

## Executive Summary

# Symposium on Climate and Extreme Events in Asia Pacific

# Enhancing Resilience and Improving Decision Making

March 19-21, 2003  
20th Pacific Science Congress  
Bangkok, Thailand

EAST-WEST CENTER



## EXECUTIVE SUMMARY

Climate-related disasters can jeopardize social development goals—such as ameliorating poverty; providing adequate food, water, housing, sanitation, and health care; and protecting the environment—as well as economic development investments that provide employment and income. At the same time, the drive for social improvement and economic growth can create new disaster risks (UNDP-BCPR 2004). Thus it is critical to integrate disaster management within the sustainable development agenda.

National, regional, and global agencies are increasingly aware that resilience to climate variability and change is an integral component of sustainable development planning. They also recognize that Asia Pacific communities are among the most vulnerable in the world, particularly small island states and low-lying coastal areas. Hydrometeorological conditions account for 80 percent of Asia Pacific’s natural disasters, and the region accounted for over 80 percent of the world’s climate-related disasters in 1991–2000 (IFRC 2000). Short-term climate variability—including seasonal monsoons, the El Niño–Southern Oscillation (ENSO), and the Interdecadal Pacific Oscillation (IPO)—is compounded by potential long-term changes in temperature, precipitation, storminess, and sea level associated with global warming. The region is particularly vulnerable because:

- Water resources are already stressed in many Asia Pacific countries;
- Climate-sensitive sectors (e.g., tourism and agriculture) and resources (e.g., coral reefs and fisheries) are at the heart of current and future economic development plans; and
- The rich biodiversity and unique ecosystems of Asia Pacific are sensitive to climate variability and change (with both local and global implications).

During the past decade, a number of research programs were designed to enhance our understanding of the nature and consequences of climate-related extreme events in the Asia Pacific region, and to explore the application of climate information to support decision making. Some of the more prominent examples include: the Extreme Climate Events Program implemented by ADPC/ECE; Climate Forecast Applications in Bangladesh, based on models developed by the University of Colorado’s Program on Atmospheric and Oceanic Sciences and Georgia Institute of Technology; the Pacific ENSO Applications Center (PEAC); the East-West Center’s (EWC) Pacific Islands regional contribution to the first U.S. National Assessment; and the Pacific Islands Climate Change Assistance Program coordinated by the South Pacific Regional Environment Programme (SPREP). In parallel, regional organizations like ADPC, the South Pacific Applied Geosciences Commission (SOPAC), and EWC’s Pacific Disaster Center (PDC) have been developing integrated assessment techniques and new technologies to support comprehensive emergency management in the region.

As described in a UNDP report titled “A Climate Risk Management Approach to Disaster Reduction and Adaptation to Climate Change” (UNDP 2002), the concept of climate risk management—reflecting a more effective integration of climate adaptation with

comprehensive emergency management programs—continues to take shape with the UNDP-BCPR, the International Federation of Red Cross and Red Crescent Societies (IFRC), the International Strategy for Disaster Reduction (ISDR), the World Conservation Union (IUCN), disaster management agencies, and humanitarian relief organizations actively leading those discussions. The regional consequences of climate change, including the effects of climate-related extreme events, are expected to provide an important focus for the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC, see Appendix C).

One common element of all these discussions is a recognition that adaptation to natural climate variability not only promises to reduce vulnerability in the near term, but also provides insights and experience that will prove valuable in enhancing resilience to long-term climate change as well.

In this context, EWC, ADPC, and the Pacific Science Association convened the *Symposium on Climate and Extreme Events in Asia Pacific: Enhancing Resilience and Improving Decision Making*, as part of the 20<sup>th</sup> Pacific Science Congress. The Symposium was sponsored by NOAA/OGP, UNDP-BCPR, EWC, and ADPC/ECE (with funding from NOAA/OGP and the U.S. Agency for International Development, Office of Foreign Disaster Assistance).

In the Symposium’s opening keynote address, Dr. Michael (Mickey) Glantz highlighted the importance of addressing the integrated “*climate-society system*.” He emphasized that we must consider societal context, decision-making frameworks, and information needs as well as the ability to monitor, understand, and anticipate changes in the physical climate system. We must create and sustain partnerships among the multidisciplinary community of scientists interested in climate adaptation, and the governments, resource managers, and businesses for whom adaptation represents a matter of survival and sustainable development.

Individual presentations, working groups, and plenary discussions addressed five integrating themes:

- *Communication*—the content, format, and dissemination of climate information to support decision making, as well as the identification of critical information gaps;
- *Participation*—engaging relevant stakeholders and establishing a dialogue with users of climate information;
- *Information use*—how climate information has been and can be used to support decision making, including responses to individual events and the routine integration of climate information in development planning;
- *Institutional capacity*—institutional barriers as well as opportunities to enhance the capabilities of current and emerging organizations;
- *Scientific and technical issues*—critical information gaps and future priorities.

