

Table 1: A summary of the Key Action Items arising from the PMC-5 meeting in Apia

Pacific Climate Change Science to Services

The Meeting Recommendations:	Responsible Party	Actions
<ul style="list-style-type: none"> ➤ Agreed to encourage and requested support from NMHSs and relevant sectors in the delivery of the new NextGen Projections project and in the development of the proposed NextGen Climate Change Science and Services for the Pacific concept note; ➤ Recognised the priority need for ongoing technical support and development of in-country knowledge, capacity and applications in partner PICs in this (climate change) ‘science to services’ research domain; ➤ Recommended that the new Pacific Climate Change Science and Services Research Roadmap provide key strategic guidance to development and delivery partners as an adjunct to and in support of the ongoing implementation of the Pacific Islands Meteorological Strategy; 	<p>NMHSs, SPREP, PCCC, CSIRO, RCC Node on Climate Change Science</p>	<p>NextGen has successfully completed its activities in 2021.</p> <p><i>Next Generation Climate Projections for Western Tropical Pacific (https://www.rccap.org/)</i></p> <ul style="list-style-type: none"> • <i>Updated partner PIC country reports X 15</i> • <i>Sectoral case studies</i> • <i>New guidance materials: hazard-based impact assessments</i> • <i>Regional assessments:</i> <ul style="list-style-type: none"> ○ <i>Extreme sea/Total water level</i> ○ <i>Tropical cyclones</i> ○ <i>Macro-economic analysis</i> • <i>Tailored comms/KB collateral</i> <ul style="list-style-type: none"> ○ <i>Fact sheets</i> ○ <i>Slide decks</i> <p>Progress on the Pacific Climate Change Science and Services Research Roadmap will be presented by the PIETR Panel</p>

Agenda Item 9: Potential alignment of the PMC to the WMO Reform

<ul style="list-style-type: none"> ➤ Requested the WMO RA V president to work with PMC Chair and Panel Chairs to review the working 	<p>Chair, president of RA V, PMC Panels’ Chairs,</p>	<ul style="list-style-type: none"> • Terms of reference to carry out this work has been
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<p>and governance structure of PMC, and to make appropriate recommendations to PMC-6 regarding the progress of the WMO Reform, the potential establishment of a PMC Management Group, and a dedicated donor engagement partnership platform.</p> <p>➤ Recommended the establishment of a task force to explore the alignment of PMC and WMO governance structures and develop a timeline to guide coordination. The task force should include the Chair, president of RA V, PMC Panels' Chairs, together with Australia, New Zealand and open representation from PMC members. Funds need to be identified to operationalize this task force.</p>	<p>together with Australia, New Zealand</p>	<p>completed.</p> <ul style="list-style-type: none"> • WMO through the CREWS has allocated funding for the activity • This will be undertaken before the end of this year and ensure it is aligned well to the Weather Ready Pacific and other initiatives in the region
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Agenda Item 7: The Framework for Resilient Development in the Pacific and the Pacific Resilience Meeting

<p>➤ Recommended that the Pacific Met Desk explore options for the PMC Panels affiliation to the Pacific Resilience Partnership Taskforce as technical working groups to advance science aspects of the FRDP.</p>		<p>Discussions with the PRP to link the Panel on Education, Training and Research to the Research Task Force of the PRP</p> <p>Need to continue engagement with the PRP</p>
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Agenda Item 11: Aviation Weather Services

