

## Pacific Islands - Online Climate Outlook Forum (OCOF) No. 113

**Country Name:** Tonga

### TABLE 1: Monthly Rainfall

Station (include data period)			January 2017				
	Nov 2016 Total	Dec 2016 Total	January 2017 Total	33%tile Rainfall (mm)	67%tile Rainfall (mm)	Median Rainfall (mm)	Ranking
<b>Northern Division</b>							
Niuafo'ou	235.3	307.3	149.3	210.0	362.6	245.0	12/44
Niuaotoputapu	66.4	317.6	205.4	208.9	296.0	236.0	23/70
<b>Central Division</b>							
Vava'u	184	145.1	136.7	172.7	299.3	239.0	17/70
Ha'apai	58.9	318.2	134.7	123.0	259.0	187.4	29/71
<b>Southern Division</b>							
Fua'amotu	166.7	209.4	103	132.0	273.0	192.0	13/38
Nuku'alofa	127.6	135.4	30	117.0	250.0	187.5	11/72

### TABLE 2: Three-monthly Rainfall November 2016 to January 2017

[Please note that the data used in this verification should be sourced from table 3 of OCOF #109]

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?)
<b>Northern Division</b>							
Niuafo'ou	691.9	702.3	998.7	798.0	13/40	22,36,42(5.6)	Inconsistent
Niuaotoputapu	589.4	613.0	864.0	752.5	22/65	23,35,42 (15.2)	Inconsistent
<b>Central Division</b>							
Vava'u	465.8	473.7	813.0	638.5	30/69	18,38,44 (25.2)	Inconsistent
Ha'apai	511.8	301.3	570.6	456.0	41/70	17,40,43 (23.7)	Near consistent
<b>Southern Division</b>							
Fua'amotu	479.1	362.4	593.9	439.0	21/37	10,36,54 (20.2)	Near Consistent
Nuku'alofa	293.0	316.1	562.0	433.5	11/72	12,42,46 (30.2)	Inconsistent

Predictors and Period used for November 2016 to January 2017 Outlooks (refer to OCOF #109):

\* 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).

Period: \*below normal/normal/above normal

**TABLE 3: Seasonal Climate Outlooks using SCOPIC for  
March to May 2017-Tercile Method**

**Predictors and Period used: NINO 3.4 (December 2016 - January 2017)**

Station	Below Normal (prob)	33%ile rainfall (mm)	Normal (prob)	66%ile rainfall (mm)	Above Normal (prob)	LEPS (%)	Hit-rate (%)
<b><i>Northern Division</i></b>							
Niuafo'ou (1971-2016)	<b>34</b>	644.5	33	803	33	-2.5	25.0
Niuatoputapu (1947-2016)	<b>35</b>	577.7	31	733.3	34	-1.5	34.5
<b><i>Central Division</i></b>							
Vava'u (1947-2016)	30	583.2	34	780	<b>36</b>	0.1	31.8
Ha'apai (1947-2016)	32	442.7	32	612.9	<b>36</b>	-0.4	38.5
<b><i>Southern Division</i></b>							
Fuaámotu(1980-2016)	25	418	<b>40</b>	574	35	3.2	45.9
Nukuálofa(1944-2016)	27	440.8	<b>37</b>	549.2	36	0.8	40.9

**TABLE 3: Seasonal Climate Outlooks using SCOPIC for  
November 2016 to January 2017**

**Predictors and Period used: NINO 3.4 November – December 2016**

Station	Below Media n (prob)	Median Rainfall (mm)	Above Median (prob)	LEPS	Hit-rate
<b>Northern Division</b>					
Niuafo'ou (1971-2016)	<b>53</b>	767.5	47	-1.3	45.5
Nlutopotapu (1947-216)	<b>51</b>	635.2	49	-1.7	20.7
<b>Central Division</b>					
Vava'u (1947-2016)	46	701.0	<b>54</b>	0.7	56.1
Ha'apai(1947-2016)	48	556.0	<b>52</b>	-1.1	46.2
<b>Southern Division</b>					
Fua'amotu (1980-2016)	42	497.0	<b>58</b>	6.0	70.3
Nuku'alofa(1944-2016)	46	488.5	<b>54</b>	0.6	59.1

**TABLE 4: Seasonal Climate Outlooks using POAMA2 for  
March to May 2017**

Station	Lower Tercile (prob)	33%ile rainfall (mm)	Middle Tercile (prob)	66%ile rainfall (mm)	Upper Tercile (prob)
<b>Northern Division</b>					
Niuafo'ou	<b>48</b>	631	34	793	18
Nlutopotapu	<b>48</b>	587	34	744	18
<b>Vava'u</b>					
Vava'u	<b>58</b>	586	18	762	24
Ha'apai	<b>58</b>	354	18	537	24
<b>Nuku'alofa</b>					
Nuku'alofa	27	361	<b>43</b>	503	30

### **Summary Statements**

**Rainfall for January 2017:**

**Northern division:** Below normal.

**Central division:** Below normal in Vava'u and normal in Ha'apai.

**Southern division:** Below normal.

**Accumulated rainfall for November 2016 to January 2017, including outlook verification:**

**Northern division:** Below normal rainfall. Forecast was Inconsistence.

**Central division:** Below normal rainfall in Vava'u with inconsistent forecast. Normal rainfall in Ha'apai with near-consistent forecast.

**Southern division:** Normal rainfall in Fua'amotu. Forecast was near-consistent. Below normal rainfall in Nuku'alofa. Forecast was inconsistent.

**Outlooks for March to May 2017:**

**1. SCOPIC:**

**Northern division:** The seasonal rainfall outlook offers little guidance for the coming season as the chance of above-normal, normal and below-normal are all similar. Confidence is low to very low.

**Central division:** The seasonal rainfall outlook offers little guidance for the coming season as the chance of above-normal, normal and below-normal are all similar. Confidence is low.

**Southern division:** The seasonal rainfall outlook shows near-equal likelihood of normal and above-normal rainfall. Confidence is low to very low.

**2. POAMA:**

POAMA seasonal outlook for all stations for March to May shows below normal rainfall except Nuku'alofa was 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:  $X \geq 35$