

FEBRUARY
2007

Fiji Islands Climate Summary

January 2007

FIJI METEOROLOGICAL SERVICE

IN BRIEF

El Niño conditions persisted in the region during the month. This was evident as rainfall was significantly suppressed across the country resulting in *below average* to *well below average* rainfall.

There has been extension of *below average* rainfall to the Southern Viti Levu while *well below average* rainfall continues to be experienced in substantial parts of Vanua Levu, Viti Levu, Mamanuca, Yasawa and Lau Groups. Nausori Airport in the Central Division recorded the lowest January rainfall total of 102mm since the station was established.

In the last three months, *below average* rainfall has extended to most parts of the country while *well below average* rainfall has emerged around Southern Vanua Levu and North-western parts of Viti Levu. Out of the 18 sites that reported, 11 received below average rainfall and three well below average rainfall from November to January.

The country experienced hot and uncomfortable conditions during the month with day-time temperatures generally *above average* at mostly all the reporting sites. A new mean

monthly temperature of 33.6°C was recorded at Viwa Island.

Night time temperatures were generally *near average* to *above average* across the country with three locations recording new mean monthly temperature. These locations were Laucala Bay, Viwa Island and Vunisea with 25.1°C, 26.1°C and 24.9°C respectively. Levuka experienced warmest night time temperature of 26.8°C in the recent two decades.

The moderate *El Niño* that was established in November in the region has undergone some weakening since mid-December 2006 with current sea surface temperature anomalies close to the *El Niño* thresholds. Given that the *El Niño* conditions are likely to dissipate gradually in the first coming months, rainfall is likely to fluctuate around *average* to *below average* with many parts of the country experiencing below average rainfall.

(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

Two significant troughs of low pressure and a convergence zone affected the Fiji Group during January mostly during the first 10 days of the month.

The first trough affected Fiji at the beginning of the month maintaining moist east to northeast wind flow over the group. The trough gradually moved to the southwest of Viti Levu before becoming slow moving over the Lau group from the 7th until the 11th. It again moved northwest across Fiji on the 11th but this time it had weakened considerably.

Also during this period, a convergence zone steadily drifted south, advancing onto Vanua Levu on the 5th and bringing significant rain onto most parts of the Group. On the 6th another trough of low pressure developed to the west of Viti Levu and moved rapidly east across the group on the 9th.

With the combination of these three weather systems accompanied by moist easterly wind flow, significant rain was recorded across the country from the 1st to the 10th. This includes 155mm of rain being recorded at Nacocolevu on the 7th.

From the 10th to the end of the month, the country's weather was dominated by mobile ridges of high pressure passing south of the group. This maintained fine conditions with stable east to southeast winds over the group.

The Convergence Zone (CZ) hovered over Rotuma during this period with significant rainfall of 92mm recorded on the 19th.

RAINFALL IN LAST THREE MONTHS, TEMPERATURES AND HUMIDITY

Rainfall in January was significantly suppressed across the country as moderate *El Niño* continued to affect the region. Well below average to below average rainfall was experienced in most parts of the country as stable weather conditions dominated most of the month. All sites in the Western Division including Yasawa and Mananuca Groups, most of Vanua Levu, Eastern Viti Levu and Parts of Lau Group reported well below average rainfall in January ranging from 16% to 39% of normal rainfall. Nausori recorded the lowest monthly total for January.

Rainfall Outlook from November 06 to January 07 in the October issue expected rainfall to be average to below average across the country with *moderate* confidence. Out of the eighteen sites that reported in time, 4 sites received average rainfall, 11 received below average and 3 received well below average rainfall in the past three months.

The country experienced hot and uncomfortable conditions during the month as the **Day-time temperatures** were generally above average at almost all the reporting sites with the highest positive departures from normal were at Viwa (2.5°C), Penang Mill (1.7°C) and Rotuma (1.5°C).

Night-time temperatures were also generally near average to above average across the country except for Matuku, that experienced below average temperatures with a departure of 0.5°C below *normal*.

