

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 17.4: Outcomes of the Regional Geohazards Meeting

Purpose

To present to PMC-8 the outcomes of the 2026 Regional Geohazards Meeting and seek PMC guidance and endorsement on strengthening the integration of geohazards within the Pacific regional multi-hazard early warning architecture, including regional coordination, strategy, investment, implementation and its alignment with PIMS 2027–2036 and Weather Ready Pacific.

Objectives:

1. To present the key outcomes, decisions and priority actions arising from the 2026 Honiara regional geohazards meetings.
2. To advance the development of a Pacific Regional Geohazards Strategic and Governance Framework, supported by a costed Investment and Implementation Plan and Partnership and Resource Mobilisation Framework.
3. To advance an integrated Earth-system approach to multi-hazard early warning, recognising the interconnections between meteorological, hydrological, oceanic and geological hazards and the potential for compound and cascading impacts.
4. To strengthen regional collaboration on geohazards and cascading risks through PIMS 2027–2036, including coordinated observation, data sharing, risk information and multi-hazard early warning across relevant agencies, while respecting national and regional mandates.

Background:

Pacific Island Countries and Territories face significant and interconnected risks from earthquakes, tsunamis, volcanic eruptions, landslides and related cascading hazards. These hazards can interact with meteorological, ocean and climate processes and can generate compound impacts on communities, infrastructure, aviation, transport and essential services.

Effective management of these risks depends on sustained monitoring, timely data exchange, reliable communications and power, operational warning capability, risk information and close coordination between geoscience agencies, National Meteorological and Hydrological Services (NMHSs), National Tsunami Warning Centres (NTWCs), National Disaster Management Offices (NDMOs), regional organisations and technical partners.

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Regional cooperation is already supported through ORSNET for seismic monitoring and data exchange, the PTWS WG-PICT for tsunami warning and mitigation, the Oceania Regional Volcano Network (ORVNET) and the Pacific Landslide Network. The 2025 Regional Geohazards Meeting agreed to advance a Regional Geohazards Strategy and regional coordination mechanism. The 2026 Honiara meeting consolidated these streams into a more coherent multi-hazard and cascading-risk agenda and agreed on practical actions for 2026-2030.

1. Meeting Overview and Key Findings

The five-day meeting brought together representatives from **Papua New Guinea, Solomon Islands, Vanuatu, Fiji, Tonga, French Polynesia** and **New Caledonia**, together with regional organisations, National Disaster Management Offices and technical and development partners. The programme combined national capability reviews, technical planning, implementation prioritization, PTWS WG-PICT coordination and discussion of governance, financing and partnerships.

After considerable deliberations, the meeting identified a consistent set of challenges:

1. Gaps in monitoring coverage and station reliability, including unreliable telemetry and power systems.
2. Workforce shortages, limited 24/7 operational capability and uneven standard operating procedures.
3. Constraints in equipment maintenance, spare parts, backup systems and lifecycle replacement.
4. Uneven real-time data sharing, metadata quality, interoperability, data management and cybersecurity capability.
5. Limited integration of geohazard information into land-use planning, infrastructure design, building standards, development approvals and investment decisions.
6. Insufficient long-term financing and political visibility for geohazard monitoring and early warning services.

The meeting concluded that these challenges are shared across the region and require nationally owned, regionally coordinated and sustained responses rather than isolated hazard-specific or short-term project interventions.

2. Integrated Multi-Hazard and Cascading-Risk Approach

A major outcome was agreement to move beyond isolated hazard-specific approaches and strengthen an integrated multi-hazard and cascading-risk framework. Participants recognized that hazards do not occur in isolation: earthquakes can trigger tsunamis and landslides; volcanic activity can generate tsunamis, ash and aviation impacts; and rainfall and climate variability can influence landslides, lahars and other geohazard processes.

The meeting therefore supported closer collaboration between geohazard, meteorological, ocean, climate and disaster management agencies through interoperable monitoring systems, shared data, integrated risk assessment, coordinated warning mechanisms and stronger preparedness. This provides a direct strategic link with the Pacific implementation of Early Warnings for All and Weather Ready Pacific.

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3. Regional Governance and Coordination

The Guadalcanal Outcome Statement (attached as Annex 1) agreed to formalise the Regional Geohazards Network to coordinate geohazards work in the Pacific and agreed that the Pacific Community (SPC) should be the coordinating entity for the Network.

