GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

LOK SABHA
UNSTARRED QUESTION NO. 2455
TO BE ANSWERED ON 04.08.2025

Climate Mitigation Technologies

2455. SHRI BASTIPATI NAGARAJU:

Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

(a) whether the Government has taken steps for the mitigation of climate change through the development and adoption of technology;
(b) if so, the details thereof and if not, the reasons therefor;
(c) the details regarding the initiatives undertaken to develop and deploy climate mitigation technologies in key sectors such as agriculture, fisheries etc;
(d) whether the Government has made effort to raise awareness and promote the use of these technologies among farmers, fishermen and vulnerable communities who are directly affected by climate change, if so, details thereof and if not, the reasons therefor; and
(e) whether the Government has established partnerships with research institutions, start-ups or Deep Tech enterprises to accelerate innovation in climate resilience and mitigation, if so, the details thereof and if not, the reasons therefor?

ANSWER
MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(SHRI KIRTI VARDHAN SINGH)

(a) to (e): To meet its climate goals, the Government of India has put in place an ecosystem to develop and adopt climate technologies, including those required for deployment of renewable energy, improving energy efficiency, electric mobility, climate resilient infrastructure, sustainable transport, and building climate resilience.

The National Action Plan on Climate Change (NAPCC), an overarching framework for all climate actions, calls for deploying appropriate technologies for both climate adaptation and mitigation at an accelerated pace. It also calls for engineering new and innovative forms of market, regulatory and voluntary mechanisms to promote sustainable development. The schemes like Production Linked Incentive (PLI) are for promoting local manufacturing of clean technologies, while carbon market instruments such as Perform Achieve and Trade (PAT) Scheme, Carbon Credit Trading Scheme (CCTS) and green bonds help draw in private capital.

Thirty-four States have also developed their own climate action plans in line with the NAPCC. The state-level initiatives contribute to national level efforts towards building a supportive environment for development of clean technologies and industrial systems.

India takes holistic approach and not sector specific mitigation action, including in agriculture and fisheries sectors under the Nationally Determined Contribution (NDC) submitted to the UNFCCC. The goal is to reduce overall emission intensity and improve the energy efficiency of the economy over time and at the same time protecting the vulnerable sectors of the economy

and segments of our society. Climate change is a cross-sectoral issue spanning various Ministries/Departments concerning sectors like agriculture, water resources, human health, power, renewable energy, transport, urban, etc. These Ministries and Departments also establish need-based partnerships.

The Department of Fisheries, Government of India has established partnerships with research institutions and supported startups to accelerate innovation and technology infusion in fisheries and aquaculture, which includes aspects of climate resilience in the fisheries sectors. In addition, the department is actively supporting fisheries startups and entrepreneurs under the Pradhan Mantri Matsya Sampda Yojana (PMMSY), providing seed funding, incubation support, and facilitating innovation in sustainable aquaculture, climate-smart practices, and digital technology applications. These efforts are aimed at driving innovation, sustainability, and economic efficiency in the fisheries value chain while enhancing climate resilience.

The Indian Council of Agricultural Research (ICAR) flagship network project, National Innovations in Climate Resilient Agriculture (NICRA) is promoting climate resilient technologies to the farmers with partner institutes from all parts of the country including ICAR research institutes, State Agricultural Universities (SAUs), Indian Institute of Technology (IIT), NGOs and Krishi Vigyan Kendras (KVKs) to develop and promote climate-resilient technologies in agriculture. NICRA experiences are also shared in international fora such as G20, SAARC, BIMSTEC, UN Climate Change Conferences, etc.

The International Rice Research Institute (IRRI), International Maize and Wheat Improvement Center (CIMMYT) and Commonwealth Scientific and Industrial Research Organisation (CSIRO) through their project 'Cereal System Initiative for South Asia' (CSISA), a regional program of Excellence in Agronomy (EiA) in collaboration with ICAR- Central Research Institute for Dryland Agriculture (CRIDA) aimed to develop a regional strategy on climate change adaptation and sustainable intensification through agronomy. The Bill & Melinda Gates Foundation (BMGF) and Borlaug Institute for South Asia (BISA) is working with national agriculture research systems in South Asia to develop the Atlas of Climate Adaptation in South Asian Agriculture (ACASA) aiming to provide granular-scale information for South Asian countries at the village scale by integrating various spatial and temporal risks that are likely to impact agriculture.

ICAR-Central Agroforestry Research Institute (CAFRI), Jhansi, has been designated as the technical agency for the Agroforestry Component under Rashtriya Krishi Vikas Yojana (RKVY). The CAFRI provides technical guidance on suitable Agroforestry models across various agro-climatic zones and supports capacity building and implementation planning. In addition, institutions such as Indian Council of Forestry Research and Education (ICFRE), SAUs, and Forest Development Corporations are engaged for model development and technical consultations.

Further, the Department for Promotion of Industry and Internal Trade (DPIIT) signed a Memorandum of Understanding (MoU) with the Global Energy Alliance for People and Planet (GEAPP) to accelerate innovation, sustainability, and entrepreneurship in India's clean energy and manufacturing sectors. Startup India is a flagship initiative of the Government of India to build a strong ecosystem for nurturing innovation and startups in the country which will drive economic growth and generate large scale employment opportunities.

The Department of Science and Technology is implementing National Mission on Strategic Knowledge for Climate Change (NMSKCC), one of the missions under NAPCC, which focuses on building human and institutional Science and Technology capacities.

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