Relative Humidity at 0900hrs were generally below average at many sites across the country. The greatest positive departures from *normal* were recorded at Levuka (2.9%), Lakeba (1.2%) and greatest negative departures were recorded at Penang Mill (12.3%), Rarawai Mill (8.2%), Labasa Airport (7.4%) and Lautoka Mill (7.0%).

TABLE 1 : SHOWING RAINFALL FROM NOVEMBER 2006 TO JANUARY 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 November, 06 (% of total rain)</u>	<u>No. of Rain days in December,06 (% of total rain)</u>	<u>No. of Rain days in January,07 (% of total rain)</u>
Penang Mill	262.3	Well Below Average	11 (13)	11 (63)	13 (24)
Monasavu Dam	1340.0	Average	26 (32)	26 (49)	25 (19)
Rarawai Mill, Ba	578.4	Below Average	07 (25)	17 (56)	11 (19)
Yasawa-I-Rara	-	-	-	-	-
Viwa Island	212.0	Below Average	04 (28)	08 (31)	07 (41)
Lautoka (FSC Res.)	288.7	Below Average	06 (39)	13 (40)	11 (21)
Nadi Airport	318.3	Below Average	09 (38)	12 (27)	13 (35)
*Yasawa-I-Rara data is missing for the whole of November, December and second half of January.					
Tokotoko, Navua	730.5	Below Average	18 (30)	22 (3)	21 (32)
Laucala Bay, Suva	668.8	Below Average	20 (13)	22 (68)	26 (19)
Nausori Airport	783.4	Average	20 (35)	20 (52)	23 (13)
*Savusavu Airfield data missing for 12th,17th and 25th November.					
Nabouwalu	270.5	Well Below Average	17 (26)	19 (40)	19 (34)
Labasa Airport	365.1	Below Average	08 (22)	13 (48)	09 (30)
Savusavu Airport*	324.8	Below Average	12 (37)	14 (36)	08 (27)
Udu Point	412.6	Below Average	16 (14)	21 (55)	15 (31)
Matei Airport	535.4	Below Average	25 (11)	23 (59)	26 (30)
*Savusavu Airfield data missing for 12th,17th and 25th November.					
Lakeba Is.	255.8	Below Average	11 (22)	10 (53)	12 (25)
Matuku Is.	460.4	Average	14 (25)	10 (35)	15 (40)
Ono-I-Lau Is.	173.1	Well Below Average	06 (19)	07 (46)	10 (35)
Vunisea, Kadavu	515.5	Average	21 (53)	19 (12)	19 (35)
*Savusavu Airfield data missing for 12th,17th and 25th November.					
Rotuma	1096.0	Average	23 (42)	20 (40)	21 (18)

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	Nausori Airport	101.7mm	-	New Low	109.2mm	2004	1956
Mean Mly Max Temp	Viwa island	33.6°C	-	New High	32.7°C	2005	1978
Mean Mly Min Temp	Laucala Bay. Suva	25.1°C	-	New High	25.0°C	1998	1942
Mean Mly Min Temp	Viwa Island	26.1°C	-	New High	25.7°C	1985	1978
Mean Mly Min temp	Vunisea	24.9°C	-	New high	24.7°C	2006	1947
Dly Min Temp	Levuka	26.8°C	3rd	New High	26.0°C	2006	1984

