

ences in the everyday world. It takes a while to bring the narrative to the science, even if a writer uses everyday idiom. Which by itself is not an easy task.

The world of science has developed a great bias towards English. The research comes from the English-speaking world, so the idiom is culturally English. The Hindi readership is not familiar with this idiom. For example, imagine the words required to explain plate tectonics in Hindi. For most scientific terms, there are translations in Hindi. But those translations mean nothing to the average reader. In fact, they mean very little to even the students of science. Because they are never used outside the classroom.

Each writer has to negotiate this problem on his terms, given his limitations. In my experience, using the metaphor of labour is useful. So, in a Hindi article on the world of computers, I have used the metaphor of carpentry to explain the nuance of a graphical user interface. To talk about the relationship between an operat-

ing system and computing software, I have found myself using the image of railway tracks and trains running on them. To talk about climate change and its impact on the monsoon, I have drawn from Hindu customs and mythology.

While this makes the material more accessible to a wider readership, it also dumbs down the narrative. One gets the feeling that there is no room for the beauty of complexity. Since there is very little written on science in the Hindi media, one also regrets the absence of a peer group. When you are struggling with a choice of words, because you cannot think of words and phrases that can convey the meaning accurately *and* interestingly, you need peers to bounce off ideas, get feedback.

Then there is the search for editors who are willing to humour science – given the media atmosphere, indulge is a closer term. How do you convince a copy-editor to not chop out a critical explanation because he/she needs ever shorter pieces? I have had an editor pub-

lish a badly cut article because of an advertisement that arrived late at night. Such problems are not that frequent in the English media, in which editors still have a little more say in the running of the publication than their Hindi counterparts.

The real reason to write in Hindi, though, is the reader. If one manages to put together good material into a good narrative, the readers respond with the kind of love one never gets from the English readership. Just like abuses hurt more when delivered in the mother tongue, appreciation is sweeter too in the first language. The Hindi reader does want more in what he reads. Will the writers and editors show some imagination and courage?

Sopan Joshi, Reporter, Writer and Editor for 17 years, Sopan Joshi has trained his eyes to see the world with the eyes of science. His recent work is available at <http://mansampark.in>
e-mail: sopanjoshi@hotmail.com

Lessons for a climate change scribe!



Archita Bhatta

It was December 2008. I was checking the rush of e-mails on my laptop trying to mine a story from the pile, when I found a research paper which showed that incidences of extreme rainfall were increasing in central India. What was more striking was that, written by a senior scientist from within the Government firmament, the paper established a connection between these increased incidences with the increase of sea-surface temperature (SST) in the Indian Ocean.

My editor and I had a good look: ‘Can you make a cover story on climate

change out of this?’ he asked. I knew why he said that.

You see, it was perhaps the first time that such a connection on climate change linkages had been made in the Indian context. For till then, the scientists who were ‘authorized’ to comment on the effect of climate change on weather systems were solely from the India Meteorological Department (IMD). And IMD had been vigorous in its denial of climate change. So this new finding indeed merited a cover story. I set about doing it.

Scientists: ‘connection’ cagey

First, how did the paper make the connection? Fifty years of rainfall data collected from IMD had been compiled and set out as a graph. Parallely, data of rise in SST over 50 years had been collected and also made into another graph. This was not an easy task – given that 50 years ago, the volume and quality of data available did not match the current requirements. So a lot of extrapolation and averaging had to be done; a strenuous process vulnerable to ‘inquisition’ during peer review.

This is one of the problems in climate change research, and the real reason behind any scientist’s reservations about making connections between local observations and global changes.

While studying to do this tough cover story, I learnt that a lot of research on climate change has been taking place in institutions like the Central Research Institute for Dryland Agriculture, and the Indira Gandhi Agriculture University, but scientists were still wary of making the connection between their findings and global climate change. A lot of hardwork and two weeks later, the cover story was published, and I was not overtly criticized by anyone; in fact, there were some kudos too.

