

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

### **Pacific Islands - Online Climate Outlook Forum No. 88 Summary Report**

**Date:** Tuesday 20 January 2015

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

**Chair:** Papua New Guinea

**Main purpose for the OCOF:**

- To provide a regular forum for the 11 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\* 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 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 February) and Chair (Samoa).

**Participants:**

The Forum was attended by 20 climate officers from nine partner PIC NMSs.

**Cook Islands:**

**Fiji:** Arieta Daphne and Swastika Devi

**Kiribati:**

**Niue:** Mellisa Douglas, Hingano Laufoli, Rossy Mitiepo

**Papua New Guinea:** Kila Kila and Nanao Poulima

**Republic of Marshall Islands:** Nover Juria

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

**Solomon Islands:** Max Norman and Lloyd Tahani

**Tonga:** Seluvaia Finaulahi

**Tuvalu:** Eli Ene, Meelina Ailesi

**Vanuatu:** Melinda Natapei, Shanna Joseph and Daphne Nalawas

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

OCO tables were received from ten participating countries (excluding Cook Islands) 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 October to December 2014 outlooks from OCOF #88:**

Observed rainfall for the one and three month periods ending December 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
Laucala Bay (Suva), Fiji	December	579.8	73	73
Nausori Airport, Fiji	December	732.6	59	59
Ono-i-lau, Fiji	December	1.7	1	69
Nadi Airport, Fiji	October-December	251	17	172
Butariatari, Kiribati	December	75.9	3	76
Hanan Airport, Niue	December	46.8	6	65
Kavieng, PNG	December	441	80	87
Kavieng, PNG	October - December	1160.2	81	85
Munda, Solomon Islands	December	99	3	53
Honiara, Solomon Islands	December	239	4	57
Niutoputapu, Tonga	December	65.4	6	68
Fuaamotu, Tonga	December	24	2	35
Vava'u, Tonga	October - December	197.7	5	68
Nukualofa, Tonga	October - December	107.4	6	71
Fuaamotu, Tonga	October - December	135.9	2	35
Niulakita, Tuvalu	December	106.8	4	62

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

Validation of forecasts with observed rainfall across the region for October to December 2014 showed 14 consistent, 25 near-consistent and 11 inconsistent outlooks (50 stations in total across ten countries, excluding the Cook Islands).

The largest inconsistency was at Nanumea, Tuvalu, where below normal rainfall was observed (364 mm) against outlook probabilities of 20/39/41 with very high skill (LEPS=22%). The strongest consistent verification was at Tarawa, Kiribati, where normal rainfall was observed (481 mm), with outlook probabilities of 9/62/29 and exceptional skill (LEPS= 56.9%).

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

Cook Islands (NA); Fiji (6C, 1NC, 1I, 1M); Kiribati (2NC, 3M); Niue (1NC); PNG (2C,3NC,3M); RMI (1C,1NC); Samoa (4NC); Solomon Islands (1C,6NC); Tonga (6NC); Tuvalu (2C,1NC,1I); and Vanuatu (2NC,5I).

**Overall: 14C, 25NC, 11I.**

**February to April 2015 Outlooks:**

Of the 11 countries contributing to the OCOF, the following predictors and periods were selected for the above period: Six chose 3-month average NINO3.4 (October-December), four chose 2-month average

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NINO3.4 (November-December) and one chose 1-month average NINO3.4 (December). Two-month average NINO3.4 is the recommended option as this is associated with the highest three-month outlook skill.

Fifty-four per cent of stations had highest probabilities in tercile 1, 10% in tercile 2, 14% in tercile 3 (59 stations in total, Cook Islands not included). The remainder of the outlooks (22%) had either near-equal probabilities in two terciles, near-equal probabilities in three terciles or a mixed outlook.

POAMA outlooks: 32% of the station outlooks favoured tercile 1, 35% favoured tercile 2 and 27% favoured tercile 3 for the coming season. The remainder of the outlooks (6%) had near equal probabilities in two terciles.

