PACIFIC METEOROLOGICAL COUNCIL

Pacific Islands Climate Services (PICS) Panel

Lessons Learned from NCOFs in the Pacific Islands Region

Compiled by the Pacific Islands Climate Services (PICS) Panel, with contributions from the World Meteorological Organisation, Papua New Guinea Meteorological Service, Vanuatu Meteorological and Geohazard Department, and Kiribati Meteorological Service.

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Introduction

The Pacific Islands Climate Services (PICS) Panel was endorsed by the second Pacific Meteorological Council (PMC-2) in July 2013 and established in April 2014 at the Special Session of the Pacific Meteorological Council, in Rarotonga, Cook Islands.

The PICS Panel is an advisory group to the PMC, and aims to:

> *'Improve coordination, continuity and integration of projects, programmes and initiatives that support climate services at national, regional and global levels; strengthen the basic and core functions and capabilities of NMHSs for robust and sustained data collection and management, analysis of data and quality assurance, production and dissemination of products, research and modelling; and enhance avenues and modes of multi-way communication and feedback between climate services providers and users to enhance the uptake and use of relevant and tailored climate services down to the communities and individuals.'*

The PICS Panel Action Plan was developed in August 2014, and a list of Priority Actions and Recommendations were produced to assist the Panel in providing advice to the PMC on climate services development in the region. The Priority Actions were subsequently updated in March 2016 at the 3rd meeting of the PICS Panel, in Port Vila, Vanuatu (see Appendix 1).

One of the current Priority Actions is to assess National Climate Outlook Forums (NCOFs) held so far in the region and produce a summary of lessons learned (this report).

Background on National Climate Outlook Forums (NCOFs)

Decision 24 of the 68th Session of the World Meteorological Organisation (WMO) Executive Council EC-68 (June 2016, Geneva, Switzerland), on the topic of National Climate Outlook Forums and National Climate Forums, included the following requests to the Commission for Climatology:

- To distribute a Concept Note on NCOFs/NCFs to Members, providing information on key features that can be adapted to their national contexts; and
- To provide Technical Guidance for NCOF operations, including the use of products of Regional Climate Centres and RCOFs for national applications.

These documents are yet to be finalised, however a summary of some of the key concepts regarding good practices for NCOFs, based on information prepared for the documents, is as follows:

Objectives

1. NCOFs should facilitate the provision of standardised climate products at relevant timescales through a regular and sustained multi-stakeholder dialogue process between an information provider and users at the national level.
2. The NCOF process should also help providers to tailor climate information to the needs of stakeholders and communicate uncertainties in climate predictions.

3. The dialogue process used at the NCOF would ultimately enable a shift to a risk management approach that makes use of probability forecasts building resilience of climate sensitive sectors.

Structure and Activities

NCOFs are usually held on a regular basis once or twice per year prior to the seasons that are critical to socio-economic sectors, such as rainy or dry seasons. Depending on users' requirements, there could be additional sessions focused on specific sector(s). NCOFs usually follow a programme as outlined below:

1. Discuss the current climate, including, inter alia, the precipitation and temperature conditions, based on national climate monitoring products;
2. Review the performance of the seasonal forecast issued in the previous season;
3. Report on the actions taken by user agencies;
4. Deliver the current seasonal climate outlook, and discuss of potential impacts and preparedness measures to be undertaken;
5. Identify areas for improvement and actions to address gaps in preparation for the coming season, based on the feedback from users on their needs and requirements; and
6. Discuss special topics and current issues of interest, if relevant.

Participation

The NCOF should have official representatives from various governmental and non-governmental agencies, academic institutions, and international donors/partner organizations. All national counterparts are invited primarily from the five priority areas of the GFCS, namely Agriculture and Food Security, Water, Health, Energy, and Disaster Risk Reduction, as well as from other sectors depending on countries' specifics and priorities.

It is advisable to keep the NCOFs open to all interested organizations that support the objectives of rendering climate services. Attendance varies from country to country but may reach up to 60-100 people.

Outcomes

The main outcomes of NCOFs should include:

1. Standardised and user friendly production of climate information and products, including a seasonal outlook;
2. A sustainable platform for communication of information to users and for obtaining their feedback on the usefulness of products and the level of understanding;
3. Improved understanding by users of the information communicated by NMHSs; and
4. Improved understanding of the users' needs in terms of the way information is presented and communicated (formats, standards, visual interpretation, etc.).

Summary of the NCOFs held so far in the Pacific Islands Region

Papua New Guinea

The inaugural PNG NCOF, which was hosted by Papua New Guinea's National Weather Service (PNGNWS) in March 2015, brought together government and United Nations agencies, Non-Governmental Organizations, the private sector, and research and education institutions. It provided a timely platform to discuss weather and climate related risks and benefits for sustainable development, public safety and protection of property.

