

Multi-faceted Approach to School Earthquake Safety in Westernmost Nepal

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Abstract

Nepal lies along the Himalayas, one of the most seismically active areas in the world. Westernmost Nepal is of particular concern as stress has been building up in this region since the last major earthquake occurred over 500 years ago. In addition, the population is growing rapidly, earthquake risk awareness is low, and earthquake-resistant construction practices are not typically followed.

Assessments show that an overwhelming number of school buildings are seismically vulnerable. Given limited resources and the vast number of collapse-prone school buildings, a multi-faceted approach is needed to protect schoolchildren. This includes building new earthquake-resistant school buildings, strengthening existing ones when feasible, and implementing interim solutions when the first two options are not possible in the near term. Interim solutions become particularly important in remote areas like westernmost Nepal, where limited retrofit programs exist.

Keywords: schools, disasters, mitigation, resilience, retrofit, construction, earthquake, assessments, scenarios.

1 Background

Nepal lies along the Himalayan mountains, one of the most seismically active areas in the world. Western Nepal (Sudurpaschim province) is of particular concern as the fault system in this region can produce earthquakes greater than Magnitude 8.0. In addition, the region's population is growing rapidly, and construction frequently lacks earthquake-resistant techniques. Though the Kathmandu Valley region has made progress in promoting disaster-resilient buildings, far-flung areas such as Western Nepal are yet to catch up with the advancement of capacities in resilient constructions.

Schoolchildren are particularly at risk. Although there have been several efforts to strengthen

school buildings, most have focused on central and eastern Nepal, and tens of thousands of schools remain vulnerable. The destructive 2015 M7.8 Gorkha earthquake in central Nepal was a stark reminder, killing over 9,000 people and destroying over 7,000 schools. The earthquake would have killed many more schoolchildren had it occurred during school hours rather than on a Saturday when schools were not in session. Many schools nationwide are of similar construction to those destroyed by the 2015 earthquake.

2 GHI's Recent Focus on Westernmost Nepal

GeoHazards International (GHI) is a small, globally-focused non-profit that aims to save lives by