



# MAURITIUS METEOROLOGICAL SERVICES



## CLIMATE JANUARY 2021

### Introduction

Total rainfall for the month was well below normal although occasional localised heavy rain lead to flooding. The month was also marked with few daytime and night-time convection. Three tropical storms were named; severe tropical storm Danilo, tropical cyclone Eloise and moderate tropical storm Joshua. Warm and sultry conditions prevailed during the 2<sup>nd</sup> week and temperatures rose by 1-4°C.

Moderate negative ENSO (Moderate La-Nina) 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 not active in the SWIO.

### 1. Rainfall

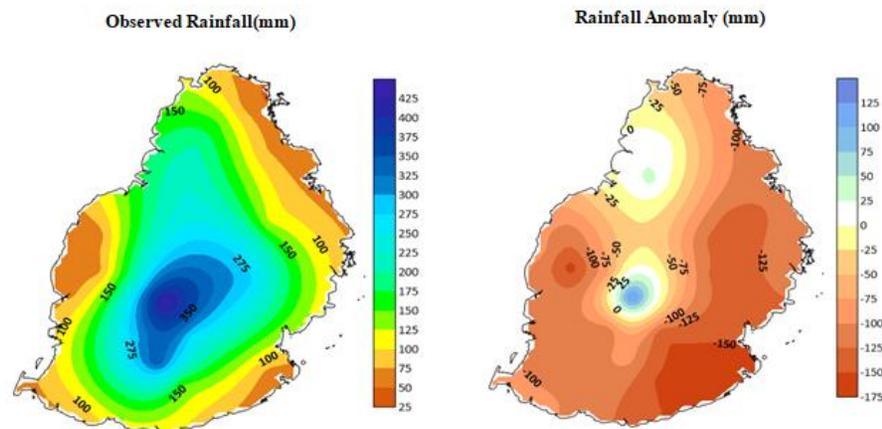


Fig. 1: Spatial rainfall distribution (a) Observed (b) Anomaly (mm)

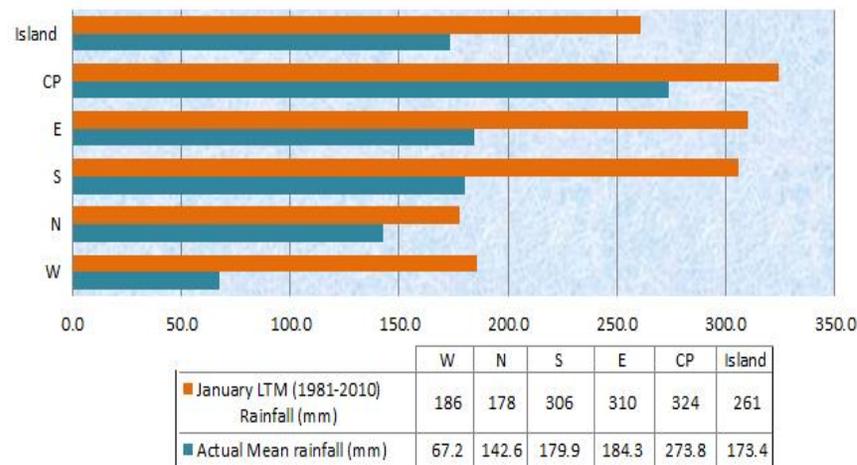
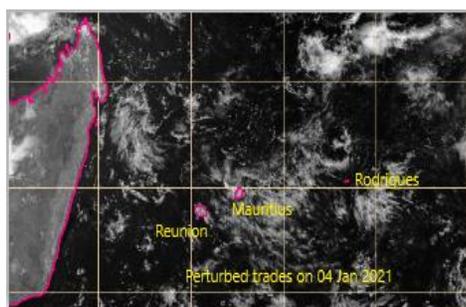
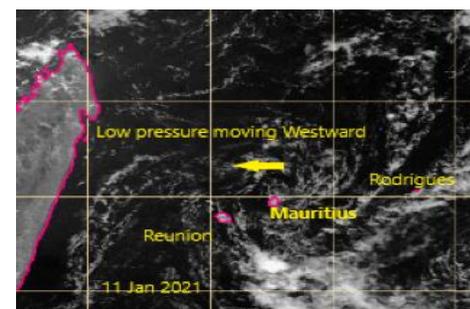
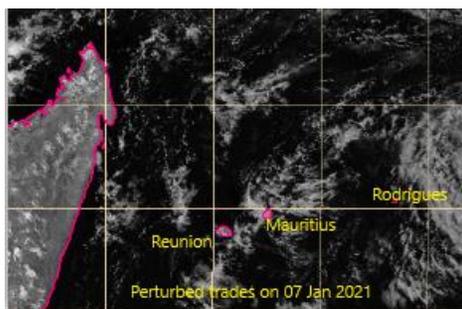


