MAURITIUS METEOROLOGICAL SERVICES

CLIMATE JUNE 2020

Introduction

June 2020 had excessive rainfall, except to the north and the west, recording 171% of the month LTM rainfall over the island. The month also experiences shortest day time as winter solstice is observed in the third week. Strong anticyclones were quite frequent with central pressure of almost 1040hPa, causing windy conditions to prevail during the month. The highest recorded gust reached 73 km/h at Bel-Village.

Neutral ENSO prevailed over the equatorial central Pacific Ocean. A weak positive signal of IOD prevailed in the equatorial Indian Ocean and the Subtropical Indian Ocean Dipole was negative. MJO was active in the SWIO during the 2nd and 3rd week with marked convective activities prevailing in the equatorial region. Most of the instabilities over Mauritius were associated with easterly waves crossing and at times with the favourable sector of upper level jets being over the island.

1. Rainfall

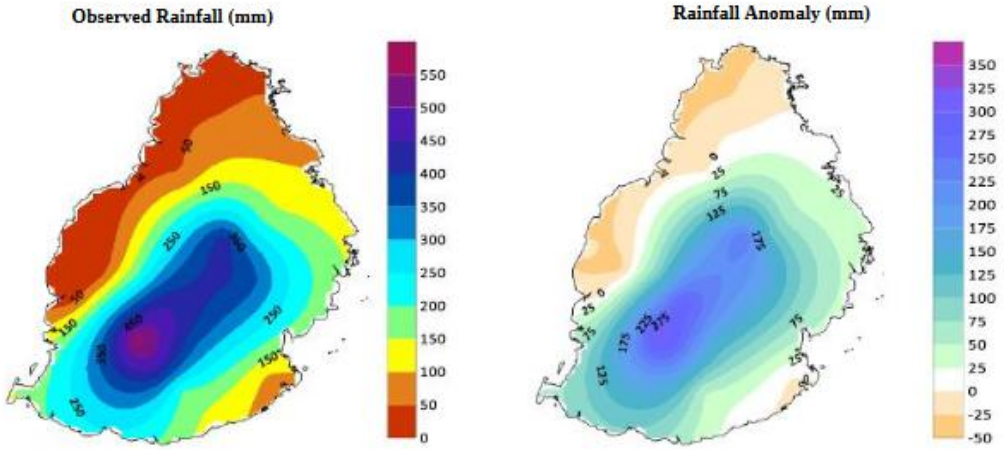
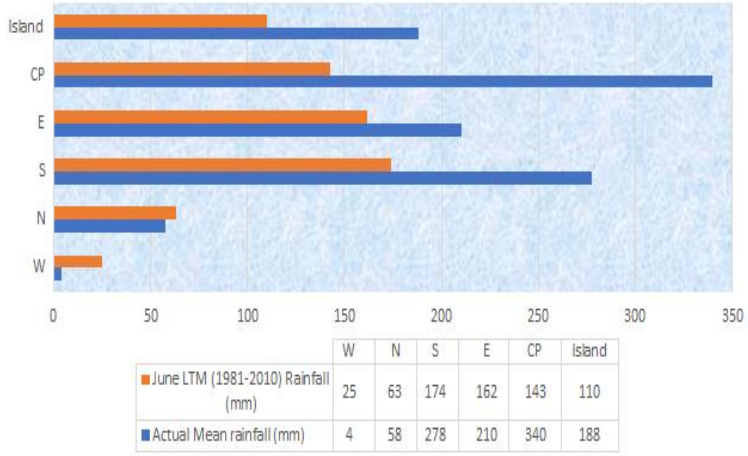


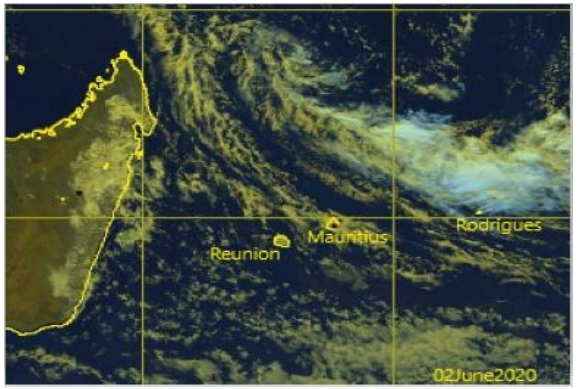
Fig. 1: Spatial rainfall distribution (a) Observed (b) anomaly (mm)



