Fiji Meteorological Service

ISO 9001:2015 certified Climate Services

Volume: 21 Issue: 5
Issued: April 29, 2025

Climate Outlook for Hydro-electricity Generation from May to July 2025

Current Conditions

Fiji's Climate

Apart from the presence of occasional trough of low pressure systems, generally fine weather transpired across the Fiji Group during the month. There were reports of localized surface and flash flooding in some parts of the Central and Western Division.

There were 22 rainfall stations that reported in, in time for the compilation of this bulletin, with 1 station reporting *well below average,* 8 *below average, 10 average* and 3 stations reporting *above average* rainfall.

Monasavu's total monthly rainfall, until 28th April was 578mm, which is in the *above average* category (121% of *normal*), when compared against the WMO standard 30-year average.

The total monthly rainfall recorded during the February until 28th April 2025 period, was 1291mm , which was 87% of the *normal*, while in the past 6 months (November to 28th April, 3303mm of rainfall was recorded (102% of the *normal*) at the station (Figure 1).

El Niño Southern Oscillation (ENSO) Status

ENSO status is currently in neutral, with likely chances of the event to persist during May to July 2025 period, with global climate models favoring neutral status till the end of the year. Sea surface temperatures (SSTs) are currently *near to above average* in the eastern and far western Pacific and *below average* in the central Pacific ocean.

The Southern Oscillation Index (SOI) for March 2025 was 13.2, with the 5-month running mean of 8.4. The latest 30-day value to 20th April 2025 was –0.19.

Trade winds have been closer to average in the western and the central Pacific. Cloudiness has been below average. Overall, ENSO indicators currently reflect neutral conditions, with the likelihood of the event to continue throughout 2025.

El Niño-Southern Oscillation and Monasavu Climate Predictions

El-Niño Southern Oscillation Prediction

Recently surveyed global climate models, on average favor neutral conditions during the May to July period, which is likely to continue until the end of 2025.

Minimum & Maximum Air Temperature Predictions - May & May to July 2025:

Day and night time temperatures are both likely to be *above normal* across Viti Levu and Vanua Levu during May as well as the May to July 2025 period (Figure 4 and 5).

Rainfall Predictions:
Fortnightly: 27th April – 10th May & 4th – 17th May

Rainfall across Viti Levu is likely to be above median from 27th April – 10th May, as well as from 4th to 17th May.

May 2025

There is 75% chance of receiving at least 98mm of rainfall at Nadarivatu station, 75% chance of at least 109mm of rainfall at the Nadarivatu and Monasavu Dams and 75% chance of receiving at least 121mm of rainfall at Wailoa. The confidence in this forecast is Good (Table 1).

May to July 2025

For the May to July 2025 period, there is 75% chance of receiving at least 295mm of rainfall at Nadarivatu station, 75% chance of at least 330mm of rainfall at Nadarivatu Dam and Monasavu, and 75% chance of receiving at least 375mm of rainfall at Wailoa. There is high confidence on the generated outlook (Table 1).

Summary

There is no strong biasness for drier or wetter than usual condition across Viti Levu during May. However, wetter than normal conditions are favored to be experienced during the May to July 2025 period.

Skill confidence is good for May and high for the May to July 2025 period.

