

# PROCEEDINGS

International Decade for Natural Disaster Reduction (IDNDR)

## PROGRAMME FORUM 1999

5 - 9 July 1999, Geneva





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# INTRODUCTION

This document is a collection of the proceedings based on reports by the rapporteurs of the International Decade for Natural Disaster Reduction (IDNDR) Programme Forum 1999, held from 5 to 9 July 1999, in Geneva, Switzerland. Proceedings of the World Meteorological Organization (WMO)/UN Education and Science Organisation (UNESCO) Sub-Forum on Science and Technology have been published in a separate document by the concerned organizations.

The IDNDR Programme Forum 1999, convened by the IDNDR Secretariat, in collaboration with WMO and UNESCO was officially opened by the United Nations Secretary-General, Mr. Kofi Annan. It was conceived as the substantive closing event for IDNDR with the objectives to:

- ♦ Exchange information on the achievements of the IDNDR programme;
- ♦ Identify remaining gaps and future research needs in the field of disaster reduction;
- ♦ Propose a feasible and effective disaster reduction strategy for the 21st century; and
- ♦ Agree on a future framework for action in the context of the United Nations.

Despite a decade of dedicated efforts, the number and costs of natural disasters continue to rise, given the increasing vulnerability of our societies to natural hazards. More than ever there is a need to strengthen and broaden disaster prevention programmes and, above all, to obtain political commitment from governments, international agencies, civil society and the private sector for a proactive management of risk and application of science and technology at all levels to mitigate the impact of natural disasters.

In this respect, the Programme Forum provided a valuable contribution by facilitating a global multisectoral and inter-disciplinary dialogue. This resulted in the adoption of the strategy "A Safer World in the Twenty-First Century: Risk and Disaster Reduction" and the "Geneva Mandate on Disaster Reduction". Both these documents constituted a major input into the United Nations deliberations on disaster reduction issues and the decision to establish successor arrangements to the IDNDR. Following the Economic and Social Council (ECOSOC) Resolution 1999/63, the General Assembly Resolution (A/54/219) endorsed the recommendations of the UN Secretary-General's report (A/54/497) to adopt the International Strategy for Disaster Reduction (ISDR) as the overall guideline for action, and to establish:

- ♦ an Inter-Agency Task Force, with representation from all relevant United Nations bodies, civil society and the NGO community and regional entities to serve as the main forum within the United Nations for defining strategies for international cooperation at all levels on disaster reduction, based on the ISDR,
- ♦ an inter-agency secretariat for natural disaster reduction as a distinct entity to implement the ISDR and to provide support to the work of the Task Force.

The Task Force and the secretariat are placed under the direct authority of the Under-Secretary General for Humanitarian Affairs and financed from extra-budgetary resources through a specific trust fund.

The proceeding of the Programme Forum provide a useful guide to various activities and policies that should be put in place to create a safer world for ourselves and for future generations. They are addressed to all parts of the disaster reduction constituencies.



# BUREAU FOR THE PROGRAMME FORUM

## **President:**

H.E. Ambassador Akao, Japan

## **Vice Presidencies:**

- Africa (Ethiopia)
- Latin America and Caribbean (Ecuador)
- Europe (Spain)
- Commonwealth of Independent States (CIS) (Russian Federation)

## **Rapporteur General:**

Mr. R. Hamilton, Chair of the United Nations Scientific and Technical Committee (STC) on Natural Disaster Reduction

## **Special Rapporteurs:**

- H.E. A. Tevodjere, Minister of Planning, Benin
- Mr. Wang Ang-Sheng, Chinese Academy of Sciences, China
- Prof. M. Erdik, University of Istanbul, Turkey, and Member of United Nations STC on Natural Disaster Reduction
- Dr. S. Yodmani, Executive Director, Asian Disaster Preparedness Center (ADPC)

## **Secretary:**

Mr. Ph. Boullé, Director, IDNDR Secretariat

TIME

ROOM I

ROOM IV

HALL

ROOM III

DAY 1: Monday 5 July 1999

CLUSTER: ACTION TOWARDS THE 21ST CENTURY

8:30 - 9:30			Registration
9:30 - 9:45	- Message of Welcome to Delegations - Designation of the Bureau - Administration Announcements, Organization of the Conference		
9:45 - 11:00	Regional Approaches to Disaster Reduction : Networking, Synergies and Coordination		
11:00 - 11:30			COFFEE BREAK
11:30 - 13:00	Regional Approaches to Disaster Reduction : Networking, Synergies and Coordination (continue)		
13:00 - 14:00		LUNCH BREAK (FREE TIME)	
14:00 - 14:30	Success Stories		

## OFFICIAL INAUGURATION OF THE PROGRAMME FORUM

15:00 - 15:30	Addresses by Mr. K. Annan, UN Secretary-General and Prof. G.O.P. Obasi, Secretary General of the WMO		
15:30 - 16:00	Keynote Addresses by High level Dignitaries		
16:00 - 17:30	- Introductory Session and Opening Debate Presentation of the Coping Studies: - "Public Perception of Disasters, Economic Impacts and Education Needs" - "Disaster Resilient Infrastructure" - "Disaster Reduction Technology"		
17:30 - 18:00	Wrap-up Session		
18:30 - 19:30	"Open Public Forum : Community Based Disaster Reduction"		

DAY 2: Tuesday 6 July 1999

CLUSTER: EDUCATION AND SOCIO-ECONOMIC CONCERNS

9:30 - 11:00	Educating Future Generations			WMO/UNESCO Sub-Forum on Science and Technology
10:00 - 10:30				Opening
10:30 - 11:30	Civil Society and Partners		COFFEE BREAK	◆ Extra Tropical Storms ◆ Severe Local Storms & Tornadoes
11:30 - 12:00		Disasters, Economy and Trade		
12:00 - 13:00			LUNCH BREAK (FREE TIME)	LUNCH BREAK (FREE TIME)
13:00 - 14:00	Success Stories			◆ Drought ◆ Fire Weather
14:00 - 14:30	Assessment and Projection of Social and Economic Impacts		COFFEE BREAK	
14:30 - 15:30		Health Dimension in Disaster Reduction.	COFFEE BREAK	
15:30 - 16:00	Empowerment of Local Communities			◆ Extreme and Persistent Temperatures ◆ Dust and Sand Storms
16:00 - 16:30		Sub-Session on Health Dimension in Disaster Reduction		
16:30 - 17:30	Wrap-up Session			
17:30 - 18:00	"Open Public Forum" : Networks and Partnerships			
18:30 - 19:30				



