

1. IN BRIEF

A weak La Niña event is firmly established in the tropical Pacific.

Moist easterlies, southeast tradewinds, together with series of troughs of low pressure systems affected the country during the month. Most parts of the country continued to record typical wet season rainfall pattern, with generally *average to well above average* rainfall recorded during the month. However, suppressed rainfall was recorded at Monasavu, Navua and Lakeba.

Overall, out of the 23 rainfall monitoring stations, 2 recorded *well above average* rainfall, 12 *above average*, 6 *average* and 3 *below average* rainfall (Table 2, Figures 1-5).

A trough affected the country from 5th to 10th, which resulted in Seaqaqa recording the highest 24-hour rainfall of 200mm, followed by 141mm at Yasawa-i-Rara and 136mm at Labasa Airport, all on the 9th respectively.

On temperatures, the highest day-time temperature of 36.1°C was recorded at Navua on the 15th, followed by 35.7°C at Penang Mill on the 9th, Levuka with 35.4°C on the 15th and Keiyasi with 35.3°C on the 20th.

The coolest night-time temperatures were recorded during the first half of the month. The lowest daily night-time

temperature of 16.0°C was recorded at Vunisea (Kadavu) on the 2nd, followed by Nadarivatu with 16.7°C, Monasavu with 18.0°C both on the 14th, Keiyasi with 19.6°C on the 2nd, Labasa Airport with 19.7°C on the 10th, and Lomaivuna and Vaturekuka (Labasa) both with 19.8°C on the 2nd.

Easterly winds were dominant at both Nadi Airport and Nausori Airport during the month, both with light to moderate wind strength (Figure 8).

Warmer than normal sea surface temperature anomalies were observed across most of the Fiji Group during the month (Figure 9).

2. WEATHER PATTERNS

A southeast wind flow prevailed over the Fiji group from the 1st till the 4th with some showers over the interior and eastern parts of Viti Levu, Vanua Levu, Taveuni and Kadavu. Fine weather prevailed elsewhere with afternoon or evening showers and isolated thunderstorms with heavy falls.

A trough of low pressure affected the country from the north on the 5th till the 10th with occasional rain over most places with isolated thunderstorms and heavy falls. Significant 24-hour rainfall were recorded on the 06th for Laucala Bay and Nausori Airport with 95.0mm and 89.9mm.

On the 11th till 13th, a southeast wind flow prevailed over Fiji turning northeast from 14th till 17th with some showers over the interior and eastern parts of Viti Levu, Vanua Levu, Taveuni and Kadavu. Fine weather prevailed elsewhere with afternoon or evening showers and isolated thunderstorms with heavy falls. This weather continued to prevail from 18th till 21st with an east to northeast wind flowing over Fiji and also from 22nd till 24th with an east to south-east wind flow.

A trough of low pressure affected the Fiji group from the north on 25th till 28th with occasional rain and few thunderstorms with isolated heavy falls.

A northerly wind flow prevailed over the country on 29th till 30th with some showers over the northern parts and interior of Viti Levu, Vanua Levu, Taveuni and Kadavu. Fine weather prevailed elsewhere with afternoon or evening showers.

A trough of low pressure affected the country from the south later on the 31st and gradually spread to the rest of the Fiji group with occasional rain, heavy at times and few thunderstorms. Significant 24-hour rainfall was recorded at Ba AWS with 108.0mm on the 31st.

Rotuma weather was dominated by a series of troughs of low pressure and moist easterly winds with the most significant 24-hour rainfall for the month was 50.8 recorded on the 05th.

3. RAINFALL

Typical wet season rainfall continued to be experienced at most parts of the country, with generally *average* to *above average* rainfall recorded during the month of December 2021. The only exceptions were at Monasavu and Navua in the Central Division and Lakeba in the Eastern Division which experienced drier than usual conditions. Yasawa-i-Rara and Lautoka Mill in the Western Division registered more than twice the normal rainfall.

Overall, out of the 23 rainfall monitoring stations, 2 recorded *well above average* rainfall, 12 *above average*, 6 *average* and 3 *below average* rainfall (Table 2, Figures 1-5).

