

Earthquake Risk in Delhi and Possible Management

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Introduction

Disaster does not have any boundary and also disasters can take place in many forms, both natural and manmade such as earthquakes, floods, hurricanes, locust swarms, livestock plagues, war and the breakdown of law and order. India is one of the most densely populated country in the world with over one billion people.

The earthquake is a potential hazard in Delhi. Many intensive research shows that the location of Delhi lies in seismic zone four which means, very high risk zone. Although we cannot forecast of earthquake but due to quality of constructions of the buildings, basic capacity building among the local community we can reduce the impact of any future earthquake. For example, in Japan an average three to four earthquakes take place in a week and there is no causality. If the earthquake take place in Delhi with 5 to 6 magnitude, the situation will be very bad in Delhi.

The table below shows the different risk due to earthquake in Delhi are as follow:

Risk in Delhi due to Earthquake	Total no. of people surveyed	Male	Female	Preferences
Collapse of the Buildings	240	175	65	1
Fire	60	50	10	4
Stuck in Metro	180	110	70	2
Floods	44	30	14	5
Disturb the food Chain and Water Supply	76	60	16	3
Total	600	425	175	

Source: An Intensive Questionnaire based field survey, February, 2013

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To analysis the above table, the total 600 people were surveyed in which 425 male and 175 female with an intensive questionnaire and found that the first preference is given by 240 people and said that the collapse of the buildings during earthquake is high possibility. the second preference given by 180 people for high risk to stuck in metro during earthquake as metro is a life line in Delhi. The above data shows that female are also aware about the possibility of earthquake in Delhi. the flood risk is wirg last preference by 44 people only.

The table below shows the education level among local community in Delhi are as follow:

S. No.	Educational Institutes	Level of Education	Total no. of %age
1.	University	55	9.16%
2.	Secondary School	195	32.5%
3.	High School	256	42.66%
4.	Others	94	15.66%
	Total	600	100%

Source: An Intensive Questionnaire based field survey, February, 2013

The description of above data shows that level of education among the surveyed community and found that 42.66% people were high school level only while, 32% people were up to secondary school level only. It is surprised to know that only 9% people are having university education. So it is clear that there is high need to create earthquake management skills at high schools to minimize the impact of earthquake disaster in future.

Table below shows the educational level of male in Delhi

S. No.	Educational Institutes	Level of Education	Total no. of %age
1.	University	82	19.29%
2.	Secondary School	176	41.41%
3.	High School	92	21.64%
4.	Others	75	17.64%
	Total	425	100%

Source: An Intensive Questionnaire based field survey, February, 2013

This above information shows that the level of education among male was 41% with secondary school and 19% are with university education. It shows that the literacy rate is high at secondary and high schools levels compare to university and other institutions. It is an important to understand here that if the government provide disaster management skills at schools levels that would be more useful and more effective that university and other institutions levels.

Table below shows the educational level of Female in Delhi

S. No.	Educational Institutes	Level of Education	Total no. of %age
1.	University	4	5.33%
2.	Secondary School	33	44.00%
3.	High School	26	34.66%
4.	Others	12	16.00%
	Total	75	100%

Source: An Intensive Questionnaire based field survey, February, 2013

After analysis the above data, there is conclusion that the education level among female is very high in secondary and high schools levels compare to university and other institutions. Therefore, it is strongly need that there is a need to provide the basic disaster management skills to the female as they also spend more time in their house compare to male. As all we know that the earthquake never kills the people but buildings do. Hence, it is an urgent need to create disaster education and skills among female for their safety.

Table below shows main suggestions given by the local community to reduce the earthquake disaster risk in Delhi with preferences.

Main Steps should be taken	Number of People	Total no. of %age	Preferences
To provide earthquake risk management skills	172	28.66%	1
Provide posters on earthquake risk management among the local community	43	7.16%	6
Start one page on for disaster risk and possible management in local	50	8.33%	5

news paper			
Students at schools and colleges be more encouraged from earthquake disaster management basic skills.	154	25.66%	2
Should be Emergency assembly point in all societies, Malls, picture halls, schools and colleges	80	13.33%	4
Provide basic skills training to women who spends more time in Houses.	101	16.83%	3
Total	600	100%	

Source: Questionnaire based field survey, January, 2014.

