

# *NATIONAL AGROMET BULLETIN*



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**November 2015**

## Highlights for November 2015

- ✚ **Moderate drought conditions reported for some southern stations.**
- ✚ **Above normal rainfall is forecast for stations over some southern parishes for December through February.**
- ✚ **Above normal temperatures forecast to continue through February 2016.**

### Weather Summary for the month of November 2015

Throughout the month of November troughs were the dominant weather features recorded. Despite the presence of these weather systems only occasional showers were experienced over the island.

During the month, Sangster International Airport in the northwest recorded 32.7 mm of rainfall, while Norman Manley International Airport in the southeast recorded 9.7 mm of rainfall. There were four (4) rain days reported for Sangster while Norman Manley had two (2) rain days. Both Manley and Sangster received well below the average rainfall for the month of November based on the thirty year rainfall means.

The highest maximum temperature recorded for Norman Manley Airport was 33.5°C (14th November) meanwhile Sangster Airport reported 33.4°C (2nd, 5th, 6th and the 14th November). Based on temperature records for Sangster from 1963 to present; November 2015 is the second warmest November on record.

## Standardized Precipitation Index (SPI)

The Standardized Precipitation Index (SPI), developed by T.B. McKee, N.J. Doesken, and J. Kleist in 1993, is based only on precipitation. One unique feature is that 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.

### KEY

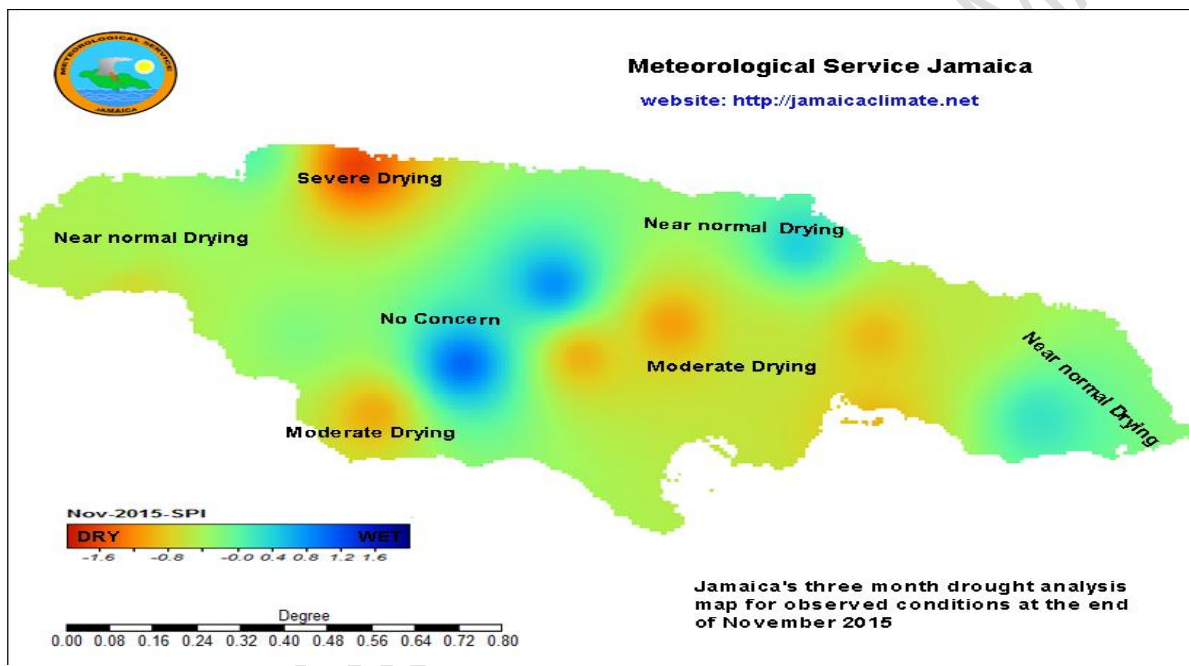
SPI Value	Category	SPI Value	Category
-0.5 to -0.7	Abnormally Dry (30%tile)	0.5 to 0.7	Abnormal Wetness (70%tile)
-0.8 to -1.2	Moderate Drought (20%tile)	0.8 to 1.2	Moderate Wetness (80%tile)
-1.3 to -1.5	Severe Drought (10%tile)	1.3 to 1.5	Severe Wetness (90%tile)
-1.6 to -1.9	Extreme Drought (5%tile)	1.6 to 1.9	Extreme Wetness (95%tile)
-2.0 or less	Exceptional Drought (2%tile)	2.0 or more	Exceptional Wetness (98%tile)