### **ENSO summary for the January 2015 OCOF**

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

The El Niño-like conditions in the tropical Pacific Ocean both in the atmosphere and ocean have weakened in recent weeks. Most of the surveyed models forecast tropical Pacific Ocean SSTs to remain above average, but within the neutral range, until at least April. Three models suggest renewed warming in June, with the value of NINO3.4 forecast to reach El Niño thresholds by this time, while the other five models remain neutral. However, model forecasts spanning the autumn months tend to have reduced accuracy than at other times of the year and should therefore be treated with caution.

Hence the ENSO Tracker has been reset to NEUTRAL. The Tracker will remain at NEUTRAL unless observations and model outlooks indicate a heightened risk of either La Niña or El Niño developing later this year.

The tropical Pacific Ocean has cooled rapidly in recent weeks, since peaking in mid-December with surface temperatures briefly reaching values typical of El Niño. December SST anomaly values for NINO3 were +0.8°C (down 0.1°C), NINO3.4 +0.8°C (down 0.1 °C) and NINO4 +1.0°C (no change). The latest weekly values to 11 January are NINO3 +0.3°C, NINO3.4 +0.4°C, NINO4 +0.7°C.

#### **Tropical subsurface**

The Bureau of Meteorology sub-surface temperature anomalies profile for the last fortnight shows weak warm anomalies close to the ocean surface near and west of the Date Line and in the far eastern Pacific. Cool anomalies are present at depth in the central and eastern Pacific.

The TAO/TRITON sub-surface temperature anomaly profile for the 5 days ending 17 January presents a similar picture.

#### **Southern Oscillation Index (SOI)**

The December 2014 value was -5.5, a rise of nearly five points from -10.0 in November. The current approximate 30-day SOI value to 17 January is -5.0 and the 90-day value -6.6.

#### **Trade Winds**

In the equatorial Pacific, easterly wind anomalies (TAO/TRITON 5 day mean ending 17 January) were present in the western Pacific while westerly anomalies were analysed near and east of the Date Line. The trade winds are near normal in the eastern Pacific.

#### **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. The ITCZ has mostly been weaker than normal and displaced equatorward as a narrow band. The SPCZ has also been weaker than normal west of and near the Date Line (southeast of the Solomon Islands and northwest of Fiji). East of the Date Line, the SPCZ has been enhanced, especially over the southern French Polynesian Islands.

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**Madden Julian Oscillation (MJO)**

The MJO weakened significantly in the last few days as it moved towards the Date Line. With the exception of westerly wind anomalies near the Date Line there has been little influence on tropical weather. Models favour further weakening in the next few days.

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)

**Observed Rainfall and Validation**

Country	December	October to December 2014	Verification <sup>†</sup> for October-December 2014 outlooks
<b>Cook Islands</b>			
<b>Fiji</b>	Below Normal , Normal	Below normal to Normal	Consistent to inconsistent
<b>Kiribati</b>	Below Normal	Normal	Consistent
<b>Niue</b>	Below Normal	Below normal	Near Consistent
<b>Papua New Guinea</b>	Below Normal [Port Moresby], Normal to Above Normal	Below Normal to Above Normal	Near Consistent to Consistent
<b>RMI</b>	Below normal	Below Normal [Majuro], Normal [Kwajelein]	Consistent to Near consistent
<b>Samoa</b>	Below Normal, Normal [Afiamalu], Above Normal [Faleolo]	Below Normal [Nafanua], Normal, Above Normal [Faleolo]	Near consistent
<b>Solomon Islands</b>	Below Normal, Normal, Above Normal [Auki]	Below Normal, Normal [Niuafou'u]	Near Consistent, Consistent
<b>Tonga</b>	Below Normal	Normal [Niuafou'u] to below normal	Near Consistent
<b>Tuvalu</b>	Below Normal, Normal	Below Normal, Normal [Funafuti]	Consistent to Inconsistent
<b>Vanuatu</b>	Below Normal [Sola], Normal, Above Normal	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).

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