

SCIENTIFIC SOCIAL RESPONSIBILITY (SSR) GUIDELINES



Government of India
Department of Science & Technology
Ministry of Science & Technology
New Delhi
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सत्यमेव जयते

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Scientific Social Responsibility (SSR) Guidelines

1. Preamble

India made significant progress in science and technology since independence. Recent achievements in Science, Technology and Innovation have been quite unprecedented. India is placed in 3rd among countries in scientific publication as per National Science Foundation (NSF) database. The country has featured within the top 50 innovative economies globally (at 46th rank), as per Global Innovation Index (GII). It has also reached 3rd Position in term of number of PhDs in science and engineering, in terms of size of Higher Education System as well as in terms of number of Startups. It made considerable progress in terms of quality of research output, number of resident patents and number of women participating in the R&D in recent years. Despite making a good progress in STI, the transfer of scientific knowledge and its benefits to society remains an area of concern. Thus, apart from deploying more resources on human and social development, building a strong connection between science and society assumes significance. One way could be through the transfer of scientific knowledge in achieving social goals which could be formalised through guidelines on “Scientific Social Responsibility (SSR)”. These guidelines are about building synergy among all stakeholders in our scientific community and about developing linkages between science and society.

2. Need for SSR Guidelines

Science and technology have been an integral part of Indian civilisation and culture over the past several millennia. Earlier S&T policies had emphasised the utilisation of science for the welfare of the people. However, the new India with its vibrant young populace is a country of ambition and rising aspiration, requiring a renewed emphasis on the integration of S&T with society at both the institutional and individual levels. The 104th session of Indian Science Congress, 2017 emphasized upon the need for inculcating SSR for engaging science for societal welfare. This necessitates developing a framework to facilitate the integration of science and society and build synergy among the stakeholders thereby ensuring transfer of scientific knowledge for the benefit of society. Therefore, an institutional mechanism through SSR Guidelines, facilitating easy access to resources and knowledge, would be a significant step in this direction.

An important justification for SSR is the moral obligation of the scientific community of “giving back” the benefits that they derive from science to less endowed stakeholders of science, technology and innovation as well as society. The relationship between science and society is a two-way engagement; SSR is not only about scientific impact upon society but also about social impact upon science. SSR would therefore strengthen the knowledge ecosystem and bring efficiency in harnessing the benefit of science for the society. It would also bring about an attitudinal change in the mindset and the work style of the scientific community, thereby enhancing the social outreach of our scientific community. Thus, SSR has the potential to fundamentally transform society by improving the lives of our citizens towards building a self-reliant nation.

The SSR guidelines would strengthen the existing efforts of institutions in an organised and sustainable manner. SSR will also impart thrust to the new initiatives of the Government such as Transformation of Aspirational Districts, Make in India, Swachh Bharat and Digital India towards achieving inclusive growth and sustainable development.

3. Objectives

The main aim of SSR guidelines is to harness the potential that is latent in the country’s scientific community to strengthen science and society linkages, on a voluntary basis, so as to make the S&T ecosystem vibrant. This primarily involves bridging science-society, science-science and society-science gaps, thereby bringing trust, partnership and responsibility of science at an accelerated pace towards achieving social goals.

This specifically implies:

- **Science-society connect:** Facilitating inclusive and sustainable development by transferring the benefits of scientific work to meet existing and emerging societal needs.
- **Science-science connect:** Creating an enabling environment for the sharing of ideas and resources within the knowledge ecosystem.
- **Society-science connect:** Collaborating with communities to identify their needs and problems and develop scientific and technological solutions. The age-old approach of Lab to Land (L2) would be replaced by a new-age approach of Land (Experience) to Lab (Expertise) to Land (Applications) (L3).
- **Cultural change:** Inculcating social responsibility among the individuals and institutions practicing science; creating awareness about SSR within society; and infusing scientific temperament into day-to-day social existence and interaction.

