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Research and Information System for Developing Countries
विकासशील देशों की अनुसंधान एवं सूचना प्रणाली

RESPONSIBLE RESEARCH AND INNOVATION IN PRACTICE

Indian National Workshop Report

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Executive summary (maximum half a page)

The discussions during the Indian National Workshop on RRI were quite productive, in which participants covered a number of important issues: the 5 RRI policy keys (ethics, societal engagement, gender, open access and science education) and their place in the Indian context and practice, where there are concerns related to the access, equity and inclusion (AEI), which are more paramount than the general ideas of ethics, engagement etc; theoretical and practical dimensions of responsibility in science and innovation; and good RRI practices and possibilities for their wider uptake. It emerged during the Workshop that though the term RRI was not used in any official document; the parallels of elements of RRI can be found in both policy and practice. It was also pointed out that in order to assess the progress of RRI, there is a need to define and devise indicators and parameters. All participants agreed to the fact that any framework for RRI must have people at the core and should address the basic problems of the Indian society. All the participants thanked RIS for convening such an important workshop on a new and emerging concept of RRI.

Introduction

RIS, in collaboration with the Department of Science and Technology, Ministry of Science and Technology, Government of India, organized the National Workshop on RRI on 28th April 2017 at New Delhi. The workshop was attended by 59 persons representing government, policy making bodies, funding agencies, academia, research think tanks, industry, civil society and media. It started with the welcome remarks by Dr. K Ravi Srinivas followed by the detailed presentation on RRI made by Prof. Sachin Chaturvedi. The Inaugural Address was delivered by Prof. Ashutosh Sharma, Secretary, Department of Science and Technology, Ministry of Science and Technology, Government of India. The Workshop had two sessions. The first one was on "RRI in Policy Making in India" and the second one was on "Aspects and Elements of RRI". The panellists for each session were eminent experts/commentators drawn from the government, academia, research think tanks and civil society. The panel discussions were followed by the Open Discussion. The agenda is enclosed in the Annexure 1.

Participants list with affiliations

The complete list is enclosed in Annexure 2.

Comments on participation based on national structures

The selection of people and organisations tried to ensure that all the relevant stakeholders were represented in this Workshop. The Department of S&T (DST), Ministry of S&T partnered with us in organizing this workshop. DST is a key funding agency for basic and applied S&T research in India and promotes innovation and S&T based entrepreneurship. There was participation from the NITI Aayog, the apex body which formulates plans and visions at the national levels in each sector. The participation of Technology Information, Forecasting and Assessment Council (TIFAC), Indian Council for Agricultural research (ICAR) and National Institute of Science, Technology and Development Studies (NISTADS) helped in enriching the discussion. There were participation from S&T based civil societies, science policy experts from the universities and research centres and media. To discuss each of the 5 Keys of RRI, relevant experts were invited to share their views and insights. The representative from the Indian Council of Medical Research (ICMR) could not participate due to his unavailability on that day. He will be interviewed later for his views and insights.

Some of the key representatives are as follows:

Government/Policy makers/Funding agency:

- NITI Aayog is the apex national body for formulating national plans and visions in each sector.
- Department of Science and Technology, Ministry of Science and Technology, Government of India, is the ministry charged with formulating S&T policy in India and a major public funding agency.
- Department of Biotechnology, Government of India, is the ministry charged with formulating biotechnology strategy in India and a major public funding agency in biotechnology sector.
- Indian Council for Agricultural Research (ICAR) is a major agency to fund agricultural research in India, under the Ministry of Agriculture.
- TIFAC (Technology Information, Forecasting and Assessment Council) is an autonomous body under Ministry of Science and Technology to develop technology visions reports.

Research organisations and academia:

- NISTADS (National Institute of Science, Technology and development Studies) is a public research centre within the Council of Scientific and Industrial Research. (CSIR).
- JNU (Jawaharlal Nehru University) is the premier research university of the country which has the Centre for Studies in Science Policy (CSSP) dealing with the issues related to science policy.
- Vigyan Prasar is an autonomous body within the DST working in the domain for science communication.
- National Law University (NLU) is a premier public law university based in New Delhi.
- TERI (The Energy Research Institute) is a private research centre working in the domain of energy and biotechnology.

Civil Society/NGOs:

- PRIA (Society for Participatory Research in Asia) is a leading civil society organization advocating participatory research and innovation.
- Centre for Technology and Development is a S&T based civil society working towards proving innovative solutions to the rural population.
- Society for Scientific Values works in the domain of academic and scientific integrity.
- Pragya works for the appropriate development of vulnerable communities and sensitive ecosystems of the world.

