MAURITIUS METEOROLOGICAL SERVICES

CLIMATE BULLETIN AUGUST 2019

Introduction

Above normal temperatures and rainfall were observed over Mauritius during the month of August 2019. Neutral ENSO conditions prevailed in the Pacific region. The Indian Ocean Dipole was positive indicating a warm sea surface temperature anomaly in the central and western Indian Ocean. The Madden Julian Oscillation (MJO) induced a wet phase in the Southern Hemisphere during the second fortnight.

1. Rainfall

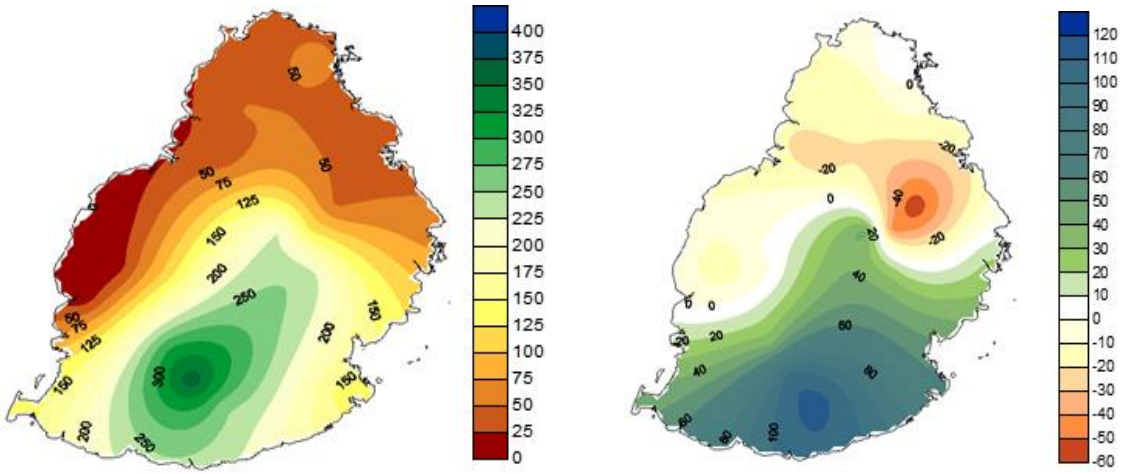
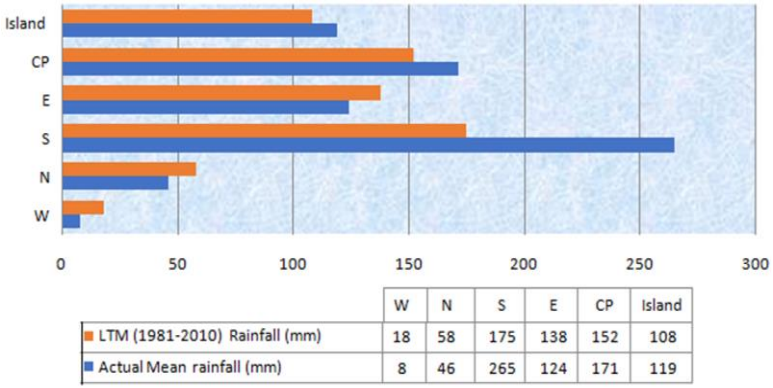


