Policy Brief #3

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Policy transfer and shared knowledge base Learning from policy implementation

Responsible Research and Innovation (RRI) in the European Union and Scientific Social Responsibility (SSR) in India

Contents

1. Introduction

Science, research, and innovation are central to the European strategy for smart, sustainable, and inclusive growth.[1] In India, the Science Technology and Innovation (STI) system is tasked to deliver solutions to address the pressing national challenges of energy and food security, nutrition, affordable health care, environment, water and sanitation and employment. It is also argued that Indian society must emerge as the major stake holder for the national STI system. India's STI-led developmental efforts should thus aim at faster, inclusive and sustainable growth.[2]

The European Commission (EC), the governing body of the European Union, is committed to directing research toward expanding the scientific and technological base of the European economy and industry, fostering broader benefits for society and tackling the most pressing societal challenges of our time.[3] In India, the government supports 'inclusive innovation' to ensure access, availability and affordability of solutions to as large a population as possible.[4]

Key messages

- RRI in the EU and & SSR in India have common foundations, aims and potential goals in making science and research better embedded in society;
- Learnings from RRI in EU may be applied to inform policy implementation of SSR in India;
- SSR principles and their application in policy may aid the development of RRI in the EU;
- SSR and RRI may jointly assist in developing a global framework for responsible innovation (RI);
- To foster these goals a joint Working Group (WG) comprising of researchers and policy makers from India and the EU to discuss and facilitate policy exchange between the respective territories in RRI and SSR is recommended.
- The WG may collect and disseminate learnings for both territories, such as ones recommended at the end of this brief.

1. (COM(2010) 2020)
2. STI Policy 2013
3. (REGULATION (EU) No 1291/2013)
4. STI Policy 2013

One of the tactics taken by the EC to create and disseminate socially and economically beneficial knowledge and drive prosperity and social benefit for all is the cross-cutting Horizon 2020 (H2020) commitment to Responsible Research and Innovation (RRI).[5] In order to foster inclusive science and innovation, the Indian government recently proposed, and put up for public consultation, a policy for Scientific Social Responsibility in order to build synergies among all stakeholders in the Indian scientific knowledge community and also about developing linkages between science and society.[6]

In the remainder of this brief we offer some of the findings of the *NewHoRRIzon* project—commissioned to develop the conceptual and operational basis to better integrate RRI into European and national research and innovation (R&I) practice and funding—to initiate exchange between European and Indian stakeholder inclusive research and innovation policy. We would like to delineate opportunities and policy exchange possibilities for mutual learning for achieving smart, sustainable, and inclusive R&I/STI in both territories.

Responsible Research and Innovation (RRI): Where does it come from? What does it mean?

Foundations of RRI were laid in the 6th Framework Program of the EU [2002-2006], when the EC began to pay increased attention to building knowledge on better aligning science and society in research.[7] In the 8th Framework Program (Horizon 2020 [2013-2020]), RRI has emerged as a more advanced "process for better aligning R&I [research & innovation] with the values, needs and expectations of society. It implies close cooperation between all stakeholders in various strands comprising: science education, definition of research agendas, access to research results and the application of new knowledge in full compliance with gender and ethics considerations."[8] The EC has also formulated Responsible Research and Innovation in terms of six key areas: (a) public engagement; (b) gender equality; (c) science literacy and science education; (d) open access; (e) ethics; and (f) governance.

Scientific Social Responsibility (SSR): Where does it come from? What does it mean?

