

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

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)			February 2016				
	Dec 2015 Total	Jan 2016 Total	Total Feb 2016	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
<i>Northern Division</i>							
Niuafu'ou (1971-2016)	151.3	61.4	133.3	206.6	299.7	241.4	6/46
Niuatoputapu (1947-2016)	164.8	111.0	71.3	190.3	267.0	224.0	5/70
<i>Central Division</i>							
Vava'u (1947-2016)	113.5	170.2	463.1	182.0	283.8	215.0	66/70
Ha'apai (1947-2016)	29.2	84.7	307.8	136.5	238.0	187.0	58/70
<i>Southern Division</i>							
Nukuálofa (1944-2016)	43.0	50.2	351.5	154.7	250.3	217.0	60/72
Fuaámotu (1980-2016)	35.7	80.4	228.8	141.7	233.3	181.0	24/37

Period: *below normal/normal/above normal

**TABLE 2: Three-monthly Rainfall
December 2015–February 2016**

Predictors and Period used: NINO 3.4 (September -October 2015)

[Please note that the data used in this verification should be sourced from table 3 of OCOF #97]

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)	346.0	715.3	950.4	843.7	2/45	55,30,15 (3.5)	Consistent
Niuatoputapu (1947-2016)	347.1	647.0	590.0	747.0	4/69	79, 19,2 (18.5)	Consistent
Central Division							
Vava'u (1947-2016)	746.8	611.7	899.0	734.0	36/69	83.14.2 (21.0)	Near consistent
Ha'apai (1947-2016)	421.7	435.0	676.7	575.1	22/69	91,8,1 (24.8)	Consistent
Southern Division							
Nukuálofa(1944-2016)	445.0	437.7	734.3	558.0	26/70	95,5,0 (31.9)	Near consistent
Fuaámotu(1980-2016)	344.9	414.3	788.3	556.5	9/36	67,31,2 (19.9)	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
Apr 2016 - June 2016**

Predictors and Period used: NINO 3.4 Jan 2016 - Feb 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)	47	481.8	28	629.7	24	-1.7	23.8
Niutopotapu (1947-2016)	45	421	20	592	36	-1.9	20.3
<i>Central Division</i>							
Vava'u (1947-2016)	60	388.5	31	522.7	9	3.8	37.9
Ha'apai (1947-2016)	56	285	36	424.3	7	5.4	38.5
<i>Southern Division</i>							
Nuku'alofoa(1944-2016)	88	280.3	3	434.3	10	8.8	47
Fua'amotu(1980-2016)	90	285.3	3	526.7	7	14.9	52.8

Seasonal Climate Outlook:

March 2016– May 2016- Median Table:

Predictors and Period used: NINO 3.4 (Nov 2015 – Jan 2016)

Station	Below Median (prob)	Median rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
<i>Northern Division</i>					
Niuafou'ou (1971-2016)	49	571.1	51	-2.4	23.8
Niutopotapu (1947-2016)	52	533	48	-1.6	31.3
<i>Central Division</i>					
Vava'u (1947-2016)	80	473	20	6	56.1
Ha'apai (1947-2016)	73	350	27	1.9	52.3
<i>Southern Division</i>					
Nuku'alofoa (1944-2016)	83	325	17	6.6	57.6
Fua'amotu Airport (1980-2016)	89	466	11	13.3	61.1

**TABLE 4: Seasonal Climate Outlooks using POAMA2 for
Apr 2016 – June 2016**

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Niufo'ou	85	449	10	621	5
Niuatoputapu	85	434	10	598	5
Vava'u	82	479	13	630	5
Ha'apai	82	264	13	381	5
Nuku'alofa	85	259	10	414	5

Summary Statements

Rainfall for February 2016:

Northern division: Below normal

Central division: Above normal

Southern division: Above normal at Nuku'alofa and normal at Fua'amotu

Accumulated rainfall for December 2015 – February 2016, including outlook verification:

Northern division: Below Normal at the Niuas. Forecast was consistent.

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

Southern division: Normal at Nuku'alofa and Below Normal at Fua'amotu. Forecast was near consistent to consistent.

Outlooks for Apr - June 2016:

1. SCOPIC:

Northern division: The seasonal rainfall outlook for the Northern division favours below normal. Confidence is high.

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

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

2. POAMA:

- POAMA seasonal outlook for all stations for April 2016 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: $X \geq 35$