

## **Climate and Oceans Monitoring and Prediction (COMP)**

### **Pacific Islands - Online Climate Outlook Forum No. 89 Summary Report**

**Date:** Tuesday 17 February 2015

**Time:** Australian Eastern Daylight Time 12:00PM (01:00 UTC)

**Chair:** Samoa

**Main purpose for the OCOF:**

- To provide a regular forum for the 11 participating PIC NMSs to discuss the current ENSO status, recent one and three-month rainfall, drought (if present) and their seasonal climate outlooks with other countries and the COMP project team.

In addition it serves as an online training forum for recent SCOPIC<sup>\*</sup> development and gives the project team and the NMSs an opportunity to discuss other project related matters.

**Agenda:**

1. Brief introduction of PIC participants and the Bureau team.
2. Brief report on current ENSO status.
3. Each NMS report on their past one and three months rainfall in relation to the current ENSO situation (include ranking and verification), and their three-month outlooks. Wherever appropriate NMS to report on their drought status.
4. Round-table discussion: addressing general concerns/queries on outlooks and SCOPIC.
5. Feedback on COSPPac products and Services.
6. Country statements with regards to drought or drought-like conditions, drought module issues/concerns.
7. Next meeting (Tuesday 17 March) and Chair (Solomon Islands).

**Participants:**

The Forum was attended by 21 climate officers from eight partner PIC NMSs.

**Cook Islands:**

**Fiji:** Bipendra Prakash, Arieta Baleisolomone, Swastika Devi and Ravind Kumar

**Kiribati:** Kamaitia Rubetaake and Mauna Eria

**Niue:**

**Papua New Guinea:** Kasis Inape, Kila Kila, Agnes Diap, Nanao Bouauka and Kisolet Posanau

**Republic of Marshall Islands:**

**Samoa:** Faapisa Aiono, Junior Lepale and Sunny Seuseu

**Solomon Islands:** Max Norman

**Tonga:** Uinita Vea

**Tuvalu:** Eli Ene, Meelina Ailesi and Niko Iona

**Vanuatu:** Shanna Joseph and Daphne Nalawas

**The Bureau team:** Grant Beard, Elise Chandler, Grant Smith and Simon McGree

OCOFC tables were received from ten participating countries before and during the meeting.

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\* Seasonal Climate Outlooks in the Pacific Island Countries: climate prediction software developed under the PI-CPP.

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**Observations and Verification of November 2014 to January 2015 outlooks from OCOF #89:**

Observed rainfall for the one and three month periods ending January 2015 were discussed for each PIC. This month, several countries experienced extreme rainfall as shown in the following table:

Station	Period	Rainfall Amount (mm)	Rainfall Rank	Years of Record
Rarotonga, Cook Islands	Jan	353.3	5	86
Niuafu'ou, Tonga	Jan	46.5	2	41
Nuku'alofa, Tonga	Nov-Jan	129.9	1	71
Fua'amotu Airport, Tonga	Nov-Jan	128.4	2	35
Labasa Airport, Fiji	Jan	105.0	6	60
Labasa Airport, Fiji	Nov-Jan	260.0	1	59
Whitegrass, Vanuatu	Jan	239.3	41	44
Taro, Solomon Islands	Jan	366	35	38
Funafuti, Tuvalu	Jan	891.3	81	83
Funafuti, Tuvalu	Nov-Jan	1530.9	76	82

[Note: The above data may not have undergone quality control]

Validation of forecasts with observed rainfall for the November 2014 to January 2015 period showed seven consistent, 32 near-consistent and 12 inconsistent outlooks (51 stations across ten countries, not including RMI).

The largest inconsistency was at Kirakira, Solomon Islands, where below normal rainfall was observed (487 mm) against outlook probabilities of 20/39/41 with high skill (LEPS=17.9%). The strongest consistent verification was at Auki, Solomon Islands, where above normal rainfall was observed (1110 mm), with outlook probabilities of 18/36/46 and exceptional skill (LEPS= 33.9%).

A summary of results (C-consistent, NC-Near Consistent, I-Inconsistent, NA-not available) for each country for the November 2014 to January 2015 outlook is as follows:

Cook Islands (1NC, 1I); Fiji (2C, 10NC, 1I); Kiribati (1C); Niue (1C); PNG (5NC,1I); RMI (NA); Samoa (4NC); Solomon Islands (2C, 3NC, 2I); Tonga (1C, 5NC); Tuvalu (2NC, 2I); and Vanuatu (2NC, 5I).

**Overall: 7C, 32NC, 12I.**

**March to May 2015 Outlooks:**

Of the ten countries contributing to OCOF #89, the following predictors and periods were selected: Three-month average NINO3.4 (November-January) – 3 countries, Two-month average NINO3.4 (December-January) – 6 countries and one-month average NINO3.4 (January) – 1 country. NINO3.4 two-month average is recommended as this predictor/period is associated with the highest three-month outlook skill on a regional scale.

Thirty-six percent of the 58 stations outlooks had the highest probabilities in tercile 1, 5% in tercile 2 and 22% in tercile 3 (RMI not included). The remaining 36% had either near equal probabilities in two terciles, near equal probabilities in three terciles or a mixed outlook.

