PACIFIC METEOROLOGICAL COUNCIL

WORLD METEOROLOGICAL ORGANIZATION

SPREP Secretariat of the Pacific Regional Environment Programme

"Sustainable Weather, Climate, Oceans and Water Services for a Resilient Pacific"

Fourth Meeting of the Pacific Meteorological Council (PMC-4) Working Papers

Agenda Item No 16.1: Update from the Pacific Islands Marine and Oceans Services (PIMOS) Panel

Purpose:

1. Endorse the Terms of Reference for the PIMOS Panel;

2. Highlight the progress of the Pacific Islands Marine and Ocean Services (PIMOS) Panel;

3. Inform the Council of Pacific Island Country (PIC) Maritime Safety Information (MSI) obligations under the UN Safety of Life at Sea (SOLAS) Convention and the current status of PIC compliance; and

4. Request the Pacific Meteorological Council's (PMC) endorsement to draft a PIMOS Panel implementation plan to address gaps in MSI and to achieve the Pacific Islands Meteorological Strategy (PIMS) Pacific Key Outcome 2 (PKO-2).

Marine Safety Information obligations under SOLAS:

5. The maritime sector, and by extension, the blue economy, is central to the lives of Pacific Islanders. The blue economy is defined as comprising the range of economic sectors and related policies that together determine whether the use of oceanic resources is sustainable.[1] According to the World Bank, in 2015[2] the total imports of goods and services in the Pacific region accounted for 67% of GDP compared to the world average of 30%. Similarly, fisheries production in the region is worth more than US 2 billion[3], and contributes significantly to the GDP of Pacific Island Countries and Territories (PICTs).

6. From the container ships which connect PICs to international markets to cruise ships full of tourists, from international tuna fishing fleets to subsistence fishing vessels, our island economies rely upon ocean transport. The safety and security of ocean transport, in return, relies upon timely and accurate information about wind, waves, ocean currents and storms.

[1] World Bank, 2017. The Potential of the Blue Economy. https://openknowledge.worldbank.org/bitstream/handle/10986/26843/115545.pdf?sequence=1&isAllowed=y

[2] World Bank, 2015. Development Indicators. http://databank.worldbank.org/data/reports.aspx?Code=NY.GDP.MKTP.CD&id=1ff4a498&report_name=Popular-Indicators&populartype=series&ispopular=y

[3] SPC, 2016. The Future of Pacific Island Fisheries. https://www.spc.int/fame/doc/corporate_docs/Future_of_PI_fisheries_Brochure.pdf

7. The International Maritime Organization (IMO) is the UN specialised agency responsible for setting the global standards and regulatory framework for safety, security and environmental performance of the shipping industry, and the UN Safety of Life at Sea (SOLAS) Convention is regarded as the most important of all international treaties concerning the safety of merchant ships. In 2016, the IMO made mandatory an audit process of compliance to SOLAS for all Member countries.

8. The following PICs have ratified the SOLAS convention (2 March 2016): Cook Islands, Fjii, Kiribati, Marshall Islands, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvlau, Vanuatu. As signatories to SOLAS, PICs are responsible for compliance to these regulations.

9. Under SOLAS, Chapter V, Regulations 5 & 9, each State must provide and promulgate meteorological information and warnings to ships, make provisions for recording and reporting observations from ships, ensure tide tables are available and Maritime Safety Information is promulgated.

10. The provision of MSI is not an optional service for coastal states. MSI is an international obligation under Treaty Law. Numerous PICs are in danger of lapsing in their compliance to SOLAS, which could lead to withdrawal of container vessels and cruise ships from the usual routes, resulting in economic losses.

11. The World Meteorological Organization (WMO) oversees the Worldwide Met-Ocean Information and Warning Service (WWMIWS) providing Maritime Safety Information (MSI) to mariners in the form of marine forecast and warning products. The WWMIWS is coordinated across the worlds' oceans through 21 defined areas, called METAREA's. The WWMIWS is structured to provide services en-route through High Seas forecasts and warnings, whilst also providing mariners with coastal services as they enter national waters into port.

