

GOVERNMENT OF INDIA  
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

**LOK SABHA**  
**UNSTARRED QUESTION NO. 3336**  
TO BE ANSWERED ON 12.07.2019

**Impact of Climate Change**

3336. DR. SUJAY RADHAKRISHNA VIKHE PATIL:

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

- a) whether the Government has conducted any study to assess the impact of climate change on different eco-systems including agriculture in India during the last two years,
- (b) if so, the details thereof;
- (c) whether any action plan has been chalked out by the Government to combat ill effects of climate change in coordination with other global agencies; and
- (d) if so, the details thereof and the salient features of such action plan?

**ANSWER**

**MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE**  
**(SHRI BABUL SUPRIYO)**

**(a) and (b)** Under the National Innovations in Climate Resilient Agriculture (NICRA) project implemented by the Indian Council of Agricultural Research (ICAR) during 2011-2017, studies were conducted on likely impact of changing weather variables on crop yields across the country. Wheat yield is projected to reduce by 6 to 12% towards the end of the century with significant spatio-temporal variations. Analysis of rainfall variability and rainfed rice productivity indicates close correlation of rice yields to monthly rainfall with largest variations during second fortnight of September.

Department of Science & Technology (DST) has supported Indian Agriculture Research Institute, New Delhi and Banaras Hindu University to study the impact of climate change on rice, wheat and sugarcane through crop simulation models for Indo-Gangetic Region. The impact of climate change on diseases and insect-pests of chickpea and pigeon pea crop was also studied in collaboration with International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Hyderabad.

DST is also supporting studies to investigate the implications of climate change driven extreme events in the Indian coastal regions and to evaluate the vulnerability of coastal infrastructure and water resources due to climate change.

National Water Mission under Ministry of Jal Shakti has been conducting studies on impact of climate change on Hydro-meteorological processes and water resources for seven river basins namely Mahanadi, Mahi, Luni, Tapi, Sabarmati, Subarnarekha and western flowing rivers from Tadri to Kanyakumari in association with research institutes like IITs, NITs, IISc and National Institute of Hydrology.

Further, a report titled “Climate Change and India: A 4X4 Assessment - A Sectoral and Regional Analysis for 2030s” of this Ministry provides assessment of impacts of climate change in 2030 in four key sectors of Indian economy, namely, agriculture, water, forests and human health in four climate sensitive regions of India, viz. the Himalayan region, the Western Ghats, the Coastal region and the North-Eastern Region.

**(c) and (d)** Climate change is a global phenomenon and requires cooperation of all nations based on the principle of ‘Common but Differentiated Responsibilities and Respective Capabilities’. India is a Party to the United Nations Framework Convention on Climate Change, its Kyoto Protocol and the Paris Agreement. India is meeting its commitments under the aforesaid instruments. Actions by eight missions under the National Action Plan on Climate Change (NAPCC) are being implemented by various Ministries in the area of solar energy, energy efficiency, sustainable habitat, water, Himalayan ecosystem, Green India, sustainable agriculture and strategic knowledge for climate change. Thirty-three States/Union Territories have also prepared State Action Plan on Climate Change in line with NAPCC taking into account State’s specific issues relating to climate change. Under NICRA project as part of National Mission on Sustainable Agriculture, heat and drought tolerant wheat, flood tolerant rice, drought tolerant pulses, water logging and high temperature tolerant tomato varieties have been developed. ICAR in collaboration with International Crops Research Institute for Semi-Arid Tropics has worked on a project for enhancing resilience to climate variability and change in watersheds with a focus on groundnut and pigeon pea in the Indian semi-arid tropics. The Technology Demonstration Component of NICRA enhances resilience and adaptive capacity of the farmers and addresses climate variability in 151 climatically vulnerable districts of the country.

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