Fig. 2: Regional rainfall distribution

An average of 173mm of rainfall was recorded over the island equivalent to 66% of the long term mean for the month and almost same amount of rainfall was recorded in both fortnights. The highest deficiency was in the region of Pierrefonds and to the South-east. On the other hand, the region of Mon Bois had an excess of about 140mm of rain. Vacoas recorded 17 rain days ( $\geq 1$ mm of rain). The highest rainfall in 24-hour was 132.6 mm recorded on 28 at Riche-Terre, due to an active afternoon convection accompanied with violent thunderstorms; 125mm of rain was recorded in 3 hours leading to flooding in the area.



(a) The first week was dominated by perturbed trades; for example on 04 and 07



(b) Remnants of Danilo as a Low pressure moving westward on 11 Jan 2021

Fig. 3: Meteosat 8 satellite pictures

## 2. Surface Temperature

The monthly mean temperature over the island in January 2021 was 26.4°C which is close to the LTM 1981-2010 (+0.3°C).

The mean minimum temperature anomaly was close to the normal (+0.2°C) and the mean maximum temperature anomaly was slightly above the normal (+0.5°C).

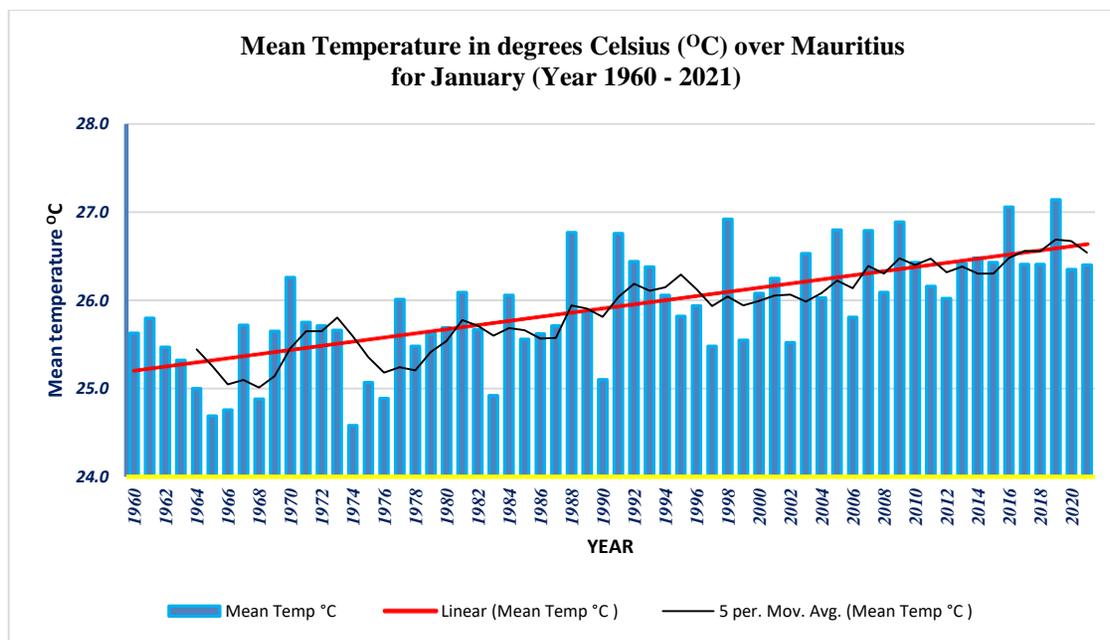


Fig. 4: Mean temperature trend for January from 1960-2021

The first week was dominated mostly by perturbed trades leading to cooler temperatures over the island.

