

# Pacific Islands - Online Climate Outlook Forum (OCOF) No. 138

Country: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)	Dec-2018	Jan-2019	Feb-2019				
			Total (mm)	33%tile	67%tile	Median	Rank
	Total (mm)	Total (mm)	Rainfall (mm)				
Northern Division							
Niuafo'ou (1971-2019)	401.3	578.0	603.6	207.0	299.7	244.0	44/46
Niuaotoputapu (1947-2019)	325.6	399.1	350.1	190.1	267.7	224.0	56/72
Central Division							
Vava'u (1947-2019)	537.7	800.2	526.2	182.0	295.0	216.5	69/73
Ha'apai (1947-2019)	707.1	461.2	524.0	136.5	238.0	188.0	73/73
Southern Division							
Fua'amotu (1979-2019)	276.8	228.4	162.4	146.0	249.7	196.0	18/40
Nuku'alofa (1944-2019)	196.2	202.9	209.4	162.0	258.9	209.4	33/75

**TABLE 2: Three-month Rainfall for December 2018 to February 2019**

Station	Three-month Total		33%tile	67%tile	Median	Rank	SCOPIC forecast probabilities* based on NINO3.4 September-October 2018				Verification: Consistent, Near- consistent, Inconsistent?
	Rainfall (mm)						B-N	N	A-N	LEPS	
Northern Division											
Niuafo'ou (1971-2019)	1582.9	Above normal	727.3	950.7	845.0	41/42	45	28	27	5	Inconsistent
Niuaatoputapu (1947-2019)	1074.8	Above normal	640.0	894.0	731.0	57/67	59	21	20	18	Inconsistent
Central Division											
Vava'u (1947-2019)	1864.1	Above normal	615.0	886.8	743.2	72/72	50	40	10	21	Inconsistent
Ha'apai (1947-2019)	1692.3	Above normal	435.0	676.7	575.1	72/72	58	29	13	23	Inconsistent
Southern Division											
Fua'amotu (1979-2019)	667.6	Normal	422.0	799.8	582.5	18/39	46	41	13	21	Near-consistent
Nuku'alofa (1944-2019)	608.5	Normal	442.3	734.3	568.0	33/74	54	36	10	25	Near-consistent

**TABLE 3: Seasonal Climate Outlooks using SCOPIC for April to June 2019****Predictor and Period used: NINO3.4 for January to February 2019**

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)		LEPS (%) [whole numbers]	Hit-rate (%) [whole numbers]
<i>Northern Division</i>						
Niuafo'ou (1971-2019)	47	571.4	53		-2	50
Niuaatoputapu (1947-2019)	49	540.0	51		-2	23
<i>Central Division</i>						
Vava'u (1947-2019)	60	484.0	40		5	57
Ha'apai (1947-2019)	56	354.0	44		1	53
<i>Southern Division</i>						
Fua'amotu (1979-2019)	60	458.0	40		6	59
Nuku'alofa (1944-2019)	58	334.4	42		3	56

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>							
Niuafo'ou (1971-2019)	33	490.8	33	632.7	34	-3	2
Niuaatoputapu (1947-2019)	31	429.0	32	613.0	37	-2	48
<i>Central Division</i>							
Vava'u (1947-2019)	40	391.3	35	563.4	25	4	38
Ha'apai (1947-2019)	40	293.4	34	429.7	26	2	35
<i>Southern Division</i>							
Fua'amotu (1979-2019)	45	285.3	21	517.7	34	6	54
Nuku'alofa (1944-2019)	48	283.0	19	435.0	33	6	49

**TABLE 4: Seasonal Climate Outlooks using POAMA2 for April to June 2019**

Station	<b>Below Normal (prob)</b>	<b>33%ile Rainfall (mm)</b>	<b>Normal (prob)</b>	<b>67%ile Rainfall (mm)</b>	<b>Above Normal (prob)</b>
Niuafo'ou	<b>52</b>	449.0	24	621.0	24
Niuaatoputapu	<b>52</b>	434.0	24	598.0	24
Vava'u	<b>61</b>	479.0	21	630.0	18
Ha'apai	<b>61</b>	264.0	21	381.0	18
Nuku'alofa	<b>45</b>	259.0	42	414.0	13

## **Summary Statements**

### **Rainfall for February 2019:**

Above normal rainfall was recorded over Northern and Central Division, while normal rainfall was recorded in the Southern Division. Ha'apai had its highest February rainfall on record.

Most of these rainfall was from the few tropical depressions that passed through the country during February.

### **Accumulated rainfall for December 2018 to February 2019, including outlook verification:**

Above normal rainfall was recorded over Northern and Central Division, while normal rainfall was recorded in the Southern Division. Vava'u and Ha'apai had their highest December to February rainfall on record.

### **Outlooks for April to June 2019:**

#### **1. SCOPIC:**

For Vava'u and Ha'apai, the outlook for season shows below normal as the most likely outcome, with normal the next most likely.

For the Southern Division, the outlook for season shows below normal as the most likely outcome, with above normal the next most likely.

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

#### **2. POAMA:**

The outlook favours below normal rainfall across the country.

**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**

Country	Date:	Stakeholder	Total Number of Participants	Number of male	Number of female
Tonga	February 2019				
	Climate Bulletin	Govt Ministries, NGOs, Media,Farmers,Website, Facebook	103	75	28
	EAR Watch				
	Monthly Climate Briefing				
	Ocean Bulletin	Govt Ministries, NGOs, Media,Farmers,Website, Facebook	103	75	28