Disaster Management · GS - III

Describe the various causes and the effects of landslides. Mention the important components of the National Landslide Risk Management Strategy.

EXAM YEAR	PAPER	SUBJECT
2021	GS - III	Disaster Management

MARKS	WORD LIMIT
15	~250 words

Answer Hint

Geological instability, heavy rainfall, earthquakes, slope cutting, deforestation, unplanned construction, Himalayan fragility, Western Ghats, loss of life, infrastructure damage, National Landslide Risk Management Strategy 2019, hazard mapping, monitoring and early warning, capacity building, regulation, mitigation

Model Answer

Introduction

A landslide is the downward movement of rock, soil or debris along a slope under gravity. India is highly vulnerable because of its mountainous terrain, intense monsoon rainfall, seismic activity and increasing human intervention.

Causes of Landslides

- **Natural causes:** Heavy or prolonged rainfall, earthquakes, weathering, erosion and steep slopes weaken slope stability.
- **Geological factors:** Faults, fractured rocks and weak geological formations increase susceptibility.
- **Human activities:** Deforestation, mining, road construction, slope cutting and unplanned settlements disturb natural drainage and slope equilibrium.
- **Climate change:** More intense rainfall events can trigger landslides in already vulnerable areas.

Effects

- Deaths, injuries, displacement and loss of livelihoods.
- Destruction of roads, railways, buildings, power lines and communication networks.
- Blocked rivers, temporary damming and possible flash floods.
- Agricultural losses, soil erosion, habitat destruction and disruption of tourism and local economies.

National Landslide Risk Management Strategy

The National Disaster Management Authority's 2019 strategy emphasises:

- **Hazard mapping:** Identifying and classifying landslide-prone areas.
- **Monitoring and early warning:** Developing rainfall thresholds, monitoring systems and warning dissemination.
- **Capacity building:** Training local authorities, engineers and communities in risk reduction and response.
- **Awareness and preparedness:** Community education, evacuation planning and mock exercises.
- **Regulation and mitigation:** Risk-sensitive land-use planning, safer road construction, drainage improvement, slope stabilisation and bioengineering.
- **Research and institutional coordination:** Improving data, technical capacity and coordination among scientific agencies and state authorities.

Conclusion

Landslide risk cannot be eliminated, but scientific mapping, ecosystem protection, responsible infrastructure development and timely warnings can substantially reduce disaster losses.

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