Social Responsibility in science and that of scientists, stemming from the analogy of Corporate Social Responsibility,[9] has been discussed in the literature.[10] Groups like CPSR (Computer Professionals for Social Responsibility) have raised concerns about the social responsibility of scientists and technologists, going beyond traditional do's and don'ts, by asking what sort of research should be pursued and whether scientists and technocrats should go by technological solutionism. SSR goes beyond codes of conduct and is also a question of aligning ethics with practice of science so that science serves the needs and demands of the society. In India, the Constitution (Part-IV, Article 51A(h)) mandates for developing the scientific temper, humanism and spirit of enquiry as part of the fundamental duties of a citizen. SSR policy proposal builds upon traditions of earlier policies (Scientific Policy Resolution 1958, Technology Policy Statement 1983, Science and Technology Policy 2003 and Science Technology and Innovation Policy 2013) SSR policy is intended to promote social responsibility in the scientific establishments based in concepts originating in Corporate Social Responsibility (CSR).The new SSR Policy is an effort to make scientific institutions and individual scientists more responsible to society and other stakeholders. Scientists and knowledge workers, it is argued, have an ethical obligation of 'giving back' to society when they use taxpayers' money for doing science. Based on the SSR policy knowledge workers are required to devote a specific number of person-days of SSR per year for exchanging scientific knowledge to society. It also recommends to provide incentives for outreach activities with necessary budgetary support as well as give credit to knowledge workers/scientists for individual SSR activities in their annual performance appraisal and evaluation. As the Prime Minister of India emphasized: "On the lines of Corporate Social Responsibility, the concept of Scientific Social Responsibility needs to be inculcated to connect our

5. (REGULATION (EU) No 1291/2013)

6. SCIENTIFIC SOCIAL RESPONSIBILITY (SSR) POLICY, 9th September 2019

7. https://ec.europa.eu/research/swafs/index.cfm?pg=about

8. Competitiveness Council, 4-5 December 2014; 16505/14, 3353rd Council Meeting

9. Cf. Krogsgaard Larsen, P., Thostrup, P. and Besenbacher, F. (2011), Editorial: Scientific Social Responsibility: A Call to Arms. Angew. Chem. Int. Ed., 50: 10738-10740. doi:10.1002/anie.201105641

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10. Pamela L. Sankar & Mildred K. Cho (2015) Engineering Values Into Genetic Engineering: A Proposed Analytic Framework for Scientific Social Responsibility, The American Journal of Bioethics, 15:12, 18-24, DOI: 10.1080/15265161.2015.1104169

leading institutions to all stakeholders, including schools and colleges. We must create an environment for sharing of ideas and resources."[11]

2. Common foundations of SSR & RRI

RRI in Europe stems from different traditions of involving ethical, legal and social issues into doing research (ELSA) paying attention to wider issues of scientific and innovation endeavors. ELSA approaches, for instance, comprise a broad range of topics that are related to the research, production and use of technology and innovation. They cover issues of privacy, agenda setting, anticipation, public acceptance, human health, access, liability, regulation and control. Information diffusion and dissemination to a wide public, multipliers and specific target groups, and discussion fora between technology stakeholders, policy makers and the public form parts of the overall approach.[12] Specific ethical questions of research as well as research integrity issues were also high on the agenda of European researchers, policy makers and funders. In India, similarly, SSR originates from addressing ethical issues that were addressed in research, as discussions about gender and solidarity issues; stakeholder inclusion also formed part of the wider policy aspects of doing, funding and regulating research.[13] A framework has already been developed earlier to address issues of Access, Equity and Inclusion (AEI) in the Indian research and innovation context.[14] Both RRI and SSR are part of approaches and policies that can be applied to achieve Sustainability Development Goals (SDGs), developed by the UN. In a study prepared for the *Responsible Research and Innovation in Practice* (RRI-Practice) project it has been recommended that "the AEI (Access, Equity, Inclusion) framework, Scientific Social Responsibility (SSR) and similar ideas can be used to understand and contextualize RRI in India."[15]

