



MAURITIUS METEOROLOGICAL SERVICES



CLIMATE BULLETIN OCTOBER 2019

Introduction

October 2019 was a typical transition month. The weather over Mauritius was influenced by the advection of cold air, sea breeze cloud development as well as passage of remnants of frontal system. Above normal temperatures and slightly above normal rainfall were observed over Mauritius. Neutral ENSO conditions persisted in the Pacific region. The Indian Ocean Dipole remained positive. The Madden Julian Oscillation (MJO) evolved in the western part of the SWIO for almost the whole month and it enhanced the rainfall to some extent. Two post monsoon cyclonic formations were named KYARR and MAHA in the Arabian Sea. They peaked to Super Cyclonic Storm and an Extremely Severe Cyclonic Storm respectively.

1. Rainfall

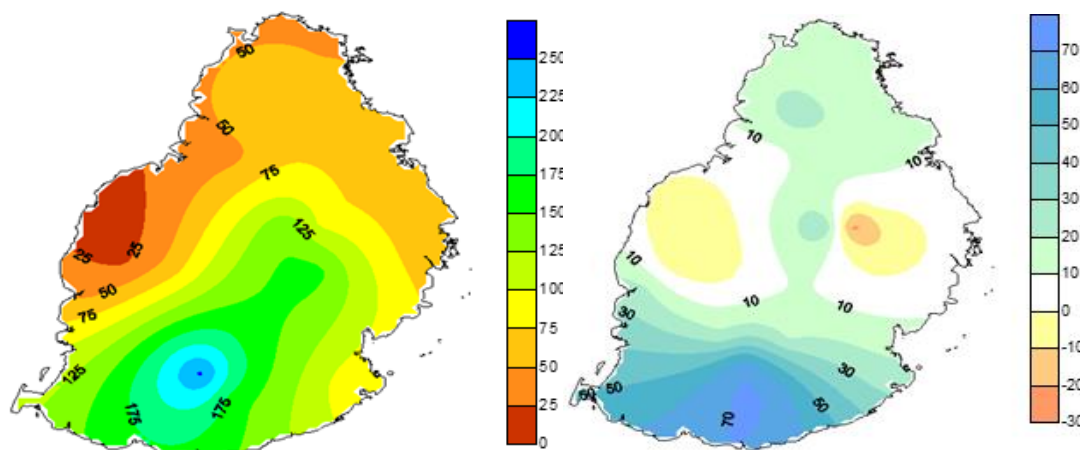


Fig. 1: (a) Observed rainfall (mm) (b) rainfall anomaly (mm)

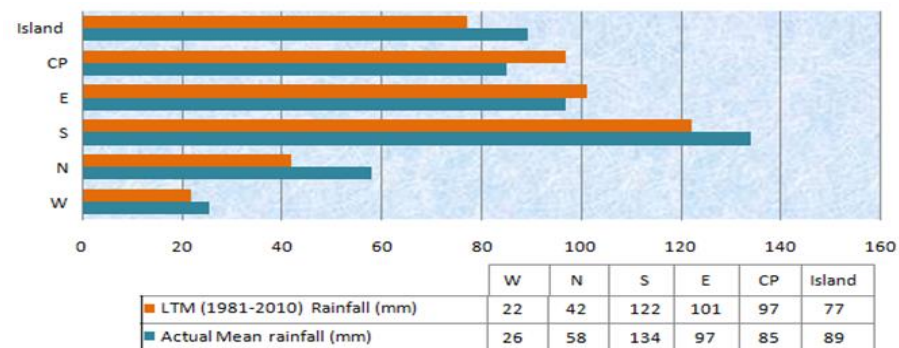


Fig. 2: Regional rainfall distribution (based on 23 stations) (mm)

October 2019 received slightly above normal rainfall amounting to 89 mm, representing 116% of the long term mean for this month. Rainfall was mainly associated with easterly waves, frontal system and local convection. Slightly deficient rainfall was observed to the east and west, for example in the region of Bel Etang, the rainfall observed was below normal by 20 mm. Elsewhere, it was normal to slightly above and the regions of Bois Cheri and Britannia received about 60 mm of rainfall in excess. The highest rainfall intensity was 16.6 mm/h at Grand Bassin on 3 October 2019.

