

Pacific Islands - Online Climate Outlook Forum (OCOF) No. 150

Country: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)	Dec-2019	Jan-2020	Feb-2020				Rank
			Total (mm)	33%tile	67%tile	Median	
	Total (mm)	Total (mm)	Rainfall (mm)				
Northern Division							
Niuafu'ou (1971-2020)	173.0	280.0	135.0	209.0	301.0	244.4	7/47
Niuatoputapu (1947-2020)	265.7	253.7	325.5	190.0	266.3	224.0	56/73
Central Division							
Vava'u (1947-2020)	158.2	220.2	351.7	193.0	297.0	219.5	57/74
Ha'apai (1947-2020)	158.6	222.5	189.5	135.5	238.0	187.0	38/74
Southern Division							
Fua'amotu (1979-2020)	245.7	305.3	88.8	147.0	240.1	190.5	8/41
Nuku'alofa (1944-2020)	228.5	257.0	62.5	162.0	284.0	223.3	5/76

TABLE 2: Three-month Rainfall for December 2019 to February 2020

Station	Three-month Total		33%tile	67%tile	Median	Rank	SCOPIC forecast probabilities based on NINO3.4 September-October 2019				Verification: Consistent, Near-consistent, Inconsistent?
	Rainfall (mm)						B-N	N	A-N	LEPS	
<i>Northern Division</i>											
Niuafo'ou (1971-2020)	588.0	Below normal	732.7	958.7	858.8	9/43	37	30	33	5	Consistent
Niuaatoputapu (1947-2020)	844.9	Normal	647.0	902.0	733.0	42/68	42	29	29	16	Near-consistent
<i>Central Division</i>											
Vava'u (1947-2020)	730.1	Normal	620.1	909.3	746.1	35/73	41	38	21	18	Near-consistent
Ha'apai (1947-2020)	570.6	Normal	435.0	678.3	577.6	34/73	42	34	24	21	Near-consistent
<i>Southern Division</i>											
Fua'amotu (1979-2020)	639.8	Normal	424.0	807.3	604.0	22/40	39	41	20	22	Consistent
Nuku'alofa (1944-2020)	548.0	Normal	443.7	729.7	578.0	37/76	43	40	17	25	Near-consistent

TABLE 3: Seasonal Climate Outlooks using SCOPIC for April to June 2020

Predictor and Period used: NINO3.4 for January to February 2020

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)		LEPS (%) [whole numbers]	Hit-rate (%) [whole numbers]
<i>Northern Division</i>						
Niuafu'ou (1971-2020)	49	578.0	51		-2	51
Niuatoputapu (1947-2020)	49	535.0	51		-2	37
<i>Central Division</i>						
Vava'u (1947-2020)	57	491.0	43		4	54
Ha'apai (1947-2020)	54	354.0	46		1	52
<i>Southern Division</i>						
Fua'amotu (1979-2020)	57	455.2	43		7	63
Nuku'alofa (1944-2020)	55	362.0	45		2	55

Station	Below Normal (prob)	33%ile Rainfall (mm)	Normal (prob)	67%ile Rainfall (mm)	Above Normal (prob)	LEPS (%) [whole numbers]	Hit-rate (%) [whole numbers]
<i>Northern Division</i>							
Niuafu'ou (1971-2020)	33	493.7	35	641.1	32	-3	27
Niuatoputapu (1947-2020)	32	433.0	32	609.0	36	-1	30
<i>Central Division</i>							
Vava'u (1947-2020)	39	411.0	34	583.2	27	4	37
Ha'apai (1947-2020)	38	293.9	34	433.0	28	2	33
<i>Southern Division</i>							
Fua'amotu (1979-2020)	42	340.0	23	513.6	35	3	44
Nuku'alofa (1944-2020)	40	288.2	26	439.0	34	6	50

TABLE 4: Seasonal Climate Outlooks using POAMA2 for April to June 2020

Station	Below Normal (prob)	33%ile Rainfall (mm)	Normal (prob)	67%ile Rainfall (mm)	Above Normal (prob)
Niuafou'ou	48	449.0	22	621.0	30
Niuaatoputapu	48	434.0	22	598.0	30
Vava'u	55	479.0	12	630.0	33
Ha'apai	55	264.0	12	381.0	33
Nuku'alofa	48	259.0	19	414.0	33

Summary Statements

Rainfall for February 2020:

Above normal rainfall occurred at Niuaatoputapu and Vava'u while normal rainfall occurred in Ha'apai. Below Normal rainfall was recorded in Niuafou'ou and the Southern Division.

Accumulated rainfall for December 2019 to February 2020, including outlook verification:

Rainfall was normal across the country except for Niuafou'ou where below normal rainfall was recorded. Forecast was Consistent for Niuafou'ou and Fua'amotu and Near-consistent for the rest of the Country.

Outlooks for April to June 2020:

1. SCOPIC:

Southern Division: The outlook for the season shows "below normal" as the most likely outcome, with above normal the next most likely. Normal is the least likely.

Northern and Central Division: The outlook offers little guidance as the chances of above normal, normal and below normal are similar.

2. POAMA:

The outlook for season shows "Below Normal" as the favoured or most likely outcome for all of Tonga.

NB: The X LEPS % score has been categorised as follows:

Very Low: $X < 0.0$ Low: $0 \leq X < 5$ Moderate $5 \leq X < 10$ Good: $10 \leq X < 15$ High: $15 \leq X < 25$

Very High: $25 \leq X < 35$ Exceptional: $X \geq 35$

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

Product	Date: February 2020	Stakeholder	Total Number of Participants	Number of male	Number of female
Climate Bulletin	12/02/2020	General public	100	66	34
EAR Watch					
Monthly Climate Briefing					
Ocean Bulletin	12/02/2020	General public	100	66	34
Total					