GOVERNMENT OF INDIA
SCIENCE AND TECHNOLOGY
LOK SABHA

STARRED QUESTION NO:146
ANSWERED ON:30.07.2003
SCIENTIFIC RESEARCH
KINJARAPU YERRANNAIDU

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

(a) whether India is the third largest Scientific Community in the World;

(b) if so, the details of achievements of the scientific research undertaken in the country during 1997-2001; and

(c) the ranking of India in research amongst the World vis-Ã -vis China?

Answer

MINISTER OF HUMAN RESOURCE DEVELOPMENT, MINISTER OF SCIENCE & TECHNOLOGY AND MINISTER OF DEVELOPMENT (DR. MURLI MANOHAR JOSHI)

a) to c) A statement is laid on the table of the House.

STATEMENT AS REFERRED IN REPLY TO PARTS a) TO c) OF LOK SABHA STARRED QUESTION NO. 146 FOR 30.07 REGARDING `SCIENTIFIC RESEARCH`.

a) International comparison of Stock of Scientific and Technical Personnel has limitations as each country adopts its own definitions & coverage of S&T Personnel. These limitations make the international comparison unrealistic.

b) Some of the significant achievements/initiatives of the Scientific Research during the period 1997-2001 are as follows: (1) Established several major research facilities/ centres of excellence in frontline areas of S&T; (2) Deployment of state-of-art seismology and geo-physical instruments in peninsular regions; (3) Launching of technology mission mode project in the areas of sugar, advanced composites, fly ash disposal and utilisation and bamboo applications; (4) Launched Swarnajayanti Fellowship to recognise the work of outstanding young scientists and provide support in project mode with more flexibility; (5) Creation of funds for improvement of S&T infrastructure in academic and related institutions; (6) Established 4 national facilities and supported number of industries as collaborative research programmes under Drugs and Pharmaceuticals; (7) Developed satellites, launch vehicles and application in space research; (8) Developed missiles (Prithvi, Agni-II, etc.), tank (Arjun), pilotless target aircraft (Lakshya), etc., in the area of defence; (9) Self reliance in the areas of nuclear reactor and its entire associated fuel cycle; (10) Application of radiation technology in the areas of health care, agriculture, food preservation, industry and research, has resulted in the release of 22 improved varieties of seeds; (11) Self sufficiency in food production; (12) Identified potential molecules for the development of vaccines and diagnostic for infectious diseases; (13) Developed diagnostic kits for HIV, hepatitis, dengue, assessment of reproductive hormones, Japanese encephalitis, vaccines for leprosy, drug formulation for septic shock, plant tissue culture protocols, formulation of bio-fertilisers, high protein gene from Amaranthus and bioremediation technology for mine spoiled dumps and crude oil spillage; (14) Rice genome mapping; (15) Ginger processing; (16) Launched 21 Jai Vigyan National S&T Missions in the areas of development of new generation vaccines, bio-technology for herbal products development, coffee improvement and establishment of mirror sites for genomics etc; (17) Promote polar science and as a treaty obligation, scientific expedition to Antarctica were undertaken on an annual basis; (18) Archaeological discoveries at Cambay with artefacts dated 7000 to 8000 B.C. (19) Under the Drugs from Sea programme, six organisms possessing anti-diabetic, anti-diarrhoeal, anti-hyperlipidaemic, anti-anxiety, anti-cholesterol, anti-bacterial and larvicidal properties were identified and 84 compounds having interesting biological activity and novel chemical structure were isolated; (20) Design fabrication and air worthiness testing of 9-14 seater light transport aircraft and certification of the 2 seater trainer aircraft HANSA-3; (21) Environment friendly electric car; (22) Large number of technologies have been developed and commercialized in the fields of drugs and pharmaceuticals, food processing, leather processing products, construction materials and bio-medical devices, etc.; (23) A new Science and Technology Policy has been formulated.

c) International comparison of research based on all the input and output parameters collectively is not available. However, as per the latest available official statistics, the expenditure on Research and Development (R&D) as percentage of Gross National Product (GNP) for India is higher than China. India spent 0.81% of GNP on R&D as compared to 0.66% by China for the years 1998 and 1997 respectively. In terms of Research Papers published in the Journals covered under Science Citation Index (SCI) database, India and China ranked 14th and 8th respectively in the year 2002. This comparison has limitations as the number of Journals covered for different countries is not uniform.