



## Community Preparedness for a Earthquake Disaster in National Capital Region of India

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### Introduction:

National capital New Delhi was rattled by at least four earthquakes in a span of three hours early on Tuesday (November, 12, 2013) and on February 15, 2012, an earthquake with an intensity of 8 on the Richter scale struck Delhi. It leveled buildings collapsed parts of the airport and triggered emergencies such as fire in goods trains carrying petrol and leaks of chlorine gas. It shows that the earthquake disaster can take place at anytime at any day in Delhi. It is an urgent need to create disaster management skills among the local community.

National Capital Region (NCR) is located on folded crustal ramp with basement rocks of Delhi Super group, bounded by two regional faults viz Mahendragarh-Dehradun Sub Surface Fault ( MDSSF) in the west and Great Boundary Fault (GBF) in the East Delhi. The ramp trending NNE-SSW across 'fore deep', is juxtaposed to Himalayan thrust belt. Another important structural element of the belt is NW-SE trending Delhi-Sargodha Ridge (DSR) which passes through Delhi and is flanked by basins on either side, viz Sahaspur Basin in the north and Bikaner Basin in south west. The geotechnical mapping, geophysical survey and remote sensing studies have indicated presence of many lineaments around Delhi. Geological Survey of India compiled a Seismotectonic Atlas based on review of seismotectonic of the country and published in 2000 (GSI 2000). Delhi and its environs have been damaged by earthquakes from far field seismic source in Himalaya, namely Great Kangra Earthquake of (M: 8.0, 1905, IX) and Uttarkashi (19th Oct., 1991) shocked Delhi to the extent of intensities VI and V respectively. The felt intensity of the Chamoli earthquake (28th March, 1999) was VI at Delhi, about 300 km from the epicenter and the peak ground acceleration value recorded near Delhi was about 11 cm/sec<sup>2</sup>. In addition to this, Delhi domain has also been affected by earthquakes of local fault systems of peninsular domain. The history of past earthquakes experienced in and around Delhi shows that it is situated in region liable to moderate damage by earthquake. Six historical earthquakes of magnitude 5.5 to 6.8 are known to have occurred in NCR and its surrounding area since 1720 AD.

'Disaster Management' covers a broad range of interventions undertaken before, during and after a disaster to prevent or minimize loss of life and property, minimize human suffering and hasten recovery. The management of a disaster can be viewed as a series of phases which includes Response and Relief Phase, Recovery Phase (Rehabilitation and Reconstruction), Prevention Phase, Mitigation Phase and Preparedness Phase.

### Concept of Community

A natural event becomes a disaster when it causes loss of lives and or property. Since disasters affect people as individuals, and community as a collective, both are important to



reduce the impacts of disasters. Community based disaster management, by its very definition, involves communities in identifying, assessing and acting jointly to reduce disaster risks. The impact of disasters is increasing in magnitude much beyond the management capacity of governments and traditional emergency responders. The usefulness of CBDM approach helps in reducing disaster impacts and calls for its greater recognition and institutionalisation within the disaster management framework. "Community is defined as a feeling that members have of belonging, a feeling that members matter to one another and to the group and a shared faith that members' needs will be met through their commitment to be together"(McMillan and Chavis, 1986). Many people define community in different ways; however, the aforesaid definition is preferred because it is inclusive. Thus community includes not only the people who live in a certain location, but also includes the local government, local business sector, local academic bodies and NGOs. The term "Community-Based Disaster Management" received attention in the development field in the 1980's, although community based disaster initiatives were already on-going in different parts of the world in formal or informal ways.

The basic principles on which CBDM stands are:

- Planning, implementation and management owned by community, led by local champions.
- Interventions start from locally available resources, capacities and partnerships.
- Community considers choices and takes decisions.
- Programmes focus on developing local coping capacities.
- Disaster preparedness approached from a development perspective.
- Sustainability considered as an underlying factor.
- Attention to special vulnerable groups.

Community-Based Disaster Management initiates a process involving sequential stages that can be operationalized to reduce disaster risk. Community participation is the most effective element to achieving sustainability in dealing with natural and man-made disaster risks. This is particularly true in the case of earthquakes, where the majority of victims are killed by their own collapsing houses. From the perspectives of environmental degradation, human intervention, and security aspects, disaster management is a pressing issue for all of us and should be undertaken on a comprehensive basis. The approach seeks communities at risk to get engaged in all of its phases: prevention, mitigation, preparedness, response, and recovery. In order to build disaster resilient communities, they need to be empowered first so that community members can cope with the adverse effects of natural hazards. There are many approaches for creating disaster management awareness among local community.

