MAURITIUS METEOROLOGICAL SERVICES

CLIMATE MAY 2020

Introduction

May is usually the transition month towards winter for Mauritius. However, this year winter onset was slightly early and wintry conditions already prevailed at the very beginning of May. The strongest anticyclone reached 1040hPa causing the highest gust to reach 80km/h at Champ de Mars. Nevertheless, occasional warm spell, particularly during the day was felt. Dry conditions prevailed during the month with less than 50% of normal rainfall recorded.
Neutral ENSO prevailed over the equatorial central Pacific Ocean. The IOD was neutral in the equatorial Indian Ocean and the Subtropical Indian Ocean Dipole was negative. MJO was active in the SWIO during the third week but most instabilities were more equatorward of the Mascarene region.

1. Rainfall

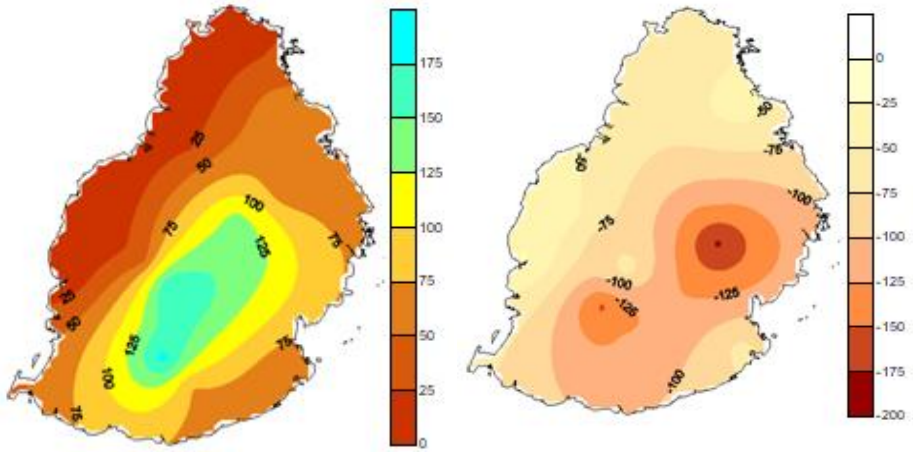
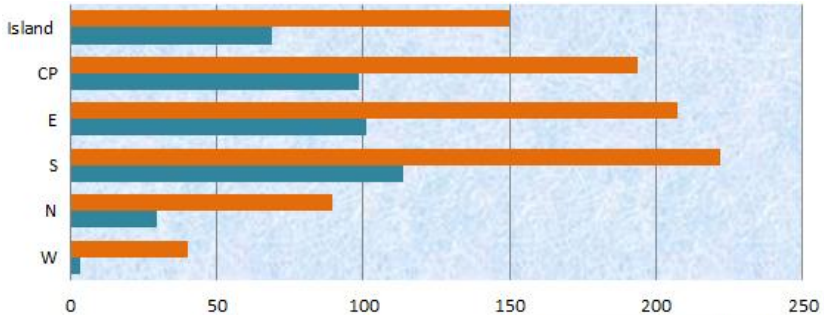


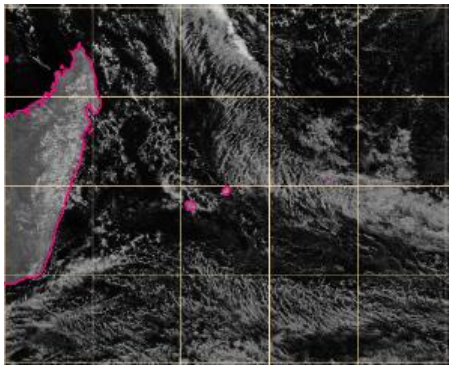
Fig. 1: Spatial rainfall distribution (a) Observed (b) anomaly (mm)



