

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 21.3: Climate Change Projections Pacific Local Knowledge and Adaptation Strategies

Purpose:

1. Present the main scientific results of the **CLIPSSA** project;
2. Discuss Pacific Island Countries and Territories (PICTs) needs regarding climate projections and climate services to support adaptation strategies.

Background:

CLIPSSA – *Climate of the Pacific, Local Knowledge, and Adaptation Strategies* – is an interdisciplinary research-action project conducted from **2021 to 2026**. Led by the **French National Research Institute for Sustainable Development (IRD)**, **Météo-France**, and the **French Development Agency (AFD)**, its ambition is to develop unprecedented future climate and agronomic projections for the **South Pacific** by the year **2100**. Four territories are at the heart of this study: **New Caledonia, French Polynesia, Wallis and Futuna**, and **Vanuatu**.

Thanks to the new climate projections and qualitative surveys, scientists worldwide, as well as authorities in the **French Pacific territories** and **Vanuatu**, will gain a better understanding of:

- **climate change** between now and **2100**, with a resolution of **20 km** across the Pacific and **2.5 km** over the target countries and territories, including:
 - changes in **precipitation patterns and extremes**, along with associated uncertainties;
 - changes in **temperatures and their extremes**, along with associated uncertainties;
 - the **evolution of tropical cyclones**.
- **potential yields** of taro, yam, and cassava varieties in the future in these countries and territories;
- **local ecological knowledge** of farmers (both men and women) to cope with future climate conditions;
- **modes of circulation** of this knowledge and practices: places and times of transmission, actors and resources involved, and their vitality

The **primary legacy of CLIPSSA** is its **website**, which centralizes these outputs. It features an **interactive map** covering all the project's territories. Each piece of data produced is geographically located and accessible from its point of origin (model outputs, climate datasets, field materials). The

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principle is to provide **location-based access** rather than discipline-based access, aligning with how users typically frame their questions.

Towards a new set of climate projections to support adaptation strategies:

The six **CLIPSSA simulations** complement an existing ensemble of:

- **44 Australian CORDEX simulations,**
- **30 global CMIP6 simulations,** and
- **6 ESNZ simulations.**

Scientific Perspectives

The **pilot study IC-Pac**, labeled under **CORDEX** and coordinated by **Jason Evans (UNSW)** and **Christophe Menkes (IRD)**, is presented as an expanded version of **CLIPSSA's climate modeling component**, covering a broader range of **Pacific islands** and involving **international partners**. This initiative brings together **nineteen scientists from ten countries and twenty-three institutions**. Its scientific objective is to **better quantify future changes**, thereby enabling institutions—much like **CLIPSSA**—to utilize the projections for **assessing climate change risks**.

Recommendations:

The Meeting is invited to:

1. **Note** the scientific advancements and key results of the CLIPSSA project, including its innovative climate and agronomic projections for the South Pacific by 2100, as well as its interdisciplinary approach combining climate modeling, local ecological knowledge, and adaptation strategies;
2. **Confirm** the critical importance of having regularly updated regional climate projections to refine diagnostics and extend them to new indicators on climate extremes and sectoral impacts of climate change;
3. **Recommend** the integration of local ecological knowledge and sectoral expertise (e.g., agriculture, water resources, disaster risk management) into the interpretation and application of climate projections;
4. **Recommend** the development of standardized methodologies for bias correction and downscaling to ensure the reliability of climate projections for local decision-making

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5. **Recommend** the strengthening of data-sharing mechanisms between national meteorological services and research institutes to improve the accuracy and relevance of climate projections. This includes:
 - facilitating **open access** to historical climate data, while respecting data sovereignty;
 - encouraging **collaborative frameworks** to ensure that research outcomes are aligned with the operational needs of meteorological services;
 6. **Request** the Pacific Island Climate Services (PICS) Panel provides an assessment of currently available climate projections from international institutes participating in IPCC intercomparison exercises (CMIP6/CORDEX), with a focus on resolutions suitable for island territories
 7. **Request** the Secretariat of the Pacific Regional Environment Programme (SPREP) and the World Meteorological Organization (WMO) facilitate the sharing of regional climate projection outputs with all Pacific Island Countries and Territories (PICTs) to support their climate adaptation strategies;
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