Over the past century, a number of mega catastrophes have revealed mitigation, risk reduction, and disaster recovery as processes which primarily revolve around social, not physical, infrastructure. Residents with deeper reservoirs of social capital display more resilience than individuals who have fewer social ties, so that areas in which horizontal associations are more active are more likely to regain population lost to disaster. Further, in the absence of a strong government, informal and formal institutions including neighborhood associations and organized criminal groups (such as the yakuza in Japan) may serve as providers of key resources when standard sources of information, assistance, food, and aid are closed. Decision makers and scholars alike must recognize that, given the unavoidable nature of risks and the increasing frequency and severity of disaster, social capital and social networks will be core engines for mitigation and recovery in the future.
Chapter 8
The Emergence of Civil Society: Networks in Disasters, Mitigation, and Recovery

Daniel P. Aldrich

8.1 Introduction

On 11 March 2011, a tremendous earthquake occurred off Japan’s northeastern shore, registering 8.9 on the Richter scale and causing office buildings in Tokyo – more than 200 miles away – to sway like trees in a wind. The quake itself did little damage in terms of casualties – fewer than 5% of the 19,000 or so victims died from collapsed homes, buildings, or structures. Instead, the earthquake triggered a towering tsunami which, within 40 min, had decimated villages in the coastal prefectures of Iwate, Miyagi, and Fukushima. The quake and the 40-ft tall tsunami disrupted the backup cooling systems of the Fukushima Dai-ichi nuclear reactors operated by the Tokyo Electric Power Company (TEPCO). While the seismic activity automatically triggered a shutdown of the three operating plants (out of the six on site), residual heat within them spiked upwards of 2,000° F despite attempts to keep them cool. The zircalloy fuel rods holding the nuclear fuel (uranium oxide pellets) melted, dropping the fuel onto the floor of the pressure chambers; engineers believe that there were complete meltdowns in the three reactors and these may have created cracks in thick steel plate floors.

Despite initial hesitation about the proper course of action, TEPCO and the government (along with members of the US military) worked to pump salt water into the complex to reduce the temperature (in a procedure labeled by engineers as a ‘feed and bleed’ process), vented the reactors to the atmosphere to reduce the pressure, and sought to evacuate residents who were at risk of exposure to radiation. At one point, more than a quarter of a million people evacuated from their homes, either due to the destruction of the tsunami (which traveled as far inland as 2 miles)
or due to concerns about radiation exposure. More than 85,000 people living in and around Fukushima prefecture may not be able to return to their homes for years, if ever.

Japan’s 3/11 catastrophe typifies what experts call a ‘compound disaster’ – an event which interacts with technological, political, social, and geographic conditions and magnifies the overall negative externalities. Several other recent high-profile disasters also qualified as compound disasters; Hurricane Katrina, where the bulk of the damage to the city of New Orleans came not from the storm itself, but from the structural failure of the levees built by the Army Corps of Engineers, is another. Due to high engineering standards and mitigation plans, the Tōhoku quake itself caused little damage to either people or facilities across Japan, but in combination with the lax regulation on coastal construction, the placement of generators and batteries at sea level, shortage of alternative transportation infrastructure, and the location of nuclear power plants in highly vulnerable areas within meters of the ocean, the earthquake triggered a crisis which is still ongoing. The destruction of thousands of homes and lives along the Tōhoku area coast has raised questions about Japan’s long term plans for coastal development, accelerated demographic changes in the nation’s periphery, and raised questions about the economic viability of many fishing communities. The ongoing nuclear crisis has resulted in the banning of a number of agricultural products from the area (including beef, tea, and rice), anxiety among parents and residents about radiation exposure, and an undermining of confidence in Japan’s nuclear energy program.

