

**APN Workshop on Climate Variability and Trends
In Oceania (APN 2000-04)**

Project Leader:

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APN Workshop on Climate Variability and Trends In Oceania (APN 2000-04)

APN Funding

US \$17,800

Participants were funded from the following countries

Australia, Cook Islands, Fiji, French Polynesia, Malaysia, New Caledonia, New Zealand, Papua-New Guinea, Samoa, Tonga, Tuvalu, Vanuatu

Introduction/Background

Oceania occupies a large portion of the Pacific Basin, and climate and ocean/atmosphere interactions of global significance occur here on annual to decadal time-scales. These include the El Niño-Southern Oscillation (ENSO), and the Interdecadal Pacific Oscillation (IPO), an ENSO-like variation which modulate climate on time scales of two to three decades, which cause significant climate change in parts of Oceania and beyond. The aims of this workshop were to encourage regional participation in global studies to monitor and detect trends and variability in climate.

By sharing experiences within the region, providing a forum for discussion with access to resources available from the international scientific community, and specific recommendations for action, the workshop took a modest step towards enhancing both regional and national capacity for Oceania countries to determine and understand their climate variability and trends.

The workshop had wide involvement of Pacific Island Countries and national meteorological services in the region, in collaboration with the South Pacific Regional Environment Programme (SPREP) and the WMO Sub-Regional Office in Apia.

Outline of activities conducted

The first session of the Auckland workshop consisted of background papers on observed global and regional climate trends and variability, and climate change detection. A series of papers covered historical data resources and the removing of data biases through homogeneity analyses.

Workshop participants presented overviews on the second day of historical and observed climate data resources available in their own countries to study climate trends and variability, along with indications of analyses that had already been undertaken. There was a large variation in the range of data resources available; with some countries having a high quality reference climate station network, and data stored on Oracle relational databases with metadata, to those with a very sparse climate network and information stored on PCs. Many countries have a significant paper archive of data requiring digitisation.

In the last session on the second day methods of analysis of data for climate trends and variability were discussed, in particular selection of climate indices for analysis, time series analysis and establishment of significance of any trends.

On the final day of the Auckland workshop SPREP and the WMO Sub-Regional office presented regional perspectives. SPREP has surveyed the needs of meteorological services in the region and the results highlight an enormous variation in the resources and expertises of the national meteorological agencies, highlighted in annual budgets varying from US \$10,000 to US \$5 million. NIWA maintains a sub regional Pacific community climate database (SPCCD) for many of the Oceania countries. Its primary purpose is as a resource for the countries that have lodged their data in the SPCCD, to provide security of the data and as a source of data for climate research.

In the final session of the day, participants separated into two breakout groups. These groups addressed issues on Oceania data resources, analysis techniques and local and regional synthesis and collaboration. The breakout groups reported their conclusions to the final plenary session where recommendations were formed.

Outcomes/Products

- Commenced regional participation in global studies to monitor and detect trends and variability in climate and improve capacity building;
- Established contacts within Oceania to progress research on climate change and variability;
- Enhanced regional and national capacity for Oceania countries to determine and understand their climate variability and trends;
- Identified the status and availability of relevant historical climate data in the region;
- Recommended appropriate methods for analysis of climate trends and variability;
- Established a collaborative project to analyse the national climate records for trends and variability across Oceania; and
- Prepared a report on the workshop for the APN, the Intergovernmental Panel on Climate Change (IPCC), the Global Climate Observing System (GCOS) and the World Climate Research Programme (WCRP).

Future directions/Follow-up work

- For the region, real-time data quality guidelines are to be developed so that all data being used is of similar standard;
- An application is to be submitted to the APN to hold a second workshop on climate variability and trends in Oceania in 2001. This would continue the capacity building begun, and prepare a paper on country and regional climate trends and variability for publication;
- Specific training programmes in statistical data analysis will be introduced so that countries can describe climate trends and variability in their data;
- The workshop recommendations and proceedings will be reported to the CLIPS participants workshop in Auckland, New Zealand (29 Nov. - 15 Dec.) for discussion; and
- This project will provide direct input to the proposed APN programme on ethnographic perspectives on resilience to climate variability in the Pacific Islands to assess and detect climate change.

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