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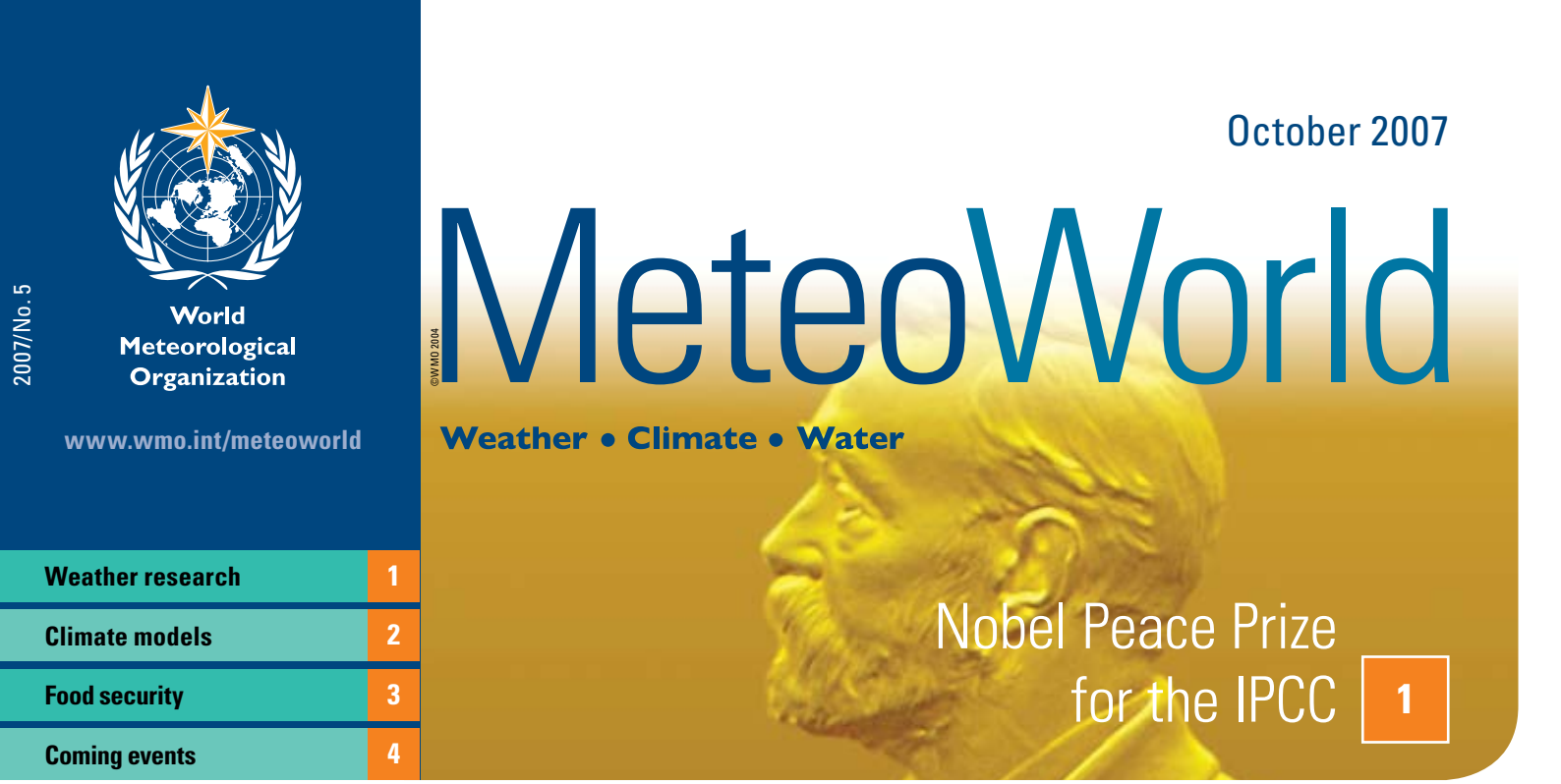


Nobel Peace Prize for the IPCC 1

NEWS IN BRIEF

Nobel Peace Prize for the Intergovernmental Panel on Climate Change

The Intergovernmental Panel on Climate Change (IPCC), co-founded and co-sponsored by WMO and the United Nations Environment Programme (UNEP), has been awarded the Nobel Peace Prize jointly with Al Gore, former Vice-President of the USA and environmental campaigner.