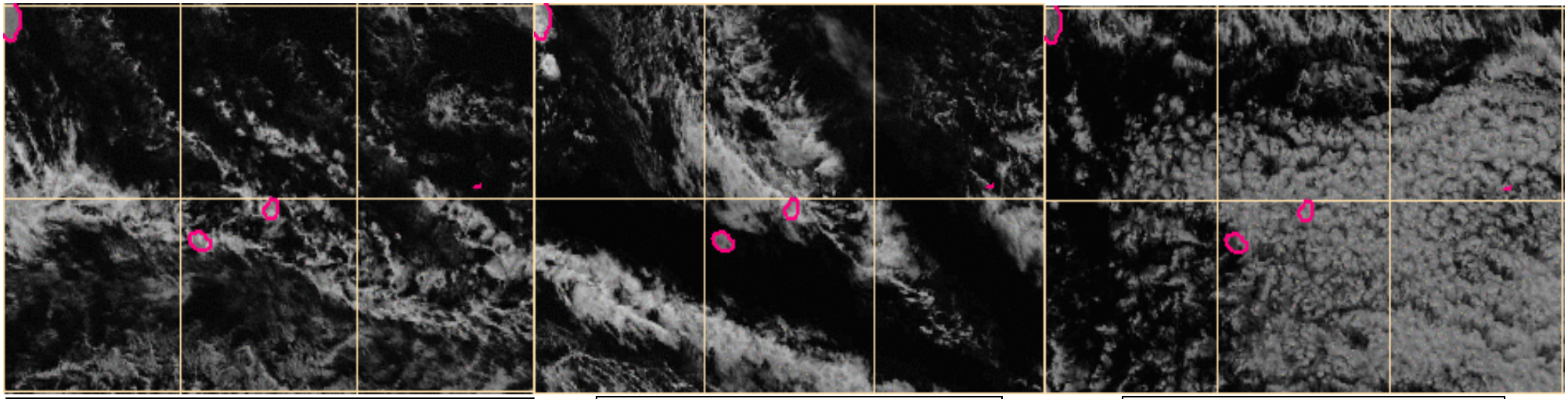
Fig. 1: (a) Observed rainfall (mm) (b) rainfall anomaly (mm)



	W	N	S	E	CP	Island
LTM (1981-2010) Rainfall (mm)	18	58	175	138	152	108
Actual Mean rainfall (mm)	8	46	265	124	171	119

Fig. 2: Regional rainfall distribution (based on 23 stations)

August 2019 received slightly above normal rainfall amounting to 119 mm, representing 110% of the long-term mean. Rainfall was mainly associated with clouds in the easterlies, frontal systems and perturbed trades and was mostly concentrated to the south and over the Central Plateau. Showers were locally of moderate intensity from 11 to 13 and from 18 to 20. Excess rainfall was recorded over the southern half of the island but was slightly drier elsewhere with deficient rainfall of about 50 mm in the region of FUEL.