Figure A

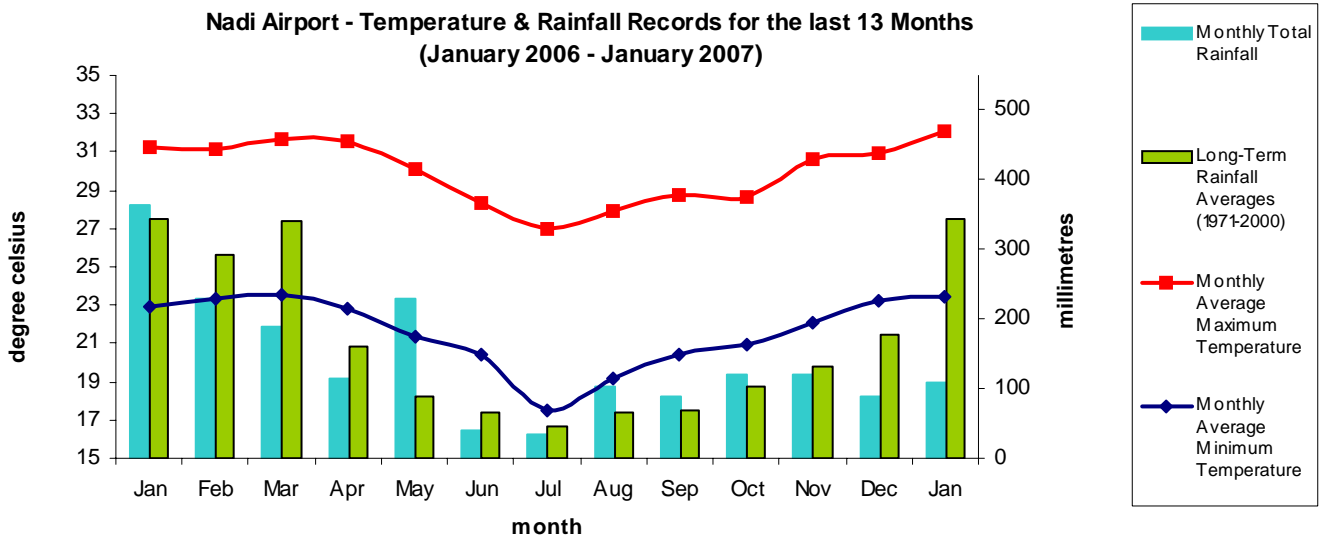


Figure B