12. In addition, IMO member Governments are urged to support the World Meteorological Organization (WMO) Voluntary Observing Ship Programme (VOS). Ship meteorological reports play an essential role in providing accurate forecasts and will continue to do so for the foreseeable future.

13. The WMO strategy is to assist NMHS in providing their services for national needs, and to support NMHS be seen as the authoritative voice on meteorological information. The WMO standards for meteorological services are defined in the WMO Manual on Meteorological Services (WMO 558). In addition, to support NMHS in the provision of services, the WMO Global Data Processing and Forecasting System (GDPFS) has a number of specialised Centres to support marine information (waves, ocean currents, winds) supply to NMHS.

14. The establishment of the Pacific Island Marine and Ocean Services Panel (PIMOS Panel) was endorsed by the Third Meeting of the Pacific Meteorological Council (PMC-3) to advise the Pacific Meteorological Council (PMC) on marine and ocean services matters in the Pacific region. This recommendation was made in light of the gaps in national marine weather and ocean services throughout the region. It was suggested that the Pacific Islands Global Ocean Observing Systems (PIGOOS) Officer located at the Secretariat of the Pacific Regional Environment Programme (SPREP) act as the inaugural chair of the PIMOS Panel.

15. The WMO and IOC Joint Technical Commission on Oceanography and Marine Meteorology (JCOMM) have a framework of Expert Teams to support observation

networks, data management and met-ocean services. The Expert Team on Maritime Safety Services (ETMSS) is the custodian of the WWMIWS, and has implemented key WMO marine strategic initiatives such as the Marine Forecaster Competence Framework, and the Marine Services Quality Management Framework. The PIMOS Panel should engage with the ETMSS and report progress into the WWMIWS monitoring system.

16. In April 2017, the Pacific Energy and Transport Ministers Meeting endorsed the *Regional Strategy on Safety of Navigation in the Pacific* and agreed to actively engage in the implementation, monitoring and evaluation of navigation related projects, including compliance with SOLAS MSI obligations. The United Kingdom Hydrographic Office (UKHO), Land Information New Zealand (LINZ), Australian Hydrographic Service (AHS) and SPC's Hydrographic Unit are all actively engaging with PICs to update their MSI.

17. In addition, to help PICs prepare for and pass audits under the IMO Member State Audit Scheme, SPC's Maritime Transport programme has been conducting awareness workshops leading to the adoption of national roadmaps identifying areas that require attention and steps for audit preparation. Some NMHSs including the Solomon Islands and Fiji have formed relationships with Maritime Safety Authorities and Administrations to coordinate ship observer meteorological information sharing. Related to Maritime Safety Information requirements under SOLAS, the WMO ETMSS have a self-assessment reporting mechanism to monitor NMHS compliance to the Marine Service standards outlined in the Manual on Marine Meteorological Services (WMO 558).

18. Importantly, during the Pacific Islands Meteorological Strategy review and consultation, marine weather and ocean services were identified as critical areas of importance and a new Pacific Key Outcome (PKO-2) was drafted, focusing on these issues. The next key step for the PIMOS Panel is the development of a detailed regional road map to support NMHSs in up-skilling and to extend/develop their capabilities to provide marine meteorology, forecasts and ocean services and establish quality management standards for marine weather service and SOLAS obligations.

PIMOS Panel Update:

19. The PIMOS Panel has convened twice, first on 28 October 2015 in the margins of the RA-V meeting in Nadi, Fiji and again on 23 May 2016, in advance of the Data Buoy Cooperation Bureau (DBCP) Pacific Islands Training on Ocean Observation and Data Applications in Noumea, New Caledonia. At the May 2016 meeting, the Pacific Community (SPC) volunteered to act as co-chair.

20. During these meetings, the Panel has drafted a Terms of Reference and identified a number of priority areas for PIMOS Panel to focus on in the near term, including: Oceanography and marine meteorology, coastal inundation and hazards, national preparedness and maritime safety, ocean observing, advising on the impacts of climate and climate change on oceans, coastal zone management and marine spatial planning, capacity building, and the establishment of ocean focal points within countries.

21. Australia (CSIRO) and Tuvalu have requested to become members of the panel.

22. During the 2 August 2017 PIMOS Panel conference call the Panel was requested to consider adding climate change and ocean acidification observations and forecasting to its priorities in the Panel ToR.

