

Seasonal Rainfall Outlook: April to June 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

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Table 1: Three (3) months rainfall outlook : April to June 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	<754	754 - 984	>984
Afulilo*	Average to Below Average	<486	486 - 628	>628
Alafua	Average to Below Average	<386	386 - 654	>654
Aopo*	Average to Below Average	<486	486 - 628	>628
Apia	Average to Below Average	<456	456 - 649	>649
Faleolo	Average to Below Average	<344	344 - 461	>461
Fasitoo*	Average to Below Average	<457	457 - 653	>653
Fiaga*	Average to Below Average	<486	486 - 628	>628
Laulii	Average to Below Average	<574	574 - 753	>753
Leauvaa*	Average to Below Average	<486	486 - 628	>628
Letui*	Average to Below Average	<486	486 - 628	>628
Lepa*	Average to Below Average	<486	486 - 628	>628
Lotofaga	Average to Below Average	<831	831 - 1134	>1134
Maota*	Average to Below Average	<486	486 - 628	>628
Nafanua	Average to Below Average	<516	516 - 766	>766
Neiafu*	Average to Below Average	<486	486 - 628	>628
Nuusuatia*	Average to Below Average	<486	486 - 628	>628
Salailua*	Average to Below Average	<316	316 - 608	>608
Salani*	Average to Below Average	<486	486 - 628	>628
Saleilua*	Average to Below Average	<486	486 - 628	>628
Saoluafata*	Average to Below Average	<486	486 - 628	>628
Savalalo*	Average to Below Average	<486	486 - 628	>628
Tiavea	Average to Below Average	<773	773 - 1096	>1096
Togitog'iga	Average to Below Average	<904	904 - 1309	>1309
Tuasivi*	Average to Below Average	<486	486 - 628	>628
Vaiaata*	Average to Below Average	<486	486 - 628	>628

◆ ENSO remains neutral with anticipated warming of the Pacific Ocean in the coming months. Prediction remains at 50% of an El Nino to eventuate if the atmosphere and ocean couples. (Pg 2)

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

◆ In the next six months, “below average” rainfall is to be expected. (Pg 2)

◆ “Average to above average” rainfall registered across the island in the past three months. New record for Nuusuatia as it recorded its wettest three monthly period (Dec to Feb) since establishment recording 1447.2mm. (Pg 3)

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

These outlooks are based upon the period January to February 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 (mm)
Afiamalu	Below Average	<504	504 - 669	>669
Alafua	Below Average	<155	155 - 475	>475
Apia	Below Average	<252	252 - 423	>423
Faleolo	Below Average	<203	203 - 335	>335
Nafanua	Below Average	<335	335 - 478	>478
Tiavea	Below Average	<721	721 - 987	>987
Laulii	Below Average	<305	305 - 597	>597

El Nino Southern Oscillation (ENSO) Outlook

CURRENT SITUATION OF ENSO

The current status of the El Nino Southern Oscillation continues to remain at neutral leaning towards El Nino. In February, evidence of warm anomalies were recorded across the entire equatorial. Conversely, the far western Pacific experienced cool anomalies SST affecting Palau, Federated States of Micronesia and Marshalls north of the equator, and Papua New Guinea, Solomon Islands and parts of Vanuatu in the south. The significant warming in late February resulting in little difference between the January and February sea surface temperature (SST) monthly values of the Nino indices as follows : Nino 3 : +0.5°C , Nino 3.4 : +0.6°C and Nino 4 : +0.8°C. The sub surface water temperature decreased from December 2018 into the beginning of 2019, however warm anomalies of more than 20C were observed at 200m surface at the western of the Dateline. The Southern Oscillation Index (SOI) had decreased in the past weeks and for the 30 days to 3 March it was -12.5. 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 model consensus supports the increasing warmth across the Pacific, with the Nino 3.4 value exceeding El Nino levels in the coming months. The 50% chance of an El Nino still remains. 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.

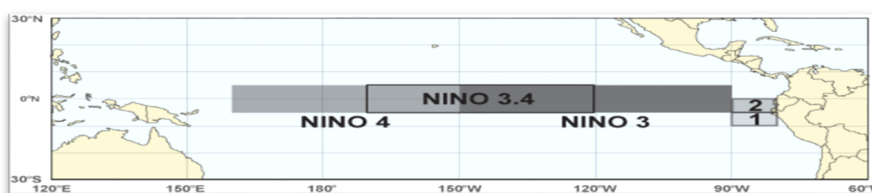


Table 3: Issued Forecast Verification for Three Monthly Rainfall (December 2018 to February 2019)

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

(N.B : The stations with complete set of data throughout out 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 December 2018 to February 2019	Verification of Forecast
Afiamalu	2527.3	1929	Above Average	Average	Near Consistent
Alafua	1487.7	1229	Above Average	Average to Below Average	Near Consistent
Apia	1300.3	1162	Average	Average to Below Average	Consistent
Aopo	2183.8	1455	Above Average	Average to Below Average	Near Consistent
Faleolo	1079.4	800	Above Average	Average to Below Average	Near Consistent
Fasitoo	1373.0	992	Above Average	Average to Below Average	Near Consistent
Lepa	1527.7	1439	Average	Average	Consistent
Laulii	1404.3	1371	Average	Average to Below Average	Consistent
Nafanua	1413.9	1530	Average	Average	Consistent
Nuusuatia	1447.2	744	Well Above Average	Average	Near Consistent
Salailua	883.6	799	Average	Average	Consistent
Saleilua	1423.8	1317	Average	Average	Consistent
Saoluafata	1401.2	1441	Average	Average to Below Average	Consistent
Ti'avea Uta	1776.8	1067	Well Above Average	Average	Near Consistent
Togitogiga	1582.4	1213	Above Average	Average	Near Consistent
Tuasivi	1189.4	940	Above Average	Average to Below Average	Near Consistent
Vaiaata	1804.6	1861	Average	Average	Consistent
Vailoa Aleipata	1229.0	808	Above Average	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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In the three monthly period of December 2018 to February 2019, the status of the rainfall recorded generally “average to above average” with Nuusuatia and Tiavea Uta station in the southern side of the islands receiving ‘well above average’ rainfall. Majority of the stations rainfall totals exceeded 1000mm with an exception of Salailua registering 883.6mm which is also the driest station for the three monthly period. In contrast, the wettest station was Afiamalu with the total of 2527.3mm followed by Aopo with 2183.8mm. Additionally, Nuusuatia recorded its wettest total of the three monthly (December to February) period– 1447.2mm. The observed rainfall was consistent with the outlook for the eight (8) stations and near consistent at the others.

APPENDIX

Figure 1: Accumulated Total Rainfall from December 2018 to February 2019 period.

