



Seasonal Rainfall & Temperature Outlook: March to May 2017

Samoa Meteorology Division

Ministry of Natural Resources and Environment

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Summary Statements

- ◆ Neutral conditions of El Niño Southern Oscillation (ENSO) remains for the tropical Pacific and it is likely to persist in the next three months. Pg 3
- ◆ Generally, “average to below average” rainfall is anticipated for Samoa through the March to May 2017 period. (Table 1)
- ◆ The six (6) monthly rainfall outlook for June to August 2017 favors ‘average to below average’ rainfall. (Table 2– pg 2)
- ◆ Generally, “average” air temperatures are expected for March 2017. (Table 3 – pg 2)
- ◆ For March to May 2017, daytime temperatures are anticipated to vary from 25.4°C to 31.6°C with minimum temperatures to be 18.7°C to 24.2°C (Table 4–pg 3)
- ◆ Generally, “average to below average” rainfall was received in November 2016 to January 2017 period. The outlook was ‘consistent’ for 8/13 stations and the rest were ‘near consistent’. (Pg 5)

Table 1: Three (3) months rainfall outlook - March to May 2017 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.

‘Average to below average’ rainfall is predicted for the next three (3) months.

Region	Rainfall Prediction	Below Average	Average	Above Average
Afiamalu	Average to Below Average	<1010mm	1010mm - 1299mm	>1299mm
Afulilo	Average to Below Average	<620mm	620mm - 899mm	>899mm
Alafua	Average to Below Average	<592mm	592mm - 815mm	>815mm
Aopo*	Average to Below Average	<620mm	620mm - 899mm	>899mm
Apia	Average to Below Average	<665mm	665mm - 837mm	>837mm
Faleolo	Average to Below Average	<488mm	488mm - 621mm	>621mm
Fasitoo	Average to Below Average	<620mm	620mm - 899mm	>899mm
Fiaga*	Average to Below Average	<620mm	620mm - 899mm	>899mm
Laulii*	Average to Below Average	<765mm	765mm - 1177mm	>1177mm
Leauvaa*	Average to Below Average	<685mm	685mm - 1148mm	>1148mm
Letui*	Average to Below Average	<620mm	620mm - 899mm	>899mm
Lepa	Average to Below Average	<620mm	620mm - 899mm	>899mm
Maota	Average to Below Average	<689mm	689mm - 940mm	>940mm
Nafanua	Average to Below Average	<802mm	802mm - 1001mm	>1001mm
Neiafu*	Average to Below Average	<620mm	620mm - 899mm	>899mm
Nuusuatia	Average to Below Average	<667mm	667mm - 999mm	>999mm
Salailua*	Average to Below Average	<620mm	620mm - 899mm	>899mm
Salani*	Average to Below Average	<234mm	234mm - 745mm	>745mm
Samalaeulu*	Average to Below Average	<620mm	620mm - 899mm	>899mm
Saoluafata*	Average to Below Average	<620mm	620mm - 899mm	>899mm
Savalalo*	Average to Below Average	<620mm	620mm - 899mm	>899mm
Tiavea	Average to Below Average	<815mm	815mm - 1025mm	>1025mm
Togitogiga	Average to Below Average	<902mm	902mm - 1205mm	>1205mm
Tuasivi*	Average to Below Average	<620mm	620mm - 899mm	>899mm
Vaiaata*	Average to Below Average	<620mm	620mm - 899mm	>899mm

Table 2: 6 months Rainfall Outlook— June to August 2017 period

These outlooks are based upon the November 2016 to January 2017 period (Southern Oscillation Index (SOI) values)

“Average to below average” is expected for the coming six (6) months.

Region	Rainfall Prediction	Below Average	Average	Above Average
Afiamalu	Average to Below Average	<507mm	507mm - 669mm	>669mm
Alafua	Average to Below Average	<216mm	216mm - 424mm	>424mm
Apia	Average to Below Average	<247mm	247mm - 407mm	>407mm
Faleolo	Average to Below Average	<209mm	209mm - 356mm	>356mm
Nafanua	Average to Below Average	<296mm	296mm - 495mm	>495mm
Salani	Average to Below Average	<118mm	118mm - 713mm	>713mm
Maota	Average to Below Average	<361mm	361mm - 669mm	>669mm
Togitogiga	Average to Below Average	<564mm	564mm - 823mm	>823mm

Table 3: Temperature Outlook— March 2017

These outlooks are based upon the November 2016 to January 2017 (Nino 3.4 values) SCOPIC model

MAXIMUM TEMPERATURE				
Region	Temperature Prediction	Below Average (°C)	Average (°C)	Above Average (°C)
Apia	Average	<30.2	30.2 - 30.9	>30.9
Afiamalu	Average	<25.5	25.5 - 26.2	>26.2
Faleolo	Average	<30.9	30.9 - 31.6	>31.6

MINIMUM TEMPERATURE				
Region	Temperature Prediction	Below Average (°C)	Average (°C)	Above Average (°C)
Apia	Average	<23.7	23.7 - 24.4	>24.4
Afiamalu	Average	<19.1	19.1 - 19.7	>19.7
Faleolo	Average	<23.4	23.4 - 24.3	>24.3

March 2017

The maximum temperature outlook for March 2017 is expected to be ‘average’ with temperatures within the range of 25.3°C to 31.8°C. Similarly, minimum air temperatures are also forecasting ‘average’ temperature to be experienced ranging from 18.9°C to 24.6°C.

