GOVERNMENT OF INDIA MINISTRY OF SCIENCE & TECHNOLOGY DEPARTMENT OF SCIENCE & TECHNOLOGY LOK SABHA STARRED QUESTION NO.72 TO BE ANSWERED ON 05/02/2021

SCHEMES TO PROMOTE SCIENCE AND TECHNOLOGY

72. SHRI DILESHWAR KAMAIT SHRI JUGAL KISHORE SHARMA

Will the Minister of SCIENCE AND TECHNOLOGY विज्ञान और प्रौद्योगिकी मंत्री be pleased to state:

(a) the details of schemes/ programmes being implemented by the Government to promote Science and Technology in the country and the achievements made thereunder, State/UTs wise, particularly in Bihar, Jammu and Kashmir and Jharkhand;

(b) the details of financial and technological assistance being provided by the Government under these schemes/programmes, State/UT wise; and

(c) the total number of proposals in this regard received by the Union Government from the Science and Technology Councils of Bihar, Jammu and Kashmir and Jharkhand, separately during the last three years and the current year so far?

ANSWER

MINISTER OF HEALTH AND FAMILY WELFARE; MINISTER OF SCIENCE AND TECHNOLOGY; AND MINISTER OF EARTH SCIENCES (DR. HARSH VARDHAN)

स्वास्थ्य और परिवार कल्याण मंत्री, विज्ञान और प्रौद्योगिकी मंत्री और पृथ्वी विज्ञान मंत्री (डॉ.हर्ष वर्धन)

(a) to (c): A statement is laid on the Table of the House

STATEMENT AS REFERRED IN REPLY TO PARTS (a) TO (c) OF LOK SABHA STARRED QUESTION NO.72 FOR 05/02/2021 REGARDING SCHEMES TO PROMOTE SCIENCE AND TECHNOLOGY

(a) & (b): Ministry of Science and Technology (MoST) is implementing several schemes/programmes for promotion of Science and Technology (S&T) in the country. These schemes and programmes cater to different cross sections of society and promote S&T and Innovation ecosystem through support towards:

- (i) Research & Development
- (ii) S&T Institutional and Human Capacity Building,

(iii) Innovation, Technology Development and Deployment for socio-economic development

Promotion of S&T across all States/UTs of the country is accomplished through the three departments under the Ministry i.e., Department of Science and Technology (DST), Department of Biotechnology (DBT) and Department of Scientific and Industrial Research/ Council of Scientific and Industrial Research. These Departments support projects to create S&T infrastructure and manpower, S&T led innovations and startups, technology development and seeding the cutting-edge, futuristic areas of S&T to connect and empower following stakeholders:

- (i) Universities: IITs: R&D institutions
- (ii) Youth: Students: Scientists, Researchers:
- (iii) Women Scientists: Scientists of Weaker Segments:
- (iv) Innovators: Entrepreneurs: Startups
- (v) Industry: Community based organizations:
- (vi) State Governments: Ministries:
- (vii) International connects

DST plays a pivotal role in promotion of S&T in the country and is the key driving force for its stimulation. Some of the noteworthy schemes/programmes of DST are:

- (i) Innovation in Science Pursuit for Inspired Research (INSPIRE)
- (ii) Technology Mission Initiative
- (iii) State Science and Technology Programme (SSTP),
- (iv) Science and Society Programme (SSP),
- (v) Tribal Sub Plan (TSP)
- (vi) Scheduled Caste Sub Plan (SCSP)
- (vii) Women Scientists Scheme,
- (viii) Technology Development Programme (TDP)
- (ix) National Council for Science and Technology Communication (NCSTC)
- (x) Fund for Improvement of S&T (FIST)
- (xi) Sophisticated Analytical & Technical Help Institute (SATHI)
- (xii) Technology Business Incubators (TBI)
- (xiii) National Initiative for Development and Harnessing Innovations (NIDHI)

Apart from above mentioned schemes, DST through its Autonomous Bodies including Science and Engineering Research Board (SERB) has taken numerous initiatives to promote S&T across the country.

