Public-private collaboration for disaster risk management: A case study of hotels in Matsushima, Japan

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Highlights

- Hotels can play a role in disaster risk management of coastal destinations.
- Matsushima's hotels and town support collaboration but differed on its outcomes.
- Stakeholders differed that collaboration gave equal opportunities and sufficient time.
- Stakeholder involvement was not broad enough and agreements didn't meet every need.
- Desire to mimic Okinawa's approach but stakeholders felt resources were lacking.

Abstract

This research paper focuses on public-private collaboration for disaster risk management in coastal destinations, particularly between the hotel industry and local government. To guide its research, this paper applies collaborative planning theory in developing a research framework to discover gaps between stakeholders attitudes towards collaboration, its outcomes, and obstacles preventing the adoption of specific hotel-based disaster management actions. A case study is used on Matsushima, Japan, a popular coastal destination in the Tohoku Region, which was devastated by the 2011 tsunami. Through surveys and interviews, this study found that hotels can play a key role in working together with the local government towards disaster risk management of coastal destinations. However collaboration gaps between the stakeholders limited the extent of the adoption of hotel-based disaster risk management initiatives.

1. Introduction

1.1. Tourism and natural hazards

Coastal tourism relies heavily on its proximity to the land and sea whose intrinsic aspects attract visitors. As much of the Asia-Pacific lies within the ring-of-fire, the coast presents numerous vulnerabilities to natural hazards including tsunamis, flooding, earthquakes, landslides, and high winds (Terry & Goff, 2012). Visitors may lack knowledge on local hazard risks and may be unprepared to respond in the event of a disaster. Despite the vulnerabilities to natural hazards, coastal destinations seek to promote an image of safety and control to tourists (Nguyen, Imamura, & Iuchi, 2016). Structural mitigation measures may be limited as local governments and the tourism industry may be averse towards altering the local landscape in fears of deterring tourists (Nguyen et al., 2016). As a result, adopting non-structural mitigation initiatives could be more appealing to coastal tourism stakeholders. Non-structural approaches can be less costly and provide solutions that can reduce exposure to hazards and loss of life (Masterson et al., 2014).

Tourism is vulnerable to a variety of external shocks ranging from those occur frequently, such as low category tropical storms, to those that rarely occur but can lead to massive damages and loss of life, such as a major earthquake and large tsunamis (Ritchie & Campiranon, 2015). Developing and implementing mitigation measures against low risk, but high impact disasters can be difficult as stakeholders may feel the long term costs may outweigh the benefits. An example are seawalls whose construction are being opposed by some cities in northern Japan due to the unlikelihood of...
another powerful tsunami in the mid-term, but can negatively impact local fisheries locally rely on (Caldwell, 2013).

Hotels and resorts attract continued investments in hazard prone areas, where risks are inadequately addressed. The UNISDR Global Assessment Report 2013 has found that the hotel industry is usually able to manage low impact hazard events well, but that extreme events are often poorly managed. Many hotels do not have the mechanisms in place to reduce their risks and to be prepared for a disaster and their participation may be limited or non-existent (UNISDR, PATA, & GIDRM, 2015). For example, in Khao Lak, Thailand during the 2004 Indian Ocean Tsunami, there was limited adoption of disaster preparedness measures by local hotels. This lack of disaster risk management stemmed from differences in perceived hazard risks, disagreement over the role and responsibilities, lack of money, lack of manpower, lack of knowledge, which contributed to the high casualty rates among tourists (Calgaro & Lloyd, 2008; Cioccio & Michael, 2007).

1.2. Research objectives

This paper examines public-private collaboration in Matsushima Town, a popular tourism destination that was impacted by the 2011 Tohoku East Japan Earthquake and Tsunami. This research summarizes findings from an investigation aimed to identify stakeholders’ perspectives towards the collaboration process and its outcomes towards disaster risk management. By doing so, it seeks to identify gaps in collaboration and highlights the contributions hotels can make through the various phases of disaster management. Interviews were conducted representatives from local hotels and the town office/municipal government. In addition, the information from representatives from the prefecture and the tourism association were collected. Surveys, followed by a semi-structured open-ended interview were used in order to determine the nature of the public-private collaboration and its influence on the adoption of hotel related disaster preparedness initiatives, such as establishing vertical evacuation, functioning as a refuge site, and serving as sites for disaster communication.

This paper is divided into six sections. The following section is a review of literature on collaborative planning theory and explains its theoretical development, benefits, limitations, and proposes a framework for research. The third section explains the methodology used in designing the survey and interviews. The fourth section provides background on Matsushima Town as a case study. This is followed by the results and findings of the surveys and interviews. The paper concludes with a discussion of key findings and obstacles discovered in the collaborative planning process between local stakeholders, and suggest the next steps for further research.