Industries / businesses:

- Association of Small & Medium Knowledge Industries, ASMKI, represents Indian SME's in Information Technology, Biotech & Healthcare, Defence & Security and Clean Technologies. It takes up policy issues with Central and State Governments for Knowledge Industries and also helps in forging links between foreign and Indian SMEs.
- PSRI Hospital Pvt Ltd. Is a private hospital group.

Understanding of responsibility and RRI

How is responsibility in research and innovation framed by the participants?

The deliberation on Responsibility began with the questions: "Responsibility towards whom?" and "Responsibility towards what?" Is it towards the safety dimension alone or does it brings in socio-economic concerns that we have? Responsibility in research and innovation was broadly framed by the participants in terms of its relevance to address the basic societal challenges such as providing safe drinking water, affordable healthcare, sanitation and hygiene, energy etc. The fundamental tenets of such a responsibility have to be based on the ideas of access, equity and inclusion (AEI). Participants agreed that the government has to play a much wider role in ensuring this. However, there is no denying of the fact that the role of private sector as well as civil society in this is equally significant.

Participants seconded the idea of Scientific Social Responsibility (SSR) advocated by the Prime Minister of India in lines with the Corporate Social Responsibility (CSR). The need for an active relationship between research and society is pertinent in present times. It was also expressed by the participants that rresponsibility should also provide the chance for all the stakeholders to participate right at the time of conception of a research project and all through its execution and implementation.

Participants advocated for mainstreaming technology assessment and socio-ethical analysis. However, it was pointed out that there is a trade-off between innovation (which is mainly about the commercialization and markets) and its societal connect (which is more about public good) and in this scenario it will be interesting to note how the new RRI framework addresses this dilemma. Another important issue voiced by the participants was on how the RRI framework would cater to bringing the synergy between the various different national innovation systems across the globe while addressing the global challenges such as health, climate change etc. It was also pointed out that in order to assess the progress of RRI, there is a need to define and devise indicators and parameters.

Is the term RRI used at all? How? What do people understand by it?

The term RRI was used by some speakers. However, most of the participants were not aware of this exact term but they could relate to the key elements of RRI from their individual as well as institutional perspectives. It can be said that the spirit of RRI could be sensed in the policy and practice.

Participants expressed that in a RRI framework people have to be at the centre. The research and innovation needs to be citizen-centric and problem–centric; not consumer-centric and domain-centric. It has to be multi-disciplinary as well as inter-disciplinary in order to address the cross-cutting challenges.

Are any of the keys mentioned as aspects of responsibility?

Most of the participants agree that the five keys of RRI i.e. ethics, societal engagement, gender equality, open access/science and science communication are important and do belong to any RRI framework. However, the participants also advocated including the keys of access, equity and inclusion (AEI) to broaden the RRI framework in the Indian context.

What was identified as significant barriers, drivers and best practices to the further development of responsibility in research and innovation, to RRI (and potentially to the keys)?

General Drivers

- An advocacy for Scientific Social Responsibility by the Prime Minister would play a major driving force. The research and innovation is expected to be more pro-society, more problem centric and people centric.
- Emphasis on making innovative products affordable and accessible to the majority of the population.
- A newer emphasis on extending the participation of stakeholders, especially private & industrial partners, in R&D and innovation processes.
- Developing supportive enabling environment for the development of R&I through new S&T&I policies (such as introducing policies on open access and schemes for the support of young, doctoral and women researchers).

General Barriers & Challenges

- One major barrier issue is changing the mindset from making innovative solutions for consumers to making them for the citizens. The cultural mindset of male colleagues and superiors pose a barrier at times.
- While steps have been taken that attempt to increase the social value, relevance or impact of research, economic imperatives typically take precedence over broader societal benefit.
- The emphasis in science and research still lies on research excellence and output, either in terms of publications, patents or marketable products. This is reflected in evaluative structures and academic careers, where e.g. high ranked peer reviewed publications count, whereas other activities, such as public engagement or citizen science, is of lower to no value.
- The need for conducting ELSI research right at the time of conception of any research and innovation project is still missing.

