BEYOND RECOVERY: RURAL TOHOKU
LOCAL POLITICS, GOVERNANCE, AND THE EROSION OF SOCIAL CAPITAL DURING
RECONSTRUCTION

By

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ABSTRACT

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In response to the 2011 Great Tohoku Earthquake, the Japanese national government launched a variety of redevelopment projects in the north-east Tohoku region. These projects are managed by the Reconstruction Agency, established to complete reconstruction and revitalization projects. The Agency primarily promotes economic development for the benefit of the overall Japanese economy but ignores localized social problems. These include aging populations, out-migration, and community discohesion. The Agency's form of development focuses on housing, roads, railroads, and relocation of residents. The Agency appears to have largely benefitted large firms through grants for industry projects and not local community projects.

This study investigates these issues through an analysis of empirical data collected from 2017. This data features key informant interviews (n=15) from 2017 and historical analysis from 2003-2017 of town office documents. This paper utilizes social capital as the conceptual framework for examining a coastal town in Tohoku (Minamisanriku, Miyagi) and the community redevelopment taking place there. This study answers the larger question of how social capital is impacted by government focus on economic redevelopment and how this affects community redevelopment. Findings show an erosion of social capital is likely occurring, with implications for the types of social capital people possess post-disaster, and how they are affected by local politics and governance. These implications demonstrate the importance of promoting social capital in redevelopment planning and including resident participation in post-disaster.

To my mother Pamela Ward and my stepfather Donald Brown.

ACKNOWLEDGEMENTS

PREFACE

Minamisanriku Town Charter

南三陸町民憲章

わたしたちは、この素晴らしい町に暮らしながら

共に成長してことを願って

ここに、希望の姿をうたいます。

海のように広心で

魚のようにいきい泳ごう

山のように豊かな愛で

繭のようにみんなを包もう

空のように澄んだ瞳で

川のように命をつなごう

大きな自然の手のひらに

抱かれている町　南三陸

While living in this wonderful town we hope to grow together—singing of hope

　　Let us be as open-hearted as the ocean

Let us be as the fish living lively

　　Let us be as the mountains growing rich in love

Let us be like silk woven together

　　Let us be as the sky clear-eyed

Let us be as the river connecting each other's lives

In the large palm of nature our town is embraced—Minamisanriku

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INTRODUCTION

In the 21st century, disasters are a major disrupter of society. Instances of flooding, earthquakes, typhoons, and other severe events continually pin humanity in cycles of upheaval and recovery. Responding to these systemic shocks, humanity learned to take a precautionary approach to impending disasters. Now, evolving disaster management systems and networks are the foundation for strong, fast, and complex responses worldwide (Chamlee-Wright, 2010; Paton, 2007; Pelling 1998). Given history, immediate and long-term actions after disaster are necessary for communities and societies to adapt to social, political, economic, and even geographical changes from disasters. This cyclical process results in shifting management of and response to communities with repeated disasters. Actions taken after a single disaster is just as important to how the same community will handle that shock again. The constant reconstruction and redevelopment of disaster communities is critical to understand to make this transformative period shorter. Redevelopment that starts from the community context, or the bottom-up tends to reduce losses and ill effects of disaster more than those that operate from a national context or top-down approach to disaster recovery (Chan, 2012; 2018). However, much of the planning and response to disasters uses a top-down approach possibly due to neoliberalist development goals. When neoliberalist development goals may be central, privatization and competition leave some communities vulnerable to redevelopment that creates economic succession with social repercussions (Collier, 2015; Kitagawa, 2016). Consequently, focusing on the redevelopment of post-disaster communities is essential to disentangling the imbalance between economic and social decisions for community rebuilding.

When disaster management mainly relies on economic redevelopment to obtain wanted community outcomes, there is a lack of consideration for social development and in turn, the

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possible effects on economic development. The general formula for creating any 'developed' community situates economic development first, and then social or cultural development second (Sen, 1999). However, social development can be a better indicator of both recovery and economic growth (Knack and Keefer, 1997; Nakagawa and Shaw, 2004; Shimada, 2017). When economic redevelopment is the primary driver of disaster management, vulnerable communities may find themselves juggling trauma and actions by actors outside their community (Pyles, 2011a). This makes rural or low-income communities vulnerable to redevelopment that may not be in their best interest (Pyles, 2011b).

There have been shifts towards using social capital as a theoretical framework when examining recovery. When used in this way, an assessment of social capital levels in a community post-disaster can tell us more about how recovery is progressing than when controlling for traditional economic measures (Aldrich, 2012b; Shimada, 2016). Utilizing social capital this study examines a coastal town in Tohoku (Minamisanriku, Miyagi) and the community redevelopment taking place there. Now nearly eight years after the 2011 Great East Japan Earthquake, how is social capital impacted by government focus on economic redevelopment? And how does this affect community redevelopment? As will be explored later, an erosion of social capital is occurring, with implications for bonding, bridging, and linking forms of social capital.

THEORETICAL FRAMEWORK

Many scholars have argued that social capital's flexibility and positive effects for communities apply to both non-disaster and disaster settings. In the former it is believed to lead to a decrease in crime, poor health outcomes, and economic burdens (Dilulio, 1997; Torsvick, 2000). It is claimed that it contributes to economic growth (Knack and Keefer, 1997), civic engagement (Putnam, 2000; Fukuyama, 2001; Putnam, 1995), facilitates the use of social resources to financial ones (Gold and Light, 2000; Reimer et al., 2008), and increases democratic governance (Putnam et al., 2004).

However, social capital can also aid some individuals more than others, its positive effects are not always uniform. As social capital is an active on-going investment that requires time and effort that not all individuals or groups have, the benefits of social capital are unequal. As a result, having an optimal level of social capital to work with is not a given and social capital stock is generally unequally distributed between the upper and lower classes (Bourdieu, 1986). This is coupled with the "downsides to social capital" as Portes (2014) notes that over-investment in and overreliance on social capital can create communities with harmful social norms (i.e. conformity) (Levine et al., 2014), can exclude others from "social and economic needs" (Waldinger, 1995:1), such as diminished job prospects, and in fact can limit opportunity because of relationship demands (i.e. family).

The definition of social capital applied here refers to the connections between people and institutions, trustworthiness that facilitates cooperation, and the actual or potential resources connected to individual or group social networks. Additionally, social capital in this study is considered as an individual and community concept (Coleman, 1990; Portes, 1998). It is the actions of both individuals and whole communities that matter, as one relies upon the other.

To consider social capital in disasters and the argued positive effects for communities, there are three types of social capital to investigate. These include bonding, linking, and bridging forms of social capital. Here, *bonding social capital* is referred to as the kin, familial, or close friendships that people have or connections to people similar to them (Briggs, 2003). *Linking social capital* is about the relationships a person has with institutions and individuals who hold authoritative power within them (Putnam et al., 2004; Woolcock, 2001). *Bridging social capital* is where relationships are between people who are different from each other, like in age, language, and socio-economic status (Szreter and Woolcock, 2004; Hawkins and Maurer, 2010). The status of these three forms of social capital are important to post-disaster recovery patterns. Especially in communities who are limited in their economic resources or otherwise disenfranchised, social capital and its forms may be notably more important (Mathbor, 2007; Norris et al., 2008; Sadri et al., 2017).

In cases where groups have more of one form over another or only one this presents complications in large-scale disasters. Throughout the recovery process individuals and groups must draw on different forms in the long-run versus in immediate aftermath.

For example, linking social capital is critical to long term positive post-disaster trajectories as well as for dealing with high amounts of physical damage (Marin et al., 2015). Indicators of linking social capital connect to variance in recovery. A study done by Tatsuki (2005; 2007), found that social ties and relations with the government, among four other items, accounted for 60 percent of community recovery variance. The other items fell into resources and well-being, such as housing, physical and mental health, and economic/financial situation. The final item was preparedness. Together, these create a model of life recovery, which specifically uses social capital as the catalyst for recovery (Shimada, 2017). Similarly, when considering connections to

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authorities, more than another other indicator, powerful city, town, and village politicians are a good predictor of recovery (Aldrich, 2016). As a result, whether linking social capital is facilitated by social ties, relations with government, or politicians, it is the most important form of social capital for long-term recovery.