Most of the nights from 01-08 and those from 25-28 were cooler by 2-3°C at most stations whereas those from 09-21 were warmer by 1-3°C; warm and sultry conditions prevailed during the 2<sup>nd</sup> week. Cold nights were observed very locally over the region of Domaine Les Pailles and the Eastern slopes else temperatures were close to the normal over most part of the island (Fig 6(a)). The lowest minimum recorded was 16.7°C at Mon-Bois and the highest was 27.5°C at La Baraque.

Cold days were observed very locally over the region of Belle-Rive (Wooton) (Fig 6(b)). However, the Western part, the Eastern and Northern coastal regions were warmer.

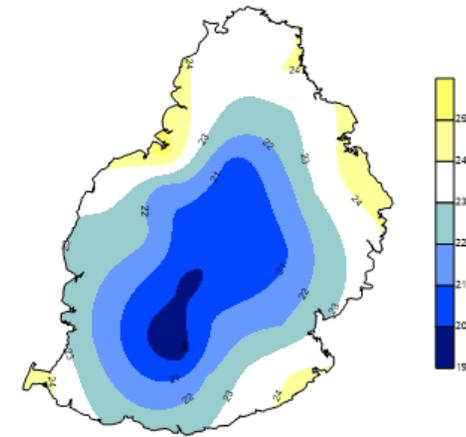
Day 01-08 and day 12 were cooler by 1-3°C (Fig 7) and it warmed up from 09 by 1-3°C and locally up-to 4°C from the normal. The lowest maximum for the month was 21.3°C recorded at Grand-Bassin on 03. The highest maximum was 35.3°C recorded at Riche Terre on 20.

New extreme minimum temperature was recorded at:

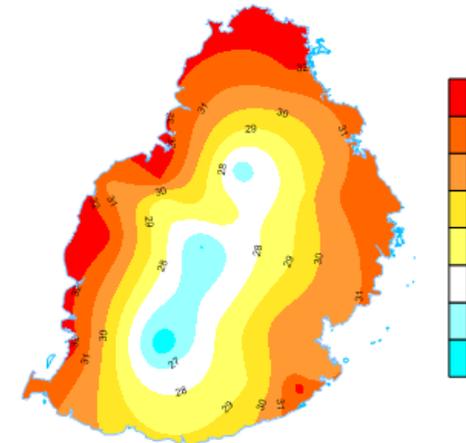
Station Location	New extreme minimum in °C	Previous extreme minimum in °C
Domaine Les Pailles	19.6	20.1
Grand-Bassin	16.9	17.1

New extreme maximum temperature was recorded at:

Station Location	New extreme maximum in °C	Previous extreme maximum in °C
Pamplemousses	32.6	32.3
Bois Manges	33.2	32.7
Mon Loisir Rouillard	34.7	33.7
Riche Terre	35.3	34.2
Beau Songes	34.5	33.4
Domaine Les Pailles	34.7	34.0



(a)

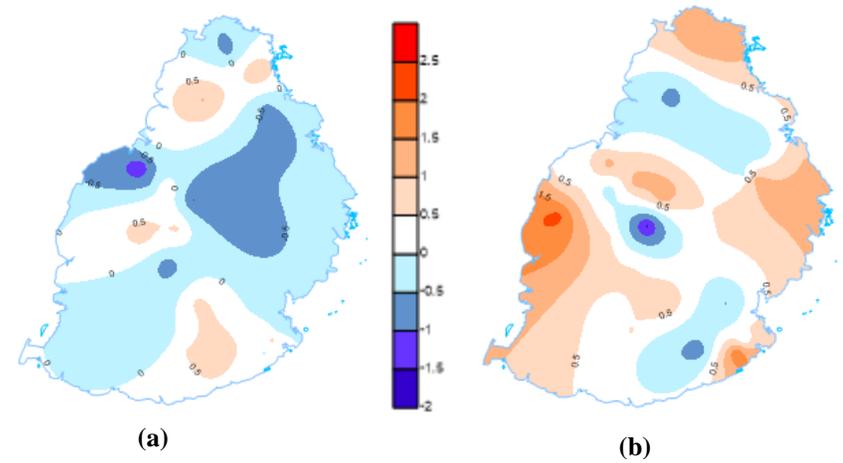


(b)

