

NOVEMBER
2006

Fiji Islands Climate Summary

October 2006

FIJI METEOROLOGICAL SERVICE

IN BRIEF

Rainfall continued to vary across the country in October with most areas in the Northern Division, parts of the Eastern Division and North-Western Viti Levu received below average rainfall. There were three occasions when troughs of low pressure passed over the country accounting for most of the rain. Notably, Monasavu received more than 200% of normal rainfall for the month.

The 2006/07 tropical cyclone season saw an early start with the first Southern Hemisphere cyclone forming near the Solomon Islands during the later part of the month and named "TC Xavier" on the 22nd.

Though the cyclone was heading towards Fiji, it weakened before reaching the group and was subsequently pushed back to where it originated from. Fortunately, it did not affect any major land areas.

During the last three months, majority of the sites experienced average to above average rainfall; however most ar-

reas in Northern Division, parts of Eastern Division and North-Western areas of Viti Levu continued to receive below average rainfall.

The maximum daytime temperatures in October were lowest in the recent years with a number of sites establishing new daily and monthly records (table 2). In contrast the night time temperatures were generally near average to above average with new monthly records being set at various sites around the country (table 2).

With the prediction of emerging *El Niño* event in the region, rainfall for the next three months (November 06-January 07) is likely to be quite variable with a gradual trend towards below average in many parts of the country.

(An ENSO status and rainfall predictions can be obtained from *Fiji Islands Climate Outlook* bulletin which is issued towards the middle of every month).

WEATHER PATTERNS

There were three distinct occasions this month when troughs of low pressure moved across the country and brought notable rainfall. On the second occasion, heavy falls were recorded

The remnants of the trough of low pressure that was over the group from the end of September continued to affect the group for the first four days before decaying. This maintained generally moist conditions over much of the country in the first week.

The second occasion that a trough passed over the country was from the 9th to 17th. This trough moved onto Vanua Levu on the 9th and remained stationary over the group over the next eight days. During this event, heavy rain was recorded across the country on the 10th with some instances of significant heavy falls. Monasavu recorded 109mm on the 14th.

The last significant trough that affected the group was from 26th to the end of the month. This trough was associated with "TC Xavier" and as this trough approached the group from the northeast, cloud and rain affected the country with significant falls being recorded. Notably, Monasavu and Vanua Balavu received 176mm and 71.6 mm of rainfall respectively in 24 hours on the 26th.

During the rest of the month, Fiji's weather was influenced by the mobile ridges of high pressure passing in the mid-latitudes. This brought fresh to strong southeast winds over the group with the usual onshore showers over the south-eastern parts of the main islands.

Rotuma received rain for most of the month as the convergence zone remained quasi-stationary near the island. Rotuma received 133.3mm on the 21st when the convergence zone became active and remained in close proximity of the island for a number of days.

RAINFALL IN LAST THREE MONTHS, TEMPERATURES AND HUMIDITY

Rainfall varied in October across the country from below average to well above average. Most of the Northern Division and parts of Eastern Division continued to receive below average.

The Rainfall Outlook from July to September was for rainfall to vary around average across the country with moderate confidence. Out of the sixteen sites that reported in time for this summary, three sites received below average, eight received average and five received above average rainfall in the past three months.

Temperatures

Day-time air temperatures were below average at all reporting sites except at Matuku and Rotuma which experienced near normal temperatures.

The highest positive departures from normal were at Matuku (0.3°C) and Rotuma (0.6°C) respectively.

Night-time temperatures were generally near average to above average across the country except for Ono-I-Lau and Yasawa-I-Rara that experienced below average temperatures with a departure of 0.6°C and 0.7°C below *normal* respectively.

Relative Humidity at 0900hrs were above average at all reporting sites across the country. The greatest positive departures from *normal* was recorded at Levuka (20.7%), Nadi Airport (8.3%), Matei (6.6%), Savusavu Airfield (6.3%) and Vunisea (5.7%).

