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# Fiji Climate Summary

## March 2021



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## 1. IN BRIEF

The La Niña in the Pacific Ocean weakened to a weak event during March. While the South Pacific Convergence Zone was displaced to the south of its normal position during the month, the eastern extension was inactive.

Rainfall activity over the Fiji Group varied during March. Out of the 23 rainfall monitoring stations, 7 recorded *above average* rainfall, 10 *near average* and 6 *below average*.

A number of heavy rainfall events were recorded during the month. Consequently, two major episodes of flash flooding were recorded during the month, in particular in the Western and Central Divisions.

The first episode of flash flooding was on the 1<sup>st</sup> and 2<sup>nd</sup> when heavy rain associated with a trough of low-pressure affected the Western Division. A number of roads in Nadi and Lautoka were closed due to flash flooding on the 1<sup>st</sup>. Furthermore, major flash flooding occurred in Ba and in low-lying areas of Tavua on the 2<sup>nd</sup>. There were reports of flood inundation in some parts of Ba town on the 2<sup>nd</sup>. The highest 24-hour rainfall during this rainfall episode was recorded at Rarawai Mill (Ba) with 123mm on the 1<sup>st</sup>.

The second episode of flash flooding occurred on the 25<sup>th</sup> when another active trough of low pressure resulted in rain and squally thunderstorms over the Fiji Group. Localized heavy rainfall led to surface flooding in many parts of the Western and Central Divisions, especially at Laucala Bay, Suva. Significant rainfall were recorded at Laucala Bay and Lakeba stations with 126mm and 124mm, respectively on the 25<sup>th</sup>.

The air temperatures on average, , that is, both day-time and night-time, were cooler than *normal* over most parts of the country during the month. However, an episode of comparatively warm condition was experienced during the 1st and last weeks of the month. The highest daily day-time air temperature for the month was registered at Korolevu with 35.2°C on the 6<sup>th</sup>, followed by Keiyasi with 35.0°C on the 8<sup>th</sup>, Koronivia and Saqani both with 34.5°C on the 6<sup>th</sup>.

In contrast, an episode of cool nights was experienced from the 16<sup>th</sup> to the 23<sup>rd</sup>. The lowest daily minimum air temperature for the month was recorded at Monasavu with 14.6°C on the 22<sup>nd</sup>, followed by Nadarivatu with 15.8°C on the 17<sup>th</sup> and Lomaivuna with 18.0°C on the 20<sup>th</sup>.

## 2. WEATHER PATTERNS

The weather in March was dominated by a series of active troughs of low pressure systems plus the moist easterly wind flow.

An active trough of low pressure affected the Fiji Group with rain and thunderstorms on the first two days of the month. On the 3<sup>rd</sup>, the trough moved to the southern parts of the group and affected the southern parts with showers. The moist northerly winds prevailed thereafter till the 7<sup>th</sup> with brief showers over the northern and interior parts of the main islands and fine weather elsewhere.

A trough of low pressure affected Fiji from the southwest on the 8<sup>th</sup> with rain and thunderstorms, which propagated north on the 9<sup>th</sup>. As the trough remained to the north of Fiji till the 13<sup>th</sup>, the eastern parts of Vanua Levu was affected with occasional rain. Brief showers was experienced over the eastern and interior of the main islands with fine weather apart from afternoon or evening showers elsewhere with the prevailing southeast winds.

On the 14<sup>th</sup>, the trough moved south over Fiji affecting the group with rain and thunderstorms over most places till the 15<sup>th</sup>.

A southeast wind flow prevailed on the 16<sup>th</sup> till the 22<sup>nd</sup> with some showers over the eastern and interior of the main islands. Fine weather apart from isolated afternoon or evening showers occurred elsewhere.

On the 23<sup>rd</sup>, a trough of low pressure affected the group with occasional rain and squally thunderstorms from the west before it exited the group to the south later on the 25<sup>th</sup>.

An easterly wind flow prevailed on the 26<sup>th</sup> till 28<sup>th</sup> with some showers over the eastern and interior of the main islands with isolated afternoon or evening showers elsewhere. From the 29<sup>th</sup> till the 31<sup>st</sup>, a trough of low pressure affected the eastern parts of Fiji with clouds and showers over the Lau and Lomaiviti group including the interior and eastern parts of the main islands. Fine weather apart from isolated afternoon or evening showers and thunderstorms prevailed elsewhere.

Rotuma experienced fine weather apart from occasional clouds and showers from a series of troughs of low pressure systems.

### 3. RAINFALL

Rainfall for March varied across the country. Out of the 23 rainfall monitoring stations, 7 recorded *above average* rainfall, 10 *near average* and 6 *below average* (Table 2, Figures 1-5).

