

Ladies and gentlemen, I could dwell at lengths on the central word of the title of the Colloquium, "sustainability". I feel, however, that it is much more important to enter into the substance of the program. I am looking forward to listening to what the presenters have to offer us.

I want to finish by saying that the Bank has been making important efforts to reduce vulnerability. We have an emergency policy lending program which recommends the inclusion of disaster prevention and mitigation in emergency recovery operations. I believe that the Environment Department is well-placed to take the conclusions from an event such as this one, along with our colleagues in the country departments and regional environment divisions, and introduce those factors into the ongoing policy dialogue we have with our borrowing countries.

With those thoughts, I would like to repeat my welcome to you. I am looking forward to the outcome of this Colloquium. At the end of the day, I will attempt to draw some of the threads together and bring to light some of the pointers for future policy. Thank you very much.

### Part III. Panel Discussions

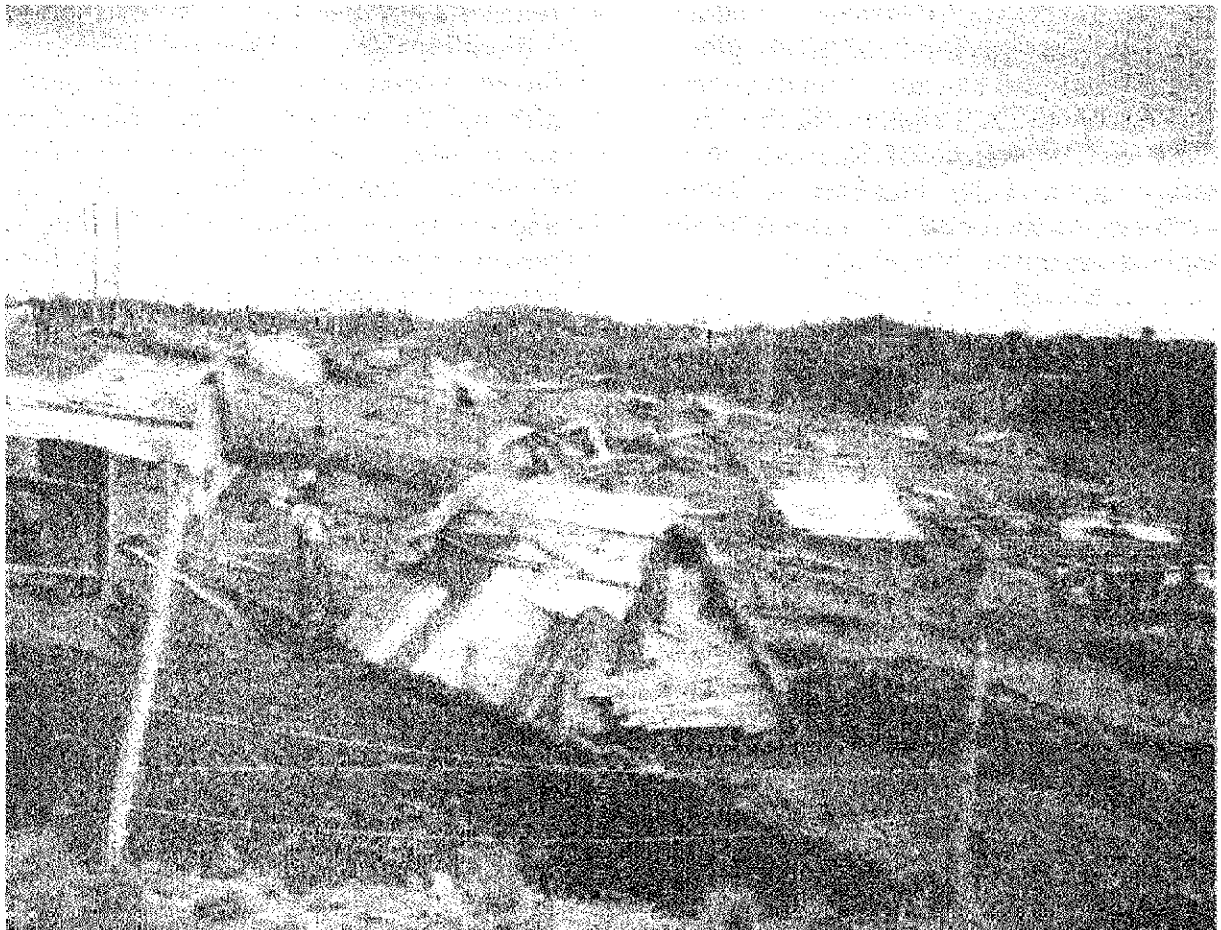
*"It is a matter of international concern that Bangladesh, one of the poorest and most densely populated countries in the world, is periodically devastated by catastrophic floods. We stress the urgent need for effective, coordinated action by the international community, in support of the Government of Bangladesh, in order to find solutions to this major problem which are technically, financially, economically and environmentally sound."*

