



Fiji Meteorological Service



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Climate Outlook for Monasavu from January to March 2018

Current Conditions

Fiji's Climate

The South Pacific Convergence Zone was displaced to the southwest of its normal position which typically happens when a La Niña event establishes.

Rainfall during December 2017 varied across the country. The Western Division recorded *below average* to *average* rainfall, while the Central Division experienced *average* to *above average* rainfall.

A number of stations experienced significantly warm and humid conditions on the 24th of the last month with new daytime air temperature records established at Tokotoko (35.1°C) and Nausori Airport (34.1°C). On the other hand, coolest night-time temperature of 14.0°C was recorded at Nadarivatu on the 10th.

In December 2017, Monasavu recorded 557.9mm of rainfall, which was 104% of the *normal*. During October to December 2017, Monasavu recorded 1488.5mm of rainfall, which was 114% of *normal*, while in the past six months, between July to December 2017, 1947.6mm of rainfall was received (96% of the *normal*).

El Niño-Southern Oscillation (ENSO) Status

Weak La Niña conditions have established in the tropical Pacific. The sea surface temperatures (SSTs) in the central and eastern tropical Pacific Ocean are around weak La Niña levels with SST anomalies between 0.5°C and 1°C. The sub-surface temperature have cooled by more than 4°C in December. The weak warm anomalies in the far western equatorial Pacific have strengthened and moved eastward.

The cloudiness near the Dateline have also been consistent with La Niña patterns, with below average cloud cover. However, the Southern Oscillation Index (SOI) for December was -1.4, that is, close to neutral levels. The Trade winds were also close to normal over most of the equatorial Pacific Ocean. The return of the Trade winds and the SOI to normal levels are most likely due to short term climate fluctuations. Thus, it should not be considered as an indication of the early breakdown of the La Niña conditions.

La Niña events are usually associated with enhanced rainfall activity over Fiji. However, with a weak event

El Niño-Southern Oscillation and Monasavu Climate Predictions

El Niño-Southern Oscillation Prediction

Global climate models are favoring for weak La Niña conditions to persist through the December 2017 to February 2018 period, with a transition to neutral conditions supported during the March to May 2018 period. Chances for El Niño are very small through to the April to June 2018 period.

SCOPIC Rainfall Predictions for Viti Levu:

January to March 2018:

Above average rainfall is favoured over the western half of Viti Levu, while rainfall can be highly variable on the eastern side. (Table 1).

SCOPIC Air Temperature Predictions for Viti Levu:

January to March 2018:

The SCOPIC model outlook for air temperatures suggest that air temperatures can be highly variable in the coming months with occasional periods of hotter than usual daytime temperatures (Tables 2 & 3). Furthermore, the global climate models are generally favouring *above normal* air temperature in the Fiji region.

SCOPIC Rainfall Prediction for Monasavu:

Using Tercile method: January to March 2018:

There is 34% chance of *below average* or less than 1423mm of rainfall, 39% chance of *average* rainfall and 27% chance of *above average* rainfall or more than 1907mm of rainfall

(*very low* confidence) (Figure 1).

Median method: January to March 2018 :

There is a 52% chance of receiving less than 1697mm of rainfall and 48% chance of receiving greater than 1697mm of rainfall (*very low* confidence) (Figure 2 & Table 1).

SCOPIC Rainfall Prediction for Monasavu:

Using the Tercile method - April to June 2018:

There is 24% chance of *below average* or less than 858mm of rainfall, 40% chance of *average* and 36% chance of *above average* rainfall or more than 1171mm of rainfall (*low* confidence).

Using the Median method - April to June 2018:

There is a 46% chance of receiving less than 984mm of rainfall and 54% chance of receiving greater than 984mm of rainfall (*low* confidence).

In summary, the SCOPIC model forecast at Monasavu for the period January to March 2018 predicts *average* rainfall. Moreover, global climate models are favouring *average* or *above average* rainfall in the Fiji region over the same period.

