

Business Line

Mountain vs man

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When the heavens opened up...

The beast in man brought out the demon in Nature.

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The Himalayas are one of the most fragile ecosystems on earth. However, for centuries, the ecosystem, fragile as it is, has coped with natural risks.

But today, the story is different, with human induced ecological changes added to the situation. Heated debates have erupted in recent days over the actual cause of the Uttarakhand disaster – whether the cause was natural or man-made.

Natural or Man-Made?

A cloud burst looks like a natural phenomenon. However, human-induced climate change cannot be ruled out as a possible factor. Landslides can have geological causes such as seismic activity, morphological causes such as undercutting of cliffs and banks by waves and rivers, or human-induced reasons such as removal of vegetation and modification of slopes.

Heavy use of explosives in the fragile terrain for dams, roads and other development works is another factor that created instabilities in the region and could have exacerbated the landslide risks.

Another natural hazard is flash floods. Rainfall intensity, duration, surface condition and topography contribute to the occurrence of flash floods. On the hill slopes of Uttarakhand, impervious surfaces have been created by construction of roads and buildings. Also, the extensive removal of vegetation reduced water absorption capacity. Both these factors increase the rate of run-off during torrential rains and vulnerability to flash floods.

High-density real estate development close to the river banks to serve the burgeoning tourist population has widened risk exposure to a larger number of people. In addition, the extensive construction of a number of hydro-electricity projects lying in proximity in a relatively short span of time resulted in large scale geological modification of hill slopes and centuries-old natural water flow characteristics.

The eco sensitive zone proposal was set aside. It is hard to find a reasonable explanation for this.

Himalayan Tsunami – a “perfect storm”

Apparently, the popular perception as to the root cause of the unprecedented disaster was the breaking of the Kedar Dome, a glacier-like body of rock and ice, located close to the Kedarnath temple. The crumbling of this immense glacier following the cloudburst and the subsequent landslides had caused a major rupture in the nearby Charbari Lake resulting in the deadly flash floods.

The cloud burst, however, could have only been a trigger for a complex chain of devastation where in a multitude of man-made factors have combined with a rare and particular concurrence of weather related phenomena – a perfect storm, so to speak. It was actually the combination that was deadly, rather any single factor.

The pursuit of economic growth in an ecologically unsustainable manner is thus the major contributing factor to the Himalayan Tsunami.

What lessons can we learn? This requires aligning the economic growth requirements with sustainable management of natural resources so that there is a decreased likelihood of risk occurrence along with an increased resilience of local communities to such disasters if and when they happen.

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