2. Collaborative planning theory

The concept of a stakeholder is often used within a business management context to recognize that there are multiple people who have a stake with a community beyond its owners and managers (Bryson & Crosby, 1992; Healey, 1998). They have a stake with what is going on but may not know how to think about it or what to do. The concept of a stakeholder is part of a scoping device to encourage those at the core of defining and developing policy agendas to recognize the universe of people affected by what happens. It can be used to encourage people to come together and discuss about issues affecting their place (Bryson & Crosby, 1992; Healey, 1998). Through this dialogue, emancipatory knowledge can be achieved, engaging all those with differing interests around a task or problem (Habermas, 1985). However in order for this knowledge to emerge, stakeholders must be equally informed, listened to, respected, and none can be accorded more power than others to speak or make decisions. These decisions must be sincere, comprehensible, accurate, and have a legitimate basis. Agreements made through this collaboration can be regarded as both rational and ethical (Habermas, 1985; Innes & Booher, 1999).

Collaborative planning is broadly defined as a collective process for participants to resolve conflicts and advancing shared visions involving a diverse set of stakeholders. It differs from other participatory methods in that it emphasizes face to face dialogue, mutual and social learning, and voluntary participation (Carr, Selin, & Schuett, 1998; Gray, 1989). Collaborative planning approaches are a subset of participatory planning types and are distinguished by their delegation of some or all planning responsibilities to stakeholders (Davis, 2008; Frame, Gunton, & Day, 2004). The level of involvement of between stakeholders surpasses other planning processes (Frame et al., 2004). It can be seen as a strategy for dealing with conflict where other practices have failed, but can also be understood as part of a societal response to the changing conditions in increasingly networked societies where power and information are widely distributed (Castells, 1996, 1997).

2.1. Benefits of collaborative planning

The primary benefit of collaborative planning is that it is more likely to resolve conflict among competing stakeholders than other methods as it identifies solutions that meet the mutual needs of all parties rather than individual groups (Carr et al., 1998; Frame et al., 2004). The high quality of agreements produced from collaborative planning processes are easier to implement and more durable because it took into consideration a wide of interests, and likely to be innovative as they are the outcome of a dynamic interchange (Innes & Booher, 1999; Owen, 1998).

Collaborative approaches in urban planning also contributes to the strengthening of institutional capacity through their effects on knowledge and relational resources, and the capacity for mobilization (Healey, 1998). Participants can develop shared intellectual capital, define problems and objectives, and mutually understand each other’s interests. Social capital is generated in new or strengthened relationships by increasing understanding, trust, and cooperation, while reducing the potential for future conflict. Innes and Booher identify second and third order effects that may emerge as a result of a successful collaboration. These include spin-off partnerships, new collaborations, the emergence of new norms, or the establishment of a new institution (Innes & Booher, 1999).

2.2. Limitations of collaborative planning

While collaborative planning has many advantages compared to other approaches, a number of obstacles are identified that limit the effectiveness of this approach. The most commonly cited limitation of collaborative planning stems from its time intensive nature due to the need to create dialogue and build consensus (Healey, 1998). Although collaborative planning has been criticized for being inefficient, efforts to improve planning of urban nature have been limited by the lack of useful evaluation methodologies (Faehnle & Tyrvainen, 2013).

Concerns also exist over power imbalances that allow more influential stakeholders to achieve their objectives without engaging in collaborative process with less powerful ones. Even if other stakeholders are motivated to negotiate, the asymmetrical distribution of negotiation skills and resources often allows more influential stakeholders to dominate the collaborative process (Birkhoff & Lowry, 2003; Susskind, Wansem, & Ciccarelli, 2000). Advocates of collaborative planning emphasize that a well designed process can mitigate these potential problems as power imbalances can be reduced by providing participant funding, negotiation
training, and independent facilitation (Amy, 1987; Frame et al., 2004).

2.3. Collaborative planning for disaster risk mitigation

Disasters are inherently local and ultimately the responsibility of lowest jurisdictional level responsible in an impacted area. Literature from urban planning, tourism management, and disaster management identify that due to their extensive day to day experiences of the locality, disaster management planning should ideally be done at the local level (Healey, 1998; Palmer, 2002). In order to maximize disaster management potential, government agencies need to create the space for these plans to be informed by local knowledge and expertise.

The ability of a community to adapt and respond to disasters are directly influenced by the interdependency of social and economic networks (Stewart, Kolluru, & Smith, 2009). During a disaster event, some private sector firms have responded as part of a government contract, others because of vested interests in an area, and/or a sense of social responsibility, such as the case of Wal-Mart's response immediately after Hurricane Katrina (King, 2008; Stewart et al., 2009). Stewart recommends that all levels of government must recognize and embrace public-private interfaces that can improve ability to manage response and recovery phases of disasters. For collaborations to work in response and recovery, relationships need to be nurtured and strengthened during the mitigation and preparedness stages (Jenkins, Lambeth, Mosby, & Brown, 2015; Simo & Bies, 2007).