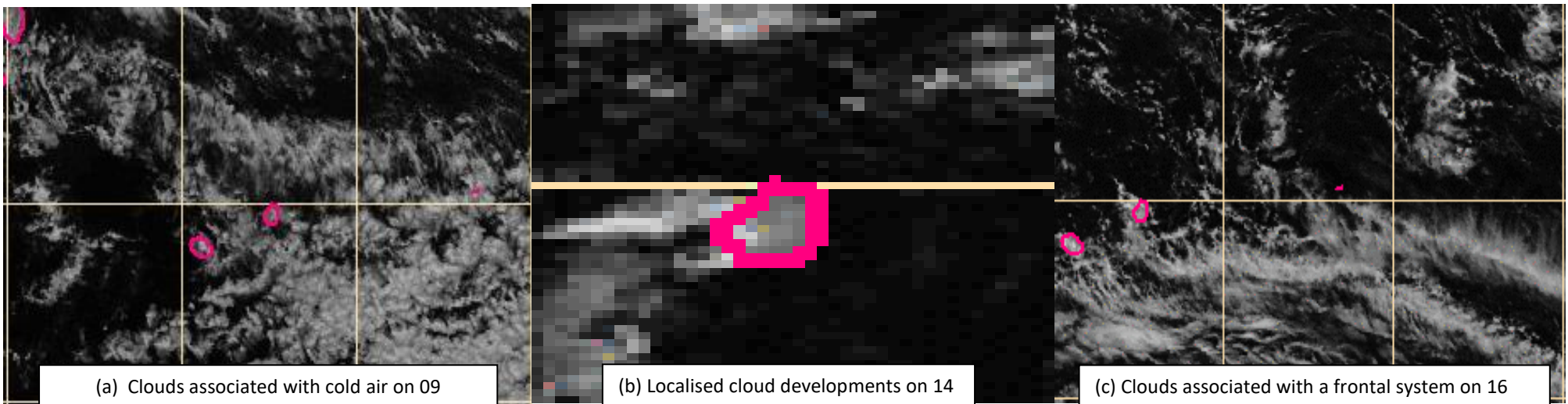


Fig 3: Weather systems during October 2019

**October Mean Maximum Temperature at Plaisance
(Year 1971 - 2019)**

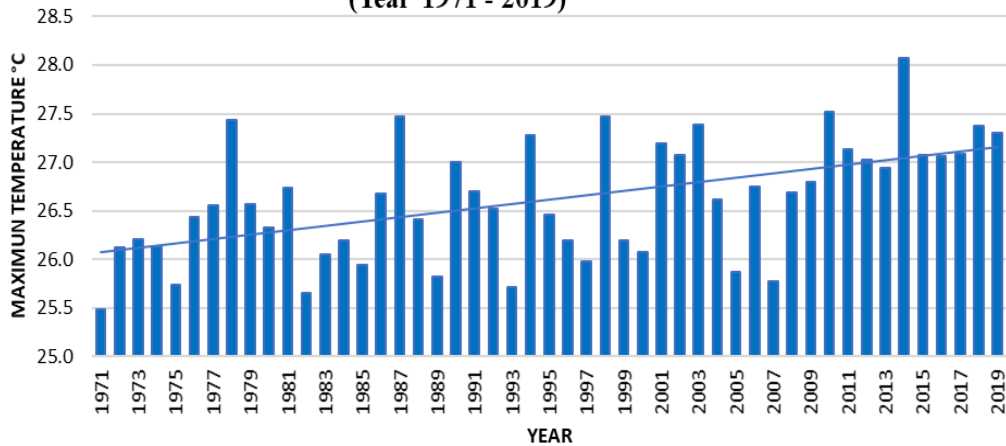


Fig. 4(a): Maximum temperature trend during October from 1971-2019

October 2019 has the eighth warmest day temperature for October on record since 1971 (based on mean maximum temperature recorded at Plaisance)

