Policy Recommendations for Strengthening Indian SciComm

Defining Science Communication

"Science Communication or SciComm[1] may be defined as the use of appropriate skills, media, activities, and dialogue to produce one or more of the following personal responses to science (the vowel analogy):

1. Awareness, including familiarity with new aspects of science
2. Enjoyment or other affective responses, e.g. appreciating science as entertainment or art
3. Interest, as evidenced by voluntary involvement with science or its communication
4. Opinions, the forming, reforming, or confirming of science-related attitudes
5. Understanding of science, its content, processes, and social factors"

However, it is important to note that *science communication* is also used as an overarching umbrella term to include the following kinds of activities:

Outreach: "a one-way discourse, in which scientists communicate their research to the general public."[2]

Public Engagement: a two-way dialogue which "facilitates the sharing and exchange of knowledge, perspectives, and preferences between or among groups who often have differences in expertise, power, and values"[3] (in this case, between scientists and members of the general public)

Knowledge Exchange: "any activity that involves engagement with businesses, public and third sector services, the community and the wider public, which involves the sharing of best practice, and which can be monitored for funding purposes."[2]

1 - Burns, O'Connor, & Stocklmayer, Science communication: a contemporary definition, Public Understand. Sci. 12 (2003) 183–202

2- Illingworth S, Redfern J, Millington S and Gray S., What's in a Name? Exploring the Nomenclature of Science Communication in the UK [version 2; peer review: 3 approved, 1 approved with reservations], F1000Research 2015, 4:409

3 - National Academies of Sciences, Engineering, and Medicine, Gene Drives on the Horizon: Advancing Science, Navigating Uncertainty, and Aligning Research with Public Values. Committee on Gene Drive Research in Non-Human Organisms: Recommendations for Responsible Conduct, Board on Life SciencesBoard on Life Sciences, Division on Earth and Life Studies, Washington, DC: The National Academies Press,. 2016.

Motivation

In the last few years, there has been a surge in the number of science communication-related opportunities, roles, positions & initiatives in India. However, we still face several challenges with respect to the following aspects of science communication:

1. Creating **awareness and recognition** for science communication as a field of practice (by freelance, public, and private organisations alike); and forging a strong **research ecosystem** within the field of science communication to be able to address issues like raising scientific literacy, fighting misinformation, and developing critical attitudes.
2. Developing a proper ecosystem for **training and capacity building, networking and mentorship** within science communication.
3. Facilitating proper **funding and institutional infrastructure** for science communication in India.
4. Ensuring greater **inclusivity, diversity, equity and accessibility** for science communication practitioners, researchers, as well as audiences.

Recently there have been multiple efforts at the national level, mostly driven by the larger SciComm community in India, and supported by various government organizations to address these challenges. The *'Science Communicators' Brainstorming Interaction'* organised by the Office of the Principal Scientific Adviser to the Government of India on 27th January 2020, and *'Across the Table – Thematic Panel Discussion on Science Communication'* organised as part of the ongoing consultation process for Science Technology & Innovation Policy 2020 (STIP 2020) on 8th July 2020, were two notable meetings that brought together a quorum of Indian science communicators together.

To take these efforts further, the *SciCommSci Club* and *Science Policy Forum* partnered to organise a series of thematic policy deliberation sessions on 20th and 21st July 2020, titled *"Towards a Policy Framework for Indian SciComm"*.

These policy deliberation sessions were attended by over 70+ practitioners of science communication, scientists, social scientists, and other professionals from across India. These open and decentralised deliberations resulted in the policy recommendations presented below.

A copy of these recommendations was also submitted to the drafting process of Science Technology & Innovation Policy 2020, as well as the Office of the Principal Scientific Adviser to the Government of India.

