

Pacific Islands - Online Climate Outlook Forum (OCOF) No.102

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)			March 2016				
	Jan 2016 Total	Feb 2016 Total	Total Mar 2016	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
<i>Northern Division</i>							
Niuafo'ou (1971-2016)	61.4	133.3	271.2	211.0	346.3	267.0	24/46
Niuaotoputapu (1947-2016)	111.0	71.3	125.6	181.7	304.0	232.0	9/70
<i>Central Division</i>							
Vava'u (1947-2016)	170.2	463.1	189.3	228.6	360.7	303.0	16/70
Ha'apai (1947-2016)	84.7	307.8	233.8	182.7	314.3	234.0	35/70
<i>Southern Division</i>							
Nukuálofa (1944-2016)	50.2	351.5	127.9	170.7	258.3	211.0	15/72
Fuaámotu (1980-2016)	80.4	228.8	139.6	152.7	225.5	185.0	11/37

Period: *below normal/normal/above normal

**TABLE 2: Three-monthly Rainfall
January 2016–March 2016**

Predictors and Period used: NINO 3.4 (October –November 2015)

[Please note that the data used in this verification should be sourced from table 3 of OCOF #99]

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							
Niuafo'ou(1971-2016)	465.9	753.0	960	904.0	5/46	74,23,2 (16.9)	Consistent
Niuatoputapu (1947-2016)	307.9	650.0	915.9	803.8	2/70	73,13,15 (4.6)	Consistent
Central Division							
Vava'u (1947-2016)	822.6	700.7	927.1	856.4	30/70	74,18,8 (7.7)	Near consistent
Ha'apai (1947-2016)	626.3	564.7	764.0	661.0	31/70	90,7,3 (18.2)	Near consistent
Southern Division							
Nukuálofa(1944-2016)	529.9	500.7	816.7	636.0	29/72	77,21,2 (17.5)	Near consistent
Fuaámotu(1980-2016)	448.8	465.9	785.6	603.5	12/37	68,31,1 (21.7)	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
May 2016 - July 2016**

Predictors and Period used: NINO 3.4 Feb 2016 - Mar 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)	37	367.8	51	464.6	12	0	12
Niutopotapu (1947-2016)	44	322.3	45	416.3	11	1.8	22.6
Central Division							
Vava'u (1947-2016)	67	293.7	26	399.7	7	7	40.9
Ha'apai (1947-2016)	70	208.3	21	307.9	9	5.3	43.1
Southern Division							
Nuku'alofoa(1944-2016)	83	234.3	10	343	7	9.5	37.9
Fua'amotu(1980-2016)	92	263.9	3	433.5	5	14.8	52.8

Seasonal Climate Outlook:

April 2016– June 2016- Median Table:

Predictors and Period used: NINO 3.4 (Dec 2015 – Feb 2016)

Station	Below Median (prob)	Median rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
Northern Division					
Niuafou'ou (1971-2016)	75	429	25	2.3	63.4
Niutopotapu (1947-2016)	65	364.2	35	0.1	58.1
Central Division					
Vava'u (1947-2016)	85	347	15	7.7	57.6
Ha'apai (1947-2016)	89	237	11	9.2	56.9
Southern Division					
Nuku'alofoa (1944-2016)	85	294.6	15	8.3	57.6
Fua'amotu Airport (1980-2016)	92	354.8	8	16.5	58.3

**TABLE 4: Seasonal Climate Outlooks using POAMA2 for
May 2016 – July 2016**

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Niuafo'ou	88	354	7	477	5
Niuaotoputapu	88	320	7	410	5
Vava'u	91	343	5	473	4
Ha'apai	91	210	5	329	4
Nuku'alofa	58	220	36	359	6

Summary Statements

Rainfall for March 2016:

Northern division: Normal at Niuafo'ou and Below normal at Niuaotoputapu

Central division: Below normal at Vava'u and Normal at Ha'apai.

Southern division: Below Normal

Accumulated rainfall for January – March 2016, including outlook verification:

Northern division: Below Normal. Forecast was consistent

Central division: Normal. Forecast was near consistent

Southern division: Normal at Nuku'alofa and below normal in Fua'amotu. Forecast was consistent at Fua'amotu and near consistent at Nuku'alofa.

Outlooks for May - July 2016:

1. SCOPIC:

Northern division: The seasonal rainfall outlook for the Northern division favours normal. Confidence is very low.

Central division: The seasonal rainfall outlook for the Central division favours below normal. Confidence is moderate.

Southern division: The seasonal rainfall outlook for the Southern division favours below normal. Confidence is moderate in Nuku'alofa and high for Fua'amotu.

2. POAMA:

- POAMA seasonal outlook for all stations for May to June 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: $X \geq 35$