

Random Thoughts

Himalayan Glacieregate and Science

R. S. Tolia*

Copenhagen has come and gone and the net residue which remains left over after this 'most expensive picnic' in recent history has variously been described as Climategate and, of late, the Himalayan Glacieregate. COP 15 negotiations have also been referred to as NATO confabulations, meaning No Action and Talk Only (NATO, as an acronym). Being in Uttarakhand obviously one's attention is drawn more towards what gets discussed related to the state of science on various aspects of the physical feature called the Himalayas on the one hand, and the state of science in our Himalayan states, on the other. Whither Himalayan Science ?

Abode of Science

This state has had the most enviable distinction of having produced many a scientists of great repute and several FNIs and FNAScs who have been associated with this state went on to become synonymous with and a by-word of their respective disciplines. Several of them have also occupied highest positions even in the field of 'management of science', heading institutions like the Council of Scientific and Industrial Research (CSIR) or various institutions affiliated to CSIR, JLN Centre of Advance Research, BARC, TIFR, and so on. Same has been the case with the IARI and Forestry research institutions. Professors like D.D. Pant, K.S. Valdiya, RS Bhakuni (ITRC), A.N. Purohit, SK Joshi, JS Singh, SP Singh, YPS Pangtey and GS Rawat, to name a few, with whom we all are familiar. I have had the privilege of knowing most of

them personally and have often marveled at our own callous apathy towards many of them, a great pity and shame, to say the least.

Besides being home to these eminent scientists and science-managers Uttarakhand is also a host to scores of scientific institutions dedicated to the scientific fields of Forest, Environment, Wildlife, Himalayan Geology, Astronomy (ARIES), Land, Forest and Oceanic Surveys, Soil and Water, Veterinary (IVRI), Mountain Agriculture (DARL and Vivekanand PKRI), Defence (DRDO), Agriculture and allied disciplines which are either assisted by the related central Ministry or the Department of Science and Technology. Taking the eminent scientists, science-managers and the scientific institutions together this Abode of Snow (as Kenneth Mason once called it) could easily be called as the Abode of Science, as well.

Himalayan Glaciers and Science

Right on the heels of the University of East Anglia's e-mail scandal, on the eve of Copenhagen Summit itself, the climate skeptics, it might be recalled helped themselves to yet another celebration when a climate change 'theory' came under a cloud because of the retraction of an unfounded claim in an Intergovernmental Panel on Climate Change's (IPCC) report from 2007. This related to the item which claimed that the glaciers of the Himalayas could disappear by 2035 i.e. in 25 years from now ! It was drawn from a campaign report by the WWF, which had taken it from an interview with an Indian glaciologist published years earlier in New Scientist. It was not based on peer-reviewed science and should not have been included in the IPCC's Fourth Assessment Report (AR 4).

Isabel Hilton, commenting on the state of research on Himalayan glaciers, has in this process raised several pertinent issues which

though made in context of this on-going debate on the Himalayan glaciers, apply mutatis mutandis to almost all scientific researches being undertaken on various aspects of our Himalayas (*Very little research on Himalayan glaciers; The Hindu , January 21, p 13; © Guardian Newspapers Ltd.*). What is really worrying, points out Hilton, *'about this report is how little it has to say about the future of the Himalaya –Hindu Kush, a region on which nearly 40 per cent of the world's population depends for water. There was a striking lack of useful data on the possible fate of the largest store of fresh water outside the poles- and no available field-work, it would appear, on glaciers that feed all the major river systems of Asia'*.

Isabel goes on to add that yet another worrying unknown is 'what impact might the loss of the Himalayan glaciers have on the monsoon, on which food security in south Asia depends ?' Her obvious conclusion that when the report was under preparation, *"it seems that, the science of the region, one of the world's most sensitive and volatile, was a black hole "*.

Himalayas : A Black-Hole of Science ?

