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Fiji Climate Summary June 2024

ISO 9001:2015 certified Climate Services

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1. IN BRIEF

Typical El Niño rainfall pattern was observed at most rainfall reporting stations in June, with *below average* to *well below average* rainfall recorded. Majority of the stations in the Western Division, Navua, Laucala Bay (Suva), Seaqaqa, Udu Point, Matei Airfield, Vanuabalavu, Lakeba, Ono-i-Lau, Matuku and Rotuma recorded less than half of their *normal* monthly rainfall.

Overall, out of the 27 rainfall monitoring stations that reported in, in time for the compilation of bulletin, 21 recorded *well below average* rainfall and 6 *below average* (Table 2, Figures 1-5).

Navua recorded the highest monthly rainfall of 124.0mm, followed by Rotuma and Koronivia both with 103.0mm, Monasavu with 93.8mm, Nausori Airport with 79.7mm, RKS Lodoni with 73.5mm, Vunisea with 67.7mm, Nasinu with 66.0mm, Nabouwalu with 64.6mm, and Vaturekuka (Labasa) with 64.5mm (Table 2).

On temperatures, the month's warmest day-time temperature of 34.3°C was observed at RKS Lodoni on the 14th, followed by Yaqara with 33.5°C on the 19th, Labasa Airfield with 33.4°C on the 20th, Lautoka Mill with 33.3°C on the 19th, and Seaqaqa with 33.1°C on the 17th. The month's coolest night-time temperature of 14.6°C was recorded at Monasavu on the 11th, followed by Labasa Airfield with 15.1°C on the 23rd, Nacocolevu with 15.5°C on the 10th, Navua with 16.5°C on the 10th, and Nadi Airport and Lautoka Mill both with 17.5°C on the 23rd and 24th, respectively.

Southeasterly winds were dominant at Nadi Airport, Savusavu Airfield and Matei Airfield (Figure 7).

Warmer than normal sea surface temperature anomalies were observed at most parts of the country (Figure 8).

Above normal sea level anomalies persisted across most of the Fiji Waters during June (Figure 10).

2. WEATHER PATTERNS

Winter month weather conditions in Fiji are largely influenced by the subtropical ridge in the southern hemisphere. This ridge dictates the prevailing easterly and southeasterly winds that characterize much of June. Changes in weather patterns throughout the month are often due to planetary wave propagation, which can lead to shifts in wind direction and the occasional influence of troughs of low pressure.

From the 1st to the 9th of June, Fiji experienced fresh to strong southeasterly winds with trade showers over the eastern parts of the country and generally fine weather elsewhere. It was followed by a transition to moderate to fresh east to northeast winds on the 10th. Northeasterly winds continued until the 14th, shifting to northeast to northwest winds on the 15th. From the 15th to the 19, northeast to northwest winds prevailed over the group due to the Col area within the vicinity of the country with foggy conditions being experienced over some parts of Fiji in the morning. From the 20th to the 27th, east to southeast winds dominated over the group. Trade showers were evident on the windward sides with mainly fine weather prevailing over the leeward side of the country. A trough of low pressure developed over the eastern parts of the group on 28th and affected the group till 29th. Significant rainfall of around 50mm over a 24 hour period was recorded especially over the eastern and northern parts of the country. Strong southeast winds developed after the passing of the trough on 30th, whereby strong winds up to 45 km/hr were experienced over the small islands and the exposed coastal areas of the main lands. Generally, cool nighttime temperatures, just below 20 degrees Celsius, were experienced, particularly when southeast and easterly winds predominated over the islands.

Weather conditions over Rotuma were primarily influenced by a series of low-pressure systems active near the island. The station recorded rainfall on 18 out of 30 days. On the remaining days without rainfall, east or southeast winds predominated.

3. RAINFALL

Generally suppressed rainfall was observed in June, with rainfall ranging from *below average* to *well below average* across the country. Majority of the stations in the Western Division, Navua, Laucala Bay (Suva), Seaqaqa, Udu Point, Matei Airfield, Vanuabalavu, Lakeba, Ono-i-Lau, Matuku and Rotuma recorded less than half of their *normal* monthly rainfall.

Overall, out of the 27 rainfall monitoring stations that reported in, in time for the compilation of bulletin, 21 recorded *well below average* rainfall and 6 *below average* (Table 2, Figures 1-5).

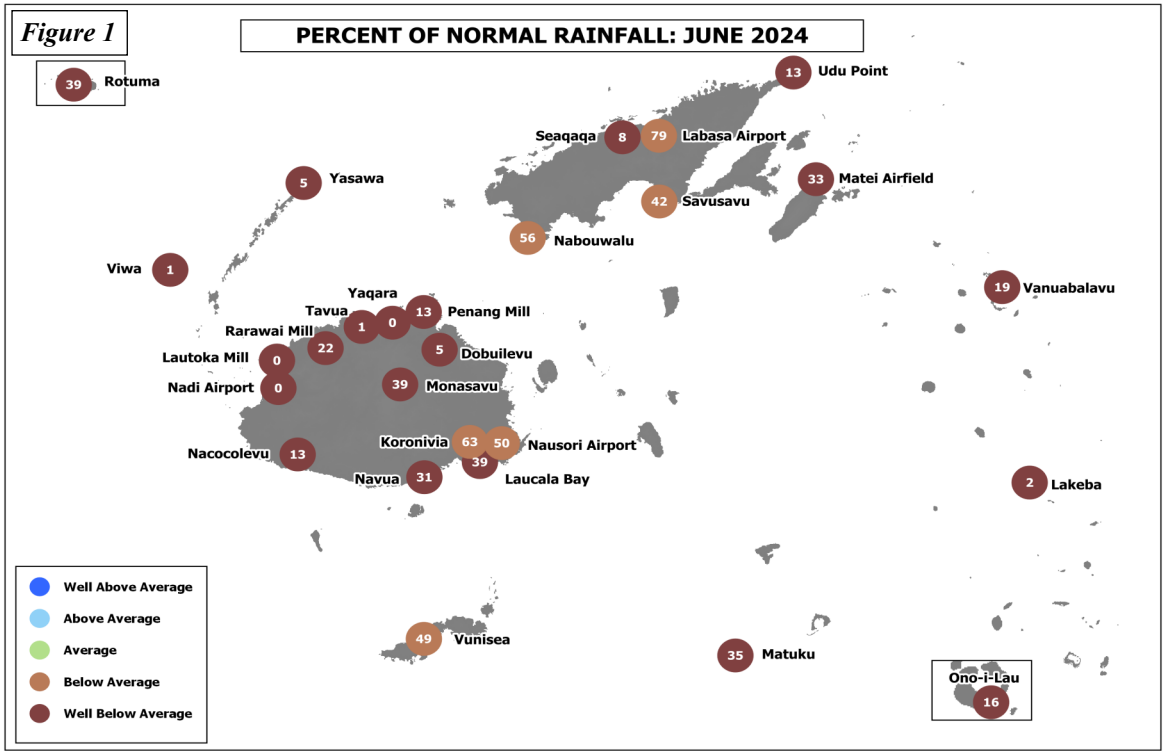
The highest monthly rainfall of 124.0mm was observed at Navua, followed by Rotuma and Koronivia both with 103.0mm, Monasavu with 93.8mm, Nausori Airport with 79.7mm, RKS Lodoni with 73.5mm, Vunisea with 67.7mm, Nasinu with 66.0mm, Nabouwalu with 64.6mm, and Vaturekuka (Labasa) with 64.5mm. On the other hand, Yaqara, Lautoka Mill and Nadi Airport recorded no rainfall at all during the month, followed by Tavua with 1.0mm, Momi and Keiyasi both with 1.5mm, Viwa with 2.5mm, Nadarivatu with 3.5mm, Lakeba with 5.5mm, Levuka and Yasawa-i-Rara both with 8.5mm, Penang Mill and Nacocolevu both with 9.6mm and Dobuilevu with 13.5mm (Table 2).

