

Pacific Islands - Online Climate Outlook Forum (OCOF) No. 105

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)	May 2016						
	March 2016 Total	April 2016 Total	May 2016 Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
Northern Division							
Niuafou'ou	271.2	449.3	77.2	136.3	205.3	155.7	8/45
Niuaotoputapu	125.6	369.0	49.4	127.0	185.0	152.0	6/66
Central Division							
Vava'u	189.3	226.2	232.3	91.0	175.7	132.0	61/70
Ha'apai	233.8	111.2	436.9	64.9	112.7	88.5	69/69
Southern Division							
Nuku'alofa	127.9	238.5	181.4	65.3	134.3	85.0	58/72
Fua'amotu	139.6	238.1	276.2	56.8	147.1	93.8	33/37

TABLE 2: Three-monthly Rainfall March to May 2016

[Please note that the data used in this verification should be sourced from table 3 of OCOF #101]

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							
Niuafou'ou	797.7	640.2	808.0	767.0	29/46	35,23,42(-2.7)	Near consistent
Niuaotoputapu	544	589	741	640.5	19/70	19,33,48(0)	Near consistent
Central Division							
Vava'u	647.8	580.4	790.0	704.0	33/70	54,28,20(0.5)	Near consistent
Ha'apai	781.9	442.3	604.7	544.0	62/70	41,42,17 (0.6)	Near consistent
Southern Division							
Nuku'alofa	547.8	439.7	549.7	481.0	48/73	64,14,22(1.3)	Near consistent
Fua'amotu	653.9	417.3	549.3	480.5	30/37	86,4,10(10.9)	Inconsistent

Period: *below normal/normal/above normal

Predictors and Period used for March to May 2016 Outlooks (refer to OCOF #101):

* 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
Mar 2016 - May 2016**

Predictors and Period used: NINO 3.4 (Dec 2015 – Jan. 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)	33	640.2	20	808	47	-2.5	25.0
Niuaatoputapu (1947-2016)	19	589.0	44	741.0	37	-1.5	34.5
<i>Central Division</i>							
Vava'u (1947-2016)	52	580.4	28	790.0	20	0.1	31.8
Ha'apai (1947-2016)	41	442.3	42	607.4	17	-0.3	38.5
<i>Southern Division</i>							
Nukuálofa(1944-2016)	64	439.7	14	549.7	22	0.8	40.9
Fuaámotu(1980-2016)	70	417.3	12	549.3	18	3.2	45.9

**TABLE 3: Seasonal Climate Outlooks using SCOPIC for
July to September 2016**

Predictors and Period used: NINO 3.4 April to May

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
Northern Division					
Niufo'ou (1971-2016)	51	336.5	30	-2.1	30
Nlutopotapu (1947-216)	42	274.5	25	-1.4	41.5
Central Division					
Vava'u (1947-2016)	41	340.0	19	0.5	21.2
Ha'apai(1947-2016)	50	289.0	16	3.6	42.4
Southern Division					
Nuku'alofa(1944-2016)	43	323.7	27	-0.5	25.8
Fua'amotu (1980-2016)	36	371.0	29	-2.6	16.7

**TABLE 4: Seasonal Climate Outlooks using POAMA2 for
July to September 2016**

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Northern Division					
Niufo'ou	67	234	27	357	6
Nlutopotapu	67	185	27	368	6
Central Division					
Vava'u	76	244	18	402	6
Ha'apai	76	217	18	337	6
Southern Division					
Nuku'alofa	64	249	31	395	5

Summary Statements

Rainfall for May 2016:

Northern division: Below normal

Central division: Above normal (Ha'apai is the highest rainfall was recorded)

Southern division: Above normal.

Accumulated rainfall for March to May

2016, including outlook verification:

Northern division: Normal at Niuafu'ou and Below Normal at Niuatoputapu. Forecast for the Niuaas was Near Consistent.

Central division: Above normal at Vava'u and Above Normal at Ha'apai. Forecast was near consistent

Southern division: Above normal at Nuku'alofa and Above Normal at Fua'amotu. Forecast was near consistent.

Outlooks for July to September 2016:

1. SCOPIC:

Northern division: The seasonal outlook shows is Below normal. Confidence is very low.

Central division: The seasonal outlook shows below normal. Confidence is low.

Southern division: The seasonal outlook shows below normal. Confidence is very low.

2. POAMA:

POAMA seasonal outlook for all stations for July to September 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: $X \geq 35$