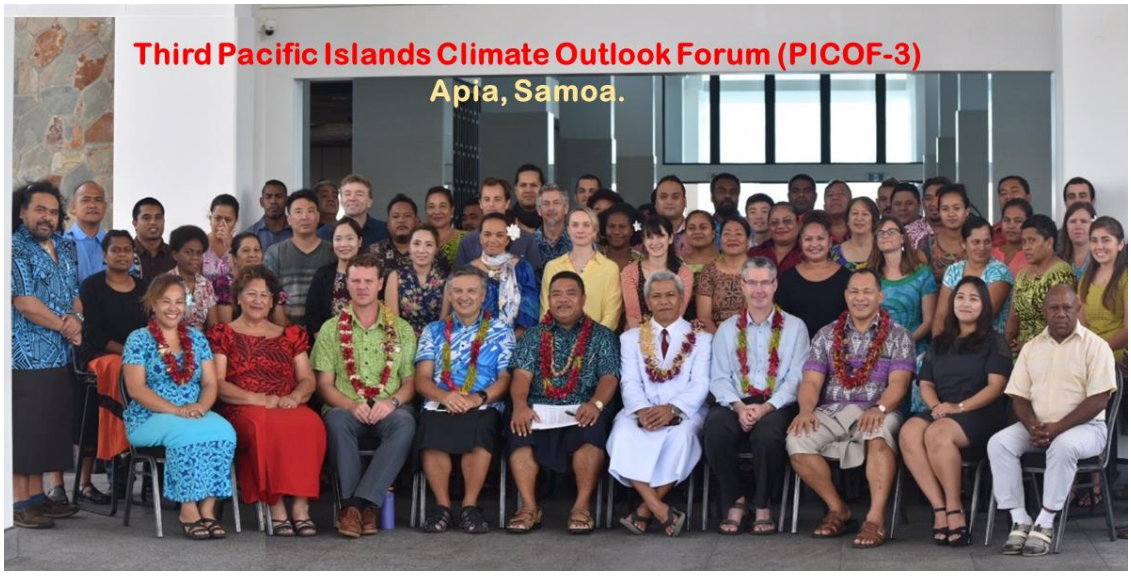
THIRD PACIFIC ISLANDS CLIMATE OUTLOOK FORUM (PICOF-3)

27-29 September 2017

Taumeasina Hotel, Apia, Samoa



Background

Objectives:

The specific objectives of Climate Technical Meeting include the following:

a) To compare the various seasonal climate forecast guidance for the Pacific region and discuss how these are produced in terms of accuracy, utility, weaknesses and strengths of the regionally produced guidance;
b) To compare and refine national level consensus-based climate outlooks for the upcoming season (October–November–December 2017);
c) To discuss how NMHSs are currently accessing and assessing the available guidance, making them nationally-relevant and disseminating them to users;
d) To discuss and develop a draft Regional Statement on the 2017/18 Climate and Tropical Cyclone Outlook for the Pacific Islands and the Potential Impacts on Human Health.

The specific objectives of PICOF-3 include the following:

a) To build collaboration and partnerships among NMHSs and the Health sector;
b) To identify the needs of the Health sector for climate services;
c) To discuss opportunities for integrating climate information for health services.
d) To discuss how representatives from the Health sector are using or may use the guidance (or some derivative from it);
e) To continue capacity building/human resource development activities for the Pacific region, particularly in seasonal prediction;
f) To provide a platform for the stakeholders through the PICOF to share and exchange experiences and knowledge on wet/tropical cyclone season and its prediction.

Expected Outcomes and Outputs:

a) The Forum is expected to improve the understanding of how seasonal climate outlooks are produced, how they are and can be made regionally and nationally relevant, and how they can be tailored to the needs of users from the Health community;
b) National climate and health plans for ongoing engagement and product development will be produced;
c) The PICOF-3 Statement on "The 2017/18 Climate Outlook for the Pacific Islands and the Potential Impacts on Human Health" will be produced; and

A Regional Consensus Forecast (rainfall and SST for Oct 2017-Mar 2018) for SW Pacific Islands and North Pacific Islands will be produced.

Day 1: 27 September 2017

Session 1: Review of 2016-2017 Climate

Key Discussion Points:

- Review of 2016-2017 Regional Statement

- Weak La Nina to normal conditions and 8 to 9 cyclones forecasted for SW Pacific
- Observed subsurface and SSTs for November 2016-January 2017 were below normal
- SOI was neutral or below +0.8
- NOAA did declare a weak La Nina due to different threshold
- Rainfall and drought late 2016 (Kiribati, Tuvalu and northern Cook Islands)
- BoM ENSO outlooks in 2017 forecasted El Nino but sub-surface temperatures did not support El Nino
- SSTs Jan-Aug 2017 were above normal warmth in Eastern and Central Pacific
- TRMM Rainfall April-August 2017: SPCZ displaced to Western Pacific (Solomon Islands to Samoa) and displaced north resulting in droughts in Vanuatu and Fiji.
- ENSO wrap-up 26 Sept 2017: stronger than normal trade winds and cooler SSTs and SOI below +0.8
- ENSO still in neutral phase and expected to continue

Comments:

