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**TOPIC**

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**DISASTER FINANCE IN INDIA:  
COUNTING PEOPLE IS NOT  
COUNTING DISASTER RISK**

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## DISASTER FINANCE IN INDIA: COUNTING PEOPLE IS NOT COUNTING DISASTER RISK

### Context

- Disaster funding under the **16th Finance Commission (FC)** raises critical concerns about the design of **India's disaster finance framework**, as 27 of 36 states/UTs are exposed to recurrent disasters.
- Over 58% of the land is vulnerable to earthquakes, 12% to floods, 68% to drought, and 5,700 km of coastline is at risk from cyclones.

### About Disaster Finance in India

- It refers to the **institutional and fiscal mechanisms** for funding prevention, preparedness, response, and recovery from disasters. With increasing climate risks, it has become a core component of **fiscal federalism and disaster governance**.
- India follows a **federal, rule-based financing system**, largely guided by the **Finance Commission (FC)**.

### Institutional Framework

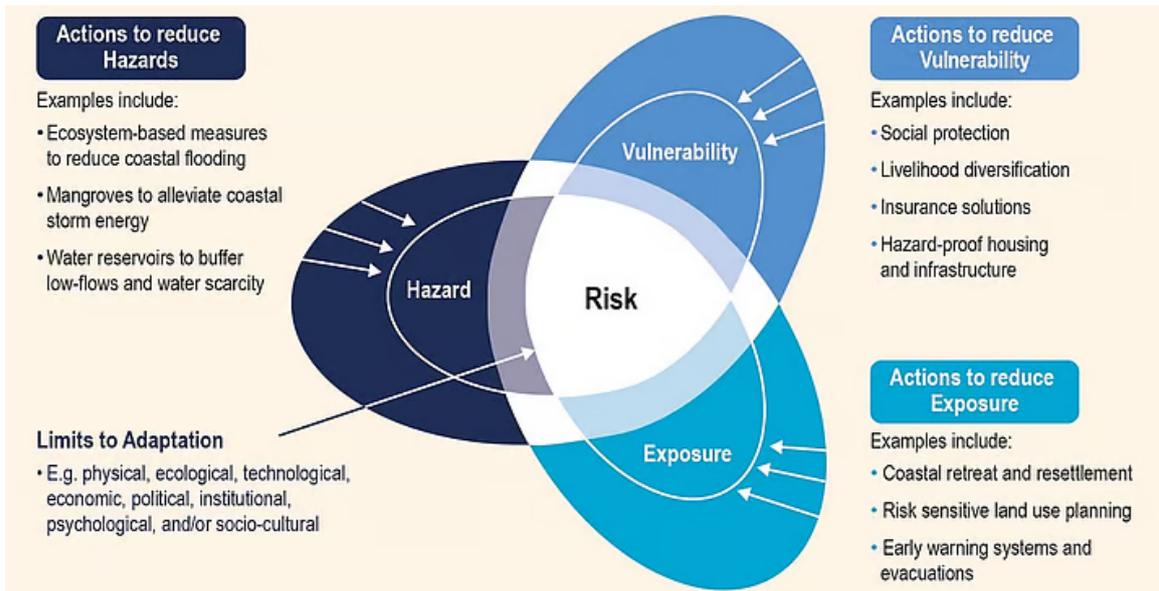
- **Constitutional & Legal Basis**
  - ♦ **Article 280:** Finance Commission recommends disaster funding
  - ♦ **Disaster Management Act, 2005:** Establishes NDMA, SDMA
- **Key Funds:**
  - ♦ **State Disaster Response Fund (SDRF):** Primary fund for **immediate disaster response**. Used for Relief, evacuation, temporary shelter, food, etc.
    - **Funded by:** Centre (75% for general states, 90% for special category states); and States (remaining share)
  - ♦ **National Disaster Response Fund (NDRF):** Supplementary fund for **severe disasters**; activated when SDRF is insufficient.
  - ♦ **Mitigation Funds (Often Underutilized): National Disaster Mitigation Fund (NDMF) & State Disaster Mitigation Fund (SDMF),** these funds focus on long-term risk reduction (rarely operationalized effectively).