Through case studies of fifteen communities across the United States, Sturtevant et al. found collaboration (cooperation and coordination) emerged as an integral part to many of their efforts in addressing wild land fire risk. In one case study in Gunflint Trail, Minnesota, relationships between local residents, businesses, and the forest service have been contentious due to past differences, however collaboration between stakeholders towards disasters has led the build-up of trust and accountability. Business leaders gained increased access, acceptance and credibility in regards to fire management (Sturtevant & Jakes, 2008).

2.4. Research framework

To guide this research into stakeholders’ perspectives towards the collaboration process and its outcomes, a framework was developed based on literature review. The four areas of public-private collaboration examined are the rationale for collaboration between the hotel industry and government for disaster risk reduction, factors that influence stakeholder’s motivation to collaborate, factors that inhibit stakeholders from further collaboration to adopt disaster risk reduction initiatives, and the outcomes of the collaboration. The purpose of this framework is to identify where in the collaboration process, stakeholders perceive to contain obstacles towards achieving outcomes that enhance disaster resiliency (Fig. 1).

The rational for collaboration with the accommodation sector stems from their potential to contribute to disaster risk reduction and improve destination resiliency (UNESCO, 2012). Hotels have been identified as a key stakeholder in coastal tourism disaster management (UNEP, 2007). First, hotels usually possess one of the strongest built structures in a coastal destination as they are constructed with steel reinforced concrete. These buildings span multiple floors that could withstand tsunami waves and could serve as a suitable site for vertical evacuation. Secondly, the high room capacity, coupled with large food stocks and emergency generators make hotels potentially a useful site for short-term refuge, accommodating evacuees for several days until transportation functions are restored. Hotel staff can also be trained to assist evacuees during a disaster event. Finally, hotels can be excellent sites for disaster preparedness communication. The lobby and guest rooms can offer various information in the form of pamphlets or videos on local hazard risks and appropriate actions to take during a disaster event, contributing to social responsibility (UNISDR et al., 2015).

The next section, inducing factors, examines motivation for stakeholders to collaborate. Literature identifies six key attributes in collaboration: Incentives to collaborate, benefits for stakeholders, the importance of consensus building on agreements, independent facilitation, time to understand information and make informed decisions, and equal opportunities to influence the decision making process (Davis, 2008; Faehnle & Tyrvainen, 2013; Frame et al., 2004; Innes & Booher, 1999). While stakeholders may have a strong inclination towards collaboration, inhibiting factors may prevent them from turning attitudes into action. These include lack of financial resources, a lack of human resources, lack of knowledge, or stakeholders may simply not perceive the collaboration to be necessary for them.

Attributes associated with high-quality outcomes involve the participation of relevant stakeholders, sharing of resources, agreements that meet all stakeholder needs, resolving obstacles, social learning, and second order effects such as the change and adoption of new practices and new partnerships with other stakeholders. While it may be difficult for stakeholders to meet all of the criteria, collaboration should strive for it as failure to meet any one of them can hinder the effectiveness of a process and the quality of its outcomes. Innes and Booher identifies that the collaborative processes and outcomes cannot be separated (Duffy, Roseland, & Gunton, 1996; Innes & Booher, 1999; Moote, Mcclaran, & Chickerling, 1997). Stakeholders were asked to assess how they felt about the outcomes of current collaborations. This was followed by a second checklist of desired support stakeholders would improve the collaborative process.

3. Methods

This paper utilizes a case study research design which are useful in investigating “how” and “why” type questions in regards to a contemporary set of events over which the investigator has little or no control (Yin, 2014). From a total of 64 journal articles published from 2000 to 2012 involving post-disaster recovery in tourism destinations, case studies were found to be the most common type of research (Mair, Ritchie, & Walters, 2016). Within tourism studies, major key variables can be derived from case study approaches (Medina-Munoz & Garcia-Falcon, 2000). One of the key themes identified as obstacles in disaster planning was communication problems between stakeholders.

This study adopts a mixed-method of data collection that utilizes a sequential explanatory approach in which the collection and analysis of quantitative data is then followed by the collection and analysis of qualitative data. The purpose of this approach is to utilize qualitative information to further explain and interpret the quantitative findings (Creswell & Clark, 2011). According to Mair et al., 51% of the 64 aforementioned articles utilized qualitative methods, followed by quantitative methods at 36%, and mixed-methods at 13%

The quantitative phase consists of survey data that was collected from a number of organizations in order to generalize all other organizations of the same type. In contrast to most surveys, the number of units in a case study is significantly less, but the extent of detail should be greater (Yin, 2014). The survey is followed by a semi-structured interview which asks respondents open-ended questions to further clarify their experiences and attitudes.
towards collaboration and how it could be improved.

Local stakeholders were identified as Matsushima Town Office, the hotel industry, Miyagi Prefecture, and the Matsushima Tourism Association. Hotels were chosen based on their proximity to both the tsunami inundation zone identified by Matsushima Town’s disaster hazard map and the actual areas flooded from the 2011 GEJE. Out of the 8 hotels located in these two areas, 7 responded to interview requests. Surveys and interviews were conducted with the town office and hotel representatives on the same day between August and October of 2016, for approximately two hours. Although the prefecture was interviewed twice, representatives felt that beyond broad prefectural level disaster plans, local level disaster planning and implementation was exclusively the realm of the town and local businesses. Similarly the tourism association expressed lack of knowledge on the planning process and could not answer.

