

Fiji Islands Climate Summary

June 2008

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IN BRIEF

Most of the country received above average rainfall in June as more than usual rain-bearing systems affected the Group. Most of the rainfall received during the month was between June 1-6 and 11-16. Flash flooding was reported in parts of the country during both periods.

On June 14, a squall was reported in Lautoka. Wind gusts exceeding 40km/h were experienced from 10a.m with the worst conditions from 2-3p.m when wind gusts reached 61.2km/h and 55.2mm of rainfall was recorded at the Sugar Research Centre.

Above average to well above average rainfall was experienced in the Central, Eastern and Northern Divisions. Rainfall at Lakeba and Vunisea was the highest on record for the month of June. A large number of sites recorded more than 200% of normal June rainfall.

Rainfall for the April to June 2008 period was predicted to be *average to above average* across the country.

Of the 23 stations that reported in time for this summary, 21 recorded *above average* and two reported *average* rainfall. The hit rate for the April to June prediction was 100%. The June to April period was also the wettest on record at Lakeba.

Maximum and the minimum air temperatures were generally *average to above average* across the country. At Nacocolevu and Ono-I-Lau, new high monthly minimum temperatures of 20.5°C and 24.8°C were recorded. The old records were set in 1984 and 1969 respectively.

El Niño Southern Oscillation (ENSO) indicators show *Neutral* conditions are firmly established in the tropical Pacific at the current time. Computer models predict Pacific SSTs to gradually warm but remaining *near neutral* (70% chance) in the coming months. *Average* or *above average* rainfall is favoured across the country for the July to September period. The skill of the prediction is *low to very low*.

WEATHER PATTERNS

An enhanced South Pacific Convergence Zone (SPCZ), frontal system and trough of low pressure caused widespread rainfall with some heavy falls at the beginning and middle of the month. This was followed by a southeasterly windflow for a few days. Wet conditions returned to parts of the country from June 23-25 and 27-29 when weak troughs were in the vicinity of the Group.

Gusty winds and significant rainfall observed from June 1-3 were associated with a front, which developed over the southern parts of the Group. In the Central Division, 24hr rainfall in excess of 100mm was received at Navua, Koronivia and Nausori Airport on June 2, and at Vanuabalavu and Lakeba on June 3. From June 4-6, the SPCZ drifted south and brought in rainfall to the northern parts of the Group. In the Eastern Division, 110mm was recorded on June 4, at Lakeba and 118mm at St. John's College, Levuka. An easterly windflow prevailed from June 7-9.

A second period of gusty winds and significant rainfall was experienced from June 11-15 as the SPCZ became active over the southern and southwestern parts of the country on June 11. Daily rain-

fall at Navua, Vanuabalavu, Lakeba and Vunisea exceeded 100mm on June 12. Also June 13 in the case of Lakeba. Meanwhile, a low-pressure system developed to the west of Viti Levu. An associated trough which traversed west across the country brought squalls to Lautoka on June 14. At the Lautoka Wharf, gusts exceeding 40km/h were recorded between 10a.m and 3p.m. The highest gust of 61.2km/h and 55.2mm of rainfall was recorded at the Sugar Research Institute between 2 and 3p.m and when the system was overhead. As the low moved south, southeasterly winds dominated for the next few days bringing brief Trade showers over the eastern parts of the larger islands.

Wet conditions returned to parts of the country from June 23-25 and 27-29 when weak troughs were in the vicinity of the Group. This was followed by a ridge of high pressure, which caused a cool southeasterly windflow on June 30.

Rotuma received rainfall on 26 days of the month largely due to the close proximity of the SPCZ. Significant falls were experienced on June 1, 9-12, 22 and 24-28.

RAINFALL IN RECENT MONTHS

Rainfall in June

Rainfall varied from *below average* in Nadi and Ba to *well above average* in the Northern, Central and Eastern Divisions. Total monthly rainfall at Lakeba and Vunisea was the highest on record for the month of June. Lakeba received more than seven times its normal June rainfall.

At Matei Airport, Vanuabalavu and Vunisea more than 300% of normal rainfall was recorded while more than 200% of normal rainfall was recorded at Udu Point, Labasa Airfield, Koronivia, Nausori Airport, Navua, St. Johns College, Levuka and Ono-I-Lau.

