GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY
LOK SABHA
UNSTARRED QUESTION NO. 2130
ANSWERED ON 12/03/2025

RESEARCH AND VOCATIONAL PROGRAMMES

†2130. Shri Bhojraj Nag:

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a)   whether any steps have been taken by the Government to develop research and vocational programmes to provide higher level education and skilled employment opportunities to the marginalized and backward classes; and

(b)   if so, the details thereof?

ANSWER

MINISTER OF STATE (INDEPENDENT CHARGE) OF THE
MINISTRY OF SCIENCE AND TECHNOLOGY AND EARTH SCIENCES
(DR. JITENDRA SINGH)

विज्ञान और प्रौद्योगिकी तथा पृथ्वी विज्ञान मंत्रालय के राज्य मंत्री (स्वतंत्र प्रभार)

(डॉ. जितेंद्र सिंह)

(a) to (b):   Ministry of Science and Technology has taken several initiatives to develop research programmes to provide higher level education and skilled employment opportunities to the marginalized and backward classes. Department of Science and Technology (DST) supports development of Scheduled Caste (SC) and Scheduled Tribe (ST), marginalized and backward communities by establishing research facilities, organizing training programmes on emerging technologies and sophisticated instruments, providing research grants to young scientists, and supporting S&T projects in agriculture & allied, health, energy, water & sanitation, skill development, and livelihood sectors. School children are also motivated through various programmes to innovate in science and technology and pursue higher education in science. These initiatives have positive impact on socio-economic development of SC & ST by adopting technology-driven solutions, entrepreneurship and building STI capacity. Major schemes & programmes of DST are as follows:

A. Scheduled Castes Sub Plan (SCSP) and Tribal Sub Plan (TSP) DST has supported around 500 S&T projects during the last two decades in different

states in diverse areas of agriculture, resource management, microenterprise development, art & craft, post-harvest technologies, health and nutrition, engineering and allied aspects, training and skill development, drinking water and sanitation, and energy to improve the quality of life of SC/ST communities. In addition, following activities are being performed to achieve the desired objectives:

- A coordinated programme on People and Protected Areas (PPA) is being implemented to deal with complex issues related to conservation and livelihoods, in the forest fringe areas and around protected areas/wild life sanctuaries in 17 states through a network of 17 NGOs by promoting site-specific interventions and use of affordable and viable technologies for livelihood augmentation, as well as conservation of natural resources.

- 45 Science Technology and Innovation (STI) Hubs have been established in different regions of the country for holistic development of Scheduled Caste (SC) and Scheduled Tribe (ST) Communities through systemic interventions. These STI Hubs develop, nurture and ensure the development, improvement and delivery of appropriate and relevant STI approaches for equitable inclusive growth of the SC and ST population through creation of sustainable livelihoods and improving the quality of life in tune to their growing aspirations.

- 11 Scheduled Caste (SC)/Schedule Tribe Cells are being supported in different States for mapping (gathering) information on livelihood system (weakest linkages and strengths), local and indigenous knowledge and ingesting it with technological information to help in development of specific strategies for development of target beneficiaries and define policies for implementation. These cells are helping in dissemination and last mile delivery of interventions.

- Heritage Food and Beverage Research Centre for Research on Ethnic Foods of Tribals of NE and ST Community Centre of Bio resources for Innovation, Technology and Entrepreneurship has been established at Institute of Advanced Study in Science and Technology, Guwahati.

- A Coastal Fisheries Information Hub (first of its kind in Car Nicobar Islands) has been established for augmenting livelihood, resilience and knowledge generation through strengthening of local knowledge systems, sustainable climate resilient fishing, coastal conservation and community fishing approach.

- The collaborative project "CRISPR mediated genetic correction of Sickle Cell disease towards clinical trials in a small patient cohort" has been implemented to develop a permanent cure for Sickle Cell Disease (CSD) with extensive benefits of improving the standard of life of SCD patients using gene editing technologies.

- The programme on "Accelerated Development of Particularly Vulnerable Tribal Groups (PVTGs)" complements the National PVTG Mission announced by Union Government in March 2023 by developing sustainable STI solutions to addresses the vulnerabilities faced by the 75 PVT Groups.