Marine and Ocean projects and activities:

23. Some progress has already been made in these priority areas over the last two years, supported by a variety of partners across numerous projects and programmes. One such activity is the Climate and Oceans Support Programme in the Pacific (COSPPac) – the Australian Bureau of Meteorology and SPC have assisted NMHSs in hosting Oceans stakeholder trainings and engagement sessions in the Solomon Islands (Nov 2015), Nadi, Fiji (Sept 2016), Cook Islands (Nov 2016), and the Republic of Marshall Islands (Mar 2017). In-country workshops are scheduled for Tuvalu (Sept 2017), Tonga (Nov 2017), Samoa and Niue (2018). These trainings have been delivered with support from partners from the University of the South Pacific (USP), SPREP and the Intergovernmental Oceanographic Commission (IOC/UNESCO). COSPPac will run until July 2018 and has developed the Pacific Ocean Portal (oceanportal.spc.int) and associated training material, which, if support is continued, could provide a solid starting point for marine and ocean services in the region.

24. The Scientific Educational Resources and Experiences Associated with the Deployment of Argo profiling floats (SEREAD) is an ongoing project supported by US NOAA, SPREP, UNESCO-IOC and NIWA. SEREAD is an educational project and resource that provides regionally relevant and focused ocean science that fits into existing Pacific island school curricula. The SEREAD program has been active in Tonga, Tuvalu and Kiribati to date.

25. Coastal Inundation Forecasting Demonstration Project – Fiji – see WP 16.3.

26. PacIOOS supports the PIMOS focus on coastal inundation and hazards with 6-day Wave Run-Up Forecasts for Majuro and Kwajalein, as well as High Sea Level forecasts for Guam and American Samoa. These are empirical models based on in situ observations. PacIOOS will be funded by NOAA to develop a new type of Wave Run-Up forecast for West Maui, Hawaii based off of numerical modeling. This forecast will be validated with in situ observations. While Hawaii is outside of the PMC countries, PacIOOS will document and publish the methodologies employed for the project so that others can implement in other locations.

PIMOS Panel implementation plan for marine and ocean services:

27. Marine and ocean services are lagging behind other areas of service delivery by NMHSs in the region, and as a result achievement of PKO-2 has not occurred. Building on the successes exemplified by the PICS Panel in improving climate services, the PIMOS Panel has identified the need to develop marine and ocean services within NMHSs in a comprehensive fashion.

28. The proposed implementation plan will look at how to develop marine and ocean services within NMHSs to support the achievement of PKO-2 and obligations under SOLAS. The implementation plan will consider the priority needs of NMHSs and WMO's strategic priorities for the WWMIWS, including support for staff, trainings, hardware, development of policies and procedures, and how to secure funding through the Green Climate Fund and other sources.

Recommendations:

29. The Meeting is invited to:

- **Endorse** the PIMOS Panel Terms of Reference, **noting** the inclusion of Australia and Tuvalu as members of the Panel the inclusion of marine climate change and ocean acidification as priorities;
- **Note** the need for PICs to develop marine weather and oceans services to strengthen economic growth, public safety and security and in comply with country obligations under the UN SOLAS Convention;
- **Recognise** the complementary roles of the CROP and other partners in supporting the implementation of PIMS PKO-2;
- **Note** the current and proposed activities that are supporting the goals of the PIMOS panel and **acknowledge** the support provided for them; and
- **Request** the PIMOS Panel draft an implementation plan to assist with the development of marine weather and oceans services capacity of the regions' NMHSs, to assist NMHSs meet their obligations under SOLAS and to achieve the goals of PIMS PKO-2 for PMC endorsement. NMHSs interested in working with the PIMOS Panel to develop a marine and ocean services project proposal are requested to **express** their willingness.

Attachments

- PIMOS Panel, Terms of Reference.
- Annex 1 Agenda Item T9 at the Pacific Energy and Transport Ministers Meeting: Regional Strategy on Safety of Navigation, April 2017.

Links

- IMO, SOLAS http://www.imo.org/en/About/conventions/listofconventions/pages/international-convention-for-the-safety-of-life-at-sea-(solas),-1974.aspx

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