

# XDI Gross Domestic Climate Risk

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**In news-** XDI Gross Domestic Climate Risk, “world-first” index that assesses the risk posed to the built environment across the world due to extreme weather events, has been released by the Cross Dependency Initiative (XDI) recently.

## **About the report/index-**

- **The index calculated the ‘physical climate risk’ to built environments** such as buildings and properties across 2,600 States and provinces globally in 2050.
- **Physical risk refers to vulnerability from eight climate change events:** heat waves, coastal flooding (and sea level rise), extreme wind, forest fire, soil movement (or other drought-related hazards), free thaw, riverine and surface flooding.
- The report **compared the risk across territories based on modelled projections of damage**, using global climate models, local weather and environmental data.
- Together, **the index assigned an Aggregated Damage Ratio (ADR) to each region**, which signifies the total amount of damage a region’s built environment would sustain in 2050.
- A high ADR signifies more peril.
- This is the first time there has been a physical climate risk analysis focused exclusively on the built environment, comparing every state, province and territory in the world.
- **The Gross Domestic Climate Risk analysis focuses on the extent of capital value at risk from extreme weather and climate change in states, provinces** and other territories, represented by vulnerability and exposure of the built environment.

- **The Cross Dependency Initiative (XDI) is a global organisation specialising in climate risk analysis for regions**, banks and companies.
- Now, for the first time, the finance industry can directly compare Mumbai, New York and Berlin using a like-for-like methodology.
- **The report's modelling is conducted under the Intergovernmental Panel on Climate Change's RCP 8.5 scenario** – a scenario projecting high emissions, consistent with average global warming over 3 degree C above pre-industrial temperatures by the end of the century.

### **Key findings of the index-**

- **Overall, India, China and the U.S**, globally significant states are **home to 80% of the most vulnerable cities and centres of economic activity** around the world.
- **Two of China's largest sub-national economies, Jiangsu and Shandong top the global ranking; followed by the U.S.** which has 18 regions in the top 100 list; including economically-important regions of Florida, Texas and California.
- **Asia dominates the list largely, with 114 of the top 200 regions falling in the continent**, with the mention of Pakistan, Indonesia and most Southeast Asian countries.
- Devastating flooding between June and August 2022 affected 30% of the area of Pakistan and has partially or fully damaged more than 900,000 houses in Sindh province.
- Notably, the **most damage posed to built infrastructure globally is caused by riverine and surface flooding or flooding combined with coastal inundation.**

### **What does the index say about India?**

- It shows that 14 Indian states are set to remain within the top 100 most climate risk-prone territories of the

world by 2050, within a list that has more than 2,600 regions.

- Punjab, Bihar, Uttar Pradesh, Assam, Rajasthan, Tamil Nadu, Maharashtra, Gujarat and Kerala fall in top 50 as India has 9 states as most disturbed on the count.
- Madhya Pradesh, West Bengal, Haryana, Karnataka and Andhra Pradesh are other Indian states remaining within the top 100 most climate vulnerable regions.
- According to the report, Assam, Bihar and Tamil Nadu had the highest ADR among other Indian States.
- Assam, in particular, would witness the maximum increase of climate risk: rising up to 330% by 2050 as compared to 1990.
- Assam has witnessed an exponential increase in flood events since 2011, and it had 15 of India's 25 districts most vulnerable to climate change.
- Further, 11 of the 36 districts in Maharashtra were found to be "highly vulnerable" to extreme weather events, droughts and dwindling water security.

**Note:**

- The Climate Risk Index in 2019, which ranked countries based on their vulnerability to fatalities and economic losses, found India to be the seventh-worst hit due to extreme weather events.
- Another report in 2022 by the Centre for Science and Environment found India recorded the most extreme weather events in 2022; there was a disaster on 247 out of 273 days between January 1 to September 30.