The results of survey questions utilizing a likert-scale were transformed into values of 1 through 7, respectively representing strongly disagree to strongly agree. These were then averaged to represent the entire hotel industry’s attitudes towards collaboration and its outcomes. In regards to the prefectoral and town offices, although a number of representatives were interviewed, both requested to answer as one entity. Results from survey questions were tallied and converted to percentages in order to evaluate where the greatest needs were in terms of adopting specific disaster resiliency actions, and support from other stakeholders.

4. The case of Matsushima Town

The 2011 Great East Japan Earthquake and Tsunami (2011 GEJE), devastated much of the Tohoku Region of north eastern Japan. Although a number of hotels are located Tohoku’s coastline, very few were officially designated as evacuation buildings. Despite this, hotels in Tohoku’s cities such as those in Kamaishi, Kesennuma and Ishinomaki, have taken in evacuees and some have even offered their hotels to be used as official evacuation and refuge. As a result, the town was inundated by a 3.2 m wave that arrived roughly 90 min after the earthquake, followed by a 3.8 m wave half an hour later. These waves pale in comparison to the 10–20 m waves that struck the other the coastal cities (Mori, 2015). Compared to their western counterparts, public-private partnerships in Japan are a relatively new phenomenon. The collapse of the bubble economy followed by a strong push towards privatization under then Prime Minister Junichiro Koizumi, led towards increasing interest among municipalities in adopting public-private partnerships with the aim of improving efficiency in a stagnant economy with limited financial resources (Ogawa, 2011).

Based on existing literature on the limited utilization of hotels during disaster events, this paper examines the role hotels played in Matsushima Town since 2011, and evaluates the collaborative processes that influence disaster preparedness. Matsushima was chosen for this case study due to its status as Tohoku’s premier coastal tourism destination. Although damages and casualties were low compared to neighboring cities, the impact of the 2011 disasters on tourism and the economy was significant. The choice to set the scale at the municipal level would better allow the research examine the collaborative relationships between the public and private sectors within the frameworks of existing prefectural and municipal tourism and disaster management plans.

4.1. Matsushima Town as a tourism destination

Although the Tohoku Region contains numerous coastal settlements on its eastern coastline that spans over 600 km, a majority of its settlements rely on agriculture and fisheries as the primary economy (METI Tohoku, 2016). Matsushima Town in contrast, is a tourism destination renowned as one of the Nihon Sankei, or Japan’s Three Great Scenic Views. The town is located in the heart of Matsushima Bay, whose main attraction are the nearly 260 small islets that adorn the bay (JINTO, 2016). Visitors can view the bay from the coast, from one of the smaller bridge-linked islands, or by ferry. In addition, the town also contains Zuiganji Temple, Godaido Temple, and numerous shrines which attract many visitors.

Despite its popularity as a tourism destination, annual visitor numbers in Matsushima Town peaked at five million in 1990 and has since been declining (Miyagi Prefecture, 1972–2015). While the 2011 Great East Japan Earthquake and Tsunami caused considerable property damages and loss of life to the neighboring cities of Higashi-Matsushima and Shiogama, Matsushima Town was spared the brunt of the devastating waves as the bay’s numerous islets acted as a buffer. As a result, the town was inundated by a 3.2 m wave that arrived roughly 90 min after the earthquake, followed by a 3.8 m wave half an hour later. These waves pale in comparison to the 10–20 m waves that struck the other the coastal cities (Mori,
Cox, Yasuda, & Mase, 2013). Nevertheless, three casualties in town were reported, two square kilometres of the town flooded, over 200 houses destroyed, and over 3000 partially damaged. Electricity and telephone services were restored a week later, water supplies and ferry transportation a month later, and one of the two rail lines restored a month later and the second line the following month. As of 2015, visitor numbers have yet to recover to pre-tsunami levels, from 3.6 million visitors pre-tsunami, to 2.3 million the following year. Since 2012, there has been an upward rise in tourism numbers which reached 3 million in 2015, but the slow pace of growth suggests that tourism numbers may be reaching a stagnation phase if not already (Fig. 2).

4.2. Matsushima Town’s disaster management

Matsushima is categorized as a town due to its small population of roughly 15,000. Despite its status as a town, it is categorized as an equal administrative unit to a city under Japan’s 1947 Local Autonomy Law (MIC, 1947). Matsushima’s municipal office consists of eight divisions. The town’s Tourism Section falls under the Industries and Tourism Division and is generally in charge of tourism promotion. Disaster preparedness and mitigation with hotels are generally the tasks of the Disaster Preparedness Section which falls under the General Affairs Division. However reconstruction of damaged areas including tourism facilities falls under the Disaster Recovery Section of the Construction Division, while town development plans falls within the jurisdiction of the Planning Management Section and the Town Development Section, both of which are part of the Planning Division. As a result, hotels in Matsushima deal with different sections and divisions regarding specific actions, such as disaster preparation with the Disaster Preparedness Section, while brochures containing hazard risk and evacuation information falls within the jurisdiction of the Tourism Division.

