

## Chapter 23

# The Importance of Social Capital in Building Community Resilience

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**Abstract** This chapter uses examples from a number of recent disasters to illuminate the ways that social capital serves as a critical part of resilience. Specifically the article looks at the response from the perspective of social networks to disaster in Bangkok, Thailand, the Tohoku region of Japan, and Christchurch in New Zealand. I introduce three types of social capital—bonding, bridging, and linking—and discuss the mechanism by which they are created and employed using concrete examples. In these cases social cohesion keeps people from leaving disaster-struck regions, allows for the easy mobilization of groups, and provides informal insurance when normal resource providers are not open. Social networks improve disaster recovery for local residents, communities, and the nation as well. Disasters are, and will continue to be, a challenge for both developed and developing countries everywhere. With this understanding in mind, it is important that communities build social capital in advance of disasters by communities as well as by planners and other decision makers. Preparing for disaster with an emphasis on physical infrastructural solutions, such as higher seawalls, raised floors, higher building standards, and so forth, is not sufficient to avoid the negative impact of disasters.

In October 2011 Thailand's capital city of Bangkok faced the worst flooding in its recorded history. The city government provided a five day holiday to residents to allow them time to evacuate (Boston Herald 31 October 2011). The 9 million residents of the city who were unable to flee tried to stockpile food, water and other necessities beforehand (BBC 27 October 2011). By the time the water stopped rising, it had drowned 815 people, reached a height of more than 1.5 m, and submerged much of the first floor of almost every building in the vicinity. With 90% of some areas submerged, the floodwaters caused \$45 billion in damage. Responses to and recoveries from the event were not the same across the city. The district known as Sai Noi in the northwest suburbs of the city, while facing the same

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levels of flooding as other parts of Bangkok, managed to work together to fight the raging waters and then mobilized to rebuild quickly after the waters receded. “People with no training and few resources built barriers and monitored flood levels, delivered food and drinking water, evacuated residents trapped in their homes, provided medical services to the sick and injured, and policed their neighborhoods for looters” (Roasa 2013: 1).

People in the community of Sai Noi were able to work together because of shared norms: most of the local residents in the area were migrants from regions of northern Thailand. Their trust in each other allowed them to work communally to form a residents’ committee to make quick decisions on mitigation responses and then a five-person security committee to secure the evacuated area from would-be looters. Several locals also had connections to powerful authority figures in organizations such as the military which allowed them to access much needed resources such as hard to find boat engines. Local residents also expected very little from the formal government, recognizing its limited financial and logistical capacities. “During the flood, we found it was better to help ourselves than to rely on the government,” explained one resident (Roasa 2013: 9).

This short description of actual events in Thailand illustrates the power of social networks before, during, and post-disaster. Bangkok residents utilized existing social capital to overcome barriers to collective action before the floods and to mitigate the coming disaster. Then, when the waters rose, they used their networks of trust and reciprocity to ensure safety and survival, keeping out looters and sharing resources. Finally, after the disaster, linking social capital to people in positions of authority allowed them to access hard to find resources when most service providers were closed. This chapter will use examples from a number of recent disasters to illuminate the ways that social capital—the ties that bind us together—is a critical part of resilience.

## Definitions and Mechanisms of Social Capital

While social scientists have a variety of ways of defining the term (Bourdieu 1986; Coleman 1988; Putnam 1993, 1995; Lin 2008), social capital in this chapter refers to the networks that connect individuals to each other either through weak or strong ties (cf. Chamlee-Wright 2010?; for an overview, see Aldrich 2012 Chap. 2). These connections provide information, reliable data on the trustworthiness of the other network members, and access to resources. Research has identified three distinct types of social capital—bonding, bridging, and linking.

The first type of connection, labeled *bonding social capital*, connects family, kin, and close friends. In rural North America, for example, locals may enter their neighbors’ homes without knocking, serving themselves if no one is around, and having deep knowledge of the personal lives of community members. Bonding social capital rests on the sociological principal of homophily, where most of us tend to affiliate with, befriend, and marry people from similar backgrounds, national

and ethnic origins, and class. Hence if we are Pattinavar fishermen on the coast of Tamil Nadu south of the city of Nagapattinam, most of our connections will have similar ethnic and industrial characteristics. Similarly, most of our connections through social media such as Face book tend to reflect our political ideology.

