

## Public engagement with science, technology and innovation\*

In January 2013, India's new Science, Technology and Innovation (STI) policy was put forward by the then Prime Minister Manmohan Singh during the centenary celebrations of the Indian Science Congress at the University of Kolkata. Taking this into consideration, a two-day National conference was held recently. The aim of the conference was to focus on the different modes of science communication to engage the general public.

Neelam Gulati Sharma (Punjab State Council for Science and Technology, Chandigarh) in her talk briefly discussed the problems Punjab suffer from in the fields of agriculture, health, water and environmental sectors, in addition to social problems such as drug use and gender bias. She also spoke on how growth and development of a society are linked with how scientifically aware its people are and about the crucial role played by NGOs and educational institutions towards improving scientific awareness of the public. Suresh Mahajan (former Head, Molecular Biology and Agricultural Division, BARC, Mumbai and Gharda Professor of Biotechnology, Institute of Science, Mumbai), in his keynote address spoke about the importance of India's new STI policy and emphasized that science communicators should focus on innovation. Innovation is not a want but a need created by lifestyle, said Mahajan, giving examples of case studies from Monsanto Company, which promotes genetically engineered cotton, brinjal and bovine growth hormone.

In the session on communicating science through print and electronic media, Mrityunjay Bose (Sakal Media Group, Mumbai), mentioned that the focus needs to be on conveying scientific topics to the common man in a language he can understand. According to Biman Basu

(former editor, *Science Reporter*, NISCAIR, CSIR, New Delhi) popular science magazines provide one of the most effective media for dissemination of the newest developments in science and technology. Popular science magazines are not only easily available, but also provide a broad-based platform for popular treatment of wide-ranging science disciplines that are not available through scholarly journals. They can play an effective role in creating public awareness on new scientific developments and help people take informed decisions on many contentious issues, he said. K. V. S. Seshasai (Zee Learn, Mumbai) spoke on how a dedicated edutainment TV channel for children has great scope for making science look like a lifestyle experience. He spoke about ZeeQ, India's first edutainment channel that showcases science as a fun experience for children. Teenovation, a show on ZeeQ, created in collaboration with the National Innovation Foundation, spots teenage innovators across the country to spread awareness about scientific achievements among children. Seshasai professes that television programmes such as Brain Cafe, Sid the science kid (currently aired on ZeeQ) can make science engaging and interactive for children. He cautioned, however, that one has to be careful about staying away from the lecture mode of teaching. A. S. Dhindsa (District Institute of Education and Training, Sangrur, Punjab) in his talk on radio programmes mentioned that good radio plays are a mixture of inspiration, talent and craftsmanship. He gave a detailed explanation about how to get a listener inside the world of play through curiosity, humour, simple language and by adding surprises.

In the session on communicating science, technology and innovation through multimedia, Anil Sharma (Centre for Communication and International Linkages, Punjab Agricultural University, Ludhiana) gave an interesting talk about science communication through traditional media through plays and folk music to communicate science to people at large. Rohini Chowgule (Bombay Hospital, Mumbai), in her talk on telemedi-

cine, discussed how with this facility, patients can discuss their problems with their doctors online through video-conferencing. Medical reports and other details are stored in a database at the International Telemedicine Centres across India, from where the doctors can access their patients' medical history. India spends almost 2.5% of its GDP on healthcare, but people at large, focus on cure rather than prevention. Today, telemedicine is the 'heal wire'; the technology is an all-pervasive force said Chowgule. Balwinder Singh Sookh (Punjabi University, Patiala) spoke on protection of innovations under Indian intellectual property (IP) regime. Various laws are made to protect innovations or creations under the Intellectual Property Rights. These rights ensure monopolistic benefits to the owner of invention or creation. The basic forms of IP protection in India are patents, copyrights, trademarks, designs, trade secrets, geographical indications, layout design of integrated circuits, protection of plant varieties, etc. Sookh asserted that knowledge is the strongest driving force for the progress and prosperity of a nation's economy. Drawing from his experience as the Director of Font & Pixel Media Pvt Ltd, Mumbai, Alok Thakor addressed the challenges of creating audio-visual programming for an audience. He focused on the conundrum that arises from an understanding of how communication is effective – understanding the audience and the context of reception as against the demands of an academic environment where science is often assumed to be context-free. He suggested that making audio-visual programmes for large audiences, demands moving science out of the syllabi, course books and examination, into the language and realm of everyday use.