B. **Technology Interventions for Disabled and Elderly (TIDE) Programme** had a wider perspective of Scientific Research, Design and Development of affordable and adaptable Science and Technological (S&T) solutions for providing greater autonomy to Persons with Disabilities (PwDs) and Elderly. The grant-in-aid support for Research and Development (R&D) in Assistive Technology (AT), Design and Development of Prototypes, Processes and Protocols, Validation, Large Scale Field Trials, Scaling up etc has been given for around 150 projects.

C. **Science & Technology for Women (STW) programme** through its Women Technology Parks (WTP) aim to improve the weakest link of the predominant livelihood system of women in an area and promote social entrepreneurship and women employment based on the strongest link of the livelihood system through interventions of Science, Technology and Innovations. Around 40 WTPS have been established and 150 projects have been supported to develop technologies for the addressing the issues related to women.

D. **Strengthening, Upscaling & Nurturing Innovations for Livelihood (SUNIL) programme** supports NGOs and Knowledge Institutions (KIs) in partnership for improving the S&T knowledge, skill enhancement, capacity building and socio-economic conditions of the community through networking network programmes. 8 projects have been supported for S&T based solutions through applied research for socio-economic development of Economically Weaker Section (EWS).

E. Under **Science and Technology Human Capacity Building programmes**, awards were provided to 21,087 ST students during last 5 years, under the Inspire Awards-MANAK (Million Minds Augmenting National Aspiration and Knowledge), a national programme to promote 'Original ideas' having potential to address societal needs through Science & Technology especially in context of National flagship Programes such as Swachh Bharat, Digital India, Swasth Bharat, Make in India, Energy, Environment, Sanitation etc. An award of Rs. 10,000/- is provided to each beneficiary.

F. Under **Strengthening of R&D Infrastructure program**, hands-on training programmes cum sensitization on the state-of-the-art equipment, use and application of various instruments and analytical techniques organized NIT, Agartala and IIT (ISM), Dhanbad under the program STUTI (Synergistic Training program Utilizing the Scientific and Technological Infrastructure) benefitted 10000 tribal researchers/students.

Fund for Improvement of S&T Infrastructure in Universities and Higher Educational Institutions were provided to The Indira Gandhi National Tribal University, Amarkantak, Madhya Pradesh to augment the R&D infrastructure facilities so as to attract good researchers from tribal community in the country and sustain their research need as well as competitiveness with reference to global context.

G. Under NM-ICPS, about 30 labs/experience centers established to provide students with opportunities for continuous learning and hands-on practice. Divyasampark IHUB Roorkee trained 17,409 students under the TSP Program for Devices Materials and Technology Foundation. Approx. 46,974 number of beneficiaries trained under skill development programme of Inter Cyber Physical Systems.

The Drone Didi Workshop, organized under the "Digital Agri Village" project at IIT Bhilai, showcased the innovative use of drones in precision agriculture. The workshop included live demonstrations of drone-based spraying, seed sowing, and other agricultural practices, with participation from over 100 women.

H. Under Anusandhan National Research Foundation (ANRF), Inclusivity Research Grant (IRG), erstwhile EMEQ Scheme provides funding support to around 125 researchers every year belonging to the Scheduled Caste/Scheduled Tribe to undertake research in frontier areas of science and engineering.

I. National Initiative for Developing and Harnessing Innovations (NIDHI) - Inclusive Technology Business Incubators (iTBIs) scheme

- NIDHI iTBI centers provides financial support, mentorship, and access to resources that empowers startups, entrepreneurs and individuals from underserved backgrounds especially SC/ST to transform their innovative ideas into viable businesses. The program emphasizes skill development, community engagement, and collaboration with various stakeholders, ensuring that marginalized groups can contribute meaningfully to the economy.
- NIDHI-iTBIs are established in Tier 2 & Tier 3 cities specially in regions which do not have the desired innovation and entrepreneurial ecosystem with a focus on inclusiveness in terms of geographic, gender, persons with special abilities and marginalized communities.
- 48 NIDHI Inclusive TBIs have been established in academic setups to extend incubation and mentoring support to innovative startups in various technology domains. The startups supported by these NIDHI iTBIs provide innovative solutions addressing local problems having significant societal impact on the nearby regions, including underserved communities.
- Additionally, under Innovation and Entrepreneurship (I&E) based training programmes, 23498 beneficiaries have been trained through the funds sanctioned to around 317 organizations in the country during last 5 years.

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