

## ***The IPCC: As good as it gets***

By Professor Martin Parry

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As the Intergovernmental Panel on Climate Change (IPCC) puts the finishing touches to its final report of the year, two of its senior scientists look at what the panel is and how well it works. Here, a view from one of the leaders of its working group on climate change impacts. The IPCC is not, as some believe, a group of scientists, but a panel set up by the United Nations comprising representatives from about 140 governments to consider what we currently know about climate change. The panel decides whether an assessment is needed, and then engages scientists to conduct it. Since its establishment in 1987, there have been four such major assessments, published roughly every five years (1990, 1995, 2001 and 2007), sprinkled with occasional special reports on specific topics. Why this government role? The reason is because governments need a sound summary of knowledge which, once commissioned and adopted, becomes accepted by them. This is why the IPCC assessments are so significant; they represent the description of knowledge that governments "buy into".

It is a summary of what we know and - just as importantly what we do not know

We should not expect them to be full of exciting new material; rather, they are consolidations of what we know. This is why they err, if anything, on the side of conservatism and have been criticised for not exploring the outer edges of knowledge. Science at the top A real challenge has been to ensure that the assessments are objective, and not influenced by government agendas; and complex structure and process seeks to ensure this. The IPCC's Bureau (an elected subset of about 30 from Plenary) formulates the very broad outlines of an assessment. For example, in the past two assessments (2001 and 2007) it has set up three working groups to cover:

- the projected climate changes
- the implied impacts and adaptation
- the associated emissions and mitigation

Plenary elects chairs for each working group and these, together with the bureau, then discuss with the research community the scope of each working group report.

In the early part of the Fourth Assessment, meetings of scientists from around the world were held to help scope the assessments, and then the draft outlines were circulated for wider comment. Is there room for political interference here? In the 20 years that I have been a scientist with the IPCC, I have not encountered a government trying at this stage to influence the assessment beyond making suggestions that would genuinely help its remit or focus. There is then a call for authors who may be nominated by any government or organisation (research institutions, universities, businesses and NGOs). The co-chairs and working group bureaux scan the research records of the nominees and seek the best match between available skills and the expertise needed to cover the fields of the assessment. Is this another area open to political interference? I genuinely think we choose the best available, and without political motive. From more than 4,000 nominated scientists, about 600 were chosen as authors in the Fourth Assessment; and all those not chosen are automatically included amongst reviewers of the drafts.

#### Balance and focus

Each chapter writing team of about 20 scientists works for two years reviewing the available scientific literature, boiling down new knowledge and then agreeing the key conclusions. They need to reach a consensus but, where there is a difference of views in the literature over a particular issue (and there frequently is), then it is specifically the task of the authors to report these differences. Several thousand scientists are asked to review the authors' drafts, at two different stages; and there are also two stages of review by governments. The purpose of the review is to ensure that the assessments are a fair reflection of the views of the whole scientific community, not just of the authors themselves. Each chapter has two review editors to ensure that reviews are considered and responded to appropriately. The assessments are therefore stuffed with references regarding one tendency suggested by some sets of data, and other tendencies suggested by others.

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#### Imperfect model?

Orthodox science has difficulty predicting the future, especially if we have experienced nothing like it in the past. Computer models are essential to these predictions

But to many non-scientists, they are an unknown quantity. However, a new development in the Fourth Assessment is that it concludes, from an examination of 29,000 data sets, that the impacts of climate change occurring now can be observed everywhere on our planet. It is evident in its impacts on animals, plants, water and ice. This is traditional science-based observation and measurement, not "arm-waving" with computer models.

### Policy summary

In the three working groups, each chapter is the responsibility of its authors. The three volumes also have a Technical Summary (about 50 pages) which are written by the senior authors of each chapter; and there is a Summary for Policy Makers (SPM) of about 15 pages which is written by these senior authors, but then considered line-by-line by the full IPCC Panel in Plenary. The SPM is chewed over for some days (and sometimes nights) by the panel; and it is this process that has sometimes brought criticism from a few scientists who have questioned how much this government involvement alters the meaning of the scientists' conclusions.

I do not think it does; Plenary might alter some nuances, but the key conclusions of the assessments remain intact. The end result is that the chapters of the full assessments are authored by the scientists alone, as are their technical summaries. The SPM is the product of the Panel and the scientists together. The latter ensures a priceless outcome: governments buy into the assessments and accept their conclusions. The process of producing the IPCC assessments is a long, painstaking and sometimes painful process. It is careful and controlled but, of course, it is not perfect. The three 1,000-page volumes do not always make gripping reading. However, they represent by far the most comprehensive and authoritative statement that we have about climate change, its potential impacts and how we can respond to the challenge.

Professor Martin Parry is currently co-chair of IPCC Working Group II, and has been a lead author on all its earlier assessments

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