



## Seasonal Rainfall Outlook: July to September 2017

### Samoa Meteorology Division (SMD)

#### Ministry of Natural Resources and Environment

ISSUED: June 2017

#### Summary Statements

- ◆ ENSO remains in Neutral state and predicts to continue for the second half of 2017. Pg 2
- ◆ 'Average to below average' rainfall is expected over Samoa in the coming three months. (Table 1)
- ◆ Generally, 'average' rainfall is anticipated for the six monthly rainfall outlook for October to December 2017.(Table 2) Pg 2
- ◆ Generally, 'average to above average' rainfall was received in March to May 2017 period The outlook was verified to be 'near consistent' for most of the stations (Pg 3)

Table 1: Three (3) months rainfall outlook - July to September 2017 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 to below average' rainfall is expected for the period of July to September 2017.

Region	Rainfall Prediction	Below Average	Average	Above Average
Afiamalu	Average to Below Average	<476mm	476mm–671mm	>671mm
Afulilo*	Average to Below Average	<267mm	267mm - 430mm	>430mm
Alafua	Average to Below Average	<148mm	148mm–476mm	>476mm
Aopo*	Average to Below Average	<267mm	267mm - 430mm	>430mm
Apia	Average to Below Average	<251mm	251mm - 423mm	>423mm
Faleolo	Average to Below Average	<208mm	208mm - 358mm	>358mm
Fasitoo*	Average to Below Average	<267mm	267mm - 430mm	>430mm
Fiaga*	Average to Below Average	<267mm	267mm - 430mm	>430mm
Laulii	Average to Below Average	<297mm	297mm - 600mm	>600mm
Leauvaa*	Average to Below Average	<267mm	267mm - 430mm	>430mm
Letui*	Average to Below Average	<267mm	267mm - 430mm	>430mm
Lepa*	Average to Below Average	<267mm	267mm - 430mm	>430mm
Maota*	Average to Below Average	<267mm	267mm - 430mm	>430mm
Nafanua	Average to Below Average	<313mm	313mm - 498mm	>498mm
Neiafu*	Average to Below Average	<267mm	267mm - 430mm	>430mm
Nuusuatia*	Average to Below Average	<267mm	267mm - 430mm	>430mm
Salailua*	Average to Below Average	<267mm	267mm - 430mm	>430mm
Salani*	Average to Below Average	<267mm	267mm - 430mm	>430mm
Samalaueulu*	Average to Below Average	<267mm	267mm - 430mm	>430mm
Saoluafata*	Average to Below Average	<267mm	267mm - 430mm	>430mm
Savalalo*	Average to Below Average	<267mm	267mm - 430mm	>430mm
Tiavea	Average to Below Average	<732mm	732mm - 993mm	>993mm
Togitogiga	Average to Below Average	<871mm	871mm - 1284mm	>1284mm
Tuasivi*	Average to Below Average	<267mm	267mm - 430mm	>430mm
Vaiaata*	Average to Below Average	<267mm	267mm - 430mm	>430mm

Table 2: 6 months Rainfall Outlook— October to December 2017 period

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

The six (6) monthly period from October to December 2017 is anticipated to receive '**average**' rainfall

Region	Rainfall Prediction	Below Average	Average	Above Average
Afiamalu	Average	<1161mm	1161mm - 1454mm	>1454mm
Alafua	Average	<503mm	503mm - 977mm	>977mm
Apia	Average	<718mm	718mm - 905mm	>905mm
Faleolo	Average	<548mm	548mm - 708mm	>708mm
Nafanua	Average	<784mm	784mm - 1038mm	>1038mm
Togitogiga	Average	<1158mm	1158mm - 1665mm	>1665mm
Tiavea	Average	<995mm	995mm - 1205mm	>1205mm

### El Nino Southern Oscillation (ENSO) Outlook

#### CURRENT SITUATION OF ENSO

The tropical Pacific is currently in '**Neutral**' state of ENSO. Trade winds and the southern oscillation index (SOI) are well within the neutral range with equatorial central sea surface temperatures (SST) being slightly warmer than normal. Noticeably, SST in the far eastern which were above normal near South American coast during March and April have cooled during May and June. The warmth of this region was not sustained due to decrease in strength of the trade winds which also decreased the potential of an El Nino event to develop.

#### ENSO OUTLOOK

All eight (8) international models surveyed suggest the tropical Pacific Ocean temperatures especially in the Nino 3.4 region are most likely to continue in NEUTRAL phase in the second half of 2017. This has been a substantial shift in comparison to the 7/8 climate models anticipated a potential El Nino in April.