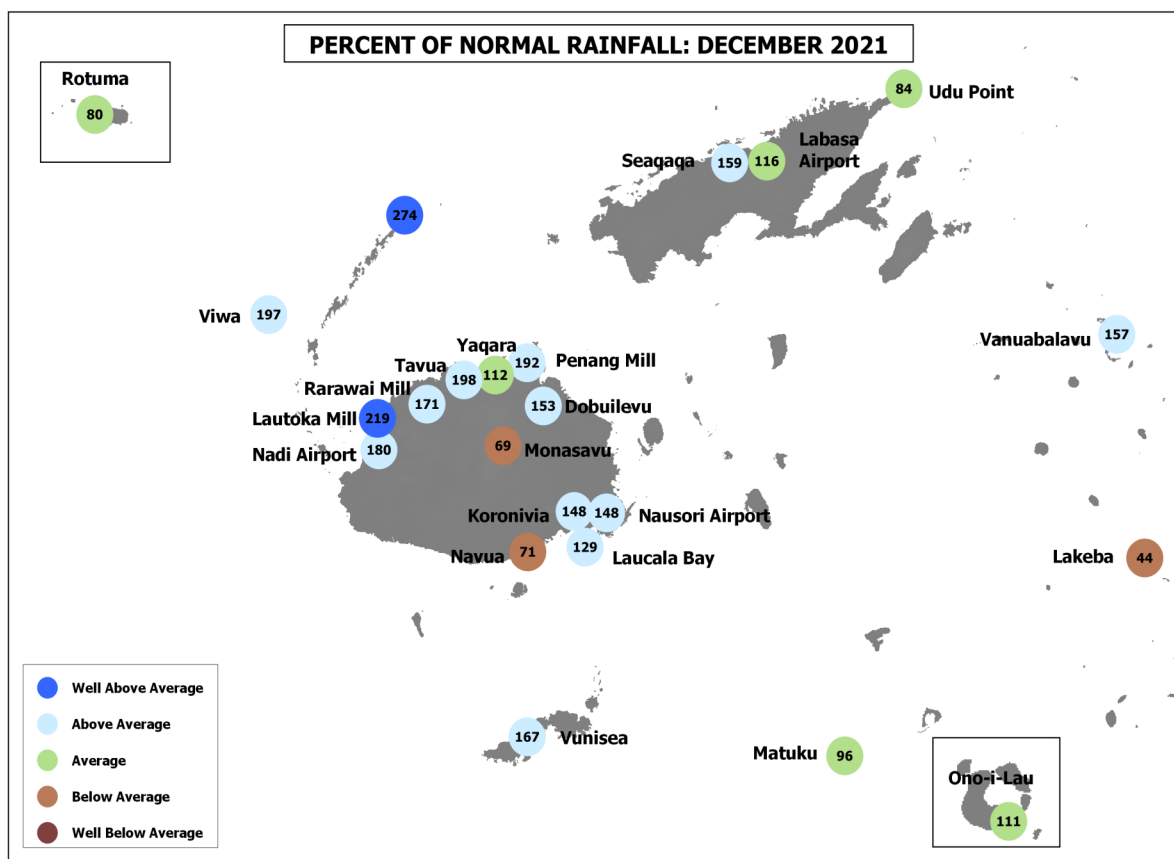
Lomaivuna was the wettest site with 522.0mm of rainfall, followed by Penang Mill with 499.3mm, Ellington (Rakiraki) with 491.5mm, Nasinu with 456.0mm, Seaqqa with 452.5mm, Lautoka Mill with 438.6mm, Nadarivatu with 434.5mm, Rarawai Mill (Ba) with 431.3mm and Vatukuka (Labasa) with 419.5mm. On the other hand, Lakeba recorded the month's lowest total monthly rainfall of 89.8mm, followed by Matuku with 137.0mm, Ono-i-Lau with 143.5mm, Yaqara with 194.5mm, Keiyasi with 198.5mm, Korolevu with 208.5mm, Levuka with 216.0mm and Wainikoro with 225.0mm.

A trough affected the country from 5th to 10th, which resulted in highest 24-hour rainfall of 200mm at Seaqqa, 141mm at Yasawa-i-Rara and 136mm at Labasa Airport, all on the

9th.

Koronivia recorded its highest number of rain days (rainfall $\geq 0.1\text{mm}$) with 29 days, followed by Dobuilevu with 27 days, Navua, Monasavu and Saqani all with 26 days, Lomaivuna, Penang Mill, Ellington (Ra), Nadi Airport and Korolevu, all with 25 days and Lautoka Mill, Nausori Airport and Levuka all with 24 days. On the other hand, Matuku recorded the least number of rain days with 14 days, followed by Ono-i-Lau and Vunisea (Kadavu) both with 16 days, Yasawa-i-Rara with 18 days, Vanuabalavu with 19 days and Lakeba, Yaqara, Momi and Viwa, all with 20 days.

There was no new rainfall record established during the month.



Normal: Long term average from 1981 to 2010
 Well Below Average: Rainfall less than 40% of normal
 Below Average: Rainfall between 40 to 79%
 Rain Day: Rainfall $\geq 0.1\text{mm}$

Average: Rainfall between 80 to 119%
 Above Average: Rainfall between 120 to 199%
 Well Above Average: Rainfall greater than or equal to 200% of normal

4. AIR TEMPERATURES

A. Maximum Day-time Air Temperatures

Above normal or *near normal* day-time air temperatures were observed at most parts of Fiji during the month. Out of the 18 climate stations that reported in time for the analysis of data, 10 recorded anomalies $\geq +0.5^{\circ}\text{C}$, 7 within $\pm 0.5^{\circ}\text{C}$, while Rarawai Mill was the lone station that recorded anomaly $\leq -0.5^{\circ}\text{C}$.

The warmest days on average were recorded at Ellington (Rakiraki) with 32.9°C , followed by Levuka and Keiyasi both with 32.7°C , Navua with 32.6°C , and Matuku, Yasawa-i-Rara and Saqani, all with 32.2°C . On the other hand, Nadarivatu recorded the coolest days on average with 25.5°C , followed by Monasavu with 26.2°C , Vanuabalavu with 30.1°C , Udu Point with 30.6°C , Momi and Vaturekuka (Labasa) both with 30.5°C , Vunisea (Kadavu) with 30.7°C , and Rotuma and Lakeba both with 30.9°C .

The highest day-time temperature during the month was registered at Navua with 36.1°C on the 15th, followed by Penang Mill with 35.7°C on the 9th, Levuka with 35.4°C on the 15th and Keiyasi with 35.3°C on the 20th. In contrast, the coolest day-time temperature of 21.8°C was at Nadarivatu, Monasavu with 22.6°C , Lomaivuna with 25.5°C , Nausori Airport with 26.7°C and Labasa Airport with 27.0°C , all on the 26th, followed by 27.2°C at Nadi Airport and Yasawa-i-Rara, on the 17th and 26th, respectively.

There were no new records registered during the month.

B. Minimum Night-time Air Temperatures

Generally *above normal* night-time temperatures were recorded over most parts of the country during the month. Of the 18 stations, 8 recorded anomalies $\geq +0.5^{\circ}\text{C}$, 5 within $\pm 0.5^{\circ}\text{C}$, and 5 registered anomaly $\leq -0.5^{\circ}\text{C}$.

