

GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
**RAJYA SABHA**  
**UNSTARRED QUESTION NO. 2127**  
ANSWERED ON 06/08/2026

**COASTAL VULNERABILITY MAPPING FOR ODISHA**

**2127. DR. SASMIT PATRA:**

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

- (a) the details of the latest coastal vulnerability assessment carried out for State of Odisha;
- (b) the district-wise details of shoreline erosion, sea-level rise, storm surge vulnerability and coastal inundation projections;
- (c) whether findings of such studies have been shared with Government of Odisha for planning purposes; and
- (d) the measures proposed to strengthen climate resilience along State's coastline?

**ANSWER**

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

- (a) The Indian National Centre for Ocean Information Services (INCOIS), MoES has prepared Multi-Hazard Vulnerability Maps (MHVM) by integrating multiple coastal hazard parameters, including sea-level change, shoreline change rate, elevation contours, extreme water levels recorded from tide gauges, and their corresponding return periods. These parameters were synthesized to derive a composite hazard line representing the extent of potential coastal inundation.

The MHVMs were developed at a scale of 1:25,000 for the entire Indian coastline, including the Odisha coast. The maps delineate coastal areas that are vulnerable to oceanogenic hazards and zones that are likely to be inundated during events with a 100-year return period have been identified.

- (b) The district-wise areas vulnerable to multi hazards and their percentage to the district area have been identified and tabulated below:

| District      | MHV Areas (Sq. Km) | Percentage |
|---------------|--------------------|------------|
| Balasore      | 980.00             | 27.36      |
| Bhadrak       | 1251.88            | 51.82      |
| Cuttack       | 28.21              | 0.76       |
| Ganjam        | 279.34             | 3.44       |
| Jagatsinghpur | 1000.67            | 59.77      |
| Jajapur       | 50.45              | 1.81       |
| Kendraparha   | 1898.64            | 77.68      |

|              |               |       |
|--------------|---------------|-------|
| Khordha      | 241.34        | 8.68  |
| Nayagarh     | 0.28          | 0.01  |
| Puri         | 2747.89       | 81.91 |
| <b>Total</b> | <b>8478.7</b> |       |

(c) & (d) The maps and atlas have been shared with Odisha State Disaster Management Agency.

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