Disaster Management · GS - III

Discuss how the contradiction between 'rapid infrastructure development' and 'disaster-risk reduction' in ecologically-sensitive areas of India can be managed, with suitable examples.

EXAM YEAR	PAPER	SUBJECT
2026	GS - III	Disaster Management

MARKS	WORD LIMIT
10	~150 words

Answer Hint

Infrastructure–ecology conflict, Himalayan region, carrying capacity, EIA, cumulative impact assessment, climate resilience, early warning, nature-based solutions

Model Answer

India’s infrastructure expansion in ecologically sensitive regions often creates a tension between connectivity and disaster resilience. The Himalayas illustrate this clearly, where roads, hydropower and urbanisation interact with fragile geology, seismicity and climate-induced hazards.

The contradiction can be managed through:

1. Carrying-capacity assessments: Infrastructure density should reflect ecological and geological limits.
2. Cumulative impact assessment: Projects should be evaluated collectively rather than individually.
3. Climate-resilient design: Roads, bridges and hydropower projects should incorporate updated hazard and climate projections.
4. Risk-sensitive land-use planning: Avoid construction in landslide-prone slopes, floodplains and unstable zones.
5. Nature-based solutions: Watershed restoration, slope vegetation and wetland conservation can complement engineered protection.
6. Strong early-warning systems and evacuation infrastructure should accompany development.

For example, Himalayan road and hydropower projects require greater attention to landslides, flash floods and seismic risks rather than relying solely on post-disaster relief.

Thus, development and disaster-risk reduction need not be mutually exclusive. “Build back better” should evolve into “build safely from the beginning”, integrating environmental assessment, local knowledge and disaster-risk governance into infrastructure planning.

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