

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

**Country Name: Tonga**

### TABLE 1: Monthly Rainfall

Station (include data period)			March 2016				Ranking
	Jan 2016 Total	Feb 2016 Total	Total Mar 2016	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	
<b><i>Northern Division</i></b>							
Niuafu'ou (1971-2016)	61.4	133.3	271.2	211.0	346.3	267.0	24/46
Niuatoputapu (1947-2016)	111.0	71.3	125.6	181.7	304.0	232.0	9/70
<b><i>Central Division</i></b>							
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
<b><i>Southern Division</i></b>							
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 <sup>1</sup> (Consistent, Near-consistent or Inconsistent)
<b>Northern Division</b>							
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
<b>Central Division</b>							
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
<b>Southern Division</b>							
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

<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  
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 (%)
<b>Northern Division</b>							
Niuafou'ou (1971-2016)	37	367.8	51	464.6	12	0	12
Niutoputapu (1947-2016)	44	322.3	45	416.3	11	1.8	22.6
<b>Central Division</b>							
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
<b>Southern Division</b>							
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
<b>Northern Division</b>					
Niuafou'ou (1971-2016)	75	429	25	2.3	63.4
Niutoputapu (1947-2016)	65	364.2	35	0.1	58.1
<b>Central Division</b>					
Vava'u (1947-2016)	85	347	15	7.7	57.6
Ha'apai (1947-2016)	89	237	11	9.2	56.9
<b>Southern Division</b>					
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	<b>88</b>	354	7	477	5
Niuaotoputapu	<b>88</b>	320	7	410	5
Vava'u	<b>91</b>	343	5	473	4
Ha'apai	<b>91</b>	<b>210</b>	5	329	4
Nuku'alofa	<b>58</b>	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:  $X \geq 35$