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WORLD METEOROLOGICAL DAY 2006

PREVENTING AND MITIGATING NATURAL DISASTERS

Message from Mr M. Jarraud Secretary-General of WMO

Every year on 23 March, the World Meteorological Organization (WMO) and its 187 Members, as well as meteorological communities worldwide celebrate World Meteorological Day. This Day commemorates the entry into force on that date in 1950 of the Convention that created the Organization. For the year 2006, the theme "*Preventing and mitigating natural disasters*" was chosen for the celebration. The choice is made in recognition of the fact that 90 per cent of all natural hazards are related to weather, climate and water and of the vital role played by WMO and the National Meteorological and Hydrological Services (NMHSs) in all countries in contributing to prevention, preparedness and mitigation of natural disasters, as well as those arising from environmental emergencies. A synopsis of extreme events in the recent past shows their growing impact on sustainable development.

The year 2005 was marked by prolonged droughts in parts of the Greater Horn of Africa, parts of Europe and Asia, Australia and Brazil. Malawi suffered its worst drought in a decade. Heavy rainfall, exceptional in some cases, caused extensive flooding in various parts of the world. A record number of devastating hurricanes was observed in the Atlantic Ocean. This year the Antarctic ozone hole was the third largest ever recorded after the years 2000 and 2003. Also, greater ozone depletion took place in the Arctic.

The year 2004 had already been earmarked as very severe in terms of natural disasters. In particular, on 26 December 2004, devastation by the Indian Ocean tsunami reached an exceptional level in terms of human loss, number of countries affected and the magnitude of subsequent response-and-recovery efforts.

During the 10-year period 1992-2001, natural disasters worldwide were linked to more than 622 000 deaths and affecting over 2 billion people. Economic losses from hydrometeorological disasters were estimated at US\$ 446 billion, thus accounting for about 65 per cent of the total losses due to all natural disasters for the period.

The economic impact of natural disasters has shown a marked upward trend over the last several decades. Additionally, developing countries, especially the Least Developed Countries (LDCs) are more affected by these hazards, thereby increasing their vulnerability and setting back their economic and social growth, sometimes by decades.

For WMO, preventing and mitigating natural disasters is a top priority. For example, in the context of the implementation of the Millennium Declaration, WMO is actively promoting a "culture of prevention". It is recalled that in January 2005, the Second World Conference on Disaster Reduction was held in Kobe, Hyogo, Japan, providing a unique opportunity to promote a strategic and systematic approach to reducing risk and vulnerability to hazards. The Conference adopted the Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters, also known as the "Hyogo Framework for Action". It also provided the framework for governments, international and regional agencies, non-governmental organizations (NGOs), the private sector and other actors, to work together in promoting a culture of prevention.

WMO is actively involved in the implementation of the Framework. With a strong commitment to disaster prevention and mitigation, the Fourteenth World Meteorological Congress (Geneva, 2003) established a new cross-cutting programme, the Natural Disaster Prevention and Mitigation (DPM) Programme, which is based on the establishment of an Organization-wide coordination framework and strong strategic partnerships, building on all of WMO's Programmes in synergy, in order to raise awareness on the benefits of proactive strategies for prevention.

While natural hazards may not be avoided, integration of risk assessment and early warnings, with prevention and mitigation measures, can prevent them from becoming disasters. That means that action can be taken to considerably reduce the resulting loss of life and socio-economic damage. WMO and the National Meteorological and Hydrological Services contribute significantly, at international and national levels, in the identification, assessment and monitoring of disaster risks and the provision of early warnings. WMO remains committed to working with national authorities and partners in halving the number of deaths due to natural disasters of meteorological, hydrological and climatic origin over the next 15 years.

It is recognized that a fundamental pre-condition for disaster preparedness is a well-functioning early warning system, capable of delivering accurate information to the population at risk, dependably and in a timely manner. To this end, WMO coordinates the relevant activities of NMHSs so that each of them receives the required data to ensure that operational early warnings for weather-, water-, and climate-related hazards are provided effectively and regardless of political boundaries.