In this way, bonding social capital is only useful in the short term or the immediate aftermath to gain needed resources or information (Hurlbert et al., 2001). Whereas, bridging and linking capital are necessary for long term needs and for healthy community redevelopment (Hawkins and Maurer, 2010). As a caveat, individuals that do have strong social networks, large families, or that are younger, tend to draw on bonding social capital (Hurlbert et al., 2000).

Besides the forms of capital that people can use, the ability of social capital to *transform* into other capitals (financial, human, built, etc.) is beneficial to economically depressed and vulnerable individuals or groups (Flora and Flora, 2013). In the case of disasters, it can replace or substitute in for other missing and lacking capitals. Often disenfranchised communities they use their social capital to create more financial capital and economic resources amongst themselves (Gold and Light, 2000). When social capital is exchanged scholars note it to lead to better community health, engagement, and leadership (Flora and Flora, 2013; Pigg et al., 2013; Pigg et al., 2015).

More interestingly, social capital can have particular connections to future economic growth post-disaster (Shimada, 2015). It can stabilize the economy and increase job growth, particularly in the service industry (Shimada, 2016). Scholars note that it also facilitates more business start-ups (Nam et al., 2010; Todo et al., 2013). Beyond these economic effects, in a string of different studies in Japan, Aldrich (2010, 2011, and 2012b), repeatedly found that social capital was

important to having faster recovery, but that also as a measure, social capital was better at capturing why communities recover faster when controlling for conventional economic indicators after the 1923 Tokyo Earthquake (2012b). This finding echoes a study by Yamamura (2010) who found that after the Kobe Earthquake in 1995, social capital slowed the effects of the Kobe disaster and increased community participation and activities after the earthquake. Expanding on this point further, Shimada (2017) found strong economic implications for social capital as it generated more jobs than any other indicator, and was the "factor that created differences in the pattern of recovery among wards" (501).

In other cases, social capital addresses issues of out-migration. Here social capital encourages people to return to their homes and stay, despite ongoing issues of depopulation (Shimada, 2015). Aldrich (2011) explores how social capital effects population post-disaster. Here, social capital in the form of non-profit organizations demonstrated better population recovery rates. It is also good for communities displaced from a disaster, as fostered community ties help alleviate isolation and anxiety (Iwasaki et al., 2017). As a case point for this study, Shimada (2015) also argues that social capital as a result should be at the core of all future planning to rebuild Tohoku.

The social capital flow model

Given all of these aspects of social capital in non-disaster and disaster settings, I utilize the following model to reflect the process of how social capital is formed and claimed to be supported. In one part, the social networks and trust that individuals or groups have is important in fostering further engagement (Putnam et al., 2004; Knack and Keefer, 1995). This engagement then causes further community or resident involvement in a variety of forms, such as through non-profits (Aldrich, 2011). This then helps support a general structure that values democratic decision-making and representation (Nakagawa and Shaw, 2004). Ultimately when social capital flows in this manner, it can foster more social capital through beneficial social infrastructure, by representing individual and community needs (Reimer et al., 2008). Bonding and bridging social capital help facilitate social trust and social networks which in turn feeds into engagement at the beginning of the flow. Linking social capital helps at the end of the flow by facilitating positive relationships with those in authority (see figure 1 for full model). This study analyzes social capital in Minamisanriku using this model to determine whether and how social capital is utilized post-disaster.
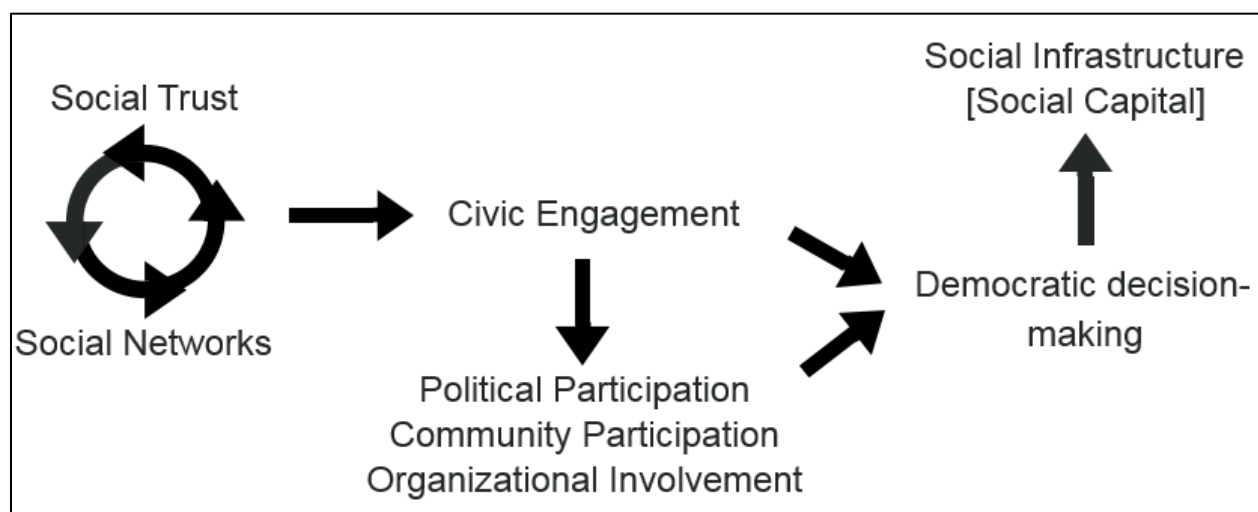

Figure 1: Social Capital Flow Model

THE STATE OF TOHOKU AND MIYAGI PREFECTURE

Most communities within Tohoku pre-disaster were economically, politically, and socially

vulnerable. This is because the region suffered from economic instability and severe

depopulation from out-migration. As a view into economic troubles, agriculture and forestry

entities fell by 16.4 percent and 30 percent respectively from 2005 to 2010 at the national level.

(Census of Agriculture and Forestry, 2010). In the case of Tohoku, this trend was similar with

agricultural businesses and related entities falling by 15.1 percent, further worsening after the

disaster with some areas having losses up to 50 percent or more. Additionally, between 2011 and

2013 loans to Tohoku totaled 813 billion yen (7.5 billion in US dollars) remaining well above the

national average in loan provisions (JFC activities, 2014). The majority of this amount,

approximately 92 percent, is directed towards the prefectures of Iwate, Fukushima, and Miyagi

(JFC activities, 2015). And out of the three, Miyagi receives the most loans (JFC activities,

2016). Throughout 2011 to 2017 these prefectures always held more loans, and owed more on

those loans in comparison to their neighbors. To date, they comprise 80 percent of all loan

provisions, with an expenditure of 1,002.4 billion yen (9.1 billion in US dollars) (JFC activities,

2017). It is possible that aggressive borrowing by private firms could be a sign of economic

vitality, but declines in the number of farmers and fishers during this same time may suggest

otherwise.

Beyond these macro measures of economic problems, changes in farming households and

workers, and fishery workers shows how the region was experiencing decline during this time.

For example, in 2010 the total number of farm workers in Tohoku was 564,283. However, only

25,370 were permanently hired and 538,913 were temporary workers (Census of Agriculture and

Forestry, 2010). There was drastic change in 2015, with permanent and temporary workers

falling to 22,383 and 349,138 respectively, a 34 percent decline in workers overall (Census of

Agriculture and Forestry, 2015). Along with agricultural jobs in Tohoku declining due to

depopulation, the disaster is accelerating the deterioration of communities. In comparison, Kanto

only saw a 23 percent decrease during this same period. So, for every worker lost in Kanto, two

have disappeared from Tohoku. Similarly, fishery workers who have a small population to begin

with, fell by 30 percent, with a total loss of 10,264 from 2008 to 2013 (Census of Fisheries,

2013).