The highest 24-hour rainfall of 64mm was recorded at Vaturekuka (Labasa) on the 29th, followed by Labasa Airfield with 58mm on 29th, Wainikoro with 56mm on the 29th, Nabouwalu with 46mm on the 16th, Vunisea and Savusavu Airfield both with 33mm on the 16th and 29th, respectively and Saqani with 27mm on the 29th.

Both Monasavu and Rotuma recorded the highest number of rain days (rainfall ≥0.1mm) with 18 days, followed by Navua, Nausori Airport and Dobuilevu all with 15 days, Laucala Bay (Suva) and Ono-i-Lau both with 14 days, Vunisea, Koronivia, RKS Lodoni and Matei Airfield all with 13 days, and Nasinu and Korolevu both with 12 days. On the contrary, Yaqara, Lautoka Mill and Nadi Airport recorded no rainfall at all, followed by Tavua, Viwa and Rarawai Mill (Ba) all with 1 day, Momi, Keiyasi, Labasa Airfield and Vaturekuka (Labasa) all with 2 days, and Lakeba, Yasawa-i-Rara, Seaqaqa, Sigatoka and Wainikoro all with 3 days.

There were no new rainfall records observed during the month.

Figure 1



Normal: *Long term average from 1991 to 2020*
Well Below Average: *Rainfall less than 40% of normal*
Below Average: *Rainfall between 40 to 79%*
Rain Day: *Rainfall ≥ 0.1mm*

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

Generally *normal to above normal* day-time air temperatures were observed across the country during the month. Out of the 22 climate stations that reported in time for the analysis of data, 10 recorded anomalies ≥+0.5°C, 9 within ±0.5°C, and 3 with anomalies ≤-0.5°C.

The warmest days on average were recorded at Viwa with 31.5°C, followed by RKS Lodoni with 31.3°C, Seaqaqa with 31.1°C, Rotuma with 30.8°C, and Lautoka Mill with 30.7°C. Consequently, Monasavu recorded the coolest days on average with 23.1°C, followed by Ono-i-Lau with 27.1°C, Matuku with 27.7°C, Vunisea and Laucala Bay (Suva) both with 27.9°C, and Savusavu Airfield with 28.1°C.

The warmest daily day-time temperatures were recorded during the third week of the month. The month's highest day-time temperature of 34.3°C was observed at RKS Lodoni on the 14th, followed by Yaqara with 33.5°C on the 19th, Labasa Airfield with 33.4°C on the 20th, Lautoka Mill with 33.3°C on the 19th, and Seaqaqa with 33.1°C on the 17th. On the other hand, the coolest day-time temperature of 19.6°C was at Monasavu on the 1st, followed by Vunisea with 24.0°C on the 28th, Ono-i-Lau with 24.2°C on the 28th, Navua with 24.6°C on the 28th and Nacocolevu and Nausori Airport both with 25.0°C on the 2nd and 28th, respectively.

There were no new day-time temperature records established during the month.

B. Minimum Night-time Air Temperatures

Generally *normal to above normal* night-time temperatures were recorded over most parts of the country during the month. Of the 21 stations, 4 recorded anomalies ≥+0.5°C, 10 within ±0.5°C, and 7 with anomalies ≤-0.5°C.

The coolest days on average was at Monasavu with 17.3°C, followed by Labasa Airfield with 19.1°C, Nacocolevu and Seaqaqa both with 19.2°C, Sigatoka with 19.4°C, Vaturekuka (Labasa) with 19.5°C, Korolevu with 19.9°C, and Nadi Airport with 20.0°C. Consequently, on average, the warmest night-time temperatures were observed at Rotuma with 26.0°C, Viwa with 24.7°C, Saqani, RKS Lodoni and Lakeba all with 23.3°C, and Savusavu Airfield with 22.8°C.

The coolest daily night-time temperatures were recorded during the first and second week of the month. The lowest night-time temperature of 14.6°C was recorded at Monasavu on the 11th, followed by Labasa Airfield with 15.1°C on the 23rd, Nacocolevu with 15.5°C on the 10th, Navua with 16.5°C on the 10th, and Nadi Airport and Lautoka Mill both with 17.5°C on the 23rd and 24th, respectively. On the other hand, the warmest night-time temperature of 27.9°C was recorded at Viwa on the 19th, followed by Rotuma with 27.6°C on the 2nd, Saqani with 26.0°C on the 18th, and RKS Lodoni with 25.9°C on the 18th.

There were no new night-time temperature records established during the month.

TABLE 1. CLIMATE RECORDS ESTABLISHED IN JUNE 2024

There were no new climate records established during June 2024.

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 1991-2020 period as its "climatic normal" period.

