no significant reduction in rainfall will be of concern to farmers especially in central parishes. Additionally the increased temperatures which are forecast could cause heat stress for animals and crops and therefore close monitoring is required in the farming communities.

The Met Office will continue to closely monitor conditions and disseminate advisories as necessary.

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)