**October Mean Minimum Temperature at Plaisance
(Year 1971 - 2019)**

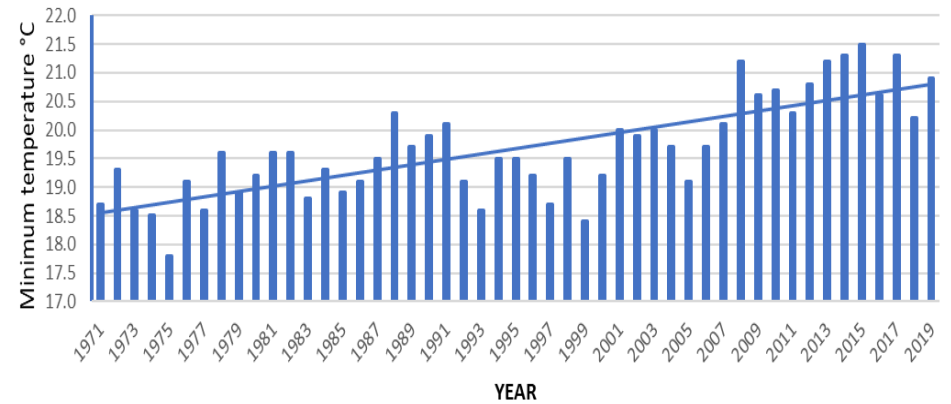


Fig. 4(b): Minimum temperature trend during October from 1971-2019

October 2019 has the sixth warmest night temperature for October on record since 1971 (based on mean minimum temperature recorded at Plaisance)

Day temperature was on most occasion above normal during October 2019. However, cold air emanating from the sub-tropical anticyclones occasioned normal to locally below normal day temperatures especially during the third week.

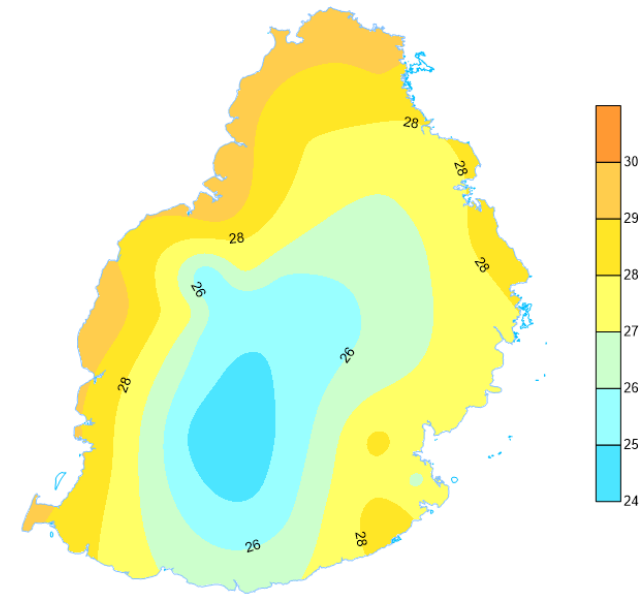
The departure for monthly mean maximum temperature across the island, ranged between -0.1 to 2.7 °C. The highest anomaly for maximum temperature of 5.9 °C was recorded at Union Park MSIRI on 25 and the lowest anomaly of -3.7 °C was recorded at Bois Cheri on the 16. The highest temperature recorded was 32.6 °C at Medine on 25.

The night time temperature was mainly normal to above except to the northwest where it was slightly below.