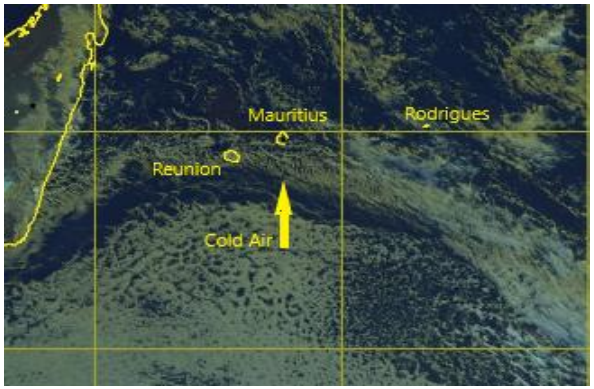
	W	N	S	E	CP	Island
June LTM (1981-2010) Rainfall (mm)	25	63	174	162	143	110
Actual Mean rainfall (mm)	4	58	278	210	340	188

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

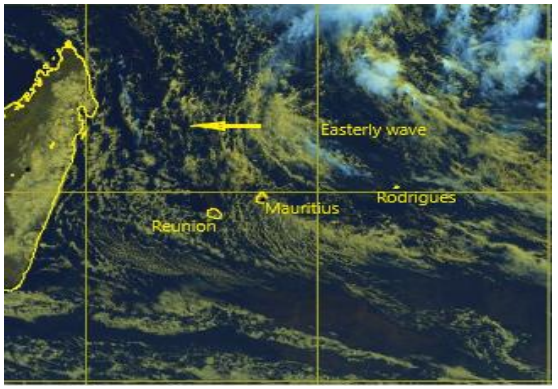
An average of 188 mm of rainfall was recorded over the island equivalent to 171% of the long term mean for the month. The 1st fortnight was very wet except to the west which was almost dry and the north which had below normal rainfall. The highest rainfall was 243% of the LTM over the region of Mare-aux-Vacoas. The 2nd fortnight remained very wet except to the west which was completely dry. The highest rainfall was in the centre with 256% of LTM. Excessive rainfall was quite noticeable over the Central Plateau notably in the regions of Arnaud and Grand-Bassin. Vacoas recorded 21 rain days (≥1mm of rain). The highest 24-hour rainfall was 108.6mm recorded on 17 at Grand-Bassin and on that day widespread rainfall prevailed over the island. Another episode of widespread rainfall was observed on the 2nd day of the month.



(a) Easterly wave north of Mauritius on 02 June



(b) Cold air advection on 07 June



(c) Easterly wave on 17

Fig. 3: Meteosat 8 satellite pictures

2. Surface Temperature

On average, June 2020 temperature over the island was 21.8°C which was 0.4°C warmer than the LTM 1981-2010.

The average mean minimum temperature anomaly was +0.5°C and the average mean maximum temperature anomaly was -0.3°C.

There were more cold days than cold nights. Thus, the cold days were offset by the greater number of warm nights.

