



Coastal Vulnerability Index

For Prelims: Coastal Vulnerability, CVI, Sea Level Rise, INCOIS, Coastal Multi-Hazard Vulnerability Mapping.

For Mains: Disaster Management, Environmental Pollution & Degradation, Coastal Vulnerability Index and Its Significance.

Why in News?

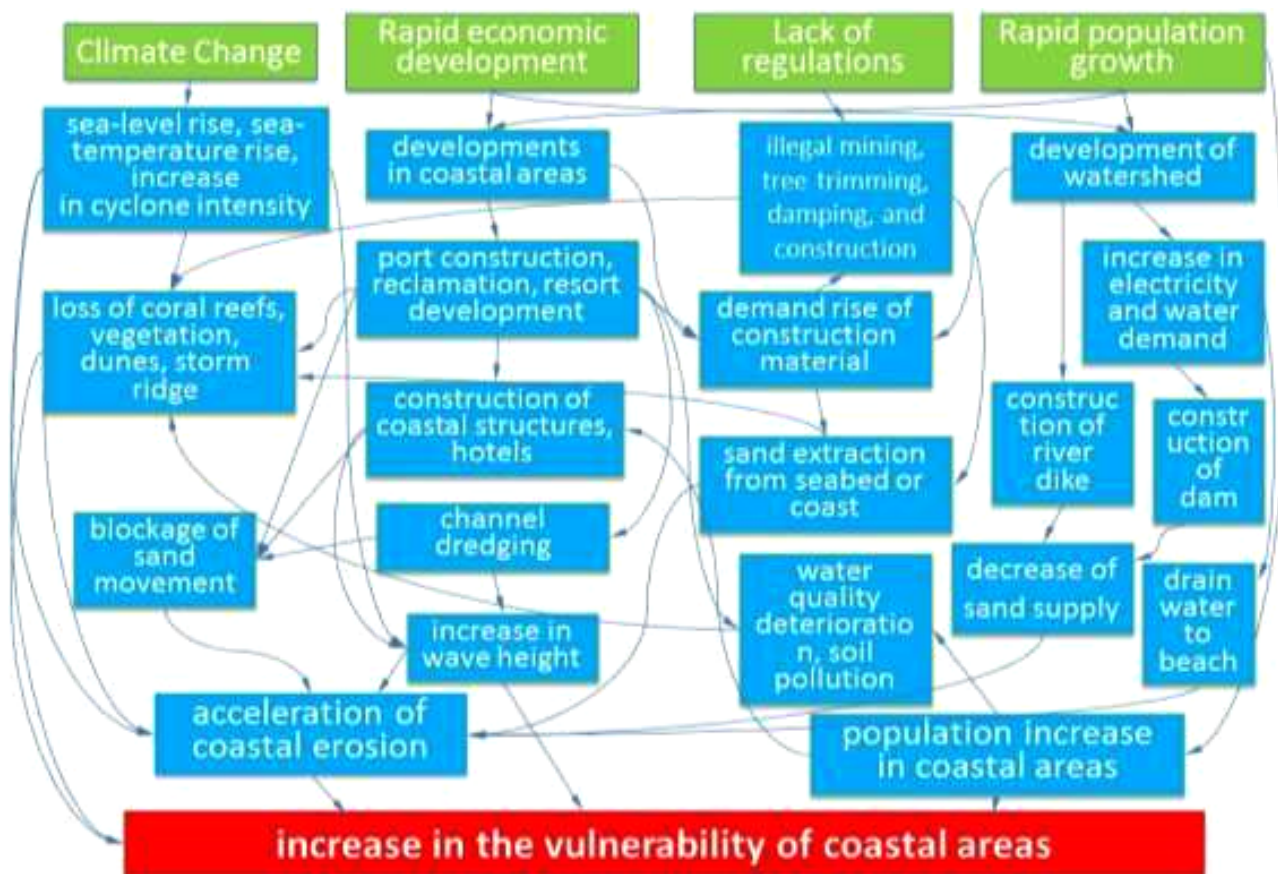
Recently, the [Indian National Centre for Ocean Information Services \(INCOIS\)](#) has carried out a coastal vulnerability assessment for the entire Indian coast at States level.

- The assessment has been conducted to bring out an **Atlas comprising 156 maps on 1:1,00,000 scales** to prepare a **Coastal Vulnerability Index (CVI)**.

