



## Seasonal Rainfall Outlook: February to April 2018

### Samoa Meteorology Division (SMD)

#### Ministry of Natural Resources and Environment

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#### Summary Statements

- ◆ Weak La Nina established and continue in the tropical Pacific. It is likely close to peak and expected to end in the beginning of southern autumn (March-April 2018). Pg 2
- ◆ 'Average' rainfall is expected for the highlands while 'average to below average' rainfall is predicted for the rest of the Samoa in the coming season. (Table 1)
- ◆ Generally, 'average to below average' rainfall is anticipated for the six monthly rainfall outlook for May to July 2018. (Table 2) Pg 2
- ◆ Generally, 'average' rainfall was received in October to December 2017 period. December was the wettest of the 3 monthly period. The outlook was verified to be 'consistent' for most stations. (Pg 3)

Table 1: Three (3) months rainfall outlook : February to April 2018 period

*These outlooks are generated from the statistical model—SCOPIG. International guidance from climate models such as IRI, METPI, ECMWF, APCC, POAMA, and others were also incorporated in these forecasts.*

Average rainfall is expected for the highlands whereas average to below average is predicted for the rest of the island.

Region	Rainfall Prediction	Below Average	Average	Above Average
Afiamalu	Average	<1254mm	1254mm–1549mm	>1549mm
Afulilo*	Average	<795mm	795mm-1108mm	>1108mm
Alafua	Average to Below Average	<704mm	704mm–1046mm	>1046mm
Aopo*	Average to Below Average	<795mm	795mm-1108mm	>1108mm
Apia	Average to Below Average	<809mm	809mm-1015mm	>1015mm
Faleolo	Average to Below Average	<591mm	591mm-693mm	>693mm
Fasitoo*	Average to Below Average	<795mm	795mm-1108mm	>1108mm
Fiaga*	Average	<795mm	795mm-1108mm	>1108mm
Laulii	Average to Below Average	<795mm	795mm-1108mm	>1108mm
Leauvaa*	Average to Below Average	<795mm	795mm-1108mm	>1108mm
Letui*	Average to Below Average	<795mm	795mm-1108mm	>1108mm
Lepa*	Average to Below Average	<795mm	795mm-1108mm	>1108mm
Lotofaga	Average to Below Average	<795mm	795mm-1108mm	>1108mm
Maota*	Average to Below Average	<795mm	795mm-1108mm	>1108mm
Nafanua	Average to Below Average	<915mm	915mm-1133mm	>1133mm
Neiafu*	Average to Below Average	<795mm	795mm-1108mm	>1108mm
Nuusuatia*	Average to Below Average	<795mm	795mm-1108mm	>1108mm
Salailua*	Average to Below Average	<795mm	795mm-1108mm	>1108mm
Salani*	Average to Below Average	<795mm	795mm-1108mm	>1108mm
Saleilua	Average to Below Average	<795mm	795mm-1108mm	>1108mm
Saoluafata*	Average to Below Average	<795mm	795mm-1108mm	>1108mm
Savalalo*	Average to Below Average	<795mm	795mm-1108mm	>1108mm
Tiavea	Average	<821mm	821mm-1053mm	>1053mm
Togitogiga	Average to Below Average	<853mm	853mm-1080mm	>1080mm
Tuasivi*	Average to Below Average	<795mm	795mm-1108mm	>1108mm
Vaiaata*	Average to Below Average	<795mm	795mm-1108mm	>1108mm

Table 2: 6 months Rainfall Outlook— May to July 2018 period

These outlooks are based upon the October to November 2017 period (Southern Oscillation Index (SOI) values)

Generally, 'average to below average' rainfall is anticipated for the six monthly rainfall outlook for May to July 2018.

Region	Rainfall Prediction	Below Average	Average	Above Average
Afiamalu	Average to Below Average	<629mm	629mm-839mm	>839mm
Alafua	Average to Below Average	<315mm	315mm-483mm	>483mm
Apia	Average to Below Average	<333mm	333mm-490mm	>490mm
Faleolo	Average to Below Average	<275mm	275mm-391mm	>391mm
Nafanua	Average to Below Average	<452mm	452mm-618mm	>618mm
Tiavea	Average to Below Average	<795mm	795mm-1019mm	>1019mm

### El Nino Southern Oscillation (ENSO) Outlook

#### CURRENT SITUATION OF ENSO

A Weak La Nina phase has established in the tropical Pacific ocean in late December 2017 and persists through to January 2018. These are well supported by the oceanic indicators of ENSO - the sea surface temperature (SST) and sub-surface water temperature. Below average (cooler anomalies) are observed across the central and eastern equatorial Pacific ocean, with enhanced anomalies in the far eastern off the coasts of Ecuador and Peru. Conversely, above average (warmer anomalies) concentrated in the western region especially south eastward of Australia and over New Zealand. This is further strengthened by the enhanced development of cooler than average sub-surface waters in the far eastern equatorial as well as warmer than average waters in the western area. The warm pool extended to a depth of 350m. The Southern Oscillation Index weakened rapidly in December with a recorded value of -1.4 and now within neutral range.

#### ENSO OUTLOOK

The weak La Nina event is likely to be at or near peak with majority of the climate models suggesting to decay in the southern hemisphere autumn (March-April 2018). The sea surface temperature in Nino 3.4 region is expected to warm up in the coming months.