Miyagi Prefecture published the Miyagi Prefecture Regional Disaster Prevention Plan in 2015, followed by a 2016 update on tsunami countermeasures (Miyagi Prefecture, 2015). The plans identify the need to establish special evacuation buildings which can include hotels, developing relevant information to tourists with a consideration for foreign tourists, and the possibility of utilizing hotels and other accommodations in the event of a long-term evacuation. In particular, the prefectural plans specifically identify Matsushima Town’s importance in strengthening disaster preparedness of a tourism destination. Similarly, Matsushima Town’s 2015 Disaster Prevention Plan and Tourism Recovery Plan confirm the importance of hotels with more than two floors as a key building during a disaster event and its potential for evacuation, the need for signage, conducting emergency communication and manuals in foreign languages, and stockpiling of food. In addition, the Matsushima’s plans also stress the need to protect the environment, as interviews have shown the town’s reluctance to adopt many structural mitigation strategies due to the town’s reliance on its scenery to generate tourism (Matsushima Town, 2015a,b).

4.3. Collaboration towards disaster risk management in matsushima

During the earthquake and the two main tsunami waves that reached Matsushima Town, many tourists and the local community evacuated to Zuiganji Temple, which is the current designated evacuation site listed by the city. Most of the hotels in Matsushima did receive evacuees, despite some buildings not being officially designated as evacuation areas. Although exact numbers are unclear over the percentages of residents and tourists evacuating to hotels versus to Zuiganji Temple, other coastal cities in Miyagi Prefecture, such as Kesennuma, witnessed a majority of evacuees going to non-designated high areas and buildings (Makinoshima, Imamura, & Abe, 2016). Currently, many hotels in Matsushima are cooperating with the Fire Department of neighboring Shiogama City, as Matsushima lacks its own Fire Department, in meeting building fire codes as well as annual disaster drills. The Matsushima Tourism Association, an organization separate from Matsushima Town, but cooperates with the town office and hotels to promote tourism, also developed its own disaster contingency plans that could be used by local hotels. As of time of writing, these plans however, are still in the development stage and have yet to be adopted by all hotels. In addition, these plans were made independently from Matsushima Town Office.

Beyond hotels, Matsushima Town office has steadily implemented a series of non-structural initiatives with local tourism businesses to improve resiliency and preparedness. These include the installation of multi-lingual tsunami risk hazard signs around areas with heavy tourist activity, expanding business participation in disaster training drills, the creation of new multi-lingual maps that display evacuation areas, and dual use facilities which function as tourist facility and contain food and relief supplies during the event of a disaster. The town has also increased existing disaster education to children in local schools.

5. Results

5.1. Attitudes towards collaboration

The first set of survey questions gauged stakeholder’s attitudes and motivation towards current collaborations (Fig. 3). The first question asked if stakeholders felt there were incentives for them to collaborate with other stakeholders. Both the hotel industry and the Matsushima Town responded very strongly agreeing in there were incentives for them to collaborate, with two hotels somewhat agreeing. All seven of the hotels stated they needed assistance in implementing disaster preparation, however two felt they were nearly self-sufficient.

The following question asked if collaboration would benefit them by suiting their needs. While the town strongly agreed it could suit everyone’s, the hotel respondents felt it could somewhat suit them. Three hotels interviewed felt that there were areas where the town may be incapable or face difficulties in assisting them. This was due to concerns over the town’s ability to conduct research and provide information, as well as limited manpower due to the town’s small size.

Innes and Booher and Susskin and Field have identified the importance of consensus making and the benefits it brings, such as legitimacy and conflict resolution (Innes & Booher, 1999; Susskind & Field, 1996). The next question asked stakeholders if they felt consensus could be made on agreements. While the town agreed it could be made, hotel stakeholders were generally undecided. In particular, those hotels closest to the coast felt indifferent towards such agreements as certain aspects of disaster preparedness were not done with the town.

Some stakeholders may wield more influence over others and may display dominating attitudes in an attempt to maintain their traditional area of influence (Amy, 1987; Healey, 1998). In addition, asymmetrical distribution of resources that may favour powerful stakeholders could lead to inequitable outcomes (Birkhoff & Lowry, 2003). The next question asked if facilitation could be fair and independent for the respondents. Both the town and the hotels agreed it was generally fair to all sides and there were minimal concerns over stakeholders who may be over dominant in their opinions and suggestions.
As collaborative processes could be time consuming in terms of processing and understanding information presented, and discussing and making informed decisions, respondents were asked if there was sufficient time in the collaborative process.