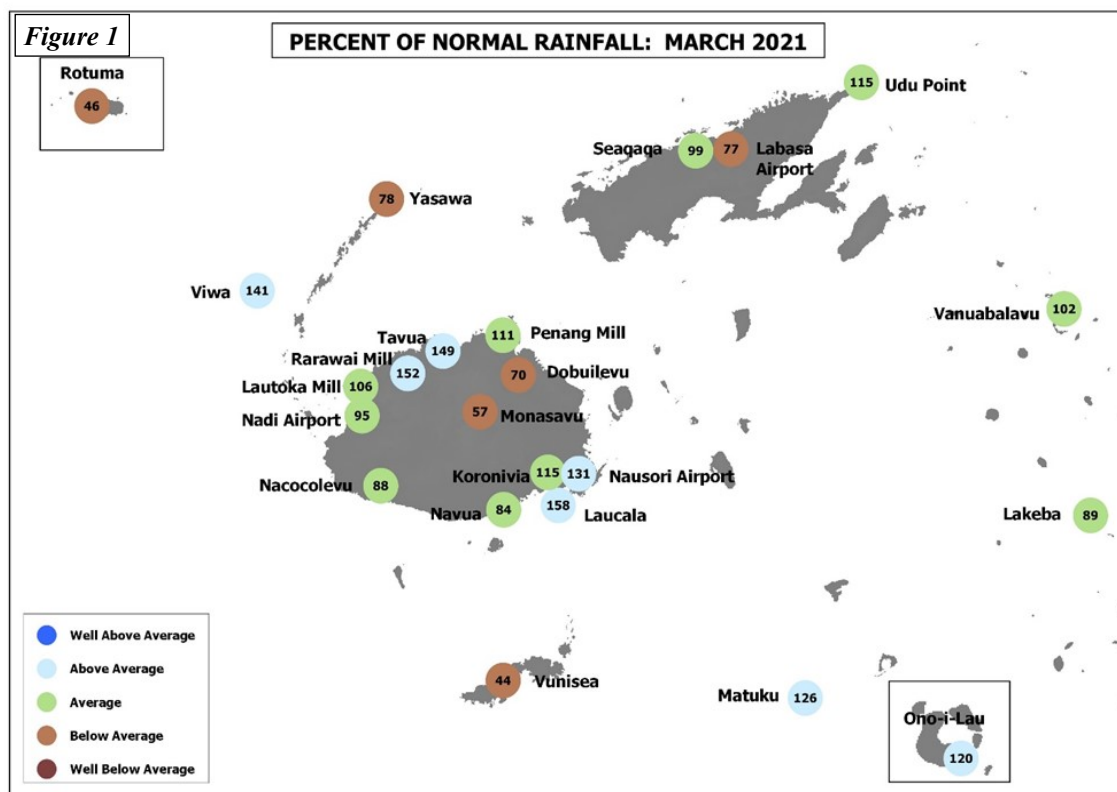
The wettest station during the month was Nadarivatu with 721mm of total monthly rainfall, followed by Laucala Bay (Suva) with 546mm, Rarawai Mill (Ba) with 537mm and Nasinu with 519mm. On the other hand, the lowest total monthly rainfall was recorded at Ellington (Ra) with 42mm, followed by Saqani with 68mm, Wainikoro with 102mm and Vunisea (Kadavu) with 136mm.

A number of heavy rainfall events were recorded during the month. The highest 24-hour rainfall for the month was registered at Nadarivatu with 197mm on the 1<sup>st</sup>, followed by Laucala Bay (Suva) with 126mm on the 25<sup>th</sup>, Lakeba with 124mm on the 25<sup>th</sup>, Rarawai Mill (Ba) with 123mm on the 1<sup>st</sup>, Tavua with 121mm on the 24<sup>th</sup> and Viwa with 106mm on the 14<sup>th</sup>.

Koronivia, Vanuabalavu and Ono-i-Lau all recorded the highest number of rain days (rainfall  $\geq 0.1$ mm) during the month with 25 days, followed by Nadarivatu with 24, Monasavu with 23, and Nausori Airport, Navua (Tokotoko)

and Ellington (Ra) all with 22. On the other hand, Saqani recorded the least number of rain days with 12 days, followed by Momi with 13, Korolevu, Yasawai-i-Rara and Viwa with all 14, and Wainikoro, Yaqara, Matuku and Lakeba with all 15.

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  $\geq 0.1$ 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

Generally *normal* or *below normal* maximum air temperatures were observed over the Fiji Group during March. Out of the 19 climate stations, 11 recorded anomalies  $\leq -0.5^\circ$ , 7 within  $\pm 0.5^\circ\text{C}$ , while Lautoka Mill was the lone station with anomaly  $\geq +0.5^\circ\text{C}$ .

Warmest days on average during the month was at Seaqqa with  $32.1^\circ\text{C}$ , followed by Keiyasi with  $31.9^\circ\text{C}$ , Lautoka Mill and Yaqara both with  $31.8^\circ\text{C}$ , and Levuka and Korolevu both with  $31.4^\circ\text{C}$ . On the other hand, Monasavu recorded the coolest days on average with  $24.9^\circ\text{C}$ , followed by Nadarivatu with  $25.2^\circ\text{C}$ , Ellington (Ra) with  $28.7^\circ\text{C}$  and Ono-i-Lau with  $29.4^\circ\text{C}$ .

The highest daily day-time air temperature for the month was registered at Korolevu with  $35.2^\circ\text{C}$  on the 6<sup>th</sup>, followed by Keiyasi with  $35.0^\circ\text{C}$  on the 8<sup>th</sup>, Koronivia and Saqani both with  $34.5^\circ\text{C}$  on the 6<sup>th</sup>, and Lomaivuna with  $34.4^\circ\text{C}$  on the 7<sup>th</sup>. In contrast, the coolest daily maximum air temperature for March was at Monasavu with  $20.0^\circ\text{C}$  on the 9<sup>th</sup>, followed by Nadarivatu with  $21.7^\circ\text{C}$  on the 1<sup>st</sup>, Lomaivuna with  $23.7^\circ\text{C}$  on the 24<sup>th</sup> and Keiyasi with  $25.4^\circ\text{C}$  on the 24<sup>th</sup>.

Koronivia registered a record breaking highest daily maximum air temperature for March during the month with the observations at the station beginning in 1950 (Table 1).

### B. Minimum Night-time Air Temperatures

Generally *below normal* minimum air temperatures were recorded over most parts of the Fiji Group during the month. Out of the 19 stations, 14 registered anomalies  $\leq -0.5^\circ$  and 5 within  $\pm 0.5^\circ\text{C}$ .

The coolest site on average during March was Monasavu with  $18.7^\circ\text{C}$ , followed by Nadarivatu and Lomaivuna with both  $20.8^\circ\text{C}$ , Keiyasi with  $21.3^\circ\text{C}$  and Rarawai Mill (Ba) with  $21.5^\circ\text{C}$ . In contrast, the warmest mean monthly minimum air temperature was observed at Levuka with  $24.9^\circ\text{C}$ , followed by Rotuma with  $24.7^\circ\text{C}$ , Ono-i-Lau with  $24.6^\circ\text{C}$  and Viwa with  $24.4^\circ\text{C}$ .