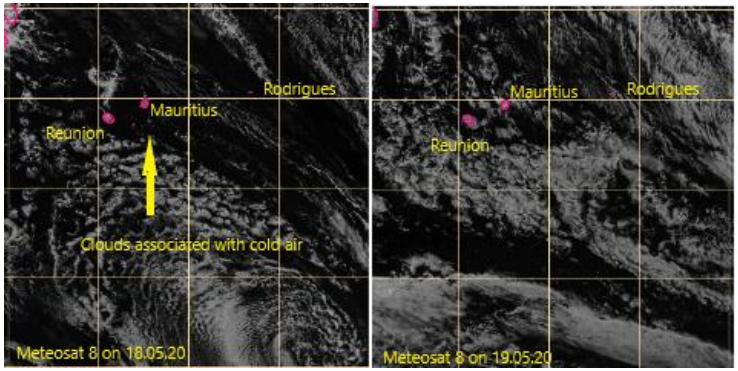
	W	N	S	E	CP	Island
May LTM (1981-2010) Rainfall (mm)	40	89	222	207	194	150
Actual Mean rainfall (mm)	3	30	114	101	98	69

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

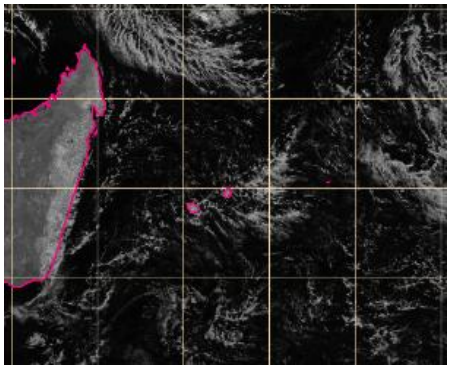
An average of 69 mm of rainfall was recorded over the island equivalent to 46% of the long term mean for the month. The 1st fortnight was very dry with 32% and the 2nd still deficient with 59% of the LTM rainfall for the respective fortnights. Deficient rainfall was quite noticeable over the Central Plateau notably in the regions of Arnaud and Grand-Bassin and to the East in the regions of Bel-Etang and Sans-Souci. Vacoas recorded only 8 rain days (≥1mm of rain). The highest 24-hour rainfall was 66.8mm recorded on 25 at Mon-Bois and this was in fact the only day with widespread rainfall.



(a) Perturbed trades approaching Mauritius on 21



(b) Cold air advection 18- 19 May



(c) Wave in the easterlies on 25 May

Fig. 3: Meteosat 8 visible pictures

2. Surface Temperature

On average, May 2020 temperature over the island was about 19.1°C which was about 0.3°C cooler than the LTM 1981-2010.

