Pacific Islands - Online Climate Outlook Forum (OCOF) No. 118

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)			June 2017				
	Apr 2017 Total	May 2017 Total	Jun 2017 Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
Northern Division							
Niuafo'ou	181.4	217.0	113.8	63.6	152.0	103.0	26/44
Niuatoputapu	445.9	622.2	233.5	66.4	154.0	89.5	65/71
Central Division							
Vava'u	114.3	342.8	126.1	56.0	135.0	90.0	46/71
Ha'apai	41.6	356.9	67.6	42.0	108.0	73.5	34/71
Southern Division							
Fua'amotu	36.8	253.0	51.9	69.0	146.0	98.0	10/38
Nuku'alofa	n.a	232.2	35.5	58.0	112.3	80.6	15/73

TABLE 2: Three-monthly Rainfall
April to June 2017

[Please note that the data used in this verification should be sourced from table 3 of OCOF #114]

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							
Niuafo'ou	**512.2**	493.7	629.3	582.0	18/43	(34,31,35) -2.5	Near Consistent
Niuatoputapu	**1301.6**	433.0	609.0	540.0	64/64	(34,33,33) -1.5	Near Consistent
Vava'u	**583.2**	389.8	526.0	476.0	49/71	(31,34,35) 0.1	Consistent
Ha'apai	**466.1**	289.0	421.7	352.0	51/70	(32,33,35) -0.4	Consistent
Fua'amotu	**341.7**	280.0	513.6	458.0	16/38	(23,40,37) 3.2	Consistent
Nuku'alofa	**N/A**	281.7	433.7	329.7	N/A	(26,37,37) 0.8	

*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 April 2017 to June 2017 Outlooks (refer to OCOF #114): **NINO3.4 (Jan-Feb 2017)**

Period:*below normal/normal/above normal

TABLE 3: Seasonal Climate Outlooks using SCOPIC for August to October 2017-Tercile Method

Predictors and Period used: NINO 3.4 (May - June 2017)

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**	321.7	33	467.0	32	-2.6	22.7
Niuatoputapu (1947-2016)	**44**	271.0	32	497.0	24	-0.0	32.8
Central Division							
Vava'u (1947-2016)	**37**	311.0	32	473.8	31	-1.4	34.3
Ha'apai (1947-2016)	**41**	236.0	40	355.0	19	4.4	40.3
Southern Division							
Fuaámotu(1980-2016)	31	280.0	**37**	410.0	32	-2.9	40.5
Nukuálofa(1944-2016)	**38**	265.6	38	397.8	24	1.6	26.9

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
Northern Division					
Niuafo'ou (1971-2016)	54	402.2	46	-1.5	52.3
NIutoputapu (1947-216)	67	332.3	33	5.7	60.9
Central Division					
Vava'u (1947-2016)	55	392.5	45	-1.0	55.2
Ha'apai(1947-2016)	71	292.7	29	10.5	62.7
Southern Division					
Fuaámotu(1980-2016)	**50**	347.0	50	-2.8	29.7
Nuku'alofa(1944-2016)	**66**	342.5	34	4.7	62.7

TABLE 4: Seasonal Climate Outlooks using POAMA2 for August to October 2017

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Northern Division					
Niuafo'ou	15	309	6	465	**79**
NIutoputapu	15	277	6	390	**79**
Vava'u	39	280	16	475	**45**
Ha'apai	39	200	16	285	**45**
Nuku'alofa	**52**	238	18	363	30

Summary Statements

Rainfall for June 2017:

Northern division: Normal in Niuafo'ou and Above Normal in Niuatoputapu.

Central division: Normal.

Southern division: Below Normal.

Accumulated rainfall for April to June 2017, including outlook verification:

Northern division: Normal in Niuafo'ou. Forecast was near-consistent. Above normal in Niuatoputapu. Forecast was in near-consistent.

Central division: Above Normal. Forecast was consistent.

Southern division: Normal in Fua'amotu, forecast was consistent. No total available for Nuku'alofa because of missing April value.

Outlooks for August to October 2017:
1. SCOPIC:

Northern division: At Niuatoputapu, the most likely outcome is below-normal, with normal the next most likely. At Niuafo'ou there is little guidance as the chances of below-normal, normal and above-normal rainfall are similar. Confidence is very low.

Central division: At Vava'u there is little guidance as the chances of below-normal, normal and above-normal rainfall are similar, while at Ha'apai the chances of below-normal and normal are similar, with above-normal the least likely outcome. Confidence is very low to low.

Southern division: At Fua'amotu there is little guidance as the chances of below-normal, normal and above-normal rainfall are similar, while at Nuku'alofa the chances of below-normal and normal are similar, with above-normal the least likely outcome. Confidence is very low to low.

2. POAMA: POAMA seasonal rainfall outlook for all stations for August to October shows above normal rainfall is the favoured outcome, 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 ≤ X < 5	Moderate 5 ≤ X < 10	Good: 10 ≤ X < 15	High: 15≤ X < 25
Very High: 25 ≤X < 35	Exceptional: X ≥ 35			