

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO. 2458
TO BE ANSWERED ON WEDNESDAY, 15TH MARCH, 2023**

LAUNCHING OF REACHOUT UMBRELLA SCHEME

2458. SHRI N. REDDEPPA:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) the details of the REACHOUT umbrella scheme launched for capacity building;
- (b) the components under the scheme along with the progress made in this respect, State/UT-wise; and
- (c) the measures taken/proposed to be taken in this regard?

ANSWER

THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR
MINISTRY OF SCIENCE AND TECHNOLOGY
AND EARTH SCIENCES
(DR. JITENDRA SINGH)

(a)-(c) Ministry implements an umbrella scheme Research, Education and Training Outreach (REACHOUT) which consists of following sub-schemes for capacity building :

- R&D in Earth System Science (RDESS)
- International Training Centre for Operational Oceanography (ITCOcean)
- Program for Development of Skilled manpower in Earth System Sciences (DESK)

The scheme is being implemented for entire country and not State/UT-wise.

The main objectives of the above sub-schemes are

- Supporting various R &D activities in the thrust areas of different components of Earth System Sciences that are theme and need based and that would help in attaining the National goals set up for MoES.
- Develop useful collaborations with international organizations for mutual transfer of advanced knowledge in science and technology in Earth Sciences and to provide services to developing countries.
- Develop skilled and trained manpower in Earth Sciences with the support of academic institutions in the country and abroad.

R&D in Earth System Science (RDESS)

Under this sub-scheme, proposals from various academic/research organizations and universities in the different fields of Earth system Science are supported with an intention that it would help in improving our understanding of the earth system (the atmosphere, ocean, solid earth, biosphere and would help in attaining the National goals set up by MoES. For this, projects that are multi-disciplinary and multi-institutional in nature are encouraged and formulated. These are need-based and time-based projects and the deliverables of these projects are expected to have impact on the overall deliverables of Earth System services (weather, climate and marine services) in the country.

The Technology Research Board (TRB) constituted is specifically oriented towards indigenous development of technologies in the multidisciplinary field of Earth Sciences. The TRB is mandated to facilitate, promote, guide and implement the development of indigenous technologies till dissemination.

Capacity Building and manpower support

To address the issue of depleting scientific manpower in the field of Earth Sciences, the Ministry had taken several steps for human resource development which include funding of M.Tech, M.Sc and Ph.D programmes at premiere institutes of the country, establishment of MoES Chairs at IIT's and IISER, opening of Centers of Excellence at various Universities with state-of the art research facilities. The details are as follows:

- Supported 2-year M.Sc. course in Ocean & Atmospheric Sciences in University of Hyderabad. The project completed in March 2019.
- Supporting/Sponsoring M.Tech and PhD programs in Atmospheric-Oceanic Sciences & Technology at IIT Delhi
- Supporting User-oriented M.Tech. programme on Ocean technology at IIT Madras

Under Earth Science & Technology Cell (ESTC), MoES supports theme based focused network R&D activities involving multi institutions with focused objectives and definite deliverables that can be translated into operational use. It also helps towards capacity building and creating adequate expertise in various disciplines of earth system Science for the benefit of society and national development.

Following ESTCs were established in various universities for conducting research in different specialized areas of marine and atmospheric sciences:

- Marine Coastal Ecology of west Coast of India at M.K. Bhavnagar University.
- Satellite Meteorology at SRM University Katanklathur, Chennai (SRMU), Tamilnadu.

- Coastal and Ocean Technology with initial project entitled “Hydrodynamic performance characteristics of Caisson type Breakwater at NITK, Surathkal, Mangalore, Karnataka.
- Marine Biotechnological Studies at Sathyabama Institute Science & Technology (SIST) Chennai, with National Institute of Ocean Technology (NIOT) and Centre For Marine Living Resources and Ecology (CMLRE) of Ministry as collaborating Institutes.

International Training Centre for Operational Oceanography

In order to enable support for capacity building activities in the field of operational oceanography for the Indian Ocean Rim (IOR) countries and islands region as well as Africa, an International Training Centre was set-up at INCOIS under the Memorandum of Association (MoA) signed between MoES and UNESCO in 2013. This centre is aimed towards promoting the development and optimization of scientific base, technology and information system for operational oceanography at national, regional and global scales.

Development of Skilled Manpower in Earth System Sciences (DESK) at IITM, Pune:

DESK program was initiated to create a large pool of trained and dedicated multidisciplinary earth system and climate research manpower in the country with in-depth hands-on expertise on individual physical processes of the land, ocean, atmosphere, biosphere and cryosphere with special emphasis on climate modeling.

- Implementation of JRF/SRF program of the Ministry and their ab-initio training in DESK of on-to-two semester duration-part of human resource development
- Organize courses (of short, medium duration) on specific or targeted areas for skilled manpower development within and outside of MoES by conducting short term schools and workshops of 1 week to 10 day duration
- To strengthen research and education support for science of the climate and climate change and to establish linkages amongst the education, research and operational organization in the country.