TABLE 2. DAILY CLIMATE REPORTING SITES: SUMMARY FOR JUNE 2024

	RAINFALL				AIR TEMPERATURES								SUNSHINE	
	TOTAL	RAIN * DAYS		MAX. FALL	AVERAGE DAILY MAX.	#	MIN.	#	EXTREME MAX.		EXTREME MIN.		TOTAL	
	MM	%	+	MM ON	C	C	C	C	C	ON	C	ON	HRS	* %
NADI AIRPORT	0.0	0	0	0 1	30.2	1.2	20.0	-0.2	32.0	19	17.5	23	248	125
LAUCALA BAY	61.2	39	14	14 27	27.9	0.0	22.5	0.3	30.5	18	19.1	10	59	45
NACOCOLEVU RESEARC	9.6	13	6	3 20	28.5	-0.4	19.2	0.2	31.5	14	15.5	10	186	149
ROTUMA ISLAND (AWS)	103.0	39	18	19 15	30.8	-0.3	26.0	0.9	31.8	14	24.4	29		
VIWA ISLAND (AWS)	2.5	1	1	3 16	31.5	0.3	24.7	0.0	33.0	19	22.7	5		
YASAWA-I-RARA (AWS)	8.5	5	3	8 24	29.8	-1.2	22.7	-1.4	31.9	18	21.1	14		
UDU POINT WEATHER	19.2	13	7	9 26	29.2	0.4	21.8	-1.5	30.5	19	19.2	1		
NABOUWALU	64.6	56	8	46 16	28.2	0.6	22.6	-0.4	30.0	20	20.4	7		
LABASA AIRFIELD	58.1	79	2	58 29	30.6	0.4	19.1	-0.1	33.4	20	15.1	23		
SAVUSAVU AIRFIELD	51.6	42	11	33 29	28.1	0.2	22.8	0.6	31.1	17	19.4	10		
KORONIVIA RESEARCH	103.0	63	13	24 1	28.6	0.9	21.2	0.3	31.8	14	18.6	7		
NAUSORI AIRPORT	79.7	50	15	16 29	28.2	0.8	20.9	0.2	31.2	19	18.0	7		
NAVUA (AWS)	124.0	31	15	26 16	28.4	-1.1	20.2	-2.3	31.7	14	16.5	10		
MONASAVU HYDRO DAM	93.8	39	18	26 1	23.1	1.0	17.3	0.5	27.4	15	14.6	11		
FSC LAUTOKA MILL	0.0	0	0	0 1	30.7	1.3	20.2	-0.5	33.3	19	17.5	24		
FSC RARAWAI MILL	14.2	22	1	14 16	U/S		U/S		U/S		U/S			
FSC PENANG MILL	9.6	13	9	2 19	28.9	0.4	22.1	0.7	32.0	18	19.5	15		
MATEI AIRFIELD	45.9	33	13	17 29	28.6	0.5	21.2	-1.5	30.4	16	19.7	1		
VANUABALAVU	24.9	19	8	18 20	28.4	0.6	21.2	-1.5	30.6	16	18.8	6		
LAKEBA (AWS)	5.5	2	3	3 1	28.4	-1.4	23.3	-0.8	31.2	18	19.2	5		
VUNISEA	67.7	49	13	33 16	27.9	1.1	21.6	0.3	31.5	14	19.0	4		
MATUKU	42.2	35	11	10 11	27.7	0.1	22.5	0.3	30.3	9	20.8	6		
ONO-I-LAU	16.5	16	14	4 13	27.1	1.1	U/S		31.0	19	U/S	U/S		
YAQARA AWS	0.0	0	0	0 1	30.1		22.2		33.5	19	24.5	21		
LEVUKA AWS	8.5		8	3 29	U/S		U/S		U/S		U/S			
KEIYASI AWS	1.5		2	1 16	U/S		U/S		U/S		U/S			
LOMAIVUNA AWS	U/S				U/S		U/S		U/S		U/S			
NADARIVATU AWS	3.5		6	1 1	U/S		U/S		U/S		U/S			
RKS LODONI AWS	73.5		13	21 29	31.3		23.3		34.3	14	25.9	18		
MOMI AWS	1.5		2	1 14	30.0		21.2		32.0	18	24.6	20		
SIGATOKA AWS	27.0		3	26 1	28.7		19.4		31.4	14	23.3	21		
VATUREKUKA AWS	64.5		2	64 29	28.9		19.5		31.2	13	22.9	21		
KOROLEVU AWS	56.5		12	13 16	28.3		19.9		31.7	14	22.3	20		
WAINIKORO AWS	59.5		3	56 29	29.6		20.6		31.7	18	24.7	2		
SAQANI AWS	44.5		7	27 29	29.8		23.3		31.3	17	26.0	18		
SEAQAQA AWS	20.5	8	3	15 29	31.1		19.2		33.1	17	23.7	21		
DOBUILEVU TB3	13.5	5	15	3 1										
NASINU TB3	66.0		12	26 29										
TAVUA TB3	1.0		1	1 16										

	TEMPERATURE(C)			HUMIDITY	WIND
	DRY	WET		RH%	VP
	MEAN	(AVERAGE AT 9AM)			KT
NADI AIRPORT	25.1	24.9	21.8	75	23.5 6.3
LAUCALA BAY	25.2	U/S	U/S	U/S	U/S
NACOCOLEVU RESEARC	23.9	25.2	22.5	79	24.0
ROTUMA ISLAND(AWS)	28.4				
VIWA ISLAND (AWS)	28.1				
YASAWA-I-RARA(AWS)	26.3				
UDU POINT WEATHER	25.5	27.0	24.0	78	26.7
NABOUWALU	25.4	26.3	23.5	79	25.6
LABASA AIRFIELD	24.9	25.8	23.1	80	24.8 12.2
SAVUSAVU AIRFIELD	25.4	26.0	23.1	78	25.1 8.0
KORONIVIA RESEARCH	24.9	25.3	23.4	86	24.1
NAUSORI AIRPORT	MISSING OBSERVATIONS				
NAVUA (AWS)	24.3				
MONASAVU HYDRO DAM	20.2	19.6	19.1	96	17.0
FSC LAUTOKA MILL	25.4	24.3	23.2	91	22.7
FSC RARAWAI MILL	U/S	26.2	23.8	82	25.4
FSC PENANG MILL	25.5	26.3	23.0	75	25.6
MATEI AIRFIELD	24.9	26.7	23.6	77	26.2 12.5
VANUABALAVU	24.8	26.3	23.2	77	25.6
LAKEBA (AWS)	25.9				
VUNISEA	24.7	25.2	22.6	80	24.0
MATUKU	25.1	25.7	22.7	78	24.7
ONO-I-LAU	U/S	25.5	22.1	75	24.4