An episode of cool nights was experienced from the 16<sup>th</sup> to the 23<sup>rd</sup>. The lowest daily minimum air temperature for the month was recorded at Monasavu with  $14.6^\circ\text{C}$  on the 22<sup>nd</sup>, followed by Nadarivatu with  $15.8^\circ\text{C}$  on the 17<sup>th</sup>, Lomaivuna with  $18.0^\circ\text{C}$  on the 20<sup>th</sup> and Keiyasi with  $18.2^\circ\text{C}$  on the 17<sup>th</sup>. On the other hand, the warmest daily minimum air temperature was recorded at Momi with  $27.6^\circ\text{C}$  on the 7<sup>th</sup>, followed by Levuka with  $27.1^\circ\text{C}$  on the 7<sup>th</sup>, Seaqqa with  $26.9^\circ\text{C}$  on the 2<sup>nd</sup> and Viwa with  $26.8^\circ\text{C}$  on the 31<sup>st</sup>.

Nadi Airport registered a record breaking highest daily minimum air temperature for March during the month with the observations at the station beginning in 1942 (Table 1).

**TABLE 1. CLIMATE RECORDS ESTABLISHED IN MARCH 2021**

<u>Element</u>	<u>Station</u>	<u>Observed (record)</u>	<u>On</u>	<u>Rank</u>	<u>Previous (record)</u>	<u>Year</u>	<u>Records Began</u>
Daily Maximum Temperature	Koronivia	$34.5^\circ\text{C}$	6 <sup>th</sup>	New High	$34.1^\circ\text{C}$	1997	1950
Daily Minimum Temperature	Nadi Airport	$26.6^\circ\text{C}$	6 <sup>th</sup>	New High	$26.5^\circ\text{C}$	1992	1942

*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 MARCH 2021**

	RAINFALL				AIR TEMPERATURES								SUNSHINE		
	TOTAL MM	RAIN MAX.		FALL MM ON	AVERAGE DAILY				EXTREME				TOTAL HRS	*	
		* DAYS			MAX. #	MIN. #	MAX. C	MIN. C	ON C	ON C					
		+	MM ON								C	C			C
NADI AIRPORT	309	95	16	74	24	30.5	-0.8	23.1	-0.0	32.7	31	21.0	17	195	100
SUVA/LAUCALA BAY	546	158	21	126	25	30.7	-0.6	23.6	-0.6	34.0	5	21.5	17	142	79
NACOCOLEVU	210	88	18	38	14	31.1	-0.5	21.6	-1.1	33.4	30	19.3	17	162	97
ROTUMA	157	46	19	25	20	30.9	-0.0	24.7	-0.1	31.9	28	22.3	1	194	114
VIWA	324	141	14	106	14	31.1	-0.3	24.4	-0.7	32.8	7	22.0	17		
UDU POINT	345	115	21	84	13	30.2	-0.8	23.5	-1.1	31.2	29	21.4	22		
SAVUSAVU AIRFIELD	STATION TEMPORARILY CLOSED														
LABASA AIRFIELD	260	77	17	51	12										
NABOUWALU	STATION TEMPORARILY CLOSED														
KORONIVIA	424	115	25	74	14	30.2	-0.6	22.0	-1.4	34.5	6	19.6	20		
NAUSORI AIRPORT	467	131	22	95	8	30.3	-0.5	22.5	-0.9	33.4	5	20.0	17		
NAVUA/TOKOTOKO	323	84	22	72	8	30.9	0.0	21.9	-0.3	34.0	5	19.2	22		
MONASAVU	341	57	23	71	8	24.9	-0.8	18.7	-0.7	28.2	8	14.6	22		
LAUTOKA AES	308	106	17	65	1	31.8	0.5	23.2	-0.8	34.0	30	22.0	3		
BA/RARAWAI MILL	537	152	18	123	1	31.0	-1.1	21.5	-1.0	33.2	30	19.0	20		
PENANG MILL	392	111	16	67	1	30.5	-0.5	23.0	-0.7	32.5	8	19.9	23		
MATEI AIRFIELD	STATION TEMPORARILY CLOSED														
VANUABALAVU	225	102	25	76	9	30.2	-0.4	23.9	-1.1	32.0	8	21.9	17		
LAKEBA	245	89	15	124	25	30.7	0.2	23.4	-0.8	32.7	4	20.4	18		
YASAWA	186	78	14	45	14	31.0	-0.1	23.1	-1.5	33.2	8	20.6	16		
VUNISEA	136	44	17	31	2	29.7	-0.7	23.5	-0.2	31.7	4	20.9	16		
MATUKU	282	126	15	80	1	29.6	-0.9	23.8	-0.8	31.4	1	21.1	17		
ONO-I-LAU	273	120	25	76	1	29.4	-0.4	24.6	0.1	31.0	31	22.0	16		
YAQARA AWS	402		15	98	1	31.8		23.6		33.9	30	21.4	21		
LEVUKA AWS	379		18	77	8	31.4		24.9		34.3	23	22.8	3		
KEIYASI AWS	336		18	71	24	31.9		21.3		35.0	8	18.2	17		
LOMAIVUNA AWS	349		19	55	8	31.0		20.8		34.4	7	18.0	20		
NADARIVATU AWS	721		24	197	1	25.2		20.8		28.2	27	15.8	17		
RKS LODONI AWS	252		21	51	8	30.1		22.3		33.2	7	20.1	17		
MOMI AWS	343		13	66	24	U/S		24.0		U/S		21.8	17		
SIGATOKA AWS	221		17	45	15	30.4		21.9		33.1	6	19.4	17		
ELLINGTON (RA) AWS	42		22	13	28	28.7		23.2		30.2	7	21.5	26		
WAINIKORO AWS	102		15	21	2	31.2		22.9		32.9	17	20.6	17		
SAQANI AWS	68	12		10	21	31.2		24.3		34.5	6	23.3	22		
VATUREKUKA AWS	229		18	34	24	30.1		21.9		31.4	7	19.8	19		
SEAQAQA AWS	364	99	20	102	12	32.1		23.5		34.0	30	20.2	19		
KOROLEVU AWS	262		14	75	23	31.4		22.1		35.2	6	19.9	22		
KORO ISLAND AWS	U/S					U/S		U/S							
KUBULAU AWS	U/S					U/S		U/S							
DOBUILEVU TB3	274	70	20	51	14										
NASINU TB3	519		21	96	8										
TAVUA TB3	449	149	17	121	24										

