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CHANGE THE WORLD FROM HERE

Cross-Sector Solutions for Disaster Resiliency

How cross-sector collaborations foster long-term solutions for catastrophic events

by

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Abstract

The purpose of this research is to examine how cross-sector collaborations foster long-term solutions for catastrophic events. Using disaster management collaborative models in practice in the Bay Area, the study posits - post-disaster resiliency depends on the nonprofit, for-profit, and the public sectors agreement to invest in long-term collaborative partnerships to ensure innovative solutions. The research includes summaries of current academic understandings of government, nonprofit and for-profit cross-sector relations and uses the disaster management lifecycle stages of recovery, mitigation, and preparedness to understand the interdependence of the sectors in creating long-term sustainable solutions. Structured interviews of disaster management experts in the public, for-profit and non-profit sector present evidence of the emergence of a cross-sector that through collaboration is responsive, accountable, and transparent in its solutions and more comprehensive than any independent single-sector solution. Included is a set of key performance indicators where the cross-sector can create positive change within the disaster management stages of response, recovery, mitigation, and preparedness. Innovation and resiliency define the Bay Area. The region is a recognized environmental incubator for ideas and exchanges. Because of this, the paper will also explore the Jesuit notion of magis in disaster management. With collaboration, disaster management provides the opportunity to arrive at decisions based on the broadest impact on people and the Jesuit idea of magis - or more for the universal good.

Keywords: Collaboration, cross-sector partnerships, natural disasters, disaster management, vulnerability, innovation, equity, civil society, magis

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Section 1. Introduction

The Bay Area is a vulnerable geographic region, susceptible to fires, earthquakes, and floods. Scientists and most citizens agree that this area formed by disasters will face future disasters. Climate change only intensifies the severity and frequency. Since 2013, Napa and Sonoma Counties have experienced significant disasters - a flood, an earthquake, and two massive wildfires have shaped the way Napa responds. Napa's improved disaster management practices are learning opportunities for neighboring counties that wait in uneasy anticipation of the disaster on the horizon. Even with significant disaster management improvements, 42 people perished in the Napa wildfires. This reality heightens the urgency to engage in and refine cross-sector partnership solutions to lessen the impact of disasters and create more resilient and ready communities.

Disasters are not the only defining characteristic of the Bay Area. The region is known for the continuous innovations and prolonged success of the tech industry as well as the abundance of solution seekers eager to leverage and invest assets and talent to create more resilient communities. These qualities are not limited to the private sector, as nonprofits and the government sectors also rise to the task through learning, sharing and responding.

The purpose of this research is to examine how cross-sector collaborations foster long-term solutions for catastrophic events. Using natural disaster management collaborative models in practice in the Bay Area, the study posits - post-disaster resiliency depends on the

nonprofit, for-profit, and the public sectors agreement to invest in long-term collaborative partnerships to ensure innovative solutions and stability. Also, the study explores the contributions of individuals when impacted by a catastrophic event, respond with altruism, enthusiasm, and joy. Civil society emerges as an influential player in cross-sector collaborative successes.

The research was conducted utilizing standard participatory action research techniques emphasizing both participation and action of experts to reflect upon and analyze issues and questions in the field of disaster management. 15 experts among the government, for-profit, and nonprofit sectors participated in in-depth interviews which serve as the primary qualitative data for analysis. Qualitative responses were recorded and coded to evaluate the theory that disaster management success is dependent upon cross-sector partnerships. A literature review serves as a secondary source of information synthesizing current thinking around cross-sector collaboration in general and cross-sector collaboration within disaster management. Outcomes from the research include a set of key performance indicators to evaluate success and a disaster resiliency model that blends characteristics of cross-sector partnership relationships with the disaster life cycle model.

Section 2: Literature Review

Cross-Sector Partnerships (CSPs) - Variety of Names, Common Characteristics

Cross-Sector Partnerships (CSPs), is a fast-moving field with confusing nomenclature that would benefit from clarification or a consistent name. For example, across the literature the following terms are used interchangeably: cross-sector collaboration, multi-stakeholder collaboration (Goldstein and Butler, 2010; Bäckstrand, 2006), public-private partnership (World Bank, n.d.), value networks, social partnerships, strategic partnerships, and cross-sector social-oriented partnerships (Selsky and Parker, 2005). These multi-sector partnerships include partners from three or more different sectors: business, non-governmental organizations, governments, and civil society or community (Gray and Stites, 2013.). In “Partnerships by Sector” (Gray and Stites, 2013), noted the potential relationships that may emerge in multi-sector collaborations. The authors expressed cross-sector partnerships can form between any two of these sectors. For example, when business and government join forces, their venture is called a public-private partnership. When businesses and NGOs link up, these alliances are known as a business–NGO partnerships. When NGOs team up with civil society members, these partnerships have been called SLENS (Sustainable Local Enterprise Networks). Visually, the partnership relationships are represented in Figure 1.

