MAURITIUS METEOROLOGICAL SERVICES

CLIMATE JANUARY 2020

Introduction

The month of January 2020 was rather wet with most of the rain falling during the first fortnight. Warm conditions prevailed mainly during the second and third week. In the first half of the month, tropical lows prevailed southern Indian Ocean. One storm reached naming stage, namely, Diane; but did not have much impact over Mauritius in-spite of coming close to the island. Diane reached a severe tropical storm intensity when it was located to the southeast of Rodrigues. Neutral ENSO prevailed over the equatorial Pacific Ocean. The IOD was neutral in the equatorial Indian Ocean and the South Indian ocean Dipole (SIOD in subtropical regions) was positive with a persistent tongue of warm pool south of the Mascarene Islands.

1.Rainfall

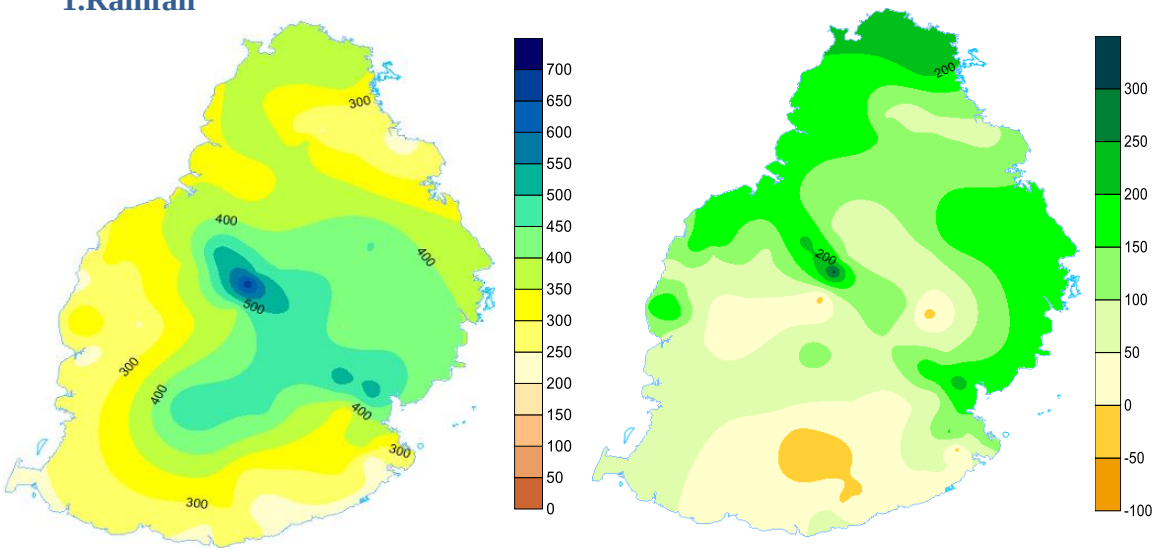
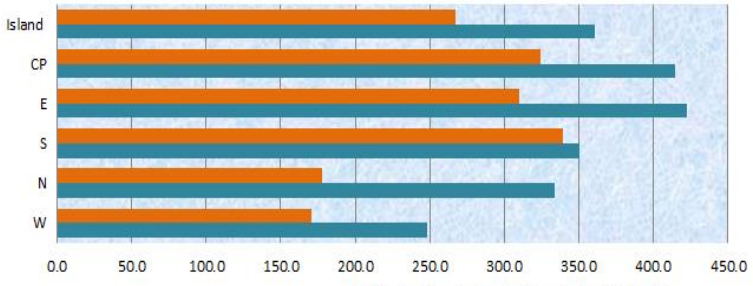


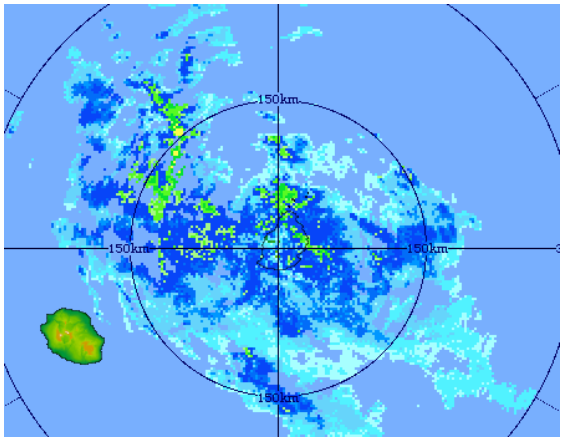
Fig. 1: (a) Observed rainfall(b) rainfall anomaly.