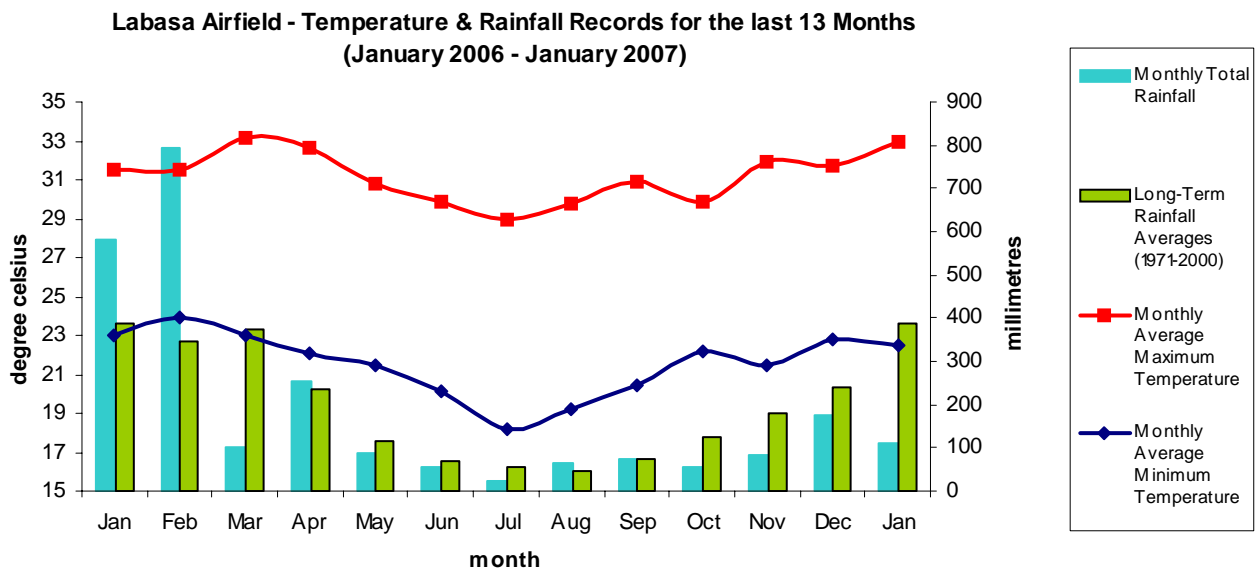
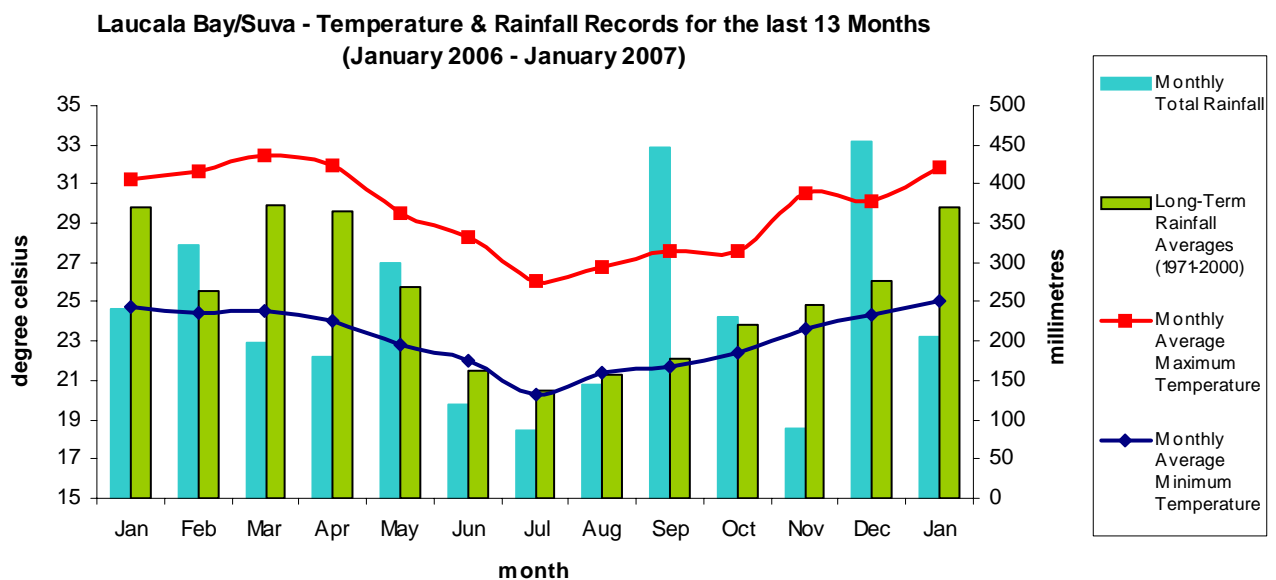


