

Chapter 30

Community-Based Disaster Risk Management

Field of expertise: School Disaster Safety, Disaster Risk Reduction Education

Takeshi Sato

Translated by Catherine Sachi Kikuchi

Summary

In order to prevent and mitigate disasters in a community, local groups such as neighborhood associations and administrative wards, form organizations to carry out voluntary activities not only in times of disaster but also in normal times. Community-based disaster risk management (CBDRM) leaders are required to be rooted in their local communities and to be visible. It is also important to train the next generation of human resources for disaster risk reduction through these activities.

Keywords: community, community-based disaster risk management volunteer organization, community-based disaster risk management leader, school-community cooperation, children

Introduction

The number of community-based disaster risk management (CBDRM) volunteer organizations formed and the number of CBDRM leaders trained do not necessarily indicate the level of disaster preparedness of a community. What has been questioned through the experience of the Great East Japan Earthquake is the ability of such organizations to demonstrate their capabilities not only in times of disaster but also in everyday life. What is also important is the independence and sustainability of the activities.

1: Problems Revealed by the Great East Japan Earthquake

What happened?

The experience of the Great Hanshin-Awaji Earthquake of January 17, 1995, led to a reassessment of the importance of CBDRM volunteer organizations from the perspective of citizens protecting their own communities. Efforts to develop and strengthen these groups have been made throughout Japan. At the same time, efforts are being made to train the leaders, who play a central role in the activities of CBDRM volunteer organizations.

The Great East Japan Earthquake that struck on March 11, 2011, caused severe and widespread damage. Local government buildings and staff were also affected by the disaster,

which meant that public assistance was limited in the immediate aftermath. For this reason, there were high expectations for CBDRM volunteer organizations and the leaders to play the role of aid provider. However, many CBDRM volunteer organizations were not equipped with the skills expected by society to evacuate and guide people to emergency evacuation sites or to operate evacuation centers. In other words, it is not always appropriate to evaluate a community's level of disaster preparedness simply by the number of CBDRM volunteer organizations formed or the number of their leaders trained.

The reality of evacuation

The Great East Japan Earthquake occurred during a time when many students were at school, and were under school supervision. It made us aware of the importance of coordinating school-based disaster risk management and community-based disaster risk management in our everyday lives. Let's take a look at a case study of a junior high school in the coastal area of Iwate Prefecture. Before the earthquake, the school's tsunami evacuation plan was to go to the schoolyard. No drills were conducted to evacuate in stages from the schoolyard. As the tsunami surged over the seawall and into the schoolyard, the students who had evacuated to the schoolyard had to rush to higher elevations for emergency evacuation. However, local residents had a different tsunami evacuation plan of escaping to higher ground, and evacuation routes had been prepared for this purpose before the earthquake. This means that the tsunami evacuation plans for children were different from the ones for the adults living in the same area. Both plans ensure safety, but it is important that both parties have a common understanding of the plans, including the differences. After the earthquake, the junior high school revised its tsunami evacuation plan to evacuate to higher ground, just like the local residents. Based on the lessons learned, promoting school safety in cooperation with the local community and families is reflected in the Plan for the Promotion of School Safety (Ministry of Education, Culture, Sports, Science and Technology, 2012), and its importance is further increased in the Second Plan for the Promotion of School Safety.

2: Paradigms Destroyed by the Earthquake

Conventional wisdom and necessary responses

In the aftermath of the Great East Japan Earthquake, there were three cases in Sendai City, Miyagi Prefecture, in which evacuation centers inland were forced to take urgent measures.

The problem of some people not being able to return home

An elementary school in central Sendai, Miyagi Prefecture, was flooded with evacuees from Sendai Station and the surrounding areas, resulting in most of the evacuees in the evacuation center being those who could not return home mainly due to mass transit disruptions after the earthquake. As a result, local evacuees were not able to enter the shelter. Shelters were originally designated for local people, and the idea of local residents supporting local evacuees was very different compared to the reality. School administrators and neighborhood association officials worked hard to ask neighboring public facilities and leading companies to accept some of the evacuees from the schools.

The problem of opening a shelter

An elementary school in Sendai City, which had been designated as an evacuation center, could not be used because of the damage caused to the building by the earthquake, even though the facility had been reinforced. Local residents who had planned to use the school as an evacuation center were forced to go elsewhere. Stockpiles of emergency supplies that had been maintained at the school had to be transferred to the newly opened evacuation center. For the facility managers who suddenly had to accept these evacuees, the premise that the designated evacuation center would be a base of operations collapsed.

The problem of evacuation center management

At a different elementary school in Sendai City, teachers and staff took the lead in running the evacuation center from when it first opened to when it finally closed, under the leadership of the principal. It was not possible to shift the management of the shelter from the school staff to the local neighborhood association. The more school teachers and staff are involved in the operation of the evacuation centers, the more time they lose in caring for the children and resuming their school-related duties. Supporting evacuees immediately after the opening of the evacuation center was expected, however, the full duration of their support from the beginning to end of the shelter being in use was far more of a burden than initially expected for the teachers and staff.

