

EIGHTH MEETING OF THE PACIFIC METEOROLOGICAL COUNCIL

PMC-8

Nuku'alofa, Tonga • 10, 11, 14 September 2026

Eighth Meeting of the Pacific Meteorological Council (PMC-8)

Weather Ready for a Secured and Sustainable Pacific

10, 11, 14 September 2026 | Nuku'alofa, Tonga

Agenda Item 16.1: Progress Updates and Workplan

Purpose:

1. To update PMC on progress in implementing PMC-6 and PMC-7 recommendations in relation to the strengthening of hydrological services.

Objectives:

1. Inform PMC on progress in implementing recommendations from PMC-6 and PMC-7; for the development of a Pacific Regional Hydrological Services Strategy and the Establishment of a regionally supported hydrological database
2. Inform PMC on the early findings of the strategy consultations.
3. Encourage NMHS engagement in consultations and input to support the timely finalisation and implementation of the Strategy and database.

Background:

1. Hydrological services provide scientific information governments rely on to forecast floods and droughts, safeguard drinking water, support agriculture, strengthen early warning systems, and sustainably manage freshwater resources. As climate change accelerates, this information is becoming increasingly important for protecting communities and supporting climate resilience.
2. Despite this importance, many Pacific Island Countries and Territories face common challenges in the collection, management and analysis of hydrological data.
3. This paper reports on progress under two initiatives established in response to recommendations from PMC-6 and PMC-7, to:
 - a. establish a regionally supported hydrological database,
 - b. develop a Pacific Regional Hydrological Services Strategy.
4. Pacific Regional Hydrological Services Strategy background:
 - a. In addition to the direction provided through PMC-7, the initiative has received strong regional support from key stakeholders. It was endorsed by Directors of Hydrological Services at the Pacific Regional Hydrological Services Forum held in Suva in February 2025 and welcomed by Pacific Water and Wastewater Ministers at the 9th Pacific Water and Wastewater Ministers' Forum in Honiara in August 2025. Water Ministers also noted the critical importance of national hydrological services in enabling evidence-based decision-making for sustainable water resources management, disaster risk reduction and climate change adaptation.
 - b. The Regional Strategy is being informed through four complementary pillars:

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- i. National diagnostic assessments and Roadmaps to ensure the Strategy reflects national contexts and priorities.
 - ii. Regional convenings of Directors and senior officials from government agencies undertaking hydrological services.
 - iii. Regional consultations with key stakeholder groups, including disaster managers, Directors of National Meteorological Services, water resources managers and water utilities.
 - iv. Engagement with regional and international partners.
- c. A Steering Committee comprising Directors and senior officials from government agencies responsible for hydrological services has been established to oversee development of the Strategy. The Steering Committee is supported by a Technical Working Group responsible for drafting the Strategy.
- d. Progress to date includes:
 - i. Thirteen country consultations completed.
 - ii. Three National Roadmaps completed.
 - iii. Ten additional National Roadmaps currently under development.
 - iv. Three further national consultations in the planning phase.
Regional engagement sessions were held with key stakeholder groups, including Directors of PICT Meteorological Services, Disaster Management Offices, and atoll water resource managers.
- e. Key emerging findings include:
 - i. Hydrological Services in the Pacific entail the collection, management and analysis of water quality and quantity data of surface water, groundwater, rainfall and rainwater storage resources
 - ii. Approximately 6% of inhabited islands across the 13 PICTs have established groundwater monitoring sites, while only 3% have established surface water monitoring sites.
 - iii.
 - iv. There are 51 government agencies and departments undertaking hydrological service functions across the 13 PICTs.
 - 1. Aside from one agency, there are no clear mandates for hydrological services. Agency mandates are focused on functions where hydrological services are prerequisites. This includes flood and drought forecasting, water supply, infrastructure design and water resource protection.
 - 2. Hydrological service responsibilities are often fragmented across multiple agencies, resulting in overlaps in some areas and gaps in others.
 - v. Common challenges identified across PICTs include:
 - 1. Governance and institutional coordination.
 - 2. Capability development and sustainable training pathways.
 - 3. Monitoring network adequacy and infrastructure.
 - 4. Staffing constraints.
 - 5. Financing constraints and sustainability risks.
 - 6. Data management systems and data accessibility.
 - vi. Common strengths identified across PICTs include:
 - 1. A clear and demonstrated stakeholder need for hydrological services.
 - 2. Existing service delivery functions, monitoring networks and technical foundations despite limited resources and funding.
- f. Next steps include further engagement with technical partners, synthesis of consultation findings and supporting evidence, and preparation of the draft Regional Strategy. Completion is expected by November 2026, followed by implementation planning.

