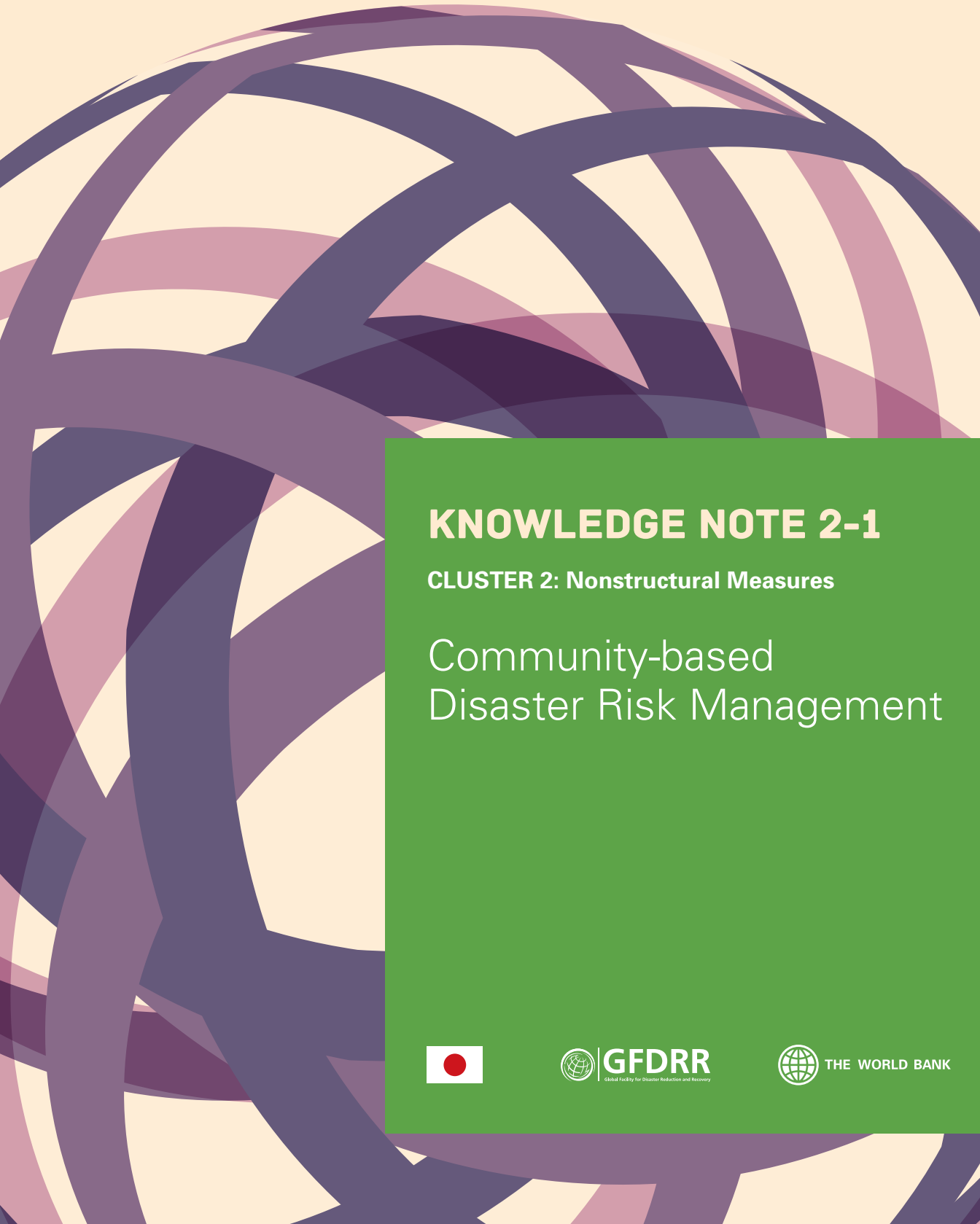

KNOWLEDGE NOTE 2-1

CLUSTER 2: Nonstructural Measures

Community-based Disaster Risk Management

GFDRR
Global Facility for Disaster Reduction and Recovery

THE WORLD BANK

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KNOWLEDGE NOTE 2-1

CLUSTER 2: Nonstructural Measures

Community-based Disaster Risk Managment

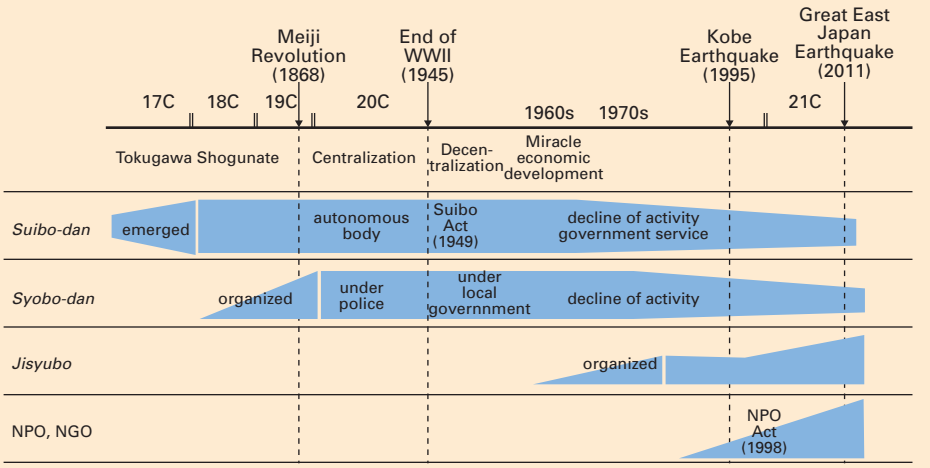
Local communities play a key role in preparing for disastrous events such as the Great East Japan Earthquake (GEJE), and are normally the first responders to take action. On March 11, 2011, community-based organizations (CBOs) were active in the disaster response and saved countless human lives. Recognizing the role of communities and providing them with central and local government support is critical to maintaining and strengthening important community-based functions.

Local communities have been responding to and managing disaster risk for centuries. Before the creation of Japan's formal state system, local communities carried out disaster-related activities as volunteers; community-based organizations (CBOs) have existed for centuries. They include: *Suibo-dan* for flood risk dating from the 17th century, *Syobo-dan* for firefighting from the 18th century, and *Jisyubo* for earthquake disasters from the 1970s (see table 1).

FIGURE 2: **The Sanriku Expressway was built with tsunamis in mind**

Organization	*Hazard*	*Legal act*	*Supervising government organization*	*Date established*	*Number of staff or groups*
Suibo-dan	Flood	Flood Fighting Act	Ministry of Land, Infrastructure, and Transport	17th century	900,000 staff in two organizations
Syobo-dan	Fire	Fire Defense Organization Act	Fire and Disaster Management Authority (FDMA)	18th century	
Jisyubo	Earthquake	Basic Act on Disaster Reduction	Cabinet Office, FDMA	1970s	140,000 staff
NPO	All	Act to Promote Specified Nonprofit Activities	Cabinet Office	After the Kobe earthquake in 1995	> 2,000 groups

FIGURE 1: **Historical timeline of community-based organizations**



In addition, various nongovernmental organizations (NGOs) and nonprofit organizations (NPOs) are involved in disaster risk management (DRM) activities at the community level. Many of them collaborate with *jichikai* (neighborhood associations) and local governments, and sometimes with local academic institutions.

How the government and CBOs coordinate around DRM has evolved over two centuries, shaped by major events and trends. These include the Meiji Restoration at the end of the 19th century, which prompted modernization and centralization; democratization following World War II; and the miracle of economic development in the 1960s. Traditional community structures were eroded over time as Japanese society modernized and urbanized. As depicted in figure 1, this has resulted in a decrease in spontaneous and autonomous community-based engagement in DRM with a corresponding increase in government support to these activities. The government's recognition of and support to community-based DRM has been key to keeping these efforts alive and well.