Policy Recommendations

1. **Support the establishment of a professional body of multidisciplinary science communication** experts, who shall help guide the field of science communication in India. This body shall prioritise relevant research questions and training curricula, help develop a comprehensive framework for science communication in India and facilitate networking and capacity building efforts in Indian SciComm. This body shall also facilitate the setting up of regional bodies of science communication that better represent the collective voice of science communicators from across the country. Together with these regional bodies, the national body shall be consulted for implementing all of the below-mentioned recommendations. Examples of such national bodies include the National Co-ordinating Centre for Public Engagement in the UK and the National Academies of Science, Engineering and Medicine's Standing Committee on Advancing Science Communication in the USA.

2. **Create infrastructure for training and capacity development for science communication** (courses, workshops, internships, Massive Open Online Courses and mentorship fora). Develop appropriate curricula, training modules and capacity building infrastructure, by drawing insights from and building upon existing global models. Incorporate science communication training as a necessary component for different levels of scientific training (i.e. undergraduate, graduate, postdoctoral, professorial, etc.).

3. **Facilitate multidisciplinary science communication research** through national programs, centres, research grants, fellowships, and positions. Research themes should include ways to develop critical thinking, strategies to fight misinformation, initiatives to build public trust in science, and the development of frameworks for evaluating the impact of Indian SciComm. Furthermore, platforms should also be developed to enable dialogue and knowledge transfer between researchers and practitioners of science communication in India, and ensure trusted outlets like high impact, open access academic journals for publishing these research studies.

4. **Create and diversify funding channels to promote science communication practice and research.** A specific percentage of funds could be earmarked in the overall budget of scientific organizations for public engagement. Further, crowd-sourced, private, philanthropic, and Corporate Social Responsibility (CSR) funding sources should also be explored and encouraged. These funds should be easily accessible to individuals and freelance professionals, and also allow collaborations between different organisations, individuals and SciComm formats/approaches.

5. **Facilitate national-level *Public Understanding of Science* surveys** to gather data on national trends of scientific awareness, scientific literacy, attitudes towards science, critical attitudes, and science-society interfaces. This could be spearheaded by the proposed professional body of science communicators.

6. **Fund and create more science communication positions** in all private and public scientific organisations, and encourage the development of dedicated communication teams within these organisations which comprise writers, graphic designers, multimedia editors, social media managers, public engagement professionals, and other suitable forms of expertise.

7. **Motivate and incentivise scientists to engage in SciComm and Public Engagement** by including science communication as a desirable component of grant/funding requirements. This would include having SciComm outputs as part of any scientific career progression metrics and creating institutional mandates and grants for enabling collaborative and grass-roots science engagement beyond publicising research.

8. **Ensure career progression and continuous professional development opportunities for SciComm professionals** by developing a proper framework of roles, responsibilities, career progression metrics, smoother evaluation, remuneration and regularised positions with other benefits such as travel grants.

9. **Ensure more diverse representation within public/private SciComm** initiatives, events, platforms, grants, and awards by removing barriers related to age, gender, caste, affiliation, language, training, and previous educational backgrounds.

10. **Build suitable ecosystems to enable, fund and support SciComm start-ups and freelancers in India**, and collectively arrive at more sustainable and for-profit business models for science communication, rather than just relying on public/private funding sources.

11. **Set up a national/regional Science Media Centre(s)** that can act as a national/regional repository of scientific news. This would be an interface between media persons, scientists and science communicators, with the aim of helping the mainstream media increase its coverage of scientific topics to at least 10-15%.

12. **Creating paid internships, residencies, and exchange programs** for students, scientists, journalists, and science communicators to work within reciprocal scientific & media organisations to develop relevant science communication skill sets.

13. **Facilitate and promote cross-disciplinary dialogue** by developing centres, programs, workshops, and talks to discuss themes at the intersection of science and society. Create science communication sessions within scientific conferences, as well as dedicated national conferences for science communicators to network and exchange relevant knowledge, skills and experiences.

14. **Promote and facilitate more creative formats of SciComm** ranging from entertainment platforms (such as folk art, theatre, dance, poetry, comedy, comics, maps, community radio, interactive digital formats) to formats incorporating the process of science (such as oral history interviews, scientist profiles, stories of discovery and innovation, and historical/archival perspectives of science).