Figure 1 Monthly Rainfall Distribution at Monasavu until 28th April 2025

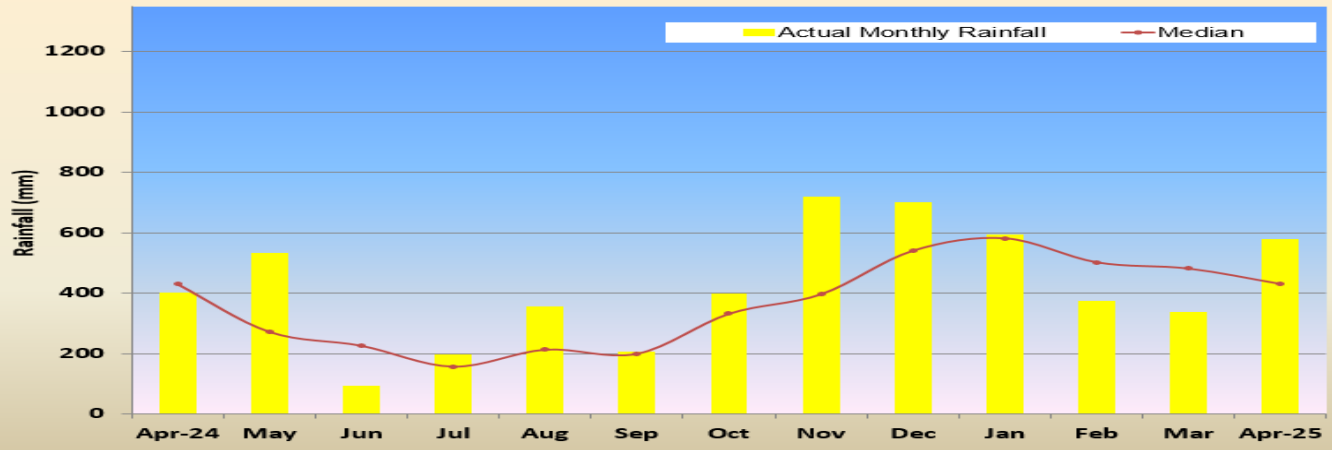


Table 1: Rainfall Outlook: May & May to July 2025

May Outlook				
	25% chance of at least (mm)	**50% chance of at least (mm)**	**75% chance of at least (mm)**	**Forecast Confidence**
Nadarivatu station	271	149	98	Good
Nadarivatu Dam	273	146	109	Good
Monasavu Dam	273	146	109	Good
Wailoa	288	173	121	Good
May to July Outlook				
	25% chance of at least (mm)	**50% chance of at least (mm)**	**75% chance of at least (mm)**	**Forecast Confidence**
Nadarivatu station	589	425	295	High
Nadarivatu Dam	623	445	330	High
Monasavu Dam	623	445	330	High
Wailoa	654	489	375	High

The table above provides 25%, 50% and 75% chances of each station receiving the amount of rainfall mentioned above.

