

**GOVERNMENT OF INDIA
SCIENCE AND TECHNOLOGY
LOK SABHA**

UNSTARRED QUESTION NO:4674

ANSWERED ON:22.04.2015

INVESTMENT IN R D

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

- (a) the details of investment of public and corporate sectors in research and development in the country during each of the last three years and the current year;
- (b) whether the Government proposes to offer incentives to Public Sector Undertakings and private/corporate sector for industrial research and development and if so, the details thereof;
- (c) whether the country is dependent on other countries for technology and new products;
- (d) if so, the steps taken by the Government in this regard along with the number of applications filed for patents submitted by scientists from the country and other countries during the above period; and
- (e) the areas identified by the Government to utilise Science and Technology (S&T) for the development of the country and special package, if any, for development of S&T including information and technology, State-wise?

Answer

MINISTER OF STATE OF SCIENCE AND TECHNOLOGY AND MINISTER OF STATE OF EARTH SCIENCES (SHRI Y.S. CHOWDARY)

(a) Madam, according to a latest available publication entitled "Research and Development Statistics (2011-12)" published by the Department of Science and Technology (DST), Ministry of Science & Technology, Government of India in December 2013, total national investment on Research and Development (R&D) and the share of public and private sector companies during 2008-09, 2009-10, 2010-11 and 2011-12 is as follows:

| Sector | (Rs. in Crores) | | | |
|---|-----------------|----------|----------|----------|
| | 2008-09 | 2009-10 | 2010-11 | 2011-12 |
| Central & State Govt. | 28619.40 | 32721.22 | 37908.32 | 43918.22 |
| Higher Education | 1911.56 | 2199.97 | 2547.43 | 2949.76 |
| Public Sector Companies | 2457.02 | 2814.56 | 3264.84 | 3787.15 |
| Private Sector Companies | 14365.40 | 15305.55 | 18332.88 | 21965.31 |
| Total National Investment | 47353.38 | 53041.30 | 62053.47 | 72620.44 |
| Share of Public Sector Companies in Total Investment | 5.19% | 5.31% | 5.26% | 5.21% |
| Share of Private Sector Companies in Total Investment | 30.34% | 28.86% | 29.54% | 30.25% |

According to information available with the Department of Scientific and Industrial Research (DSIR), investment by 42 public sector companies and 1778 private sector companies (whose in-house R&D units are recognized with DSIR) was of the order of Rs. 3,886 crore and Rs. 25,590 crore, respectively during 2013-14.

(b) The Government provides a number of fiscal incentives to the industrial sector to increase their investment in R&D. Fiscal incentives available for enhancing scientific R&D are given below:

100% write-off of revenue and capital expenditure on R&D.

Weighted Tax deduction @200% on expenditure incurred in approved in-house R&D facility, to companies engaged in business of biotechnology or in any business of manufacture or production of any article or thing, till 31.03.2017.

Weighted Tax deduction @200% for Sponsored Research Programmes in approved national laboratories, universities and IITs.

Income tax rebate @175% on donations for scientific research made to non-commercial research organizations approved &

notified under section 35(1)(ii) & 35(1)(iii) of I.T. Act 1961.

Tax Holiday for ten consecutive assessment years to commercial R&D companies approved before 31.03.2007.

Accelerated depreciation allowance upto 40% on investments on new plant & machinery based on indigenous technology as per Rule 5(2) of I.T. Rules.

Customs duty exemption on goods imported for R&D and central excise duty waiver on purchase of indigenous goods for R&D to public funded and privately funded institutions registered with DSIR.

Customs duty exemption on imports made in industries for use in R&D projects funded by Govt.

DSIR recognized in-house R&D units engaged in R&D in bio-technology and pharmaceuticals sector, can import specified equipment duty free. In respect of R&D units with manufacturing facilities, the benefit of full customs duty exemption for specified equipment is also available for manufacturing activity to the extent of 25 per cent of the previous year's export turnover.

Central excise duty waiver for 3 years on specified goods designed & developed by a wholly owned Indian company, national laboratory, public funded research institutions, or university and patented in any two countries from amongst India, USA, Japan and in any one country of the European Union. The specified goods are manufactured by a wholly owned Indian company. This exemption is available based on certification from DSIR.

As regards R&D by Central Public Sector Enterprises (CPSEs), guidelines issued by the Department of Public Enterprises in September, 2011 prescribe that Maharatna & Navratna CPSEs and Miniratna – I & II including other CPSEs incur a minimum R&D expenditure of 1% and 0.5% of Profit After Tax (PAT), respectively.

(c) India imports advanced technology and new products from other countries to remain globally competitive in this age of globalization and interdependence among countries. The sectors in which Indian companies have signed Foreign Technical Collaboration (FTC) Agreements over the past ten years include Metallurgy, Fuels (Power & Oil Refinery), Electrical Equipment, Telecommunications, Transportation, Industrial Machinery, Chemicals, Drugs & Pharmaceuticals, Agriculture (Hybrid Seeds & Plantation) and the Services Sector including Hotels & Tourism.

(d) In order to promote indigenous technology development, the Government has initiated and operates a number of schemes and programmes in various departments such as Department of Science and Technology (including Technology Development Board), Department of Scientific and Industrial Research (including CSIR), Department of Biotechnology, Department Electronics & Information Technology (DeitY), Indian Council of Agricultural Research (ICAR) and Indian Council of Medical Research (ICMR).

According to information available with the Office of Controller of Patents & Designs, the Patent applications filed from India and from abroad during 2011-2014 is given below:

| Year | No. of Patents filed from India | No. of Patents filed from Abroad |
|---------|---------------------------------|----------------------------------|
| 2011-12 | 8921 | 34276 |
| 2012-13 | 9911 | 33763 |
| 2013-14 | 10941 | 32010 |

The patent applications were filed in sectors, viz. Chemicals, Drugs, Food, Electrical, Mechanical, Computers /Electronics, Bio-technology, General Engineering, Bio –Medical, Bio-Chemistry, Communication, Physics, Civil, Textile, Metallurgy / Material Science, Agriculture Engineering, Polymer Science/Technology, Micro Biology, Agrochemicals and Traditional Knowledge.

(e) Although no areas have been identified state-wise; the Government has identified the following areas for the development of Science & Technology in the country:

Enrichment of knowledge base;

S&T Human Resource Development and University Interaction;

#Aligning S&T to Developmental Needs;

Implementation of National Missions in select areas such as Agriculture, Water, Energy, Environment and Health;

Undertaking Mega Science Projects such as: Gravitational Wave (LIGO) Experiments; India Based Neutrino Observatory; Thirty meter Telescope (TMT); Square Kilometer Array (SKA); National Large Solar Telescope and Next Generation Synchrotron.

Strategies for transformational changes within the sector, viz. increasing density of scientists by about 60%; evolving an effective Public Private Partnership model for R&D; and creating an enabling policy environment for sustainable innovation ecosystem.

Evolving Performance Measurement System for Science Technology and Innovation Output Indicators for gaining global competitiveness;

Department of Science & Technology (DST) has played a catalytic role by facilitating the State Governments in establishing and developing the State S&T Councils. With a view to spread R & D base, state and region specific special packages have been

evolved, viz. the North-Eastern Region Package (2008) and Jammu & Kashmir Package (2009) for augmentation of the teaching and research facilities at the S&T departments of the Colleges and Universities in these states. S&T intervention have been drawn up for strengthening Science Education, Bio-Resource Technologies, Energy, Meteorology, Mapping, Health Care, Bamboo Processing and Disaster Management in Arunachal Pradesh and Nagaland.