GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY
LOK SABHA
UNSTARRED QUESTION No. 2070
TO BE ANSWERED ON 12/02/2021

Participation of People in Research and Development

2070. DR. SUBHAS SARKAR:

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

(a) whether the Government has proposed new measures and schemes to promote participation of people in Research and Development(R&D);

(b) if so, the details thereof;

(c) whether it is a fact that the R&D sector in India is about to witness more growth in the coming years;

(d) if so, the details including Gross Expenditure on R&D(GERD) for last three years; and

(e) the details of R&D investments, international research collaborations and technology development during the said period?

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) & (b) Yes Sir, Government has initiated several programmes and schemes to promote people's participation in R&D. Several new schemes to attract young researchers such as National Post Doctoral Fellowship; Early Career Research Award; Overseas Doctoral Fellowship; and Overseas Post Doctoral Fellowship; and Teacher Associates for Research Excellence have been launched. These schemes have almost doubled the opportunities for young and aspiring researchers for carrying out R&D in their chosen areas of science and engineering. A scheme called Visiting Advanced Joint Research (VAJRA) has been initiated to bring best of global science and scientists to India including Non-Resident Indians. To address gender imbalance, a new scheme known as "Knowledge Involvement in Research Advancement through Nurturing" (KIRAN) has been launched. A pilot scheme VIGYAN JYOTI was tested on limited scale

and duration to attract and encourage young women in underrepresented areas such as engineering, mathematics in top institutions. A scheme called Augmenting Writing Skills for Articulating Research - AWSAR was launched to encourage young scientists to write popular science articles on their research pursuits. To encourage young students to think innovatively, a scheme MANAK - Million Minds Augmenting National Aspirations and Knowledge has been launched to target 10 lakh students every year from class 6 to 10.

(c) & (d) The gross expenditure on R & D (GERD) in the country has been consistently increasing over the years and has nearly tripled from Rs. 29,932.58 crore in 2005-06 to Rs. 95,452.44 in 2015-16. It has further increased to Rs. 1,03,099.26 crore and Rs. 1,13,825.03 crore in 2016-17 and 2017-18, respectively. It is estimated to be Rs. 1,23,847.70 crore in 2018-19.

(e) The contribution of central government, private sector industry, state sector, public sector industry and higher education sector in R&D investments in the year 2017-18 is estimated as 45.4%, 36.8%, 6.4%, 4.6% and 6.8%, respectively.

India has active S&T cooperation with 46 countries and 17 regional and multilateral partnerships. These collaborations are in the form of joint R&D projects, human and institutional capacity building, innovation and technology development, creation of centres of excellence, networking, utilization and creation of mega science facilities etc. During last 3 years, a total of 658 joint research projects have been supported. India's share of international collaboration in world output increased from 3.8 % in 2011 to 4.2 % in 2016.

A few important technology developments have resulted from ongoing bi-lateral and multi-lateral projects under Mega Facilities for Basic Research scheme. Under the Compact Muon Solenoid (CMS) project at European Organization for Nuclear Research (CERN), Geneva, high-tech Gas Electron Multiplier (GEM) foil technology was transferred to an Indian Industry. 31 GEM Chambers have been sent to CERN as in-kind contribution from India. As part of Large Ion Collider Experiment (ALICE) experiment at CERN, design and development of Common Readout Unit (CRU), a hi-tech electronics item was completed. For construction of Facility for Antiproton and Ion Research (FAIR) in Germany, India supplied 164 Power Converters to FAIR, Germany as in-kind contribution from India.

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