NATIONAL AGROMET BULLETIN

Issued by

Climate Branch

Meteorological Service, Jamaica

65 ¾ Half Way Tree Road

Kingston 10

Telephone: 929-3700/3706

Email: datarequest@metservice.gov.jm

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Highlights for June 2014

- **Medium to high confidence of below normal rainfall forecast for July to September.**
- **Drought observations show moderate to extreme drought conditions.**
- **Forecast indicates slight improvement in drought conditions by August 2014.**

Weather Summary for month of June 2014

Throughout the month, the island experienced very little rainfall activity especially over the eastern section of the island. Throughout the month high pressure ridges and Troughs were the dominant weather features affecting the island.

During the month, Sangster in the northwest recorded 45.2 mm of rainfall, while Norman Manley in the southeast had no rainfall recorded. There were five rainfall days reported for Sangster. Sangster recorded below average rainfall or approximately 44% of the 1971-2000 mean. The highest maximum temperatures recorded for Sangster Airport was 34.6°C (16th June) which exceeded the 20 year mean by 0.2°C while 33.7°C (22nd June) was reported for Norman Manley Airport.

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-monrth, 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 to -0.4	Normal drought		**0 to 0.4**	Normal Wetness
-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 Analysis for Selected Stations

Parish	Station	June Monthly Total (mm)	Percent of 30 year Mean (%)	SPI for June
Hanover	Mount Peto	179	59	1.2
Westmoreland	Sav-la-mar	110	57	0.1
Manchester	Sutton	No data	No data	No data
St. Elizabeth	Y.S Estates	89	55	0.4
St. Elizabeth	Potsdam	0	0	-0.9
Clarendon	Beckford Kraal	0	0	-1.2
St. Catherine	Tulloch	10	6	-1.8
Trelawny	Orange Valley	18	22	-0.1
St. James	Sangster	45	44	0.9
St. Ann	Cave Valley	113	85	1.4
St. Mary	Hampstead	14	16	-0.3
Portland	Shirley Castle	2	1	-1.1
St. Thomas	Serge Island	18	9	-1.0
KSA	Langley	0	0	-0.2
KSA	Manley Airport	0	0	-0.9

Standardized Precipitation Index Discussion

Of the fifteen reporting stations, nine (9) were showing various levels of drought. Most of the stations which are located on the southern section of the island were showing moderate drought except for Tulloch in St. Catherine which is in extreme drought for the month of June. Continued deterioration in parishes such as Portland and St.Mary may not be affecting the farming sector but will impact on the supply of water provided to residents especially in Kingston which depends on these areas for input to the supply chain.

The drought maps both show moderate to extreme drought conditions over the eastern and central parishes extending into western parishes especially South St. Elizabeth. The maps differ in coverage of the island and length of dataset used in the calculation however we see similar levels of drought in both maps.