Rainfall in the last three months

Rainfall for the April to June 2008 period was predicted to be *average to above average* across the Fiji Group. The confidence level of the forecast was low to moderate.

Of the 23 stations that reported in time for this summary, 21 recorded *above average* and two reported *average* rainfall. The hit rate for the April to June prediction was 100%.

The June to April period was also the wettest on record at Lakeba.

TABLE 1 : THREE MONTH RAINFALL : APRIL TO JUNE 2008

| <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 April 08 (% of total rain)</u> | <u>No. of Rain days in May 08 (% of total rain)</u> | <u>No. of Rain days in June 08 (% of total rain)</u> |
|-----------------------|-----------------------------|--|---|---|--|
| Penang Mill, Rakiraki | 594.0 | Above Average | 25 (37) | 13 (45) | 11 (18) |
| Monasavu Dam | 1213.2 | Above Average | 22 (40) | 14 (20) | 19 (40) |
| Rarawai Mill, Ba | 498.8 | Above Average | 14 (54) | 14 (35) | 12 (11) |
| Nacocolevu | 463.8 | Above Average | 13 (36) | 16 (39) | 11 (25) |
| Viwa Island | 543.1 | Above Average | 15 (38) | 15 (46) | 05 (16) |
| Lautoka (FSC Res.) | 456.0 | Above Average | 14 (26) | 13 (49) | 07 (25) |
| Nadi Airport | 443.7 | Above Average | 14 (44) | 14 (45) | 11 (11) |
| *Tokotoko, Navua | 1400.3 | Above Average | 15 (20) | 17 (42) | 19 (38) |
| Laucala Bay, Suva | 908.3 | Above Average | 21 (39) | 21 (27) | 20 (34) |
| Koronivia | 1022.9 | Above Average | 18 (29) | 18 (32) | 22 (39) |
| Nausori Airport | 999.4 | Above Average | 18 (26) | 20 (38) | 23 (36) |
| Nabouwalu | 524.9 | Average | 22 (41) | 20 (33) | 21 (26) |
| Labasa Airport | 707.3 | Above Average | 19 (35) | 16 (45) | 09 (20) |
| Savusavu Airport | 827.0 | Above Average | 18 (37) | 20 (36) | 20 (27) |
| Udu Point | 800.2 | Above Average | 15 (19) | 13 (39) | 15 (42) |
| Matei Airport | 833.1 | Above Average | 30 (23) | 28 (32) | 25 (45) |
| Vanua Balavu, Lau | 812.6 | Above Average | 14 (20) | 17 (18) | 20 (62) |
| Lakeba, Lau | 1088.6 | Above Average | 15 (30) | 16 (17) | 13 (53) |
| Matuku, Lau | 479.4 | Above Average | 08 (27) | 14 (43) | 11 (30) |
| Ono-I-Lau, Lau | 460.4 | Average | 09 (15) | 10 (43) | 13 (42) |
| Levuka, Ovalau | 1023.0 | Above Average | 15 (28) | 17 (29) | 19 (43) |
| *Vunisea, Kadavu | 1050.8 | Above Average | 22 (24) | 22 (36) | 22 (40) |
| Rotuma | 1170.2 | Above Average | 25 (23) | 25 (45) | 26 (32) |

* Data missing : 2 days in April - Tokotoko, Navua and 2 days in June - Vanabalavu

AIR TEMPERATURES, RELATIVE HUMIDITY AND SUNSHINE IN JUNE

Maximum Air Temperatures were *average to above average* except at Tokotoko in Navua. The greatest positive departures from normal were recorded at Viwa (1.3°C), Penang Mill (1.2°C) Monasavu and Lakeba (1.1°C). Tokotoko, Navua was the only site which recorded below average maximum air temperatures.

Minimum Air Temperatures were *average to above average* at most sites. The greatest positive departures were recorded at Nacocolevu (2.0°C) and Tokotoko, Navua (1.8°C). The greatest negative departures were recorded at Rotuma and Lakeba (-0.5°C) and St. John's College, Levuka (-0.4°C).