Considering that we are now in the peak period of the wet and tropical cyclone season, together with the persistence

Figure1: SCOPIC-3month Rainfall Outlook (Tercile Method)
Jan to Mar 2018
T1: 1423mm T2: 1907mm

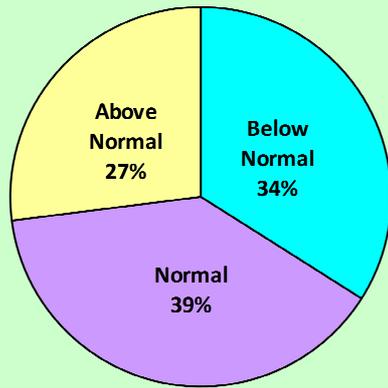


Figure2: SCOPIC-3month Rainfall Outlook (Median Method)
Jan to Mar 2018
Median Rainfall 1697mm

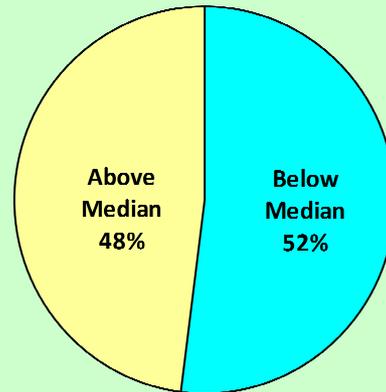


Figure 3
Monthly Rainfall Distribution for Monasavu from December 2016 to December 2017



Figure 4
Actual and Long Term Average (LTA) Cumulative Rainfall for Monasavu (December 2016 to December 2017)

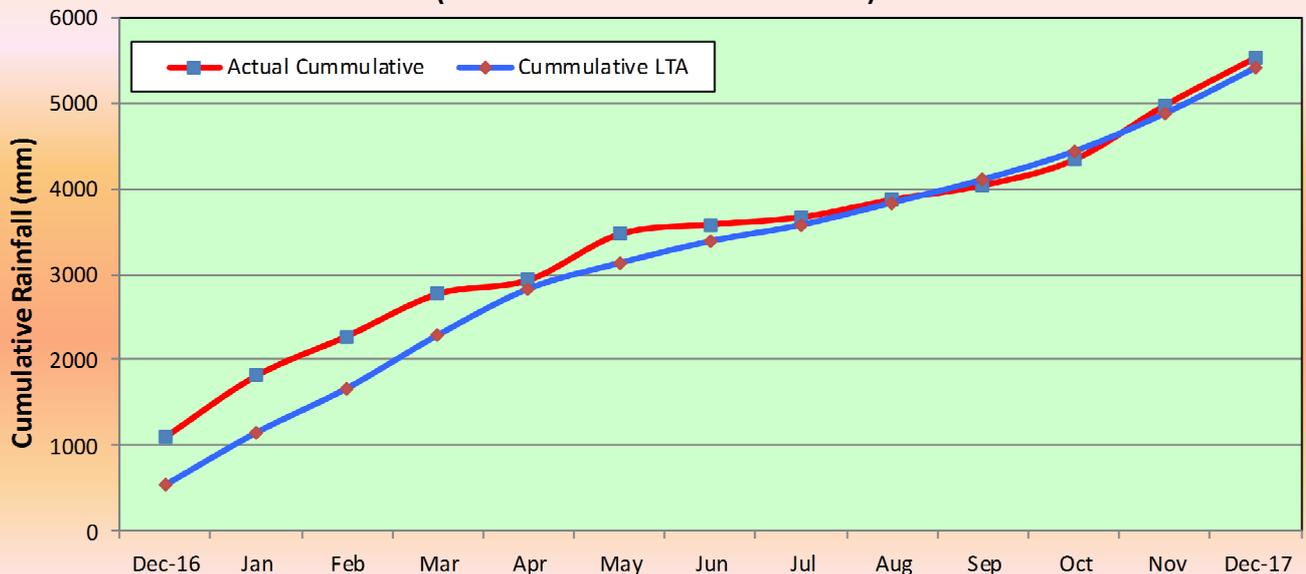
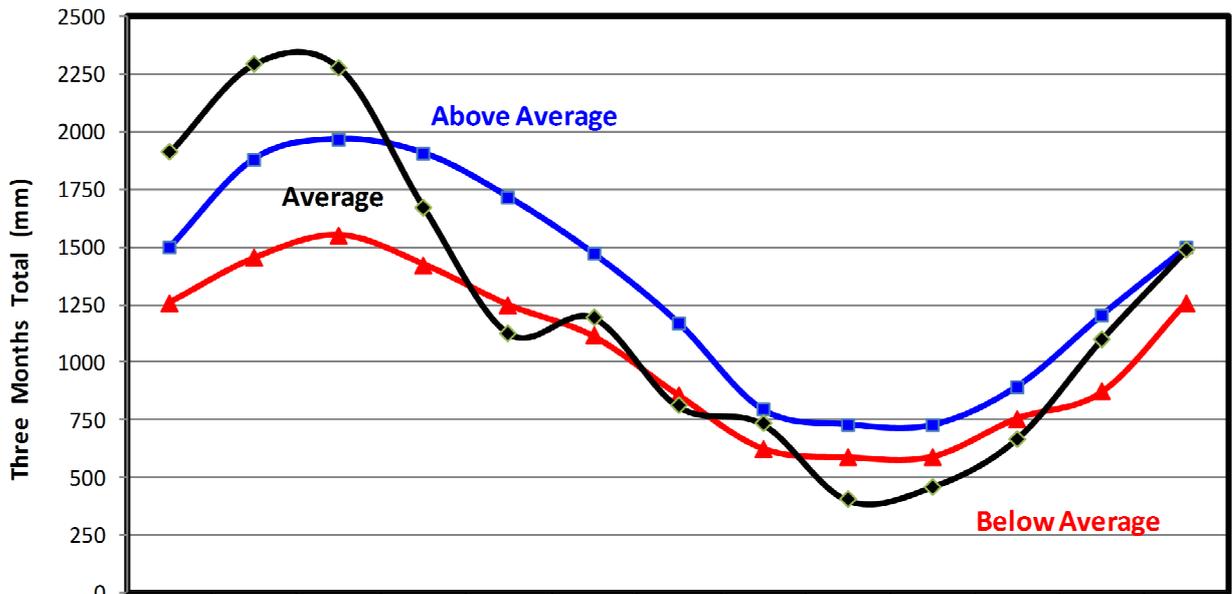


