

Climate and Oceans Monitoring and Prediction (COMP)

Pacific Islands - Online Climate Outlook Forum No. 78 Summary Report

Date: Thursday 20 March 2014

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

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. Interactions with stakeholders (new or existing).
7. Next meeting (Wednesday 16 April) and Chair (Tonga).

Participants:

The Forum was attended by 16 climate officers from 8 PIC NMSs.

Cook Islands: -

Fiji: Swastika Devi and Ravind Kumar

Kiribati: Kamaitia Rubetaake, Ueneta Toorua

Niue: Rossy Mitiepo, Sean Tukutama and Melissa Douglas

Papua New Guinea: Nanao Bouauka and Kisolet Posanau

Republic of Marshall Islands: Nover Juria

Samoa: Tile Tofaeono and Junior Lepale

Solomon Islands: -

Tonga: Mele Lakai and Sione Tu'ungafasi

Tuvalu: Eli Ene and Meelina Ailesi

Vanuatu: -

The Bureau team: Elisabeth Thompson, Simon McGree, Grant Beard and Adna Kazazic

OCOFC tables were received from all of the eleven participating countries before 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 December 2013 to February 2014 outlooks from OCOF #74:

Observed rainfall for the one and three month periods ending February 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
Rarotonga, Cook Islands	February	52.5	5	116
Suva, Fiji	February	680.8	72	73
Nausori Airport, Fiji	February	453.1	55	58
Navua, Fiji	February	678.2	58	70
Suva, Fiji	Dec-Feb	1537.7	72	72
Navua, Fiji	Dec-Feb	1509.5	66	68
Kiritimati, Kiribati	February	1.6	5	89
Kiritimati, Kiribati	Dec-Feb	2.8	1	78
Kwajalein, RMI	February	351	70	70
Auki, Solomon Islands	February	555	50	53
Lata, Solomon Islands	February	203	3	40
Lata, Solomon Islands	Dec-Feb	841	4	39
Munda, Solomon Islands	Dec-Feb	1505	49	52
Taro, Solomon Islands	Dec-Feb	1168	34	35
Lamap, Vanuatu	February	69.8	5	54
Bauerfield, Vanuatu	February	125.8	3	42
Port Vila, Vanuatu	February	102.7	3	62
Whitegrass, Vanuatu	February	18.8	1	43
Aneityum, Vanuatu	February	57.6	1	63

* **Record rainfall** [Note: Quality control of the above data is not complete]

Validation of forecasts with observed rainfall across the region for December 2013 to February 2014 showed mostly near consistent results (32 out of 57 stations) at the eleven countries. Consistent results significantly outnumbered inconsistent results (20 versus 5 respectively). The largest inconsistency was at Sola, Vanuatu, where below normal rainfall was observed (985.3mm) against outlook probabilities of 24/24/52 with low skill (LEPS=1.3%). The strongest consistent verification was at Nukuálofa, Tonga, where above normal rainfall was observed (833.9mm), with outlook probabilities of 10/21/69 and very high skill (LEPS=29.7%).

A summary of results (C-consistent, NC-Near Consistent and I-Inconsistent) for each country for the December 2013 to February 2014 outlook is as follows:

Cook Islands (2NC); Fiji (6C, 7NC); Kiribati (1C, 3NC); Niue (1NC); PNG (1C, 5NC, 2I); RMI (1C, 1NC); Samoa (4NC); Solomon Islands (3C, 2NC, 2I); Tonga (5C, 1NC); Tuvalu (3NC); and Vanuatu (3C, 3NC, 1I).

Overall: 20C, 32NC, 5I.

April to June 2014 Outlooks:

Of the eleven countries contributing to the OCOF, four chose the combination of SSTa 1 and 9 over December 2013 to February 2014 as the predictors for the April to June 2014 outlook, one chose

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SSTa 1 and 9 over one month (February), one chose NINO3.4 over January to February 2014, three chose NINO3.4 over December 2013 to February 2014, while two chose the December 2013 to February 2014 SOI.

SCOPIIC outlooks for the coming season mainly favoured tercile 3, i.e. above normal; with 24% of stations with high probabilities in tercile 1; 29% in tercile 2; 38% of the stations with the highest probabilities in tercile 3; 7% of the stations with equal chance of terciles 2 and 3; and 2% of the stations with equal chance of terciles 1 and 2. POAMA outlooks equally favoured terciles 1 and 2 (13 out of 31 stations each) for the coming season.

Current climate patterns:

ENSO status and outlook

The El Niño-Southern Oscillation (ENSO) state remains neutral even though recent observations show warming of the tropical Pacific in recent weeks and months. International climate models surveyed by the Bureau indicate that warming of the tropical Pacific is likely to continue in the coming months, with most models showing temperatures approaching El Niño thresholds around the middle of the year.

Tropical sea surface temperatures

Large areas of the surface waters of the western Pacific are warmer than average, extending from the area north of Indonesia and east of the Philippines to the South Pacific Convergence Zone (SPCZ). Cooler-than-average SSTs exist in the eastern equatorial Pacific. February SST anomaly values were NINO3 -0.5°C (down 0.3°C), NINO3.4 -0.3°C (no change) and NINO4 +0.4°C (up 0.4°C). The latest weekly values are NINO3 0°C, NINO3.4 -0.1°C, NINO4 +0.5°C.

