Saint Lucia Monthly Agro-Met Bulletin

Issue 7 January 2014

Monthly Theme–

Preparation towards dry season

The dry season in Saint Lucia is usually from December/January to May, December being considered as a transition month. The rainfall being experienced currently is not indicative of a typical dry season. However it is not a time to become complacent. The hurricane, storm and drought events experienced in the past three years are real indicators that climate change is affecting the Caribbean islands, with more frequent intense events. Preparation should still be made to ensure adequate supplies of potable water are available in the event of an emergency situation.

Glossary

Drought - is a deficiency of moisture that results in adverse impacts on people, animals, or vegetation over a sizeable area

Inside this issue:

Stolen Equipment

The hydro-meteorological network of Saint Lucia provides rainfall data and water level data essential to farming activities, flood early warning, drought warning and engineering design. The network is operated and maintained by the Water Resource Management Agency and the Saint Lucia Meteorological Services. In less than a year there have been five (5) incidents of vandalism and theft at some of these stations.

In this issue of the agro-met bulletin you will observe that there are no data available for Deglos or Bexon. These are the two most recently vandalized stations. Stolen solar panels, rain gauge covers, batteries, modems and data loggers, together with destruction of the housing for the equipment have all occurred, causing major disruption in data collection. Gaps in data due to vandalism and the time required to replace a station prevent sound analyses. Additionally, where early warning systems are tampered with, there is no longer a proper mechanism to provide warning to communities that may be detrimentally affected by flood or drought.

In the event that you witness persons tampering with these stations, please alert the nearest police station. There are still no leads on the culprit(s) responsible for the theft over the past year, and as long as it continues to happen, our country will be unable to move forward with sound data collection and analyses which are foundational in sustainable planning and national development.

Agricultural outlook

Unbelievable but true. Never have we experienced such a volume of rainfall immediately before Christmas. We are certainly experiencing some very cool nights as a result of the periods of very cold weather experienced in the US. In the UK there are areas under flood waters for months.

Figure 2. Black sigatoka

These are extraordinary weather conditions. What do the phenomena indicate?

This certainly suggests that farmers cannot continue to behave/ operate as normal. It is calling for a behavioral change of our farmers. This phenomena, climate change is presently having serious implications for our honey producers. Due to the uncharacteristic rainfall experienced in January the onset of flowering in most of trees has been suppressed. Where flower production is decreasing, honey production is also low.

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Fig 1a. Deglos hydro-meteorological station before theft and vandalism

