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Trust deficit: Japanese communities and the challenge of rebuilding Tohoku

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Trust deficit: Japanese communities and the challenge of rebuilding tohoku

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Abstract: Trust between civil society and the state is a necessary precondition for successful public policy in advanced industrial democracies. It is all the more important following a mass catastrophe that affects hundreds of thousands and upends the rhythms of daily life across the country. Choices made by the Japanese government and energy utilities during and after the compounded 11 March 2011 disasters damaged relationships between civil society, utility firms, and the government. This article looks at how decision makers in Japan continue to struggle with a trust deficit and how that gap has altered the behavior of non-governmental organizations (NGOs) and civil society as a whole. Residents will continue to resist what they see as flawed disaster recovery and nuclear restart processes unless the political system undergoes major reform.

Keywords: trust, community, Japan, Tohoku, recovery, social capital

Scholars have labeled Japanese as a cooperative, vertically integrated society where citizens cooperate with each other and their government (Doi 1974, Nakane 1978). Observers see these characteristics meshing with Japan's relative ethnic homogeneity to create a foundation for nationwide cohesion and trustworthiness. However, Japan has long struggled to build trust between citizens and the state (Pharr and Putnam 2000). Well before the 11 March 2011 disasters, Japanese citizens had little taste for their elected officials. For example, World Value Survey data showed that only 28 per cent of respondents expressed confidence in Japan's parliament in the 1980s. This number hovered at 29 per cent in the 1990s and 27 per cent in the mid-1990s (Newton and Norris 1999, p. 18). In the early 2000s, only 14 per cent of respondents stated that they trusted their Diet a great deal or a lot, with 25 per cent of respondents saying that they trusted their national government as a whole (Diamond 2007). In comparative terms, Japan sat closer to Spain, Italy and Belgium at the low end of the spectrum in terms of generalized trust in government, far from the other, more trusting advanced industrialized democracies of Finland, Norway, Sweden and Canada.

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35 The 11 March 2011 Great East Japan Earthquake triggered a set of massive
 tsunami along with meltdowns at the Fukushima Dai-ichi nuclear power plants,
 claiming the lives 18,500 and displacing hundreds of thousands. These events,
 while increasing solidarity among disaster affected residents and among citizens
 more generally, further widened the trust deficit between the people and the gov-
 40 ernment. The 3/11 compounded disasters – like past disasters (Takeda et al.
 2003, Solnit 2009) – increased trust among citizens, especially survivors (Veszteg
 et al. 2014). People in Tohoku rallied together to support each other, work coop-
 eratively and share resources. Quantitative studies found that trust in family and
 trust among survivors remained high or increased after the event (Hommerich
 2012, p. 59). A number of Japan-wide phenomena, including large numbers of
 45 volunteers traveling to Tohoku to assist, an upsurge in donations of money, an
 increase in various slogans (including the phrase *Ganbapesshi* in Tohoku dialect,
 meaning *try hard* or *keep going*) and norms around collective-reinforcing imagery
 (such as the promotion of the word *kizuna*, or *social bonds*) confirm that civil soci-
 ety responded collectively and positively to the disaster.

50 But authorities in Japan deliberately withheld information about radiation lev-
 els that they thought would create anxiety among the public and pursued top
 down strategies which ignored the interests and wishes of local residents directly
 affected by those choices. Following the Fukushima disaster, only 16 per
 cent of respondents to a survey expressed trust in governmental institutions
 55 (Hommerich 2013, p. 52). As a consequence, civil society altered its behavior in
 a number of areas, creating new outlets for citizen science (Aldrich 2012b), pro-
 testing **against** energy policy choices, and resisting cookie-cutter rebuilding plans
 in Tohoku (Takezawa 2013). While citizens may have found increased trust in
 each other following the disasters, they have yet to place that faith in authorities.
 This article first reviews why trust serves as a critical component of good gover-
 60 nance, provides counterfactual outcomes that the government could have
 pursued during the triple disasters, and shows what choices the state and energy
 utilities made that undermined trust in them. It ends with a discussion of the
 consequences for the recovery and energy sectors and policy recommendations
 for rebuilding connections.