(a) Remnants Clouds associated with a cold front on 11

(b) Clouds associated with a wave on 18

(c) Clouds associated with cold air on 27

Fig 3: Weather systems during August 2019

2. Surface Temperature

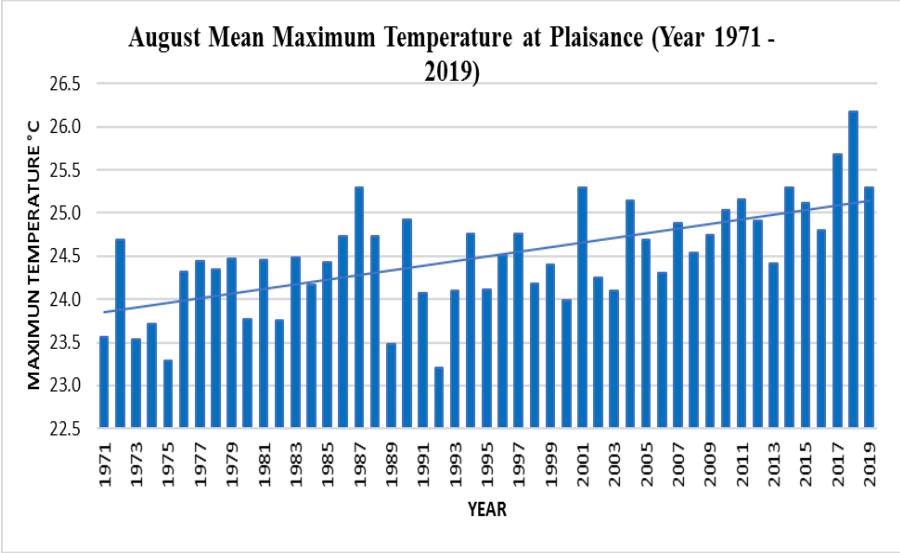


Fig. 4(a): Maximum temperature trend during August from 1971-2019

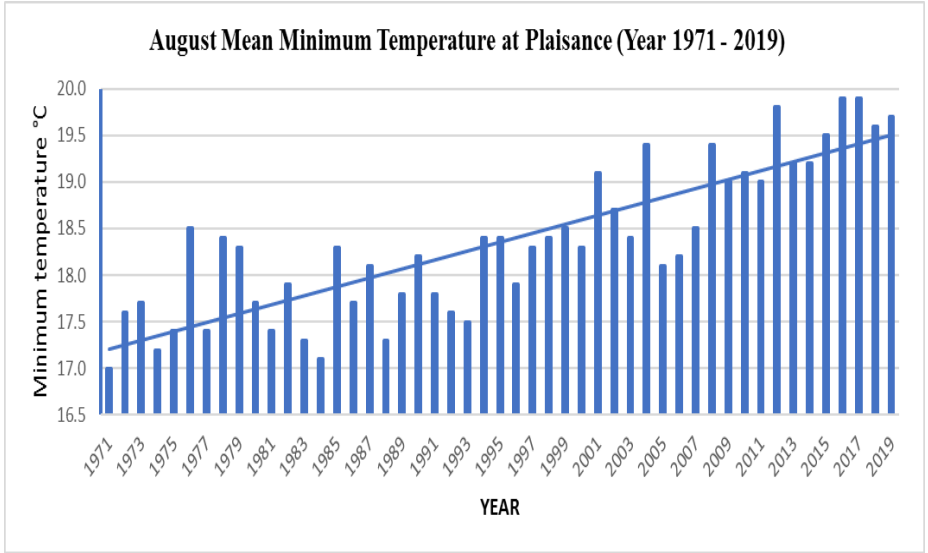


Fig. 4(b): Minimum temperature trend during August from 1971-2019

August 2019 has the fourth warmest day temperatures for August on record since 1971 (based on mean maximum temperature recorded at Plaisance)

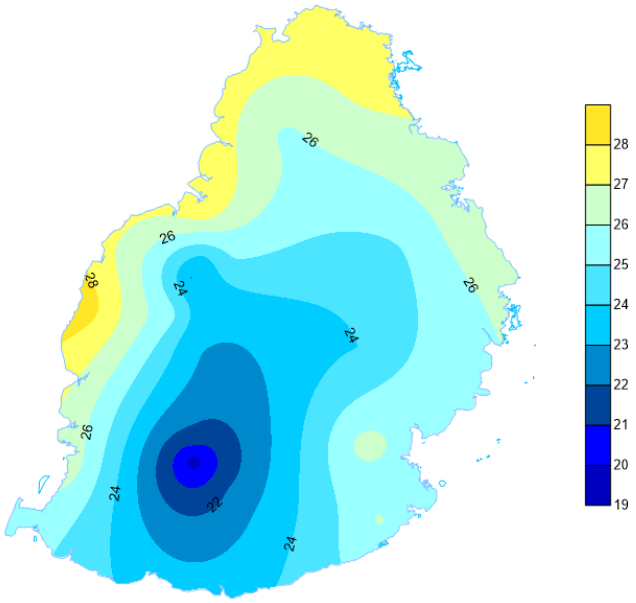
August 2019 has the fourth warmest night temperatures for August on record since 1971 (based on mean minimum temperature recorded at Plaisance)

Day temperature was most of the time above normal during August 2019. On few other occasions, under the influence of cold air emanating from the anticyclone migrating along the sub tropics, the temperature was normal to locally below normal.