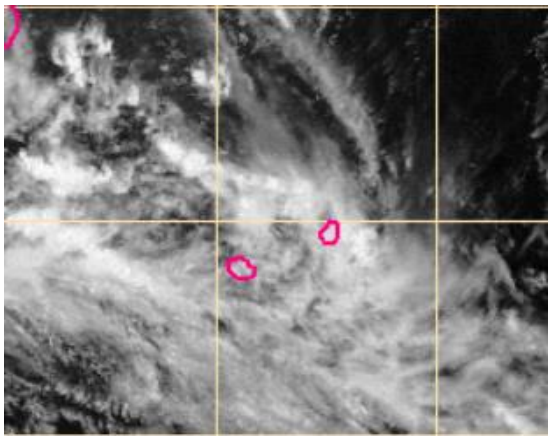
	W	N	S	E	CP	Island
January LTM (1981-2010) Rainfall (mm)	171	178	339	310	324	267
Actual Mean rainfall (mm)	248.6	334.1	350.5	422.5	414.4	361.0

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

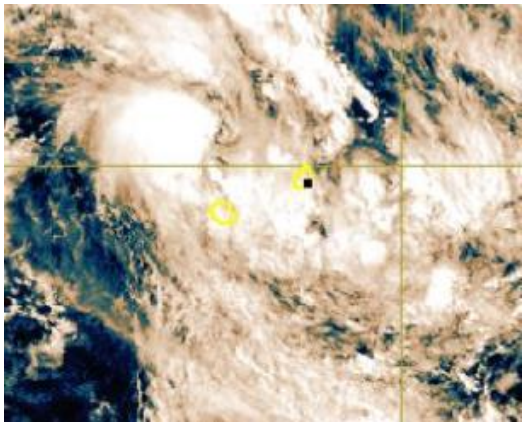
An average of 361 mm of rainfall was recorded over the island equivalent to 135% of the long term mean for the month. The rainfall was well distributed over the month with the first and second fortnight accounting for about 70% and 65% of that rainfall respectively. The more significant rainfall episode was from the night of Sunday 05 to Monday 06 which warranted a heavy rain warning. In fact, the highest 24-hour rainfall, amounting to 221m at Valetta was recorded during that event. Else cloud clusters coming from the north and north-west, particularly from 14-16, further contributed to the rainfall and at the end of the month, from 21-25, storm DIANE added some more rainfall. On few occasions afternoon convective clouds brought localised showers and these were more frequent to the east and southeast. It was particularly wet to the North and over part of the Central Plateau and eastern region. Localised flooding was observed mainly during the night of Sunday 05 and daytime on Monday 06.



