



## Seasonal Rainfall Outlook: February to April 2019

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### Summary Statements

Issued : January 2019

◆ El Nino Southern Oscillation (ENSO) phase is currently neutral. The anticipated El Nino decreased its chance of occurring from 70% to 50% in mid 2019. (Pg 2)

◆ Average to Below average precipitation is anticipated for February to April 2019 period. (Pg 1)

◆ In the next six months, "average to below average" rainfall is to be expected for May to July 2019. (Pg 2)

◆ Generally, 'average to above average' rainfall received throughout the country with majority of stations consistent with the outlook. The highest three monthly accumulated rainfall recorded was at Togitogiga station with 1831.0 mm (Pg 3)

Table 1: Three (3) months rainfall outlook : February to April 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 expected for the upcoming season.

Location	Rainfall Prediction	Below Average (mm)	Average (mm)	Above Average (mm)
Afiamalu	Average	<1269	1269 - 1562	>1562
Afulilo*	Average to Below Average	<795	795 - 1108	>1108
Alafua	Average to Below Average	<705	705 - 1059	>1059
Aopo*	Average to Below Average	<705	705 - 1059	>1059
Apia	Average to Below Average	<814	814 - 1023	>1023
Faleolo	Average to Below Average	<591	591 - 694	>694
Fasitoo*	Average to Below Average	<705	705 - 1059	>1059
Fiaga*	Average to Below Average	<705	705 - 1059	>1059
Laulii	Average to Below Average	<1075	1075 - 1396	>1396
Leauvaa*	Average to Below Average	<705	705 - 1059	>1059
Letui*	Average to Below Average	<705	705 - 1059	>1059
Lepa*	Average	<705	705 - 1059	>1059
Lotofaga	Average	<705	705 - 1059	>1059
Maota*	Average	<705	705 - 1059	>1059
Nafanua	Average	<918	918 - 1143	>1143
Neiafu*	Average to Below Average	<705	705 - 1059	>1059
Nuusuatia*	Average	<705	705 - 1059	>1059
Salailua	Average	<371	371 - 785	>785
Salani*	Average	<705	705 - 1059	>1059
Saleilua*	Average	<705	705 - 1059	>1059
Saoluafata*	Average to Below Average	<705	705 - 1059	>1059
Savalalo*	Average to Below Average	<705	705 - 1059	>1059
Tiavea	Average	<821	821 - 1069	>1069
Togitogiga	Average	<705	705 - 1059	>1059
Tuasivi*	Average to Below Average	<705	705 - 1059	>1059
Vaiaata*	Average	<705	705 - 1059	>1059

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

These outlooks are based upon the period October to November 2018 (Southern Oscillation Index (SOI) values)

'Average to below average' is anticipated for the next six months.

Region	Rainfall Prediction	Below Average (mm)	Average (mm)	Above Average (mm)
Afiamalu	Average to Below Average	<754	754 - 984	>984
Alafua	Average to Below Average	<386	386 - 654	>654
Apia	Average to Below Average	<456	456 - 649	>649
Faleolo	Average to Below Average	<344	344 - 460	>460
Nafanua	Average to Below Average	<516	516 - 766	>766
Tiavea	Average to Below Average	<773	773 - 1097	>1097
Laulii	Average to Below Average	<316	316 - 608	>608

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

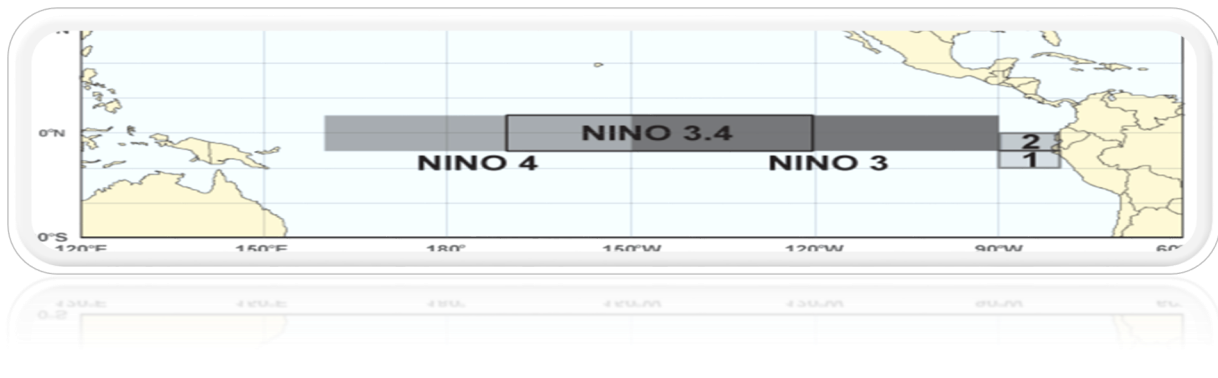
**CURRENT SITUATION OF ENSO**

The immediate risk of El Nino for this period of time has passed retreating from an Alert to Watch status. However, there is an increased likelihood it will develop later in 2019.

The sea surface temperature (SST) and sub-surface temperature continued to be warmer than average but have cooled in late 2018 to recent. The atmospheric indicators with the southern oscillation index (SOI) all continue to remain in ENSO-neutral conditions.

**ENSO OUTLOOK**

The risk of El Nino remains as sea surface temperature are likely to continue to warm however, most climate models indicate ENSO-neutral conditions for the immediate future. Three of eight models suggest that El Niño may establish by mid-2019.