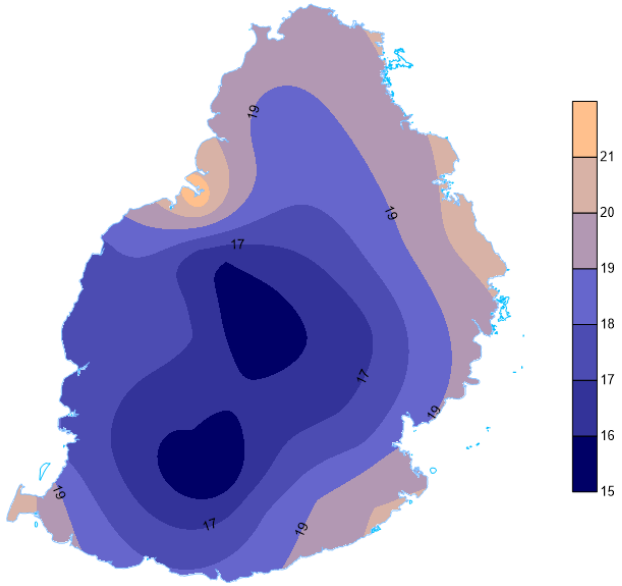
Across the island, the departure for monthly mean maximum temperature ranged between 0.0 to 2.7 °C. The highest anomaly for maximum temperature of 4.7 °C was recorded at Mon Desert Alma on 22 and the lowest anomaly of -1.9 °C was recorded at Grand Bassin on the 16. The highest temperature recorded was 30 °C at Medine on 01.

The night time temperature was mainly above except to the northeast where it was normal to slightly below. The departure for monthly mean minimum temperature ranged between – 1.0 to 1.8 °C and the highest number of cold nights was 9 recorded at Albion and Gros Cailloux. The highest anomaly for minimum temperature of 4.0 °C was recorded at Plaisance on 09 and the lowest anomaly of -3.8 °C was recorded at Albion on the 26.

The lowest minimum temperature of 12.5 °C was recorded at Belle Rive on 17. A new record of minimum temperature of 15.6 °C was observed at Gros Cailloux on the 26 (previous 15.8 °C).



(a)



(b)

Fig. 5: (a) Maximum (b) Minimum temperature distribution

Some stations had up to 25 warm days;
(maximum temperature anomaly (anomax) >2°C).

Stations	Highest anomax (°C)	Number of warm days.
Mon Desert Alma	4.7	25
Riche en Eau	4.4	23
Medine	3.7	21
Quatre-Bornes	4.2	17
Union Park MSIRI	3.4	16
Sans Souci	3.4	12
Digue Seche	3.3	10
Albion	3.5	10
Vacoas	3.8	10
Belle Rive (MSIRI)	3.1	10