(a) Instability zone on 05



(b) Instability zone on 21



(c) MTS DIANE on24

Fig 3: Weather systems during January

2.Surface Temperature

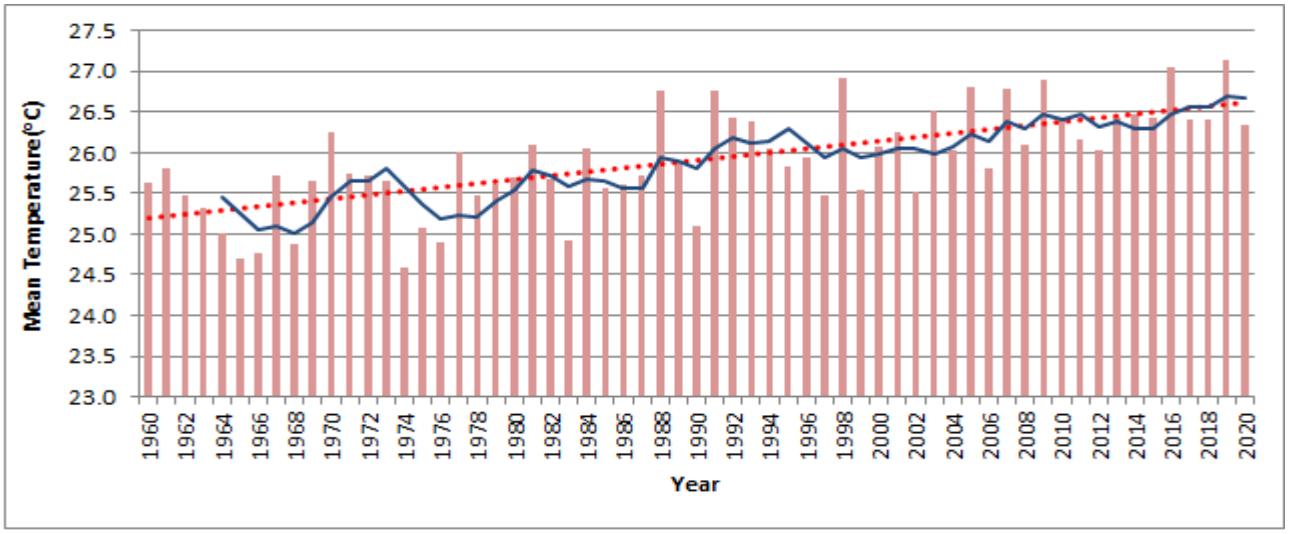


Fig. 4: Mean temperature trend for January from 1960-2020.

January 2020 has not been a much warmer month than in previous. The temperature warm days were offset by the temperatures during the cold days in the last week of the month.

Warm conditions prevailed during the first 20 days of the month (Fig. 7) except for some temporary drop in daytime temperature during the first week due to cloudy and rainy conditions. The warm conditions were due to a persistently moisture laden north-westerly wind (Fig.9). But a marked change was observed during the last week with a drop in both maximum and minimum associated with winds blowing mostly from the south as MTS Diane moved south of the Mascarene Islands.

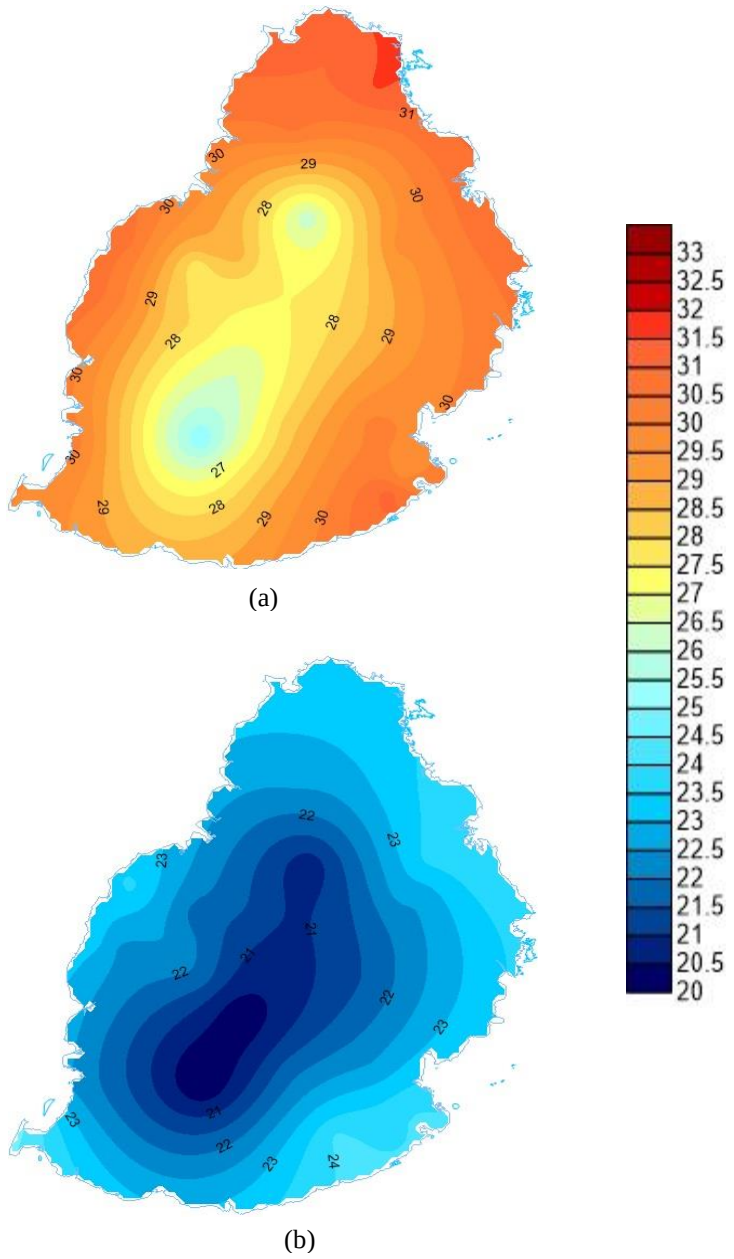
Overall, the mean maximum temperature for the month was close to normal almost over the whole island except to the west where it was 0.5 °C to 1 °C below the seasonal mean (Fig 6(a)). However, the mean daytime temperatures were about 0.5^0C warmer than normal during the first 20 days.

