Landslide Susceptibility – India Maps Its Slope Risk

Prelims: *Current events of National and International Importance | Geography and Disaster Management*

Why in News?

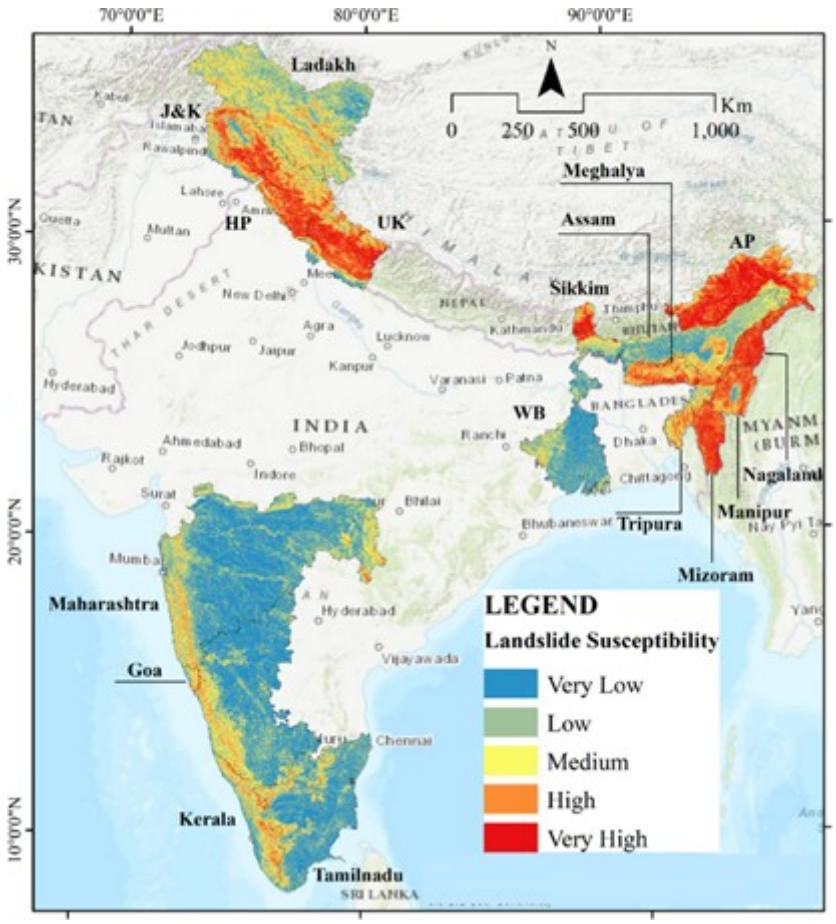
The Geological Survey of India (GSI) has mapped ***landslide susceptibility*** *across India's mountain regions and is now preparing detailed maps of critical sectors, as hill states face recurring slope failures.*

What is a Landslide?

The downward movement of rock, debris or soil along a slope under gravity.

The Susceptibility Map

- **Coverage** – GSI's ***National Landslide Susceptibility Mapping (NLSM)*** covers about 4.3 lakh sq km across 19 states and Union Territories, including the Himalayas, North-Eastern Tertiary Belt and Western Ghats, at 1:50,000 scale.
- **Zones** – Areas are rated high, moderate or low; GSI estimates about 12.6% of India's land is landslide-prone.
- **Access** – Maps and landslide inventory are free on GSI's Bhukosh portal, NGDR, Bhusanket and the Bhooskhalan app.



Causes

- **Natural** – Steep slopes, weak rock, heavy rain and cloudbursts, earthquakes and river erosion.
- **Human** – Deforestation, road and hydropower construction, and unplanned settlements on slopes.



How the Mapping Is Done

- **Method** – Remote-sensing and field data build a landslide inventory (33,904 landslides field-validated); GSI combines it with terrain factors in GIS to rate zones.
- **Agencies** – GSI, under the ***Ministry of Mines***, is the nodal agency; NDMA supports mitigation, and ***IMD, NCMRWF and ISRO's NRSC*** help rainfall-based forecasting.
- **Next step** – Mapping at 1:10,000 and 1:5,000 scales for 200 critical sectors by 2028; 160 are done.

Significance

- **Planning** – Guides land use, roads and settlements away from fragile slopes.
- **Safety** – Feeds early warning; GSI has issued landslide forecasts since the 2025 monsoon.
- **Resilience** – Directs limited funds to the riskiest zones.

Reference

Ministry of Earth Sciences (PIB) | Mapping of Landslide Prone Areas

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