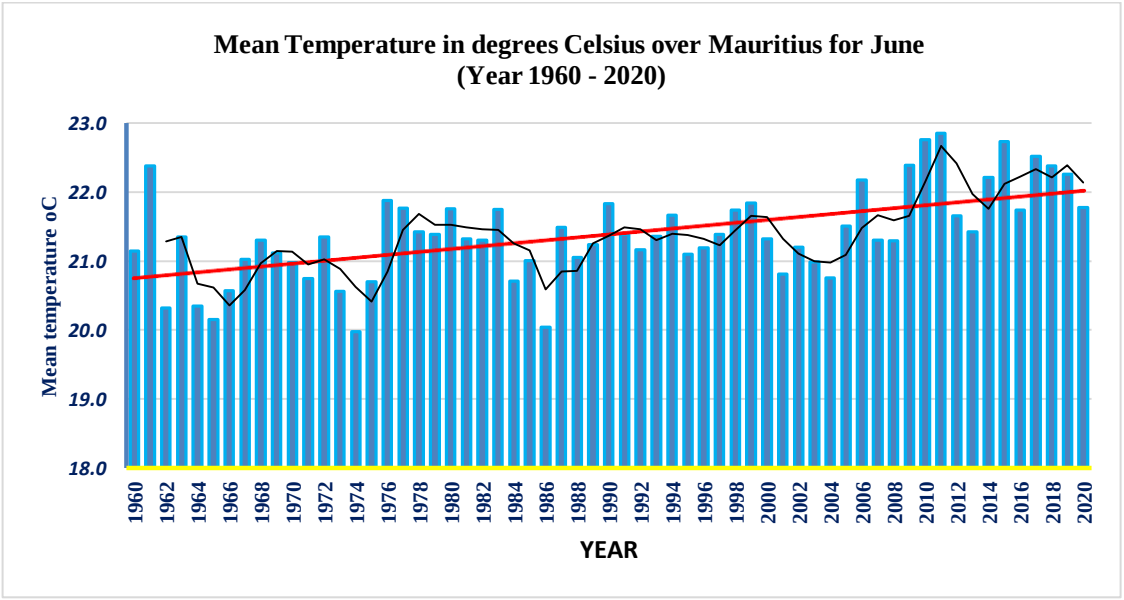


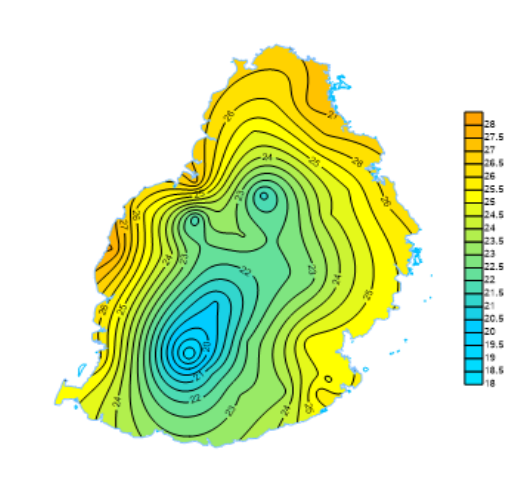
Fig. 4: Mean monthly temperature trend for June from 1960-2020

The month started with relatively warmer days and nights. A similar condition prevailed by the end of the 1st fortnight, i.e from 13-15. However, on frequent occasions, the maximum temperature recorded was below normal by 2-3°C of the LTM. The month was marked by 3 events of successive cold days. Day 7 experienced the first surge of cold air for the month emanating from a strong anticyclone (Fig 7).

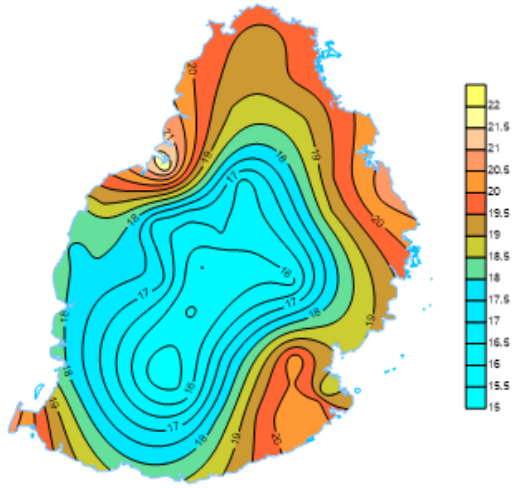
The monthly mean maximum temperature was slightly below their LTM at various places, notably over the western half and the southern part of the island (Fig 6(a)). With the exception of two warm spells from 01-06 and 13-15, the other days were cooler than the normal by 2-3°C. The cold days were more pronounced in the regions of Moka, and Grand-Bassin.

The coolest day was on 17 with the lowest maximum of 17.0°C recorded at Grand Bassin. However, during the two warm spells, daytime temperatures were warmer by 2-3°C and locally up to 5°C on some occasions. The highest maximum temperature recorded was 30.6°C on 14 at Port-Louis. The stations recording the highest number of warm days were located to the northeast, and over the western coast.

Night time temperatures were mostly warmer than the normal over most part of the island and particularly to the north and the southeast (Fig 6(b)). On most of the nights, the minimum was warmer by at least 1°C. Cooler nights were observed only from 06-09 and on 30. Indeed, the lowest minimum recorded was 13.0°C at Grand-Bassin on 08.