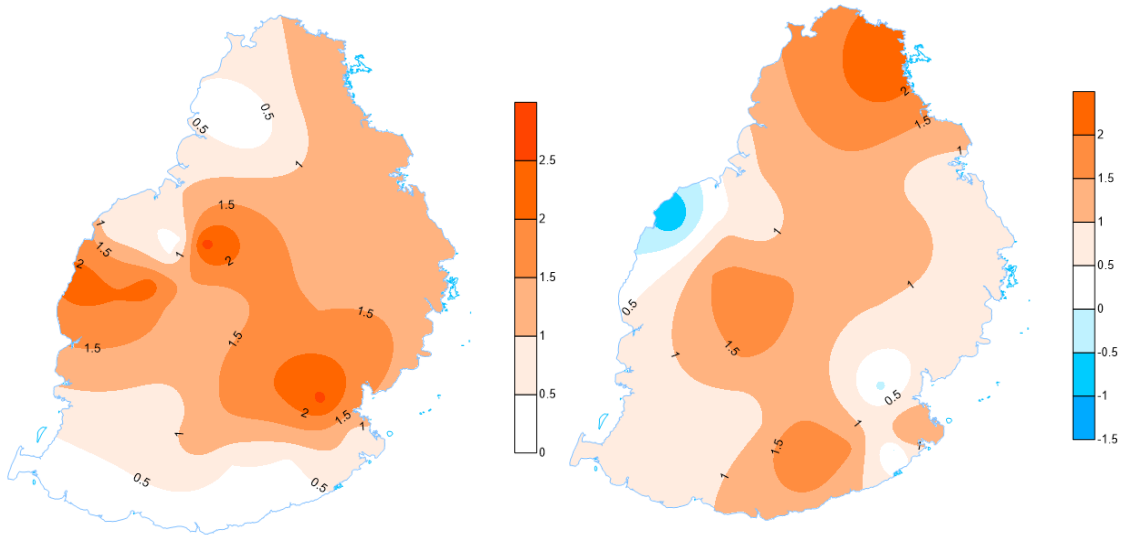


Fig. 6: (a) Maximum (b) Minimum temperature anomaly

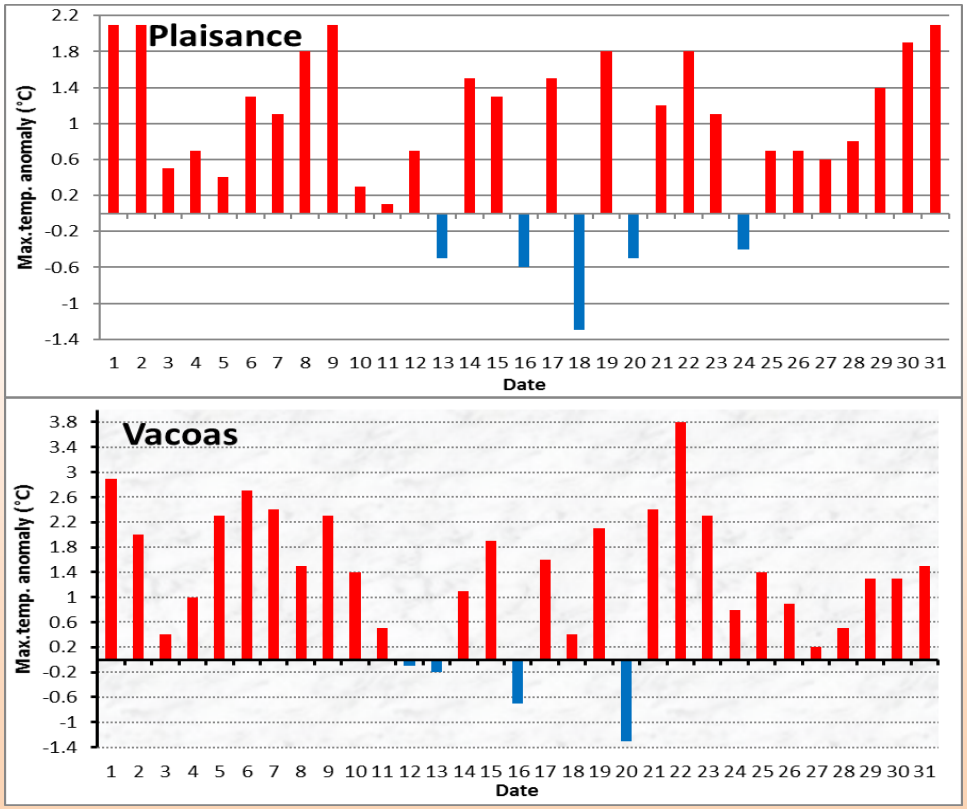


Fig. 7: Daily maximum temperature anomalies at Vacoas and Plaisance

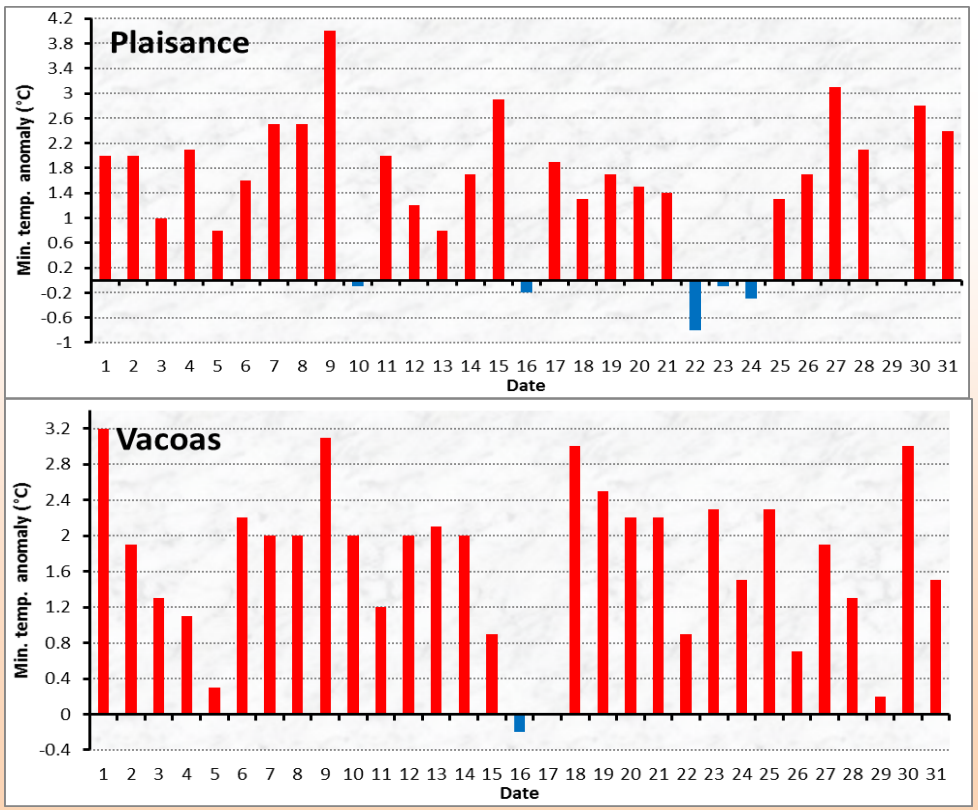


Fig. 8: Daily minimum temperature anomalies at Vacoas and Plaisance

3. Sunshine and Humidity

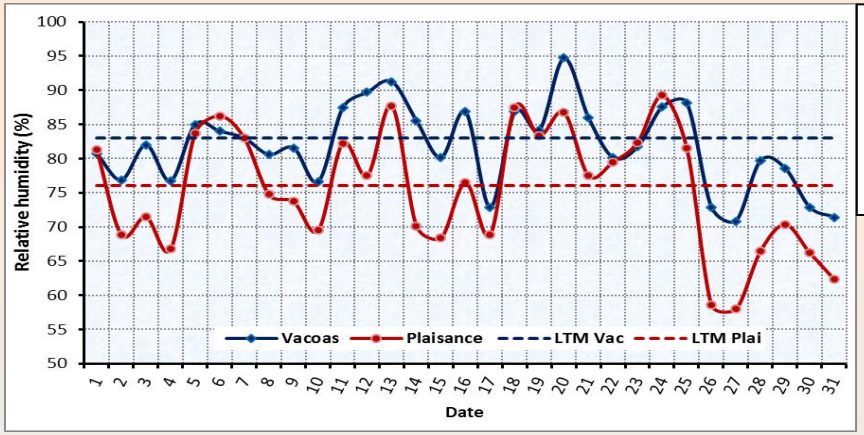


Fig. 9: Daily Relative Humidity: Vacoas (blue) and Plaisance (red)