Figure 5

Monasavu- Three Months (Seasonal) Rainfall



	Oct- Dec16	Nov16- Jan17	Dec16- Feb17	Jan- Mar17	Feb-Apr 17	Mar- May17	Apr- Jun17	May-Jul 17	Jun- Aug16	Jul- Sep17	Aug- Oct17	Sept- Nov17	Oct- Dec17
Series1	1496.9	1881.9	1967.6	1906.9	1716.0	1471.4	1171.1	792.9	728.6	725.5	892.7	1202.3	1496.9
Series2	1257.9	1450.8	1550.1	1423.1	1247.3	1112.0	858.2	626.0	588.4	590.9	756.0	869.9	1257.9
Actual Rainfall	1910.7	2295.6	2281.1	1674.7	1126.9	1194.8	809.6	732.5	402.1	459.1	668.1	1099.3	1488.5

The tercile values have been calculated from January 1980 to November 2017 data. In the tercile method, three months rainfall is arranged from the lowest on record to highest on record. The observed three months rainfall below tercile 1 (T1) is considered to be below average, while rainfall above tercile 2 (T2) is considered to be above average. By this method, extreme conditions either wet or dry is flagged by T1 and T2 boundary.

Figure 6

Southern Oscillation Index Vs 5-Month Running Mean (January 2012 - December 2017)