Relative Humidity at 0900hrs was generally *above average*. The greatest positive anomalies were recorded at Vanuabalavu (7.8%), Lakeba (7.3%) and Nausori Airport (7.2%). The greatest negative anomalies were recorded at Savusavu Airport (-5.1), Matuku Island (-3.3%) and Penang Mill (-2.6%).

Sunshine & Winds

Sunshine hours were near average (80 - 96%) across the country in June. Wind speeds were *below average* at Rotuma and Nabouwalu, *average* at Nausori Airport, and *above average* at Nadi Airport and Vunisea.

Figure 1

**Nadi Airport - Temperature & Rainfall Records for the last 13 Months
(June 2007 - June 2008)**

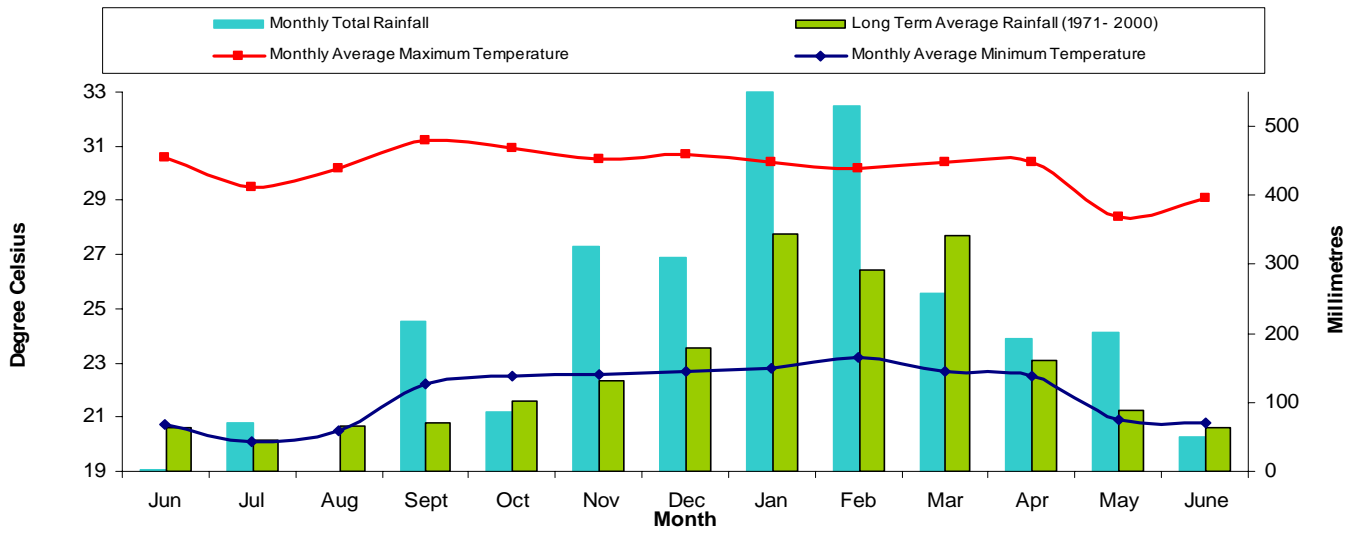


Figure 2

**Labasa Airfield - Temperature & Rainfall Records for the last 13 Months
(June 2007 - June 2008)**

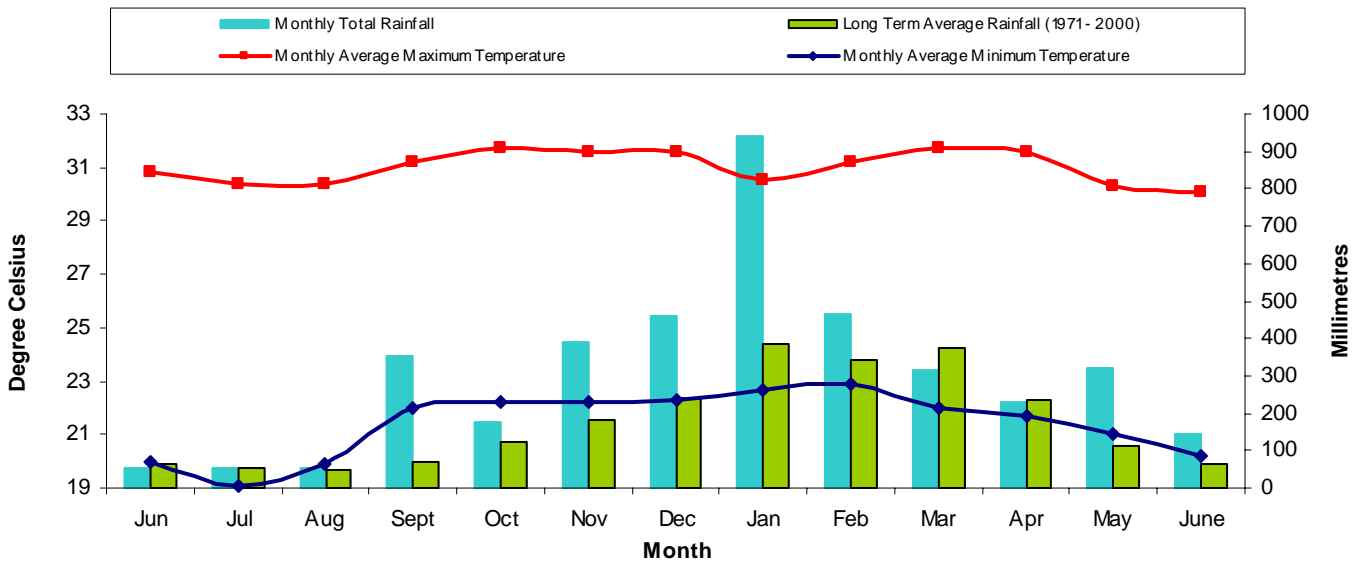
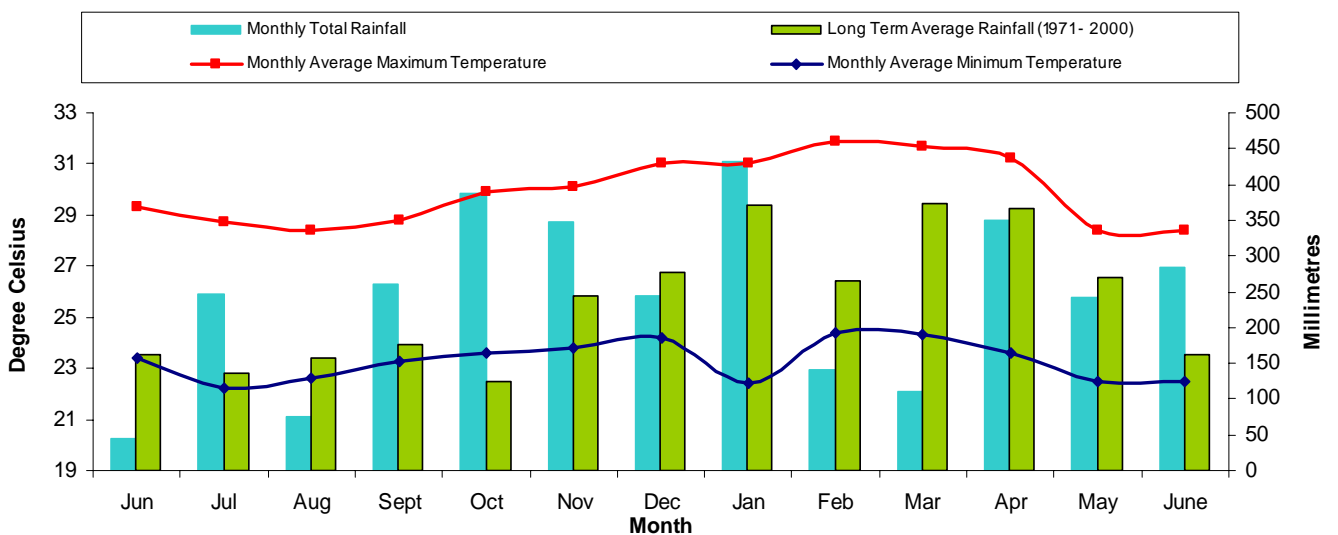