Table 4: Temperature Outlook—March to May 2017 period

These outlooks are based upon the November 2016 to January 2017 (Nino 3.4 values) SCOPIC model

MAXIMUM TEMPERATURE				
Region	Temperature Prediction	Below Average (°C)	Average (°C)	Above Average (°C)
Apia	Average	<30.3	30.3 - 30.7	>30.7
Afiamalu	Average	<25.6	25.6 - 26.0	>26.0
Faleolo	Average	<31.0	31.0 - 31.4	>31.4

MINIMUM TEMPERATURE				
Region	Temperature Prediction	Below Average (°C)	Average (°C)	Above Average (°C)
Apia	Average	<23.6	23.6 - 24.0	>24.0
Afiamalu	Average	<18.9	18.9 - 19.3	>19.3
Faleolo	Average	<23.4	23.4 - 24.0	>24.0

March to May 2017 period

Generally, average (normal) daytime and night time temperatures across Samoa is expected through March to May 2017 period. It is predicted that maximum temperatures fall in the range of 25.4°C to 31.6°C whereas the minimum temperatures anticipated temperatures ranging from 18.7°C to 24.2°C.

El Nino Southern Oscillation (ENSO) Outlook

CURRENT SITUATION

The tropical Pacific ocean continues to exhibit neutral (neither El Nino nor La Nina) of El Nino Southern Oscillation (ENSO) conditions with indicators remaining in the neutral range. The sea surface temperatures (SSTs) in the central equatorial Pacific Ocean are below average (cooler). The latest weekly NINO SST anomalies to 29th January were: NINO3 +0.5°C; NINO3.4 -0.1°C; NINO4 -0.2°C respectively. Similarly the sub-surface waters in the central and eastern equatorial tropical ocean were cooler than average with weakening anomalies in the western Pacific. The Southern Oscillation Index (SOI) is currently in neutral levels. The 30day SOI value of +2.3 value was recorded in December and dropped down to +1.3 value in January. The 90 day value recorded was +3.3

ENSO OUTLOOK

The climate model forecast indicate the tropical Pacific Ocean is likely to remain ENSO-neutral in the next three months. Most models surveyed expect the tropical Pacific Ocean to warm during this period, meaning La Nina is the least likely outcome for mid-2017.

Table 5: Issued Forecast Verification for Three Monthly Rainfall (November 2016 to January 2017)

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 November 2016 to January 2017. These outlooks were generated using SOI values of June to August 2016.

Climate Stations	Three Monthly Total Rainfall (mm)	Long Term Average (mm)	Three Monthly Rainfall Status	Rainfall Prediction for November 2016 to January 2017 period	Verification of Forecast
Afiamalu	1704.1	1744	Average	Average to Above Average	Consistent
Alafua	1206.7	1354	Average	Average to Above Average	Consistent
Apia	942.3	1101	Average	Average to Above Average	Consistent
Faleolo	841.8	759	Average	Average to Above Average	Consistent
Laulii	674.2	1320	Below Average	Average to Above Average	Near Consistent
Leauvaa	1066.6	1587	Below Average	Average to Above Average	Near Consistent
Maota	1291.2	1100	Average	Average to Above Average	Consistent
Nafanua	1252.6	1294	Average	Average to Above Average	Consistent
Salani	751.4	1139	Average	Average to Above Average	Consistent
Tiavea	877.4	1299	Below Average	Average to Above Average	Near Consistent
Togitogiga	946.5	1370	Below Average	Average to Above Average	Near Consistent
Nuusuatia	1165.6	949	Above Average	Average to Above Average	Consistent
Lepa	708.0	1624	Below Average	Average to Above Average	Near Consistent

Generally, 'average to below average' precipitation recorded in November 2016 to January 2017 period with Nuusuatia registered 'above average' rainfall. The wettest station in these three months was Afiamalu with 1704.1mm followed by 1291.2 at Maota and 1252.6mm at Nafanua. Conversely, the driest station recorded 674.2mm at Laulii followed by 708.0mm at Lepa and 841.8mm at Faleolo station. November 2016 to January 2017 was anticipated to receive 'average to above average' accumulated rainfall across the country however, verifications showed that 8/13 stations observed rainfall were 'consistent' while 5/13 were 'near consistent' with the outlook. December 2016 was the wettest month of this three months period as illustrated in Figure 1 in Appendix.

Table 6: Temperature Outlook Verification—November 2016 to January 2017

This table shows the verification of the temperature forecast for the last 3 months which was issued in September 2016. These were generated using the Nino 3.4 Values of June to August 2016 period.

MAXIMUM TEMPERATURE						
Region	Below Average (°C)	Average (°C)	Above Average (°C)	Observed Mean Maximum (°C)	Temperature Prediction Issued	Verification
Apia	<30.1	30.1 - 30.5	>30.5	32.8	Below Average	Inconsistent
Afiamalu	<25.4	25.4 - 26.0	>26.0	25.9	Below Average	Near Consistent
Faleolo	<30.7	30.7 - 31.0	>31.0	32.1	Below Average	Inconsistent

MINIMUM TEMPERATURE						
Region	Below Average (°C)	Average (°C)	Above Average (°C)	Observed Mean Minimum	Temperature Prediction Issued	Verification
Apia	<23.5	23.5 - 24.2	>24.2	25.5	Below Average	Inconsistent
Afiamalu	<19.0	19.0 - 19.5	>19.5	19.2	Below Average	Near Consistent
Faleolo	<23.6	23.6 - 24.1	>24.1	24.9	Below Average	Inconsistent

APPENDIX

Figure 1: Accumulated Total Rainfall from November 2016 to January 2017 period.