FINDINGS

THE ROLE OF CBOS IN THE GEJE

A key factor in reducing the number of lives lost in the GEJE was the long tradition of community organization around risk reduction and preparedness. The tsunami waves brought on by the GEJE overwhelmed coastal defenses, and warning systems underestimated the height of the waves. CBOs played critical roles in responding to the event.

THE VOLUNTEER FIRE CORPS (SYOBO-DAN)

The volunteer fire corps traces its history to the 18th century. Corps members have regular jobs but, when disaster strikes, they take part in disaster management activities in their own communities, such as firefighting, issuing warnings, assisting evacuations, conducting search and rescue operations, and operating facilities. There are currently some 890,000 active volunteers across Japan, which is almost six times the number of career firefighters. The Fire Defense Organization Act and its bylaws stipulate the corps's roles, organizational structures, members' status as part-time government staff, and compensation and allowances. The local government has principal responsibility for the corps, while the central government subsidizes their facilities.

The *Syobo-dan* responded to the GEJE at the risk of their own lives. Some 250 members were killed or are missing, including 51 in Rikuzentakata City. Some examples follow:

- A corps member quickly guided all the people in a community to an evacuation shelter preventing any casualties. Corps members supported the evacuation of 30 handicapped and elderly persons, and persuaded three other people to move who were insisting on staying at home (Shiogama City).
- Members closed the tsunami gates by hand, since they could not be operated automatically because of power failures (Miyako and Ofunato cities).
- Members died closing the tsunami gates in Kamaishi and Isihinomaki cities.
- One member died ringing a fire bell to warn people of the tsunami right up until the tsunami hit (Otsuchi City).
- Six members, on the way back from closing gates, tried to save a bedridden elderly woman from her residence. Five of the six members and the woman died in the tsunami (Otsuchi City).

Based on lessons learned from the GEJE, the Fire and Disaster Management Agency requested local governments to reinforce the volunteer fire corps in October 2011 with equipment, increased allowances up to the level stipulated by law, and the recruitment of new members.

