



CHRONOLOGY OF WMO CLIMATE SERVICES

DRAFT

First International Meteorological Conference (Brussels)



International Polar Year
First Polar Year
1882-1883

Second Polar Year
1932-1933



● 1853

● 1873

● 1882

● 1929

● 1932



Vienna establishes WMO's predecessor, the International Meteorological Organization (IMO)

Commission for Climatology begins



1950s

WMO re-establishes CCI as an intergovernmental body with increased focus on the world-wide collection of climate observations and the practical application of climate to the needs of society.

Emerging modeling computing capability.

World Weather Watch WWV launches with Global Telecommunications



Launch of International Geophysical Year 1957-1958

Global Ozone Observing System set up

● 1957

● 1963

● 1968

1951 WMO becomes a specialized agency of the United Nations



WMO establishes Regional Training Centres for building science skills in weather and climate and technological skills in computing.

1960s



The Global Atmospheric Research Programme (GARP) jointly co-sponsored by WMO and International Council for Science (ICSU) with the World Weather Watch. These become a foundation for today's improved numerical weather forecasting and scientific basis for climate prediction.

The great Sahelian drought and famine of 1968-1974 200,000 people and millions of their animals died.



Scientific concern was beginning to mount that human activities could be starting to impact the Earth's climate at global scales.

1970s

Tropical Cyclone Programme begins, enabling future world-wide monitoring and warnings of hurricanes and typhoons, and later still, risk assessments.

WMO Operational Hydrology Programme strengthens collaboration on water hazards and water resource internationally

WMO conducts first international assessment of the state of global ozone

Integrated Global Ocean Services System launched

GARP Programme conducts Global Weather and Monsoon Experiments

The first ENSO forecast, based on winds and ocean temperatures, opens path to inter-seasonal climate forecasting

● 1974

● 1976

● 1979



UN General Assembly calls on WMO to undertake a study of climate change.

WMO Experts on Climate change call for making better use of climate knowledge in learning to live with climate variability.

WCC-1

The 1st World Climate Conference convenes
“a world conference of experts on climate and mankind”

WMO takes lead in promoting studies of climate variability and change and their implications for society and the environment

The World Climate Programme begins. Data, Applications, Research + Impact studies are key components.



Villach Conference WMO, UNEP, ICSU

“temperature rises in the first half of the 21st century greater than any in human history”

UN General Assembly Resolution tasks IPCC to prepare a comprehensive review and recommendations with respect to the state of knowledge of the science of climate change; social and economic impact of climate change, possible response strategies and elements for inclusion in a possible future international convention on climate.

WMO and UNEP initiate the process that leads to negotiations of the United Nations Framework Convention on Climate Change (UNFCCC)

1985

1987

1988

1989

World Meteorological Congress 10 calls for WMO to provide authoritative information on climate change. WMO initiates call for guidance of governments rather than solely through scientists serving in personal capacities.

1980s

The Tropical Ocean and Global Atmosphere project TOGA jump starts operational seasonal prediction, using coupled atmosphere-ocean models for the first time.

Data rescue projects DARE, CLICOM help build national computerized data banks.

Vienna Convention on the Protection of the Ozone Layer

Global Atmosphere Watch establishes to monitor atmospheric composition



1990s

International Decade for Natural Disaster Reduction

Dublin International Conference on Water and the Environment

World Hydrological Cycle Observing System launches

WCRP establishes CLIVAR, an international research programme investigating climate variability and predictability on time-scales from months to decades

WMO Public Weather Services Programme begins to help deliver weather and climate data effectively to through media.



First meeting of UNFCCC aims to stabilize greenhouse gas concentrations to level that would “prevent dangerous interference with the climate system.”

1990

WCC-2

The 2nd World Climate Conference greatly stimulates the world’s interest in climate issues

1991

World Meteorological Congress 11 broadens World Climate Programme to embrace all agencies involved with climate aspects of socio-economic development, restructures to include impacts and adaptation



IPCC 1st Assessment Report “**global mean surface air temperature has increased by 0.3 to 0.6°C over the last 100 years...; The size of this warming is broadly consistent with predictions of climate models, but it is also of the same magnitude as natural climate variability**”

Initiates the Global Climate Observing System (GCOS) as essential to measuring climate variability and change.

The most broadly based call for cooperative international action on climate change emerges from Conference and leads to the establishment of the UN Framework Convention for Climate Change UNFCCC.



Rio Conference – The Earth Summit signed the UN Framework Convention on Climate Change for “**stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic (man-made) interference with the climate system.**”

Agenda 21 forms a legally-binding UN Convention to Combat Desertification



UNFCCC Articles 4 & 5 obligates the Parties to a systematic observation and research in support of stabilization of greenhouse gases that would “**prevent dangerous anthropogenic interference with the climate system.**”



IPCC 2nd Assessment Report “**The balance of evidence suggests a discernible human influence on global climate**”.