**Table 1. Rainfall and Drought Analyses for Selected Stations**

Parish	Station	November Monthly Total (mm)	Percent of 30 year Mean (%)	SPI for November
Hanover	Mount Peto	103	82	-0.36
Westmoreland	Sav-La-Mar	68	50	-0.70
Westmoreland	Frome	128	99	-0.44
Manchester	Sutton	258	193	1.03
St. Elizabeth	Y.S. Estates	165	104	-0.21
St. Elizabeth	Potsdam	136	130	-1.04
Clarendon	Beckford Kraal	222	176	-1.01
St. Catherine	Tulloch	211	135	-0.61
St. Catherine	Worthy Park	156	134	-1.12
Trelawny	Orange Valley	55	49	-1.66
St. James	Sangster	33	32	0.01
St. Ann	Cave Valley	162	133	0.80
St. Mary	Hampstead	293	123	0.40
Portland	Shirley Castle	604	99	-0.57
St. Thomas	Serge Island	201	91	0.23
KSA	Langley	154	53	-0.96
KSA	Manley Airport	10	12	-0.99

### **Standardized Precipitation Index Discussion**

Six of the seventeen reporting stations were showing varying levels of drought, with one station namely, Orange Valley in Trelawny showing extreme drought, while the remaining five stations were showing severe drought. Two stations namely, Suttons in Manchester and Cave Valley in St. Ann were showing moderately wet conditions. November represents the transition period between wet and dry seasons however, the island received below normal rainfall activity in November especially over sections of north-western parishes, as shown in figure 1 (see below).



**Fig.1 Station drought condition for November 2015**

### **Precipitation Outlook – December 2015 to February 2016**

The rainfall outlooks for the period December 2015 to February 2016, from the Global Dynamic Models as well as the Climate Predictability Tool (CPT) are indicating warmer than normal temperatures with near normal to above normal rainfall for most stations across the island. Of the seventeen rainfall stations that were examined across the island, twelve are likely to experience near normal to above normal rainfall, however, forecast confidence has reduced significantly. This is due to weak signals coming from the Atlantic sea surface temperatures during the transition period from the wet season to dry season. The most recent forecast from our



computer models indicate some parishes could receive near normal rainfall, especially drought affected parishes of St. Mary and Portland. Rainfall deficits could continue to affect sections of the following parishes of Clarendon, St Thomas, St Elizabeth and Trelawny due to below normal rainfall for the greater portion of 2015.