Overview of Indian Keys of AEI in relation to RRI

Key	**Overview**	**Drivers**	**Barriers**
Access *(This also includes the RRI key of Open Access)*	Access includes Open Access and access to basic needs such as safe drinking water, healthcare and education	National Policy on Data Sharing and Open Accessibility is making it mandatory for all institutions to share the project data coming from publically funded projects with all the stakeholders; various initiatives have been undertaken to enable the population to access basic needs	Limited infrastructure to upload data on public portals by many S&T institutions. Limited logistic resources
Equity *(This also includes RRI key of Gender Equality)*	Equity encompasses Gender Equality, and rural-urban equality	Various schemes/fellowships have been launched by the government to increase women representation in research and innovation activities; many programmes have been launched in order to bring the innovative technological solutions to the rural population	Cultural mindset Huge rural inequality Limited logistic resources and human resources

Inclusion *(This also includes RRI keys of Ethics, Education and Public Engagement)*	Inclusion implies geographic inclusion, educational inclusion, inclusion of stakeholders, vulnerable groups; upholding scientific and academic Ethical integrity	The idea of having people at the core for any S&T endeavor is the focus of government; various schemes/programmes have been launched to include the wider population through science education and Communication, and through societal engagement	Absence of open approach and mindset Absence of institutional frameworks like a national authority to oversee the issue of scientific and academic integrity Limited logistic and human resources

Initiatives/good practices

A number of good practices and initiatives were enumerated by the participants in all the five keys of RRI.

Some of the notable ones are:

- Open Access/Science: The National Data Sharing and Accessibility Policy (NDSAP) formulated in 2012 by the DST allow for free access to the data generated by the projects publically funded by the government to all the stakeholders. The NDSAP 2012 identified the Department of Electronics and Information Technology (DeitY), Ministry of Electronics and Information Technology, as the nodal department for the implementation of the policy through National Informatics Centre. In pursuance of the policy, an online Open Government Data Platform India (www.data.gov.in) was launched in 2012. This portal is intended to be used by Government of India Ministries/ Departments and their organizations to publish datasets, documents, services, tools and applications collected by them for public use.
- Gender Equality: In order to address the issue of low women representation in science in India, DST, in 2014, restructured all the women specific programmes under one umbrella known as "KIRAN" (Knowledge Involvement in Research Advancement through Nurturing). KIRAN is addressing various issues related with women scientists (e.g. unemployment, relocation etc.) and aimed to provide opportunities in research, technology development/demonstration, and self-employment etc. KIRAN is also actively involved in taking proactive measures, under the name CURIE (Consolidation of University Research for Innovation and Excellence in Women Universities) to develop state-of-the-art infrastructure in women universities in order to attract, train and retain promising girls students in S&T domain.
- Science Education: The National Council for Science and Technology Communication (NCSTC) within the DST is mandated to communicate Science and Technology to masses, stimulate scientific and technological temper and coordinate and orchestrate such efforts throughout the country. Some important initiatives of the division are:
    - Science Media Research Initiatives
    - Mission eco NEXT
    - Science Express
    - National Children's Science Congress

At what level (state, institutional level, individual researchers) did the participants tend to address responsibility in research and innovation?

Most often, participants discussed the R&I practices and frameworks in their own organisations, but the situation on the national level was also brought up several times, most often highlighting how the various government plans, policies and practices are implementing the various RRI keys.

Reflections on the workshop process

How easy was it to recruit people? How easy was the conversation; was there a degree of conflict to the discussions? To what extent did the facilitator have to steer the discussion with specific questions (in contrast to an easy flow of discussion)? Did the participants seem interested in the project's results?

It was not difficult at all to bring all the relevant stakeholders on board for this important workshop. The conversation was more or less smooth with very important insights from the various stakeholders in highlighting the successes as well as challenges in addressing the elements of RRI. All participants were interested in the project and asked to be informed about its progress and findings. They expressed their readiness to participate in the future activities. They also suggested that similar workshops and meetings are needed at institutions and different cities.

Annex 1

AGENDA

09.30-10.00	**Registration**
	Inaugural Session
10.00-10.10	**Welcome Remarks**: Dr. K Ravi Srinivas, RIS
10.10-10.20	**Presentation on RRI**: Prof. Sachin Chaturvedi, DG, RIS
10.25-10.35	**Key Remarks:** Dr. Parveen Arora, Sc-G and Head-CHORD Division, DST
10.35-10.55	**Inaugural Address :** Prof. Ashutosh Sharma, Secretary, DST, Min. of S&T, Govt. of India
10.55-11.00	**Vote of Thanks:** Dr. Amit Kumar, RIS
	Session I: RRI in Policy Making
11.00-12.15	**Chair:** Prof. Prabhat Ranjan , ED, TIFAC **Co-Chair:** Dr. Arun S Ninawe, Adviser, DBT **Panellists:** • Dr. Ashok A. Sonkusare, Joint Adviser (S&T), NITI Aayog • Dr. Pradosh Nath, Former Chief Scientist, NISTADS • Prof. Pranav N Desai, Professor, CSSP, JNU • Dr. Pawan Kumar Agarwal, Asst. DG (NASF), ICAR **Discussants** • Prof. E. Haribabu, Adjunct Senior Fellow, RIS