As for severe depopulation from out-migration, every prefecture in Tohoku pre-disaster had

similar rates of out-migration to other regions. However, there is stark change in out-migration

patterns from the coastal prefectures (Iwate, Miyagi, and Fukushima), with Iwate faring better

than the others (see figure 1). Key here is that even pre-disaster out-migration rates were high. In

comparison to their neighbors, Miyagi and Fukushima worsen to an average out-migration

percentage of 6.0 and above, while all other others experience a decrease. The out-migration rate
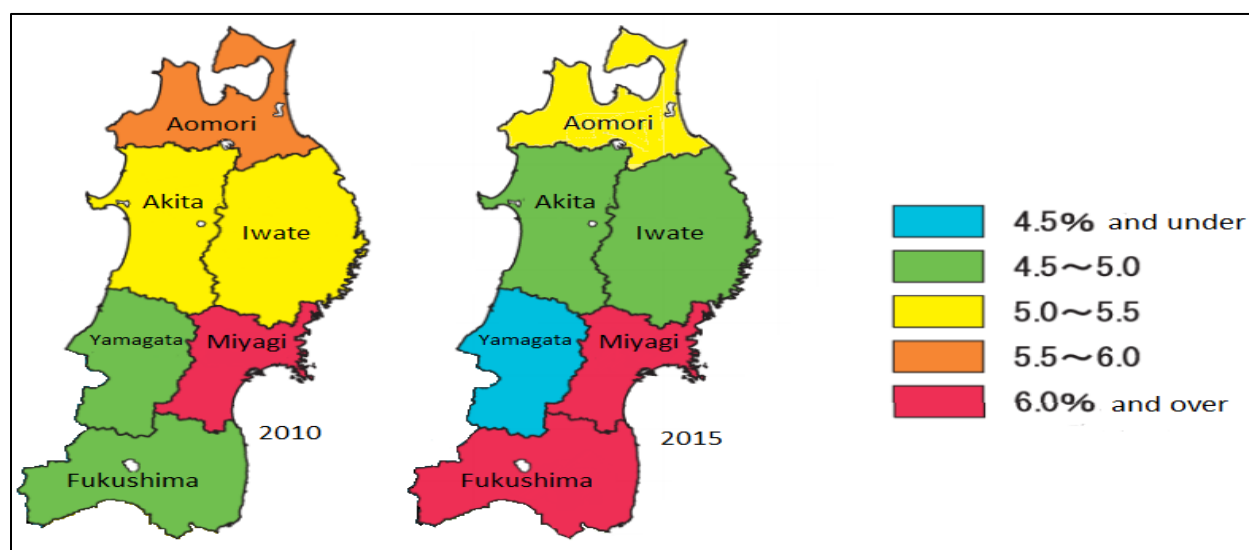

Figure 2: Map of Tohoku Out-Migration Rates (Source: Adapted from 2015 Population Census of Japan, Statistics Bureau Ministry of Internal Affairs and Communications)

used here is based on the number of people moving out over that of the current number of permanent residents. The percentages here represent the number of people leaving an area.

While one of the direct effects of the nuclear meltdowns at the Fukushima Daiichi Nuclear Plant was the vast, forced relocation of communities in Fukushima, Miyagi prefecture is experiencing similar out-migration patterns to its neighbor. This is not unusual as the most damage is in Miyagi, accounting for 327km^2 of the 561km^2 of flooded land or 60 percent of all damage reported among six prefectures and sixty-two municipalities (Miyagi Prefecture's Restoration and Reconstruction Efforts, 2018). Having faced the brunt of the tsunami, coastal towns were mostly destroyed amongst water heights of 15 feet to over 68 feet (Tsuji et al., 2014). And like its neighbors, Miyagi has suffered economic ills from the loss of farmland, viable fishing, and processing facilities (Sekine and Bonanno, 2016). Post- disaster, the prefectural government produced "Miyagi Prefectures' Restoration and Reconstruction Efforts" which holds five principles to their approach to recovery (see table 1).

Table 1: Miyagi's Basic Principles of Recovery

1. Developing a disaster-resistant and secure community
2. Each citizen is a key player in recovery efforts; utilizing all available resources
3. Drastic restructuring that does not simply stop at restoration
4. Progressive community development that will help solve modern-day social issues
5. Constructing a model that outlines the steps from catastrophic damage to full recovery

Community development addressing social problems is present in these five principles. However, community development during reconstruction is focused on public housing, relocation, land readjustment, and removal of debris. This is physical community development rather than social community development. Addressed social problems include creating support centers for disaster victims, including temporary housing, mental health care, child care, disability support, and other welfare. These social issues were rapidly addressed post-disaster,

but these primarily pertain to health and welfare, and not overall community well-being and unity. Unfortunately, social and community development efforts are overshadowed by regional economic development, which is must more extensive and robust compared to these previous areas.

Much of the redevelopment has been conducted through economic partnerships, branding initiatives for sectoral businesses, privatization of businesses, farmland, and fisheries, along with public-private partnerships rather than social or community projects (Reconstruction Agency, 2015). This economic focus is promoted by Japan's neoliberalist approach to redevelopment and disaster management, even though neoliberalist tendencies of privatization have become problematic as larger private firms threaten the small livelihoods of affected residents (Sekine and Bonanno, 2016). This privatization has functioned through the Special Zone for Reconstruction. For example, those within the zone in Miyagi include fishermen who have had to contend with, "economic restructuring and profitability, [where] government reconstruction plans included the granting of fishing rights to corporations and the elimination of small fishing ports used by family-owned boats" (Sekine and Bonanno, 2016:153). Actions like these are common in Miyagi and demonstrate deflection from addressing connected social and economic community needs.

The dominance and power behind economic drivers for recovery in Miyagi have left social issues insufficiently addressed. These social issues include the unhindered continuation of out-migration discussed earlier due to depopulation and aging. For Miyagi, out-migration may be the greatest threat to its future recovery. As 20 percent of the prefecture has an out-migration rate of 12.5 to 20 and higher (Population Census of Japan, 2015). An additional 21 percent of the prefecture has a rate of 10 to 12.5, meaning roughly half of Miyagi experiences severe

depopulation (see figure 3). The threat of continued out-migration is somewhat obscured by the economic progress the prefecture has reached (see table 2). Overall, the prefecture will meet its regional economic development goals by 2020, but the social and over community recovery of coastal towns remain uncertain.
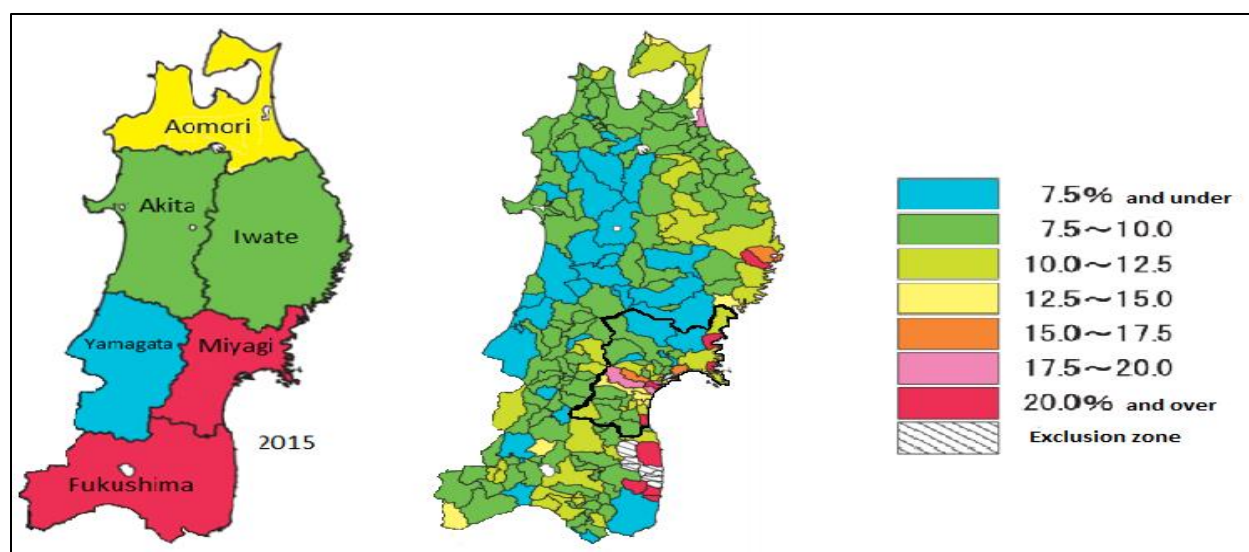
Figure 3: Map of Tohoku by City, Town, and Village Out-Migration Rates (Source: Adapted from 2015 Population Census of Japan, Statistics Bureau Ministry of Internal Affairs and Communications Japan).

