



MAURITIUS METEOROLOGICAL SERVICES



CLIMATE BULLETIN JULY 2019

Introduction

During the month of July 2019, above normal temperatures and rainfall were observed over Mauritius. Slightly warm ENSO conditions prevailed in the Pacific region. The Indian Ocean Dipole was moving from the neutral phase towards the positive value indicating a positive sea surface temperature establishing in the central and western Indian Ocean. The effect of the Madden Julian Oscillation (MJO) in the southern hemisphere was negligible.

1. Rainfall

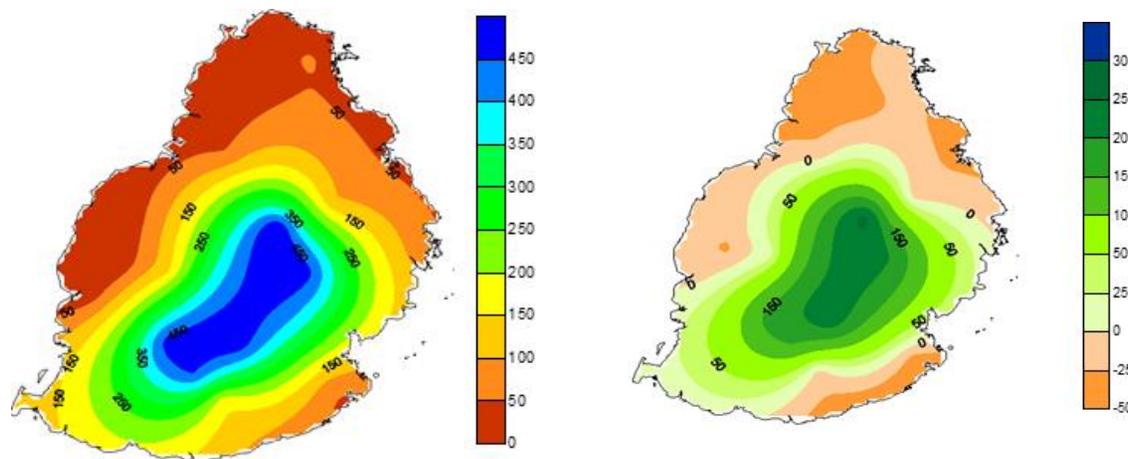


Fig. 1: (a) Observed rainfall (mm)

(b) rainfall anomaly (mm)

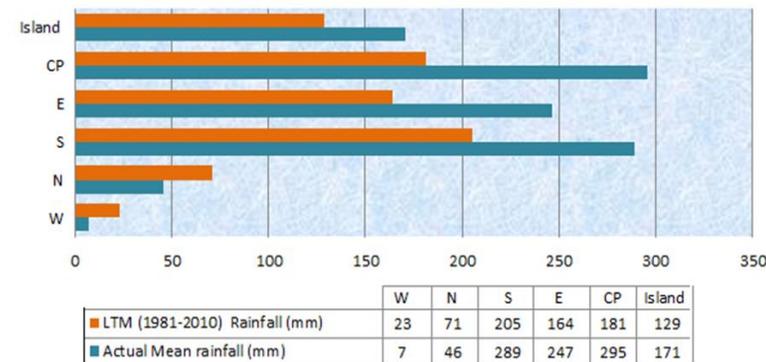
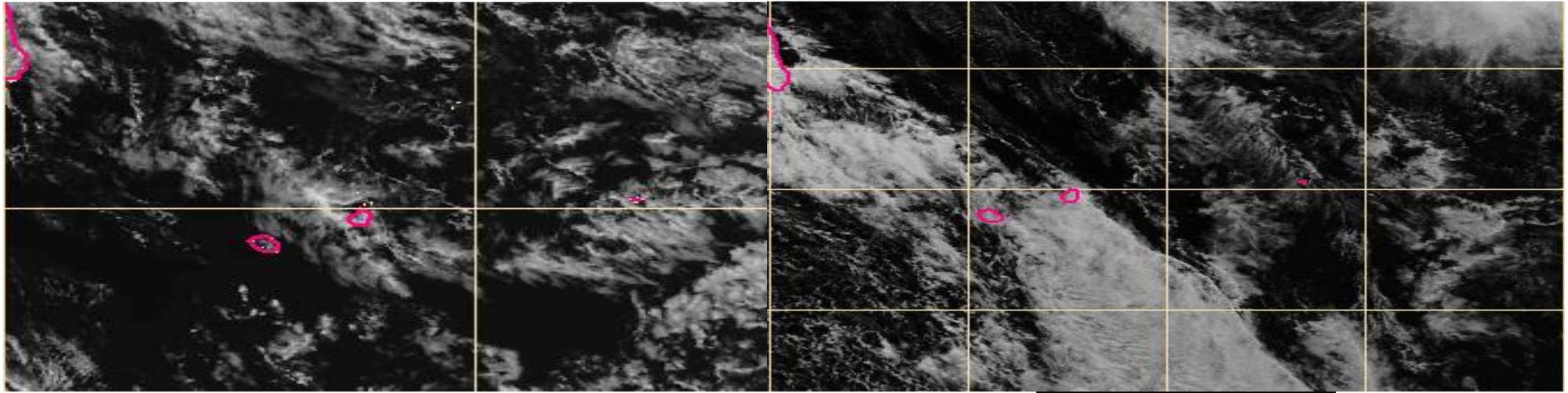


