

# Seasonal Rainfall Outlook: June to August 2019

Samoa Meteorology Division (SMD)

Ministry of Natural Resources and Environment



(+685) 20855/20856



[www.samet.gov.ws](http://www.samet.gov.ws)



[www.facebook.com/Samoa Meteorological Services](https://www.facebook.com/Samoa-Meteorological-Services)



## Summary Statements

Issued : May 2019

Table 1: Three (3) months rainfall outlook : June to August 2019 period

*These outlooks are generated from the statistical model—SCOPIIC. International guidance from climate models such as IRI, METPI, ECMWF, APCC, POAMA, and others were also incorporated in these forecasts. Note : stations with \* used POAMA to generate their rainfall predictions.*

“Average to Below Average” rainfall is anticipated for the next three months.

| Location    | Rainfall Prediction      | Below Average (mm) | Average (mm) | Above Average (mm) |
|-------------|--------------------------|--------------------|--------------|--------------------|
| Afiamalu    | Average to Below Average | <509               | 507-669      | 669>               |
| Afullo*     | Average to Below Average | <272               | 272-395      | 395>               |
| Alafua      | Below Average            | <227               | 227-427      | 427>               |
| Aopo*       | Average to Below Average | <272               | 272-395      | 395>               |
| Apia        | Below Average            | <253               | 253-410      | 410>               |
| Faleolo     | Below Average            | <208               | 208-348      | 348>               |
| Fasitoo*    | Below Average            | <272               | 272-395      | 395>               |
| Fiaga*      | Average to Below Average | <272               | 272-395      | 395>               |
| Laulii      | Below Average            | <324               | 324-472      | 472>               |
| Leauvaa*    | Below Average            | <272               | 272-395      | 395>               |
| Letui*      | Below Average            | <272               | 272-395      | 395>               |
| Lepa*       | Average to Below Average | <272               | 272-395      | 395>               |
| Lotofaga    | Average to Below Average | <719               | 719-968      | 968>               |
| Maota*      | Below Average            | <272               | 272-395      | 395>               |
| Nafanua     | Average to Below Average | <297               | 297-498      | 498>               |
| Neiafu*     | Average to Below Average | <272               | 272-395      | 395>               |
| Nuusuatia*  | Average to Below Average | <272               | 272-395      | 395>               |
| Salailua*   | Average to Below Average | <272               | 272-395      | 395>               |
| Salani*     | Average to Below Average | <272               | 272-395      | 395>               |
| Saleilua*   | Average to Below Average | <272               | 272-395      | 395>               |
| Saoluafata* | Average to Below Average | <272               | 272-395      | 395>               |
| Savalalo*   | Below Average            | <272               | 272-395      | 395>               |
| Tiavea      | Average to Below Average | <725               | 725-1075     | 1075>              |
| Tuasivi*    | Below Average            | <272               | 272-395      | 395>               |
| Vaiaata*    | Average to Below Average | <272               | 272-395      | 395>               |

◆ Although the ENSO status is neutral, both oceanic and atmospheric indicators suggest a 50% likelihood of an El Nino event to occur in the coming months. (Pg 2)

◆ Generally “Average to below average” precipitation is anticipated for June to July 2019 period. (Pg 1)

◆ The next 6 months accumulated rainfall is expected to be “Average to below average”. (Pg 2)

◆ While some stations recorded “Below Average” rainfall in the last three (3) months (February to April), most stations experienced wetter conditions, mainly at the highland and southern region of Samoa. (Pg 3)

Table 2: 6 months Rainfall Outlook— September to November 2019 period

These outlooks are based upon the period March to April 2019 (Southern Oscillation Index (SOI) values)

“Average to Below average’ is anticipated for the six monthly period.

| Region   | Rainfall Prediction      | Below Average (mm) | Average (mm) | Above Average |
|----------|--------------------------|--------------------|--------------|---------------|
| Afiamalu | Average to Below Average | <785               | 785-1089     | 1089>         |
| Alafua   | Average to Below Average | <346               | 346-672      | 672>          |
| Apia     | Average to Below Average | <492               | 492-679      | 679>          |
| Faleolo  | Average to Below Average | <401               | 401-519      | 519>          |
| Laulii   | Average To Below Average | <628               | 628-975      | 975>          |
| Nafanua  | Average to Below Average | <598               | 598-762      | 762>          |
| Tiavea   | Average to Below Average | <855               | 855-1031     | 1031>         |

**El Nino Southern Oscillation (ENSO) Outlook**

**CURRENT SITUATION OF ENSO**

While El Nino thresholds were favoured in the last couple of months, the ENSO status remains neutral for the time being. Extreme temperatures were observed further south of the Pacific Ocean, mainly in the East coast of Southern Australia, extending towards New Zealand. Overall, SSTs were generally warmer than normal. In addition, sub sea surface temperatures were warm over the Central Equatorial region. However as the months progressed, these warm anomalies eventually weakened, and cool anomalies down to depths of 250m were strengthened in March 2019. The Nino anomalies therefore have slightly decreased in the last month : Nino 3 : +0.7°C , Nino 3.4 : +0.7°C and Nino 4 : +0.6°C. On the other hand, the Southern Oscillation Index (SOI) still fluctuate within normal range, and makes an El Nino event difficult to predict in the near future. The approximate 30-day and 90-day (SOI) values to 12 of May were -6.2 and -8.3 respectively. The SOI value for both 30 and 90 day has been within El Nino thresholds in recent weeks.