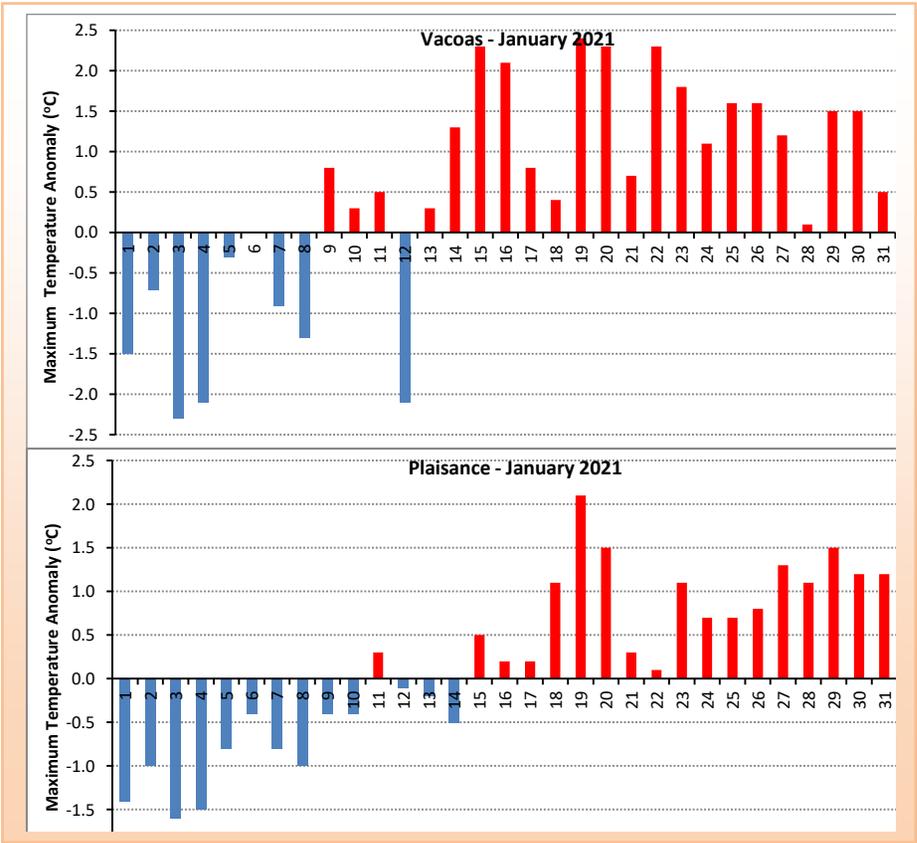
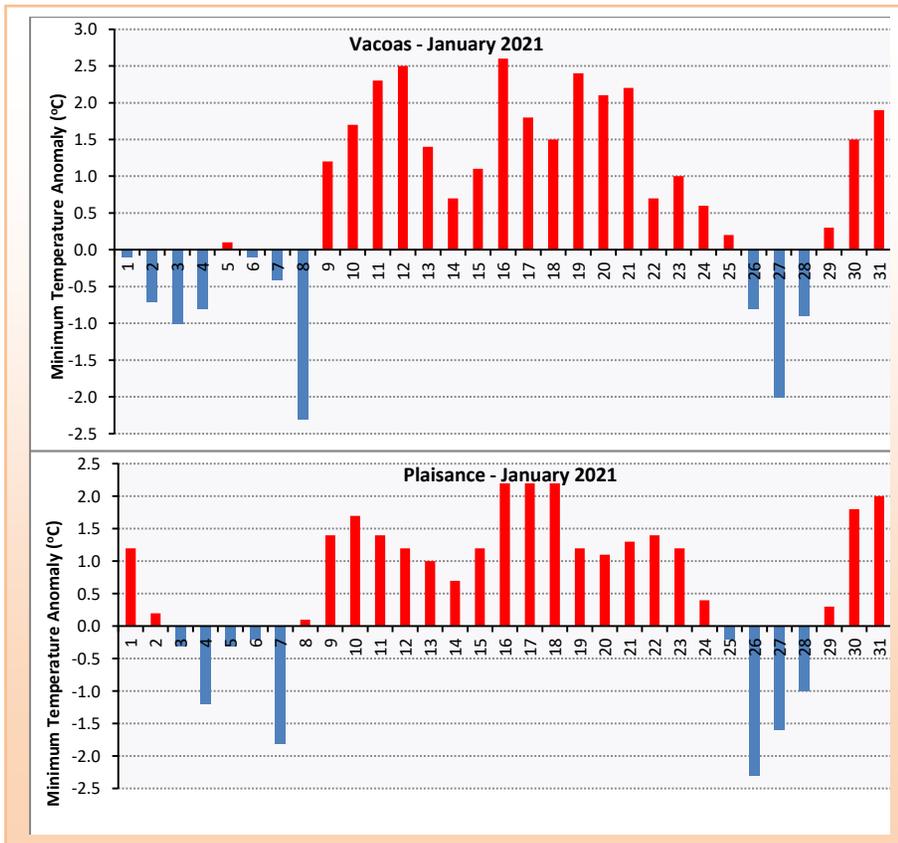
**Fig. 5:** (a) Mean minimum (b) Mean maximum temperature distribution