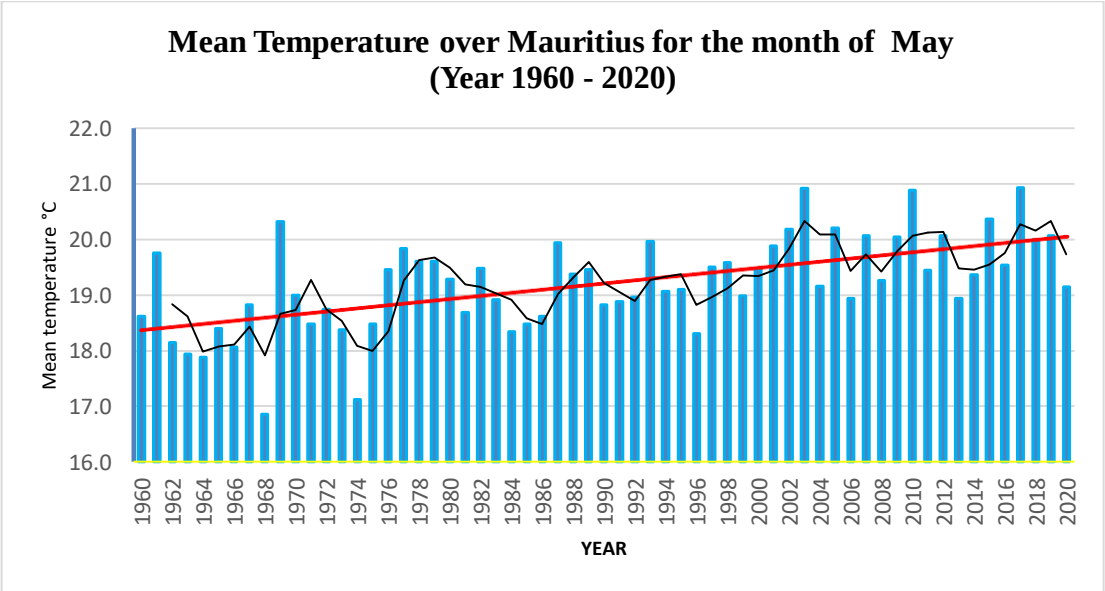


Fig. 4: Mean temperature trend for May from 1960-2020

During the 1st week, the nights were relatively cold and day time remained slightly warm. However, even the nights warmed up afterwards and mainly fair weather was experienced after 03. The 3rd week had a strong anticyclone of 1040hPa which resulted in cold air advection causing a drop in temperature over the whole island. The last week had mainly fair days again which explains the rise in temperature particularly during the day.

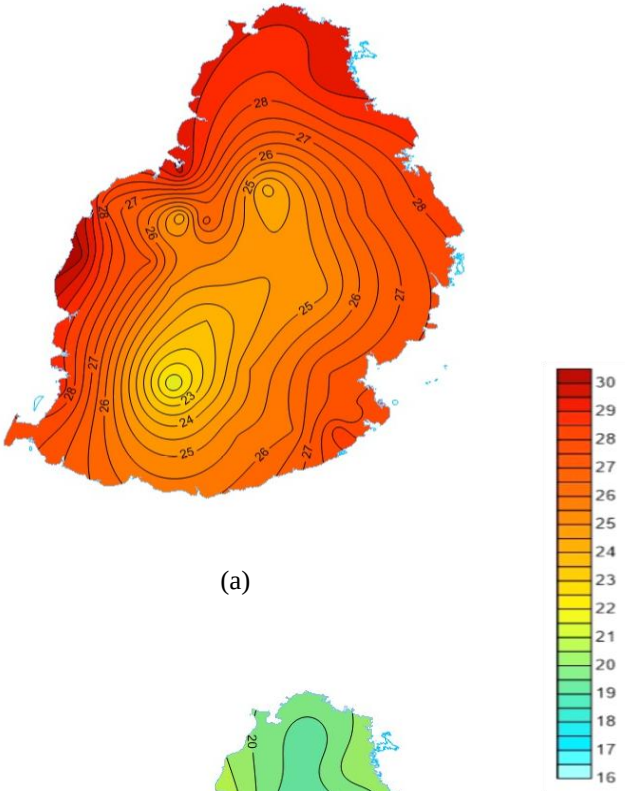
Daytime temperatures were particularly cooler than normal during the period 11-12 and 18-25 The maximum temperature dropped by about 1.5 to 3°C and locally by 4°C at Port-Louis and Moka on 24. However, two marked warm spells prevailed during the month from 04-09 and 15-17. During those warm spells daytime temperatures were warmer by 2-3°C and locally up to 4°C on some occasions (Fig. 7).

The stations recording the highest number of warm days were located to the north, and over the western coast. The cold days were more pronounced in the regions of Moka, Quatre-Bornes and Mon-Bois.New record of maximum temperature was observed on 07 at Albion with 32.5°C and Medine 32.4°C (which is +0.1°C and +0.2°C higher than the previous record respectively).

