

## NEED ASSESSMENT FOR EMERGENCY SUPPLY IN EVACUATION PLACES AFTER EARTHQUAKES

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During the first few days after a big disaster (such as a strong earthquake) where many people can be affected, providing necessary supply (such as tent, water, food, etc.) for victims and survived people are big challenges for disaster management authorities. This is mainly because of huge amounts of requests, blockage of road network, security issues and limited resources available in the affected region. In many cases, such as Sarpol-e Zahab, Iran Earthquake of 2016, delay in providing basic requirements for the affected population, caused severe social and security issues for many days, aftermath of the disaster.

In order to address this issue, some countries have developed different guidelines (such as SPHERE, 2012) and formulated many plans for storing and distributing necessary materials, before to after the disaster, to be used after potential disasters during emergency conditions. However, those guidelines should be prepared based on local conditions and cannot be directly translated and applied in other countries, due to differences in socio-cultural conditions. Similarly, in Iran some guidelines have been prepared to address necessary emergency supply (such as providing water and health services at the time of crisis) by relevant institutions such as Red Crescent Society (RCS) and Tehran University of Medical Science (TUMS, 2011 and TUMS, 2012).

The key element for developing emergency supply plans is the assessment of potential needs aftermath. This can be evaluated by studying hazards, vulnerabilities (physical and social) and conducting risk analysis. Based on such analysis, the potential number of evacuees at each region can be estimated and then necessary supply for each individual can be assessed. In this paper and based on evaluation of different resources and having a look on local conditions in Iran, the basic requirements for evacuees during emergency phase (before temporary settlement) has been assessed and the results have been summarized in Table 1.

*Table 1. Minimum requirements for emergency shelters based*

Water	Food	Tent	Blanket	WC	Shower
7.5-15 liter per person per day	300-500 gram per person per day	1 for 8 person for 2% of total population	4 for each individual for 2% of total population	1 for 30 evacuees	1 for 60 evacuees

The other important issue in this regard is the storing of those materials in appropriate places to be used after a disaster. In this study and based on available infrastructures in Iran, the safe school buildings have been selected as potential places for evacuation and storing necessary material. Accordingly, at each neighborhood, the safe schools



having appropriate spaces for accommodation of local residents at the time of earthquake should be determined and the necessary materials should be prepared and kept in those places to be used at the emergency conditions. For this purpose, water tanks having minimum capacities (as can be calculated based on Table 1) should be installed in appropriate places in schools. Other materials should be preferably kept in the schoolyards in appropriate containers to be accessible even if the school buildings experience some damages by earthquakes (Figure 1).



Figure 1. Container of storing emergency items in the safe schoolyards and practice to set tents by local residents

The materials kept in the containers should be inspected regularly and replaced with new ones in appropriate time intervals. The old materials can be used in the annual drills or can be donated to charity organizations. This is worth mentioning that the proposed plan is now under implementation by disaster management authorities in Iran in the context of “Safe School – Resilient Communities” program and it is expected to be expanded in many safe schools all around the country by 2025 (Amini Hosseini, 2016).

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