Figure 2: Rainfall Outlook: Fortnightly: 27th April – 10th May & 4th – 17th May

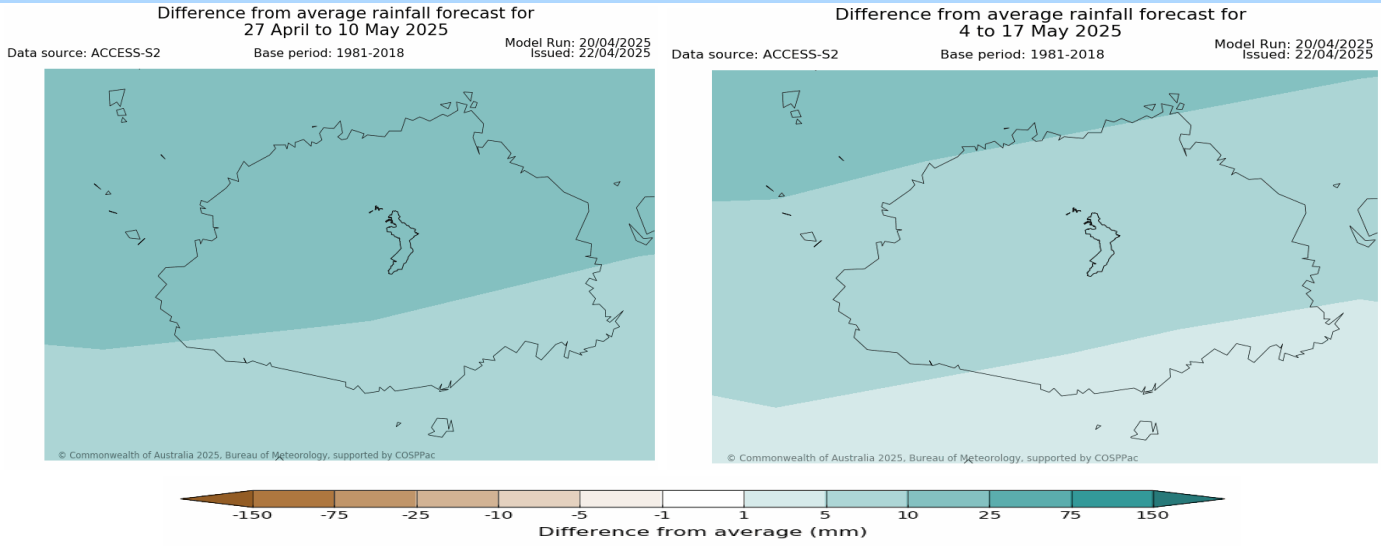


Figure 3: Rainfall Outlook: