

**GOVERNMENT OF INDIA  
MINISTRY OF SCIENCE AND TECHNOLOGY  
DEPARTMENT OF SCIENCE AND TECHNOLOGY  
LOK SABHA  
UNSTARRED QUESTION NO.1139  
TO BE ANSWERED ON 28/6/2019**

**SCIENCE AND TECHNOLOGY INFRASTRUCTURE**

**1139. SHRI D.K. SURESH:**

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

- (a) whether the Government proposes to strengthen and develop the science and technology infrastructure in major sectors;
- (b) if so, the details in this regard;
- (c) whether there is any system to encourage the scientists, technology experts and other specialized institutions in the country and if so, the details thereof;
- (d) whether the Government is providing any assistance to or coordinating with the foreign institutions having the said expertise; and
- (e) if so, the details in this regard?

**ANSWER**

**Minister of State in the Ministry of Health and Family Welfare  
Shri Ashwini Kumar Choubey**

स्वास्थ्य और परिवार कल्याण मंत्रालय में राज्य मंत्री

श्री अश्विनी कुमार चौबे

(a) Yes, Sir. The Government proposes to strengthen and develop the science and technology infrastructure in major sectors.

(b) & (c): The Government already has successful schemes in operation to strengthen and develop the science and technology infrastructure of R&D Institutions in major sectors. The schemes such as Fund for Improvement of S& T infrastructures in Universities and Higher Educational institutions (FIST), Promotion of University Research and Scientific Excellence (PURSE), Sophisticated Analytical Instrument Facility (SAIF) of the Department of Science and Technology (DST). The FIST Program enables the University and Academic sectors to perform cutting edge competitive research activities and establish modern teaching facilities. So far, nearly 2820 S&T Departments of Universities/ Institutes including over 460 PG colleges have been supported with a total investment of about Rs. 2850 crores. The DST PURSE scheme was initiated with the purpose of creating and fostering the research ecosystem among performing universities in the country by enhancing their research capacity through augmentation of their research infrastructure. So far, over Rs. 800 crores has been invested on 50 premier Universities under this Program. The DST SAIF program provides the facilities of sophisticated analytical instrument to researchers especially from such institutions which do not have state-of-the-art instruments to pursue contemporary R&D activities and keep pace with development taking place globally. Currently, 15 SAIF Centres are operating in the currently. These facilities have been utilised by over 19, 000 researchers, over 1, 10,000 samples have been analysed facilitating over 2000 Publications per year. To build a shared, professionally managed, and strong Science and Technology infrastructure which is readily accessible to academia, start-ups, manufacturing, industry and R&D labs, DST is in the process of setting up four *Sophisticated Analytical & Technical Help Institutes* (SATHI), at a total cost of Rs. 375 crores. These will house major analytical instruments to provide common services of high-end analytical testing thus avoiding duplication and reduced dependency on foreign sources. These would be operated with a transparent, open access policy.

Under the DST Nano Mission, one of the umbrella programme to promote R&D in this emerging and active area of research, adequate support towards infrastructure development for Nano Science & Technology Research has been provided. The DST National Spatial Data Infrastructure (NSDI) initiative involves works with various Central and