UNDP: Asked to explain the ENSO thresholds (NOAA, BoM and NIWA) and stated that this creates uncertainty in the seasonal forecasting with the regional partners having different El Nino thresholds.
NMHSs: state this different information and inconsistency in El Nino conditions creates confusion for Met services and sectors
BoM: important to listen to the needs of stakeholders and communicate clear messages about ENSO.
Palau: when people hear El Nino they automatically think drought which is not always the case
SPC Health Division: working in FSM in 2013 and used information for Pacific Games. Important to communicate the impacts of the seasonal forecasts
BoM: reminding stakeholders that they are the experts and to only use forecasts as guidance

Recommendations:

- NMHSs suggest aligning the El Nino forecasts.
- NIWA suggests declaring El Nino or La Nina events on a spectrum scale (weak, strong or neutral)

Session 2: Verification of previous seasonal climate and TC Outlooks

Key Discussion Points:

Seasonal Rainfall Outlooks verification

SCOPIC and POAMA (BoM):

- Demonstrated variability and POAMA is being replaced and SCOPIC will be made available. SCOPIC has good skill scores in El Nino and La Nina events
- IFRC asked clarification with models when it comes to neutral period- In some countries skill score is not too good.
- Moderate and variability in skill score during different events- statistical and dynamical model sometimes does not perform well. Skill score did well in 2015-16 El Nino and performs better during the wet season

ICU (METPI): method used to test the skill score does not take into account the range and other variables.

APCC (MME and PICASO):

- HSS and LEPS score – models used to downscale
- PICASO and MME does well will in developing and mature phases

ARPEGE (MeteoFrance)

- Climate models show anomaly correlation with good skill in the Tropics

- MeteoFrance was hesitant to release skill score maps, but decided to make this open source
- Climate forecast models are available online

PEAC (NOAA): provides 3-month outlooks and have verification and performed well in El Nino conditions.

Tropical Cyclones (TC) Outlook

- Method used ocean atmosphere conditions and large scale ocean atmosphere condition over TC season from dynamical models (ENSO)
- Selected analog seasons (seasons presenting similar characteristics in terms of conditions leading up to TC season and forecast conditions
- Composite TC density anomalies, areas expected more / less TCs than climatology
- 2016-2017 least active since 2011-2012, there were post season cyclones, and recorded two cyclones (Donna and Ella) post season. TC Donna was the strongest post season cyclone ever recorded in that month.
- El Nino Costero" developed early in 2017, it worked to amplify this VP dipole, with major rising motion/upper air divergence occurring near coastal South America and nearly-as-anomalous ascent forced to the west, across the central Pacific. This allowed the early season inactivity to generally persist.
- Zonal wind anomalies (enhanced wind shear) in the upper atmosphere and this was not conducive for tropical cyclone genesis or growth

Comments:

PICS Panel Chair: clarified that the Regional Climate Centre will be responsible for verification of model skill scores. Training has been done on the tools and evaluation methods

BoM: LEPS method was used and has been used at trainings to verify the test and other centres have used the LEPS method as the testing methods. Incoming RCC can look at LEPS score and other score on the performance of all the forecast product. SST at the beginning of the season was cooler than normal and there complete dissipation of La Nina signals in May and this could have been the reason. The regional climate drivers are changing.

NIWA: AgataSEVERE weather statement- information is going out to the region. The outlook enables interaction with partners and chance to discuss resource allocation. There is difficulty in communicating the messages to the community. Forecasting fewer number of events but more intense.

Samoa: Statements provide guidance and support the continuity of the work. There was slow onset of the wet season and shift in the was there a shift in the wet season

NIWA: ELNINO COSTERO was not forecasted and affected the region by dampening the conditions. Rainfall was occurring over land and had more TC like conditions occurring over land. There is a need for revisions to TC outlooks throughout the season.

Session 3: Seasonal Forecast Guidance for 2017-2018

Key Discussion Points:

ENSO Outlook:

- Cooler SSTs (Nino 3.4) neutral
- Sub-surface temperatures: cooling
- Nino 3.4: neutral to weak La Nina forecast
- SOI is at +4.1 (neutral) around La Nina threshold

SCOPIC Outlook Oct-Dec 2017:

- Cooling in recent last two months, no SST data (using July-August)
- September SST will be negative along Nino 3.4 then above normal rainfall SW of SPCZ and equatorial pacific drier
- POAMA monthly: above normal rainfall along SPCZ and ITCZ and drier eastern and central pacific

APCC Outlook Oct-Dec 2017:

- Temperature: above normal in Western Pacific
- Rainfall: above normal rainfall southwest and Northwest Pacific and below normal in Central Pacific
- Jan-March 2018: continued above normal temperatures and above normal rainfall Southwest and Northwest Pacific and below normal in Central pacific

METEO France and NIWA Outlook Oct-Dec 2017:

- Rainfall: drier Central Pacific and wetter in Western and Southwest pacific

NOAA Outlook Oct-Dec 2017:

- wetter in West pacific and drier in Central Pacific and normal for Hawaii
- Forecast for increase sea levels in next three months for RMI and Palau

Comments:

SPC: Requested July 2018 forecast for Yap and December 2018 forecast for Samoa
USP: Need the increase or decrease in rainfall and the potential impacts of the forecasts for agriculture and stressed the importance of impact forecasts
APCC: Tercile forecasts are important for sectoral needs
NIWA: Forecasts are updated every month for the next three months