The disaster has had an impact far beyond Japan’s shores, prompting other advanced industrial democracies such as Germany, Italy, and Switzerland to move away from atomic energy despite large scale investments in the industry. In Japan, that nation’s long term energy plans are shifting away from a focus on nuclear power to one involving safer alternative and renewable sources, including solar and geothermal power. Much of the critical discussion about Japan’s response to the quake and ongoing nuclear risk has focused on the work of the central government, large scale nongovernmental organizations (NGOs) such as the Red Cross, and private firms, such as TEPCO and the other regional power monopolies. The central government, for example, works as a unitary, not federal government, holding the purse strings for local governments, which cannot carry out much of the recovery work without Tokyo’s support. Critics have singled out these actors for tremendous criticism, ranging from the fact that it took the Red Cross almost 4 months to start distributing 169 billion yen in donations to victims, to the slowness and inflexibility of the central government’s handling requests from local communities for aid and logistics.

However, the ham-handed responses from the government and the slow release of data and crucial radiation information from TEPCO have brought about a silver lining: the visible emergence of the effectiveness of civil society in post-disaster settings. The critical role of citizens and residents – and not formal state or private sector institutions – can be seen in disasters around the world, ranging from their role as first responders to their long term involvement in city planning. Furthermore, disasters may serve as catalysts for less active social networks, pushing them to become more active in situations where the government and other providers have
failed to perform well. In Japan, for example, the government’s slow and incomplete response to the Tōhoku disaster has brought about new forms of transparent ‘citizen science’ along with a more informed and active citizenry which is willing to directly confront the government. This chapter will underscore the role played by networks of residents, volunteers, and even the mafia in disaster response along with post-crisis recovery and mitigation.

8.2 Social Resources in Disaster

A number of recent academic works have underscored the role of norms, trustworthiness, group solidarity, and mobilization after crises and disasters in different time periods and cultures. Rieko Kage began her 2010 book Civic engagement in post-war Japan by showing that levels of recovery after World War II varied tremendously among the 47 prefectures in Japan. Using quantitative data on the number of jobs, hospitals, elementary schools, and library books in each prefecture, she demonstrated how connections among citizens – measured through proxies such as the volume of mail per capita – interacted with other variables to help drive the process of rebuilding. State assistance by itself would not have been able to effectively guide recovery, but by interacting with local citizens, voluntary groups, and other horizontal associations, planners were better able to accelerate the growth process. Local civil society was able to better guide state resources where they were most necessary and avoid duplication and unnecessary investments. Kage’s book also used case studies of the Japanese YMCA and judo clubs to show how civic engagement and volunteerism flourished in Japan’s new democratic environment and further contributed to its post-war growth. In precisely the environment where we might expect social capital to fail – a society where most urban centers had been reduced to rubble, where millions of citizens had been stationed abroad as soldiers or colonists, and where the government had suppressed democratic thought and activity – it provided a core component of Japan’s postwar ‘economic miracle.’

Emily Chamlee-Wright’s 2010 book The cultural and political economy of recovery: Social learning in a post-disaster environment emphasized local narratives, norms, and expectations in New Orleans following the 2005 Hurricane Katrina. Through approximately 300 or so interviews with survivors in locations such as the Village de L’est, the Lower Ninth Ward and Lakeview, Chamlee-Wright found that different neighborhoods had very different stories of their own evacuation, survival, and renewal. Residents in these communities drew on different cultural toolkits for handling the trauma of destruction. Some neighbors had strong self-help ethics which drew neighbors and even strangers together into collaborative efforts to tear down moldy dry wall, work collectively to restart electricity and other utilities, and push local institutions to restart. Other areas of New Orleans seemed to be waiting for aid from the authorities, and displayed less cooperative behavior and a slower pace of regrowth over time. Her focus on “the structure of socially embedded resources” illuminates how, more than aid from the government or damage
from the disaster, local norms and social resources strongly determined the trajectory of recovery in the Big Easy (Chamlee-Wright 2010, p. 16).