Figure 1 - Partnerships by Sector

Source: Retrieved from nbs.net/knowledge, 2013.

CSPs - What are They?

CSPs - What are They?

For consistency, this study will refer to it as Cross-Sector Partnerships or CSPs. In particular, this study examines tri-sector partnerships. These cross-sector partnerships (CSPs) are commitments between or among the public, for-profit, and non-profit institutions in which individuals from the partnering organizations commit resources and agree to work cooperatively toward common development goals. Some CSPs are not necessarily legally defined but rather voluntary and more fluid. Koshman, Kuhn, and Pfarrer (2012) suggest some CSPs employ “authoritative texts” to bind and guide collaboration in the form of memorandums of understanding, a mission statement or bylaws. These “authoritative texts” are communication

protocols or voluntary ground rules. What is consistent - true CSPs move beyond each sector's individual goals to a relationship that involves a co-creation of a common goal, shared risk and responsibilities, interdependency, and often the development of a shared organizational structure. Both definitions recognize the strengths of the whole toward achieving a common goal and the value of leveraging the combined strengths for greater impact. Cross-sector partnerships are not without its challenges but when successful, is full of opportunities resulting in what Vangen (2018) refers to as "collaborative advantage." The joint effort is mutually beneficial, and although the partnership in some ways diminishes individual sector autonomy, the benefits outweigh the challenges. Review of the literature provided evidence that CSPs aren't always conflict-free. Vangen noted the "collaborative inertia" experienced by some partners who although they may value the idea of partnerships, recognize "the rate of output is slow and even successful outcomes involve pain and are a hard grind" (Vangen, 2018).

CSPs - Theoretical Frameworks and Governance

There are several theoretical frameworks related to cross-sector collaboration (Bryson, 2015). The theoretical frameworks are rooted in organizational, leadership, strategic management, public administration, policy studies, environmental management studies, network and communication theories. The core components of seven of the theoretical frameworks described by Bryson et al. (2015) include similar conditions across all such as the necessity for agreements, leadership, trust, commitment to processes, a capacity of joint action, systematic review of power imbalances, and communication. "Governance is at the intersection

of process and structures of each framework” (Bryson, 2015). How governance is managed, maintained, and structured varies according to the situation.

As an example, a 2012 Stanford Social Innovation Review article, titled “Understanding the Value of Backbone Organizations in Collective Impact, the authors agree with the definition that large-scale social change requires cross-sector coordination (Turner, 2012). Together they identify five elements for collective impact. Unlike Bryson (2015), who noted: “the collaborative structure is subsumed in the processes” Turner, suggested CSPs require a “backbone organization” for collective impact. Backbone organizations are “separate organization(s) with staff and a specific set of skills to serve as the backbone for the entire initiative and coordinate participating organizations and agencies” (Turner, 2012). Both point to the necessity of formalizing the layers of participation among the partners. The CSPs require equal representation from the partners and ongoing involvement of those representatives in management, decision-making, and the processes or systems.

CSPs - The Life Cycle and Rules of Engagement

CSPs need not exist in perpetuity, but they do have a life cycle (Stöteler, 2012). Broadly the research suggested, the partnership life cycle begins with a shared belief that the solution cannot be solved in isolation, then identifying and developing trusted partners, implementing and managing the partnership, assessing and revising results, and lastly, sustaining impact. Each phase has its rewards and challenges but accepting that it’s a learning process, encourages trust and a willingness to embrace mistakes as part of the process.

CSP Partners - Perceived Value to Partners

The value to the partners is another area of exploration that Austin and Seitanidi (2012) explored. Here the authors define four different types of value created for participants in partnership. The values described by the authors include "associational, transferred resource, interaction, and synergistic value." Associational value refers to the benefits that accrue to partners by having a partnership, such as improved credibility". Transferred resource value applies to benefits that accrue as a result of resource transfers between partners. "Interaction value refers to the benefits generated by working in partnership, such as shared knowledge and improved trust between partners." Finally, synergistic value relates to the benefits originating as a result of a partnership that would otherwise not have occurred for participants, such as achieving specific outcomes. The authors noted the types of value created through partnerships are not mutually exclusive as partnerships can generate a combination of value types.