Cold nights were quite frequent during the second fortnight. Minimum temperatures were cooler by 1.5-3°C . On day 11 the minimum drop by 6°C at Albion which recorded 14.0°C. However, in some regions, notably over the windward side of the Central Plateau, to the north-west and to the south-east, the nights were rather warm during the first 10 days and minimum temperatures were observed to be 1.5 to 2°C above the long term mean. In these regions, the mean monthly night time temperature was close to the normal as the cooler nights were offset by those warm nights. However, over several part of the island the mean monthly minimum was cooler by more than 1°C The cool nights were mainly due to cold air emanating from the anticyclones transiting to the South of the Mascarenes and these were experienced all over the island. The highest number was observed at ALTEO (FUEL) which recorded 14 cold nights.

A new record of extreme minimum temperatures was recorded at Mon-Bois on 19 with 13.0°C previously 13.3°C.

The lowest maximum recorded was 18.5°C at Grand-Bassin on 24 and the highest was 32.5°C at Albion on 09.



(a)

(b

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

Warm days observed were less than 15 (maximum temperature anomaly (anomax) >2°C) and cold nights less than 14 (anomin<2°C)

Stations	Highest anomax (°C)	Number of warm days.		Stations	Lowest anomin (°C)	Number of cold nights
Albion	4.1	8		Albion	6.5	7
Medine	3.9	15		Gros Cailloux	5.5	9
Quatre-Bornes	3.7	7		Mon-Bois	4.6	11
Mon Bois	3.7	6		Mon-Loisir Rouillard	4.5	10
Union Park-MSIRI	3.6	5		ALTEO/FUEL	4.1	14
Bois Cheri	3.4	9		Reduit	4.0	9
Vacoas	3.2	5		Belle-Mare	3.8	7