	TEMPERATURE( C)		HUMIDITY		WIND KT	SUN RAD %OF MJ/ POS SQ.M
	DRY	WET	RH%	VP		
	MEAN (AVERAGE AT 9AM)					
NADI AIRPORT	26.8	27.6	24.4	77	28.1	6.2 50 22.4
SUVA/LAUCALA BAY	27.2	27.4	24.6	79	28.8	39 19\$
NACOCOLEVU	26.4	27.5	24.9	80	29.4	46 21\$
ROTUMA	27.8	28.5	26.4	84	32.9	51 21\$
VIWA	27.7	28.5	25.6	79	30.5	
UDU POINT	26.9	28.1	25.5	80	30.5	
SAVUSAVU AIRFIELD	OBSERVATIONS TEMPORARILY CLOSED					
LABASA AIRFIELD	26.4					
NABOUWALU	STATION TEMPORARILY CLOSED					
KORONIVIA	26.1	27.3	24.8	82	29.4	
NAUSORI AIRPORT	26.4	26.8	24.6	83	29.2	4.3
NAVUA/TOKOTOKO	26.2	27.2	25.3	86	30.8	
MONASAVU	21.8	21.9	20.4	87	22.8	
LAUTOKA AES	27.5	28.8	25.3	75	29.4	
BA/RARAWAI MILL	26.2	27.0	24.5	81	28.8	
PENANG MILL	26.8	27.4	24.8	80	29.2	
MATEI AIRFIELD	OBSERVATIONS TEMPORARILY CLOSED					
VANUABALAVU	27.1	27.9	25.2	80	29.9	
LAKEBA	27.1	28.4	25.4	78	30.1	
YASAWA	27.0	28.0	25.7	83	31.2	
VUNISEA	26.6	27.4	24.8	80	29.2	
MATUKU	26.7	27.4	25.2	83	30.3	
ONO-I-LAU	27.0	27.6	25.2	82	30.4	

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

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

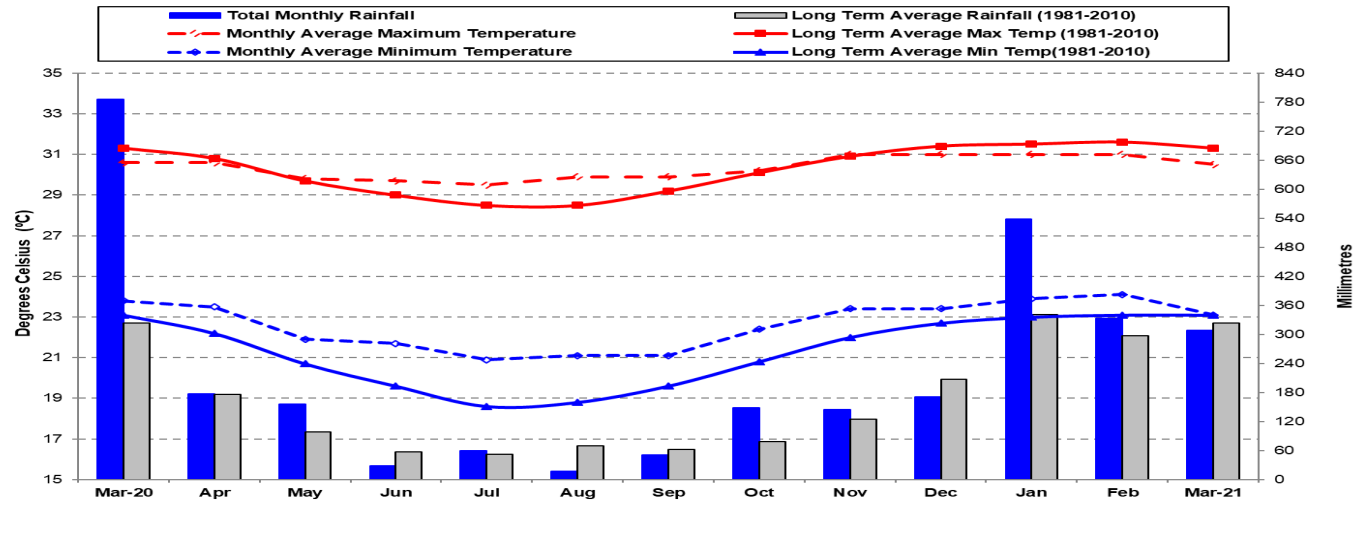


Figure 3

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

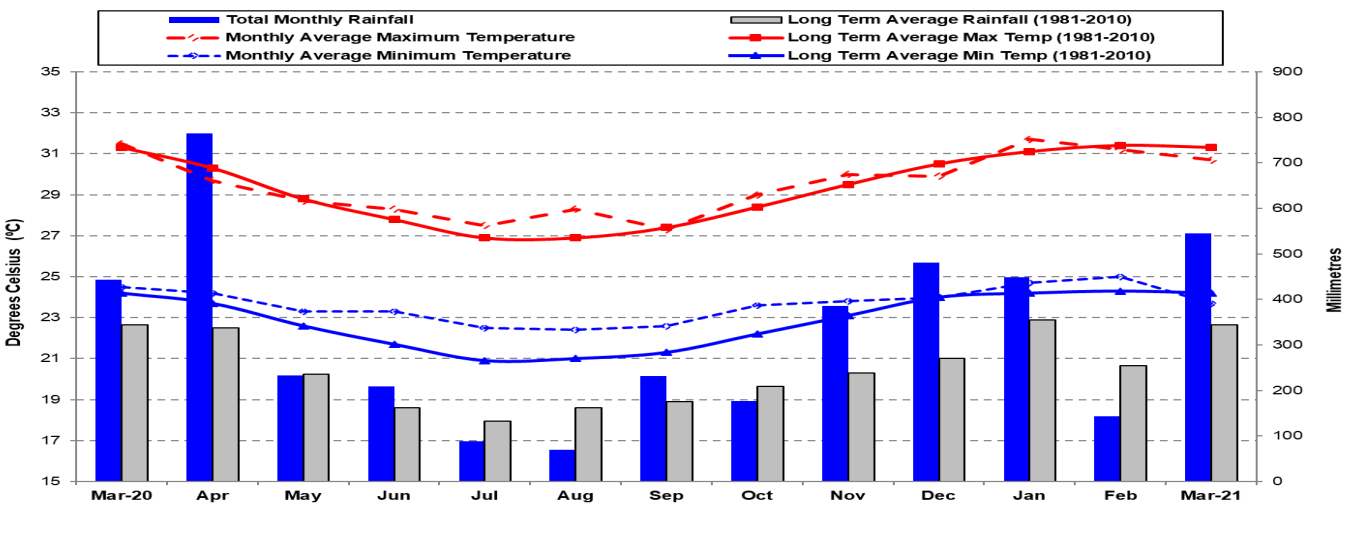


Figure 4

Udu Point - Temperature & Rainfall for the last 13 Months (March, 2020 - March, 2021)