CSP Partners - Value to Society

The benefit to society of CSPs is described as social value created by combining partner resources and capabilities by authors Austin and Seitanidi (2012). Lester Salamon (2002) outlined each sectors failures as the reason to explore collaborative relationships. For example, Salamon noted governments are facing new challenges and are entering new policy areas it requires them to provide services. However, they often lack the resources to staff or sufficiently respond to the new requirements or mandates. Salamon suggests new methods are needed to deliver public goods and services and contracts, partnerships, networks, and other approaches through CSPs should be considered.

Phase One of the Life Cycle - Setting a Clear Case for the Partnership

In the first phase of the life cycle, partnerships surface and form as each sector recognizes the opportunity to turn interests into engagements that combine the unique capabilities and resources of each actor to deliver outcomes that surpass those of any sector acting in isolation. One study referred to these sector partners as solution seekers. These partners "choose not to focus on a piece of the problem and tackle just that piece, but to engage multiple stakeholders in crafting solutions that are complex enough and possess the various perspectives and resources necessary to adequately address the challenges" (Becker and Smith, 2018).

In "Governing Cross-Sector Collaboration"(2014), the authors used the example of childhood obesity for CSPs addressing multifaceted social problems that cross layers of government (federal, state, local) and other sectors. Solutions to childhood obesity are difficult because developing solutions is ongoing and iterative as "responses to one aspect may reveal other problems"(Forrer, Key & Boyer, 2014, p.33). The various stakeholders are likely to view the problem in different ways (i.e., lack of access to proper nutrition or exercise, poverty, etc.). Here Forrer argued that collaboration may lead to innovative solutions. Forrer et al. used the case of the State of Washington's Childhood Obesity Prevention Coalition which worked to improve Washington's overall environment so children can live a healthy, active lifestyle. Forrer noted that through pooling resources of government, private, and nonprofit organizations, the Coalition was able to provide space for after-school activities and a toolkit for other organizations interested in a similar cross-sector approach.

This model scales as well to the international level as exemplified in the work of the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA). OCHA is “responsible for bringing together humanitarian actors to ensure a coherent response to emergencies. OCHA also ensures there is a value framework within which each actor can contribute to the overall response effort (OCHA, n.d.). This framework is referred to in the literature as a “cluster approach” as OCHA seeks to ensure effective humanitarian response through coordination, advocacy, policy, information management, and humanitarian financing tools and services. In effect, OCHA serves as the collaborative “backbone” for the collective impact referred to by Turner (2012).

In addition to establishing a clear case for the partnership, several authors including Austin and Seitanidi (2012) identify a history or an acceptance of collaboration within the community may influence the speed the formation of partnerships. If past collaborative partnerships yielded positive outcomes for the community, trust is already established and advocating for the model is not added to the timeline. Even so, the authors also suggest partners remain diligent in evaluating the risks along with the rewards of the partnership.

Phase Two of the Life Cycle- Who are the Trusted?

The next phase involves identifying partners and establishing trust. In a Nonprofit Quarterly publication on organizational social capital, Jo Anne Schneider (2009) suggests bonding, bridging and linking are methods for building trust. Linking especially has a place in CSPs. She defines linking as both “deliberate and slow, with shared-values toward establishing long-term relationships across power relationships.” Schneider asserts that even if the power

relationship is unequal as in government-funded nonprofit programs, there exists trust within the relationship.

Trust

In CSPs linkages of trust are essential, and the power relationships shift as the new collaborative develops its structure or power dynamics. In “Governing Cross-Sector Collaboration” this is referred to in transformational leadership terms as “power without power over”(Forrer, Key & Boyer, 2014, P. 224). The authors (2014, p 31) suggest the CSP model of governance shifts from a “principal-agent” relationship where the government defines what it wants from the partner and the mechanisms to achieve results, to a principal-principal relationship. In a principal-principal relationship, the effect is strategic, as other sectors become partners in the delivery of goods and services.

Across the literature, equity and respect are noted qualities in successful collaborations (Greenwald, 2008). Stronger partnerships emerged when participating partners acknowledged the value each organization. Nevertheless, engaging in a partnership requires trust-building which takes a commitment from stakeholders, to be honest in their interactions and a willingness to learn about each partner involved in the effort. If insufficient time is devoted to developing trust, conflicts arise (Gray and Purdy, 2014). Some collaborations begin with pre-existing proven partners where respect for leadership is already in place.

Compromise

A characteristic as important as trust is each partner’s willingness to compromise (Becker and Smith, 2018). Decision-making in collaborative environments required partners to

factor the totality of the circumstances, remove self-interest, prioritize the shared goal, and commit to negotiating with patience and civility.

Phase Three of the Life Cycle - What is the Process and Structure?