Session 4: Tropical Cyclone Guidance for 2017-2018

Key Discussion Points:

The official TC Outlook will be released until 11 October 2017

TC Outlook Methodology:

- Southwest Pacific TC season: November to April
- Look back at ocean-atmosphere conditions leading to September
- Expected large-scale ocean-atmosphere condition over the TC season from dynamical models (ENSO)
- Selecting 'analog' seasons: *i.e.* seasons presenting similar characteristics in terms of conditions leading up to TC season and forecast conditions
- 'Composite' TC density anomalies: areas expected more / less TCs than climatology (SpearTC dataset)
- Rapid intensification of SSTs in the Western Pacific. Probabilities derived from models describe on average a slight weak La Nina conditions from Oct-Dec 2017. Chance for El Nino are very small.

2017-2018 SW Pacific TC Outlook:

- Evidence so far supports mild La Niña conditions developing over the course of the 2017 – 2018 South Pacific TC season
- Analog composite anomalies of TC density show 'typical' La Niña-like signal: enhanced TC frequency in the western Pacific Ocean, decreased in the central and eastern Pacific Ocean
- Preliminary data gathered for the TC Outlook suggest near average number of cyclones and no significant decrease in frequency of cyclones for SW Pacific

Comments:

PICS Panel Chair:

- Appreciate feedback on usefulness of these technical information. Encourage NMHSs to seek assistance if they still cannot understand the technical issues and models discussed
- Different datasets used to establish tracks, climatology have implications on products and there are discrepancies in some datasets. It is not easy to establish significant trends in probabilistic forecasts.
- Statement needs to differentiate between North and South West Pacific.
- Guidance at the national level will be taken from the regional level. Regional Statements provide information to ensure useful guidance.

Session 5: Comparison of Forecast Guidance (Statistical and Dynamical)

Key Discussion Points:

Guidance used for Oct-Dec 2017 National forecasts

a. **Group discussion and presentations on ideas for better use of all guidance to enhance national forecasts**
b. **Guidance used for Oct-Dec 2017 national forecasts**
c. **Group discussion and presentations on ideas for better use of all guidance to enhance national forecasts**

Kiribati:

- BoM (ENSO update) SCOPIC, ICU rainfall forecasts, APCC forecasts (CLIKP), COSPPac monthly climate bulletin

FSM/Palau/RMI:

- PEAC quarterly newsletter (current conditions, state of ENSO, tropical cyclone, SSTs and sea level and individual rainfall/temperatures)
- NOAA NCEP CPC
- SCOPIC is first real tool North Pacific can use to produce their own forecasts

Issues:

- Using multiple sources of guidance can be difficult when formulating own forecasts
- Mechanism to do this can be helpful
- SCOPIC is used because it is easy to use, but has its limitations
- Need to issue outlooks every month

How can other guidance and information can improve forecasts:

- OCOF calls (adding PICASO)
- PICASO: good for downscaling for small islands and is station based and producing the outlook statement
- WMO/ECMWF/METPI
- Local/Traditional Knowledge for forecasts
- Training on other models
- Use of MMEs and PI-RCC is important for providing coordination of products (NIWA, BoM, NOAA, APCC), verification of model and determining the best model for each country
- Use of MME consensus outlook maps

Melanesia (Fiji, PNG, Solomon Islands, Vanuatu):

- Currently use SCOPIC, BoM and ICU

- Better lead time, high skill resolution, issuing consensus based forecast, better stakeholder engagement and communication of forecasts

Polynesia (Cook Islands, Niue, Samoa, Tokelau,Tonga, Tuvalu):

- SCOPIC, ICU, ENSO Update, use mobile app for issuing outlook,
- Way forward: including PICASO in OCOF
- TK project is useful
- Engagement with stakeholders
- Challenges for NMHSs; short staffed
- Need more training for NMHSs

Actions:

- PICS Panel needs to determine how to improve training and best utilize the available information

- no significant decrease in frequency of cyclones for SW Pacific

Comments:

USP: involvement of private forecast providers
NIWA: Met services are seen as primary sources of information in the Pacific
Singapore Met: maybe including private sector in OCOFs

Niue: requested if a model comparative analysis could be performed regional partners to determine which model is best for which country.

Session 6: Sub-Seasonal Variability and Predictability

Key Discussion Points:

- Brief review of the Madden-Julian-Oscillation (MJO)
- Case study 1: Modulation of Fiji daily rainfall by the MJO
- Case study 2: Modulation of S. Pac. Tropical Cyclone genesis by the MJO
- Potential for predictability in dynamical forecast systems

Potential for predictability in dynamical models forecast systems

- ECMWF produces accurate large-scale MJO forecasts
- ACCESS-S1 (BoM, soon to be operational)
- S2S (subseasonal to seasonal) WMO-led project (comparison of dynamical models' forecasts for subseasonal variability)
- Potential to derive products tailored to the Pacific (rainfall, incl. extremes, TC risk

Comments:

Samoa: asked how you get the probability used on the bar graph and if NIWA could assist Samoa in what they have done in other countries.