How this Abode of Snow and once an Abode of Science has become a Black-Hole of Science deserves every one's close scrutiny and very prompt response. Isabel Hilton has, as far as my own personal understanding of pursuit of science in this region goes, hit the nail on the head indeed when she very pragmatically concludes :

*To be a glacier scientist in tropical and temperate zones requires both **scientific training** and **mountaineering skills**. In most of the Himalayas, those with mountaineering skills are tribal people, and those with scientific training middle-class and urban. Since the glaciers lie in some of the most sensitive security regions in the world, **scientists from***

elsewhere can find their work frustrated by national security suspicions.

The issues related to the known and unknown hurdles in scientific investigations in the Himalayas now stand highlighted internationally and it is really surprising that no one amongst our own scientists has deemed it necessary to raise them even within India, whereas there are any number of forums available to do the same. Studying the glaciers, until recently, “was not a high priority”, says Hilton..and “ unlike the Alps, the Himalayas have a patchy photographic record and the history of scientific glaciology is short. Climate modeling is unreliable across the variations in altitude (and)..the collection of even basic data is sparse. The result was that nothing was known about precipitation at high altitude, where the glaciers are. This is one of the most complex regions on earth, and there are confusing local variations, such as the Karakoram, where glaciers are advancing.”

The debate has been joined by Indian government which had criticized the IPCC’s glaciers claim in November, publishing its own discussion paper by geologist Vijay Kumar Raina, who while admitting that some glaciers in the Himalayas are retreating, it counter-claimed that “ there is nothing to suggest as some of said that they will disappear ”.

Task Force on the Mountain Ecosystems, 2006

Those of us, destined or doomed to remain in the Himalayas, know it very well, where the truth really lies. I am one, who should know, the real state of affairs of the state of scientific researches in these parts and it was nothing except extremely deep concern about the pathetic state of affairs of our existing scientific research institutions located in the Indian Himalayan region that a SWOT analysis was included in the Report of the Task Force on the Mountain Ecosystems. In Annexure 6 of the Task Force, headed by

me personally, we had recommended that the 40 plus R&D institutions belonging to ICAR, CSIR, DST and DRDO be networked and the concerned Ministries made special efforts to strengthen the existing R&D institutions. Besides strengthening the existing 40 plus R&D institutions we had recommended that new centres of R&D excellence be set up based on mountain specific needs. Predictably not much has changed even since and Himalayan Glaciergate comes as no surprise at all to any conscientious Himalayan citizen

This SWOT analysis, added as Annexure 6 of this Task Force Report, submitted to the Planning Commission in November, 2006; pointed out several shortcomings, including the following:

- (i) lack of in-depth information on selected disciplines,
- (ii) limitation in man-power/skill to address multidisciplinary issues,
- (iii) weak attention to some geographic areas,
- (iv) poor network,
- (vi) weak information dissemination, and
- (vii) no lateral support from in-depth sectoral R&D.

Lest the readers is led to believe that these weaknesses and shortcomings were confined to some non-descript R&D institutions existing in the Himalayan region, let me hasten to clarify that these inflicted institutions included GBPHIED, Kosi Katarmal, Wadia Institute of Himalayan Geology and the SWOT Analysis was prepared by GBPHIED itself !(Report of the Task Force, Annexure : 6, p 86 – 87). While Wadia Institute of Himalayan Geology was involved in glacier-studies for some time in the Bhagirathi region the involvement of GBPHIED is so nascent that it is not even worth mentioning ! That leaves our Geological Survey of India i.e. its Glaciology Wing, and the GSI has ever held the view that the phenomenon of climate change is “cyclical”. The GSI version is the one I had had occasion to listen

to at a Conclave of Scientists and Administrators which was organized at Kosi-Katarmal again, in which Ministers and Secretaries of as many as three Scientific Ministries had participated, way back in year 2000 !

Are Himalayan Sciences Taken Seriously ?

There are ample examples available in Uttarakhand itself which fully substantiate what Isabel Hilton has very forcefully diagnosed As the causative factors which have resulted in converting this *Abode of Science* into a *Black-Hole of Science*. One has to only ask (i) why ICAR should have shifted the IVRI from Mukteshwar to Bareilly and what exactly is happening at Mukteshwar IVRI Campus today; or, (ii) who was responsible for shifting the headquarters of DARL, Pithoragarh to Haldwani, while two ICAR affiliated institutions were already located at Pantnagar and Almora respectively, and what necessitated the change of the name of the research focus and change in the nomenclature of DARL itself, or (iii) what has been the result of various problems which had been identified related to the Himalayan issues in the various ICAR Regional Conferences, from say 2000 to 2009 and so on ?