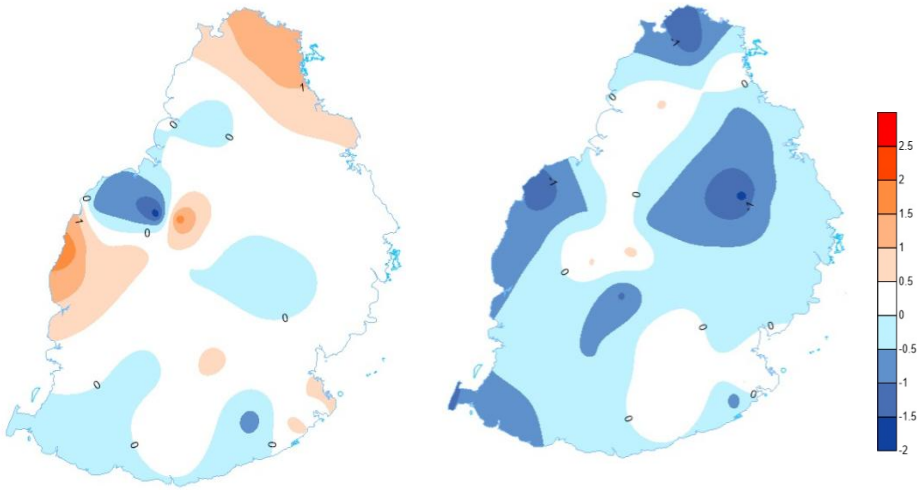
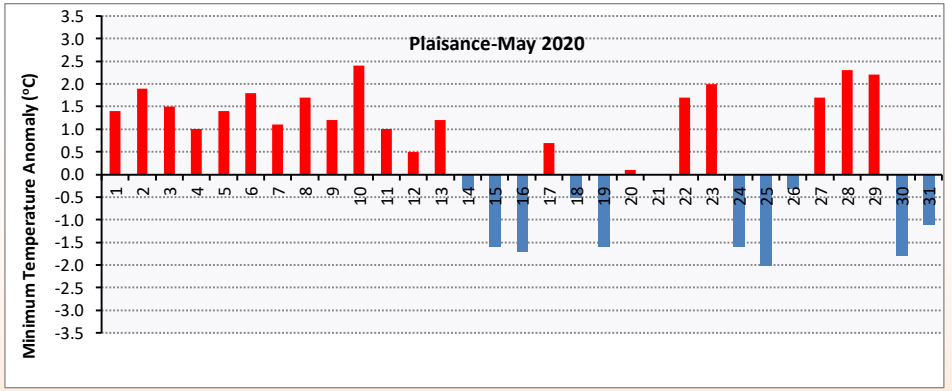
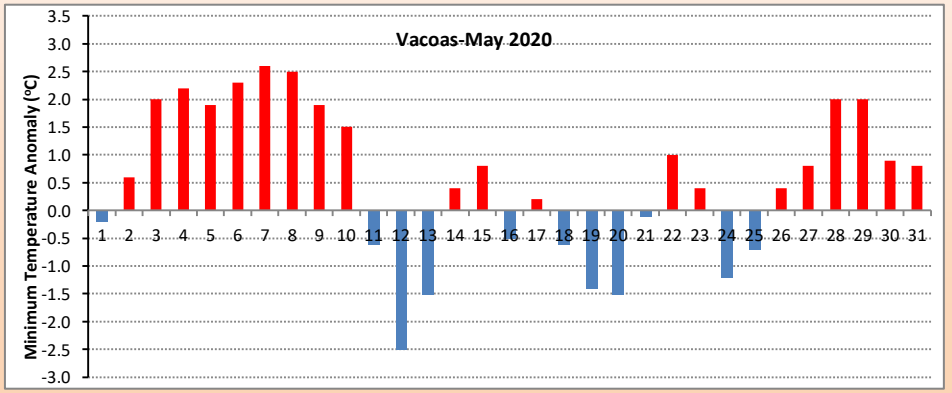
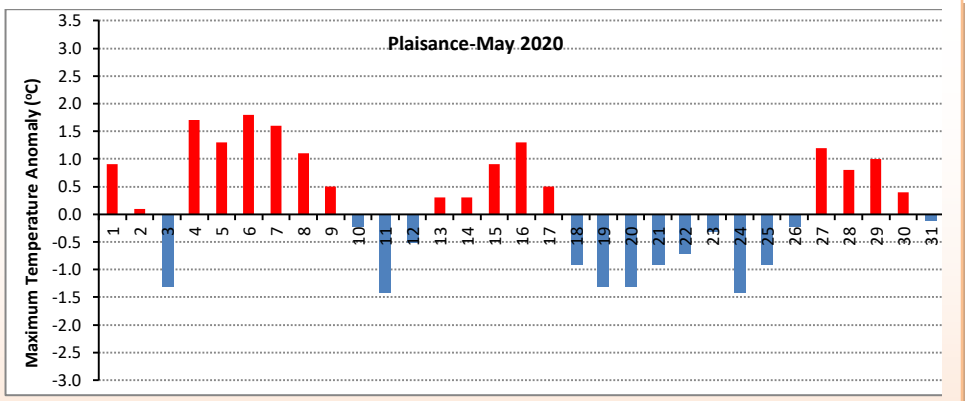


