Pacific Islands - Online Climate Outlook Forum (OCOF) No. 132

Country: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)	Jun-2018	Jul-2018	Aug-2018				
			Total (mm)	33%tile	67%tile	Median	Rank
	Total (mm)	Total (mm)	Rainfall (mm)				
Northern Division							
Niuafo'ou (1971-2018)	74.2	96.4	127.5	62.7	126.2	86.0	32/46
Niuatoputapu (1947-2018)	31.1	112.6	220.9	53.0	102.0	70.1	**67/71**
Central Division							
Vava'u (1947-2018)	39.5	109.5	30.1	63.3	127.0	87.0	13/72
Ha'apai (1947-2018)	79.3	60.0	66.7	58.1	115.3	93.6	29/72
Southern Division							
Fua'amotu (1979-2018)	244.6	12.5	60.4	72.4	146.2	99.8	11/39
Nuku'alofa (1944-2018)	182.7	16.0	28.8	69.0	137.0	102.0	9/74

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

Station	Three-month Total		33%tile	67%tile	Median	Rank	SCOPIC forecast probabilities* based on NINO3.4 March-April 2018				Verification: Consistent, Near-consistent, Inconsistent?
	Rainfall (mm)						B-N	N	A-N	LEPS	
Northern Division											
Niuafo'ou (1971-2018)	298.1	Normal	272.4	415.0	348.5	20/43	29	42	29	-2	Consistent
Niuatoputapu (1947-2018)	364.6	Above normal	239.0	356.0	312.5	48/71	28	38	34	-1	Near-consistent
Central Division											
Vava'u (1947-2018)	179.1	Below normal	252.0	353.7	308.0	8/72	29	37	34	-1	Near-consistent
Ha'apai (1947-2018)	206.0	Normal	192.3	311.4	278.0	26/72	32	30	38	-1	Near-consistent
Southern Division											
Fua'amotu (1979-2018)	317.5	Normal	270.3	400.0	351.0	16/39	34	33	33	-3	Near-consistent
Nuku'alofa (1944-2018)	227.5	Below normal	242.0	267.0	298.0	22/74	34	34	32	-2	Near-consistent

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

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)		LEPS (%) [whole numbers]	Hit-rate (%) [whole numbers]
Northern Division						
Niuafo'ou (1971-2018)	54	711.0	46		3	51
Niuatoputapu (1947-2018)	58	647.5	42		10	65
Central Division						
Vava'u (1947-2018)	61	544.0	39		20	69
Ha'apai (1947-2018)	61	350.0	39		17	65
Southern Division						
Fua'amotu (1979-2018)	55	366.5	45		13	68
Nuku'alofa (1944-2018)	63	346.7	37		22	72

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)	35	645.0	34	854.1	31	0	30
Niuatoputapu (1947-2018)	38	534.0	36	746.3	26	6	43
Central Division							
Vava'u (1947-2018)	42	397.7	40	610.7	18	22	53
Ha'apai (1947-2018)	42	249.6	40	425.0	18	20	59
Southern Division							
Fua'amotu (1979-2018)	32	287.9	38	442.1	30	32	63
Nuku'alofa (1944-2018)	44	285.2	36	418.7	20	30	57

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

Station	Below Normal (prob)	33%ile Rainfall (mm)	Normal (prob)	67%ile Rainfall (mm)	Above Normal (prob)
Niuafo'ou	18	517.0	27	719.0	55
Niuatoputapu	18	446.0	27	693.0	55
Vava'u	30	376.0	27	599.0	42
Ha'apai	31	235.0	27	363.0	42
Nuku'alofa	24	229.0	40	380.0	36

Summary Statements

Rainfall for August 2018:

Above normal rainfall was recorded over the Northern Division while below normal rainfall was recorded in the Southern Division. In the Central Division, Vava'u recorded below normal rainfall while Ha'apai recorded normal rainfall. Niutoputapu station recorded the 5th wettest August on record.

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

Above normal rainfall was recorded in Niuatoputapu while below normal rainfall was recorded in Vava'u and Nuku'alofa. Normal rainfall was recorded in Niuafo'ou, Ha'apai and Fua'amotu.

The rainfall outlooks were near consistent at all sites except for Niuafo'ou which was consistent.

Outlooks for October to December 2018:

1. **SCOPIC:**

   - At Nuku'alofa the outlook shows below normal as the most likely outcome, with normal the next most likely.

   - The outlook for Niuatoputapu, Vava'u and Ha'apai shows a near-equal likelihood of below-normal and normal rainfall.

   - The outlook for Niuafo'ou and Fua'amotu shows little guidance as the chances for above-normal, normal and below normal are similar.

   The skill of the forecast is high to very high in the Central and Southern Divisions, but low in the Northern Division.

2. **POAMA:**

   The outlook for most stations favours above normal except for Nuku'alofa where normal rainfall is the most likely outcome.

Stakeholder Engagement- Evaluations of how effective NMS engage with stakeholders

Country	Date	Stakeholder	Total Number of Participants	Number of male	Number of female
Tonga	8/08/18	Distribute Climate outlook and second Media release on El Nino and Drought Watch via email list to stakeholders. Also update Monthly Climate summary and Ocean Outlook on website. These are updated on a monthly basis, however for the media release it can be changed to fortnightly depending on the needs to update information according to ENSO status. Stakeholders are: Agriculture & Farmers, NGOs, Govt mins, Helath, Water, Disaster. .Media- radio, TV, social media Director gets interviewed by radio and television once media release is out and also demand from public and media (radio) for news.	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