The Department of Biotechnology (DBT) has been providing grant for development /promotion of biotechnology in various States of the country. The support is primarily for Basic and Translational Research & Development for Agriculture Crop Biotechnology, Basic Inter-disciplinary Biology, Animal Biotechnology, Health, Food and Nutrition including Vaccines, Drugs, Regenerative Medicine, Bioengineering, Terrestrial, Marine and Environmental Biotechnology, Clean Energy, System and Synthetic Biology, Human Genetics and Genome Analysis. DBT also supports Biotechnology for societal development to generate new knowledge, leads and technologies to promote biotechnology at community level.

CSIR through its dynamic network of 38 National Laboratories, 39 outreach centres, 3 Innovation Complexes and 5 units is creating cutting-edge R&D knowledgebase in diverse S&T areas across the country. The R&D done in these institutions provides significant technological intervention in many areas with regard to societal efforts, which include environment, health, drinking water, food, housing, energy, farm and non-farm sectors that could indirectly lead to employment generation of youth.

Details of some noteworthy schemes and programmes as mentioned above are enclosed as Annexure I.

The schemes and programmes of Ministry are in alignment with different components of Sustainable Development Goals (SDGs) and National Development Programmes (NDPs).

There are significant achievements under the schemes and programmes of MoST under R&D Infrastructure, Human Capacity Building and Innovation, Technology Development and Deployment for socio economic development.

Achievements under R&D infrastructure

Ten state-of-the-art national facilities have been established through Intensification of Research in High Priority Areas (IRHPA) Scheme of SERB. In last three years SERB approved institution of 4 Cryo-Electron Microscopy Facilities in North, East, West, South regions to create research knowledge base and skills for cryo-EM research and thereby establish leadership in structural biology, enzymology, ligand/drug discovery, and to combat new and emerging diseases.

During the last three years, 6200 publications in SCI Journals were reported and a total of 293 patents were filed from SERB funded projects. Out of these publications, 109 papers were published in Journals of Impact Factor more than 10 and 754 papers in Journals of impact factor between 10 and 5.

Under Sophisticated Analytical Instrument Facilities (SAIF) programme instruments that are vital for pursuing research in many areas of science and technology are established in various academic institutes, universities and R&D organizations. Currently, 15 SAIFs are functioning at various academic/R&D institutions in the country. The achievements of the SAIFs include publication of about 2,500 research papers per year. About 20,000 researchers across the country utilize and get benefited from the facilities provided by the SAIFs every year. About 90% of the users are from academic sector. About 1, 35,000 samples were analyzed at the facilities during the year.

A new programme **Sophisticated Analytical & Technical Help Institute (SATHI)** was initiated in 2019 to create high-end equipment and infrastructure facility necessary for research/ testing/ manufacturing/ fabrication thus providing access and sharing of scientific equipment and infrastructure, capacity building of manpower thus leading to 'Atmanirbhar Bharat Abhiyan' (Self Reliant India Campaign).

Under Fund for Improvement of S&T Infrastructure (FIST) 2912 S&T departments spread over 625 Academic Institutions and PG colleges were supported for strengthening the teaching and research infrastructure with a total investment of about Rs 2948 crores. Numerous State-of-the-art research facilities have been established across different R&D organizations throughout the Nation. During the last three years, more than 60,000 researchers (including faculty/ research Scholars/ PG students) have benefited in achieving around 5500 publications.

Ministry is also supporting projects in newer areas such as Smart Grids, Offgrids, Building Energy Efficiency, Alternate Fuels, Clean Coal Technologies, Clean Energy Materials, Renewable & Clean Hydrogen in alignment with Clean Energy, Biomedical Device alignment with Swasth Bharat, Waste Management in alignment with Swachh Bharat and Smart Cities.