Fig. 2: Regional rainfall distribution (based on 23 stations)

July 2019 received above normal rainfall amounting to 171 mm, representing 133 % of the long term mean for this period. Almost all regions of the island received above normal rainfall, except the west and the north. Rainfall were associated with easterly waves, perturbed trades and frontal systems and was mainly concentrated to the east, south and over the Central Plateau. Rainfall was locally deficient in northern and south-eastern regions whereas excess rainfall of more than 250mm was observed in the region of Grand Providence.



(a) Clouds in the easterlies on 03

(b) Cold front crossing on 22

Fig 3: Weather systems during July 2019

2. Surface Temperature

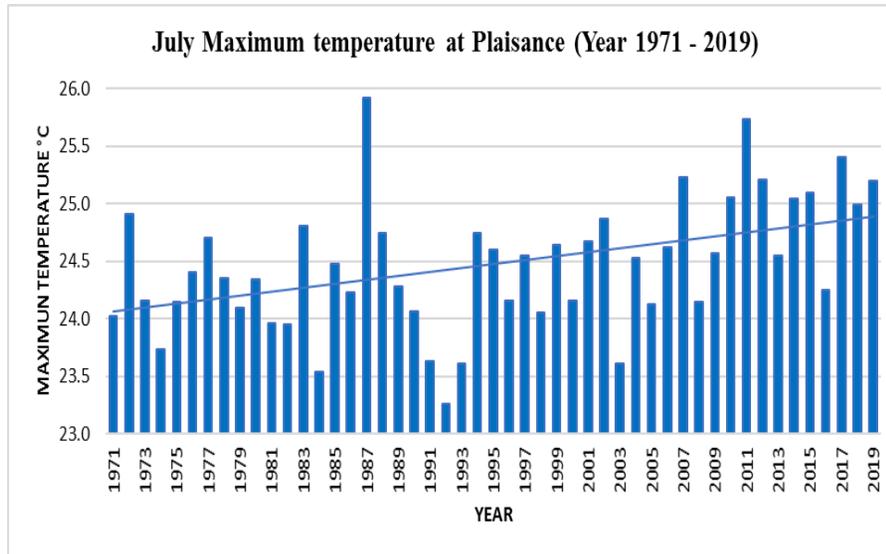


Fig. 4(a): Maximum temperature trend during July from 1971-2019

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

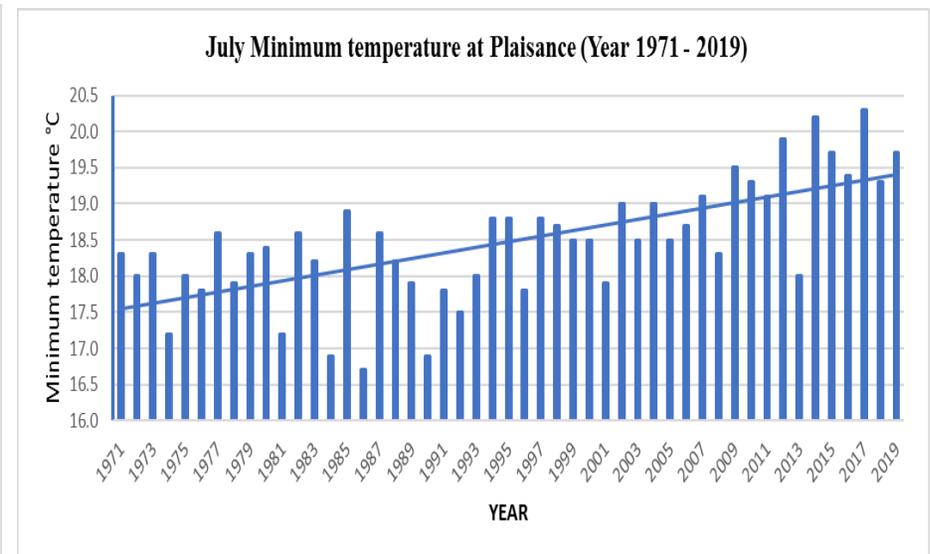


Fig. 4(b): Minimum temperature trend during July from 1971-2019

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

