Pacific Islands - Online Climate Outlook Forum (OCOF) No. 145

Country: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)	Jul-2019	Aug-2019	Sep-2019				Rank
			Total (mm)	33%tile	67%tile	Median	
	Total (mm)	Total (mm)	Rainfall (mm)				
Northern Division							
Niuafo'ou (1971-2019)	404.4	65.5	50.0	85.0	156.0	122.0	8/47
Niuatoputapu (1947-2019)	143.3	90.9	92.5	53.7	132.1	109.0	32/70
Central Division							
Vava'u (1947-2019)	300.6	109.6	71.9	80.6	169.0	109.8	20/73
Ha'apai (1947-2019)	254.8	57.1	133.8	50.7	134.1	90.0	49/73
Southern Division							
Fua'amotu (1979-2019)	329.2	62.8	183.3	77.7	145.0	102.0	30/40
Nuku'alofa (1944-2019)	340.6	56.5	177.0	75.0	142.7	103.0	56/75

TABLE 2: Three-month Rainfall for July to September 2019

Station	Three-month Total		33%tile	67%tile	Median	Rank	SCOPIC forecast probabilities based on NINO3.4 April-May 2019				Verification: Consistent, Near-consistent, Inconsistent?
	Rainfall (mm)						B-N	N	A-N	LEPS	
Northern Division											
Niuafo'ou (1971-2019)	519.9	Above normal	257.2	426.4	337.0	38/46	42	24	34	0	Inconsistent
Niuatoputapu (1947-2019)	326.7	Normal	212.3	374.0	286.0	40/70	37	38	25	-1	Consistent
Central Division											
Vava'u (1947-2019)	482.1	Above normal	256.0	398.0	342.5	60/73	36	42	22	0	Near-consistent
Ha'apai (1947-2019)	445.7	Above normal	231.0	351.0	291.6	65/73	43	35	22	2	Inconsistent
Southern Division											
Fua'amotu (1979-2019)	575.3	Above normal	286.0	414.0	362.0	36/40	33	44	23	0	Near-consistent
Nuku'alofa (1944-2019)	574.1	Above normal	275.7	369.7	324.3	**72/75**	38	36	26	-1	Inconsistent

TABLE 3: Seasonal Climate Outlooks using SCOPIC for November 2019 to January 2020
Predictor and Period used: NINO3.4 for August to September 2019.

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)		LEPS (%) [whole numbers]	Hit-rate (%) [whole numbers]
Northern Division						
Niuafo'ou (1971-2019)	50	803.6	50		6	62
Niuatoputapu (1947-2019)	**54**	754.0	46		12	67
Central Division						
Vava'u (1947-2019)	**58**	655.0	42		25	75
Ha'apai (1947-2019)	**57**	469.0	43		23	71
Southern Division						
Fua'amotu (1979-2019)	50	479.0	50		17	64
Nuku'alofa (1944-2019)	**57**	435.7	43		23	75

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)	32	702.3	**35**	998.7	33	4	38
Niuatoputapu (1947-2019)	36	613.0	**38**	864.0	26	14	47
Central Division							
Vava'u (1947-2019)	36	482.6	**38**	817.7	26	20	54
Ha'apai (1947-2019)	35	317.8	**38**	580.5	27	25	64
Southern Division							
Fua'amotu (1979-2019)	31	383.3	**40**	593.9	29	19	54
Nuku'alofa (1944-2019)	34	316.1	**41**	562.0	25	27	59

TABLE 4: Seasonal Climate Outlooks using POAMA2 for November 2019 to January 2020

Station	Below Normal (prob)	33%ile Rainfall (mm)	Normal (prob)	67%ile Rainfall (mm)	Above Normal (prob)
Niuafo'ou	6	669.0	6	826.0	88
Niuatoputapu	6	474.0	6	773.0	88
Vava'u	15	447.0	6	738.0	79
Ha'apai	15	285.0	6	515.0	79
Nuku'alofa	18	305.0	27	487.0	55

Summary Statements

Rainfall for September 2019:

"Below normal to normal" rainfall was recorded across the Northern (Niuafo'ou and Niuatoputapu) and Central Divisions (Ha'apai and Vava'u), while "above normal" rainfall was recorded over the Southern Division (Nuku'alofa and Fua'amotu).

Accumulated rainfall for July to September 2019, including outlook verification:

"Above normal" rainfall was recorded across most of the country, the one exception being normal rainfall at Niuatoputapu. The outlook issued in August was Consistent at Niuatoputapu, Near-Consistent at Vava'u and Fua'amotu, and Inconsistent at Niuafo'ou, Ha'apai and Nuku'alofa.

Outlooks for November 2019 to January 2020:

1. **SCOPIC:**

   - **Niuatoputapu, Vava'u and Ha'apai:** The outlook shows a near-equal likelihood of normal and below normal rainfall. Above-normal is the least likely.

   - **Fua'amotu and Nuku'alofa**: The outlook for season shows normal as the most likely outcome with below normal the next most likely. Above normal is the least likely outcome.

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

2. **POAMA:**

   The outlook favours above normal rainfall across the country.

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: September 2019	Stakeholder	Total Number of Participants	Number of male	Number of female
Climate Bulletin	19/09/2019	General public	100	66	34
EAR Watch					
Monthly Climate Briefing					
Ocean Bulletin	19/09/2019	General public	100	66	34
		Total	**Total**	100	