Attendees at the first Papua New Guinea National Climate Outlook Forum, Port Moresby, PNG, March 2015.

A key outcome from the Forum was the clear consensus that PNGNWS needs to strengthen its capability and capacity to provide more tailored weather and climate services.

In addition, civil society organizations, speaking on behalf of local communities, agreed that they need to enhance their knowledge and understanding on climate variability and change, terminologies used in weather and climate information including warnings and seasonal climate outlooks. They also called on the National Weather Service to simplify weather and climate information for the benefit of users of the climate information, particularly local communities[1].

The Forum concluded with a set of recommendations, including:

[1] Note, in 2016 PNGNWS began working on a glossary for defining meteorological terms. Over the period of two days, staff of the PNGNWS came together with members of the PNG national media and the Red Cross Society to help build their confidence in working with the media while ensuring communication is clear and understood by relevant audiences.

- Simplify terminologies, graphics and others items used in weather and climate information including warnings and seasonal climate outlooks;
- PNGNWS needs more weather and climate stations, including some located in key water catchment areas, to provide the needed data;
- Organize training workshop(s) for stakeholders on climate science and terminologies used in climate information including seasonal climate outlooks;
- Improve quality and timeliness of weather and climate information including warnings and seasonal climate outlooks to increase proactive disaster risk preparedness and management;
- Utilize innovative communication of weather and climate information including warnings and seasonal climate outlooks through social media such as Facebook;
- Identify ways for efficient and effective dissemination, flow and reception of information from the National Weather Service to the National Agriculture Research Institute and to the farmers; and
- Improve collaborative research between the National Weather Service and the sectors (e.g. water, energy, health, agriculture, DRR).

In September 2015, the second NCOF was held in PNG in conjunction with a National Stakeholders Workshop on the implementation of the Global Framework for Climate Services (GFCS). The forum concluded with similar recommendations to those summarised above, with the important addition of:

- An MOU be agreed and signed between these important Government Department such as PNGNWS, Office of Climate Change and Development (OCCD), National Disaster Centre (NDC), and the Department of National Planning and Monitoring (DPNM) as important drivers in setting up of the PNG NCOF and its Secretariat to implement its work in the country, and submitted to the National Executive Council for the approval and endorsement.

In September 2016, a further Climate Outlook Forum was held in combination with a conference on enhancing weather forecasting generation and application, with the major stakeholder being the Geohazards Management Division (GMD).

A significant issue identified by PNGNWS is the lack of continuity regarding the participants attending the three NCOFs.

Kiribati

The Republic of Kiribati first National Climate Outlook Forum (NCOF) was held on Tarawa for the Gilbert Islands' Group from 1 to 2 September 2015 and on Christmas Island for the Line and Phoenix Islands' Group from 23 to 24 November 2015.

[Participation at Tarawa?]

18 participants from the fisheries, water, agriculture, hotels, tourism, meteorology (weather and climate) sectors; Christmas Island Urban Council (CIUC), Ministry of Lines and Phoenix Islands (MLPI); Ministry of Communication, Transport and Tourism Development (MCTTD); Solar Salt Company; the Office of the President; the Pacific Community (SPC); Secretariat of the Pacific Regional Environment Programme (SPREP); and WMO, participated in the NCOF for Christmas Island.

Learning from the NCOF for Tarawa, the objectives of the NCOF on Christmas Island were simplified as follows:

- To serve as a key national platform for promoting a regular dialogue and inter-agency coordination in responding to meteorological hazards, climate variability, extremes, and change;
- To help the Kiribati Meteorological Service (KMS) to package climate information to the needs of stakeholders and communicate uncertainties in weather and climate information; and
- To help participants to know how to use existing climate information provided by KMS.

Group discussions at the first Republic of Kiribati National Climate Outlook Forum, Christmas Island, November 2015.

Key climate products presented and discussed at the Forum were the Kiribati Climate Outlook, the Kiribati Drought Update, the Kiribati Ocean Climate Summary, and the Summary of Predicted 2015 Spring Tides in Tarawa Calendar.

From the Tarawa and Christmas Island NCOFs, the following specific needs were identified:

- Increase visibility of KMS on Christmas Island;
- Measure soil temperature;
- Availability and accessibility to 2016 tide calendar for Christmas Island;
- Improve daily weather forecast for Christmas Island;
- Improve measurement of rainfall around Christmas Island;
- Improve information on coral bleaching for Christmas Island;
- Improve information on wind speed and direction for Christmas;
- Develop drought early warning system and response plan;
- Develop bush fire early warning system or response plan; and

- Organize a second NCOF on Christmas Island.

For the drought early warning system and response plan and bush fire early warning system or response plan, the participants proposed a “Whole-Island Approach” and a Committee to be established to address these items. The Committee, and with the assistance of KMS would also take the lead to organize the second and future NCOF for Christmas Island.