Tropical subsurface

As of mid-March sub-surface temperature anomalies are warmer than average west of 135°W with cooler than average temperatures to the east. Over the last few months the warm anomalies have strengthened significantly and extended further east. Warm anomalies in excess of 5°C exist at a depth of around 150 m between 150°W and 170°W. If (more likely when) this pool of warmer-than-average sub-surface water rises to the surface in the central or eastern tropical Pacific this will lead to surface warming and the formation of a significant El Niño event.

Southern Oscillation Index (SOI)

The official SOI for February 2014 was -1.3; a fall from the January value of +12.2. The current approximate 30-day SOI value is -12.3, while the 90-day value is +0.8.

Trade Winds

Westerly trade winds anomalies have been observed west of the dateline and further east to 160°W (5 day mean ending 18 March) another indicator supporting the transition to El Niño conditions. The recent westerly wind burst over the far western Pacific is the strongest seen since at least 2009 – the last time an El Niño developed.

Sea level

Positive sea level anomalies have been observed from about 160°E to 110°W for the 30 days to 14 March. Sea level anomalies exceeded 10 cm in the Kiribati Gilbert Islands region and further east at Jarvis Is. and Kiritimati.

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

Over the last 30 days (to 18 March) the WPM has been largely suppressed over the Papua New Guinea mainland. SPCZ activity has been enhanced with the exception of the Niue-Southern Cook Islands region. There has been suppressed ITCZ activity close to the equator east of the dateline and enhanced convection to the west.

MJO

The Madden-Julian Oscillation (MJO) continued to move eastward over the tropical western hemisphere this past week and it is likely to have contributed to enhanced rainfall activity this past fortnight in the central tropical Pacific Ocean. Currently, climate models indicate the possibility of the MJO reaching the Australian longitudes within the first half of April so the next active phase of MJO in the western Pacific could be around mid-April.

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ENSO Update (Issued on 11th March 2014)

The El Niño–Southern Oscillation (ENSO) remains neutral – neither El Niño nor La Niña. However, international climate models surveyed by the Bureau indicate that warming of the tropical Pacific is likely in the coming months, with most models showing temperatures approaching or exceeding El Niño thresholds during the austral winter.

Recent observations indicate that warming of the tropical Pacific is occurring. The tropical Pacific Ocean sub-surface has warmed substantially over the past few weeks, which is likely to result in a warming of the sea surface in the coming months. A recent burst of westerly winds over the far western Pacific is the strongest seen since at least 2009 – the last time an El Niño developed.

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

Additional Discussions:

All countries have been sent a second copy of the SCOPIC version 3.0.13 CD. Installation instructions and support will be available to those who notify the COMP team of its arrival.

It has been recommended that the partner PICs begin to transition towards the use of 2 month NINO3.4 SST anomalies as their default SCOPIC predictor. For example using the NINO3.4 January to February 2014 time period for the April to June 2014 outlook.

The importance of upcoming vigilance in regards to media and stakeholder speculation of a future El Niño was also discussed. The COSPPac team will provide any desired support to those who would like assistance responding to local media and stakeholder queries.

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Observed Rainfall and Validation

Country	February	Dec 13-Feb 2014	Outlooks Issued for Dec 13-Feb 2014 (skill level)	Verification [†] for Dec 13-Feb 2014 outlooks
Cook Islands	Below Normal to Normal	Below Normal to Normal	Below Normal to Normal (moderate to very high skill)	Near Consistent
Fiji	Normal to Above Normal Below Normal [Lautoka Mill]	Normal to Above Normal	Normal to Above Normal (very low to exceptional skill)	Near Consistent to Consistent
Kiribati	Below Normal to Normal Above Normal [Kanton]	Below Normal to Normal	Below Normal to Normal (high to exceptional skill)	Near Consistent to Consistent
Niue	Below Normal	Normal	Above Normal (high skill)	Near Consistent
Papua New Guinea	Below Normal to Above Normal	Normal to Above Normal	Below Normal to Above Normal (very low to moderate skill)	Inconsistent to Consistent
RMI	Above Normal	Normal to Above Normal	Above Normal (low skill)	Near Consistent to Consistent
Samoa	Normal	Above Normal	Normal (low to very high skill)	Near Consistent
Solomon Islands	Below Normal to Above Normal	Normal to Above Normal Below Normal [Lata]	Below Normal to Above Normal (very low to very high skill)	Inconsistent to Consistent
Tonga	Normal to Above Normal Below Normal [Vavaú]	Above Normal Normal [Vavaú]	Above Normal (moderate to very high skill)	Consistent Near Consistent [Vavaú]
Tuvalu	Above Normal Below Normal [Nui]	Below Normal Above Normal [Funafuti]	Climatology and Normal (low to moderate skill)	Near Consistent
Vanuatu	Below Normal to Normal Above Normal [Pekoa]	Normal to Above Normal Below Normal [Sola]	Normal to Above Normal (very low to high skill)	Near Consistent to Consistent Inconsistent [Sola]

[†] 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).