Who is responsible for the on-going abject apathy towards all these developments - the administrators, science-managers, Ministries concerned or the scientists themselves ? Do the crop of scientists who are sent to work in these R&D institutions have the necessary inclination or desire to work on the mountain-issues, or are they well versed in the mountain R&D themes per se or is it just a matter of finding employment and doing research and merely publishing them in various scientific journals, improving their CVs. These are certainly very unpalatable questions to be digested both by the scientists as well as the science managers. What are the essential qualifications which must be insisted upon before a scientist is engaged to work in a R&D institution set up or assisted to work on Mountain issues ?

External Peer- Reviews of All R&D Institutions

In the light of the Himalayan Glaciergate, which has for the first time raised several pertinent issues which must be addressed not only in the interest of science but for the sake of very survival of the humankind the following steps deserve serious and immediate consideration:

(i) Bring all R&D Institutions under compulsory Peer-Review mechanism, Review Team consisting of scientists drawn from peer institutions and also user-groups and eminent citizens,

(ii) First Peer-Review must take place within 2010 itself and thereafter it become a Quinquennial exercise,

(iii) Stop funding to any R&D institution, which has not complied with External Peer-review mechanism,

(iv) Stop funding to those R&D institutions who having had a Mountain R&D mandate has diluted its original mandate by shifting its headquarters, research locations or research programmes and fix responsibilities for such violations, under any excuse,

(v) Identify and address “transparency” issues of R&D institutions working in the Himalayan region and prescribe regimes which are simultaneously compliant of ‘national security suspicions’,

(vi) Ensure data-sharing among R&D institutions and user organizations; it is not possible to conduct truly scientific research in the Himalayan region, without sharing data regionally and internationally ; secrecy in data-sharing has already caused very serious harm both to the science and regional development initiatives, and

(vii) Use forums and multi-Governmental organizations like the International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, SAARC, Kathmandu and other UN agencies Regional Offices located in the region for data-sharing, joint-action research on the Himalayan/Mountain issues, and

(viii) Develop and promote collaboration and co-operation among the Himalayan States and the 40 plus R&D Institutions located in the IHR, activate Indian Inter-State mechanism like the North East Council and create new mechanism to strengthen the remaining Himalayan States of Uttarakhand, Himachal Pradesh and J&K, as suggested by the Task Force on the Mountain Eco-systems (2006) and finally establish a Ministry for Mountain Development at the Centre to systematically monitor and promote R&D on Mountain specific issues.

Secrecy, Science and the RTI

It would not be out of place to recount here what the Secretary of the Science Writers Association of Uttarakhand had mentioned in one of the workshops which the Uttarakhand Information Commission had organized way back in 2005 itself. He had expressed serious concern over the secrecy which most of the R&D institutions practiced, when it came to sharing scientific research findings with the science writers. If the findings are not shared with the science writers, who only have the capacity to explain it to the public at large, how the so-called 'scientific temper' going to be inculcated amongst the citizens, especially the potential scientists ? It is an open secret that various R&D institutions are engaged in similar, thus repetitive and avoidable, research work. Let an effective network-arrangement amongst the R&D institutions remove this nagging suspicion in the public mind.

It is only through a transparent and credible peer-review of R&D institutions' work and their systematic dissemination by the writings like, what one used to read courtesy a long forgotten popular - science writer, George Gamow; that Himalayan Glaciers can be avoided in future. When even the shackles of 'State-secrets' have been loosened why this vicious grip of 'Science-secrets' not being eased up ? Scientists, please allow the Himalayas breath properly, for the sake of humanity !

* R.S.Tolia is the Chief Information Commissioner of Uttarakhand Information Commission, Dehradun and he welcomes queries at rs_tolia@rediffmail.com or at uic.gov.in (ask CIC).