Pacific Islands - Online Climate Outlook Forum (OCOF) No. 115

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)	Jan 2017 Total	Feb 2017 Total	March 2017				
			March 2017 Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
Northern Division							
Niuafo'ou	149.3	528.1	287.5	212.0	344.7	270.0	26/46
Niuatoputapu	205.4	693.9	154.4	180.1	296.0	229.5	12/67
Central Division							
Vava'u	136.7	925.6	305.2	227.8	358.0	301.0	37/71
Ha'apai	134.7	498.0	285.3	184.0	313.0	233.9	43/71
Southern Division							
Fua'amotu	103.0	473.9	257.7	146.0	222.0	180.3	29/38
Nuku'alofa	30.0	416.9	209.1	168.7	255.7	209.0	37/73

TABLE 2: Three-monthly Rainfall
January to March 2017

[Please note that the data used in this verification should be sourced from table 3 of OCOF #111]

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	**964.9**	745.0	948.0	893.5	28/41	17,**42**,41(11.1)	Near consistent
Niuatoputapu	**1053.7**	640.0	906.7	794.4	58/67	20,33,**47** (19.2)	Consistent
Vava'u	**1367.5**	711.3	926.2	854.3	66/70	23,35,**42**(7.3)	Consistent
Ha'apai	**918.0**	566.0	778.0	660.5	63/71	17,37,**46** (17.1)	Consistent
Fua'amotu	**834.6**	460.0	775.3	584.0	29/38	15,27,**58** (24.9)	Consistent
Nuku'alofa	**656.0**	505.3	810.3	633.0	39/73	20,32,**48** (15.6)	Near consistent

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* Forecast is <u>consistent</u> when observed and predicted (tercile with the highest probability) categories coincide (are in the same tercile).

Forecast is <u>near-consistent</u> 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 <u>inconsistent</u> when observed and predicted (tercile with the highest probability) differ by two categories (i.e. terciles 1 and 3).

Period:*below normal/normal/above normal

TABLE 3: Seasonal Climate Outlooks using SCOPIC for May to July 2017-Tercile Method

Predictors and Period used: NINO 3.4 (February - March 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)	33	362.5	**34**	458.3	33	1.5	35.7
Niuatoputapu (1947-2016)	33	321.3	**35**	411.7	32	3.2	36.5
Central Division							
Vava'u (1947-2016)	32	298.0	**35**	401.0	33	3.7	41.8
Ha'apai (1947-2016)	33	209.7	**34**	303.3	33	2.3	40.9
Southern Division							
Fuaámotu(1980-2016)	26	255.7	36	430.2	**38**	6.6	56.8
Nukuálofa(1944-2016)	31	234.7	**35**	343.0	34	6.5	31.3

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
Northern Division					
Niuafo'ou (1971-2016)	**51**	427.4	49	4.2	66.7
NIutoputapu (1947-216)	**50**	360.6	**50**	0.9	58.7
Central Division					
Vava'u (1947-2016)	50	352.5	**50**	4.8	56.7
Ha'apai(1947-2016)	50	237.0	**50**	5.8	56.1
Southern Division					
Fua'amotu (1980-2016)	47	343.5	**53**	8.4	56.8
Nuku'alofa(1944-2016)	50	295.8	**50**	4.4	55.2

TABLE 4: Seasonal Climate Outlooks using POAMA2 for May to July 2017

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Northern Division					
Niuafo'ou	**61**	354	27	477	12
NIutoputapu	**61**	320	27	410	12
Vava'u	**55**	343	33	473	12
Ha'apai	**55**	210	33	329	12
Nuku'alofa	30	220	**52**	359	18

Summary Statements

Rainfall for March 2017:

Northern division: Normal in Niuafo'ou and below normal in Niuatoputapu.

Central division: Normal at both Vava'u and Ha'apai.

Southern division: Above normal in Fua'amotu and normal in Nuku'alofa.

Accumulated rainfall for January to March 2017, including outlook verification:

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

Central division: Above normal rainfall. Forecast was consistent.

Southern division: Above normal rainfall in Fua'amotu, forecast was consistent. Normal rainfall in Nuku'alofa, forecast was near consistent.

Outlooks for May to July 2017:
1. SCOPIC:

Northern division: The seasonal rainfall outlook offers little guidance for the coming season as the chances of normal, below-normal and above-normal rainfall are similar. Confidence is low.

Central division: The seasonal rainfall outlook offers little guidance for the coming season as the chances of normal, above-normal and below-normal rainfall are similar. Confidence is moderate.

Southern division: The seasonal rainfall outlook shows near-equal chances of above-normal and normal, with below-normal the least likely. Confidence is low.

2. POAMA:

POAMA seasonal outlook for all stations for May to July favours below normal rainfall, except at Nuku'alofa where normal rainfall 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