May & May to July 2025

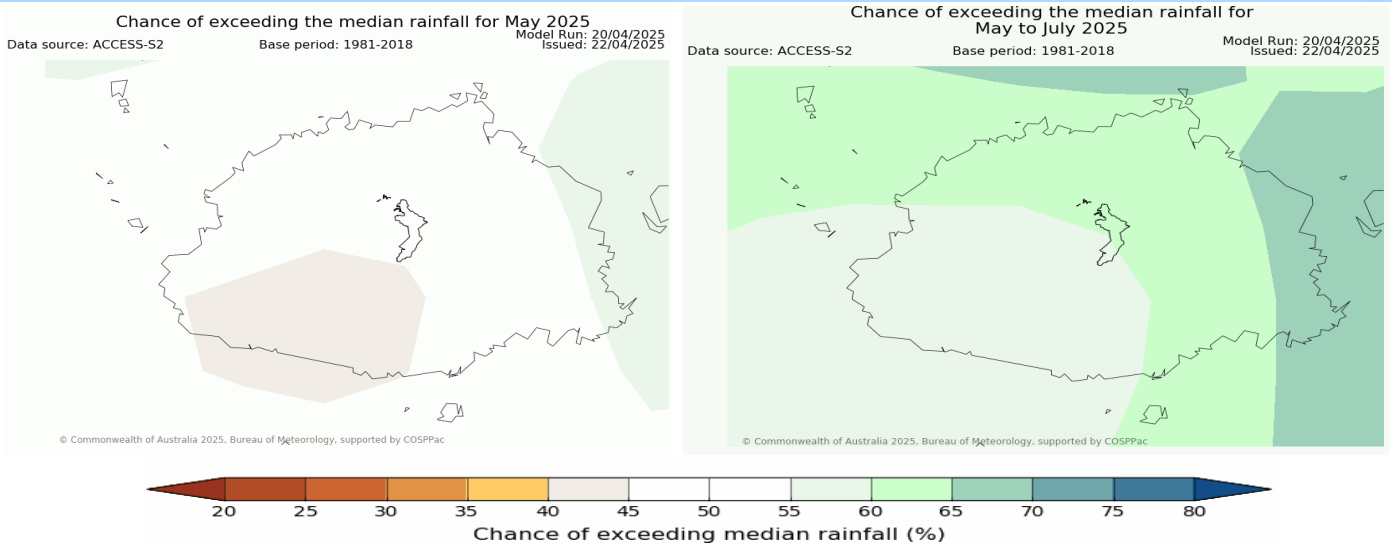
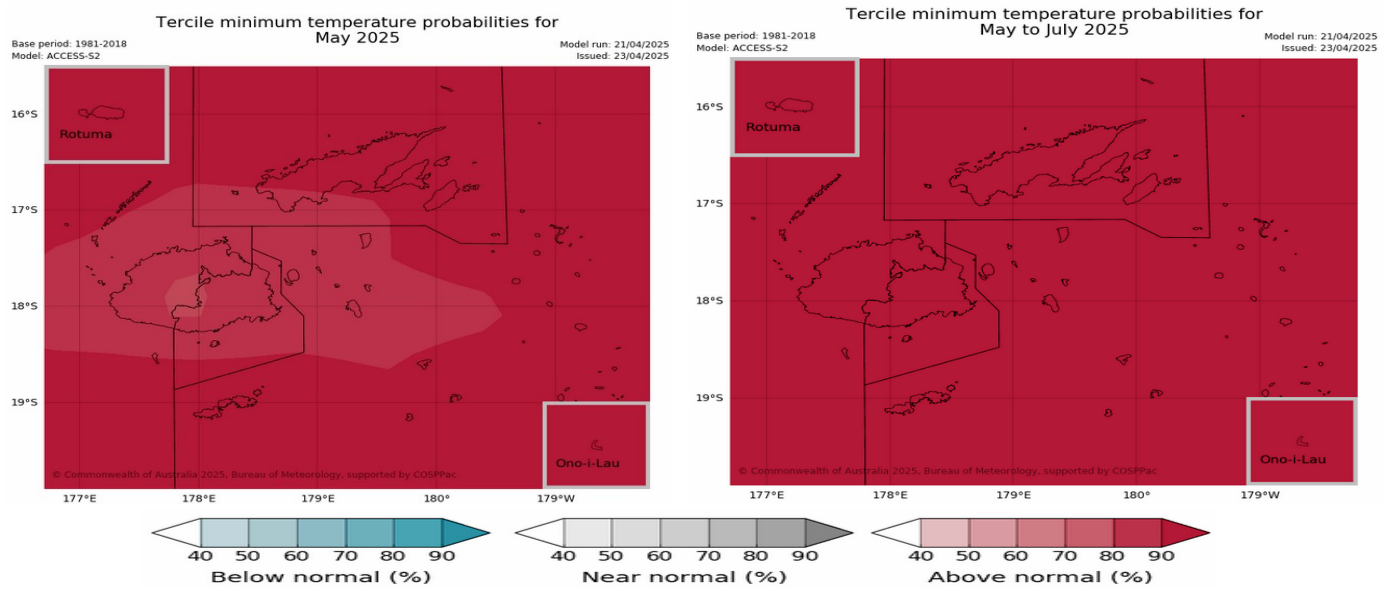
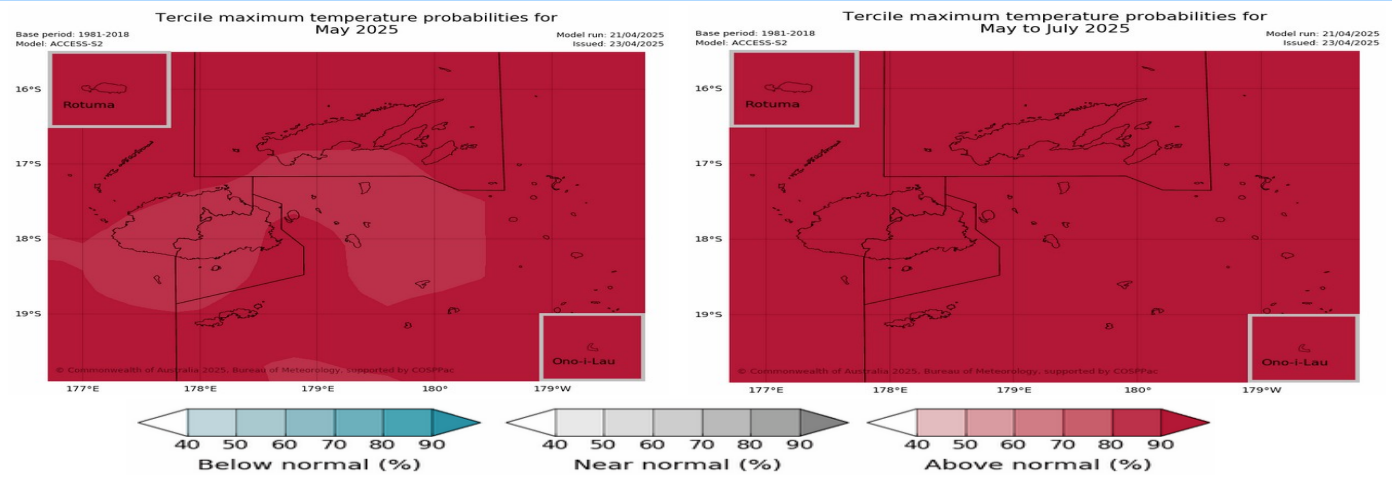