# AGENDA

DAY 3: Wednesday 7 July 1999		WMO/UNESCO Sub-Forum on Science and Technology	
CLUSTER: SCIENTIFIC AND TECHNOLOGICAL CONCERNS			
9:00 - 9:30	Toward Integrated Risk Reduction	Urban Mega Disasters	COFFEE BREAK
9:30 - 10:30			COFFEE BREAK
10:30 - 11:00			
11:00 - 11:30	Information Technology for Assessment and Simulation Capacities	Applying Technology for Sharing Information	
11:30 - 12:00			
12:00 - 13:00		LUNCH BREAK (FREE TIME)	
13:00 - 14:00	Success Stories		
14:00 - 14:30	Safe Human Settlements in Disaster-Prone Areas	Towards Earthquake Safe Cities: How to Reduce Earthquake Damages	
14:30 - 15:30			
15:30 - 16:00			
16:00 - 16:30	Early Warning Systems: An Integrated Process	Geological Hazard Assessment - How Science tries to stop hazards from becoming disasters	COFFEE BREAK
16:30 - 17:30			
17:30 - 17:45	Wrap-up Session		
17:45 - 18:30	"Open Public Forum": Early Warning		
DAY 4: Thursday 8 July 1999			
CLUSTER: DEVELOPMENT AND ENVIRONMENTAL CONCERNS			
9:00 - 9:30			WMO/UNESCO Sub-Forum on Science and Technology
9:30 - 10:30	Disaster Reduction within Development - Disaster Reduction and Recovery for Sustainable Human Development	Protection of Natural Resources	♦ Tropical Cyclones ♦ River Floods
10:30 - 11:00			
11:00 - 11:30	Land Use Planning	Vulnerability of Ecosystems and Natural Disasters	Panel Discussion: Vulnerability and Awareness
11:30 - 12:30			
12:30 - 13:00			LUNCH BREAK (FREE TIME)
13:00 - 14:00	Success Stories	Climate Change and Natural Hazards - Experience in and from Switzerland	Panel Discussion: Warning Capacities of Events
14:00 - 14:30			
15:30 - 16:00	Capacitating Developing Countries	"Open Public Forum": Integrated Risk Management	Panel Discussion: Preparedness and Education
16:00 - 16:30			
16:30 - 17:30	Wrap-up Session		
DAY 5: Friday 9 July 1999			
CLUSTER: ACTION TOWARDS THE 21ST CENTURY			
9:30 - 11:00	Climatic Variabilities and Extreme: El Niño, la Niña		
11:00 - 11:30			COFFEE BREAK
11:30 - 13:00	The Disasters of the Future		
13:00 - 14:00			
14:00 - 14:30	Success Stories	LUNCH BREAK (FREE TIME)	
14:30 - 16:00	Programme for the Future		
CLOSING SESSION			
15:00 - 17:30	- Presentation of the Conclusion of the Programme Forum by the Rapporteur General of the Programme Forum - Conference Statement - Strategy for the 21st Century - Closing statement by the President of the Programme Forum		



# OFFICIAL INAUGURATION OF THE PROGRAMME FORUM

## ADDRESSES:

**MR. KOFI ANNAN, SECRETARY-GENERAL OF THE UNITED NATIONS**

**"DESPITE DEDICATED EFFORTS, NUMBER AND COST OF NATURAL DISASTERS  
CONTINUE TO RISE"**

*Following are the remarks of United Nations Secretary-General Kofi Annan on the occasion of the closing of the International Decade for Natural Disaster Reduction, delivered at the International Conference Center of Geneva on the 5 July:*

"As the International Decade for Natural Disaster Reduction draws to a close we have achieved much, but we continue to confront major challenges. It is a tragic irony that 1998, the penultimate year of the Disaster Reduction Decade, was also a year in which natural disasters increased so dramatically.

At the same time, the International Decade has seen major achievements, for that, the IDNDR team here in Geneva, and their partners in and outside the UN system, deserve our gratitude.

There have been major advances in scientific cooperation. Around the world, an interdisciplinary scientific community of meteorologists, geologists, seismologists and social scientists is working ever more cohesively. Despite its limited financial resources, IDNDR has also brought together governments, NGOs, other international organizations and the private sector to work with the scientific community on disaster reduction strategies.

Much has been learnt from the creative disaster-prevention efforts of poor communities in developing countries.

And yet, ladies and gentlemen, we confront a paradox. Despite a decade of dedicated and creative effort by IDNDR and its collaborators, the number and cost of natural disasters continue to rise.

The cost of weather-related disasters in 1998 alone exceeded the cost of all such disasters in the whole of the 1980s. Tens of thousands of mostly poor people have died. Tens of million have been temporarily or permanently displaced.

1998 was, in fact, a truly disastrous year.

In the Caribbean, hurricanes George and Mitch killed more than 13,000. In fact, Mitch was the deadliest Atlantic storm in 200 years. A cyclone in India in June got less publicity. But it caused comparable damage, and an estimated 10,000 deaths.

India, Nepal and Bangladesh were hit by major floods, with more than four thousand killed. Two thirds of Bangladesh was inundated for months: millions were made homeless. But the greatest single disaster of 1998 was China's catastrophic Yangtze flood. Thousands were killed. Millions were displaced. The cost has been estimated at 30 billion dollars - yes, 30 billion dollars.

In Afghanistan, major earthquakes killed more than 9,000 people. In Brazil, Indonesia and Siberia, fires ravaged tens of thousands of square kilometers of forest.

The developed states suffered far less; even so, a single ice storm in January in Canada and the northeast of the United States left 2 billion dollars worth of damage in its wake.

The cost of disasters in the 1990s was some nine times higher than in the 1960s, and it is becoming increasingly clear that the term "natural" for such events is a misnomer.