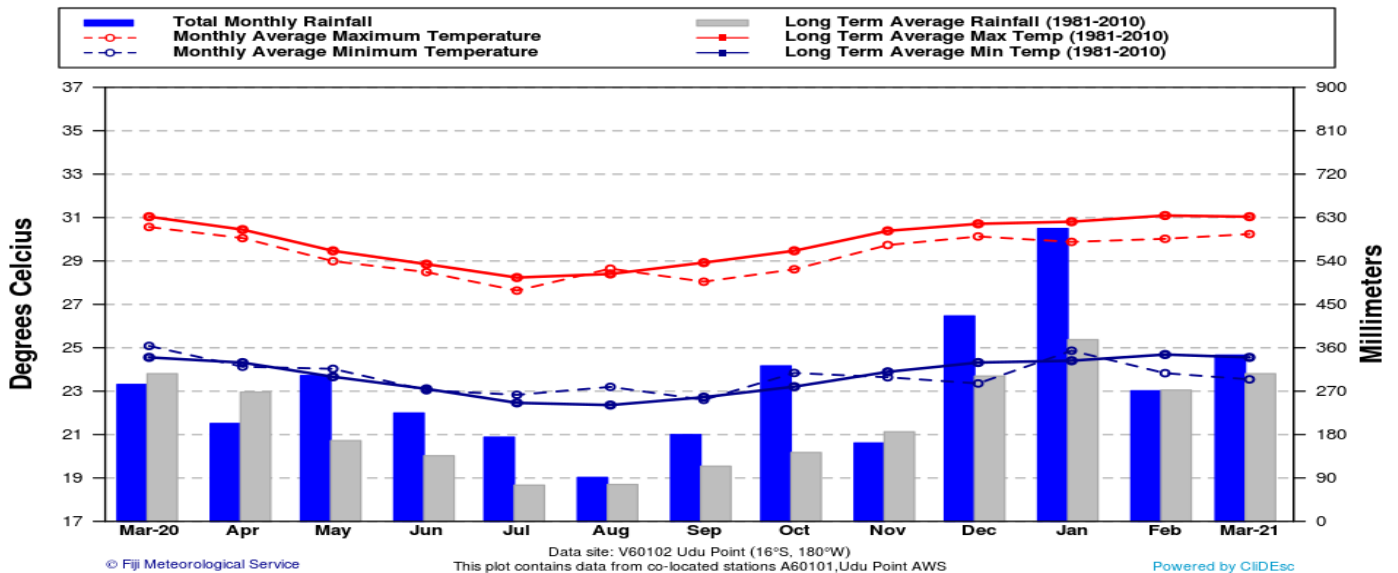
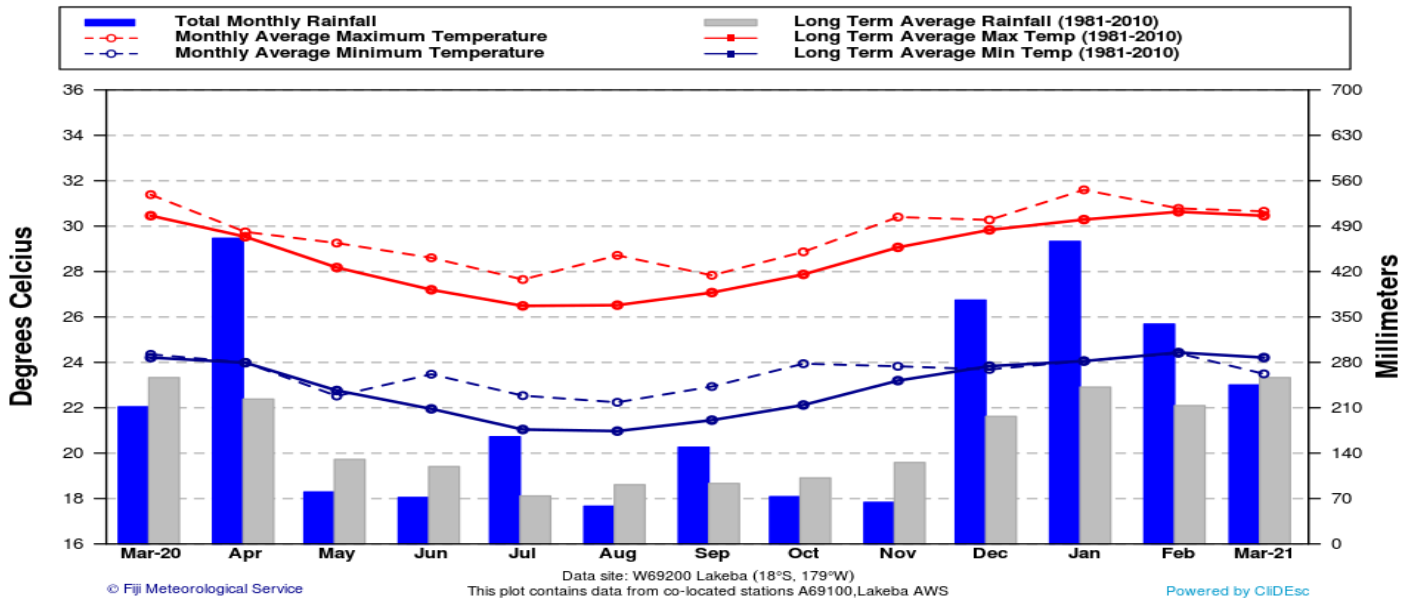


