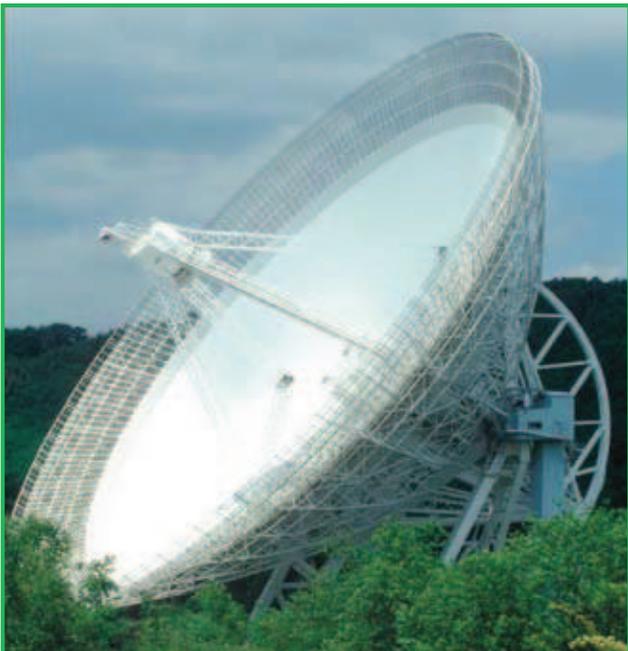


CLIMATE KNOWLEDGE:  
SCIENCE, ASSESSMENT,  
MONITORING &  
EARLY WARNING



Climate knowledge is the foundation for the development of an effective response to the climate change challenge. The UN system plays a central role in this area, bringing together global resources for observation and analysis of climate change trends. It is committed to reinforcing its efforts to provide sound and unbiased scientific information and climate services to enable evidence-based policy and decision making at all levels.

**B**uilding up the individual and collective capacity of countries to monitor climate change, enhance climate science and services and utilize climate predictions is crucial for effective adaptation and mitigation strategies. Such capacity also enables timely planning to reduce the impact of increasing natural disasters, enhance food security and manage climate risks in all socioeconomic sectors.



The joint winners of the Nobel Peace Prize Award in 2007 — the Intergovernmental Panel on Climate Change (IPCC) and Al Gore, former Vice President of the USA and environmental campaigner — were chosen for "their efforts to build up and disseminate greater knowledge about man-made climate change and to lay the foundations for the measures that are needed to counteract such change". IPCC, co-sponsored by WMO and UNEP and supported by other UN system agencies, has during its two decades of existence provided the authoritative scientific evidence that underpins all action in response to climate change.

Key programmes and initiatives on climate knowledge generation and sharing include: →

## Observations and monitoring of the climate system

The Global Climate Observing System consolidates and makes available to countries information on essential climate variables collected through global atmospheric, oceanic and terrestrial observation systems that use in-situ, satellite and other remote sensing technologies.

*FAO, ICSU, ITU, UNEP, UNESCO/IOC, WMO*

## Scientific research and assessments

The Intergovernmental Panel on Climate Change assesses the available scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation. Its assessments are underpinned by research, modelling, climate simulations and projections of future change, including work conducted by the World Climate Research Programme. Research programmes around the UN system support action on social, human and natural sciences on a number of climate-related issues, such as water management, biodiversity conservation, coastal zone management, migration, human rights and environmental ethics. Publications like the annual UNEP Year Book survey significant environmental science, global events, and issues of ecosystem management, disasters and conflicts, toxics, and resource efficiency, while the World Bank World Development Report 2009 will also focus on climate change.

*FAO, IAEA, ICSU, IPCC, UNEP, UNESCO/IOC, World Bank Group, WHO, WMO*

## Monitoring of climate impacts and vulnerability

Monitoring reports, analysis and assessments provide valuable information on various climate-sensitive parameters and resources, such as: crop and food supply; marine and forest biomass resources; water resources; human settlements and related infrastructure; demographic, socio-economic and environmental trends; human development; human rights; disaster risk trends and progress in risk reduction; transboundary air pollution and watercourses and international lakes; hydroacoustic, seismic, infrasound and radionuclide data and reference standards used for atmospheric isotope measurements. Standards and recommended practices for GHG emissions by aircraft and ships are set by the respective specialized agencies.

*CTBTO, FAO, IAEA, ICAO, IMO, ITU, UNDP, UNESCO, UNFPA, UN-HABITAT, UNISDR, OHCHR, UN Regional Commissions, WFP*

## Climate predictions, warnings and services

Climate/weather data management enables forecasts and the development and promotion of world climate impact assessment and response strategies, with climate hazards early warning systems, including regional flood alert systems and drought monitoring centres, in order to build the resilience of nations and communities to disasters.

*CTBTO, UNCCD, UNEP, UNESCO, UN-ISDR, WMO*

## Emergency information on climate-sensitive socio-economic parameters

UN system organizations are supporting a number of specific emergency information and response systems on climate-sensitive socio-economic parameters related to agriculture, food insecurity and vulnerability, animal and plant pests and diseases, natural disasters.

*FAO, IFAD, UNEP, WFP*