*Group of Seven, Economic Declaration of the Paris Summit, July 16, 1989*



**Panel 1.**  
**The International Decade for Natural Disaster Reduction**

**Stephen Rattien**, *The National Research Council*  
**Richard Hallgren**, *IDNDR U.S. National Committee*  
**Philippe Boule**, *United Nations Disaster Relief Coordinator*  
**Everardo Wessels**, *moderator, The World Bank*



## Summary of Panel Proceedings

Growing worldwide attention on disaster prevention and mitigation is being generated, in part, by the U.N.'s designation of the 1990s as the International Decade for Natural Disaster Reduction. The first panel of the day set the stage for the Colloquium, providing background on the Decade and its objectives, and identifying critical development and policy issues that are critical to the Decade's goals.

The first speaker, **Stephen Rattien** of the National Research Council, chronicled the development of the global movement for the Decade, from its genesis as a proposal by Dr. Frank Press, President of the U.S. Academy of Sciences, to its passage as a U.N. General Assembly resolution, to current deliberations on the event's eventual form and spirit.

Soon after, the proposal by Dr. Press, the National Academy, public and private organizations, academic institutions, and the United Nations under the leadership of the representatives of Japan and Morocco began to explore the possibility of endorsing and participating in the Decade. By the fall of 1987, a U.N. resolution co-sponsored by 93 nations formalized the International Decade. The resolution called for "...a decade in which the international community, under the auspices of the United Nations, will pay special attention to fostering international cooperation in the field of natural disaster reduction." Mr. Rattien said the Decade would stimulate cooperation among the mosaic of involved actors - national governments, scientific, health, and NGO communities, the public and private sectors, and the media - to achieve an integrated approach to vulnerability reduction.

Mr. Rattien also explained that interest in establishing the Decade was keen for several reasons. First, the scientists and policy makers believed that a coordinated, international program could rally around the cause of disaster reduction. Conversely, if no programs to contain the negative impacts of extreme events were enacted, disasters would become increasingly severe. Also, technological resources could be harnessed for disaster reduction, and the policy makers and development planners could reach a consensus on the issue as disaster mitigation would become increasingly linked to sustainable development. Second, although the incidence of natural disasters could never be completely eliminated, significant reductions in their frequency and impact was considered a feasible and positive option to pursue. Support for an activity to reduce the one-million plus lives lost every decade to natural calamities and to halt the massive disruption of economic progress in developing countries was greeted with enthusiasm by the international community.

Mr. Rattien concluded by outlining the organizational structure for administering the Decade. The U.N. has called for establishing national committees as the primary implementing bodies. These national committees would involve individual countries in the global effort while also allowing each nation to design a disaster reduction program for its individual needs. Soon after the General Assembly resolution was adopted, Mr. Perez de Cuellar, U.N. Secretary General, appointed a 25-member Ad Hoc Group of Experts to recommend how the Decade could be best implemented.

**Richard Hallgren**, Chairman of the

U.S. National Committee for the Decade and a member of the Ad Hoc Group of Experts who advised the U.N. Secretary General on the Decade applauded the International Decade for providing the impetus and framework in which disaster reduction could be achieved on a global basis. He also expressed his encouragement that with the momentum generated by the Decade, available scientific and technological knowledge would be adapted into operational form for the purpose of risk reduction.

