

**Indices and Indicators for Monitoring Trends in
Climate Extremes (APN 2003-01)**

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

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APN funding:

Year 1: (APN 2001-01) US\$ 48,000

Year 2: (APN 2002-01) US\$ 40,000

Year 3: (APN 2003-01) US\$ 42,000

Participating countries:

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

A participant from each of the listed countries (except Australia) will be funded by APN. About ten further participants from BMRC, the National Climate Centre (NCC), and CSIRO Atmospheric Research in Australia are expected to be self-funded. There are likely to be at least two participants from New Zealand, but only one will be funded by APN. Pakistan will be involved to assist in their preparation for an APN workshop proposal. Malcolm Haylock, the consultant who has managed the data issues for the previous workshops, is now working in UK. He will be funded to return to Melbourne to support this workshop.

Brief introduction and background:

The importance of monitoring and analysing climate extremes has been highlighted by the last two 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 is the fifth in a series of workshops on Climate Extremes in Southeast Asia and the South Pacific. The workshop will be held in the Bureau of Meteorology, Melbourne, Australia, from 23-25 March 2004.

Outline of activities conducted:

The main activity in 2001 was a three-day workshop in Melbourne, involving representatives of seventeen countries. The next workshop in 2002 focused on meta-data, in addition to the continuing theme of analysing climate extremes.

The key activity for the current year will be a workshop in Melbourne in March 2004. The workshop will follow-up on earlier analyses of climate extremes in rainfall and temperature across the region, and follow-up the work from the last meeting on the collection and archiving of metadata. There will be three new features introduced at the meeting. First, the importance of extending the range of analysed variables will be discussed; in particular, problems associated with monitoring humidity will be considered. Secondly, participants will use web-based techniques to explore the relationship between their data and large-scale variables, like ENSO. Thirdly, there

will be a discussion of how to apply the analysis of extremes to impact assessments, where only changes in mean variables are well known.

Outcomes and products:

The expected products from the project at the workshop in March are listed as follows:

- Each participant will receive a CDROM containing new or updated software for quality control, the calculation of climate extreme indices, and metadata entry. The CDROM will also contain all the presentations from participants, including lectures and country reports. Thus, the CDROM updates and extends the material provided at the previous workshops, and so provides a basis for further improvement of data analysis in each participating country;
- 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; and
- The website <<http://www.bom.gov.au/bmrc/csr/apn>> will be updated to include the results of the current workshop.

The outcomes of the project will 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 metadata by participants.

Future directions and follow-up work:

The current workshop will be the fifth and last of the series hosted by BMRC. It is hoped that the work will be taken up by other groups. The model of these APN workshops will continue to be used in other parts of the world, through other funding mechanisms.