	Open Discussion
	Session II: Aspects and Elements of RRI
12.15-13.30	**Chair:** Dr. Rajesh Tandon, Founder-President, PRIA **Panellists:** • Science Education & Communication – Dr. R.Gopichandran, Director, Vigyan Prasar • Ethics – Dr. R K Kotnala, Chief Scientist, NPL and Secretary, Society for Scientific Values • Societal Engagement – Dr. Raghunandan, Director, Centre for Technology and Development • Gender Equality – Dr. Neelam Kumar, Former Sr. Scientist, NISTADS • Open Access/Science – Dr. Arul George Scaria. Asst. Prof., NLU- Delhi **Discussants** • Dr. T P Rajendran, Visiting Fellow, RIS • Dr. Anup Kumar Das, Documentation Officer, CSSP, JNU **Open Discussion**
13.30-13.35	**Summing Up:** Dr. K Ravi Srinivas, RIS
13.35 -14.15	**Lunch**

Annex 2

Participant list with Affiliations

Title	First Name	Surname	Institution
Dr.	K. Ravi	Srinivas	RIS
Prof.	Sachin	Chaturvedi	RIS
Dr.	Parveen	Arora	DST, Ministry of Science and Technology
Prof.	Ashutosh	Sharma	DST, Ministry of Science and Technology
Dr.	Amit	Kumar	RIS
Prof.	Prabhat	Ranjan	TIFAC
Dr.	Arun	Ninawe	Department of Biotechnology
Dr.	Ashok	Sonkusare	NITI Aayog, Government of India
Dr.	Pradosh	Nath	NISTADS
Prof.	Pranav	Desai	CSSP, JNU
Dr.	Pawan	Agarwal	ICAR, Ministry of Agriculture
Prof.	E.	Haribabu	RIS
Dr.	Rajesh	Tandon	PRIA
Dr.	R.	Gopichandran	Vigyan Prasar
Dr.	R. K.	Kotnala	NPL/ Society For Scientific Values
Dr.	Raghunandan		Centre for Technology and Development
Dr. (Mrs.)	Neelam	Kumar	NISTADS

Dr.	Arul	Scaria	National Law University
Dr.	T. P.	Rajendran	RIS
Dr.	Anup	Das	Jawaharlal Nehru University
Mr.	Dushyant	Mohil	Pragya
Mr.	H. K.	Agarwal	Expert
Mr.	Phet	Sayo	International Development Research Centre
Prof.	M.	Wali	Medical Consultant to the President
Prof.	Ashok	Chawla	Ministry of External Affairs
Dr.	P.K.	Agarwal	Indian Council of Agricultural Research
Mr.	John	Paulraj	Intergrated Mountain Initiative
Amb.	Praveen	Goyal	Retd. Diplomat
Ms.	Sanghmitra	Acharya	Jawaharlal Nehru University
Dr. (Mrs.)	Malti	Goel	Climate Change Research Institute
Dr. (Mrs.)	Usha	Dixit	Dept. of Science and Technology, Govt. of India
Dr.	Mukesh	Kumar	Indo French Centre for the Promotion of Advanced Research
Mr.	Kishhore	Kumar	India China Trade Centre
Dr.	Sudhir	Kochhar	Expert
Mr.	M. P.	Mehani	India Juris
Mr.	Jacob	Koshy	The Hindu Newspaper
Mr.	Siddharth	Jain	JNU
Dr.	Pratibha	Singh	TAU, DBT
Ms.	Meenu	Galyan	NAM S&T Center
Ms.	Mitali	Roy	Indian Council of Agricultural Research
Ms.	Aruna	Kumar	DKMA, ICAR
Ms.	Anjan	Chamuah	JNU
Mr.	Ashutosh	Tiwari	Centre for Studies in Science Policy, JNU
Ms.	Payel	Biswar	Institute of Urban Transport (India)
Mr.	Kuldeep	Minda	JNU
Dr.	Anil	Chaturvedi	PSRI Hospital Pvt. Ltd.
Mr.	Yaruingam	Awungshi	Delhi University
Ms.	Usha	Mahajan	Freelance Journalist
Ms.	Nutan	Kaushik	TERI
Ms.	Shilpa	Mishra	Jawaharlal Nehru University
Dr.	Reji	Joseph	Central University of Gujarat
Dr.	Suman	Sahai	Gene Campaign
Mr.	Swayamsiddha	Panda	UNESCAP
Dr.	S.R.	Singh	DARE/ICAR
Mr.	Nalin	Kohli	Association of Small & Medium Knowledge Industries
Dr.	Deepika	Rohatgi	DSIR, Ministry of Science and Technology
Mr.	Surender	Singh	All India Radio
Dr. (Ms.)	Chong	Shimray	NCERT
Ms.	Padma	Jha	NITI Aayog, Government of India