

GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
RAJYA SABHA
UNSTARRED QUESTION No. 2405
TO BE ANSWERED ON THURSDAY, MARCH 23, 2017

STRENGTHENING RESEARCHES IN EARTH SCIENCES

2405. SHRI K.C. RAMAMURTHY:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether Government has taken any measures to strengthen the researches in earth sciences in Indian universities and in think tanks organisations;
- (b) the details of challenges faced by earth science researches and documentation thereof;
- (c) the collaboration made between inter-Governmental and international agencies to strengthen and innovate earth science researches;
- (d) whether Government is planning to introduce Masters level university programmes in core and diversified areas of earth science studies in our universities; and
- (e) If so, the details thereof; if not the reasons therefor?

ANSWER

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

- (a) Yes Sir. The Ministry is supporting the following academic programmes:
 - User Oriented M.Tech Programme in "Ocean Technology" in IIT Madras.
 - M.Tech & Ph.D. Programme in Atmospheric-Oceanic Science and Technology in IIT Delhi.
 - M.Sc. course in Ocean and Atmospheric Science at Centre for Earth & Space Sciences, University of Hyderabad.
- (b) The challenges include the development of required infrastructure with High Performance Computers (HPC), Aircrafts and research ships including polar research vessel, development of technology for the exploration and sustainable harnessing of marine living and non-living resources and development of skilled and trained manpower in Earth Sciences with the support of academic institutions in the country and abroad.

(c) Under bilateral and multilateral international agreements with various Government agencies in the field of Earth system science, the Ministry supports research proposals, joint observational campaigns, joint development work, exchange of resources personnel and training abroad, workshops etc. Projects being implemented under these collaboration provide excellent opportunity to students/researchers to work and interact with foreign researchers, visit their labs etc.

- Under a MoU with Belmont Forum countries, Indian Scientists are supported for international collaborative research through joint calls in societal relevant global environmental change challenges.
- Under a MoU with the Natural Environmental Research Council (NERC), the research institutes are participating in joint observational campaigns for studying the various processes involved in understanding the monsoonal behavior. Under this MoU, research institutes are part of projects funded by the ministry for undertaking research in Monsoon, Atmospheric Pollution and Human Health, Changing Water Cycle.
- Under the MoU with Research Council of Norway, the research institutes are part of the various projects being funded by the ministry for undertaking research in Polar Research and Geo-Hazards.
- The Ministry has launched a mission mode program such as Monsoon Mission wherein various national and international agencies work together to improve prediction of the monsoon in various spatial and temporal scales. In addition various flagship programs such as Metro Air Quality, Climate Change Research including atmospheric Chemistry wherein the researchers/scientists from universities and research institutes working in these projects get hands-on experience on the sophisticated equipment's through participation in field campaigns, laboratory experiments and data analysis /modeling techniques etc.
- India has signed an Implementing Agreement (IA) to become a member country of the International Energy Agency - Ocean Energy Systems (IEA-OES). A Memorandum of Understanding (MoU) was signed between the Ministry of Earth Sciences and the Japan Agency for Marine-Earth Science and Technology (JAMSTEC) to establish and promote cooperation between in the field of marine and earth science and technology.

(d) No Sir.

(e) Already, several universities are offering master level courses in Meteorology/Atmospheric science, Physical/Chemical/Biological oceanography, Geophysics/Geology with the support of Ministry of Earth Sciences. In addition, special grants are offered to various Indian Institute of Technologies (IITs)/Indian Institute of Science, Bengaluru to support Research & Development (R&D) on priority area of Earth System Sciences.