Rick Weil and his research team have interviewed more than 7,000 residents across New Orleans and gathered data about civic engagement, community work, participation, crime, and recovery, among other factors. His research, like that of Chamlee-Wright, demonstrated the deep connections between positive recovery outcomes and a whole battery of factors related to volunteerism, mobilization, and other collective resources. At the census tract, the indicators of associational involvement, civic engagement, service performance, holding social trust, and attendance at public meetings positively correlated with higher levels of repopulation (Weil 2011). Areas whose citizens did not vote, get engaged in group activities, or work for a common cause are those where blight, crime, and slow recovery remain most evident after the storm. His research hammers home the message: recovery is not primarily a function of government aid, or damage, or wealth before disasters. Rather, social relationships are the drivers of recovery.

8.3 Three Categories of Social Capital

These and other scholars have sought to categorize the role played by the ties, connections and networks that bind us together – resources known by social science as social capital – in the process of disaster recovery and mitigation. Initially named by L.J. Hanifan in the early twentieth century, expanded upon by Pierre Bourdieu (1986) and James Coleman (1988), the field of social capital exploded after Robert Putnam popularized it in his study of the civic roots of Italian economic development (1993) and his follow up research on declining levels of engagement in the United States (2000). Researchers have categorized social capital into three types, depending on the types of connections in the relationship.

The first and most common form of network is bonding social capital. Sociologists have long argued that we connect most regularly and easily with individuals who are similar to us; this condition is called homophily (c.f. Rueff et al. 2003), and predicts, for example, that middle age Japanese housewives are likely to have class friends of similar age and gender. Bonding social capital connects these kinds of kin, family, and friends and can be seen as a “horizontal” connection between individuals of the same power levels. It is strongest in homogeneous communities and often results in closed networks which are relatively stable over time because they are composed of like-minded, similar-value holding residents. Residents in the primarily African-American neighborhood of the Lower 9th Ward in New Orleans, for example, are more likely than counterparts in the Lakeview neighborhood to know their neighbors’ names, engage in regular communal group activities, and have higher levels of trust in nearby residents (Elliott et al. 2010). Granovetter’s work envisioned these types of connections as ‘strong ties,’ in contrast to weak ones (1973); in such networks, daily or weekly direct contact is the norm. Studies have demonstrated that bonding social capital does not necessarily generate strong
economic growth or motivate entrepreneurial behavior (Gittell and Vidal 1998). Instead, bonding social capital has helped poorer communities ‘get by,’ but not necessarily ‘get ahead’ (Narayan 1999; Woolcock 2000). Bonding social ties reinforce tendencies toward homophily but provide few resources beyond often geographically circumscribed boundaries.

The second type of social capital is labeled bridging social capital, and it connects between often isolated or enclosed groups. Parent Teacher Association (PTA) meetings, which bring together individuals who may normally not have encounters in their regular social circles, can foster this type of connection. Other formal institutions and associations such as hobby and sport clubs, employment groups, unions, and schools may create bridging social networks. Bridging social capital has the capacity to cross cultural, religious, and racial lines and reduce conflict among ethnic groups.

Ashutosh Varshney has argued that communities with more bridging organizations experienced fewer (often deadly) Hindu-Muslim riots over the late twentieth century (2002). Through direct contact on a regular basis through cross-cultural voluntary associations, both Hindus and Muslims could reduce ethnic tension, smooth over differences, and solve potentially explosive conflicts before they reach the streets. Granovetter (1973) has argued that ‘weak ties’ between people who may have little or no direct regular contact, but instead provide extra local, extra-network resources, are most critical in processes such as job searches. That is, many people find jobs not through their personal friends, but rather through friends of friends and colleagues. As a result of research on bridging social capital, institutions such as the Concord Project have sought to “bring together people with fundamentally opposing views or identities for the purpose of promoting civil society while recognizing group differences” (Nelson et al. 2003, p. 1). The Concord Project was founded on the belief that bridging social capital acted as a resource which would create a more harmonious society.

The third and final type of social capital comes when individuals and nodes are connected not through standard horizontal ties – when the connections stretch between people of similar status and power – but rather through vertical ties (Szreter and Woolcock 2004). Scholars have titled this connection as linking social capital. Residents of the Village de L’est neighborhood in northwestern New Orleans rarely interacted with city government officials, NGO leaders, or decision makers before Hurricane Katrina’s advent in 2005. Once the storm decimated the city and flooded their neighborhood, though, they quickly worked to find allies and politicians within the power structure who could assist them in their drive to re-establish their community. Their search for power brokers in the administration contrasted with members of the Lakeview community, many of whom already had direct personal ties with city government officials well before the storm.