Measuring and reporting - owning it

Partners not only have a shared goal, but the success of the CSP is also dependent on how the achievement of the vision will be measured and reported. Strategic goals that are SMART - strategic, measurable, achievable, relevant and time-bound have been embraced guidelines by partners regardless of the sector (Performance Development, n.d.). Stanford Social Innovation Review, noted, “collecting data and measuring results consistently and on a short list of indicators at the community level and across participating organizations, ensures all efforts remain aligned. It also enables participants to hold each other accountable and to learn from each other’s successes and failure” (Kania and Kramer).

A review of the literature denotes the importance of the participants having ownership or a stake in not only determining group processes and structures but also intended outcomes (Bryson et al.). Who makes decisions? How are they made? How is progress monitored and reviewed? When needed, how are processes and structures revised? These are the questions that underpin the process and structure of the partnership. Additionally, how large should the structure be without becoming inefficient and bureaucratic? At the outset, the literature suggests, participating organizations must identify key staff, particularly staff that have both time and an interest in the shared goal to be part of the effort.

CSPs as Learning Environments

Adaptable

An earlier review of the literature reports trust and compromise are desired characteristics of partners. As CSPs are learning environments, the literature also recognized the importance of adaptability of not only individual partners but the CSP as a whole (Abou-Bakr, 2013). Here the collaborative group evaluates external conditions that might cause unexpected shifts in priorities. The CSPs capacity to remain adaptable to change in response to those conditions, not within their control is a strength, not a weakness. Periodic reviews of the environment become part of the process.

Communication - Transparent and frequent

Even more frequent than reviews within the process is communication. “Communication must be consistent and open across the collaborative to build trust, assure mutual objectives, appreciate the common motivation and share lessons learned” (Austin, 2012, p.133). Maintaining clear lines of communication, committing to honest, open, discourse in the face of difficulties fortifies trust. Austin also asserted communication must exist between partners, within each organization, and to outsiders (Austin, 2012, p. 131-134). Since communication is both internal and external, identifying who and how messages are shared from the CSP is necessary to ensure the conversation is inclusive. Stakeholders are diverse, and communication styles must be varied to reach all participants.

Innovation - the proof is in the outcomes

One of the components identified in a successful CSP is consistent measuring and reporting of the results toward a common goal. Measuring social value is elusive and so too is an innovation which is often iterative. In a New York Times article titled “What Land Will Be Underwater in 20 Years? Figuring It Out Could be Lucrative” (New York Times, Feb 23, 2018), the authors profiled Jupiter Intelligence, a Silicon Valley start-up banking on predictive models and analytics. Jupiter Intelligence views analytics as a way to “make informed decisions that safeguard trillions of dollars in at-risk infrastructure from a flood, fire, heat, cold and wind events” (Jupiter Intelligence, n.d.). Jupiter’s cross-sector approach combines an elite workforce with diverse perspectives from the for-profit sector, academia, and government with the common purpose of protecting valuable infrastructure assets and identifying communities as the risk of catastrophic events. The authors noted that although the science is new and unproven, the combined efforts of CSPs to actively engage in technological solutions showcase the potential CSPs may have in collective impact on climate change. Additional sources point to other advantages as the drivers for the corporate sectors engagement in social good such as reputation (Waters, 2014).

Phase Four of the Life Cycle - Gathering and Mapping of Resources

Resources in collaborative partnerships are both financial and human and necessary to develop and sustain a collaborative group. Every organization brings a unique set of resources which might include funding, technical expertise, leadership, credibility, etc. Identify the preferred criteria for achieving the shared vision are essential to attain the common goal. Across the literature, it is recommended, CSPs consider what the costs are in the collaborative effort?

Where will the funds come to support the CSPs? Who decides how to apply funds or change funding? Are there enough funds to cover the costs of the critical staff involved in the collaborative process?

CSP Leadership

In “The Collaborative Challenge” (2010), the author noted, “every successful strategic alliance studied has significant support and direct involvement from top leaders in the partnering organizations” (Austin, 2010, p. 53). He sees top managers as alliance authorizers. With project champions and leadership buy-in, CSPs will likely thrive. The characteristics that have shaped the group (trust, equity, respect, adaptability, transparency, accountability) are also the characteristics required of leadership. Legitimate leaders in CSPs share those qualities as well as knowledge of the subject area, credibility, and the capacity to maintain stability as the CSP evolves. In a Harvard Business Review titled “Triple Sector Leadership” (2013), the authors distill six traits of cross-sector leaders as follows:

1. "**Balanced motivations** - A desire to create public value in a professional or a personal capacity; the ability to reconcile the drive to foster social good or work on a particular social or environmental issue with competing considerations, such as financial needs or holding influence."
2. "**Transferable skills** - A set of skills and professional competencies received from work experience; practical skills in areas such as strategic planning, quantitative analytics, and stakeholder management that all sectors value."
3. "**Contextual Intelligence** - The ability to assess the differences and recognize the similarities between sectors, stemming from exposure or experience; an

understanding of each sector's values, culture, constraints, and key performance indicators which allows leaders to navigate within and between sectors."

