

Pacific Islands - Online Climate Outlook Forum (OCOF) No.98

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)			October 2015				
	Aug 2015 Total	Sep 2015 Total	Oct 2015 Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
Northern Division							
Niuaotupapu (1947-2015)	53.6	48.7	30.0	119.0	212.0	149.0	30/68
Niuafo'ou (1971-2015)	70.6	25.3	28.7	136.7	187.6	154.3	5/45
Central Division							
Vava'u (1947-2015)	158.3	225.3	31.4	100.3	172.0	139.3	8/69
Ha'apai (1947-2015)	154.2	97.2	25.0	60.3	118.0	91.8	10/69
Southern Division							
Nukuálofa (1944-2015)	251.0	73.8	10.1	55.0	129.7	94	2/72
Fuaámotu (1980-2015)	188.8	110.2	19.6	20.2	110	74	1/36

Period: *below normal/normal/above normal

**TABLE 2: Three-monthly Rainfall
Aug – October 2015**

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

[Please note that the data used in this verification should be sourced from table 3 of OCOF #94]

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)	124.6	312.9	463.0	331.5	6/67	34, 41 ,25 (-3.7)	Near Consistent
Niuafo'ou(1971-2015)	132.3	276.0	476.0	395.8	1/45	51 ,26,29 (3.0)	Consistent
Vava'u (1947-2015)	415	306.3	471.2	381.5	40/69	45 ,26,29(-2.9)	Near Consistent
Ha'apai (1947-2015)	276.4	224.5	345.7	289	37/69	34, 55 ,11(1.2)	Consistent
Nukuálofa(1944-2015)	334.9	275	378	322.9	33/71	39 ,37,24 (-3.4)	Near Consistent
Fuaámotu(1980-2015)	318.6	274	421	371	17/36	35,27, 38 (-3.6)	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
Dec 2015 - Feb 2016**

Predictors and Period used: NINO 3.4 (Sep - Oct 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)	88	647	7	890	5	12.7	52.5
Niuafo'ou (1971-2015)	67	715.3	15	950.4	18	0.8	33.3
<i>Central Division</i>							
Vava'u (1947-2015)	76	611.7	23	899	1	23.5	56.9
Ha'apai (1947-2015)	88	435	10	676.7	2	22.1	53.8
<i>Southern Division</i>							
Nuku'alofofa(1944-2015)	85	437.7	14	734.3	1	27.2	55.4
Fua'amotu(1980-2015)	62	414.3	36	788.3	2	18.6	44.4

Seasonal Climate Outlook:

Dec 2015 – Feb 2016- Median Table:

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

Station	Below Median (prob)	Median rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
<i>Northern Division</i>					
Niutoputapu (1947-2015)	86	747	14	10.6	65.6
Niuafo'ou (1971-2015)	72	843.7	28	2	59
<i>Central Division</i>					
Vava'u (1947-2015)	93	734.0	7	19.8	70.8
Ha'apai (1947-2015)	98	575.1	2	31.9	73.8
<i>Southern Division</i>					
Nuku'alofofa (1944-2015)	97	558.0	3	28.7	69.2
Fua'amotu Airport (1980-2015)	97	556.5	3	31.7	75.0

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

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Niutoputapu	95	918	5	823	0
Vava'u	94	596	5	882	1
Ha'apai	94	347	5	618	1
Nuku'alofa	79	384	12	642	9

Summary Statements

Rainfall for October 2015:

Northern division: Below Normal

Central division: Below Normal

Southern division: Below Normal

Accumulated rainfall for August – October 2015, including outlook verification:

Northern division: Below Normal. Forecast was Near consistent at Niutoputapu and Consistent at Niuafu'ou.

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

Southern division: Normal. Forecast was Near consistent.

Outlooks for Dec 2015 - Feb 2016:

1. SCOPIC:

Northern division: The seasonal rainfall outlook for the Northern division favours below normal. Confidence is low to good.

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 very high.

2. POAMA:

- POAMA seasonal outlook for all stations for December 2015 to February 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: $X \geq 35$