Day temperature was most of the time above normal during July 2019 due to the amount of insolation resulting from cloud free sky (Fig 10) and it led to above normal daytime temperatures especially during the first fortnight. On 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 2.5 °C. The highest anomaly for maximum temperature of 6.2 °C was recorded at Mon Desert Alma on 10 and the lowest anomaly of -2.2 °C was recorded at Le Morne and Grand Bassin on the 24. The highest temperature recorded was 31 °C at Medine

The night time temperature was mainly above except on few occasions under the influence of cold air advection. The departure for monthly mean minimum temperature ranged between -0.5 to 2.0 °C and the highest number of cold nights was 6 recorded at Domaine les Pailles. The highest anomaly for minimum temperature of 5.8 °C was recorded at Ferret on 30 and the lowest anomaly of -5.1 °C was recorded at Mon Desert Alma on the 13.

The lowest minimum temperature of 10 °C was recorded at Mon Desert Alma on 13.

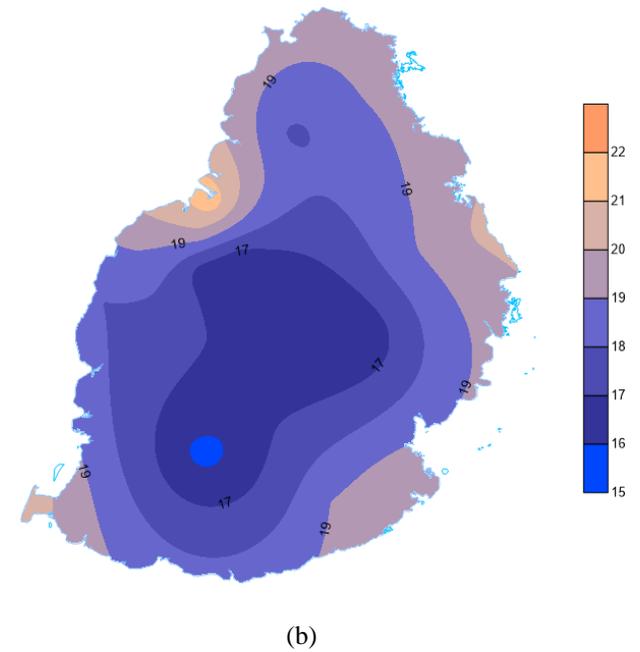
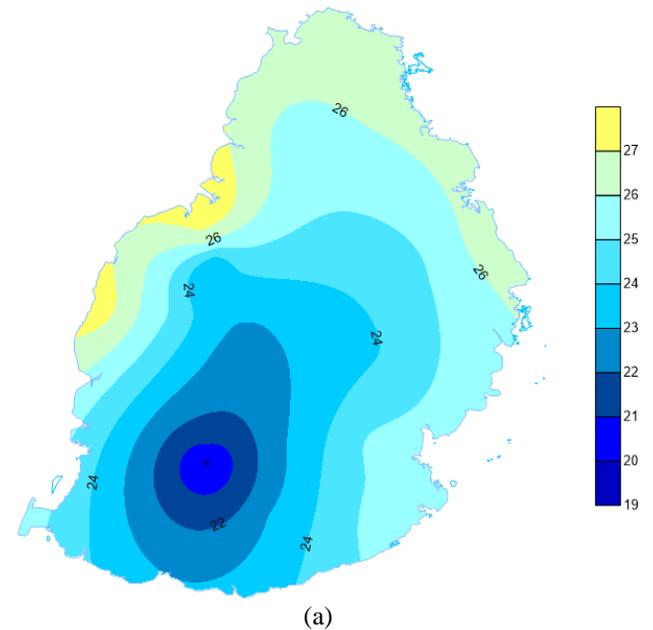


