Pacific Islands - Online Climate Outlook Forum (OCOF) No. 108

Country Name: Tonga

TABLE 1: Monthly Rainfall

| Station (include data period) | June 2016 Total | July 2016 Total | August 2016 | | | | |
			August 2016 Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
Northern Division							
Niuafo'ou	112.1	44.1	113.4	62.0	126.0	83.0	29/43
Niuatoputapu	224.4	45.1	73.3	52.3	102.7	67.5	36/70
Central Division							
Vava'u	329.5	49.2	304.3	61.7	127.0	81.0	69/70
Ha'apai	387.1	59.1	147.9	58.5	112.0	78.0	59/70
Southern Division							
Nuku'alofa	435.4	24.1	306.7	67.0	136.3	102	70/72
Fua'amotu	564.3	31.4	297.2	75.8	143.5	99.8	35/37

TABLE 2: Three-monthly Rainfall
June to August 2016

[Please note that the data used in this verification should be sourced from table 3 of OCOF #104]

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	**268.5**	274.4	415.0	348.5	14/42	35,16,**49** (-1.9)	Inconsistent
Niuatoputapu	**342.8**	233.7	354.1	306.8	44/63	**59**,13,28 (0.6)	Near consistent
Central Division							
Vava'u	**683**	250.3	347.7	307	67/70	**51**,24,25 (-0.1)	Inconsistent
Ha'apai	**593.2**	190.7	308.8	275	69/69	31,**52**,17 (0)	Near Consistent
Southern Division							
Nuku'alofa	**766.2**	245.7	364.7	298	72/72	**37**,30,33 (-1.7)	Inconsistent
Fua'amotu	**892.9**	270.7	399.0	351	37/37	32,**38**,30 (-3.2)	Near Consistent

Period:*below normal/normal/above normal

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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).

TABLE 3: Seasonal Climate Outlooks using SCOPIC for October to December 2016-Tercile Method

Predictors and Period used: NINO 3.4 (June - August 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)	31	632.3	31	840.1	**38**	0.5	34.1
Niuatoputapu (1947-2016)	29	532	34	746	**37**	6.0	44.3
Central Division							
Vava'u (1947-2016)	24	377.7	36	614.8	**40**	20.8	54.5
Ha'apai (1947-2016)	24	245.7	36	417.7	**40**	21.0	56.1
Southern Division							
Nukuálofa(1944-2016)	15	275.3	**43**	419.7	42	30.2	62.1
Fuaámotu(1980-2016)	17	272.9	44	435.6	**49**	30.2	50.0

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

Predictors and Period used: NINO 3.4 July to August 2016

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
Northern Division					
Niuafo'ou (1971-2016)	45	708.9	55	1.4	43.9
Nlutoputapu (1947-216)	42	647.5	58	1.9	68.9
Central Division					
Vava'u (1947-2016)	*40*	*576*	*60*	*18.6*	*72.7*
Ha'apai(1947-2016)	40	344	60	20.9	69.7
Southern Division					
Nuku'alofa(1944-2016)	38	348.4	62	24.8	72.7
Fua'amotu (1980-2016)	35	363	65	14.4	66.7

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

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Northern Division					
Niuafo'ou	12	517	5	719	**83**
Nlutoputapu	*12*	*446*	*5*	*693*	***83***
Central Division					
Vava'u	*21*	*376*	*12*	*599*	***67***
Ha'apai	21	235	12	363	**67**
Southern Division					
Nuku'alofa	**42**	229	21	380	36

Summary Statements

Rainfall for August 2016:

Northern division: Normal

Central division: Above normal

Southern division: Above normal

Accumulated rainfall for June to August

2016, including outlook verification:

Northern division: Below normal rainfall in Niuafo'ou and normal in Niuatoputapu. Forecast was inconsistent for Niuafo'ou and near consistent for Niuatoputapu.

Central division: Above normal rainfall. Forecast was inconsistent for Vava'u and near consistent for Ha'apai.

Southern division: Above normal rainfall. Forecast was near consistent for Fua'amotu and inconsistent for Nuku'alofa.

Outlooks for October to December 2016:
1. SCOPIC:

Northern division: The outlooks offer little guidance as the chances of above-normal, normal and below-normal rainfall are similar

Central division: The seasonal rainfall outlook favours above normal rainfall with normal rainfall the next most likely. Confidence is high.

Southern division: The seasonal rainfall outlook shows a near equal likelihood of above-normal and normal rainfall for Nuku'alofa and above normal with normal the next most likely atFua'amotu. Confidence is very high.

2. POAMA:

POAMA seasonal outlook for all stations for October to December 2016 favours abovenormal at all stations 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