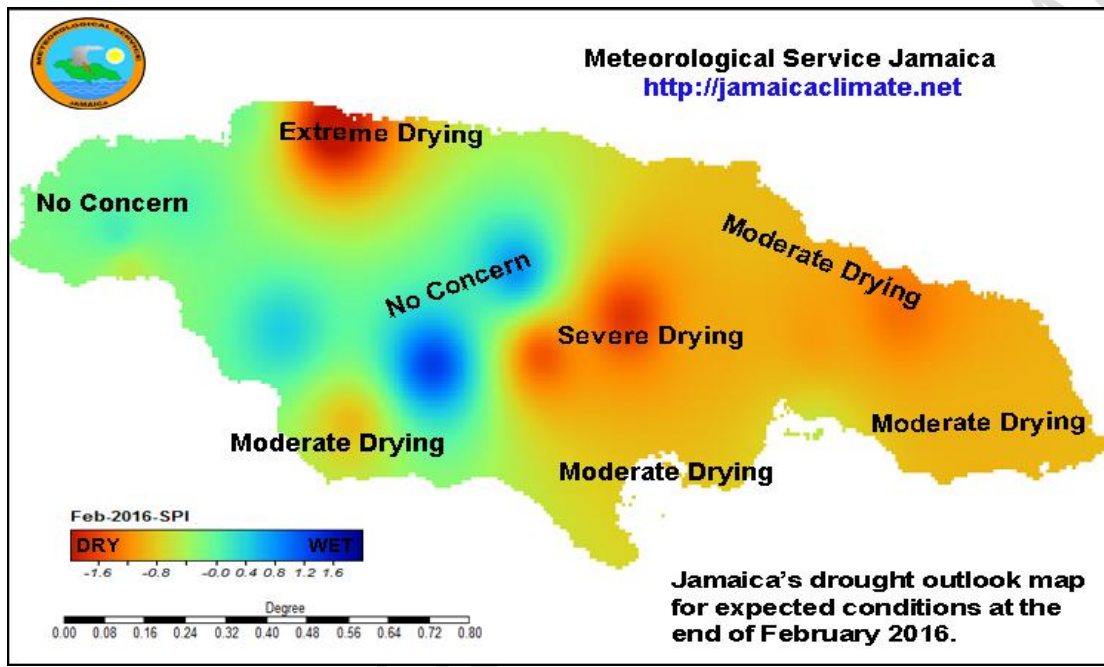
**Table 2. Climate Predictability Tool (CPT) Outlook D/JF 2015/6.**

Stations	Below (B) %	Normal (N) %	Above (A)%
Manley Airport (KSA)	31	32	37
Sangster Airport (St. James)	33	31	36
Sav-La-Mar (Westmoreland)	42	28	30
Beckford Kraal (Clarendon)	32	31	37
Serge Island (St. Thomas)	38	30	32
Cave Valley (St. Ann)	30	32	38
Tulloch Estate (St. Catherine)	32	33	35
Y.S. Estate (St. Elizabeth)	35	32	33
Hampstead (St. Mary)	35	20	45
Orange Valley (Trelawny)	37	33	30
Langley (KSA)	30	34	36
Mount Peto (Hanover)	35	29	36
Shirley Castle (Portland)	32	31	37
Sutton (Manchester)	30	25	45
Potsdam (St. Elizabeth)	32	31	37
Frome (Westmoreland)	33	30	37
Worthy Park (St. Catherine)	36	30	34
<b>JAMAICA</b>	<b>34</b>	<b>30</b>	<b>36</b>

**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

**Drought Forecast – February 2016**



**Fig.2 Expected drought conditions by end of February 2016**

**Temperature Forecast – December 2015 to February 2016**

Location	Below (B) %	Normal (N) %	Above (A) %
<b>Jamaica Temperature Outlook</b>	10	15	<b>75</b>

## **Summary and Expected Agricultural Impacts**

As Jamaica goes through the transition period between wet and dry seasons, the forecast confidence levels in the models are low. Therefore precipitation forecast through February shows above normal levels for most stations, with sections of some central and extreme western parishes to benefit the most. In contrast sections of north-western and eastern parishes are expected to experience a deficit in rainfall with drought conditions likely to continue in some areas. As more data becomes available the models will be revisited to determine any changes which might occur in the forecast.

El Nino which is the driving force for the drought which Jamaica has been experiencing this year, is still expected to continue into the dry season (Dec 2015 - Mar 2016). However, for the early rainfall season (April/May) conditions should improve over most parishes once the El Nino weakens, as is being predicted by the models.

With Jamaica experiencing drought conditions in 2015, water management plans should have been implemented for the upcoming dry season. This is to ensure that whatever situation unfolds in the next three (3) months that it can be properly managed.