A Case Study of Central Nepal Earthquake

Meruga Siva Parvathi [1] , Dr. Syed Omar[2]
Department of Civil Engineering
[1] Assistant Professor, Holy Mery Institute Of Technology And Science, Keesara, Hyderabad
[2] Professor, Holy Mery Institute Of Technology And Science, Keesara, Hyderabad

Abstract- *The sudden movements of the Earth's tectonic plates it was caused to an Earth quake on the surface of the earth. It was the deadly natural disasters. In that name quake means tremor or temblor. When the result of sudden release of energy in the Earth's crust, it creates seismic waves. In Nepal and its adjacent areas the magnitude of earthquake is very high. The Himalayan belt, Bihar- Nepal border, Assam and North Bengal especially Darjeeling, Jalpaiguri, Alipurduar and Cooch Behar districts fall in this seismic zone. In North India due to the high intensity of an Earth quakes many lives are destructed and they lost their properties. Nearly 9,000 were dead and 20,000 are injured. It was the Worst earthquake in Nepal in over 80 years. The main cause of an earth quake in Nepal was the main fault between sub ducting Indian plate and overriding Eurasian plate to the North. It was the fourth biggest earthquake since 1988. The specified objectives have been fulfilled by the utilization of maps of Indian Meteorological Department (IMD) and Google images. Necessary maps, diagrams and tables have been prepared for exposition of these problems. By the tectonic movements in an Earth crest it was caused for shaking of an Earth surface by releasing of more energy.*

Keywords- Earthquake causes, Objectives, consequences and Recommendations

I. INTRODUCTION

An Earthquake is the Sudden movement or vibration in earth's crust result that creates seismic waves. Release of the energy due to intense pressure and active internal dynamism of the earth. The seismic activity of an area refers to the frequency, type and size of earthquakes experienced over a period of time. BY sending out a series of shocks and vibrations it was creates violent tremor in the earth crest. An Earthquake was one of the most terrible hazards in nature and it causes to lost many lives and their properties. The Nepal Earth quake was happened on 25th April 2015 approx 80km north-west of capital Kathmandu. The earthquake occurred as a result of thrust faulting on the main fault between turn Indian plate and overriding Eurasian plate to the North. By this Earthquake nearly 9000 lives were died and nearly 20000 were injured. Another as like with same intensity it was happened on 12th May.

Since 1988 it was the fourth biggest worst Earthquake. In the Richter scale it was 7.8/7.9 the reason was turn Indian plate and overriding Eurasian plate to the North. It was also felt in northern and north eastern part of India, China, Tibet, Bangladesh and as far as Pakistan. The main causes of an earthquake was Great explosions, landslides, slips on steep coasts, dashing of sea waves, avalanches ,Mining, Nuclear testing and some large engineering projects cause minor tremors. some of them are manmade, other are natural. After shocks it was continued up to 15 to 20 minutes at surrounding areas of Nepal also. It was a major earthquake similar in intensity to the 1934 Munghyr and the 2001 Gujarat Earthquakes.

On 12th May 2015 it was occurred again at 12:35 IST with a magnitude of 7.3 on Richter scale. Epicentre was near the Chinease border, between Katmandu and Mount Everest.By this earthquake up to 900,000 homeless, 60% of buildings destroyed Only two or three of the 14 hospitals in the valley with an in- patient capacity of thirty or more still functional ϖ 95% of water pipes & 50% of pumping stations & treatment plants seriously affected; water supply disrupted for several months. ϖ 60% of telephones unusable for up to a month ϖ 40% of electricity lines and all sub-stations non-functional for a month ϖ 50% of bridges & many narrow roads unusable because of damage & debris ϖ Kathmandu international airport isolated by collapse of access roads & bridges; runway partially or totally unusable.

II. STUDY AREA

On Saturday April 25th 2015, in capital Katmandu at Nepal was flattered with the intensity of 7.8-magnitude causing devastation across the impoverished Himalayan nation. This earthquake released energy equivalent to about 79 lakh tons of TNT which are 504.4 times the energy which was created by the atomic blast on Hiroshima in 1945. The Epicenter of the Nepal earthquake was approximately 34 kilometers east – southeast of Lamjung, Nepal. The earthquake lasted about fifty seconds causing flattening of the entire village at epicenter and areas nearby it.

The study area is bounded by 21°33´07.04´´ N to 30°21´02.53´´ N Latitudes and 77°06´33.77´´ E to 95°56´31.16´´ E Longitude in Nepal and the states of India, namely West Bengal, Bihar, Uttar Pradesh, Assam and Sikkim

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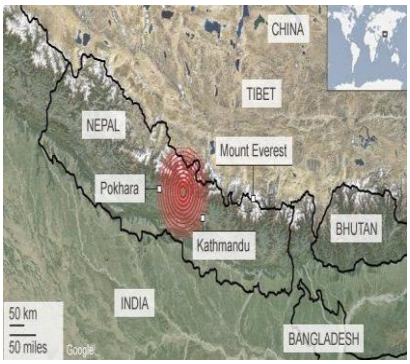

III. METHODOLOGY

All this research was based on the empirical study of earthquakes. A systematic methodological principle, means pre field study, field study, and post field study. In the pre field study the investigation started from getting the information from intensive literature review from related books, journals, articles government publication, etc. has been done to specify the research problem and selecting the study area and topic of this research work. In the field study the spatial information collected from Indian Meteorological Department (IMD) and Geological Survey of India was also taken into consideration. Primary and secondary data has been obtained through internet and current News Papers. Photographic records of the related features have also been collected from different sources. And in the post field study the spatial information collected from Indian Meteorological Department (IMD) and Geological Survey of India was also taken into consideration. Primary and secondary data has been obtained through internet and current News Papers. Photographic records of the related features have also been collected from different sources.

IV. LITERATURE REVIEW

After independence some famous scientists and geographers published too many research papers on the nature and mapping of the Earthquake hazards. Hemmady, A.K.R. published a classic book –„Earthquakes‟ (1996), Bolt, B.A. published „Earthquakes‟ 1993)(.Another popular article was published by Dakshinaranjan Nandy (2007)Mapping„ Earthquake Hazards‟. AboutEarthquake hazard predictable, the authentic article was published in 2007, popularlyObservationknownofpre-seismicas signals„ through Geochemical Monitoring‟ by the senior Scientist and research scholar of Department of Science and Technology and Department of Atomic Energy, Hirok Chaudhuri, Nisits K. Das, Rakesh K. Bhandari, DebasisGhose, Prasanta Sen and Bikash Sinha. Other well-known booksEarthquake:„ Forecasting and Mitigati;

V. CONCLUSION

Over 80 years means from 1934 this was the biggest earthquakes . The main reason for this biggest earthquake was a shift of earth’s surface which is estimated to have been 3 meters in 7,200 km. By this effect the Kathmandu, which is the capital of Nepal was lifted by about 3 feet, vertically. This caused severe damage in the capital city. The earthquake resulted in the death of about 5,057 people in Nepal alone. More than 8,000 people of Nepal were injured. Along with Nepal, this earthquake caused the destruction of property and loss of life in India, China, Tibet and Bangladesh. 74 people died in India and 25 people in China. Even the mighty Mount Everest felt the tremors of the earthquake and is now 2.5 cm shorter than its height before the earthquake.

Everest before

Everest after

And some of the affected areas are

Langtang Valley Landslide

The Unharmed Pashupatinath Temple

After Shock

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