India's approach progressively shifting from Post- Disaster Relief to Disaster Prevention in Landslide Management: Dr. Jitendra Singh at 7th World Landslide Forum

“India’s landslide susceptibility mapping completed across 4.3 lakh sq km; inventory of nearly 91,000 historical landslides compiled”

National Landslide Forecasting Centre established in Kolkata extends forecasting activities to 20 districts, says Dr. Jitendra Singh

₹1,000 crore National Landslide Mitigation Project approved for 15 states; ₹1,115.67 crore sanctioned for disaster mitigation and capacity building: Dr. Jitendra Singh

AI-based prediction, geospatial technologies, satellite monitoring and last-mile early warning to strengthen landslide resilience: Dr. Jitendra Singh

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Union Minister of State (Independent Charge) for Science & Technology and Earth Sciences, and MoS in the PMO, Dr. Jitendra Singh, today said India's approach is progressively shifting its approach to landslide management from post-disaster relief to prevention, preparedness and risk reduction, marking a major transformation in the country's disaster management strategy.

Addressing the inaugural session of the 7th World Landslide Forum (WLF7) at Amrita Vishwa Vidyapeetham, Faridabad, the Minister said India is moving away from waiting for disasters to occur and mobilising relief machinery afterwards, towards anticipating risks, strengthening early warning systems and preventing avoidable loss of lives and infrastructure.

The 7th World Landslide Forum, being held from November 22 to 27, 2026, is being hosted in India for the first time by Amrita Vishwa Vidyapeetham in collaboration with the International Consortium on Landslides (ICL) and the International Programme on

Landslides (IPL). The inaugural session brought together international experts, scientists and policymakers from more than 75 countries.

Dignitaries present included Secretary, Ministry of Earth Sciences, Dr. Srinivas Kumar Tummala; Chancellor of Amrita Vishwa Vidyapeetham, Mata Amritanandamayi Devi; Vice-Chancellor Dr. Vikram Rangan; Pro-Vice-Chancellor Dr. Maneesha Vinodini Ramesh; and other academic leaders and international delegates.

Dr. Jitendra Singh said India's diverse geological and geophysical landscape, encompassing the Himalayas, Western Ghats, northeastern region and other vulnerable mountain areas, makes landslide risk reduction a critical national priority. Recalling major landslide disasters in Wayanad, Kerala, Chamoli in Uttarakhand, Sikkim, Himachal Pradesh and Jammu and Kashmir, he stressed the need for interdisciplinary research, continuous monitoring and coordinated scientific efforts to minimise the impact of such disasters.

The Minister said the Department of Science and Technology has been engaged in geospatial technologies and natural resource data management since 1982 through the Natural Resources Data Management System (NRDMS). The National Geospatial Policy and National Geospatial Programme introduced in 2019 have further strengthened India's geospatial ecosystem by leveraging contemporary technologies. The Department has supported landslide warning and early detection systems, low-cost AI-based and video-based monitoring solutions, geological and geophysical investigations, vulnerability mapping and related research initiatives.

Dr. Jitendra Singh said national landslide susceptibility mapping has been completed across approximately 4.3 lakh square kilometres, while the landslide inventory database has compiled information on nearly 91,000 historical landslides by the end of 2025. The National Landslide Forecasting Centre was established in Kolkata in 2024, while the Regional Landslide Forecasting System, established in 2020, is supporting experimental and operational forecasting across vulnerable regions. The National Landslide Forecasting Centre has now extended its activities to 20 districts.

The Minister said a high-level committee headed by the union home minister has recently approved ₹1,115.67 crore for disaster mitigation and capacity-building exercises, along with ₹1,000 crore for the National Landslide Mitigation Project covering 15 states, including 10 Himalayan states and five other landslide-vulnerable states. He also referred to institutional collaborations and scientific partnerships involving the Geological Survey of India, National Centre for Medium Range Weather Forecasting and Wadia Institute of Himalayan Geology, Dehradun, which are advancing geological investigations, hazard assessment, integrated monitoring, satellite-based observations and AI-enabled landslide mapping and prediction.

Highlighting the role of weather science in landslide risk management, Dr. Jitendra Singh said Mission Mausam, launched with an initial allocation of ₹2,000 crore, is strengthening India's weather observation, forecasting and modelling capabilities. The Bharat Forecast System, introduced in 2025, provides weather forecasts at a spatial resolution of up to approximately six kilometres, enabling more localised information for disaster preparedness, administration and infrastructure planning.

The Minister stressed that rainfall forecasts alone cannot adequately predict landslides, as scientific assessment must also account for geology, soil moisture, pore-water pressure, slope deformation and ground stability. He called for closer integration of weather forecasts with geological, geotechnical, hydrological and real-time ground observations to develop more accurate, actionable and location-specific landslide early warning systems.

Dr. Jitendra Singh appreciated Amrita Vishwa Vidyapeetham's contribution to landslide research and early warning technologies, particularly its wireless sensor network-based landslide detection system deployed in Munnar, Kerala. Developed through sustained indigenous research and supported by the Department of Science and Technology, the system combines real-time measurements of rainfall, soil moisture, pore-water pressure and other geophysical parameters to assess changing slope conditions.

He also referred to the advanced landslide early warning system deployed in Sikkim with support and co-funding from the Ministry of Earth Sciences, in collaboration with the Sikkim State Disaster Management Authority, as an example of government-supported university research translating into field-level applications. The Minister said such initiatives reflect the importance of indigenous innovation, Make in India and Atmanirbhar Bharat in developing technologies with direct societal relevance.

Dr. Jitendra Singh called for strengthening integrated geospatial databases, satellite and sensor-based monitoring, institutional collaboration and the translation of scientific advancements into effective last-mile warnings. He said the future of landslide risk reduction lies in combining artificial intelligence, geospatial science, satellite observations, ground sensors and interdisciplinary research with practical implementation, so that scientific knowledge reaches vulnerable communities in time to protect lives, infrastructure and livelihoods.

The Minister expressed hope that the 7th World Landslide Forum would advance global scientific collaboration, technology transfer, institutional capacity-building and impact-based early warning systems, while translating scientific deliberations into practical pathways for safer slopes, resilient infrastructure and disaster-resilient communities.


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