Fast forward to 2011. I was then working with another Indian non-governmental organization (NGO) engaging itself on environmental issues, a key player at the global conventions and negotiations on climate change. I was asked to write about a climate change awareness programme that the organization was undertaking among school children.

I started the article with reference to cyclone *Aila*, which was one of the ex-

tre events, and which had created serious concerns in the young minds. It had in fact driven some of them towards making incremental changes in their own lifestyles. Some of them had decided to reduce power consumption, some started using their air conditioning at higher temperature settings. For me, this seemed a good, dramatic start of an important piece of climate journalism. Or so I prided myself in thinking. But the editor was adamant: 'It will be a disaster for our organization if you make such a connection. Do you have any proof that *Aila* happened because of climate change?'

Such arguments are daily affairs in the media, so I had to rebut my editor. 'I am not saying that this particular incident was because of climate change. I am just relating how this incident highlighted the perils of climate change in the minds of the youth. Besides, that the Intergovernmental Panel on Climate Change (IPCC) itself has said that such extreme events will keep on increasing, and this is one of the clear symptoms of climate change', I said. But all my arguments failed. My article promptly went into the waste bin.

Uncertainty: a hot terrain...

Clearly, therefore, the media expression of a science and environment-based NGO had accepted the connections as valid, while another environmental organization's portal refused to do so.

This is the difficulty in reporting climate change issues. The first time an Indian scientist had established such a connection was in 2009. My Article then was published in the NGO's magazine. But in 2011, a science-based organization refused to accept that there was a proven connection, and my report was scrapped!

Interestingly, 2011 was also the year of the Copenhagen Conference of Parties on climate change, and recent research by the Center for Science and Technology Policy Research at the University of Colorado, USA shows that climate change reportage peaked that year. By 2011 too, an increasing number of scientists had accepted the projections by the IPCC, one of which was the increase in the incidences of extreme events and their linkage to climate change (Scheer and Moss, *The Environmental Magazine*, 23 September 2012). However, on the ground very little had changed: many

scientists were still wary of drawing direct connections and inferences.

At the root of this resistance lies the uncertainty factor of climate change research. Climate change is a science whose sole laboratory is the entire world. So many different factors are at play when you predict what will happen five or 50 years from today. The areas of impact of this interdisciplinary science are huge and diverse – weather systems, agriculture, forests, ecosystems, wildlife, socio-economic effects, social strife, even infrastructure, and so on.

Such a multifaceted problem is always associated with some level of uncertainty. A study titled 'Ideological cultures and media discourses on scientific knowledge: re-reading news on climate change' (Anabela Carvalho, *Public Understanding Sci.*, 2007, **16**, 223–243), shows how the media becomes a tool in politicising the uncertainties built into climate change research.

The study says that a British newspaper, *The Guardian* acknowledged these uncertainties, and yet called for heavy cuts in emissions. On the other hand, *The Times* demonstrated a sceptical position towards climate change, justifying its stand on grounds of this very 'uncertainty'. The study published by Sage said that this was because uncertainty was a difficult issue for news reporters, for whom facts were sacrosanct.

Another study titled 'Public representations of scientific uncertainty about global climate change', published in the journal, *Public Understanding of Science* (2000) scanned newspapers in USA to show that scientific uncertainty was used by the media to construct or reinforce boundaries separating scientists and the lay public.

These analyses call for better communication skills among the climate change media fraternity regarding the prickly issue of 'uncertainty', so that scientific findings are not taken as deterministic, and at the same time, they do not deter policymakers and the public from taking steps that can deter climate change.

The latter is most important because we cannot wait for improved 'certainty' in our results or projections before taking corrective steps to tackle climate change.

These changes had started taking place many decades before the scientists had woken up to the need to study them, and the changes are still ongoing. So, there is

a major time-lag between the changes, which are taking place much faster than the research to establish them. Thus, we need to take precautions on the basis of the results already in hand. This is known as the 'precautionary principle' approach.