65 **Social capital, trust and resilience**

70 Trust – the belief in the ability and the intention/willingness of another to carry
 out expected or requested behaviors – plays a critical role even in modern, highly
 digital societies. Trust is all the more important in developing nations facing
 uncertain rule of law and weak law and regulation enforcement. At their core, all
 social and business interactions involve uncertainty and risk, which may manifest
 75 **themselves** in different ways. Trust mitigates potential risks from social and busi-
 ness dealings **that** can range from embarrassment to bankruptcy. We trust others
 to whom we are even barely connected – and all the more so classmates, spouses,

75 friends, and business partners – to behave in ways that conform to our shared norms and expectations. If we introduce ourselves to a new acquaintance at a social event, we hope we will not be ignored or slighted. If we do a favor for another, we expect that they will do likewise; if we extend ourselves into a vulnerable position, we plan that those with whom we interact will not take advantage of us (Putnam 1993).

80 Because of its role as a foundation for society, trust serves as a critical component of successful cooperation, collective mobilization, good governance, and rapid economic development (see the introduction to this special issue by Lukner and Sakaki). A tremendous amount of research has shown how communities of all sizes require trust and shared norms to be able to carry out fundamental
85 Q2 communal activities such as common pool resource management (Ostrom 1990, Putnam 1993, Fukuyama 1995). Communities and societies with individuals who trust neighbors, believe in local institutions such as the town hall and police, and have faith in power-checking institutions such as newspapers and media
90 Q3 regularly find success in their political and economic endeavors (Rothstein and Stolle 2008). Businesses who believe that their partners will deliver services need not rely on third party enforcement, lawsuits and threats, and can carry out deals more smoothly and regularly. Citizens who can successfully cooperate and make their voices heard by political authorities receive better governance than those who shun voting and peaceful demonstrations. Importantly, citizens who
95 believe in their government institutions will listen to requests more quickly, obey mandatory evacuation orders without hesitation, and believe forecasts about future events. Neighborhoods where residents have more trust in each other need not call the police to handle a loud party or noisy teenagers. Governmental authorities facing a protesting crowd need not ask the police to use coercive force
100 to disperse protestors whom they believe are expressing an opinion and not threatening their safety. Through repeated interactions with each other and authorities, residents build connections with each other and decision makers to generate social capital (Putnam 1993, Aldrich 2012).

105 Trust and the concept of *social capital* strongly overlap. Indeed, social capital may be defined as ‘trust, norms and networks that can improve the efficiency of society by facilitating coordinated actions’ (Putnam 1993, p. 167). As such, there is some disagreement on the precise relationship between social capital and trust. Some have argued that social capital requires the presence of trust (Putnam 1993). Without people trusting each other to the degree that they will take social
110 and economic risks, building social connections to people or institutions may be impossible. In contrast, others have argued that trust is a consequence of those connections – once people have created a network, they envision those in it as
115 Q4 trustworthy (Woolcock 1998). Some envision trust itself as a form of social capital (Hommerich 2012). This article follows a middle ground perspective and envisions trust and social capital as separate but mutually reinforcing concepts
Q5 (Hu 2004). Network members select new connections based on existing levels of

trust and trustworthiness but further reinforce that trust through repeated interactions over time.

120 Social capital and trust are themselves critical components of *resilience* – the
ability to absorb, adapt to and transform responsive to shocks. A resilient com-
125 munity shares information and works cooperatively during a disaster to reduce
mortality, and then repopulates damaged areas and restores its businesses and
Q6 utilities after the event (Aldrich 2012; Aldrich and Sawada 2015). Resilient eco-
logical and social systems display a number of shared factors, including feedback
130 loops (the system components can be changed with negative feedback), decen-
tralization (parts of the system have autonomy to pursue local efficacy and effi-
ciency), and horizontal and vertical connectivity. Horizontal connectivity –
which some would label as bonding social capital – refers to ties between family
members and close friends while bridging social capital indicates ties through
135 institutions such as schools, clubs, neighborhood associations and workplaces.
Vertical connectivity, in contrast, involves connections between local political
units (local NGOs, horizontal associations, towns, villages, etc.) and central ones
(Tokyo’s central government agencies and politicians) (cf. Aldrich 2015). In
Japan, while some neighborhoods demonstrate strong horizontal ties between
140 residents, few have strong vertical trust ties; further, feedback loops – where citi-
zens provide information about the quality of policies to those who create them –
are weak or ignored. The 3/11 disasters magnified these problems.