### Role of Finance Commission

- Each Finance Commission determines **total allocation**, and designs a **distribution formula among states**.
- **Recent Trends:**
  - ♦ **15th FC:** Additive approach
  - ♦ **16th FC:** Introduced **Disaster Risk Index (DRI)**

### Understanding the 16th FC's Approach

- **Shift to a Multiplicative Disaster Risk Index (DRI):** The 16th FC introduced a **multiplicative model:  $DRI = Hazard \times Exposure \times Vulnerability$** 
  - ♦ It replaces the earlier **additive approach** of the 15th FC and aligns with global disaster risk theory.
- **Components of the DRI**
  - ♦ **Hazard:** The Commission expanded the hazard variable **to include ten specific disasters:** flood, drought, cyclone, earthquake, landslides, hailstorms, cold wave, cloud burst, lightning, and heatwave.
  - ♦ **Exposure:** It is measured **using the projected population** for October 2026. FC utilises **population as a surrogate for exposure** because it is **highly correlated with the crops and infrastructure** susceptible to damage.
  - ♦ **Vulnerability:** It is calculated **using the per-capita income of States**; Susceptibility to damage.



### Key Structural Issues in the Current Formula

- **Mis-measurement of Exposure: Current approach** focuses on exposure that is the total **population of the State**.
  - ♦ According to the **IPCC Sixth Assessment Report**, exposure refers to '*presence of people in places that could be adversely affected*'.
  - ♦ Thus, a large inland population is not high disaster exposure, and a smaller coastal population in hazard zones are higher real exposure.
  - ♦ **Examples:**
    - **Odisha:** High hazard, low population score: Lower DRI
    - **Uttar Pradesh & Bihar:** Lower hazard but high population: Higher DRI
- **Inadequate Proxy for Vulnerability: Current approach focuses on vulnerability that is inverse of per capita NSDP.** However, it has **limitations** like:
  - ♦ Measures **economic capacity**, not disaster vulnerability; and ignores housing quality, health infrastructure, early warning systems, and localized inequalities.
  - ♦ **Examples:**
    - **Kerala floods (2018): ₹31,000 crore damage:** Low vulnerability score due to high income.
    - **Jharkhand:** High poverty but still loses funding share.

### Broader Implications

- **Distorted Allocation Outcomes:** Almost 20 States lose funding share; common pattern includes smaller population, higher income, and better preparedness.
- **Undermining Risk-Based Governance:** The framework unintentionally penalizes **prepared States**, rewards **demographic size over disaster risk**, and weakens incentives for long-term resilience building.

### What Needs to Change?

- **Redefining Exposure:** Exposure should reflect population in **hazard-prone zones**, not total population.
  - ♦ **Data Sources:** BMTPC Vulnerability Atlas; and Census block-level data.
- **Building a Composite Vulnerability Index:** It includes kutchha housing share, agricultural labour dependence, health infrastructure density, insurance penetration (PMFBY), and early warning effectiveness.
  - ♦ **Data Sources:** NFHS-5; NHM surveys; and IMD records.

- **Institutional Reform:** NDMA should publish an **Annual State Disaster Vulnerability Index**; and standardize methodology across Finance Commissions; and reduce arbitrariness and contestation.

#### Way Forward: Aligning Finance with Climate Reality

- **Climate projections** indicate intensifying cyclones (East & West coasts), expanding drought zones, and increased extreme rainfall events.
  - ♦ States like Odisha, Andhra Pradesh, Kerala, and Assam are likely to face **greater future risks**, but remain **underserved**.

#### Conclusion

- The current disaster finance formula is conceptually sound but operationally flawed.
- It reduces a complex risk landscape into a **demographic headcount**, by equating exposure with total population and vulnerability with income.
- For a climate-vulnerable country like India, disaster finance needs to reflect **where risk actually exists**, not just how many people live within political boundaries.

Source: TH

#### Daily Mains Practice Question

- [Q] Examine the challenges in India's disaster finance architecture, and suggest measures to make disaster fund allocation more equitable and climate-resilient.