Mean daytime temperature for the month over the island was close to normal at most stations. Warm daytime temperatures were occasionally felt to the east, the southeast and over certain localities of the Central Plateau. Anomalies in maximum varied between+3.5 to + 4.5 °C to the east and southeast and between +3.0 to + 3.5°Cover the Central Plateau. Mean monthly night time temperature was also close to the normal except over the Central Plateau and to the South where anomalies in minimum were warmer by +1.0 to + 1.3°C.

Queen Victoria station registered an all-time record maximum temperature of 33.9°C (previous33.4 °C). However new records in low minimum temperatures were observed at 3 stations, namely at Grand-Bassin 17.1°C (previous 17.5 °C), Mon-Bois 15.5°C (previous 16.0 °C) and Mon-Loisir 19.7 °C (previous 20.6 °C).

There were distinct warm days (temperature anomaly ≥ 2°C) and cold days (temperature normally ≤ 2°C) distribution across the island. The stations recording the highest number of warm days were located to the east, southeast and over the Central Plateau. The numbers of days with below normal temperature during the month were also pertinent, and particularly observed to the west. For instance, Quatres-Bornes, Albion and Beau-Songes, and Le Morne recorded 8, 5 and 9 days with below normal temperature respectively. However, some stations over the Central Plateau and to the southeast equally had some days with below normal temperature, namely 6 at Grand-Bassin, 5 at Mon-Bois and 6 at La Baraque.

Warm nights were more frequent than warm days. The highest number was observed at Belle Rive recording 14 warm nights. Other stations such as Vacoas, Union Park and La Barque had 10, 11 and 13 warm nights respectively. Cold nights were higher over the western part of the island.



(a)

(b)

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

Warm days observed were less than 10 (maximum temperature anomaly (anomax)>2°C).

Stations	Highest anomax (°C)	Number of warm days.
Union Park MSIRI	3.7	9
Bois Cherie	3.9	6
Grand Bassin	3.7	6
Mon Bois	3.2	7
Mon Desert Alma	3.2	6
Constance	3.6	5
Fuel	4.2	4
La Baraque	3.0	7
Riche En Eau	3.7	8
Mon Desert Mon Tresor	4.0	8