The meeting reaffirmed the role of ORSNET as the primary technical coordination and collaboration mechanism for seismic data sharing, hazard assessment, capacity development and training, and recognized PTWS WG-PICT as the established regional mechanism for tsunami warning coordination and implementation under the UNESCO-IOC Pacific Tsunami Warning and Mitigation System.

The regional structure is intended to bring together seismic, volcano, landslide and tsunami priorities while preserving the mandates of the existing technical mechanisms. The meeting reaffirmed the establishment of the Pacific Landslide Network and ORVNET and agreed that tsunami preparedness and warning priorities should be reflected in the Regional Geohazards Network multi-year work programme in close collaboration with WG-PICT.

The meeting further tasked SPC to develop and resource a dedicated geohazards programme with specialized technical expertise to support monitoring, hazard and risk assessment, early warning and evidence-based decision-making across the Pacific.

These arrangements are intended to strengthen regional geohazards coordination while preserving existing institutional and national mandates, and to provide a clearer interface between geohazards mechanisms and the wider Pacific multi-hazard early warning architecture.

4. Data Sharing, Interoperability and Technical Systems

Data sharing restrictions was identified as a constraint on regional earthquake detection, tsunami warning and scientific analysis. ORSNET members agreed to strengthen data sharing and regularly review and update station metadata.

The meeting endorsed an IT Technical Working Group to coordinate technical standards, system architecture, interoperability, data sharing and operational procedures. Priority technical directions include FDSN-compatible services, standard metadata practices, secure data governance that respects national ownership, cloud-based backup and disaster recovery, and phased onboarding of national networks.

5. Priority Technical and Capacity Actions for 2026-2030

The meeting validated a practical implementation direction centred on the following priorities:

1. Strengthen volcano monitoring and warning capability, including seismic, infrasound, hydroacoustic, GNSS and satellite observations in high-risk volcanic areas.
2. Standardise volcano monitoring procedures, alert levels and bulletins and conduct simulation exercises to test readiness and inter-agency coordination.
3. Establish a regional landslide and cascading hazards programme, including improved monitoring, hazard mapping, rainfall-threshold approaches and stronger integration of landslide risk into land-use and infrastructure planning.
4. Improve seismic data sharing, metadata management and interoperability across ORSNET.
5. Establish sustained workforce development pathways through training, mentoring, attachments, communities of practice and peer-to-peer support.

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6. Develop a regional scientific support mechanism or expert roster able to provide rapid technical advice during significant geohazard events.
7. Prepare a regional inventory of monitoring stations, equipment condition, telemetry, power resilience, metadata completeness and priority maintenance needs.

6. Tsunami Warning and Preparedness

The 11th PTWS WG-PICT meeting reinforced the need to implement the 2025 PTWS Capacity Gap Assessment, strengthen coordination among NTWCs, Tsunami Warning Focal Points, Meteorological and Geological Services and NDMOs, and increase real-time seismic data exchange through ORSNET and the Pacific Tsunami Warning Center.

Priority actions for 2026-2027 include piloting the PTWS Minimum Competency Training Programme for NTWC personnel, expanding Tsunami Ready recognition, conducting and evaluating PacWave 2026, strengthening volcano-generated tsunami SOPs and modelling, and improving integration of SeisComP and automated warning and decision-support platforms.

7. Sustainability, Maintenance and Investment

The meeting identified maintenance, spare parts, telemetry, resilient power, backup systems and lifecycle replacement as persistent weaknesses, particularly for equipment installed through time bound donor projects. It welcomed the establishment of a regional maintenance funding mechanism through SPREP to support the long-term sustainability of Pacific regional observation systems, including seismic, infrasound, hydrometeorological, sea-level and GNSS networks.

The meeting also supported development of a regional geohazards strategy and investment framework, including clear costed priorities for equipment, staffing, training, maintenance, data systems and scientific support. It further agreed to explore with SPREP potential aviation sector contributions to support volcanic monitoring, observation networks and volcanic ash advisory services in highly exposed countries.

8. Integration with PIMS 2027–2036, Weather Ready Pacific and Early Warnings for All

The integrated Earth-system approach proposed by the Honiara meeting provides an important opportunity to strengthen the treatment of geohazards and cascading risks within the Pacific Islands Meteorological Strategy 2027–2036, without altering the respective mandates of meteorological, hydrological, oceanic, geological or disaster management agencies.