**Table 3: Issued Forecast Verification for Three Monthly Rainfall (October to December 2018)**

*This table shows the verification of the forecast for the last 3 months. This was the rainfall forecast that was issued in September for the period of October to December 2018. These outlooks were generated using SOI values of July to August 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 October to December 2018	Verification of Forecast
Afiamalu	1561.2	1347	Average	Average	Consistent
Alafua	791.6	990	Average	Average	Consistent
Apia	825.3	842	Average	Average	Consistent
Aopo	1304.2	863	Above Average	Average	Near Consistent
Faleolo	722.1	574	Above Average	Average	Near Consistent
Gagaifo	1404.6	974	Above Average	Average to Above Average	Consistent
Lepa	1489.1	1343	Average	Average to Above Average	Consistent
Laulii	1031.6	1152	Average	Average	Consistent
Lotofaga	1356.2	1075	Above Average	Average	Near Consistent
Nafanua	982.8	939	Average	Average	Consistent
Nuusuatia	1753.4	1011	Well Above Average	Average to Above Average	Consistent
Salailua	832.2	608	Above Average	Average to Above Average	Consistent
Saleilua	1705.8	1286	Above Average	Average to Above Average	Consistent
Saoluafata	1221.4	1180	Average	Average to Above Average	Consistent
Savalalo	844.5	842	Average	Average to Above Average	Consistent
Ti'avea Uta	1692.4	1109	Above Average	Average to Above Average	Consistent
Togitogiga	1831.0	1375	Above Average	Average to Above Average	Consistent
Tuasivi	960.6	676	Above Average	Average to Above Average	Consistent
Vaiaata	1645.0	1472	Average	Average to Above Average	Consistent
Vailoa Aleipata	1023.2	806	Above Average	Average to Above Average	Consistent

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

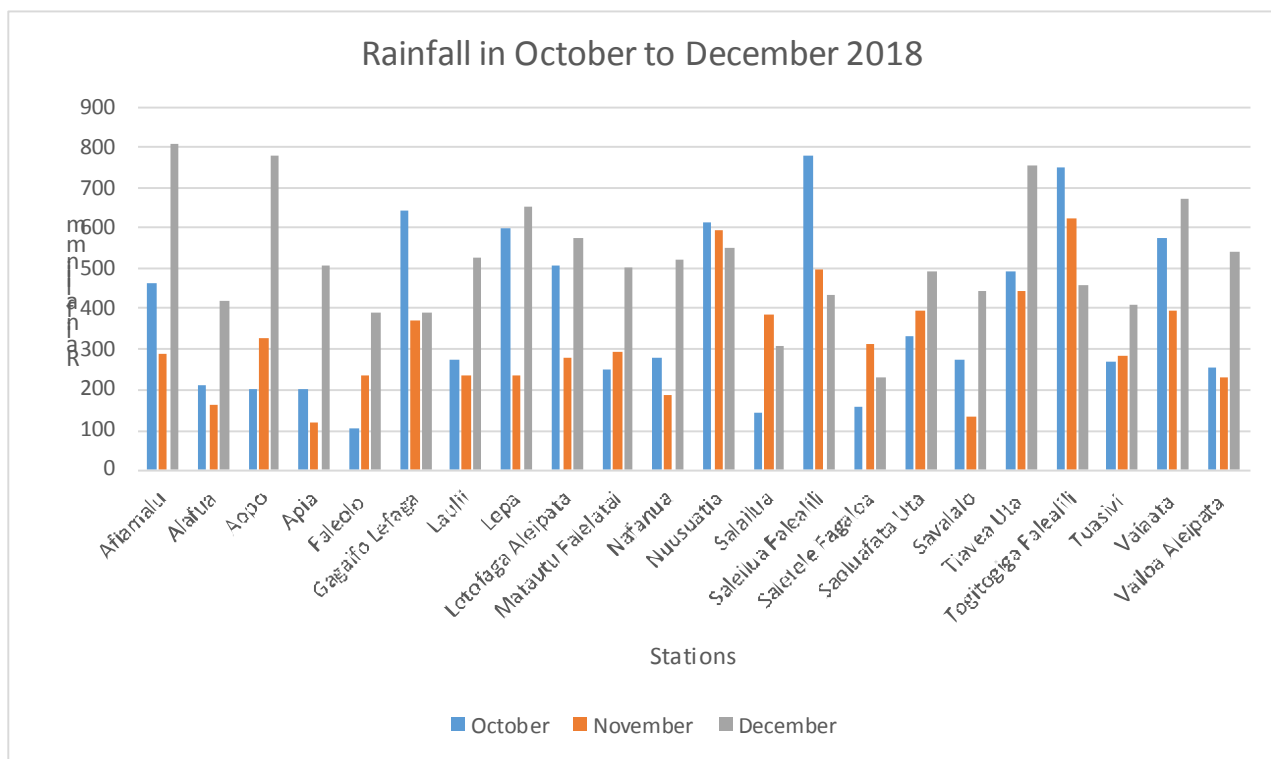
Well Below Average < 40%	Below Average 40% - 80%	Average 80% - 120%	Above Average 120% - 160%	Well Above Average > 160%
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Generally, 'average to above average' was experienced throughout the country in October to December 2018 period with Nuusuatia in the south of Upolu recorded 'well above average'. Togitogiga station received the highest three monthly total of 1831.0mm which is above its 30 year average (normal) of 1375mm. The second highest rainfall was at Nuusuatia with 1741.4mm. In comparison, the lowest three monthly registered at Faleolo with 714.9mm followed by Alafua with 791.6mm. Generally, the most of the rainfall totals fall within the range of 700mm - 1800mm.

Moreover, the outlook issued for the past season was mostly consistent with all observed rainfall while near consistent at a few stations.

APPENDIX

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



December 2018 is registered as the wettest month of the three monthly period followed by November 2018. The weather in December were mainly influenced by the position of the South Pacific Convergence Zone (SPCZ) over the island bringing sufficient rainfall.