Lessons learned from the NCOFs held at Tarawa and on Christmas Island include the following:

- Participants have limited knowledge on the difference between weather, climate variability and climate change;
- 4 staff for the KMS on Christmas Island roles to carry out weather observations at Cassidy International Airport on Christmas Island. Introduction of climate prediction is a very challenging for them. They need additional training in climate;
- Tarawa, the Capital where the Kiribati Meteorological Service Main Office is located is two hours behind of Christmas Island. Daily weather forecasts issued at 6a.m daily from Tarawa is already too late for Christmas Islands, especially for the tourists who are going out fishing in the early hours of the morning;
- Participants other than staff of the Kiribati Meteorological Service have never seen Climate Outlooks (three months rainfall) for Kiribati; and
- Participants are very keen and interested to learn more about Climate Outlook (3 months rainfall), Ocean Climate Summary and Drought Update Bulletin; have access to the information; and how to use the information.

A significant issue identified by the organisers was the difficulty getting sector people to attend the NCOFs (turnout was lower than desired).

Vanuatu

The first Vanuatu National Climate Outlook Forum was hosted by the Climate Division of the Vanuatu Meteorology and Geo-Hazards Department and was held over two days, at the Melanesian Hotel in Port Vila from 14-15 March 2015. Importantly, the following three days were also used for consultation on the development of the Vanuatu Framework for Climate Services (VFCS), thus maximum benefit was made of having the attendees (many of whom had to travel to the meeting from other provinces).

The NCOF organizing and facilitation committee was made up of staff from: VMGD Climate Division, VMGD Administration Division (Training Officer), Australian National University (Researcher), SPREP, NIWA and WMO. Sectors represented at the NCOF were: agriculture/livestock, health, water and sanitation, energy, disaster management, fisheries, tourism, chamber of commerce, media, women and education. There were also representatives from provincial government (Secretary Generals from each Province and VMGD provincial observations staff), Vanuatu Rainfall Network (VRN), the Red Cross and other NGOs and UN agencies. A total of around 60 people were in attendance.

The focus of the NCOF was on looking back at the 2015/16 El Niño as well as ahead to a possible La Niña developing later in 2016, including a refresher for attendees on the science of these phenomena. Participants were asked to share their experiences of the impacts of the El Niño, and reflect on how prepared they were for the drier than normal conditions.

Presentations were made by the Climate Division on the preparation and dissemination of their monthly publication, the "Vanuatu Climate Update" – which includes updated seasonal forecasts. The Climate Division also presented a detailed overview of their communications and outreach activities during the 2015/2016 El Niño event, and sought feedback on internal ENSO response and planning strategy through a review of their ENSO Directive. Most of the presentations and discussions were held in Bislama. This promoted and enabled active participation from the workshop attendees, some of whom may have found conversing in English quite challenging.

Lastly, a national statement on the 2015/16 El Niño, its impacts, current status, and forecasted weakening was produced with an associated media release.

Group brainstorming activity at the first Vanuatu National Climate Outlook Forum, Port Vila, March 2015.

Much of the discussion during the forum was centred on the Vanuatu Climate Update (VCU), and how it could be made more sector-specific. It was well-noted that VMGD do a good job of holding semi-regular climate briefings based around the latest climate statistics and the VCU. However, these briefings are generally only available to stakeholders in Port Vila. There was also a lot of discussion on the production of a "Community VCU", which would have less technical and more visual information. Information dissemination mechanisms were identified and communication of key messages was emphasised.

Other main outcomes of the NCOF were:

- The capacities of observers and rainfall collectors need to be built up;

- There is strong capacity in the Climate Division to cater for current climate services, however additional responsibilities or sector specific services can only come with additional resources and positions;
- Women have capacity, youth have capacity – we need to build on this;
- Distinctions between weather, climate variability, climate change effects, attribution and impacts are not so evident by stakeholders;
- The level of understanding of key climate concepts by stakeholders seems to be quite high, but more one-on-one briefings and training exercises are still needed;
- Use of the VCU seems to be quite high, with several stakeholders using the guidance and having their own response plans;
- Traditional knowledge needs more integration; and
- Need to link climate services to other Climate, Meteorology, Disaster, and Sustainable Development policies at National, Regional, and Global level.

Lessons learned from the NCOF included:

- There was an incredibly large amount of "good will" amongst the participants, indicating that everyone is keen to see climate services be effectively delivered to everyone in Vanuatu, and for useable, easily-understood, and reliable information to really help communities and people to better manage and prepare for climate variations and changes;
- Communication (at all levels) seems to be the main issue, needing a more systematic approach, and taking into account some areas with poor communications infrastructure and illiterate communities;
- It is important to take into account Vanuatu's remoteness and size when planning for future events to make sure that the provinces are duly represented and also have the opportunity to connect with national level stakeholders;
- Planning for such a big event requires a long lead time to account for the administrative processes required; and
- Thorough documentation of all aspects of the NCOF is incredibly helpful for future planning and must continue to be a priority.