The coolest days on average was at Nadarivatu with 19.1°C , followed by Monasavu with 19.8°C , Lomaivuna with 21.6°C , Wainikoro with 22.0°C , and Vunisea (Kadavu), Keiyasi and Vaturekuka (Labasa), all with 22.1°C . On the other hand, the warmest night-time temperatures on average were observed at Ellington (Ra) with 27.2°C , followed by Levuka and Matuku both with 25.5°C , Rotuma with 25.1°C and Laucala Bay (Suva) with 24.6°C .

The coolest night-time temperatures were recorded during the first half of the month. The lowest daily minimum air temperature of 16.0°C was recorded at Vunisea (Kadavu) on the 2nd, followed by Nadarivatu with 16.7°C , Monasavu with 18.0°C both on the 14th, Keiyasi with 19.6°C on the 2nd, Labasa Airport with 19.7°C on the 10th, and Lomaivuna and Vaturekuka (Labasa) both with 19.8°C on the 2nd. On the other hand, the warmest night-time temperature of 27.5°C was recorded at Ellington (Rakiraki) on the 2nd, followed by Levuka with 27.1°C on the 18th, Rotuma with 26.5°C on the 14th and RKS Lodonni with 26.3°C on the 19th.

There were no new records registered during the month

TABLE 1. CLIMATE RECORDS ESTABLISHED IN DECEMBER 2021

There were no new records established during the month.

Note: All comparisons in this summary are with respect to "Climatic Normals". This is defined to be the average climate condition over a 30-year period. Fiji uses 1981-2010 period as its "climatic normal" period.

TABLE 2. DAILY CLIMATE REPORTING SITES: SUMMARY FOR DECEMBER 2021

	RAINFALL				AIR TEMPERATURES								SUNSHINE		
	TOTAL	RAIN		MAX. FALL	AVERAGE DAILY				EXTREME		TOTAL				
	MM	* %	DAYS +	MM ON	MAX. #	MIN. #	MIN. #	MAX. #	MAX. C	MIN. C	ON	ON	HRS	*	
NADI AIRPORT	373.3	180	25	73	31	31.3	-0.1	23.8	1.1	33.4	20	22.5	1	150	68
LAUCALA BAY	350.0	129	23	95	6	31.5	1.0	24.6	0.6	34.2	15	23.0	3	173	92
NACOCOLEVU RESEARCH	MISSING OBSERVATIONS														
ROTUMA ISLAND	245.0	80	21	51	5	30.9	-0.1	25.1	0.2	32.5	6	23.4	6	170	98
VIWA ISLAND	289.2	197	20	60	25	31.7	0.4	24.1	-0.9	34.7	6	23.1	25		
YASAWA-I-RARA	391.6	274	18	141	9	32.2	1.3	22.3	-2.1	34.8	23	20.7	27		
UDU POINT WEATHER	267.3	84	23	56	27	30.6	-0.1	23.7	-0.6	31.4	22	21.7	10		
LABASA AIRFIELD	294.5	116	22	136	9	31.9	0.2	22.3	0.1	34.4	22	19.7	10		
KORONIVIA RESEARCH	381.8	148	29	64	6	31.2	1.2	23.3	0.5	32.9	30	21.5	1		
NAUSORI AIRPORT	391.7	148	24	90	6	31.3	1.5	23.5	0.6	33.7	29	21.8	1		
NAVUA (AWS)	248.0	71	26	63	10	32.6	2.9	23.6	1.7	36.1	15	21.9	14		
MONASAVU HYDRO DAM	389.3	69	26	58	3	26.2	1.3	19.8	1.2	28.2	23	18.0	14		
FSC LAUTOKA MILL	438.6	219	24	74	31	31.7	0.4	23.6	0.3	34.0	25	22.0	26		
FSC RARAWAI MILL	431.3	171	22	80	31	31.4	-1.0	23.1	1.2	34.2	15	20.5	2		
FSC PENANG MILL	499.3	192	25	98	25	31.2	0.5	23.9	0.3	35.7	9	23.0	16		
VANUABALAVU	270.8	157	19	66	8	30.1	0.4	23.2	-1.1	31.2	6	21.6	9		
LAKEBA	89.8	44	20	17	28	30.9	1.1	23.8	-0.0	32.2	17	21.3	12		
VUNISEA	306.2	167	16	122	7	30.7	1.3	22.1	-1.1	32.4	18	16.0	2		
MATUKU (AWS)	137.0	96	14	36	6	32.2	2.4	25.5	1.5	33.7	17	23.5	14		
ONO-I-LAU (AWS)	143.5	111	16	65	31	U/S		U/S		U/S		U/S			
YAQARA AWS	194.5	112	20	58	31	31.9		24.0		33.8	6	22.7	13		
LEVUKA AWS	216.0		24	49	6	32.7		25.5		35.4	15	23.6	7		
KEIYASI AWS	198.5		21	46	9	32.7		22.1		35.3	20	19.6	2		
LOMATVUNA AWS	522.0		25	103	19	31.5		21.6		34.1	23	19.8	2		
NADARIVATU AWS	434.5		23	45	12	25.5		19.1		29.8	22	16.7	14		
RKS LODONI AWS	325.0		22	110	10	31.3		23.4		32.8	30	21.9	14		
MOMI AWS	234.5		20	37	31	30.5		23.8		31.8	4	21.7	2		
SIGATOKA AWS	233.0		21	39	24	31.8		22.6		34.0	15	20.9	2		
ELLINGTON (RA) AWS	491.5		25	71	25	32.9		27.2		33.9	18	26.6	3		
VATUREKUKA AWS	419.5		23	155	9	30.5		22.1		32.9	23	19.8	2		
KOROLEVU AWS	208.5		25	38	31	31.8		23.0		33.7	18	22.0	9		
WAINIKORO AWS	225.0		21	44	29	31.2		22.0		32.7	23	20.7	2		
SAQANI AWS	374.0		26	80	9	32.2		24.1		33.6	6	22.3	10		
SEAQAQA TB3	452.5	159	23	200	9										
DOBULEVU TB3	397.0	153	27	90	24										
NASINU TB3	456.0		23	86	6										
TAVUA TB3	340.5	198	22	58	31										