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

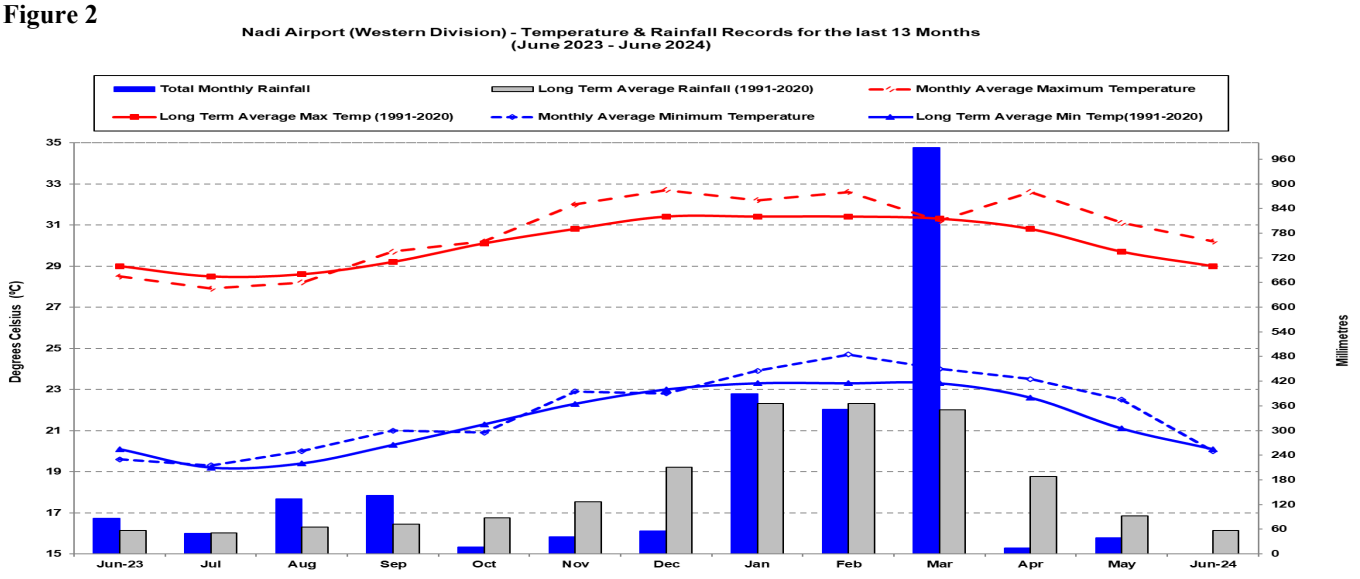


Figure 3

