

**Japan's Emergency Planning and the
Great Tohoku Earthquake of 2011**

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The Great Tohoku Earthquake of March 11, 2011, was the first time in Japan's history that the government sought international assistance. Japan's Self Defense Forces (JSDF), the equivalent of armed forces, and the US military in Japan responded with "Operation *Tomodachi*" to rescue and to assist victims. The international community also promptly reacted with offers of humanitarian assistance. But the string of disasters – a magnitude 9.0 earthquake, several towering tsunami and the venting of highly radioactive debris from four nuclear reactors - revealed serious shortcomings in Japan's readiness to respond quickly and effectively to natural disasters. Also apparent were government restraints on Japan's NPO (Non-profit Organizations) community's capacity to assist.

The Great Tohoku Earthquake

The earthquake rattled Japan from Tokyo to Tohoku, the northern half of Japan's main island of Honshu. After-shocks rocked the area 52 times with magnitudes between 6 and 9 (the 2009 earthquake in Haiti registered magnitude 6.1). Shortly after the first tremor, several tsunami ten meters (30 feet) and higher devastated Tohoku's northeast coast.



Shock and Awe

One tsunami slammed into several nuclear power plants on the coast midway between Tokyo to the south and Sendai city to the north. The Japanese government and Tokyo Electric Power Company (TEPCO) are still struggling with the aftermath. Explosions at four of the damaged power plants spread radiation across Fukushima Prefecture and into the Pacific Ocean, halting farming and fishing, and forcing tens of thousands of people to abandon their homes. The final death toll could reach 25,000 lives. The Japanese people's confidence in their government and technology has also been shaken. Economically, upwards of 20% of Japan's manufacturing, agriculture and fish production has been disrupted, and some 15% of the nation's electricity generating capacity lost.

Technology's Vulnerability

Preparations to deal with natural disasters were based on faulty assumptions. The first was that Japan's technology would minimize the impact of earthquakes and tsunami. This was translated into the implementation of rigorous building codes designed to minimize the effects of strong earthquakes. Similarly, massive breakwaters, sea walls and tidal gates line Japan's coast to block tsunami. A sophisticated, nationwide earthquake and tsunami warning system was established. Sensors in the ground and on the ocean floor detect even slight tremors. These "pre-quake" warnings automatically stop speeding "bullet trains," local trains and subways, shut off natural gas distribution and power stations. Alarms sound on mobile telephones, radios and televisions to inform people of a tremor's location and magnitude. On March 11, the system worked flawlessly, but still so many died.

The building codes saved people the earthquake but not the tsunami. Absent were zoning laws positioned municipal office buildings, schools and hospitals outside areas vulnerable to tsunami. These sturdy structures were also designated evacuation centers. When the tsunami struck, many local emergency workers died at their posts in these centers. Sadly, many hospitals and homes for the elder were similarly vulnerable. A preliminary study suggests that almost 66% of the known dead were age 60 years or older.

Emergency Planning and Response

Emergency planning is divided between local municipalities (clusters of towns and villages that formed a single administrative unit), and prefectural and the central governments. Municipalities plan and implement emergency plans. Prefectural governments channel information from localities to the central government about a disaster's severity and local requests for assistance. Tokyo allocates assistance. Local fire and police, which are administratively linked to Tokyo, must await central government directives before reacting except local fire departments can begin putting out fires as needed.



Rescued!

The only nationally available disaster assistance resource is the Self Defense Forces (SDF), i.e. Army, Air Force and Coast Guard. The central government determines when and where it is to be deployed. There is no prefectural government equivalent of the US states' "National Guard." Only local fire departments maintain some rescue equipment and a few teams of three or four especially trained and equipped firemen who can quickly respond to a disaster. Police do not have any special training or equipment, nor does the SDF except the Coast Guard which has some helicopters for rescue at sea. The central government maintains a few specialized and well equipped emergency response teams, but their role is to deploy to foreign disasters.

There are no "non-governmental organizations," NGOs. Instead Japan's so-called NPOs or Non-profit Organizations are government managed and funded. Even the Japanese Red Cross is a government managed NPO. Tax laws do not offer inducements to donate money to NPOs, compelling them to rely on government support. This limits NPOs to maintaining small paid staffs. When disaster strikes, NPOs turn to volunteers, but government officials decide if, when and where they can be deployed. Once authorized, NPOs can enter a disaster area to assist as assigned by local governments. NPOs do not maintain human and/or material resources for quick response to domestic disasters.



The Face of Fear

The system is rational, but it collapsed on March 11. Everything hinged on local officials prompt response by guiding people to evacuation shelters and informing higher levels of government about local needs. But many emergency workers - local officials, fire and police personnel, doctors and nurses, and teachers - were among the tsunami's early victims. Prefectural and central government authorities were forced to turn to the mass media for reliable information.

Communication and transportation infrastructure was destroyed preventing emergency crews from nearby communities from reaching devastated areas. Also destroyed were emergency vehicles needed for evacuation. Helicopters were urgently needed but no plan had anticipated

this. Only the SDF had a few to begin rescue operations. US helicopters and naval vessels were scattered and needed time to gather along Tohoku's northeast coast.



A Hospital's S.O.S.

No Emergency Supplies

Disaster plans assumed that the impact of an earthquake or typhoon would be brief. No evaluation centers were stocked with food, medicine, blankets, tents, fuel for cooking, heaters, not even water. Emergency planners assumed that private corporations would promptly supply local governments at regular prices everything needed at an evacuation center but this proved impossible on March 11 and at least two weeks afterward. Survivors gathered in dark, cold shelters with nothing more than the clothing they wore. Injured and elderly soon began to die from exposure to cold and their injuries. Healthy survivors ventured into the cold and snow or rain to stand for hours in long lines to get drinking water and to buy small amounts of food occasionally available in some grocery stores. Some victims built fires from scrap wood outside evacuation centers to warm themselves and to melt snow for drinking water. Those who had cars could not use them because the lack of electricity shut down gasoline stations, not to mention the fact that most roads were blocked with debris or that bridges had been washed away. The SDF quickly deployed 100,000 members to the devastated areas but they had little to offer victims. Several days passed before they could bring in more food, water and tents than they needed for themselves. The SDF's meager medical supplies were slowly augmented by foreign medical teams. Only the US military had limited stocks of food to rush to Tohoku.

Japan's NPOs could do little more than collect donations of money, used clothing and recruit volunteers. Almost one month passed before volunteers were allowed to enter evacuation centers where they cooked, distributed donated goods and cleaned toilets. When the Japan Red Cross began distributing cash to some victims, the beneficiaries looked confused. The money

was too little to help rebuild lives and virtually useless for buying daily necessities since there were few stores accessible for shopping.



A Survivors' Shelter

The situation in the devastated areas continues to improve slowly. After six weeks, most basic daily needs were being provided. But still people in the centers have had to sleep on unheated floors, eat instant noodles, and use cardboard boxes to get some privacy. Most must wait until August or later to be assigned temporary housing.

American NGOs and Japan's Long Term Need

America's NGOs have much to offer beyond compassion and material support. They can share with their Japanese counterparts their extensive, worldwide experience acquired over the past two decades about how to prepare for and respond to natural disasters. They could, with US Agency for International Development's assistance, consider organizing an international conference that would review Japan's past emergency planning and recent experience, and seek ways to better prepare for the next, inevitable natural disaster in Japan. Japanese experts are predicting with a 90% degree of confidence that a major 7+ magnitude earthquake will strike south of Tokyo within the next 30 years, if not sooner. It too most likely will be accompanied by a tsunami.