3: A New Approach

In order to make the most of the three lessons learned from the disaster, described in section 2 above, let us discuss the social trends that have changed after the Great East Japan Earthquake, focusing on the situation in Sendai City.

Maintenance of temporary accommodation for those who cannot easily return home

In order to avoid people who have difficulty returning home rushing to designated evacuation centers, local governments and business establishments that have facilities that can temporarily accommodate them are working on agreements to establish temporary stay facilities. As an example, the Sendai Station Area Difficulty-Returning-Home Countermeasure Liaison Council, a coalition of the city of Sendai, businesses in the Sendai Station area, and shopping district promotion associations, has formulated guidelines for handling people in this situation, and regularly holds drills, including on how to guide them to temporary stay facilities. Business establishments also keep employees on the premises for a certain period of time to prevent people who were having a difficult time returning home from rushing home at once (Rushing Home Control).

Early Emergency Risk Assessment¹

¹ Emergency Risk Assessment is when an architectural expert directly investigates a building damaged by an earthquake to determine whether a secondary disaster will affect human safety within the building. They check the risk of outer walls/windows falling, maintenance equipment attached to the building, and building collapse due to aftershocks.

In principle, evacuation centers accept evacuees after the facility manager confirms its safety, but a safety check based on a professional's perspective is required. Since the number of administrative officials in the architectural profession is limited, it has become a nationwide issue to conduct emergency risk assessments of evacuation centers as quickly as possible with the cooperation of private architectural engineers. Sendai City has concluded an agreement with a group of building experts to expedite the safety check of evacuation centers. Specifically, in the event of an earthquake disaster with a seismic intensity of 6-lower or above on the Japanese seismic scale, the city of Sendai will assume that it has received a request for assistance even if it has not, and private sector building engineers will begin to assess the evacuation centers that they have been pre-assigned.

Evacuation Center Management Committee

In order to manage evacuation shelters, local groups such as neighborhood associations, evacuees, administrative staff in charge of evacuation shelters, as well as facility managers and staff are supposed to form an evacuation shelter management committee and carry out systematic activities. The evacuation center management committee will discuss in advance the division of roles and the management of evacuation centers. Based on the results of these discussions, they prepare a management manual for each evacuation center. For evacuation facilities that take COVID-19 into consideration, their countermeasures are increasing, the number of shelters is increasing, and the limitations of public assistance immediately after the disaster is becoming clearer. Expectations of the local community members to help each other, through what is known as mutual support, are increasing as well.

4: Achievements and the Future

A new approach to disaster science

As described in section 3, community-based mutual support requires CBDRM leaders as key persons. In this section, we focus on the Sendai City Local Disaster Risk Management Leader (known in Japanese as the SBL), who is visible to the local community to the point that they are required to provide personal information (address, name, telephone number, and gender) to the local neighborhood association, school, and other SBLs in order to attend training sessions.

The SBL in the Katahira district of Sendai City is continuing the "Disaster Risk Reduction x Treasure Hunt Game (DRRTHG)" to teach local children about nature, history, and disaster prevention resources of the area while exploring the city (Sato et al., 2018). Photo 30-1 (a) shows the children of Katahira, who were in the sixth grade at the time, asking to participate in community development activities with local adults. Photo 30-1 (b) shows the children in first year junior high school participating in a DRRTHG in which local SBLs acted as guides. In Photo 30-1 (c), the children in the second year of junior high school are presenting at the World Bosai Forum, and in (d), the children, now in their first year of high school are acting as guides for elementary school students who participate in the treasure hunt.

Katahira district's model of disaster risk reduction activities during normal times can be seen as an example for training the next generation of human resources. We will contribute to the global promotion of community-based disaster risk reduction activities by disseminating and sharing good activity models (Sato et al., 2016) of CBDRM leaders in Japan and abroad.



Photos 30-1a, b, c, d. The Disaster Risk Reduction x Treasure Hunt Game in Katahira District, Sendai City, and training the next generation of human resources

Conclusion - from the author

Since the Great East Japan Earthquake, there have been a number of activities for high school and junior high school students to learn about disaster risk reduction, such as the Miyagi Prefecture Board of Education's Disaster Risk Management Junior Leader Training Seminar and the Great East Japan Earthquake Memorial Day, led by Tagajo High School. Some high school students have voluntarily become certified as Miyagi Prefecture Disaster Risk Management Instructors. They are now CBDRM leaders as a result of their exchange experiences and learning among students from different schools and different parts of Japan. We hope that opportunities for the next generation of children to learn from each other will be provided on a regular basis, both in Japan and abroad, and that the next generation of disaster management professionals will continue to be nurtured through these activities.

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