

Pacific Islands - Online Climate Outlook Forum (OCOF) No. 112

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)	December 2016						
	October 2016 Total	November 2016 Total	December 2016 Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
Northern Division							
Niuafou'ou	182.3	235.5	307.3	224.0	359.0	281.0	26/45
Niukatoputapu	200.0	66.4	317.6	166.0	278.0	241.5	48/66
Central Division							
Vava'u	253.6	184.0	145.1	122.3	250.0	166.0	30/69
Ha'apai	129.5	58.9	318.2	64.0	157.9	115.0	63/70
Southern Division							
Nuku'alofa	72.2	127.6	135.4	72.3	173.0	126.0	39/72
Fua'amotu	137.3	166.7	209.4	122.6	186.2	150.2	29/37

TABLE 2: Three-monthly Rainfall October to December 2016

[Please note that the data used in this verification should be sourced from table 3 of OCOF #108]

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							
Niuafou'ou	724.9	632.3	840.1	708.9	25/42	31,31,38 (0.5)	Near-consistent
Niukatoputapu	584.0	532.0	746.0	647.5	30/65	29,34,37 (6.0)	Near consistent
Central Division							
Vava'u	582.6	377.7	614.8	516.0	43/70	24,36,40 (20.8)	Near consistent
Ha'apai	506.6	245.7	417.7	344.0	57/70	24,36,40 (21.0)	Consistent
Southern Division							
Nuku'alofa	335.2	275.3	419.7	348.4	33/73	15,43,42 (30.2)	Consistent
Fua'amotu	513.4	272.9	435.6	363.0	31/37	17,44,49 (30.2)	Consistent

Predictors and Period used for October to December 2016 Outlooks (refer to OCOF #107):

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 February to April 2017-Tercile Method

Predictors and Period used: NINO 3.4 (November - December 2016)

Station	Below Normal (prob)	33%ile rainfall (mm)	Normal (prob)	66%ile rainfall (mm)	Above Normal (prob)	LEPS (%)	Hit-rate (%)
Northern Division							
Niuafou'ou (1971-2016)	31	728.5	31	936	38	0.1	31.7
Niutopotapu (1947-2016)	28	686.4	39	840	33	0.4	41.7
Central Division							
Vava'u (1947-2016)	28	692	34	890	38	2.8	39.4
Ha'apai (1947-2016)	25	543	33	705	42	8.0	42.4
Southern Division							
Nuku'alofa(1944-2016)	31	543.3	32	681	37	0.0	36.4
Fua'amotu(1980-2016)	20	456	35	672	45	8.8	43.2

TABLE 3: Seasonal Climate Outlooks using SCOPIC for February to April 2017

Predictors and Period used: NINO 3.4 November – December 2016

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
Northern Division					
Niuafou'ou (1971-2016)	43	885.7	57	3.3	58.5
Nlutopotapu (1947-2016)	45	755	55	1.5	56.7
Central Division					
Vava'u (1947-2016)	45	820.6	55	1.9	59.1
Ha'apai(1947-2016)	44	649	56	2.5	56.1
Southern Division					
Nuku'alofa(1944-2016)	46	609.5	54	0.0	54.5
Fua'amotu (1980-2016)	38	510	62	5.1	62.2

**TABLE 4: Seasonal Climate Outlooks using POAMA2 for
February 2017 to April 2017**

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Northern Division					
Niuafo'ou					
Nlutoputapu					
Central Division					
Vava'u					
Ha'apai					
Southern Division					
Nuku'alofa					

Summary Statements

Rainfall for December 2016:

Northern division: Normal rainfall in Niuafo'ou and above normal in Niuatoputapu

Central division: Normal rainfall in Vava'u and above normal in Ha'apai

Southern division: Normal rainfall in Nuku'alofa and above normal in Fua'amotu

Accumulated rainfall for October to December 2016, including outlook verification:

Northern division: Above normal in Niuafo'ou forecast was consistent and normal in Niuatoputapu, forecast was near consistent.

Central division: Normal in Vava'u, forecast was near consistent and above normal in Ha'apai forecast was consistent.

Southern division: Normal in Nuku'alofa and above normal in Fua'amotu, forecast was consistent.

Outlooks for February to April 2017:

1. SCOPIC:

Northern division: The seasonal rainfall outlook is above normal for Niuafo'ou and normal for Niuatoputapu. Confidence is low

Central division: The seasonal rainfall outlook favours above normal with normal the next most likely. Confidence is low to moderate

Southern division: The seasonal rainfall outlook favours above normal with normal the next most likely. Confidence is very low to moderate

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: $X \geq 35$