Similarly, local residents in poverty-stricken villages in the Indian state of Tamil Nadu rarely met their local ‘collector;’ that is, the government representative who travels throughout sub-regions to connect citizens with government services. The government has published public lists with email and phone contact information for these officials (see http://www.tn.gov.in/telephone/collectors.html) to better
connect residents with assistance. Linking social capital provides access to translocal
resources, information, and services that are often embedded with decision makers
who operate above the day-to-day lives of most residents. Given these different
types of social networks, how do social resources focus after crisis?

8.4 Social Capital Mechanisms

My work in disaster recoveries in India, Japan, and the United States has demon-
strated that social networks provide assistance before, during, and after disaster
through at least three overlapping mechanisms: exit vs. voice, the provision of infor-
mal insurance and mutual assistance, and the overcoming of barriers to collective
action (Aldrich 2012a). The first decision each survivor must make is to either
return to a damaged home or to uproot stakes and relocate to a new community. Of
course, in some cases the government will not allow survivors back in; this has been
the situation for Japanese survivors of the tsunami whose homes were within 20 km
of the Fukushima Dai-ichi nuclear power plants. For those citizens, while they can
break the police cordon around the area and return illegally, the radiation levels in
these ‘hot spots’ have created an environment unsafe for long term habitation.

But for the vast majority of disaster survivors, they must select either ‘exit’ or
‘voice.’ These terms are borrowed from the work of Albert Hirschman (1970); he
discussed the decision making heuristics of disappointed clients and customers who
can either stop patronizing a business (exit) or complain to improve levels of service
(voice). Exit in a post-disaster setting means relocating to a new community, possi-
ably quite far from one’s initial home. Internally displaced people from New
Orleans settled as far away as Arkansas and Massachusetts in the diaspora after
Hurricane Katrina; many others settled in Houston, Texas. Many of these displaced
New Orleanians remain in their new communities some 6 years after the storm.

The decision to stay and rebuild whatever the costs, or to start over in a new loca-
tion, is heavily influenced by social networks. For individuals who are only loosely
connected to a location, or for those who have fewer friends, family, and kin in the
area, relocating may be less painful and hence more likely. If one’s job has been
lost, and one has few friends in the area, restarting life in a new location may be a
refreshing start. On the other hand, for residents who feel tightly bound to a sense
of belonging to local networks, or have friends or family who are staying in the
damaged area, relocation may not be an option even if the rebuilding will be an
expensive and slow process. Their love for their neighborhood and their connec-
tions to their neighbors have them eschew exit and use their voice; they will join
with other concerned local citizens to have their needs met by the government.

Research on Tokyo residents after the 1923 earthquake which leveled roughly
half of the capital city has shown that neighborhoods in which people worked
together on common causes – through political demonstrations, riots, and voting,
for example – were the ones which regrew population levels most effectively
(Aldrich 2012b).
The next mechanism by which social capital works following a crisis is through the provision of informal insurance or mutual assistance. Many people around the world receive services, such as information, medical assistance, child care, food, and water from a combination of public and private organizations. Government welfare offices, free or private medical clinics, and public or private childcare providers are in high demand around the world. Following a severe crisis, these institutions may not be open or able to provide such services to their constituents. After hurricane Katrina in New Orleans, for example, there were almost no grocery stores, hospitals, gas stations, or kindergartens in the city itself. However, members of social networks can serve as substitute—even if temporary—providers of these services when standard providers cannot.

