

ENFORCEMENT KEY TO EARTHQUAKE SURVIVAL IN ASIA



Speed read

- Buildings collapse due to bad construction or the non-adherence to building codes
- And codes often only apply to civic structures, not to dwellings
- Good governance or strong leadership are required to reform building practices in the region

[BANGALORE] Up to a quarter of the world's population lives in earthquake-prone South Asia where enforcement of building codes could vastly reduce deaths from future tremors, says a paper in Science.

Fatalities from earthquakes since 1900 in this region have exceeded those in previous centuries due to both a growing population and the fragility of construction methods, according to the paper published earlier this month (9 August).

Post-earthquake investigations reveal that buildings typically collapse due to "shoddy construction resulting from poverty and ignorance, or to covert avoidance of building codes by contractors", it says.

And where earthquake-resistant design codes do exist, they are generally applied to civic structures only, and not to the dwellings where most of the people of South Asia live, it says.

Even the existing codes may be inadequate because of a lack of earthquake hazard maps and data on earthquakes in the region, and these gaps may take decades to fill.

"The establishment and implementation of credible earthquake-resistant building codes thus remains

a data-gathering challenge for scientists, engineers, and planners of South Asia," the paper says.

“It is the buildings that kill people, not the earthquakes.”

- Roger Bilham

But improved estimates of earthquake risk will be futile if South Asian governments permit unauthorized and unsound construction practices to continue, the paper says, and lives could be saved even without further scientific input by simply enforcing existing construction codes, it concludes.

"It is the buildings that kill people and not the earthquakes," says Roger Bilham, lead author of the paper and a geology professor at the University of Colorado, United States.

Arvind Kumar Jain, a senior scientist at the Indian National Science Academy, says that the implementation of building codes is negligible — even for government buildings — with agencies failing to monitor construction once permission is given.

According to Jain, the situation is especially dangerous in India's National Capital Region centred on Delhi, as well as in large cities located within 200 kilometres of the Himalayas, such as Chandigarh, Jammu, Lucknow, Patna and Saharanpur.

These cities are witnessing unregulated growth in an area that is seismically more active and at higher risk than the adjoining southern regions.

Jain adds that despite data gaps there are enough details to adopt building codes without any further delays.

Chittenipattu Puthenveetil Rajendran, a geologist at the Indian Institute of Science, Bangalore, agrees that earthquake-resistant construction is needed to prevent large-scale damage.

But to do this, current building practices and land-use policies need to be overhauled, and this requires good governance or strong leadership,

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