

Climate and Oceans Monitoring and Prediction (COMP)

Pacific Islands - Online Climate Outlook Forum No. 92 Summary Report

Date: Tuesday 12 May 2015

Time: Australian Eastern Daylight Time 11:00AM (01:00 UTC)

Chair: Tuvalu

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^{*} 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 16 June) and Chair (Vanuatu).

Participants:

The Forum was attended by 20 climate officers from 11 partner PIC NMSs.

Cook Islands: Turi Tutai

Fiji: Bipen Prakash

Kiribati: Kamaitia Rubetaake

Niue: Mellisa Douglas, Rossy Mitiepo, Robert Togiamana, Sean Tukutama

Papua New Guinea: Kila Kila and Nanao Bouauka

Republic of Marshall Islands: Nover Juria

Samoa: Faapisa Aiono and Faagalo Key

Solomon Islands: Max Norman and Lloyd Tahani

Tonga: Seluvaia Finaulahi

Tuvalu: Meelina Ailesi and Eli Ene

Vanuatu: Daphne Nalawas, Shanna Joseph and Philip Malsale

The Bureau team: Simon McGree, Grant Beard, Adna Kazazic and Elise Chandler

OCOFC tables were received from 11 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 February to April 2015 outlooks from OCOF #92:

Observed rainfall for the one and three month periods ending April 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
Yasawa-i-rara, Fiji	Apr	22.0	3	64
Laucala Bay, Fiji	Apr	78.3	2	74
Lakeba, Fiji	Apr	58.3	4	65
Vunisea, Fiji	Apr	76.1	5	80
Ono-i-lau, Fiji	Apr	30.1	4	68
Labasa Airport, Fiji	Apr	11.3	1	60
Laucala Bay, Fiji	Feb-Apr	539.3	2	74
Nausori Airport, Fiji	Feb-Apr	620.8	4	59
Tokotoko, Fiji	Feb-Apr	551.7	2	71
Labasa Airport, Fiji	Feb-Apr	513.5	3	60
Kwajalein, RMI	Apr	430.3	68	71
Kwajalein, RMI	Feb-Apr	1124.0	71	71
Momote, PNG	Apr	119.6	5	66
Madang, PNG	Feb-Apr	672.2	3	66
Momote, PNG	Feb-Apr	370.0	2	65
Taro, Solomon Islands	Apr	153.0	3	40
Munda, Solomon Islands	Apr	1554.0	54	54
Lata, Solomon Islands	Apr	1661.0	38	40
Nanumea, Tuvalu	Apr	111.3	5	74
Funafuti, Tuvalu	Feb-Apr	1104.9	81	83
Whitegrass, Vanuatu	Feb-apr	153.6	1	44
Ha'apai, Tonga	Apr	36.6	4	69
Nukualofa, Tonga	Apr	29.8	3	71
Fuaamotu, Tonga	Apr	17.1	1	36

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

Validation of forecasts with observed rainfall for the February to April 2015 period showed 22 consistent, 16 near-consistent and 14 inconsistent outlooks (52 stations across 11 countries).

The largest inconsistency was at Misima, PNG, where above normal rainfall was observed (1036.6 mm) against outlook probabilities of 58/35/7 with very high skill (LEPS=29.0%). The strongest consistent verification was at Kirimati, Kiribati, where above normal rainfall was observed (412.5 mm), with outlook probabilities of 516/24/60 and high skill (LEPS= 21.1%).

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

Cook Islands (1C); Fiji (8C, 1NC, 3I); Kiribati (2C); Niue (1I); PNG (1C,2NC, 3I); RMI (2I); Samoa (1C,3NC); Solomon Islands (2C, 3NC, 2I); Tonga (3C, 3NC); Tuvalu (2C, 1NC, 1I); and Vanuatu (2C,

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3NC, 2I).

Overall: 22C, 16NC, 14I.

June to August 2015 Outlooks:

Of the ten countries contributing to OCOF #92, the following predictors and periods were selected: Three-month average NINO3.4 (February-April) – 2 countries, Two-month average NINO3.4 (March-April) – 7 countries and one-month average NINO3.4 (April) – 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.

Fifty-three percent of the 59 stations outlooks had the highest probabilities in tercile 1, 7% in tercile 2 and 20% in tercile 3. The remaining 20% had either near equal probabilities in two terciles, near equal probabilities in three terciles or a mixed outlook.