State Government Agencies for setting up the infrastructure with the objectives of facilitating access, search and discovery of spatial data acquired by various agencies; providing a single window access mechanism for all spatial data sets in the country; and creating awareness about its benefits amongst its stakeholders. The DST Mega Science Program is aimed to create Mega Science facilities and launch Mega Science projects in and out of the country to improve access to such state-of-the-art facilities for the Indian scientific community, especially from the academic sector. Because of technical complexities and requirement of large resources, such projects are manifestly multi-agency, multi-institutional and, most often, international in character. The DST and the Department of Atomic Energy (DAE) have been jointly promoting most of such projects in the country. Under DST engagement with the Global S&T Platforms DST also contributed to Worldwide Development of Research Infrastructures and participated in the 11th meeting of the Group of Senior on the development on Global Research Infrastructures (GSOGRI), hosted by the National Science Foundation, USA. It was decided to include 'Laser Interferometric Gravitational Wave Observatory (LIGO) having a node in India, as a future case study of Global Research Infrastructures. 5 Technical Research Centres (TRCs) were established in 5 DST institutions viz. Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), Trivandrum; International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad; Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru; Indian Association for the Cultivation of Science (IACS), Kolkata; and S.N. Bose National Centre for Basic Sciences, Kolkata. Under the DST Clean Energy Research Initiative (CERI) the Government is establishing R&D centres in the areas such as Smart Grids (2 No.), Clean Coal (2 No.), Solar Energy (2 No.), Energy Storages (4 No.) and Water Technology (7 No.) to strengthen and develop the science and technology infrastructure. The Department of Biotechnology (DBT) has announced the Access of its Research Resources and Facilities supported across the country, by way of Scientific Infrastructure Access for Harnessing Academia University Research Joint Collaboration (SAHAJ). Each DBT Autonomous Institute and DBT supported Infrastructure programme makes available its high end equipments and infrastructure to Research Institutes, Universities, colleges and start-ups / entrepreneurs. The Ministry of Mines, Govt. of India provides funds to promote research in applied geosciences, mineral exploration, mining and allied areas, mineral processing, optimum utilization and conservation of the mineral resources of the country, for the benefit of the nation and its people under Science and Technology Programme Scheme of Ministry of Mines. The Ministry of Human Resources has established seven Indian Institute of Science Education & Research (IISERs) declared as the Institutes of National Importance (INI) under the National Institutes Technology Science Education and Research (NITSER) Act, 2007, as amended from time to time. Besides, the MHRD have also been continuously supporting the Indian Institute of Science (IISc), Bangalore, a premier Institute of higher learning and research. The MHRD has supported these Institutes towards providing and maintaining world class infrastructure in science and technology to promote both higher learning as well as advanced research in frontier areas of S&T using cutting edge technologies.

(d) Yes, Sir.

(e) The Government is providing assistance to co-ordinate with the foreign institutions by establishing bilateral and multilateral programmes in the areas such as Smart Grids, Offgrids, Clean Energy Materials, Renewable and Clean Hydrogen and also in Water Technologies under the aegis of Mission Innovation, which is a global platform of 25 countries to accelerate innovations in these domains. Open Geospatial Consortium (OGC) – a not-for-profit body of 550 Industries, Governments; Academia; and Non-Governmental Organisations is developing Open Standards useful in establishment of NSDI for interoperable sharing of spatial data sets amongst the stakeholders. Inter-governmental Agreement on Cooperation in the field of Science, Technology and Innovation were signed with several countries. The DST and the National Technological Innovation Authority of Israel have jointly established a US\$ 40m "India-Israel Industrial R&D and Technological Innovation Fund (I4 Fund)" for a period of five years to support joint R&D projects aimed to co-develop innovative technology-driven products, services or processes that have potential for commercialization. Several Bilateral meetings were held to foster the research areas in the field of Clean Energy, Sustainable Agriculture, Renewable Energy, Metallurgy, Physics & ICT. Establishment of Indo-Korean Center for Research and Innovation (IKCRI) and Indo-Mexico Centre in areas of energy, water, food security and air quality was agreed to from respective countries. Under Mission Innovation programme, meetings were held with Swedish Minister for Innovation and Enterprise, Governor of Skåne, Director of Brazilian Innovation Agency (FINEP), Minister for Science and ICT of the Republic of Korea, Deputy Prime Minister of Uzbekistan, Mexico's Ambassador to India to identify potential areas of interest in domains covering clean transport, clean energy, smart grids, smart industry & advanced manufacturing, medical sciences, circular and bio-based economy. The initiatives undertaken by the DBT included acquisition and maintenance of synchrotron X-ray beamline (BM14) in partnership with Medical Research Council (MRC), The European Molecular Biology Laboratory (EMBL) and The European Synchrotron Radiation Facility (ESRF). This resource has been of tremendous utility to the macromolecular crystallography community in India and will have critical impact on the biotechnology research in the country.

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