TABLE 1 : SHOWING RAINFALL FROM AUGUST TO OCTOBER 2006

<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 August (% of total rain)</u>	<u>No. of Rain days in September (% of total rain)</u>	<u>No. of Rain days in October (% of total rain)</u>
Penang Mill	271.3	Average	6 (30)	9 (30)	15 (40)
Monasavu Dam	1528	Above Average	24 (21)	20 (27)	28 (52)
Vatukoula Mine	241.6	Average	4 (37)	8 (23)	7 (40)
Rarawai Mill, Ba	274.2	Average	6 (35)	6 (21)	10 (44)
Yasawa-I-Rara	-	-	-	-	-
Viwa Island	213	Average	8 (32)	10 (34)	11 (34)
Lautoka (FSC Res.)	243.3	Average	4 (32)	8 (21)	11 (47)
Nadi Airport	311.7	Above Average	4 (34)	9 (28)	15 (38)
Nacocolevu, Sigatoka	-	-	10	9-	
Data is missing from Nacocolevu in months of August (18th), September (4th), Yasawa-I-Rara data missing for October (28th,30th).					
Tokotoko, Navua	917.3	Above Average	21 (32)	17 (39)	25 (29)
Laucala Bay, Suva	821.0	Above Average	25 (18)	19 (54)	22 (28)
Nausori Airport	715.8	Above Average	23 (16)	20 (45)	23 (39)
Nabouwalu	-	-	-	-	-
Labasa Airport	192	Below Average	5 (53)	7 (39)	10 (28)
Savusavu Airport	286.6	Below Average	10 (22)	10 (33)	14 (45)
Udu Point	377.0	Average	19 (18)	14 (42)	16 (40)
Matei Airport	-	-	20	21-	-
Nabouwalu data missing for 6th, 17th,19th & 20th August, Matei data missing for 6th October.					
Lakeba Is.	138.4	Below Average	13 (12)	8 (50)	14 (38)
Matuku Is.	-	-		-	-
Ono-I-Lau Is.	321.9	Average	9 (20)	12 (43)	8 (37)
Vunisea, Kadavu	480.6	Above Average	23 (24)	17 (31)	23 (45)
Matuku data missing for September (20th, 21st & 29th) and for October (23rd, 26th & 30th).					
Rotuma	889.5	Average	17 (20)	24 (25)	23 (55)

TABLE 2 : NEW CLIMATE RECORDS

<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>
Monthly Rainfall	Monasavu	794.2 mm	-	New High	768.1 mm	1981	1980
Mean Mly Max Temp	Vatukoula	30.2 ° C	-	New Low	30.3 ° C	1984/2001	1984
Dly Max Temp	Viwa Island	24.6 ° C	6th	New Low	25.2 ° C	1978	1978
Dly Max Temp	Tokotoko, Navua	21.5 ° C	6th	New Low	23.0 ° C	1994	1992
Dly Max Temp	Levuka	22.5 ° C	5th	New Low	28.5 ° C	1993	1984
Mean Mly Min Temp	Labasa Airport	22.2 ° C	-	New High	21.5 ° C	2002	1956
Mean Mly Min Temp	Vatukoula	21.2 ° C	-	New High	21.0 ° C	1999	1984
Dly Min. Temp (°C)	Levuka	25.5 ° C	15th	New High	21.0 ° C	1985	1984