They 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".

WMO and UNEP established the IPCC in 1988 to provide world leaders and policy-makers with an objective source of information on the complex and challenging issue of climate change, particularly its potential environmental and socio-economic impacts, and possible response options. The IPCC Secretariat is hosted at WMO Headquarters in Geneva.

The scientific assessments of the IPCC provide the international community with a better understanding of what causes climatic shifts and what can be done to address them to better manage land and water resources, thereby reducing poverty and vulnerability and contributing to sustainable socio-economic development.

The Prize will help the IPCC in its work, particularly in developing countries, to overcome gaps in climate monitoring programmes and in promoting adaptation and mitigation measures that governments can take to protect their citizens against natural disasters and extreme weather and climate events.

The IPCC is currently finalizing its Fourth Assessment Report entitled *Climate Change 2007*. The reports by the three Working Groups already published provide policy-makers with a comprehensive and up-to-date assessment of the current state of knowledge on climate change:

The Synthesis Report integrates the information around six topic areas. It will be approved at the 27th session of the IPCC in November 2007 in Valencia, Spain.

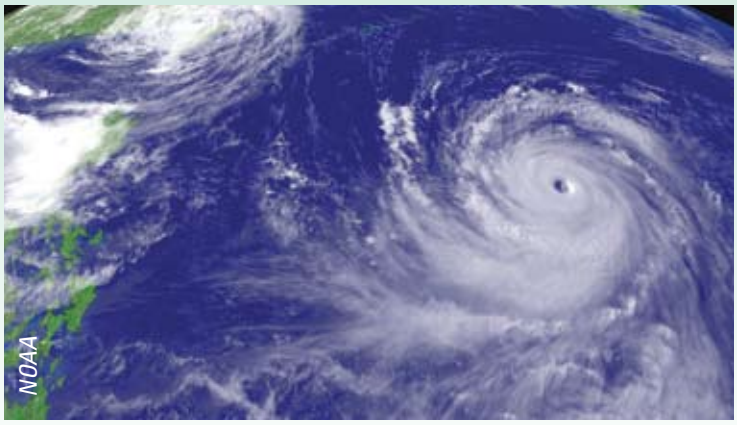
When the announcement was made on 12 October 2007, the Secretary-General of WMO, Michel Jarraud, said that the Prize recognized, at the highest level, the role that the Intergovernmental Panel on Climate Change—and through it the international scientific community—plays in raising awareness and understanding of the impact of human activities on the Earth's climate. He expressed his confidence that the award would inspire everyone, from individuals to decision-makers, to make the best use of the scientific knowledge about changing climate to take the necessary actions to protect the planet.

Weather prediction research in the Pacific-Asian region

THORPEX is a programme conducted under the WMO World Weather Research Programme (WWRP) with the aim of accelerating improvements in the accuracy of one-week high-impact weather forecasts for the benefit of the economy and the environment.

WWRP-THORPEX regional committees in Asia (China, India, Japan, the Republic of Korea and the Russian Federation) and North America (Canada, Mexico and the USA) have been leading the development of a major campaign for 2008 called the THORPEX Pacific Asian Regional Campaign (T-PARC).

T-PARC is based on the societal needs of these two regions to improve prediction of typhoons in the western Pacific and Asia and high-impact weather events in North America, the Arctic and



The life cycle of western Pacific and Asian typhoons from genesis to extra-tropical transition/decay is one focus of WMO weather prediction research for social and environmental benefit for the region.

other locations, whose dynamical roots and/or forecast errors are driven by upstream typhoons and other intense cyclogenesis events over east Asia and the western Pacific.

A meeting was held in July in order to exchange information on recent progress in national THORPEX activities and to implement a T-PARC observational strategy for 2008.

