

Glaciers and the IPCC Off-base camp

A mistaken claim about glaciers raises questions about the UN's climate panel

Jan 21st 2010 | from the print edition

THE idea that the Himalaya could lose its glaciers by 2035—glaciers which feed rivers across South and East Asia—is a dramatic and apocalyptic one. After the Intergovernmental Panel on Climate Change (IPCC) said such an outcome was very likely in the assessment of the state of climate science that it made in 2007, onlookers (including this newspaper) repeated the claim with alarm. In fact, there is no reason to believe it to be true. This is good news (within limits) for Indian farmers—and bad news for the IPCC.

The IPCC, like ancient Gaul, is divided into three parts. Working Group I looks at the physical science of climate change. Working Group II is concerned with impacts, vulnerability and adaptation. Working Group III deals with mitigation. The claims about Himalayan glaciers come from a short “case study” in a chapter on Asia in WG-II’s report from 2007. Like all of the IPCC’s work, this was meant to be an expert assessment of relevant research, resting mostly on peer-reviewed sources but also, at times, on the “grey literature”—reports by governments and other organisations that are not commercially or academically published.

The WG-II case study cites a grey report by the WWF, an environmental group, as the source of the date 2035. The WWF in turn cites a study presented in 1999 to the International Commission on Snow and Ice (ICSI) by Syed Hasnain, chair of ICSI’s working group on Himalayan glaciers.

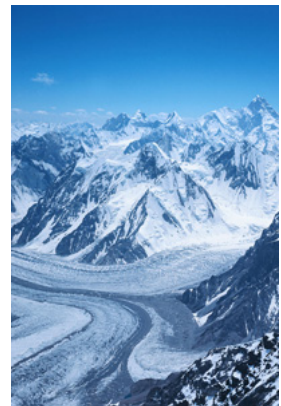
But the passage about 2035 that the WWF report quotes comes not from that ICSI report (which was unpublished) but from an article that appeared around the same time in *Down to Earth*, an Indian magazine. This article was based in part on an interview with Dr Hasnain, who was also quoted by *New Scientist* as saying it was possible the glaciers would be gone in 40 years. The article in *Down to Earth* claims that the area covered by glaciers would drop from 500,000km² to 100,000km² by 2035, a claim found in the IPCC report but not in the WWF report. This suggests the *Down to Earth* article was itself a source for the IPCC, though Murari Lal, a retired Indian academic, now a consultant, who was one of the four co-ordinating lead authors of the chapter, says this was not the case.

There are two further problems with the area figure. One is that the research in question was looking at all the world’s glaciers, not just the Himalaya’s. The other is that the research was looking at the prospects for 2350, not 2035.

Georg Kaser, a glaciologist at the University of Innsbruck, explains that a timescale of centuries, not decades, is far more plausible for the Himalaya. Politics and logistics make a comprehensive study of Himalayan glaciers difficult, but if those individual glaciers which have been studied recently are representative, then the glaciers are retreating. This retreat,

Like

0



Still there

Corbis

however, is likely to take a long time. To melt a glacier at an altitude above 6,000 metres, where many of the Himalayan glaciers are found, requires a lot more warming than can be expected by 2035—a point made forcefully in a letter to *Science* by Dr Kaser and others, published this week. Jeff Kargel of the University of Arizona, one of its authors, stresses that its criticism is aimed at this specific claim, not at the IPCC in general, and should not be seen as undermining the panel's conclusions.

On January 20th the IPCC released a statement reiterating its overall conclusion on water from seasonal snow packs and glaciers in a warming world: that it is likely to be scarcer and available at different times. The statement also says that in the case study on the Himalaya's glaciers "the clear and well-established standards of evidence, required by the IPCC procedures, were not applied properly." Christopher Field of the Carnegie Institution's Department of Global Ecology, who is now the co-chair of WG-II, says the fact that the review process failed to catch the problem needs to be looked into.

That a review process which included 40,000 comments did not catch the error proves that size is not everything—especially since the error was quite catchable. Dr Kaser read the chapter after it was reviewed but before it was published. As a glaciologist—he was an author of the relevant chapter in the WG-I report, a much more thorough take on the subject which makes no grandiose claims about the Himalaya—he found the passage absurd, and alerted the IPCC. Problems he had with a passage on glaciers in WG-II's chapter on Africa were subsequently addressed. Those in the chapter on Asia were not.

This poses two questions. One is why Dr Kaser, or some other glaciologist, did not see the chapter earlier on. Like Gaul's three parts, the IPCC's working groups, rooted in different disciplines, have different tribal structures; they do not communicate as well as they should. Dr Field says he is determined to try to do something about this in the process leading up to the next set of assessments in 2013.

The other question is why, when alerted by Dr Kaser, the IPCC did nothing. When open criticism began last year, it was airily dismissed by Rajendra Pachauri, who chairs the IPCC and runs an institute in India where Dr Hasnain now works on glaciology. If he had not heard the claims were wrong by that stage, he should have done. This mixture of sloppiness, lack of communication and high-handedness gives the IPCC's critics a lot to work with.

Meanwhile, the future of water resources in the places served by the glaciers remains unclear. Glaciers in monsoonal climates, unlike high-latitude glaciers, gain mass from precipitation during the same warm season in which they lose mass from melting, which makes their behaviour complex. And there are other water-related questions to be addressed, including possible changes to the monsoons and massive depletion of groundwater. There is an urgent need to study these things, and to synthesise the results in a way that can be relied on.

from the print edition | [Science and technology](#)