

Indices and Indicators for Monitoring Trends in Climate Extremes (APN 2002-01)

Project Leaders:

Dr. M. MANTON & Dr. N. NICHOLLS
Bureau of Meteorology Research Centre (BMRC)
GPO Box 1289K, Melbourne VIC 3001
AUSTRALIA
Tel: +61-3-9669-4444
Fax: +61-3-9669-4660
Email: m.manton@bom.gov.au

Indices and Indicators for Monitoring Trends in Climate Extremes (APN 2002-01)

APN funding

US\$ 40,000

Participating countries

Participants from the following countries were funded: Australia, Fiji, French Polynesia, Indonesia, Japan, Malaysia, New Caledonia, New Zealand, Papua New Guinea, P. R. China, Philippines, Republic of Korea, Thailand, Viet Nam.

A participant from each of the listed countries (except Australia) was funded by APN. Owing to travel problems, the invited participant from Samoa was unable to attend at the last minute. A further ten participants from BMRC, the National Climate Centre (NCC), and CSIRO Atmospheric Research in Australia were self-funded. There were two participants from New Zealand, and one of them was also self-funded. Malcolm Haylock, the consultant who has managed the data issues for the previous workshops, is now working in UK. He was funded to return to Melbourne to support this workshop. Lisa Alexander, a scientist with the UK Hadley Centre and closely involved with climate extremes research, was on holiday in Australia in December, and she agreed to participate in the workshop.

Brief introduction and background

The importance of monitoring and analysing climate extremes has been highlighted by the last three assessment reports of the IPCC. Over the last few years, there has been increased research in developed countries aimed at improving the analysis of climate extremes. However, the national and regional trends in climate extremes are of interest to all countries, and this APN project aims first to enhance the capacity of participating countries to monitor and analyse their own data and secondly to enable national trends to be put into a regional context. The current phase of the project included the fourth in a series of Workshops on Climate Extremes in Southeast Asia and the South Pacific which was held at the Bureau of Meteorology, Melbourne, Australia, 11-13 December 2002.

Outline of activities conducted

The main activity in the first year was a three-day workshop in Melbourne in April 2001, involving representatives of seventeen countries. Following the workshop, a web page for the APN Network for Climate Extremes was established <<http://www.bom.gov.au/bmrc/csr/apn>> containing documents and software from the first three workshops, as well as some results of the analyses.

The key activity for the current year was a workshop in Melbourne in December 2002. The focus of the meeting was on the collection and archiving of meta-data for climate extremes and on data rescue and rehabilitation. Meta-data, or “data about the data,”

are vital to the process of rehabilitating climate records, where instrumentation has changed, sites moved, or objects (like trees or buildings) near the observing sites have changed. Many countries have only paper records of their climate data, and so these data and the accompanying meta-data must be transferred to computer storage systems. Following the workshop, it is planned to update the APN Network for Climate Extremes web page to include the results of the workshop.

Outcomes and products

The products from the project at the end of the second year are as follows:

- Each participant received a CD-ROM containing new or updated software for quality control, the calculation of climate extreme indices, and meta-data entry. The CD-ROM also contained all presentations from participants, including lectures and country reports. Thus the CD-ROM updates and extends the material provided at the previous workshop, and so provides a basis for further improvement of data analysis in each participating country;
- Each participant has commenced the process of establishing a meta-data archive, and documenting data they have yet to digitise;
- Updated analysis of national data on climate extremes, carried out by individual participants;
- Updated regional analysis of climate extremes, providing a regional context for national analyses;
- A report on the workshop will be prepared for the APN Newsletter;
- The web site will be updated to include the results of the current workshop; and
- A journal paper, co-authored by all participants, will be finalised and submitted for publication.

The outcomes of the project include:

- Maintenance of the APN profile in the international science community;
- Strengthened regional links through collaborative work across many countries;
- Enhanced understanding of climate in the Asia Pacific region; and
- Enhanced understanding of the requirements for collection and archiving of climate data and associated meta-data by participants.

Future directions and follow-up work

It is proposed that a workshop will be held in about March 2004 to maintain the network of scientists focussed on the analysis of climate extremes, to provide updated software for the analysis of climate extremes, and to update the regional analyses of climate extremes. The highest priority activity for the future continues to be seen by the participants as enhanced work on the digitisation and analysis of historical pressure, rainfall and temperature data.