Achievements under Human Capacity Building

Innovation in Science Pursuit for Inspired Research (INSPIRE) programme primarily attracts, motivates, nurtures and train talented and meritorious students to pursue science and build career in Research and Development (R&D). The scheme has its presence in most of the States/UTs including Bihar, Jammu and Kashmir and Jharkhand. INSPIRE has been able to engage, encourage and energize lakhs of science students in last three years details of the scheme is enclosed as Annexure I:

S. No	Component	Total	no	of	Bihar	J&K	Jharkhand
		Students/scholars					
		supported					
1	INSPIRE MANAK	13,34,422			4623	2388	4168
2	INSPIRE	67,880			150	1100	200
	Internship						
3	INSPIRE	35,082			102	68	13
	Scholarship						
4	INSPIRE	2371			15	45	19
	Fellowship						

5	INSPIRE	Faculty	403	3	6	7
	programme					

In last three years, more than 1000 women scientists with break in career were supported under *Women Scientists Scheme* across the country to address the challenge of gender equality in R&D.

Under State Science and Technology Programme (SSTP) of DST, Odisha State Council for Science and Technology, Karnataka State Council of Science and Technology, Tamilnadu State Council for Science and Technology, Kerala State Council of Science and Technology, Himachal Pradesh Council of Science and Technology and Environment (HPCOSTE), Bihar Council on Science and Technology (BCST) supported, 3000 projects to Under Graduate students under its Student Project Programme (SPP) to encourage their efforts in science and technology.

Visiting Advanced Joint Research (VAJRA) Faculty Scheme of SERB offers adjunct / visiting faculty positions to overseas scientists including NRIs to undertake high quality collaborative research in Public funded academic and research Institutions in India. More than 50 accomplished overseas scientists have been identified and several of them had undertaken multiple collaborative research visits.

Achievements under Innovation Technology Development and Deployment leading to Socio-economic Development

Department of Science and Technology (DST) is supporting establishment of Technology Business Incubators (TBI) to support innovators and entrepreneurs in setting up of new ventures and startups and also provides financial assistance to early stage startups. From 2016, DST has initiated National Initiative of Developing and Harnessing Innovations (NIDHI) programme to nurture ideas to prototype with financial support of upto Rs 10 lakhs and a monthly fellowship upto Rs 30,000 to potential entrepreneurs. These programs have supported nearly 3600 entrepreneurs and has generated 60,000 jobs in last five years.

Department of Bio-Technology (DBT) through its Public Sector Enterprise Biotechnology Industry Research Assistance Council (BIRAC) has initiated several schemes related to Funding, Incubation support and Capacity Building for the encouragement of the Science and Technology entrepreneurship in the country.

More than 200 start-ups, young entrepreneurs, small industries and 50 Bio-Incubators were supported through BIRAC. These programmes help in generation of employment opportunities, and self-employment among youth in this field thus leading to the goal of *Atmanirbhar Bharat*.

In addition to this, the Ministry is also connecting science to society through its cross sectoral approach and schemes designed specifically to cater to the needs of society through field agencies, R&D institutes and Academic universities. Some of the notable interventions are dyes, fixtures and manually operated equipment for bamboo artisans, region specific, economically effective, Integrated Pest Management (IPM) package for the management of red spider for tea farmers,

communication package on sex selection drugs, Eco-friendly package on Phalaenopsis orchid for cultivation in tropical hills etc

The details of the financial assistance under various schemes/projects in last three years including current year States/ UT-wise and specifically to the state of Bihar, Jharkhand and J&K may be seen at Annexure II.

Technological Achievements in J&K

1. State-of-the-art WHO cGMP Plant has been set up at CSIR-IIIM, Jammu for extraction, formulation, packaging of medicinal plant based phytopharmaceutical drugs under internationally accepted GMP guidelines.