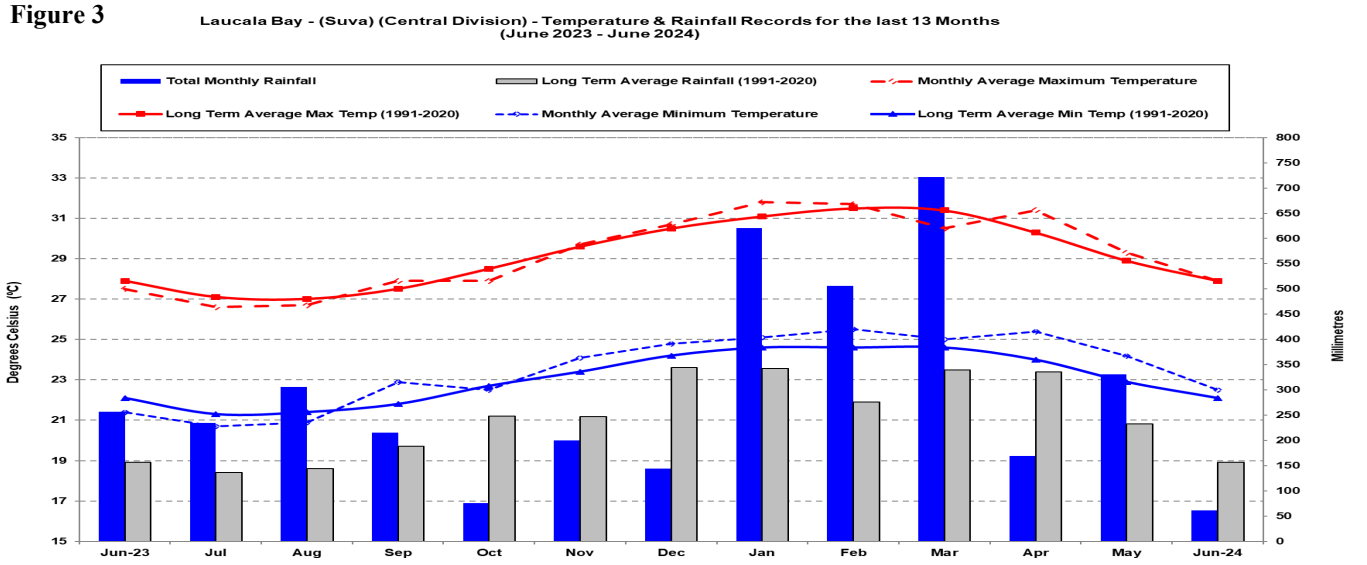


Figure 4

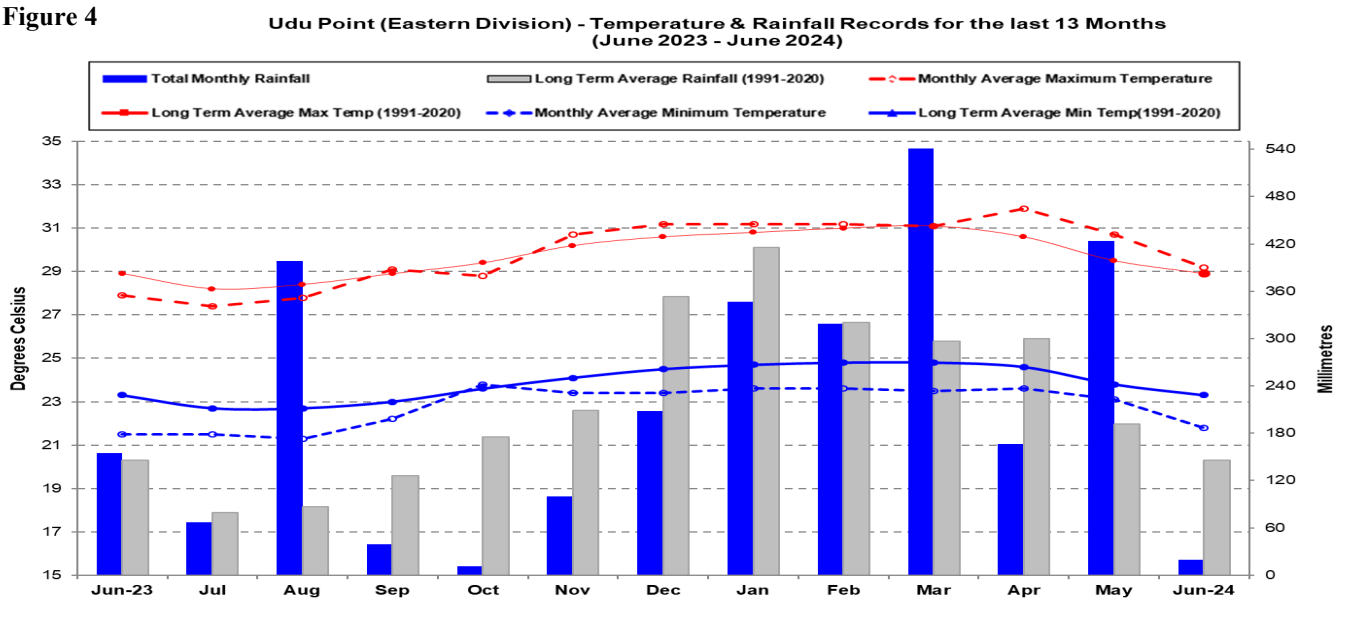
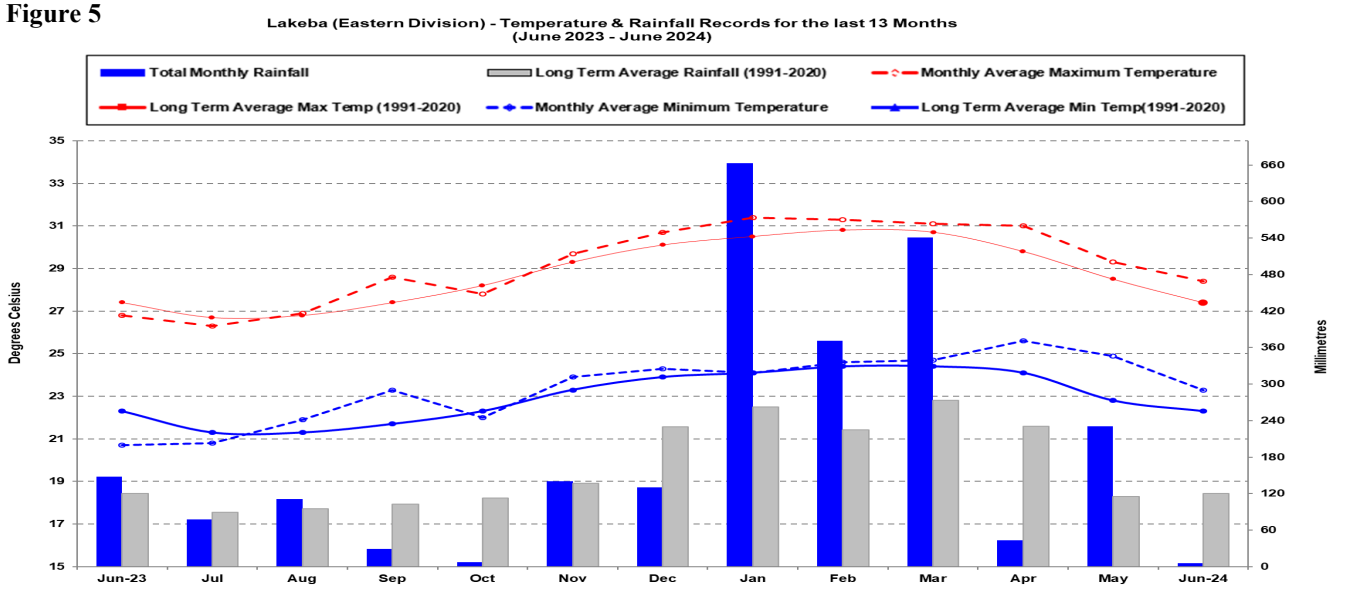