Fig 1b. Deglos hydro-meteorological station after theft and vandalism

Rainfall comparison 2012, 2013 and 2014

Source: www.malff.com/

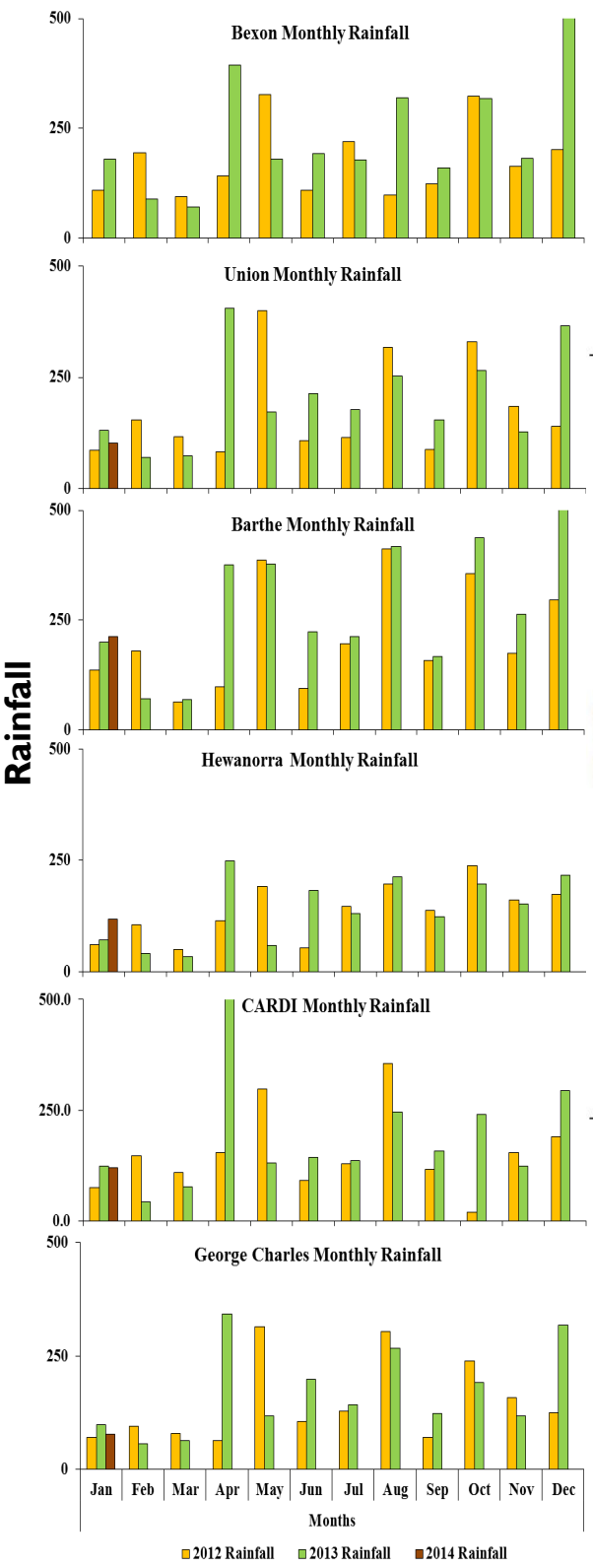

Fig. 3 summarizes 2012, 2013 and 2014 monthly rainfall. No rainfall data are available for Bexon since it was stolen.

The rainfall for both 2012 and 2013 up to October followed a similar trend, with a dry season from January to May, followed by the rainy season.

The rainfall in January 2014 for two stations, Barthe and Hewannora, exceeded the rainfall experienced in 2012 and 2013.

The other three stations, Union, CARDI, and George Charles received rainfall ranging from 78.1 mm to 101.3 mm in January, each less than the 2013 rainfall but greater than that experienced in 2012.

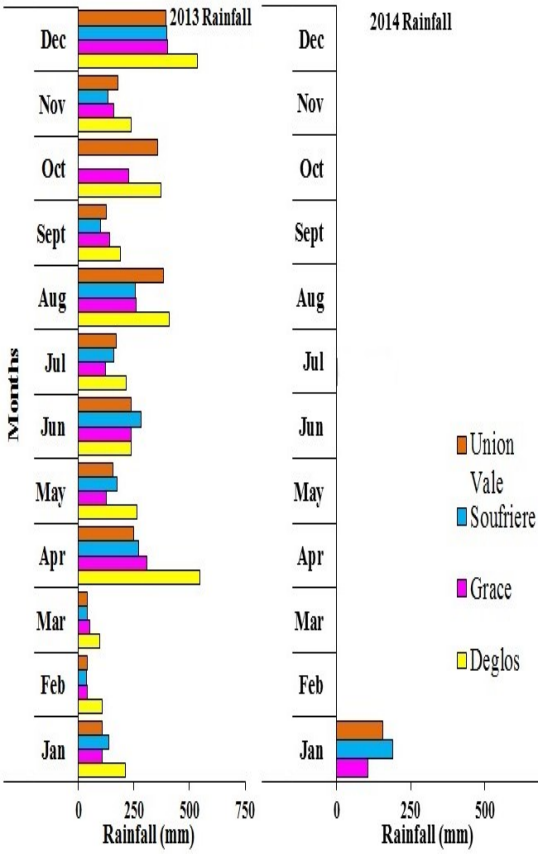

Fig. 4 Monthly rainfall

Fig. 4 provides graphical representation of the 2013 monthly rainfall and January 2014 rainfall for an additional 4 rainfall stations in the south and central areas of the island. Rainfall data from Deglos for January 2014 is not represented because the station equipment were stolen and no data could be retrieved.

The trend for January 2014 follows that of January 2013 with Soufriere showing the highest rainfall of the three stations. Rainfall at Soufriere and Union Vale for January 2014 exceeded the amount received in its 2013 counterpart by 38% and 47% respectively. Grace received 3% less rainfall in January 2014 compared with January 2013.

