Climate and Oceans Monitoring and Prediction (COMP)

Pacific Islands - Online Climate Outlook Forum No. 81 Summary Report

Date: Thursday 12 June 2014

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

Chair: Vanuatu

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 (Thursday 17 July) and Chair (Cook Islands).

Participants:

The Forum was attended by 14 climate officers from 8 PIC NMSs.

Cook Islands: Turi Tutai

Fiji: Arieta Baleisolomone, Bipendra Prakash and Swastika Devi

Kiribati: -

Niue: Melissa Douglas and Hingano Laufoli

Papua New Guinea: Ruth Apuqahe and Nanao Bouauka

Republic of Marshall Islands: Nover Juria

Samoa: Sunny Seuseu and Junior Lepale

Solomon Islands: -

Tonga: Selusalema Vite and Uinita Vea

Tuvalu: -

Vanuatu: Melinda Natapei

The Bureau team: Grant Beard, Adna Kazazic, Simon McGree and Mark Caughey.

OCOF tables were received from nine of the eleven participating countries before the meeting.

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

Observations and Verification of March to May 2014 outlooks from OCOF #77:

Observed rainfall for the one and three month periods ending May 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
Labasa Airport, Fiji	Mar-May	329	4	59
Port Moresby, PNG	May	0	**1**	123
Auki, Solomon Is.	May	365	50	52
Henderson, Solomon Is.	Mar-May	944	38	39
Honiara, Solomon Is.	Mar-May	1345	**60**	60
Lata, Solomon Is.	Mar-May	811	4	39
Nukuálofa, Tonga	May	228	68	70
Nukuálofa, Tonga	Mar-May	871	69	70
Fuaámotu, Tonga	Mar-May	886	31	35
Sola, Vanuatu	May	168	5	43

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

Validation of forecasts with observed rainfall across the region for March to May 2014 showed mostly near consistent results (22 out of 48 stations) at the nine countries. Consistent results equalled inconsistent results (both 13 out of 48). The largest inconsistency was at Whitegrass, Vanuatu, where below normal rainfall was observed (317.4mm) against outlook probabilities of 9/30/61 with high skill (LEPS=17.4%). The strongest consistent verification was at Lata, Solomon Islands, where below normal rainfall was observed (811mm), with outlook probabilities of 44/43/13 and high skill (LEPS=16.9%).

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

Cook Islands (2NC); Fiji (4C, 3NC, 6I); Kiribati (N/A); Niue (1C); PNG (1C, 4NC, 2I); RMI (2NC); Samoa (2C, 1NC, 1I); Solomon Islands (4C, 2NC, 1I); Tonga (4NC, 1I); Tuvalu (N/A); and Vanuatu (1C, 4NC, 2I).
Overall: 13C, 22NC, 13I.

July to September 2014 Outlooks:

Of the nine countries contributing to the OCOF, four chose the combination of SSTa 1 and 9 over March to May 2014 as the predictors for the July to September 2014 outlook, one chose SSTa 1 and 9 over one month (May), two chose NINO3.4 over March to May 2014, one chose NINO3.4 over April to May 2014; while one chose the March to May 2014 SOI.

SCOPIC outlooks for the coming season mainly favoured near climatology, i.e. similar probabilities in all terciles, with 2% of stations with high probabilities in tercile 1, 33% in tercile 2, 25% of the stations had the highest probabilities for tercile 3, and 38% of the stations had similar probabilities in all terciles. The remainder of the outlooks had equal probabilities for terciles 1 and 3. POAMA outlooks favoured tercile 2 (17 out of 26 stations) for the coming season.

Current climate patterns:

ENSO status and outlook

The equatorial Pacific continues to warm suggesting a developing El Niño pattern. The Bureau has issued an El Niño ALERT, indicating at least a 70% chance of an El Niño developing in 2014. May SST anomaly values were NINO3 +0.7°C (up 0.3°C), NINO3.4 +0.5°C (up 0.2 °C) and NINO4 +0.7°C (up 0.2°C). There has been further warming in the last week. The latest weekly values to 8 June are NINO3 +0.9°C, NINO3.4 +0.6°C, NINO4 +0.9°C.

Most international climate models suggest that further warming is likely through winter. Several of the surveyed models have eased their predictions slightly since the last update but around half continue to indicate that the equatorial Pacific is likely to exceed El Niño thresholds before or during the Sep-Nov period.