Figure 5



5. DAILY RAISED PAN EVAPORATION

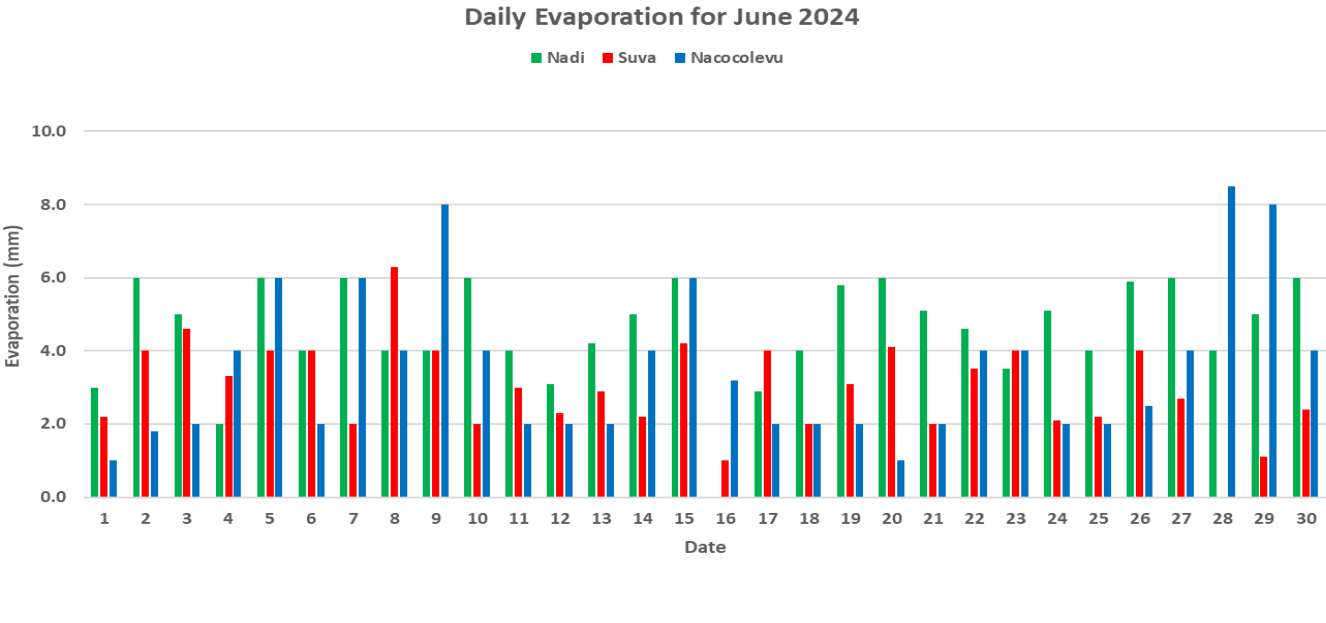


Figure 6: The total monthly raised pan evaporation at Nadi Airport, Laucala Bay (Suva) and Nacocolevu (Sigatoka) were 136.2mm, 89.2mm and 106.0mm, respectively. Nadi's highest daily evaporation was 6.0mm on the 2rd, 5th, 7th, 10th, 15th, 20th, 27th and 30th, respectively with Suva's highest daily evaporation of 6.3mm on the 8th, and Nacocolevu (Sigatoka) recorded its highest of 8.5mm on the 28th.

6. SOLAR RADIATION

The Nadi solar radiation instrument was unserviceable during the month of June 2024.

7. WIND SUMMARY

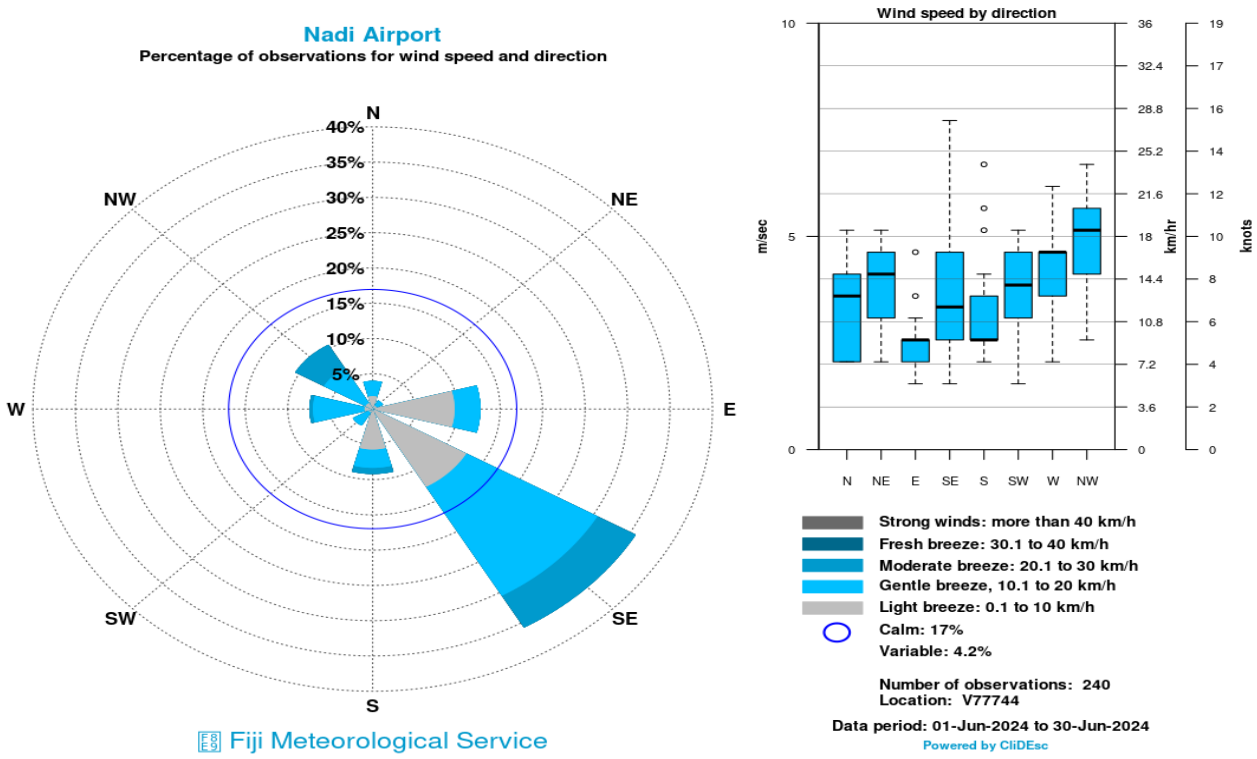


Figure 7a: Looking at Nadi's 3 hourly observations, southeasterly winds were most dominant during the month, followed by easterly and then northwesterly winds. Wind strength ranged from light to moderate breeze, while 17% observations accounted for calm winds.

Figure 7b: Nausori Airport wind rose diagram was unavailable during the compilation of this bulletin due to reported missing wind observations for the month of June 2024.