Fig. 6: Spatial distribution of temperature anomaly (a) Maximum (b) Minimum.







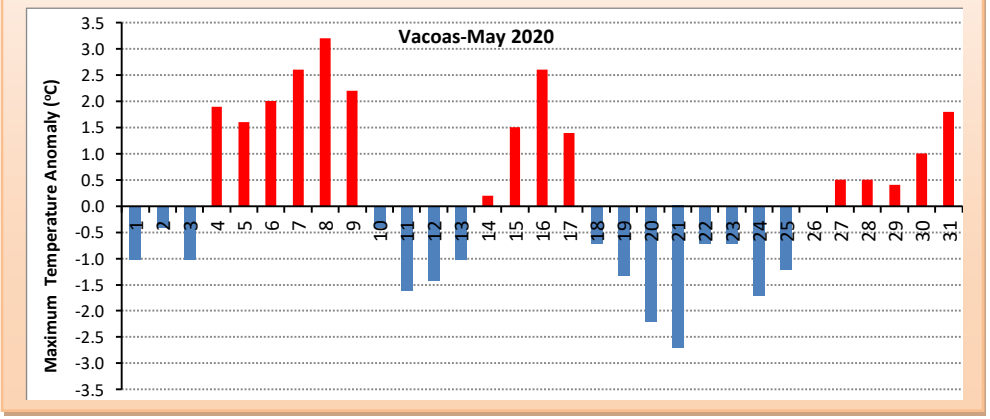


Fig. 7: Daily temperature anomaly at Plaisance and Vacoas: Minimum *(left)* Maximum *(Right)*

