

XDI Gross Domestic Climate Risk

February 22, 2023

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.