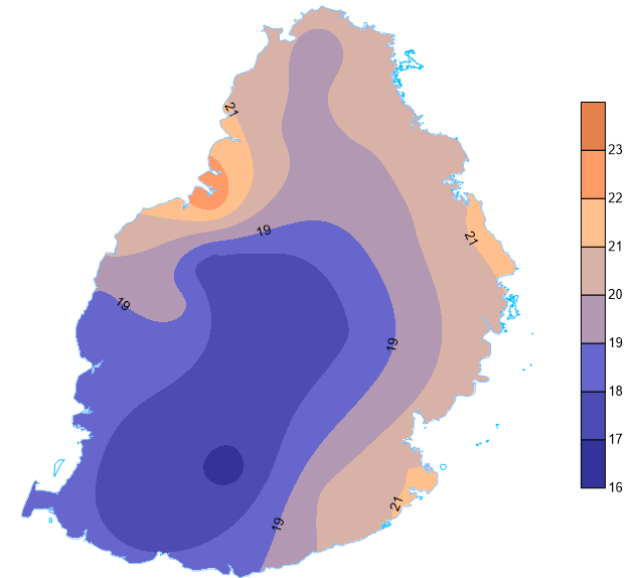
The departure for monthly mean minimum temperature ranged between -0.7 to 1.8 °C and the highest number of cold nights was 04 recorded at Gros Cailloux.

The highest anomaly for minimum temperature of 4.1 °C was recorded at Ferret on 25 and the lowest anomaly of -3.6 °C was recorded at Gros Cailloux on the 19.

The lowest minimum temperature of 14.1 °C was recorded at Belle Rive on 15. A new record of minimum temperature of 18.2 °C was observed at Mon Loisir SE on the 30 (previous 19.7 °C) and 17.4 °C was observed at Gros Cailloux on the 19 (previous 18.4 °C).



(a)



(b)

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

Some stations had up to 21 warm days;
(maximum temperature anomaly (anomax) >2°C).

Stations	Highest anomax (°C)	Number of warm days
M Desert Alma	4.8	21
Riche En Eau	5.4	21
M L Rouillard	3.8	16
Bois Cheri	5.5	14
Medine	4.4	12
Sans Souci	4.3	12
Quatre Bornes	5.1	11
Vacoas	4.9	11
Union Park MSIRI	5.9	11
Belle Rive	4.1	10