Figure 4: Minimum Air Temperature Predictions: May & May to July 2025



Minimum air temperatures are expected to be *above normal* across Viti Levu and Vanua Levu, during May and May to July 2025 period. *Source: ACCESS-S2 Model.*

Figure 5: Maximum Air Temperature Predictions: May & May to July 2025



Maximum air temperatures are likely to be *above normal* across Viti Levu and Vanua Levu, during May and May to July 2025 period. *Source: ACCESS-S2 Model.*

Explanatory Notes

Climate Outlook for Hydro-electricity Generation is produced to provide advisories to Energy Fiji Limited (EFL). It aims to provide advanced warning on climate abnormalities for planning on economic generation mix and hydro-storage optimization.

Climate (Rainfall/Air Temperature) Outlook

Above normal – indicates that the rainfall/temperature value lies in the highest third of observation recorded in the standard 30 year normal period.

Near normal – indicates that the rainfall/temperature value lies in the middle third of observation recorded in the standard 30 year normal period.

Below normal – indicates that the rainfall/temperature value lies in the lowest third of observation recorded in the standard 30 year normal period.
Climatology – means that there are equal chances of receiving below normal, normal and above normal rainfall.

Median – rainfall value which marks the level dividing the ranked data set in half, that is, the midpoint of the ordered (lowest to highest) monthly or yearly rainfall totals.

Above Median – rainfall value that lies above the median value.

Below Median – rainfall value that lies below the median value.

El Niño Southern Oscillation (ENSO)

ENSO is the principal driver of the year-to-year variability of Fiji's climate. There are three phases of this phenomenon, ***El Niño, La Niña*** and ***Neutral*** conditions. El Niño or La Niña events are a natural part of the global climate system and usually recur after every 2 to 7 years. It normally develops around April to June, attains peak intensity between December to February and usually starts to decay around April to June period the following year. While most events last for a year, some have persisted for up to 2 years. It should be also noted that no two El Niño or La Niña events are the same. Different events have different impacts, but most exhibit some common climate characteristics.

Usually there is a lag effect on Fiji's climate with ENSO events, that is, once an El Niño or La Niña event is established in the tropical Pacific, it may take 2-6 months before its impact is seen on Fiji. Similarly, once an event finishes, it can take 2 -6 months for climate to normalise.

El Niño events are associated with warming of the central and eastern tropical Pacific. El Niño events usually result in reduction of Fiji's rainfall. Often the whole of Fiji is affected in varying degrees and it is quite unusual for one part of the country to experience a prolonged dry spell, while the other is in a wet spell. The relationship and level of rainfall suppression is greater in the Dry Zone than in the Wet Zone. It is the suppression of rainfall during the Cool/Dry Season (May to October) that is normally of most concern. A reduction in Cool/Dry Season rainfall in the Dry Zone results in little or no rainfall until the next Wet Season. While usually the strength of an ENSO event is proportional to its impact on Fiji, at times weak event can also have a significant impact.

La Niña events are associated with cooling of the central and eastern tropical Pacific. Usually La Niña results in wetter than normal conditions for Fiji, occasionally leading to flooding during the Warm/Wet Season (November to April).

During **Neutral** condition, neither El Niño nor La Niña is present, it has little effect on global climate, meaning other climate influences are more likely to dominate.

Lag effects – means that there is a delay in a change of some aspect of climate due to influence of other factors that is acting slowly.

Climate bulletins that can be viewed together with this bulletin include:

1) *Fiji Climate Summary at https://www.met.gov.fj/index.php?page=FijiClimateSummary (issued monthly)*
2) *Fiji Climate Outlook at https://www.met.gov.fj/index.php?page=ClimateOutlook* **(***issued monthly)*

For further information, contact: The Director of Meteorology, Fiji Meteorological Service, Private Mail Bag NAP0351, Nadi Airport, Fiji. Phone: (679) 6724888, Fax: (679) 6720430, E-mail: fms@met.gov.fj or climate@met.gov.fj. URL: http://www.met.gov.fj