The WMO centres, including its three World Meteorological Centres and 40 Regional Specialized Meteorological Centres (RSMCs), provide all nations with the necessary global operational infrastructure for observing, detecting, modelling, forecasting and issuing early warnings for a wide range of hazards, ranging from short-lived, violent events of limited geographical extent, such as tornadoes and flash floods, to large-scale phenomena such as droughts, which can affect the better part of a continent and entire populations anywhere from months to years.

In particular, WMO's global network has proven to be particularly effective for issuing tropical cyclone (hurricane and typhoon) early warnings. The WMO six RSMCs with specialization in tropical cyclones, issue forecasts and advisories around the clock. NMHSs produce their national tropical cyclone warnings which are dispatched to decision-makers, the media and the public. In every country, the NMHS is the sole source of such official warnings.

Beyond natural hazards, WMO also supports its Members and partner organizations in responding to large-scale transboundary environmental emergencies, such as may be caused by nuclear accidents, volcanic eruptions, chemical accidents or wildfires. In collaboration with other organizations, WMO is committed to extending its early warning systems to address other hazards, beyond those of hydrometeorological origin. However, while early warnings systems exist for many such hazards, they need to be further improved and made available to all countries, particularly to those with least resources. The challenge is therefore to ensure that all countries

may have the necessary systems, infrastructure, human capacity, organizational structures and technical capacity, to fully utilize and build on the early warning systems.

The NMHSs also provide vital information, enabling their respective countries to develop proactive strategies for mitigating the impacts of natural disasters. An NMHS may use various approaches to disseminate information to its authorities and general public, relying specially on the best locally available technologies. However, many challenges remain in ensuring that all countries are adequately equipped with an effective alert system, for the timely and effective flow of warnings to the community. Countries must also develop the capacity to respond to the information through effective emergency planning and response. Furthermore, education and public outreach programmes are a critical component of the preventive strategies needed to enable the public to understand hazards and their potential impacts.

Historical observations of hazards are also critical for assessing the vulnerability of communities to weather-, climate- and water-related hazards. Climate data are needed to quantify the intensity and frequency of events, characterizing the potential damage of extreme events, and predicting expected damages. Systematic studies of meteorological and hydrological observations of hazards and their impacts constitute a useful knowledge base for disaster risk managers.

Through its technology transfer, capacity building, and data management programmes, WMO works to ensure that all NMHSs, particularly those of developing countries, have access to critical hazard-related data. Real-time monitoring by the NMHSs allows for timely information on the immediately pre- and post-disaster conditions, enabling the emergency response and recovery teams to direct their efforts to the most affected areas. Through its land- and space-based observing systems, WMO also plays a key role in the international initiative for developing a Global Earth Observation System of Systems (GEOSS).

In the longer term, according to the Intergovernmental Panel on Climate Change (IPCC), which is sponsored by WMO and the United Nations Environment Programme (UNEP), climate change could result in increased heat stress, especially in urban areas, increased drought and risk of flooding in other areas. Water shortage and quality problems are projected to keep increasing in many water-scarce regions of the world. There is a need for a better understanding of the climate system and the development of capabilities for predicting natural climate variability and human-induced climate change. Strong support for research programmes in these areas has long been one of the core strengths of WMO, and will continue to be so in the future.

WMO's proven system provides the world community with an invaluable operational instrument to address the increasing threat of natural disasters to sustainable development. Any operational system to address multihazards could benefit from and be built on existing successful structures for issuing warning of hydrometeorological disasters.

As we celebrate this Day, it is my hope that the contributions of National Meteorological and Hydrological Services in all aspects of disaster prevention and mitigation are well recognized and used effectively in all countries. I would invite national authorities, scientific communities, intergovernmental and non-governmental organizations, the private sector, the media and the public to be aware of the role of NMHSs and ensure that they have the capacity to contribute to the mitigation of disasters and to achieving the relevant components of the Millennium Development Goals.
