

Seasonal Rainfall Outlook: May to July 2019

Samoa Meteorology Division (SMD)

Ministry of Natural Resources and Environment



(+685) 20855/20856



www.samet.gov.ws



www.facebook.com/Samoa Meteorological Services



Summary Statements

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Table 1: Three (3) months rainfall outlook : May to July 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	<622	622-834	834>
Afullio*	Average to below average	<388	388-530	530>
Alafua	Average to below average	<320	320-480	480>
Aopo*	Average to below average	<388	388-530	530>
Apia	Average to below average	<333	333-485	485>
Faleolo	Average to below average	<275	275-383	383>
Fasitoo*	Average to below average	<388	388-530	530>
Fiaga*	Average to below average	<388	388-530	530>
Laulii	Average to below average	<480	480-651	651>
Leauvaa*	Average to below average	<388	388-530	530>
Letui*	Average to below average	<388	388-530	530>
Lepa*	Average to below average	<388	388-530	530>
Lotofaga	Average to below average	<775	775-1116	1116>
Maota*	Average to below average	<388	388-530	530>
Nafanua	Average to below average	<451	451-602	602>
Neiafu*	Average to below average	<388	388-530	530>
Nuusuatia*	Average to below average	<388	388-530	530>
Salailua*	Average to below average	<388	388-530	530>
Salani*	Average to below average	<388	388-530	530>
Saleilua*	Average to below average	<388	388-530	530>
Saolufata*	Average to below average	<388	388-530	530>
Savalalo*	Average to below average	<388	388-530	530>
Tiavea	Average to below average	<807	807-1018	1018>
Togitogiga	Average to below average	<1011	1011-1291	1291>
Tuasivi*	Average to below average	<388	388-530	530>
Vaiaata*	Average to below average	<388	388-530	530>

◆ ENSO still at neutral levels, as SSTs continue to warm towards El Nino levels, raising the chances of such event to happen from 50% to 70% in the upcoming months. (Pg 2)

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

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

◆ “Average to below average” rainfall was generally the rainfall status for Samoa in the last three months (January to March 2019) with stations such as Apia and Nafanua receiving their lowest rainfall for the month of March since establishment. (Pg 3)

Table 2: 6 months Rainfall Outlook— August to October 2019 period

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

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

Region	Rainfall Prediction	Below Average (mm)	Average (mm)	Above Average
Afiamalu	Below Average	<603	603-833	833>
Alafua	Below Average	<234	234-496	496>
Apia	Below Average	<368	368-529	529>
Faleolo	Below Average	<282	282-422	422>
Laulii	Below Average	<421	421-730	730>
Nafanua	Below Average	<472	472-595	595>
Tiavea	Below Average	<790	790-940	940>

El Nino Southern Oscillation (ENSO) Outlook

CURRENT SITUATION OF ENSO

While the current state of ENSO is at neutral, models still suggest that an El Nino event is highly likely in the coming months. This means that sea surface temperatures are nearing El Nino thresholds, warming up immensely at the equatorial region, and slightly cooling of southward of the equator. In addition, the four month sequence of sub sea surface temperatures indicates that the top 200m of the ocean are still experiencing warmer than average conditions, but weakening in the eastern part of the Equatorial region as the months progressed. Moreover, Nino anomalies have slightly increased in the last month : Nino 3 : +0.7°C , Nino 3.4 : +0.8°C and Nino 4 : +0.8°C. With the SSTs nearing El Nino thresholds, 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 14 April were -2.0 and -5.8 respectively. The 30-day SOI value has been within El Nino thresholds for almost two weeks while the 90-day SOI value is well within neutral conditions at -2.2

ENSO OUTLOOK

The forecast now shows an increased likelihood of an El Nino to occur, from 50%-70% in the coming months. Further analysis presumes that late this year, we should expect SSTs to cool to neutral levels. Also note that an El Nino only eventuates when the atmosphere and the ocean coupled. Most importantly, model forecasts are cautiously analyzed during this time as the accuracy tends to be lower than at other times of the year.

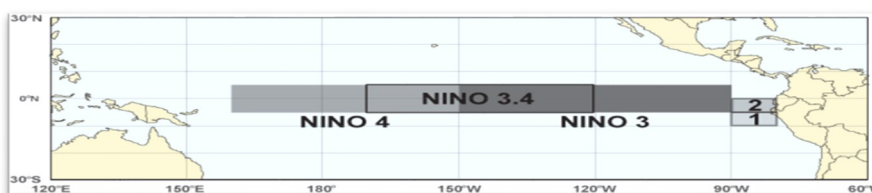


Table 3: Issued Forecast Verification for Three Monthly Rainfall (January to March 2019)

This table shows the verification of the forecast for the last 3 months. This was the rainfall forecast that was issued in December 2018 for the period of January to March 2019. These outlooks were generated using SOI values of October to November 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 January to March 2019	Verification of Forecast
Afiamalu	1854.3	1880	Average	Average	Consistent
Alafua	1152.4	1161	Average	Average to below average	Consistent
Apia	851.8	1153	Below average	Average to below average	Consistent
Aopo	1540.8	1474	Average	Average to below average	Consistent
Falelima	1066.2	1218	Average	Average to below average	Consistent
Faleolo	802.1	800	Average	Average to below average	Consistent
Laulii	916.6	1399	Below average	Average to below average	Consistent
Lepa	1206.4	1201	Average	Average	Consistent
Nafanua	960.1	1491	Below average	Average	Near Consistent
Nuusuatia	1342.6	743	Well above average	Average	Near Consistent
Saleilua	1439.6	1228	Average	Average	Consistent
Saletele	844.0	1235	Below average	Average	Near Consistent
Saoluafata	998.6	1407	Below average	Average to below average	Consistent
Ti'avea Uta	1280.4	957	Above average	Average	Near Consistent
Tuasivi	800.0	1082	Below average	Average to below average	Consistent
Vaiaata	1277.6	749	Above Average	Average	Near Consistent
Vailoa.A	857.0	391	Well above average	Average to below average	Near Consistent

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

Well Below Average < 40%	Below Average 40% - 80%	Average 80% - 120%	Above Average 120% - 160%	Well Above Average > 160%
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Statistics shown by Table 3 presents 'average to below average' as the rainfall status for most stations in the country. Highlands were still seen to be wetter than most regions, with Afiamalu station recording 1854.3mm of accumulated rainfall, with Aopo station receiving 1540.8mm, being the second wettest station. On the other hand, northern region of Samoa experienced low rainfall activity for most of March, where Tuasivi station is the driest station, having received 800.0mm of rainfall in the last three months. The observed rainfall was mostly 'consistent' with the forecast for this period, while six others registered 'near consistent'.

APPENDIX

Figure 1: Accumulated Total Rainfall from January to March 2019 period.