Fig. 2. Location of Matsushima Town and tsunami damage and tourism characteristics (Compiled from Matsushima Town Office data).
While the town office felt that sufficient time is or could be given, the hotel stakeholders were generally pessimistic with some undecided, and others strongly disagreeing. Out of the six attributes identified in collaboration, perceptions on appropriate time presented the biggest gap between the hotel industry and the town office. Stakeholders felt that more time to understand information was needed.

In relation to concerns over power relationships and independent facilitation, stakeholders were asked if they felt collaboration could give all stakeholders equal opportunities to influence the decision making process. Although issues do exist, virtually all stakeholders except for one hotel, felt facilitation were fair and independent. In terms of equal opportunities to influence the collaboration process, while the town strongly agreed that such opportunities exist, hotel stakeholders varied considerably, with some agreeing, and others strongly disagree. Two hotels located closest to the shore, disagreed strongly over equal opportunities to influence decision making process. Although issues do exist, virtually all stakeholders except for one hotel, felt facilitation were fair and independent. In the case of the town office, they have already investigated the pamphlet made by Okinawa Prefecture and would love to emulate it, but simply do not have the skills to make a similar one adjusted to reflect Matsushima’s specific circumstances.

Next, respondents were shown a picture of an official evacuation building sign placed in front of a hotel in Atami City, a popular beach and hot spring destination south of Tokyo. 43 percent of the respondents stated that they already function as an evacuation building, although admit that there are no signs that identify it as such. 29 percent cited lack of money and another 29 percent cited lack of manpower that could make their hotel into an official designated evacuation area. 14 percent cited a lack of knowledge. When pressed about the lack of signs, some hotels stated that they would not mind having the sign placed on their property, while others cited concerns that such signs would negatively impact the intrinsic aspects of the property, hence the lack of signs either on the building or existing evacuation maps. It should be noted that during the 2011 disaster, all of the 7 hotels interviewed received evacuees, which included local and international tourists, to nearby residents. As the tsunami arrived to Matsushima around 3PM Japan Standard Time, the number of evacuees ranged from a dozen to twenty guests per hotel as the disaster occurred before most hotels’ check-in time, in addition to occurring during the March off-season where it was still snowing. Had the tsunami occurred in the summer, hotel representatives believed that the number of evacuees would have been substantially higher and more diverse with more domestic tourists located far from Miyagi Prefecture, and foreign tourists.

Hotels were also identified as being areas of refuge following a disaster, due to their room capacity, possession of emergency generators, and significant food and water resources. Respondents were shown recent planning policies from Okinawa Prefecture which suggested the accommodation industry should stockpile enough room, food and water to provide for tourists for one week in

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**Stakeholder attitudes towards the collaboration process**

![Fig. 3. Results of survey that examines stakeholders' attitudes and motivations towards current public-private collaboration.](image)
the scenario that they are unable to return home due to transportation stoppages. 57 percent of the respondents felt that they were already able to provide enough food and water and had already done so in 2011. 43 percent felt that they did not have enough manpower to take care of all the evacuees, and 29 percent felt they lacked enough money to take care of evacuees. Issues relating to the availability of fresh water supplies during a disaster were a common theme among hotels as water supply stopped. Another area of concern was the provision of enough blankets as the disaster occurred in early March. At least two hotels ran out of supplies for tourists and relied on the town office to supply additional relief for tourists. Likewise, the Matsushima Town Office believed it was capable of taking care of all the hotels food and water needs during a disaster.

Finally, hotels are also identified as being sites for disaster communication (UNESCO, 2012). Respondents were asked if there were limitations in training its staff to assist tourists, the local community, and other evacuees in the event of a disaster. 57 percent of the respondents cited that such training was already adopted as they participate in the annual disaster prevention drills with the Shiogama Fire Department. 29 percent cited a lack of knowledge, as they were not trained for such events, and 14 percent cited a lack of money. A theme that emerged in the interview was that although a number of hotels are being trained in aiding tourists, there was concern about their ability to aid foreign tourists as a number of hotels do not have training in dealing with tourists speaking foreign languages. In the interview with the seven hotels in Matsushima, it appeared only the high-end hotels maintained staff capable of speaking in a foreign language, usually English.

5.3. Stakeholder attitude towards collaborative outcomes

Broad, inclusive stakeholder involvement is the most cited factor mentioned in literature as an important contributor towards a successful collaborative relationship. While the town strongly agreed that all relevant stakeholders were involved, the Matsushima’s hotel industry somewhat disagreed. Although one hotel agreed that all relevant stakeholders involved, the other six hotels ranged from disagreeing to somewhat disagreeing. Upon further questioning, some hotels expressed stronger preference in working with just the Tourism Association and the Shiogama Fire Department, than with the town in regards to disaster preparation, others felt that neither the tourism association or the town were active enough (Fig. 5).