3/11 as a missed opportunity

140 Governments regularly become stuck in standard operating procedures and miss
the chance to innovate or try approaches **that** may be less familiar yet more effec-
tive (Farley et al. 2007). As such, the destruction wrought by the Great East
Japan Earthquake could have served as a ‘focusing event’ for the Japanese gov-
ernment, a moment when it could step back from status quo responses to press-
ing societal and international challenges (Birkland 1997). The disaster could
145 have prompted new forms of binational and regional collaboration between the
United States and Japan; alternatively 3/11 might have been used as moment to
rethink Japan’s closed fuel cycle approach to commercial nuclear power
(Samuels 2013). Further, Tokyo could have used the crisis to redistribute finan-
cial and administrative power between localities and the center. Japanese local
150 governments, for example, have long been constrained by a lack of fiscal and
logistical autonomy. A potential shift in the field of reconstruction policy might
have allowed each community more flexibility in designing their own rebuilding
and recovery process. This eluded Kobe city after its 1995 earthquake (Aldrich
1999) and it continues to plague local authorities in Tohoku. Initial expert com-
155 mittees set up by the government to guide its efforts – such as the Reconstruction
Design Council and the Reconstruction Promotion Committee – did stress bot-
tom up, social infrastructure based approaches to recovery (Dimmer 2014). For

160 the first time the central government set up national-level field offices in the three most-affected prefectures to serve as centers for coordination and information sharing (Iuchi *et al.* 2013).

165 Yet rather than allowing local governments to take the reins during the reconstruction process or open up a serious debate on the closed fuel cycle nuclear program, the central government defaulted to continuity. Japan's perpetuation of past policies may have been from a combination of a lack of a powerful political entrepreneur (whether a politician such as Koizumi Junichiro or an activist such as past Prime Minister Naoto Kan) and intense political pressure from businesses and corporations to return to the status quo. Strong ties between the business community, central government bureaucrats, and politicians – a network known as the 'Iron Triangle' – may explain why Tokyo seemed 'out of step with the times' during the 3/11 recovery process (Onishi 2011). Other reasons for a default to the status quo stem from the fact that rural cities and towns rely heavily on construction jobs and infrastructure spending for economic stimulus. When reconstruction began in earnest, Japan's central government emphasized homogeneity in planning requirements across towns and villages and demonstrated top down, bureaucratic inflexibility (Oguma 2013).

175 In response to the earthquake, tsunami and nuclear meltdowns, the government set up a framework to spend more than 25 trillion yen (some 250 billion dollars), primarily in concrete-based rebuilding projects, over five years. Despite the government's official commitment to rebuilding Tohoku, investigations revealed that, by the end of the first year after 3/11, up to 25 per cent of the money set aside for Tohoku reconstruction had gone to unrelated projects. These non-Tohoku based spending cases included building seawalls in Okinawa, prisoner training in Hokkaido, and atomic fusion projects carried out far from the affected areas in Miyagi, Fukushima and Iwate (Brasor 2012). One Tokyo governor hoped to use the Tohoku reconstruction budget to cover the costs of holding the 2020 Tokyo Olympics (*Mainichi Shinbun*, 13 February 2015). Redirecting spending towards projects clearly unrelated to disaster recovery undermined citizens' faith in the central government to carry out the public will. Many residents saw the central government decision makers' willingness to spend money on unrelated projects as a sign of construction state thinking that would forward the interests of the state, but not its citizens (Author interviews July 2015).

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200 Even when money has been available for relevant projects in Tohoku, such as seawall and berm construction, Tokyo's bureaucratic inflexibility and manpower shortages have dragged the process out and slowed down the use of available money at a local scale. For instance, the mayor of Ishinomaki said it took six months for the Ministry of Agriculture, Forestry and Fishing to allow for rice paddies to be re-zoned into housing areas in his community (*Economist*, 7 February 2015). By mid 2015, only a few hundred families out of the more than 12,000 evacuees had moved into permanent housing in Ishinomaki due to the slow pace of reconstruction. Local officials in another town in Tohoku

reported that attempts to consolidate the local schools into a more efficient structure because of shrinking numbers of students were stymied by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) (Author interviews 2014). Whatever the reasons – including a labor shortage – only 40 per cent of the funds for local communities had been accessed by spring 2015 (Kyodo News, 3 March 2015). As a result, the three most affected prefectures of Fukushima, Iwate and Miyagi have completed little of their planned permanent housing unit stock (Murai 2015).

