

THIS WEEK

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The final assessment

The Intergovernmental Panel on Climate Change has provided invaluable evidence for policy-makers, but giant reports should give way to nimbler, more relevant research.

The first working group of the Intergovernmental Panel on Climate Change (IPCC) will deliver its assessment of the science of global warming at a meeting in Stockholm next week. This will be the fifth time that the IPCC has delivered such an assessment; some 23 years have passed since the first effort. Many things have changed in that time; others have not. Regardless, it is time to rethink the IPCC. The organization deserves thanks and respect from all who care about the principle of evidence-based policy-making, but the current report should be its last mega-assessment.

For more than two decades, the depth and breadth of the IPCC's regular reports have expanded exponentially and in parallel with a truly breathtaking array of data. More climate models are running increasingly sophisticated calculations, and coordinated experiments are bolstering our understanding of the results. Most importantly, the panel has increased its confidence in the underlying message — that greenhouse gases are altering Earth's climate. No serious politician on the planet can now dispute that.

Unfortunately, one thing that has not changed is that scientists cannot say with any certainty what rate of warming might be expected, or what effects humanity might want to prepare for, hedge against or avoid at all costs. In particular, the temperature range of the warming that would result from a doubling of atmospheric carbon dioxide levels is expected to be judged as 1.5–4.5°C in next week's report — wider than in the last assessment and exactly what it was in the report of 1990. The governments of the world, to whom the IPCC reports, have made precious little headway in reducing emissions. And they appear in little hurry to do so. For all of these reasons, it would seem that a little reform is in order.

After the first working group publishes its findings next week, attention will turn to the second and third groups, which focus on impacts and mitigation, respectively, and are scheduled to deliver their results next year. The result of this process will be a kind of consensus document that scientists, non-governmental organizations, bureaucrats and elected officials around the world can turn to as they discuss — at times it can seem endlessly — how to confront the most complex environmental issue of our time.

OLD NEWS

The IPCC process remains a human endeavour and, as such, is subject to human error; the silly mistake in the previous report that Himalayan glaciers would melt completely by 2035 demonstrates this. But the rarity of such errors shows what a solid job the organization has done. Critics went through the rest of the more-than-900-page report with a fine-tooth comb but found little else of significance to crow about.

True, 'consensus' does not necessarily mean that everybody is entirely happy with judgments about how the science is framed. Many researchers felt that the fourth assessment underplayed the potential for rapid sea-level

rise, for instance, and this time around, some fear that the IPCC is putting too much weight on a series of studies suggesting that the climate may be less sensitive to greenhouse gases than previously thought. In the end, however, it is abundantly clear that the IPCC has done its job and is delivering what international policy-makers need to do theirs. Yes, greenhouse gases are changing the climate. Yes, we are already seeing substantial impacts, and more are on the way. And

yes, this adds up to a problem for society that is significant and warrants immediate attention.

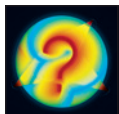
"The IPCC's mega-assessments are out of date by the time they hit the streets."

But none of this is news, and that is the problem. The IPCC's fifth assessment will provide a comprehensive analysis of policy options and the scientific basis for the next round of climate negotiations, which are scheduled to come to a head in 2015. What is missing from these talks is not science but political ambition, which is ultimately a reflection of public support. The IPCC has a crucial role in this process and must remain the central authority on global warming. It is not clear, however, that to immediately launch into yet another comprehensive assessment — which would consume immeasurable time and energy, and would probably come to the same bottom-line conclusions — represents the best use of our scientific resources.

Instead, climate scientists should focus on smaller and more rapid assessments of more pressing questions that have a particular political interest and for which science is evolving quickly. These reports could look more like the panel's recent special report on extreme weather; longer and more detailed assessments could be performed as needed, when there is sufficient interest from the governments that the IPCC serves.

Such a structure might also help to avoid an unfortunate consequence of the current framework, which ensures that the IPCC's mega-assessments are out of date by the time they hit the streets. For the latest document, some 20 international teams participated in coordinated modelling experiments, providing the core climate projections that the global community will use in the coming years; this is one area in which the IPCC has clearly driven the science forward. However, owing to logistics and deadlines, scientists barely had time to conduct a preliminary analysis for the current assessment, and as a result it lacks the more detailed analyses and most of the new science being published in journals today.

Absent from next week's report, for instance, is recent and ongoing research on the rate of warming and what is — or is not — behind the plateau in average global temperatures that the world has experienced during the past 15 years. These questions have important policy implications, and the IPCC is the right body to answer them. But it need not wait six years to do so. ■



OUTLOOK FOR EARTH

A Nature special issue on the IPCC
nature.com/ipcc2013