The individual presentations on national and sectoral experiences confirmed the exposure and sensitivity of the Asia Pacific region to climate-related extreme events, and

highlighted opportunities in a number of key sectors: agriculture and food security; drought, flood, and fire management; disaster management; tourism; health; water and other natural resource management; and fisheries. These presentations and subsequent working group discussions also reinforced the central importance of a *highly collaborative, participatory process in which scientists and decision makers share responsibility for developing and applying climate information to enhance the resilience of Asia Pacific communities and improve decision making.*

Symposium discussions highlighted the following points that might be considered ***guiding principles*** for climate information systems.

- ***Address the integrated climate-society system***
  - Climate risk management in a sustainable development context
  - Climate risk management as a valuable framework for building partnerships and guiding climate information systems
- ***Understand vulnerability and focus on building resilience***
  - Place and context matter
  - Understand decision-making framework(s) to help guide climate information development, delivery, and applications
  - Provide mechanisms to continuously assess vulnerability, adjust decisions, identify new opportunities, and routinely integrate new insights and capabilities
  - Emphasize proactive planning
- ***Focus on useful, usable, and actionable information***
  - Scale, timing, format, language, and content of information appropriate to a particular application/user community
  - Products and process responsive to user needs
  - Tools and technology appropriate to a given user and application
- ***Recognize the importance of climate information on a continuum of time scales*** from extreme events through variations in climate on seasonal, intra-seasonal and year-to-year time scales, and climate change on decadal and longer time scales
  - Provide a valuable focus to galvanize the commitment of scientists, government, the private sector, and the public
  - Address today's problems while planning for the future
  - Protect public health and safety, improve decision making in critical sectors, and support long-term planning and policy development

- ***Utilize a team/network approach with partners engaged in an iterative, participatory process***
  - The *process* of communication and dialogue between the providers and users of climate information is at least as important as the individual climate information products
  - Building trust and credibility is essential to success
  - Sharing experiences, expertise, and tools among teams/networks is vital to regional success
- ***Recognize the vital role of trusted information brokers*** (individuals, institutions, associations)
- ***Build on existing systems, institutions, programs, relationships, and networks*** and recognize the necessity of education, training, and capacity building

This provides only a shorthand version of some of the rich discussion that characterized the March 2003 Symposium on Climate and Extreme Events in Asia Pacific. Additional details are provided in the full Symposium Report. The report, as well as Symposium presentations and background materials, can be found online at:

[www2.EastWestCenter.org/climate/extreme](http://www2.EastWestCenter.org/climate/extreme)

In March 2003, the East-West Center, the Asian Disaster Preparedness Center, and the Pacific Science Association convened a **Symposium on Climate and Extreme Events in Asia Pacific: Enhancing Resilience and Improving Decision Making**, as part of the 20th Pacific Science Congress. Individual presentations, working groups, and plenary discussions addressed five integrating themes:

**Communication** issues related to the content, format, and dissemination of climate information to support decision making, as well as the need to identify critical information gaps;

**Participation** issues related to engaging stakeholders and establishing dialogue with users of climate information;

**Information use** issues related to how climate information supports decision making, including responses to individual events and the routine integration of climate information in development planning;

**Institutional capacity** issues, including barriers and opportunities for enhancing the capabilities of existing and emerging organizations; and

**Scientific and technical** issues, with particular attention to critical information gaps and future priorities.

As noted by Mickey Glantz during his opening keynote address, it is important to address the *integrated climate–society system*. We must undertake a collaborative program that considers societal context, decision-making frameworks, and information needs as well as enhancing the ability to monitor, understand, and anticipate changes in the physical climate system. Creating and sustaining the partnerships required for such an endeavor is both a grand challenge and an unprecedented opportunity for the multidisciplinary community of scientists interested in climate adaptation and for the governments, resource managers, and businesses for whom adaptation represents a matter of survival and sustainable development.

The Symposium brought together a diverse mix of scientists, resource managers, and government officials from 17 nations as well as representatives from a number of regional and international scientific, development, and environmental organizations. The participants shared individual experiences and explored lessons learned from both successes and failures in early efforts to use information about climate variability and change to reduce vulnerability in the region. Through their interaction, Symposium participants committed to a new level of collaboration and identified a set of guiding principles for a climate information system designed to enhance resilience and improve decision making.

The Symposium was sponsored by the Office of Global Programs of the U.S. National Oceanic and Atmospheric Administration (NOAA/OGP), the United Nations Development Programme Bureau of Crisis Prevention and Recovery, the East-West Center, and the Asian Disaster Preparedness Center's Extreme Climate Events Program with funding from NOAA/OGP and U.S. Agency for International Development Office of Foreign Disaster Assistance.

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This report can be found online at the East-West Center website:

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