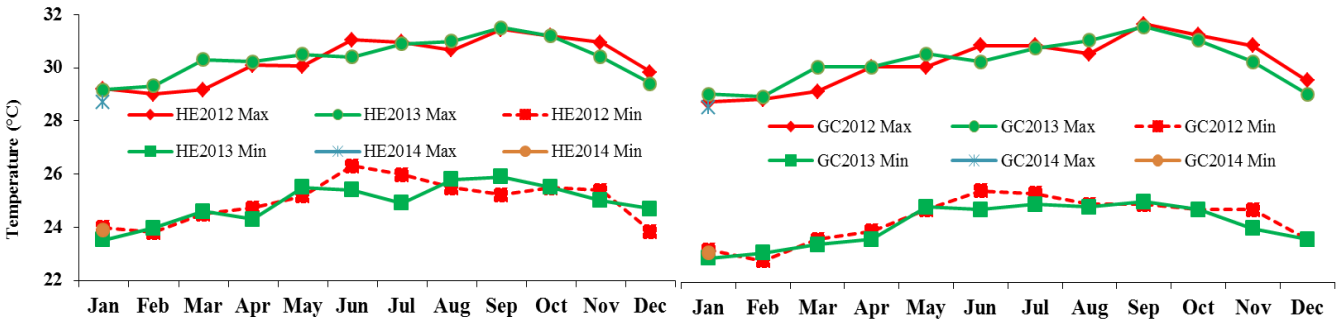

Fig.5 2012 and 2013 Mean monthly min and max temperatures for Hewanorra (HE) and George Charles (GC)

Fig. 6 depicts the mean monthly max. and min. temperatures for 2012, 2013 and 2014 for HE and GC. The 2012 mean monthly minimum and maximum temperatures for HE were 24.0°C and 29.2°C, respectively and for 2013, 23.5°C and 29.2° C, respectively. For GC the values were similar, 23.2°C and 28.7°C in 2012 and 22.9 and 29.0°C in 2013, respectively. Compared with the 2012 and 2013 maximum temperatures, it is evident that the 2014 temperatures are lower in 2014 for both Hewannora and George Charles. The minimum temperatures for both stations are similar to those of 2012 and 2013 with 23.1°C at George Charles and 23.9°C at Hewannora.

Weather Summary for January

Saint Lucia experienced above average rainfall in the south of the island but a deficit in the north. This January was the 6th wettest January recorded at Hewanorra since 1973 while it was the 37th wettest January at George Charles since 1967. George Charles had 22 rainy days while Hewannora had 21. At Hewanorra the maximum temperature for January was less than the long term mean of 28.9 °C while the minimum temperature was greater than the long term mean of 23.5 °C.

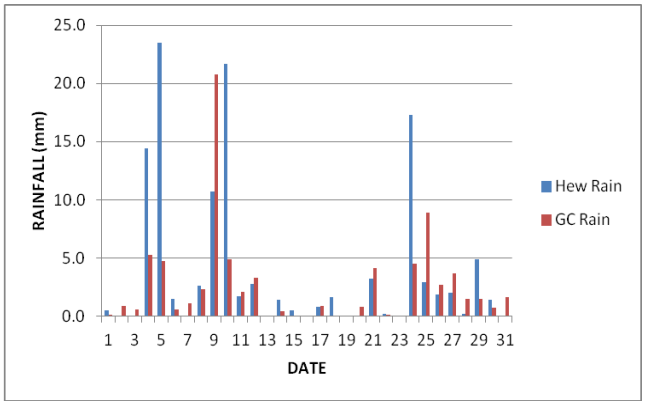

Fig. 6 Daily rainfall in January 2014 for at Hewannora and GC

Agricultural Outlook cont'd…

The almost daily rainfall means that conditions are ideal for the proliferation of diseases, especially those of a fungal and bacterial nature in crop production. Our banana farmers cannot keep their guard down or behave as if we are in the dry season, because the Black Sigatoka will definitely increase. Vegetable farmers likewise need to be mindful of this; the incidence of whitefly may not be what it normally would be for this time of year, they need to take the necessary managerial steps to keep especially the vegetable diseases at bay.

The weather conditions are also suggesting that we should not or rather it is risky to make shortcuts in land preparation. Therefore, our root crop farmers especially farmers who generally are involved in land clearing/ land preparation at this time need to be mindful of that fact.

The weather to some extent has slowed down land preparation for our yam producers, but even those who proceed, need to be mindful that for the past 3 years we have received heavy rains in April.

The effects of climate change calls for changes in our farming practices, and in order to be productive, it is necessary that farmers are willing to carry out good agricultural practices.