2. CSIR-IIIM, Jammu is conducting clinical trials of the following Ayush formulations:

- (i) Withaniasomnifera(*Ashwagandha*)
- (ii) *Tinosporacordifolia*(Guduchi)
- (iii) *Glycyrrhiza glabra* (Mulethi)

3. A vaccine for mycoplasmosis has been developed by, Sher e Kashmir University of Agricultural Science and Technology (SKAUST), to control mycoplasma diseases among small ruminants (sheep & goats) reared by tribals in Ganderbal of Kashmir valley and Kargil district of Ladakh region in J & K.

Technological Achievements in Jharkhand

1. CSIR-CIMFR contributed significantly towards Chenani - Nashari tunnel project dedicated to the nation in April 2017.

2. CSIR-CIMFR developed and patented coal dust collecting and briquetting system and transferred the patented technology to M/s Tata Motors Limited, Mumbai.

3. CSIR-CIMFR CSIR is certifying the quality of the coal being supplied and used in state-run coal and thermal power companies. The certification helps power plants to use coal appropriate to the machinery and technology available in the plant and contribute to efficient use and, in the long run, reduce emissions

Technological Achievements in Bihar

Government of Bihar is facilitating proposal to set up world class technological advance Indian Institute of Science Education and Research (IISER) and School of Planning and Architecture.

(c) Ministry of Science and Technology is supporting proposals of Core Grant Support, Mapping of State S&T needs and Patent Information Centers (PIC) at Bihar Council on Science and Technology (BCST), Jammu & Kashmir State Science, Technology & Innovation Council (JKSTTIC) and Jharkhand Council on Science and Technology (JCST) in last three years. Apart from this Student Project Programme was supported in Bihar by DST, Establishment of Biotechnology parks (One each in Jammu and Kashmir) was supported by DBT, and Establishment of Demonstration Farms (K-5000) in Kupwara District Kashmir is ongoing collaboration with CSIR-IIIM, Jammu. JKSTTIC kas submitted proposal for establishment of Skill Vigyan Centers under DBT Skill Vigyan State Partnership Programme to Department of Biotechnology. BCST has submitted proposals to Department of Biotechnology (DBT) under Skill Vigyan Programme (SVP).

Details of noteworthy schemes and programmes under Ministry of Science and Technology

Fund for Improvement of S&T Infrastructure (FIST): The FIST program was initiated to facilitate support towards augmenting higher education and research largely at the different Departments of Universities/ Institutes and related academic organizations by augmenting basic infrastructural facilities including Equipment, Networking & Computational facilities, Infrastructure and Maintenance for conducting research in basic or applied science areas. The scheme is currently operating through a four-level support and each level depicts a different quantum of support that is provided depending upon the type of organization as well as its existing R&D profile and future research vision. The program provides support in all areas of S&T and Post Graduate Colleges. The selection of the Departments/ PG Colleges is through a peer review mechanism and visit to the Department, if necessary. This scheme has so far supported 2912 S&T departments spread over 625 Academic Institutions and PG colleges (Level 0-480, Level 1-2175, Level 2-256 and Level 3-01) for strengthening the teaching and research infrastructure with a total investment of about Rs 2948 crores. Numerous State-of-the-art research facilities have been established across different R&D organizations throughout the Nation. During the last three years, more than 60,000 researchers (including faculty/ research Scholars/ PG students) have benefited in achieving around 5500 publications.

Promotion of University Research and Scientific Excellence (PURSE): This program is currently an on-going scheme exclusively for the University Sector being implemented by R&D Infrastructure Division of DST since 2009. This program is pro-active initiative of DST, which has facilitated in broadening as well as creating excellence in the R&D base around the performing Universities in India. Since the initiation of the program, DST announces quantum of funds to University based on Study Commissioned by DST for assessing the performance of Universities in the country with respect to their 10 years aggregate Research performance in terms of *h*-index & Publications through SCOPUS Database. So far, based on 4 different studies, 50 performing universities whose *h*-index ranging from 70 to 26 have been supported/identified ranging from Rs 30.0 Crore to Rs 6.0 Crore for 4 years period. Under PURSE program, large investments have been made to encourage, nourish and sustain research performance of the leading universities. The grant released in the scheme is for augmentation of research infrastructure at the University level.

