

GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
**RAJYA SABHA**  
**UNSTARRED QUESTION NO. 2749**  
ANSWERED ON 19/12/2024

**CYCLONES IN THE ARABIAN SEA**

2749. SMT. RENUKA CHOWDHURY:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether Government is aware that according to a report by the Ministry, the frequency, intensity, and duration of cyclones in the Arabian Sea have increased and subjected to further increase leading to more damage, if so, the details thereof;
- (b) whether Government is formulating any strategy to tackle the same, if so, the details thereof; and
- (c) whether Government has collated any data on the damage such as crop loss, deaths, infrastructure loss caused by cyclones in the last three years, if so, the details thereof?

**ANSWER**

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

- (a) Based on the dataset from 1990 to 2020, there is an increasing trend in the duration of cyclonic disturbances over the Arabian Sea. In recent years, there has been an increase in the genesis frequency of extremely severe cyclonic storms & above-category systems over the Arabian Sea. There is no significant trend in the frequency of eastward/northeastward recurving tropical cyclones over the Arabian Sea.
- (b) The India Meteorological Department (IMD) is responsible for providing early warnings regarding cyclonic disturbances developing over the north Indian Ocean region and crossing Indian coasts. IMD has developed well-defined mechanisms/technology for early warning on cyclones so as to enable disaster managers to minimize loss of life and damage to property. IMD has one of the best forecasting systems for predicting tropical cyclones using high-resolution advanced mathematical models(including global, regional, and cyclone-specific models) and a suite of quality observations.

IMD has three Area Cyclone Warning Centres at Chennai, Kolkata & Mumbai and four Cyclone Warning Centres at Ahmedabad, Bhubaneswar, Thiruvananthapuram, and Visakhapatnam for carrying out operational forecasting and warning activities.

IMD has prepared a map of the cyclone hazard proneness of the coastal districts of India based on the frequency of cyclones, their intensity, actual/estimated maximum wind strength, Probable Maximum Storm Surge (PMSS) associated with the cyclones, and Probable Maximum Precipitation (PMP) for all the districts along the coastline. Ninety-six districts, including 72 districts touching the coast and 24 districts not touching the coast but lying within 100 km from the coast, have been classified based on their cyclone hazard proneness.

- (c) The information on the loss of life due to the Cyclonic Storm that formed over the Arabian Sea from 2021 to November 2024 is given in Annexure-1.

The extremely severe cyclonic storm “Tauktae” affected Lakshadweep, Kerala, Karnataka, Goa, Maharashtra, Gujarat & Rajasthan, Daman & Diu and Dadra & Nagar Haveli. Remnant also impacted northwest India with isolated heavy rainfall. A large area was impacted at the time of landfall. About 129297 houses were damaged, and the power supply to about 9543 villages/cities was affected. About 3-4 meters of storm surge above the astronomical tide inundated the low-lying areas of coastal districts of Saurashtra around the time of landfall.

Extremely Severe Cyclonic Storm “BIPARJOY” affected Gujarat's coastal areas. Heavy rains and strong winds resulted in the loss of three lives in the Kutch and Rajkot districts. Trees were uprooted, and a wall collapsed due to the severe weather conditions. Additionally, in Kutch, strong waves swept away tents situated on Mandvi Beach. As the cyclone approached the coast, the Dwarka region experienced high tides. Damage to the electricity network in Gujarat also was reported.

**Annexure-1**

<b>Year</b>	<b>Cyclonic Storm</b>	<b>Total</b>
2021	Extremely Severe Cyclonic Storm TAUKTAE	118
2023	Extremely Severe Cyclonic Storm 'BIPARJOY'	2
<b>Grand Total</b>		<b>120</b>

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