

Pacific Islands - Online Climate Outlook Forum (OCOF) No.96

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)			August 2015				
	June 2015 Total	July 2015 Total	August 2015 Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
Northern Division							
Niuafo'ou (1971-2015)	116.6	48.6	70.6	62.6	123.9	84.7	19/45
Niuatoputapu (1947-2015)	85.3	53.3	53.6	53.0	103.0	77.0	25/68
Central Division							
Vava'u (1947-2015)	51.2	13.9	158.3	61.4	126.3	81.0	59/69
Ha'apai (1947-2015)	104.1	42.8	154.2	55.1	104.1	75.5	59/69
Southern Division							
Nukuálofa (1944-2015)	86.8	30.5	251.0	66.0	135.0	100.0	67/71
Fuaámotu (1980-2015)	135.4	20.8	188.8	72.5	138.1	95.0	30/36

Period: *below normal/normal/above normal

TABLE 2: Three-monthly Rainfall

June – August 2015

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

[Please note that the data used in this verification should be sourced from table 3 of OCOF #91]

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							
Niuafo'ou (1971-2015)	235.8	274.8	412.4	339.6	11/43	36,36,28 (-0.3)	Near-consistent
Niuatoputapu (1947-2015)	192.2	231.0	369.0	301.5	14/68	37,39,24 (1.1)	Near-consistent
Vava'u (1947-2015)	223.4	252.0	350.3	307.0	19/69	43,35,22 (7.2)	Consistent
Ha'apai (1947-2015)	301.1	190.3	306.1	273.0	44/69	43,33,24 (4.7)	Near-consistent
Nukuálofa(1944-2015)	368.3	242.0	367.0	298.0	48/71	46,29,25 (10.3)	Inconsistent
Fuaámotu(1980-2015)	345.0	267.3	400.0	349.0	18/36	45,28,27 (8.1)	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
Oct - Dec 2015**

Predictors and Period used: NINO 3.4 (Jun-Jul 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>							
Niuafu'ou (1971-2015)	37	633.6	45	813.7	18	-0.8	26.8
Niuatoputapu (1947-2015)	64	520.2	26	746.0	10	6.6	43.5
<i>Central Division</i>							
Vava'u (1947-2015)	69	379.7	29	610.7	2	20.1	53.8
Ha'apai (1947-2015)	65	257.0	33.	419.3	2	17.8	52.3
<i>Southern Division</i>							
Nukuálofa(1944-2015)	95	285.3	4	423.0	1	29.1	64.6
Fuaámotu(1980-2015)	97	287.9	2	436.2	1	29.6	51.4

**Seasonal Climate Outlook:
Oct – Dec 2015- Median Table:**

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

Station	Below Median (prob)	Median rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
<i>Northern Division</i>					
Niuafo'ou (1971-2015)	67	708.9	33	-0.1	46.3
Niuaotoputapu (1947-2015)	84	655	16	10.3	66.1
<i>Central Division</i>					
Vava'u (1947-2015)	92	530	8	17.4	72.3
Ha'apai (1947-2015)	93	347	7	19.3	72.3
<i>Southern Division</i>					
Nuku'alofa (1944-2015)	96	352	4	26.2	72.3
Fua'amotu Airport (1980-2015)	83	364	17	10.1	65.7

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

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Niuafo'ou	94	517	5	719	1
Niuaotoputapu	94	446	5	693	1
Vava'u	88	376	6	599	6
Ha'apai	88	235	6	363	6
Nuku'alofa	82	229	13	380	5

Summary Statements

Rainfall for August 2015:

Northern division: Normal

Central division: Above normal

Southern division: Above normal

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

Northern division: Below normal, Forecast was Near-consistent.

Central division: Below normal in Vava'u and Normal in Ha'apai. Forecast was consistent at Vava'u and near-consistent at Ha'apai.
Southern division: Above normal in Nuku'alofa and Normal in Fua'amotu. Forecast was Inconsistent in Nuku'alofa and near consistent in Fua'amotu.

Outlooks for Oct - Dec 2015:

1. SCOPIC:

The seasonal rainfall outlook for August to December 2015 shows:

Northern division: The seasonal rainfall outlook for the Northern division favours below normal for Niuatoputapu and normal rainfall is most likely for Niuafu'ou. Confidence is low to moderate.

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 October to December 2015 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: $X \geq 35$