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# Fiji Islands Climate Summary

## March 2007

### FIJI METEOROLOGICAL SERVICE

#### IN BRIEF

The abrupt ending of *El Niño* event in February saw rapid establishment of wet weather pattern with prolonged and torrential rain in March resulting in *average to above average* rainfall.

Two tropical depressions affected the country that brought strong and gusty winds to the Northern and Western Divisions. Accompanying torrential rain with the system resulted in flash floods in parts of the two divisions. Four lives were lost during flash flooding incidences, three in Lasasa and one in Tavua.

Surrounding areas and towns in Labasa, Rakiraki and Nadi also experienced flooding during the month with minor damages. Major impacts seems to be on the roads which continued to deteriorate from persistent downpour.

Significant one-day falls of more than 100mm were recorded during the month at various sites with new one-day high rainfall record being established at Tokotoko in Navua.

With substantial increase in March rainfall, the three monthly (January to March) rainfall trend has shifted from *below average* to now *average to above average*. The only exception is Ono-i-Lau, the southern-most island of the Lau Group which continues to experience below average rainfall.

Cloudy and rainy conditions kept daytime temperatures average to below average while the night time temperatures were generally average to above average.

As of March 2007, the Pacific region is in the state of neutral condition. The key indicators and climate prediction models favour continuation of neutral conditions with a little chance of La Nina like conditions emerging in the coming months. Under the circumstance, Fiji's rainfall is likely to *vary around average* in the coming three months.

*(A detailed report on the ENSO status and rainfall predictions can be obtained from the Fiji Islands Climate Outlook Bulletin).*

#### WEATHER PATTERNS

March was wet as active troughs of low pressure persisted over Fiji. A Tropical Depression (TD) also affected the country, bringing strong and gusty winds and torrential rain over Northern and Western Divisions. Flash flooding affected many parts of the country as heavy rain continued for most of the month.

From the 1<sup>st</sup> to 5<sup>th</sup>, an active trough of low pressure drifted across Fiji from the north causing widespread rain, with isolated heavy falls. Although rain eased for a day as the trough lay to the south of the group, associated moist northerlies set in returning rain to most places. This trough moved onto the southern parts of the country and prevailing moist northerly flow caused another episode of heavy downpour, this time mainly confining to the northern and western parts of the larger islands. During this event, Rakiraki recorded 230mm of rainfall on the 9<sup>th</sup> and resulted in flash flooding. Rain continued till 14<sup>th</sup> with isolated heavy falls and thunderstorms. As the trough moved east, a weak ridge of high pressure pushed in from the southwest.

From the 14<sup>th</sup> to 19<sup>th</sup>, while a trough lay slow-moving to the east of the Group while a second trough approached the country

from the west. The prevailing east to northeast flow maintained showers in most places with isolated thunderstorms.

From the 20<sup>th</sup>, the trough moved onto the Group and became stationary for about a week. Widespread rain was recorded with heavy falls and squally thunderstorms during this period. Rakiraki recorded 215mm on the 23<sup>rd</sup>. On the 22<sup>nd</sup>, a second tropical depression was identified to the northwest of Fiji, moving southwards. The depression came closest to the group on the 24<sup>th</sup> and 25<sup>th</sup> and caused strong and gusty winds to some parts of the Northern and Western Divisions.

From the 27<sup>th</sup>, the trough moved to the north and remained slow moving there till the end of the month. However, the prevailing moist northerly flow caused showers and thunderstorms over most places during this period.

Rotuma continued to receive rain and thunderstorms for most of March with some heavy falls being experienced.

#### RAINFALL IN LAST THREE MONTHS, TEMPERATURES AND HUMIDITY

**Majority** of the sites recorded above average rainfall in March as typical wet season rainfall pattern was observed in the recent years. Active troughs of low pressure systems and tropical depression brought significant rainfall over the country that resulted in the Central, Western and parts of the Eastern Divisions receiving above average rainfall. Lautoka and Rarawai mills recorded twice as much rainfall in March while some sites registered more than 100mm of rainfall in 24 hours. In contrast, apart from Labasa Airport, all the sites in the Northern Division received average to below average rainfall.

In the **Rainfall Outlook from January to March**, rainfall was expected to be average to below average across the country with *moderate* confidence. Of 19 sites, 13 received average rainfall, 5 received above average and Ono-i-Lau was the only site receiving below average rainfall over the three month period.