Table 2: Current Progress from Miyagi Prefecture's Restoration and Reconstruction Efforts 2018

Housing	Temporary housing	Land	Business	Tourism	Labor
All public housing started (16,000)	2,006 units in use with 4,462 occupants	99% ready for construction (194/195 areas)	11,425 affected 9,748 continuing operations	Number of tourists match previous years (2010)	37,000 job seekers (33,778 employed)

Agriculture	Horticulture	Forestry	Fisheries	Hauls
98% of salt removed (12,808/13,000 ha)	99% of greenhouses recovered (176.5/178 ha)	95% of mountains and coasts recovered (18/19 sites)	82% of ports restored (1,032/1,260)	100% recovered 2017: 60.7B¥; 250,000 tons

The ideal community development that the prefecture and national government promotes has likely not manifested for two reasons. The first is the reconstruction deadline of 2020 that all prefectures, not only Miyagi, must meet. The approximate 10 year recovery plan follows three stages: restoration, reconstruction, and development. Restoration is referred to as projects that will "restore the livelihood of disaster victims and public facilities," which took place from 2011 to 2013. Reconstruction refers to the "fulfilment of infrastructure construction," which took place from 2014 to 2017. Lastly, development refers to "promoting strategic projects for the future prosperity of this [Tohoku] region," to take place from 2018 to 2020. The formation of development in this way clearly separates different areas and forms of development. The social and community development discussed earlier took place in the restoration stage. Continued social and community development that considers needs beyond housing and health care is largely seen through economic development. The assumption is that economic development will resolve unaddressed social problems, like out-migration, depopulation, and assist with aging populations.

Thus the reconstruction and development stages are primarily economic projects to promote regional revitalization to benefit the overall Japanese economy. As a result, critical and short-term social problems were addressed early on post-disaster to protect and safeguard residents, but the same urgency is not currently present. The social problems present in the restoration stage associated with inadequate social and community redevelopment did not pause after 2013. As a result, the relationship between social and economic development in Japan's present disaster management as the site producing social and economic imbalances is all the more important to analyze.

It is then the purpose of this qualitative study to investigate further the effects of these processes within Miyagi. Key to this study is understanding how the current economic model post-disaster effects community development. For this study, social capital is used as the theoretical tool to help examine how this process operates. As a result, the study answers a broader question of how social capital is impacted by government focus on economic development in the context of disasters. This is because disaster management is prone to paying homage to the notion of social capital in affected communities without effectively utilizing it, worsening the levels of social capital after disaster and thereby having social implications.

THE CASE OF MINAMISANRIKU

Minamisanriku (MSR) was originally four separate areas (Togura, Iriya, Utatsu, and Shizugawa). As a whole, the areas most affected by the tsunami were Shizugawa, Togura, and Utatsu with the loss of businesses, fishing ports, farmland, housing, schools, the hospital, and other necessary buildings. Both agricultural and non-agricultural industries were affected. Farms and fisheries have declined in both the number of businesses in operation and in the number of households post-disaster (see figures 4 and 5). The recovery of industry is mixed. The majority of total private businesses pre-disaster was 853 (2011), and fell to a low of 251 (2014), before slightly recovering to 494 (2016) (Minamisanriku Town Statistics, 2016). Private businesses currently employ approximately 4,372 workers or 34 percent of the town population. From 2010 to 2018, the population fell from 17,064 to 13,022[1]. The top contributing industries include construction, retail, restaurants/lodging, and manufacturing. These industries contribute a third of all workers currently employed in the town, however when construction is completed it is possible that more than 700 people will be out of work.
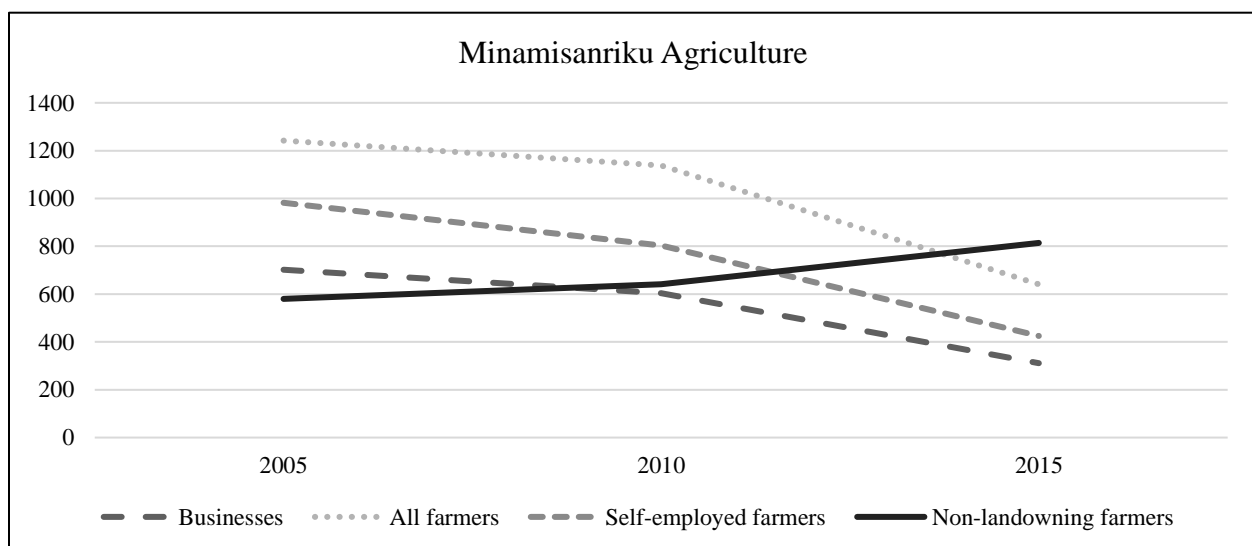

Figure 4: Minamisanriku Agricultural Data (Source: Adapted from 2016 Minamisanriku Town Statistics Report, Agriculture)
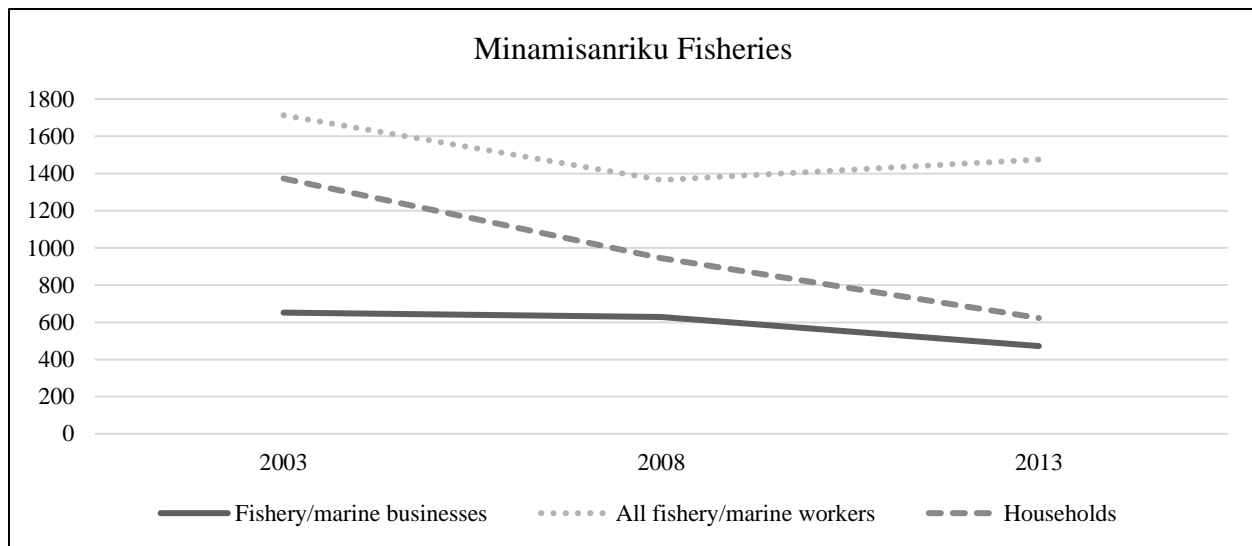
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[1] As of October 2018

