

Pacific Islands - Online Climate Outlook Forum (OCOF) No. 108

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)	August 2016						
	June 2016 Total	July 2016 Total	August 2016 Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
Northern Division							
Niufo'ou	112.1	44.1	113.4	62.0	126.0	83.0	29/43
Niutoputapu	224.4	45.1	73.3	52.3	102.7	67.5	36/70
Central Division							
Vava'u	329.5	49.2	304.3	61.7	127.0	81.0	69/70
Ha'apai	387.1	59.1	147.9	58.5	112.0	78.0	59/70
Southern Division							
Nuku'alofa	435.4	24.1	306.7	67.0	136.3	102	70/72
Fua'amotu	564.3	31.4	297.2	75.8	143.5	99.8	35/37

TABLE 2: Three-monthly Rainfall June to August 2016

[Please note that the data used in this verification should be sourced from table 3 of OCOF #104]

Station	Three-month Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking	Forecast probs.* (include LEPS)	Verification* (Consistent, Near-consistent, Inconsistent?)
Northern Division							
Niufo'ou	268.5	274.4	415.0	348.5	14/42	35,16,49 (-1.9)	Inconsistent
Niutoputapu	342.8	233.7	354.1	306.8	44/63	59,13,28 (0.6)	Near consistent
Central Division							
Vava'u	683	250.3	347.7	307	67/70	51,24,25 (-0.1)	Inconsistent
Ha'apai	593.2	190.7	308.8	275	69/69	31,52,17 (0)	Near Consistent
Southern Division							
Nuku'alofa	766.2	245.7	364.7	298	72/72	37,30,33 (-1.7)	Inconsistent
Fua'amotu	892.9	270.7	399.0	351	37/37	32,38,30 (-3.2)	Near Consistent

Period: *below normal/normal/above normal

* 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).

Predictors and Period used for June to August 2016 Outlooks (refer to OCOF #104):

**TABLE 3: Seasonal Climate Outlooks using SCOPIC for
October to December 2016-Tercile Method**

Predictors and Period used: NINO 3.4 (June - August 2016)

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 (1971-2016)	31	632.3	31	840.1	38	0.5	34.1
Niuaatoputapu (1947-2016)	29	532	34	746	37	6.0	44.3
<i>Central Division</i>							
Vava'u (1947-2016)	24	377.7	36	614.8	40	20.8	54.5
Ha'apai (1947-2016)	24	245.7	36	417.7	40	21.0	56.1
<i>Southern Division</i>							
Nukuálofa(1944-2016)	15	275.3	43	419.7	42	30.2	62.1
Fuaámotu(1980-2016)	17	272.9	44	435.6	49	30.2	50.0

**TABLE 3: Seasonal Climate Outlooks using SCOPIC for
October to December 2016**

Predictors and Period used: NINO 3.4 July to August 2016

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
Northern Division					
Niuafo'ou (1971-2016)	45	708.9	55	1.4	43.9
Nlutopotapu (1947-216)	42	647.5	58	1.9	68.9
Central Division					
Vava'u (1947-2016)	40	576	60	18.6	72.7
Ha'apai(1947-2016)	40	344	60	20.9	69.7
Southern Division					
Nuku'alofa(1944-2016)	38	348.4	62	24.8	72.7
Fua'amotu (1980-2016)	35	363	65	14.4	66.7

**TABLE 4: Seasonal Climate Outlooks using POAMA2 for
October to December 2016**

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Northern Division					
Niuafo'ou	12	517	5	719	83
Nlutopotapu	12	446	5	693	83
Central Division					
Vava'u	21	376	12	599	67
Ha'apai	21	235	12	363	67
Southern Division					
Nuku'alofa	42	229	21	380	36

Summary Statements

Rainfall for August 2016:

Northern division: Normal

Central division: Above normal

Southern division: Above normal

Accumulated rainfall for June to August

2016, including outlook verification:

Northern division: Below normal rainfall in Niufo'ou and normal in Niuatoputapu. Forecast was inconsistent for Niufo'ou and near consistent for Niuatoputapu.

Central division: Above normal rainfall. Forecast was inconsistent for Vava'u and near consistent for Ha'apai.

Southern division: Above normal rainfall. Forecast was near consistent for Fua'amotu and inconsistent for Nuku'alofa.

Outlooks for October to December 2016:

1. SCOPIC:

Northern division: The outlooks offer little guidance as the chances of above-normal, normal and below-normal rainfall are similar

Central division: The seasonal rainfall outlook favours above normal rainfall with normal rainfall the next most likely. Confidence is high.

Southern division: The seasonal rainfall outlook shows a near equal likelihood of above-normal and normal rainfall for Nuku'alofa and above normal with normal the next most likely at Fua'amotu. Confidence is very high.

2. POAMA:

POAMA seasonal outlook for all stations for October to December 2016 favours abovenormal at all stations except Nuku'alofa where below normal is favoured.

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: $X \geq 35$