When local stores are shut down and residents need power tools to remove moldy dry wall, they ask neighbors if they can borrow them. If a day care is shut down, local mothers may form a round-robin daycare group until a more permanent solution can be found. Importantly, disaster survivors in need of information about logistics such as restarting utilities, registering a home as damaged, or signing up children in a new school system, will seek out this information from their networks. Similarly, survivors who need damaged homes repaired by contractors will ask their friends and neighbors for the names of those who can be trusted. Those survivors with fewer contacts—that is, lower levels of bonding, bridging, and linking social capital—are at risk of being outside critical information loops and missing the boat (or deadlines, as the case may be) in important areas.

The third mechanism by which social capital alters the recovery trajectory is through lowering the barriers to collective action. During and after disasters communities may have a number of commonly held goals and targets—deterring looting, removing debris, and pressuring local and national authorities to dedicate more resources to their area. Successful accomplishment of these goals requires more than just individual action and will, however. In order to deter looting, local citizens must systematically work to keep out potential thieves and coordinate their watches over the area. The creation of a clean, debris-free neighborhood requires all local homeowners and renters to move their garbage out of the area and keep others from dumping in their neighborhood.

Mancur Olson (1965) and other social scientists established decades ago that there are high barriers to collective action—individuals would often prefer to free ride on the accomplishments of others. Given that highly motivated residents may act independently and take on broader responsibilities, the motivation to shirk for less outgoing individuals is quite high. Why would I use up valuable time and resources to join a community watch patrol if I believe that my eager-to-serve neighbor will fill in for my absence? Why bother walking my garbage an additional hundred yards to a special dumpster if I can toss it over into a ravine or onto the street? These problems require collective obligation, an expectation of surveillance, and a long term perspective.

Neighborhoods with higher levels of bonding social capital are ones where successful collective action is most likely. The aforementioned of Village de L’est in New Orleans returned to their damaged homes far earlier than other communities
and found themselves without power and other utilities. They contacted the local utility in New Orleans, Entergy, and were told that they must submit a petition with several hundred names in order to show that they had sufficient numbers to justify these actions. They easily collected several hundred signatures within days of the request. In areas where trust is lower and neighbors have less contact, collective action becomes almost impossible. Following the 1995 Kobe earthquake, the local government offered condominium owners free debris removal if they could provide signatures of all owners within a set period of time. Unfortunately, very few condos took advantage of this offer because they did not have the information about the location of their neighbors.

8.5 Filling the Gap: Weak and Failed States

Some may imagine that social networks and social capital serve as important parts of recovery and mitigation only in advanced industrial democracies, such as Japan, Germany, or the United States. Observers may argue that social networks cannot play such strong roles in weak or failed states. But the crucial role of communities, mutual assistance, and norms of trustworthiness has emerged even in disaster responses in developing nations with weak governance structures, such as Haiti. On 12 January 2010 a 7.0 earthquake struck some 20 miles away from Haiti’s capital Port-au-Prince, collapsing buildings, homes, and roads. Estimates of casualties go as high as 300,000, with more than a million residents made homeless by the event (Reuters News, 12 January 2011). Immediately following the quake, neighbors, friends, and family began to dig in the rubble to try to free those trapped underneath. As we have seen in past disasters, the first responders were not professional fire fighters, police officers, or uniformed military personnel, but instead those who knew where to find the bodies. People who were able to use shovels, hands, and other improvised implements tried to save those survivors buried in the ruins. Beyond the emergence of members of civil society as first responders, post-earthquake Haiti provides another example of the power held by communities and norms after crisis.

A number of Haitian residents whose homes survived the quake opened them to internally displaced people, providing shelter and food despite the lack of a mandate from the state or supplies from the private sector. People set up pots of food to share with passersby, and sought to provide what creature comforts that they could. In this environment of communal sharing, individuals seen as violating collectively held norms of cooperation and mutual aid were punished severely. Several reporters captured the gruesome scene as a crowd distributed their form of justice to a suspected thief, who was beaten to death and then dragged through the streets (17 January 2010, The Guardian). This unfortunate outcome arose out of the recognition by locals of the need to work together and protect each other from outsiders who might upset the delicate balance of demand and supply.

