

**GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
LOK SABHA  
UNSTARRED QUESTION NO. 553  
TO BE ANSWERED ON WEDNESDAY, 22<sup>ND</sup> JULY, 2026**

**HEATWAVE FORECASTING AND EARLY WARNING SYSTEMS AT THE  
DISTRICT LEVEL**

553. SHRI UMMEDA RAM BENIWAL:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether any district-level heatwave forecasting and early warning system has been developed for vulnerable regions of the country and if so, the details thereof;
- (b) whether any assessment has been undertaken to identify districts vulnerable to extreme heat events including Barmer district of Rajasthan and if so, the details thereof;
- (c) whether any mechanism is in place for dissemination of heatwave forecasts and impact-based warnings to local authorities and the public at the district level and if so, the details thereof; and
- (d) the measures taken by the Government to strengthen heatwave monitoring, forecasting and early warning systems in the country?

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

- (a) Yes. The India Meteorological Department (IMD), under the Ministry of Earth Sciences (MoES), issues warnings and alerts, including impact-based forecasts (IBFs) for heatwaves, at the district level twice a day. It includes the expected impact and suggested actions to mitigate heatwaves, as outlined in the National Disaster Management Authority (NDMA) guidelines and the heat action plan. These impact-based forecasts and risk-based warnings at the district level are disseminated to disaster managers, stakeholders, the media, and the general public through multiple communication channels, including email, APIs, mobile applications, social media platforms, websites, electronic and print media, mass communication systems, and Common Alerting Protocol (CAP)-based dissemination mechanisms.
- (b) Yes. IMD has developed the Hazard and Vulnerability Atlas of India, which provides district-wise vulnerability assessments for heatwave hazards (<https://imdpune.gov.in/hazardatlas/index.html>). The Atlas covers all districts of the country, including Barmer district in Rajasthan. As per the Atlas, Barmer district has a Heatwave Vulnerability Index of 0.54 on a scale of 0 to 1, placing it in the High Vulnerability category.

- (c) IMD is sharing its heatwave bulletins with different stakeholders, including Disaster Management Authorities, Health Departments, Labour Departments, Indian Railways, Transport Department, Forest Departments, etc, on a regular basis. Further, IMD shares heatwave warnings with the general public through Websites, Mass Media, Social Media, WhatsApp groups, Mobile Apps, APIs, Common Alert Protocols, etc. As a pilot initiative, IMD initiated the dissemination of impact-based heatwave warnings to informal workers through their respective associations in a simple, easy-to-understand, and actionable format. Regular meetings are also held by the NDMA with various stakeholders to disseminate the IMD forecast for anticipatory and on-the-ground actions. Most of the heat wave-related products are available on a web-GIS-based platform and are openly accessible to the general public ([https://dss.imd.gov.in/dwr\\_img/GIS/heatwave.html](https://dss.imd.gov.in/dwr_img/GIS/heatwave.html)).
- (d) The Government has significantly strengthened heatwave monitoring, forecasting, and early warning systems through the India Meteorological Department in collaboration with the NDMA, State agencies, and local health departments. Heat Action Plans have been implemented in many parts of the country to provide advance warnings and guidance on preventive measures. Since 2016, IMD has issued seasonal outlooks for temperatures and heatwaves to support planning, along with monthly outlooks, extended-range (weekly) forecasts, and twice-daily heatwave bulletins for the public, disaster managers, and other stakeholders.

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