	TEMPERATURE (C)		HUMIDITY RH%	WIND VP	WIND KT	SUN RAD %OF MJ/ POS SQ.M
	DRY	WET				
	MEAN (AVERAGE AT 9AM)					
NADI AIRPORT	27.5	28.5	25.0	75	29.1	5.7
LAUCALA BAY	28.0	28.9	25.9	78	29.8	8.1
NACOCOLEVU RESEARCH	MISSING OBSERVATIONS					
ROTUMA ISLAND	28.0	28.6	26.3	84	29.3	
VIWA ISLAND	27.9	29.5	26.2	77	30.8	
YASAWA-I-RARA	27.2	28.7	26.5	85	29.4	
UDU POINT WEATHER	27.0	28.4	25.6	80	28.9	
LABASA AIRFIELD	27.1	28.7	25.0	74	29.4	
KORONIVIA RESEARCH	27.2	28.8	25.7	78	29.6	
NAUSORI AIRPORT	27.4	28.4	25.4	78	28.9	5.7
NAVUA (AWS)	28.1					
MONASAVU HYDRO DAM	23.0	23.1	21.6	88	21.1	
FSC LAUTOKA MILL	27.7	29.5	26.3	78	30.8	
FSC RARAWAI MILL	27.3	28.5	25.3	77	29.1	
FSC PENANG MILL	27.6	28.2	25.4	80	28.6	
VANUABALAVU	26.6	28.2	24.9	77	28.6	
LAKEBA	27.3	29.1	25.4	75	30.1	
VUNISEA	26.4	28.7	25.8	80	29.4	
MATUKU (AWS)	28.9					

MEAN TEMPERATURE IS (MAX+MIN)/2; WIND IS MEAN SPEED AT 06,12,18,24 HOURS.
 \$:SOLAR RADIATION CALCULATED FROM SUNSHINE DURATION. # :DEPARTURE FROM LONG-TERM AVERAGES (1981-2010). + :NUMBER OF DAYS WITH 0.1 MM OR MORE RAIN. * :PERCENT OF LONG-TERM AVERAGES.
BLUE FONT: MISSING RECORDS OF LESS THAN OR EQUAL(≤) TO 5 DAYS. U/S: UNSERVICEABLE

Figure 2

Nadi Airport (Western Division) - Temperature & Rainfall Records for the last 13 Months (December 2020 - December 2021)

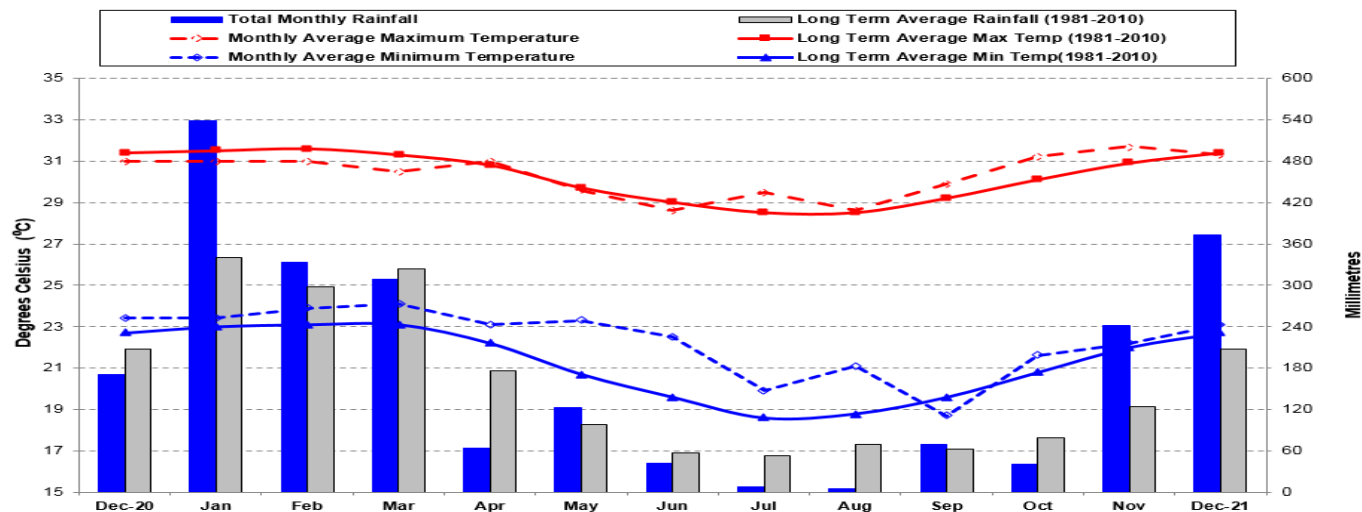


Figure 3

Laucala Bay - (Suva) (Central Division) - Temperature & Rainfall Records for the last 13 Months (December 2020 - December 2021)