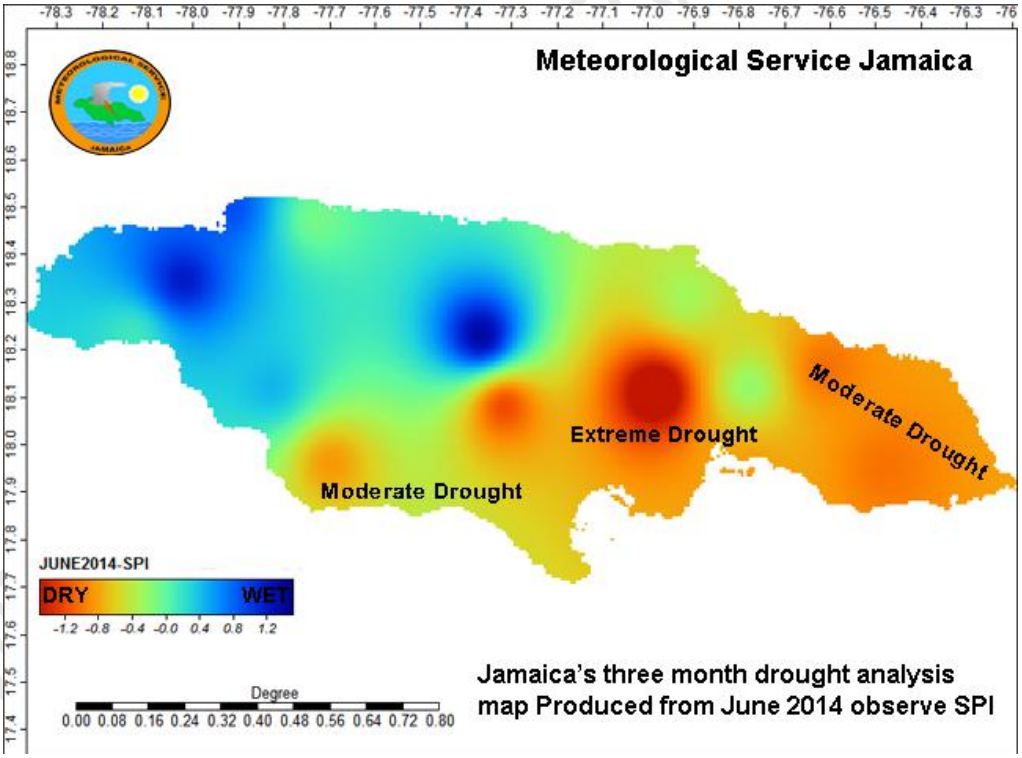

Fig.1 Station observed drought conditions for June 2014

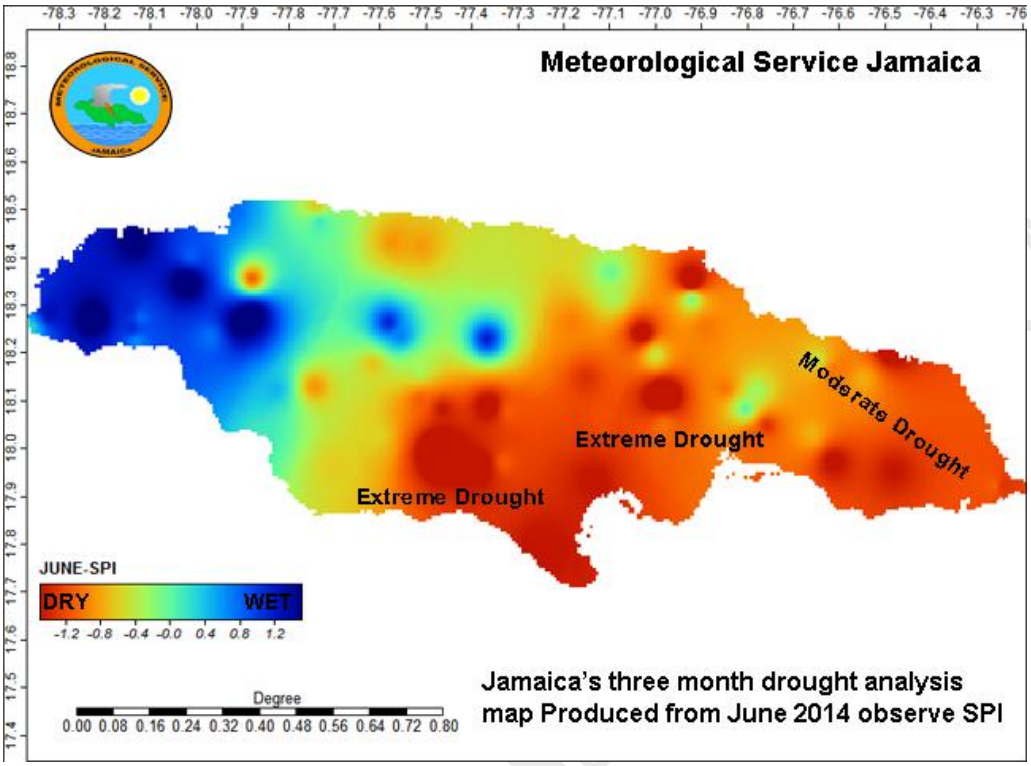

Fig.2 Station observed drought conditions for June 2014(shorter time period for dataset but better coverage of the island).

Precipitation Forecast – July to September 2014

The Global Dynamic Models are forecasting below normal rainfall across the entire Caribbean, with warmer than normal sea surface temperatures. This strongly agrees with the CPT rainfall and temperature forecast for the same period. Of a total of fifteen stations that were examined across the island, nine are likely to receive below normal rainfall during the period. However, Manley in Kingston, Cave Valley in St Ann, Tulloch in St Catherine, Mount Peto in Hanover as well as Potsdam in St. Elizabeth could receive near normal to above normal rainfall.

A pending El Niño this summer and a persistent sea surface warm pool across much of the Caribbean are the main reasons for the below average rainfall across the island.