4. "**Integrated Networks** - The ability to use one's legitimacy and credibility among contacts across sectors, earned from a history of leadership positions; the capacity to leverage networks across sectors to advance one's career, build teams, or convene stakeholders on an intersection issue."
5. "**Prepared Mind** - Deliberate career planning across sectors; a willingness to seize new opportunities."
6. "**Intellectual Thread** - A leader's subject-matter expertise on a particular issue – based on work experience in the discipline, formal education, and professional training – practiced across sectors."

CSPs in Disaster Management

Evaluation of the literature in cross-sector partnerships formed for disaster response serve as a case study that exemplifies the practice of partnerships. Disaster Emergency Management involves cross-sector partnership collaborations that are long-term because efforts to build communities that are resilient to disasters cannot happen through government organizations alone. The private sector—ranging from small, individually-owned businesses to national and global enterprises along with academic institutions, nonprofits, and faith-based organizations—have a wealth of knowledge and assets that may be of vital importance during disasters, crucial in their aftermath, and essential to building community resilience. According to Abou-Bakr, (2013) collaboration between the public and private sectors can help leverage resources, knowledge, skills, and energy to ensure communities can prepare for, withstand, and recover from disasters. The private, nonprofit, and public sectors have complementary

resources and capabilities, and access to different parts of the community. Through collective efforts, CSPs identify needs and resources and coordinate before a disaster occurs and significantly improve its resilience to disaster.

In the cross-sector partnership literature review, the following conditions appear to underpin a successful collaboration: shared purpose/common goal, trust, willingness to compromise, flexibility, strong leadership, open communication, transparency, and a commitment to measuring and reporting towards goals. These conditions remain true in cross-sector efforts for disaster management. FEMA studies referred to CSP Disaster Management as “A Whole Community Approach.” This approach is defined as “a means by which residents, emergency management practitioners, organizational and community leaders, and government officials can collectively understand and assess the needs of their respective communities and determine the best ways to organize and strengthen their assets, capacities, and interests. By doing so, a more effective path to societal security and resilience forms. In a sense, Whole Community is a philosophical approach on how to think about conducting emergency management” (FEMA, 2011).

The literature referred to disaster management of having its life cycle in which the sectors collaborate. The lifecycle engages sector participation or the Whole Community at various stages. The four phases were outlined by the Center for Disaster Philanthropy (n.d.) as follows:

1. "**Response** - Efforts to minimize the hazards created by a disaster. Emergency response aims to provide immediate assistance to maintain life, improve health and support the morale of the affected population. Such assistance may range from giving specific

but limited aid, such as assisting those impacted by transport, temporary shelter, and food. It also may involve initial repairs to damaged infrastructure. The focus in the response phase is on meeting the basic needs of the people until more permanent and sustainable solutions can be available.

Examples: search and rescue; emergency relief".

2. "**Recovery** - Returning the community to normal.

As the emergency comes under control, the affected community is capable of undertaking a growing number of activities aimed at restoring their lives and the infrastructure that supports them. There is no distinct point at which immediate relief changes into recovery and then into long-term sustainable development. There are many opportunities during the recovery period to enhance prevention and increase preparedness, thus reducing vulnerability. Ideally, there should be a smooth transition from recovery to ongoing development.

Examples: providing temporary housing; grants; medical care".

3. "**Mitigation** - Minimizing the effects of a disaster.

Mitigation activities eliminate or reduce the probability of disaster occurrence, or reduce the effects of unavoidable disasters. Mitigation measures include building codes; vulnerability analyses updates; zoning and land use management; building use regulations and safety codes; preventive health care; and public education.

Examples: building codes and zoning; vulnerability analyses; public education".

4. "**Preparedness** - Planning how to respond.

These measures can be described as logistical readiness to deal with disasters and can be enhanced by having response mechanisms and procedures, rehearsals, developing long-term and short-term strategies, public education and building early warning systems. Preparedness can also take the form of ensuring that strategic reserves of food, equipment, water, medicines and other essentials are maintained in cases of national or local catastrophes. During the preparedness phase, governments, organizations, and individuals develop plans to save lives, minimize disaster damage, and enhance disaster response operations. Preparedness measures include preparedness plans; emergency exercises/training; warning systems; emergency communications systems; evacuations plans and training; resource inventories; emergency personnel/contact lists; mutual aid agreements; and public information/education.

