

Climate and Oceans Monitoring and Prediction (COMP)

Pacific Islands - Online Climate Outlook Forum No. 85 Summary Report

Date: Thursday 16 October 2014

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

Chair: Bureau of Meteorology

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* 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 13 November) and Chair (Kiribati).

Participants:

The Forum was attended by 18 climate officers from all the 11 partner PIC NMSs.

Cook Islands: Turi Tutai

Fiji: Bipendra Prakash and Anshuka Anshuka

Kiribati: Kamaitia Rubetaake

Niue: Melissa Douglas, Hingano Laufoli, Rossy Mitiepo and Robert Togiamana

Papua New Guinea: Kisolet Posanau and Ruth Apuqahe

Republic of Marshall Islands: Nover Juria

Samoa: Faapisa Aiono, Tile Tofaeono

Solomon Islands: Llyod Tahani and Max Norman

Tonga: Sione Tu'ungafasi

Tuvalu: Meelina Ailesi

Vanuatu: Melinda Natapei

The Bureau team: Grant Beard and Simon McGree,

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

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

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Observations and Verification of July to September 2014 outlooks from OCOF #81:

Observed rainfall for the one and three month periods ending September 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 |
|--------------------------|----------|----------------------|---------------|-----------------|
| Penrhyn, Cook Islands | Jul-Sept | 107.7 | 4 | 75 |
| Penang Mill, Fiji | Sept | 0.4 | 1 | 104 |
| Nadi Airport, Fiji | Sept | 7.6 | 6 | 73 |
| Yasawa-i-rara, Fiji | Sept | 7.7 | 5 | 62 |
| Laucala Bay-Suva, Fiji | Sept | 39.3 | 4 | 73 |
| Navua, Fiji | Sept | 38.4 | 3 | 70 |
| Ono-i-Lau, Fiji | Sept | 20.8 | 6 | 67 |
| Rotuma, Fiji | Sept | 93.5 | 7 | 100 |
| Penang Mill, Fiji | Jul-Sept | 43.3 | 2 | 104 |
| Lautoka Mill, Fiji | Jul-Sept | 23.4 | 2 | 115 |
| Nadi Airport, Fiji | Jul-Sept | 20.9 | 2 | 73 |
| Yasawa-i-rara, Fiji | Jul-Sept | 21.2 | 1 | 61 |
| Laucala Bay-Suva, Fiji | Jul-Sept | 184.2 | 3 | 73 |
| Navua, Fiji | Jul-Sept | 263.4 | 4 | 69 |
| Labasa Airport, Fiji | Jul-Sept | 13.8 | 1 | 58 |
| Kiritimati, Kiribati | Sept | 95.7 | 80 | 87 |
| Majuro, RMI | Jul-Sept | 1195.1 | 56 | 61 |
| Hanan Airport, Niue | Sept | 20.4 | 4 | 65 |
| Honiara, Solomon Islands | Sept | 20 | 3 | 59 |
| Honiara, Solomon Islands | Jul-Sept | 114 | 3 | 58 |
| Niuatoputapu, Tonga | Sept | 16.0 | 5 | 68 |
| Vava'u, Tonga | Sept | 33.9 | 6 | 68 |
| Ha'apai, Tonga | Sept | 1.1 | 1 | 68 |
| Nuku'alofa, Tonga | Sept | 32.9 | 6 | 70 |
| Fua'amotu, Tonga | Sept | 19.0 | 1 | 35 |
| Niuafu'ou, Tonga | Jul-Sept | 151.2 | 3 | 44 |
| Vava'u, Tonga | Jul-Sept | 131.2 | 4 | 68 |
| Ha'apai, Tonga | Jul-Sept | 82.9 | 1 | 68 |
| Fua'amotu, Tonga | Jul-Sept | 154.2 | 3 | 35 |

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

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Validation of forecasts with observed rainfall across the region for July to September 2014 showed equal numbers of near consistent and inconsistent outlooks (16 equal out of 46 stations) over the July to September period (11 countries). There were 14 consistent outlooks.

The largest inconsistency was at the Lautoka Mill, Fiji, where below normal rainfall was observed (23.4 mm) against outlook probabilities of 25/18/57 with low skill (LEPS=3.4%). The strongest consistent verification was at Lata, Solomon Islands, where normal rainfall was observed (942 mm), with outlook probabilities of 14/57/29 and very low skill (LEPS= -2.3%).

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

Cook Islands (1C, 1NC); Fiji (3NC, 9I); Kiribati (1C, 1NC, 2I); Niue (1NC); PNG (-); RMI (1NC, 1I); Samoa (1C, 2NC, 1I); Solomon Islands (4C,2NC, 1I); Tonga (3NC, 2I); Tuvalu (1C, 1NC); and Vanuatu (6C, 1NC).

Overall: 14C, 16NC, 16I.