Geohazard observations and risk information are integral to an end-to-end multi-hazard early warning system. The Regional Geohazards Network can provide a technical interface between geohazard services and the wider Pacific early warning architecture, while Weather Ready Pacific can support stronger connections to NMHSs, risk information, sustainable observation infrastructure, maintenance and coordinated investment.

The Honiara meeting specifically agreed to present its outcomes to PMC-8 and to advocate for a holistic multi-hazard approach under Early Warnings for All. It also called for stronger visibility of geohazards within Pacific meteorological and disaster management processes and for formalized partnerships to support implementation.

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9. Indicative work programme 2026-2030

Priority area	Agreed direction	Lead / partners	Timing
Governance	Finalise the Regional Geohazards Network Terms of Reference, membership, rules of procedure, reporting lines and working-group arrangements.	PICT members; SPC; technical networks	2026-2027
Regional strategy	Develop one integrated Regional Geohazards Strategy covering earthquake, tsunami, volcano, landslide and cascading-risk priorities.	Regional Geohazards Network; SPC; UNESCO-IOC; SPREP; partners	2026-2027
Investment planning	Prepare a costed regional geohazards investment plan and partnership framework aligned with EW4All and Weather Ready Pacific.	SPC; SPREP; members; development partners	2027
Data and standards	Strengthen seismic data exchange, metadata, interoperability, data governance, cybersecurity and common operational standards.	ORSNET; national agencies; technical partners	Ongoing
Infrastructure sustainability	Map priority monitoring assets and incorporate lifecycle costs, calibration, maintenance, communications, resilient power, spare parts and replacement.	Members; SPC; SPREP; partners	2026-2030
Capacity development	Implement training, mentoring, attachments, competency pathways, peer support and specialist technical tracks.	Technical networks; UNESCO-IOC; SPC; partners	Ongoing
Hazard specific priorities	Implement and periodically review validated seismic, tsunami, volcano and landslide priorities under the regional strategy.	Technical networks; national agencies	2026-2030
Reporting and advocacy	Report progress through relevant regional mechanisms and use International Earthquake Day and other platforms for advocacy.	Network leadership; coordinating entity	Annual

Recommendations:

The Meeting is invited to:

- I. **Note** the outcomes of the Annual ORSNET Meeting, the 11th PTWS WG-PICT Meeting and the Third Regional Geohazards Meeting held from 10 to 14 August 2026 in Honiara, Solomon Islands, and the Guadalcanal Outcome Statement.
- II. **Endorse** the development of a Pacific Regional Geohazards Strategy, supported by a costed Investment and Implementation Plan and Partnership and Resource Mobilization Framework, and request the Regional Geohazards Network, coordinated by SPC, to work with SPREP, Members and relevant technical and development partners to progress its development and implementation.
- III. **Recognise** that meteorological, hydrological, oceanic and geological hazards are interconnected through the Earth system and can contribute to compound and cascading impacts; and support an integrated Earth-system and multi-hazard approach to early warning across the Pacific.
- IV. **Endorse** strengthened collaboration on geohazards and cascading risks within the Pacific Islands Meteorological Strategy 2027–2036, including enhanced cooperation on observations, data shar-

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ing, risk information and coordinated multi-hazard early warning among meteorological, hydrological, oceanic, geological and disaster management agencies, while respecting their respective national mandates; and call upon development partners to support implementation through Weather Ready Pacific and other relevant regional initiatives.

- V. **Support** strengthened institutional coordination between the PMC, Regional Geohazards Network and other relevant regional mechanisms, with SPC coordinating the Regional Geohazards Network and SPREP, including through Weather Ready Pacific, supporting areas of common interest within the Pacific multi-hazard early warning architecture, while respecting existing mandates and governance arrangements.
- VI. **Request** the following draft text is approved for consideration by the drafting to be included in the Matatoa Ministerial Declaration.....

*“**Recognising** that meteorological, hydrological, oceanic and geological hazards are interconnected through the Earth system, and that compound and cascading hazards present growing risks to Pacific communities, economies and infrastructure, we **affirm** that geohazards should be considered as an integral part of the broader multi-hazard early warning system. We therefore support an integrated Earth-system and multi-hazard approach under the Pacific Islands Meteorological Strategy 2027–2036, strengthening collaboration on observations, data sharing, risk information and coordinated early warning among meteorological, hydrological, oceanic, geological and disaster management agencies, while respecting their respective national mandates. We call upon development partners to support this approach through Weather Ready Pacific and other relevant regional initiatives.”*

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Annex 1

**Annual Oceania Regional Seismic Network (ORSNET) and Regional Hazards Meeting,
Honiara, Solomon Islands, 10-14 August 2026
Guadalcanal Outcome Statement
Version 2.0**

High-level statement

The meeting reaffirmed its commitment to strengthening regional geohazard monitoring and early warning systems through enhanced seismic data sharing, establishment of the ORSNET Technical Working Group, adoption of common interoperability and data governance standards, investment in workforce and technical capacity development, modernisation of monitoring infrastructure, and strengthened advocacy to secure sustainable political and financial support for geohazard services across the Pacific.