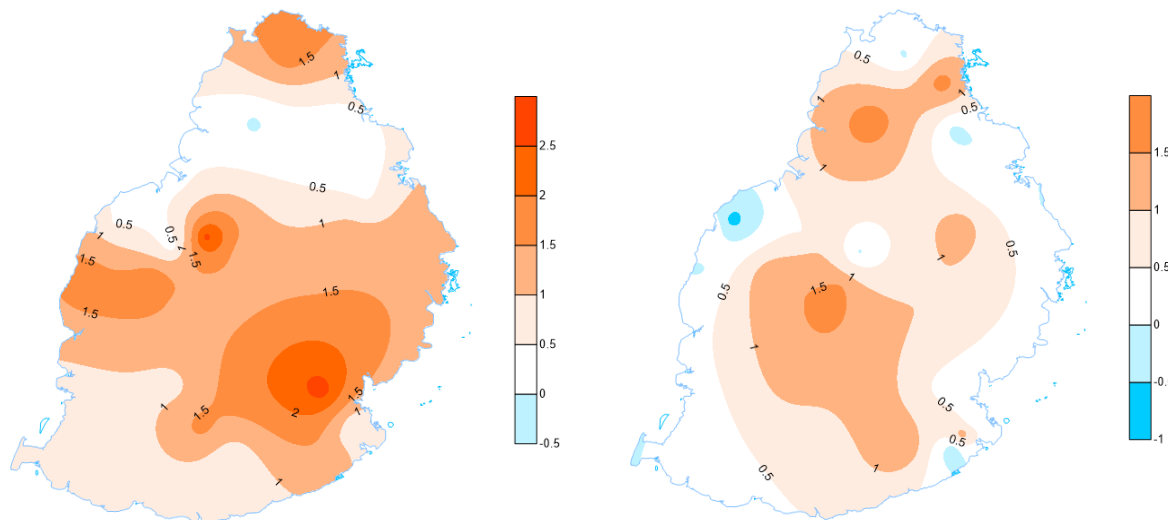


Fig. 6: (a) Maximum temperature anomaly

(b) Minimum temperature anomaly

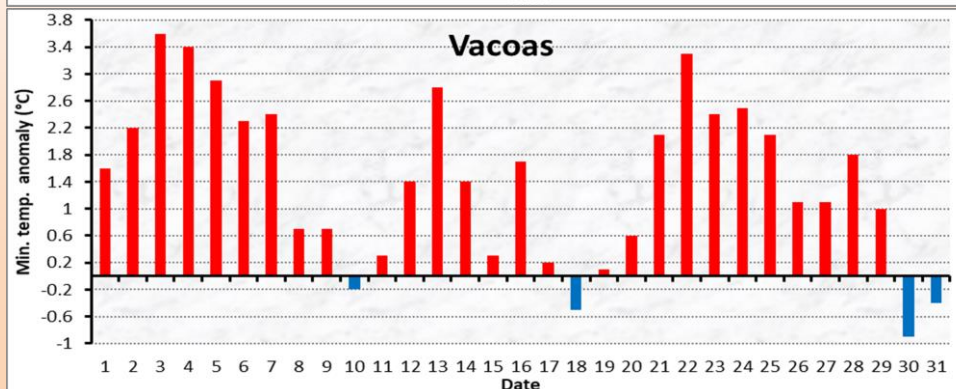
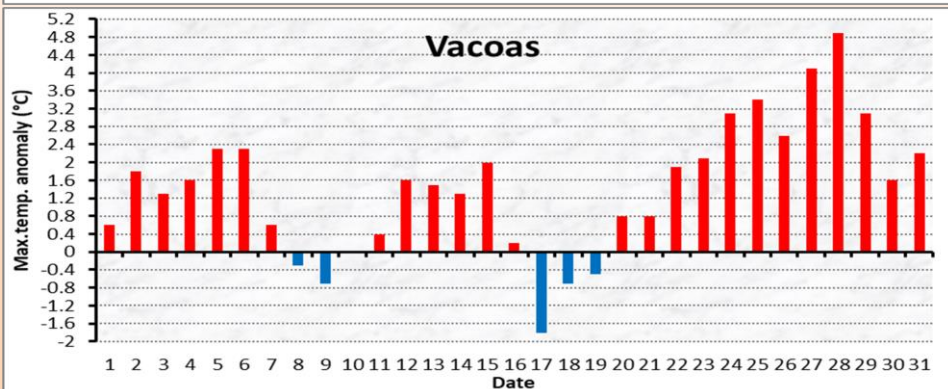
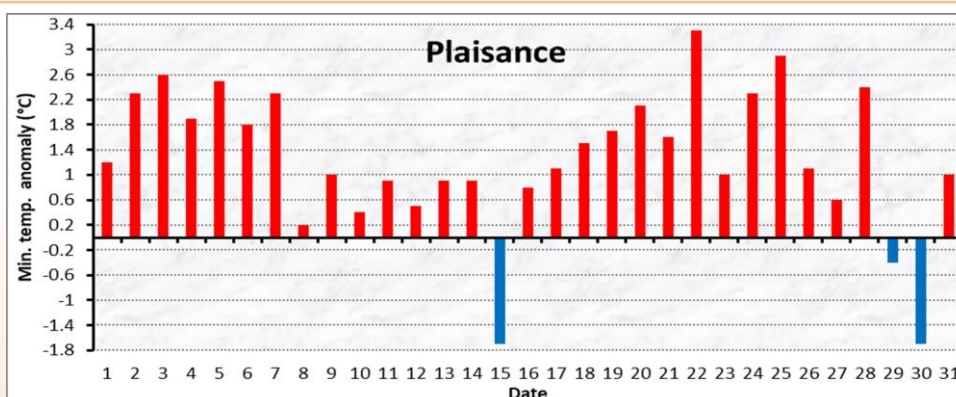
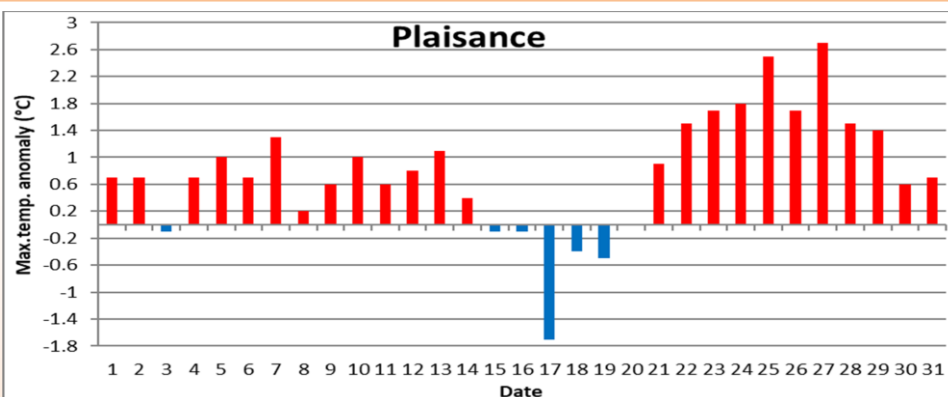