**Observed warm days (maximum temperature anomaly (anamax > 2°C)) and cold nights (minimum temperature anomaly (anomin > 2°C)).**

Stations	Highest anomin (°C)	Number of cold nights	Stations	Highest anamax (°C)	Number of warm days
Mon-Loisir Rouillard	4.2	7	Grand-Bassin	4.7	6
Domaine Les Pailles	4.9	11	Mon Desert Mon Tresor	4.6	18
Sans Souci	4.0	8	Medine	4.1	14
Mon Bois	3.9	10	Mon Loisir Rouillard	4.0	10
Beau Vallon	3.4	5	Beau Songes	3.8	17
Mon Loisir - Riv du Rempart	3.8	8	Union Park	3.5	12



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



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

### 3. Sunshine and Humidity

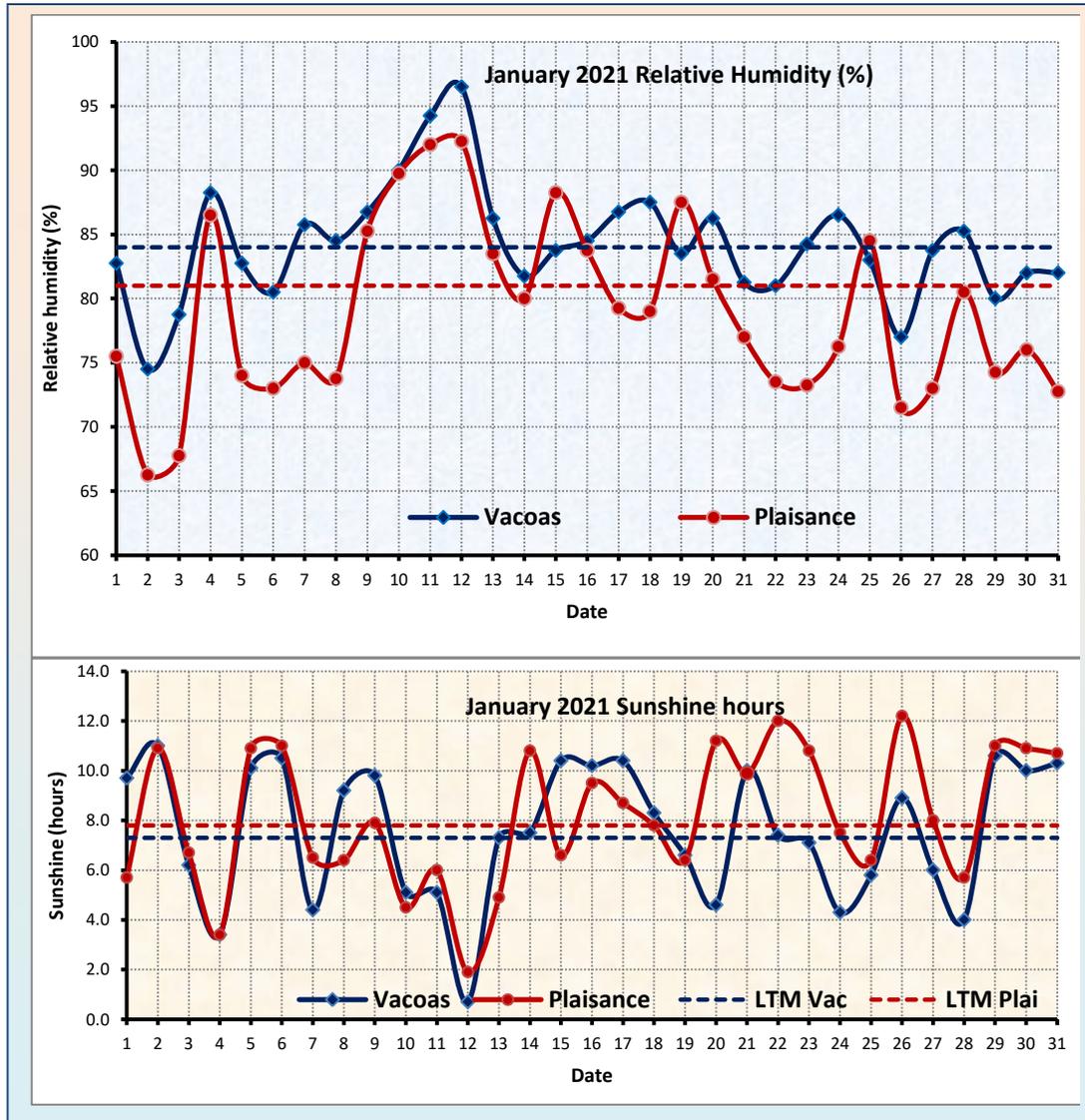


Fig. 8: Daily relative humidity and sunshine

An anomalous frequency of the trade wind was observed at this period of the year; the Northerly wind components normally expected were rare.

