

Melting Himalayas – ICIMOD’s comments on a turbulent debate

The debate on the rate of melting of the Himalayan glaciers has gained momentum in recent days. The debate has centred on the statement made in the IPCC AR4 Working Group II report that the Himalayan glaciers are retreating faster than in any other part of the world and at the present rate of retreat could disappear by the third decade of this millennium. This has culminated with the statement from the IPCC on 20 January 2010 retracting this one statement in AR4, but reiterating that the broader conclusion of the report is unaffected.

Many of the inferences regarding glacial melting are based on terminus fluctuation or changes in glacial area, neither of which provides precise information on ice mass or volume change. Measurements of glacial mass balance would provide direct and immediate evidence of glacier volume increase or decrease with annual resolution. But there are still no systematic measurements of glacial mass balance in the region although there are promising signs that this is changing. China is the only country in the region which has been conducting long-term mass balance studies of some glaciers and it has expressed the intention of extending these to more Himalayan glaciers in the near future. India has recently started to study several glaciers for regular mass balance measurements. Recognising the importance of mass-balance measurements, ICIMOD has been promoting mass balance measurements of benchmark glaciers in its member countries and has co-organised trainings to build capacity for this in the region.

ICIMOD has been drawing attention to the severe problems resulting from the lack of good scientific data and information for the Hindu Kush-Himalayan region, especially but not only on glaciers. This severely limits the ability to understand present changes or predict future impacts, a prerequisite for good decision-making thus the Centre has been promoting development of baseline information related to environmental processes and their changes. In early 2002, ICIMOD initiated a regional inventory of glaciers and glacial lakes, based on desk research and analysis of maps, aerial photographs, and satellite images. Since then, partner institutions have continued this work and developed inventories at national scales. ICIMOD is now focusing on assimilating existing information and national data and developing a regional database so that a regional monitoring system on the status of cryospheric elements like snow and glaciers can be put in place. Standardisation of methodologies has been given due emphasis to facilitate integration of the database. At present, ICIMOD is conducting research on critical glacial lakes and is promoting the organisation of mass balance measurements in the region. Based on the analyses we have been doing, we can state that the majority of glaciers in the region are in a general condition of retreat, although with some regional differences; that small glaciers below 5000 m above sea level will probably disappear by the end of the century, whereas larger glaciers well above this level will still exist but be smaller; and that deglaciation could have serious impacts on the hydrological regime of the downstream river basins. Further, it is important to compare and summarise observations from a number of glaciers in different areas, of different size, and at different altitudes to draw clear scientifically justified conclusions about the changes that are occurring.

Although the lack of information and knowledge about the glacier melt processes in the Himalayas has been used to politicise the larger issues, the positive aspect of the debate has been the immense awareness created at various levels including politicians, decision makers, the media, and the public at large, which has led to some positive outcomes in recent months. In this context, the Indian Government has taken a decision to establish a specialised glacier research centre. Similarly, the concept of the Third Pole Environment initiated by the Chinese Academy of Sciences will have a positive impact on minimising the gaps in our basic understanding. ICIMOD is determined to contribute to developing better understanding of basic environmental processes, in particular climate change, glacial melting, and livelihoods impacts downstream, and highly commends these recent efforts made by our member countries.

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