*(El Nino is one major driver of Samoa's rainfall and temperature. El Nino could affect the normal rainfall pattern in Samoa generally resulting in reduced rainfall or drought. Day time temperatures tend to be hotter than normal over the country. Past El Nino events have been one cause of Forest Fires in Asau (North West of Savaii island). Different parts of the country may experience varying rainfall impacts. As a consequence of this rainfall deficit, the following sectors could be severely impacted: Water, Agriculture, Health, Energy (Hydropower), Tourist (Accommodations Facilities) and Forestry.)*

**Table 3: Issued Forecast Verification for Three Monthly Rainfall (March to May 2017)**

*This table shows the verification of the forecast for the last 3 months. This was the rainfall forecast that was issued in February 2017 for the period of March to May 2017. These outlooks were generated using SOI values of November 2016 to January 2017*

Climate Stations	Three Monthly Total Rainfall (mm)	Long Term Average (mm)	Three Monthly Rainfall Status	Rainfall Prediction for March to May 2017 period	Verification of Forecast
Afiamalu	1705.9	1136	Above Average	Average to Below Average	Near Consistent
Alafua	1585.5	831	Well Above Average	Average to Below Average	Near Consistent
Apia	1292.9	758	Well Above Average	Average to Below Average	Near Consistent
Faleolo	945.2	556	Well Above Average	Average to Below Average	Near Consistent
Lepa	1253.8	873	Above Average	Average to Below Average	Near Consistent
Letui	1129.6	756	Above Average	Average to Below Average	Near Consistent
Lotofaga Aleipata	1328.1	890	Above Average	Average to Below Average	Near Consistent
Nafanua	1527.1	1126	Above Average	Average to Below Average	Near Consistent
Nuu	1309.6	831	Above Average	Average to Below Average	Near Consistent
Nuusuatia	1083.0	693	Above Average	Average to Below Average	Near Consistent
Salani Falealili	1352.8	890	Above Average	Average to Below Average	Near Consistent
Saleilua Falealili	1317.6	1121	Average	Average to Below Average	Consistent
Saoluafata	1294.6	1095	Average	Average to Below Average	Consistent
Savalalo	1357.9	758	Well Above Average	Average to Below Average	Near Consistent
Tiavea Uta	1398.6	875	Above Average	Average to Below Average	Near Consistent
Togitogiga	1197.4	1050	Average	Average to Below Average	Consistent
Tuasivi	997.8	1003	Average	Average to Below Average	Consistent
Vailoa Aleipata	922.4	875	Average	Average to Below Average	Consistent

Generally, 'average to above average' rainfall was recorded across most of the stations. The wettest station during March to May 2017 period was Afiamalu with 1705.9mm followed by 1585.5mm recorded at Alafua. Conversely, the driest station was Vailoa Aleipata with 922.4mm followed by Tuasivi with 997.8mm. It is the wettest 3 monthly period for Afiamalu, Apia, Nafanua. The issued forecast in February anticipated an 'average to below average' rainfall for this period. 13 out of 18 stations observed rainfall were 'near consistent' with the outlook while the rest recorded 'consistent'. May registered as the wettest month of the three monthly period.

Table 4: Temperature Outlook Verification— March to May 2017

This table shows the verification of the temperature forecast for the last 3 months which was issued in January 2017 . These were generated using the Nino 3.4 Values of October to December 2016 period.

MAXIMUM TEMPERATURE						
Region	Below Average (°C)	Average (°C)	Above Average (°C)	Observed Mean Maximum (°C)	Temperature Prediction Issued	Verification
Apia	<30.3	30.0-30.7	>30.7	33.4	Average	Near Consistent
Afiamalu	<25.6	25.6-26.0	>26.0	26.7	Average	Near Consistent
Faleolo	<31.0	31.0-31.4	>31.4	32.2	Average	Near Consistent

MINIMUM TEMPERATURE						
Region	Below Average (°C)	Average (°C)	Above Average (°C)	Observed Mean Minimum	Temperature Prediction Issued	Verification
Apia	<23.6	23.6-24.0	>24.0	24.8	Average	Near Consistent
Afiamalu	<18.9	18.9-19.3	>19.3	19.5	Average	Near Consistent
Faleolo	<23.4	23.4-24.0	>24.0	24.8	Average	Near Consistent

APPENDIX

Figure 1: Accumulated Total Rainfall from March to May 2017 period.

