

## Climate and Oceans Monitoring and Prediction (COMP)

### Pacific Islands - Online Climate Outlook Forum No. 86 Summary Report

**Date:** Thursday 13 November 2014

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

**Chair:** Kiribati

**Main purpose for the OCOF:**

- To provide a regular forum for the eleven participating PIC NMSs to discuss the current ENSO status and their seasonal climate outlooks with the COMP project team.

In addition it will serve as the online training forum on the latest SCOPIC<sup>\*</sup> developments and will give the project team and the NMSs an opportunity to discuss other project related matters/concerns.

**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 1 and 3 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 (Thursday 18 December) and Chair (Niue).

**Participants:**

The Forum was attended by 14 climate officers from nine partner PIC NMSs.

**Cook Islands:**

**Fiji:** Bipendra Prakash and Anshuka Anshuka

**Kiribati:** Kamaitia Rubetaake

**Niue:** Hingano Laufoli, Rossy Mitiepo, Sean Tukutama and Robert Togiamana

**Papua New Guinea:** Kisolet Posanau and Kila Kila

**Republic of Marshall Islands:** Nover Juria

**Samoa:**

**Solomon Islands:** Max Norman

**Tonga:** Uinita Vea

**Tuvalu:** Meelina Ailesi

**Vanuatu:** Melinda Natapei

**The Bureau team:** Grant Beard, Isabelle Jeanne and Simon McGree,

OCOFC tables were received from the nine 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 August to October 2014 outlooks from OCOF #82:**

Observed rainfall for the one and three month periods ending October 2014 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
Navua, Fiji	October	505.0	63	70
Vunisea, Fiji	October	345.0	76	78
Lautoka Mill, Fiji	Aug-Oct	52.2	6	115
Nadi Airport, Fiji	Aug-Oct	44.4	2	73
Lakeba, Fiji	Aug-Oct	137.8	5	66
Ono-i-Lau, Fiji	Aug-Oct	115.8	6	67
Butaritari, Kiribati	October	198.5	70	73
Kwajalein, RMI	October	436.1	63	70
Madang, PNG	October	54.8	3	66
Madang, PNG	Aug-Oct	191.8	6	66
Vanimo, PNG	Aug-Oct	840.8	52	53
Auki, Solomon Is.	October	343	48	52
Munda, Solomon Is.	October	480	51	53
Taro, Solomon Is.	October	392	34	36
Munda, Solomon Is.	Aug-Oct	1064	50	53
Vava'u, Tonga	Aug-Oct	138.3	6	68
Nuku'alofa, Tonga	Aug-Oct	121.5	5	70
Fua'amotu, Tonga	Aug-Oct	116.1	3	35
Bauerfield, Vanuatu	October	379.5	41	42
Port Vila, Vanuatu	October	250.5	60	62
Bauerfield, Vanuatu	Aug-Oct	492.6	39	42

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

Validation of forecasts with observed rainfall across the region for August to October 2014 showed 19 consistent, 17 near-consistent and 14 inconsistent outlooks (50 stations in total across ten countries).

The largest inconsistency was at Port Vila, Vanuatu, where above normal rainfall was observed (492.6 mm) against outlook probabilities of 56/36/8 with very high skill (LEPS=32.2%). The strongest consistent verification was at Lata, Solomon Islands, where normal rainfall was observed (1113 mm), with outlook probabilities of 21/57/22 and very low skill (LEPS= - 4.9%).

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

Cook Islands (NA); Fiji (8C, 2NC, 2I); Kiribati (1C, 2NC, 1I); Niue (1NC); PNG (2NC, 1I); RMI (2NC); Samoa (1C, 2NC, 1I); Solomon Islands (4C,2NC, 1I); Tonga (4C, 1NC, 1I); Tuvalu (2NC, 2I); and Vanuatu (2NC, 5I).

**Overall: 19C, 17NC, 14I.**

**December 2014 to February 2015 Outlooks:**

Of the 10 countries contributing to the OCOF, the following predictors and periods were selected for the above period: Three chose 3-month average NINO3.4 (August-October) and three chose 2-month average NINO3.4 (September-October). Two-month average NINO3.4 is the recommended option as this is associated with the highest three-month outlook skill. Three countries did not state which predictor they used and one stated using SST1&9 (1-month) average but appears to have used SST1&9 (3-month average).

Nine percent of stations had highest probabilities in tercile 1, 20% in tercile 2, 4% in tercile 3 (46 stations in total, Solomon Islands not included). The remainder of the outlooks (67%) had either near equal probabilities in two terciles, near equal probabilities in three terciles or a mixed outlook.

