

Seasonal Rainfall Outlook: October to December 2019

Samoa Meteorology Division (SMD)

Ministry of Natural Resources and Environment



(+685) 20855/20856



www.samet.gov.ws



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



Summary Statements

Issued : September 2019

◆ The current ENSO status is at neutral levels, with climate models indicating to sustain within those levels in the coming months. (Pg 2)

◆ “Average to Above Average” rainfall is to be expected in the next 3 monthly period. (Pg 1)

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

◆ For the period June to August, Average to Below Average rainfall was observed for most station. (pg 3)

Table 1: Three (3) months rainfall outlook : October to December 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 Above Average” rainfall is anticipated for highlands and southern stations, with “Average” rainfall in the northern region for the next three months.

Location	Rainfall Prediction	Below Average (mm)	Average (mm)	Above Average (mm)
Afiamalu	Average to Above Average	<1210	1210-1498	>1498
Afullilo*	Average to Above Average	<713	713-865	>865
Alafua	Average	<778	778-1085	>1058
Aopo*	Average	<713	713-865	>865
Apia	Average	<735	735-918	>918
Faleolo	Average	<564	564-717	>717
Fasitoo*	Average	<713	713-865	>865
Fiaga*	Average	<713	713-865	>865
Laulii	Average	<888	888-1085	>1085
Leauvaa*	Average	<713	713-865	>865
Letui*	Average	<713	713-865	>865
Lepa*	Average to Above Average	<713	713-865	>865
Lotofaga	Average to Above Average	<892	892-1189	>1189
Maota*	Average to Above Average	<713	713-865	>865
Nafanua	Average to Above Average	<789	789-1044	>1044
Neiafu*	Average to Above Average	<713	713-865	>865
Nuusuatia*	Average to Above Average	<713	713-865	>865
Salailua*	Average to Above Average	<713	713-865	>865
Salani*	Average to Above Average	<713	713-865	>865
Saleilua*	Average to Above Average	<713	713-865	>865
Saoluafata*	Average	<713	713-865	>865
Savalalo*	Average	<713	713-865	>865
Togjitogiga	Average to Above Average	<1191	1191-1663	>1663
Tuasivi*	Average	<713	713-865	>865
Valaata*	Average to Above Average	<713	713-865	>865

Table 2: 6 months Rainfall Outlook— January to March 2020 period

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

“Average” rainfall is anticipated for the six monthly period.

Region	Rainfall Prediction	Below Average (mm)	Average (mm)	Above Average (mm)
Afiamalu	Average	1676	1676-2054	2054
Alafua	Average	1150	1150-1538	1538
Apia	Average	991	991-1256	1256
Faleolo	Average	690	690-884	884
Laulii	Average	1340	1340-1688	1688
Nafanua	Average	1086	1086-1611	1611
Togitogiga	Average	1014	1014-1170	1170

El Nino Southern Oscillation (ENSO) Outlook

CURRENT STATUS & OUTLOOK FOR ENSO

For the last couple of months, the ENSO state has remained at neutral levels. For August, sea surface temperatures (SSTs) have cooled significantly along the equatorial region, with warm anomalies weakening steadily. These cool temperatures are reflected by the Nino Indices, where NINO3 was at +0.0 °C, NINO3.4 at +0.2 °C and NINO4 at +0.7 °C. On the other hand, the Southern Oscillation Index (SOI) are currently within El Nino thresholds, with a 30 Day value of -11.9. For the last couple of months, ocean and atmospheric indicators have not coupled together for an El Nino to occur in 2019. The same climate models predict have now predicted a prolonged neutral ENSO phase till the end of the year.

All the Nino indices region cooled in the latest weekly update. Majority of the climate models forecast the tropical Pacific Ocean will sustain this cool anomalies with all eight surveyed climate models anticipating ENSO-neutral values during the upcoming season.

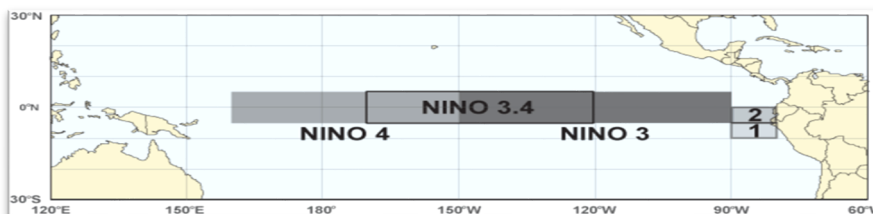


Table 3: Issued Forecast Verification for Three Monthly Rainfall (June to August 2019)

This table shows the verification of the forecast for the last 3 months. This was the rainfall forecast that was issued in May 2019 for the period of June to August 2019. These outlooks were generated using SOI values of March to April 2019