The second type of network, known as *bridging social capital*, often works through institutions such as schools, clubs, or corporations. Bridging social capital provides connections to individuals with different ethnic background, religious interests, and norms. In India, for example, Varshney (2001) has identified how peace committees bridged the Muslim and Hindu business communities. During times of ethnic violence, such as the riots that rocked India in the 1990s, these types of bridging social networks dampened intergroup and reduced the number of riots locally. Further, as Mario Small has shown, kindergartens and schools often link parents—even disadvantaged single parents in urban communities—to resources they may otherwise not know about (2009).

The final type of relationship is *linking social capital*. Where linking social capital connects similar individuals, and bridging social capital connects across caste and identity, linking social capital in contrast allows normal citizens' access to power brokers, authority figures, and decision makers. In rural India, for example, many coastal dwellers have never met their elected officials or civil servants representing the government. Those who have the cell phone number and name of the state collector, therefore, are at an advantage when they need work carried out or a favor. Similarly members of the primarily Vietnamese and Vietnamese-American community in the Mary Queen of Viet Nam (MQVN) neighborhood of New Orleans created new political ties to the mayor's office and the governor following Hurricane Katrina. These connections helped the community ensure it would be "on the map" of the recovery process. These types of ties work through three mechanisms (Aldrich 2012).

The first decision made by survivors in developed and developing countries alike following a disaster is whether to stay and rebuild a damaged home, condominium, or business, or relocate. The costs of recovery can involve financial costs, opportunity costs, and psychic costs. For the few individuals who have private insurance, for example, those insurance funds rarely provide full coverage for damage and lost business. Then, the weeks and years it may take to complete the rebuilding process mean that local survivors cannot pursue other opportunities. Finally, the mental costs to remaining in a damaged community and trying to rebuild can be very high. Individuals with more bonding and bridging social capital are more likely to engage in voice, where they stay in damaged areas and work with neighbors to rebuild. Those with fewer connections, who feel less of a sense of place in a disaster-affected community, are more likely to engage in exit. Therefore, strong bonds dampen exit and increase voice (cf. Hirschman 1970).

Next, many of the challenges facing local residents following disaster involve collective action challenges. Authorities may require that a community garner a certain number of signatures before rebuilding infrastructure and restarting utilities such as gas and electricity, and this requires being able to mobilize the entire community. Alternatively, communities where locals rarely work together may find

it difficult to articulate their needs to resources providers and be unable to agree on a shared vision of their future neighborhood. In the worst case scenario, a lack of shared norms and trust creates a scenario in which locals may engage in disruptive behaviors such as looting. Communities where the residents share a collective identity, are willing to work together to coordinate their recover, and can overcome free riding problems are ones which will display better resilience.

The final mechanism through which social capital works in disaster and recovery periods is through informal insurance and mutual aid. Following crises, the normal providers of resources such as childcare, temporary living accommodation, gasoline, and food are often shut for days, if not weeks. Some neighborhoods in New Orleans lacked convenience stores and grocery markets for more than a year, for example. Local survivors who need someone to watch their child, or to borrow a power tool to cut out molding dry wall, or a place to stay while fixing their home can only draw on the resources of their nearby friends and neighbors. For individuals who have built strong connections before the crisis, they are well situated to draw on informal insurance after the disaster. For those who were isolated and unconnected, it is very difficult to form new friendships and trust in the “compressed time” period after crisis. I now turn to two recent disasters to illustrate the power of these connections.

## Cases

On 11 March 2011, a 9.0 magnitude earthquake struck off Japan’s northeast coast. While the earthquake was quite powerful, high engineering standards and distance to land meant that the quake itself generated few casualties and little damage in Japan. Instead, the strike-slip earthquake set off a tsunami which roared towards Japan’s coast at several hundred miles per hour. The Japan Meteorological Agency (JMA) issued a series of tsunami warnings, providing locals with roughly 40 min in which to evacuate their coastal dwellings and businesses. These warnings went through various channels, including cell phone alerts, radio warnings, television news interrupts, and standing sirens in the area. When the tsunami arrived, it devastated some 120 communities along the coast, killing more than 17,000. The earthquake and tsunami had broader ripple effects: they shut down the back up cooling systems at the Fukushima Dai-ichi nuclear power plant reactors one through three. As a result, the reactors heated up within two days and had full fuel meltdowns which spewed radioactivity into the air and water. Cooling efforts were eventually successful, but containment of the contaminated cooling water has remained an issue, and tens of thousands of people have had full body radiation scanning to understand their exposure levels.

Several aspects of the disaster and recovery process underscore the power of social networks in communities in the Tohoku region. First, interviews with survivors indicated individuals had 40 min between tsunami sirens and arrival of the wave. For able-bodied residents, this was usually sufficient time to save themselves.