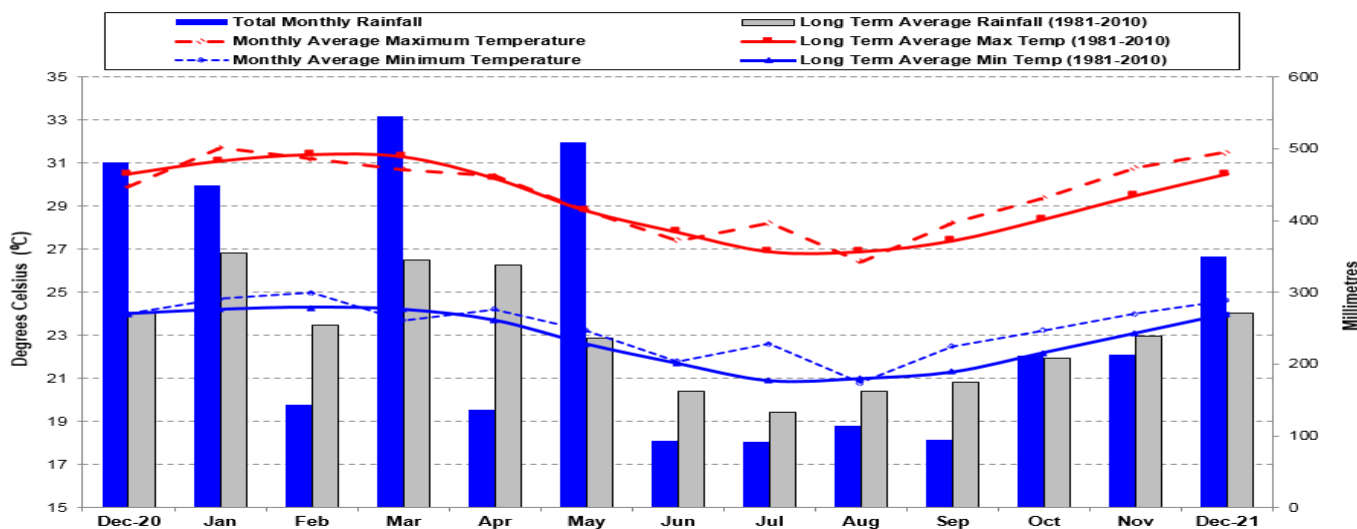


Figure 4

Udu Point (Eastern Division) - Temperature & Rainfall Records for the last 13 Months (December 2020 - December 2021)

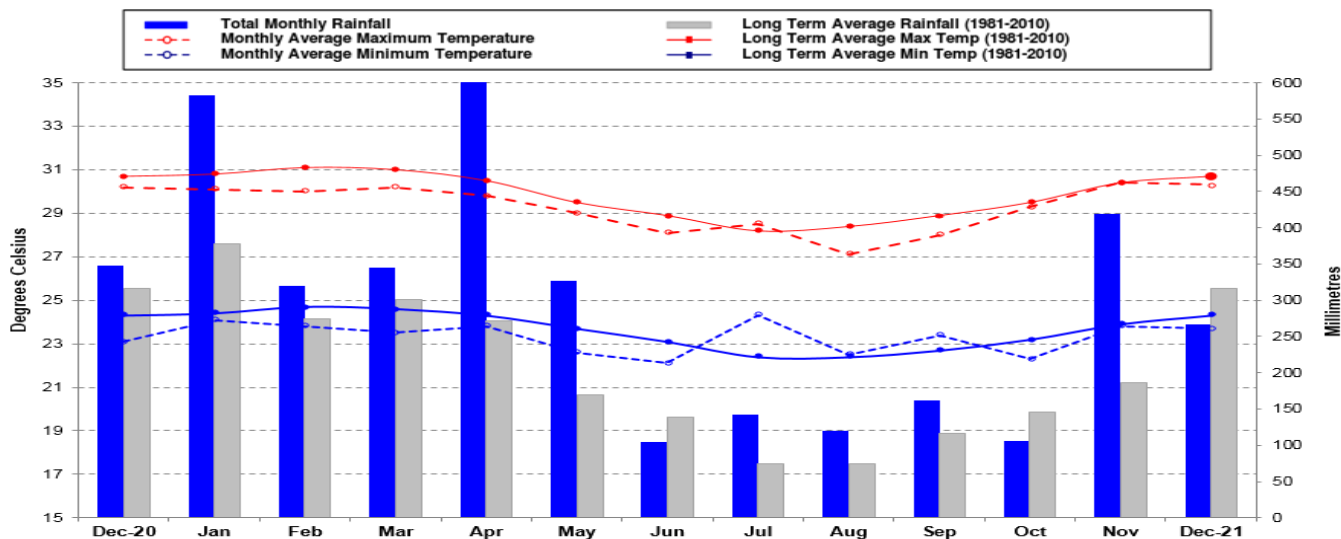
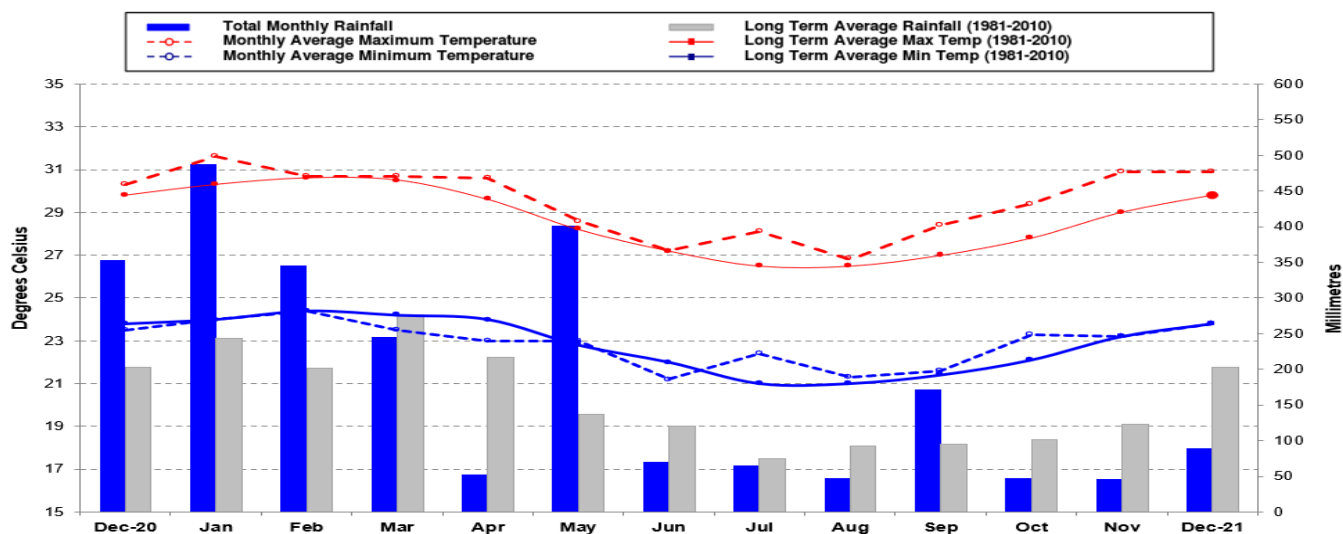