Figure 5: Minamisanriku Fisheries Data (Source: Adapted from 2016 Minamisanriku Town Statistics Report, Fisheries)

In terms of progress, in 2015-2016 major ports in Shizugawa were restored and in 2016 two major marine processing plants were re-opened. In 2017 the town saw the re-location of the market (San-San shotengai) in Shizugawa and another in Utatsu (Hamare shotengai), the opening of the Ujie grocery store, and the town hall. A small community center is available next to the Hamare shotengai in Utatsu as well.

Among changes to agriculture and non-agriculture industries, tourism is seen as an important component to the revitalization of the local economy. There are on-going efforts between the local government, tourism association, and businesses to attract new growth. However, tourism efforts have been met with conflict from both residents and less wealthy business owners. When the original San-San shotengai was moved and updated, many business owners could not afford the newly increased lease prices, making the new market more appropriate for wealthier business owners. At the new complex there are also chain-stores which some residents feel are valued over local small businesses. For some owners this transition was a boon, especially if they could afford the initial high costs, as tourist and transportation buses stop at the Shizugawa market

frequently throughout the week. The Hamare market in Utatsu has far fewer visitors than the main market in the center of town. However, between my visits at the new and old markets, there is a decrease in the presence of locals at the new market, and an increase in travelers, sports groups, and tourists.

In comparison to its neighbors, Minamisanriku's recovery trajectory has been more tumultuous. Coupled with geographic isolation difficulties, Minamisanriku will not receive a new train line like its northern and southern neighbors. Instead, a bus-transit system has been put in place to provide residents with public transportation. However, the busing system is not as convenient as the train once was. Additionally, the original Tohoku expressway by-passed the town. To assist with its isolation post-disaster, the Tohoku expressway is being expanded to pass through MSR. As of 2018, the extension of the Tohoku expressway is still incomplete and currently ends in Shizugawa. It is projected by the end of the year to reach part way into Utatsu.

DATA GATHERING

This qualitative study relied upon participatory methods to facilitate the project. Participation

using partnerships was enabled through non-profit organizations, their staff, volunteers, and the

residents who came to their community events. In the ladder of low to high participation,

partnerships are high (Arnstein, 1969). As equitable partnerships foster inclusion in the research

process, this facilitates forms of citizen power in mutually beneficial ways. This method assists

with the inclusion of participants and organizations in all stages of the research process (Austin,

2004; Carreta, 2016; Francis, 2001). By doing so, this ideally enables those in the partnership to

contribute their knowledge and share in the creation of the research.

Participatory research methods were intentionally chosen to help alleviate issues of community

distrust, as residents had noted in earlier years that they often do not see nor hear where their

stories, knowledge, and information goes and for what purpose these are being used. This aspect

of participation adapts well for this explicit purpose to protect vulnerable groups. As a result,

from 2014 to 2017 three reports have been shared, along with in-person and virtual follow-ups to

answer questions about the project. This allowed clarifications and useful amendments to the

project, a strong point of participatory methods (Garcia et al., 2014; Enria, 2015).

Data

From 2014 to 2017 this qualitative study occurred in the town of Minamisanriku, Miyagi. Ten of

the fifteen key informant interviews from 2017 are premise of this paper. In previous years other

interviews with residents and volunteers occurred that are not featured here. In addition to these

interviews, information from site-visits conducted at temporary housing shelters, schools, fishing

ports, farms, and markets every year are used. Moreover, volunteers within non-profit

organizations and residents provided commentary about how construction was progressing,

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including but not limited to: changes in roads, bridges, highways, businesses, bus stops, and old railroads which were maintained in a fieldnote journal.

To obtain interviewees, snowball sampling along with previous relationship knowledge assisted in recruiting. Given the status of vulnerable communities, such as those going through complete societal changes, snowball sampling affords a slow but sure way to gaining access to individuals (Berg, 2007; Emerson, 2011). After establishing relationships with nonprofits in the area in previous years, I branched out into groups of individuals connected to their community programs, and eventually into unaffiliated groups. The initial forms of contact provided rich and robust connections to individuals throughout the community, at different socio-economic tiers, and levels of re-integration.

All key informant interviews were semi-structured and ranged from 30 to 45 minutes at a location of the respondents choosing. These I coded by hand using an indexing method. Following indexing, I grouped them into smaller distinct themes and areas of convergence after open coding. Interviewees include five women and five men who work in the town, hold a position of high social status, and have been assisting with disaster recovery since 2011. The substantive findings from these are broken into bridging, bonding, and linking social capital. Using these areas, I critique the current processes of social development in Minamisanriku and disaster management in reference to the social capital flow model presented earlier.

FINDINGS

Of the 15 key information interviews, all gave insight into how bridging, bonding, and linking

capital may have been affected post-disaster, and how responses to the disaster throughout the

reconstruction process created conflict amongst different people and areas of the town. In each of

following sub-sections, relevant town history and data is incorporated to qualify some of the

interviewees' statements. For the bridging and bonding social capital section, a political history

of the town is prefaced. For linking social capital, the focus is on disaster decision making by

those in authority as discussed by the interviewees. For linking social capital, the four main

codes produced by the indexing method make up sub-sections in this category. These include

preparedness, support, defining, and leadership. The 10 interviewees featured in the findings

section have been given a different name to de-identify them.

Bridging and bonding social capital

Often localized disputes complicate whatever social, economic, or political issue the community

is suffering from post-disaster. For bridging and bonding social capital, political disputes placed

strain on the ability of residents to utilize the benefits of the forms in two ways. The first is the

young history of the town, and the second is the multi-generation consolidation of political

power.

In the case of MSR, these disputes arose from the four different areas of the town largely not

interacting with each other pre-disaster. Starting in 2003 a merger was initiated to form

Minamisanriku and was completed in 2005. Before this merger the original areas had their own

mayors, associations, and the general structures of a local government. Additionally, political

lines in the community are strongly enforced by the multi-generational legacies of primary

families. Individuals living in MSR, have not moved from the same places their parents,

grandparents, and great-grandparents grew up in nor have many changed their occupations. This is a common phenomenon in rural Japan (Iinuma, 1995). This is due to traditional patterns of inheritance, (Iinuma, 1995), which contribute to consolidating power through generations. In terms of local politics, this has produced three family lines of power within MSR in the spheres of business, politics, and agriculture. For the head family highly influencing agricultural practices and decisions in MSR, changes post-disaster have not particularly hindered their hold on the status quo. Most of these farmers are not part of the growing group of non-landowners. Rather local collectives of farmers and fishermen have done the work of contesting infringement on their livelihoods, a key point that is also found in Sekine and Bonanno's (2016) study of Utatsu fishermen.

In comparison, business and political families have had much conflict. As Kimura (female, Director) stated, "the families in town do not like each other, and so the three often do not agree or [pauses] think of the others as rivals. So the people who own [redacted] do not like the mayor or the board—association, because they have different views on town development. In Shizugawa there is a [redacted] related building that hasn't been torn down because its private property and they [mayoral associates] cannot force them to remove it. It's the, one of the only original buildings still left from 2011." The following excerpt from Morishima (female, Director) also provides a more detailed discussion explaining this issue with regard to local schisms.