For those bedridden, sick, or elderly residents of these coastal times, it was an impossibly short period in which to evacuate safely. Instead, several conditions had to be met for such a resident to escape the wave. First, a neighbor, friend, or caregiver had to know of their condition. Next, that individual had to know that they were home, or at least their location. Finally, the network connection had to be willing to risk death to come to their home and assist them in the evacuation process.

Next, an initial quantitative analysis of tsunami mortality levels in 280 towns, villages, and cities in Tohoku indicated a strong correlation between one widely used measure of social capital and survival. Holding constant the height of the wave, the height of sea walls, the demographics of the community, and other potential confounding factors, the level of crime in the community before the tsunami was strongly connected to mortality levels during the event. Sociological research has long connected lower levels of trust, fewer shared norms, and a lack of social connections with higher levels of crime. In these communities, those areas which before the disaster had more theft, coercion, and murder (although these were rare to begin with in these communities) had higher levels of people killed in the tsunami. I believe that more fragmented communities were ones in which people shared less information, distrusted signals from authorities, and engaged in less collective action (Aldrich and Sawada 2015). Other research has also shown how “areas rich in social capital accomplished speedier recovery” following the Tohoku disasters (Inagaki 2013: 6).

## Christchurch Disaster

New Zealand faced two major earthquakes within 6 months of each other: the 4 September 2011 earthquake in Canterbury and the 22 February 2011 in Christchurch. 185 people died, primarily from two buildings collapsing, and the event caused more than \$40 billion in damage to buildings and structures in the city. Some observers have criticized the newly created Canterbury Earthquake Recovery Agency (CERA)—created to manage the rebuilding process—as slow moving and top-down. In response, a number of bottom up, community oriented organizations have moved to accelerate the process of recovery.

A number of local city planners, volunteers, and community activists noticed large amounts of land in the city of Christchurch remained ugly and vacant for extended periods after the quake. These areas attracted crime and illegal activities (drug use, etc.) and did little to bolster the spirits of local residents hoping to make a comeback. They formed the Gap Filler Charitable Trust to “see vacant sites—awaiting redevelopment as a result of the many earthquakes or otherwise—utilized for temporary, creative, people-centered purposes” (<http://www.gapfiller.org.nz/>). Gap Filler tries out small scale, experimental projects with small grants; successful projects are replicated elsewhere. Among their other popular projects are the Summer Pallet Pavilion which functions as a community space and venue for

events. The site is made up of recycled wooden pallets, outdoor furniture, potted plants, and a performance space. It has drawn together neighbors who might otherwise have little ability to gather together in a society slowly reknitting after rupture.

The community of Lyttleton was severely by the 2011 earthquake; a number of buildings, including many with historical and social meaning to the community, collapsed. Members of the community worked together through a local community currency program known as the Lyttleton Time Bank to donate time and volunteer hours to each other. Time banking involves earning “hours” of work by carrying out a skill (such as sewing, typing, cleaning, and so forth) and earning an hour credit worth of work from others in return. For people who needed additional assistance after the earthquake, many people donated additional hours to help them out. Seen as a way of developing communities through sustainable local trading, this program has been a bottom up initiative which has caught the attention of policy makers domestically and internationally (<http://www.tindall.org.nz/time-bank/>).

One final bottom-up, social capital-based approach to the Christchurch disaster has been the mobilization of the organization known as the Student Volunteer Army (<http://www.sva.org.nz/>). Immediately following the earthquake, Sam Johnson worked with other local students to form emergent groups of volunteers to assist survivors in the aftermath. After a number of gatherings and assistance provision in the area, the founders managed to bring more than 13,000 students out as volunteers per week. This kind of locally based volunteerism provides long term assistance to the hardest hit communities. Many of the younger volunteers who enter disaster-affected communities such as those in New Zealand and in Tohoku, Japan chose to remain and assist with broader rebuilding efforts. Further, rather than simply bringing in outsiders for “short term” volunteer jobs which create few connections with local residents, volunteers from the community itself have a better chance of enhancing social cohesion and building deeper reservoirs of social capital.

## Conclusions

This chapter has briefly introduced the idea of the critical role of social capital in disaster recovery (Nakagawa and Shaw 2004), bringing examples from three recent disasters to show the ways that local individuals work together to improve their environment. Bonding, bridging, and social capital keep people from leaving disaster-struck regions, allow for the easy mobilization of groups, and provide informal insurance when normal resource providers are not open. In Thailand, Japan and New Zealand different forms of networks played critical roles after major catastrophe. Neighbors connected through bonding social capital were able to assist each other with disaster mitigation—such as setting up sandbags in Thailand—and evacuation from hazards, such as in Tohoku. In Lyttleton the time bank

institutionalized otherwise informal ways for neighbors to assist each other following the Canterbury earthquakes. Bridging social capital and linking social capital allowed for wide scale mobilization and collective action, as seen in the Student Volunteer Army.