Figure 5

Lakeba (Eastern Division) - Temperature & Rainfall Records for the last 13 Months (December 2020 - December 2021)



5. DAILY RAISED PAN EVAPORATION

Figure 6

Daily Evaporation for December 2021

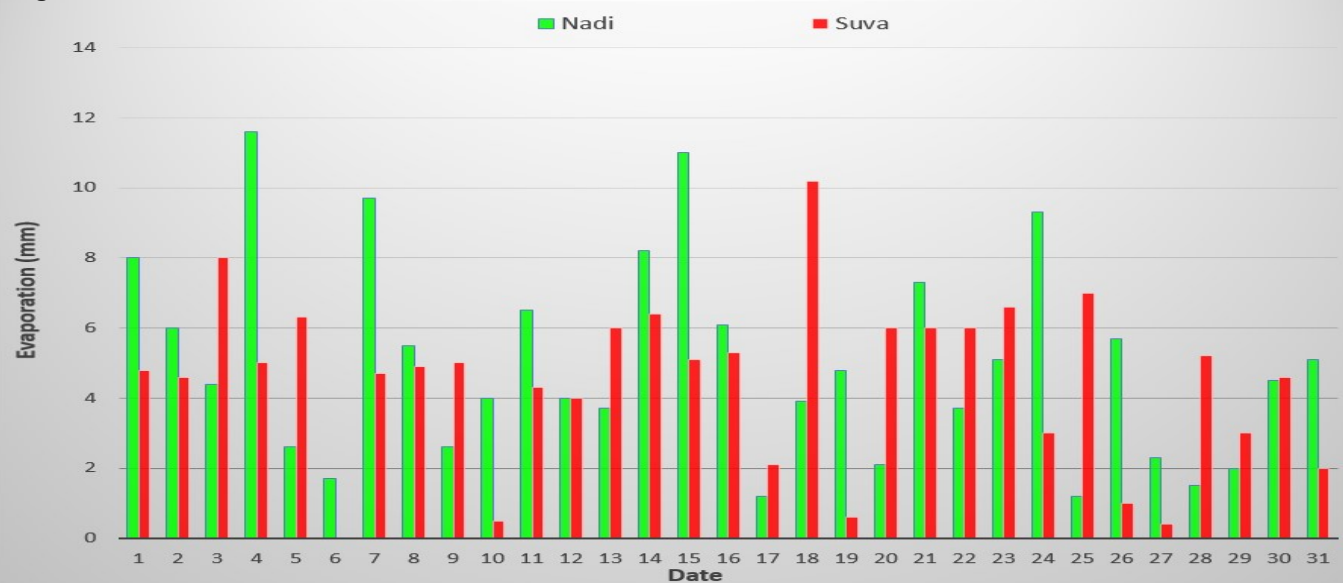


Figure 6: The total monthly evaporation at Nadi Airport and Laucala Bay (Suva) were 155.3mm and 138.6mm, respectively. Nadi’s highest daily evaporation was 11.6mm on the 4th, with Suva’s highest daily evaporation of 10.2mm on the 18th. Note Nacocolevu’s evaporation could not be analysed due to missing data.

6. SOLAR RADIATION

The Nadi solar radiation instrument became unserviceable during the month of December 2021.