Fig. 5: (a) Maximum (b) Minimum temperature distribution

Some stations had up to 15 warm days;
(maximum temperature anomaly (anomax) >2°C).

Stations	Highest anomax (°C)	Number of warm days.
Mon Desert Alma	5.7	15
Medine	4.2	14
Sans Souci	3.5	14
Union Park MSIRI	4.6	13
Quatre-Bornes	4.1	12
Vacoas	5.2	12
Riche en Eau	4.5	11
Fuel	4.8	10
Belle Mare	2.4	10
D. les Pailles	3.1	10

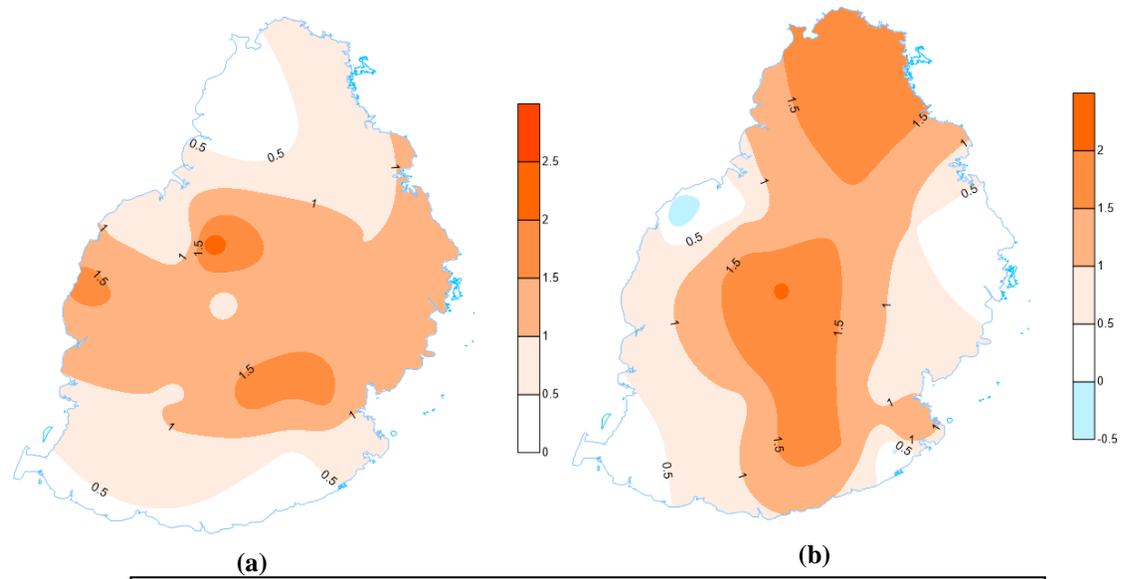


Fig. 6: (a) Maximum

(b) Minimum temperature anomaly

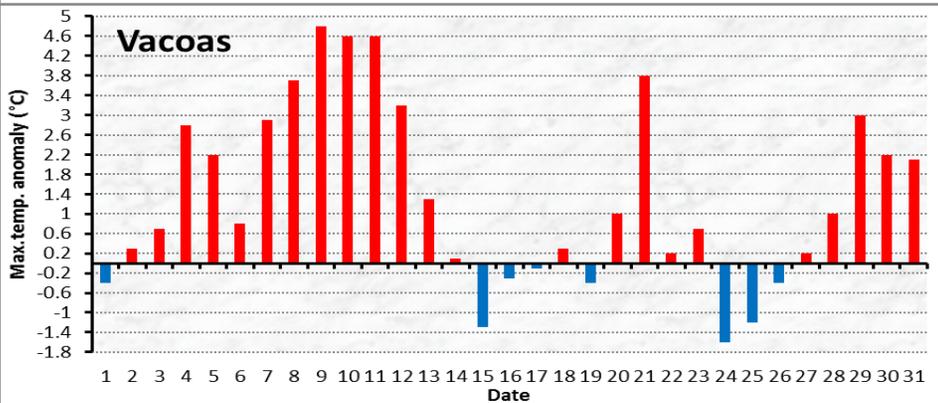
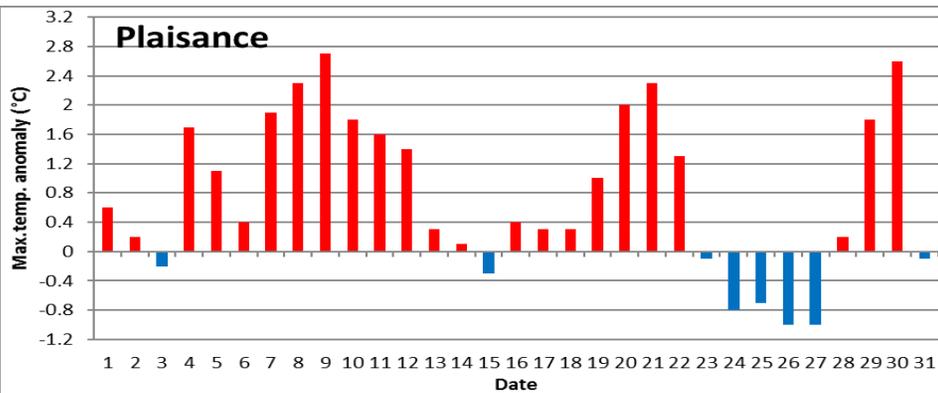


