

## CHALLENGES IN DISTRIBUTION OF EMERGENCY RELIEF SUPPLY: CASE STUDIES OF THREE EARTHQUAKES IN IRAN

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Iran is located in the Alpine-Himalayan seismic belt as one of the most active tectonic regions of the world. The country has frequently suffered large and destructive earthquakes in the past few decades. When a natural disaster strikes, relief services play an important role and are in a unique position to address the particular needs created by natural disasters, as the capabilities include technology, expertise and products in areas such as energy, water, lighting and healthcare. Based on this, emergency relief supplies need to be distributed among survived people in timely manner to protect their lives. Resources and employee support therefore are required to be mobilized for assisting the affected communities.

The aim of this paper is to briefly review the provision and distribution of necessary supplies and resources in the aftermath of three major earthquakes that occurred in Iran during the last quarter of century including Manjil–Roudbar 1990, Bam 2003, and Bushehr 2013. The methodology is based on field observation undertaken by both authors. Some records have been inferred from document search. The challenges regarding these three earthquakes in the field of distribution and access to necessary relief items are discussed briefly in this paper. However, other common issues emerged in these earthquakes, part of which included:

- Inappropriate information dissemination;
- Weak coordination among relevant relief forces active at scene;
- Key shortages in required personnel, capacity and equipment;
- Improper use of specialized volunteers;
- Improper collection and distribution of goods in the area;
- Lack of good enough security after distribution of goods;
- Insufficient vehicles for transferring the goods.

The improper information publicized about the existing shortages, caused problems in sending goods to the affected areas in time. Also, the difference in distribution for the survivors among various provinces caused extra difficulties and problems in providing security for donations. This also caused difficulties in proper distribution of such goods. The access to most stricken regions were not easily possible due to the damage of roads resulted from geological instabilities. One of the other important issues was that providing aid for survivors was not in accordance with their social conditions and sometimes against ethical considerations (Amini Hosseini et al., 2009).

In order to reach the affected area in time and to distribute the needs of survived people in the aftermath of an earthquake, few issues can be recommended based on observations of the authors and available sources. First of all, the establishment of relief centers can be useful in order to locate a place to coordinate the resources. This will use these centers as a place where all the aid agencies and relief operators can cooperate together in order to avoid overlap in responsibilities and double aid assistance. Additionally, a reliable system should be in place to estimate the approximate number of deaths, injured and survivors. This will help the government and local aid agencies to have an overall estimation of the needs for the affected area. The governments should estimate the extent of people's emergency needs to see if they can handle the situation or they need assistance from other countries. Groups of selected people in the community should be trained in advance to deal

with security issues in order to avoid chaos in the time of distribution of goods and relief items. There should be covered storage room for storing the goods that are sent from either local assistance or foreign aids. Some foods needs to be kept in dry places, otherwise they will become unusable. In case of reaching the blocked roads, the use of light vehicles such as bikes or in cases animals such as camels and donkeys which can travel in bad conditions and remote areas, are suggested specially in rural areas.

In general, by comparing lessons learnt from these earthquakes, it can be observed that there is a gradual change and improvement in recent earthquake in Bushehr (Tatar et al., 2013) with regard to considering the social condition of people and maintaining the security in distribution. At the end, it is suggested that some lessons learnt should be emphasized further in future disasters including issues related to collecting donation, estimation of people requirements, timely distribution, sharing equipment among task forces, total distribution, paying attention to social conditions, and last but not the least, considering the security issues in process of supply distribution.

To conclude, this study presents a brief background into challenges of resource availability in a post-disaster situation in three moderate to major earthquakes in Iran during 1990 to 2013. This paper provides insights into issues the relief interventions could contribute in arriving at resource availability for a successful disaster relief supplies. Challenges are observed and addressed and recommended strategies towards improvement of this process are presented for future disasters. It should be mentioned that the research on this aspect of earthquake response is very limited in Iran. The reason can be due to the lack of extensive documents and the allowable extent of using the available confidential data. It is however, addressing a relevant subject to assist people resiliency especially after major earthquakes, and therefore has a great value for further detailed exploration.

## REFERENCES

Amini Hosseini K et al (2009) Local Disaster Management Assessment and Implementation Strategy, IIEES Report, Tehran, Iran

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