Pacific Islands - Online Climate Outlook Forum (OCOF) No. 146

Country: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)	Aug-2019	Sep-2019	Oct-2019				Rank
			Total (mm)	33%tile	67%tile	Median	
	Total (mm)	Total (mm)	Rainfall (mm)				
Northern Division							
Niuafo'ou (1971-2019)	65.5	50.0	199.5	137.0	195.0	165.0	32/47
Niuatoputapu (1947-2019)	90.9	92.5	202.1	116.7	214.3	164.0	44/70
Central Division							
Vava'u (1947-2019)	109.6	71.9	187.0	101.7	172.3	139.3	52/73
Ha'apai (1947-2019)	57.1	133.8	38.0	60.7	126.7	95.4	14/73
Southern Division							
Fua'amotu (1979-2019)	62.8	183.3	146.9	52.1	112.6	75.4	34/40
Nuku'alofa (1944-2019)	56.7	177.7	127.0	56.0	124.6	84.0	51/76

TABLE 2: Three-month Rainfall for August to October 2019

Station	Three-month Total		33%tile	67%tile	Median	Rank	SCOPIC forecast probabilities based on NINO3.4 May-June 2019				Verification: Consistent, Near-consistent, Inconsistent?
	Rainfall (mm)						B-N	N	A-N	LEPS	
Northern Division											
Niuafo'ou (1971-2019)	315.0	Below normal	339.0	479.0	417.0	16/47	35	24	41	-2	Inconsistent
Niuatoputapu (1947-2019)	385.5	Normal	273.0	514.4	338.5	40/70	42	34	24	2	Near-consistent
Central Division											
Vava'u (1947-2019)	368.5	Normal	323.7	474.2	400.0	31/73	38	32	30	-1	Near-consistent
Ha'apai (1947-2019)	228.9	Below normal	241.3	358.0	300.8	22/73	43	37	20	3	Consistent
Southern Division											
Fua'amotu (1979-2019)	393.0	Normal	278.0	405.1	347.0	25/40	31	34	35	-3	Near-consistent
Nuku'alofa (1944-2019)	361.4	Normal	263.8	398.5	342.5	41/75	37	38	25	1	Consistent

TABLE 3: Seasonal Climate Outlooks using SCOPIC for December 2019 to February 2020
Predictor and Period used: NINO3.4 for September to October 2019

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)		LEPS (%) [whole numbers]	Hit-rate (%) [whole numbers]
Northern Division						
Niuafo'ou (1971-2019)	55	858.8	45		4	60
Niuatoputapu (1947-2019)	58	733.0	42		10	69
Central Division						
Vava'u (1947-2019)	59	746.1	41		14	70
Ha'apai (1947-2019)	68	577.6	32		31	74
Southern Division						
Fua'amotu (1979-2019)	60	604.0	40		33	74
Nuku'alofa (1944-2019)	66	578.0	34		29	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 (1971-2019)	37	732.7	30	958.7	33	5	48
Niuatoputapu (1947-2019)	42	647.0	29	902.0	29	16	42
Central Division							
Vava'u (1947-2019)	41	620.1	38	909.3	21	18	59
Ha'apai (1947-2019)	42	435.0	34	678.3	24	21	55
Southern Division							
Fua'amotu (1979-2019)	39	424.0	41	807.3	20	22	54
Nuku'alofa (1944-2019)	43	443.7	40	729.7	17	25	55

TABLE 4: Seasonal Climate Outlooks using POAMA2 for December 2019 to February 2020

Station	Below Normal (prob)	33%ile Rainfall (mm)	Normal (prob)	67%ile Rainfall (mm)	Above Normal (prob)
Niuafo'ou	12	671.0	21	933.0	67
Niuatoputapu	12	618.0	21	823.0	67
Vava'u	12	596.0	24	882.0	64
Ha'apai	12	347.0	24	618.0	64
Nuku'alofa	19	384.0	39	642.0	42

Summary Statements

Rainfall for October 2019:

"Above normal" rainfall was recorded across the Southern Division (Nuku'alofa and Fua'amotu), Vava'u and Niuafo'ou, while "normal" rainfall was recorded in Niuatoputapu. "Below normal" rainfall was recorded in Ha'apai.

Accumulated rainfall for August to October 2019, including outlook verification:

"Normal" rainfall was recorded in Southern Division, Vava'u and Niuatoputapu, while "below normal" rainfall was recorded in Ha'apai and Niuafo'ou.

The forecast issued in July was consistent in Ha'apai and Nuku'alofa, near-consistent at Niuatoputapu, Vava'u and Fua'amotu, and inconsistent at Niuafo'ou .

Outlooks for December 2019 to February 2020:

1. **SCOPIC:**
   Niuatopuitapu: The outlook for 'season' shows 'below normal' as the most likely outcome, with 'normal or above normal' the next most likely.

   Ha'apai: The outlook for 'season' shows 'below normal' as the most likely outcome, with 'normal' the next most likely. 'Above normal' is the least likely.

   Vava,u, Fua'amotu and Nuku'alofa: The outlook for 'season' shows near-equal likelihood of 'below normal' and 'normal' rainfall. 'Above normal' is the least likely.

   Niuafo'ou: The outlook offers little guidance as the chances of 'above-normal', 'normal' and 'below-normal' are similar.

2. **POAMA:**
   Northern and Central Divisions: The outlook favours 'above normal', with `normal' the next most likely.

   Southern Division: Near-equal chances for 'above normal' or 'normal' rainfall.

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

Table: 5 Stakeholder Engagement- Evaluations of how effective NMS engage with stakeholders

Product	Date: October 2019	Stakeholder	Total Number of Participants	Number of male	Number of female
Climate Bulletin					
EAR Watch					
Monthly Climate Briefing					
Ocean Bulletin					
		Total			