

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 # 21.2: Enhancing Climate Information and Knowledge Services for 5 island countries of the Pacific Ocean [UNEP CIS-Pac5]

Purpose:

1. **To provide an update** on the achievements and implementation status of the UNEP-led, Green Climate Fund (GCF)-financed programme, *"Enhancing Climate Information and Knowledge Services for Resilience in Five Island Countries of the Pacific Ocean"* (UNEP CIS-Pac5).
2. **To recognize the national ownership and sustained commitment** demonstrated by the Governments of Cook Islands, Niue, Palau, the Republic of the Marshall Islands, and Tuvalu in advancing the Programme and delivering its results and benefits to their peoples.
3. **To recognize the contribution of regional technical partners** in strengthening multi-hazard early warning systems across the five Programme countries, and to affirm the value of continued regional collaboration in sustaining these gains.
4. **To call on PMC** to support long term sustainability of critical National Meteorological and Hydrological Service (NMHS) functions.

Background:

1. UNEP CIS-Pac5 was developed at the request of the 5 countries (Cook Islands, Niue, Palau, the Republic of Marshall Islands and Tuvalu) and was endorsed by the Pacific Meteorological Council (PMC) at the 5th biennial meeting in July 2019.
2. Leadership and support from the PMC contributed to the Green Climate Fund (GCF) Board approving the USD \$49 million programme at the 27th meeting of the Board in November 2020.
3. Official implementation commenced in September 2021 known as the Effectiveness Date of the Funded Activity Agreement (FAA) between the GCF and UNEP, with the Regional Inception Workshop and First Programme Steering Committee (PSC) held in May 2022.
4. Green Climate Fund approved a 12-month No Cost Extension to revise the programme completion date to be 10 September 2027.
5. The programme directly advances the objectives of the Early Warnings for All (EW4All) Initiative, the Pacific Meteorological Strategy and the Framework for Resilient Development in the Pacific.
6. The programme is implemented through four inter-related **Programme Results**, based on the pillars of the Global Framework for Climate Services (GCFS) and the PIMS:
 - **Result 1:** Strengthened delivery model for climate information services and MHEWS covering oceans and islands.

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- **Result 2:** Strengthened observations, monitoring, modelling and prediction of climate and its impacts on ocean areas and islands.
 - **Result 3:** Improved community preparedness, response capabilities and resilience to climate risks.
 - **Result 4:** Enhanced regional knowledge management and cooperation for climate services and MHEWS.
7. The programme's continued success and impacts are attributable to the strength of the national implementing partners across the five countries, including the respective NMHSs; Emergency Management Cook Islands, Kumiti Au Vaine, Climate Change Cook Islands, Boys and Girls Brigade Niue, Ekalesia Niue Federation of Christian Women, Palau Red Cross Society, National Emergency Management Office, Bureau of Marine Transport, Marshall Islands Conservation Society, Marshall Islands Red Cross Society, Tuvalu National Disaster Management Office.
 8. The programme benefits from the expertise of a broad coalition of regional technical partners coordinated by UNEP ensuring coherence and complementarity: APEC Climate Center (APCC), the Australian Bureau of Meteorology (BOM), Red Cross Red Crescent Climate Centre (Climate Centre), the Earth Sciences New Zealand (ESNZ), the Pacific Community (SPC), the Secretariat of the Pacific Regional Environment Programme (SPREP), and the University of Hawaii (UH).

Progress/ Updates:

Overall Programme Reach

- Since inception, the programme has reached 48,306 direct beneficiaries (55% of the target population) and 85,939 indirect beneficiaries (95% of the target population) across the five countries, bridging advanced meteorological data with community-level action to strengthen resilience to climate hazards.

Strengthened Institutional Frameworks and Delivery Models

- Finalisation and implementation of the National Framework for Weather, Climate and Ocean Services (NFWCOS) for Niue and Tuvalu, with the Cook Islands NFWCOS in draft and expected to be finalised shortly.
- Finalisation and implementation of the National Strategic Plans for Weather, Water and Climate Services (NSPWWCS) Implementation Plans for Palau and the Marshall Islands.

Expansion of Climate Information Services Across Priority Sectors

- The application of Climate Information Services (CIS) has expanded across climate-sensitive sectors: tourism, agriculture, disaster risk reduction, fisheries, utilities, health and water; as defined in each country's Climate Sector Action and Communication Plan (CSACP) and Sector Specific Climate Training Programme (SSCTP). This has been achieved by: (i) building national technical capacity to harness and manage climate data; (ii) developing practical, sector-relevant CIS tools; and (iii) fostering the uptake and dissemination of tailored climate information to end users.

Strengthened Observation Infrastructure

Land-based weather and climate observation:

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- Installation and operationalisation of 21 Automatic Weather Stations (AWS) and 8 Automated Weather Observing Systems (AWOS), now supporting climate prediction, weather forecasting, severe weather monitoring and improved aviation safety across all five countries.
- Re-establishment of the Cook Islands Upper Air Sounding Station after nearly ten years without observations, improving global numerical weather prediction accuracy and international aviation safety for the Cook Islands (population 15,040) and the broader central South Pacific region.
- Installation of dual-polarisation C-Band radar is underway for three countries (Cook Islands, Niue, Tuvalu), with two installations targeted for 2026; installation for the remaining two countries (Palau, Marshall Islands) is scheduled to commence in early 2027.