**ENSO OUTLOOK**

The ENSO Outlook in the upcoming months suggest a 50% likelihood of an El Nino event to occur. Models also predict later on in 2019, that SSTs will return to neutral levels, if the atmospheric indicators continue to linger within neutral levels. An El Nino event will only take place if both ocean and Atmospheric indicators couple.

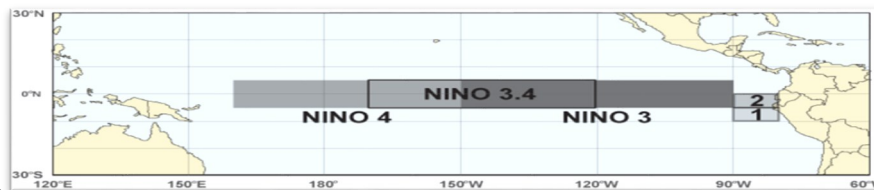


Figure 1. Niño SST Indices

**Table 3: Issued Forecast Verification for Three Monthly Rainfall (February to April 2019)**

*This table shows the verification of the forecast for the last 3 months. This was the rainfall forecast that was issued in January 2019 for the period of February to April 2019. These outlooks were generated using SOI values of November to December 2018.*

*(N.B : The stations with complete set of data throughout the three monthly period are used for this analysis).*

| Climate Stations | Three Monthly Total Rainfall (mm) | Long Term Average (mm) | Three Monthly Rainfall Status | Rainfall Prediction for February to April 2019 | Verification of Forecast |
|------------------|-----------------------------------|------------------------|-------------------------------|--|--------------------------|
| Afiamalu         | 1380.4                            | 1462                   | Average                       | Average  | Consistent               |
| Alafua           | 965.7                             | 952                    | Average                       | Average to Below Average                       | Consistent               |
| Apia             | 826.0                             | 918                    | Average                       | Average to Below Average                       | Consistent               |
| Aopo             | 1208.2                            | 950                    | Above Average                 | Average to Below Average                       | Near Consistent          |
| Falelima         | 855.4                             | 717                    | Average                       | Average  | Consistent               |
| Faleolo          | 712.9                             | 644                    | Average                       | Average to Below Average                       | Consistent               |
| Laulii           | 776.4                             | 1107                   | Below Average                 | Average to Below Average                       | Consistent               |
| Lepa             | 1015.4                            | 882                    | Average                       | Average  | Consistent               |
| Nafanua          | 777.6                             | 1491                   | Below Average                 | Average  | Near Consistent          |
| Nuusuatia        | 1128.6                            | 590                    | Well Above Average            | Average  | Near Consistent          |
| Saleilua         | 1320.0                            | 1014                   | Above Average                 | Average  | Near Consistent          |
| Saletele         | 639.1                             | 1078                   | Below Average                 | Average  | Near Consistent          |
| Saoluafata       | 774.2                             | 1078                   | Below Average                 | Average to Below Average                       | Consistent               |
| Ti'avea Uta      | 1113.8                            | 777                    | Above Average                 | Average  | Near Consistent          |
| Tuasivi          | 710.6                             | 907                    | Below Average                 | Average to Below Average                       | Consistent               |
| Vailoa.A         | 702.6                             | 656                    | Average                       | Average  | Consistent               |

**Rainfall statuses are defined as they deviate from normal (in percentage) as shown in this key :**

|                                    |                                   |                              |                                     |                                     |
|------------------------------------|-----------------------------------|------------------------------|-------------------------------------|-------------------------------------|
| <b>Well Below Average</b><br>< 40% | <b>Below Average</b><br>40% - 80% | <b>Average</b><br>80% - 120% | <b>Above Average</b><br>120% - 160% | <b>Well Above Average</b><br>> 160% |
|------------------------------------|-----------------------------------|------------------------------|-------------------------------------|-------------------------------------|

Generally average rainfall was received for most station in the last three months. The northern region of the island was seen to have received minimal activity, with the lowest accumulated rainfall registered at Saletele station of 639.1mm. Highlands remained wet throughout the outlook period, where Afiamalu station recorded the highest accumulated rainfall of 1380.4mm, with the second highest at Saleilua station of 1320.0mm. The observed rainfall was mostly 'consistent' with the forecast for this period, while few registered 'near consistent'.

APPENDIX

Figure 1: Accumulated Total Rainfall from February to April 2019 period.