The average monthly relative humidity (RH) was mainly normal for both Vacoas (82 %) and Plaisance (76 %). The highest humidity at Plaisance was recorded on 24 reaching 89 % and 95 % at Vacoas on 20 (Fig 9). The lowest RH at Plaisance, 58 %, was recorded on the 26 associated with a cold air invasion from the anticyclone.

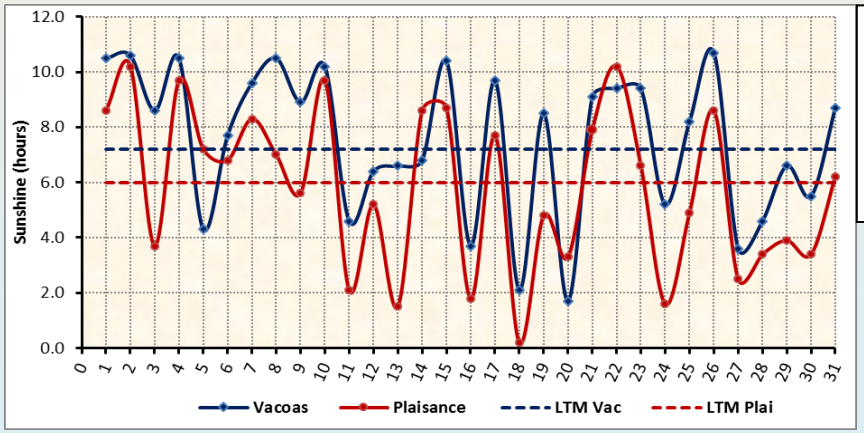


Fig. 10: Daily sunshine hours: Vacoas (blue) and Plaisance (red)