(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 June to August 2019	Verification of Forecast
Afiamalu	977.0	1257	Below Average	Average to Below Average	Consistent
Afulilo	1356.0	1109	Above Average	Average to Below Average	Near Consistent
Alafua	646.8	809	Average	Below Average	Near Consistent
Apia	677.2	796	Average	Below Average	Near Consistent
Faleolo	460.1	800	Below Average	Below Average	Consistent
Laulii	676.2	1152	Below Average	Below Average	Consistent
Lepa	1397.8	1343	Average	Average to Below Average	Consistent
Nafanua	716.8	942	Below Average	Average to Below Average	Consistent
Neiafu	321.0	787	Below Average	Average to Below Average	Consistent
Nuusuatia	1142.6	1011	Average	Average to Below Average	Consistent
Saleilua	1461.6	1286	Average	Average to Below Average	Consistent
Saoluafata	836.0	1180	Below Average	Average to Below Average	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%
--	------------------------------------	-------------------------------	--------------------------------------	---

The three monthly accumulated rainfall showed 'Average to Below Average' status for June to August period. According to table 3, the wettest station was Saleilua, having received 1461.6mm of rainfall. On the other hand, Neiafu station received the least amount of rainfall of 321.0mm in the last couple of months, with the second driest at Faleolo station with 460.1mm. The forecast for this period was generally Average to Below Average, which verified as Consistent for most stations. In terms of monthly precipitation, August registered as the driest month for all stations.

The fluctuation of the South Pacific Convergence Zone westward of the group was one major influence to the rainfall status in recent months. A graph in Page 4 helps demonstrate how rainfall varied in the period June to August 2019.

APPENDIX

Figure 1: Accumulated Total Rainfall from June to August 2019 period.

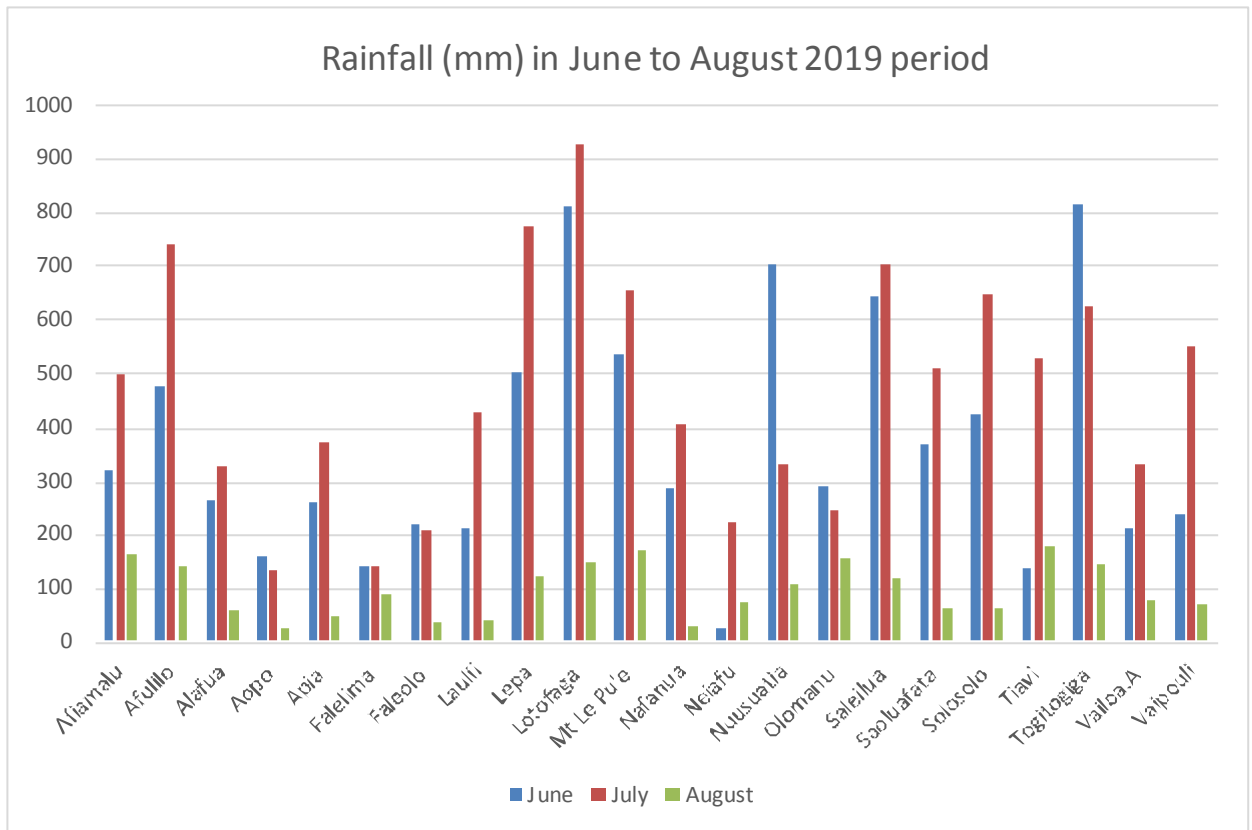


Figure 1 shows rainfall activity across the island for the period June to August 2019, where July was registered as the wettest station for said period. On the contrary, August was the driest month, as seen in the graph. The weather summary also observed strengthened wind speeds while sustaining low rainfall activity during last month. A typical dry season regime can also be observed (Figure 1) where southern and highland stations register high amount of rainfall, with the opposite occurring in the northern parts, due to topography and location. Furthermore, the southern station of Lotofaga has registered its wettest June to August rainfall (mm) in record.