Fig. 7: Daily maximum temperature anomalies at Vacoas and Plaisance

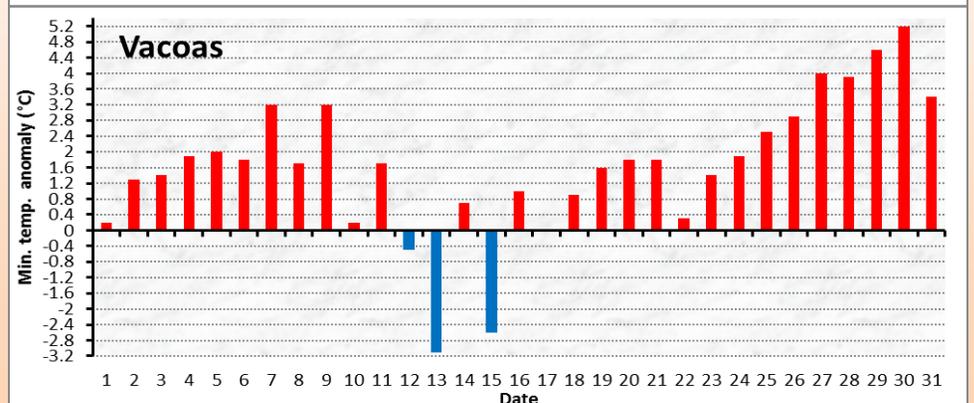
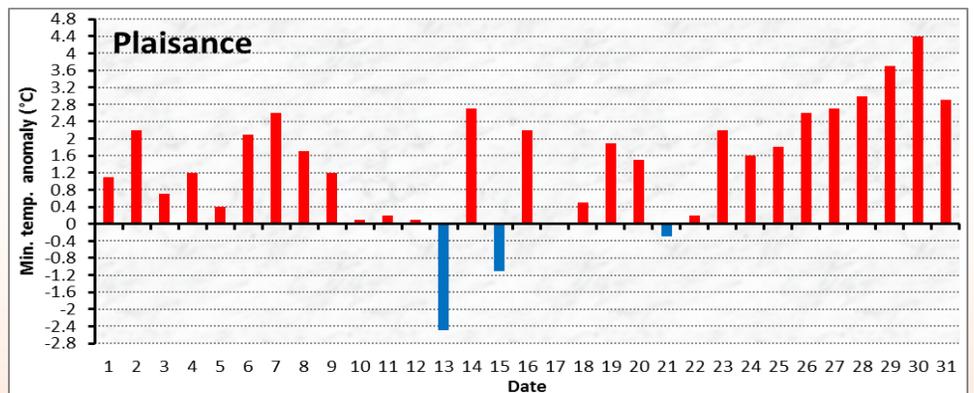


Fig. 8: Daily minimum temperature anomalies at Vacoas and Plaisance

3. Sunshine and Humidity

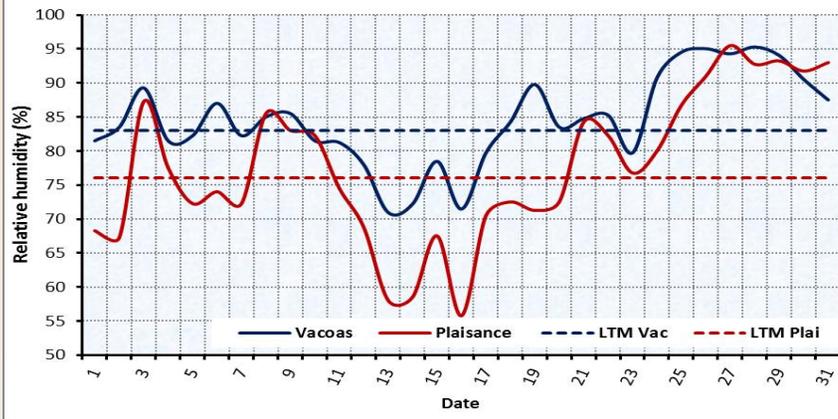


Fig. 9: Daily Relative Humidity: Vacoas (blue) and Plaisance (red)

