

GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
RAJYA SABHA  
UNSTARRED QUESTION NO-3075  
ANSWERED ON - 23/03/2021

**ASSESSMENT OF CLIMATE CHANGE OVER INDIAN REGION**

**3075. SHRI M.V. SHREYAMS KUMAR:**

**Will the Minister of EARTH SCIENCES be pleased to state:**

- (a) whether the Ministry has published “Assessment of Climate Change over Indian Region” recently;
- (b) if so, the details thereof; and
- (c) whether the Ministry has taken steps in view of this new report to combat and adapt to the effects of climate change?

**ANSWER**

**MINISTER FOR MINISTRY OF SCIENCE AND TECHNOLOGY  
AND MINISTRY OF EARTH SCIENCES  
(DR. HARSH VARDHAN)**

- (a) Yes, Sir. The Ministry of Earth Sciences (MoES), has recently published a Climate Change report entitled "Assessment of Climate Change over the Indian Region" which covers all the aspects of regional climate change including the climatic extremes across India.
- (b) The preparation of this report was led by the Center for Climate Change Research (CCCR) at the Indian Institute of Tropical Meteorology (IITM) Pune. The report from the MoES is the first of its kind where a comprehensive discussion has been made regarding the impact of human-induced global climate change on the regional climate and monsoon of the Indian subcontinent, adjoining Indian Ocean and the Himalayas.

Based on the available climate records, the report documents the surface air temperature over India has risen by about 0.7 °C during 1901–2018 which is accompanied with an increase in atmospheric moisture content. The sea surface temperatures in the tropical Indian Ocean have also increased by about 1 °C during 1951–2015. Clear signatures of human-induced changes in climate have emerged over the Indian region on account of anthropogenic GHG and aerosol forcing, and changes in land use and land cover which have contributed to an increase in the climatic extremes. The complex interactions between the earth system components amidst the warming environment and regional anthropogenic influences have therefore led to a rise in frequency of localized heavy rainfall events,

drought and flood occurrences, and increase in the intensity of tropical cyclones etc. in the last few decades. Future projections of regional climate, performed under different climate change scenarios, too indicate robust changes in the mean, variability and extremes of several key climatic parameters over the Indian subcontinent and adjoining areas (e.g. land temperature and precipitation, monsoons, Indian Ocean temperature and sea level, tropical cyclones, Himalayan cryosphere, etc).

- (c) India is a Party to the United Nations Framework Convention on Climate Change (UNFCCC), its Kyoto Protocol (KP), and the Paris Agreement (PA). Independent studies rate India's efforts highly and compliant with the requirements under PA. The Government of India stands committed to combating climate change through its several programmes and schemes including the National Action Plan on Climate Change (NAPCC) which comprises missions in specific areas of solar energy, energy efficiency, water, agriculture, Himalayan ecosystem, sustainable habitat, green India, and strategic knowledge on climate change. The NAPCC provides an overarching framework for all climate actions. Thirty-three States /Union Territories have prepared their State Action Plan on Climate Change (SAPCC) in line with NAPCC taking into account the State's specific issues relating to climate change. These SAPCCs outline sector-specific and cross-sectoral priority actions, including adaptation.

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