3. Sunshine and Humidity

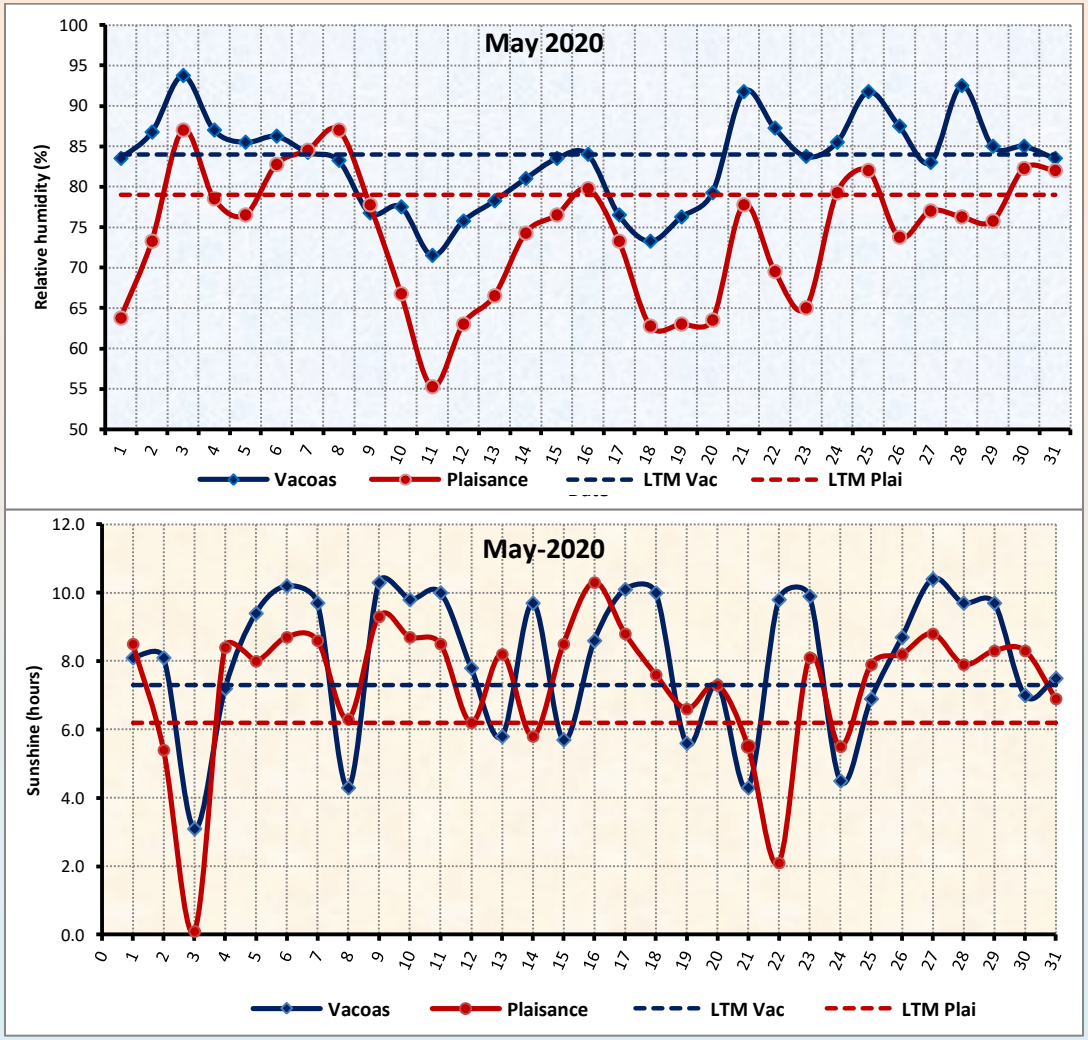


Fig. 8: Daily relative humidity and sunshine

The mean monthly relative humidity was mainly below normal both at Vacoas and Plaisance during the 2nd and the 3rd week. Else, it was more or less close to the normal. The low values could be associated with the cold air advection on day 11 (Fig 8) and this is closely related to the higher than normal sunshine hours due to fair weather that prevailed. This cold air advection also led to a drop in day time temperatures (Fig. 7), in-spite of the fair weather.

The number of daily bright sunshine hours was most of the time above normal (daily mean of +1.1 hours at Plaisance and +0.8 hours at Vacoas compared to their respective LTM) except on 03 which was mainly cloudy to overcast with rain and 22 which remained cloudy at Plaisance. The number of monthly bright sunshine hours was slightly above normal at Plaisance with +34.8 hours and 23.4 hours at Vacoas compared to their respective LTM.

Light to moderate winds blew mainly from the eastern to south-eastern sector. It was very occasional when mean wind speed exceeded 35 km/h which was on 01and 21. The 3rd week had a strong anticyclone of 1040hPa during which the AWS at Champ de Mars recorded gusts of 76km/h.

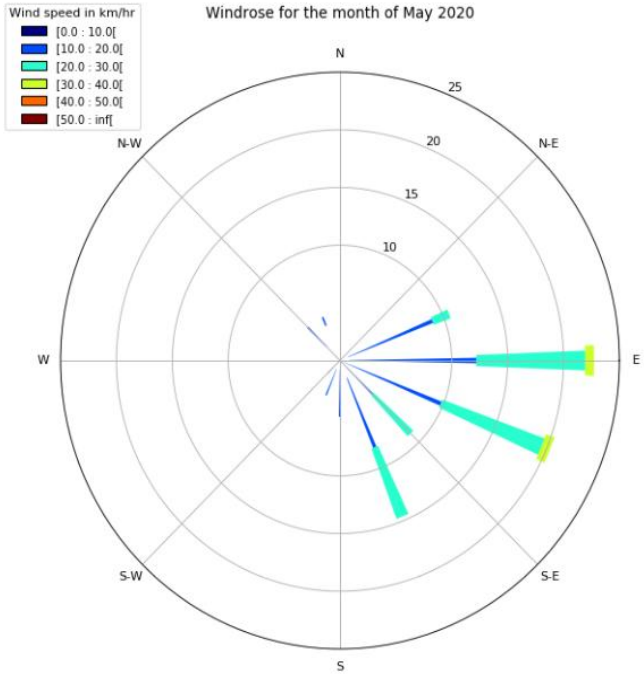


Fig. 9: Wind frequency at Plaisance.

FORECAST FOR MAY-JUNE-JULY (MJJ)

Sea surface temperature (SST) will remain neutral for MJJ across the equatorial Pacific. In the Indian Ocean, IOD will also remain neutral whereas the SIOD index will remain weak negative (Fig 13a). A weak positive pressure anomaly south of Madagascar will persist and indicates that subtropical anticyclones may be stronger than normal in this sector, thus the Mascarene region will lie in cold trades regime.