Mr. Hallgren presentation largely focussed on the function and critical role national committees will assume in the global effort to reduce vulnerability. As entities representing sovereign countries, the national committees are uniquely positioned to build bridges between organizations and to coordinate and pool resources into regional ventures. Moreover, the national committees could effectively bring disaster mitigation to the community and local levels. He emphasized that if the goal of global disaster reduction is to be attained, developing nations and their national committees would need financial and technical assistance, and that governments and local populations must possess the commitment to reduce vulnerability within their countries.

Mr. Hallgren explained that the national committees have three principal goals: to promote the Decade's activities within their countries; to advise their governments on appropriate risk reduction programs and policies; and to serve as the linkage between country, regional, and international efforts. In this regard, he recommended a series of actions for each committee to take, which included developing a national plan for Decade activities, coordinating policy and legislation to minimize vulnerability, publicizing and increasing public awareness

on disaster prevention and mitigation, bringing donors and benefactors together for concerted action, and promoting research and development for disaster reduction technology and procedures.

Mr. Hallgren concluded by expressing optimism that the U.S. National Committee would be one of the many already-established committees to produce and implement an effective disaster reduction program.

**Philippe Boule** of the New York Office of the United Nations Disaster Relief Coordinator (UNDRO), wrapped up the first panel by reflecting upon institutional and policy issues confronting the International Decade.

Mr. Boule said that the Group of Experts' approach emphasize flexibility and multisectoralism. This approach would establish a comprehensive program to include NGOs and the public and private sector. However, Mr. Boule said, for the Decade's resources to be constructively allocated and for its activities to be successfully administered, a number of key issues need to be resolved.

- Broad qualitative and quantitative targets need to be defined in order to operationalize the Decade and assess its performance.

- Widespread educational programs are needed to change the public's fatalistic belief that natural disasters are inevitable and uncontrollable. These educational efforts also need to convince public officials that reduction programs can be cost-effective and politically popular.

- The scientific community must develop technologies that are

resistant to natural hazards and appropriate for developing-country settings.

- Disaster response needs to be more directly linked to prevention and mitigation.
- The Decade's overall framework for instituting disaster reduction needs to take into account the international economic and political milieu and make the linkages between the lowering of vulnerability and other relevant issues of global consequence, such as environmental degradation.
- The majority of the Decade's activities needs to focus on the local and national level if global disaster reduction is to be assured.

Mr. Wessels, Director of the Latin America Technical Department of the World Bank, the panel moderator, concluded the session and commented on the relevance of disasters on long-term economic development and the importance of correcting the course of disaster management. In a subsequent note, Mr. Wessels elaborated on the importance of the International Decade and the participation in it by individual governments.

## **Background to the International Decade for Natural Disaster Reduction**

**Stephen Rattien**

*Deputy Executive Director*

*Commission on Engineering and Technical Systems  
National Research Council*

The concept of a cooperative international program to reduce natural hazards was first presented by Dr. Frank Press, President of the U.S. National Academy of Sciences, in a speech at the Eighth World Conference on Earthquake Engineering in 1984. In his keynote address to the International Association for Earthquake Engineering (IAEE), he proposed an International Decade for Natural Hazard Reduction, beginning in 1990. After the conference, as copies of the speech circulated, international interest began to build, not only with respect to reducing the toll from earthquakes, but from other natural hazards as well. In response to the first wave of interest, an ad hoc National Research Council (NRC) group developed an internal National Academy report, "Toward a Less Hazardous World," that pointed to the moral underpinning of such a Decade and spurred further NRC actions.

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Interest in establishing the Decade continued to grow and led to the appointment of the NRC Advisory Committee on the International Decade for Natural Hazard Reduction, whose charge was to evaluate the potential for such an effort and how best it might be realized. The Committee, chaired by George Housner of the California Institute of Technology, was composed of natural hazard experts from many disciplines and was drawn from academia, the private

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**Stephen Rattien** is the Deputy Executive Director of the Commission on Engineering and Technical Systems of the U.S. National Research Council (NRC), the research arm of the U.S. National Academy of Sciences. He has principal oversight over the Division of Natural Hazard Mitigation. Mr. Rattien served as Vice President for Technology Development and Transfer at the Center of Innovative Technology; and President of DHR, Inc., a contract research firm. He held earlier positions at the National Science Foundation and the White House Council on Environmental Quality, the University of Pittsburgh, and Argonne National Laboratory. Mr. Rattien received his bachelor's degree in electrical engineering from The Cooper Union, his master's degree in Biomedical Engineering from the University of Rochester and his Ph.D. in Regional Economic Development Planning from Cornell University.

sector, and governmental agencies. In addition to its American membership, the Committee benefited from the input received from experts in Canada, Mexico, and Japan.