No doubt there will always be genuinely natural hazards - - whether floods, droughts, storms or earthquakes. But today's disasters are sometimes man-made, and nearly always exacerbated by human action - - or inaction.

Obviously disasters like Mitch can exacerbate poverty. But poverty can also exacerbate disasters

It is no accident that 90 percent of disaster victims worldwide are in developing countries. Poverty and population pressures are forcing growing numbers of poor people to live in harm's way - - flood plains, earthquake-prone zones and unstable hillsides. Their extraordinary vulnerability is perhaps the single most important cause of disaster casualties.

And as cities in developing countries grow ever larger, as urban communication, energy and transportation systems grow ever more dense and complex, the risk of high cost losses is ever greater.

Disasters can also be made worse by faulty development practices. Massive logging operations reduce the soil's ability to absorb heavy rainfall. That in turn makes erosion and flooding more likely. The destruction of wetlands reduces the land's capacity to absorb heavy run-off.

Extreme climatic events may also be caused in part by global warming, which is in turn partly caused by increased carbon emissions from burning fossil fuels. Can it really be a coincidence that 1998 was the warmest year recorded since worldwide measurements were first taken some 150 years ago?

Much remains to be achieved. The programmes initiated during the decade point the way.

We must, above all, shift from a culture of reaction to a culture of prevention. The humanitarian community does a remarkable job in responding to disasters. But the most important task in the medium and long term is to strengthen and broaden programmes which reduce the number and cost of disasters in the first place.

Prevention is not only more humane than cure; it is also much cheaper. Disaster reduction and disaster relief are complementary, and yet quite different. Each is vital. Neither should be subsumed by the other.

Achieving prevention, as the IDNDR team and their partners have tirelessly argued, requires better early warning of impending disasters to give vulnerable populations time to move out of

harm's way. It means better policies to mitigate the effects of natural disasters. But above all, it means greater efforts to reduce vulnerability in the first place.

Unfortunately, such efforts rarely receive much publicity and thus too often fail to engage the attention of top policy makers.

Early warning is critical. But it will achieve little unless we use it for a combined effort by all sectors to plan ahead and build up people's capacity to respond rapidly at the local level.

And if we are to make real progress, we need a better understanding of the scientific and technical requirements of prevention. And we need to apply them resolutely in all our policies on development, housing and land use.

The scientific community understands the importance of the connection between natural disasters, climate change, and land use. The challenge now is to communicate this understanding more effectively to citizens and policy makers.

Prevention policy is too important to be left to governments and international agencies alone. To succeed it must also engage civil society, the private sector and the media.

We know what has to be done. What is now required is the political commitment to do it.

Of course the United Nations is not alone in the disaster prevention field. But it has a special leadership role thanks to its universal character, its broad policy agenda, its capacity for acting as an honest broker and its vital role as a forum for global dialogue.

Real progress will require Member States, NGOs and International Organizations to work together on advocacy, networking and consensus building, creating the sorts of global coalition that we saw in the campaigns to ban landmines and establish the International Criminal Court.

Among our most pressing tasks is to create clear guidelines for future action at all levels.

Above all, let us not forget that disaster prevention is a moral imperative, no less important than reducing the risks of war.

I applaud your extraordinary work over the past decade, and I share your determination to work even harder in the years ahead. Thank you all."

5 July 1999

**PROF. G.O.P. OBASI, SECRETARY-GENERAL  
OF THE WORLD METEOROLOGICAL ORGANISATION**

Distinguished Secretary-General of the United Nations,  
Your Excellencies,  
Distinguished guests,  
Ladies and Gentlemen,

It is indeed an honour and a privilege for me to address this Forum, on a subject of increasing concern to humanity. On behalf of the World Meteorological Organization (WMO) and on my own, I wish to thank the organizers of this Forum and particularly, Mr Philippe Boullé, the Director of the International Decade for Natural Disaster Reduction (IDNDR) Secretariat, for inviting me to address the Forum. It gives me great pleasure to also express my thanks and appreciation to Mr Kofi Annan, the Secretary-General of the United Nations, for gracing this occasion with his presence, and for his leadership, commitment and support to all efforts aimed at reducing the impact of natural disasters, for the welfare of humankind.

Your Excellencies, Ladies and Gentlemen,

You will recall that in 1987, the United Nations adopted Resolution 42/169 on IDNDR, and decided to designate the 1990s as the International Decade for Natural Disaster Reduction. This came about as a recognition of the very severe damages resulting from natural disasters that affect the fragile economic infrastructure of developing countries, especially the least developed, land-locked and island developing countries, and thus hampering their development process. Indeed, in 1979, hurricane David that struck Dominica had set back the Gross Domestic Product of that country by at least five years. The objective set for the Decade was therefore to reduce, through concerted international action, especially in developing countries, the loss of life, property damage, and social and economic disruption caused by natural disasters such as earthquakes, windstorms (tropical cyclones, tornadoes etc ) tsunamis, floods, landslides, volcanic eruptions, wildfires, grasshopper and locust infestations, drought and desertification and other calamities of natural origin.

The initiatives of the UN General Assembly was timely because, as we now know, all the disaster-causing events had occurred with higher frequencies and intensities during the Decade in all parts of the world.

Your Excellencies, Ladies and Gentlemen,

It has long been known that over 70 per cent of all natural disaster-causing phenomena are meteorological and hydrological in origin. For this reason, the primary responsibilities of all national Meteorological and Hydrological Services (NMHSs) are the provision of information and services for the safety of life and property of the citizens of their respective countries. As WMO works very closely with these Services, the primary objectives of its Programmes are such that the NMHSs have access to global data and information that are needed for timely warnings aimed at reducing the loss of life, property damage and social and economic disruption caused by natural disasters. It is to be recalled that such activities were in fact initiated by the predecessor of WMO, namely the International Meteorological Organization (IMO) whose establishment in 1873 was prompted by the need for weather forecasts to improve safety at sea.