### **Awareness Campaign**

Awareness campaign need to be launched to educate the people about the disastrous effects of earthquakes and to prepare them to face these in a better way. Prevention and mitigation



begins with the information. Moreover, public education and community participation is key to the success of the implementation of reduction and mitigation programmes.

A large number of specialised as well as popular articles have been written about earthquakes in research journals and conference proceedings, which are not available to common man. The newspapers and magazines usually do not show interest in publishing articles about mitigation and hazard reduction, however, they give extensive coverage after earthquake takes place. Information and popular articles should be written in simple language and be made readily available to common man. Earthquake related curricula should be introduced in the school stage of education itself. Audio-visual programmes, preferably in the local languages have to be prepared and made available to the public. Voluntary organisation and college students may be approached to take up the responsibility of awareness campaign.

### **Women's role at the community level:**

Women and men are affected differently by disaster due to the economic, social and cultural roles they play in society. Very often, social groups with few resources and precarious material conditions are the most vulnerable. Women and children frequently form the majority of these groups. The community plays a major role in disaster response because it is the first unit mobilized before specialized aid can arrive. Preparing before a catastrophic event is necessary for adequate community reaction. Loss of human lives and material losses can thus be avoided. Women play key roles in the community to protect themselves and their families in case of a disaster. However, to fully develop this potential they need preparation and support. Women should be represented in local emergency committees and other community groups whose objective is to identify risks in the community and ways to reduce them. For example, women should participate in decisions related to the choice of construction sites, channeling of a river, reforestation and so on. Given the fact that women spend more time at home and in the community, their training and participation will be a priority in preventing home fires (measures to avoid short circuits, use of extinguishers, storage of inflammable materials, etc.).

The heads of households, an important proportion of who are women, could choose safe homes if they had sufficient information about the disasters affecting their areas, such as information construction designs resistant to earthquakes, fires, hurricanes and floods. Guidance about preventive measure, such as preventing heavy objects from falling during earthquakes, would also result in safer homes. In most societies, women constitute more than fifty per cent of the population and are a major human resource in socio-economic development. However, this resource can only be realized if women are involved and active in the development process.

Prepare your home for a Earthquake disaster:

India is one of the most densely populated countries in the world with a population of over one billion according to the 2011 census. The population of Delhi is 19 million with the highest density of 11,297 people per square Kilometre according to the 2011 census, making



it the first largest city in India. An earthquake disaster in North India has the potential to do enormous damage which would have dire consequences for commercial and industrial centres as well as having enormous economical and political implications, which will affect the entire country and not just the population of North India. The All India Foundation for Peace and Disaster Management (aifpdm) has strongly felt the importance of having a Disaster Kit in every house for use in any disaster crisis, in order to save people. The aifpdm is the first organisation in the world which has taken this initiative at local, regional, national and international levels, to make the world community safer from any disaster.

### **Importance of the Disaster Kit:**

1. The Kit is helpful for some self help before any medical aid can come.
2. It is easy to use and is easily accessible.
3. People can help their friends and family members first before medical aid arrives.
4. This kit will help ease trauma in any disaster crisis.
5. It will save many lives.
6. With the Panic Alarms, people can be found in rubble before sniffer dogs find them and other electronic search devices are also put into operation.
7. This Kit will give a new awareness to people to be prepared for a disaster crisis.
8. This Kit is simple to use without any special training.
9. By easing the trauma, this kit will give more confidence and psychological support to the injured.
10. Children, adults and senior citizens will find it easy to use.

### **Conclusion**

Earthquakes of intensity lower than four on the Richter scale have originated from 14 epicentres located in the NCR. Besides, there are several other parallel faults inferred from geomorphologic studies. Earthquake in Delhi and neighbourhood areas is related to tectonic activity along these faults. The government alone cannot and will not be able to manage and handle all types of disasters with its machinery without active participation by the people of any country, according to a common theory given by policy makers, experts, and professionals. Failures of top down effective disaster management approach to reduce risks from disasters lend evidence to this notion. As a consequence, numerous scholars and stakeholders feel that it is high time to adopt a new strategy that will involve vulnerable people directly in planning and implementation of mitigation, preparedness, response, and recovery measures. This is because communities are the best judges of their own vulnerability and are capable of making the best decisions regarding their well-being.

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