



Editorial

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Nepal earthquake 2015 – an overview

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Editorial

Every year, several bouleversements are recurrent throughout the universe that afflict to human life and mass devastation to properties. Due to augment in the size of world population and massive urbanization; catastrophic earthquakes are becoming more vulnerable to the human world. Death toll depends on population density, even with similar magnitude earthquakes. Earthquakes are considered every bit unitary of the awful natural disasters without any dire prediction and responsible for highest number of demises in different spots of the Earth [1]. In 1976 a 7.8M_w seismism decimated around 242,000 populations in Tangshan, China. In the same year, 7.5M_w macroseism in Guatemala, assimilated 22,778 lives, Mexico City bump by a 8.1M_w upheaval, in 1985 with a death toll of 10,000. A seismic activity of 6.9M_w haphazard in Armenia 1988, which terminated 24,944 living soul [2, 3]. Altogether over the globe seismic activities are experiencing everyday and continuously monitored by geologists.

Nepal is a landlocked country between China and India in the Himalayan range. This area is earthquake-prone. Scientists postulated that Himalayan earthquakes are driven by the release of compression strain which gradually accumulates near Greater Himalaya. It has likewise been discovered that Tibetan reservoir of elastic strain energy is run out in proportion to Himalayan rupture length, which is responsible for the consequent growth of slip and magnitude intensity. This stress and strain accumulation in this plate takes approximately 500 years, which results devastating earthquakes [4].

There are evidences of two massive agitations in Nepal in the past. 7th June AD 1255 an undulation devastated Kathmandu and mortally wounded the Nepalese King Abhaya Malla. This earthquake also ruptured the surface of the mega-thrust. On 15th January 1934, 8.2M_w Nepal-Bihar seism severely damaged Kathmandu, Bhaktapur and Patan. Therefore, historic evidences of two large convulsions in past 1,000 years. This is true that earthquakes cannot be predicted, but a research in 2013 by Murphy *et al* pointed out the potential risk of earthquake in Nepal. Authors used radiocarbon dating to show that one or more earthquakes created 10 m of surface displacement on the fault between AD 1165 and 1400 [5-8].

Murphy *et al* used field data to recognize a 63 km long earthquake rupture which is present in an unrecognized fault in the western part of Himalayan range. Authors concluded that a potential seismic hazard within the interior of the Himalaya persists and it requires special attention [5].

Their assumptions came into true as a nightmare for Nepal. April 25, 2015 around 11.56 am a massive 7.8M_w earthquake hit just

80 kilometers northwest of the capital Kathmandu. Its epicenter was east of the district of Lamjung. Every year the India tectonic plate moving north at about 45mm pushing under the Eurasian plate beneath the Himalayas. This catastrophic event occurred because the India plate and the overriding Eurasia plate to the north.

The destruction was in an enormous scale in this underdeveloped country. More than 9,000 people died in this tragic catastrophe and injured more than 23,000. Peoples of Nepal just tried to come out of this trauma, but 18 days later, on 12 May 2015 at 12:51pm the second major earthquake happened with 7.3M_w, about 40 kilometers west of Kathmandu, killing several hundred & injured. The epicenter was near the Chinese border, near the town of Namche Bazaar, in Solukhumbu District in the Sagarmatha Zone of north-eastern Nepal. Ramechhap and Dolakha are the worst hit districts. Casualties and damages also reported from Sindhupalchok.

Apart from the huge death toll, UNESCO World Heritage sites in the Kathmandu Valley, damaged severely, including Kathmandu Durbar Square, the Patan Durbar Squar, the Bhaktapur Durbar Square, the Changu Narayan Temple and the Swayambhunath Stupa.

Continued aftershocks occurred in Kathmandu, Gorkha and other places throughout Nepal with short intervals for next few weeks. This increased the risk of landslides throughout the hilly regions of the country. Residents were frightened to enter their houses due to several large cracks. These after-effects include displacement of populations (IDPs/refugees), psychological trauma including severe depression, increased risk of malaria due to increased vector breeding sites [9]. Neighboring countries like India first send the aid with a fully equipped medical and rescue team (Operation Maitri) shortly after the quake. Afterwards China, Japan, Canada, United Kingdom, United States, Israel, Australia, Bhutan, Pakistan and many other countries across the globe send rescue team, medicines, relief items to Nepal. Charitable organizations, such as UNICEF, Red Cross, World Food Programme, World Health Organization, United States Agency for International Development etc. whole heartedly contributed in this disaster. There was also a potential risk of spreading of infection after the earthquake. Prompt health action was taken along with disease surveillance measures carried out by Epidemiology and Disease Control Division (EDCD) of Nepal in collaboration with other countries to prevent disease.

Events during temblor happen abruptly, so this is always a strong challenge for the rescue team to do promptly to reduce the casualty cases. Past history of earthquakes showed that most of the victims suffer from crush injuries in abdominal, spinal, and pelvic regions from building collapses [10-13]. As Nepal is situated in a seismically active region, so more importance should be given to make proper strategic plans to manage this type of disaster.

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