Figure 3

**Laucala Bay/Suva - Temperature & Rainfall Records for the last 13 Months
(June 2007 - June 2008)**



PRELIMINARY CLIMATOLOGICAL SUMMARY FOR JUNE 2008

PRELIMINARY CLIMATOLOGICAL DATA FOR MONTH 6 , 2008 : SUMMARY FOR DAYS 1 TO 30

| | RAINFALL | | | | AIR TEMPERATURES | | | | | | | | SUNSHINE | | |
|-------------------|----------|-----|-----------|------|------------------|------|------|------|---------|------|----|------|----------|-----|-----|
| | TOTAL | | RAIN MAX. | | AVERAGE DAILY | | | | EXTREME | | | | TOTAL | | |
| | MM | % | * DAYS | FALL | MAX. | # | MIN. | # | MAX. | MIN. | C | ON | C | ON | HRS |
| NADI AIRPORT | 50 | 78 | 11 | 19 | 14 | 29.1 | 0.1 | 20.8 | 1.6 | 32.0 | 16 | 18.0 | 9 | 173 | 85 |
| SUVA/LAUCALA BAY | 316 | 194 | 20 | 91 | 2 | 28.4 | 0.7 | 22.5 | 1.1 | 30.6 | 17 | 20.3 | 8 | 134 | 96 |
| NACOCOLEVU | 115 | 151 | 11 | 30 | 28 | 28.6 | 0.2 | 20.7 | 2.0 | 31.5 | 22 | 17.2 | 1 | 119 | 80 |
| ROTUMA | 374 | 160 | 26 | 42 | 1 | 30.1 | 0.5 | 24.1 | -0.5 | 31.0 | 30 | 22.0 | 13 | 161 | 86 |
| VIWA | 86 | 129 | 5 | 75 | 5 | 29.7 | 1.3 | 23.7 | 0.5 | 32.5 | 16 | 21.7 | 9 | | |
| UDU POINT | 341 | 294 | 15 | 72 | 5 | 28.9 | 0.2 | 23.1 | -0.0 | 32.0 | 24 | 20.1 | 8 | | |
| SAVUSAVU AIRFIELD | 226 | 190 | 20 | 57 | 11 | 28.0 | 0.1 | 21.4 | -0.2 | 29.5 | 14 | 19.6 | 6 | | |
| LABASA AIRFIELD | 142 | 212 | 9 | 40 | 5 | 30.1 | 0.3 | 20.2 | 1.3 | 32.0 | 5 | 16.5 | 26 | | |
| NABOUWALU | 134 | 137 | 21 | 38 | 5 | 27.8 | 0.7 | 23.0 | 0.4 | 29.7 | 14 | 21.0 | 15 | | |
| KORONIVIA | 400 | 258 | 22 | 146 | 2 | 27.8 | 0.4 | 21.4 | 1.1 | 29.6 | 24 | 19.5 | 1 | | |
| NAUSORI AIRPORT | 362 | 240 | 23 | 128 | 2 | 27.4 | 0.1 | 20.8 | 0.3 | 29.0 | 14 | 18.0 | 10 | | |
| NAVUA/TOKOTO | 526 | 268 | 19 | 160 | 2 | 26.7 | -1.4 | 20.7 | 1.8 | 28.9 | 14 | 17.0 | 9 | | |
| MONASAVU | 486 | 189 | 19 | 78 | 3 | 22.9 | 1.1 | 17.6 | 1.5 | 25.4 | 8 | 15.2 | 9 | | |
| LAUTOKA AES | 112 | 156 | 7 | 60 | 14 | 29.5 | 0.7 | 21.3 | 0.6 | 31.5 | 19 | 18.7 | 11 | | |
| BA/RARAWAI MILL | 55 | 62 | 13 | 17 | 13 | 30.5 | 0.5 | 19.5 | 1.5 | 32.9 | 20 | 16.1 | 11 | | |
| PENANG MILL | 104 | 105 | 11 | 36 | 12 | 28.9 | 1.2 | 22.1 | 0.7 | 30.5 | 17 | 18.1 | 8 | | |
| MATEI AIRFIELD | 379 | 303 | 25 | 45 | 18 | 28.2 | 0.2 | 22.9 | 0.4 | 29.5 | 14 | 21.1 | 12 | | |
| VANUABALAVU | 508 | 379 | 20 | 137 | 3 | 28.1 | 0.5 | 23.2 | 0.4 | 29.9 | 27 | 20.2 | 13 | | |
| LAKEBA | 574 | 709 | 13 | 137 | 13 | 28.4 | 1.1 | 21.5 | -0.5 | 29.9 | 10 | 18.5 | 11 | | |
| ST. JOHNS COLLEGE | 449 | 289 | 19 | 114 | 5 | 27.8 | 0.1 | 21.9 | -0.4 | 29.5 | 15 | 20.0 | 10 | | |
| VUNISEA | 421 | 334 | 22 | 102 | 12 | 26.7 | 0.1 | 21.8 | 1.3 | 29.6 | 15 | 19.4 | 8 | | |
| MATUKU | 143 | 133 | 11 | 31 | 12 | 27.8 | 0.9 | 22.7 | 1.0 | 30.5 | 26 | 19.2 | 6 | | |
| ONO-I-LAU | 195 | 219 | 13 | 69 | 13 | 26.4 | 0.5 | 21.6 | 0.2 | 28.7 | 16 | 18.0 | 30 | | |