Even in recent years, natural disasters associated with meteorological and hydrological phenomena are costing the world economy about US\$50 billion per annum. These disasters have also caused suffering to more than two billion people since 1965 and three million lives have been lost. We only need to recall a few of the recent disasters caused by Hurricane Mitch (1998) in Nicaragua, Honduras and Guatemala; the adverse impacts of the 1997/98 El Niño in Ecuador and Peru; the flooding of the Yangtze River in China (1998) and those of River Oder in Poland, Czech Republic and Germany (1997); the tsunami affecting Papua New Guinea (1998); the forest fires in Indonesia and the associated smoke in South East Asia (1997). The list is a very long one.

Mr Secretary-General, Your Excellencies,

A key concern of the Decade is the application of science and technology to mitigate the impact of natural disasters. As a scientific and technical Organization, WMO has therefore been in the forefront of such applications especially in the mitigation of weather-, flood- and climate-related disasters.

Furthermore, WMO has been very much involved in the planning of IDNDR and has maintained an active role in the implementation of the resolutions and decisions of the United Nations General Assembly as well as the Yokohama Strategy and Plan of Action on natural disaster reduction. In particular, the WMO Congress, the highest policy-making body of the Organization, adopted in 1991 a Plan of Action for the IDNDR. In this connection, WMO continues to give high priority to the collection, processing and exchange of data on natural hazards of meteorological and hydrological origins for national, regional and global use, particularly for the security of property and safety of life. The infrastructure maintained by WMO and the NMHSs for generating data and information in support of natural disaster reduction include, among others, the following:

(a) A global network of about 10,000 surface stations, 700 ocean buoys, 7300 ships and 1000 upper air stations, complemented by over 45000 aircraft observations per day and those from a constellation of ten geostationary and polar-orbiting meteorological satellites, weather radars and automatic weather stations, within the context of the WMO World Weather Watch (WWW) Programme;

(b) A global network of hydrological stations, being further enhanced through the World Hydrological Cycle Observing System (WHYCOS);

(c) A network of over 340 stations under the Global Atmosphere Watch (GAW) for the monitoring and prediction, among others, of transboundary air pollution including radioactivity, changes in the atmospheric concentration of greenhouse gases, and the depletion of the protective ozone layer;

(d) A network of World and Regional/Specialized Centres as well as national Centres of Meteorological and Hydrological Services, providing routine and emergency forecasts and warnings of hazardous meteorological and hydrological conditions such as tropical cyclones, severe storms, droughts and floods;

(e) A series of five Regional Tropical Cyclone bodies which coordinate forecasts and warnings on tropical cyclones and related phenomena such as floods and storm surges in the

respective areas. These bodies are of particular importance to the implementation of relevant components of the Barbados Programme of Action in support of the Small Island Developing States (SIDS);

(f) Specialized Centres for issuing warnings of tropical cyclones, floods, droughts, locust infestations, forest fires and other environmental hazards; and

(g) A network of 23 Regional Meteorological Training and Research Centres. For example, during the Decade, WMO specifically organized training courses for over 1,000 meteorologists in tropical cyclone forecasting and offered over 3,000 fellowships on subjects related to disaster mitigation.

In order to enhance the capacities of national Meteorological and Hydrological Services to provide timely warnings and advisories of weather- and climate-related natural disasters such as tropical cyclones and droughts, WMO has provided, during the Decade period, approximately US\$200 million of technical assistance in support of national and regional development projects.

In addition to the long-term activities, WMO has developed and implemented the following projects, specially geared to the goals of the IDNDR:

- ◆ *Tropical Cyclone Warning System for the South-West Indian Ocean Region* - to upgrade substantially the warning system through the application of meteorological satellite and computer technology, and the transfer of scientific knowledge;
- ◆ *Comprehensive Risk Assessment* - to promote a comprehensive approach to risk assessment in order to help reduce loss of life and property caused by flooding and other natural disasters;
- ◆ *System for Technology Exchange for Natural Disasters (STEND)* - to identify and facilitate the transfer of technology for use in reducing the impact of natural disasters. In addition, WMO's Hydrological Operational Multipurpose System (HOMS) helps in technology transfer related to flood forecasting;
- ◆ The development, jointly with the International Council for Science (ICSU), of a *pilotless aircraft to improve the observation of tropical cyclones*

Furthermore, the WMO World Weather Watch network also supports other comprehensive early warning programmes dedicated to specific hazards, such as the communication of information and warnings about volcanic ash clouds in cooperation with International Civil Aviation Organization (ICAO), dissemination of tsunami warnings in cooperation with UNESCO's Intergovernmental Oceanographic Commission (IOC), and the communication of information about nuclear accidents, in cooperation with the International Atomic Energy Agency (IAEA). WMO has also collaborated with the World Tourism Organization in the preparation and publication of a handbook on natural disaster reduction in tourist areas.

Mr Secretary-General, Your Excellencies,

The advent of increasingly powerful computers, improved observational capacity using satellite-based sensors, telecommunications and enhanced research efforts have led to improved understanding and prediction of weather and climate systems. Such advances have enabled the provision of skillful weather forecasts and warnings, of up to about 10 days in advance in the extra-



tropical regions. Such information has been useful in minimizing the negative consequences of natural disasters on water resource management, energy use, transportation, agricultural production and many other socio-economic activities.

In addition, intensive monitoring and data collection of the equatorial central and eastern Pacific Ocean, carried out during the Tropical Ocean and Global Atmosphere (TOGA) Project (1985 - 1994), resulted in a breakthrough of knowledge in El Niño prediction. These developments in El Niño prediction of a few seasons to a year ahead have been successfully used in many regions for early warning of El Niño-related extreme weather and climate events and the associated socio-economic impacts. Such prediction capability now form crucial components of early warning and disaster preparedness activities in many regions of the world where strong El Niño signals have been detected. In this regard, *the International Seminar on the 1997/98 El Niño event: Evaluation and Projections*, held in Ecuador in 1998, recognized the importance of such capability in support of sustainable development. It is to be recalled that the 1997/98 El Niño caused global damage of at least US\$34 billion. That Seminar also agreed on the need for the establishment of an International El Niño Centre which Ecuador is prepared to host.