The Committee concluded that there was widespread interest in establishing the Decade, noting that the scientific and technological community believed the time was right for a coordinated international program on hazard reduction and, conversely, that if nothing was done, natural disasters would become increasingly severe. The Committee's report, *Confronting Natural Disasters*, stated that there was growing confidence that important advances in coping with natural hazards were within reach of every nation if a global effort was mounted. While it is too optimistic to expect that natural disasters can be completely eliminated during such an effort, a strong program can markedly reduce injuries, deaths, and property damage due to natural hazards.

### United Nations Involvement

In parallel with the efforts of the Committee, there was a growing international dialogue among a number of people engaged in science and technology research relating to natural hazards, as well as among others engaged in hands-on disaster mitigation activities. Among them were Mr. Hans Einhaus, Director and Deputy to the United Nations Disaster Relief Coordinator (UNDRO), and Mr. Hidehiko Sazanami, Director of the United Nations Centre for Regional Development (UNCRD). They and others convinced Dr. Press of the feasibility of the Decade and suggested that the United Nations might serve as a coordinating body for this activity.

As a result, George Housner and I met with a number of U.N. officials and

with the assistance of Hans Einhaus and Philippe Boule, had the opportunity to discuss this activity with Jean Ripert, then the U.N. Director-General for Development and International Economic Cooperation. Mr. Ripert became a champion of the Decade, as did Secretary-General Perez de Cuellar, who subsequently discussed the concept in depth with Dr. Press.

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In the summer of 1987, in parallel with the completion of the Housner Committee report, informal discussions at the U.N.'s Economic and Social Council (ECOSOC) elicited support for the Decade concept, particularly when the link was made between disaster mitigation and the enhanced probability of sustained economic development. U.N. delegates were enthusiastic about supporting an activity that could tangibly reduce the over one million lives lost per decade and that could halt the disruption of economic progress that disasters bring to developing nations. The delegates from Japan and Morocco, Ambassador Taniguchi and Counsellor Ben Moussa, ultimately became leading forces for the Decade. In the fall of 1987, they spearheaded a U.N. General Assembly resolution, cosponsored by 93 nations and passed by consensus, calling for the 1990s to be, "...a decade in which the international community, under the auspices of the United Nations, will pay



special attention to fostering international co-operation in the field of natural disaster reduction...."

The Secretary-General subsequently called for the establishment of national committees and, indeed, a number of countries, including Canada, China, Italy, Japan, Mexico, and Morocco, already have national committees. As of June 1989, the number had reached 30. The U.S. National Committee, chaired by Dr. Richard Hallgren, will meet for the first time on June 21 to 22 here in Washington.

### **International Ad Hoc Group of Experts**

After the General Assembly resolution, the Secretary General appointed a 25-member international Ad Hoc Group of Experts to advise him on how best to implement the Decade. The Group, chaired by Dr. Press, recently completed its work at a meeting in Tokyo, where it issued the attached Tokyo Declaration. Dr. Press presented the Group's report to the Secretary-General at a ceremony in New York City on June 1, and it was well received by the Secretary-General, as well as by the U.N. Steering Committee for the Decade (which has membership from the key participating U.N. system organizations). It will be presented to the Group of 77 nations meeting at ECOSOC this July. Ultimately, it is hoped that the General Assembly this year will approve the detailed plan for Decade implementation so that the international program can begin promptly in 1990.