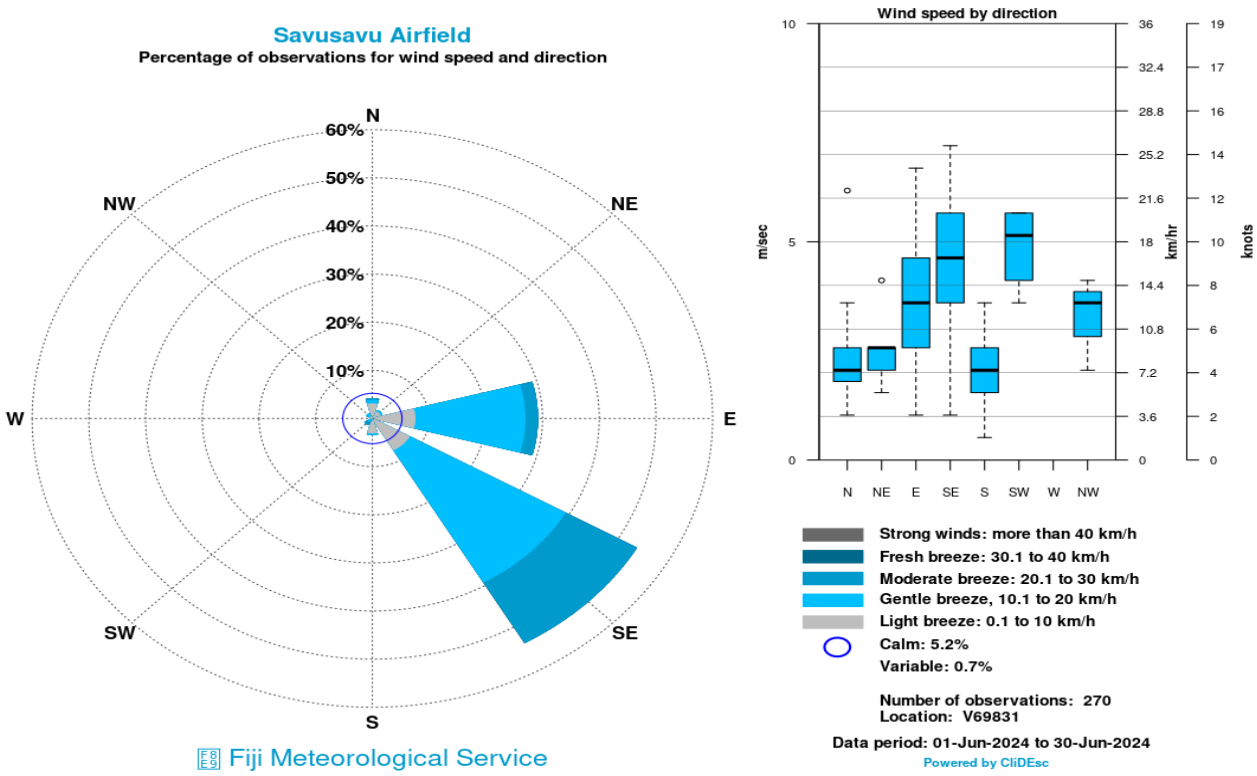


Figure 7c: For Savusavu Airfield's hourly observations (0800hrs to 1600hrs), southeasterly winds were most dominant during the month, followed by easterly and then northerly winds. Wind strength ranged from light to moderate breeze, with calm winds observed 5.2% of the time.

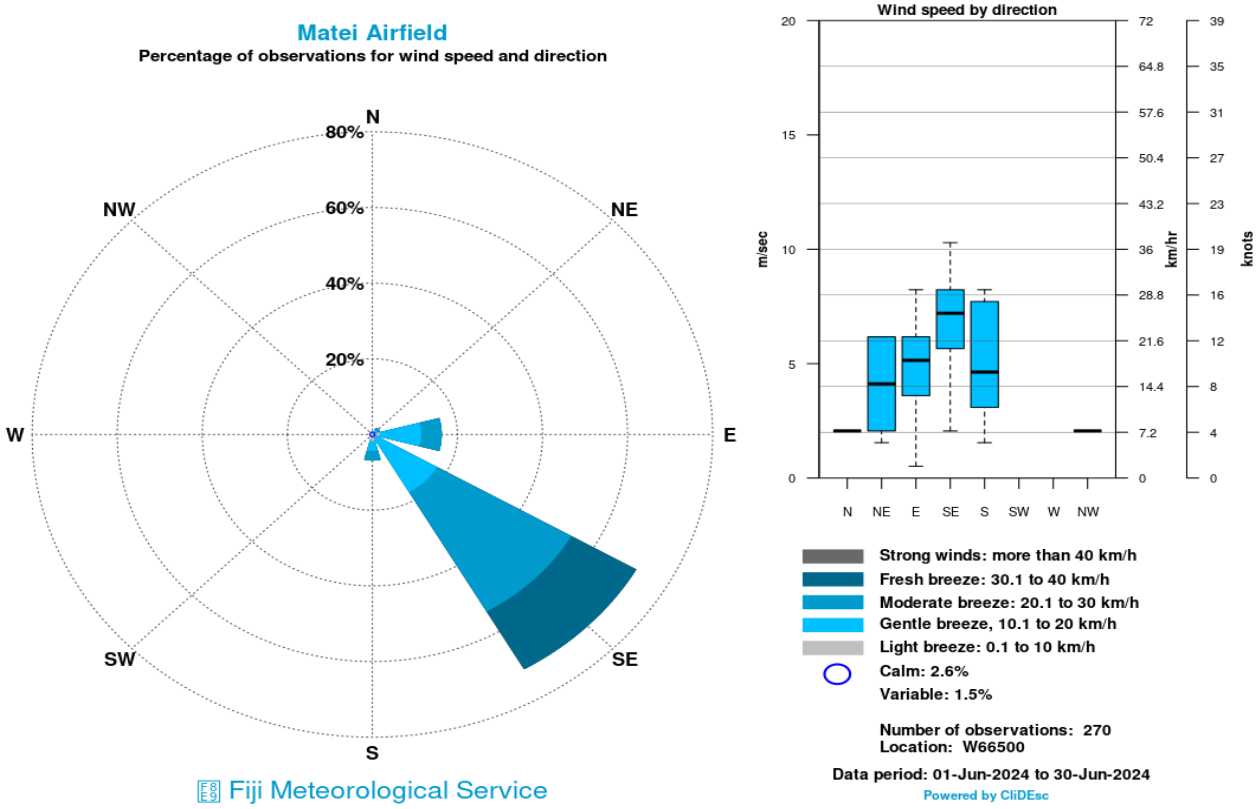


Figure 7d: For Matei Airfield's hourly wind observations (0800hrs to 1600hrs), southeasterly winds were dominant followed by easterly and then southerly winds. Wind strength ranged from light to fresh winds, with calm winds observed 2.6% of the time.

8. SEA SURFACE TEMPERATURE (SST)

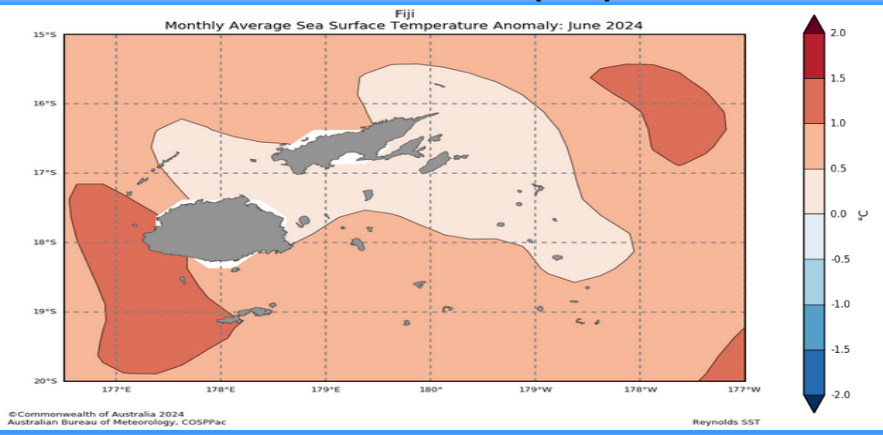


Figure 8:
Warmer than normal sea surface temperature anomalies were observed across most of the Fiji Waters, with anomalies 0.5-1.5°C.

