

Pacific Islands - Online Climate Outlook Forum (OCOF) No.101

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)			January 2016				
	Nov 2015 Total	Dec 2015 Total	Total Jan 2016	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
Northern Division							
Niuafo'ou (1971-2016)	297.6	151.3	61.4	209.2	367.4	240.9	3/43
Niuaotoputapu (1947-2016)	384.3	164.8	111.0	210.9	293.7	239.5	10/69
Central Division							
Vava'u (1947-2016)	140.9	113.5	170.2	173	313.3	244	22/70
Ha'apai (1947-2016)	59.6	29.2	84.7	123	259.7	191.9	17/70
Southern Division							
Nukuálofa (1944-2016)	120.4	43.0	50.2	121	251	188	11/72
Fuaámotu (1980-2016)	115.7	35.7	80.4	132	284.2	193	9/37

Period: *below normal/normal/above normal

**TABLE 2: Three-monthly Rainfall
November 2015–January 2016**

Predictors and Period used: NINO 3.4 (Aug-September 2015)

[Please note that the data used in this verification should be sourced from table 3 of OCOF #97]

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							
Niuafu'ou(1971-2016)	510.3	699.5	996	782.8	8/45	55,30,15,(3.2)	Consistent
Niuatoputapu (1947-2016)	660.1	579	867.3	754	25/69	80,18,2(16.5)	Near consistent
Vava'u (1947-2016)	424.6	491.7	819.3	655	19/69	84,14,2(23.8)	Consistent
Ha'apai (1947-2016)	173.5	311.9	564.9	456	8/69	91,8,1(25.0)	Consistent
Nukuálofa(1944-2016)	213.9	346	565	443	68/70	96,4,0(32.6)	Consistent
Fuaámotu(1980-2016)	230.8	374.7	606.7	456	6/36	67,31,2(20.2)	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
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 (%)
Northern Division							
Niuafo'ou (1971-2016)	35	653.5	23	807.8	42	-2.7	23.3
Niuaatoputapu (1947-2016)	19	593	33	751	48	0	1.6
Central Division							
Vava'u (1947-2016)	52	580.4	28	790	20	0.5	32.3
Ha'apai (1947-2016)	41	442.3	42	604.7	17	0.6	21.9
Southern Division							
Nuku'alofa(1944-2016)	64	437.3	14	549.7	22	1.3	40
Fua'amotu(1980-2016)	86	420.7	4	576.0	10	10.9	55.6

Seasonal Climate Outlook:

March 2016– May 2016- Median Table:

Predictors and Period used: NINO 3.4 (Nov 2015 – Jan 2016)

Station	Below Median (prob)	Median rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
Northern Division					
Niuafo'ou (1971-2016)	41	767.2	59	-0.5	58.1
Niuaatoputapu (1947-2016)	42	643.5	58	-1.4	38.7
Central Division					
Vava'u (1947-2016)	61	704	39	-0.2	55.4
Ha'apai (1947-2016)	63	544	37	-0.2	46.9
Southern Division					
Nuku'alofa (1944-2016)	72	481	28	1.9	28
Fua'amotu Airport (1980-2016)	86	502.5	14	11.8	69.4

**TABLE 4: Seasonal Climate Outlooks using POAMA2 for
Mar 2016 – May 2016**

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Niufo'ou	67	631	18	793	15
Niutoputapu	67	587	18	744	15
Vava'u	73	586	15	762	12
Ha'apai	73	354	15	537	12
Nuku'alofa	64	361	27	503	9

Summary Statements

Rainfall for January 2016:

Northern division: Below normal

Central division: Below normal

Southern division: Below normal

Accumulated rainfall for November 2015 – January 2016, including outlook verification:

Northern division: Below Normal at Niufo'ou and Normal at Niutoputapu. Forecast was Consistent.

Central division: Below Normal. Forecast was consistent.

Southern division: Below Normal. Forecast was consistent.

Outlooks for Mar 2016 - May 2016:

1. SCOPIC:

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

Central division: The seasonal rainfall outlook for the Central division favours below normal. Confidence is low.

Southern division: The seasonal rainfall outlook for the Southern division favours below normal. Confidence is low at Nuku'alofa and Moderate at Fua'amotu.

2. POAMA:

- POAMA seasonal outlook for all stations for March 2016 to May 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: $X \geq 35$