NIWA: the analysis done for specific stations and NIWA can work with Samoa on this.

Session 7: Regional Climate Centre (RCC)

Key Discussion Points:

Formulation of Implementation Plan

- A draft IP was fleshed out, using the Southeast Asian RCC Network IP as a template and incorporating the skeleton IP
- The draft IP was distributed to planning meeting attendees and others for review by their organisations
- A final IP was produced with the following node/consortia structure:

Process for Establishment

- A letter was sent from the WMO PR of NZ (on behalf of the RCC implementation team) to PRs of countries of all the node/consortia institutions requesting institutional commitment for the 2-year demonstration phase
- Responses have been received and commitment has been pledged by all institutions
- PMC endorsement of establishment of the demonstration phase was requested (and granted) at PMC-4, August 2017
- The chair of the WMO RA-V WG CLS has submitted a request to the President of WMO RA-V for the 2-year demonstration period to begin as soon as possible

Structure of the RCC webpages

- Main idea is that the RCC is a "One Stop Shop" for Climate Services Information for Pacific Islands Region
- Design is based on the RCC mandatory and highly recommended functions
- Includes other important links
- Initial work done by University of Hawaii
- Pages transferred to SPREP and reformatted in line with new PMC page

RCC products and services

- Long-Range Forecasting
- Climate Monitoring
- Operational Data Services
- Training
- Climate Projections

Request for feedback

- The PI-RCC is a service for PI NMHSs
- Have mapped existing products and services to the four "mandatory" and one "highly recommended" functions of an RCC (as determined by WMO)
- Once we get the final go-ahead from the President of RA-V, we will start developing the webpages
- Our starting point will be linking to other sites with the existing products and services
- Requested for participants to review to Implementation Plan annex and provide comments
- Over the next couple of years we will be frequently asking for your suggestions on how we can make changes to the PI-RCC so that it can best serve your needs.

Session 8: RCOFs around the World and Potential Future Elements of the PICOF

Key Discussion Points:

Overview, Structure and Agenda

Outcomes

- Identification of SWOT analysis for RCOFs
- Strategies for improved RCOF processes
- An Action plan for the RCOFs' evolution
- Identification of the roles of RCCs in coordinating RCOF sessions
- Strategies for effective communication of RCOF products at the national level, including NCOFs.
- Final RCOF Review document

Lessons Learned

- RCOFs are user needs based and should be flexible in order to meet needs of region (need for consensus forecast varies)
- Need for consistency of regional products/verification
- Importance of communication of RCOF products at the national level (NCOFs and NFCSs)
- RCOFs are useful for climate experts, NMHSs and national sectors to build partnerships/knowledge/capacity and share experiences
- Demonstrating value of forecasts from user perspective
- RCOFs need to go beyond seasonal outlooks (priority climate informational needs)
- Access to data-models more training and sustainable funding

SWOT Analysis

Future Elements of PICOF

1.) Climate Monitoring-(PCCC)
2.) Verification (RCC, PICASO, CLIKP)
3.) Climate Change (PCCC)
4.) Sub-Seasonal Forecasting (30-60 day forecasts)
5.) Extensions to other seasons
6.) Annual to multi-decadal
7.) Remote Climate Anomalies
8.) Impact based forecast (including level of vulnerability to population/sectors)
9.) Demonstrate Value
10.) Training
11.) Consensus based outlooks
12.) Other sectors (agriculture, tourism, fisheries, energy, ect.)
13.) PI-RCC and PCCC (training/research, capacity building, coordination with NMHS/stakeholders/partners/user feedback, information and data access ect.)

RA V Enhancements

- Conducting regular and special event services assessments.
- Extending the time frames under consideration.
- Expanding capacity-building activities for the NMHSs and other practitioners.

PICOF Enhancements

- Adding climate parameters to the PICOF portfolio
- Continue to add invited sectors to the PICOF.
- Enhancing sectoral applications-related information to the PICOF portfolio.
- Adding a session on communication and outreach to the PICOF.
- Better linkages between the monthly OCOFs and the annual PICOF.

ASEANCOF Enhancements

- Tailoring and transformation of information to make it more useful.
- More regular and comprehensive delivery of operational products and services
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Session 9: Draft the NMS Component of PICOF Statement

- Climate sector participants convened to draft the NMS component of the PICOF-3 Statement

Day 2: 28 September 2017

Session 1: The Climate of the Pacific Region Over the Last Few Years

Key Discussion Points:

Overview of ENSO: El Nino and La Nina

- El Nino: More cyclones
- La Nina; Less cyclones

Comments:

Samoa: the 2015 El Nino affected Samoa by early 2016. ENSO is not just three states and impact for different regions vary. There is a need for regional and national collaboration as well as using impact-based forecasting. The Samoa Climate Glossary in Samoa.
Tuvalu: no specific word for ENSO but better to tell people the impacts
Vanuatu: climate video on ENSO in Vanuatu language.