Examples: preparedness plans; emergency exercises/training; warning systems".

Visually, the disaster life cycle is consistently represented in the literature as shown in

Figure 2. However, a comprehensive review of the literature yielded inconsistent figures of

cross-sector collaboration within the disaster life cycle model. This visual is further explored post-analysis from information gathered from participants.

Figure 2 - The Disaster Management Life Cycle

Source: CampaignforAction.org, "The Next Disaster: Are you Ready?", 2018"

The aim of the research

Through structured interviews of Bay Area disaster management experts in the public, for-profit and non-profit sector the research aims to answer the question if the emergence of a cross-sector collaboration is responsive, accountable, and transparent in its solutions and more comprehensive than any independent single-sector solution? What significant innovations have been made in each of the sectors as they respond to catastrophic events? Are stronger alliances and networks formed amongst the sectors in managing disasters? What more yet to be explored to ensure the broadest impact toward the universal good?

Section 3: Methods and Approaches

Data Collection and Methods

The data were collected utilizing standard participatory action research techniques. The literature review served as a secondary source of data, synthesizing current thinking around cross-sector collaboration in general, and in disaster management. Primary data was collected through in-depth semi-structured interviews based on a series of questions that resulted from the literature. Appendix A is the set of structured interview questions. The responses provided qualitative information on cross-sector partnerships in Bay Area nonprofit, for-profit, and public sector in practice to understand and analyze how Bay Area disaster management practices adhere to theoretical approaches in the existing literature. The research was limited to the Bay Area which helped in accessing local experts and provided opportunities for interviewing authorities outside of the region as locals often suggested additional resources.

In total, 15 interviews were conducted over a period of two weeks. Some of the participants were individuals introduced by a trusted colleague. Other participants were former colleagues. Given that this study was for academic research, experts were willing to participate, however, a couple of interviewees requested their responses remain within the

University of San Francisco and not be made public or published. Those individuals and titles are anonymous. An introductory call or email outlined the purpose of the research. A calendar invite secured the time and place of the meeting. Interviewees were selected as subject matter experts in governmental departments of disaster management in Oakland, San Francisco and Napa, local non-profits impacted by current or past disasters, as well as for-profit corporations located in the Bay Area in the field of technology and architecture. Interviews were conducted in-person, on the phone, or online using software provided by the University of San Francisco. Appendix B is a list of participants, titles, organization, and sector.

All interviews were recorded and transcribed then entered into a Google spreadsheet. Supporting text is primarily comprised of direct quotes, except in cases where information is better conveyed through a paraphrased version of the text.

The structured interviews consisted of six open-ended questions. The length of the discussions varied from forty minutes to ninety minutes based on the amount of time of the respondent was available and if a tour was included. Answers were reviewed to the degree to which interviewees responses indicated the achievement of successful cross-sector collaborative performance indicators. Evidence of the cross-sector collaborative impact in disaster management is shown by “yes” answers to following six outcomes:

1. Has responding to disasters contributed to innovations in your organization?

2. Is there a separate body driving the collaborative efforts and how is decision making structured?
3. In your experience have your cross-sector collaborative efforts been positive and what gaps or challenges have you experienced?
4. In your experience, were stronger and more diverse networks and alliances formed as part of working with nonprofits, government, and corporations in disaster management?
5. Are the sectors considering the most vulnerable (property and people) in long-term strategies for recovery, mitigation, and preparedness?
6. Is there more that can be done? What is it?

Also, data were collected on interviewees response to:

1. Where do you feel your organization is best able to respond or is operating at its best? (Relief, Recovery, Mitigation, Preparedness, All).

Lastly, evidence of learning within the organization was recorded as a separate field as it became a common theme amongst respondents and perhaps might be useful in analysis.

Coding methodology

For each outcome that was coded “yes,” the response was assigned 1 point. For each outcome that was “partial,” the response was given 2 points. If the outcome was not achieved, the response was given a score of 3. If the question was not applicable to the organization, the response was recorded as 4. A score of “1” in any response indicates the

organization is successful in its collaborative efforts relative to the question. The lower the overall score across all six questions, the more successful the organization is in the achievement of the immediate outcomes that the research suggests leading to successful cross-sector partnerships in disaster management.

Coding validation

Any direct quotes were shared with the interviewee to ensure the accuracy of the quote and interpretation. Any errors or misstatements were corrected.