While the Group of Experts' report was prepared for the Secretary-General and must await his release, it is fair to note that the Group views the Decade with enthusiasm, seeing it as a relatively low cost activity that will yield tangible near-term benefits. The principal focus must inevitably be at the national level, but regional and international cooperation

is critical in sharing knowledge and assisting developing countries. Further, the Decade must be a cooperative endeavor of the U.N. system and outside experts, with the inclusion of experts and organizations of many types throughout the world, including the scientific, technological, and health communities; business and industrial groups; voluntary organizations; donor groups; the media; and others.

As stated in the Group's appended Tokyo Declaration, the Decade is both a moral imperative and an opportunity for the world community, in a spirit of global cooperation, to use the considerable existing scientific and technical knowledge to alleviate human suffering and enhance economic security. Fatalism is no longer acceptable; it is time to bring the full force of scientific and technological advancement to reduce the human tragedy and economic loss from natural disasters. We must take an integrated approach to disaster reduction, bringing new emphasis to pre-disaster planning, preparedness, and prevention, while sustaining our post-disaster relief capabilities. Our humanitarian efforts must be broadened to encompass disaster-resistant investment as well as timely warnings in which people at risk receive, understand, and act upon the information conveyed.

If all goes well, the number of nations having established national committees will soon expand greatly and a unique organizational structure involving expertise both within and outside the United Nations will be created. National programs will take shape, with a distinctly broader orientation than has existed historically, and cooperative programs will be created among professionals and experts from diverse fields. We should also see joint activities among nations as we seek to tackle problems and exploit opportunities common to all.

**Annex 1. Tokyo Declaration on the  
International Decade for Natural Disaster Reduction  
April 11, 1989**

We, the International Ad Hoc Group of Experts for the International Decade for Natural Disaster Reduction, hereby declare the following:

Throughout history, mankind has lived under the threat of natural disasters. Millions of lives have been lost in recent decades, with untold human suffering and property damage as well as setbacks to development efforts. Indeed, the situation is growing worse. Vulnerability to natural disasters is rising due to population growth, urbanisation, and the concentration of industry and infrastructure in disaster-prone areas. But we now have improved capacity to confront the problem. Fatalism is no longer acceptable; it is time to bring the full force of scientific and technological advancement to reduce the human tragedy and economic loss of natural disasters.

This concept is the premise of the United Nations General Assembly decision, in its Resolution 42/169 of 11 December 1987, to designate the 1990s as an International Decade in which the world community joins to cooperate on natural disaster reduction.

The Secretary-General of the United Nations, who was asked to develop a framework to attain the objective and goals of the Decade, appointed our Committee, the International Ad Hoc Group of Experts. We are 25 scientists and technical experts drawn from throughout the world and representing the spectrum of

disciplines engaged in disaster reduction. We will soon submit our report to the Secretary-General, but today we wish to call to the world's attention our common conviction that millions of lives can be saved, hundreds of millions protected from tragedy, and hundreds of billions of dollars saved as a result of the International Decade.

Since our first meeting in Geneva in July 1988, there have been floods in the Sudan and Bangladesh, Hurricanes Gilbert and Juana in the Caribbean and Central America, destructive earthquakes in China, India, Nepal, and the USSR, and severe drought and locust infestations in Africa. The post-disaster response of the international community has been generous. But observing these and other tragic events has convinced us of the need for increased efforts in disaster planning, preparedness, and prevention.

We believe that the Decade is a moral imperative. It is the first coordinated effort to prevent the unnecessary loss of life from natural hazards. It also makes practical sense. The Decade is an opportunity for the world community, in a spirit of global cooperation, to use the considerable existing scientific and technical knowledge to alleviate human suffering and enhance economic security. In implementing the Decade, the vulnerability of developing countries must be of special concern.

Thus we, the International Ad Hoc Group of Experts, call on:

The people of the world, as well as their governments, to work toward greater security against natural disasters;

The governments of all countries to participate actively in the Decade by educating and training their citizens to increase awareness, by enhancing social preparedness, by integrating disaster-consciousness into their development programmes, and by making available the power of science and technology to reduce disaster loss;

The United Nations, scientific and technological institutions, nongovernmental organisations, and the private sector to support international and regional cooperation on disaster-related activities and to contribute to the transfer of disaster-reduction technology, particularly in disaster-prone developing countries.

