

**GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY
LOK SABHA
UNSTARRED QUESTION NO. 3872
ANSWERED ON 18/12/2024**

CLIMATE SCIENCE RESEARCH INITIATIVES

3872. Dr. Dharamvira Gandhi:

Will the Minister of SCIENCE AND TECHNOLOGY विज्ञान और प्रौद्योगिकी मंत्री **be pleased to state:**

- (a) the current research initiatives in climate science aimed at understanding and mitigating climate change;**
- (b) the percentage of the budget allocated by the Government to environmental research in the 2023 and the key outcomes achieved during the year;**
- (c) the details of collaborations established with international organisations or institutions to enhance climate science research; and**
- (d) the measures taken to disseminate research findings to policymakers and the public to inform climate action strategies?**

ANSWER

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

विज्ञान और प्रौद्योगिकी तथा पृथ्वी विज्ञान मंत्रालय के राज्य मंत्री (स्वतंत्र प्रभार)
(डॉ. जितेंद्र सिंह)

(a) Yes Sir. Research initiatives in climate science are being led by Ministry of Science and Technology (MoST), Ministry of Earth Sciences (MoES), Ministry of Environment, Forest and Climate Change (MoEF&CC) and Ministry of Agriculture and Farmers Welfare.

Department of Science and Technology (DST) is leading two National Missions on Climate Change: the National Mission for Sustaining the Himalayan Ecosystem (NMSHE) and the National Mission on Strategic Knowledge for Climate Change (NMSKCC). These missions provide support to academic and research institutions to study various aspects

of climate change, including health, coastal vulnerability, agriculture, water resources, and the Himalayan ecosystem. Department of Biotechnology (DBT) has taken initiatives to develop the enabling technologies and products for a climate resilient industrial growth such as high Performance Bio-manufacturing initiative.

Centre for Climate Change Research (CCCR) at the Indian Institute of Tropical Meteorology (IITM), Pune established by MoES, focuses on improving the understanding of regional climate change and provide scientific inputs for framing climate change mitigation and adaptation policies. First Earth System Model from India, the IITM Earth System Model, was developed at CCCR-IITM Pune.

MoEF&CC has initiated different studies under the Climate Change Action Programme (CCAP), including National Carbonaceous Aerosols Programme (NCAP), Long Term Ecological Observatories (LTEO) Programme to create and strengthen the scientific and analytical capacity for assessment of climate change in the country.

(b) There is no separate allocation of budget specifically for environmental research in the MoES and MoST, however a budget of Rs. 125 Crore was allocated in 2023 by DST for the implementation of Climate, Energy and Sustainable Technology initiatives. Under the Environment Research and Development Program (ERDP) of the MoEF&CC, Rs. 3 Crore was also allocated for the year 2023.

Key achievements of DST includes the strengthening of State Climate Change Cells (SCCCs) in Telangana, Tamil Nadu, Kerala, Puducherry, Karnataka, Chhattisgarh, West Bengal, Arunachal Pradesh, Nagaland, Jammu & Kashmir, and Meghalaya. Additionally, a new Centre of Excellence (CoE) focused on Indian monsoons has been established at the University of Allahabad and R&D projects in the area of Hydro Climate Extremes and Himalayan Cryosphere were supported during the year. Further, first of its kind 21-day Capacity Building Program in Glaciology, featuring on-field training at the Machoi Glacier in Drass, Ladakh, has been successfully conducted by the University of Kashmir, benefiting twenty doctoral and post-doctoral students nationwide.

DST has also showcased the outcomes of Climate Change Vulnerability and Climate Resilient Development Strategy in the Indian Himalayan Region at a dedicated side event during the COP-28 conference of the United Nations Framework Convention on Climate Change (UNFCCC) in Dec 2023 at Dubai.

(c) Several collaborations have been established with international organisations and institutions for joint research initiatives aimed at enhancing Climate science research involving countries like Australia, Austria, Bangladesh, Bhutan, Brazil, Canada, Cambodia, Denmark, Egypt, Finland, France, Germany, Israel, Japan, Mauritius, Morocco, Myanmar, Namibia, Netherlands, Russia, South Africa, Sweden, Switzerland, USA and UAE.

Scientists from IITM-Pune have contributed to the IPCC Sixth Assessment Report as Co-coordinating Lead Authors and Lead Authors. The CCCR-IITM Pune, under MoES, is actively involved in the Climate Model Experiment & Coupled Model Inter-comparison Project (CMIP) of the World Climate Research Program (WCRP) to address projected climate changes. In addition, under the National Monsoon Mission, an Indo-US collaboration has been set up between MoES and the National Oceanic and Atmospheric Administration (NOAA), USA, for the development of dynamical prediction system of monsoon at various scales over India.

(d) Under the DST-led National Missions, NMSHE and NMSKCC, several public awareness programmes on climate change and adaptation have been regularly organized. The dissemination has been through workshops, seminars and publications that engage and sensitise a diverse range of stakeholders, including state officials, scientists, research scholars, community members, civil society representatives, youth & women organizations and NGOs.
