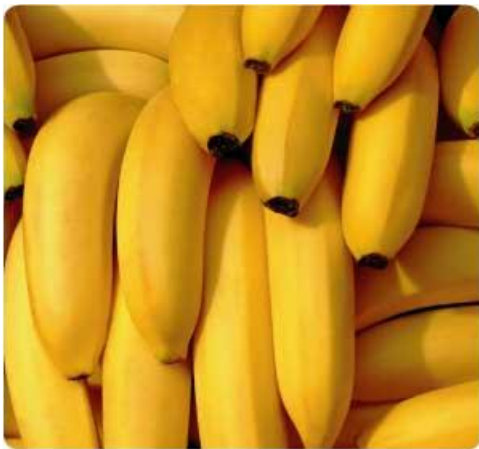


NATIONAL AGROMET BULLETIN



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
June 2016



HIGHLIGHTS

- ✚ Drying conditions reported over St. James and St. Catherine.**
- ✚ Above normal rainfall is forecast for August and September.**
- ✚ Above normal temperatures forecast to continue through September 2016.**

Weather Summary June 2016

During the month of June, weather conditions were influenced by Troughs and High Pressure systems. Rainfall recorded across the island was only 7% above normal.

Rainfall for the Norman Manley and Sangster stations were well below their respective 30-year means (1971-2000), especially Sangster. Sangster (located in the northwest of Jamaica) recorded 38.9 mm of rainfall while Norman Manley (located in the southeast) recorded 23.1 mm of rainfall. There were six (6) rain days reported for Sangster while Norman Manley reported five (5) rain days.

The highest maximum temperature recorded for Norman Manley was 33.5°C (26th June) while Sangster reported 34.4°C (5th June), which is the same as the 1992-2011 mean.

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 April to June SPI for Selected Stations

| Parish | Station | June Rainfall Total (mm) | Percent of 30-year Mean (%) | Observed SPI for April-May-June |
|---------------|----------------|--------------------------|-----------------------------|---------------------------------|
| Hanover | Mount Peto | 230 | 76 | 0.41 |
| Westmoreland | Sav-La-Mar | 73 | 38 | 0.08 |
| Westmoreland | Frome | 141 | 63 | -0.14 |
| Manchester | Sutton | 222 | 167 | 1.82 |
| St. Elizabeth | Y.S. Estates | 88 | 55 | 0.51 |
| St. Elizabeth | Potsdam | 36 | 37 | -0.23 |
| Clarendon | Beckford Kraal | 93 | 73 | 0.29 |
| St. Catherine | Tulloch | 66 | 42 | -0.95 |
| St. Catherine | Worthy Park | 49 | 31 | 0.15 |
| Trelawny | Orange Valley | 62 | 76 | 0.2 |
| St. James | Sangster | 39 | 38 | -0.92 |
| St. Ann | Cave Valley | 215 | 190 | 1.38 |
| St. Mary | Hampstead | 18 | 21 | 0.15 |
| Portland | Shirley Castle | 130 | 88 | 0.38 |
| St. Thomas | Serge Island | 71 | 35 | 0.19 |
| KSA | Langley | 159 | 104 | 0.87 |
| KSA | Manley Airport | 23 | 35 | -0.21 |

Table 1: Observed SPI for Selected Stations across Jamaica during the April-May-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

As with the March to May period, Sutton, Manchester continued to be abnormally wet for April to June. Cave Valley in St. Ann received nearly two times as much rain as its 30-year mean, which resulted in an SPI value in the 'severely wet' category.

Fortunately, stations worst affected by drying conditions in the period ending in June were only considered to be 'abnormally dry'. These were Tulloch, St. Catherine and Sangster, St. James. Again this drying trend for both stations was noted in the March to May period but June's SPI values are actually an improvement on the values from May.

Other stations such as Hampstead, St. Mary received the least amount of rainfall in comparison to its 30-year mean but still managed to remain in the 'near normal' category since rainfall from April and May were enough to offset the possibility of drought conditions. See Figure 1 below for the graphical representation of observed SPI values for the April-May-June period.

