



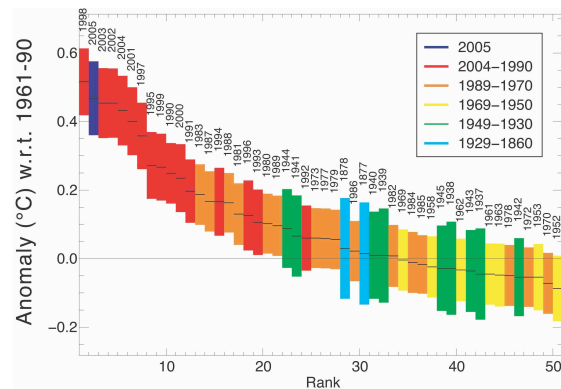
2005 – a record-breaking year

“The year 2004 had already been earmarked as very severe in terms of natural disasters, but the year 2005 broke all previous records” says Mr. Michel Jarraud, Secretary-General of the World Meteorological Organization (WMO), at the World Meteorological Day on 23 May 2006 in Geneva, Switzerland.

The year 2005 was not only amongst the hottest years on record, it was also record-breaking in the number and intensities of storms and floods. Nearly all parts in the world reported unusual weather phenomena that affected millions of people and lead to unprecedented high numbers in fatalities, evacuations and economic loss.

The long list of superlatives for 2005 reads in summary as the following. With up to half a degree above the annual average in global temperature since 1850, the year 2005 was part of a series of hot year during the last decade compared to the rest of the century. Extremely harsh heatwaves hit India and neighbouring countries with temperatures up to 50°C; heatwaves aggravating forest fires also affected Southern Europe, Australia, North Africa and the south-western United States. In contrast, during winter, central Europe and central and eastern parts of Asia experienced significantly colder than average temperatures and suffered from severe winter storms. Prolonged droughts threatened parts of the Greater Horn of Africa, of Europe and Asia, Australia and Brazil. In other parts of the world, heavy rainfall, exceptional in some cases, caused extensive flooding and landslides. In the Atlantic basin, a record number of devastating hurricanes was observed. Also this year, the Antarctic ozone hole was the third largest ever recorded after the years 2000 and 2003, and the ozone depletion over the Arctic was greater than ever reported. The extent of Arctic sea-ice was the lowest observed since 1979. In general, the economic impacts of natural disasters show a marked upward trend and culminate in the monetary losses in 2004 and 2005; in particular the least developed and developing countries are most vulnerable to natural

hazards with greatest socio-economic negative impacts.



Global ranked surface temperatures showing the last 50 warmest years. The size of the bars indicates the uncertainty associated with each year. Figure: Hadley Centre, The Met Office, UK, and Climatic Research Unit, University of East Anglia, UK.

With the *Annual Statements*, the WMO World Climate Data and Monitoring Programme, a component of the World Climate Programme, provides a comprehensive historical perspective on the variability and trends of surface temperatures, precipitation and extreme events since the nineteenth century. The statements complement the periodic assessments of the WMO/UNEP sponsored Intergovernmental Panel on Climate Change (IPCC) and are intended to provide credible scientific information on climate and its variability. “A major challenge for WMO and the meteorological and hydrological communities worldwide is to work towards a major reduction of the fatality rate associated with natural disasters” says Mr. Jarraud in the foreword of the *WMO Statement on the Status of the Global Climate in 2005*.

Reliable weather information well in advance were essential in any of the following three examples, in order to reduce societal impacts.

During the hurricane season, the world’s leading meteorological centers constantly monitored the state of the atmosphere and the ocean in the North Atlantic region and provided early warnings to the areas most likely hit by tropical cyclones. The long season (1 June to 30 November 2005) brought an unprecedented 28 named storms that caused devastating losses across Central America, the

Caribbean and the United States, 7 of these were major hurricanes of the categories 3, 4 and 5. With swirling winds at 250 km/h, hurricane *Katrina* was the deadliest hurricane to hit the United States since 1928. In the aftermath, the storm killed 1,600 people, made 1 million people homeless, affected tens of thousands of business companies and produced widespread devastation along the central Gulf coast of the United States.

Early warnings were also fundamental to East African countries and international aid and food services. The Greater Horn of Africa was facing the worst drought for at least a decade, when pounding rainfall in early April 2006 brought an end to the unusual long dry period. Threatened by food insecurity, about 17 million people in Kenya, Ethiopia, Eritrea, Somali, Djibouti and Tanzania were in serious danger. The failure of the 2005/6 rain season had significantly reduced food and cash crop production, but the drought also compounds the impact of the poor 2004/5 rain season, which already left several million people food insecure.

The south-west monsoon during June-September 2005 brought unprecedented heavy rain and widespread massive flooding to parts of western and southern India, affecting more than 20 million people and resulting in more than 1,800 deaths. In particular Mumbai (formerly Bombay) in the Maharashtra State was hit by record rainfall. Already soggy from monsoon rains, India's southeast coast flooded again when heavy rains soaked the region in early December 2005. About 15 people died and 300,000 were evacuated. Early evacuation procedures to reduce fatalities and economic loss were essential during these flooding events.

WMO and the National Meteorological and Hydrological Services (NMHSs) play major roles in the identification, assessment and monitoring of risks and the provision of early warnings to prevent natural hazards from becoming disasters. It is amongst the priorities of WMO, the weather, climate and hydrological services to prolong observational records and provide accurate weather forecasts well in advance, in particular to regions prone to tropical cyclones, droughts and floods. The data volume on climate system behaviour constantly grows to improve climate and weather information and forecasts. For sustainable development, there is a need for a better monitoring and understanding of the climate system as well as the further development of capabilities for predicting natural climate variability and human-induced climate change. [ca]

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References and links

WMO-No. 998 (2006) WMO Statement on the Status of the Global Climate in 2005. Available online www.wmo.int (Publications).

WMO-Statement by Mr. Jarraud (2006) Address on the Occasion of the Ceremony for the World Meteorological Day 2006, 23 May, Geneva. Available online www.wmo.int (News Centre: Statements & Announcements).

World Meteorological Organization (WMO) www.wmo.int.

World Climate Programme (WCP) www.wmo.int/web/wcp/wcp-home.html.