

GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
**RAJYA SABHA**  
**UNSTARRED QUESTION No. - 1783**  
ANSWERED ON 22/12/2022

**EFFECT OF HEAT WAVES ON LIVESTOCK**

1783. SHRI R. GIRIRAJAN:  
SHRI S. KALYANASUNDARAM:  
SHRI M. MOHAMED ABDULLA:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether Government has taken note of the fact that prolonged heat waves in the country adversely affect the livestock sector as animals are more vulnerable to heat waves; and
- (b) if so, the preventive steps taken/being taken by Government keeping in mind that an urgent mitigation and adaptation plan is needed to tackle the adverse impact of heat waves in the country and the details thereof?

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

- (a) Yes Sir. As per studies, the stress induced due to the heat waves increases respiration and mortality, reduces fertility, modifies animal behaviour, and suppresses the immune and endocrine system, thereby increasing animal susceptibility to some diseases.
- (b) Heat wave is one of the severe weather phenomena for which IMD issues early warning. In the country, appreciable rise in maximum temperatures as well as heat waves are found to be more in the months of April, May & June. As an initiative IMD is issuing Seasonal Outlook for temperatures for the months of April, May & June in the last week of March for planning purpose. This outlook brings out the expected scenario of heat waves also during the period.

The seasonal outlook is followed by Extended Range Outlook issued on every Thursday for next two weeks. In addition to this, the forecast and the colour coded warnings for severe weather including heat wave warning are issued on daily basis for next five days with outlook for another two days.

IMD issues an additional bulletin on heat wave in the morning (8 a.m.) valid for 24 hours for supporting the planning of activities for the day and this bulletin is also disseminated to all concerned. All these bulletins are posted to IMD website also, on a special page created for Heatwaves.

As an adaptive measure, IMD in collaboration with local health departments have started heat action plan in many parts of the country to forewarn about the heat waves and also advising action to be taken during such occasions. Heat action plan became operational since 2013.

The Heat Action Plan is a comprehensive early warning system and preparedness plan for extreme heat events. The Plan presents immediate as well as longer-term actions to increase preparedness, information-sharing, and response coordination to reduce the health impacts of extreme heat on vulnerable populations. NDMA and IMD are working with 23 states prone to high temperatures leading to heat-wave conditions to develop heat action plans.

Recent advancement made in Heat wave forecast and warning follow:-

- Heat Wave Monitoring and Forecasting Information on GIS
- Issue special heat wave & its impact bulletin (March to June) at 1600 hrs IST by including impact of Minimum Temperature, humidity and wind.
- Heat Wave hazard analysis for entire country for four hot weather months (MARCH, APRIL, MAY & JUNE) considering the Maximum Temperature, Minimum Temperature, Humidity, Wind and Duration is completed. This will lead to identification of hazard scores based on different meteorological parameters aggravating impact of Heat Waves. These scores could in future be utilized as threshold to generate Heat Wave impact based alerts for the specific locations.

The link for Heat Wave information web-page is  
[https://internal.imd.gov.in/pages/heatwave\\_mausam.php](https://internal.imd.gov.in/pages/heatwave_mausam.php)

Recently IMD brought out web based online “Climate Hazard & Vulnerability Atlas of India” prepared for the thirteen most hazardous meteorological events, which cause extensive damages, economic, human, and animal losses. The same can be accessed at <https://imdpune.gov.in/hazardatlas/abouthazard.html>. The climate Hazard and vulnerability atlas will help state government authorities and Disaster Management Agencies for planning and taking appropriate action to tackle various extreme weather events. This atlas serves as a reference to IMD to issue impact based forecast for various extreme weather events, including heatwaves.

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