The average monthly relative humidity (RH) was mainly normal for both Vacoas (85 %) and Plaisance (78 %). The highest humidity was recorded at Plaisance on 27 reaching 96 % and 95 % at Vacoas on 25, 26 and 28 (Fig 9). The lowest RH at Plaisance, 56 %, was recorded on the 16 associated with a cold air invasion from the anticyclone.

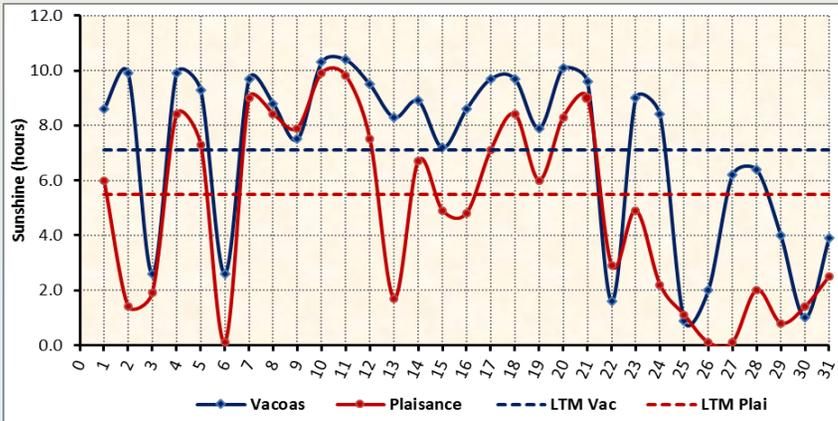


Fig. 10: Daily sunshine hours: Vacoas (blue) and Plaisance (red)