Figure 5

Lakeba - Temperature & Rainfall for the last 13 Months  
(March, 2020 - March, 2021)



5. DAILY RAISED PAN EVAPORATION

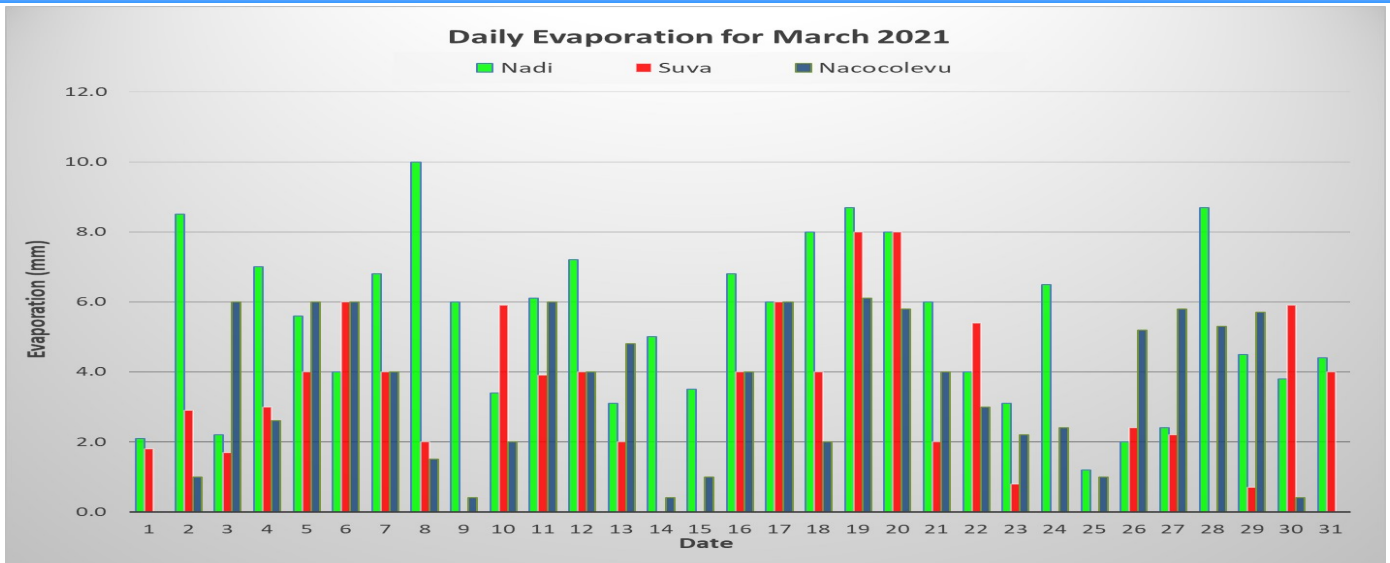


Figure 6: The total monthly evaporation at Nadi Airport, Nacocolevu (Sigatoka) and Laucala Bay (Suva) were 165mm, 105mm and 95mm, respectively. Nadi’s highest daily evaporation was 10.0mm on the 8<sup>th</sup>, with Suva’s highest daily evaporation of 8.0mm on the 19<sup>th</sup> and as well as on the 20<sup>th</sup> and Nacocolevu (Sigatoka) recorded its highest of 6.1mm on the 19<sup>th</sup>.

6. SOLAR RADIATION

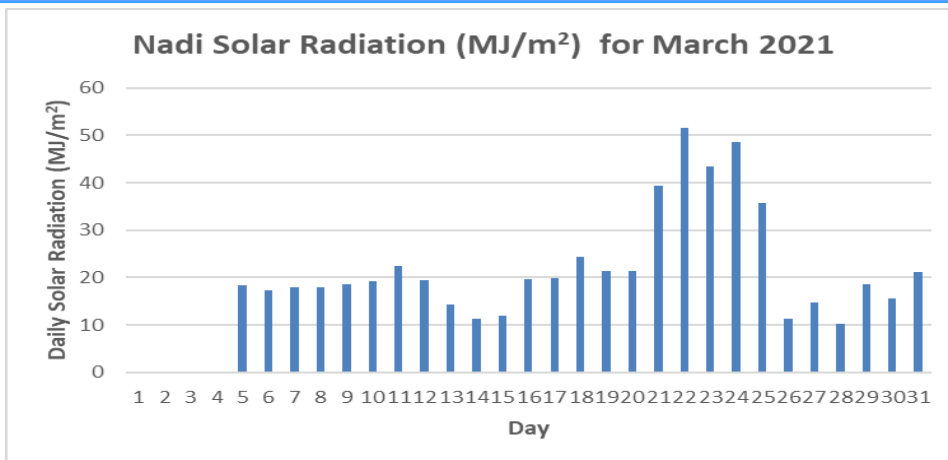


Figure 7:

The mean daily solar radiation at Nadi Airport during the month was 22.4MJ/m<sup>2</sup> compared to 18.7MJ/m<sup>2</sup> over 30 year average (1981 -2010).

