Geography · GS - I

How can the mountain ecosystem be restored from the negative impact of development initiatives and tourism?

EXAM YEAR	PAPER	SUBJECT
2019	GS - I	Geography

MARKS	WORD LIMIT
15	~250 words

Answer Hint

Fragile mountain ecology; deforestation; slope instability; landslides; unplanned construction; waste management; carrying capacity; sustainable tourism; ecological restoration; community participation; environmental impact assessment

Model Answer

Introduction

Mountain ecosystems provide freshwater, biodiversity, forest resources and livelihoods while regulating climate and supporting downstream populations. However, unplanned infrastructure, deforestation, intensive tourism and construction in ecologically sensitive areas can cause habitat loss, landslides, soil erosion and water pollution.

Measures for Restoration

1. Scientific Land-Use Planning

Development must account for slope stability, geological conditions, drainage and ecological sensitivity. Construction should be restricted in landslide-prone zones, floodplains and fragile habitats.

2. Environmental Impact Assessment

Roads, dams, tunnels and tourism projects should undergo rigorous environmental assessment that considers cumulative impacts, disaster risks and alternatives. Monitoring must continue after project approval.

3. Ecological Restoration

Degraded slopes should be restored through native vegetation, assisted natural regeneration and watershed treatment. Plantation programmes must prioritise locally suitable species rather than indiscriminate monocultures.

4. Sustainable Tourism

Tourism planning should assess carrying capacity, regulate visitor numbers in sensitive locations and promote responsible accommodation, public transport and low-impact trekking.

5. Waste and Water Management

Local authorities should strengthen waste segregation, recycling, sewage treatment and plastic control. Tourism facilities must not discharge untreated waste into mountain streams.

6. Community Participation

Local communities should participate in planning and conservation. Eco-tourism, traditional knowledge and payments for ecosystem services can provide incentives for protecting forests and watersheds.

7. Climate and Disaster Resilience

Early-warning systems, slope monitoring, hazard mapping and climate-resilient infrastructure can reduce disaster risks. Development should avoid increasing exposure in vulnerable areas.

Conclusion

Mountain restoration requires a shift from construction-led development to ecological planning. Scientific regulation, community participation, sustainable tourism and long-term monitoring can help reconcile livelihood needs with conservation and disaster resilience.

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