Figure A

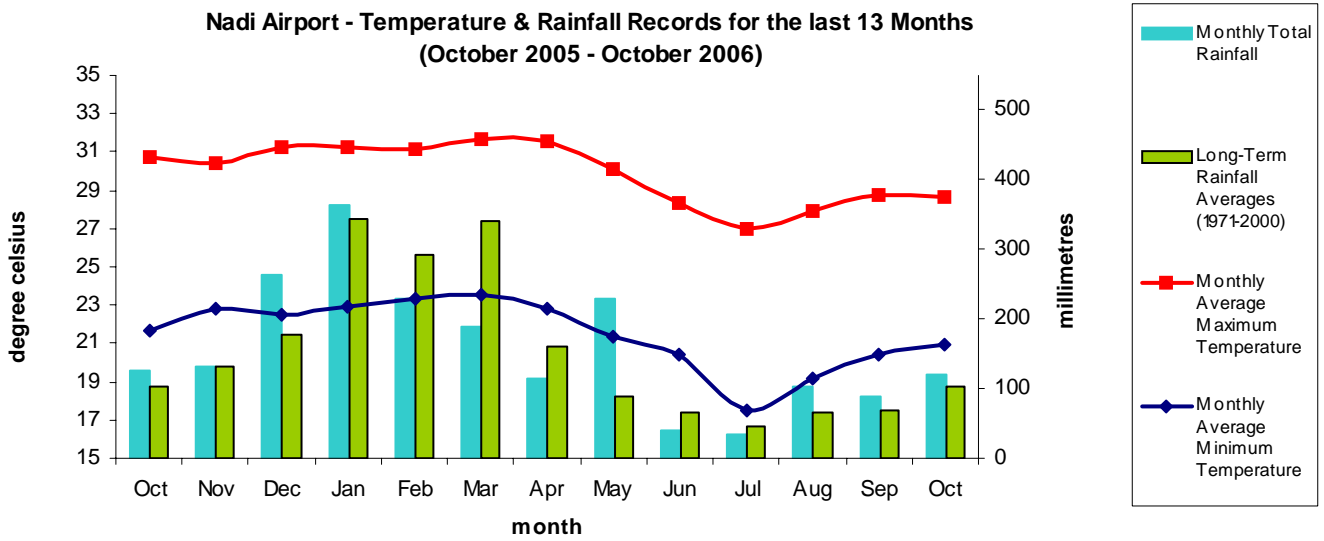


Figure B