Session 2: Health Impact Across the Region Over the Last Few Years

Key Discussion Points:

World Health Organization

- Increasing evidence of climate change impact on health
- Climate Change and non-communicable diseases (NCDs) are the two most important challenges to human health and security in the Pacific
- Need for strong and resilient health systems
- Vulnerable populations are affected first (elderly, women and children)
- Climate change threatens health (250,000 deaths per year)
- Pollution, food and water shortage, disease outbreaks
- Food safety, food security, malnutrition and foodborne diseases
- Malaria in Solomon Islands and increased cases of dengue in Samoa due to climate change
- Respiratory diseases and illness due to pollution
- Mental Health: anxiety, depression, PTSD due to environmental change
- Rainfall patterns, increased temperatures, SSTs and sea levels and salinity can affect health
- WHO Report: Human Health and Climate Change in PICs
- Climate Resilient Health System

Conclusions:

- Pacific island countries (PICs) are extremely vulnerable to the impacts of climate change
- PICs have "triple burden of diseases" due to health impacts of climate variability and climate change
- Healthcare facilities are threatened by extreme weather events and sea-level rise
- Climate-resilient health systems can be built in PICs, if the opportunities are well taken

Comments:

SPC:

Weak health systems in the Pacific and double burden on NCDs and CDs. Need to strengthen support mechanisms for dealing with climate-related health issues.

Pacific Public Health Surveillance Network (1996-SPC and WHO) (detection of outbreaks, alert and communication, verification and identification, outbreak investigation and response and infection control)

Challenges:
Sharing of information, monitoring, vector surveys and mapping

International Federation of the Red Cross (IFRC)

- **Water quality and quantity:** Water insecurity, is a major concern in the context of climate change in the Pacific. Sea level rise leading to salinization of fresh water.
- **Food security**: ***undernutrition*** - decrease in crop yields and ***overnutrition*** – consumption of more energy dense food.
- **Communicable diseases: spreading of vector-borne diseases to new places and increases in number of cases where it is endemic**
- **Extreme weather events:** An increase in both frequency and intensity of extreme weather events: more prolonged droughts, and floods; and more intense storms.

Red Cross Activities – Resilience and Institutional Preparedness

- **Climate Smart Integrated programme**: Fiji, Tuvalu and Kiribati and potentially Solomon Island
- **Community Based Surveillance** –Vanuatu
- **Community Health Programme**: FSM, and Fiji
- **Contingency plan and Emergency Response Team**

Comments:

New Caledonia: issue of vector diseases
Samoa: NMHSs need Health Sector to have continued communication with them on climate change and need to do more work on Climate-Health.
WHO: If you have strong health system then this will help to address diseases in future
USP: Report on how climate change and pollution from cars cab affect health of people in Fiji
Research on nutrition content on food: increased drought raises cyanide level in Casava. Need to integrate climate and health data.
Vanuatu: how do we get SPC, IFRC, WHO to provide integrated implementation of data at country level.

Session 3: Does Climate Impact Human Health?

Key Discussion Points:

MalaClim-Solomon Islands Met Service

Background:

The inception of the case study was initiated in 2004 under the Pacific Islands Climate Prediction Project funded by Australian Government and implemented by Bureau of Meteorology Australia (BOM).

Initial collaboration for data with Health sector/Malaria for the case study was a great challenge.

However; with more understanding between SIMS and National vector borne(NVBDCP) for national benefit in controlling Malaria, the partnership became stronger with sharing of data.

Useful Findings:

- Very wet October – December periods tend to result in lower malaria transmission in the subsequent January - June.
- Rainfall thresholds can be determined to allow categorical forecasting of (high, medium, low) malaria transmission.
- Rainfall below 350mm – high transmission
- Rainfall above 550mm – low transmission
- This information will be used to inform a climate-based malaria early warning system for the Solomon Islands.
- Rainfall is just one of many factors **which affect malaria transmission. This analysis does not quantify the other factors.**

Early Warning Procedures:

- June–July: Begin monitoring ENSO phase forecasts.
- August: Oct–Dec seasonal rainfall forecast using SCOPIC and ENSO forecast.
- October–December: MalaClim tracking tool monitors the progress of the forecast by updating the MalaClim Statistical tool. It then produces the likely malaria risk (forecast) based on total rainfall.
- January: Final malaria risk forecast for Jan – Jun period.
- January–June: Track progress of malaria season using collected number of cases (from the Ministry of Health).

Samoa Met Service-Climate Early Warning System and Health

- Provide the best tailored climate information and warnings at the right time for all sectors and communities, to empower all sectors and communities increase resilience to climate variability and long term climate change.
- Vehicle for CC mainstreaming into sectors to achieve sustainable development
- Diarrheal cases vs rainfall. Higher rainfall and more cases
- Higher typhoid cases follow higher rainfall periods
- Higher dengue cases in periods of lower rainfall
- Strengthen collaboration and partnership between Health Sector and Met Service (MOU and work attachments) and improve current and identity new policies to create resilience in Samoa.