Civil society and social networks will often move to fill in a vacuum left by a weak, absent, or poorly performing state. These networks may not be the ‘good’
social capital that many citizens hope to see active in their backyards. Instead, well
organized criminal groups, especially highly disciplined and well-resourced mafia
associations, regularly emerge after disaster to provide supplies, deter looting,
and assist victims. The motivation for these groups to undertake philanthropic
activities is unclear. After Japan’s triple-disaster in March 2011, when asked why
gangsters worked so hard to deliver supplies to the area, a Japanese mafia boss was
quoted as saying “It takes too long for the arm of the government to reach out here
so it’s important to do it now” (Reuters, 25 March 2011). His words implied that
these organizations acted out of a desire to improve the public good. Critics – espe-
cially in law enforcement agencies – say that these are attempts to rehabilitate
tarnished public images; one observer argued that the yakuza simply enjoy pub-
licity (National Post, 23 July 2003). Whatever the reason, the involvement of these
non-governmental, ‘uncivil’ civil society organizations in disaster recovery is well
documented.

In Japan, the mafia group known as the yakuza is well organized and operates
visibly, especially in cities such as Kobe and Osaka. In these urban metropolises,
local yakuza groups may even hang out their ‘shingle’ for all to see. On the 17
January 1995, at around 5:45 am, an earthquake registering 6.8 on the Richter scale
struck near the densely populated city of Kobe. Close to 6,500 people lost their lives
as buildings, homes, and roads across the area collapsed. Fires broke out, and while
volunteer fire brigades organized to combat the blazes, many trucks could not reach
victims or their homes in time due to narrow streets which were blocked with
rubble. The government moved slowly to call out the Japanese Self Defense Forces
(SDF) for assistance. In the meantime, as citizens dug with their hands and other
simple tools in the rubble, the local yakuza clans organized the delivery of supplies
(Fukushima 1995). Some have claimed that the Yamaguchi-gumi criminal syndi-
cate – one of the largest in Japan – was “one of the most responsive forces on the
ground” (Adelstein 2011). While these groups operate beyond the law and have
been implicated in crimes including stock market manipulation, extortion, and
prostitution, they effectively provided post-disaster assistance. Beyond the work of
these peripheral social groups post-disaster, recent events in Japan have triggered a
renaissance in civil society.

8.6 The Surge in Civic Activities in Post-3/11 Japan

Residents who believe that their governments and dedicated aid organizations are
performing poorly may take action when such citizens in the past were reluctant to
do so, and this has been the case in post 3/11 Japan. Outsiders have regularly seen
Japanese civil society as weak, with civil society organizations (CSOs) only coming
into their own since the 1980s (Hirata 2002). Observers have categorized civil soci-
ety in Japan as “underdeveloped in the arenas that promote democratic agenda” and
“underprofessionalized” as it lacks a large cadre of trained professionals in the field
(Lowry 2008).
Past disasters in Japan have created ‘silver linings’ of volunteerism. After the 1995 Kobe earthquake, for example, more than one million volunteers flooded into the city to assist, and this outpouring of volunteers triggered a radical shift in Japan’s laws towards nonprofit organizations (NPOs) (Haddad 2007). In 1998 the government passed the so-called NPO Law (Law for the Promotion of Specified NonProfit Activities) and followed up with the 2001 tax reform which provided tax privileges to the NPOs (Pekkanen 2006). These regulations made it far easier for groups across Japan to receive administrative and financial benefits if they registered with the government and were officially recognized. In the late 1990s, there were fewer than 1,000 recognized NPOs in Japan, but by 2005 more than 20,000 had signed up, and by 2011 more than 41,000 were in the system. Despite this tremendous growth in the number of registered NPOs, in international perspective, these numbers (especially as a percentage of the population) are quite small, and NPOs remain constrained by very small budgets, staffs, and membership levels.