Persistent cloudy conditions and prolonged periods of rainfall resulted in **Maximum Air Temperature** being *average to below average* at most sites during the month. The highest positive mean monthly departures were recorded at Viwa Island & Nabouwalu (0.6°C). The lowest departure of 1.1°C below normal was recorded at Nadi Airport.

**Minimum Air Temperature** remained near average to above average at many locations around the country making night time temperatures uncomfortable. The highest positive departure of 1.3°C was recorded at Vunisea while lowest negative departure of 1.4°C was recorded at Yasawa-I-Rara.

**Relative Humidity** at 0900hrs was generally above average at almost all recording sites except Matuku which was below average. The greatest positive departures from *normal* were recorded at Levuka (9.4%), Nadi Airport (9.1%), and Ono-i-Lau (8.4%) and the only negative departure was recorded at Matuku (-9.9%).

**TABLE 1 : SHOWING RAINFALL FROM JANUARY 2006 TO MARCH 2007**

<u>Station</u>	<u>Actual Rainfall (mm)</u>	<u>Rainfall in the last three months (Below average, average or above average)</u>	<u>No. of Rain days in January 07 (% of total rain)</u>	<u>No. of Rain days in February 07 (% of total rain)</u>	<u>No. of Rain days in March 07 (% of total rain)</u>
Penang Mill	1133.7	Average	13 (06)	22 (29)	27 (65)
Monasavu Dam	1693.0	Average	25 (15)	25 (45)	28 (40)
Rarawai Mill, Ba	1596.7	Above Average	11 (07)	18 (36)	25 (57)
Nacocolevu*	927.0	Most likely Average	9 (22)	14 (38)	25 (40)
Viwa Island	718.4	Average	7 (12)	18 (39)	25 (49)
Lautoka (FSC Res.)	1173.5	Above Average	11 (06)	17 (37)	25 (57)
Nadi Airport	1294.0	Above Average	13 (08)	16 (40)	29 (52)
*Four days of rainfall is missing for the Jan-Mar 2007 period.					
Tokotoko, Navua	1298.3	Average	21 (18)	23 (36)	27 (46)
Laucala Bay, Suva	1030.1	Average	26 (12)	25 (33)	27 (55)
Nausori Airport	970.1	Average	23 (10)	23 (31)	27 (59)
Nabouwalu	747.5	Average	19 (12)	24 (41)	26 (47)
Labasa Airport	1332.6	Above Average	09 (08)	22 (43)	26 (49)
Savusavu Airport	716.4	Average	08 (12)	19 (54)	24 (34)
Udu Point	751.4	Average	15 (17)	21 (44)	23 (39)
Matei Airport	847.2	Average	26 (19)	28 (50)	30 (31)
Lakeba Is.	659.3	Average	12 (10)	17 (34)	23 (56)
Matuku Is.	768.1	Average	15 (24)	18 (28)	23 (48)
Ono-I-Lau Is.	477.9	Below Average	10 (13)	12 (48)	20 (39)
Vunisea, Kadavu	1131.4	Above Average	19 (16)	22 (33)	31 (51)
Rotuma	1153.8	Average	21 (17)	23 (38)	26 (45)

**TABLE 2 : NEW CLIMATE RECORDS**

<u>Element</u>	<u>Station</u>	<u>Observed (record)</u>	<u>On (date)</u>	<u>Rank</u>	<u>Previous (record)</u>	<u>Year</u>	<u>Records Began</u>
Daily Rainfall	Navua/Tokotoko	215.4mm	23	New High	178.0mm	2001	1992
Daily Max Temp	Navua/Tokotoko	26.5°C	5	New Low	26.5°C	2001	1992
Daily Max Temp	Levuka	28.0°C	23	New Low	30.0°C	2006	1984
Daily Min Temp	Levuka	26.5°C	12	New High	23.5°C	2000	1984
Mean Monthly Min Temp	Nacocolevu	23.5°C	-	New High	23.4°C	1973	1938
Total Sunshine	Rotuma	106.9 hrs	-	New Low	111.0hrs	1993	1936

Figure A

Nadi Airport - Temperature & Rainfall Records for the last 13 Months  
(March 2006 - March 2007)