It is to be noted, however, that the performance of the new generation of climate models used in seasonal prediction needs further improvement in some regions of the world, such as in the tropics, where relatively more research have to be carried out, and where the networks of surface and upper air observations are often sparse. In addition, considerable research is still required to fully understand the processes involved in the space-time evolution of most of the systems which result in natural disasters, especially those which are local or sub-regional in nature such as hailstorms, lightning, thunderstorms and tornadoes.

A scientific challenge for the next century is to further explore and enhance those advances in science and technology relevant to the mitigation of natural disasters. To date, the prediction of weather-related disasters with good lead-time and adequate preparedness is still the best disaster mitigation option. Indeed, studies of the economies of disasters showed that for every dollar spent on prevention and preparedness, between US\$ 100 and 1000 are required for an equivalent effect after a disaster. In addition, it is not possible to attach a monetary value on the life of a human being.

In its efforts to continually improve the capability of skillful prediction of weather and climate including natural disaster-causing events, WMO in collaboration with the IOC of UNESCO and ICSU has been implementing a *Climate Variability and Predictability (CLIVAR) project* under the World Climate Research Programme. The project is building upon the achievements of TOGA. Also, WMO Congress has recently instituted a new research project entitled *World Weather Research Programme* mainly to better understand the intensive weather phenomena that are responsible for disasters.

Mr Secretary-General, Your Excellencies,

Intensive weather and climate phenomena that result in natural disasters constitute a normal component of the global climate system. They had occurred in the past and will continue to occur in the future. What will be required is to further understand their nature. For instance, it has been noted that since the early 1970s, El Niño phenomena have been more frequent than La Niña. Associating some of these observed extremes to global warming is still a question of scientific debate, due to limitations of data, and the scientific knowledge for the detection and attribution of observed climate variability and climate change signals.

*The Second Assessment Report of the WMO/UNEP Intergovernmental Panel on Climate Change (IPCC)* issued in 1995 contained an assessment of the impact of climate change on phenomena that can result in natural disasters. While more research is required, it is expected that a warmer climate will result in a more intense hydrological cycle leading to increased drought conditions in some areas and floods in others. The Third IPCC Assessment Report which is expected to be issued in the year 2001 will provide further insights into the subject.

Mr Secretary-General, Your Excellencies, Ladies and Gentlemen,

This Forum is expected to propose a cost-effective strategy as well as guidelines and a programme of action for a coordinated and comprehensive approach to the reduction of the impact of natural disasters, as a contribution to sustainable development in the 21st century. In undertaking these tasks the Forum should take the following into account.

Firstly, the need to critically assess the current state of the science and technology used in natural disaster reduction and prevention, identifying improvements made during the Decade and, most importantly, making suggestions for future operational and research programmes to ensure continued progress. Some of the areas of focus should include the enhancement of current scientific ability to forecast geophysical events that cause natural disasters, and the strengthening of scientific and technological infrastructure, including observational networks, to support nations in natural disaster mitigation. Particular emphasis should be placed on existing national, regional and international capacities to determine vulnerability, undertake preparedness actions, provide warnings and promote awareness through public education programmes.

Secondly, the Forum might wish to propose how best the regional centres, especially those in developing countries, which monitor and provide early warnings should be further supported. As many of the disasters have regional and global dimensions, the resources required are sometimes beyond the capacity of many countries. A good example of the global dimension of natural disasters is the worldwide occurrence of extreme weather, hydrological and climate events, causing disasters which are observed during El Niño/La Niña episodes. In this connection, an El Niño International Centre could be established, to be hosted by Ecuador as earlier indicated.

Thirdly, as the major early warning tools in the 20th century were products of research including the current ability to provide skillful prediction of El Niño, the Forum should propose how best to enhance support for continued research at national, regional and global levels. WMO will continue to provide the international coordination of relevant research through its *Atmospheric Research and Environment* and its *World Climate Programmes* to enable the scientific community and all Member countries to maximize the benefits from all research results which may be useful for early warning and disaster preparedness.

Fourthly, there is a need to identify an intergovernmental mechanism for addressing earthquakes and volcanic eruptions so that the occurrence of these phenomena are better addressed.

Mr Secretary-General, Your Excellencies,

The implementation of the action plans for the Decade has resulted in significant awareness for enhanced collaboration between the scientific and technical agencies and the humanitarian and development agencies, particularly within the United Nations System. In our view, the humanitarian and development components have to be coordinated by the Office for the

Coordinator of Humanitarian Affairs (OCHA), and the United Nations Development Programme (UNDP), while the scientific and technical aspects is to be coordinated by an Inter-Agency Secretariat supported by all relevant UN Specialized Agencies and Programmes. Such an arrangement will ensure the enhancement of the scientific and technical programmes in support of the mitigation of natural disasters.

As we move into the next millennium, there will be increasing concern on how to more effectively address the wide-ranging effects of natural disasters. Although some progress have been made during the Decade, much more remains to be done. In some circles, it is still believed that the answer to such questions is in the enhancement of humanitarian assistance. Such belief is based on the philosophy that natural disasters are acts of God and not much can be done about them. Our view is that science and technology can make the required difference. This is the case with Bangladesh where in 1970 about 300,000 people lost their lives when struck by a tropical cyclone. A similar intense cyclone that struck in 1994 caused a loss of less than 500 people due to enhancement of scientific and technological support in mitigation efforts.

I hope therefore that this Forum will look back on the significant difference made by science and technology, over the Decade period, and formulate with conviction, appropriate strategies to address the related concerns of humanity in the 21st century.

Thank you.

**H.E. AMBASSADOR N. AKAO, PERMANENT REPRESENTATIVE OF JAPAN  
PRESIDENT OF THE PROGRAMME FORUM**

***"A Message from the Yokohama Conference to The Programme Forum in Geneva  
and Beyond to the 21st Century"***

Distinguished delegates, Ladies and Gentlemen,

First of all, I am very much honoured to be given this opportunity to chair the IDNDR Programme Forum, which will bring the International Decade for Natural Disaster Reduction to its conclusion by recalling what we have originally aimed, reviewing what we have eventually achieved and refining where the needs are to be carried out for the future. I would also like to express my heartfelt appreciation for the excellent job done by the United Nations IDNDR Secretariat in arranging this Forum, and for the efforts and work that have been put into this Forum by national delegations as well.