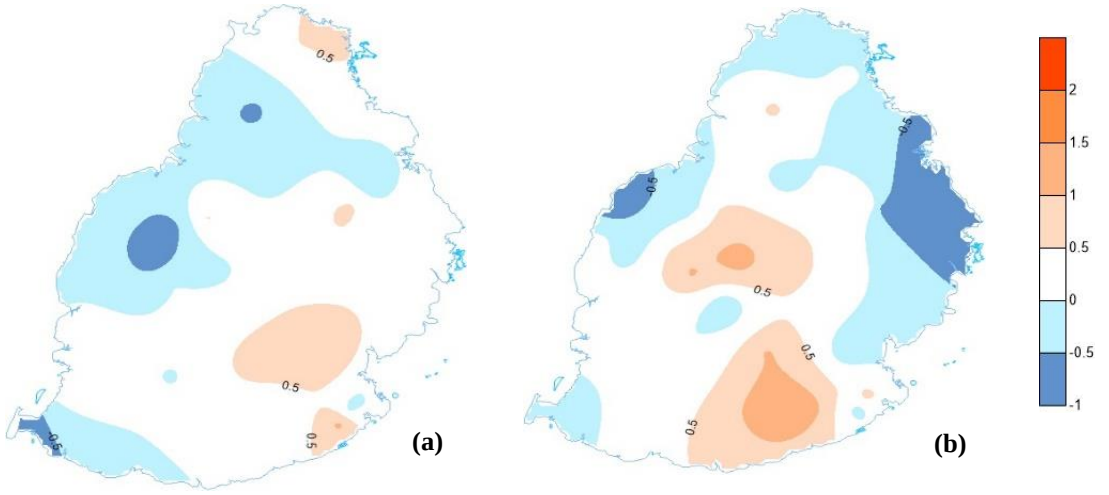
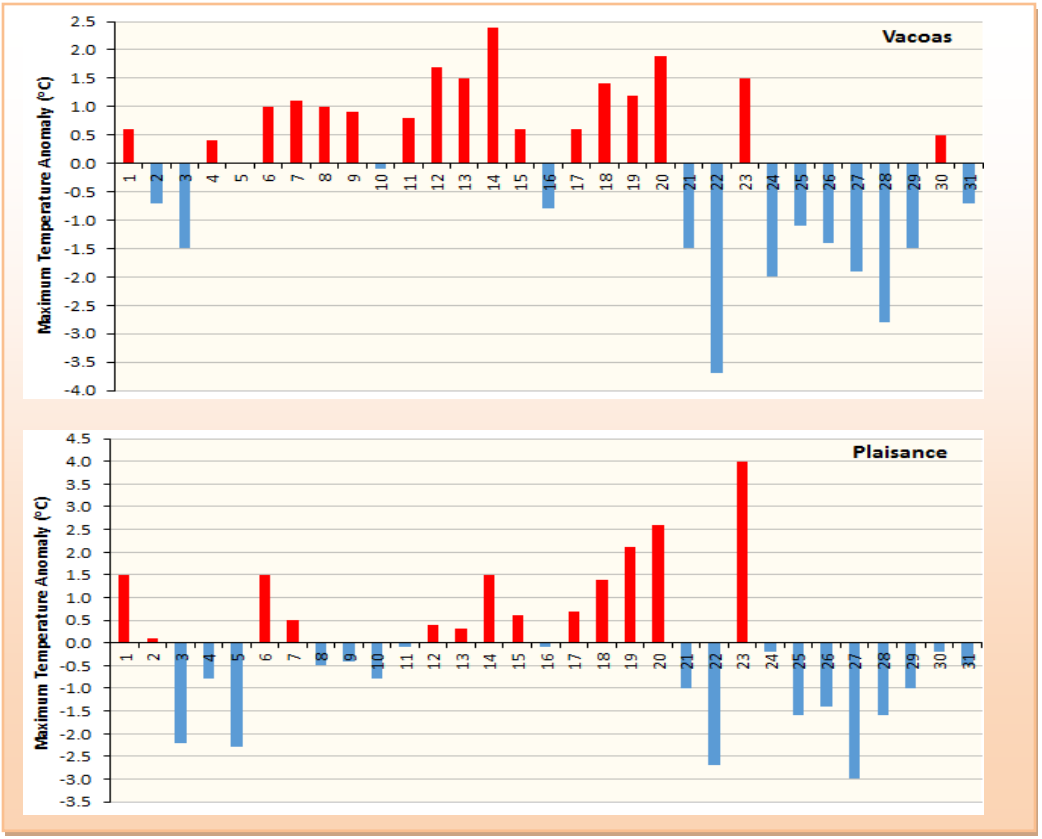


Fig. 6: Spatial distribution of temperature anomaly(a) Maximum(b) Minimum.