The Tōhoku disaster and the resulting Fukushima nuclear crisis have altered the civil society landscape for many Japanese residents, however. For the first few days after earthquake and tsunami struck, many people living nearby the Fukushima Dai-ichi received contradictory information. The Fukushima government initially ordered those within 2 km to leave at 7 p.m. on the day of the tsunami, and then the next day the government expanded this evacuation zone to 20 km. On March 16 the United States government advised US citizens within 80 km of the plant to seek shelter elsewhere, while the Japanese government told citizens within 20–30 km not to leave their homes (BBC News, 16 March 2011). Specifically, then-Prime Minister Naoto Kan told residents, “Please do not go outside. Please stay indoors. Please close windows and make your homes airtight.” The US government, at the same time, assisted US military and diplomatic personnel with evacuation from the country. Government authorities argued that they relied on information provided to them by the Tokyo Electric Power Company (TEPCO), which was slow in revealing radiation levels at and around the plant. Later TEPCO argued that failed sensors caused it to under report radiation exposure both to workers at the plant and nearby residents.

Many Fukushima prefecture residents argued that they felt betrayed by years of reassurances that accidents at Japanese nuclear power plants were not possible. One older evacuee told reporters, “We knew it was close by, but they told us over and over again that it was safe, safe, safe. I can’t believe them now. Not at all” (AP News, 15 March 2011). Mothers of children have been especially vocal about their distrust of the government and the private sector’s statements. One mother, who planned on moving some 20 miles further from the plant, told her interviewer that “When the explosion happened, they didn’t say anything about it being dangerous. We don’t trust the media either, since the nuclear plant operator sponsors many newspapers and television stations” (Lim 2011).

Parents of school aged children have argued that the government did little to deal with the pressing issue of decontamination of playgrounds and topsoil near schools, where children regularly play. As a result, many school administrators and parents have kept children indoors during the spring and summer because of fears about
radiation exposure. To avoid having tremendous amounts of land declared hazardous, the government has relaxed standards from pre-Fukushima levels in another move which had many Japanese citizens wondering about ‘safe’ levels of exposure (Watts 2011). The central government recently released additional funding to help remove topsoil from schools in and around the area, but for many parents, it was too little, too late. In Fukushima, each resident can now receive a full body radiation scan along with an invitation to participate in a longitudinal health study on the effects of radiation exposure on health.

In this blizzard of anxiety and confusing and often contradictory claims, many citizens have stepped forward and begun to work to produce clear information through transparent citizen science. Combining ‘street science’ with crowdsourcing social media tools, the new NGO Safecast project enables volunteers to post radiation level readings to a public website. The maps on Safecast’s website utilize more than 600,000 data points collected by volunteers across Japan wielding Geiger counters; by working collectively, they have created detailed, up to date color-coded radiation level maps of Japan. Where the bureaucratic response to a nuclear accident has been to evacuate citizens in concentric circles, these bottom-up maps have shown instead that wind patterns, topology, and geography create hot (and cold) spots in nonlinear, non-predictable ways. Beyond a group of core volunteers who use their cars to take continuous readings, the project enables anyone within Japan to submit their own Geiger counter readings. Sociologists and anthropologists studying Japan often stress the norms of obedience and submission to authority (Nakane 1967; Miyamoto 1995); the creation and maintenance of the Safecast project has been one way that an independent and engaged civil society has emerged in the post 3/11 environment.

Another interesting site of a more active civil society has been the interaction between Fukushima citizens and government decision makers. Past research on conflict in Japan has stressed that Japanese parties usually seek to privatize conflict, removing it from the public realm and thus ‘saving face’ for participants (Pharr 1990). Hence many studies have shown that Japan has fewer marches and demonstrations than Western nations, and that surveys underscore many Japanese citizens are far less likely to participate in such public protest than counterparts abroad. Therefore recent videos of open strife between local residents and government bureaucrats over the issue of radiation exposure and contamination show how much has changed. Audience members at public meetings asked questions such as, “As other people do, Fukushima residents have a right to avoid radiation exposure and live healthy lives, right?” to which the attending bureaucrats could only respond, “The government has tried to reduce radiation exposure as much as it can.” Amazingly, audience members then raised their voices to express their displeasure, shouting out that the civil servants had not answered the question. This and other uncomfortable confrontations in post 3/11 Japan – such as the TEPCO president’s visits to temporary shelters where evacuees challenged his handling of the situation – illuminate a society in which citizens may no longer accept the government’s or private sector’s answers as gospel. A final sign of a more active citizenry have been the large scale marches against nuclear power in Tokyo and other major urban
centers. In mid-September 2011, some 50,000 people marched in the Sayonara Nuclear Power rallies, undertaking some of the largest demonstrations in that nation in decades (The Economist, 24 September 2011). While the 3/11 disaster may have put many lives at risk, it may also be opening up a new era in civil society-state relations where local residents, the social networks that bind them, and civil society organizations work together to enact policies in their best interest.