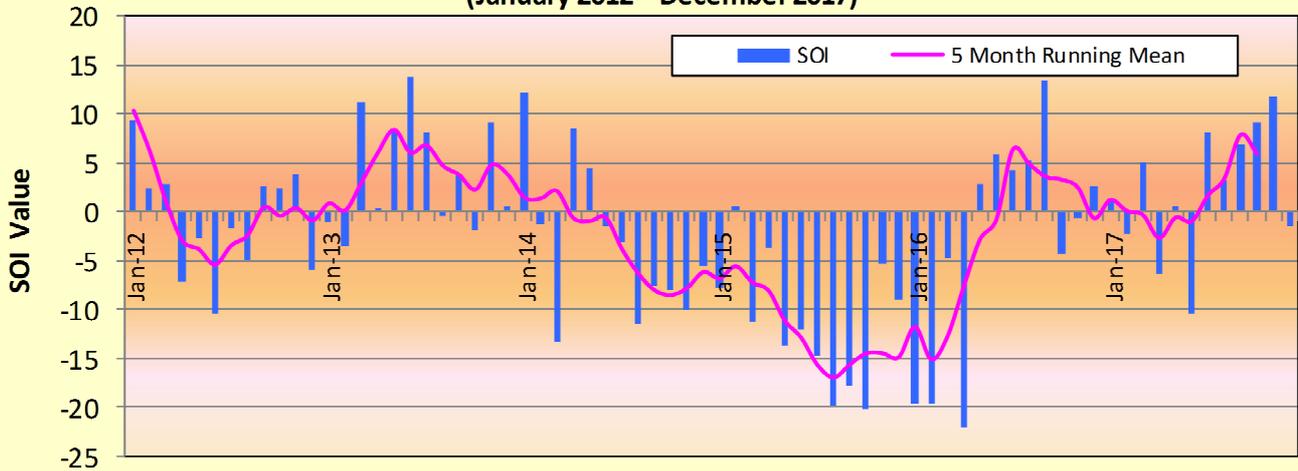


Figure 7

Niño Regions

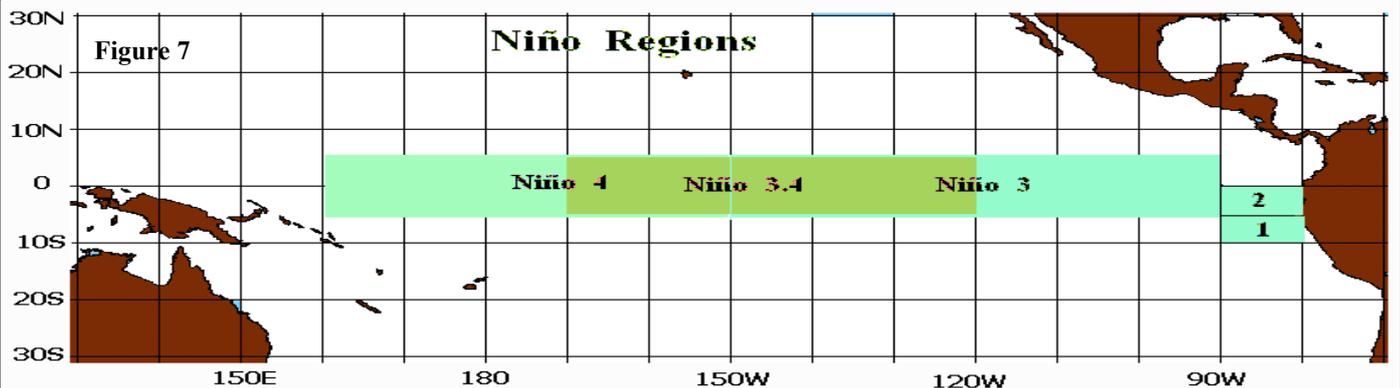


Table 1: Rainfall Predictions from January to March 2018

Rainfall	Below Average (%)	Average (Median) (mm)	Above Average (%)
Monasavu Dam	52	1697	48
Nadi Airport	35	938	65
Penang Mill	30	1069	70
Laucala Bay (Suva)	46	1012	54
Nacocolevu (Sigatoka)	37	816	63

Table 2: Maximum Air Temperature Predictions from January to March 2018

MAXIMUM TEMPERATURE	Below Average (%)	Average (Median) (°C)	Above Average (%)
Monasavu	48	25.7	52
Laucala Bay (Suva)	56	30.8	44
Nadi Airport	74	31.4	26

Table 3: Minimum Air Temperature Predictions from January to March 2018

MINIMUM TEMPERATURE	Below Average (%)	Average (Median) (°C)	Above Average (%)
Monasavu	57	19.3	43
Laucala Bay (Suva)	52	23.9	48
Nadi Airport	59	22.9	41

Climate bulletins issued by the Climate Services Division of Fiji Meteorological Service include:

- 1) *Fiji Climate Summary at <http://www.met.gov.fj/Summary1.pdf> (issued monthly)*
- 2) *Fiji Climate Outlook at <http://www.met.gov.fj/Outlook1.pdf> (issued monthly)*
- 3) *Climate Outlook for Monasavu at <http://www.met.gov.fj/Monasavu1.pdf> (issued monthly)*
- 4) *Fiji Sugarcane Rainfall Outlook at <http://www.met.gov.fj/SOutlook.pdf> (issued quarterly)*
- 5) *ENSO Update at http://www.met.gov.fj/ENSO_Update.pdf (issued every second month)*
- 6) *Fiji Annual Climate Summary at <http://www.met.gov.fj/Summary2.pdf> (issued annually)*

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