<ul style="list-style-type: none">➤ Requested members of the PMC to nominate experts from their countries and organizations, and invite Civil Aviation Authorities (CAAs), International Air Transport Association (IATA), and International Federation of Airline Pilots Association (IFALPA) to nominate representatives, as members of the PIAWS Panel;➤ Endorsed the establishment of a PIAWS Panel Task Team (Members: Fiji, New Zealand, and Tonga) on ICAO compliance: (a) to develop a work plan for addressing deficiencies in consultation with the concerned ICAO Member States; and (b) to understand current capabilities with regards to the IWXXM implementation and dissemination and to develop a work plan to assist each ICAO Member State in the Pacific region to meet the IWXXM requirements. The Task Team is encouraged to complete this work by June 2020 to enable reporting on progress to the ICAO APANPIRG Met SG meeting in July 2020;➤ Encouraged members of the PMC through their MWOs to coordinate with respective national authorities for participating in and coordination with the ICAO Asia-Pacific Regional Office, APANPIRG Meteorology Sub-Group (MET SG) and its Working Groups (WGs), and Volcanic Exercise	<p>NMHSs, PIAWS Panel</p>	<p>Updates will be provided by the PIAWS Panel under Agenda 9 of the PMC-6</p> <p>CREWS2.0 is providing additional funding for each Panel members</p>
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<p>Steering Group (VOLCEX SG) on activities such volcanic ash test exercises, SIGMET collaboration and harmonization, and VAACs back-up test exercises;</p> <ul style="list-style-type: none">➤ Endorsed the request to New Zealand to pursue the development of a web portal for issuing Volcano Observatory Notice to Aviation (VONA), subject to funding.➤ Requested SPREP to provide financial support to the PIAWS Panel to coordinate and communicate with, and participate in the ICAO Asia Pacific Regional Office activities and bodies such as the ICAO APANPIRG MET SG and its WGs, and VOLCEX SG;➤ Requested SPREP to assist members of the PMC to develop Service Agreements or equivalent between National Meteorological Services (NMSs) and CAAs;➤ Requested Fiji Meteorological Service to develop Service Agreements with other NMSs in the Pacific region on the provision of aviation services;➤ Requested SPREP to organize training for NMSs personnel and auditors on ISO 9001-2015;➤ Requested SPREP to continue to provide assistance to members of the PMC to develop Civil Aviation Rule Part 174 corresponding document – the Aviation Meteorology Exposition and CAR Part 100 corresponding documents – the Quality		
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<p>Management System (QMS) manual and Safety Management System (SMS);</p> <ul style="list-style-type: none"> ➤ Acknowledged efforts by members of the PMC for compliance with the requirements for competency assessment, and capacity development for the AMOs and AMFs; ➤ Requested SPREP to continue to provide assistance to members of the PMC on competency assessment and capacity development for the AMOs and AMFs; and ➤ Welcomed the progress on the planning of the South-West Pacific Conference on Meteorology for Aviation which is planned for 2020; and members of PMC are invited to consider hosting the event. 		
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Agenda Item 12: Climate Services

<ul style="list-style-type: none"> ➤ Noted the excellent progress of the PICS Panel, in collaboration with other regional and international partners, toward strengthening climate services in the Pacific Islands region; ➤ Noted that membership of the PICS Panel now includes the following new members: FSM, French Polynesia, American Samoa, Fiji, Kiribati, Tonga, CSIRO, APCC and UKMO. The Panel also invites sector representatives to participate as and when needed; 		<p>Progress have been made on these recommendations.</p> <p>Updates will be provided under Agenda 10 including updates on the RCC</p>
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<ul style="list-style-type: none">➤ Recognised the financial support for PICS Panel and PICOF meetings provided by SPREP, WMO, the government of the Russian Federation, Australian Bureau of Meteorology, Republic of Korea and other donors;➤ Recommended the PICS Panel continued its work as outlined in the ongoing priority actions listed above and to regularly review its membership and ToR in consultation with the PMC and others;➤ Agreed to support and guide the activities initiated by the PICS Panel, in collaboration with other regional and international partners, thus ensuring the sustained and continuous development of climate services in the Pacific Islands region; and➤ Agreed to encourage appropriate climate services projects/programmes in the region to contribute small funds to support PICS Panel priority activities (e.g. RTSM).➤ Approved the PICS Panel to serve as the coordination committee of the Pacific Island Regional Climate Centre (PI-RCC)➤ Recommended the PICS Panel continue to work to tailor the RCC so that it meets the needs of all the NMHSs in the Pacific Islands region; and		
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<p>the next PMC Ministerial Meeting in 2020.</p>		
<ul style="list-style-type: none"> ➤ Recommended the Council members to further strengthen and extend support and collaboration with hydrologists. This should include sharing of resources, data, and development of joint actions and initiatives for national and regional benefits. ➤ Recommended the availability of various historical and real-time hydro meteorological data and other information to ensure that the FFGS provides the highest quality data and information to forecasters; and ➤ Requested the PHS panel to support the existing FFGS project and to work with interested NMHSs on how to extend this FFGS project to the region. 		<p>Updates will be presented under agenda 12.</p> <p>A side event on the FFGS is also organised to provide more information on the opportunities</p>
<ul style="list-style-type: none"> ➤ Recognised and requested continued financial support for PIMOS Panel provided by SPC, SPREP, Australia, WMO, JICA, NOAA, the government of Korea, and other donors; 		<p>Updates will be presented under Agenda 14</p>