3. RRI in Europe: Learnings and recommendations

Since the 6th Framework Program of the European Research Funding Scheme, the European polity has consistently promoted a strong ethical and political position for the European R&I ecosystem. In the 7th Framework Programme the European Commission has launched the first four projects to investigate and define the features of RRI to be further implemented in H2020. The *NewHoRRIzon*[16] project findings — commissioned to advance the integration of RRI into European and national research and innovation (R&I) funding and practice — showed that despite laudable first steps, the EC's vision for RRI is insufficiently represented and operationalized at the program level. Besides, very few projects have meaningfully integrated RRI in their research, confining its potential to theoretical analyses mostly within the SWAFS programme line. The BODEGA project, for instance, have shown that substantial uptake of RRI in the project design can increase the overall quality of the investigations by suggesting that in-depth and rigorous socio-political analysis guarantees that technological transformation actually serves the ends that it seeks to achieve.[17]

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11. https://economictimes.indiatimes.com/news/politics-and-nation/must-develop-scientific-social-responsibility-pm/articleshow/56309561.cms?from=mdr

12. Cf. Forsberg E. M. (2015). ELSA and RRI--Editorial. *Life sciences, society and policy*, 11, 2. https://doi.org/10.1186/s40504-014-0021-8

13. Cf. Muralidhar, K., Ashok, A.G, & Singhvi, K. (2019) Ethics in Science Education, Research and Governance, New Delhi: Indian National Science Academy

14. Chaturvedi, S., Srinivas, K.R. & Rastogi, S. (2015) Science, Technology, Innovation in India and Access, Inclusion and Equity: Discourses, Measurement and Emerging Challenges, Discussion Paper 202, RIS, New Delhi https://ris.org.in/science-technology-innovation-india-and-access-inclusion-and-equity-discourses-measurement-and.

15. Srinivas, K.R. Kumar, A. and Pandey, N (2018) Report from National Case study: India, Deliverable 11.1. https://www.rri-practice.eu/

16. The NewHoRRIzon project (European Commission Grant Agreement No 741402) seeks to promote strong integration of responsible research and innovation into national and international research and innovation funding. To do so, we are engaging a wide-ranging group of R&I stakeholders from across Horizon 2020 programming, and co-creating tailor-made "pilot actions," based on key needs of European and national research and innovation funding programmes related to inclusive and responsible research and innovation. Get in touch with us to learn more, participate in a Social Lab, share your unique perspective, and shape the future of Responsible Research and Innovation in Europe. Website: newhorrizon.eu |Newsletter: list.newhorrizon.eu | contact@newhorrizon.eu

17. https://bodega-project.eu - https://bodega-project.eu/IMG/pdf/bodega_publicdeliverablesummary_d2.5.pdf

The NewHoRRIzon project has investigated potential measures and paths to foster the necessity to integrate RRI in the design of research projects. It has done so by engaging a wide variety of different and diverse stakeholders in all the 19 programme lines of H2020 through an action research inspired process, creating social labs, creating experiments for RRI uptake and engaging in a series of reflection workshops in order to suggest the most appropriate and efficient ways to implement RRI in each programme line.[18]

In order to better assist to the achievement of SDGs via R&I and to assist better policy integration of RRI on all levels of R&I policy, the following measures were suggested:

(1) all research proposals should require an attached supplement addressing project-specific RRI-related questions and reflections;

(2) every research proposal should incorporate RRI-specific actions in the submissions' tasks, deliverables, milestones, and budgets;

(3) every research evaluation process should incorporate RRI-informed criteria in the evaluation of research proposals or include RRI experience or RRI academic/policy expertise in the evaluation panel;

(4) the establishment of a specific policy, advocacy and expertise centre for mainstreaming RRI.

When looking at policy exchange between EU and non-EU research arenas, several EU projects that dealt with RRI, e.g. GREAT, Res-Agora, Responsibility and CONSIDER, have highlighted the necessity for RRI to be participatory and flexible with regard to their contexts of application.[19] Furthermore, the project CONSIDER suggested that the potential cross-fertilization of ethical frameworks between EU and non-EU countries should take into consideration the different needs and existing models to address societal challenges. Therefore, the frameworks of social innovation as well as frugal innovation should be conceived as contextual variations to integrate different objectives.