(The Nadi solar radiation instrument was unserviceable from the 1<sup>st</sup> to the 4<sup>th</sup>)

7. WIND SUMMARY

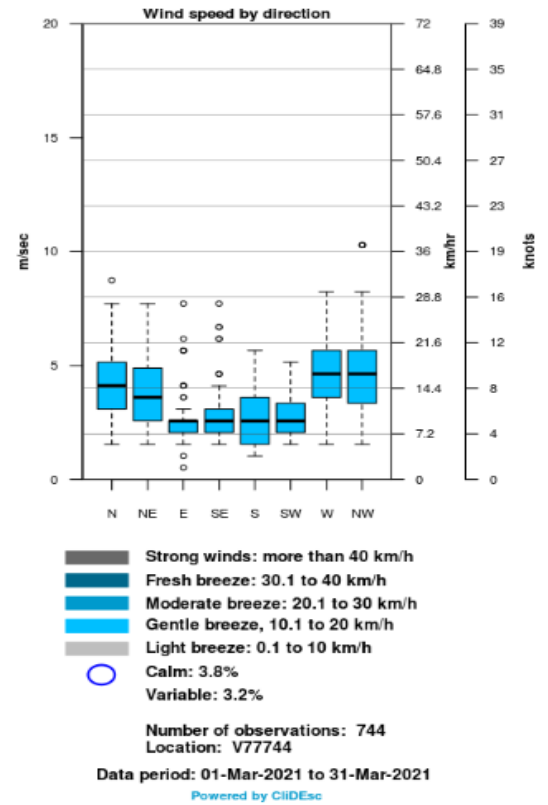
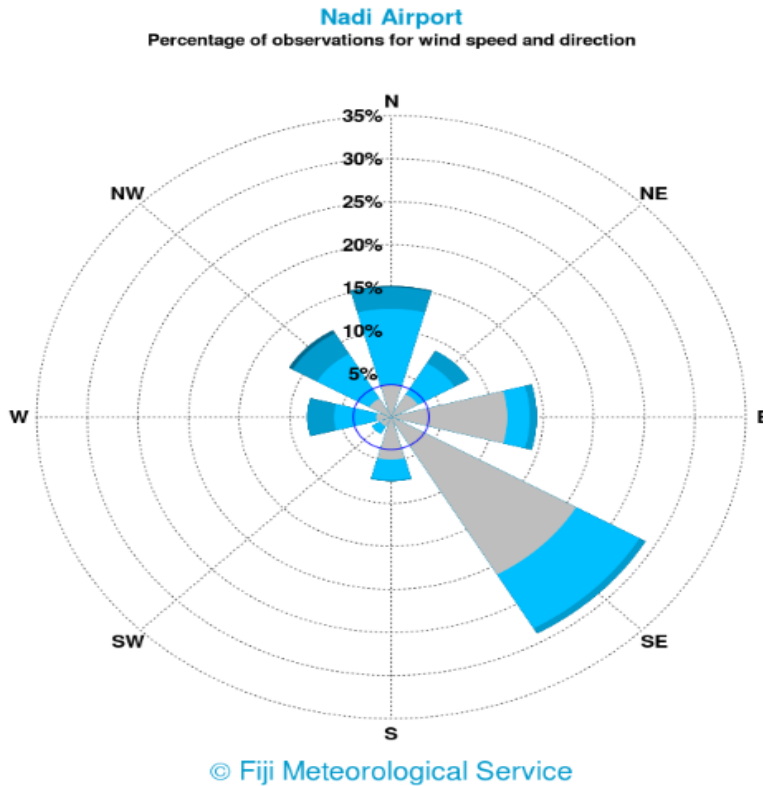


Figure 8a: Southeasterly winds were dominant at Nadi Airport during the month, followed by northerly, then easterly. Wind strength ranged from light to fresh during this period.

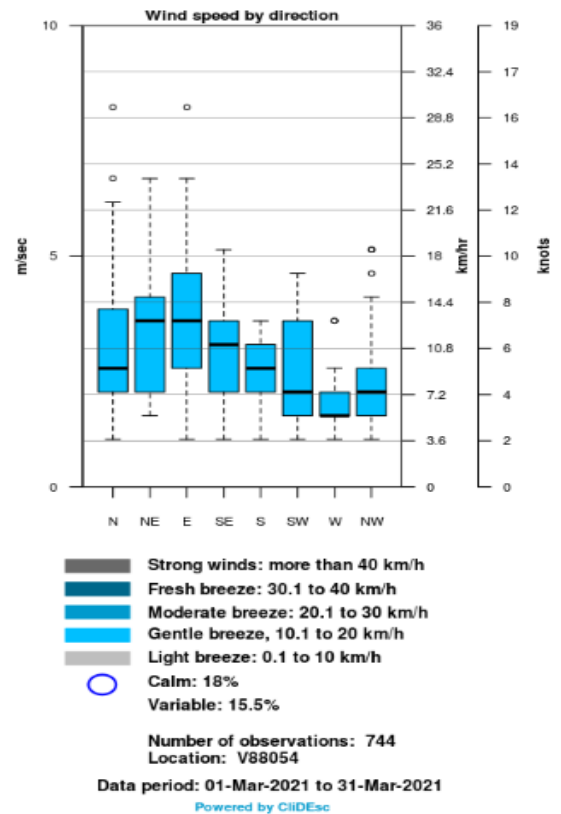
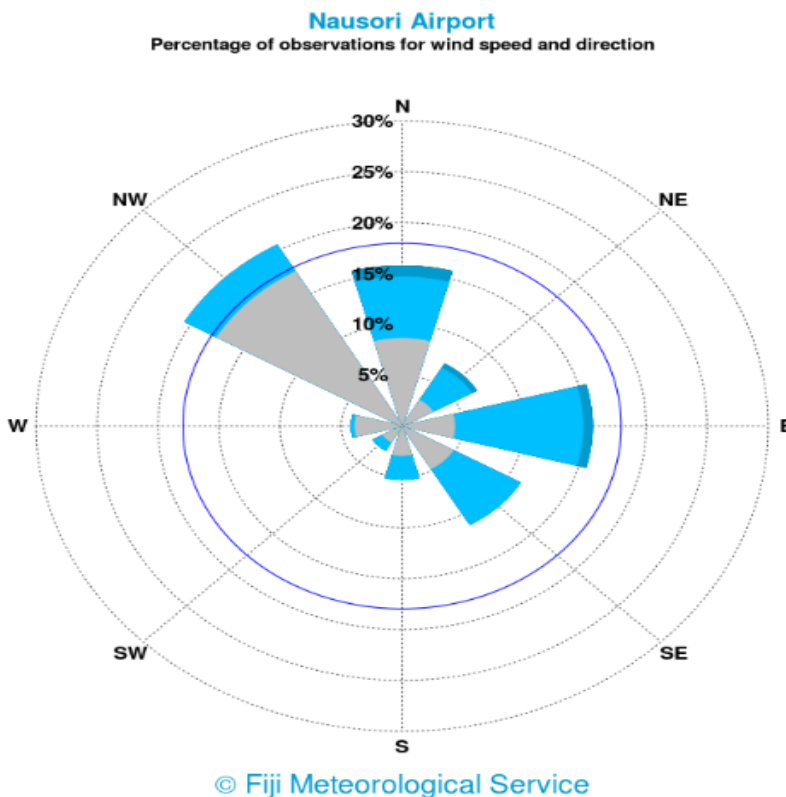
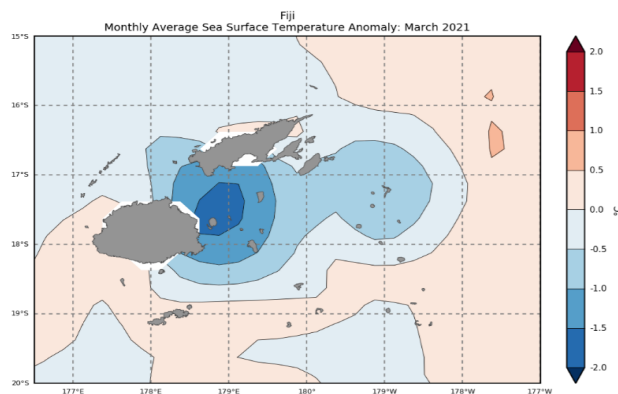