SSR is aimed at creating an effective ecosystem for optimum use of existing assets in order to empower the less endowed, marginalized and exploited sections of society by enhancing their capability, capacity and latent potential.

4. Stakeholders

SSR guidelines would involve four different categories of stakeholders: beneficiaries, implementers, assessors and supporters.

4.1 Beneficiaries

Any community, group, entity or individual benefitting out of the SSR activity, including students; school/college teachers; local bodies; communities; women's groups; farmers; self-help groups; self-employed; informal sector enterprises; micro, small and medium enterprises (MSMEs); start-ups; non-governmental organizations (NGOs); anganwadi workers; biodiversity management committees (BMCs); etc.

4.2 Implementers

Public and private knowledge institutions (laboratories, institutes, universities and colleges, Anchor Scientific Institutions) and their knowledge workers, science centres, Central Ministries, State Governments, their departments and associated autonomous agencies.

4.3 Assessors

Internal assessment cell or external agency carrying out an assessment of SSR activities/projects at institutional, project and individual level.

4.4 Supporters

Funds provided as part of sponsored projects by government, Corporate bodies providing funds (as per the CSR guidelines), Non-Resident Indians (NRIs), Overseas Citizens of India (OCIs), Alumni Associations, or any other agency providing funds for the purpose are the supporting stakeholders.

5. Broad guidelines

SSR guidelines are to be implemented through the following specific strategies:

- 5.1. All Central Government Ministries and State Governments would plan and strategize their SSR in accordance with their respective mandates.
- 5.2. Every knowledge institution would prepare its implementation plan in consultation with an identified knowledge based institution called "Anchor Scientific Institution (ASI)" for achieving its SSR goals and prepare its SSR code of conduct that ensures transparency, diversity and equity.
- 5.3. All knowledge workers would be sensitised by their institutions as well as by Anchor Scientific Institution about their ethical responsibility to contribute towards the

betterment of society and achieving national developmental and environmental goals.

- 5.4.** Every knowledge worker is expected to contribute at least ten person-days in a year towards SSR over and above their routine/regular work except those in administration or are involved directly in the management of SSR implementation. While the knowledge worker would be given choice in choosing the SSR activity, it should necessarily pertain to making S&T ecosystem vibrant and responsive towards societal needs.
- 5.5.** There should be an SSR assessment cell in each institution including Anchor Scientific Institution to periodically assess institutional projects and individual activities. Each knowledge institution would publish an annual SSR report.
- 5.6.** Appropriate indicators for periodic assessment of SSR activities pertaining to input, process, output/outcomes need to be developed at institutional level. However, institutions would keep track of the SSR activities of individual knowledge workers in their organisation towards collation of input in their Annual Report. The impact of SSR activities needs to be measured in terms of short-term, medium-term and long-term time frames.
- 5.7.** Individual and institutional SSR activities should be adequately incentivised, including with necessary budgetary support.
- 5.8.** Individual SSR activities should be given due weightage in performance evaluation of the knowledge worker, such as the performance-based assessment system (PBAS) used to evaluate the output of university and college teachers.
- 5.9.** SSR activities and projects of a knowledge institution would not be outsourced or sub-contracted.

6. Activities

An illustrative list of SSR activities to be carried out by different categories of stakeholders includes:

- 6.1.** Lectures by scientists in schools and colleges on modular or full courses or on a theme for inspiring students to study science and take up career in science.
- 6.2.** Engagement and Training: Mentoring; internship; setting up displays in schools or for the public (museums, libraries), mentoring of school students in their innovation projects; organizing visits to planetariums, laboratories, sciences centres and industries.