Tropical subsurface
Sub-surface waters are more than 4 °C warmer than average in several parts of the central and eastern equatorial Pacific

The latest TAO/TRITON 5-day subsurface anomalies shows water in the sub-surface of the eastern half of the equatorial Pacific is warmer than average in the top 100 m. An area of sub-surface water within the far eastern equatorial Pacific is currently more than 5 °C above average around 50 m depth.

Southern Oscillation Index (SOI)
The SOI currently remains neutral. The May 2014 value was +4.4; a slight fall from +8.8 in April. The current approximate 30-day SOI value to the 11th June is +6.5, while the 90-day value is –0.1.

Trade Winds
At the current time marginal westerly wind anomalies exist west of the Date Line. Elsewhere the equatorial trades are near normal.

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 enhanced ITCZ activity just north of the equator between 165E and 130W (from Kosrae, through southern RMI, northern Gilberts and across to the northern Line Islands). In the South Pacific the SPCZ is enhanced as a narrow band, slightly displaced northeastward west of the Date Line.

MJO
A weak MJO event, currently detected near the equator in the east of the Indian basin has probably contributed to a recent increase in rainfall activity across the Indian Ocean.

A survey of climate models indicates some uncertainty in the expected strength and movement of the MJO over the next two weeks with models indicating two main scenarios. The first is that the MJO, and associated active tropical weather, will maintain strength and continue east toward the Maritime Continent within the next two weeks. The second scenario is that the MJO, and associated weather, will progress east for a few days, and then stall over the eastern Indian Ocean and southeast Asia.

ENSO Update (Issued on 3rd June 2014)

The tropical Pacific Ocean remains on track for El Niño in 2014, with just over half of the climate models surveyed by the Bureau suggesting El Niño will become established by August. An El Niño ALERT remains in place, indicating at least a 70% chance of an El Niño developing in 2014.

Sea surface temperature (SST) anomalies in the tropical Pacific Ocean have increased steadily since February, and are now greater than +0.5 °C in the key NINO regions. However, above-average SSTs also extend into the western tropical Pacific, meaning strong west to east gradients in tropical Pacific SST anomalies are yet to become established. As a result, atmospheric indicators—such as the Southern Oscillation Index and trade winds—have only shown a weak response.

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:

Several countries have had stakeholder interactions over the past month. In particular, the Samoa Meteorological Service has had productive stakeholder communication and liaison including:

- discussions with Samoa Tourism Authority (SAT),
- preparations for Small Island States 5th meeting in September,
- concerns expressed about the water supply for that time of year; they expect 3000-4000 delegates to attend the meeting, and
- whether the current El Nino will be like the 1997 event or a moderate event.

Outlook terminology was discussed, with reference to the terminology guidance document, which Grant Beard will re-send to all participants. In particular it was noted that care needs to be taken with statements when outlook probabilities are close to climatology (when all three probabilities are between 28% and 39%).

In addition, the transition towards the use of 2-month NINO3.4 SST anomalies as the default SCOPIC predictor was once again discussed.

Observed Rainfall and Validation

Country	May	Mar-May 2014	Outlooks Issued for Mar-May 2014 (skill level)	Verification† for Mar-May 2014 outlooks
Cook Islands	Normal	Below Normal	Below Normal to Normal (low to moderate skill)	Near Consistent
Fiji	Normal to Above Normal	Below Normal to Normal Above Normal [Suva]	Normal to Above Normal (very low to good skill)	Inconsistent to Consistent
Kiribati	N/A	N/A	N/A	N/A
Niue	Above Normal	Above Normal	Above Normal (low skill)	Consistent
Papua New Guinea	Below Normal Normal [Misima]	Below Normal to Normal Above Normal [Misima]	Below Normal to Above Normal (very low to high skill)	Inconsistent to Near Consistent Consistent [Misima]
RMI	Below Normal to Normal	Above Normal	Normal to Above Normal (low skill)	Near Consistent
Samoa	Normal to Above Normal	Normal to Above Normal	Below Normal to Normal (very low to low skill)	Near Consistent to Consistent Inconsistent [Faleolo]
Solomon Islands	Below Normal to Normal	Below Normal to Above Normal	Below Normal to Above Normal (very low to high skill)	Near Consistent to Consistent
Tonga	Normal to Above Normal	Normal to Above Normal	Below Normal to Above Normal (low skill)	Inconsistent to Near Consistent
Tuvalu	N/A	N/A	N/A	N/A
Vanuatu	Below Normal to Normal Above Normal [Port Vila]	Below Normal to Normal Above Normal [Lamap]	Normal to Above Normal (very low to high skill)	Inconsistent to Near Consistent Consistent [Lamap]

† 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).