Comments:

New Caledonia: have malaria project and also looks and rainfall and temperature
NOAA: also important to know what different types of mosquitos carry malaria
BoM: before funding project important to do a literature review
SPC: supports the proposal and need to improve entomological surveys

Samoa H-CLEWS Proposal-Climate Early Warning System and Health

- Develop a prototype Early Warning System (EWS) for climate and health in Samoa and American Samoa. If successful, the prototype can be replicated in other Pacific Islands.
- An H-CLEWS would be a system for generating and disseminating easy-to-understand information about the risk of above-normal or below-normal health impacts (e.g. due to malaria, dengue, diarrhoea, typhoid, etc) based on climate data and seasonal forecasts.
- Primary focus of the study is to understand the vector (mosquito) entomological relationship with seasonal climate variations;
- Secondary focus is to determine whether this relationship varies across the Pacific Region (or even within countries);

- From this fundamental basis of knowledge, it is possible to infer health impact risk (rather than try to model it directly);
- Key is to link vector surveillance data (not health data) with climate data:

Session 4: Evaluation of Current Relationship Between NMHSs and Health Sector

Key Discussion Points:

Comments:

Day 3: 29 September 2017

Session 5: The 2017-2018 Regional Climate Outlook and Tropical Cyclone Guidance

Key Discussion Points:

- SSTs in Eastern Tropical Pacific cooling and approaching La Nina levels
- Models indicate 50% probability of La Nina developing in first quarter of 2018 and emergence of El Nino can be ruled out

Rainfall outlooks

POAMA: Above normal for SW Pacific and NW Pacific and drier than normal in Central and Eastern pacific

CLIKP: Above normal for SW and NW Pacific and drier in Central and Eastern Pacific

ICU: Above normal for SW and NW Pacific and drier Central and Eastern pacific

PEAC: Normal to above normal rainfall for next three mon in North Pacific

Tropical Cyclone Outlook:
ECMWF: Increased in SW Pacific and decreased in Central and Eastern Pacific
MeteoFrance: increased in SW Pacific and Eastern and Central Pacific

Analog composite anomalies and dynamical model outlooks for TC density show typical La Nina-like signal; enhanced TC frequency in SW Pacific and decreased in central and Eastern Pacific:

Comments:

SPC: Are TC outlooks always accurate?

NIWA: Last season was predicted to be normal to above normal and it was below normal

Session 6: Current Regional and Global Health Warnings and Forecasts

Key Discussion Points:

- How can Ministries and Departments of Health utilize ENSO, Regional Climate and Tropical Cyclone Forecasts in order to be better prepared to respond to resulting public health emergencies:

Comments:
NIWA: Need to communicate the direct impact of health due to rainfall and temperature extremes

WHO: Both Health and Met sectors are using probability for disease outbreaks and climate outlooks, but probabilities are much more conservative in health sector

NIWA: Key benefit of climate information is that Met sector continually updates daily observations and that makes it more specific. Continually monitor forecasts with current observations

NOAA: Need to monitor how more less rainfall affects patients and health conditions

Tuvalu: Drought leads to increased diarrhea because Tuvalu relies on rainfall unlike Samoa and Fiji that have other water catchments

Kiribati:

- Sea level rise affects health
- 2013 drought resulted in a virus outbreak (100 cases and 6 deaths)
- 2015-2016 flooding led to relocating patients to other locations.
- Need Met service to provide Health Sector with sea level rise information so health sector can prepare

WHO:

- Need better coordination between Met and Health Sector
- Countries are more regularly reporting their outbreaks to Event Management System
- Top 15 Diagnoses: influenza, SARS and dengue in Pacific.
- International Health Regulations: 194 member countries of WHO to better respond to disease outbreaks and follow Core Capacity Requirements
- Pacific still not at 80% core public health system functions: How do we overcome these gaps?
- Defining health security: reduced vulnerability of populations to acute threats to health through collective international public health action

Session 7: Country-Level Climate Outlooks

Key Discussion Points:

Palau:
SCOPIC: strong skill during wet season and moderate skill during dry season
APCC CLIKP: OND 2017: 50-60 percent probability of above normal rainfall
PICASO: OND 2017 above normal rainfall
PEAC: SST above normal and TC outlooks below average, rainfall near to above normal

FSM: OND 2017
SCOPIC: above normal rainfall
POAMA: above normal rainfall
CLIKP: above normal temperatures and above normal rainfall
PEAC: near normal rainfall, higher sea levels, below average TC through rest of 2017

RMI:
PEAC: OND 2017: Average rainfall

Tuvalu: OND 2017
SCOPIC: below normal rainfall
PICASO: below normal rainfall

- SCOPIC not providing climatology forecast but PICASO is doing much better for seasonal climate forecasts.

- Tuvalu Climate Bulletin: email, phone, radio, social media, notice board
- Include CLIKP and PICASO
- Include health sector in communication of climate bulletin
- Monitor and verification of forecasts

Cook Islands:
SCOPIC and POAMA:
OND 2017: above normal rainfall south cook islands and below normal for northern cook islands

Fiji: OND 2017:
POAMA: above normal
ECMWF: normal
JAMSTEC: above normal
NCEP: normal
CLIKP: above normal
PICASO: normal
ICU: above normal to normal

Have stakeholders meeting to brief sectors on seasonal outlooks and have climate bulletin

Kiribati:OND 2017
SCOPIC: Normal to below normal rainfall
PICASO: normal rainfall

Data collection-data analysis: OCOF: 3 month seasonal outlook to stakeholders. Outlook prepared end of month and issued 1st or 2nd week of next month and emailed and presented at NCOFs

Nauru: OND 2017
Rainfall:
POAMA: normal to below normal rainfall
CLIKP: below normal rainfall
Outlook: below normal to normal rainfall
Email, radio, SMS