November 2014 to January 2015 Outlooks:

Of the 10 countries contributing to the OCOF, the following predictors and periods were selected for November 2014 to January 2015: Five chose 3-month average NINO3.4 (July to September), three chose 2-month average NINO3.4 (August and September) and one chose 1-month SSTa 1 and 9 (September). Two-month average NINO3.4 is the preferred option as this has been associated with the highest three-month outlook skill.

SCOPIC outlooks for the coming season favoured near equal probabilities in either two or three terciles. Four percent of stations had highest probabilities in tercile 1, 28% in tercile 2, 9% in tercile 3. The remainder of the outlooks 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, 25% favoured tercile 2 and 32% favoured tercile 3 for the coming season. 16% showed similar probabilities in two or three terciles. As mixed outlooks commonly occur with POAMA an attempt is made to categorise the outlook as a T1, T2 and T3 outlook unless the T values are close. In comparison, mixed outlook occurrence is rare for SCOPIC.

ENSO summary for the October 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.

Atmospheric indicators of El Niño have remained neutral over recent months. Tropical cloud patterns and trade winds have only had brief periods with El Niño-like values since May. Despite a recent drop into El Niño territory, the Southern Oscillation Index (SOI) has returned to neutral values.

Positive SST anomalies cover much of the equatorial Pacific in September. September SST anomaly values for NINO3 were +0.5°C (no change), NINO3.4 +0.7°C (up 0.4°C) and NINO4 +0.4°C (down 0.3°C). The latest weekly values to 12 October are NINO3 +0.6°C, NINO3.4 +0.5°C, NINO4 +0.7°C.

Tropical subsurface

The Bureau of Meteorology 4-month sequence of sub-surface temperature anomalies (to 14 Oct) shows warm anomalies close to the Date Line and in the eastern Pacific. The eastern Pacific region has anomalies in excess of 2°C. The warm anomalies in both these regions have moved closer to the ocean surface in the last fortnight.

The TAO/TRITON sub-surface temperatures for the 5 days ending 13 October show shallow warm anomalies exceeding 2°C in the eastern Pacific within 100 m of the surface. A second region of above 2°C anomalies is located near and east of the Date Line, just below 100 m.

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Southern Oscillation Index (SOI)

The September 2014 value was -7.5 ; a slight rise from the -11.4 in August. The current approximate 30-day SOI value has risen further to -3.0 , while the 90-day value is -7.2 .

Trade Winds

The trade winds have been near normal across most of the equatorial Pacific recently (TAO/TRITON 5 day mean ending on 13 Oct.)

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 for the north Pacific show suppressed convection south of the Palau and western FSM main islands. ITCZ activity further east is generally enhanced.

In the South Pacific there has been enhanced convection over the Solomon Islands, Vanuatu and New Caledonia. Further east rainfall has been generally enhanced over Fiji, Tonga the Cook Islands.

Madden Julian Oscillation (MJO)

The MJO has been largely inactive since the first week of September, and as such is unlikely to have influenced the cyclone activity over the northwest Pacific Ocean.

Most climate models indicate a new burst in MJO activity may develop and strengthen over the eastern Pacific and Africa in the next two weeks. However, the strength of the MJO signal is uncertain. If the MJO strengthens over Africa it may act to suppress activity over the northwest Pacific and hence reduce the risk of tropical cyclone activity.

ENSO Update (Issued on 7 October 2014)

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, models continue to suggest an El Niño remains possible during the last quarter of 2014.

Atmospheric indicators of El Niño have remained neutral over recent months. Tropical cloud patterns and trade winds have only had brief periods with El Niño-like values since May. Despite a recent drop into El Niño territory, the Southern Oscillation Index (SOI) has returned to neutral values over the past fortnight.

Model outlooks and current observations mean the Bureau's El Niño WATCH remains in place, indicating double the normal chance (50%) of an El Niño over the coming months.

Next update expected on 21 October 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/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

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Observed Rainfall and Validation

| Country | September | July to September 2014 | Verification [†] for July-September 2014 outlooks |
|-------------------------|--|-------------------------------|--|
| Cook Islands | Below normal | Below normal and normal | Consistent and near consistent |
| Fiji | Below normal Normal [Vunisea only] | Below normal | Near consistent to inconsistent |
| Kiribati | Below normal to above normal | Below normal to above normal | Consistent to inconsistent |
| Niue | Below normal | Below normal | Near consistent |
| Papua New Guinea | | | |
| RMI | Below normal | Below normal and above normal | Consistent and inconsistent |
| Samoa | Below normal | Below normal to normal | Consistent to inconsistent |
| Solomon Islands | Below normal to normal Above normal [Munda] | Below normal to normal | Consistent to inconsistent |
| Tonga | Below normal to normal | Below normal to normal | Near consistent to inconsistent |
| Tuvalu | Below normal to normal | Below normal | Consistent to near consistent |
| Vanuatu | Normal to above normal | Below normal to above normal | Near consistent to inconsistent |

[†] 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).