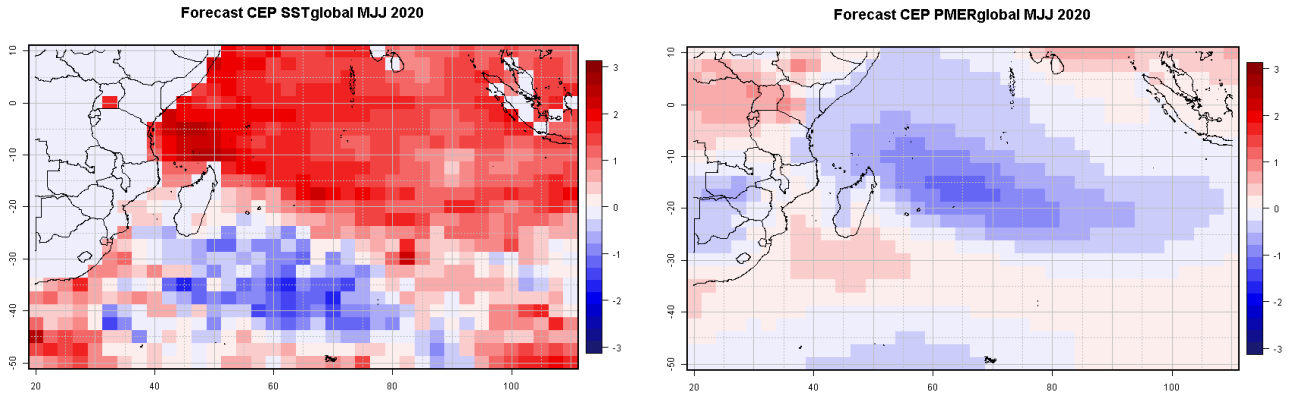


Figure 13: Sea surface temperature (a) and pressure (b) anomaly charts for MJJ 2020

Consensus forecast for Mauritius

- Statistical model is expecting normal rainfall for MJJ (Fig. 14(a)). The monthly rainfall forecast consensus is as follows: Above normal rainfall for June (140 mm) and slightly above normal for July (~145mm) respectively.
- Statistical model is expecting mostly above normal mean temperature. However, based on prevailing conditions temperature during June and July is forecasted to be close to normal.

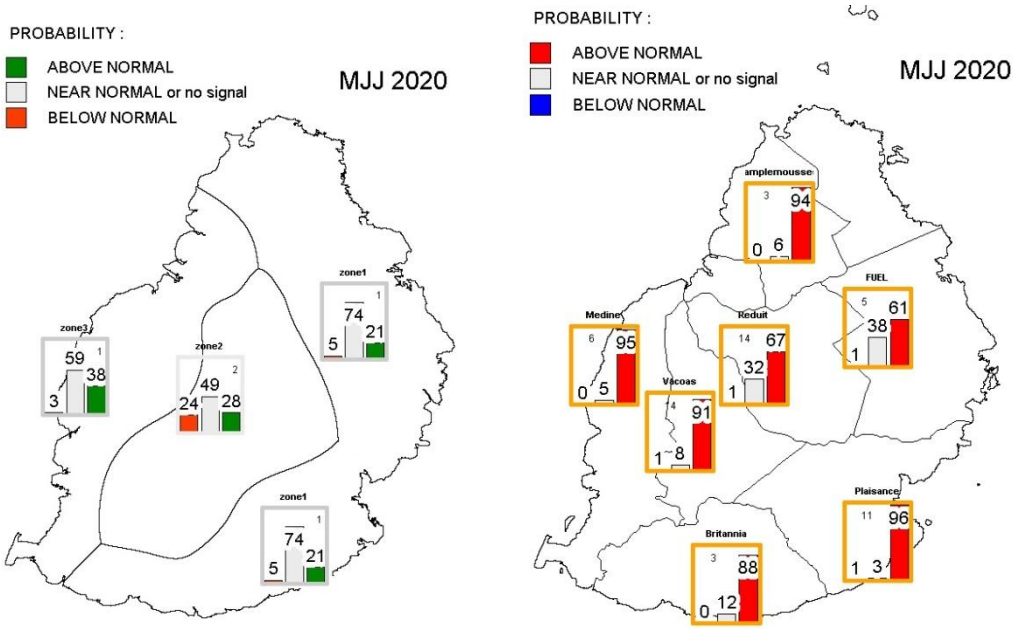


Fig. 14: Statistical Model Forecast of (a) rainfall and (b) temperature

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