Section 4. Data Analysis

Of the organizations evaluated in the research, seven are nonprofits providing disaster support services in the Bay Area, four are corporations headquartered in the Bay Area, and four represent the public sector's emergency management departments serving San Francisco, Napa, and Oakland. Figure 3 summarizes six intermediate outcomes that the literature review points to as evidence of characteristics of successful cross-partnerships in disaster management. The responses indicate that disaster management CSPs in the Bay Area are 72% effective, 22% partially regarded as effective, 5% not remarked as effective. 1% of the respondents indicate the question was not applicable. As a summary, the results are positive but provide little detail of why or how. Nor does this figure illuminate what isn't working. A more in-depth dive into individual survey responses offer more evidence of where cross-partnerships are most effective and where additional effort is needed.

Figure 3 - Summary of structured interview responses

Figure 4 - Summary of responses to questions

Figure 4 provides a snapshot of the overall responses to the questions identifying which areas CSPs are successful and where the sectors are only partially or not meeting CSPs intended

outcomes. The data was further summarized in tables 1 through 3 by sector. Presumably, the lower the total response, the more positive the organization regards the effectiveness of the collaborative efforts in disaster management. However, the additional analysis yields compelling perspectives from participants.

Summary by sectors

Table 1 - Summary of Nonprofit responses

Nonprofits	Innovative	Governance Sep. Body	Positive experience	Stronger Networks	Consider Vulnerable	More to be done?	Total
American Red Cross	1	1	1	1	1	1	6
Napa COAD	1	1	1	1	1	1	6
Catholic Charities of Santa Rosa	1	1	1	1	1	1	6
SF CARD	1	1	2	1	2	1	8
Big City Emergency Managers	1	1	2	1	2	1	8
Sierra Club	1	3	2	1	3	1	11
Center for Disaster Philanthropy	1	2	4	1	2	1	11

Table 2 - Summary of For-profit responses

For-Profits	Innovative	Governance Sep. Body	Positive experience	Stronger Networks	Consider Vulnerable	More to be done?	Total
TEF	1	1	1	2	1	1	7
Google Crisis Response Team	1	2	2	1	1	1	8
Google.org, Philanthropic Donations	1	3	2	1	1	1	9
Facebook	1	2	2	2	2	1	10

Table 3 - Summary of Government responses

Government	Innovative	Governance Sep. Body	Positive experience	Stronger Networks	Consider Vulnerable	More to be done	Total
Napa County Emer. Svcs.	1	1	1	1	1	1	6
San Francisco Dept. Emer. Svcs.	1	1	1	1	2	1	7
SFFD - NERT	1	1	2	1	1	1	7
Oakland Emergency Services	1	3	2	1	2	1	10

Disaster Management Inspired Innovations

What is overwhelmingly apparent is respondents across the sectors indicate that disaster management has led to innovations within their organization, yet 100% also agree there is more to do. When asked how disaster management has led to innovations within their organization, the Napa COAD (Community Organizations Active in Disasters) nonprofit points to innovations in its organizational structure and communications. As the firestorms raged in Napa and Sonoma in the fall of 2017, a COAD representative was included 24/7 in all of the briefings at the Napa Emergency Operations Center. This inclusion was new. Having the COAD in these briefings proved instrumental in providing meaningful and timely information to other nonprofits to serve their clients and respond to the community needs. Additionally, the Napa COAD improved communication by simultaneously releasing emergency messages in English and translated Spanish by native speakers. These innovations may seem relatively minor. However, their timeliness and accuracy are potentially life-saving. The literature supports this as well noting “communication must be consistent and open across the collaborative to build trust,

assure mutual objectives, appreciate the common motivation and share lessons learned”

(Austin).

Catholic Charities of Santa Rosa noted innovations came in creative solutions to lack of housing during the recovery phase of the fires:

“As you would expect, housing was very difficult before the fires; the vacancy rate was 1.5% however if you are creative about, you might find housing that may not be advertised. Two ways to be creative include - 1) networking and 2) create landlord incentives. If you rent to a person in our system, we will give \$1000 bonus for rental or \$500 for a room. We also created risk mitigation pools. Any damage that happens will be covered by a risk pool. A refurbishment was also established to help landlords with money up to a certain dollar amount to refurbish a property not currently available for a set period.”