**Table 3: Issued Forecast Verification for Three Monthly Rainfall (October to December 2017)**

*This table shows the verification of the forecast for the last 3 months. This was the rainfall forecast that was issued in September 2017 for the period of October to December 2017. These outlooks were generated using SOI values of July to August 2017.*

Climate Stations	Three Monthly Total Rainfall (mm)	Long Term Average (mm)	Three Monthly Rainfall Status	Rainfall Prediction for October to December 2017 period	Verification of Forecast
Afiamalu	1643.8	1347	Above Average	Average to Below Average	Near Consistent
Alafua	1429.5	1354	Average	Average to Below Average	Consistent
Apia	1136.2	1101	Average	Average to Below Average	Consistent
Faleolo	991.3	819	Above Average	Average to Below Average	Near Consistent
Gagaifo Lefaga	897.6	1058	Average	Average to Below Average	Consistent
Lepa	832.9	1624	Below Average	Average to Below Average	Consistent
Letui	1320.6	1333	Average	Average to Below Average	Consistent
Lotofaga	1079.7	1139	Average	Average to Below Average	Consistent
Matautu Falelatai	1392.2	1058	Above Average	Average to Below Average	Consistent
Nafanua	1235.0	1294	Average	Average to Below Average	Consistent
Nuu	1171.6	1354	Average	Average to Below Average	Consistent
Salani Falealili	1019.2	1139	Average	Average to Below Average	Consistent
Saleilua Falealili	1112.8	1496	Below Average	Average to Below Average	Consistent
Savalalo	1100.5	1101	Average	Average to Below Average	Consistent
Ti'avea Uta	1065.0	1299	Average	Average to Below Average	Consistent
Togitogiga	1201.0	1341	Average	Average to Below Average	Consistent
Tuasivi	899.4	923	Average	Average to Below Average	Consistent
Vailoa Aleipata	800.6	981	Average	Average to Below Average	Consistent

Generally, 'average' rainfall was recorded across most of the stations. The wettest station during October to December 2017 period was Afiamalu with 1643.8mm followed by 1429.5mm recorded at Alafua. Conversely, the driest station was Vailoa Aleipata with 800.6mm. The forecast issued in September 2017 period anticipated an 'average to below average' rainfall and this was verified to be consistent in all stations except for Afiamalu and Faleolo station. Significantly, the wettest month of the three monthly period as shown in Figure 1 (pg 4) was December.

APPENDIX

Figure 1: Accumulated Total Rainfall from October to December 2017 period.

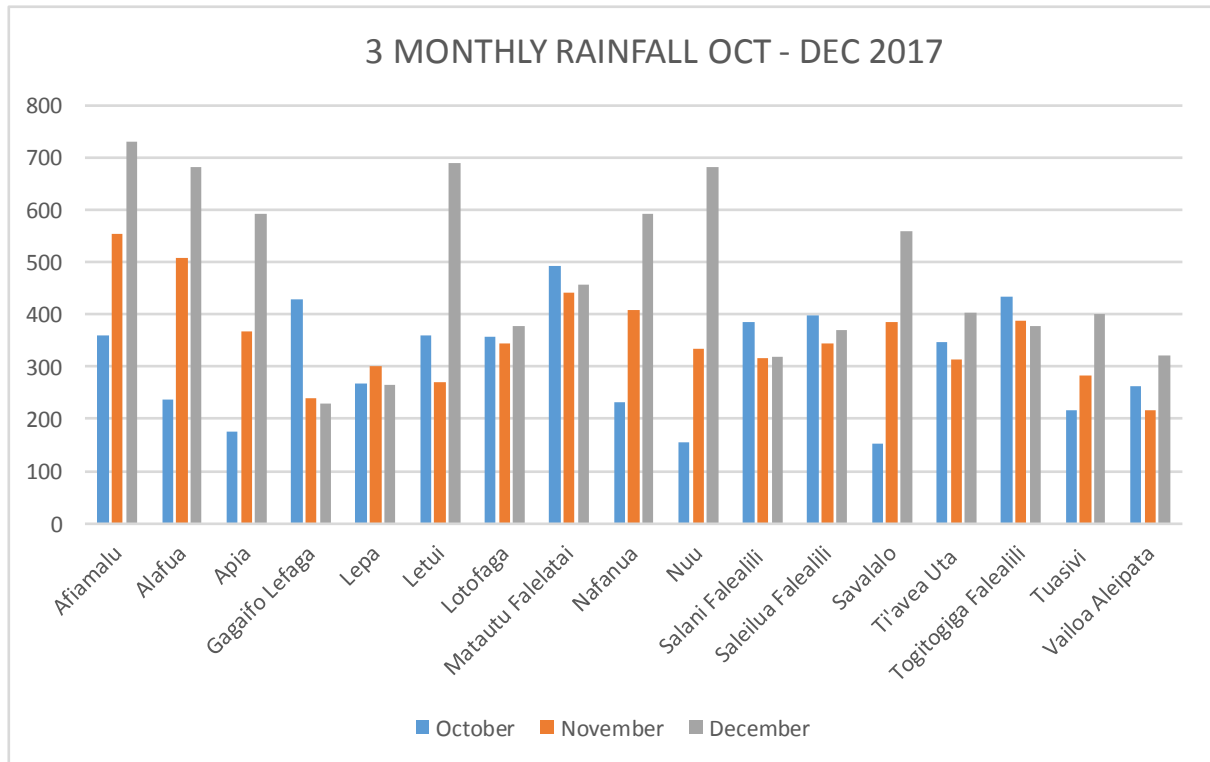


Figure 2: Nino Indices Area Map (Source: Bureau of Meteorology- ENSO Wrap Up)