Monthly mean sunshine hours were close to normal with anomalies of 0.1 hours at Vacoas and -0.6 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 three occasions on 06, 26 and 27 under the influence of clouds in the easterlies crossing the island.

4. Winds

Trade winds prevailed over Mauritius for most of July 2019 under the influence of anticyclones 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 104 km/h recorded was at Champ de Mars on the 24.

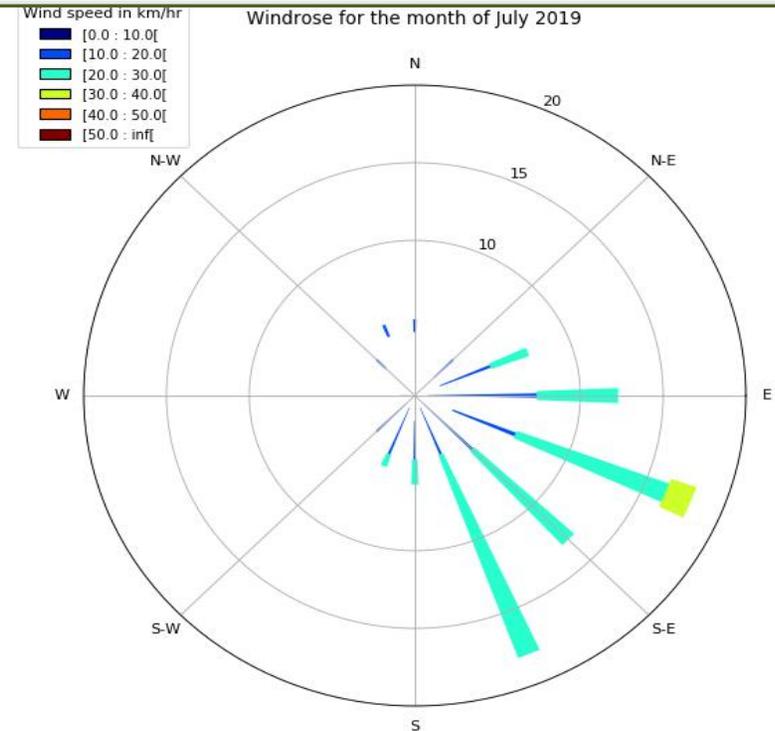


Fig. 11: Wind frequency at Plaisance

FORECAST FOR AUGUST-SEPTEMBER-OCTOBER (ASO)

From the beginning of August, the sea surface temperature anomaly, OLR and wind distribution across the equatorial Pacific Ocean revealed a neutral ENSO condition. The most dominant features for ASO will be the persistent moderate IOD and warm SST over the SWIO region.

In the previous JAS statistical run near normal rainfall was predicted. The month of July recorded above normal rainfall representing 134% (171mm) of the long-term mean. The first half of July was dry with rainfall of 27% (17mm) of the long-term mean, however the second half became wetter. Currently, normal rainfall has been recorded for the first half of August.