Fig. 7: Daily maximum temperature anomalies at Vacoas and Plaisance

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

3. Sunshine and Humidity

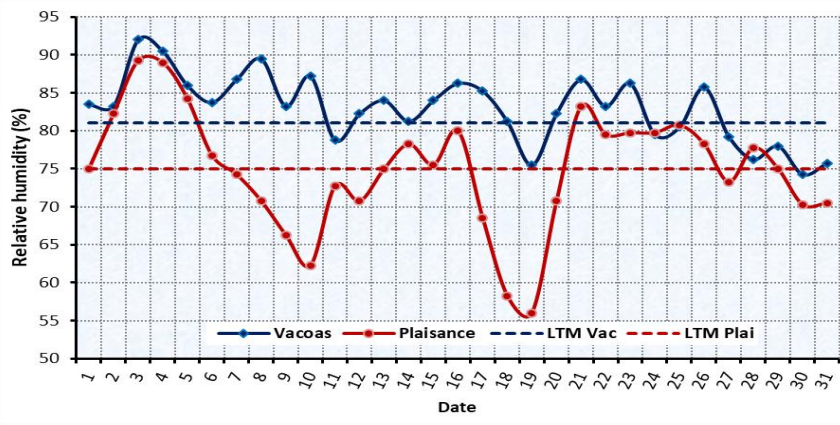


Fig. 9: Daily Relative Humidity: Vacoas (blue) and Plaisance (red)

The average monthly relative humidity (RH) was mainly normal for both Vacoas (83%) and Plaisance (75%). The highest RH at Plaisance was recorded on 03 and 04 reaching 89% and 92% at Vacoas on 03 (Fig 9). The lowest RH at Plaisance, 56%, was recorded on the 19 associated with a cold air invasion from the anticyclone.

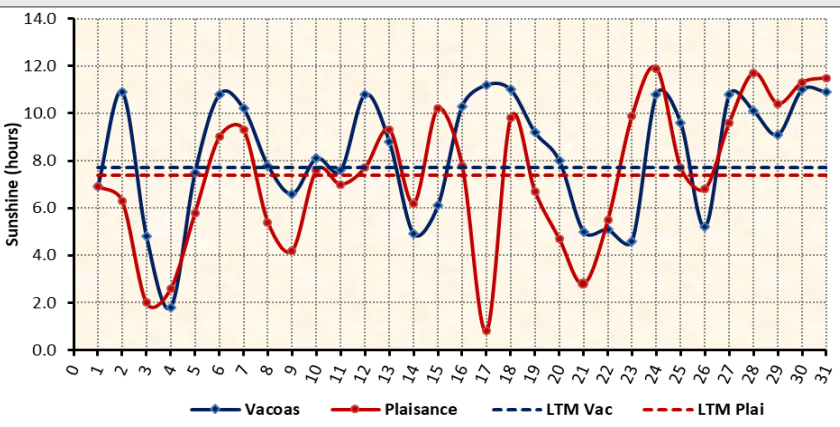


Fig. 10: Daily sunshine hours: Vacoas (blue) and Plaisance (red)

Monthly mean sunshine hours were normal at Plaisance with a nil anomaly and close to normal at Vacoas with an anomaly of 0.5 hours. Plaisance and Vacoas had daily sunshine hours which varied significantly (Fig 10). Close to nil sunshine hours was observed on 17 at Vacoas when remnants clouds associated with a modified cold front crossed the island. (Fig 3(c)).