Sophisticated Analytical Instrument Facilities (SAIF): Sophisticated analytical instruments are vital for pursuing research in many areas of science and technology. Broad objectives of this program are (a) to provide facilities of sophisticated analytical instruments to Scientists, various academic institutes, R&D laboratories and industries, (b) to acquire and develop capability for preventive maintenance and repair of sophisticated instruments, (c) to generate skilled work-force for handling, repair and maintenance of high-end equipment as well as interpretation of data and (d) to disseminate information about SAIF, its activities and different instruments through short term courses/workshops periodically. The SAIF program is being implemented to provide facilities of sophisticated analytical instruments to research workers in general and especially from institutions which do not have such instruments to enable them to pursue R&D activities requiring such facilities and keep pace with development taking place globally. Currently, 15 SAIFs are functioning at various academic/R&D institutions in the country. Achievements of the SAIFs include publication of about 2,500 research papers per year. About 20,000 research workers from all over the country utilized and benefited from the facilities provided by SAIFs during the year. These include research workers from almost all universities in the country. About 90% of the users are from academic sector. About 1, 35,000 samples were analyzed at the facilities during the year.

Sophisticated Analytical & Technical Help Institute (SATHI): This program is envisaged to have facilities for fabrication work, rapid prototyping, material testing, characterization, new device fabrication, smart manufacturing, accreditations and characterization facilities etc., to attract and help R&D labs, industrial R&D, MSME, Incubators and Start-ups, etc. This effort is expected to reach-out to much needed less endowed organizations like MSMEs, Start-ups, State Universities and Colleges

fostering a strong culture of research collaboration between institutions and across disciplines to take advantage of developments, innovations and expertise in diverse areas. It helps to eliminate duplication of expensive equipment. Each SATHI shall ensure that facilities are available at least for 80% of the operational hours (to the External Users and remaining 20% of the time would be made available for Internal Users. The aims of this scheme are: (a) procurement and maintenance of highend equipment and infrastructure facility necessary for research/ testing/ manufacturing/ fabrication. To cater service by understanding the demands of researchers, scientists, students, start-ups, manufacturing units, industries and R&D Labs, (b) Providing access and sharing of scientific equipment and infrastructure, (c) Capacity building of operators and technicians for efficient operations and interpretations of results/ outcome, (d) Monitoring of usage of expensive scientific research infrastructure for maximum utilization of Infrastructure Management with efficient operations and to be a part of 'Atmanirbhar Bharat Abhiyan' (Self Reliant India Campaign). The SATHI Scheme has been launched in the latter half of 2019.

Innovation in Science Pursuit for Inspired Research (INSPIRE): The Government is implementing INSPIRE to attract, motivate, nurture and train talented and meritorious students to study science subjects and opt for careers in Research and Development (R&D) to build a pipeline of quality manpower, thereby widening the R&D manpower base of the country.

INSPIRE-MANAK (Million Minds Augmenting National Aspiration and Knowledge), is targeted to attract young school students in the age group of 10-15 years to pursue science and career in research through creative and innovative thinking. The nominations are received from schools across the country through online portal E-Management of INSPIRE Award Scheme (E-MIAS). One lakh shortlisted ideas receive an initial award of Rs. 10000 /- each, through Direct Benefit Transfer (DBT) to prepare project/model/showcasing of idea. Top 60 innovations are selected through National Level Exhibition for further support.

INSPIRE Internship provides exposure to top 1% students of Class X Board examination pursuing science in XI Standard through Science Camps organized during summer or winter. These camps offer an opportunity to 50,000 students to interact with Science icons from India and abroad, including Nobel Laureates.