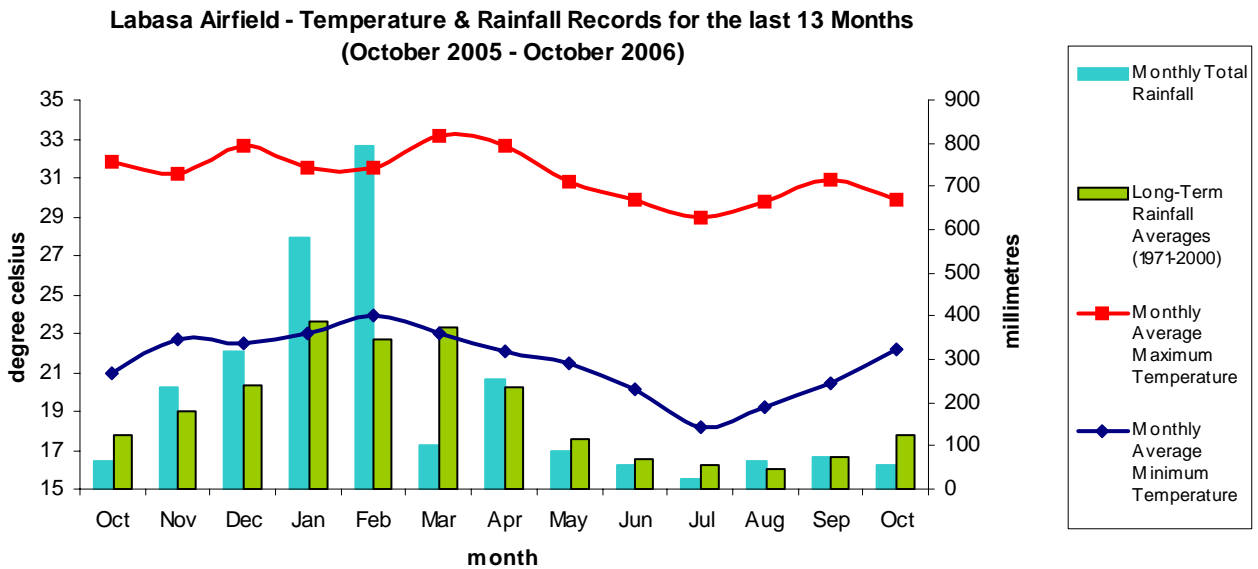
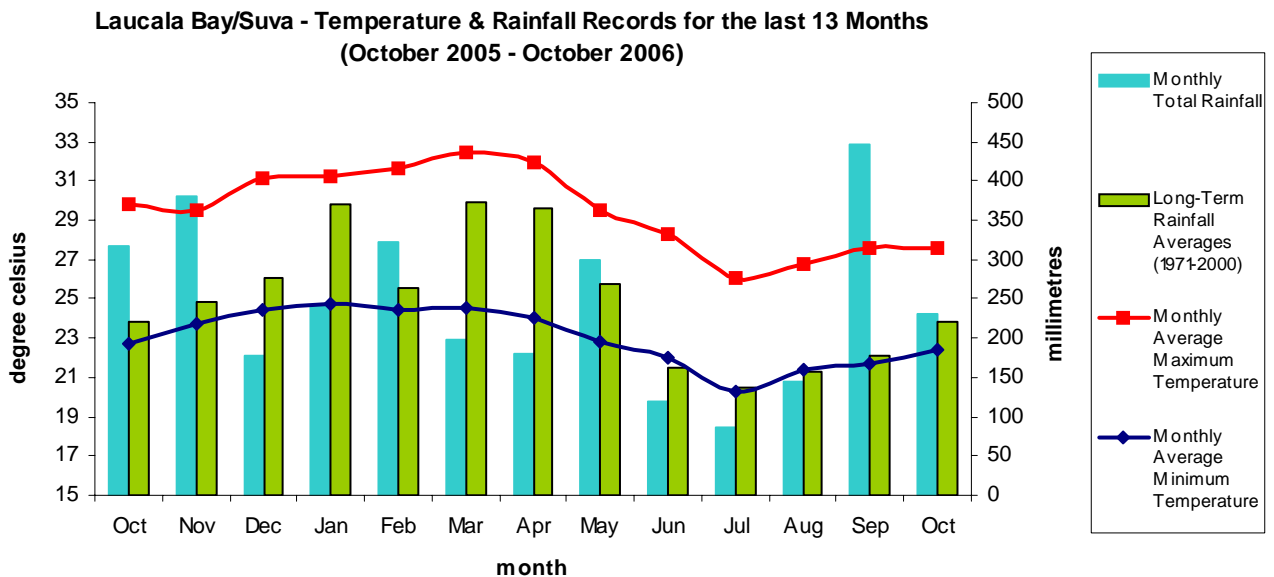


