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

May 2014

Highlights for May 2014

- **Low to medium chance of below normal rainfall for June to August.**
- **Drought observations show moderate drought conditions for Clarendon, St. Catherine and Portland.**
- **El Nino conditions now have a 70% chance of development by summer.**

Weather Summary for month of April 2014

Throughout the month, the island experienced an increase in rainfall activity especially over western parishes. One major rainfall event was reported during the month, which resulted in life threatening thunderstorms and flash flooding over parts of western parishes. In excess of 100mm was reported at our Sangster synoptic station on the 19th. The severe flash floods in the Montego Bay, St. James area on the 19th also resulted in the death of two boys from the parish.

Throughout the month surface Troughs were associated with the increase in rainfall activities across the island. During the month, Sangster in the northwest recorded 272.8 mm of rainfall, while Norman Manley in the southeast recorded 31.8 mm. There were eleven and eight rainfall days reported for Sangster and Norman Manley International airports respectively. Sangster recorded above average rainfall or approximately 257% of the 1971-2000 mean while Norman Manley recorded below average or about 47% of the 1971-2000 mean.

The highest maximum temperatures recorded for Sangster Airport was 33.6°C (13th May) while 33.3°C (23rd May) 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	May Monthly Total (mm)	Percent of 30 year Mean (%)	SPI for May
Hanover	Mount Peto	597	149	1.4
Westmoreland	Sav-la-mar	241	101	0.4
Manchester	Sutton	289	117	0.2
St. Elizabeth	Y.S Estates	387	118	0.8
St. Elizabeth	Potsdam	115	65	-0.2
Clarendon	Beckford Kraal	167	71	-0.8
St. Catherine	Tulloch	101	51	-1.2
Trelawny	Orange Valley	129	144	0.2
St. James	Sangster	273	257	1.4
St. Ann	Cave Valley	494	257	1.2
St. Mary	Hampstead	145	100	-0.2
Portland	Shirley Castle	253	82	-0.9
St. Thomas	Serge Island	144	64	-0.3
KSA	Langley	364	141	0.4
KSA	Manley Airport	32	47	-0.3

Standardized Precipitation Index Discussion

Of the fifteen reporting stations, seven (7) were showing various levels of drought. There has been some improvement in areas such as Shirley Castle, Hampstead and Langley while south central stations such as Tulloch and Beckford Kraal is now experiencing more severe drought conditions than in April. Potsdam in St. Elizabeth is also now reporting normal drought conditions. This is due mainly to a deficit in rainfall amounts received in May in these areas. The rainfall amounts in June so far have not been good and this could result in most parishes reverting to drought conditions by the end of June if the rainfall activity does not improve by that time. The farming sector will have to possibly look at the options available such as irrigation to sustain their crops during this dry period and also the replenishment of dams and reservoirs would also be affected therefore proper management of the available water is necessary until the late rainfall season begins.