These for me were complex lessons. What I realized is that there is need to acknowledge and communicate the uncertainties (for facts are sacrosanct in journalism, as I have said earlier), but in a manner such that the public is not confused and naysayers do not win the battle.

Beware: alarmists and naysayers alike...

In the confusing media weather over climate change, a naysayer is the climate sceptic who mostly rides on the back of these 'uncertainties'. Actions to mitigate climate change, be it lifestyle changes or reduced dependence on fossil fuels, of alternative energy sources or increased energy efficiency, usually receive maximum opposition from the climate sceptic.

Diagonally opposite is the alarmist attitude, which like Hamlet, on the one hand, sees the apparition of climate change in every small research finding; and like an umpire in a game of cricket, feels his judgement is final. Just as much as the sceptical attitude, one should also beware the alarmist attitude that the media adopts while covering climate change issues.

A study titled 'Mediated messages about climate change: Reporting the IPCC Fourth Assessment in the UK Print Media', published in *Science Communication* in 2007, shows that the media is largely alarmist in its attitude on climate change.

The third assessment report had other aspects too, like what to do to avoid the situation from worsening. But the media's alarmism ignored those prescriptions. However, such messages do not work. Far from bringing about behavioural changes, such doomsday communications of bare risk perceptions – based on fear-mongering – are counterproductive. This is because they propagate drastic lifestyle changes that any commoner would be averse to.

Thus much thought needs to be given to coverage of climate change if it is intended to bring about a change in policies and in the lifestyles of people.

Policy and hero fixation

Another failing of climate change coverage is the journalist's fixation for big, policy-shaping events like the annual Conference of Parties (CoPs), and the clamour to catch 'headline-stuff' quote from top political policymakers.

The Center for Science and Technology Policy Research at the University of Colorado has been tracking climate change coverage in 50 newspapers across 20 countries and six continents since 2000. The graphs on media coverage across countries show a similar trend of peaks during the annual CoPs, with the highest peak in case of most countries achieved during the 2009 CoP at Copenhagen.

The other media coverage peaks correspond with extreme weather events like the hurricane Sandy in the US in 2012. So there is a lack of consistent reporting of the scale that is needed to translate public awareness into public concern.

An article titled 'Media needs a climate change' in *The Hindu* highlights how in the Indian media, every CoP triggers a barrage of news items on India's stand vis-a-vis that of other super powers, and also stories on issues of national policy on climate change. The article also points out that in this milieu, local

stories connected to climate change are lost.

Climate change in the media

This again takes me back to 2011. Just back from a research on how apple orchards were shifting uphill in Himachal Pradesh because of increase in temperatures, I scanned the papers for the coverage of this in the media. None was found, except for one article in the science and environment magazine called *Down to Earth*.

These local stories of vegetation shifts, reduction in flows in the rivers, loss of crops, drought, etc. might appear as disparate and disconnected, but there lies the failing of the Indian media: it does not grasp the complex connections between these micro-level changes with the larger global changes.

The result is that climate change reportage is viewed by the public as a 'mere policy issue for 'intellectuals', remote and unconnected to their lives.

This has to change

So the situation remains the same as when I travelled across central India to report on how extreme rainfall and

drought there had affected people's lives. Farmers affected by unexpected rainfall in groundnut-growing areas of Andhra Pradesh, did not understand 'climate change' as the *professor* spoke of.

This has to change

The rapidly decreasing rainfall in Chhattisgarh did not make sense to the farmers there; connecting this to the fast burgeoning vehicular population, or the consumptive lifestyle of their middle-class urbane brethren.

It is most likely they still do not understand, because we in the media have ourselves not seen the *real* connection and are comfortable chasing policy diatribes and quoting big politicians.

This is what has to change... towards building a strong bench of climate change journalists who understand the complex subject and connect it to the lives of the common people, the community that will finally make the difference in climate change scenario happen.

Archita Bhatta, Climate Specialist for *Down To Earth*, and now writes for SciDev.Net on science and climate change issues.
e-mail: architabhata@gmail.com