I had the honour to serve as chairman of the 1994 World Conference on Natural Disaster Reduction, the mid-point in the Decade, which was hosted by Japan in the city of Yokohama. The Conference, which was attended by delegations from 155 countries and territories, United Nations agencies, academia, private business and NGOs, turned out to be a great success with the adoption of the "Yokohama Strategy and Plan of Action for a Safer World" and the "Yokohama Message".

At the outset of this today's Programme Forum, allow me to share with you what I believe the Yokohama message was, as it formed the directions and priorities in the field of natural disaster reduction in the second half of the Decade.

The Yokohama Message stated "disaster prevention, mitigation, preparedness and relief are four elements which contribute to and gain from the implementation of sustainable development policies." "Prevention is better than cure." This is the essence of the Yokohama Message.

As you have heard, the message is too simple to forget it; but it is also very difficult to realize. It was well prepared, with the audience five years later in mind, but it certainly did not mitigate our work during the second half of the Decade. On the contrary, much work has been undertaken to let the message materialize. Let me give you some highlights of how Japan followed up the Message, in my capacity as head of the Japanese Delegation.

For cross-border regional cooperation, Japan opened the Asian Disaster Reduction Center in the city of Kobe last July, the city now remarkably recovering from a devastating earthquake in 1995. The Asian Disaster Reduction Center will serve as one of the central organizations of multilateral cooperation in the disaster-prone Asian region by promoting information exchange and joint research among Asian countries.

For technology transfer and training, Japan has been engaging in human resource development programmes in developing countries in the light of the pressing need for disaster prevention technology. We have provided cooperation for training programmes in flood control and sabo (landslide prevention), and technical cooperation in areas such as seismic engineering and meteorology.

Japan has also made significant contributions in financial terms and in human resources to the IDNDR Secretariat. This continuous support includes the "RADIUS" project which develops techniques for forecasting and preventing earthquake damage in urban areas, the outcome of which will be disclosed at one of the sessions of this Forum.

I am confident that all of you, with the Yokohama Message in your mind, have dealt with the mitigation of natural disasters in the latter half of the Decade. In my capacity as chairman of this Forum, I strongly encourage you to present to us what you have achieved in the coming five days. Each of the presentation and the subsequent discussion will, I believe, bring this Forum to a success.

Distinguished Delegates, Ladies and Gentlemen,

The need for concerted international efforts for disaster reduction does not end because the ten year programme of IDNDR comes to its conclusion.

The international community will need to build on the achievements and intentions of the International Decade for Natural Disaster Reduction and continue to share their experiences and disaster prevention technology so as to further progress in mitigating the damage from natural disasters in the twenty-first century.

We know that the Secretary-General is putting forward proposals for setting up an appropriate platform that would bring about concerted global action to continue the work done by IDNDR. As we can see from the presentations of regional and national IDNDR achievements, the importance of the functional continuation of the existing international framework as well as the regional institutions beyond the Decade is being emphasized.

Natural disaster is a real problem. More than twenty lives were lost in Hiroshima quite recently, a dreadful reminder of the power of nature.

As we end the Decade and proceed into a new millennium, we still are not able to eliminate natural disasters, nor the devastating damage they cause. Nature is sure to take advantage of yet another new vulnerability of ours, namely the concentration of population and industry.

But let us not be discouraged by this. Let us not let disasters prevent us from working together, sharing our experience and taking further steps. I am happy to reaffirm that Japan will continue to play an active role in disaster prevention cooperation through the ADRC as well as through bilateral and multilateral ODA.

Five years ago, we came together at the seaside metropolis of Yokohama.

Today we gathered in the mountainous lake city of Geneva. Let mother nature inspire you, to take part in active discussion of the issues coming up in this Forum, to lay the groundwork for pooling the wisdom and energy towards the common goal of mitigating natural disasters, so that very soon in the next century, we will be able to give a sigh of relief.

Thank you

**Mr. M. LEGGERI**, DEPUTY PERMANENT REPRESENTATIVE TO THE UN ON BEHALF OF **H.E. AMBASSADOR FULCI**, PRESIDENT OF THE ECONOMIC AND SOCIAL COUNCIL (ECOSOC) OF THE UNITED NATIONS

The President of ECOSOC, Ambassador Fulci, has asked me to convey to you this message:

"Ladies and Gentlemen,

You are gathered here in Geneva this week to review IDNDR's achievements over the past ten years and to formulate an action programme for disaster reduction in the twenty-first century. This is a challenging task.

Holding a substantive Forum as a component of ECOSOC already represents an important innovation. I am convinced that the quality and depth of your presentations and discussions will greatly facilitate the work of ECOSOC, providing a sound basis for decision-making on future arrangements.

1998 has again placed natural disasters visibly on the international agenda. The message that this Forum is sending to the world is that disaster reduction is feasible and possible. Vulnerability can be reduced; natural phenomena need not turn into disasters that kill and impede severely on economic wellbeing. Technological tools for disaster reduction are continuously improving, and their social and humanitarian implications are becoming ever clearer.

I am impressed by the variety of issues to be discussed during this meeting. This variety testifies to the universal and multi-sectoral character of disaster reduction, and to the commitment of the international community to effective and concerted action.

I therefore look forward, like all my colleagues, to receiving the results of the Programme Forum and your strategy of action for the future. I wish all partners of the IDNDR Framework for Action a successful conference."

**MR. R. HAMILTON**, USA, CHAIR OF THE UNITED NATIONS SCIENTIFIC AND TECHNICAL COMMITTEE ON NATURAL DISASTER REDUCTION AND RAPPOREUR GENERAL OF THE PROGRAMME FORUM

Good afternoon, Ladies and Gentlemen,

Mr. Secretary-General, Excellencies,

I appreciate the opportunity to join in welcoming the participants to the Programme Forum, the final event of the International Decade for Natural Disaster Reduction.

I am participating in this opening session in my capacity as Chair of the IDNDR Scientific and Technical Committee, the 25-member group of experts who have been responsible for reviewing overall programs of the Decade.