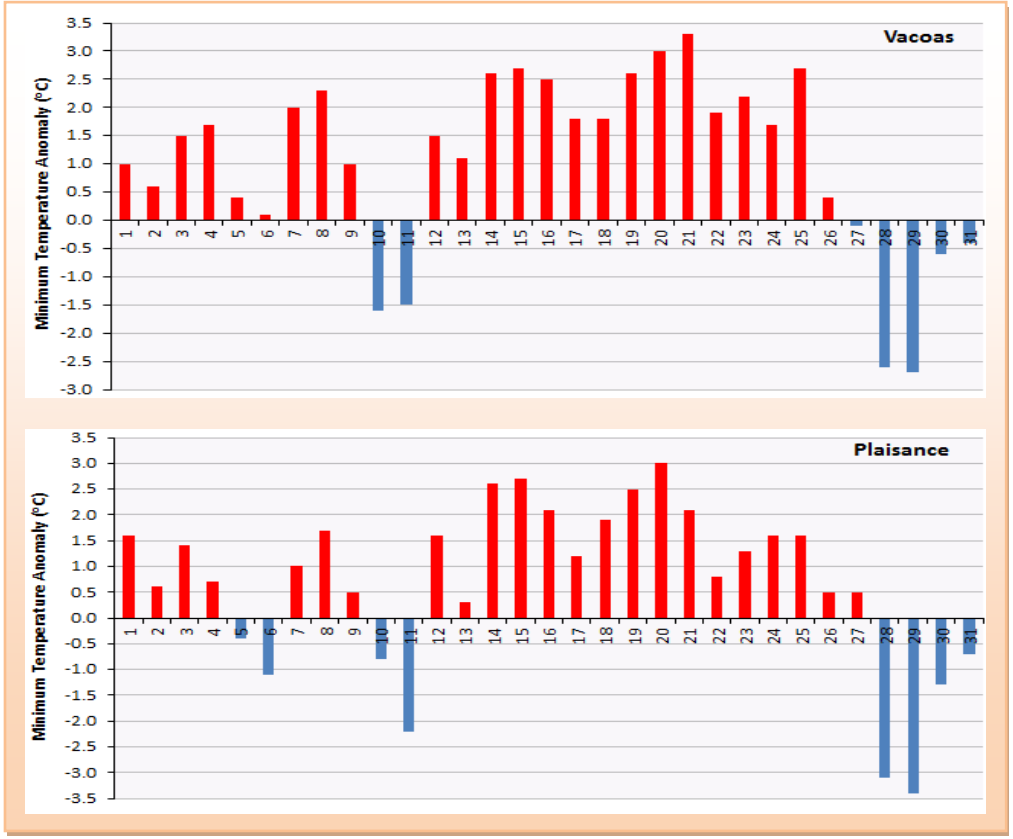
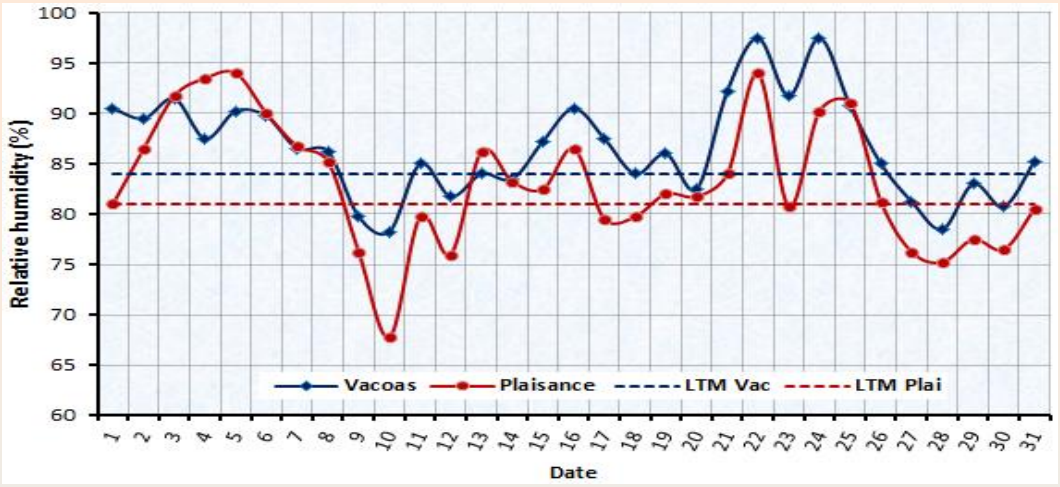
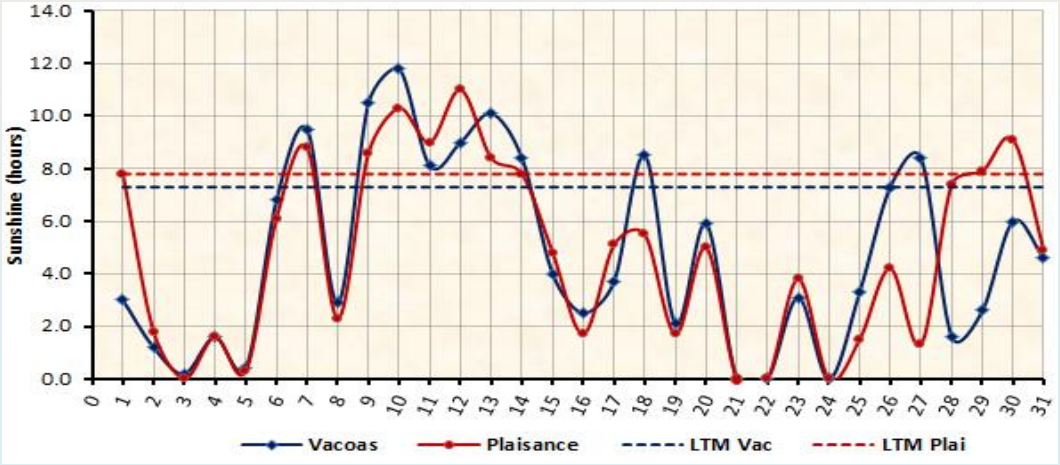


