

Pacific Islands - Online Climate Outlook Forum (OCOF) No.99

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)			November 2015				
	Sep 2015 Total	Oct 2015 Total	Nov 2015 Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
Northern Division							
Niuaotupapu (1947-2015)	48.7	30.0	384.3	148.0	238.3	183.0	63/68
Niuafo'ou (1971-2015)	25.3	28.7	297.6	166.2	272.6	235.2	27/45
Central Division							
Vava'u (1947-2015)	225.3	31.4	140.9	76.7	171.9	113.5	41/69
Ha'apai (1947-2015)	97.2	25.0	59.6	64.5	133.0	88.5	22/69
Southern Division							
Nukuálofa (1944-2015)	73.8	10.1	120.4	42.0	143.0	80.0	45/72
Fuaámotu (1980-2015)	110.2	19.6	115.7	43.0	135.0	102.0	21/36

Period: *below normal/normal/above normal

TABLE 2: Three-monthly Rainfall

Sep – November 2015

Predictors and Period used: NINO 3.4 (June–July 2015)

[Please note that the data used in this verification should be sourced from table 3 of OCOF #95]

Station	Three-month Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking	Forecast probs.* (include LEPS)	Verification ¹ (Consistent, Near-consistent or Inconsistent)
Northern Division							
Niuaotoputapu (1947-2015)	462.7	389.0	560.0	482.0	33/68	64,30,6 (10.6)	Near Consistent
Niuafo'ou(1971-2015)	317.4	448.1	638.2	561.1	8/45	56,32,12 (6.1)	Consistent
Vava'u (1947-2015)	397.6	350.7	539.0	413.0	44/69	59,37,4 (14.6)	Near Consistent
Ha'apai (1947-2015)	181.8	228.7	396.7	302.0	34/69	55,34,11 (6.0)	Consistent
Nukuálofa(1944-2015)	204.3	240.6	432.0	359.0	26/71	80,16,4 (17.3)	Consistent
Fuaámotu(1980-2015)	244.7	247.7	391.8	314.0	13/36	63,27,10 (9.0))	Consistent

¹Forecast 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
Jan 2016 - Mar 2016**

Predictors and Period used: NINO 3.4 (Oct - Nov 2015)

Station	Below Normal (prob)	33%ile rainfall (mm)	Normal (prob)	66%ile rainfall (mm)	Above Normal (prob)	LEPS (%)	Hit-rate (%)
<i>Northern Division</i>							
Niutoputapu (1947-2015)	74	645	23	900	2	16.9	58.7
Niuafo'ou (1971-2015)	73	731.9	13	960.1	15	4.6	23.1
<i>Central Division</i>							
Vava'u (1947-2015)	74	711.3	18	961.7	8	7.7	46.2
Ha'apai (1947-2015)	90	564.7	7	764	3	18.2	55.4
<i>Southern Division</i>							
Nuku'alofoa(1944-2015)	77	500.7	21	818.8	2	17.5	47.7
Fua'amotu(1980-2015)	68	465.9	31	785.7	1	21.7	58.3

Seasonal Climate Outlook:

Jan 20156– Mar 2016- Median Table:

Predictors and Period used: NINO 3.4 (Oct - Nov 2015)

Station	Below Median (prob)	Median rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
<i>Northern Division</i>					
Niutoputapu (1947-2015)	89	804	11	13.4	71.4
Niuafo'ou (1971-2015)	82	904	18	4.2	59
<i>Central Division</i>					
Vava'u (1947-2015)	77	852.9	23	4.6	56.9
Ha'apai (1947-2015)	90	661	10	13.1	61.5
<i>Southern Division</i>					
Nuku'alofoa (1944-2015)	98	636	2	28.5	70.8
Fua'amotu Airport (1980-2015)	96	603.5	4	27.4	72.2

**TABLE 4: Seasonal Climate Outlooks using POAMA2 for
Dec 2015 – Feb 2016**

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Niutoputapu	95	627	5	827	0
Vava'u	88	567	6	846	6
Ha'apai	88	487	6	623	6
Nuku'alofa	82	453	13	723	5

Summary Statements

Rainfall for November 2015:

Northern division: Above Normal

Central division: Below Normal Rainfall in Ha'apai and Normal Rainfall in Vava'u.

Southern division: Normal

Accumulated rainfall for September – November 2015, including outlook verification:

Northern division: Normal at Niutoputapu and Below Normal at Niuafo'ou. Forecast was near consistent to consistent.

Central division: Normal at Vava'u and Below normal at Ha'apai. Forecast was near consistent to consistent.

Southern division: Below Normal. Forecast was consistent.

Outlooks for Jan 2016 - Mar 2016:

1. SCOPIC:

Northern division: The seasonal rainfall outlook for the Northern division favours below normal. Confidence is low at Niutoputapu and high at Niuafo'ou..

Central division: The seasonal rainfall outlook for the Central division favours below normal. Confidence is moderate at Vava'u and high at Ha'apai.

Southern division: The seasonal rainfall outlook for the Southern division favours below normal. Confidence is good to high.

2. POAMA:

- POAMA seasonal outlook for all stations for January 2016 to March 2016 shows Below normal rainfall is favoured across Tonga.

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: $X \geq 35$