I should note that the STC has completed its report to the Secretary-General assessing progress during the Decade and identifying challenges for the future, and that report is available at this meeting.

At this opening session, hoping to stimulate your interest in the report, I would like to briefly mention the five challenges:

- First, to integrate disaster prevention and mitigation into overall economic planning; it is not logical to do otherwise.
- Second, to anticipate the vulnerabilities being created by increasing population concentrations in large urban centers, that is, megacities, with their dependencies on complex infrastructures.
- Third, to reduce the vulnerability of ecosystems and environmental resources to natural hazards, which directly affects livelihoods and the quality of life.
- Fourth, to improve disaster prevention and mitigation capabilities in developing countries, so they can better manage their own risks.
- And fifth, to assure effective coordination and implementation of programs.

On this last point, I commend the United Nations for focussing world attention on the importance of natural disaster reduction, and I urge the UN to lead us into the 21st century.

Along these lines I make one recommendation: prevention and mitigation of natural disasters should not be subordinated to emergency response and recovery.

History shows that humanitarian crises always absorb all the available resources, leaving nothing for long-term prevention and mitigation strategies.

Moreover, the nature of emergency response, dealing with short-term housing, food, and health needs, is inherently different from prevention and mitigation, which deal with land use, building practices, and warning systems.

Coordination of natural disaster prevention and mitigation should be separate from but linked with, coordination of emergencies.

Finally, I would like to take this opportunity to thank all those who have contributed to making the IDNDR a successful program, especially the Secretariat, those Member States that have provided the financial resources and that have conducted programs, and the experts who have given their time to the STC

I welcome you to the Programme Forum.

Thank you.



**MR. CH. KERT, FRANCE, PRESIDENT OF THE NATIONAL COMMITTEE FOR IDNDR, MEMBER OF THE FRENCH PARLIAMENT**

[Translated from French]

Mr. Chairman, Mr. Secretary-General, Excellencies, Ladies and Gentlemen,

You have put a number of questions to me. You have asked me how France has taken up this Decade, the last before the end of this century, one that is so important in terms of scientific progress, the last decade in a millennium where we will have to build a new world. How has France taken up its destiny during this decade, faced with an increase of major risks, the ignorance and fear of some, and the economic constraints. The experience of IDNDR calls for establishing a more responsible prevention society, one that is characterized by greater solidarity, one more open to the rest of the world and in particular to developing countries.

During the last decade, France has realized that globalization, demographic pressure, urban growth phenomenon and the changes in our economies have inexorably led us to increasing vulnerability of our modern societies. We had theoretic systems but they had not been wide spread in implementation. We have noted greater impetus between 1992 and 1995 to bridge the gaps, which has enable France to make progress.

We have had a very specialized scientific approach. We then have considered science of nature, engineering, social and human sciences, thus changing our way of thinking. Experts and governments have accepted to opening up to local groups, local communities and the civil society. Politicians and technical experts have understood each other better.

In the last three years, France enjoys a strong symbolic presence for the evaluation of risks with a planning commissioner in the executive and a parliamentarian responsible for technological and scientific choices in the legislative. Frances wanted its National Committee to open up. A specific working group was set up along with demonstration projects with respect to what can be done at the urban level and specific projects organized in Point-à-Pitre, Nice and Grenoble where a major meeting was held recently.

We have concentrated on cooperation in the European sphere and international cooperation such as that in the Caribbean and in the Mediterranean, in particular concerning the protection of forest, and I think, Ladies and Gentlemen, that together we have been able to deal with the problems better. It is a good idea to meet together in Geneva. First of all we emphasize the essential need to see prevention integrated completely in our programmes together with land use and development programmes for a sustainable development of human establishments.

Can we accept people not realizing what risks represent? No. We therefore need to exchange experiences, to share our risk stock, to realize more about risk and hazards. We need to mobilize our efforts to prepare individuals in terms of prevention by looking at the role of NGOs and civil society given that they all have their specific responsibilities. We need to look into the proposals to establish a World Prevention Fund comparable to the World Environment Fund as a prevention policy necessitates financial resources.

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And, very frankly, that are the two major ideas which have been present throughout our work. First, the emergence of a new idea of risks associating science, education, technology, new communication and, media, and second, a 21st century culture enabling us to build a world characterized by greater solidarity and, we hope, more fraternity. People have to be familiar with disasters, which they have suffer, sometimes even personally.

We hope that the coming century will be characterized by our greater role. Societies will remain fragile and vulnerable. It is because they are asking still today about risks that we need to provide a reply

Martin Luther King hoped that people would be able to have three meals per day to fulfill their needs. So we need to have freedom and equality to feed our minds. We saw that we can all work together to prepare the Forum in Geneva. We all saw that people needed knowledge in order to promote their individual security, which is the greatest need. And we note today that in one way or another we have to continue our efforts. We need to have international focal points outside and within the United Nations system to maintain an interagency mechanism in order to encourage international cooperation.

In the way of conclusion I would like to say that the Forum is very important. Let us give a face, with a pronounceable word, to our struggle for the coming decades. Let us act together to find the financial resources enabling us to continue our efforts. And let us be courageous enough to believe that everyone will be able to have access to this new culture, the culture of risks. New solidarity is opening up its doors broadly to this new culture and we can call this the oath of Geneva.

Thank you.

**H.E. FAN BAOJUN**, PEOPLE'S REPUBLIC OF CHINA,  
VICE CHAIRMAN AND SECRETARY-GENERAL OF CNCIDNDR,  
VICE MINISTER OF CIVIL AFFAIRS

Mr. Chairman, Ladies and Gentlemen,

First of all, please allow me, on behalf of the Chinese delegation to convey our warm congratulations to the opening of this Forum.

The aim of IDNDR is to effectively mitigate natural disasters through concerted efforts worldwide. Over the decade, the United Nations system has been playing a positive role and scored outstanding achievements in promoting IDNDR activities in a far-reaching way and raising the public awareness of natural disaster prevention. The Chinese Government highly appreciates these achievements.

