

# Coastal Vulnerability Index

February 12, 2022

**In news-** Recently, Indian National Centre for Ocean Information Services (INCOIS) has carried out a coastal vulnerability assessment for the entire Indian coast at state level to bring out an Atlas Comprising 156 maps to prepare a Coastal Vulnerability Index (CVI).

## **About Coastal Vulnerability Index (CVI)-**

- **The CVI uses the relative risk that physical changes will occur as sea-level rises are quantified based on parameters like:** tidal range; wave height; coastal slope; coastal elevation; shoreline change rate; geomorphology; and historical rate of relative sea-level change.
- From this CVI, it can be delineated that **Gujarat's 124 coastal kilometers is going to get affected or 5.36%**, Maharashtra 11 km or 1.22% and then Karnataka & Goa 48 km or 9.54%, Kerala 15 km or 2.39%, Tamil Nadu 65 km or 6.38%, Andhra Pradesh 6 km or 0.55 %, Odisha 37 km or 7.51% West Bengal 49 km or 2.56%, Lakshadweep Islands 1 km or 0.81%, Andaman Islands 24 km or 0.96km and Nicobar Islands 8 km or 0.97%.
- These **maps determine the coastal risks due to future sea-level rise** based on the physical and geological parameters for the Indian coast.
- The coastal vulnerability assessments can be useful information for coastal disaster management and building resilient coastal communities.
- **A coastal Multi-Hazard Vulnerability Mapping (MHVM) was also carried out** using parameters like sea level change rate, shoreline change rate, high-resolution coastal elevation, extreme water level from tide gauges and their return periods.
- These parameters were synthesized to derive the

composite hazard zones that can be inundated along the coastal low-lying areas due to extreme flooding events.

- This MHVM mapping was carried for the entire mainland of India.

### **Indian National Centre for Ocean Information Services (INCOIS) -**

- INCOIS, which is an autonomous body under Ministry of Earth Sciences (MoES), has been issuing alerts on Potential Fishing Zone, Ocean State Forecast, Tsunami Early Warning, Storm Surge Early Warning, High Wave Alerts, etc., through dedicated ocean modeling, observations, computation facilities and the marine data center.
- It was established as an autonomous body in 1998-99 under the MoES and is a unit of the Earth System Science Organization (ESSO).
- It is mandated to provide the best possible ocean information and advisory services to society, industry, government agencies and the scientific community through sustained ocean observations and constant improvements through systematic and focussed research.