

**GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
LOKSABHA  
UNSTARRED QUESTION NO. 3050  
TO BE ANSWERED ON FRIDAY, 6<sup>th</sup> AUGUST, 2021**

**RISE IN TEMPERATURE**

**3050. SHRIMATI RANJANBEN DHANANJAY BHATT:**

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

- (a) whether it is true that rising temperature leads to severe storms in the country and if so, the details thereof;
- (b) whether the Government proposes to take any concrete and effective steps to check the rise in temperature in the country;
- (c) if so, the details thereof and the timelines proposed in this regard; and
- (d) 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) There has been significant rise in mean temperature across the globe which is expected to trigger more intense meteorological events like intense/severe cyclonic storms.

Recent studies using a 50-year (1970–2019) extreme weather events dataset of India Meteorological Department (IMD) have shown that in the recent decades, there are increased occurrences of extreme weather events including extremely severe cyclonic storm. Also the analysis of past data of cyclones over North Indian Ocean (Bay of Bengal and Arabian Sea) during the period from 1891 to 2020 indicates that, frequency of Extremely Severe Cyclonic Storms has increased in recent few years over the Arabian Sea, since 1990 and remained same over the Bay of Bengal.

These events had significant impacts over various regions of the Indian subcontinent leading to loss of lives and property as well as adversely affecting the livelihood of the vulnerable community.

The details of the Cyclones in North Indian Ocean since 2016 are given below. It can be seen that during recent years, frequency of severe cyclones has increased.

YEAR	Frequency of Cyclones over			Total number of cyclones	Intensity with that of Severe Cyclones or more
	Arabian Sea	Bay of Bengal	North Indian ocean		
2016	0	4		4	1
2017	1	2		3	2
2018	3	4		7	6
2019	5	3		8	6
2020	2	2	1	5	5
2021 (till June)	1	1		2	2

- (b) & (c) Ministry of Earth Sciences has the mandate only to provide forecasts and early warnings.

However, as an adaptive measure to minimize the effects of increasing temperatures, 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 at present with respect to heat action plan.

IMD has started Forecast Demonstration Project (FDP) on heat waves from April 2017 for the hot weather season under which a detailed daily report including realized data of heat waves, weather systems leading to the occurrence of heat waves, diagnosis on the basis of Numerical Model outputs and forecast and warnings for five days is prepared. This bulletin is disseminated to all concerned including health departments.

From April 2018 onwards, IMD started issuing an additional bulletin on heat wave in the morning (8 a.m.) valid for 24 hours to support 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.

- (d) Does not arise.

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