POAMA outlooks: Fifty percent of the 30 station outlooks favoured tercile 1, 33% tercile 2 and 3% tercile 3. The remaining 9% had either near equal probabilities in two terciles, near equal probabilities in three terciles or a mixed outlook.

## **ENSO summary for the February 2014 OCOF**

### *Sea surface temperatures (SSTs), ENSO status and outlook*

The borderline El Niño patterns in the tropical Pacific Ocean and atmosphere have continued to weaken during 2015. Sea surface temperatures across the tropical Pacific Ocean have eased away from the near-El Niño levels observed late last year. Models surveyed indicate tropical Pacific Ocean SSTs are likely to remain above average, but within the neutral range, until May. By July, six of the eight models suggest a renewed warming with the NINO3.4 index likely to reach El Niño thresholds. However, model forecasts at this time of year tend to be less accurate than at other times of the year due to ENSO events transitioning as they decay; forecasts should therefore be treated with a high degree of caution.

The tropical Pacific Ocean has cooled rapidly through the start of 2015 since peaking in mid-December, at which time surface temperatures briefly reached values typical of El Niño. January SST anomaly values for NINO3 were +0.3°C (down 0.5°C), NINO3.4 +0.5°C (down 0.3 °C) and NINO4 +0.9°C (down 0.1°C). The latest weekly values to 8 February are NINO3 +0.1°C, NINO3.4 +0.5°C, NINO4 +0.8°C.

### *Tropical subsurface*

The Bureau of Meteorology sub-surface temperature anomalies profile for the last fortnight shows a pool of warm anomalies centred on the Date Line down to a depth of approximately 200m. Cool anomalies are present to the east of 140W in the eastern Pacific.

The TAO/TRITON sub-surface temperature anomaly profile for the 5 days ending 17 January presents a similar picture in the central and eastern Pacific, but also shows cool anomalies in the far western Pacific peaking at approximately 100m below the surface.

### *Southern Oscillation Index (SOI)*

The January 2015 value was -10.0; a decrease from -5.5 in December. The current approximate 30-day SOI value to 14 February is -10.4 and the 90-day value -6.6. The recent drop in the SOI is related to a break in the Australian monsoon in combination with local weather systems in the vicinity of Tahiti.

### *Trade Winds*

Trade winds were generally near average over tropical Pacific around and west of the Date Line, though tending weaker than average in some parts of the far western tropical Pacific (TAO/TRITON 5 day mean ending 14 February)

### *Modes of Variability*

*South Pacific Convergence Zone (SPCZ), West Pacific Monsoon (WPM), Intertropical Convergence Zone (ITCZ)*

Satellite observations (OLR and TRMM) for the last 30 days show enhanced convection in the western Pacific over PNG and the northern Solomon Islands. The ITCZ has mostly been weaker than normal and displaced equator ward as a narrow band. The SPCZ has formed a distinct narrow band stretching from the Marshall Islands, through Kiribati, Tuvalu, to the north of Samoa and down through French Polynesia. There was evidence of enhanced SPCZ activity in conjunction with the passage of an active MJO in equatorial latitudes in the western Pacific.

### *Madden Julian Oscillation (MJO)*

The MJO has weakened over the last few days after an enhanced phase in the Central to Western Pacific over the last month. The MJO has brought above normal rainfall to the Western Pacific above and below the equator since mid-January.

For up to date information on the state of ENSO please refer to the links below;

BoM ENSO Wrap Up - <http://www.bom.gov.au/climate/ens/>

BoM model survey - <http://www.bom.gov.au/climate/ahead/ENSO-summary.shtml>

IRI model summary - [http://iri.columbia.edu/climate/ENSO/currentinfo/SST\\_table.html](http://iri.columbia.edu/climate/ENSO/currentinfo/SST_table.html)

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**Observed Rainfall and Validation**

Country	January 2015	November 2014 to January 2015	Verification <sup>†</sup> for November 2014-January 2015 outlooks
<b>Cook Islands</b>			
<b>Fiji</b>	Below normal to normal [above normal at Navua]	Below normal to above normal	Consistent to inconsistent
<b>Kiribati</b>	Normal	Normal	Consistent
<b>Niue</b>	Below normal	Below normal	Consistent
<b>Papua New Guinea</b>	Below normal to normal	Below normal to above normal	Near consistent to inconsistent
<b>RMI</b>			
<b>Samoa</b>	Normal [below normal at Faleolo]	Below normal to normal	Near consistent
<b>Solomon Islands</b>	Above normal [below normal at Lata, normal at Kirakira]	Below normal to above normal	Consistent to inconsistent
<b>Tonga</b>	Below normal to normal	Below normal	Consistent to near consistent
<b>Tuvalu</b>	Normal to above normal	Below normal [above at Funafuti]	Near consistent to inconsistent
<b>Vanuatu</b>	Normal to above normal [below normal at Pekoia]	Above normal	Near consistent to inconsistent

<sup>†</sup> 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).