

# Himalayan Blunders make for Himalayan Tragedies

**GLOBAL** warming & climate change, environmental degradation & ecological damage, resource exploitation & resource utilisation – all these go hand-in-hand with the need for development to meet the requirements and expectations of the ever-growing human population. It is a tricky & risky terrain to navigate. One that demands balancing development needs with thoughtful risk assessment.

The most recent unfolding tragedy in the Himalayan region once again attests to our frequent disregard for the ecology and environment that sustain us, in striving for our development goals. In Joshimath in Uttarakhand, cracks are reported to have appeared in buildings and roads and land subsidence has also been reported.

The slow sinking of houses and land in the region has perhaps been caused by the over-exploitation of underground water resources causing the soil to compact and the ground to sink. Another reason being cited is the possible collapse of underground tunnels & caves. Besides, the Himalayan region, especially the Joshimath area, is prone to tectonic activity; it lies in Zone 5 – comprising the most seismically active area. The other factors that may have further added to the already existing strain could have been uncontrolled development in the form of hotels, high-rise buildings and overcrowding due to the increasing tourist burden.

But more would be known after a CSIR-National Geophysical Research Institute (NGRI) nine-member team wraps up an extensive sub-surface mapping of the 3-km area of the affected town to understand the soil layers, rock structure and underground water flow. As part of its tests, the NGRI team will send a high-voltage electricity burst into the soil, sending electric waves; the received signals will be modelled to generate a 3D picture depicting the kind of soil and water present. Ground penetrating radars and Multi-channel Assessment of Seismic Waves (MASW) will also be used to study the bedrock, apart from the survey of the geology and ground cracks in the region.

In recent times, with developmental activities often breaching environmental concerns several regions in the world have had to face catastrophic consequences, with local communities being affected the most. This includes displacement from long-held settlements and loss of livelihood.

Can science communication play a role in preventing such tragedies? Well, not until science communication efforts are effectively formulated and modulated and targeted towards the local inhabitants and communities, on the one hand, and authorities, regulators, policymakers and lawmakers, on the other. By effectively communicating scientific information and research findings to the public and decision-makers, science communication can help to raise awareness of potential environmental hazards and inform the development of sound public policies.

It is important also for local government and community leaders to work together to manage development in the area in a sustainable manner, taking into account the needs and well-being of both the environment and the local population.

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