<ul style="list-style-type: none">➤ Recommended the PIMOS Panel continue its work as outlined in the ongoing priority actions listed above and to regularly review its membership and ToR in consultation with the PMC and others;➤ Invited NMHSs to reaffirm the work of the PIMOS Panel and to encourage appropriate marine and ocean services projects/ programmes in the region to support PIMOS Panel priority activities in the workplan.➤ Agreed to design a path forward that defines the roles PMC and NMHS wish to take with respect to monitoring, researching, and/or coordinating responses to ocean acidification under the PIMOS panel; ➤ Recommended that national governments and appropriate national agencies establish baseline monitoring necessary to capture natural variability in ocean carbon chemistry and understand long-term trends; ➤ Recommended that future ocean observation platforms include ocean acidification monitoring; ➤ Agreed to coordinate national inventories of OA work currently		
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<p>underway in each country and of needs for addressing OA; and</p> <ul style="list-style-type: none">➤ Agreed to advocate for more donor support for regional-scale OA work to address those needs. ➤ Requested to have NMHSs' representatives be members of existing national Maritime Committees with other relevant agencies for improved national coordination in the delivery of safety of navigation services and the broadcasts of maritime safety information; ➤ Agreed to share key information from IMO Audits (IMSAS) findings related to gaps and challenges in the delivery of Marine Meteorological Services with the PIMOS panel to support regional coordination of donors' assistance to NMHSs; ➤ Requested development partners to coordinate with the PIMOS Panel a regional approach to implement Quality Management Systems and stakeholder engagement fora for the enhanced delivery of Marine Meteorological		
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<p>Services in accordance with international conventions, codes and guidelines and for the safety of all ocean users; and</p> <ul style="list-style-type: none"> ➤ Requested NMHSs to prioritise strengthened services for domestic mariners and shipping agents for improved safety. ➤ Tasked the PIMOS Panel to identify science and service opportunities through PCCOS and the UN Decade of Ocean Science that align with the Pacific Islands Meteorological Strategy (PIMS 2017-2026). 		
<ul style="list-style-type: none"> ➤ Recommended amendments to current PICI TOR to include responsibility into identifying best practices for working with the private sector to find solutions – options, best practices, guidelines and way forward in ensuring maintenance issues and interoperability of systems ➤ Recommended the establishment of a Communication Infrastructure and technical; maintenance position within SPREP PMDP to support the work of the panel and provide policy advice and technical support to the NMHSs; 		<p>Updates will be provided under Agenda 15</p>

