ENVIRONMENT: Indian Glaciologist Fires Back at Climate Sceptics

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By Keya Acharya

BANGALORE, India, Jan 26 (IPS) - "It is a fact that global warming is happening. If the Arctic Sea ice is melting, how can the Himalayan glaciers not be melting?" glaciologist Syed Iqbal Hasnain asked indignantly. Amid the brouhaha over last week's retraction by a United Nations body of its 2007 report that the Himalayan glaciers would disappear by 2035, global warming sceptics quickly seized on the error, noting the rash of media

reports on the issue, which they believed bolstered their position.

But Hasnain, who found himself at the centre of the Himalayan meltdown controversy, said it is "ridiculous" to assume that the glaciers are not melting.

The scientist was reported as having given the year 2035 for the disappearance of Himalayan glaciers due to global warming in a 1999 interview with a British publication, 'New Scientist'. The Inter-governmental Panel on Climate Change (IPCC) picked up the date from the ensuing article and reported it eight years later in its 2007 Fourth Assessment Report, only to retract it last week.

In the IPCC report, the United Nations body said the phenomenon of climate change would melt most Himalayan glaciers by 2035, which was taken from the 'New Scientist' article published in 1999, according to the British broadsheet 'Sunday Times' in its Jan. 17 issue. The article was based on a telephone interview with Hasnain by the journal's writer, Fred Pearce.

IPCC, which assesses valuable information on climate change, won the 2007 Nobel Peace Prize along with former U.S. Vice-President Al Gore.

Hasnain, who denied ever having given the 2035 time frame to the writer, said Pearce has gone on record in the same 'Sunday Times' article, saying a 1999 report prepared by the scientist "does not mention 2035 as a date by which any Himalayan glacier will melt."

Hasnain, a senior fellow at The Energy and Resources Institute (TERI), said the date cited in the 'New Scientist' article was a "journalistic assumption interpolated by the interviewer over which I had no control."

Hasnain gave IPS a synthesis of recent scientific studies on the Himalayan glaciers. Titled 'Synthesis of Recent Studies on Himalayan Glaciers,' his report sums up scientific research done in the last decade, proving that the Himalayan glaciers are receding.

Glaciers in eastern and central Himalayas are especially sensitive to present atmospheric warming due to their summer snow-accumulation system, said the glaciologist's report, citing a 1984 study by Yasunari Ageta and K.

Higuchi.

An increase in summer air temperature not only enhances ice melt but also significantly reduces the accumulation by altering snowfall according to rainfall. In contrast, 'winter-accumulation type' glaciers receive their main accumulation at lower temperatures and are thus less sensitive to air temperature increase, said Hasnain's report further.

The Himalayas, located between the Indian subcontinent and the Tibetan Plateu, comprise the world's highest mountain range, including Mount Everest. It is home to more than 15,000 glaciers.

A 2009 study on glacial melt by a team of scientists led by A. Shukla, using optical satellite sensor data, found that the Samundratapu glacier in Lahaul-Spiti, Himachal Pradesh in northern India, had deglaciated by 13.7 square kilometres in the last 41 years, with the snout retreating by about 588 metres. The scientists concluded that all changes appeared to be linked to climate warming.

The issue of climate change has been on the forefront of vigorous discussions worldwide and the focus of earnest efforts by the international community to deal with its impact, including rapid glacier melting that has been known to trigger a wave of natural disasters.

Late last year, a flurry of emails sent out by climate scientists at the University of East Anglia in Britain, claiming some statistical data had been rigged to prove climate change, caused a public uproar. The scientists at the heart of the controversy said their emails were hacked and taken out of context.

Hasnain said vested interests are trying to denigrate scientists who are "diligently doing their best to research the issue."

Collecting and collating scientific evidence on glacial retreat in the Himalayas has been both physically near impossible and technically difficult. According to the Kathmandu-based International Centre for Integrated Mountain Development (ICIMOD) there are still no systematic measurements of glacial mass balance in the Himalayan region.

China is the only country in the region that has been conducting long-term mass balance studies of some glaciers. It will expand this study to more Himalayan glaciers in future, said ICIMOD.

In November 2009, accompanying a group of international journalists to Khardung La, India's highest pass, to observe the state of receding glaciers, Hasnain showed scientific evidence of glacial retreat at Chota Sigri in Himachal Pradesh, Drang Drung in Zanskar region of Ladakh, and in East Rathong in the eastern Himalaya.

Chota Sigri showed a sharp decline in the annual mass balance, with the glacier moving at 40 m per year in the higher reaches and at 25 m each year in the lower reaches.

"It is definitely shrinking," Hasnain told the group of European, American and South Asian journalists.

Along with Dr. Veerabhadra Ramanathan of the Scripps Institute of Oceanography at Woods Hole, Massachusetts, Hasnain also presented scientific evidence of how black carbon aerosols, contributing to the ‘atmospheric brown cloud' phenomenon, was depositing itself on the Himalayan snows and causing temperature rise to accelerate even further than "normal" global warming.

In India, the Ministry of Environment and Forests appears to feel vindicated over its charge, made mid-2009, that the IPCC view had been "alarmist." IPCC chairman Rajendra Pachauri, who is also the director of TERI, had described the Ministry's report as based on ‘voodoo science'.

The embarrassing debacle over the projected date of disappearance of the Himalayan glaciers has clouded discussions on the poor state of these ice masses, especially the smaller ones.

In Ladakh, in India's northernmost state of Jammu and Kashmir, retired rural development civil engineer Chewang Norphel quietly refutes claims that there is insufficient scientific data to prove that India's glaciers are receding.

"I am the scientific data," said Norphel. "I have seen, for instance, the size of the Khardung La glacier since I was a child: it was solid ice then," he told the international journalists' group in November 2009.

Norphel, known popularly as India's ‘glacier man', has been building high- altitude water-conservation channels that freeze over as ‘artificial glaciers' to beat the lack of water from the receding Himalayan glaciers.

The Khardung La glacier is one example of Ladakh's melting glaciers, barely recognisable now as a glacier. Over 70 percent of Ladakh district's water supply is sourced in springtime from the melting snows off glaciers and is the sole source of water for irrigation for its remote mountain communities.

But in recent years, rising temperatures believed to have been spawned by climate change have resulted in decreasing snowfall in the upper-reach ‘accumulation' zones of these glaciers, leading to reduced waters in the springtime.

A survey of 20 villages and 211 individuals over 65 years of age in Ladakh district, done by the French non-government organisation GERES (Groupe Energies Renouvelables, Environnement et Solidarités) showed over 90 percent of them saying that winters were now warmer.

Metereological data analysed from 1973 onwards by GERES shows a rise of 1 degree Celsius in the winter months in Ladakh, coupled with a sharp decline in snowfall and an equally sharp increase in mean summer temperatures in July, August and September.

The changing temperatures have already begun impacting the region's biodiversity and its communities, said the international conservation organisation Worldwide Fund for Nature (WWF).

"The breeding of the bar-headed goose and the Black-necked crane has not been on schedule in recent years," said Nisa Khatoon, project officer of WWF at Leh.

She added that migration routes of communities on the Tsokar lake at Leh, which weave the world-famous Pashmina shawls, "have become more frequented as these pastoral communities migrate due to degrading pastures."

Find out more about the forces behind climate change - but also about the growing citizen awareness and new climate policies towards sustainable development
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