Another benefit of collaborative planning is the sharing of various resources, such as human, financial, and technological resources that may be lacking among some, but in within the capabilities of another stakeholder. The next question asked if such resources were shared during collaboration. A majority of the hotel stakeholders and the town somewhat agreed such resources were being shared, with one hotel disagreeing that enough was given to them. The town of office stated that whatever resources they have, is already shared, but the problem lay in that there are other resources, especially technical and human resources, that they lack, and as a result, could not be shared. Most hotels also acknowledged, during the interview, that while they would like more support and resources shared, they understand that it may be beyond the town office’s capabilities. The one hotel that disagreed, felt that its interactions with the town were very limited compared to other accommodations.

High quality agreements produced from collaborative planning processes are generally easier to implement as it takes into consideration a wide range of interests into account and are less likely to generate opposition (Frame et al., 2004; Healey, 1998). Respondents were asked if agreements made during collaboration met their needs. While the town office felt that existing agreements strongly met needs, Matsushima’s accommodation industries somewhat disagreed. For example, two hotels that felt equal opportunities were limited while other hotels explained that the agreements produced were insufficient.

Collaborative planning also seeks to resolve conflict among
stakeholders and seeks to identify solutions that meet the interests of all parties (Frame et al., 2004). Respondents were asked if collaborative planning reduced or resolved any obstacles they may have had. All respondents were generally positive, with the town office strongly agreeing that they were resolved, while the hotel industry somewhat agreeing. Two hotels, while strongly interested in improving disaster preparedness, felt the outcomes of the collaboration were limited.

Innes and Booher suggest that successful collaborative planning can also lead to several second order and third order effects, such as new partnerships, new collaborations, the creation of new institutions and other adaptations that transcend the agreements and process itself (Innes & Booher, 1999). Stakeholders were asked if perspectives on the problems were changed after collaboration and social learning occurred. Again all stakeholders responded positively, with the town office strongly agreeing, and the hotels somewhat agreeing. When asked to explain, the events of 2011 significantly changed stakeholders’ levels of perception of risk, leading to an increase in disaster awareness and desire to be better prepared.

Another second order effect that can form after collaboration is the development of modification of old practices or the development of new ones. Stakeholders were asked if new practices were adopted and/or old ones were changed. Stakeholders responded nearly exactly the same as the previous question on changes in perspectives, with the town office strongly agreeing, and the hotels somewhat agreeing. Again, hotel representatives said much of these changes were due to the disaster. Some hotels which did not participate in the disaster training drills, decided to participate after the disaster and work more closely with the city.

Finally, another second order effect is the formation of new partnerships between stakeholders as a result of a collaborative relationship. Responses were similar in which the town strongly agreed that new partnerships formed while most hotels agreed. One hotel was undecided whether a new partnership was formed, and one somewhat disagreed. In particular, those hotels that had a loose relationship with the town office, strengthened their relationships after the disaster.

5.4. Support

The final section asked all respondents what kind of support they would like to see that would improve collaboration and outcomes in Matsushima (Fig. 6). Financial and technical support was the most common demands, both at 71 percent. Many of the hotels stated that they simply did not have the knowledge to produce disaster resilience initiatives and activities as well as lacking the financial means to adopt them. 57 percent cited more human resources, as many felt their organizations are incredibly understaffed, some of which had less than 10 employees. Another 57 percent cited more political support. The survey on collaborative outcomes demonstrated that although many of the stakeholders were mostly positive on the need to collaborate, they remained mixed in some areas of the results of the collaboration, particularly on broad stakeholder inclusiveness, resource sharing, and agreements that met their needs.

6. Discussion and conclusions

6.1. Collaboration and disaster risk reduction

Coastal tourism destinations are often exposed to a variety of natural hazards, such as typhoons, flooding, and tsunamis. Tourists may be unfamiliar with local hazards and may be unable to properly respond to disaster events. Hotels are a key driver of the local tourism economy, however they can also contribute to disaster risk reduction. The combination of a sturdy building structure, height, room capacity, food capacity, and energy capacity can transform many hotels into evacuation sites as well as short-term refuge. Despite this, the adoption of official evacuation hotels were limited during the 2011 Great East Japan Earthquake and Tsunami.

Surveys and interviews were conducted in 2016 at Matsushima Town. The 2011 earthquake and tsunami led to telephone and power outages, and both rail and ship based transportation were suspended for a month, leading to the initial inability of tourists to return home, and a halt in communication. Although many tourists and the local community evacuated to Zuiganji Temple, an official evacuation site, all coastal hotels reported receiving evacuees...
despite the lack of observable evacuation signage and information. These hotels provided accommodation, refuge, and provisions to evacuees. In the event provisions ran out, the Matsushima Town Office provided extra.

Although there were comparatively fewer damages and casualties in Matsushima Town, and a large number of coastal hotels accommodating evacuees, there were limitations in the ability of the hotels to provide further disaster risk reduction. Firstly, many hotels accepted evacuees on the basis of social responsibility rather than official obligation. Although members of the Matsushima Town office stated that there were official evacuation hotels, most of the hotels did not identify themselves as such. Second, other areas where hotels could contribute such as stocking provisions, providing rooms, and emergency electric generators, were generally not planned. All of the hotels interviewed used existing food and snacks intended to be sold in their own restaurants or souvenir shops. The lack of emergency water supplies was an issue brought up by hotel stakeholders.