The Scholarship for Higher Education (SHE) component of INSPIRE encourages meritorious students within top 1% cut-off marks at the Class XII Board (State or Central) examinations or in selected national level competitive examinations like IIT-JEE, etc. to study basic and natural sciences in B.Sc. and M.Sc.. The scheme offers 12,000 (10,000 Direct Mode + 2000 Institutional Mode) scholarships/year to meritorious students in the age group 17-22 years @ Rs 0.80 lakh per year.

The INSPIRE Fellowship under INSPIRE Scheme offer 1000 Fellowships/year to bright students in the age group of 22-27 years to pursue Ph.D. in Basic and Applied Sciences including Engineering, Medicine, Agriculture and Veterinary Sciences. Fellowship is offered to (i) students who secure 1st Rank and 70% marks in University-level PG examinations in India or 1st Rank Holders in Graduate/Post-graduate level examination in Medicine conducted by a university/ institution in India; or ii) INSPIRE-SHE Scholars who secure minimum 70% marks (or CGPA equivalent) in aggregate in their M.Sc. or Integrated M.S./M.Sc. level examinations, eligible for admission to a Ph.D. Programme in any recognized university/academic institution of the country. The Fellowship is provided for a maximum of 5 years (2 years as JRF and 3 years as SRF) to pursue a full-time Ph.D. programme. For the first two years, INSPIRE Fellows are granted fellowship amount of Rs.31,000/pm + HRA + Contingency grant of Rs.20,000/year. After evaluation of two years' research work, an INSPIRE Fellow can be promoted as a Senior Research Fellow (SRF) and paid fellowship amount of Rs.35000/pm + HRA + Contingency grant of Rs.20,000/year.

The INSPIRE Faculty Fellowship under INSPIRE provides 100 fellowships every year to young achievers with Ph.D. qualification in the age group of 27-32 years for independent research for 5 years to carry out post-doctoral research in both Basic and Applied Sciences including Engineering, Medicine, Agriculture and Veterinary Sciences. A fellowship of Rs. 1,25,000/- p.m. with annual increment of Rs.2000/year and a research grant of Rs.7 lakh per annum is given to the selected candidate.

The scheme has its presence in most of the States/UTs including Bihar, Jammu and Kashmir and Jharkhand. It has been able to engage 13,34,422 students under MANAK programme; 67,880 students under INSPIRE Internship; 35,082 students under INSPIRE Scholarship; 2371 students under INSPIRE Fellowship and 403 young researchers under INSPIRE Faculty programme in last three years including this year.

Technology Mission Initiative :Department of Science and Technology (DST) is promoting research, development and innovation in the field of clean energy and water through its Technology Mission Initiatives in all states of the country including Bihar, Jammu & Kashmir and Jharkhand. Currently, newer areas such as Smart Grids, Offgrids, Building Energy Efficiency, Alternate Fuels, Clean Coal Technologies, Clean Energy Materials, Renewable & Clean Hydrogen are being supported.

State Science and Technology Programme (SSTP): Government of India, established State Councils for Science & Technology to attain developmental goals of the State and the Country using Science and Technology (S&T). The Ministry of Science and Technology, started providing budgetary support for Scientific and Technical Secretariat at State S&T Councils during Ninth Five Year Plan (1997–2002) to accelerate S&T activities for overall socio–economic development at the State level under State Science and Technology Programme (SSTP). Currently, 28 State S&T Councils/UTs are being supported under this programme including Bihar Council on Science and Technology (BCST), Jammu & Kashmir State Science , Technology & Innovation Council (JKSTTIC) and Jharkhand Council on Science and Technology (JCST). The initiatives undertaken by State S&T Councils under SSTP are broadly Science & Technology Innovation Initiatives, S&T Application and Science Popularization Programmes.