World Meteorological Congress 12 establishes the Climate Information and Services (CLIPS) project.



● 1992

● 1995

● 1996

● 1997



UNFCCC proposes a “**no-regrets**” option



Kyoto Conference of the Parties establishes target and timetable for reducing greenhouse-gas emissions

Record-breaking ENSO event

WMO and the International Research Institute for Climate and Society begin issuing the El Niño/La Niña Update.



2000s

A joint initiative between WMO and the Global Water Partnership aims to maximize the net benefit from floodplains and to minimize loss to life from flooding

Celebration of 150th anniversary of the Brussels Conference (1853)

Launch of Natural Disaster Prevention and Mitigation Programme, WMO Space Programme and Programme for the Least Developed Countries (LDCs)

World Agro-Meteorological Information Service (WAMIS) begins



IPCC 3rd Assessment Report “**there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities**”. “Adaptation” in the title of one of the reports for first time.



● 2001

● 2003

2000 WMO celebrates 50 years of service



World Meteorological Congress 14 considers, but delays 3rd World Climate Conference, noting disparity of Members’ views

Great heat wave kills over 52,000 Europeans

GCOS 2nd Adequacy Report delivers list of Essential Climate Variables, & global climate products to make routinely available to UNFCCC in the next decade.

Washington, D.C. The First Earth Observation Summit establishes an ad hoc intergovernmental Group on Earth Observations (GEO)

Moscow World Climate Change Conference



WMO conducts a self assessment of inadequacy of Climate Agenda. Recommended working with GEO to engage societal benefit areas.

Tokyo GEO 2nd Earth Observation Summit includes climate in scope of Global Earth Observation System of Systems (GEOSS)

● 2004

● 2005

Kobe, Hyogo - First World Conference on Disaster Reduction adopts the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters.

Mauritius International Meeting to Review the Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States

UNFCCC initiates the Nairobi Work Programme with a focus on adaptation

Brussels 3rd Earth Observation Summit endorses GEOSS 10-year Implementation plan and establishes Intergovernmental Group on Earth Observations (GEO) to carry it out, Secretariat establishes office near WMO, Plenary holds first meeting in Geneva

Beijing Technical Conference on Climate as a Resource - recommended enhancing climate services in support of sustainable development, describing sectors' uses of climate information. Launches guidelines on Climate Watch





WMO launches Greenhouse Gas Bulletin and Arctic Ozone bulletin

Antarctic ozone hole most serious on record

Bonn Third International Conference on Early Warning from Concept to Action says climate change to be integrated into early warning systems

WMO begins a three-tiered climate forecast structure with Global, Regional, National Centres

Climate for Development in Africa (ClimDev Africa) Initiative - carries enormous potential to strengthen the NMHS across Africa



Epsos Conference on Living with Climate Variability and Change: Understanding the Uncertainties and Managing the Risks. lays basis for Global Framework for Climate Services

● 2006

● 2007

IPCC 4th Assessment Report “**increases in anthropogenic greenhouse gas concentrations are very likely to have caused most of the increases in global average temperatures since the mid-20th century**”.



Bali UN Climate Change Conference calls for comprehensive scientific information in support of climate change mitigation and adaptation.

WMO receives the Montreal Protocol Partners Award on 20th anniversary

Launch of International Polar Year 2007-2008 co-sponsored by the International Council for Science and WMO



Nobel Peace Prize award goes to WMO-UNEP Intergovernmental Panel on Climate Change and Mr Al Gore, former US Vice-President and environmental campaigner



20th anniversary of the WMO/
UNEP Intergovernmental Panel
on Climate Change

One decade of Regional Climate Outlook Forums, 2nd International expert review (Arusha, Tanzania), develops operations, verification, capacity building, user liaison, research and sustainability.

Bali Action Plan sets WMO & UNESDO to lead “science, assessment, monitoring and early warning” called Climate Knowledge. The UN System delivering as one was to be the first initiative acted upon through the WCC-3

2008

2009

WCC-3

The 3rd World Climate Conference calls for international framework of climate services

WMO Executive Council approves first Regional Climate Centres in Beijing and Tokyo

Tokyo Climate Conference on current status and challenges in agriculture and water sectors aims at establishing a new international framework for climate services.

WMO EC-CWE Review make recommendations on the Global Framework for Climate Service

UNFCCC Copenhagen Conference of Parties 15
“Sealing the deal”





World Meteorological Congress 16 reviews WMO's role in the Global Framework for Climate Services and what the organization and its members will commit to over the next two years, the next four years, and beyond.

● 2010

● 2011

● 2012 and beyond ...

Antalya Technical Conference on Changing Climate and Demands for Climate Services for Sustainable Development with a joint session between Commission for Climatology and World Climate Research Programme

WMO Executive Council reviews the progress in the Global Framework for Climate Services (2012)

IPCC 5th Assessment Report (2013)

World Meteorological Congress 17 reviews the progress in the climate framework (2015)