Much of the money actually being spent in remote Tohoku communities is being poured into large scale projects often built over the objections of local residents. Prefectural governments, taking their cues from the reconstruction guidelines passed down from Tokyo (NHK, 12 July 2011), have come to view concrete seawalls as a necessary precondition for rebuilding in many areas. These concrete structures – which some local residents have likened to a ‘jail wall’ or ‘Great Wall’ (quoted in Kurtenbach 2015) – provide little proven protection against massive waves. Many of the communities along the coast of Tohoku had seawalls before the tsunami and more than 93 per cent of those coastal structures had no impact in reducing mortality (Dooley 2014, Aldrich and Sawada 2015). The city of Kamaishi, for example, spent \$1.6 billion on a mile long concrete barrier that crumpled under the power of the 3/11 tsunami. Central government bureaucrats then played down independent reports that the town’s barrier may in fact have amplified the power of the waves and caused more damage to the community (Onishi 2011).

Local residents worry that – beyond the waste of money – investing resources in seawalls creates a moral hazard for the community. ‘The adults are arguing about the height of the wall. But height is not the matter. I think most important thing is that we all should know that you have to protect your own life by yourself,’ said one student. One report on the evacuation stated, ‘Some residents who thought that the [pre-tsunami] breakwater was high enough to stop the tsunami decided to stay on the second floor of their house rather than evacuate to higher ground’ (Hasegawa 2013). The previous mayor of Iwanuma publicly stated that, ‘We don’t need the sea wall to be higher. What we do need is for everyone to evacuate.’ Residents have seen few reconstruction results on which to pin their trust, and choices in the nuclear and crisis management fields further enforced a deleterious cycle between people and state, as we shall see next.

Japan’s crisis management and energy policies

Beyond the choices made in the Tohoku recovery process, citizen trust in the government has been damaged by recent choices made in the fields of crisis management and energy policy. The Japanese government has long supported its commercial nuclear power program through a number of policy instruments beyond the standard policies of risk amortization (such as North America’s

Price-Anderson Act, which provides government assistance in the case of a large-scale nuclear power accident) and financial assistance found in many countries (Aldrich 2005). The central government through its Agency for Natural Resources and Energy and connected quasi-government agencies (such as the Center for the Development of Power Supply Regions and the Japan Atomic Energy Relations Organization) promoted the ‘safety myth’ of Japan’s nuclear power plants, sent state-paid scientists to lecture local residents on the need for nuclear power, and helped set up junkets for government officials and town council members to visit sites **that** already had atomic reactors in a ‘habituation’ strategy. These institutions funneled money generated by an invisible tax on electricity use to rural nuclear power plant host communities in a framework known in Japanese as the *Dengen Sanpō* (Aldrich 2008). The government also created a moral hazard by having the Ministry of Economy, Trade and Industry simultaneously regulate the field while promoting it through various subsidy programs (Hasegawa 2004, Fackler and Onishi 2011, Aldrich 2012b, 2015). Despite Chernobyl and Three Mile Island, as well as a series of smaller scale domestic accidents, the Japanese public broadly supported Japan’s nuclear power program for decades. Regular public opinion surveys showed that two-thirds of respondents supported expanding the use of nuclear power in the country (Aldrich 2010).

But the Fukushima accident and central government’s poor response to it caused a sea change in public opinion: less than one-third of the public now supports the use of nuclear **power**. Japanese citizens lost trust in **the** central government agencies responsible for nuclear power because the Fukushima accident showed atomic energy’s costs to livelihood and mental health. Many residents who lived far from nuclear plant host communities had envisioned nuclear power solely in terms of its promise of energy security. But **the** host communities themselves saw nuclear power as an economic lifeline **that** could sustain depopulating, rural communities through tens of millions of dollars in subsidies (Aldrich 2008, 2012b). The highly publicized accident, mandatory evacuations of tens of thousands of residents, and the long-term concerns over the livelihood and health effects of radiation (see Reiher, **this issue**) served as focusing events for the Japanese public. Yet beyond concerns about cancer and exposure to radiation, TEPCO (Tokyo Electric Power Company) and the government made policy choices **that** sapped public trust.