> **Ward**: What you were saying at the city office about disunity, so when you do community organizing the most difficult steps…seem to be more maybe personal based in MSR—
>
> **Morishima**: And who doesn't like who, or who feels—it is all just very personal and some it is even from a long time ago bias. But, the younger generation the 20 year olds and the 30 year olds much less so. The bigger issue with them is that the younger people who are in MSR, the majority of them, they're from the rich families. Thence, they're there because they have a reason to be there. Anyone from a poorer family or from someone who didn't have

much or who lost too much in the tsunami has already left because there is no opportunity for them in MSR. So of course those people say 'yeah we're all friends.'

Ward: They don't have issues? [probing]

Morishima: Yeah, they have no real issues. I know I heard some people talk negatively about the youth there but, the other side is that they actually [broke topic] finally, the generation that is from MSR [MSR did not exist until 2005]…if you talk to the grandparents, anyone over 50 or 40 even, they will remember a time when it was Utatsu and Shizugawa and Togura, and you know everything was split. So they still identify as, 'I'm from Shizugawa,' and their loyalties are very strong. But the 20-30, and I think about the 40 is the line, they say, 'oh Minamisanriku' and they mean everybody.

Ward: Okay. So is this why the political issue is more stressed now than before?

Morishima: Yes, but a lot of things with the political is that people say, more money was spent on Shizugawa's redevelopment than Utatsu's.

As Morishima and Kimura note, besides the economic imbalance between residents who have wealth, there is a problem with previous loyalties to specific parts of the town. This is compounded by perceived political conflicts and unfair bias in who receives more development spending.

Groups in agriculture, while less politicized, presented their own settings to investigate. In areas like MSR, agriculture produced a collective network amongst residents as labor could be shared during harvest and planting seasons, without the use of outsiders. However, like in many Japanese rural areas, farmers in MSR tend to be an aging population as urban dreams and expectations of more lucrative jobs pull possible heirs to cities. This has led to what some call part-time farming (Jussaume, 1991), in response to issues in the inheritance process and changes in the economy (Rohlen, 1983). In areas like Utatsu, where much of the onion farmers locate their fields, many remark as Shizuho (male, farmer/landowner) does, "We have 40 fields but can only plant 30 of them. We don't have enough equipment, [money], or people."

The problem expressed here is common. Some new farmers have come into the community but they do not have the long standing connections or wealth that other farmers do. As a result, groups that could potentially reverse aging issues have accumulated much debt while doing so, with the town only able to provide minimal support. As Kouhei (male, farmer/non-landowner) notes, "I barely have enough to pay my rent, and I now have a daughter. I moved from [redacted] and the job paid better, my salary was 3000000¥ [approx. 27K] more than now. Between making payments on equipment, buying fertilizer and seeds, it is hard to continue. I may not be here next year [without housing assistance]."

Depending upon local politics, recovery and redevelopment can be promoted, inhibited, or stagnant. For MSR, conflicts between the powerful business and political families may lead to a lack of efficient decision-making. On the wayside, agricultural families, while still maintaining some relevancy are not included in this dialog. For the purposes of this study, the local politicized context became important in understanding why and how redevelopment affects post-disaster communities. Here, redevelopment heightened previous village/political loyalties and manifested in the conflict between major families in the community which made plain individual problems.

In terms of social capital it is clear that due to the schisms in the town, some parts and groups of the community do not associate with each other, limiting their social network, and if at all, their ability to engage with one another. This affects their ability to use bridging social capital post-disaster. Bridging social capital is produced through the relationships with other individuals or groups dissimilar from them. Bridging social capital provides additional economic and social support, and access to information that otherwise an individual may not have access to (Hurlbert et al., 2001). Additionally, if individuals are only relying on their bonding social capital (i.e.

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family ties), they may not recover from disaster affects (e.g. financial ruin, isolation, etc.) (Hawkins and Maurer, 2010). Symptomatic of this is the separation by loyalty to the previous areas of the town, the separation between young and old groups, and separation by wealth. With gaps between young and old and the wealthy, this may signify problems with bridging social capital as well. If there is not a strong tether that residents can pull on in the community whether by social networks or bridging social capital this may be what is contributing to distrust in the town. This distrust becomes more prominent in the linking social capital section next.

While these considerations here are representative of a weakness in both bonding and bridging social capital, the key issue is that residents do not have good linking social capital with the local authorities. This emphasis is apparent in the perceptions of how funding distribution took place, who received greater priority, or who simply received favor.

Linking social capital

To define different actors and their importance, a brief discussion on governance and social capital is necessary. In the most basic sense governance operates to organize and facilitate collective decisions and is key to management and development structures (Rosa et al. 2014). The claimed relationships between governance and social capital highlight that social capital bridges trust with those in authority (Górriz-Mifsud et al., 2016; Bull and Jones, 2006), can create communities more resistant to social, political, and economic failures (Bowles and Gintis, 2002), which governance reforms are passed, and that the higher social capital is the more positive perceptions there are of local governance and actors (Abby et al., 2016). Górriz-Mifsud et al., (2016) also elaborates on the necessity of social capital factors for governance, "governance deals with societal challenges entailing institutional changes by increasing agents'

coordination, collaboration and participation in multiple facets (multi-actor, multi-sector, and multi-level), which constitute core social capital elements," (26).

Ideally, democratic governance processes include agents from multiple networks including civic, nongovernmental, and experts. In the case of MSR, the level of governance the town contributes to is small, and national agencies and ministries have more control over the function of policies and decisions than locals. However, this is not for lack of trying. When the Reconstruction Agency formed it was tasked with creating goals, implementing plans, and various project to meet specific national based needs. Their overarching goals were 1) providing health and living support 2) restore public infrastructure 3) rebuild houses and communities 4) revive industries and livelihoods and 5) revitalize and reconstruct Fukushima (Reconstruction Agency, 2016). While the agency has done well in facilitating private-public business projects (116 total), and progressing with industry goals in Miyagi, it has not done well in including residents in this process. It has failed to 1) facilitate people's active participation in MSR and 2) has mainly used knowledge from the private sector, to promote projects which undermines and fails to use social capital efficiently. This leads to increasing conflicts with the RA and with the governor of Miyagi, as many special zones for reconstruction did not account for local well-being, especially in the case of fishermen in Utatsu who had to rally to save their fisheries from privatization (see Sekine and Bonnano, 2016). As a result, governance in the case of MSR is for the benefit of economic values rather than a combination of both economic and social ones.

Due to governance structures not adequately facilitating active participation, interviewees had negative responses to this system and the actors within it. These responses fall into four areas that participants identified as unsatisfactory, including: preparedness, defining, support, and leadership.

Preparedness. Due to central government implementation and control, initially there was visible difficulty in the national government assisting Tohoku (Lochbaum, 2014). The visibility came from conflicting reports, issues with maintaining contact with affected residents, and general distrust from the public concerning radiation (Elliot, 2013). However, as time progressed, issues of preparedness were insidious—meaning preparedness did not have one specific responsible group. In interviews, participants thought there was a lack of national government preparedness, lack of prefectural organization, and/or arbitrariness in the Reconstruction Agency's decisions on chosen projects (i.e. delaying one project for another). In one example, Yuka (female, retired business owner) compared her memories of Chile earthquake and tsunami in the 1960s to the one in 2011 in regard to how residents were included in decision-making post disaster.

> **Yuka**: I was here [in Minamisanriku] for the previous tsunami from Chile…we were not ready although we had drills…In 2011, I, we [turns to husband] there was too much water. Too much. When we, I think it was two days, when we, my daughter came. There was so much debris that it was hard to get to a center. My daughter told me the school was gone…There was lack of food… but the town [officials], when they came they didn't ask us what we should do. We've already been here [from last tsunami], so why don't they ask us?...And then now, now we [pauses] there aren't really meetings. We [gestures to husband] meet with our friends to talk about the town, but they still haven't asked us what we think are good ideas.