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

9. CLOUD COVER

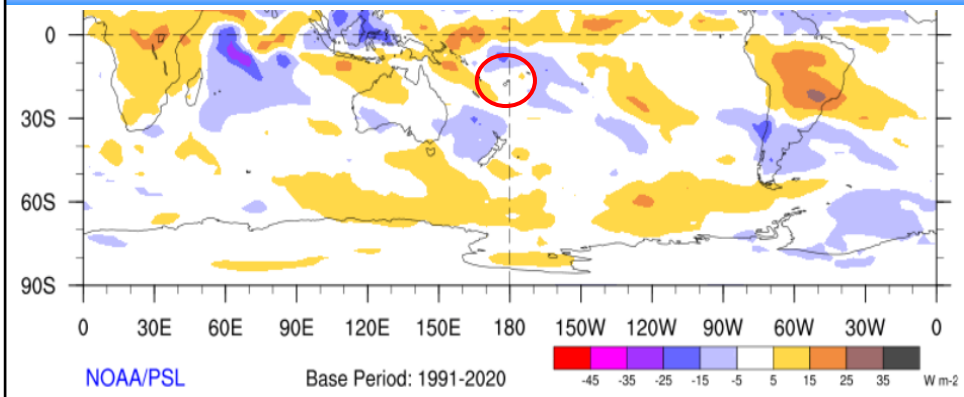


Figure 9:
Near normal cloud cover was present over the Fiji Group during June (*Fiji in red circle).*

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

10. SEA LEVEL

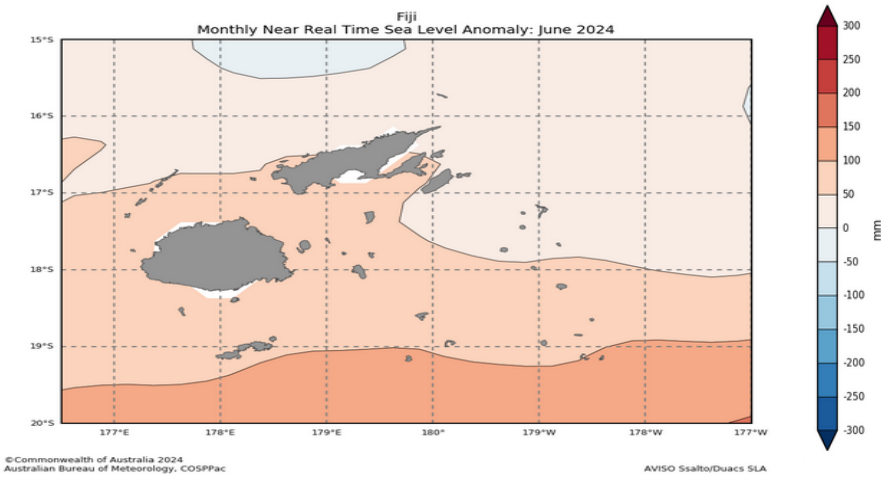


Figure 10:
Above normal sea level anomalies persisted across most of the Fiji Waters during June.

Source: https://oceanportal.spc.int/portal/app.html#sealevel

11. WIND ANOMALIES

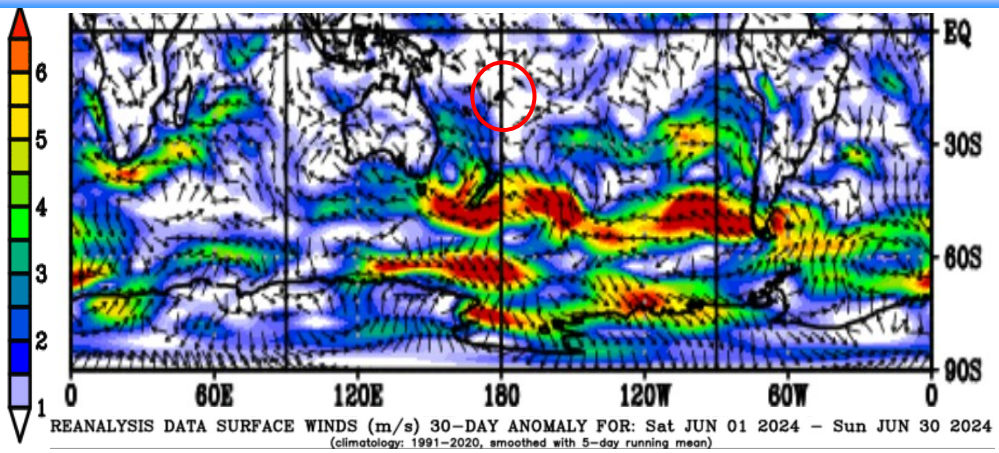


Figure 11:

Variable winds were observed over the Fiji Group during the month (base period: 1991-2020) (*Fiji in red circle*).

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

EXPLANATORY NOTES

Anomalies - denote the departure of an element (rainfall, temperature, sea surface temperature, cloud cover, sea level and wind) from its long-period average value for a particular location.

Trough - an elongated area of low atmospheric pressure that is associated with a cyclone, or low. Sometimes referred to as a 'trough of low pressure'.

Rain - Liquid precipitation in the form of water droplets. Rain falls from dense, continuous clouds, called 'stratiform' clouds.

Shower - precipitation from individual clouds, often characterised by the sudden beginning or ending. Showers fall from 'lumpy looking', 'cauliflower' clouds, called 'cumuloform' clouds.

Trade Winds - the trade winds are the east to southeasterly winds (in the Southern Hemisphere) which affect tropical and subtropical regions.

High pressure systems or anticyclones are atmospheric circulations that rotate anti-clockwise in the Southern Hemisphere. Anticyclones are areas of higher pressure and are generally associated with lighter winds and fine and settled conditions.

Low pressure systems or mid-latitude cyclones are atmospheric circulations that rotate clockwise in the Southern Hemisphere (anti-clockwise in the Northern Hemisphere). Cyclones are areas of lower pressure and generally associated with stronger winds, unsettled conditions, cloudiness and rainfall.

Sea Surface Temperature (SST) - the temperature of the water's surface. It is usually measured using buoys, ship data, and satellites.