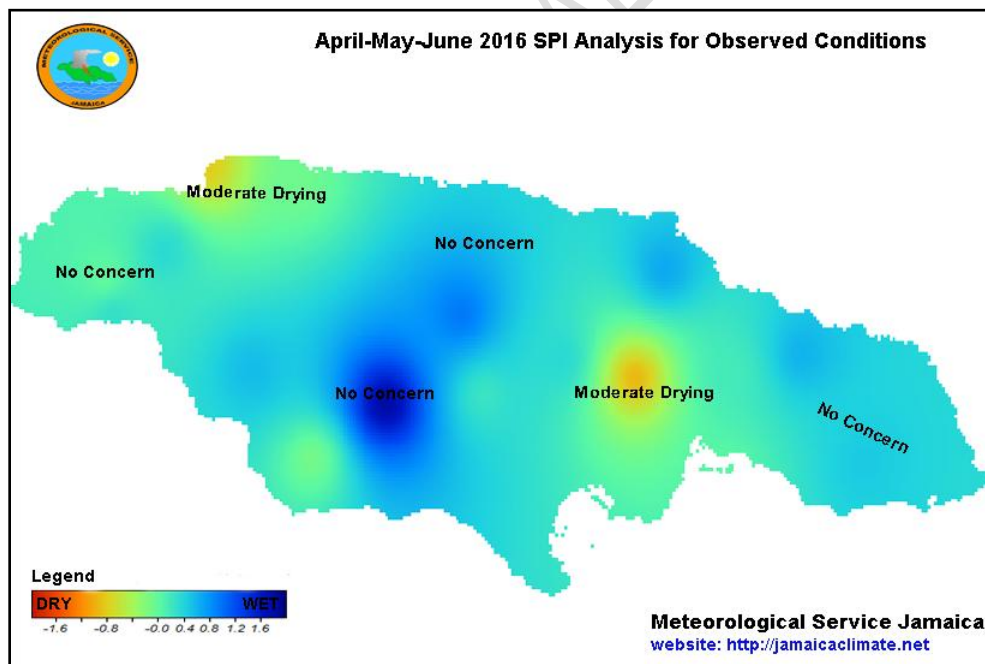


Figure 1: April-May-June 2016 SPI Analysis for Observed Conditions



As for drought conditions, the SPI analysis through September has determined that moderate drying is possible in northern St. Catherine while northern St. James and northwestern Trelawny could experience abnormal drying. There continues to be no concern for Manchester or southwestern St. Ann (see Figure 2 below).

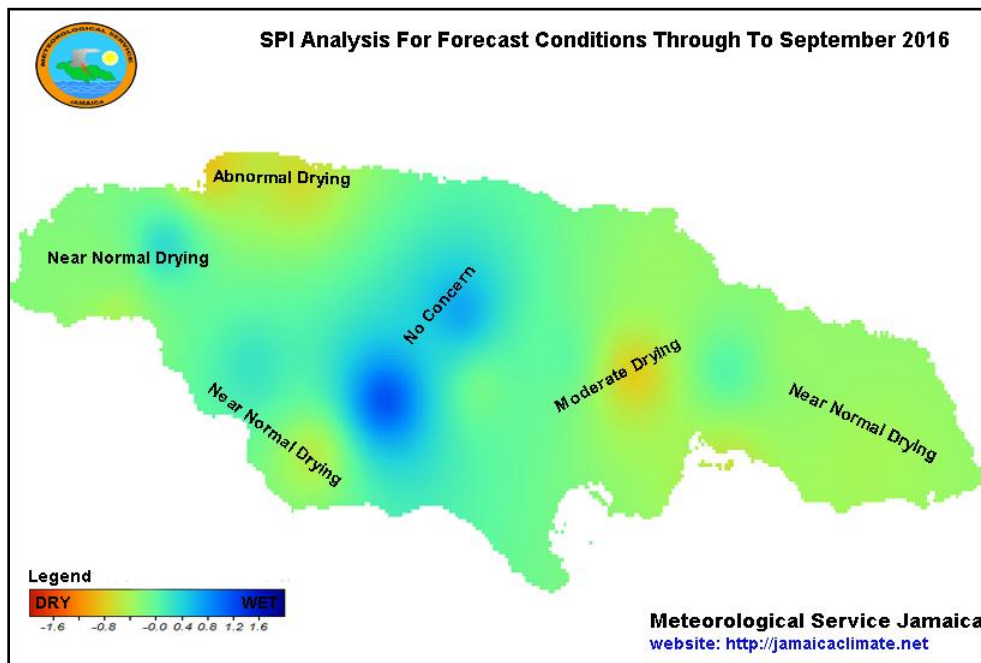


Figure 2: Forecast Drought Conditions through to September 2016

Seasonal Forecast – July to September 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 July to September period, precipitation models have indicated an expectation of normal to above normal rainfall across most areas. Temperatures are also predicted to remain warmer than normal over much of the Caribbean and western Atlantic over this period, which will likely



provide favourable environmental and local conditions for rainfall to be in the normal and above normal ranges (see Table 3 below).

| | % Below (B) | % Normal (N) | % Above (A) |
|--|-------------|--------------|-------------|
| Jamaica Rainfall Outlook | 25 | 35 | 40 |
| Jamaica Temperature Outlook | 15 | 25 | 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 July to September.

Specifically, each month’s forecast is as follows:

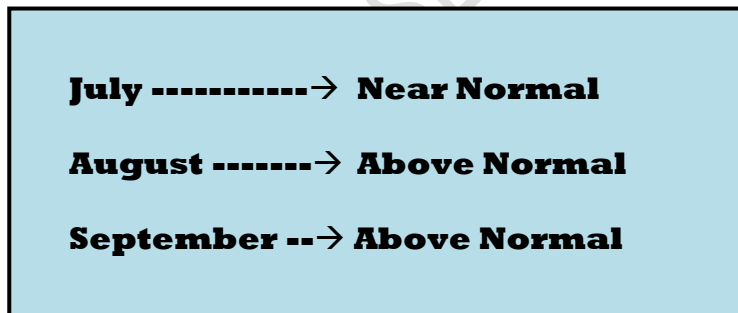


Figure 3: July-August-September Rainfall Outlook

Although July is forecast to receive a slight reduction in rainfall, no significant agricultural impact is expected, particularly to key areas across southern parishes. Projected increases for August and September correspond to the climatological peak in activity of the Atlantic Hurricane Season. 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. Of the seventeen (17) analysed stations, only four (4) have a higher chance of receiving below-normal rainfall than above-normal rainfall.

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



Summary and Expected Agricultural Impacts

Jamaica is expected to experience above-normal rainfall and temperature conditions for August and September 2016.

Although the CPT analysis indicates a possibility of above normal rainfall for St. Catherine and St. James in the coming months, these parishes are still likely to experience varying levels of drying conditions as the predicted recharge may not be sufficient to offset prior depletion.

In general, no significant agricultural impact is expected, particularly to key areas across southern parishes.

METEOROLOGICAL SERVICE, JAMAICA