RAINFALL OUTLOOK FOR FIJI ISLANDS - JUNE TO AUGUST 2008

El Niño Southern Oscillation (ENSO) indicators show that *Neutral* conditions are firmly established in the tropical Pacific at the present time. Over the last month or so, the cool Sea Surface Temperature (SST) anomalies have weakened in the central equatorial Pacific, while warm anomalies have emerged both in the surface and subsurface ocean in the far eastern Pacific. The Southern Oscillation Index (SOI) has fallen from large positive values to 5.0 this month, cloudiness has increased to near normal near the Dateline and the equatorial Trade Winds are close to average.

Computer models predict Pacific SSTs to gradually warm but remaining *near neutral* (70% chance) in the coming months. The models also indicate a low chance of either strong warming to *El Niño* (15%) levels or a re-intensification of *La Nina* (15%) conditions during July to September period. *Average or above average* rainfall is favoured across the Fiji Islands during the July to September period. The skill of the prediction is *low to very low*.

(More detailed climate predictions will follow in the "Fiji Islands Climate Outlook" to be released in the coming days).

TABLE 2— CLIMATE RECORDS ESTABLISHED IN JUNE 2008

| Element | Station | Observed (record) | On | Rank | Previous (record) | Year | Records Began |
|------------------------|-----------------|-------------------|------|----------|-------------------|------|---------------|
| Monthly Total Rainfall | Lakeba | 574.2mm | - | New High | 349.0mm | 1962 | 1949 |
| Monthly Total Rainfall | Vunisea, Kadavu | 421.3mm | - | New High | 321.4mm | 1975 | 1943 |
| Daily Min Temp | Nacocolevu | 20.7°C | 17th | New High | 20.5°C | 1984 | 1926 |
| Daily Min Temp | Ono-I-Lau | 25.3°C | 12th | New High | 24.8°C | 1969 | 1943 |

Normal - Long term average from 1971 to 2000.

Average - Rainfall between 80 to 119%.

Well Below Average - Rainfall less than 39%.

Above Average - Rainfall between 120 to 199%.

Below Average - Rainfall between 40 to 79%.

Well Above Average - Rainfall more than 200%.

This summary is prepared as soon as possible following the end of the month, once climate data is received from various recording stations around Fiji and ENSO information is received from various Meteorological Agencies around the World. Delays in data collection, communication and processing occasionally arise. While every effort is made to verify observational data, the Fiji Meteorological Service does not guarantee the accuracy and reliability of the analysis and rainfall predictions presented, and accepts no liability for any losses incurred through the use of this summary and its contents. The contents of the summary may be freely disseminated provided the source is acknowledged. All requests for data should be directed to the Fiji Meteorological Service HQ in Namaka, Nadi.