A comprehensive overview of the campaign was made and wintertime components were demonstrated. Post-campaign activities were reviewed. These included a new forecast demonstration project on tropical cyclone landfall in the Bay of Bengal and sand- and duststorm research in China.

Protecting health in a changing climate

Climate variability and change present a range of challenges for human health and safety around the world. Weather, climate and water-related extremes such as heat waves, heavy rains and violent storms can cause heat stress, increase the range and extent of outbreaks of infectious diseases and cause injury and death to vulnerable populations. In a changing climate, it is expected that, on the whole, the risks will increase.

The United Nations system, in particular the World Health Organization, working jointly with WMO and other international organizations, is taking steps to evaluate the effects of climate change in the health sector. Recent workshops in various regions of the world, such as the Maldives, the Himalayas, Jordan, Malaysia and Costa Rica, have generated highly valuable inter-sectoral and inter-institutional discussion on climate variability and change and the risks to health.

These sessions allow decision-makers and professionals in climate, health and related sectors such as food and nutrition security, water resources, sanitation, disaster prevention and air pollution among others to collaborate, strengthen coordination among agencies and development sectors. They also facilitate the planning of joint efforts for vulnerability reduction and adaptation activities.

Significant outcomes from these workshops include recommendations for identifying the key risk factors, the most vulnerable populations, the socio-economic impacts of climate-related health problems, the need for strengthened partnerships, education, surveillance systems, data collection and sharing and joint research.

It has also been recognized that addressing climate variability and change should be embedded in regional and national policies and that consequences of, and responses to, climate change should be accounted for in the budgets of each vulnerable sector and in national action plans for disaster prevention.

If climate change is inevitable, some adaptation to climate variability is essential for meeting the challenges of the future in a changing climate.

Climate change models: the next generation

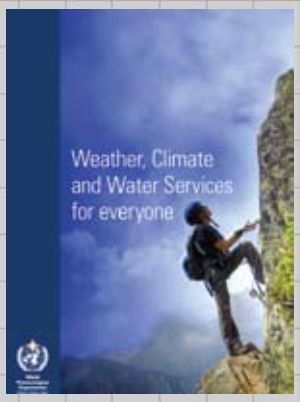
Climate models used for climate change projections are on the threshold of including much greater biological and chemical detail than before. Today, standard climate models (referred to generically as atmosphere-ocean general circulation models (AOGCMs)) include components that simulate the coupled atmosphere, ocean, land and sea ice. Some modelling centres are now incorporating carbon cycle models in AOGCMs in a move toward an Earth system model (ESM) capability. Other potential components to include in ESMs are aerosols, chemistry, ice sheets and dynamic vegetation.

A strategy for using climate system models as part of a coupled biophysical-climate and integrated model assessment approach is to develop a next-generation experimental design. It will follow the scenario approach where concentrations and their derived emissions based on story lines as were used in the development of the Third and Fourth Assessment Reports of the Intergovernmental Panel on Climate Change. Recent developments in climate system models that can shed light on greenhouse-gas emission scenarios were specifically addressed.

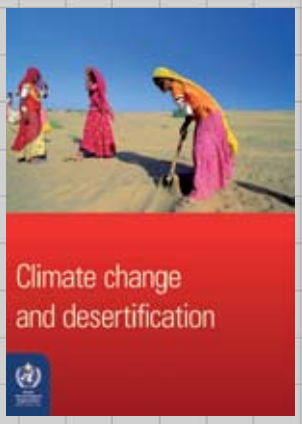
The modelling groups of the World Climate Research Programme, co-sponsored by WMO, and the International Geosphere-Biosphere Programme (a programme of the International Council for Science) are now making decisions as to what form their next-generation climate models will take with the consideration of how new climate change experiments may be evaluated in a next IPCC assessment.