The Decade is an opportunity for action, both immediate and long term. Specific projects can be implemented immediately to help achieve a safer world. Implementation of the Decade requires commitment of the international community to enhance the level of technical cooperation, particularly with regard to developing countries. The Group calls for all countries to form national committees to plan for and coordinate national efforts. It suggests that the United Nations General Assembly consider the establishment of a unique cooperative mechanism, supported by extrabudgetary resources, that brings together the diverse groups that can contribute to the Decade. It seeks the commitment of the international community to assure the availability of resources to implement this important activity.

The Group is confident that through these actions mankind will capture the promise of enhanced security and prosperity.

International Ad Hoc Group of Experts

## Formation of National Committees for the International Decade for Natural Disaster Reduction

**Richard E. Hallgren**

*Chair, U.S. IDNDR National Committee  
Executive Director, American Meteorological Society*

I am extremely pleased to be able to participate in the Colloquium. For those of us involved in the preparations for the International Decade for Natural Disaster Reduction (IDNDR), it is rewarding to know that the World Bank is interested in considering ways to contribute. I believe it is extremely important for the World Bank to be involved, not only because of the suffering and misery that disasters cause to the people of the world each and every year, but also due to the fact that disasters interrupt the social and economic programs of developing nations.

The IDNDR is an exciting opportunity. It is an enormously complex undertaking and represents a tremendous challenge.

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**Richard E. Hallgren** is presently the Chair of the U.S. National Academy of Sciences' National Committee for Natural Disaster Reduction. He is also the Executive Director of the American Meteorological Society, a nonprofit scientific and professional organization, and a member of the U.N.'s Planning Committee for the International Decade for Natural Disaster Reduction (IDNDR). Mr. Hallgren served from 1979 to 1988 as the Director of the U.S. National Weather Service, which was responsible for providing weather forecasts and flood warnings for the U.S. and the coastal and off-shore waters. He also has been a member of the Executive Committee of the World Meteorological Organization (WMO) and the Assistant Administrator for the National Oceanic and Atmospheric Administration's Oceanic and Atmospheric Services. Mr. Hallgren received his Ph.D. in meteorology from Pennsylvania State University.

In my former role as Director of the Weather Service of the United States, I became painfully aware of the many ways the warning system for the protection of life and property can fail. On some occasions, the disaster survey report would show that we had failed to issue a warning or the warning was inadequate and that, although the science and technology was available to prepare a far more accurate and more precise warning, we had not translated the science and technology into the operational warning system. But more frequently, the disaster survey report would show that we had issued a good warning but the people in the communities either did not get it in a timely way, or did not understand it fully, or did not know what to do. We simply had not done enough in educating the public and in encouraging the development of preparedness plans.

Concerning the IDNDR, or in the case of the United States, the National Decade, disaster reduction activities can go a long way in solving these types of problems. The IDNDR will provide the opportunity for building the bridges among the various groups involved in different types of disasters and in ensuring that all of functions of risk assessments, land-use planning, building codes, monitoring, warning, education, and preparedness treated in a balanced way. A comprehensive program of this type just simply makes better sense than the piecemeal approach that has been undertaken in this country and other countries for too long.

The complexity of the program is somewhat mind-boggling. To be successful, we have to have the full support of so many different organizations, including scientific and engineering groups, communications media, educational groups, insurance and banking corporations, civil protection and voluntary organizations, and disaster management organizations, just to

name a few. These organizations have to come together at the national, regional, and international level. That is the big challenge and the one that we must address because there is so much at stake.

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Too frequently the world's attention is brought into focus on the large disasters such as the Armenian earthquake, Bangladesh floods, or the Colombian volcanic eruption. They were terrible disasters, but they take away somewhat from the fact that there are literally tens of hundreds of smaller scale disasters that happen every day around the world. And these many "smaller ones," which are not in the world's news, collectively take a far greater toll than those that we hear about.

#### Formation of National Committees

I have been asked to focus on the formation of national committees or entities for the Decade. I consider the national arrangements as being the most critical element in the implementation of the Decade. The bottom line is to ensure that the people know what to do for all natural hazards that are common to the area, and the local community has a plan of action that can be quickly swung into motion. This can only be done at the national level. It will involve many people