The 2015 Mw7.8 Gorkha, Nepal, Earthquake: Destruction and Creation

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On 25 April 2015, the Mw7.8 Gorkha earthquake rocked Nepal, collapsing vulnerable structures in villages throughout the country and causing over 9000 deaths. The death toll was mitigated by several factors, including the time of day of the event (near noon local time), and pervasive non-linear site response that deamplified high-frequency shaking in the Kathmandu valley. Following the heavy losses caused by the mainshock, long-term reverberations, including but not limited to geological hazards per se, continue to be felt. The mainshock caused thousands of landslides across the epicentral region; in some cases landslides caused extreme immediate damage to villages, and in other cases created dams across rivers. The risk of future landslides due to monsoons continues to pose an enormous challenge for the reconstruction effort. In addition to long-term geological reverberations, large earthquakes in any region also commonly generate long-term reverberations in the social and political realms. Within Nepal, for example, there was concern that inflated reports of damage caused a serious impact on the tourism industry, an important lifeblood of the Nepali economy. Moreover, in several recent other examples, including the 2001 Bhuj, India, earthquake, large earthquakes in the Indian subcontinent and elsewhere have been agents of political change. Lastly, I note that, as recognized by fundamental Hindu tenets, destruction and creation can be seen as two sides of the same coin. Especially where earthquake professionals and others are able to capitalize on opportunities created in the aftermath of a damaging earthquake, earthquake disasters can lead to legislative actions to reduce earthquake risk and other actions that improve resilience. Windows of opportunity are, however, short, creating an urgent impetus for timely action.