Monthly mean sunshine hours were close to normal with anomalies of 0.3 hours at Vacoas and -0.2 hours at Plaisance. For most of the month, both Plaisance and Vacoas had daily sunshine hours which varied significantly (Fig 10). Close to nil sunshine hours for Plaisance was observed on 18 under the influence of clouds associated with an easterly wave crossing the island (Fig 3(b)).

4. Winds

Trade winds prevailed over Mauritius for most of August 2019 under the influence of seven anticyclones moving to the south of the Mascarenes, Fig 11. In between the passage of the anticyclones, light wind was observed at Plaisance. The magnitude of the observed trade wind was within the range of 20 to 30 km/h. The highest gust of 79 km/h recorded was at Champ de Mars on the 12.

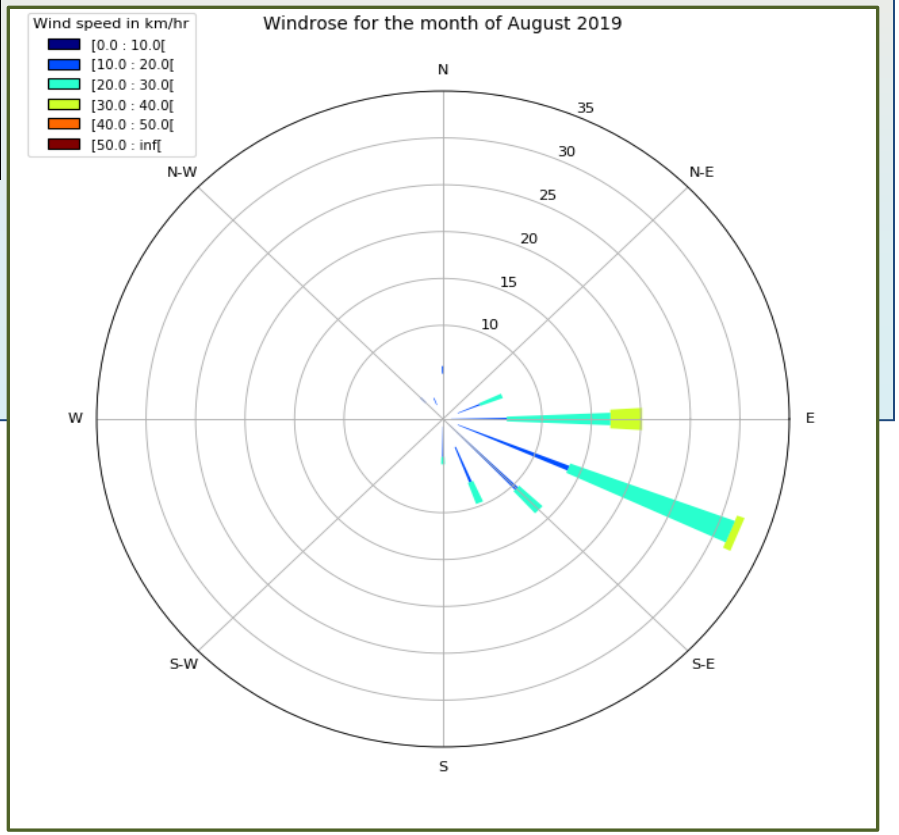


Fig. 11: Wind frequency at Plaisance

FORECAST FOR SEPTEMBER-OCTOBER-NOVEMBER (SON)

The most dominant features for SON will be the persistent moderate IOD and warm SST over the SWIO region.

