

# WORLD METEOROLOGICAL DAY 2004

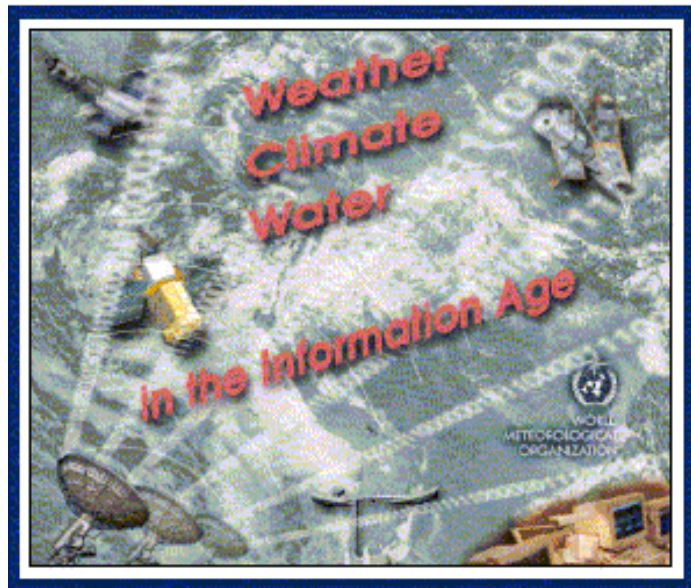
## WEATHER, CLIMATE AND WATER IN THE INFORMATION AGE

### SUMMARY

#### **Message from Mr. M. Jarraud Secretary-General of WMO**

World Meteorological Day 2004 celebrates the entry into force on 23 March 1950 of the Convention creating the World Meteorological Organization (WMO), as the successor to the International Meteorological Organization (IMO) established in 1873. For this Day, the theme “*Weather, climate and water in the information age*” is selected in recognition of the vital role of technology in advancing meteorological, hydrological and related geophysical sciences that enable National Meteorological and Hydrological Services (NMHSs) to contribute to socio-economic development and to the protection of the environment.

Today, the world is changing faster than ever. There is greater awareness of the sensitivity of the economy to weather, climate and water that influence virtually all human activities. In the 1950s, losses from all natural disasters, including those of hydro-meteorological origin, earthquakes and volcanic eruptions, were estimated at US\$ 4 billion per year and in the 1990s at US\$ 40 billion. More than 65 per cent of these losses and nearly 90 per cent of people killed were due to weather-, climate- and water-related disasters, with more than 280 000



deaths attributable to drought in the 1990s. Unfortunately, the burden of the associated impacts falls disproportionately on developing countries.

Indeed, at no time in history has so much been expected from the sciences of meteorology, hydrology and related geophysical sciences in addressing the challenges associated with sustainable development in areas such as disaster mitigation, food security, water resources management, transportation, tourism and pollution control. Some of the major advances that have led to such assurances arise from the context in which these sciences evolve and include:

- The considerable progress in scientific understanding of dynamical and physical processes in the atmosphere and its interaction with the oceans and various other elements of the Earth's system;
- The unprecedented improvement in the quality and accuracy of numerical weather prediction (NWP). As a result, five-day forecasts today are as good as two-day forecasts about 20 years ago.
- The ability to forecast the occurrence of El Niño and La Niña and the associated impacts over various parts of the world over a time-scale of a season to a year in advance;
- The ability to make climate projections on a time-scale of decades. This has contributed to climate-change studies and to the assessments of the Intergovernmental Panel on Climate Change.
- The ability to transmit and disseminate crucial high quality meteorological, climatological and hydrological information in an efficient and timely manner by means of state-of-the-art high technology systems.

These achievements have been possible primarily due to major scientific breakthroughs and technological developments in observing, telecommunications and computer capability.

Another benefit of the information age relates to the monitoring of the water cycle and water quality using up-to-date technologies and scientific developments. This is essential in water resources assessment and management, flood forecasting and the wise and equitable use of fresh water across frontiers to address the increasingly acute problems of fresh water supplies and management.

There is also growing recognition of the economic and social value of weather and climate as a resource. Indeed, weather, climate and water information are vital for most socio-economic activities. For example, weather and hydrological forecasts are used, among others, to enhance agricultural production, manage water resources, combat desertification, ensure safe and efficient transportation, control pollution, schedule the production and distribution of electricity, support leisure activities and the insurance industry.

The opportunities offered by the 'Information Age' to meteorological, hydrological and related geophysical sciences should enable WMO and the NMHSs of its Members to address a growing number of challenges that relate to improved protection of life and property through better preparedness and vulnerability assessment as well through contributions to sustainable development and poverty reduction.