Figure C



PRELIMINARY CLIMATOLOGICAL SUMMARY FOR SEPTEMBER 2006

PRELIMINARY CLIMATOLOGICAL DATA FOR MONTH 10 , 2006 : SUMMARY FOR DAYS 1 TO 31

	RAINFALL				AIR TEMPERATURES								SUNSHINE		
	TOTAL MM	RAIN		MAX. MM ON	AVERAGE DAILY				EXTREME				TOTAL HRS	* %	
		%	+		MAX.	#	MIN.	#	MAX.	MIN.					
											DAYS	FALL			C
NADI AIRPORT	119	117	15	67	10	28.6	-1.7	20.9	0.4	31.9	26	2.4	27	139	59
SUVA/LAUCALA BAY	232	105	22	55	12	27.6	-0.6	22.4	0.5	30.4	25	19.4	7	75	46
NACOCOLEVU	137	139	14	58	10	28.2	-0.9	20.9	1.2	33.3	25	17.0	7	115	60
ROTUMA	486	143	23	133	21	30.3	0.6	24.8	0.6	32.1	9	23.5	16	195	100
VIWA	73	111	11	43	10	28.9	-0.4	24.0	0.4	32.1	30	21.2	5		
UDU POINT	151	92	16	36	14	28.3	-1.0	23.3	0.4	30.0	28	19.6	7		
LABASA AIRFIELD	55	44	10	15	11	29.9	-0.9	22.2	2.4	32.5	17	18.0	23		
NABOUWALU	97	57	19	38	10	27.2	-0.5	22.7	0.1	28.8	5	19.7	8		
SAVUSAVU AIRFIELD	130	76	14	23	11	27.3	-0.9	22.0	0.1	32.0	30	19.0	2		
MATEI AIRFIELD	209	107	26	52	13	27.4	-0.8	22.9	0.4	29.0	28	17.0	20		
YASAWA-I-RARA	89	85	5	41	26	28.3	-0.6	22.3	-0.7	30.0	29	20.4	12		
VATUKOULA	95	96	7	59	10	30.2	-0.9	21.2	2.1	33.7	25	17.7	20		
MONASAVU	794	241	28	176	26	21.8	-1.0	17.0	0.7	24.5	21	13.8	20		
NAUSORI AIRPORT	279	136	23	94	12	26.6	-1.0	21.6	0.7	29.5	25	18.0	7		
NAVUA/TOKOTOKO	263	95	25	49	13	26.1	-0.8	20.8	0.1	28.5	25	17.0	7		
ST. JOHNS COLLEGE	218	159	20	40	10	27.2	-0.5	22.7	0.4	29.5	31	20.0	6		
LAKEBA	52	42	14	19	11	27.0	-0.7	22.7	0.6	29.8	25	20.1	17		
MATUKU	84	73	11	22	11	27.7	0.3	23.0	1.2	30.7	31	20.0	12		
VUNISEA	216	158	23	70	10	25.7	-1.4	21.6	0.8	28.0	24	17.6	7		
ONO-I-LAU	118	137	8	40	5	25.5	-0.9	20.8	-0.6	28.5	27	17.5	6		
BA/RARAWAI MILL	120	113	10	46	10	30.2	-1.0	20.6	1.0	33.5	25	15.1	9		
LAUTOKA AES	115	112	11	51	10	28.7	-0.8	21.9	0.3	30.6	13	18.0	20		
PENANG MILL	108	94	15	38	10	28.4	-0.5	22.3	0.1	30.2	3	20.2	6		

RAINFALL OUTLOOK FOR FIJI ISLANDS - NOVEMBER 2006 TO JANUARY 2007

The current Pacific climate patterns show an emergence of a weak to moderate El Niño in the region and predicted to persist into early 2007. This is characterised by self sustaining feedback between the Pacific ocean temperatures, winds and cloud patterns. Despite these conditions prevailing in the region, rainfall activity is expected to pick up but remain quite variable with a gradual trend towards below average rainfall. It is predicted that rainfall for the next three months is likely to be average to below average, however, the prediction can be significantly affected if any tropical disturbance or tropical cyclone affects or passes close to the country. The confidence level of this prediction is **moderate**.

More detailed climate predictions are in the "Fiji Islands Climate Outlook" which will be released during the middle of the month.

TROPICAL CYCLONE SEASON 2006/2007

The South Pacific Tropical Cyclone Season formally started on the 01st of November 2006 and will continue till end of April 2007. The emergence of *El Niño* event and its persistence into early 2007 should significantly affect tropical cyclone frequency and distribution in the South Pacific region.

Pre-season "TC Xavier" formed against all odds near Solomon Islands during later half of the month. It was named on Sunday 22 October and lasted till Thursday 26 October, developing into a CAT 4 (95knot or 175km/hr with gusts to 240km/hr) hurricane. Models predictions indicated the system to curve southwest towards Vanuatu, but it instead initially drifted south and later southeast curving towards Fiji. Luckily, the system dissipated before reaching close proximity of the country and fortunately did not affect any major land areas.

Fiji on average experiences 10 to 15 tropical cyclones in a decade with 2 to 4 of these being *severe*. This means that on average, 1 to 2 cyclones per season can affect Fiji. The chance for a hit are high during *neutral* and *El Niño* conditions and there is an increased risk of a cyclone affecting Fiji this season. Since 1995, the only two tropical cyclones, Gavin (1997) and Ami (2003) affected the country severely. Therefore the chance for a big one is rather high! Based on the historical records, two cyclones have affected Fiji in November since 1969/70 season. These were Osea in 1986 and Sina in 1990 .

Given the trend of more extreme events occurring in different parts of the world, one should always prepare for the worse one yet to come.

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