The suggestions given by the local community of Delhi shows that 28% given first preference and said that there is need to provide earthquake risk management skills among the local community of Delhi .Around 172 people out of 600 were in favour of to provide earthquake risk management skills. 25% given second preference encourage the students at schools and colleges be more encouraged from earthquake disaster management basic skills and 16% given third preference for providing basic skills training to women who spends more time in Houses. Only 6% people given the sixth preference for providing the posters on earthquake risk management among the local.

Major problems in Delhi for managing disaster risk :

1. Delhi having a huge pressure population.
2. The roads are very congested and even one ambulance cannot get through.
3. There is a complete lack of quality infrastructure.
4. There is also poor quality in the housing construction and there is no public awareness of what to do in an earthquake.
5. Also, there is no knowledge of what possible food to have on hand in a disaster.
6. There is a lack of locally trained people everywhere.
7. Many people have to many glass picture frames on the walls and objects near their beds.
8. Single brick walls have been built in slum areas without cement. This will cause injuries and be an obstacle to any rescue operation.
9. There is also a lack of emergency hospital tents and their location

Possible Management of earthquake risk in Delhi:

- Helipads to withstand an earthquake need to be constructed as they will provide the only help possible.
- New Buildings are to have a limited height and be able to “Shake” as in Japan.
- Awareness is needed for communities as well as individual Apartments to be organized in earthquake Disaster Management.
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- Every house should have a disaster management domestic kit-whistle, small torch, mask, bandages, water bottle and phone numbers for the hospital, police and ambulance.
- A Helicopter Disaster Team should be trained and on hand for any disaster.
- To provide earthquake risk management skills.
- Provide basic skills training to women who spends more time in Houses.
- Should be Emergency assembly point in all societies, Malls, picture halls, schools and colleges.
- Students at schools and colleges be more encouraged from earthquake disaster management basic skills.
- Start one page on for disaster risk and possible management in local news papers.
- Provide posters on earthquake risk management among the local community.

Problems Faced during survey:

To understand the perceptions of the local community of Delhi and examine the quality data for earthquake risk in Delhi and possible management , we have surveyed 600 hundred local people including male and female. It was so hard to get information in slum areas and rural Delhi in comparison to urban community of Delhi. Few field surveyor noticed that many female had very little knowledge about the earthquake and they refused to give information but when we explained that this is the educational research and will be helpful for us and the government to make right policies in future regarding earthquake disaster risk management in Delhi. In fact real problem we faced in slum areas where most of male and female felt that we will give some money for getting information but we took the headman of the slums and then they gave some information.

Many female said when we will get piece of land for our houses in Delhi. They said many people come to us for getting such types of information but they do not help us for getting jobs and land for our houses. We do understand their mantel level regarding permanent settle with concrete houses.

Conclusion:

As all we know that the earthquake never kills the people but buildings do. Delhi is the capital of India and having very dense population. Due to poor quality construction, lack of awareness for disaster risk management, slums and an intensive underground expansion of metro there is an urgent need for providing capacity building among the males and females. We also form a trained youth task force for disaster management and must train at least 20 male and female in very one kilometer in Delhi. These youths must be train in basic emergency first, basic life support and have distribution of their mobile numbers in their concerned area. If earthquake disaster take place in Delhi, the government and other agencies will be so late in scene so that time these trained youth would be an asset for saving many lives.

References:

1. Singh. Jagbir (2008) "Disaster Management: Future Challenges and Opportunities" Published by- I.K. International Pvt. Ltd. S-25, Green Park Extension, Uphaar Cinema Market, New Delhi, India (www.ikbooks.com).
2. Singh. Jagbir (2008) Information Technology and Environmental Management, 2008, by MD Publication, New Delhi, India.
3. Srivastava (1966) The Seismicity of the Area Around Delhi', Proceeding of the Third Symposium of Earthquake Engineering, Roorke, November, pp.417-422.