<ul style="list-style-type: none">➤ Recommended the ongoing identification of policies and frameworks and opportunities for NMHS to collaborate and develop National Emergency Telecommunication Plans (NETP);➤ Recommended a review of existing Pacific NMHS communications options for telemetry needs to be conducted with consultation with each country;➤ Recommended to consider bulk purchasing option and optimal contractual arrangements (both region and local) for both cellular and satellite providers for purchasing of airtime and data;➤ Recommended the consideration and review of options and methods to integrate non-automated observations and automatically-generated standard synoptic and Metar messages that consider the significant and on-going increase in automated data collection;➤ Recommended to seek support and funding for a calibration tool-kit and associated training for meteorological and hydrological instruments and equipment and for a process at the regional level for other Pacific NMHSs that do not have the capability;➤ Recommended to work together with PIETER panel to explore the		
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<p>development of accredited on-the-job training guidelines, material, and funding for Pacific technical staff for AWS and Climate Early Warning systems operations and maintenance;</p> <ul style="list-style-type: none">➤ Encouraged the implementation of a rapid alert notification system (RANS) by individual states;➤ Recommended to work together with PIMOS panel to ensure that marine observation and communication infrastructure objectives and outcomes are aligned; and➤ Recommended the PICI panel work with the PICS panel to outline, document then present to the PMC the range and extent of data integration and quality issues currently impacting Pacific meteorological records. This would be followed by submitting a list of remedial actions to assist NMSs improve the quality of their data. <ul style="list-style-type: none">➤ Recommended that an emergency broadcasting system be included in the Digital Television multiplex system;➤ Recommended a coordination talk-group – accessible by all ERN users – to be incorporated when the ERN moves to a trunked architecture;		
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<ul style="list-style-type: none"> ➤ Recommended to put in place a system to ensure that restoring road access to essential telecommunication facilities are priorities following a storm or similar event; and ➤ Recommended to maintain international cooperation with stakeholders to enhance local and regional capacity and networks. 		
<ul style="list-style-type: none"> ➤ Recommended SPREP, USP and FMS to collaborate and work according to the framework prescribed and carry out assigned roles and the timelines proposed for introduction of classes by 2021; and ➤ Requested other Donors and partners to contribute funding or in kind resources to ensure that the RTC can commence implementation ASAP. ➤ Requested that the PIETR panel of the PMC take responsibility for overseeing subsequent development and implementation of the Research Roadmap going forward; and ➤ Recommended that the PIETR Panel closely collaborates with the PICS 		<p>Updates will be discussed under Agenda 16</p>

<p>Panel in the finalization and implementation of the Pacific Climate Change Science and Services Roadmap to enable cohesion with the implementation plan of the Pacific Roadmap for Strengthened Climate Services and related PICS Panel activities.</p>		
<ul style="list-style-type: none"> ➤ Recommended all NMHS Directors to consider providing historical station-based data to SPREP upon request for the ROK-PI CLIPS project duration or through formal data agreements; ➤ Recommended that ROK-PI CLIPS project and the COSPPac project coordinate their activities and trainings in the region, as well as contribute to the technical discussions in the PICS Panel; and ➤ Recommended that Pacific Island NMHSs consider the use of PICASO and CLIK-P for generating seasonal outlooks. 		<p>This project has successfully concluded.</p> <p>Updates will be provided under the Agenda 17.3</p>
<ul style="list-style-type: none"> ➤ Encouraged the continued active engagement of IPCC focal points 		<p>Updates provided under 7</p>

<ul style="list-style-type: none"> ➤ Recommended improving the capacity of the PMDP to coordinate and implement the PIMS 		
<ul style="list-style-type: none"> ➤ Requested SPREP, and invites key donors and partners to collaborate to prepare a draft PMC Donor and Partner Engagement Platform for presentation to the PMC for approval and launch in 2020 at the 3rd Pacific Ministerial Meeting on Meteorology. Note that the Platform must also make clear connections its contribution to the Pacific Resilience Partnership for acknowledgement of the PRP in support of the FRDP; ➤ Requested SPREP and invites key donors and partners to coordinate a detailed review of the PMDP; to consider its mandate, roles and functions, modalities of its services and resourcing; to prepare a costed plan of additional resources for priority resourcing and implementation, so as to support it to coordinate and facilitate more effectively PMC partnerships and regional initiatives. This review and its 		<p>The Donor and Development Platform is now established on Thursday.</p> <p>A guiding Partnership mechanism will be presented on Thursday together with the Dashboard to Map various projects in the region</p> <p>Updates will be presented under agenda 23</p>

results are to be presented to the PMC for approval and launch in 2020;		
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