A powerful earthquake of magnitude (M) 7.8 occurred on April 25, 2015 at the plate boundary between Indian plate and Eurasian plate. The epicenter of this earthquake is located approximately 80 km northwest of Kathmandu, Nepal. This epicenter location is near to the district Gorkha for which it is also called as Gorkha earthquake. The convergent movement of the Indian plate with the Eurasian plate resulted in the strain accumulation along major faults and hence produced many significant earthquakes along the boundary in past. This earthquake is as severe as its predecessor event, the 1934 Nepal-Bihar earthquake where the fatalities was 10,600 while 8000 and above during this event. We describe in detail the seismotectonic aspects of the 2015 Nepal earthquake (Mw 7.8) and the damage caused by it. We also provide a background on the seismicity of the Himalayan region.

The tectonic framework of Indian subcontinent is spatio-temporally varied and complex. The rapid drifting of Indian plate towards Himalayas in the north eastern direction with a high velocity along with its low plate thickness (Kumar et al. 2007) might be the cause for high seismicity of the Indian region. Indian plate is moving northward at about 45 mm/year per year and it collides with the Eurasian Plate (Figure 1, Bilham 2004). The collision resulted in the reduction of convergent movement of Indian plate approximately to 18 mm/yr. This collision also resulted in the development of potential slip available to drive large thrust earthquakes beneath the Himalaya. When continents converge, large amounts of shortening and thickening take place, like in the Himalayas and the Tibet. Due to this massive collision, the Himalayas were formed and also resulted in large numbers of earthquakes along the plate boundary. This plate boundary in the Himalayan regions is a major cause of earthquakes in this region. In a similar process, involving the Indian Plate and the Burmese micro-plate, results in earthquakes in the

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Andaman & Nicobar Islands. The plate boundary areas along the Himalayas and northeast India, are characterized by very high level of seismicity (Gupta 2006).

SEISMICITY OF INDIA

The analysis of the seismic activity in India can be broadly characterized by three general seismo-tectonic considerations (Nath and Thingbaijam 2010) as shown in Figure 2; they are tectonically active shallow crustal region, subduction zones and stable continental region. The subduction zone earthquakes can be further divided as regions with intraslab and interface earthquakes. In this report, the emphasis is given on tectonically active shallow crustal region. The seismicity of the Himalayan arc tectonic belt is connected with the underthrusting of the Indian plate beneath the Eurasian plate (Molnar and Tapponnier 1979; Krishnan 1953).
Excess Pore Pressures Around Underground Structures Following Earthquake Induced Liquefaction
www.igi-global.com/article/excess-pore-pressures-around-underground/69987?camid=4v1a