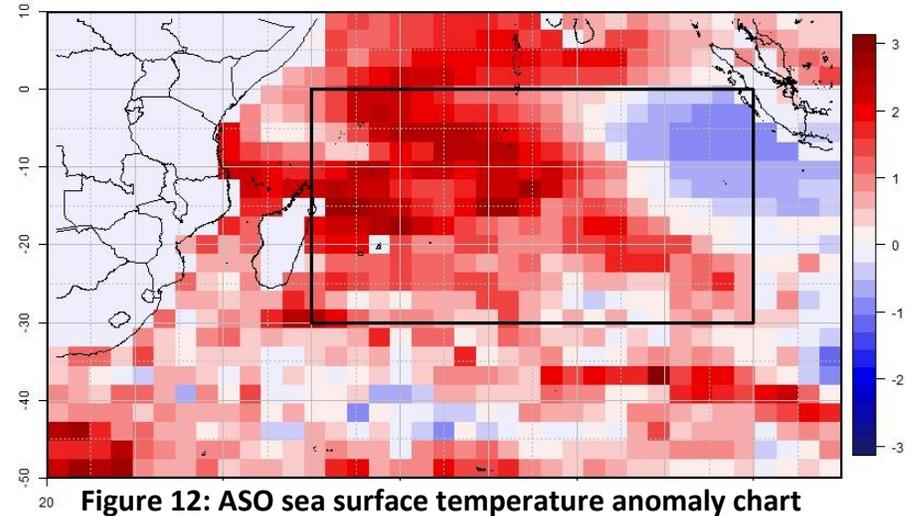


Figure 12: ASO sea surface temperature anomaly chart

Consensus forecast for Mauritius

- Statistical model is expecting slightly above normal rainfall for ASO (Fig. 14(a)). However, based on climatology and prevalent large-scale conditions, the most appropriate ASO rainfall has been forecasted normal as follows: for August~115 mm, normal for September and October with~ 100 mm and~76 mm respectively.
- Mean temperatures will continue to remain above normal at most places due to warm sea surface temperature persisting over SWIO region.

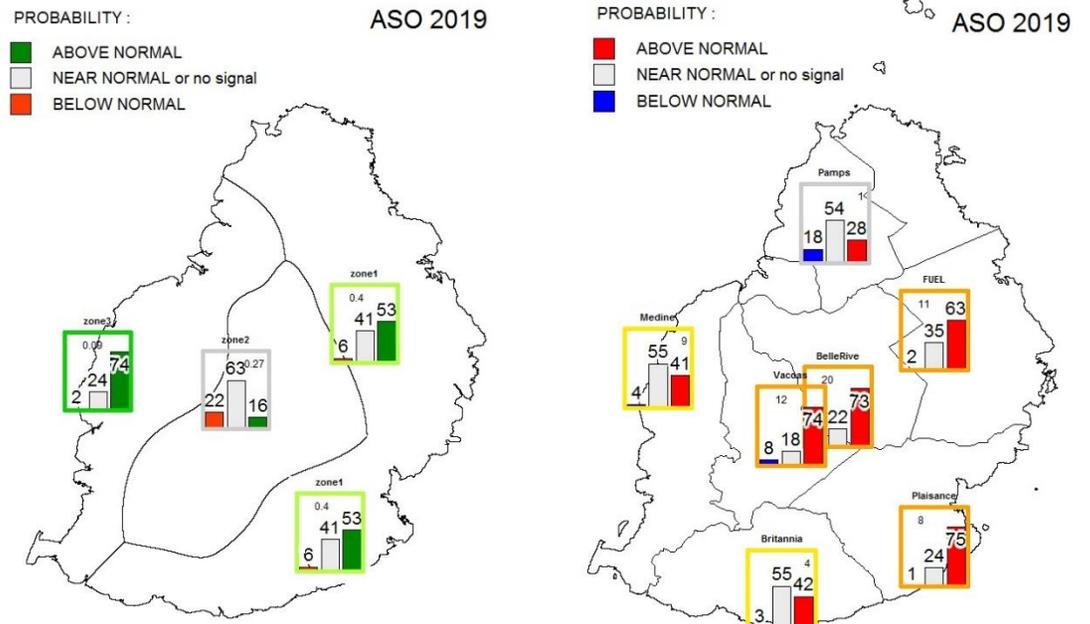


Fig. 13: Statistical Model Forecast of (a) rainfall and (b) temperature

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