4. Winds

Trade winds, mainly from the eastern sector prevailed over Mauritius for most of October 2019 (Fig 11) under the influence of anticyclones migrating south of the Mascarenes. In between the passage of the anticyclones, light wind was observed at Plaisance. The magnitude of the observed trade wind was mainly within the range of 20 to 30 km/h. The highest gust of 65 km/h recorded was at Champ de Mars on the 09, 16 and 17.

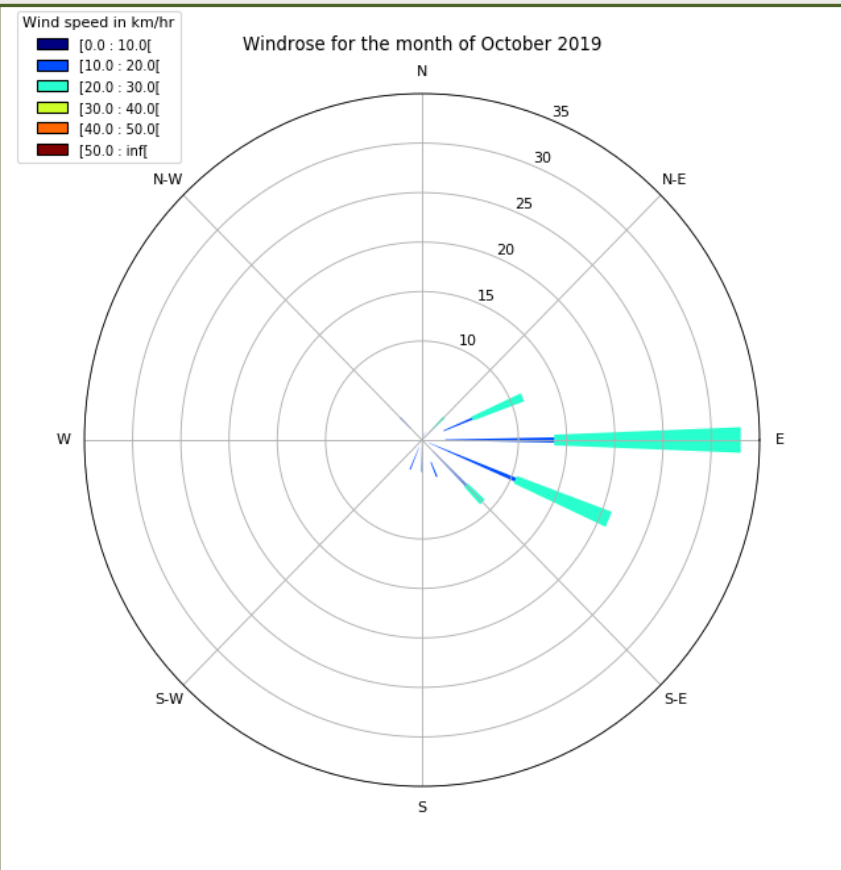


Fig. 11: Wind frequency at Plaisance

FORECAST FOR NOVEMBER-DECEMBER-JANUARY (NDJ)

Neutral ENSO condition is being observed in the Pacific Ocean and is expected to persist for NDJ. The most dominant feature for NDJ will be a strong IOD (Fig 13) which is currently at peak intensity and is expected to weaken slightly to moderate intensity during the forecast period.

In the previous OND statistical run slightly above normal rainfall was predicted. October recorded slightly above normal rainfall with two rainy episodes representing 116 % (89 mm) of the long-term mean.