First, ‘public authorities failed to communicate accurately and clearly’ during the nuclear crisis (Yilmaz 2011, p. 2). For example, the central government told residents from **the** towns of Namie and Tomioka near the Fukushima nuclear power plant to evacuate but gave no guidance on what to do (in contrast with those from Futaba and Ohkuma who were put on buses); as such, many from Namie and Tomioka went to Iitate. Yet winds blew radioactive particles precisely to that area, and people were outside, exposed to radioactive particles, for several days before they were encouraged to move on (*New York Times*, 8 August 2015). MEXT had access to forecasts of the location of those hazardous plumes thanks

285 to a system called SPEEDI (an acronym for System for Prediction of Environ-
ment Emergency Dose Information). SPEEDI had been built in the mid-1980s
after the Three Mile Island accident and data from the system was released to
US embassy personnel and military forces by 14 March 2011, just days after the
290 accident (Kyodo News, 18 January 2012). Yet the information was not released
to the broader public until around 23 March; politicians later defended the delay
by saying that the information at the time was not complete or accurate and that
they wanted to avoid ‘creating a panic’. For many Japanese, the failure to provide
this critical forecast data to residents (while it had been released to allies) was a
sign at least of incompetence or a lack of concern about the health of the nation
295 (Cleveland 2014).

Other ambiguous public announcements and a lack of clear information
increased anxiety levels among Fukushima residents (Kazunobu 2011). Decision
makers at the local and regional levels failed to carry out standard radiation emer-
gency plans, such as the distribution of potassium-iodide pills to local children
300 exposed to higher levels of radiation. Poland, for example, distributed millions of
the pills to children soon after the Chernobyl accident. Even though most local
towns near the Fukushima Dai-ichi nuclear power plants had stockpiles of the
pills, some local governments waited until the central government gave the go
ahead before doing so. It took some five days for the order to arrive from Tokyo,
305 by which point some 100,000 residents had already departed. Local officials in
several communities, such as Kawauchi, claimed that they did not receive the
pills until 16 March (*Wall Street Journal*, 29 September 2011). Some towns, such
as Futaba and Tomioka, gave out the pills without waiting for the order from
Tokyo. To understand how these decisions impacted local feelings about the
310 disaster, one scholar surveyed the broader population. She concluded that ‘[i]
nstead of creating stability and helping disaster victims to cope, the governmental
conduct seems to have resulted in increasing anxiety, uncertainty and distrust,
especially among those who need support most urgently’ (Hommerich 2013,
p. 53).

315 Next, the government withheld information about the extent of the disaster,
not admitting publicly that there had been fuel meltdowns until nearly three
months after the 3/11 crises (*New York Times*, 8 August 2011). Threats to prose-
cute those who sought their own information on radiation exposure also put a
damper on civil society–state relations. One activist told me, ‘You remember the
320 late summer of 2011 when central government officials put out word that they
would prosecute those publishing non-official radiation data. It was perhaps a
member of the Health Ministry. I don’t think they ever did [prosecute violators],
but it could have a chilling effect on many people’ (Interview 12 May 2016).

325 Other government decisions about nuclear power have sapped public trust.
The administration of Prime Minister Abe Shinzo (2012) has insisted that it
intends to restart Japan’s nuclear power program and restore its use in providing
up to 20 per cent of Japan’s electricity (*Japan Times*, 22 December 2014). This

330 push comes despite broad societal opposition to the restarts and to civil society's
acceptance of higher electricity bills as a result. More specifically, polls continue
to show that more than two-thirds of respondents want to end the use of nuclear
power in Japan (NBC News, 25 May 2015; *Globe and Mail*, 27 May 2015) and
that a similar proportion of the public will accept higher electricity prices as a
consequence of having no nuclear power plants online (*Nikkei Shinbun*, 24
335 August 2014). These choices have altered citizen–state relationships, as I will
explore shortly.