Under *Science and Society Programme (SSP)*,Tribal Sub Plan (TSP) and Scheduled Caste Sub Plan (SCSP), development and promotion of S&T is being undertaken for the benefit of people at grassroots through various field-based, action-oriented projects. These programs integrate S&T primarily to enhance livelihood opportunities and quality-of-life of different cross section of the society, through adaptive research, capacity building and skill development at local level. The broad areas of support include Agriculture (including horticulture, aquaculture, fisheries, livestock and other allied activities), Resource Management, Microenterprise Development, Art & Craft, Post-Harvest Technologies, Health, Nutrition, and Engineering.

DST is also nurturing young researchers to use new and emerging technologies such as Artificial Intelligence, Robotics etc under the Scheme for Young Scientists and Technologists (SYST) to address the challenges pertaining to society through adaptive R&D. These young researchers were able to develop several technology packages of interventions to address the challenges and needs of various cross-sections of the society. Some of the notable interventions are Dyes, fixtures and manually operated equipment's for bamboo artisans, Region specific, economically effective, Integrated Pest Management (IPM) package for the management of red spider for tea farmers, communication package on sex selection drugs, Eco-friendly package on Phalaenopsis orchid for cultivation in tropical hills etc

Several Coordinated Network Programmes aimed at holistic development of socially disadvantaged section of the communities through application of S&T interventions are also undertaken under Science and Society initiative of DST.

Women Scientists Scheme: In order to address the challenges faced by women scientists after a break in career, necessitated by marriage, childbirth and other familial responsibilities, DST is supporting a Fellowship scheme for Women in Science. The scheme encourages women to undertake research projects in various S&T streams comprising of Physical & Mathematical Sciences, Chemical Sciences, Life Sciences, Earth & Atmospheric Sciences, Engineering & Technology and also projects having societal relevance. The scheme has successfully provided opportunity to over 5000 women, who had a substantial break in career after obtaining at least a Masters' degree in any of the above mentioned streams to conduct R&D and enhance their research skills and expertise. Under this program, more than 30% of these women were able to get permanent positions in various S&T institutions; over 45% were awarded Ph.D. degrees during the project tenure.

Technology Development Programmes (TDP) :Department of Science and Technology has been implementing Technology Development Programmes (TDP) to facilitate conversion of proof-of-concepts for technologies/ techniques/ processes/products into advance prototypes for validation and demonstration in field settings. Investigators are encouraged to involve industry while working on technology development projects.

National Children's Science Congress (NCSC) encourages child scientists across the country in the age group of 10-17 years to identify some societal problems and motivate them to present possible solution and its analysis through working models and prototypes. NCSC covers almost all the districts of the country with a participation of over 500,000 students. Through a process of evaluation, best of promising ideas and projects are shortlisted for presentation at State level in all the States including Bihar, Jharkhand and J&K

Science, Technology, Engineering, Mathematics and Medicine (STEMM): India activities comprise of Science fairs, melas, expositions, mobile science exhibitions, lecture-demonstrations, interactive media, visits to S&T establishments like labs and industry, hands-on-STEMM activities, and so on. These events, whether stationary or mobile, including mobile science exhibitions, serve to utilize the expertise of resource persons trained/being trained by NCSTC in various aspects of the concerned activities. More than 34 static and mobile exhibitions were organized in different parts of the country including Bihar, J&K andJharkhand.

Science and Engineering Research Board (SERB): Science and Engineering Research Board (SERB) under DST is a premier national research funding agency working to raise the quality and footprint of Indian science and engineering to the highest global levels in an accelerated mode, through calibrated support for research and development. SERB is implementing following schemes in all the States/UTs for promotion of S&T:

i) Core Research Grant (CRG): The CRG scheme provides research support to an individual researcher or a group of researchers working in a recognized academic institution or national laboratory or in other recognized R & D institution in India.

ii) *Start-up Research Grant (SRG):* The SRG scheme aims to assist researchers to initiate their research career in a new institution for two years. Research grant of Rs. 30 lakh plus overheads for a period of two years is provided under SRG.