(a)

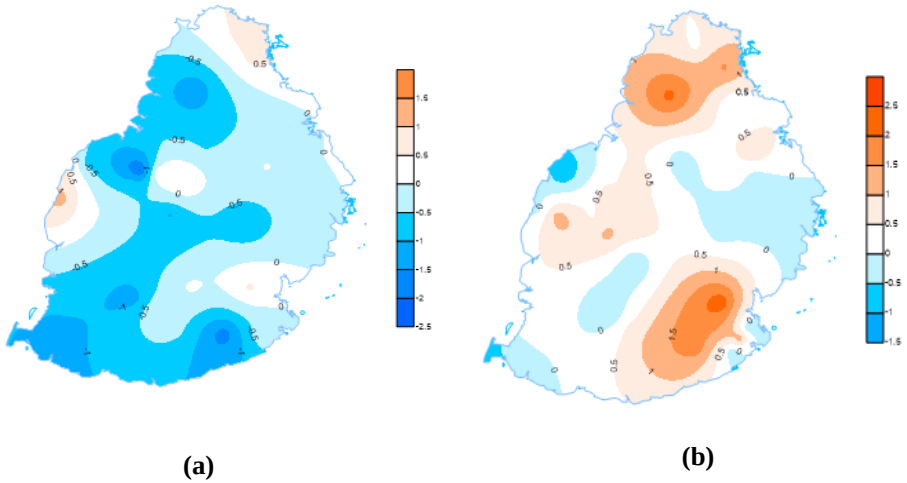


(b)

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

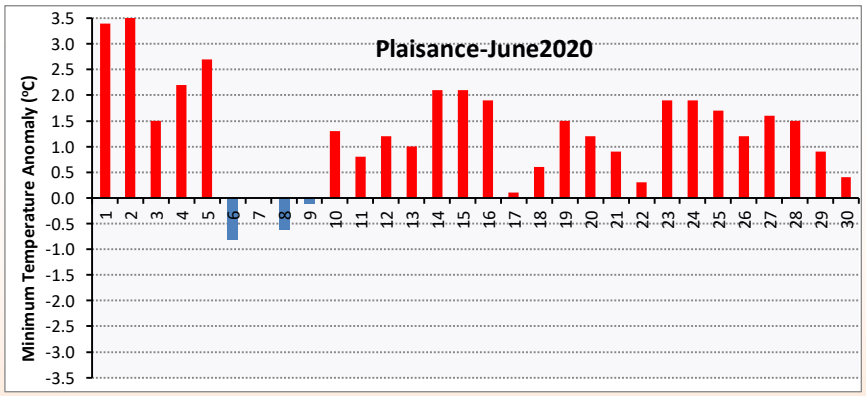
Observed cold days (maximum temperature anomaly (anomax<2°C)) were more frequent than cold nights (minimum temperature anomaly anomin<2°C)).

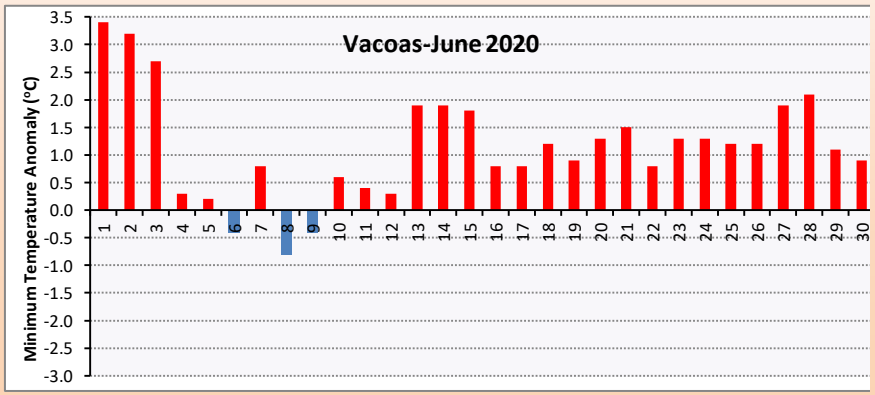
Stations	Lowest anomin (°C)	Number of cold nights	Stations	Lowest anomax (°C)	Number of cold days
Belle-Mare	3.7	3	Case Noyale	4.0	6
Mon Desert Mon Tresor	3.6	2	Mon-Bois	3.9	6
Albion	3.5	5	La Baraque	3.6	13
Gros-Cailloux	3.2	5	Moka	3.6	17
Queen Victoria	3.1	3	Belle Rive (Wooton)	3.5	11
Beau Vallon	2.9	4	Grand Bassin	3.4	8