Brainstorming activities were used at the NCOF and the VFCS consultation. These were particularly useful and provided excellent feedback to the VMGD Climate Division staff.

Key Lessons Learned

The NCOFs held so far in the Pacific Islands region have each been successful events. Participants from national meteorological services, multiple sectors, central and regional government, and non-governmental organisations have significantly benefited by attending these events.

Based on the NCOFs held in Papua New Guinea, the Republic of Kiribati, and Vanuatu, the following key lessons have been learned:

- The cost of planning and running an NCOF in the Pacific Islands region is often high, due to the challenges of bringing some stakeholders large distances from outer islands as well as bringing resource people from other countries to a centralised location. Financial and logistical support is therefore often required, which may be obtained through specific funding proposals or, ideally, included in the annual budget of the Meteorological Service;

- A 2-day NCOF should be combined with another activity (e.g. a consultation workshop) to maximise the utility of resource people (including consultants) and minimise costs associated with travel;
- NCOFs should be held as frequently as possible, given financial constraints. Ideally they should be held annually or biannually, and be timed to coincide with the Pacific Islands Climate Outlook Forum (PICOF), which is a regional event held in late September or early October every year;
- Stakeholders attending NCOFs should be asked beforehand to think about how the weather (including longer time scale events like drought, high sea levels, and warmer or cooler than normal seasons) have impacted them in the past. This might include impacts on fishing, boating, agriculture, fresh water supply, disease outbreaks, tourist numbers, electricity supply, housing and infrastructure. Sharing of these experiences at the NCOF is to be strongly encouraged;
- All efforts should be made to have the same people attend the NCOFs every year or two years. New people can and should be invited as well, but it is vital that there is a core of stakeholders who re-engage with the NMHS staff on a regular basis. If possible, these people should be invited to other more regular events as well, such as climate briefings;
- A vital component of the NCOFs should be discussing mechanisms of disseminating information, particularly to communities. These mechanisms often include "intermediaries" such as through church networks, central and provisional government channels, and non-governmental organisations. If intermediaries are used, then it is very important they are well briefed and fully understand the nature of the climate information;
- Most stakeholders relate more to sector-specific information, with forecasts based on probable impacts (e.g. on drinking water quality and the risk of diseases). The second day of NCOFs should focus on the translation of climate outlook information from NMHSs into impact-based forecasts. Ideally, such translation should be done at the sector level (e.g. by employees of the Ministry of Health, or Agriculture, or Water Resources, or by staff at NGOs), with the tailored information then incorporated into their own newsletters or updates;
- Time should be devoted at the NCOF to designing a simplified (e.g. "community level") climate bulletin, which would include key messages (in the local language) and pictures. The NMHS staff should commit to producing this bulletin every month for a trial period (e.g. one or two years), and then evaluating its effectiveness at the next NCOF;
- Lastly, feedback on the usefulness of climate information and forecasts is often difficult to receive. NCOFs are the ideal forum for asking the question: "How did you use this information, and was it useful to you?" Furthermore, participants should be asked to evaluate the NCOF itself. Such feedback is vital for NMHSs to justify the costs for running these events.

Disclaimer

This report has been prepared by the PICS Panel based on information provided by WMO, NCOF summary reports for PNG, Kiribati and Vanuatu, and expert assessment by the report author Dr. Andrew Tait, NIWA. The report has been peer reviewed by other members of the PICS Panel. The information in this report is provided on a best endeavour basis. Neither the PICS Panel nor the PMC shall be held accountable for the accuracy or use of the information in this report.

Appendix 1: Revised Priority PICS Panel Actions

The following Priority Actions, revised in 2016, have been drawn from the PICS Panel Action Plan:

	Priority Actions	**Timeline**	**PICS Panel task leader**
1	Plan for and hold either the second Pacific Islands Climate Outlook Forum (PICOF-2) including a disaster management/health sector focus or a regional workshop on the Roadmap for Strengthening Climate Services (depending on funding)	October 2016	BoM, SPREP
2	Write a PICS Panel report on the "Samoan Approach of Developing Climate Services for Water Resources Management"	December 2016	SPREP, Samoa MNRE
3	Assess NCOFs held so far in the region and produce a summary of lessons learned	March 2017	NIWA, SPREP
4	Assess the need for RCOFs in the Pacific Islands region, based on a survey of participants	June 2017	BoM
5	Work with WMO RA-V WG CLS to draft an RA-V RCC-Network Implementation Plan, to be submitted to the RA-V Management Group	June 2017	NIWA, NOAA
6	Assess and document the status of CLEWS and MHEWS in the region	June 2017	NIWA, NOAA