POAMA outlooks: 10% of the station outlooks favoured tercile 1, 23% favoured tercile 2 and 47% favoured tercile 3 for the coming season. 10% showed similar probabilities in two or three terciles.

**ENSO summary for the November 2014 OCOF**

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

Tropical Pacific Ocean ENSO indicators remain within the neutral range, having failed to maintain sustained values typical of El Niño. However, given the persistent warmth in the tropical Pacific Ocean, some models continue to suggest an El Niño remains possible later this year.

Some atmospheric indicators have met El Niño thresholds. The trade winds and the Southern Oscillation Index (SOI) have had El Niño-like values for the last three months. Rainfall/convection patterns near the Date Line have been slightly below average over the past two weeks.

Positive SST anomalies cover most of the equatorial Pacific in October. October SST anomaly values for NINO3 were +0.7°C (up 0.2°C), NINO3.4 +0.6°C (up 0.2°C) and NINO4 +0.8°C (up 0.1°C). The latest weekly values to 9 November are NINO3 +0.9°C, NINO3.4 +0.7°C, NINO4 +0.9°C.

*Tropical subsurface*

The Bureau of Meteorology 4-month sequence of sub-surface temperature anomalies (to 10 Nov) shows warm anomalies across much of the tropical Pacific subsurface with the warmest region around +3°C centred on 160W.

The TAO/TRITON sub-surface temperatures for the 5 days ending 9 November show shallow warm anomalies exceeding 3°C in the central and eastern Pacific at around 100 m of the surface.

*Southern Oscillation Index (SOI)*

The October 2014 value was -8.0; a slight decline from the -7.5 in September. The current approximate 30-day SOI value has dropped further to -13.2 (9 November), while the 90-day value is -9.6.

*Trade Winds*

The trade winds have been near normal across most of the equatorial Pacific recently, although the western Pacific trade winds have weakened slightly over the last fortnight (TAO/TRITON 5 day mean ending on 9 Nov.)

*Modes of Variability*

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

Outgoing Longwave Radiation (OLR) and TRMM observations for the last 30 days show suppressed convection for the western Maritime Continent, while tropical cyclone related enhanced convection was observed over the northwestern Pacific and east Pacific. In the south Pacific there has been enhanced

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convection over Vanuatu, Fiji, New Caledonia Fiji, Tonga and the Cook Islands associated with a southwest displacement of the SPCZ.

### *Madden Julian Oscillation (MJO)*

Being largely inactive since the first week of September, the MJO is unlikely to have influenced the cyclone activity over the northwest Pacific Ocean.

Most climate models indicate a likely weak burst in MJO activity currently over the western hemisphere which may move east across the Indian Ocean over the next two weeks (although there are no current observations of any eastward propagation). Eastward propagation of the MJO at this time of year would likely lead to suppressed conditions in the western Pacific.

### *ENSO Update (Issued on 5 November 2014)*

#### **Warm tropical Pacific Ocean, but ENSO remains neutral**

Overall, the El Niño–Southern Oscillation (ENSO) remains just shy of El Niño thresholds. Sea surface temperatures in the tropical Pacific Ocean have warmed over the past two months, and the Southern Oscillation Index has remained negative. The existence of warmer-than-average water in the tropical Pacific sub-surface supports a continuation of the current near-El Niño conditions.

International climate models surveyed by the Bureau suggest that tropical Pacific sea surface temperatures are likely to remain above average. Three of eight models reach El Niño thresholds in January 2015, and two remain just shy of thresholds.

Next update expected on 18 November 2014.

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/enso/>

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	October	August to October 2014	Verification <sup>†</sup> for August-October 2014 outlooks
Cook Islands			
Fiji	Below normal to above normal	Below normal Normal [Navua], Above normal [Vunisea]	Consistent to inconsistent
Kiribati	Below normal and above normal	Below normal to above normal	Consistent to inconsistent
Niue	Normal	Below normal	Consistent
Papua New Guinea	Below normal to normal	Normal and above normal	Near consistent and inconsistent
RMI	Below normal and above normal	Normal	Near consistent
Samoa	Normal Below normal [Afiamalu]	Below normal Normal [Faleolo]	Consistent to inconsistent
Solomon Islands	Above normal Below normal [Henderson], normal [Honiara]	Below normal to above normal	Consistent to inconsistent
Tonga	Below normal to above normal	Below normal Niuafu'ou [normal]	Consistent to inconsistent
Tuvalu	Below normal Normal [Funafuti]	Below normal to above normal	Near consistent to inconsistent
Vanuatu	Above normal Normal [Whitegrass]	Normal and 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).