In the previous ASO model run, slightly above normal rainfall was predicted. The month of August recorded 119 mm, representing 110% of the long-term mean. However, in September so far, few rainy spells had been observed and rainfall amount is very likely to be below normal.

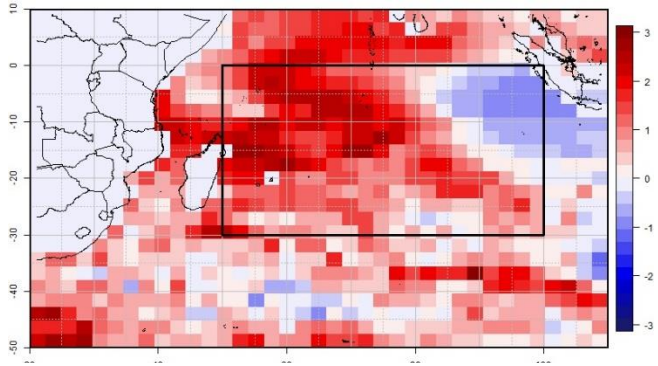


Figure 12: SON sea surface temperature anomaly chart

Consensus forecast for Mauritius

- In spite, the statistical model is expecting slightly below above normal rainfall for SON (Fig. 13(a)), however a most appropriate forecast for SON has been anticipated based on climatology and prevalent large-scale conditions.

  The most appropriate monthly rainfall has been forecasted as follows: below normal for September and October with~ 70mm and 65mm respectively and near normal for November with~80mm.

- Mean temperatures will continue to remain above normal at most places due to warm sea surface temperature persisting over SWIO region.

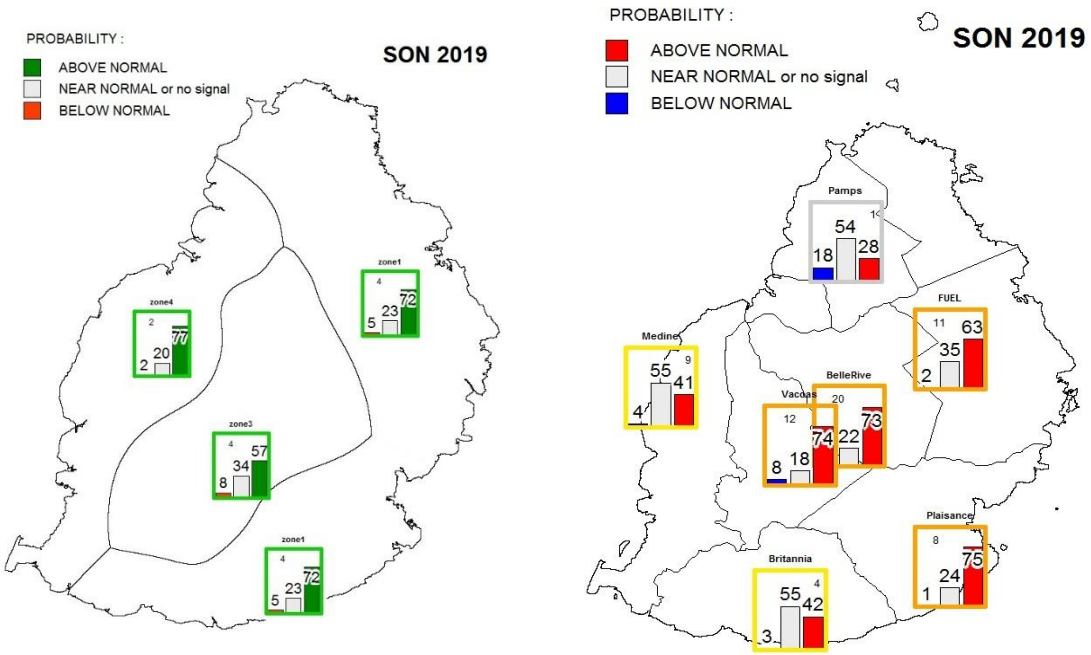


Fig. 13: Statistical Model Forecast of (a) rainfall and (b) temperature

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