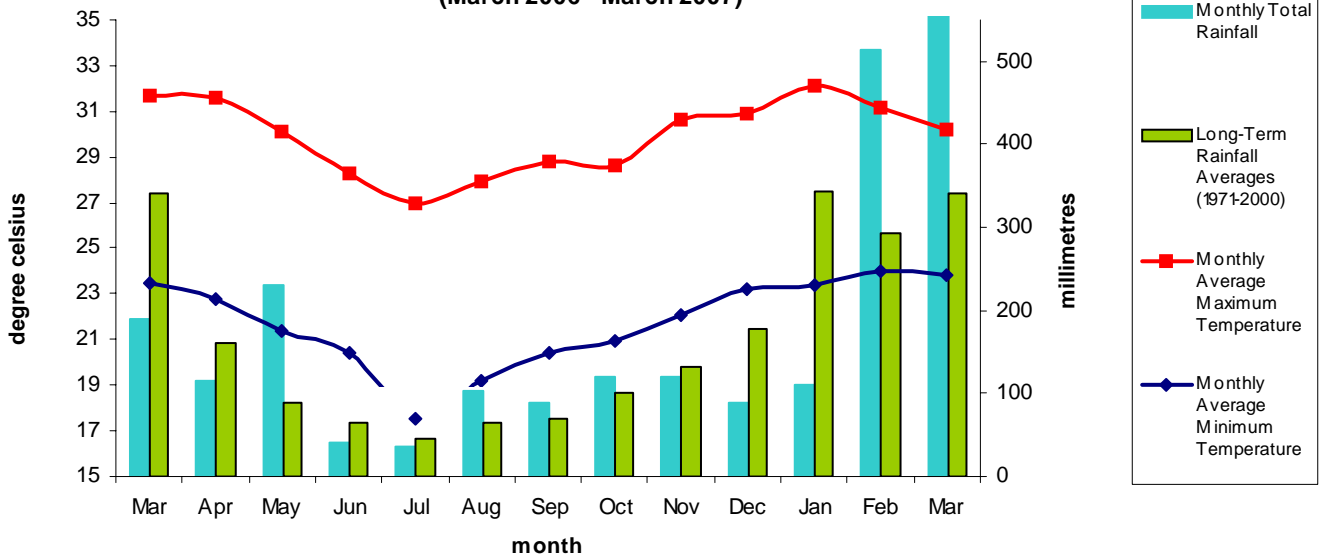


Figure B

Labasa Airfield - Temperature & Rainfall Records for the last 13 Months  
(March 2006 - March 2007)