Table 2. Climate Predictability Tool (CPT) Outlook JAS 2014.

Stations	Below (B) %	Normal (N) %	Above (A) %
Manley Airport	26	32	**42**
Sangster Airport	**48**	32	20
Sav-la-mar.	**44**	29	28
Beckford Kraal	**35**	33	32
Serge Island	**62**	25	13
Cave Valley	23	36	**40**
Tulloch Estate	23	31	**47**
Y.S. Estate	**41**	28	31
Hampstead	**55**	28	17
Orange Valley	**67**	22	11
Langley	29	**37**	34
Mount Peto	26	30	**43**
Shirley Castle	**50**	29	21
Sutton	**41**	40	19
Potsdam	27	31	**43**
Jamaica	**40**	**31**	**29**

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 – August 2014

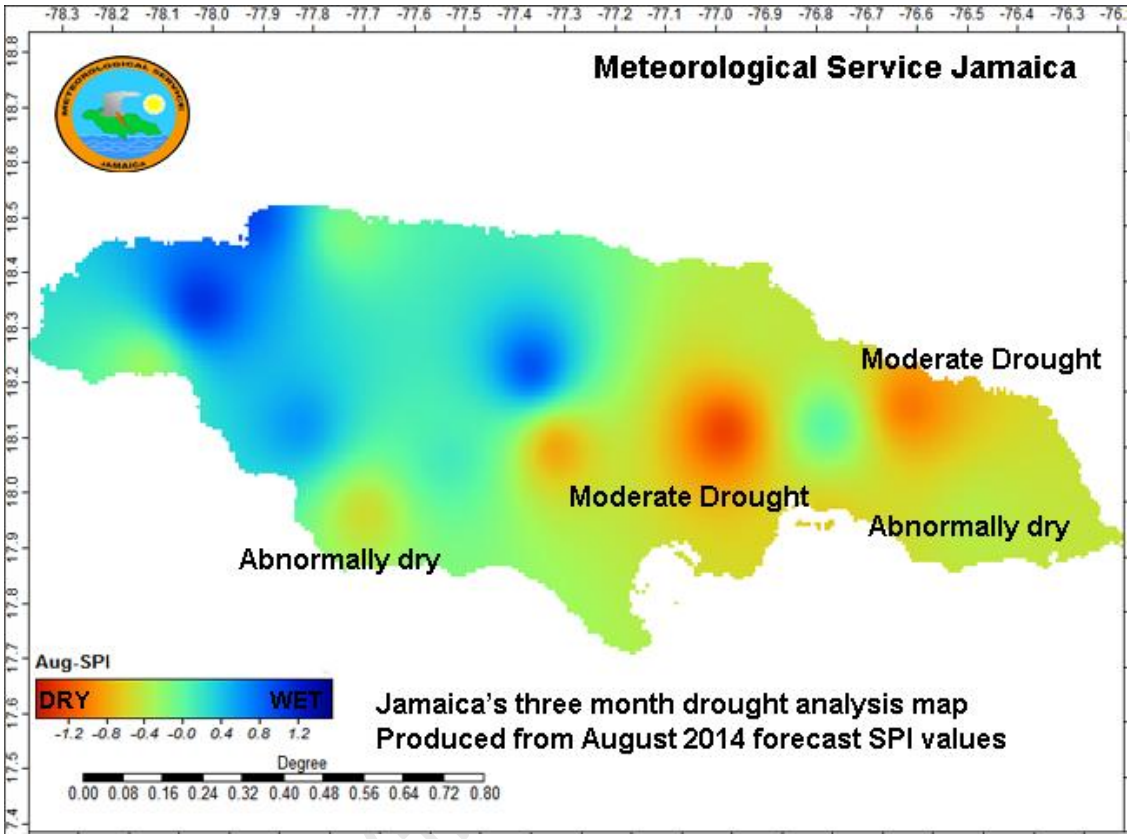

Fig.3 Expected drought conditions by end of August 2014

Summary and Expected Agricultural Impacts

There is medium to high confidence in the CPT precipitation outlook for July through September for below normal rainfall for most stations. The greatest concern exists now for stations already in drought and expecting below normal rainfall for July through September. Farmers and other interests should therefore put alternative measures in place to prevent loss of crops already in the fields or think of alternative crops which can withstand drought conditions (for upcoming planting) until improvement in the rainfall activity occurs.