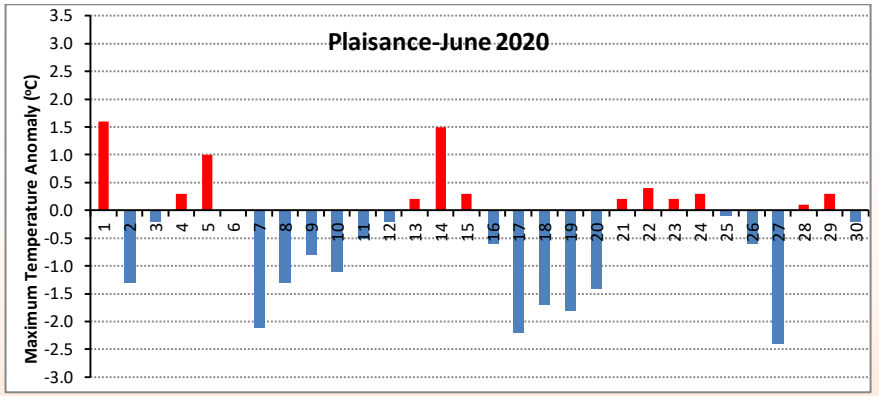


(a) (b)

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







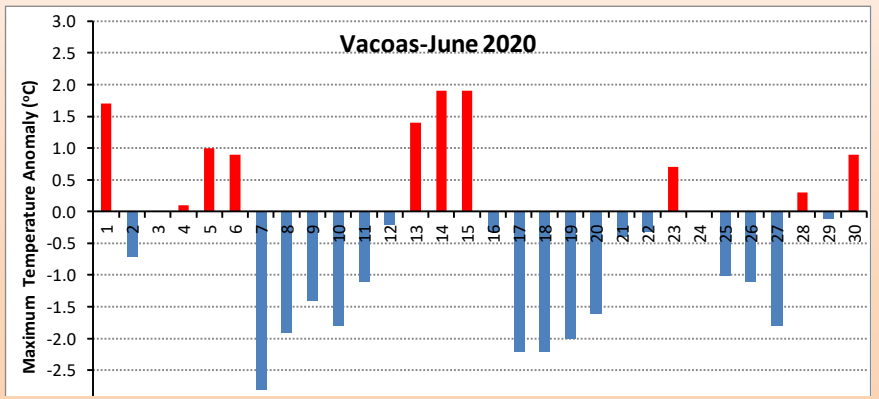
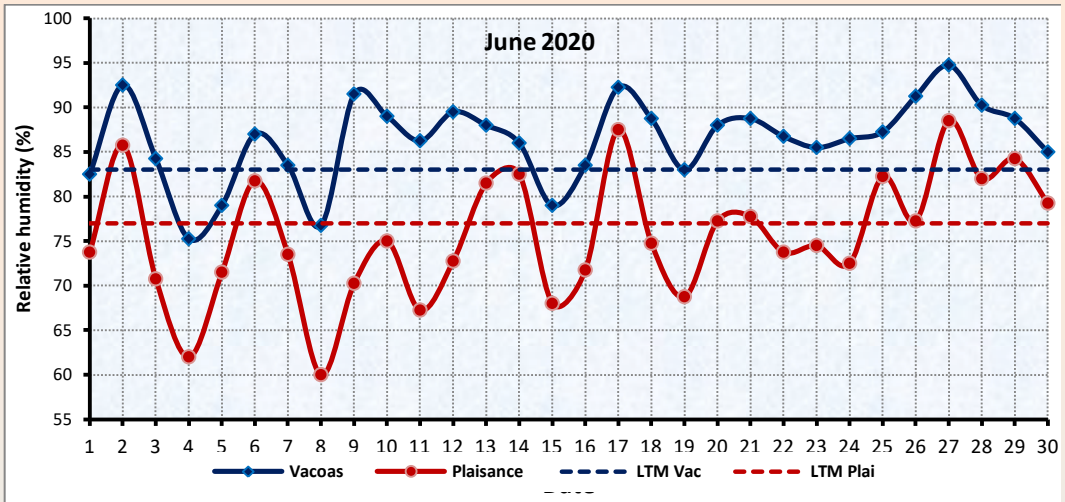