Meeting Outcome

The meeting **noted**;

- That data sharing is uneven across the ORSNET member countries, limiting regional earthquake detection and tsunami warning capability.
- That there are significant technical and human resource gaps exist across ORSNET member countries.
- Volcano observatory capabilities remain uneven across the Pacific, particularly on Twenty-Four Seven (24/7) monitoring, SOPs, equipment maintenance, and data management.
- That landslide legislative frameworks in member countries were limited.
- The importance of hazard detection and monitoring as a foundation of development planning and risk reduction efforts for safe and resilient communities.
- The increasing value of ORSNET and WG-PICT collaboration in strengthening the links between seismic monitoring, tsunami warning operations, and multi-hazard early warning systems.

The meeting welcome and **acknowledged**;

- The continuous support by the European Union, USGS, UNDRR, UNESCO-IOC and other donors in supporting countries in technical capacity strengthening.
- The support to develop a regional partnership and investment plan for geohazards supported through the Weather Ready Programme (WRP) under SPREP.

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The meeting **recognised**;

- The International Earthquake Day to be a key advocacy and awareness day to elevate the work on geohazards in the Pacific.
- ORSNET as the primary technical coordination and collaboration mechanism for seismic data sharing, hazards assessments, capacity development and training
- WG-PICT as the principal regional mechanism for tsunami warning coordination and implementation under the UNESCO-IOC Pacific Tsunami Warning and Mitigation System.

The meeting **tasked**;

- SPC to develop and resource a dedicated geohazards programme with specialised technical expertise to support geohazard monitoring, hazard and risk assessments, early warning systems, risk assessments and evidence-based decision-making across the Pacific.
- ORSNET to develop key products to inform learnings, based on available data.
- Task the ORSNET secretariat to work with the Pacific Community to review the draft terms of reference for the Regional Geohazards Network.

The meeting **re-affirm**;

- The decision of the 2025 Regional Geohazards Meeting on;
 - the establishment of the Regional Geohazards Strategy and Regional Geohazards Body.
 - Vanuatu to spearhead advocacy of the establishment of Regional Geohazards Body
 - The Regional Geohazards Network rules of procedures to be informed by SPREP and SPC as regional convening bodies before it is adopted.
 - establishment of Regional Landslide Working Group also known as Pacific Landslide Network (PLN) and its Terms of Reference and Membership under the Regional Geohazards Meeting.
 - establishment of the Regional Volcano Working Group also known as Oceania Regional Volcano Network (ORVNET) and its Terms of Reference and Membership under the Regional Geohazards Network
 - establishment of Regional Tsunami Working Group also known as PTWS Regional Working Group on Tsunami Warning and Mitigation for Pacific Islands Countries and Territories with its Terms of Reference and Membership under the Regional Geohazards Network.

The meeting **agreed** to;

- Formalise the Regional Geohazards Network to coordinate geohazards work in the Pacific.
- That the Pacific Community be the coordinating entity for the Regional Geohazards Network in the Pacific.
- That ORSNET members share their data and ensure that members' metadata are reviewed and updated regularly.
- Regional Geohazards Network include tsunami preparedness and warning priorities within its multi-year workplan and maintain close collaboration with WG-PICT and regional resilience initiatives.

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- Welcome the establishment of a regional maintenance funding mechanism through SPREP to support and maintain the long-term sustainability of Pacific regional observation systems, including seismic, infrasound, hydrometeorological, sea-level monitoring and GNSS networks.
- Explore with SPREP aviation-sector contributions to support volcanic monitoring, observation networks and volcanic ash advisory services in highly exposed countries.
- Formalise a partnership framework for the Regional Geohazards Network
- To present a paper on the outcome of the geohazards meeting in Honiara, Solomon Islands (Gualcanal meeting outcome) to the 8th Pacific Meteorological Council meeting in Nuku'alofa, Tonga.