Figure 8b: Northwesterly winds were dominant at Nausori Airport, followed by easterly and then northerly. Wind strength ranged from light to moderate during this period.

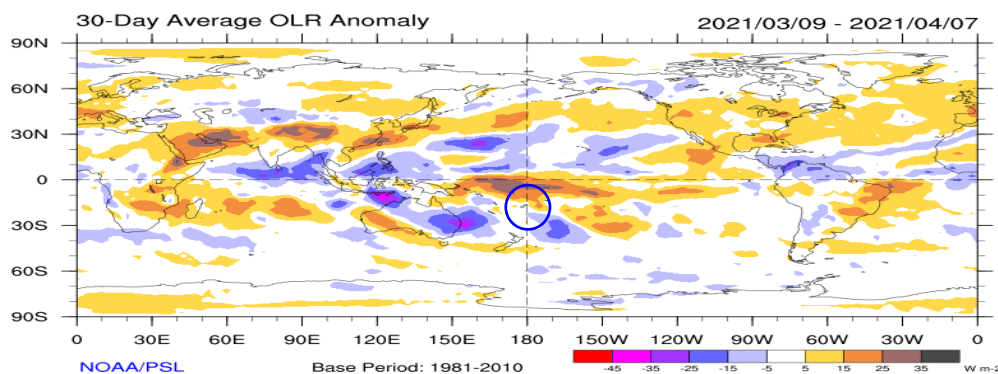
## 8. SEA SURFACE TEMPERATURE (SST)



**Figure 9:** Below normal sea surface temperatures were recorded in between Viti Levu and Vanua Levu, Koro sea, and northern Lau Group.

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

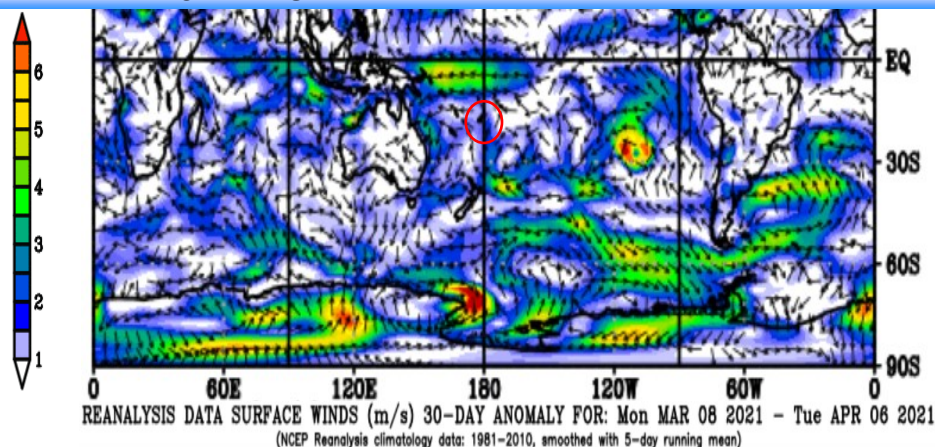
## 9. CLOUD COVER



**Figure 10:** Near normal cloud cover was present over the Fiji Group during the month, with below normal cloud over Rotuma (Fiji in blue circle).

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

## 10. WIND ANOMALIES



**Figure 11:** Southerly wind anomalies of up to 2m/s were recorded in the Fiji region 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](https://www.esrl.noaa.gov/psd/map/images/rnl/sfcwnd_30b.rnl.html)

## 11. FLASH FLOOD

Two major episodes of flash flooding were recorded over the country during the month, in particular in the Western and Central Divisions.

The first episode of flash flooding was on the 1<sup>st</sup> and 2<sup>nd</sup> when heavy rain associated with a trough of low-pressure affected the Western Division. A number of roads in Nadi and Lautoka were closed due to flash flooding on the 1<sup>st</sup>. Furthermore, major flash flood occurred in Ba and in low-lying areas of Tavua. There were reports of flood inundation in some parts of Ba town on the 2<sup>nd</sup>. The highest 24-hour rainfall was recorded at Rarawai Mill (Ba) with 123mm on the 1<sup>st</sup>.

The second episode of flash flooding occurred on the 25<sup>th</sup> when another active trough of low pressure resulted in rain and squally thunderstorms over the Fiji Group. Localized heavy rainfall led to surface flooding in many parts of the Western and Central Divisions, especially at Laucala Bay, Suva. Significant rainfall were recorded at Laucala Bay and Lakeba stations with 126mm and 124mm, respectively on the 25<sup>th</sup>.



Figure 12: Flooded Ba market on the 2<sup>nd</sup>.  
Picture Source: Fiji Broadcasting Corporation



Figure 13: Surface flooding around Laucala Bay in Suva on the 25<sup>th</sup>.  
Picture source: Fiji Broadcasting Corporation