The experiments proposed regarding stabilization scenarios warrant community experiments to address this issue even if there is not another IPCC assessment. Additionally, new emission scenarios developed by the integrated assessment community reflect recommendations of the

Recently issued



Weather, climate and water services for everyone
WMO-No. 1024 [E]



Climate change and desertification (leaflet/poster) [E-F-S]

WCRP Annual Report 2006-2007
Providing the Science for Climate Change Solutions
WMO/TD-No. 1404 [E]

25th IPCC session (April 2006, Mauritius). These advances—in both the climate modelling and scenarios communities—provide an opportunity for increased communication and collaboration that could recommend plausible action toward assessing human mitigation of changing climate.

Climate information is key for water resources management

To attenuate the negative impacts of climate change, due recognition should be given to the need for the continued monitoring of our climate and enhancing climate knowledge to make sure the world adapts to change in the most efficient way, notably in managing water resources more effectively. Climate change and variability issues should be introduced within the national development agenda for water resources.

The world needs to adapt to the changing conditions in water availability and the occurrence of extreme events with a high potential to trigger major climate and water-related disasters. Water resources management needs to apply adaptive measures to prevent extreme weather from turning into disasters such as floods and droughts.

Water managers need to express their concrete requirements for climate information, ranging from seasonal forecasts to climate projections that influence huge investments in water infrastructure projects. Climate researchers and forecasters need to respond by developing and providing adequate tools to help manage water resources more efficiently.

Adaptation to projected climate changes, however, requires tools and mechanisms which remain to be developed, to meet engineering standards with respect to the accuracy and quality of projections. Uncertainties are still large, meaning that water managers have to include this element in their decision-making process.

Water resources management and disaster prevention can be aided by:

- Planning systems that balance immediate needs with long-term adaptation;
- The creation of global datasets of hydrological variables, allowing comparable analyses of climate impacts on hydrology and water resources; such datasets should be built on the strengthening of local and regional hydrological observing networks and of streamflow networks;
- Closer communication between researchers and policy-makers in order to ensure well-informed decision-making;
- Closer collaboration between climate and hydrology, to further explore the links between climate, water and development.

Food security

More intense, longer droughts have been observed over larger areas since the 1970s, particularly in the tropics and subtropics. A combination of those events could cause land degradation leading to desertification. The year 2007 has seen a high number of extreme events, such as droughts in parts of southern Africa, leading to a reduction in maize production of about 40-60 per cent in Lesotho, Swaziland and Zimbabwe.

WMO contributes to the understanding of interactions between climate and land degradation through dedicated observations of the climate system; improvements in the application of agrometeorological methods and the proper assessment and management of water resources; advances in climate science and prediction; and promotion of capacity-building in the application of meteorological and hydrological data and information to drought preparedness and management.

WMO's role as a global authority on scientific and technical aspects of combating desertification/land degradation and mitigating the effects of drought has been internationally recognized, in particular by the United Nations Convention to Combat Desertification.

WMO has drawn world attention on how climate induces and influences land degradation and what measures need to be taken to enhance the applications of weather and climate information to combat land degradation, in particular through innovative land management practices.

Some of the areas focused upon recently have been historical climate data and climate change scenarios required for future strategic planning, agrometeorological zoning and crop pattern rescheduling; targeted weather forecasts at all levels and local scales to help stakeholders make appropriate decisions. Also of importance is improved spatial coverage of meteorological stations, especially in mountain areas, which are highly vulnerable to land degradation. Detailed, accurate and spatially distributed rainfall intensity data are needed for use in surface erosion assessment and modelling and draining structure design. The capacity of National Meteorological and Hydrological Services to acquire, analyse and disseminate data needs to be enhanced in order to promote the effective use of climate and weather information for reducing land degradation and develop tailor-made products with users.

One of the most important issues facing the world today is the need to ensure food security through sustainable management of water and soil resources.

Protecting the ozone layer

The ozone layer, which protects life on Earth from the harmful effects of ultraviolet (UV) radiation, continues to be depleted, notably over the Antarctic. Over the next 10-20 years, high-quality global observations of ozone and ozone-depleting substances will be particularly critical in verifying the effectiveness of the actions taken under the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer.