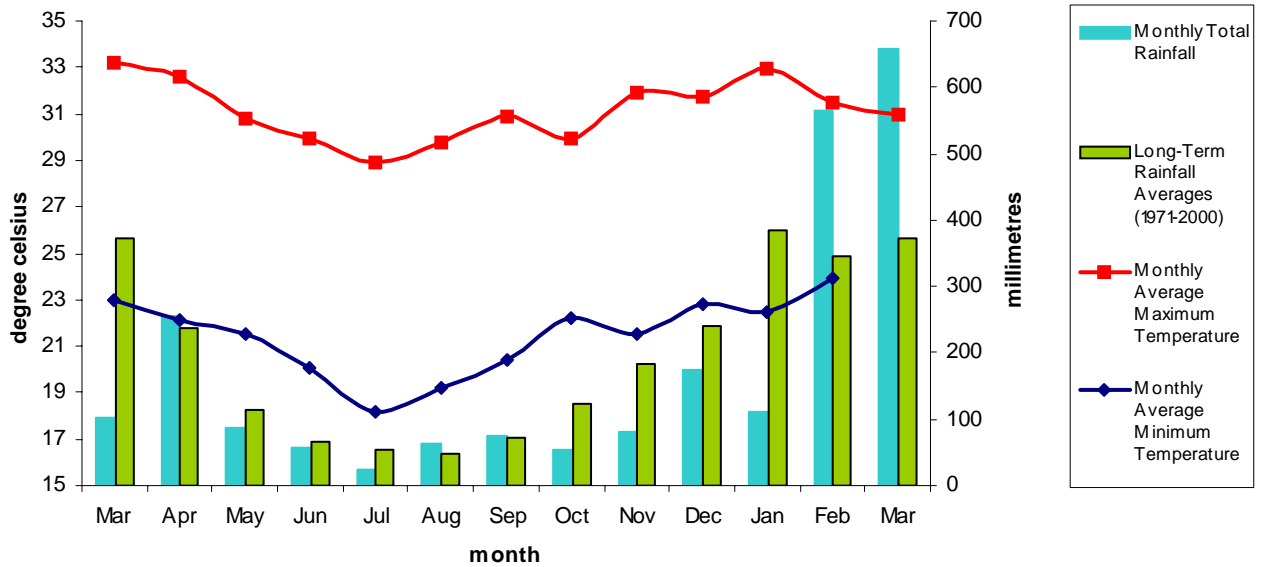
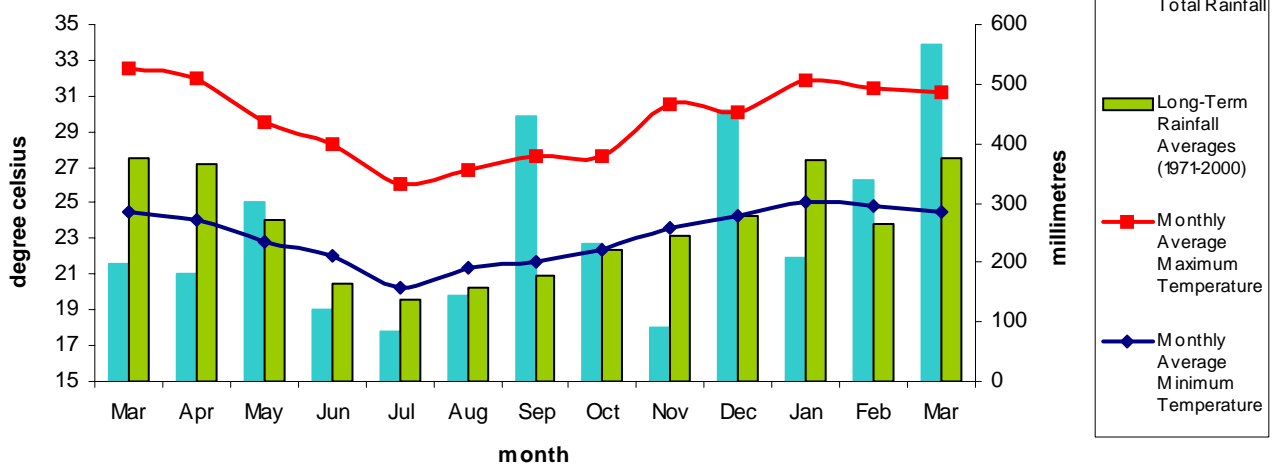


Figure C

Laucala Bay/Suva - Temperature & Rainfall Records for the last 13 Months  
(March 2006 - March 2007)



