

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

STARRED QUESTION NO:450  
ANSWERED ON:23.12.2005  
BRAIN DRAIN  
Rao Shri Kavuru Samba Siva

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

- (a) whether India has a shortage of brilliant scientists of international standard;
- (b) if so, the details thereof;
- (c) the steps taken/being taken to check the trend of scientists going abroad;
- (d) whether the Government proposes to formulate a long term policy to encourage scientists to pursue research in the areas of their interest without any constraints in the country; and
- (e) if so, the details thereof?

**Answer**

MINISTER OF STATE (INDEPENDENT CHARGE) OF THE MINISTRY OF SCIENCE AND TECHNOLOGY & MINISTER OF STATE (INDEPENDENT CHARGE) OF THE DEPARTMENT OF OCEAN DEVELOPMENT ( KAPIL SIBAL)

(a) to (e): A Statement is laid on the Table of the House.

STATEMENT AS REFERRED IN REPLY TO PARTS (a) TO (e) OF LOK SABHA STARRED QUESTION NO. 450 FOR 23.12.2005 REGARDING "BRAIN DRAIN".

(a)&(b) India has produced many brilliant scientists of international standard. However, considering the goals and ambitions of our country in transforming ourselves into a developed nation by the year 2020, there is a need for a larger number of brilliant scientists.

Currently, the number of scientists engaged in active research in India is 120 per million as compared to 2691 for U.K. However, any comparison of these numbers and conclusion drawn will be unrealistic in view of the resources and infrastructure available in developing and developed nations.

(c) In view of the global nature of the scientific enterprise the government is of the view that scientific mobility should not be disturbed. The scientists move overseas in view of better opportunities available for higher education and employment in the emerging area of S&T. Increasing opportunities in India has attracted many scientists to return to India particularly in some of the high-tech areas like IT. Availability of Indian diaspora overseas has also been of great help in undertaking joint research projects/ventures in the country. Government has taken a number of initiatives and measures in order to improve the working conditions of scientists to encourage their retention/return in the country.

(d)&(e) Government has framed policies and various schemes to encourage scientists to pursue research in the area of their interest in the country. The various measures taken from time to time are:

Policies:

# Science and Technology Policy, 2003.

# Increase in the outlay for science and technology sector in successive Five Year Plans.

# Enhancement in the retirement age of scientists to enable them to pursue their research interest for longer duration.

# Delegation of advanced administrative and financial powers to S&T institutions to improve working conditions of scientists.

School centric programmes to attract school children:

# Children Science Congress.

# U-PROBE (Introducing meteorology in schools).

# Schools on mathematical modelling in earth system sciences.

# National Science Olympiad Programme.

# Kishore Vaigyanik Protsahan Yojana (KVPY).

# SERC Schools in emerging areas of science and technology.

# CSIR Programme on Youth for Leadership in Science (CPYLS).

Programmes targeted towards young scientists:

# Swarnajayanti Fellowships.

# Fast Track Scheme for Young Scientists.

# SERC Visiting Fellowships.

# Better Opportunities for Young Scientists in Chosen Areas of Science and Technology (BOYSCAST) fellowship to visit international laboratories and institutions.

# Mission HOPE (Higher Education - Opportunities for Promoting Entrepreneurship) with the aim of converting aspirations to real enterprises (CARE).

# Contact programmes to attract and motivate brilliant young scientists to take up R&D as a career.

# Junior/Senior research fellowships, research associateships and senior research associateships.

# Diamond Jubilee Research Interns Award Scheme, JRF-GATE and Entrepreneurship support to research scholars.

# Early Faculty Induction Programme, which aims at attracting bright and young under-graduate

students in Engineering and Technology/Pharmacy/Architecture, etc. to take teaching as their career.

# S&T based training for entrepreneurial development.

Programmes targeted towards performing scientists:

# The Ramanujan Fellowships.

# The JC Bose National Fellowships.

# The Ramanna Fellowships.

# Shyama Prasad Mukherjee Fellowships.

# SERC Individual Projects.

# Financial assistance to scientists to participate in international conferences and training programmes

# Opportunities to distinguished scientists of Indian origin settled abroad for short term technical assignments to assist in frontier and emerging areas of S&T.

# Post-doctoral Fellowships in Biotechnology and Life Sciences.

Infrastructure development programmes:

# Intensification of Research in High Priority Areas (IRHPA).

# Fund for Improvement of S&T Infrastructure in Higher Educational Institutions (FIST).

# Setting up of centres of excellence/advanced studies in the universities and academic institutions.

# Creation of core groups of professionals with necessary modern facilities required for pursuing research in new and frontier areas of science.

# Creation of new scientific Departments/Organisations.