Measurable consequences

340 The government's responses to Tohoku disaster undermined what little trust citi-
zens had in their elected officials and in their bureaucracy. Japanese trust in gov-
ernment institutions plummeted after 3/11, putting it near the bottom in a
ranking of 27 countries (Edelman 2016). Individuals affected by the disaster 'had
little confidence in the trustworthiness of the government. This discrepancy
between affected and not affected was most explicit amongst the over-64-year-
olds, whose trust in governmental institutions is usually comparatively high'
(Hommerich 2012, p. 59). One observer argued that 'This loss of trust is the
345 most serious challenge that nuclear policymakers and the nuclear industry now
face in Japan' (Suzuki 2015). As the governor of Fukushima prefecture, Masao
Uchibori, told one media outlet, because the government was 'unable to take suf-
ficient measures in such issues [as nuclear safety and management] ... as a result,
the residents developed a sense of mistrust' (quoted in Slavin 2016). Nakayachi
350 (2015) found that 'the Japanese people's trust in risk managing organizations for
earthquakes and nuclear accidents was damaged.' Losing trust in government
agencies makes it more challenging for Tokyo to issue orders that will be followed
smoothly and to be seen as a source for reliable information. The consequences
of this trust deficit can be seen in a variety of policy areas.

355 First, despite the enormous amount of spending on physical infrastructure and
large-scale public works projects, the return of the population to permitted areas
of Fukushima has been slow (*Asahi Shinbun*, 11 March 2015). Many ex-resi-
dents from areas near the nuclear power plant have said that they do not believe
government claims about successful decontamination or reduced health risks in
360 the area. While the government continues to excavate top soil from residential
and business areas and bag it for indefinite storage in Fukushima prefecture, few
believe that these experimental approaches will lower risks to themselves and
future generations. A lack of trust makes it challenging for these expensive treat-
ments to raise confidence in long-term recovery.

365 A second change in civil society resulting from the trust deficit has been the
surge in the practice of citizen science (see also Reiher, this issue). Rather than
being forced to rely on data from Tokyo or from corporations such as TEPCO,
Japanese residents have formed non-profit organizations and civil society

370 organizations that collect, analyze and publish relevant information. One of the
best examples of this kind of citizen science has been the website SafeCast, which
has more than 35 million pieces of data uploaded by citizens and volunteers
around Japan. In a transparent way, it allows anyone with a radiation detector or
Geiger counter to measure and upload the measurement to their website. The
375 site, in fact, provides do-it-yourself information on how to build radiation detec-
tors and lends radiation detectors for those who cannot afford to purchase a pre-
made device (SafeCast 2016).

380 A third change has been an increase in the use of lawsuits against the central
government and TEPCO. Nearly half of the village of Iitate – some 2800 resi-
dents – filed a petition with the Nuclear Damage Compensation Dispute Resolu-
tion Center in winter 2014 asking TEPCO to admit legal responsibility, raise
compensation levels, and pay for psychological damages resulting from the resi-
385 dents' exposure to radiation (Yoshioka 2015). Beyond Iitate's residents, some 20
class action lawsuits with more than 10,000 participants are suing the central
government and TEPCO for damages (*New York Times*, 8 August 2015). Three
hundred and seventy US Navy sailors have sued TEPCO over supposed expo-
sure to radiation while serving on the USS Ronald Reagan in March 2011 off
Fukushima's coast (*Stars and Stripes*, 13 March 2016). Some local Japanese
courts, including those in Otsu District Court about the Takahama nuclear
390 Q10 plant, have sided with activists and halted attempts at nuclear restarts. Whatever
the outcomes, the drop of trust has resulted in local residents and even foreign
visitors relying on lawsuits and third party enforcement to create a sense of justice
and fairness.

395 A final visible consequence has been wide resistance to government-led plans
to restart nuclear power plants. The Abe administration's insistence on returning
to a pre-Fukushima energy policy using nuclear power plants to produce up to
one-third of Japan's electricity is a political decision that flows against the general
will (*Asahi Shinbun*, 31 May 2013). Large-scale demonstrations, which topped
400 120,000 participants have petered out but smaller, more sporadic protests con-
tinue, especially in Tokyo at the residence of the Prime Minister but also in
nuclear power plant host communities. A number of activist groups began peti-
tions to allow local residents to select nuclear-free electricity sources for their
use. Many local communities slated for nuclear power plants, such as those in
Kaminoseki, Yamaguchi prefecture – have found renewed enthusiasm for anti-
405 nuclear protests following the Fukushima disaster. The Fukushima disaster itself
may have destroyed the safety myth but the government's response to the disaster
sapped citizens' belief in the government's claims and legitimacy.