- 6.3.** Setting up and maintaining interactive exhibits in schools or for the public (museums, libraries).
- 6.4.** Skill development through training and workshops.
- 6.5.** Sharing of Infrastructure and knowledge resources: Instruments; equipment; databases; research facility, non-proprietary software, digital platforms; open access to pre-prints of research articles.
- 6.6.** Demonstration of solutions and technologies: Technical or scientific solution to local problem (environment, ecological, health, hygiene and similar); digital solutions for augmenting income.
- 6.7.** Working with innovators: Technical support to rural and local innovators; solving specific problems.
- 6.8.** Scientific and technological information in simple local language and disseminate through social media communication like articles and interviews.
- 6.9.** Training on high end scientific skills and research facilities.
- 6.10.** Converting important research problem and/or the finding of the research work into popular science articles/ stories for newspapers/magazines and other print and electronic media including social media. In-house competitions may be held to encourage this activity.
- 6.11.** Building capacity in writing professional research papers and Ph.D thesis.
- 6.12.** Delivering scientific talks on popular theme (by TV, Radio, Newspapers, Magazines, Social Media, etc.) in simple language to create scientific awareness and also to remove superstition among society.
- 6.13.** Aiding NGOs in the use of S&T for societal challenges.
- 6.14.** S&T based empowerment of women and weaker sections of the society by awareness building, training programs and use of S&T through appropriate NGOs towards livelihood generation.
- 6.15.** Using a diversity of visual and performing art forms to create awareness of science in society.
- 6.16.** Using the Idea of National Science Service, where gaming and virtual incentivization could be used to inculcate SSR philosophy in younger scientists.
- 6.17.** Any other activity which will transfer the benefits of science to society.

7. Implementation Strategy

If a vibrant science-society link is to be established, the information asymmetries and unidirectionality would have to be mitigated. As a first and foremost step towards implementing SSR, an Anchor Scientific Institution (ASI) in every district of the country would be identified with a well-defined catchment area. The ASIs would in turn be responsible for mapping the societal issues/problems requiring immediate scientific solutions apart from establishing linkages with the Implementers (educational, scientific institutions as well as other knowledge/resource institutions) functioning in their respective catchment areas.

At State level, all district ASIs would be linked to their respective State S&T Council (SS&TC) or other assigned State body or Scientific Institution. The ASIs and SS&TCs would be further linked at national level with the Programme Monitoring Unit (PMU) at DST towards effective implementation of SSR guidelines in the country. The PMU would be guided by a National Apex Committee (NAC) constituted by DST, comprising of diverse stakeholders from science and society as its members. The PMU will be responsible for developing relevant course contents, capacity building training workshops, strengthen planning inter-linkages, nurturing start-ups etc. PMU, on the advice of NAC would constitute sub-committees as and when required towards implementation and accomplishment of SSR goals. It will also be responsible for evaluation of SSR activities carried out by implementers at district, state and national level, imparting hand holding in cases where the proposed outcomes are either lacking or appear difficult to achieve and in suggesting suitable changes in the guidelines on SSR at regular intervals taking into consideration the dynamic changes in the socio-economic and scientific environment of the country.

A national digital portal linking ASIs at district level, SS&TCs at state level along with their respective Implementers (knowledge/resource institutions) would be developed so as to facilitate linkages and communication at national level with PMU, DST. The national portal would thus also serve as platform for linking varied stakeholders including society and reporting of SSR activities and outcomes in the country.

8. Resources

SSR activities and projects would need to be adequately incentivised, through internal budgetary support and resources of institutions. In case of extramural project grants, SSR activities could be supported either through: (a) allocation of additional resources as part of R&D support for the projects or (b) as a fixed percentage of the project cost built similar to the SERB SSR model in practice. In addition, resources for SSR activities could also be mobilised through Corporate Social Responsibility (CSR) funds (as per the CSR guidelines) and from Non-Resident Indians (NRIs), Persons of Indian Origin (PIO), Overseas Citizenship of India (OCI), alumni associations, philanthropic organisations etc.

