



The Intergovernmental Panel on Climate Change

Fourth Climate Change Assessment

In February 2007 the Intergovernmental Panel on Climate Change (IPCC) released the first of a series of reports which will make up the Fourth Assessment Report (AR4). "Climate Change 2007: The Physical Science Basis", assesses the current scientific knowledge of the natural and human drivers of climate change, observed changes in climate, the ability of science to attribute changes to different causes, and projections for future climate change.

This report expresses much greater confidence than past assessments that most of the observed warming over the past half-century is caused by human activities (greater than 90% certainty) and concludes, from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level, that warming of the climate system is unequivocal.

Among the observed impacts detailed in the report:

- Eleven of the last twelve years rank among the twelve hottest on record.
- Global sea level rise has accelerated.
- Mountain glaciers and snow cover have declined on average in both the northern and southern hemispheres.
- More intense and longer droughts have been observed over wider areas since the 1970s, particularly in the tropics and subtropics.

Projected climate change for the end of the 21st century depends on the level of future emissions and the IPCC used six defined emission scenarios for its projections. The report concludes that if we take no action to reduce emissions, there will be twice as much warming over the next two decades than if we had stabilized heat-trapping gases at 2000 levels.

Among the projections included in the report:

- The full range of projected temperature increase is 1.1 to 6.4 degrees C
- The best estimate range, which reflects the center point of the lowest and highest emissions scenarios, is 1.8 to 4.0 degrees C
- It is likely that future tropical cyclones (typhoons and hurricanes) will become more intense, with higher peak wind speeds and more heavy precipitation associated with warmer tropical seas.
- There is a greater than 90 percent likelihood that extreme heat, longer heat waves, and heavy precipitation events will continue to become more frequent.

In April 2007 the IPCC will agree and release the second part of the AR4 "Impacts, Adaptation and Vulnerability" in Brussels closely followed by the release of part three "Mitigation of Climate Change" in Bangkok at the beginning of May.

What is the IPCC?

The IPCC was established by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) in 1988. At the time it was recognised that climate change was a serious issue and that world leaders would need unbiased scientific advice - independent of national interests and corporate influence. The IPCC is charged with providing 'policy relevant' but not 'policy prescriptive' advice to policymakers on all aspects of the climate change problem.

The IPCC is open to all member countries of UNEP and of WMO and normally meets in plenary sessions about once a year. It decides on the IPCC's structure, principles, procedures and work programme, and it elects the IPCC Chair and the Bureau. It also agrees on the scope of IPCC reports and accepts reports. Plenary sessions are conducted in the six official languages of the United Nations and are generally attended by hundreds of representatives from Governments and participating organizations. The IPCC, the IPCC Chair and the Bureau are supported by the IPCC Secretariat.

The role of the IPCC is to advise policy makers about the current state of knowledge and provide reliable information pertaining to climate change. It does not conduct any scientific research itself, but instead reviews the thousands of papers on climate change published in the peer reviewed literature every year and summarises the 'state of knowledge' on climate change in Assessment Reports which are published every five years or so. These reports have become standard reference works, widely used by policymakers, scientists, other experts and students. . The IPCC also produces a variety of other reports on request of governments, intergovernmental organisations or international treaties. All scientists and experts involved in producing and reviewing the IPCC's work do so on a voluntary basis.

How the IPCC Works

The IPCC is broken down into three working groups.

- Working Group I: "assesses the scientific aspects of the climate system and climate change". That is, it reports on what we know about climate change - if it is happening, why it is happening and how fast it is happening.
- Working Group II: " assesses the vulnerability of socio-economic and natural systems to climate change, negative and positive consequences of climate change, and options for adapting to it". That is, it looks at what degree climate change will impact people and the environment, and what changes might reduce its impacts.
- Working Group III: "assesses options for limiting greenhouse gas emissions and otherwise mitigating climate change." That is, it examines ways we can stop human-induced climate change, or at least slow it down.

Each Working Group has two co-chairs, one from an industrialized country and one from a developing country, and a technical support unit. IPCC activities, including travel costs for experts from developing countries and countries with economies in transition, are financed through voluntary contributions from Governments. WMO, UNEP and the UN Framework Convention on Climate Change (UNFCCC) provide additional support.

IPCC Assessment Reports

Assessment Reports consist of several volumes and provide comprehensive scientific, technical and socio-economic information on climate change, its causes; impacts, adaptation and vulnerability, and mitigation options. Each of the three Working Group reports includes a Summary for Policy Makers (SPM), published in all the official UN languages. The SPM is written so as to be understood by non-specialists.

Previous assessments have been highly influential in determining both national and international policy on combating climate change. The first, released in 1990, led to the decision by the UN General Assembly to prepare the UN Framework Convention on Climate Change. The Second in 1995, provided input to the negotiations for the Convention's Kyoto Protocol.

IPCC reports are written by teams of authors, nominated by Governments and international organizations and selected for a specific task according to their expertise. Several hundred experts from all over the world are normally involved in drafting the reports, with many more experts participating in the review process. About 1,000 experts from all over the world were involved in drafting the last (Third) Assessment Report in 2001 and about 2,500 were involved in its review. The Fourth Assessment Report will be published in 2007.

The IPCC usually starts a new assessment by developing a general outline. Policymakers and other users are consulted in order to identify the key policy-relevant issues. After the outline is approved, teams of lead authors are assembled for each chapter. Chapter teams should include experts from all regions and represent a range of expertise and prevailing scientific-technical views.

IPCC reports must pass through a rigorous two-stage scientific and technical review process to ensure credibility and transparency. For the first review, the drafts are circulated to specialists with significant expertise and publications in the field. The drafts are then revised and distributed to Governments and to all authors and expert reviewers. After taking into account the expert and Government comments, the final drafts are presented to plenary for acceptance of their content.

Summaries for Policymakers are prepared alongside the main reports and undergo a simultaneous expert and Government review. They are then approved in plenary session line-by-line, with the concurrence of the lead authors, to ensure that they are consistent with the underlying scientific-technical report.