

Pacific Islands - Online Climate Outlook Forum (OCOF) No. 109

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)	September 2016						
	July 2016 Total	August 2016 Total	September 2016 Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
Northern Division							
Niufo'ou	44.1	113.4	101.9	81	156	115	21/44
Niutoputapu	45.1	73.3	255.7	53	129	101	61/67
Central Division							
Vava'u	49.2	304.3	11.9	81	169	109	1/70
Ha'apai	59.1	147.9	38.5	51	139	91	18/70
Southern Division							
Nuku'alofa	24.1	306.7	9.0	75	143	103	1/72
Fua'amotu	31.4	297.2	11.9	81	145	105	1/37

TABLE 2: Three-monthly Rainfall July to September 2016

[Please note that the data used in this verification should be sourced from table 3 of OCOF #105]

Station	Three-month Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking	Forecast probs.* (include LEPS)	Verification* (Consistent, Near-consistent, Inconsistent?)
Northern Division							
Niufo'ou	258.3	252	417	337	16/43	33,20, 47 (-2.5)	Near consistent
Niutoputapu	374.1	208	368	275	46/67	19, 44, 37 (-1.5)	Near consistent
Central Division							
Vava'u	365.4	254	398	340	41/70	52, 28, 20 (0.1)	Near consistent
Ha'apai	245.5	231	362	294	26/70	41, 42, 17 (-0.3)	Near consistent
Southern Division							
Nuku'alofa	339.8	276	376	340	42/72	64, 14, 22 (0.8)	Near consistent
Fua'amotu	340.5	286	419	371	17/37	70,12,18 (3.2)	Near consistent

Predictors and Period used for July to August 2016 Outlooks (refer to OCOF #105):

Period: *below normal/normal/above normal

* Forecast is consistent when observed and predicted (tercile with the highest probability) categories coincide (are in the same tercile).

Forecast is near-consistent when observed and predicted (tercile with the highest probability) differ by only one category (i.e. terciles 1 and 2 or terciles 2 and 3).

Forecast is inconsistent when observed and predicted (tercile with the highest probability) differ by two categories (i.e. terciles 1 and 3).

**TABLE 3: Seasonal Climate Outlooks using SCOPIC for
November 2016 to January 2017-Tercile Method**

Predictors and Period used: NINO 3.4 (August - September 2016)

Station	Below Normal (prob)	33%ile rainfall (mm)	Normal (prob)	66%ile rainfall (mm)	Above Normal (prob)	LEPS (%)	Hit-rate (%)
<i>Northern Division</i>							
Niuafou'ou (1971-2016)	22	702	36	999	42	5.6	41
Niutoputapu (1947-2016)	23	613	35	864	42	15.2	49.2
<i>Central Division</i>							
Vava'u (1947-2016)	18	474	38	813	44	25.2	58.5
Ha'apai (1947-2016)	17	301	40	571	43	23.7	62.1
<i>Southern Division</i>							
Nukuálofa(1944-2016)	12	316	42	562	46	30.2	59.1
Fuaámotu(1980-2016)	10	362	36	594	54	20.2	50

**TABLE 3: Seasonal Climate Outlooks using SCOPIC for
November 2016 to January 2017**

Predictors and Period used: NINO 3.4 August – September 2016

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
<i>Northern Division</i>					
Niuafou'ou (1971-2016)	44	709	56	1.4	43.9
Nlutopotapu (1947-216)	41	648	59	11.9	69
<i>Central Division</i>					
Vava'u (1947-2016)	39	516	61	18.6	72.7
Ha'apai(1947-2016)	38	344	62	20.9	69.7
<i>Southern Division</i>					
Nuku'alofa(1944-2016)	37	348.4	63	24.8	72.7
Fua'amotu (1980-2016)	34	363	66	14.4	66.7

**TABLE 4: Seasonal Climate Outlooks using POAMA2 for
November 2016 to January 2017**

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)

Summary Statements

Rainfall for September 2016:

Northern division: Normal to Above Normal

Central division: Below normal

Southern division: Below normal

Accumulated rainfall for July to September

2016, including outlook verification:

Northern division: Normal rainfall in Niuafu'ou and Above normal in Niuatoputapu. Forecast was near consistent.

Central division: Normal rainfall. Forecast was near consistent.

Southern division: Normal rainfall. Forecast was near consistent.

Outlooks for November 2016 to January 2017:

1. SCOPIC:

Northern division: The seasonal rainfall outlook shows the most likely outcome is above-normal, with normal the next most likely. Confidence is low to moderate.

Central division: The seasonal rainfall outlook favours above normal with normal the next most likely at Vava'u. There is a near equal likelihood of above-normal and normal rainfall at Haapai. Confidence is high.

Southern division: The seasonal rainfall outlook favours above normal with normal the next most likely. Confidence is high.

2. POAMA:

NB: The X LEPS % score has been categorised as follows:

Very Low: $X < 0.0$

Low: $0 \leq X < 5$

Moderate $5 \leq X < 10$

Good: $10 \leq X < 15$

High: $15 \leq X < 25$

Very High: $25 \leq X < 35$

Exceptional: $X \geq 35$