Fig. 7: Daily temperature anomaly at Plaisance and Vacoas (a) Maximum(b)

3. Sunshine and Humidity





The mean monthly relative humidity was close to normal both at Vacoas and Plaisance. Moreover, a marked variability is observed during the month with moist conditions prevailing during the first and third week and a sudden surge of dry air in the last week. This dry air is coupled with the drop in temperature (Fig. 7) indicative of modified cold air invasion emanating from anticyclones south of the Mascarene region. The moist conditions from 21 to 25 were associated with rain bearing clouds as the sunshine hours also plummeted during that period. This also caused a drop in daytime temperature and an increase in night-time temperature. A similar condition prevailed during the first week of the month. The sunshine hours were deficient by 2.6 and 3 hours at Vacoas and Plaisance respectively. This was due to persistent cloud cover particularly during the first and third week.

4. Winds

The month had a variable wind both in terms of speed and direction. Most of the time easterly wind prevailed but occasionally it blew from the south and southwest particularly during the last week. Light wind conditions were quite often contributing to the occasional sultry conditions, particularly during the first fortnight. Moderate winds were observed at the end of the first fortnight and when storm DIANE moved to the southeast of the island.

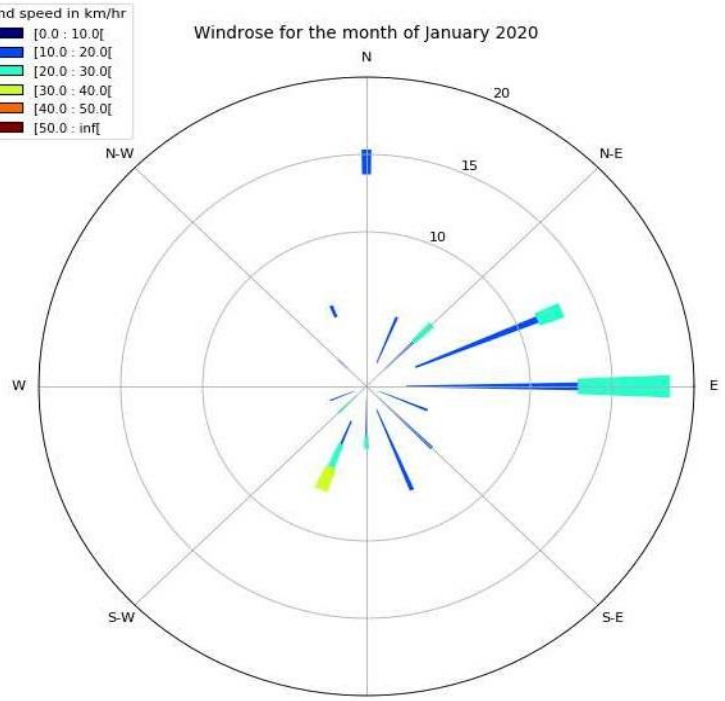


Fig. 9: Wind frequency at Plaisance.

