Disaster Management · GS - III

The high landslide susceptibility of the Amarnath pilgrimage route highlights the vulnerability of Himalayan infrastructure to natural hazards. Examine the challenges involved and suggest measures for ensuring disaster-resilient pilgrimage management.

EXAM YEAR	PAPER	SUBJECT
DAILY PRACTICE 21/11/2026	GS - III	Disaster Management

MARKS	WORD LIMIT
15	~250 words

Answer Hint

Himalayan fragility, slope instability, extreme rainfall, glacial and geomorphological processes, carrying capacity, early-warning systems, resilient infrastructure, risk-sensitive planning, inter-agency coordination.

Model Answer

Introduction

The Amarnath pilgrimage route passes through the fragile Himalayan landscape, where steep slopes, unstable geology and extreme weather increase landslide risks. A reported study identifying nearly 85% of the route as landslide-sensitive underlines the need for scientific risk management.

Key Challenges

- **Geological vulnerability:** Young and tectonically active Himalayan terrain is prone to slope instability.
- **Climate-related triggers:** Intense rainfall, cloudbursts and changing snow and ice conditions can trigger slope failures.

- **Infrastructure pressure:** Road widening, slope cutting and unplanned construction may weaken natural slope stability.
- **Drainage deficiencies:** Poorly designed drainage can cause water accumulation and erosion.
- **High human exposure:** Seasonal concentration of pilgrims increases the consequences of disruptions and emergencies.

Way Forward

1. **Scientific mapping:** Conduct high-resolution landslide hazard zonation and identify vulnerable stretches.
2. **Early warnings:** Install rainfall gauges, ground sensors, weather stations and real-time alert systems.
3. **Resilient infrastructure:** Strengthen slopes through bio-engineering, retaining structures and properly designed drainage.
4. **Pilgrim regulation:** Introduce route-wise carrying-capacity limits, weather-based movement restrictions and staggered registration.
5. **Preparedness:** Establish evacuation routes, emergency shelters, medical facilities and coordinated response teams.
6. **Ecological safeguards:** Restrict construction in high-risk zones and undertake regular environmental assessments.

Conclusion

Pilgrimage safety in the Himalayas requires a shift from reactive relief to risk-informed planning. Scientific monitoring, ecological sensitivity and coordinated administration can protect both pilgrims and the fragile mountain environment.

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