iii) *Empowerment and Equity Opportunities for Excellence in Science:* The Scheme ensures enhanced participation of weaker sections of the society in research and development. Under this scheme funding is provided up to a maximum of Rs. 50.0 lakh (excluding overhead charges) for a maximum period of three years.

iv) Intensification of Research in High Priority Areas (IRHPA)

The IRHPA program supports proposals in high priority areas where multidisciplinary/ multiinstitutional expertise is required to bring India at international science map.

v) Mathematical Research Impact Centric Support (MATRICS)

MATRICS provide fixed grant support in the area of Mathematical Sciences as it is overlooked field with few researchers. The Scheme provides research grant of Rs. 2 lakh p.a. for a period of three years.

vi) National Post-Doctoral Fellowship

The SERB-National Postdoctoral Fellowship (N-PDF) motivates young researchers through grant-in aid for doing research in frontier areas of science and engineering. The selected fellows work under a mentor, and are provided fellowship for a period of 2 years.

vii) SERB Women Excellence Award

In order to bring gender parity and acknowledge the efforts of women researchers in R&D, SERB Women Excellence Award is presented to women scientists below 40 years of age and who have received recognition from any one of the National Academies. These women researchers are supported with a research grant of Rs. 5 lakh per annum for a period of 3 years.

viii) Visiting Advanced Joint Research (VAJRA) Faculty Scheme

The Scheme aims to tap the expertise of Overseas Faculty / scientists including Non-resident Indians (NRIs) & Overseas Citizen of India (OCI) for collaborative research in frontier areas of S&T including the interdisciplinary areas of national priorities such as energy, water, environment, health, security, nutrition, waste processing, advanced materials, high performance computing, cyber-physical systems, smart machines and manufacturing, etc. This collaboration would stimulate the latent potential of our academic and research sector as the VAJRA faculty would be physically available for 1-3 months in Indian institutions and co-guide Ph.D. students in India thus strengthening the ecosystem of Indian S&T through experience and knowledge sharing.

S.No.	State and Union Territories	No. of Proposals	Total Cost (in Rupees Crore)
1	Andaman & Nicobar Islands	2	0.74
2	Andhra Pradesh	193	82.793
3	Arunachal Pradesh	20	7.43
4	Assam	195	103.1721
5	Bihar	68	27.04
6	Chandigarh	125	44.04
7	Chhattisgarh	52	15.49
8	Dadra And Nagar Haveli	0	0
9	Daman & Diu	0	0
10	Delhi	602	398.2377
11	Goa	60	22.615
12	Gujarat	181	89.4751
13	Haryana	99	44.855
14	Himachal Pradesh	77	24.695
15	Jammu & Kashmir	127	57.79
16	Jharkhand	116	43.225
17	Karnataka	587	2406.407
18	Kerala	291	2095.871
19	Lakshadweep	0	0
20	Ladakh	1	0.48
21	Madhya Pradesh	198	84.41
22	Maharashtra	615	317.3499
23	Manipur	25	10.38
24	Meghalaya	39	17.9809
25	Mizoram	20	12.25
26	Nagaland	18	7.1
27	Odisha	233	90.6835
28	Puducherry	48	25.64
29	Punjab	230	116.4598
30	Rajasthan	170	75.52
31	Sikkim	7	4.69
32	Tamil Nadu	808	469.9203
33	Telangana	443	4618.494
34	Tripura	12	4.32
35	Uttar Pradesh	566	309.1154
36	Uttarakhand	148	82.17
37	West Bengal	636	6935.504
	Total	7012	18646.3437
			-

No. of projects supported State/UT wise in last 3 years including current year

No. of projects supported in Bihar, J&K and Jharkhand in last 3 years including current year

S.No.	State and Union Territories	No. of Proposals	Total Cost (in Rupees Crore)
1.	Bihar	68	27.04
2.	Jammu & Kashmir	127	57.79
3.	Jharkhand	116	43.225