In the session on evaluation, impact and strategic monitoring of science communication, Margie Sastry (former Editor, *Tinkle* and Anu Club; a science series by *Tinkle*, a monthly magazine, *Amar Chitra Katha* comics by India Book House, Baroda) revealed her joys and tribulations of creating Anu Club and *Tinkle*, and the challenges that one faces to make non-fiction interesting and

\*A report on a two-day National Conference on Public Understanding and Public Engagement with Science, Technology and Innovation, jointly organized by National Centre for Science Communicators, Mumbai and Punjab State Council of Science and Technology, Chandigarh during 15 and 16 February 2014 at Homi Bhabha Centre for Science Education, Mumbai.

use it to tell a story about science. Saraswati Iyer (former Director, Jawahar Bhavan, Mumbai) demonstrated innovative science activities in order to engage people, especially children with science and technology. T. V. Venkateswaran (Vigyan Prasar, New Delhi) spoke about Edu Sat – Education Satellite Technology, Geo Satellite and satellite-interactive terminals that are specifically configured to meet the special needs of India. Narottam Sahoo (Adviser of Gujarat Council of Science & Technology, Government of Gujarat) spoke on capturing new heights in science literacy. Gujarat Council of Science City working under the aegis of the Department of Science and Technology, New Delhi has emerged as an effective science education and science popularization platform to promote innovative and experimental activities, through hands-on and minds-on exposures. Sahoo stressed upon the informal community-based learning that intends to enliven imagination, foster creativity and develop a spirit of inquiry, especially in young minds.

In a session on evaluation, impact and strategic monitoring of science communication, Manasi Rajadhyaksha (Concepts India Ltd., Mumbai) spoke about the impact assessment programme con-

ducted by Marathi Vidnyan Parishad for scientific awareness, wherein a project survey at 17 centres in Maharashtra was carried out. People were interviewed and statistical analysis of the data was done to draw conclusions of the effectiveness of the Year of Scientific Awareness (YSA) programmes. Three major conclusions were drawn from the study. Alertness of people regarding disaster management was found. Also, there was no significant difference in scientific awareness between rural and urban people and lastly, computer literacy was low all over the state of Maharashtra. According to T. V. Venkateswaran, evaluation of a SciCom project is not simple because each SciCom activity is not identical to the other. Its aims and goals too are different. Most TV shows, radio broadcasts, panel discussions, etc are one-way information flow. However, 'dialogue events' can help generate open-ended discussion between the general public, scientists, policy-makers and campaigners that provides a platform for thoughtful and informed public debates. Venkateswaran believes that it may be prudent to design the assessment tools of SciCom programmes open-ended enough to capture the range and avoid the pitfall of fetishism of 'numbers'. Chhaya Datar

(Former Professor of Tata Institute of Social Sciences (TISS), Mumbai) addressed the issues of Pani Samiti and Village Water and Sanitation Committees. She assessed women's participation in decision-making in the Samiti and stressed upon strengthening women's rights to be able to manage affairs that concern them the most. Arnab Bhattacharya (Tata Institute of Fundamental Research (TIFR), Mumbai) discussed a unique outreach initiative 'Chai-and-why', that was started in 2009 to bring TIFR's science into the public domain. Running twice a month, this programme covers a range of topics such as science of colour during Holi, fireworks during Diwali, science behind topical news such as wireless networks, etc. The programme has researchers and students from TIFR as speakers. Sessions have been extended to develop interactive science demos popular at schools with local Marathi language version that is appreciated in rural Maharashtra.

---

**Parul R. Sheth**, E-705/706 Kalp Nagri, Vaishali Nagar, Mulund (West), Mumbai 400 080, India.  
e-mail: parulrsheth@gmail.com