The search for recovery of ozone requires vigilance. Global changes

GLOBAL WARMING AND THE WATER CYCLE

According to the Intergovernmental Panel on Climate Change (IPCC), co-sponsored by WMO, warming observed over the past several decades is consistently associated with changes in the hydrological cycle. Climate models are also projecting precipitation increase at high latitudes and in some tropical areas, as well as precipitation decrease in certain subtropical and lower mid-latitude areas.

By mid-century, annual average river runoff and water availability are projected by the IPCC to increase by 10-40 per cent at high latitudes and in some wet tropical areas, and to decrease by 10-30 per cent over some dry regions at mid-latitudes and in the subtropics. Drought-affected areas will likely increase in extent. Heavy precipitation events, which are very likely to increase in frequency, will augment flood risk.

COMING EVENTS

7-9 November: WMO/GEO Expert Meeting on an International Sand and Dust Storm Warning System (Barcelona, Spain)

12-14 November: Second Space for Hydrology Workshop (Geneva)

12-16 November: Intergovernmental Panel on Climate Change—27th session (Valencia, Spain)

15-16 November: Workshop on African Fire Danger Requirements (co-sponsored by WMO) (Accra, Ghana)

20-23 November: Roving Seminars on Weather, Climate and Farmers (Bogota, Colombia)

28-30 November: International Workshop on the Rescue and Digitization of Historical Climate Records (Tarragona, Spain)

28-30 November: Fifth Latin-American Meeting in Agrometeorology (San Cristóbal, Venezuela)

3-5 December: WMO International Symposium on Public Weather Services: a Key to Service Delivery (Geneva)

4-5 December: International Fire Early Warning Workshop (Edmonton, Canada)

in climate mean that conditions in the atmosphere are different today and may indeed have implications for ozone recovery. Maintaining existing observational capabilities and enhancing the integration of information using numerical atmospheric prediction models are critical for separating the effects due to changes in climate from those due to changes in ozone-depleting substances.

Since the 1950s, routine ozone measurements have been made by National Meteorological Services and partners worldwide. Comprehensive measurements have been coordinated by the WMO Global Atmosphere Watch (GAW) since the late 1980s. These measurements have been critical to the series of ozone science assessments published since the mid-1980s by WMO and the Ozone Secretariat of the United Nations Environment Programme.

The Montreal Protocol was signed on 16 September 1987. In 1994, the United Nations declared that this date would henceforth be known as International Day for the Preservation of the Ozone Layer.

Moreover, in honour of the 20th anniversary of the Montreal Protocol, the year 2007 has been designated International Year of the Ozone Layer. In the framework of celebrations of the event, WMO received the Montreal Protocol Partners Award in recognition of its contributions towards protecting the ozone layer.

Every year, WMO/GAW issues the Antarctic Ozone Bulletin on the current state of stratospheric ozone on a bi-weekly basis. Usually, the Antarctic ozone hole reaches its maximum intensity in late September/early October. In 2007, the ozone hole appeared relatively early and earlier than in 2006, when the largest and most severe Antarctic ozone hole on record was observed.

In recent years, scientists have become increasingly aware of the possible links between ozone depletion and climate change. Increased atmospheric concentrations of greenhouse gases will lead to a warmer climate at the Earth's surface and a probably cooling of the atmosphere at the altitude of the ozone layer. A cooling of the winter stratosphere over the last decades has indeed been observed, both in the Arctic and in the Antarctic. Lower temperatures enhance the chemical reactions that destroy ozone. At the same time, the amount of water vapour in the stratosphere has been increasing at the rate of about one per cent per year. A wetter and colder stratosphere means more polar stratospheric clouds, which is likely to lead to more severe ozone loss in both polar regions.

These changes in the stratosphere could delay the expected recovery of the ozone layer. It is therefore vital that nations with stratospheric measurement programmes continue to enhance these measurements and that funds are available to support research on stratospheric ozone and UV radiation.

Together with the International Council for Science, WMO is coordinating the International Polar Year 2007-2008. Thousands of scientists are collaborating to increase our understanding of processes that take place in polar regions, including those of stratospheric ozone and UV radiation.

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