# Pacific Islands - Online Climate Outlook Forum (OCOF) No. 114

**Country Name: Tonga**

## TABLE 1: Monthly Rainfall

| Station (include data period) | | | February 2017 | | | | |
|---|---|---|---|---|---|---|---|
| | Dec 2016 Total | Jan 2016 Total | Feb 2017 Total | 33%tile Rainfall (mm) | 67%tile Rainfall (mm) | Median Rainfall (mm) | Ranking |
| ***Northern Division*** | | | | | | | |
| Niuafo'ou | 307.3 | 149.3 | 528.1 | 203 | 299 | 238 | 42/44 |
| Niuatoputapu | 317.6 | 205.4 | 693.9 | 190 | 266.3 | 223 | 70/70 |
| | | | | | | | |
| ***Central Division*** | | | | | | | |
| Vava'u | 145.1 | 136.7 | 925.6 | 183 | 294 | 216.5 | 71/71 |
| Ha'apai | 318.2 | 134.7 | 498 | 137 | 238 | 188 | 71/71 |
| | | | | | | | |
| ***Southern Division*** | | | | | | | |
| Fua'amotu | 209.4 | 103 | 473.9 | 144.1 | 229.9 | 185 | 34/38 |
| Nuku'alofa | 135.4 | 30 | 416.9 | 158.3 | 252.7 | 217.5 | 66/73 |

## TABLE 2: Three-monthly Rainfall
## December 2016 to February 2017

**[Please note that the data used in this verification should be sourced from table 3 of OCOF #110]**

| 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)? |
|---|---|---|---|---|---|---|---|
| ***Northern Division*** | | | | | | | |
| Niuafo'ou | **984.7** | 715.7 | 950.3 | 843.5 | 29/40 | 20,**41**,39 (3.4) | Near consistent |
| Niuatoputapu | **1216.9** | 626 | 887 | 727.5 | 62/65 | 12,**44**,**44** (19.2) | Near-Consistent |
| ***Central Division*** | | | | | | | |
| Vava'u | **1207.4** | 611.7 | 885.5 | 734 | 65/69 | 21,32,**47** (21.2) | Consistent |
| Ha'apai | **950.9** | 433 | 675.3 | 575 | 68/70 | 14,40,**46** (21.8) | Consistent |
| ***Southern Division*** | | | | | | | |
| Fua'amotu | **786.3** | 412 | 788.3 | 556.6 | 25/37 | 15,28,**57** (25.0) | Near consistent |
| Nuku'alofa | **582.3** | 439.3 | 729.7 | 545.5 | 40/73 | 17,34,**49** (20.8) | Near consistent |

Predictors and Period used for December 2016 to February 2017 Outlooks (refer to OCOF #110): **NINO3.4 Sept-Oct 2016**

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*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 April to June 2017-Tercile Method

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

| Station | Below Normal (prob) | 33%ile rainfall (mm) | Normal (prob) | 66%ile rainfall (mm) | Above Normal (prob) | LEPS (%) | Hit-rate (%) |
|---|---|---|---|---|---|---|---|
| ***Northern Division*** | | | | | | | |
| Niuafo'ou (1971-2016) | 34 | 493.7 | 31 | 629.3 | **35** | -2.2 | 38.1 |
| Niuatoputapu (1947-2016) | **34** | 433 | 33 | 609 | 33 | -1.7 | 33.3 |
| | | | | | | | |
| ***Central Division*** | | | | | | | |
| Vava'u (1947-2016) | 31 | 389.8 | 34 | 526 | **35** | 2.3 | 37.3 |
| Ha'apai (1947-2016) | 32 | 289 | 33 | 421.7 | **35** | 2.6 | 36.4 |
| | | | | | | | |
| ***Southern Division*** | | | | | | | |
| Fuaámotu(1980-2016) | 23 | 280 | **40** | 513.6 | 37 | 4.4 | 51.4 |
| Nukuálofa(1944-2016) | 26 | 281.7 | **37** | 433.7 | **37** | 5.5 | 47.8 |

## TABLE 3: Seasonal Climate Outlooks using SCOPIC for April to June 2017 – Median Method

**Predictors and Period used: NINO 3.4 January – February 2017**

| Station | Below Median (prob) | Median Rainfall (mm) | Above Median (prob) | LEPS | Hit-rate |
|---|---|---|---|---|---|
| ***Northern Division*** | | | | | |
| Niuafo'ou (1971-2016) | **50** | 582 | 50 | -2.4 | 14.3 |
| Nlutoputapu (1947-216) | **50** | 540 | 50 | -1.7 | 26.7 |
| ***Central Division*** | | | | | |
| Vava'u (1947-2016) | 48 | 476 | 52 | 3.0 | 53.7 |
| Ha'apai(1947-2016) | **51** | 352 | 49 | 0.3 | 51.5 |
| ***Southern Division*** | | | | | |
| Fua'amotu (1980-2016) | **55** | 458 | 45 | 5.3 | 62.2 |
| Nuku'alofa(1944-2016) | **53** | 329.7 | 47 | 3.4 | 56.7 |

## TABLE 4: Seasonal Climate Outlooks using POAMA2 for April to June 2017

| Station | Lower Tercile (prob) | 33%ile rainfall (mm) | Middle Tercile (prob) | 66%ile rainfall (mm) | Upper Tercile (prob) |
|---|---|---|---|---|---|
| ***Northern Division*** | | | | | |
| Niuafo'ou | **58** | 449 | 27 | 621 | 15 |
| Nlutoputapu | **58** | 434 | 27 | 598 | 15 |
| | | | | | |
| *Vava'u* | **48** | 479 | 33 | 630 | 19 |
| Ha'apai | **48** | 264 | 33 | 381 | 19 |
| | | | | | |
| Nuku'alofa | **55** | 259 | 30 | 414 | 15 |

## Summary Statements

**Rainfall for February 2017:**

**Northern division**: Above Normal.

**Central division**: Above Normal .

**Southern division**: Above Normal.

**Accumulated rainfall for December 2016 to February**

**2017, including outlook verification:**

**Northern division:** Above normal rainfall. Forecast was near-consistent at both Niuafo'ou and Niuatoputapu.

**Central division:** Above normal. Forecast was consistent.

**Southern division:** Normal rainfall. Forecast was near-consistent.

**Outlooks for April to June**

**2017:**

**1. SCOPIC:**

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

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

**Southern division**: The seasonal rainfall outlook shows a near-equal likelihood of above-normal and normal rainfall. Below normal rainfall is the least likely. Confidence is low to moderate.

**2. POAMA:**

POAMA seasonal outlook for all stations for April to June shows below normal rainfall.

**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