4. SSR Policy: Proposal opened for public consultation in 2019

SSR policy in India proposes a central agency to be set up at the Department of Science and Technology (DST) to supervise, monitor and implement SSR activities in the country. Each S&T institution would be required

(1) to inform its knowledge workers about their ethical responsibility toward society, and

(2) to have an SSR monitoring system to assess projects and activities, and

(3) to publish an annual SSR report. It is suggested that indicators are to be developed for monitoring SSR activities at both institutional and individual levels. To effectively implement the SSR Policy, a national digital portal will be set up to identify societal needs requiring scientific interventions, and as a platform for implementers and for reporting SSR activities. Funding agencies are required to assist SSR implementation through

(4) funding individual SSR projects,

(5) every project to contain dedicated funds for SSR, and

(6) create SSR requirements for all projects that received funding.

5. Recommendations and exchange opportunities

To increase the ability of societies to deal with social challenges presented by new, disruptive technologies, to facilitate collaborative science and research processes and to increase responsibility, resilience, and sustainability in research and innovation a global framework for responsible innovation (RI) is to be developed. The development of such a framework may benefit from the exchange of experiences in the EU and India. Furthermore, we believe, there is a benefit in mutual exchange on RRI/SSR strategies and policy implementation processes to foster inclusive and responsible research and innovation in both territories.

18. https://newhorrizon.eu/social-labs/

19. http://www.great-project.eu - https://res-agora.eu; http://responsibility-rri.eu - http://www.consider-project.eu

RRI policy may benefit from the public consultation as well as the challenges and potential solutions in the Indian SSR context; Indian STI/SSR policy may benefit from the policy implementation experience as well as the research results offered by European projects, especially that of NewHoRRIzon. It has been already suggested by RRI-practice, a successful RRI project funded by the EC, that mutual learning and developing synergies between related concepts, practices, and cross-fertilization among ideas can result in better theory and practice in both RRI and SSR.[20]

We therefore suggest to establish a formal exchange process to harvest and exploit jointly beneficial learning from the implementation of the policies that aim for a more stakeholder inclusive science and innovation policy in India and the EU.

We therefore suggest to the DST and the EC to

(1) Set up a joint Working Group (WG) comprising of researchers and policy makers from India and the EU to discuss and facilitate policy exchange between the respective territories in RRI and SSR;

Within this framework EC/NewHoRRIzon project could offer to India:

(2) To utilize research results and learning generated in analyzing RRI policy implementation challenges in H2020 by the NewHoRRIzon project, focusing on stakeholder inclusivity, public engagement and science education (RRI keys applicable to SSR principles);

(3) To exploit experience in raising awareness and building capacity by RRI policy implementation networks across Europe—like National Contact Point Networks, European Innovation Partnerships, and European Technology Platforms;

(4) To utilize experience in the development of "Key Performance Indicators" based in the 2015 Expert Group on Policy Indicators for Responsible Research and Innovation,[21] the *MoRRI* project[22] as well as the ongoing SUPER-MoRRI project,[23] to provide tools and instruments that can be applied in SSR development and implementation in India;

(5) To apply specific, tested and applied methods for engaging different stakeholders in a structured form to address wider societal challenges, including: Social Labs; One-Day Consensus Conferences, Participatory scenario building processes and other participatory methods developed in EU projects.[24]

(6) To jointly further advance the online Societal-Readiness (SR) Thinking Tool,[25] developed by the NewHoRRIzon project, addressing project-specific RRI-related questions and reflections to incite researchers to reflect on their work in relation to societal needs and publics.

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23. https://www.super-morri.eu/super-morri/index.php

24. https://www.rri-tools.eu/-/participatory_methods_tools; http://actioncatalogue.eu/search

25. https://www.thinkingtool.eu/