POAMA outlooks: thirty-nine percent of the 46 station outlooks favoured tercile 1, 41% tercile 2 and 13% tercile 3. The remaining 7% had either near equal probabilities in two terciles, near equal probabilities in three terciles or a mixed outlook.

ENSO summary for the May 2015 OCOF

Ocean monitoring

Sea surface temperatures (SSTs)

The tropical Pacific Ocean & atmosphere show strong indications of the early stages of an El Niño event.

Positive SST anomalies have persisted across the western and central Pacific in recent months and have now expanded into the eastern Pacific.

April SST anomaly values for NINO3 were +0.8°C (up 0.5°C), NINO3.4 +0.8°C (up 0.2°C) and NINO4 +1.1°C (stable). The latest weekly values to 10 May are +1.21°C for NINO3, +0.97°C for NINO3.4 and +1.05°C for NINO4.

Tropical subsurface

The Bureau of Meteorology sub-surface temperature anomalies profile for to the 7th of May show a large pool of warm anomalies largely east of the Date Line down to a depth of approximately 200 m. This pool of warm water has continued to intensify in early May and spread further east when compared with the sub-surface anomalies for April. Cool anomalies are no longer present in the eastern Pacific.

The TAO/TRITON sub-surface temperature anomaly profile for the 5 days ending 9 May presents a similar picture in the central and eastern Pacific, with anomalies in excess of +5°C in the far eastern Pacific.

Atmosphere monitoring

Southern Oscillation Index (SOI)

The April 2015 SOI was –3.8, a rise of about 7 points from –11.2 in March. The approximate 30-day SOI value to 09 May is –8.5 and the 90-day value –6.3.

Trade Winds

The equatorial trade winds were weaker than average especially in the western half of the tropical Pacific (TAO/TRITON 5 day mean ending 9 May). Strong westerly wind anomalies have been presented west of the Date Line. Westerly anomalies have been present for at least 3-months.

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Modes of Variability

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

The TRMM 30-day rainfall anomaly map to 8 May 2015 shows an enhanced ITCZ across most of the tropical north Pacific except to the north of New Guinea. Notable positive rainfall anomalies were present along the equator, centred on the Date Line, associated with warm SST anomalies in the same region.

In the south Pacific, the SPCZ was suppressed near the Date Line (esp. over Fiji, Tonga and Niue). A second region of below normal rainfall is located between Samoa and the equatorial Pacific. Enhanced rainfall was present over the southern New Guinea islands, southern Solomon Islands, Vanuatu, New Caledonia, southern Cook Islands and southernmost French Polynesian islands.

Madden Julian Oscillation (MJO)

The MJO has remained inactive over the last fortnight. Model forecasts weak MJO activity will appear in the western Pacific over the next few days, it is likely to remain weak as it moves eastwards. There is likely to be little influence on weather in the western Pacific; neither suppressing nor enhancing rainfall over the coming weeks.

ENSO Outlook

All climate models monitored by the Bureau forecast the tropical Pacific Ocean to reach or exceed El Niño thresholds by June. These models also predict the central Pacific Ocean will continue to warm past mid-year, with all the September forecasts for NINO3.4 more than 1 °C above normal and in several cases exceeding 2°C.

Model forecasts from all eight models are consistent in their outlooks for a warming to occur over the coming months in the tropical Pacific Ocean.

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

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Observed Rainfall and Validation

Country	April 2015	February to April 2015	Verification[†] for February-April 2015 outlooks
Cook Islands	Normal	Below normal	Consistent
Fiji	Below normal [above normal at Rotuma]	Below normal [normal at Ono-i-lau]	Consistent to inconsistent
Kiribati	Above normal [normal at Butaritari]	Above Normal	Consistent
Niue	Below normal	Below normal	Consistent
Papua New Guinea	Below normal to normal [above normal at Port Moresby]	Below normal to above normal	Near consistent to inconsistent
RMI	Normal	Above normal	Inconsistent
Samoa	Below normal to above normal	Normal [above normal at Faleolo]	Consistent to near consistent
Solomon Islands	Below normal to above normal	Below normal to above normal	Consistent to inconsistent
Tonga	Below normal to above normal	Below normal to normal	Consistent to near consistent
Tuvalu	Below normal to above normal	Normal [below normal at Nanumea]	Consistent to inconsistent
Vanuatu	Below normal to above normal	Below normal to above normal	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).