

Pacific Islands - Online Climate Outlook Forum (OCOF) No.88

Country Name: Tonga

TABLE 1: Monthly Rainfall

Station (include data period)			December 2014				
	October 2014 Total	November 2014 Total	Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
Northern Division							
Niuafou'ou (1971-2014)	268.4	261	204.4	231.3	361.7	283.0	10/44
Niutoputapu (1947-2014)	84.0	264	65.4	189.0	281.3	244.3	6/68
Central Division							
Vava'u (1947-2014)	62.0	13.3	122.4	127.0	264.0	178.0	23/68
Ha'apai (1947-2014)	95.8	11.1	32.2	66.0	161.8	123.0	8/68
Southern Division							
Nukuálofa (1944-2014)	73.3	13.6	20.5	76.0	174.9	130.5	10/71
Fuaámotu (1980-2014)	83.2	28.7	24.0	133.0	188.7	153.8	2/35

Period: *below normal/normal/above normal

**TABLE 2: Three-monthly Rainfall
October to December 2014
Predictors and Period used: NINO 3.4 (July to August 2014)**

Station	Three-month Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking	Forecast probs.* (include LEPS)	Verification ¹ (Consistent, Near-consistent or Inconsistent)
Northern Division							
Niuafo'ou (1971-2014)	733.8	638.7	855.0	711.0	24/44	34,33,33 (-1.0)	Near Consistent
Niuaatoputapu (1947-2014)	413.4	533.0	746.7	664.5	12/68	34,35,31(7.0)	Near consistent
Central Division							
Vava'u (1947-2014)	197.7	383.0	618.3	544.0	5/68	35,39,26(21.3)	Near consistent
Ha'apai (1947-2014)	139.1	256.9	421.0	350.0	9/68	36,38,26 (17.7)	Near consistent
Southern Division							
Nukuálofa(1944-2014)	107.4	294.0	421.0	351.0	6/71	29,42,29(29.7)	Near consistent
Fuaámotu(1980-2014)	135.9	309.0	435.0	366.5	2/35	17,44,39(27.9)	Near consistent

¹Forecast 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).

Seasonal Climate Outlook:

February to April 2015- Median Table:

Predictors and Period used: NINO 3.4(October to December2014)

Station	Below Median (prob)	Median rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
Northern Division					
Niuafou'ou (1910-2014)	59	891	41	2.1	53.8
Niutoputapu (1900-2014)	56	765	44	0.5	53.4
Central Division					
Vava'u (Suva) (1942-2014)	59	821	41	3.1	59.4
Ha'apai (1957-2014)	59	649	41	4.3	53.1
Southern Division					
Nuku'alofa (1950-2014)	55	610	45	0	51.6
Fua'amotu Airport (1931-2014)	64	510	36	8.8	60.0

TABLE 4: Seasonal Climate Outlooks using POAMA2 for February to April2015

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
Nuku'alofa	52	420	27	583	21

Summary Statements

Rainfall for December 2014:

Rainfall during December was below normal throughout the country.

Accumulated rainfall for October - December 2014, including outlook verification:

Rainfall over the last three months was *normal* in Niuafou'ou (Central Division), while the rest of the stations recorded *below normal* rainfall.

The SCOPIC forecasts for the last three months were near- consistent for all stations.

Outlooks for February – April 2015:

1. SCOPIC:

The seasonal rainfall outlook for February to April 2015 shows:

- *Below normal* is the most likely outcome for the Northern Division, the next most likely outcome is above normal.
- *Below normal* rainfall is the most likely outcome for the Central and Southern Division and the next most likely outcome is normal.

The confidences of the forecasts were generally low to moderate. Ha'apai in the Central division and FuaThe Northern Division had *very low* forecast confidence.

2. POAMA:

- POAMA models shows the most likely outcome for Nuku'alofa for February to April 2015 is for rainfall to be ***below normal***.

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: $X \geq 35$