Results reveal that despite challenges from 2011, there were interest among all hotel stakeholders and the local government towards public-private collaboration for disaster risk reduction. All hotel representatives felt their buildings could be (or if not already) be used as official evacuation sites during a disaster, and inquired how they could better prepare for the next event. When asked barriers towards implementing these improvements, lack of knowledge and money were the most commonly cited reason for multilingual disaster pamphlets. Although some hotels had already considered themselves evacuation buildings and had adequate stocks, others felt they lacked money and manpower to meet these needs.

Further public-private collaboration could mitigate some of these gaps. For example, the town office had already produced small multi-lingual multi-hazard cards for tourists, but its distribution was limited as it was not found in any hotel. The town was also quick to provide further relief stocks when hotel stocks were depleted during 2011. Despite these benefits, this collaboration still maintained limitations. There were concerns among many stakeholders that there was insufficient time given for collaboration, and concerns existed over equal opportunities to influence the collaboration process. Hotel stakeholders also did not deal exclusively with the town office, but collaborated with other entities towards disaster risk management. For example, many hotels worked with the Shiogama Fire Department in one area of disaster safety, and with the Matsushima Tourism Association in other areas. Some of these plans, such as those with the tourism association, were not known by the Town Office, nor were the tourism association familiar with the town office’s initiatives. The disjointed public-private collaboration not only affected disaster preparedness but manifested in other areas such as tourism marketing and promotion.

Optimism exists for improvements in disaster risk reduction. Both hotel stakeholders and the town office expressed strong interest and desire in mimicking the production of disaster related materials and policies that are in use in Okinawa Prefecture, a popular tourism destination in southern Japan. Better stock, a wider more encompassing multi-hazard pamphlet, were some of the many things that Matsushima’s hotel and municipality would like to see adopted. However money and knowledge was the most common barrier cited by all stakeholders that reduced the success of current collaboration. Secondly, desires for better political support, as well as more human resources were also cited by stakeholders. Some hotels wished for better and consistent representation as they felt left out in the planning process.

6.2. Further studies

Due to the fragmented nature of coordination between the various sections of the prefecture, town, and hotel industry, there has been strong interest in the development of a Destination Marketing Organization (DMO), also referred as a Convention and Visitors Bureau (CVB). Although DMOs at the top-tier administrative sub-division exist in many other countries, as of 2016, Okinawa
Prefecture has a fully functioning DMO in Japan, although a number of municipal level DMOs exist in the larger cities such as Yokohama and Osaka. Coordinating the various areas of public-private collaboration, from tourism promotion to disaster management, is done through its DMO, the Okinawa Convention and Visitors Bureau, which serves as the center for facilitation and interaction between the prefecture, cities, and tourism businesses, including the hotel and transportation industry. As of 2016, the Japanese Ministry of Land, Infrastructure, Transport and Tourism (MLIT) is supporting the establishment of DMOs and is currently being considered by several prefectures in the Tohoku Region (MLIT, 2016). In the case of Miyagi Prefecture, the Tourism Section is currently negotiating stakeholder roles within a potential prefectural DMO. Within Matsushima Town, there has been a strong interest in pushing the discussion of DMOs among local stakeholders in order to identify its justification and needs. A further study will be conducted between Miyagi and Okinawa Prefectures to determine if the role of DMO improves facilitation, resource sharing, conflict resolution, and as a result, leads to further adoption of disaster prevention activities and initiatives between the hotels and the local government that can improve resiliency of the area.

The decline of domestic tourism in the Tohoku Region has pushed many municipalities, including Matsushima, to expand foreign tourism markets. While foreign tourists constitute a small percentage of Matsushima’s overall tourism, there has been a strong push in attracting tourists from the Asia-Pacific Region. In an interview with the tourism section in neighboring Sendai City, which serves as the primary gateway to Matsushima, different tourism markets maintain different levels of risk aversion. For example, tourists from South Korea may not be as well prepared on natural hazard risks and preparedness actions compared to their counterparts from Taiwan. Improving internet access as well the creation of new applications has been considered as a method of distributing disaster communication to tourists. The events of 2011 highlighted that despite policies that led to the adoption of disaster early warning systems on mobile phones in 2007, damages to communication limited people’s abilities to receive up to date information. This has led to internet based applications such as the creation of LINE in 2011 and Safety Tips in 2014 (The Asahi Shimbun, 2017). Research is currently ongoing in Miyagi Prefecture’s coastal cities on how to better reach tourists with disaster risk information via mobile applications (Lee et al., 2016). Although such applications have yet to be found in widespread use in Japan, successful adoption could add another layer of communication beyond pamphlets and signage.

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