Niue: OND 2017
SCOPIC: above normal
POAMA: above normal
Modes of delivery: email, social media radio and television

Use Climate information for mosquito spraying and disaster preparedness
Climate information has been used to develop a draft drought preparedness plan
Health sector wants to strengthen partnership with met for better planning

PNG: OND 2017
SCOPIC: normal rainfall
POAMA: above normal rainfall
PICASO: normal rainfall

Monthly Met service meeting with NDMO for seasonal and cyclone outlook and PNG NCOFs

Samoa:OND 2017
PICASO: above normal rainfall and above average temperatures
SCOPIC: normal rainfall
POAMA: normal rainfall

CLIKP: Rainfall: normal to above normal and temperatures: above normal

Solomon Islands:
SCOPIC, POAMA, PICASO: OND 2017: normal to above normal rainfall
Email and printouts

Tonga:
OND 2017: SCOPIC, POAMA, PICASO: normal rainfall
Email, website, TV, radio, press release, telephone and in person

Vanuatu: OND 2017 Rainfall:
SCOPIC: normal
POAMA: below normal

Session 8 : Country-Level Discussion

Key Discussion Points:

- Reviewed national climate and TC outlook and ENSO guidance
- Considered possible impacts over next six months and think about key messages
- Designed a tailored outlook for the health sector

Session 9: Using and Communicating Climate Information

Key Discussion Points:

Comments:

Session 10: The ASEANCOF Perspective

Key Discussion Points:

Reflections form ASEANCOF:

- Valuable to bring together GPCs with regional seasonal forecasters – the information producers, forecasters and end users.
- Can help to develop best practice.
- There is a lot of good information available from the GPCs. The WMO-LC is a very good resource.
- Forecast skill matters
- "Help! What to do with all this information?" →Training.
- Forum process can give greater confidence to forecasts at national level.
- If possible, needs a consistency of people to build a community.
- How do we engage better with end users?
- Can the ASEANCOF group adopt towards using more similar approaches/techniques in coming up with preliminary forecast?

- For the same season, different parts of the region have different considerations (monsoons vs TCs vs local circulations) → different techniques.
- Can we be more objective in our forecast?
- Currently, gaps in our understanding allows for elements of subjectivity/interpretation to creep in

Reflections from PICOF-3:

Similarities:

- National Meteorological Services are 'receptacles of wisdom'

- Language barrier with end users?
- Training is very important
- How to move towards more objective outlooks?
- Climate change is part of the discussion already
- Both looking forward to the new Regional Climate Centres

Differences:

- No GPC in ASEANCOF
- Outlook is more important in ASEANCOF

Lessons:

- We can learn from each other!
- Group discussions are useful
- Benefits of more regular/monthly discussions

Session 11: The PICOF-3 Survey

Key Discussion Points:

- The PICOF-3 Survey was distributed to participants to collect comments on Third Pacific Islands Climate Outlook Forum.
- The surveys were collected and will be analysed and then a report will be produced to share the results with all participants.

Session 12: The PICOF-3 Statement

Key Discussion Points:

- The PICOF-3 Regional Statement will be finalised and the will be disseminated in mid-October once the official Tropical Cyclone Outlooks are released by NIWA, BoM, and NOAA.

Day 1 – Wednesday 27 September 2017 – Pre-PICOF Climate Technical Meeting

Time	Agenda Item	Responsible	Guidance
8:30-9:00am	Registration	SPREP	
9:00am – 9:30am	i. Welcome ii. Opening Prayer iii. Setting the Scene	i. Samoa Met Service ii. SPREP iii. PICS Chair PICS Panel	Objectives for the pre-PICOF

9:30am – 10:00am	Session 1 – Review of 2016/17 climate	BoM, NOAA, SPREP	Rainfall, OLR, SSTs, ENSO.
10:00am – 10:30am	Photo session / Morning Tea		
10:30am – 11:00am	Session 2 – Verification of previous seasonal climate and TC outlooks	BoM, NIWA, NOAA, APCC, MeteoFrance, SPREP	How well did the forecasts turn out?
11:00am – 11:30pm	Session 3 – Seasonal forecast guidance for 2017/18	NIWA, NOAA, BoM, MeteoFrance, APCC, SPREP	ENSO outlook, climate model predictions for next six months
11:30am – 12:00pm	Session 4 – Tropical Cyclone guidance for 2017/18	NIWA, NOAA, BoM, SPREP	Current guidance and indication of when the TC outlook will be released
12:00pm-1:00pm	Lunch		
1:00pm – 2:30pm	Session 5 – Comparison of forecast guidance (statistical and dynamical) a. Guidance used for Oct-Dec 2017 national forecasts b. Group discussion and presentations on ideas for better use of all guidance to enhance national forecasts	All (group discussions)	Groups based on location of country (Micronesia, Melanesia and Polynesia). Each group has at least one country that currently use multiple sources of guidance.
2:30pm – 3:00 pm	Session 6 – Sub-seasonal variability and predictability	NIWA	Latest research on sub-seasonal forecasts.
3:00pm – 3:30pm	Afternoon tea		
3:30pm – 4:00 pm	Session 7 – Regional Climate Centre (RCC) a. Structure of RCC and webpage b. RCC products and services c. Request for feedback	PICS Panel Chair/SPREP	First look at the PI-RCC
4:00pm – 4:30pm	Session 8 – RCOFs around the world, and potential future elements of the PICOF	SPREP, NOAA	RCOF workshop summary and content for RA-V WG white paper. 15 mins each.
4:30pm – 5:00pm	Session 9 – Draft the NMS component of PICOF Statement	All (BoM lead)	Just the climate section