15. **Facilitate learning & collaborations between science engagement and science pedagogy** to improve the teaching of science, and better incorporate the history and philosophy of science, scientific method, and critical thinking within science education.

16. **Create community-centric programs / regional science centres for local actors to produce science communication in regional languages.** Such regionally produced content can better incorporate local and hyper-local contexts, engage the audiences better, transcend barriers of literacy by using folk formats, and overcome issues of last-mile connectivity, especially in rural settings.

17. **Acknowledging and incorporating people's lived experience** by supporting public participation in science, via citizen science projects, stakeholder consultations, co-creative experiences, and policy interventions.

18. **Maintain a publicly accessible, constantly updated, and searchable database** of science communicators across India, and of funding opportunities, fellowships, grants, courses, workshops, and professional opportunities. This could be taken up by the national/regional bodies of science communication or national academies of science.

19. **Ensure greater transparency and access to 'science' for independent journalism**, by removing barriers for scientists / scientific staff to talk to journalists, science communicators, or any media person without requiring explicit consent from institutional heads. This would also involve ensuring that scientists are trained to properly interact with the media and setting up precedents for clear boundaries and procedures like being 'on the record' vs. 'off the record', counter-quotes, and comments based solely on the scientific background, to empower press officers and journalists to freely interact with scientists.

Future Directions

We would like to sincerely thank everybody who contributed their valuable inputs through the public consultation sessions and/or through written feedback to help us consolidate this set of policy recommendations for Indian SciComm.

This policy document was written with the primary aim of submitting the policy recommendations to the drafting process of STIP 2020. However, we are confident that this is just the first step in moving towards a comprehensive and effective policy framework for science communication (and allied fields) in the Indian context.

We firmly believe that these public consultations were a collective effort by, of and for the larger SciComm community in India and that it can only move further with the support of the entire community while being truly inclusive and accessible to all.

We hereby make this policy document freely available in the public domain under a ***Creative Commons - By Attribution* 4.0** license. We would encourage the Indian science communication community to continue engaging with this document in the following ways:

1. Offer constructive feedback on the overall document, or on specific policy recommendations to help improve its scope, intent, and feasibility. You can offer feedback by clicking here that would redirect you to our discussion forum. You may use recommendation numbers to talk about specific recommendations of this document.

2. Use this policy document as a starting point to come up with a more refined and comprehensive policy document. You are free to use this document for your own work, as long as you attribute us (under a CC-BY license).

3. Utilise this document and its specific recommendations to reflect on your own science communication practice as well as that around you, and contribute to improving Indian SciComm in your own ways.

4. Share this policy document and its specific recommendations with concerned stakeholders, especially those in positions of power at the institutional, local, regional and national levels, to help further the conversation and bring about gradual changes in the field of science communication, including the adoption of some of these policy recommendations.

5. Work towards catalysing the formation of a professional body of multidisciplinary science communication experts (including researchers, practitioners and scientists) as outlined in our first policy recommendation. Such a professional science

communication body could be critical in facilitating the implementation of most of the other policy recommendations suggested in this document. We would be happy to assist anybody interested in taking this further, to the best of our abilities.

We sincerely hope that our efforts would help provide an introductory framework for advancing the field of science communication in India, both in terms of its research and practice.

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Contact Us

If you have further queries, ideas or proposals to discuss with us, especially with regards to developing a professional body of science communicators, please reach out to us at scicommsciclub@gmail.com or contactus@thesciencepolicyforum.org.

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Facilitators & Contributors

Here's a list of all the contributors who attended either of the two public consultation sessions and/or shared feedback on the draft policy recommendations via the Google Doc, email or social media channels.

You can also find a list of all the facilitators who were involved in planning and organising these public consultations sessions, and collating and editing the public inputs into a comprehensive list of policy recommendations for strengthening the field of Indian Science Communication.

In case we have missed out on including someone's name, or if there's a correction to be made to someone's name or affiliation, please contact us at contactus@thesciencepolicyforum.org with the Subject: "Corrections for SciComm Policy Recommendations - Contributor List".

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