The mean relative humidity was mainly above normal during the 2<sup>nd</sup> and the 3<sup>rd</sup> week else it was mainly below normal. The high relative humidity values on 11-12 were due to clouds coming from the East associated with remnants of Danilo(Fig 3b & 3c). From 10-13, during cloudy and rainy conditions, the humidity exceeded 90 % at Vacoas and Plaisance (Fig 8).

The number of daily bright sunshine hours was close to the normal at Vacoas and Plaisance; with a daily mean difference of +0.3 hours and +0.4 hours compared to their respective LTM. The lowest sunshine hours on 12 was due to cloudy conditions (Fig 3b). The total number of monthly bright sunshine hours at Vacoas was 234.9 and at Plaisance was 252.8.

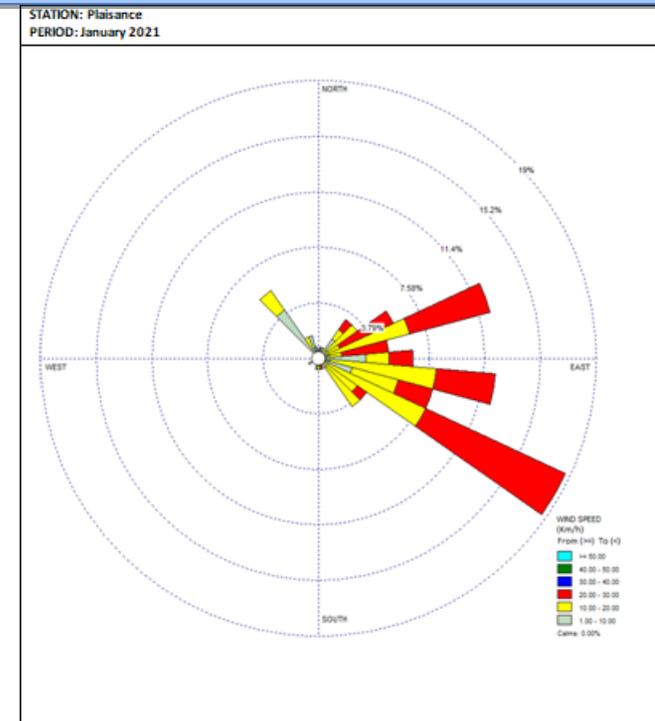
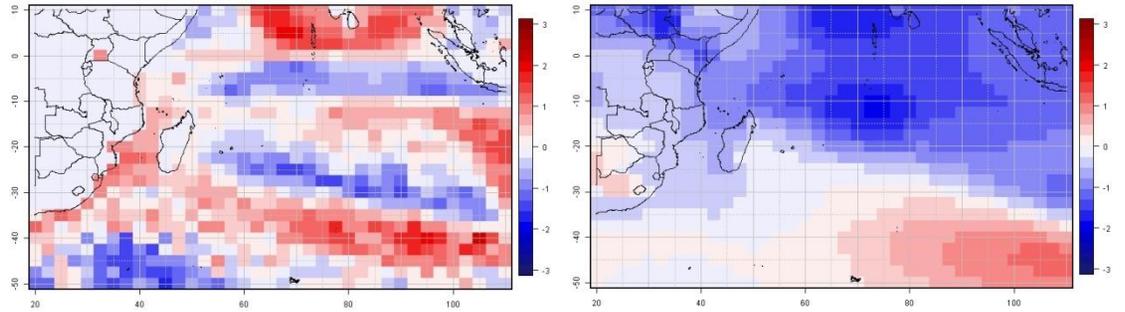