Consensus forecast for Mauritius

- Statistical model is expecting above normal rainfall for NDJ (Fig. 14(a)).
- Based on prevailing situation, slightly above normal rainfall is being forecasted for NDJ as follows: normal for November~86 mm and slightly above normal for December and January with~200 mm and~310 mm respectively.
- Mean temperatures will remain above normal at most places (Fig 14(b))

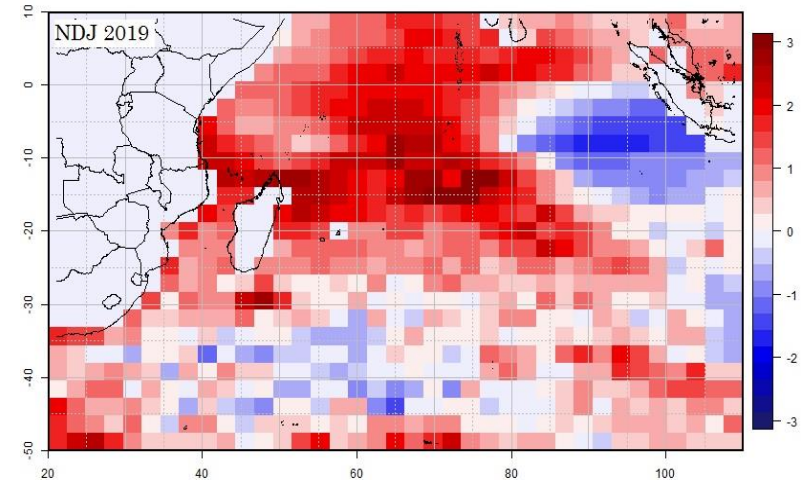


Figure 13: NDJ sea surface temperature anomaly chart

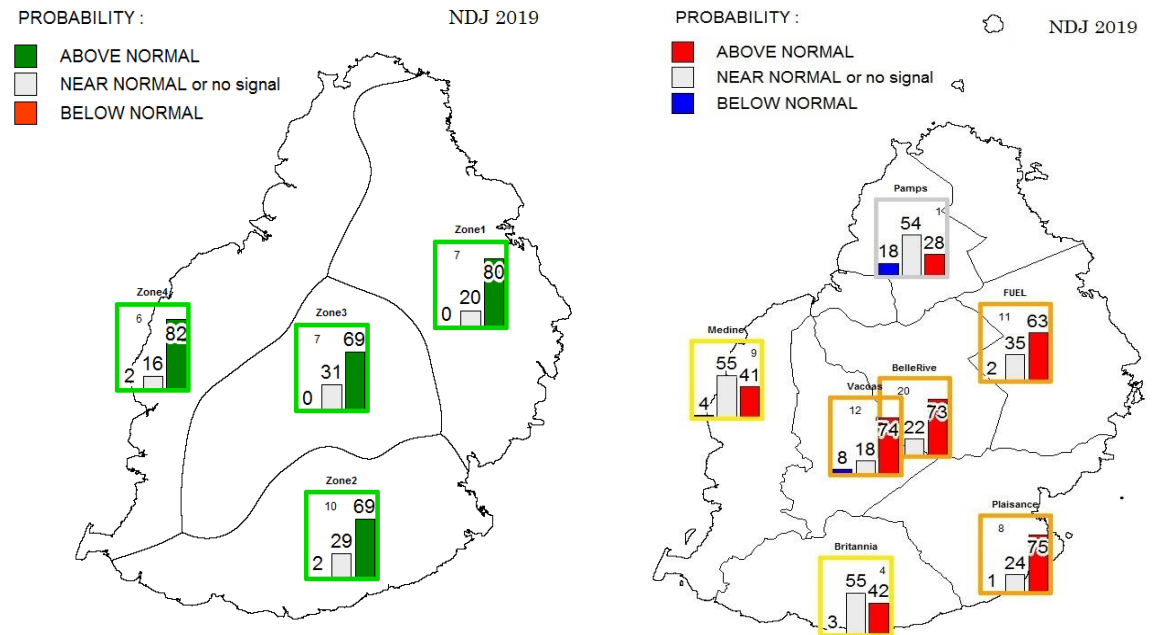


Fig. 14: Statistical Model Forecast of (a) rainfall and (b) temperature

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