Given the importance of social capital in community resilience, disaster managers, town planners, decision makers, and local residents alike should think about mitigation and recovery strategies involving social infrastructure. Well before disasters strike vulnerable areas, for example, local residents can ensure that they have contact information for their neighbors and are aware of pressing medical conditions or emergency needs. This will help the community when the next catastrophe strikes. Further, field experiments have shown that—even in developing nations with chronic challenges such as civil war—it is possible to artificially increase the stock of social capital. Successful strategies for doing so include “focus group” like meetings where local residents meet on issues of common concern with regularity over several months (Pronyk et al. 2008; Brune and Bossert 2009). A final strategy shown successful at building trust and connections has been that of community currency or time banks, where individuals who donate and volunteer their time are rewarded. These rewards then recirculate within the community, creating a virtuous cycle (Doteuchi 2002; Lietaer 2004).

As we move into the 21st century, disasters will remain a serious challenge for developing and developed nations alike. It will not be possible to solely invest in physical infrastructure such as higher seawalls, raised homes, higher building standards, and so forth and expect that we will avoid the negative consequences of disasters. Instead, by investing in social infrastructure, we can better prepare residents and communities alike for future shocks. Resilience will come not from physical engineering—instead, it will come from bottom up responses built on local social networks.

## References

- Aldrich, D. P. (2012). *Building resilience: Social capital in post-disaster recovery*. Chicago IL: University of Chicago Press.
- Aldrich, D. P., & Sawada, Y. (2015). The physical and social determinants of mortality in the 3.11 tsunami. *Social Science and Medicine*, 124, 66–75.
- Bourdieu, P. (1986). Forms of Social Capital. In J. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–260). Westport CT: Greenwood Press.
- Brune, N., & Bossert, T. (2009). Building social capital in post-conflict communities: Evidence from Nicaragua. *Social Science and Medicine*, 68, 885–893.
- Chamlee-Wright, E., & Storr, V. (2009). Club goods and post-disaster community return. *Rationality and Society*, 21(1), 429–458.
- Chamlee-Wright, E. (2010). *The cultural and political economy of recovery: Social learning in a post-disaster environment*. London and New York: Routledge.
- Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology* (Special Issue on Organizations and Institutions: Sociological and Economic Approaches to the Analysis of Social Structure), S95–S120.

- Doteuchi, A. (2002). Community currency and NPOs—A model for solving social issues in the 21st century. NLI Research Paper No. 163.
- Hirschman, A. (1970). *Exit, voice, and loyalty: Responses to decline in firms, organizations, and states*. Cambridge, MA: Harvard University Press.
- Inagaki, Y. (2013). The Power of Kizuna: Did social capital promote recovery from the Great East Japan Earthquake? Center for the Study of Social Stratification and Inequality (CSSI) Working Paper Series No.4.
- Lietaer, B. (2004). Complementary currencies in Japan today: History, originality and relevance. *International Journal of Community Currency Research*, 8, 1–23.
- Lin, N. (2008). A Network Theory of Social Capital. In D. Castiglione, J. W. van Deth, & G. Wolleb (Eds.), *The handbook of social capital* (pp. 50–69). New York: Oxford University Press.
- Nakagawa, Y., & Shaw, R. (2004). Social capital: A missing link to disaster recovery. *International Journal of Mass Emergencies and Disasters*, 22(1), 5–34.
- Pronyk, P. M., Harpham, T., Busza, J., Phetla, G., Morison, L. A., Hargreaves, J. R., et al. (2008). Can social capital be intentionally generated? A randomized trial from rural South Africa. *Social Science and Medicine*, 67, 1559–1570.
- Putnam, R. (1993). *Making democracy work: Civic traditions in modern Italy*. Princeton: Princeton University Press.
- Putnam, R. (1995). Bowling alone: America's declining social capital. *Journal of Democracy*, 6 (January), 65–78.
- Roasa, D. (2013). The DIY Disaster plan: How informal Networks Battled Bangkok's Worst Flood. The Rockefeller Foundation Informal City Dialogues Vol 1.
- Small, M. (2009). *Unanticipated gains: Origins of network inequality in everyday life*. New York: Oxford University Press.
- Varshney, A. (2001). Ethnic conflict and civil society: India and beyond. *World Politics*, 53(3), 362–398.