Figure C



PRELIMINARY CLIMATOLOGICAL SUMMARY FOR JANUARY 2007

	PRELIMINARY CLIMATOLOGICAL DATA FOR MONTH 1 , 2007 : SUMMARY FOR DAYS 1 TO 31														
	RAINFALL					AIR TEMPERATURES							SUNSHINE		
	TOTAL	RAIN		MAX.		AVERAGE DAILY				EXTREME			TOTAL	*	
	MM	%	+	MM	ON	MAX.	#	MIN.	#	MAX.	MIN.	C	ON	HRS	%
NADI AIRPORT	110	32	13	43	3	32.1	0.6	23.4	0.6	34.5	31	21.0	31	258	122
SUVA/LAUCALA BAY	125	34	26	37	6	31.9	1.1	25.1	1.2	33.1	12	23.4	21	218	113
NACOCOLEVU	206	75	9	155	7	32.4	1.2	22.1	-0.2	35.0	15	19.5	25	172	96
ROTUMA	193	54	21	92	19	32.1	1.5	25.3	0.6	33.1	7	23.6	20	212	125
VIWA	87	36	7	56	7	33.6	2.5	26.1	1.1	35.0	24	24.4	27		
UDU POINT	130	41	15	56	4	31.0	0.5	25.2	0.9	32.0	2	23.6	22		
LABASA AIRFIELD	110	28	9	40	6	32.9	1.2	22.5	0.3	34.6	2	19.0	25		
NABOUWALU	91	29	19	20	14	30.6	0.5	24.9	0.7	31.7	2	23.0	26		
SAVUSAVU AIRFIELD	86	31	8	42	4	30.7	0.1	24.2	0.7	33.0	14	20.0	2		
MATEI AIRFIELD	161	44	26	45	4	30.2	0.2	U/S		31.9	14	U/S			
YASAWA-I-RARA	Missing Readings from the 17th														
VATUKOULA	No Readings for the Month														
MONASAVU	259	39	25	34	14	25.6	0.3	19.4	0.6	27.8	29	17.2	25		
NAUSORI AIRPORT	102	28	23	16	7	30.7	0.3	23.5	0.4	32.4	8	21.0	21		
NAVUA/TOKOTOKO	236	54	21	62	7	30.2	0.5	23.3	0.3	31.4	27	21.0	6		
LEVUKA	122	50	22	27	5	30.5	0.3	24.8	0.7	31.5	26	23.0	21		
LAKEBA	63	26	12	12	24	30.2	0.1	25.0	1.9	31.6	15	22.0	28		
MATUKU	183	66	15	30	20	29.6	-0.6	23.9	-0.5	32.0	29	22.5	5		
VUNISEA	180	62	19	59	26	30.1	0.2	24.9	1.5	31.5	28	22.1	21		
ONO-I-LAU	61	35	10	24	12	30.4	1.2	24.1	-0.1	32.5	3	22.4	21		
BA/RARAWAI MILL	110	27	11	61	14	32.9	0.9	22.3	0.2	35.3	29	19.0	21		
LAUTOKA AES	61	16	11	23	9	32.0	1.0	23.6	-0.1	34.8	22	21.1	21		
PENANG MILL	64	16	13	23	8	32.0	1.7	24.5	0.5	33.2	27	22.8	21		

RAINFALL OUTLOOK FOR FIJI ISLANDS - FEBRUARY TO APRIL 2007

The *El Niño* condition is expected to gradually weaken and dissipate in the coming months. This view is also supported by climate prediction models with majority of the models showing return to neutral conditions by June. Despite *El Niño* conditions weakening, its effects are likely to continue for few months with a continuation of suppressed rainfall likely for Fiji from February to April. The rainfall over the next three months is expected to fluctuate around *average* to *below average* with large areas continuing to experience below average rainfall. While 3 months are still remaining for the *Tropical Cyclone Season* to come to an end, the passage of a tropical cyclone or a depression over or close to Fiji can significantly affect the actual rainfall distribution. The confidence level of this prediction is **moderate to low**.

(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 (TC) Season formally started on the 01st of November 2006 and will continue till end of April 2007. The weakening *El Niño* event in the region is expected to have its effect for few months and may significantly affect tropical cyclone frequency and distribution in the South Pacific region.

Four tropical cyclones have been named in Fiji's area of responsibility this season with "TC Xavier (pre-season) and TC Yani" both forming near Solomon Islands on 22nd October and 22nd November respectively. January saw typical *El Niño* pattern of tropical cyclone formation (east of dateline) and movement (southeast). TC Zita formed near the Northern Cook Islands on the 23rd while TC Arthur formed to the east of Samoa on the 25th. Both cyclones followed the similar track and affected parts of French Polynesia.

Since 1969/70 season, 8 tropical cyclones have affected Fiji in February and during the same period for *El Niño* seasons, 4 tropical cyclones have affected Fiji with 1 reaching gale, 1 storm intensity and 2 reached hurricane intensities. Based on the historical records, the chance of a cyclone affecting from February to April is still high. 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.

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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