Day 2 - Thursday 28 September 2017 – Pacific Islands Climate Outlook Forum

Theme for the day – "Looking back and learning"

Time	Agenda Item	Responsible	Guidance
8:30am – 9:00am	Registration	SPREP	
9:00am – 10:00am	i. Welcome ii. Opening Prayer iii. Official Opening Remarks: iv. SPREP remarks v. UNDP remarks vi. WHO remarks vii. Setting the Scene	i. Samoa Met/MNRE (MC) ii. Samoa Met/MNRE iii. Hon Fiame Mataafa, Deputy Prime Minister and Minister of Environment, Samoa iv. Mr. Roger Conforth, Deputy Director General, SPREP v. Mr. Noud Leenders, UNDP vi. Mr. Rasul Baghirov, WHO Representative for Samoa, American Samoa, Cook Islands, Niue and Tokelau. vii. Dr. Andrew Tait, Chair PICS Panel	Scene setting: Include **objectives of PICOF** and pose the question to the attendees – what do they expect to gain by attending this PICOF (to be reflected on at the close)?
10:00am – 10:30am	Photo session / Morning Tea		
10:30am – 11:15am	**Session 1 – The climate of the Pacific Region over the last few years** a. Presentation (30 mins) b. Q & A	BoM	General-level presentation, based on material presented on the technical day
11:15am – 12:30pm	**Session 2 – Health impacts across the region over the last few years** a. Presentations (45 mins) b. Round-the-room country experiences (15 mins) c. Q & A	WHO, IFRC, SPC	What have been the major health issues across the region and in countries over the last 4-5 years
12:30pm – 1:30pm	Lunch		
1:30pm – 2:30pm	**Session 3 – Does climate impact human health?** a. Presentations (45 mins) b. Q & A	WHO (ENSO effects on diarrhea), Solomon Islands (MalaClim), Samoa (H-CLEWS proposal)	How much do we know (or suspect) about the linkages between climate and health?
2:30pm – 3:30pm	**Session 4 – Evaluation of current relationships between NMHSs and Health Sector** a. What information is currently shared and how is it used (and are there specific projects in place or planned)? b. What can be done better to strengthen the relationship – from both the Met and Health sides	All (group discussions) SPREP/WHO/IFRC to facilitate	Facilitated group discussions (Micronesia, Melanesia and Polynesia)
3:30pm –	Afternoon tea		

4:00pm			
4:00pm – 4:30pm	**Session 4 continued** c. Report back presentations (10 mins each)	All	
4:30pm – 4:45pm	Summary of the day Close	PICS Panel Chair	
7:30pm – 9:30pm	PICS Panel Meeting	NIWA, BoM, NOAA, IFRC, SPREP, SPC, Niue, Palau,	MeteoFrance, PNG, Vanuatu,…

Day 3 - Friday 29 September 2017 – Pacific Islands Climate Outlook Forum

Theme for the day – "Looking forward and preparing"

Time	Agenda Item	Responsible	Guidance
9:00am – 9:30am	**Session 5 – The 2017/18 regional climate outlook and Tropical Cyclone guidance** a. Presentation (15 mins) b. Q & A	NIWA	General-level presentation of 2017-2018 ENSO and Regional Climate and TC Forecasts
9:30am – 10:00am	**Session 6 – Current regional and global health warnings and forecasts** a. Presentation (15 mins) b. Q & A	WHO	Disease warnings, outbreak concerns across the region and globally
10:00am – 10:30am	Morning Tea		
10:30am – 12:30pm	**Session 7 – Country-level climate outlooks** a. Presentations (7 mins each) b. Q & A	NMHSs	Country outlook presentations (template provided)
12:30pm – 1:30pm	Lunch		
1:30pm – 2:30pm	**Session 8 – Country-level discussions** a. Review national climate and TC outlook and ENSO guidance b. Consider possible impacts over next six months and think about key messages c. Design a tailored outlook for the health sector	NMHSs and Health sector representatives	Country-level discussion groups, supported by roving facilitators. A quick round-the-room report back on the outcomes of the session.
2:30pm – 3:30pm	**Session 9 – Using and communicating climate information**	SPREP, Country examples (TBD)	Examples of developing national communications strategies for climate and health
3:30pm - 4:00pm	Afternoon Tea		
4:00pm – 4:30pm	**Session 10 – The ASEANCOF perspective** a. Presentation on ASEANCOF process (15 mins) b. Commentary on similarities and differences	Singapore Met	
4:30pm – 4:45pm	**Session 11 – PICOF survey**	BoM	All participants to complete survey
4:45pm – 5:00pm	**Session 12 – PICOF-3 Statement**	NOAA	Presentation of full statement
5:00pm – 5:15pm	Summary of the meeting and reflections Close	PICS Panel Chair	