8.7 Conclusions

This chapter has pushed for the recognition of social resources as critical ones in response to disasters. Where standard government and NGO policies on disaster recovery have pushed for physical infrastructure repair and maintenance, such as the repair of bridges, homes, and ports, this approach to crisis has instead seen social infrastructure as the most important factor. Recent research in a number of disaster sites, including post World War II Japan and post Katrina New Orleans has found qualitative and quantitative evidence that social networks matter. The different types of social capital – bonding, which links like-minded people, bridging, which brings together different races, ethnicities, and religions, and linking, which connects people at different power levels – work to assist survivors during and after crises. Social capital works through reducing the use of ‘exit’ and strengthening ‘voice,’ the provision of mutual assistance, the overcoming of barriers to collective action.

In developing nations like Haiti and advanced industrial democracies like Japan, social networks provide critical resources, advice, and motivation to survivors and guide them in their post-disaster behaviors. In Japan, after years of relative inactivity, the 1995 Kobe earthquake and the 2011 Tōhoku earthquake have created new forms of participation and altered the legislation relating to civil society. Where the Japanese government and private sector have been slow to provide information, citizen scientists have used social media tools to create transparent databases on radiation exposure levels across the country. Where citizens previously attended government-run meetings which were run as ‘rituals of assent’ (Gusterson 2000), they now openly challenge decision makers and push them to answer questions directly, along with gathering by the tens of thousands to show their displeasure with central government policies.

Further, much work on civil society in Japan has emphasized the tight connections between civil society organizations and the central government (c.f. Schwartz and Pharr 2003). Many observers would argue that trust in government regularly correlates strongly with trust in other citizens. The new resurgence in civic activism following 3/11 has challenged these conventional approaches to the field, and shown that many citizens now act autonomously in direct opposition to government policies. Where before the state’s intervention in civil society may have gone unchallenged, many activists have raised their voices against the ‘nuclear village’ (genshiryoku mura) constructed with deliberate intent by central government decision makers. Citizens who before had faith that the government was acting in their
best interests have been pained by revelations that decision makers deliberately withheld critical data about radioactive contamination.

Decision makers in NGOs and governments alike must understand that social networks will continue to play important roles in both mitigation and recovery from disaster. Whereas some disaster responses, such as the random placement of survivors in temporary shelters, actually damage existing social networks, future responses should incorporate social capital into their implementation. In an era when the number and costs of disasters will increase because of global climate change, social networks around the world will continue to serve as the engines of recovery.

Acknowledgments Much of the research underpinning this chapter was carried out on an Abe Fellowship (2007–2008) from the Center for Global Partnership, the Japan Foundation, and the Social Science Research Council. Erik Cleven, Paul Danyi, Urbano Fra and anonymous reviewers provided helpful criticism.

References


Daniel P. Aldrich is an Associate Professor of political science at Purdue University’s Department of political science, a member of the Mansfield US-Japan Network for the Future, and, during the 2011–2012 academic year, an American Association for the Advancement of Science (AAAS) fellow at USAID. He is the author of Site Fights: Divisive Facilities and Civil Society in Japan and the West (2010) and Building Resilience: Social Capital in Post-Disaster Recovery (2012) along with more than 40 peer reviewed articles, book chapters, reviews, and general interest pieces. His research interests include post-disaster recovery, the siting of controversial facilities, the interaction between civil society and the state, and the socialization of women and men through experience.
## Author Queries

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