Defining. While my conversation with Yuka and others provided some insight to how prepared people, the town, and government were, there was a more specific issue of being able to identify who redevelopment projects were for and for what purpose. Seven of the key informants noted confusion over how chosen redevelopment projects related to local resident needs. Mito (male, business associate) noted "we didn't need a new market, the old San-San market was for us. You've been to the new one, isn't the food expensive?" Again, on concerns toward supported projects, Ishikawa (female, professional translator) said "for mothers, there are still no parks for children to play. They can't really take them anywhere so the kids play in the street where it is

dangerous [there are police banners in town stating children not to do this]. The [artificial] beach is good, but community parks are better." The key factor for most people is that up until the end of 2015 much of the construction was unambiguously for resident benefit (temporary housing, public housing, rebuilding schools, the hospital, etc), but these were larger projects that didn't necessarily let residents lead as Mito said "a satisfying life."

For linking social capital, if people do not feel included or in some cases, are excluded from decision-making processes this bodes ill for social capital growth. Shaw and Nakagawa (2004) noted previously that the more that social capital is promoted in communities post-disaster the more likely they are to agree with how redevelopment planning is implemented. In the case of MSR, there is a lack of connection and understanding by residents of the redevelopment process. In ways, this makes linking social capital more difficult to acquire, especially if residents disagree with which projects are completed or supported.

Support. Support is something that varies across the community. However, there is a distinct lack of it from the local government. When speaking with Kengo (male, NPO Director) the conversation quickly began to show that ideas of support at all would be cause for surprise. As the local government does not provide support except moral and on a small basis. Our conversation started with relationships between organizations, company (sponsors), and the local government.

> **Kengo**: I mean the last time with [company] just a month ago we had a scene with the mayor… which I think would have been easier if we had a clear proposition from the local government. If we have something clear to support ah, if possible… [it] makes opportunities by going to them [companies] with specific proposals.

> **Ward**: Has there been, have they asked you to do specific things? Like with proposals?

> **Kengo**: From what I am aware, that is where the opportunities come from [proposals]. I know every time they have a community festival… they see us, 'these people oh, join,

organize, and contribute.' Are there specific requests outside of that? I think they know us most as people who just help out with volunteers, but that isn't necessarily what we want.

Ward: What do you want?

Kengo: [pauses] After the disaster there was of course chaos, and I don't think that at that time with what was left of the government, they didn't have systems in place and it was pretty revealing that [resident] was proposing things to the central government when that was happening! But in terms of implementing there was the whole GFA and I feel there was some collaboration at that point but much later. What I'm trying to say, I'm not sure how much outreach these projects had to the local government, if it was less or none, I have a feeling it is because, I guess is that, they are slow and are unresponsive and they don't necessarily get on board and support… because the town doesn't sponsor us we have sponsors outside the town [private companies] to do the workshops, I think if there was some local government support for I suppose, I would think they could at least be supportive of bringing outside people to the community… I would be happy to hear it if there was some program that supports that kind of effort [community reuniting]. I don't know if they, like the reconstruction board, put the same kind of value on community reuniting, the non-construction related things, I get the feeling they are mostly focused on construction unfortunately. Maybe its just the case that we haven't gone out of our way to pitch the idea [workshops/communities reuniting].

What Kengo shares here is common with many of the informants I interviewed. In this case, there is a form of despondency with the local government in showing interest or supporting groups in different ways. There is also apparent confusion over why the local government does not become more involved when workshops for community reuniting or community engagement are consistently offered by more than three different organizations in the town.

A second interview with Miki (female, administrator), I asked more about this relationship with the local government in terms of how its relationships affect support.

Ward: I was asking about relations with the local government earlier. Do you know if it's good? More neutral—

Miki: Definitely more neutral. So, we don't have much, well we haven't had much support from the government, the local government. But instead, the reason we are still in Minamisanriku is that, is that we have more connections with the local people as opposed to the government. So the government, at the time of the disaster they were focusing on things like, [pauses] like rebuilding the industries, and they're focusing on the harder hit area. So people in Numata, they were kind of left out, because they didn't have, they didn't lose their house. So that is where [organization], we didn't know about this until they came

to us because we were going all over the place to like Hinanjo…but then someone heard of us…I don't know how they got in touch with (redacted), in saying that 'we don't have anything, we haven't had any supplies or anything.' And also there wasn't anywhere they could go …that's when we learned about people struggling…so [the Numata people] could move or guide us…They helped more with the distribution system than the government. So from the beginning, the government wasn't much involved.

Ward: Okay, and— [Miki continues to speak]

Miki: I would say not really, say that like, the mayor loves [person], he loves [person], but he can't make a decision 'on his own.' Everything has to go through the local government, he wants or always says 'we can help you…' but the support is not there. We've received local grants once maybe? Twice? But because we applied for it. It wasn't something they offered us.

Ward: Then is the relationship still the same? You acknowledge each other but there is no interaction?

Miki: Not much. Right.

Ward: So then what program is, or I am wondering, what program is there support—

Miki: The Christmas program…for that one day people come back, it is like a reunion for the local people and for the volunteers too. Like people who were, were in the distribution system they will come to that and see everyone. It is a big reunion.

Ward: Then is the local government more involved at that time?

Miki: No. no. We have some people from the local government that will come, because (person) thinks it's good to invite them, like some officials. So the mayor comes every year.

Ward: So there is some overlap, but it is not support from the local government, it's more like individuals who choose to attend.

Miki: Well (laughs) the mayor doesn't do anything. He just comes.

Again, in discussing support, informants feel that there are no tangible forms of support. In this way, the local government isn't assisting organizations, and by not doing so, they also disengage from residents that may use these organizations for support. There is also noticeable expectations from informants that these relationships with the local government will not change.

For the previous discussion on linking social capital, this lack of support further harms the social capital that could come from it. Generally, organizations in the area do not rely on government support, thereby they cannot use linking social capital because it is not facilitated by either group. If organizations which assist with post-disaster support and community participation cannot access the local government in a meaningful way, this further reduces engagement as a whole with implications for resident inclusion as well.

Leadership. At the end, these three areas converge into issues of perceived and actual leadership by the town and by the national government. For context, the Shizugawa mayor Jiro Sato and the Utatsu mayor Makino have had an argument since 2011. Besides allegations of negligence against Sato, there have been long driven divisions between these two mayors by residents which went unaddressed in community planning meetings between 2003 and 2005 during the merger. Featured often in the news, the main issue was, "They [assembly members] stipulated that the newly formed town move its city hall and disaster prevention center out of low-lying Shizugawa and onto higher ground…With Sato as mayor of Minamisanriku, however, progress on relocation was slow. Meetings were held and committees formed, but the relocation was, at best, a far-off ambition. Makino says Sato was 'buying time,' concerned that an exodus of civil servants from downtown would hurt shops and restaurants. Sato, in a letter to Makino and 16 other bereaved family members after the tsunami, said the relocation was held up because of 'financial issues' and local opposition" (Harlan and Oda, 2014). During the course of the study, this situation was alluded to frequently, but not in terms of the negligence or disagreements between mayors. The main issue that arose was questioning how Sato spent funds and "keeping funds for his own area." While these are unsubstantiated allegations, the concerns of residents and viewing leadership as untrustworthy has significant implications. As was mentioned earlier

there is a grey area amongst residents between the local government responsibilities and national government responsibilities. Problems in leadership at the town level can cause negative associations with higher levels of leadership, and vice versa. The compounding effects of local politics, dysfunctions in governance, and leadership have resulted in limiting forms of social development and forms of social capital.

DISCUSSION—THE EROSION OF SOCIAL CAPITAL

Insights for this case

Key informant information converges to present a case where the national government and local government decisions have not supported social development of the community at least in some capacity. This is deleterious to the future recovery and growth of the town as social capital, as demonstrated earlier, is a key and a necessary piece to recovery trajectories (Aldrich, 2011; Nakagawa and Shaw, 2004; Mathbar, 2007; Shimada, 2016; Sadri et al., 2017). In each finding, the descriptions and information show how the three different forms of social capital possibly operate in MSR. For these the most effected is linking social capital, closely followed by bridging and bonding social capital.