SEASONAL FORECAST: February-March-April (FMA) 2020

The central and eastern equatorial Pacific SST anomaly will be normal for FMA. In the Indian Ocean, IOD will remain neutral whereas a positive SIOD has developed and is expected to persist. The Mascarene region will lie in a warm pool of SST for the period FMA due to the ongoing positive SIOD (Fig 15). Consequently, light wind and sultry conditions may prevail during this period.

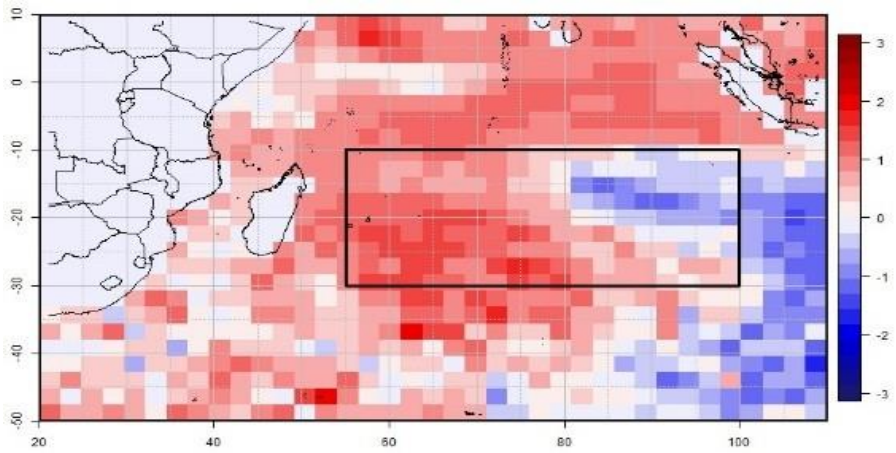
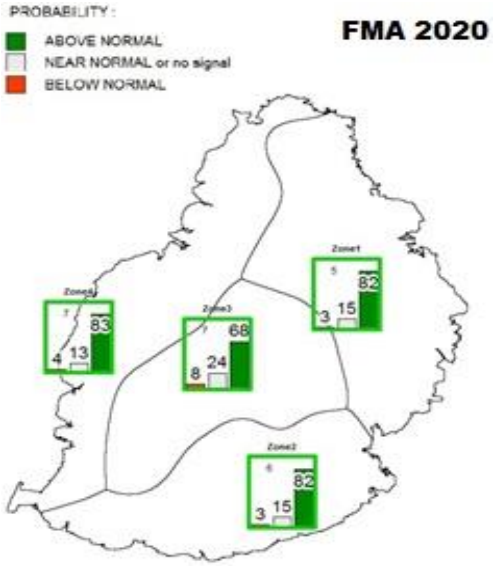
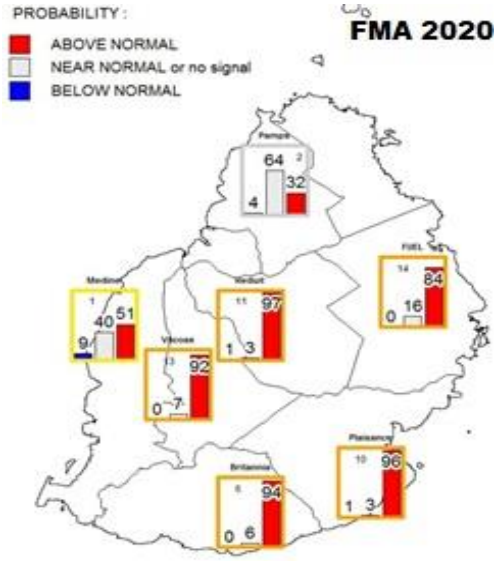


Fig 10: Expected SST anomaly during FMA

Consensus forecast for Mauritius

- Rainfall amount is expected to be normal for FMA, and the rainfall statistics have been worked out as follows: February (300mm), March (270mm) and April (210mm)
- Day time maximum temperature will continue to remain above normal at most places.





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20 February 2020