

Pacific Islands - Online Climate Outlook Forum (OCOF) No. 106

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)	June 2016						
	April 2016 Total	May 2016 Total	June 2016 Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
Northern Division							
Niufo'ou	449.3	77.2	112.1	61.4	152.0	97.5	25/43
Niutopotapu	369.0	49.4	224.4	65.3	144.0	88.1	62/70
Central Division							
Vava'u	226.2	232.3	329.5	56.0	133.0	89.0	65/70
Ha'apai	111.2	436.9	387.1	41.7	106.7	73.0	70/70
Southern Division							
Nuku'alofa	238.5	181.4	435.4	58.0	108.7	77.3	72/72
Fua'amotu	238.1	276.2	564.3	68.7	138.9	96.1	37/37

TABLE 2: Three-monthly Rainfall April to June 2016

[Please note that the data used in this verification should be sourced from table 3 of OCOF #102]

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	638.6	490.8	637.7	578.0	28/42	47,28,24(-1.7)	Near consistent
Niutopotapu	642.8	429.0	600.7	537.5	47/63	45,20,36(-1.9)	Near consistent
Central Division							
Vava'u	788.0	388.5	522.7	473.0	61/70	60,31,9(3.8)	Inconsistent
Ha'apai	935.2	285.0	424.3	350.0	68/69	56,36,7(5.4)	Inconsistent
Southern Division							
Nuku'alofa	855.3	280.3	430.2	325.0	71/72	88,3,10(8.8)	Inconsistent
Fua'amotu	1078.6	278.3	509.2	440.0	37/37	90,3,7(14.9)	Inconsistent

Period: *below normal/normal/above normal

Predictors and Period used for April to June 2016 Outlooks (refer to OCOF #102):

* 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
August to October 2016-Tercile Method**

Predictors and Period used: NINO 3.4 (May – June 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)	35	313.0	28	469.0	37	-2.6	18.6
Niuaatoputapu (1947-2016)	44	270.7	30	484.3	26	0.4	41.3
<i>Central Division</i>							
Vava'u (1947-2016)	37	308.7	34	467.9	29	-1.1	34.8
Ha'apai (1947-2016)	43	234.0	40	351.7	17	5.7	30.3
<i>Southern Division</i>							
Nukuálofa(1944-2016)	38	263.8	42	395.3	20	2.4	22.7
Fuaámotu(1980-2016)	32	278.0	33	399.7	35	-3.1	13.9

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

Predictors and Period used: NINO 3.4 May to June 2016

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
Northern Division					
Niuafu'ou (1971-2016)	46	407.9	54	-1.8	53.5
Nlutopotapu (1947-216)	36	331.6	64	5.2	60.3
Central Division					
Vava'u (1947-2016)	56	386.0	44	-0.6	56.1
Ha'apai(1947-2016)	66	274.0	34	5.7	60.6
Southern Division					
Nuku'alofa(1944-2016)	67	341.0	33	4.8	62.1
Fua'amotu (1980-2016)	48	342.0	52	-2.8	33.3

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

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Northern Division					
Niuafu'ou	45	309	12	465	42
Nlutopotapu	45	277	12	390	42
Central Division					
Vava'u	51	280	27	475	21
Ha'apai	51	200	27	285	21
Southern Division					
Nuku'alofa	45	283	36	363	18

Summary Statements

Rainfall for June 2016:

Northern division: Normal for Niuafu'ou and Above Normal for Niuatopotapu.

Central division: Above normal.

Southern division: Above normal.

Accumulated rainfall for April to June

2016, including outlook verification:

Northern division: Above Normal rainfall. Forecast was Near Consistent.

Central division: Above Normal rainfall. Forecast was Inconsistent.

Southern division: Above Normal rainfall. Forecast was Inconsistent.

Outlooks for August to October 2016:

1. SCOPIC:

Northern division: The seasonal outlook is for Niuafu'ou is mixed with similar chances for below-normal and above-normal totals, while Below Normal is favoured for Niuatoputapu. Confidence is low to very low.

Central division: The seasonal outlook favours below normal rainfall. Confidence is low to very low.

Southern division: The seasonal outlook favours normal rainfall for Nuku'alofa, while there is little guidance for Fua'amotu as the chances of above-normal, below-normal and normal rainfall are similar. Confidence is low to very low.

2. POAMA:

POAMA seasonal outlook for all stations for August to October 2016 shows a mixed outlook for the Northern Division, a below normal outlook for the Central and Southern Divisions.

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: $X \geq 35$