Ocean monitoring, prediction and forecasting:

- Deployment and certification of 8 multiparameter water quality sondes in Cook Islands, Niue, Marshall Islands and Tuvalu, supporting lagoon health and water quality monitoring and building understanding of met-ocean drivers of water quality.
- Deployment of 7 wave buoys in Cook Islands, Niue, Palau and Tuvalu, under an enhanced wave observation programme, now collecting data.
- Operationalisation of ocean forecasting and coastal inundation warning systems, incorporating AI and dynamic models tailored to local contexts, in four countries. In Palau, modelling demonstrated that mangroves could reduce wave-driven flooding by up to 25%, underscoring the value of nature-based solutions.

Drone-based monitoring:

- Survey-grade drones have been supplied to enhance aerial monitoring capacity, including impact analysis of severe weather events and post-disaster assessments. Civil Aviation certifications have been completed for national staff in Cook Islands, Niue and Tuvalu.

Climate Risk Integrated into Infrastructure Planning

- Climate resilience has been embedded in the engineering design of a new airport Runway End Safety Area (RESA) in the Cook Islands, with long-term climate change risk projections informing future planning through the Climate Risk Assessment for Aitutaki Airport.

Technical and Institutional Capacity Building

- Meteorological staff have strengthened their climate analytical and technical capacity, enabling more independent installation, maintenance, calibration, analysis and interpretation of climatology, and in-house production of climate and ocean outlook products. This has been delivered through technical partner-led training, including the Young Scientist Support Programme, Ocean Sciences to Services training, Early Action Rainfall (EAR) Watch, Quality Management Systems, Equipment training and certification, the Basic Instruction Package for Meteorological Techni-

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cians (BIP-MT), Oceans and Climate Attachments, the Pacific Island Countries Advanced Seasonal Outlook (PICASO), the Australian Community Climate and Earth System Simulator – Seasonal (ACCESS-S), Statistical analysis, Traditional Knowledge, and Gender.

Last-Mile Communication and Community Engagement

- Communication accessibility for last-mile communities has been enhanced through distribution and use of Starlink units across all 24 atolls in the Marshall Islands, strengthened connectivity for three outer-island Met Stations in Tuvalu, and the co-development and testing of an early warning mobile application (Rainbird Pacific) for all five countries.
- Annual National Climate Outlook Forums (NCOF) are mainstreaming climate risk knowledge, ensuring stakeholders incorporate climate-informed decision-making into agency work plans and strengthening situational awareness of key hazards: tropical cyclones, king tides, tsunamis and drought; including messaging to last-mile communities.
- Community training, outreach and education campaigns have reached **23,456 beneficiaries**, improving community access to and use of climate information. Initiatives include the roll-out of the People's Empowerment Programme across all 16 states of Palau, localised climate/weather glossaries, climate information access training and disaster simulation exercises (Cook Islands, Tuvalu), Public School Outreach and Emergency Response Trainings (RMI), and Traditional Knowledge outreach (Niue); strengthening preparedness, inclusivity and cultural relevance.

Country Level NMHS-Led Delivery

National Meteorological and Hydrological Services (NMHS) continue to lead the co-design and delivery of sector-tailored climate products with support from regional technical partners:

- **Cook Islands** is advancing on streamflow forecasting, water management and climate data services alongside drought and coastal inundation anticipatory action, with CSACPs spanning Agriculture, Water Resources, Disaster Risk Management/Tourism, Marine Resources & Safety, and Health.
- **Niue** is developing forest fire information and an Agro-Met bulletin, with CSACPs covering Disaster Risk Reduction, Fisheries, Health, Utilities and Agriculture.
- **Palau** is piloting reservoir level forecasting alongside drought and tropical cyclone anticipatory action, a Kukau (Taro) Climate Early Warning dashboard for women farmers in Choll County, with CSACPs across Agriculture, Water, Disaster Risk Reduction, Fisheries and Health.
- **Republic of the Marshall Islands** will be rolling out a drought early warning system and health climate early warning dashboard supported by drought anticipatory action, with CSACPs spanning Agriculture, Disaster Risk Reduction, Fisheries, Tourism and Water.
- **Tuvalu** is delivering a drought early warning product and Agro-Met bulletin underpinned by drought anticipatory action, with CSACPs covering Agriculture, Disaster Risk Reduction, Health and Water.

Next Steps

- National Financing Policies and Sustainability Plans will be developed for all five countries to support the long-term sustainability of NMHS functions.

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- Five countries are all eligible for SOFF with 3 countries at investment phase (Palau, the Marshall Islands and Tuvalu) and 2 countries at readiness phase (Cook Islands, Niue).

Recommendations:

The Meeting is invited to:

- Note** the significant progress achieved by Cook Islands, Niue, Palau, the Marshall Islands and Tuvalu under UNEP CIS-Pac5, and commend the national ownership demonstrated by the five Governments.
 - Acknowledge** the critical contribution of UNEP as Accredited Entity, the Green Climate Fund as financier, the regional technical partners (APCC, BoM, Climate Centre, ESNZ, SPC, SPREP, UH) and collaborating projects and programmes (WMO CREWS, WRP, COSPPac, ClimSA, PARTNER2) in strengthening end to end multi-hazard early warning systems in Cook Islands, Niue, Palau, the Marshall Islands, and Tuvalu.
 - Support** the need for sustained support to regular maintenance and upgrades of infrastructure, technical training and certifications to ensure sustainability of NMHS services and products in compliance with WMO requirements.
 - Call upon** the **Systematic Observations Financing Facility (SOFF)** to prioritize support to the basic observations' infrastructure initiated in Cook Islands, Niue, Palau, the Marshall Islands and Tuvalu under UNEP CIS-Pac5, for sustainability and the attainment of full GBON standards in the 5 countries and building on the already established cooperation platform.
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