GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO. 5983
TO BE ANSWERED ON WEDNESDAY, 1ST APRIL, 2026

RISE IN TEMPERATURE

5983. SHRI KALYAN BANERJEE:

Will the Minister of EARTH SCIENCES be pleased to state:

(a) whether it is a fact that while 23 per cent of world's population lived with extreme heat in 2010-2020 and this figure is set to grow to 41 per cent over the next three decades by 2050 and if so, the details thereof;
(b) whether the Government proposes to take any concrete and effective steps to check and control the rise in temperature in the country and if so, the details thereof;
(c) the details of steps taken by the Government to achieve the global goal of net zero carbon emission by 2050; and
(d) whether any study or research has been conducted regarding the impact of climate change and if so, the details thereof and if not, the reasons therefor?

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

(a) Yes. As per the study conducted by the University of Oxford and published in the journal Nature Sustainability, it is reported that about 23% of the world's population was exposed to extreme heat conditions around 2010. This proportion is projected to increase significantly to about 41% by 2050 under a scenario of rising global temperatures. The study further indicates that nearly 3.79 billion people could be affected by extreme heat by mid-century, particularly in regions such as South Asia, Africa, and parts of Southeast Asia. The increase is attributed to global warming driven by continued greenhouse gas emissions, with impacts expected to intensify as global temperatures approach or exceed 1.5°C to 2°C above pre-industrial levels.

(b) IMD contributes to climate adaptation activities such as heat action plans by providing early warnings of extreme weather events, including heatwaves, and disseminating timely forecasts and advisories to minimize adverse impacts. The effective steps for climate adaptation for the rise in temperature in the country taken by the Government are as follows:

- Heat Action Plans (HAPs): The National Disaster Management Authority (NDMA) is collaborating with 23 states to implement HAPs, which include early warning systems, awareness campaigns, public health responses, and setting up cooling centers.

- The India Meteorological Department (IMD), under the Ministry, issues special heat wave warning bulletins and impact based heatwave forecasts, providing details of guidelines or advisories for adopting heat-resilient urban planning measures such as cool roofs, urban forests, water bodies and reflective infrastructure at meteorological sub-division and district levels to various users, including the Ministry of Home Affairs, NDMA, State Disaster Management Authorities, Deputy Commissioners/District Magistrates, health departments, Indian Railways, road transport, and the media.
- Since 2023, IMD has also commenced issuing seasonal and monthly heatwave Outlooks to enable proactive measures in reducing heatwave-related risks across various parts of the country.
- Further, IMD communicates all forecasts, including heat wave information, to the end user through offline and online media. Additionally, dedicated State websites provide district-specific heatwave information, and sector-specific bulletins are also available for the health and agriculture sectors.

(c) The Government has taken several steps towards achieving the goal of net zero carbon emissions. These include large-scale expansion of renewable energy, development of green energy corridors, promotion of cleaner manufacturing and energy efficiency, and deployment of battery storage systems. The Indian Government remains steadfast in its commitment to combat climate change through various programs and initiatives, such as the National Action Plan on Climate Change (NAPCC) and the State Action Plan on Climate Change (SAPCC). These plans encompass specific missions in areas like solar energy, energy efficiency, water conservation, sustainable agriculture, health, Himalayan ecosystem preservation, sustainable habitat development, Green India, and strategic knowledge for climate change. The NAPCC serves as a comprehensive framework for all climate-related actions. Additionally, India has taken a proactive role in fostering international collaborations through initiatives such as the International Solar Alliance and the Coalition for Disaster-Resilient Infrastructure.

(d) The Ministry carries out continuous monitoring and analysis of weather and climate across the country. Information on extreme temperatures, heatwaves, and cold waves at regional and district levels is documented through Monthly Climate Summaries (https://imdpune.gov.in/cmpg/Product/mcs.php), Annual Climate Summaries (https://imdpune.gov.in/cmpg/Product/acs.php).

In addition, IMD also publishes a monthly and seasonal Climate Diagnostic Bulletin of India (CDBI) (https://imdpune.gov.in/cmpg/Product/Cdbulletin.html), which includes information on temperature and rainfall anomalies, extreme weather events, and large-scale climate drivers such as ENSO and IOD, providing a diagnostic assessment of the prevailing climate conditions over the country. IMD has also prepared climatological analyses on heat wave and cold wave characteristics over India (https://imdpune.gov.in/Reports/Met_Monograph_Cold_Heat_Waves.pdf).

IMD has also assessed the changing rainfall pattern in the country and its extremes in the recent 30 years in different states and districts. Reports over different states on "Observed Rainfall Variability and Changes" is available on the IMD Pune website (https://imdpune.gov.in/Reports/rainfall%20variability%20page/raintrendnew.html).

The Intergovernmental Panel on Climate Change (IPCC) prepares comprehensive Assessment Reports about knowledge on climate change, its causes, potential impacts, and response options based on the published studies. The IPCC Sixth Assessment Report (2021-2023) consisted of:

- WG I (Aug 2021): The Physical Science Basis
- WG II (Feb 2022): Impacts, Adaptation, and Vulnerability
- WG III (Apr 2022): Mitigation of Climate Change
- Synthesis Report (Mar 2023): Summarizing the comprehensive findings, which can be accessed at https://www.ipcc.ch/reports/

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