NEIGHBORHOOD ASSOCIATIONS (JICHIKAI)

Communities were generally very well prepared for the GEJE. Most had participated in regular disaster drills and knew what to do when the tsunami warning was issued.

For example, in Kesennuma City, a television program broadcast in 2007 urged neighborhoods to prepare themselves. The program provided a detailed simulation of a tsunami hitting Kesennuma. This simulation was shown to the local residents, and the neighborhood associations (*Jichikai*) subsequently undertook to identify key evacuation routes. Regular disaster drills were also conducted. These preparations helped local residents to

FIGURE 2: **Damaged Hashikami area of Kesennuma (left); Kesennuma Fukkou Yatai Mura (community recovery restaurant (right)**

evacuate safely and quickly to higher ground immediately after the GEJE, thus saving many lives (figure 2).

In the Toni village of Kamaishi City, community members participate in annual disaster evacuation drills conducted by the *Jichikais*. The drills are conducted every year on March 3 to mark the anniversary of the Meiji-Sanriku tsunami of 1896. Participation rates in the disaster drill vary from neighborhood to neighborhood, with more people participating in the smaller, more cohesive communities. According to the head of the *Jichikai*, the participation rate in Kojirahama is low, while in Kerobe most people participate in the drill. In Kerobe and Oishi, community members have a strong sense of solidarity, as the population is much smaller than in Kojirahama and they have lived there for years. Toni residents have written books about the effects of past tsunamis, which are used by the communities as an awareness-raising tool. In addition, there are two tsunami maps: one issued by the Kamaishi City government and the other developed by the community members themselves. The former includes the expected flood area, expected height of the tsunami, and expected arrival time. The latter includes local information about which areas were flooded in the Meiji-Sanriku and Syowa-Sanriku-tsunamis, evacuation sites, evacuation routes, and dangerous areas. These maps are distributed to all families in the town of Toni (KN 5-3). Finally, a number of community festivals are used as opportunities to engage local schools in disaster awareness and preparedness activities (figure 3).

In the Wakabayashi ward of Sendai City, the local community forged a very strong relationship with the elementary school to educate people in disaster preparedness. At the initiative of the *Jichikai*, regular drills were conducted in cooperation with the school. A handbook was prepared on managing the evacuation centers. After the 2010 Chilean earthquake, a tsunami warning was issued for the Tohoku coast, and tsunami waves of up to 1.5 meters reached some areas. This prompted communities in Wakabashi to reexamine their evacuation plans. They found that it would take longer than expected for school children in the coastal school, Arahama Elementary, to evacuate to the designated school, which was 4 kilometers from the coast. The local community therefore decided to take shelter

FIGURE 3: **Toni Bay Area of Kamaishi City (top); Sakura Festival (bottom)**

in Arahama Elementary School, and emergency food supplies were increased to feed 800 instead of 300 people, and were stored on the top floor of the school building. During the GEJE, Arahama Elementary served as the shelter for more than 300 adults from local communities, in addition to 70 school children. They remained in the school overnight, and the food supplies were well protected on the top floor during the emergency (figure 4).

LESSONS

The GEJE experience yielded several important lessons about the need to empower communities: to understand and reduce the risks they face, to be prepared, and to act as first responders to hazard events. It also pointed to important ways that their roles can be strengthened. Specific lessons include:

FIGURE 4: **Wakabayashi Area (top), and local community activities (bottom)**

- The volunteer fire corps plays a critical role in DRM for several reasons:
  - Since the volunteers come from the community, they have local knowledge of the context and are familiar with those residents who may need special assistance to evacuate, such as the disabled or bedridden.
  - The total number of volunteers is some six times that of the professional firefighting staff, providing a cost-effective way of mobilizing large-scale emergency response capacity.
  - The members receive regular training and can respond immediately because they are locally based.
- Community-based DRM activities are well integrated in the daily lives of the residents, ensuring that awareness of natural hazards is maintained, for example, by marking the anniversary of a large catastrophe with disaster drills, and linking awareness-raising activities with local festivals.
- The role of communities in DRM is formally recognized and supported by local and national authorities through linkages with local institutions.

RECOMMENDATIONS FOR DEVELOPING COUNTRIES

- Most people saved from major disasters are rescued by relatives and neighbors within the first 24 hours—before professional responders can get there. Statistics show that in the 1995 Kobe earthquake, 80 percent of those rescued were saved by their neighbors. So, while local and national authorities have key responsibilities for civil protection in hazard events, communities are always the first responders and should be empowered in that role.

- Strong and effective community-based DRM requires grassroots support and linkages to the day-to-day life of the community. Linking disaster risk awareness and preparedness activities to local cultural events can be extremely effective in maintaining a culture of preparedness.

- In addition to grassroots support, building effective and sustainable capacity for community-based DRM requires the formal recognition and support of local and national authorities. In addition to providing financial and technical assistance, local and national governments should develop legislation on and institutionalize the role of CBOs.

KEY REFERENCES

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