

## Pacific Islands - Online Climate Outlook Forum (OCOF) No. 106

**Country Name:** COOK ISLANDS

### TABLE 1: Monthly Rainfall

| Station (include data period) | June 2016        |                |              |                       |                       |                      |         |
|-------------------------------|------------------|----------------|--------------|-----------------------|-----------------------|----------------------|---------|
|                               | April 2016 Total | May 2016 Total | Total        | 33%tile Rainfall (mm) | 67%tile Rainfall (mm) | Median Rainfall (mm) | Ranking |
| <b>RAROTONGA</b>              | 52.3             | 57.0           | <b>49.2</b>  | 68.0                  | 118.1                 | 96.0                 | 28/118  |
| <b>PENRHYN</b>                | 125.4            | 278.6          | <b>478.6</b> | 97.3                  | 166.1                 | 128.0                | 77/78   |
|                               |                  |                |              |                       |                       |                      |         |
|                               |                  |                |              |                       |                       |                      |         |
|                               |                  |                |              |                       |                       |                      |         |

### TABLE 2: Three-monthly Rainfall April to June 2016

[Please note that the data used in this verification should be sourced from table 3 of OCOF #102]

| 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>RAROTONGA</b> | <b>158.5</b>      | 373.0                 | 487.7                 | 424.0                | 6/118   | <b>86</b> /10/4 (17.4%)         | Consistent   |
| <b>PENRHYN</b>   | <b>882.6</b>      | 314.0                 | 520.9                 | 381.0                | 72/78   | 9/13/ <b>78</b> (10.9%)         | Consistent   |
|                  |                   |                       |                       |                      |         |                                 |  |
|                  |                   |                       |                       |                      |         |                                 |  |
|                  |                   |                       |                       |                      |         |                                 |  |

Period: \*below normal/normal/above normal

Predictors and Period used for April to June 2016 Outlooks (refer to OCOF #102):

### NINO3.4 SST Anomalies December 2015 – February 2016

\* 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 August to October 2016**

**Predictors and Period used: NINO3.4 (April - June)**

| Station   | Below Median (prob) | Median Rainfall (mm) | Above Median (prob) |  | LEPS  | Hit-rate |
|-----------|---------------------|----------------------|---------------------|--|-------|----------|
| RAROTONGA | 54.9%               | 337.0                | 45.1%               |  | -1.2% | 56.1%    |
| PENRHYN   | 17.4%               | 357.2                | 82.6%               |  | 16.6% | 64.1%    |

| Station   | Below Normal (prob) | 33%ile rainfall (mm) | Normal (prob) | 66%ile rainfall (mm) | Above Normal (prob) | LEPS  | Hit-rate |
|-----------|---------------------|----------------------|---------------|----------------------|---------------------|-------|----------|
| RAROTONGA | 51.9%               | 270.7                | 16.7%         | 388.7                | 31.4%               | 1.5%  | 50.0%    |
| PENRHYN   | 12.8%               | 293.0                | 19.5%         | 440.0                | 67.6%               | 11.7% | 46.9%    |

**TABLE 4: Seasonal Climate Outlooks using POAMA2 for August to October 2016**

| Station   | Lower Tercile (prob) | 33%ile rainfall (mm) | Middle Tercile (prob) | 66%ile rainfall (mm) | Upper Tercile (prob) |  |  |
|-----------|----------------------|----------------------|-----------------------|----------------------|----------------------|--|--|
| RAROTONGA | 75.8%                | 251                  | 15.2%                 | 372                  | 9.0%                 |  |  |
| PENRHYN   | 24.2%                | 308                  | 21.2%                 | 473                  | 54.6%                |  |  |

## **Summary Statements**

### **Rainfall for June 2016:**

Above normal rainfall was recorded for Penrhyn, and Rarotonga had below normal rainfall.

### **Accumulated rainfall for April to June 2016, including outlook verification:**

Penrhyn had above normal rainfall for the period of April to June 2016, and Rarotonga had accumulated well below normal rainfalls for the same period.

SCOPIC outlook for the last three months was consistent for both Cook Island stations with Low skill level for Rarotonga and Good skill for Penrhyn.

### **Outlooks for August to October 2016:**

#### **1. SCOPIC:**

Penrhyn forecast is biased towards Above normal rainfall conditions for August through to the end of October, with normal rainfall proving to be the next most likely outcome. Rainfall outlook for Rarotonga is biased towards below normal conditions and above normal is the next most likely outcome. There is a good confidence for Penrhyn outlook, and low skill for Rarotonga.

#### **2. POAMA:**

Penrhyn favours above normal rainfall conditions and Rarotonga favours below normal rainfall.

**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:  $X \geq 35$