Fig. 9: Wind frequency at Plaisance.

## FORECAST FOR FEBRUARY-MARCH-APRIL (FMA)

La-Nina is weakening and is expected to become neutral towards the end of the forecast period. From Figure 10 (a), in the Indian Ocean, IOD together with SIOD will be neutral. However as per fig 10(a), the Mascarene region will encounter a relatively cooler SST during FMA.



**Figure 10: (a) Sea surface temperature and (b) pressure anomaly charts for FMA 2021**

### Consensus forecast for Mauritius

Statistical analysis is showing well below normal rainfall for FMA.

As such cumulative monthly rainfall is as follows:-

- February well below normal (~150 mm)
- March slightly below normal (~215 mm),
- April normal (~190 mm)

Mean temperature is forecast to be near normal in most places (Fig 11b).

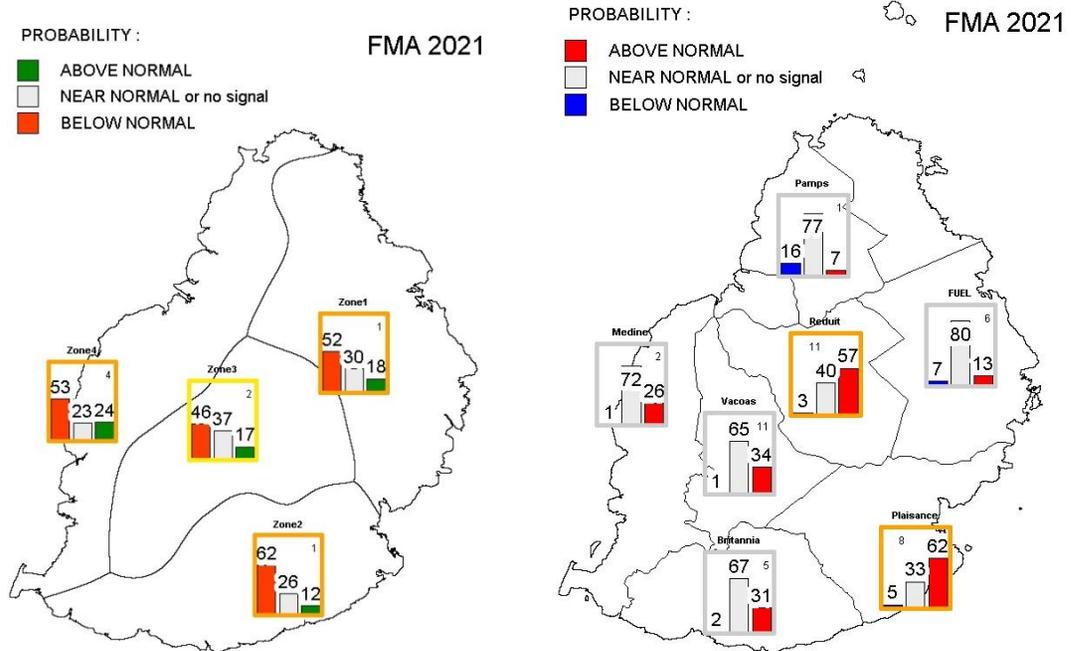
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Updated on: 23 February 2021



**Fig. 11: Statistical Model Forecast of (a) rainfall and (b) temperature**