

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 ¹ (Consistent, Near-consistent or Inconsistent)
Northern Division							
Niuaotoputapu (1947-2015)	155.6	209.0	365.0	286.0	14/68	32, 38 ,30 (-3.2)	Near consistent
Vava'u (1947-2015)	397.5	254.0	397.7	328.5	46/69	38, 43 ,19 (-0.5)	Consistent
Ha'apai (1947-2015)	294.2	224.5	345.7	289.0	36/69	52 ,27,21 (1.6)	Near consistent
Nukuálofa(1944-2015)	355.3	275	378	322.9	44/71	34, 48 ,18 (-1.4)	Consistent
Fuaámotu(1980-2015)	319.8	274	421	371.0	16/36	43 ,31,27 (-1.2)	Near 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
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: $X \geq 35$