

## Pacific Islands - Online Climate Outlook Forum (OCOF) No.97

Country Name: Tonga

### TABLE 1: Monthly Rainfall

Station (include data period)			September 2015				
	Jul 2015 Total	Aug 2015 Total	Sep 2015 Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
<i>Northern Division</i>							
Niuatoputapu (1947-2015)	53.3	53.6	48.7	53.3	129.9	100.5	22/69
<i>Central Division</i>							
Vava'u (1947-2015)	13.9	158.3	225.3	80.3	167.0	109.0	60/69
Ha'apai (1947-2015)	42.8	154.2	97.2	50.3	141.7	90.0	39/69
<i>Southern Division</i>							
Nukuálofa (1944-2015)	30.5	251.0	73.8	75.0	143.0	103.0	22/71
Fuaámotu (1980-2015)	20.8	188.8	110.2	79.3	149.0	102.0	20/36

Period: \*below normal/normal/above normal

**TABLE 2: Three-monthly Rainfall  
July – September 2015**

**Predictors and Period used: NINO 3.4 (Apr – May 2015)**

**[Please note that the data used in this verification should be sourced from table 3 of OCOF #93]**

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>							
Niutoputapu (1947-2015)	<b>155.6</b>	209.0	365.0	286.0	14/68	32, <b>38</b> ,30 (-3.2)	Near consistent
Vava'u (1947-2015)	<b>397.5</b>	254.0	397.7	328.5	46/69	38, <b>43</b> ,19 (-0.5)	Consistent
Ha'apai (1947-2015)	<b>294.2</b>	224.5	345.7	289.0	36/69	<b>52</b> ,27,21 (1.6)	Near consistent
Nukuálofa(1944-2015)	<b>355.3</b>	275	378	322.9	44/71	34, <b>48</b> ,18 (-1.4)	Consistent
Fuaámotu(1980-2015)	<b>319.8</b>	274	421	371.0	16/36	<b>43</b> ,31,27 (-1.2)	Near 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  
Nov 2015 - Jan 2016**

**Predictors and Period used: NINO 3.4 (Aug - Sep 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>							
Niutoputapu (1947-2015)	79	579.0	19	867.3	2	18.5	48.4
<i>Central Division</i>							
Vava'u (1947-2015)	83	491.7	15	819.3	2	21	53.8
Ha'apai (1947-2015)	91	311.9	8	564.9	1	24.8	63.1
<i>Southern Division</i>							
Nuku'alofoa(1944-2015)	95	346.0	5	565.0	0	31.9	61.5
Fua'amotu(1980-2015)	67	374.7	31	606.7	2	19.9	51.4

**Seasonal Climate Outlook:**

**Nov 2015 – Jan 2016- Median Table:**

**Predictors and Period used: NINO 3.4 (Aug - Sep 2015)**

Station	Below Median (prob)	Median rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
<i>Northern Division</i>					
Niutoputapu (1947-2015)	89	754	11	12.8	69.4
<i>Central Division</i>					
Vava'u (1947-2015)	97	655	3	28.2	75.4
Ha'apai (1947-2015)	96	456	4	26.2	70.8
<i>Southern Division</i>					
Nuku'alofoa (1944-2015)	93	443	7	20.2	69.2
Fua'amotu Airport (1980-2015)	69	456	11	14.5	71.4

**TABLE 4: Seasonal Climate Outlooks using POAMA2 for  
Nov 2015 – Jan 2016**

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Niuaotoputapu	95	474	5	773	0
Vava'u	95	447	5	738	0
Ha'apai	95	285	5	515	0
Nuku'alofa	91	305	5	487	4

### **Summary Statements**

#### **Rainfall for September 2015:**

Northern division: Below Normal.

Central division: Normal Rainfall in Ha'apai and Above Normal Rainfall in Vava'u.

Southern division: Below Normal Rainfall in Nuku'alofa and Normal in Fua'amotu.

#### **Accumulated rainfall for July – September 2015, including outlook verification:**

Northern division: Below normal. Forecast was Near consistent.

Central division: Normal. Forecast was Consistent at Vava'u and Near Consistent at Ha'apai.

Southern division: Normal. Forecast was Consistent at Nuku'alofa and Near Consistent at Fu'amotu.

#### **Outlooks for Nov 2015 - Jan 2016:**

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

- The most likely outcome for the country of Tonga (Northern, Central and Southern division) is below normal, the next most likely is normal rainfall. Confidence is high to very high.

##### **2. POAMA:**

- POAMA seasonal outlook for all stations for November 2015 to January 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:  $X \geq 35$