

## HAZARDS '93 Symposium

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### 1. *Background*

The HAZARDS '93 symposium was held in Qingdao, China, from 29 August to 3 September 1993. It was organized by the International Society for the Prevention and Mitigation of Natural Hazards (below: Natural Hazards Society) and the IAPSO Commission on Natural Marine Hazards, as well as by the Research Committee of Natural Disasters and the Institute of Oceanology, both of the Chinese Academy of Sciences.

This meeting on natural and man-made hazards was the fifth in the interdisciplinary and international series begun in 1982. The aims of these symposia are defined as follows: to promote the advancement of hazard sciences, to perceive and explore those aspects that may be similar among some of the various hazards, to review the newest developments in a few selected fields, and also to outline new directions for future research. The theme of HAZARDS '93 was 'Disaster Mitigation: Scientific and Socio-Economic Aspects'.

With the designation by the United Nations of the 1990-2000 period as the International Decade of Natural Disaster Reduction (IDNDR), the important issue of preventing and mitigating natural disasters has received increasing worldwide recognition.

### 2. *Meeting summary*

More than 100 scientists, a slight majority of them Chinese, attended the meeting. Numerous communications, both oral and through posters, were presented during a total of 27 sessions of the symposium.

The scientific sessions were devoted to the following topics: Disaster Mitigation and Management (3 sessions), Climatic/Atmospheric Hazards (2), Tsunami (2), Coastal Hazards (1), Earthquakes/Geological Hazards (3), Environmental Hazards (2), Floods (3), Socio-Economic Aspects (1), Storm Surges (1), Forest Fire Hazards (2), Marine Hazards (4), and Natural Hazards: General Aspects (3).

Besides opening addresses, the opening ceremony included two invited talks. James P. Bruce, Chair of the IDNDR Scientific and Technical Committee, gave a progress report

of the IDNDR activities. Zou Jingmeng, President of the World Meteorological Organization, spoke on the topic 'Modernization of Disaster Forecasting Services'.

Four plenary sessions were held during the conference, including six keynote papers. These included the presentations by Madhav L. Khandekar (Atmospheric Environment Service, Downsview, Canada) about 'El Niño/Southern Oscillation, Indian Monsoon and World Grain Yields - A Synthesis'; Hélène Denis (Ecole Polytechnique, Montreal, Canada) about 'Natural and Technological Disasters: A Comparison between Technical, Sociopolitical and Scientific Issues'; Chen Yong (China) about the 'Prediction of Earthquake Disasters in China and the Strategy for Disaster Reduction'; Selina Begum (Water Resources Engineering Department, Dhaka, Bangladesh) about 'Storm Surges and River Flooding in Bangladesh: a Rising Challenge in a Changing Global Climate'; Alan Easton (Swinburne University of Technology, Hawthorn, Australia) a 'Review of the Oil Spill Models'; and Wang Angsheng (Institute of Atmospheric Physics, Beijing, China) on 'Advance of Disaster Reduction in China and It's [sic] Contribution for IDNDR'.

During the sessions, individual scientists presented papers on how to deal with natural hazards from the methodological or observational point of view. They also reported on inspections of recent natural disasters such as the 1991 floods in China. According to the theme, emphasis was placed on the mitigation aspects and on the need to find practical solutions to problems. Presentations were heard on such topics as the reduction of seismic vulnerability and the situation in Bangladesh. Although all types of natural hazards require particular measures of mitigation, they share a number of common aspects. The most important of these is that their effects can be greatly reduced by pre-disaster actions.

In papers dealing with man-made disasters, case studies were presented on recent catastrophes such as oil spills. Pollution-related problems were reported. The relationship between natural and man-made disasters was recognized as a somewhat underrepresented area of the meeting.

Among the various practical suggestions advanced during the conference was to establish a one billion dollar fund to help developing countries to invest in mitigation measures. Such topics as multihazard management, the need to bridge the gap between the scientific community and government officials, and how to raise awareness of the various hazards among the general public were also discussed.

A special session of the symposium was devoted to meetings of societies and commissions such as the Natural Hazards Society and the Tsunami Society. The symposium programme was completed by an official banquet and an excursion.

### 3. *Remarks*

An interdisciplinary meeting, HAZARDS '93 brought together scientists not only from the various branches of geosciences, but also from the social sciences, as well as engineers and policy makers. This approach is useful and necessary owing to the complexity of risks: a profound evaluation of mitigation policies and tools is not possible

without the exchange of views and experiences between the representatives of the different fields. This exchange is a prerequisite for the successful harnessing of existing scientific knowledge and modern technology to the reduction of disasters.

With participants from almost all over the world, HAZARDS '93 was a very global meeting. Scientists with experience of the practical problems of disasters in developing countries were present, which added to the global view. The importance of this should not be underestimated, because disaster mitigation problems are often approached only from the western point of view.

The host country, China, has often been hit by various natural disasters such as floods, droughts and earthquakes, and it has therefore accumulated a vast experience of the different aspects involved. It was interesting to learn about hazard sciences in China, as such information not always is easily accessible elsewhere. Some linguistic problems arose, however, these did not prevent, for instance, the final plenary session from ending with an outstanding summary discussion.

The next symposium in this series will be arranged in the United States during 1996.