The Chinese Government attaches great importance to natural disaster management and reduction work. While devoting itself to the economic construction, it has established the significant position of natural disaster reduction in the national economic construction and social development. Since its establishment in April 1989, the China National Committee for IDNDR (CNCIDNDR) has done a great deal in formulating the national plan and policies for natural disaster reduction, organizing and coordinating relevant departments and NGOs as well as providing guidance to local governments to carry out disaster reduction activities. In April 1998, the Chinese Government promulgated the "National Natural Disaster Reduction Plan of the People's Republic of China (1998-2010)", which clarifies the guiding principles, tasks and measures for natural disaster reduction, and put forward major actions to be taken.

The Chinese government has strengthened the legal construction of natural disaster reduction. Since 1989, several laws have come into force, such as "The National Earthquake Prevention and Disaster Reduction Law of the People's Republic of China"; "The National Fire Fighting Law of the People's Republic of China" and "The Flood Control Law of the People's Republic of China". These laws have gradually provided a sound legal basis for natural disaster reduction.

In the 1990's, China has experienced many severe natural disasters such as floods, earthquakes and droughts. In particular, the great 1998 floods along the valleys of the Yangtze River, Nen River and Songhua River have been seldom seen in history. Confronted with threats from natural disasters, the Chinese Government and the Chinese people struggled together as one to achieve one victory after another in the fight against natural disasters.

During the unyielding struggle against natural disasters, an operational mechanism for comprehensive natural disaster reduction with Chinese characteristics has come into being and been improved, which could be described as "overall decision-making and coordination at various levels with a due division of labor; well-planned organization and mass participation by the whole nation; guiding by science and technology and stress on prevention; and promoting beneficial measures to remove disaster risks and ensure development." In June 1999, the United Nations and the Chinese Government successfully held the "International Workshop on Natural Disaster Management".

In natural disaster reduction, we have also received extensive support and help from the international community. Here I would like to express our heartfelt gratitude. In our future work, we will fully implement "The National Natural Disaster Reduction Plan" and enhance comprehensive capacity in natural disaster reduction. We will actively take part in international cooperation in natural disaster reduction and make due contributions to international natural disaster reduction.

Mr. Chairman,

With the approaching of the 21st century, we are still confronted with a very severe natural disaster situation. Based on the IDNDR achievements, it is necessary for the international community to make more concerted efforts to mitigate natural disasters. For this purpose, I would like to make the following proposals:

1. Retaining the existing UN institutions for natural disaster reduction so as to continuously promote and coordinate international actions on natural disaster reduction.
2. Formulating an information-sharing plan for the international disaster reduction, fully utilizing science and technology to set up a global information network of natural disaster reduction and gradually realizing the sharing of information in the field.
3. Establishing "the UN Funds for International Natural Disaster Reduction" aiming at supporting major disaster reduction projects and actions, education and training programs. Meanwhile, the developed countries should take effective measures to increase assistance to the developing countries in natural disaster reduction, particularly help the developing countries improve their capacity in natural disaster reduction.
4. Establishing monitoring and early warning systems for major natural disasters worldwide to enhance the mankind's capacity in responding to these disasters.
5. Establishing an effective mechanism for the liaison and coordination of experts specialized in natural disaster reduction so as to promote exchanges and cooperation among them.

Mr. Chairman, this Forum is a significant event in IDNDR in reviewing the past and looking to the future.

I am confident that this Forum will surely lay a solid foundation for the cause of international natural disaster reduction in the coming century.

Finally I wish the Forum a full success.

Thank you, Mr. Chairman.

**H.E. A. FISCHER**, VICE PRESIDENT OF COSTA RICA AND CHAIR OF THE IDNDR MEETING FOR THE AMERICAS

[Translated from Spanish]

Ladies and Gentlemen,

It is for me a great honor to participate, as representative of the Latin American and the Caribbean nations, in the closing event of the International Decade of Natural Disaster Reduction. It is also a true pleasure to be in a country as exceptional as Switzerland always generous, which has opened up its hospitality to us.

We are here to analyze the achievements of one of the most important platforms of interaction for prevention of natural disasters at the regional and international level. Thanks to this Decade, the international community today is aware of the need for an approach based on medium and long term development, as well as the establishment of a prevention culture in the social sphere.

The Decade has contributed to the universal legitimization of this issue, to the development of a technological and political framework and to the opening up of regional

fora among partners and nations. And above all, it has highlighted the need for the promotion of integrated multi-sectoral strategies for the reduction of disasters, in a framework of national development plans, as a fundamental part of the process to improve the life standards of our people.

For this reasons, we hope that, with the assistance of all parties present, the United Nations system shall continue to play the role of international coordinator for prevention, mitigation and preparedness face with all types of disasters and this beyond the Decade which is coming to an end in order to ensure the permanency of the results that have been achieved and to extend the possibilities of a positive impact.

We stress the need to benefit from the achievements.

We have thus respectfully appealed to the United Nations system to maintain its leadership role in this area.

We want to continue to support the necessary substantial changes in the behavior of the citizens; to incorporate an integral perspective of risk management and prevention in the development plans of our countries; the social appropriation of information in order to lead to concrete decisions and actions.

Under this leadership we hope to achieve further knowledge on natural phenomena and scenarios on which impact may be achieved.

Ladies and Gentlemen,

It is absolutely necessary to continue along the path already embarked upon so that the Decade may overcome the causes, which generate vulnerability and risks, especially for those who live in poverty still today.

We must continue to promote land use planning; we have to avoid the repetition of mistakes; we need to convince people not only of social but also economic advantages of preventive measures.

Faced with the achievements made by the Decade, internationally and in particular in the Latin American and Caribbean region, we express our great interest to keep alive the working platform established during these past years.

Costa Rica is firmly convinced in appeals to the United Nations system to analyze the possibility of keeping open the Regional Office for Latin America and the Caribbean with the view to giving continuity to prevention, mitigation and preparedness projects

Of course the agenda is broad and ambitious. But even higher are our aspirations to achieve worthy and secure live for all of our people.

Certainly, there will be unavoidable responsibilities within each and every one of our countries. We trust that in the United Nations system we can keep alive our hopes.

Thank you.