

Pacific Islands - Online Climate Outlook Forum (OCOF) No. 121

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)	September 2017						
	July 2017 Total	August 2017 Total	Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
NIUAFO'OU	143.6	126.7	171.3	82.3	155.7	108.7	35/45
NIUATOPUTAPU	75.3	72.2	133.5	53.0	131.4	101.0	46/68
VAVA'U	161.6	264.0	193.6	80.0	167.0	109.0	57/71
HA'APAI	69.5	141.9	100.7	50.0	137.0	90.0	42/71
FUA'AMOTU	66.2	66.4	200.3	78.0	141.0	102.0	30/38
NUKU'ALOFA	75.8	72.4	209.9	74.7	142.3	102.5	63/73

**TABLE 2: Three-monthly Rainfall
July to September 2017**

[Please note that the data used in this verification should be sourced from table 3 of OCOF #117]

Station	Three-month Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking	Forecast probs.* (include LEPS)	Verification* (Consistent, Near-consistent Inconsistent)?
NIUAFO'OU	441.6	255.0	414.0	336.0	32/44	(42,27,31) -0.3	Inconsistent
NIUATOPUTAPU	281.0	209.0	374.0	286.0	34/68	(38,35,27) -1.4	Near-consistent
VAVA'U	619.2	254.0	397.5	342.5	66/71	(38,40,22) 0.1	Near-consistent
HA'APAI	312.1	237.5	361.0	291.6	39/71	(43,32,25) +1.7	Near-consistent
FUA'AMOTU	332.9	298.0	417.0	371.0	17/38	(34,37,29) -1.7	Consistent
NUKU'ALOFA	358.1	276.3	374.7	324.4	47/73	(38,34,28) -0.7	Near-consistent

Period: *below normal/normal/above normal

Predictors and Period used : NINO 3.4 (April - May 2017)

* Forecast is consistent when observed and predicted (tercile with the highest probability) categories coincide (are in the same tercile).

Forecast is near-consistent when observed and predicted (tercile with the highest probability) differ by only one category (i.e. terciles 1 and 2 or terciles 2 and 3).

Forecast is inconsistent when observed and predicted (tercile with the highest probability) differ by two categories (i.e. terciles 1 and 3).

TABLE 3: Seasonal Climate Outlooks using SCOPIC for November 2017 to January 2018 – Tercile Method

Predictors and Period used: NINO3.4 SST Anomalies (August-September 2017)

Station	Below Median (prob)	Median Rainfall (mm)	Above Median (prob)		LEPS	Hit-rate
NIUAFO'OU	44	783.0	56		7.6	65.0
NIUATOPUTAPU	47	751.0	53		11.1	66.1
VAVA'U	46	627.0	54		21.7	74.2
HA'APAI	46	457.0	54		26.8	71.6
FUA'AMOTU	41	456.0	59		18.2	67.6
NUKU'ALOFA	46	431.0	54		23.4	76.1

Station	Below Normal (prob)	33%ile rainfall (mm)	Normal (prob)	67%ile rainfall (mm)	Above Normal (prob)	LEPS	Hit-rate
NIUAFO'OU	27	699.0	36	996.0	37	4.9	35.0
NIUATOPUTAPU	31	597.3	36	863.0	33	16.9	51.6
VAVA'U	27	465.5	40	810.0	33	23.8	57.6
HA'APAI	25	306.0	40	570.3	35	25.7	62.7
FUA'AMOTU	18	366.0	41	583.0	41	18.3	48.6
NUKU'ALOFA	21	314.3	44	559.0	35	30.2	61.2

TABLE 4: Seasonal Climate Outlooks using POAMA2 for November 2017 to January 2018

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	67%ile rainfall (mm)	Upper Tercile (prob)		
NIUAFO'OU	21	669	15	826	64		
NIUATOPUTAPU	21	474	15	773	63		
VAVA'U	12	447	18	738	70		
HA'APAI	12	285	18	515	70		
NUKU'ALOFA	12	305	33	487	55		

Summary Statements

Rainfall for September 2017:

Rainfall was above-normal throughout the country except Ha'apai which recorded normal rainfall.

Accumulated rainfall for July to September 2017, including outlook verification:

Above-normal rainfall in Vava'u and Niuafu'ou. Forecast was inconsistent in Niuafu'ou and near-consistent in Vava'u.

Normal rainfall for the rest of the country. Forecast was consistent in Fua'amotu and the rest were near-consistent.

Outlooks for November 2017 to January 2018:

1. SCOPIC:

Normal rainfall is the most likely outcome for Vava'u, Ha'apai and Nuku'alofa, with above-normal being the next most likely. Very high confidence.

Outlook offers little guidance for Niutatoptapu as the chances of above-normal, normal and below-normal are similar.

Outlook shows a near equal likelihood of above-normal and normal rainfall for Niuafu'ou and Fua'amotu for the season November 2017 to January 2018. Very high confidence.

2. POAMA:

Seasonal outlook for the period November to January for Tonga shows above-normal rainfall as the most likely outcome.

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: $X \geq 35$