Fig. 7: Daily temperature anomaly at Plaisance and Vacoas: Minimum *(left)* Maximum *(Right)*

3. Sunshine and Humidity



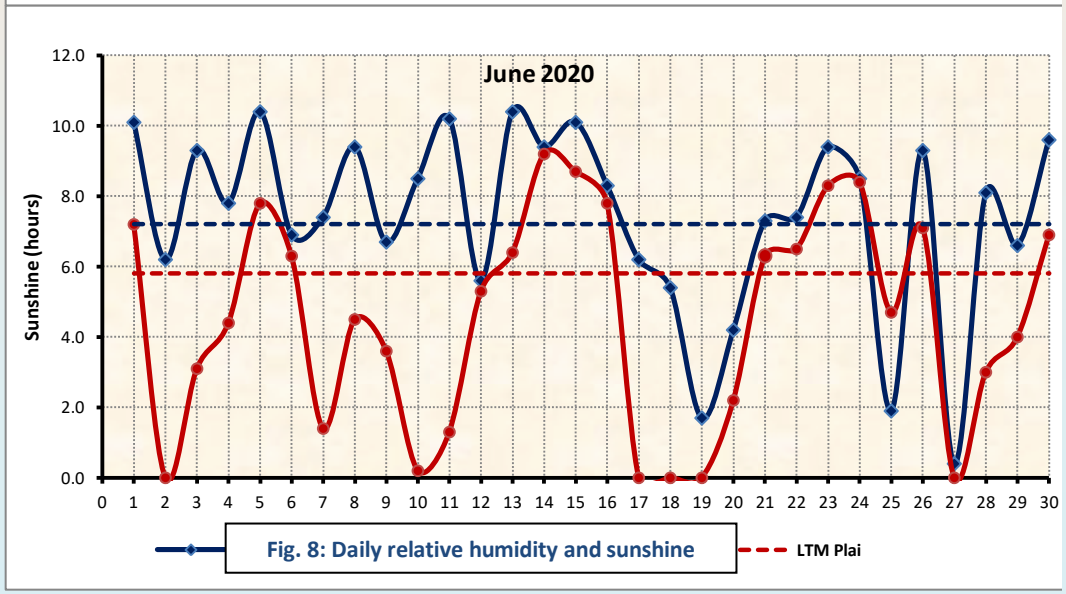


Fig. 8: Daily relative humidity and sunshine

The mean monthly relative humidity was mainly below normal at Plaisance during the first 3 weeks, being close to above normal during the last week. At Vacoas, it was mostly above the normal as most of the time there was orographic showers. The low relative humidity values could be associated with the cold air advection for example on day 07 (Fig 8).

The number of daily bright sunshine hours was most of the time below normal with a daily mean of -1.3 hours at Plaisance and above by +0.2 hours at Vacoas compared to their respective LTM. On the 19 and the 27 which were mainly cloudy to overcast, had the least number of bright sunshine hours. The total number of monthly bright sunshine hours was less the normal at Plaisance with -39.4 hours and higher than the normal with +6.7 hours at Vacoas.

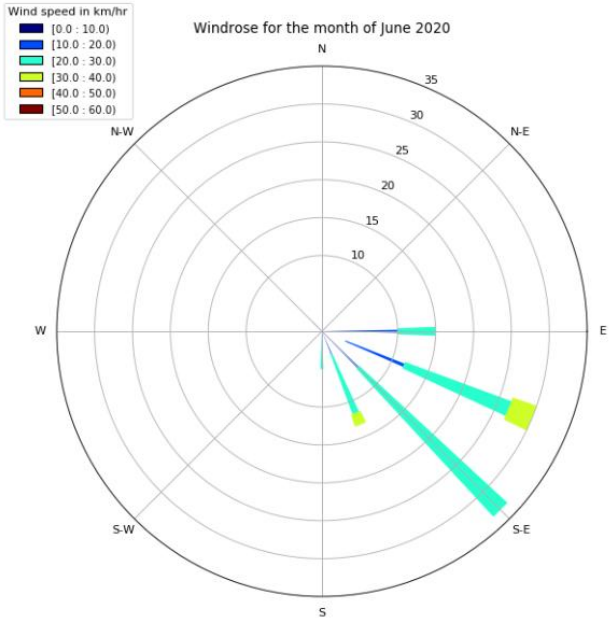


Fig. 9: Wind frequency at Plaisance.

