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News / Environment / Rising landslides in India linked to climate change, infra projects

Climate change, rapid infra growth behind rising landslide frequency in India

The RMSI study projects that annual precipitation intensity will increase substantially in the coming decades.

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The most vulnerable states include Arunachal Pradesh, Sikkim, Kerala, Meghalaya, Maharashtra. (Photo: PTI)

In Short

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- This is in turn fueling several climatic factors like intense rain
- RMSI study projects that annual precipitation intensity will increase substantially

A new study has highlighted a concerning rise in landslide frequency and severity across India, with climate change and infrastructure development emerging as key contributing factors.

The report comes weeks after the [deadly landslide in Kerala's Wayanad](#) that killed over 200 and destroyed two villages.

The assessment, prepared by RMSI, a geospatial and technology company that works in assessing natural and man-made disasters, analysed landslide patterns in several states, comparing them to other landslide-prone regions.

Approximately 30% of India's landmass is covered by mountain ranges, with 22 states and parts of Puducherry and the Andaman & Nicobar Islands affected by landslides.



The most vulnerable states include Arunachal Pradesh, Sikkim, Kerala, Meghalaya, Maharashtra, Manipur, Uttarakhand, and Himachal Pradesh.

The report further confirmed that climate change is playing a significant role in increasing landslide risk. This is in turn fueling several climatic factors like intense rain in several parts of the country.

The RMSI study projects that annual [precipitation intensity will increase substantially](#) in the coming decades. For example, Mangaluru city in Karnataka is expected to see a 36% increase in annual precipitation intensity by 2050, while Guwahati in Assam may experience a 21% increase by 2080.

However, the report emphasises that climate change is not the sole culprit.

Rapid infrastructure development, particularly the expansion of road networks in hilly regions, has contributed to increased landslide vulnerability. Since 1950, India's road length has grown from 3,99,942 sq. km to 62,95,717 sq. km in 2021.



The report calls for more cautious development practices. (Photo: PTI)

Human activities such as deforestation and vegetation removal have further exacerbated the problem. The study found that areas with slopes between 25-45 degrees are [particularly susceptible to landslides](#), suggesting that construction activities in these regions should be carefully managed.

"While heavy rains are one of the major contributors to landslides, there's more to the story," says Pushpendra Johari, who heads the sustainability business at RMSI.

There is a clear link between rapid infrastructure development and India's increasing frequency of landslides. "When we disrupt natural landscapes—whether by clearing vegetation, altering water absorption patterns, or expanding roads and buildings in fragile areas—we destabilize slopes, making them more prone to failure," Pushpendra added.

The report calls for more cautious development practices, especially in areas with low-grade metamorphic rocks, medium-grade metamorphic rocks, and soft sedimentary rocks. It emphasises the importance of preserving natural landscapes to maintain slope stability and reduce landslide risk.

As India continues to grapple with the dual challenges of development and environmental preservation, this report points to the urgent need for balanced, sustainable approaches to infrastructure expansion in vulnerable regions. ■