**PRELIMINARY CLIMATOLOGICAL SUMMARY FOR MARCH 2007**

PRELIMINARY CLIMATOLOGICAL DATA FOR MONTH 3 , 2007 : SUMMARY FOR DAYS 1 TO 31

	RAINFALL				AIR TEMPERATURES								SUNSHINE		
	TOTAL	RAIN	MAX.	FALL	AVERAGE DAILY				EXTREME		TOTAL	*			
	MM	%	+		MM	ON	MAX.	#	MIN.	#	MAX.		MIN.	ON	HRS
NADI AIRPORT	670	197	29	117	24	30.2	-1.1	23.8	1.0	32.0	29	22.5	18	125	65
SUVA/LAUCALA BAY	566	151	27	83	23	31.2	0.3	24.5	0.6	33.5	11	22.7	4	133	79
NACOCOLEVU	368	134	25	42	7	31.5	0.4	23.5	1.0	34.0	31	21.6	2	110	73
ROTUMA	523	142	26	72	26	29.9	-0.7	24.7	-0.0	32.0	9	23.5	24	107	65
VIWA	354	146	25	76	14	31.6	0.6	25.4	0.2	33.5	8	23.5	21		
UDU POINT	292	91	23	49	26	30.1	-0.6	24.6	0.2	32.5	16	23.0	25		
LABASA AIRFIELD	659	177	26	98	11	31.0	-0.5	Missing		34.0	17	Missing			
NABOUWALU	348	104	26	44	4	30.7	0.6	24.7	0.4	33.0	12	23.5	26		
SAVUSAVU AIRFIELD	245	87	24	33	20	30.7	0.1	24.0	0.4	33.0	12	22.5	22		
MATEI AIRFIELD	266	70	30	58	24	30.2	-0.1	Missing		31.5	8	Missing			
YASAWA-I -RARA	526	191	22	81	23	30.4	-0.2	23.2	-1.4	32.3	19	22.0	23		
VATUKOULA	No Report														
MONASAVU	683	100	28	83	1	25.8	0.2	20.2	0.9	28.6	11	18.7	1		
NAUSORI AIRPORT	570	149	27	107	5	30.5	0.0	23.7	0.5	33.2	12	22.0	24		
NAVUA/TOKOTOKO	598	149	27	215	23	30.3	0.1	23.0	-0.1	31.5	6	21.0	24		
LEVUKA	424	133	28	60	23	30.3	-0.2	25.0	0.6	31.7	29	24.0	1		
LAKEBA	373	127	23	80	21	30.5	0.2	24.8	0.8	32.0	19	23.5	2		
MATUKU	370	145	23	61	5	28.9	-1.5	Missing		31.9	16	Missing			
VUNI SEA	576	190	31	93	5	30.2	0.2	24.8	1.3	32.4	7	23.6	22		
ONO-I -LAU	188	74	20	47	9	29.5	0.2	24.6	0.2	31.6	13	22.5	9		
BA/RARAWAI M ILL	904	248	25	189	24	31.3	-0.7	23.4	1.1	33.6	3	21.5	18		
LAUTOKA AES	674	219	25	152	24	30.4	-0.6	24.3	0.5	31.6	1	23.0	18		
PENANG M ILL	736	173	27	230	9	30.7	0.2	24.0	0.2	33.5	21	21.9	29		

**RAINFALL OUTLOOK FOR FIJI ISLANDS - APRIL TO JUNE 2007**

The *El Niño event* has abruptly ended in February 2007. The oceanic and atmospheric conditions resemble neutral conditions in the Equatorial Pacific region. Convection has returned to normal in the Western Equatorial Pacific. With the prediction of neutral conditions to generally continue and a possibility of La Nina conditions to emerge, wet weather pattern is likely to be dominant in the coming months. While the country is expected to undergo a gradual seasonal change from wet to dry season, usual fluctuation in the weather pattern can be expected with the eastern parts of the larger islands likely to receive some high intensity rainfall. Overall, Fiji's rainfall is expected to **vary around average** over the next three months. The **confidence level** of the prediction is **moderate to low**. (More detailed climate predictions will follow in the 'Fiji Islands Climate Outlook' to be released in mid April).

**TROPICAL CYCLONE SEASON 2006/2007**

The South Pacific Tropical Cyclone Season is expected to formally last till 30th April. However, there have been seasons that have extended into May and even in June. With neutral conditions prevailing in the region, it is unlikely that tropical cyclone season will extend into May.

Since the 1969/70 season, six tropical cyclones have affected Fiji in April of which three were gales, two storms and one hurricane. With the ending of *El Niño* and a return of *neutral* conditions in Pacific basin, tropical cyclone development is expected to shift from near and east of the Dateline (El Niño) to near and west of the Dateline. The cyclonic activity is expected to gradually diminish by the end of this month, This means that the chances of at least one cyclone affecting Fiji for the rest April is **moderate to low**.

Eight tropical cyclones have developed and have been named in the Southwest Pacific this season of which two were named by Brisbane and six by Fiji Regional Specialized Meteorological Centre. The first two tropical cyclones were *Xavier* which formed on the 22nd October and *Yani* formed on the 22nd November 2006. In January 2007, TC *Zita* formed near the Northern Cook Islands on the 23rd TC *Arthur* developed to the east of Samoa on the 25th. The two recent cyclones, TC *Becky*, formed south of the Solomon Islands on 26th of March while TC *Cliff* formed to the northwest of Fiji on 3rd of April. TC *Cliff* passed over Vanua Levu, Tavuni and the Lau Group leaving crops uprooted and minor damages along its track.

**Normal** - Represents average form 1971 to 2000 period.

**Well Below Average** - Rainfall less than 39%.

**Below Average** - Rainfall between 40 to 79%..

**Average** - Rainfall between 80 to 119%.

**Above Average** - Rainfall between 120 to 199%.

**Well Above Average** - Rainfall more than 200%.

For all correspondences please contact: The Director, Fiji Meteorological Service, Private Mail Bag, NAP0351, Nadi Airport, Fiji Islands.  
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