Weather and Climatic outlook

With the exception of some moderate to heavy showers towards the ending of the first week, January has been relatively dry, and that is expected since we are getting further into the dry season. Typical monthly rainfall figures for January range from 2.8 mm to 203.4 mm at Hewanorra and from 1.7 mm to 220.3 mm at George F.L. Charles.

The mean maximum temperature for Hewanorra for January is 28.9°C and ranges from 27.0°C to 30.5°C while the minimum temperature is 23.3°C and ranges from 22.0 °C to 24.8°C.

This year the seasonal precipitation outlook for the February, March and April period indicate the likelihood for rainfall to be in the normal to below normal category or to range from 47.4 mm to 250 mm in Vieux-Fort and from 37.9 mm to 256.6 mm in Castries

For the May, June and July period, however, the precipitation outlook is for equal likelihood for rainfall to be in the below normal, normal or above normal categories or for rainfall in the Vieux-Fort area to range from 80.5 mm to 670.1 mm and in the Castries area to range from 171.5 mm to 1057.4 mm.

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The Saint Lucia Meteorological Services uses the Standardized Precipitation Index (SPI) to monitor the likelihood of drought on the island. The SPI is a simple index which uses only precipitation amounts as input. The SPI calculation for any location is based on the long term precipitation record for a desired period. Positive SPI values indicate greater than median precipitation while negative values indicate less than median precipitation. A drought event occurs when the SPI becomes negative and less than -1 and ends when the SPI value becomes positive. SPI value on time scales of 1 month and 3 months for Hewanorra and George F.L.Charles Met. Offices are shown in figure 7 below for the period January 2013 to January 2014.

Fig. 7a shows that a drought event on a time scale of 1 and 3 months started in November 2013 at George Charles (GC). Due to the large quantity of rainfall experienced in December this drought event ended. The SPI intensities for Hewanorra indicate that precipitation was normal to above normal for the entire period. For George Charles, however, the SPI intensities indicate moderately dry conditions were experienced from September to November 2013 and near normal for January 2014.

The one and three months SPI values for George Charles for January 2014 are –0.55 and 0.31 respectively, and the one month and three month SPI values for Hewannora for January 2014 are 0.91 and 1.14.

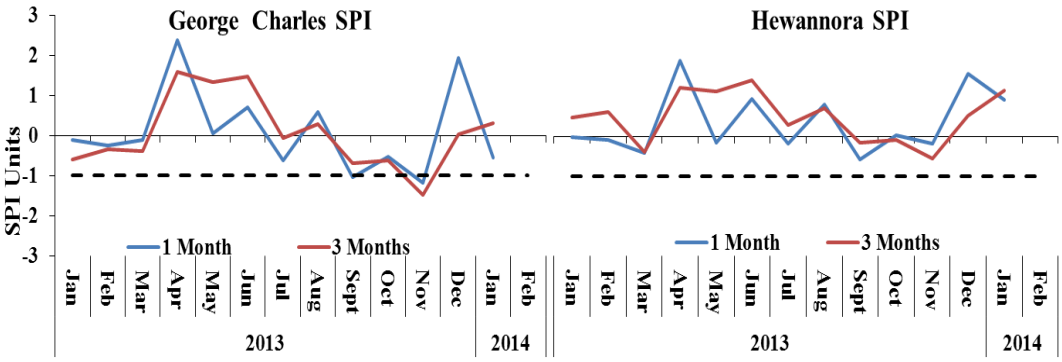

Fig. 7a & 7b—SPI for George Charles and Hewannora between August 2012 to January 2014

Table 1 SPI intensity index

SPI ≥2	Extremely wet	-1.0 to -1.49	Moderatel dry
1.5 to 1.99	Very Wet	-1.5 to -1.99	Severely dry
1.0 to 1.49	Moderately wet	SPI≤ -2	Extremely dry
-0.99 to 0.99	Near Normal		

Notices

1. The Agricultural Engineering Service Division (AESD) provides free technical assistance to the agrarian community in Irrigation, Drainage, Soil conservation and pond construction. Persons requiring assistance can contact the AESD Office at Union or call 758-468-5618.

2. The propagation units of the Ministry of Agriculture presently has on sale a wide range of plants. For further information contact the Union and Barthe offices at 758-450-3212, 457474, respectively.

3. If water is being abstracted from any river, spring or groundwater well for agricultural purposes, please contact that Water Resource Management Agency in order to apply for an abstraction license as this is required by law. Contact numbers are 758-468-5664 and 450-3540.