7. WIND SUMMARY

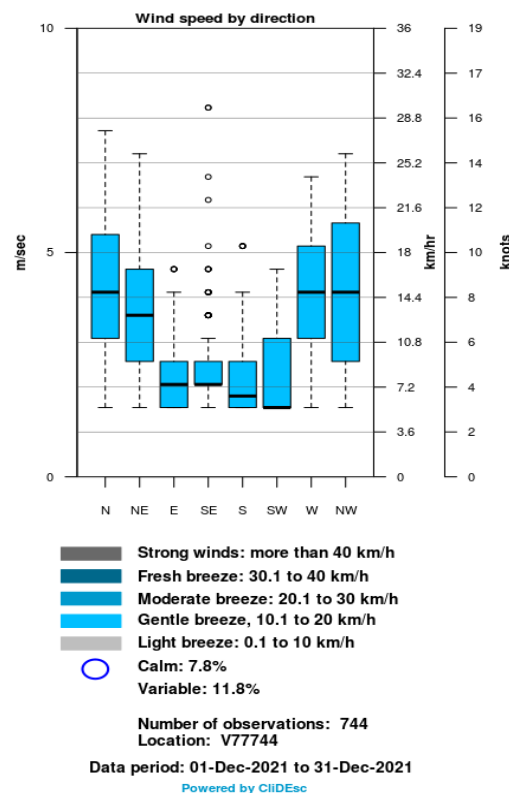
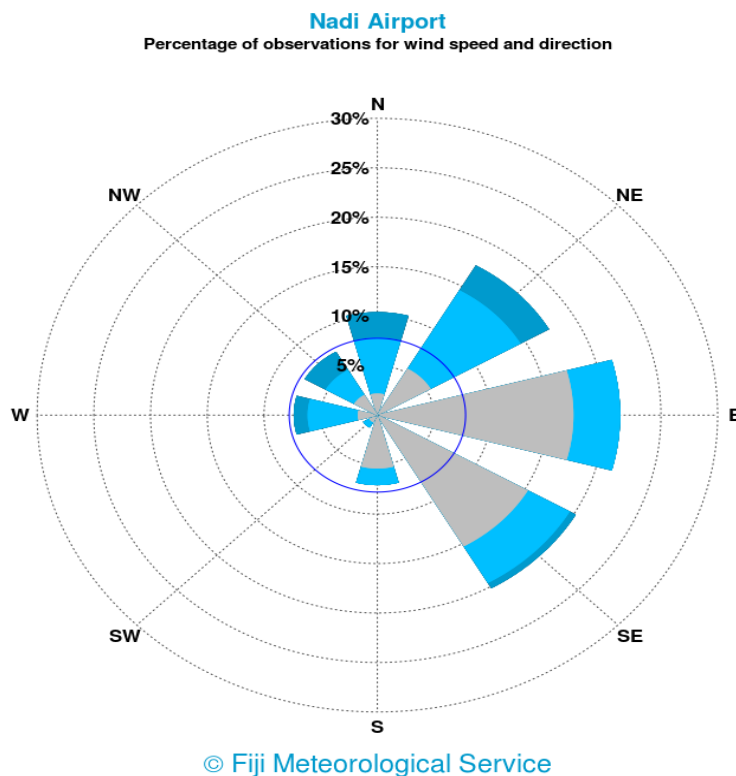


Figure 8a: Easterly winds were most dominant at Nadi Airport during the month, followed by southeasterly and northeasterly winds. Wind strength ranged from light to moderate breeze during this period.

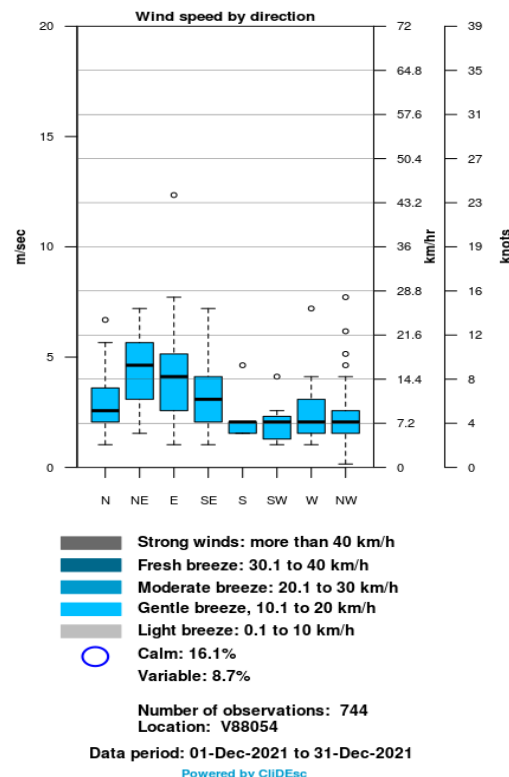
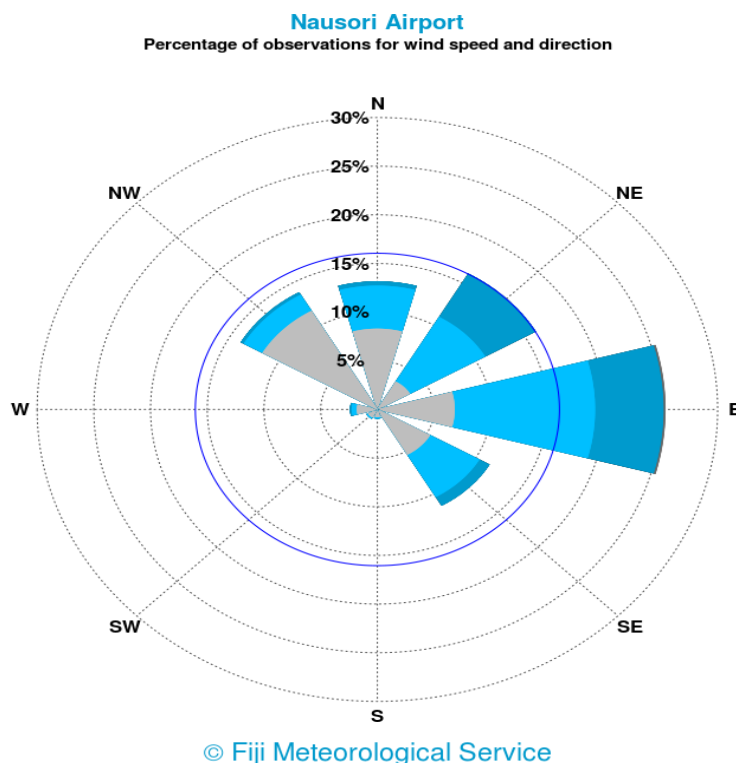


Figure 8b: Easterly winds were dominant at Nausori Airport, followed by northeasterly and northwesterly winds. Wind strength ranged from light to moderate breeze during this period.

