

## 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
<b>Northern Division</b>							
Niuafo'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
<b>Central Division</b>							
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
<b>Southern Division</b>							
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 <sup>1</sup> (Consistent, Near-consistent or Inconsistent)
<b>Northern Division</b>							
Niuafo'ou(1971-2016)	<b>346.0</b>	715.3	950.4	843.7	2/45	55,30,15 (3.5)	Consistent
Niuatoputapu (1947-2016)	<b>347.1</b>	647.0	590.0	747.0	4/69	79, 19,2 (18.5)	Consistent
<b>Central Division</b>							
Vava'u (1947-2016)	<b>746.8</b>	611.7	899.0	734.0	36/69	83.14.2 (21.0)	Near consistent
Ha'apai (1947-2016)	<b>421.7</b>	435.0	676.7	575.1	22/69	91,8,1 (24.8)	Consistent
<b>Southern Division</b>							
Nukuálofa(1944-2016)	<b>445.0</b>	437.7	734.3	558.0	26/70	95,5,0 (31.9)	Near consistent
Fuaámotu(1980-2016)	<b>344.9</b>	414.3	788.3	556.5	9/36	67,31,2 (19.9)	Consistent

<sup>1</sup>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  
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 (%)
<b>Northern Division</b>							
Niuafou'ou (1971-2016)	47	481.8	28	629.7	24	-1.7	23.8
Niuaotoputapu (1947-2016)	45	421	20	592	36	-1.9	20.3
<b>Central Division</b>							
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
<b>Southern Division</b>							
Nuku'alofa(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
<b>Northern Division</b>					
Niuafou'ou (1971-2016)	49	571.1	51	-2.4	23.8
Niuaotoputapu (1947-2016)	52	533	48	-1.6	31.3
<b>Central Division</b>					
Vava'u (1947-2016)	80	473	20	6	56.1
Ha'apai (1947-2016)	73	350	27	1.9	52.3
<b>Southern Division</b>					
Nuku'alofa (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)
Niuafo'ou	85	449	10	621	5
Niuaatoputapu	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 Niua. 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:  $X \geq 35$