Conclusions

More than 15 years ago, scholars identified a lack of trust in the Japanese govern-
ment as a major issue (Pharr and Putnam 2000); Japanese residents viewed their

410 politicians and decision makers with suspicion well before the 3/11 compounded
disasters. Yet the choices made by governmental agencies and utilities after the
disasters sapped much of the remaining connection between civil society and
state. Decision makers did not use the moment to re-evaluate existing plans or
415 experiment with new ones. The government misappropriated money set aside for
the disaster, spent money on large-scale infrastructure projects viewed with little
favor by local residents, and insisted on standardization across Tohoku recon-
struction plans. Hiding information on radioactive exposure and refusing to
acknowledge the meltdowns pushed many residents to doubt the state's claims
420 and to collect and analyze data through citizen science. Rather than embracing
transparency and allowing citizens to make their own choices, the government
chose to filter what information they released to the public. 'Overall, the sense
was that the government was holding back information or intentionally keeping
low their estimates when no data was available' (Yilmaz 2011, p. 2). Radiation
425 expert Tatsuhiko Kodama argued that there was no excuse for the false promises
made by the government about risks to health. 'What makes me most angry is
the censorship', he said (quoted in *The Economist*, 10 March 2012). The gov-
ernment's initial refusal to call the event a meltdown, threats to prosecute those
who provided independent information, and optimistic claims about exposure
effects damaged the linking ties between citizen and state.

430 Nongovernmental organizations and residents across Japan have altered their
behavior because of the Tohoku disasters and the state's responses. Many have
participated in small and large scale rallies in host communities and in Tokyo
against nuclear power; others have petitioned for choice in their selection of
energy providers. Communities in Fukushima have embraced decentralized,
435 small-scale power generation schemes through wind, solar and geothermal sour-
ces. SafeCast and other organizations have used mass crowd sourcing to generate
new, reliable, and transparent data on radioactivity levels across the country (and
now the world). Local residents who previously knew nothing of city planning
now join with urban designers and architects to think through ways that they can
440 create sustainable, citizen-led communities. Citizens have advocated for recon-
struction plans based less on physical infrastructure and more on social infra-
structure (interviews with residents, May 2016).

445 The Tohoku disasters simultaneously increased levels of social capital among
survivors and residents in Japan while reducing it between citizens and their state.
This has resulted in a bifurcated situation where residents more deeply trust their
neighbors but are less likely to embrace suggestions or heed advice from govern-
mental agents. Communities have invested time and resources in deepening the
reservoirs of neighborhood social capital through programs such as Ibasho where
450 local elders help create and sustain social ties among the community (Iwasaki
et al. 2015). While initial results from bottom up programs such as Ibasho have
been promising, repairing the linking social ties between residents and the gov-
ernment will take more sustained effort.

455 The central government still can rethink its top down, centralized, homogeneous approach to better engage with the factors that actually improve recovery and mitigate against disaster. In doing so it can try to rebuild trust and legitimacy among the people. There are several areas where the government could seek to mend its approaches. First, many NGOs have asked the central government to verify **the** status of decontamination efforts in Fukushima, but the government has yet to agree to allow this oversight (Interview, 12 May 2016). Allowing third party verification of decontamination outcomes might help shorten the distance between citizen and state on this important topic.

460 Next, the government could seek to integrate citizen feedback into the restart process. Rather than relying on informal gentlemen's agreements between mayors, governors, and private utilities (Aldrich 2008), utilities and regulators could use polls not only of locals but also of those within 25 km of plants – the evacuation radius should there be an accident. The government should also acknowledge that for many years it did not serve as a neutral empire in the field of energy policy; it had a strong interest in promoting nuclear power, which continues to this day. It should back away from its promotion efforts and allow the market, not top down incentives, to drive the process of energy decisions.

470 Finally, the central government could also allow individual cities, towns, and villages to pursue their own reconstruction plans and their own infrastructure development plans. Currently, suggestions from central ministries **have** become mandates at the prefectural and local levels and **have** created unwanted and unneeded homogeneity in sea wall heights. The imposition of central government suggestions has generated opposition from many residents across Tohoku (Takezawa 2013). Should the government seek to close the trust gap, it could seriously embrace these reforms and move to shore up its shaky relationship with its people.

480 **Disclosure statement**

Q11 No potential conflict of interest was reported by the author.

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