Linking social capital

For this case it appears that linking social capital is limited for parts of the community. Linking social capital is harmed by the lack of local government support, lack of focus on social development needs, lack of responsiveness toward both residents and organizations, and the general shadow of the Reconstruction Agency's focus on economic development. This suggests that some of social capitals' benefits for the community are lost. Compounded by political schisms, and power hierarchies from business, agriculture, and political families, MSR residents may simply not have reliable or sustained access to the creation of linking social capital. Additionally, industry and social decisions are not balanced. This can further divide residents from the local government and create conflict around redevelopment projects. This extends to both local and national government decision-makers not appropriately defining the purpose of redevelopment projects, not engaging residents sufficiently, nor providing satisfactory leadership from the perspective of the key informants.

Bonding and bridging social capital

These two forms of social capital overlap in some ways within MSR. From local politics the loyalties expressed by older residents toward their own villages strains bridging social capital by not having connections with people unlike them (from other parts of the town) and by being separated from younger groups in the community (by age). There is also a lack of bridging social capital between residents who identify with the Shizugawa and Utatsu mayors as was explored via governance. Bonding social capital is more amorphous as individuals and families likely lost someone in the disaster or by people moving outside the community via out-migration. Collectively this is a loss of more than 4,000 people from a town that previously had a population of 17,064. This strain is not quantifiable but rather embodied by residents as they seek to reunite at the limited community events centered on community unification. Additionally, the hallowing out of agricultural sectors in the community despite government spending on economic development, also has implications for bonding and bridging social capital.

This is where the overlap occurs. Farmers, fishermen, and foresters all contribute to the social fabric, however they also rely on each other for support. As these groups experience steep declines in the number of businesses, the number of workers, and the number of families operating, the economic damage also causes social disruption. As these areas decline there is more pressure for social and economic needs to be met. In this way, I am revisiting Portes's (2014) downside to social capital not as a critique but as a lesson. The case study presented in these pages finds that very low forms of social capital necessitate a hyper-investment in it to include others social and economic needs, such as job prospects, and in fact relationships are needed to create opportunity. This investment is not a single individual or community

responsibility. It is the responsibility of the government to have social infrastructure to support this. In this way, MSR needs and needed, social development with an investment in social capital to create communities with beneficial social norms, to ensure that resident social and economic needs were considered, and in fact, to create opportunity by relationships. Since social capital in MSR is appears to be dysfunctional this provides a case for us to consider what happens when social capital erodes.

CONCLUSION

So, what is to be done? Certainly, the amount of work left in MSR is staggering on multiple levels. The effort put forth here is not to dismay continued projects in the area that are solely economically driven. This would be a misinterpretation. Rather, social welfare of residents should be reoriented as the driving force of all development. This, for numerous reasons, has not been the case for undertaken projects, but it must be incorporated, as it is a genuine asset to cohesive community development. It is this which drives the main implication for this study—to enhance economic and community development the creation and perpetuation of social capital must be invested in at all scales when creating, implementing, and facilitating any post-disaster reconstruction. Social and community issues do not disappear while economic development occurs. It is not as if these are paused or proceed after economic development. Here, the amendment to post-disaster development policy would not be to strip economic development of its high status, but rather pay equal importance to other development typologies such as community, education, agricultural, and so on. As such, this study recognizes a call to redistributing development goals to fit the needs of residents in all places that will continue to experience disasters.

Revisiting the social capital flow model

With the insights from this case, it is necessary to re-consider how social capital occurs post-disaster. In the case of MSR, there is not active and sustained efforts to build up bonding, bridging, and linking social capital. Social capital is similar to a muscle, when not used, it atrophies. In this way, I present that while disasters could be the impetus for new social capital creation, it can also trigger the active erosion of social capital. By active erosion, it is meant that this is a continual process, it does not stop unless reversed. Also erosion does not require

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continuous action. Unlike building social capital where an individual or community must constantly maintain what they have in order to fend off regressing, erosion simply has to be started. Reversing this erosion is very difficult, as the deterioration of linking, bonding, and bridging social capital places the entire flow of social capital in uncertainty. As a result, the social capital flow begins to destroy itself. With the lack of linking social capital post-disaster communities will find themselves excluded from decision making processes, that can further limit their participation and engagement. On the other side, failing bridging capitals weaken social networks and produce distrust (see figure 6 for full model). I invite you to compare this the original social capital flow model presented at the beginning of the paper. The major point here is that the building and erosion of social capitals follow a similar process.
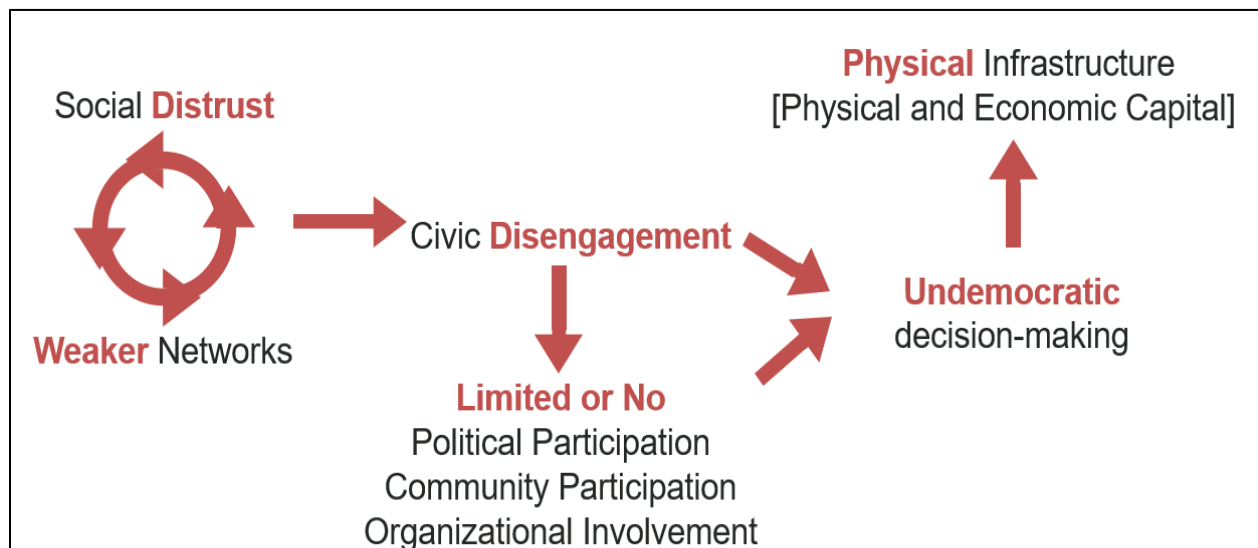

Figure 6: The Erosion of Social Capital

Similar to normal forms of social capital, the effects of eroding social capital are unequally felt by individuals and groups within communities. Those at the bottom of the social and economic ladder will feel this force more strongly and are likely to be heavily effected by undemocratic decision-making processes, where the lack of investment in social infrastructure will affect their

daily lives. Those at the top of social and economic hierarchy may still feel some effects from the erosion of social capital, but likely have at their disposal some or all forms of capital (human, physical, financial, cultural, etc), that they can use to offset this cost.

Likewise, similar to other systems that produce inequalities, the erosion of social capital must be combatted using a composite of individual, community, local government, and national government action. The erosion of social capital is too big a burden for a single individual to tackle since social capital is produced by interaction—interaction with other groups and authoritative decision-makers that an individual resident in MSR likely does not have access to. This means a reorienting towards needs expressed by those experiencing erosion, and them being actively included in decision-making processes at the local and national level. Local governments who oversee communities experiencing social capital erosion should support programs or organizations that can provide the means to take pressure off of already strained social capital. This incorporation would likely reduce effects of dysfunctional governance and alleviate tension in political conflicts as well.

For communities that will inevitably suffer from future disasters, the threat of eroding social capital needs to be considered when planning, implementing, or otherwise attempting forms of community redevelopment that use mainly economic development as a proxy for social development. The erosion of social capital should continue to be studied in other disaster communities for the future. The consequences of disaster management that pays only homage to social capital without directly considering the negative and positive effects of its status (eroding or building) in affected communities, will continue to produce community redevelopment with significant social ramifications, and may ultimately not reach wanted economic outcomes.

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