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5. Regionally supported Hydrological Database
 - a. A regional hydrological database survey conducted in 2023 found that 12 of the 13 agencies undertaking hydrological services considered themselves constrained by the functionality of their existing database systems.
 - b. A Regional Database Advisory Group was established to assess suitable database options and recommended adoption of the open-source Hydro-Pacifique platform. The Advisory Group further recommended a hybrid implementation model, with the platform supported and governed at the regional level while being deployed and managed within individual countries to meet national operational requirements and maintain ownership of hydrological data.
 - c. Hydro-Pacifique was developed in the Pacific region for the French Territories and provides a proven platform for hydrological data management in the Pacific Island context.
 - d. Through the WMO-supported Early Warning Systems for Flooding Project, implemented by The Pacific Community (SPC) and Earth Sciences New Zealand (ESNZ), significant progress has been made in establishing the foundations for implementation of Hydro-Pacifique in six PICTs.
 - e. To support long-term sustainability and regional ownership, the Regional Database Advisory Group has been formalised as the Pacific Hydrological Database Technical Working Group (HydroData TWG). Membership includes national representatives from hydrological services across PICTs, alongside SPC, SPREP, WMO, ESNZ and other regional partners. The role of the HydroData TWG includes:
 - i. Governance and Oversight
 - ii. Technical Development
 - iii. Capacity Building and Awareness
 - iv. Risk Management
 - f. A key milestone has also been achieved through the transfer of hosting arrangements for Hydro-Pacifique to SPC, providing a regional institutional home for the platform and supporting its long-term sustainability.
6. The Pacific Regional Hydrological Services Strategy and the regionally supported hydrological database initiative represent significant progress in implementing PMC-6 and PMC-7 recommendations. Together, The Strategy and database are strengthening governance, enhancing technical capability, improving hydrological data management, and supporting more coordinated and sustainable hydrological services across the Pacific. As both advance through 2026, a stronger foundation for water resource management, flood and drought resilience, and climate adaptation across Pacific Island Countries and Territories will be established.

Recommendations:

The PMC is invited to:

- I. **Note** the significant progress made in addressing the recommendations from PMC-6 and PMC-7; for the development of a Pacific Regional Hydrological Services Strategy and the Establishment of a regionally supported hydrological database
- II. **Recognise** that hydrological services in PICTs are delivered through a range of agencies with complementary mandates; and **support** strengthened collaboration and coordination across hydrological and meteorological sectors ensuring an earth systems approach to advance shared resilience and development outcomes.

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- III. **Request** the support of development partners in addressing the priority needs identified through national consultations and reflected in the development of the Pacific Regional Hydrological Services Strategy, including hydrological workforce development, hydrology-specific training pathways, ground-based telemetry and observation infrastructure, enhanced hydrological forecasting and early warning capabilities (including flash flood early warning and compounding events), and support for their integration into national and regional Integrated Forecasting Platforms, and strengthened data governance arrangements.
 - IV. **Request** that SPC and SPREP secure resources and long-term institutional arrangements to ensure the sustainability, security and interoperability of the regional hydrological database, including support for nationally owned databases, regional backup arrangements, integration with emerging forecasting platforms, and the inclusion of priority datasets such as water quality information, consistent with the regional asset policy and data framework.
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