9. Benefits

SSR has the potential to bring scientific and innovative solutions to societal problems, especially marginalized sections of society, thereby transforming the country. Some of the envisioned benefits of SSR include:

- 9.1. Expanding the domain of science and its benefits to the community. Encouraging students into science through handholding and nurturing their interest.
- 9.2. Creating an opportunity for cooperation and sharing of S&T resources in laboratories with other researchers in universities and colleges.
- 9.3. Providing training for skill development and upgrading scientific knowledge.
- 9.4. Helping MSMEs, Start-ups and informal sector enterprises in increasing their overall productivity.
- 9.5. Facilitating scientific intervention in rural innovation.
- 9.6. Empowering women, disadvantaged and weaker sections of the society through scientific intervention.
- 9.7. Facilitating actions towards addressing Technology Vision 2035 Prerogatives and Sustainable Development Goals (SDGs) of the country such as water, ecology, health and livelihood.

10. Vision

The SSR guidelines envision a scientific ecosystem with systematically evolved interconnections among stakeholders to create two-way engagement among science and society in the pursuit of a more driven scientific community building a self-reliant nation.

Definitions

1. Scientific Social Responsibility (वैज्ञानिक सामाजिक उत्तरदायित्व)

The ethical obligation of knowledge workers in all fields of science and technology to voluntarily contribute their knowledge and resources to the widest spectrum of stakeholders in society, in a spirit of service and conscious reciprocity.

Scientific (वैज्ञानिक)

All knowledge workers and institutions, whether in the public or private sectors, that are actively engaged or employed in the creation, use or/and dissemination of scientific knowledge and associated skills.

Social (सामाजिक)

The overall educational, developmental and environmental needs of the country as well as the specific local problems of India's rural and urban populations and communities.

Responsibility (उत्तरदायित्व)

An ethical obligation rather than a legal requirement, thus different from accountability. The emphasis would be on auditable voluntarism.

2. Knowledge worker (ज्ञानकर्मी)

Anyone who participates in the knowledge economy in the areas of the human, social, natural, physical, biological, medical, mathematical and computer/data sciences and their associated technological domains¹.

¹ Explanations: (1) SSR is not envisaged as a mandatory academic requirement for students, research scholars and those who are involved directly in the management of SSR implementation. However, the ingenuity and enthusiasm of students can be utilised by knowledge institutions and their mentors, scientists, and advisors to great extent to carry out institutional SSR projects. Further some of the SSR activities could be included in School Curricula to promote scientific temper. (2) Knowledge workers in private educational and research institutions would be liable for individual SSR activity, exactly as their counterparts in the public sector. (3) Knowledge workers in companies and other commercial entities, whether public or private, will not be liable for SSR although they may voluntarily choose to do so.

3. Knowledge institution (ज्ञानपीठ)

Anchor Scientific Institution, national and state laboratories and institutions of higher learning and research (institutes, universities and colleges)² responsible for promotion and implementation of SSR.

4. Knowledge economy (ज्ञान अर्थव्यवस्था)

An economy in which growth primarily depends on the quantity, quality, and accessibility of useful information and the technologies based on it, instead of the traditional means of production (land, capital, labour and resources).

5. Scientific ecosystem (वैज्ञानिक पारितंत्र)

A knowledge community of interacting individuals, institutions, associated policies and mechanisms in physical and/or cyber proximity, that facilitate sharing of resources to create, disseminate and use knowledge.

6. Scientific temperament (वैज्ञानिक स्वभाव)

An approach to human and social existence that rejects dogma or assertion that contradicts empirical evidence or lacks a scientific basis, that habitually questions everything, that privileges logic and rationality, and is consistently self-critical.

7. Social entrepreneurship (सामाजिक उद्यमिता)

Initiating, sustaining and operating an innovative business enterprise that serves a social cause.

² Explanation: Does not include public and private companies, although they would be required to submit an annual report detailing their voluntary SSR activities, if any. However, MSMEs, start-ups and informal sector enterprises would be exempted from annual SSR reporting.



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