

Governments as a percentage of GNP from 0.93% in 1989-90 to 0.80% in 1995-96. However, in absolute terms the R&D expenditure has gone up substantially.

(c) and (d) Council of Scientific & Industrial Research (CSIR) is perhaps the first and the only organisation in India to formulate and publically announce its Intellectual Property Management Policy. CSIR laboratories are in the forefront of intellectual Property and Patents movement in the country and account for about 20-25% share of all the patents filed in India by Indians.

The laboratories monitor the performance of their licensees through Business Development Groups. CSIR have now set up a Customer Satisfaction Evaluation Cell to monitor the feed back from end users, perhaps a pioneering effort unmatched by any other Government Organisation.

(e) Does not arise.

Structural Engineering Centre CSIR

1365. SHRI V. HANUMANTHA RAO: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) the activities of the Structural Engineering Research Centre of CSIR in Chennai;

(b) whether it accepts projects from State Governments;

(c) the outside earning SERC, Chennai in the last three years; and

(d) if so, full details thereof?

THE MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY AND THE MINISTER OF STATE OF THE MINISTRY OF POWER (SHRI YOGINDER K. ALAGH): (a) The Structural Engineering Research Centre (SERC), Chennai, a constituent laboratory of Council of Scientific & Industrial Research (CSIR) is engaged in carrying

out Research and Development in Structural Engineering *inter alia* covering dynamics, experimental mechanics, fatigue, computer aided analysis & design, and software development of structures, optimal design of transmission line towers and wind Engineering including cyclone disaster mitigation.

(b) The SERC, Chennai accepts projects related to its areas of R&D from diverse customers including State Governments.

(c) and (d) External Cash Flow (ECF) receipts from contracted R&D, consultancy, and services rendered for the last three years were as follows:—

(Rupees in Lakhs)

Year	Sector			Total
	Govt. (Central & State)	PSU (Central & State)	Pvt. (Sources)	
1994-95	18	27	81	126
1995-96	27	36	118	181
1996-97	33	18	160	211

दिल्ली में भूकम्प

1366. श्री राघवजी: क्या विज्ञान और प्रौद्योगिकी मंत्री यह बताने की कृपा करेंगे कि:

(क) वर्ष 1997 में दिल्ली में भूकम्प के कितने झटके महसूस किए गए और इसके क्या कारण हैं;

(ख) इन झटकों से कितना नुकसान हुआ; और

(ग) भविष्य में भूकम्प के ऐसे झटकों को रोकने के लिए क्या उपाय किए जा रहे हैं?

विज्ञान और प्रौद्योगिकी मंत्रालय में राज्य मंत्री तथा विद्युत मंत्रालय के राज्य मंत्री (श्री योगिन्द्र कुमार भगतलाल अलवा): (क) पहली जनवरी से 23 जुलाई, 1997 के बीच मध्यम दर्जे के भूकम्प के ऐसे कुल 14 झटके दर्ज किए गए जिसकी तीव्रता रिक्टर

पैमाने पर 2.5 से अधिक न थी। दिल्ली मुरादाबाद, सोहना तथा अरावली भ्रंशों के निटक स्थित हैं जो स्थानीय झटकों को उत्पन्न करते हैं।

(ख) इन झटकों की वजह से जान-माल की किसी हानि की रिपोर्ट नहीं मिली है।

(ग) स्थान, समय एवं परिणाम को ध्यान में रखते हुए वैज्ञानिक तौर पर खासी सटीकता के साथ भूकंप का पूर्वानुमान लगाना संभव नहीं है। भूकंप को रोकने का कोई भी प्रमाणिक तरीका नहीं है।

Smuggling of genetic resources

1367. DR. MOHAN BABU:

SHRI SOLIPETA

RAMACHANDRA REDDY:

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

(a) whether United States was indulging in large scale smuggling of India's genetic resources and then patenting them to the detriment of our economy; and

(b) the measures taken to check such activity?

THE MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTER OF STATE OF THE MINISTRY OF POWER (SHRI YOGINDER K. ALAGH): (a) No complaint has been received; genetic resources in the public domain are not patentable.

(b) A national legislation to regulate access to genetic materials is under formulation.

Planetary Features Similar to Earth

1368. DR. SHRIKANT RAMACHANDRA JICHKAR: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether Government are aware of the latest finding that Jupiters moon, Ganymede has feature similar to the earth;

(b) if so, the information available with Government about this; and

(c) in what manner will this information be useful for scientific research in India?

THE MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY AND THE MINISTER OF STATE OF THE MINISTRY OF POWER (SHRI YOGINDER K. ALAGH): (a) Yes, Sir.

(b) and (c) The spacecraft Galileo has been studying the planet Jupiter and its moon very closely for more than a year. The Ganymede is seen to have magnetic fields associated with it extending into the space. Scientists conjectured that its magnetic field may have its origin similar to that of the magnetic field of the earth. Such studies are of great interest and useful for scientific research in India to understand the origin of the magnetic fields of Planets, stars, galaxies etc.

Autonomy to Scientific Establishments

1369. SHRI VIRENDRA KATARIA: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) the steps being taken to improve the Research and Development in Science and Technology; and

(b) what steps are taken for more autonomy in scientific establishments in the country and taking them away from the bureaucratic framework?

THE MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY AND THE MINISTER OF STATE OF THE MINISTRY OF POWER (SHRI YOGINDER K. ALAGH): (a) Several initiatives have been taken to improve research and development in Science & Technology. Some of these are:

Increased support to S&T in successive Plans for pursuing R&D efforts through the various S&T