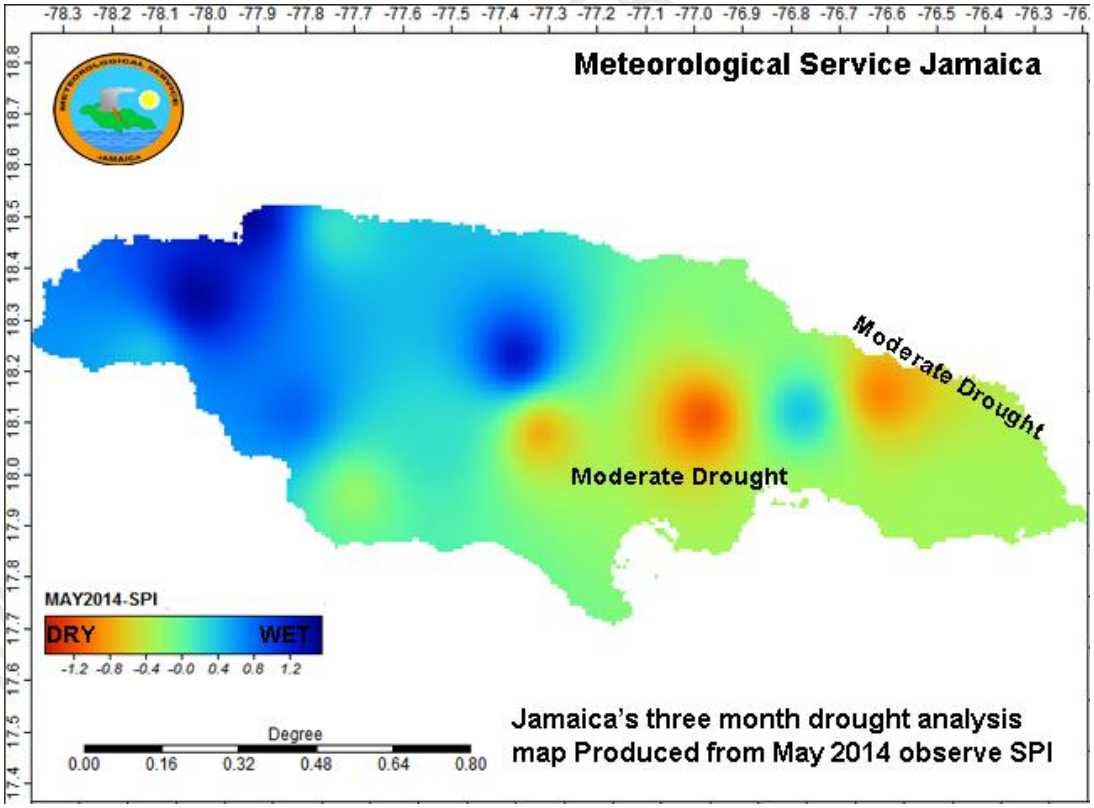

Fig.1 Station observed drought conditions for May 2014

Precipitation Forecast – June to August 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 forecast for the same period. Of a total of fifteen stations that were examined across the island, twelve are likely to receive below normal rainfall during the period. However, Sutton in Manchester, Beckford Kraal in Clarendon as well as Cave Valley in St. Ann could receive above normal rainfall. It must be noted that the forecast confidence level for the period remains low to medium.

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 JJA 2014.

Stations	Below (B) %	Normal (N) %	Above (A) %
Manley Airport	**35**	33	31
Sangster Airport	**35**	33	32
Sav-la-mar.	**39**	32	30
Beckford Kraal	32	33	**35**
Serge Island	**38**	33	29
Cave Valley	31	33	**36**
Tulloch Estate	**35**	33	32
Y.S. Estate	**35**	33	32
Hampstead	**39**	31	30
Orange Valley	**37**	32	31
Langley	**36**	33	31

Mount Peto	**36**	33	31
Shirley Castle	**36**	33	31
Sutton	27	36	**37**
Potsdam	**35**	33	32
Jamaica	**35**	**33**	**32**

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 – July 2014

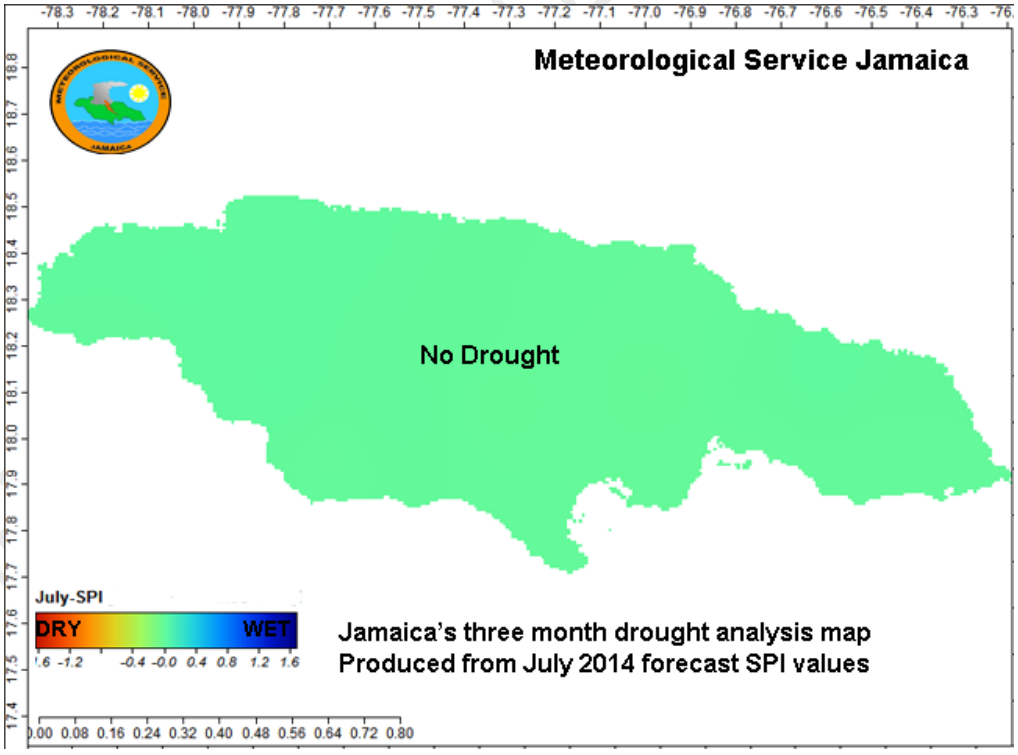

Fig.2 Station forecast drought conditions for July 2014

Summary and Expected Agricultural Impacts

There is low to medium confidence in the CPT precipitation outlook for June through August for below normal rainfall for most stations. Normal rainfall is possible based on the probabilities and the confidence levels however the concern still exists whether this would be sufficient for areas where drought conditions are currently being experienced.