



WMO

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE



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PROGRESS OF WORKING GROUP I TOWARDS THE IPCC FOURTH ASSESSMENT REPORT (AR4)

(Submitted by the Co-chairs of Working Group I)

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1. Summary

The Panel approved the outline for the Working Group I contribution to the Fourth Assessment Report (AR4), at its 21st Session in Vienna in November 2003. Since then substantial progress has been achieved towards completion of this report. Key steps, in chronological order, have been:

- “CLIVAR/PAGES/IPCC Workshop: A multi-millennia perspective on drought and implications for the future” held in Tucson, Arizona, November 2003.
- Selection of Lead Authors and Review Editors for the WG1 contribution to the AR4 by the 9th Session of the Working Group I Bureau held in Nyon, Switzerland, April 2004;
- “IPCC Workshop on Describing Scientific Uncertainties in Climate Change to Support Analysis of Risk and of Options” held in Maynooth, Ireland, May 2004;
- “IPCC Workshop on Climate Sensitivity” held in Paris, France, July 2004;
- IPCC Working Group I First Lead Author meeting, held in Trieste, Italy, September 2004.

2. Fourth Assessment Report

At its 9th Session, the Working Group I Bureau selected 140 Coordinating Lead Authors (CLAs)/ Lead Authors (LAs) to write the WG1 contribution to the AR4 and 37 Review Editors (REs) to assist the authors in dealing with review comments. Two CLAs and at least two REs were selected for each of the 11 chapters. A full list of authors and Review Editors by chapter, indicating their area of expertise, is available on the main IPCC web pages, or can be provided on request to the Working Group I Technical Support Unit (TSU).

The first Working Group I Lead Author meeting was held from September 26 to 29 in Trieste, hosted by the International Centre for Theoretical Physics with kind support from the Italian Government. In the course of that meeting author teams worked from the approved outline for the report to produce more detailed outlines for their chapters, to assign writing tasks for chapter sections to specific LAs, and to develop internal timelines for the preparation and compilation of draft material. The LAs also addressed a number of cross-chapter issues, considered areas where contributing authors (CAs) might be called on, and considered relevant cross cutting themes for the AR4.

The Zero order draft of the Working Group I contribution to the AR4 will be submitted to the TSU by January 14, 2005 and then subjected to an internal review during February and March. The second Lead Author meeting will be held in Beijing in May 2005 at the kind invitation of the China Meteorological Agency. Following that, the First Order Draft will be written and sent for a full expert review in mid September 2005.

3. Meetings in support of the Fourth Assessment Report.

The CLIVAR/PAGES/IPCC Workshop on Drought brought together 63 participants to review scientific understanding of the occurrence and causes of drought from both a paleo and contemporary perspective, with particular reference to drought in Africa and North America. The IPCC Trust Fund provided support for 9 experts from DC/CEITs.

A summary of the workshop has been published¹ describing advances in observational studies of drought and in modelling processes involved in drought. Areas where new understanding is emerging, relevant to the AR4, include the prevalence of ‘mega-drought’ periods of several decades or longer in paleo records, and the use of climate models to elucidate teleconnections between patterns of ocean sea surface temperatures and drought.

¹ Trenberth, K., Overpeck, J. & Solomon, S. Meeting report: Exploring drought and its implications for the future. *EOS Transactions American Geophysical Union* **85**, 27 (2004).

Copies of a workshop report are available on request to the Working Group I TSU or can be found on the Working Group I web site at:

<http://ipcc-wg1.ucar.edu/meeting/Drgh/>.

The “IPCC Workshop on Describing Scientific Uncertainties in Climate Change to Support Analysis of Risk and of Options” was conducted to develop the AR4 Cross Cutting theme on Uncertainty. It was held in Maynooth, Ireland, at the kind invitation of the Irish Environmental Protection Agency and the National University of Ireland. It was attended by 79 experts representing each of the IPCC’s three Working Groups and covering all areas of climate change science. Experts from user communities were also invited to present their perspectives on the application of uncertainty in both public and private sector decision making.

The workshop enabled a careful review of how uncertainty had been treated in the Third Assessment Report and of options for improving consistency in approaches in the AR4. A series of papers resulting from this workshop will be published in a special issue of *Geosciences* late in 2004. In addition a full report of the workshop is available from the IPCC Secretariat and can be found on the IPCC web pages at:

http://ipcc-wg1.ucar.edu/meeting/URW/product/URW_Report_v2.pdf.

An important recommendation of the workshop was that brief guidance notes be prepared for the Lead Authors of the AR4 in all Working Groups to provide suggestions for consistent approaches to determining and describing uncertainties and levels of confidence in expert findings. A draft for these guidance notes was prepared by Martin Manning, Michel Petit and Richard Moss. This has been subjected to a round of review by experts and CLAs attending the Maynooth workshop and has been distributed to LAs at the first Lead Author meetings of each Working Group. Initial responses to these guidance notes have been positive and the notes are now undergoing a final round of review by all LAs from all WGs.

The IPCC Workshop on Climate Sensitivity was held in Paris in July 2004 to review progress in improving estimates of climate sensitivity to greenhouse gas forcing which is a key parameter of the climate system. The meeting was attended by about 100 experts and covered four topic areas: climate sensitivity from models; climate sensitivity from observations (including modern and paleoclimatic observations); radiative transfer and forcing; and probabilistic measures of climate sensitivity.

A smaller joint IPCC/WCRP expert meeting on aspects of climate sensitivity was also held earlier in Exeter, UK, in April 2004 at the kind invitation of the United Kingdom and its Meteorological Office. That meeting dealt more specifically with the role of cloud feedbacks in climate sensitivity and provided a valuable prelude to the climate sensitivity workshop in July.

A general summary of the climate sensitivity workshop has been published² in a high profile journal and a full report of the workshop is available on request to Working Group I TSU or can be found on the Working Group I web site at:

http://ipcc-wg1.ucar.edu/meeting/CSW/product/CSW_Report.pdf

An appendix to the workshop report contains the report of the Exeter meeting.

4. Support Activities

Following the selection of LAs by the WG1 Bureau, a total of 51 LAs are now eligible to use the WG1 ‘eJournal’ system which allows WG1 LAs from developing countries and countries with economies in transition access to online science journals. The system uses password controlled web pages at the Working Group I web site to provide on-line access to 16 science journals, including the ability to download articles from current and past issues of those journals. The service relies on the generous support of a number of scientific publishing companies and is being used regularly.

The Working Group I TSU is also developing a web-based system for collection of review comments, which will be tested during the internal review of the WG1 zero-order draft. Such extensions into web-based systems will not prevent continued use of existing forms of review or distribution of information.

² Kerr, R. A. Three Degrees of Consensus. *Science* **305**, 932-934 (2004).