

## Pacific Islands - Online Climate Outlook Forum (OCOF) No.100

**Country Name: Tonga**

### TABLE 1: Monthly Rainfall

Station (include data period)			December 2015				
	Oct 2015 Total	Nov 2015 Total	Dec 2015 Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
<b><i>Northern Division</i></b>							
Niuafo'ou (1971-2015)	28.7	297.6	151.3	224.6	358.8	281.2	21/45
Niuaatoputapu (1947-2015)	30.0	384.3	164.8	189.0	276.3	243.0	9/68
<b><i>Central Division</i></b>							
Vava'u (1947-2015)	31.4	140.9	113.5	123.9	257.0	172.0	20/69
Ha'apai (1947-2015)	25.0	59.6	29.2	69.7	159.9	119.0	7/69
<b><i>Southern Division</i></b>							
Nukuálofa (1944-2015)	10.1	120.4	43.0	74.7	714.0	129.0	13/72
Fuaámotu (1980-2015)	19.6	115.7	35.7	122.7	186.2	150.4	4/36

Period: \*below normal/normal/above normal

**TABLE 2: Three-monthly Rainfall  
Oct – December 2015**

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

**[Please note that the data used in this verification should be sourced from table 3 of OCOF #96]**

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>							
Niuaatoputapu (1947-2015)	<b>579.1</b>	520.2	746.0	655.0	30/68	37,45,18 (-0.8)	Consistent
Niuafo'ou(1971-2015)	<b>443.4</b>	633.6	813.7	708.9	7/45	<b>64,26,10</b> (6.6)	Consistent
Vava'u (1947-2015)	<b>285.8</b>	379.7	610.7	347.0	11/69	<b>69,29,2</b> (20.1)	Consistent
Ha'apai (1947-2015)	<b>113.8</b>	257.0	419.3	530.0	5/69	<b>65,33,2</b> (17.0)	Consistent
Nukuálofa(1944-2015)	<b>173.5</b>	285.3	423.0	352.0	13/71	<b>95,4,1</b> (29.1)	Consistent
Fuaámotu(1980-2015)	<b>170.2</b>	287.9	436.2	364.0	4/36	<b>97,2,1</b> (29.6)	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  
Feb 2016 - Apr 2016**

**Predictors and Period used: NINO 3.4 (Nov - Dec 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>							
Niuafo'ou (1971-2015)	<b>59</b>	724.4	12	938.9	29	1	45
Niuaotoputapu (1947-2015)	<b>74</b>	645	24	900	2	16.9	58.7
<i>Central Division</i>							
Vava'u (1947-2015)	<b>62</b>	690.3	22	878.3	16	3.3	41.5
Ha'apai (1947-2015)	<b>71</b>	541.3	24	708	5	9.6	44.6
<i>Southern Division</i>							
Nuku'alofa(1944-2015)	<b>47</b>	542.7	37	678.7	16	1.5	35.4
Fua'amotu(1980-2015)	<b>79</b>	455.3	16	675.7	6	10.4	41.7

**Seasonal Climate Outlook:**

**Feb 2016– Apr 2016- Median Table:**

**Predictors and Period used: NINO 3.4 (Oct – Dec 2015)**

Station	Below Median (prob)	Median rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
<i>Northern Division</i>					
Niuafo'ou (1971-2015)	<b>70</b>	888.2	30	1.5	52.5
Niuaotoputapu (1947-2015)	<b>65</b>	756	35	0	52.4
<i>Central Division</i>					
Vava'u (1947-2015)	<b>77</b>	815	23	3.9	60
Ha'apai (1947-2015)	<b>77</b>	646	23	4.1	56.9
<i>Southern Division</i>					
Nuku'alofa (1944-2015)	<b>70</b>	607	30	0.2	53.8
Fua'amotu Airport (1980-2015)	<b>85</b>	508.5	15	10.8	63.9

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

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Niuafou'ou	67	718	18	950	15
Niuaotoputapu	67	667	18	808	15
Vava'u	67	679	27	878	6
Ha'apai	67	458	27	617	6
Nuku'alofa	64	420	30	583	6

### **Summary Statements**

#### **Rainfall for December 2015:**

Northern division: Below Normal Rainfall

Central division: Below Normal Rainfall.

Southern division: Below Normal Rainfall.

#### **Accumulated rainfall for October – December 2015, including outlook verification:**

Northern division: Normal at Niuaotoputapu and Below Normal at Niuafou'ou. Forecast was consistent.

Central division: Below Normal. Forecast was consistent.

Southern division: Below Normal. Forecast was consistent.

#### **Outlooks for Feb 2016 - Apr 2016:**

##### **1. SCOPIC:**

**Northern division:** The seasonal rainfall outlook for the Northern division favours below normal. Confidence is low at Niuafou'ou and good at Niuaotoputapu.

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

**Southern division:** The seasonal rainfall outlook for the Southern division favours below normal. Confidence is low at Nuku'alofa and Moderate at Fua'amotu.

## 2. POAMA:

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