8. SEA SURFACE TEMPERATURE (SST)

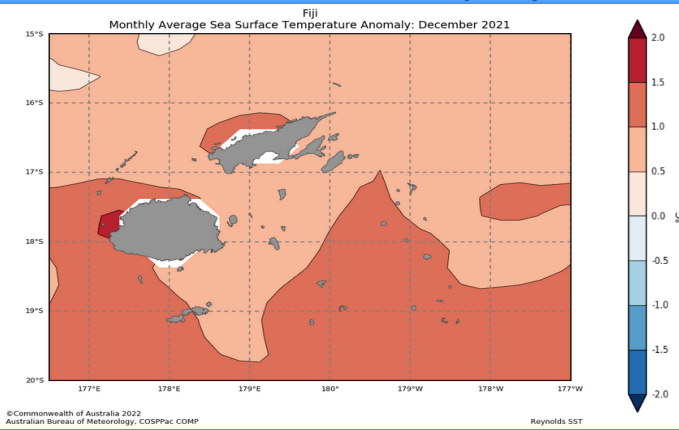


Figure 9: Warmer than normal sea surface temperature anomalies were observed across most of the Fiji Waters, with anomalies of more than 1.0°C observed north of Vanua Levu, north-western Viti Levu, Kadavu and across the Lau Group.

Source: <http://oceanportal.spc.int/portal/app.html#climate>

9. CLOUD COVER

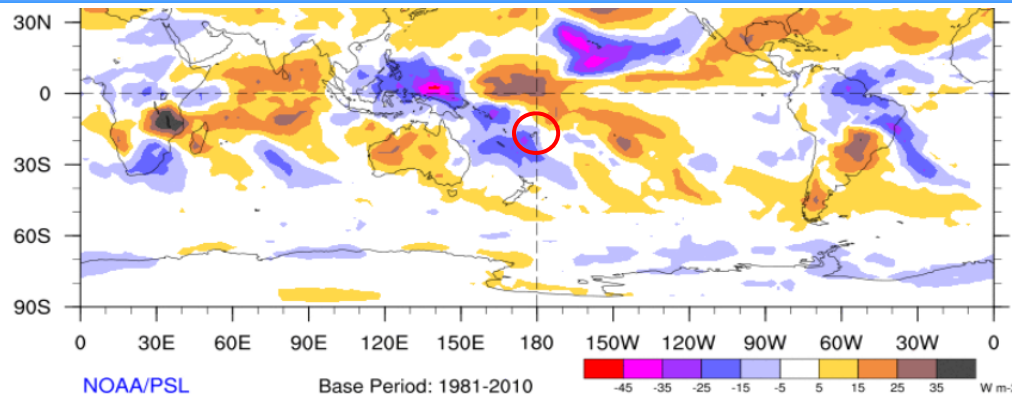


Figure 10:

Slightly above normal cloud cover was present over the Fiji Group during December (Fiji in red circle).

Source: <http://www.esrl.noaa.gov/psd/map/clim/olr.shtml>

10. SEA LEVEL

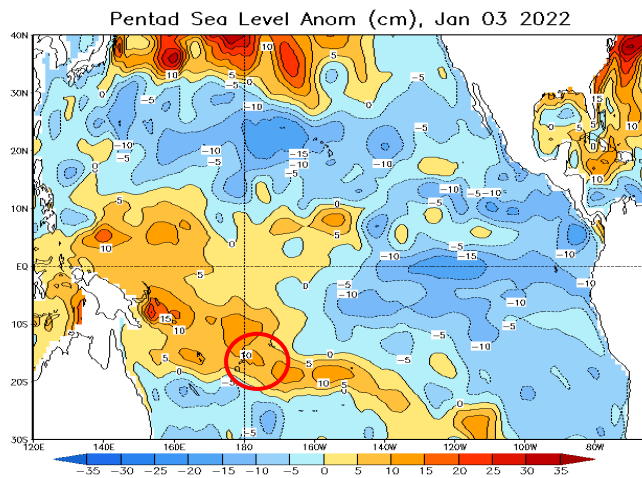


Figure 11:

Above normal sea level anomalies (between 10-15cm) persists across most of the Fiji Waters (Fiji in red circle).

Source: https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ocean/weeklyenso_clim_81-10/wksl_ann.gif

11. WIND ANOMALIES

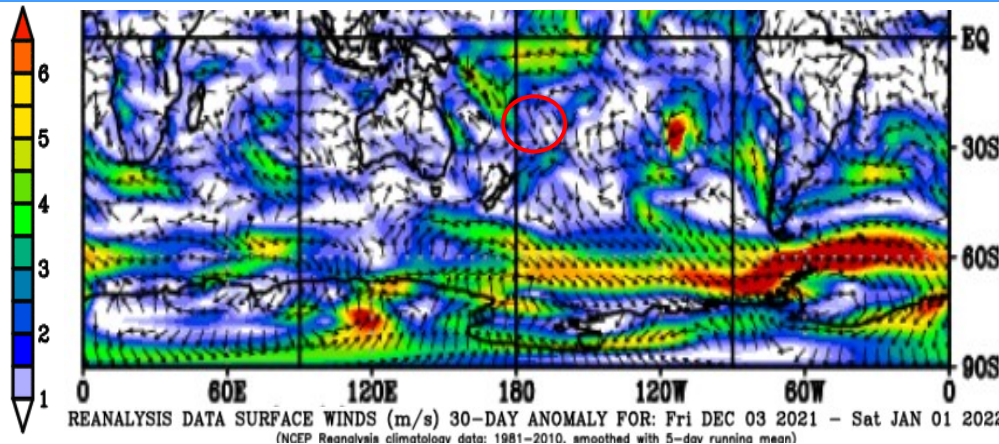


Figure 12:

North-westerly wind anomalies were recorded over the Fiji Group during the month (base period: 1981-2010) (Fiji in red circle).

Source: https://www.esrl.noaa.gov/psd/map/images/rnl/sfcwnd_30b.rnl.html