What is Coastal Vulnerability?

- Coastal vulnerability is a **spatial concept that identifies people and places that are susceptible to disturbances** resulting from coastal hazards.
- Hazards in the coastal environment, **such as coastal storms, [sea level rise](#) and erosion**, pose significant threats to coastal physical, economic, and social systems.

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What is the Coastal Vulnerability Index?

- The maps will **determine the coastal risks due to future sea-level rise** based on the physical and geological parameters for the Indian coast.
- 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
 - Historical rate of relative sea-level change.

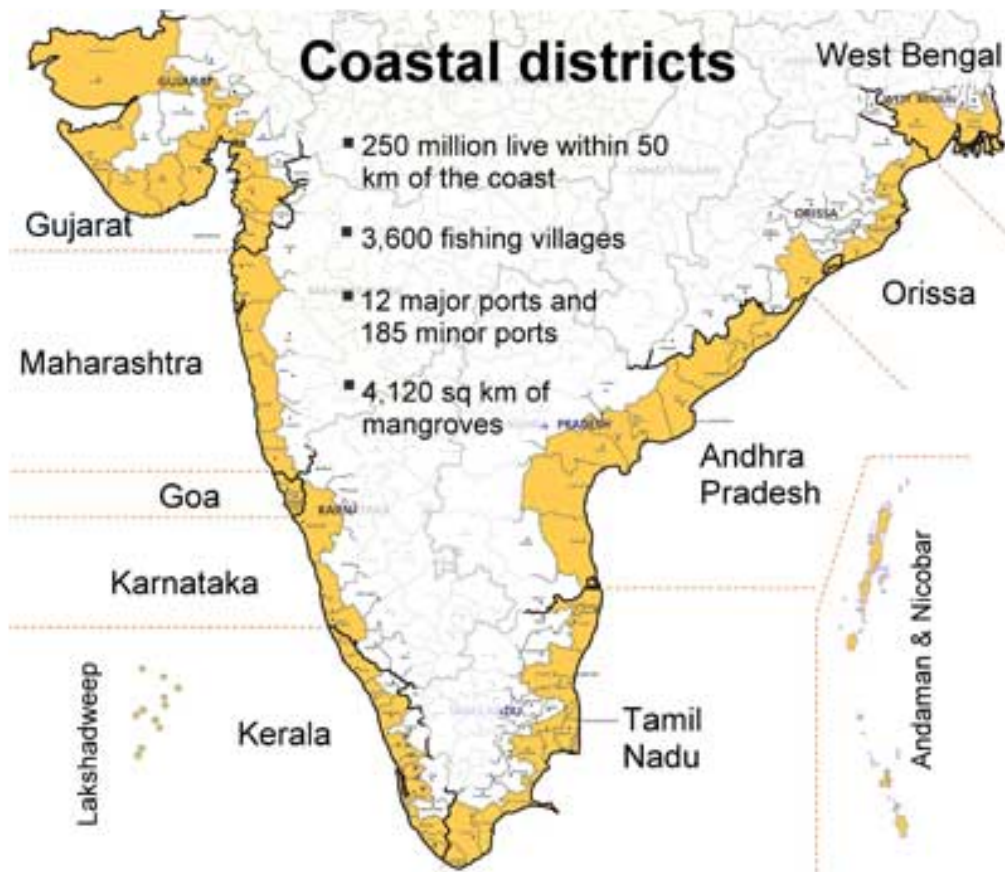
What is a Coastal Multi-Hazard Vulnerability Mapping?

- A coastal Multi-Hazard Vulnerability Mapping (MHVM) was also **carried out using above mentioned parameters.**
- These **parameters were synthesised 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 on a **1:25000 scale.**

What is the Significance of CVI?

- Coastal vulnerability assessments can be **useful information for coastal disaster management and building resilient coastal communities.**
 - India has a coastline of 7516.6 Km i.e. 6100 km of mainland coastline plus coastline of

1197 Indian islands touching 13 States and Union Territories (UTs).



What is INCOIS?

- INCOIS is an **autonomous organisation under the Ministry of Earth Sciences (MoES)**.
- It is **located in Hyderabad & was established in 1999**. It is a unit of the Earth System Science Organisation (ESSO), New Delhi.
 - The ESSO operates as an executive arm of the Ministry of Earth Sciences (MoES) for its policies and programmes.
- 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 improvement through systematic and focused research.

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