Pacific Islands - Online Climate Outlook Forum (OCOF) No. 134

Country: Tonga

TABLE 1: Monthly Rainfall

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Station (include data period)	Aug-2018	Sep-2018	Oct-2018				
			Total (mm)	33%tile	67%tile	Median	Rank
	Total (mm)	Total (mm)	Rainfall (mm)				
Northern Division							
Niuafo'ou (1971-2018)	127.5	279.7	413.6	137.0	191.4	157.0	**43/46**
Niuatoputapu (1947-2018)	220.9	124.3	211.9	114.3	216.5	160.0	45/69
Central Division							
Vava'u (1947-2018)	30.1	148.0	229.9	100.3	172.0	135.6	56/72
Ha'apai (1947-2018)	66.7	61.6	164.4	60.3	125.0	95.0	62/72
Southern Division							
Fua'amotu (1979-2018)	60.4	73.4	75.4	50.2	114.3	78.6	20/39
Nuku'alofa (1944-2018)	28.8	112.2	68.7	55.0	126.8	89.0	31/75

TABLE 2: Three-month Rainfall for August to October 2018

Station	Three-month Total		33%tile	67%tile	Median	Rank	SCOPIC forecast probabilities* based on NINO3.4 May-June 2018				Verification: Consistent, Near-consistent, Inconsistent?
	Rainfall (mm)						B-N	N	A-N	LEPS	
Northern Division											
Niuafo'ou (1971-2018)	820.8	Above normal	330.3	472.3	407.9	**43/46**	34	32	34	-2	Near-consistent
Niuatoputapu (1947-2018)	557.1	Above normal	272.0	507.9	335.4	52/69	35	34	31	2	Inconsistent
Central Division											
Vava'u (1947-2018)	408.0	Normal	317.3	474.6	399.0	39/72	34	33	33	-1	Near-consistent
Ha'apai (1947-2018)	292.3	Normal	238.7	361.0	309.0	36/72	35	35	30	-3	Near-consistent
Southern Division											
Fua'amotu (1979-2018)	209.2	Below normal	280.0	407.6	353.0	6/39	34	33	33	-3	Near-consistent
Nuku'alofa (1944-2018)	209.7	Below normal	267.4	399.3	329.7	15/74	34	35	31	0	Near-consistent

TABLE 3: Seasonal Climate Outlooks using SCOPIC for December 2018 to February 2019
Predictor and Period used: NINO3.4 for September to October 2018

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)		LEPS (%) [whole numbers]	Hit-rate (%) [whole numbers]
Northern Division						
Niuafo'ou (1971-2018)	**62**	845.0	38		6	61
Niuatoputapu (1947-2018)	**67**	731.0	33		12	71
Central Division						
Vava'u (1947-2018)	**69**	743.2	31		15	70
Ha'apai (1947-2018)	**83**	575.1	17		34	75
Southern Division						
Fua'amotu (1979-2018)	**80**	582.5	20		37	76
Nuku'alofa (1944-2018)	**81**	568.0	19		32	71

Station	Below Normal (prob)	33%ile Rainfall (mm)	Normal (prob)	67%ile Rainfall (mm)	Above Normal (prob)	LEPS (%) [whole numbers]	Hit-rate (%) [whole numbers]
Northern Division							
Niuafo'ou (1971-2018)	**45**	727.3	28	950.7	27	5	42
Niuatoputapu (1947-2018)	**59**	640.0	21	894.0	20	18	43
Central Division							
Vava'u (1947-2018)	**50**	615.0	40	886.8	10	21	60
Ha'apai (1947-2018)	**58**	435.0	29	676.7	13	23	56
Southern Division							
Fua'amotu (1979-2018)	**46**	422.0	41	799.8	13	21	53
Nuku'alofa (1944-2018)	**54**	442.3	36	734.3	10	25	54

TABLE 4: Seasonal Climate Outlooks using POAMA2 for December 2018 to February 2019

Station	Below Normal (prob)	33%ile Rainfall (mm)	Normal (prob)	67%ile Rainfall (mm)	Above Normal (prob)
Niuafo'ou	64	671.0	15	933.0	21
Niuatoputapu	64	618.0	15	823.0	21
Vava'u	64	596.0	21	882.0	15
Ha'apai	64	347.0	21	618.0	15
Nuku'alofa	64	384.0	21	642.0	15

Summary Statements

Rainfall for October 2018:

Niuafo'ou, Vava'u and Ha'apai received above normal rainfall.

Niuatoputapu, Fua'amotu and Nuku'alofa rainfall was normal during October.

Niuafo'ou recorded 4th wettest October on record.

Accumulated rainfall for August to October 2018, including outlook verification:

Northern division: Above normal, forecast was near-consistent for Niuafo'ou and inconsistent for Niuatoputapu.

Central division: Normal, forecast was near-consistent

Southern division: Below normal, forecast was near-consistent.

Niuafo'ou recorded the 4th wettest August to October on record.

Outlooks for December 2018 to February 2019:

1. **SCOPIC:**
   For Niuatoputapu, Ha'apai and Nuku'alofa; the outlook favours below normal with normal the next most likely.

   For Niuafo'ou, Vava'u and Fua'amotu, the outlook for the season shows below normal as the most likely outcome with normal the next most likely. Above normal is the least like.

   The skill for the outlook is low for Niuafo'ou and good for the rest of the country.

2. **POAMA:**
   The rainfall outlook for the season shows below normal is the most likely outcome for the season.

Stakeholder Engagement- Evaluations of how effective NMS engage with stakeholders

Country	Date: October 2018	Stakeholder	Total Number of Participants	Number of male	Number of female
		Distribute Climate outlook via email list to stakeholders. Also update Monthly Climate summary and Ocean Outlook on website. These are updated on a monthly basis. Stakeholders are: Agriculture & Farmers, NGOs, Govt mins, Helath, Water, Disaster. .Media- radio, TV, social media.	103	75	28

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