Light to moderate winds blew mainly from the south-eastern sector. Occasionally the mean wind speed exceeded 35 km/h notably on 07and 17. The highest gust recorded was 73km/h at Bel-Village on 07.

FORECAST FOR JULY-AUGUST-SEPTEMBER (JAS) 2020

Sea surface temperature (SST) will remain neutral for JAS across the equatorial Pacific with a tendency towards weak La Nina beyond the forecast period. In the Indian Ocean, IOD will also remain neutral whereas the SIOD index will be weak negative (Fig 13a).

A weak positive pressure anomaly will persist south of Madagascar (Fig 13b)

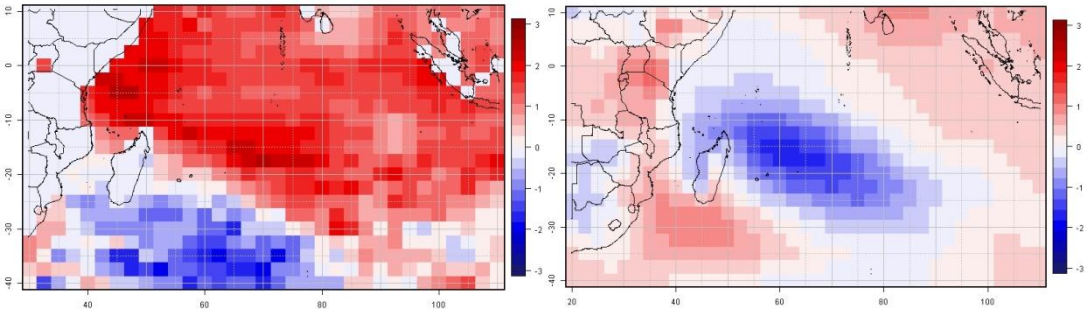


Figure 13: Sea surface temperature (a) and pressure (b) anomaly charts for JAS 2020

Consensus forecast for Mauritius

- Statistical model is expecting normal rainfall for JAS (Fig. 14(a)). The monthly rainfall forecast consensus is as follows: July slightly above normal (~140mm) and normal for August and September (~95mm) and (~90mm) respectively.
- Mean temperature is forecasted to be slightly above normal.

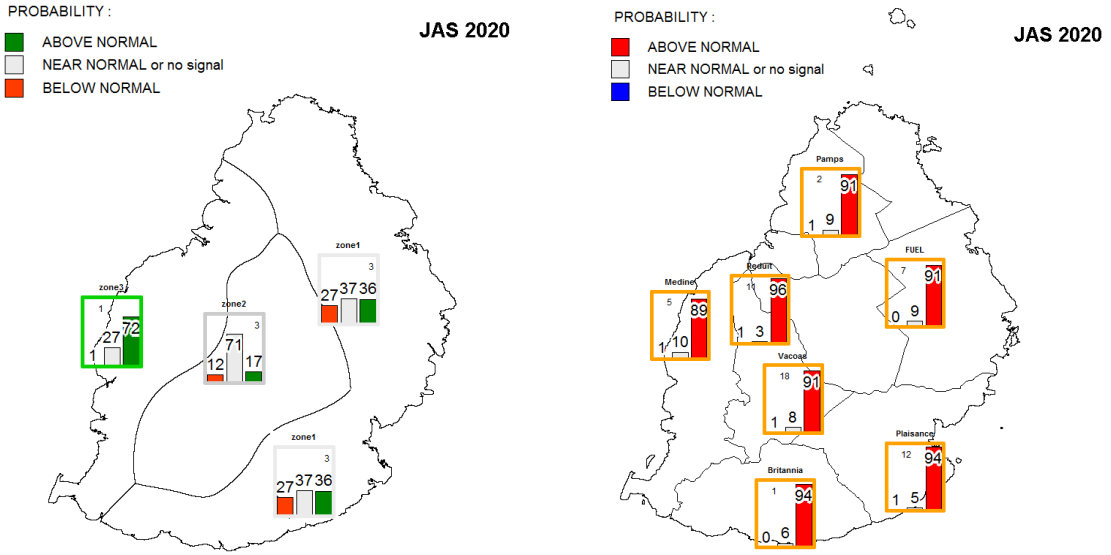


Fig. 14: Statistical Model Forecast of (a) rainfall and (b) temperature

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