

Evolving the IPCC

The Intergovernmental Panel on Climate Change must incorporate expertise outside of traditional academia in assessing knowledge on climate change, but it must be transparent in its approach.

The past two years have been a challenging time for the Intergovernmental Panel on Climate Change (IPCC). Following global acclamation for its work on communicating the importance of climate change — recognized with a Nobel Peace Prize in 2007 — the panel came in for sharp criticism for a series of blunders. The most notable of these was the erroneous estimate in its last assessment report that Himalayan glaciers would probably melt by 2035.

Collectively these incidents led to questioning about the credibility and transparency of the panel's processes for assessing climate change science. But they also led to specific advice on much-needed improvements to the structure and functioning of the IPCC, which has seen an exponential increase in workload over the past two decades, without the resources to match. This advice has mostly been in the form of recommendations from an international scientific advisory body, the InterAcademy Council, which ultimately prompted the IPCC to agree its own conflict-of-interest policy at a meeting this May in Abu Dhabi. One of the main objectives of the IPCC's new policy is to pay special attention to issues of independence and bias within the organization, so as to ensure and maintain public confidence in its products and processes. While acknowledging that author bias cannot be eliminated, the policy states that it should be managed by the inclusion of diverse expertise and affiliations, and that conflict of interest — in which an author could gain financially from the outcome of an IPCC product — should be fully disclosed.

That the panel has experienced severe scrutiny on its processes in the past — and has recently acknowledged the need to address these issues — makes the latest set of allegations against the IPCC all the more perplexing. The latest fracas relates to the disclosure that one of the authors of the IPCC's *Special Report on Renewable Energy Sources and Climate Change Mitigation* (SRREN) — also released at the Abu Dhabi meeting in May — is a campaigner and energy analyst with Greenpeace. The involvement of Sven Teske, Renewable Energy Director for the international non-governmental organization, creates a perceived bias to the report's conclusions, the most striking of which is based on a Greenpeace-commissioned analysis showing

that around 80% of the world's energy supply could come from renewable sources by 2050. Although there is no evidence that the report — authored by some 120 individuals from the petroleum industry and academic and advocacy groups — was biased by Teske's involvement, a perceived bias can be as damaging to reputation as a real one.

In a Commentary on page 228, Mark Lynas argues that Teske should not have been involved as a lead author in an IPCC report on renewables. But is that a fair assessment? Writing on page 229, IPCC Working Group III co-chair and lead author of the SRREN report, Ottmar Edenhofer, suggests not, and argues that it is entirely appropriate — and indeed necessary — for the IPCC to include diverse expertise and information outside of academia in assessing the existing knowledge base. After all, the IPCC could not hope to achieve the ambitious mandate of assessing the physical climate, plus the impacts, adaptation, vulnerability and mitigation of climate change without drawing on sources from government, industry, non-governmental organizations and practitioners. Taking agriculture as an example, scientific research can tell us about likely future trends in crop yields, but addressing issues on adaptation of farming practices requires information from many other field sources, and often from industry. This recent controversy should not be taken as a call for the exclusion of wider sources from the IPCC process, but it does serve as yet another warning call for the IPCC's communication strategies. Much of the drama of the past few weeks could have been avoided if the panel had declared authors' affiliations openly and communicated the reports results more objectively. For a body that represents the state of understanding on one of the most complex and important issues of our time, repeating previously acknowledged mistakes is completely unacceptable.

On keeping true to its promise of widening its pool of sources, the panel must also go further to minimize the risks posed by inclusion of information and experts outside of mainstream academia. While the IPCC should continue to encourage the involvement of industry or advocacy groups — as it has done with the SRREN report — it must ensure that diverse views are balanced and that any potential bias is completely transparent at each

step of the process, from the commissioning and scoping of reports right through to the issuing of press releases. Failure to do so with immediate effect will only serve to undermine public trust in science.

Just as importantly, the panel could encourage, without mandating, researchers within the scientific community to undertake formal meta-analysis of topics that include 'grey' literature sources — in other words, the rigorous assessment of previously published studies, many of which have not been through peer review — partly as a means of including more work of non-governmental organizations and industry in its formal assessment process. At present, the IPCC asks that authors ensure the inclusion of such material in its reports is "fully justified," and that authors provide an additional layer of critical assessment of grey literature at the level of quality control that would otherwise come from a journal's peer-review process. Although IPCC authors have been very diligent in this regard, errors, such as the date for Himalayan glacier melting, show that here there is room for improvement. An increase in the number and diversity of topics explored through meta-analysis could form an important part of the effort to include diverse sources while ensuring scientific rigour.

This approach would obviate the need for overstretched IPCC volunteers to double-check every conclusion in every non-journal-based source, a cumbersome task that leads to a practical limit on the amount of non-journal-based material that can be assessed in any given report. Meta-analyses can help unlock the value of this material, both by bringing new conclusions to light and by providing a layer of critical analysis of the results even before they reach the IPCC table. An additional benefit of the inclusion of grey literature through meta-analysis would be the avoidance of publication bias, a problem stemming from the fact that researchers tend to publish more positive than negative results.

Widening the circle of expertise and information contributing to the IPCC is essential for the organization's evolution, and the SRREN report should be commended in that regard. Some of the greatest insights into how we cope with climate change could come from such diversity, be that in the form of authors with industry or advocacy links, sources of information outside of journals, or meta-analyses. □