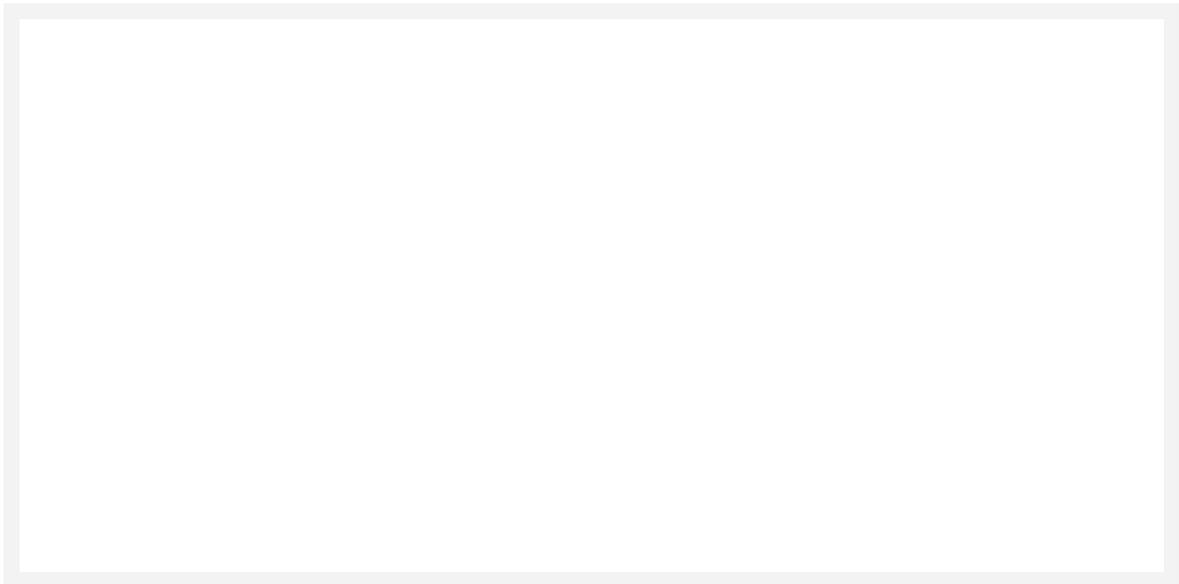
As Catholic Charities of Santa Rosa embarks on multi-million dollar capital campaign to create affordable housing and expand services, attaining Program-Related Investments (PRI) from community foundations are an option. According to the Grantmakers website “the primary benefit of PRIs is access to capital at a lower rate than may otherwise be available. For the funder, the principal benefit is that the repayment or return of equity is recycled for another charitable purpose. PRIs are valued as a means of leveraging philanthropic dollars” (Grantmakers, n.d.) and in the case of Catholic Charities of Santa Rosa, a way to address a need and be innovative in maximizing the tax benefits of its nonprofit sector status.

Both Google and Facebook utilize data to produce innovative disaster management tools such as Google SOS Alert and Facebook’s Safety Check. Both tools leverage each corporation’s brand and user base to communicate disaster information such as maps, and safety status.

Survey responses from government representatives point to innovations in learning. Kevin Twohey of Napa County notes “you’re only as good as your last disaster,” meaning innovations are iterative or evolutionary, not necessarily revolutionary as some technology innovations are perceived. San Francisco’s emergency managers back that up noting its innovations come with tech partners but also in understanding how people communicate in disasters through technology tools means re-designing its communication processes.

Separate Collaborative Body - or Backbone Organization in Disaster Management

Figure 5.0 - Summary of separate collaborative governance



Responses to the second question are mixed but mostly indicate that there is a separate form of governance for the collaboration. This structure is considered an essential element to success in the literature review as it suggests a willingness to unify multiple solution seekers

(Becker and Smith, 2018) with various perspectives and resources to adequately address the challenge. As an example, five of the seven nonprofits have a separate body or individuals assigned to manage or be the point person(s) for disaster management issues. It's important to note that two of those five nonprofits - Napa COAD and SF/CARD, are by definition, separate governing bodies specifically for disaster management. VOADs (Voluntary Organizations Active in Disasters), COADs (Community Organizations Active in Disasters) and CARDs (Community Agencies Responding to Disasters) are similar names for "organizations that share knowledge and resources throughout the disaster cycle—preparation, response, and recovery—to help disaster survivors and their communities." (VOAD. n.d.) Before the founding of National VOAD in 1970, disaster response was chaotic as numerous organizations served disaster victims independently of one another. These included both government and the private, nonprofit sector. Service was haphazard, redundant, or worse - unmet. A VOADs goal in disaster response - foster the four C's—communication, coordination, collaboration, and cooperation to serve people impacted by disasters. Brian Whitlow, Executive Director of SF/CARD, is an active member of San Francisco's Disaster Council. SF/VOAD is a program within SF/CARD, and SF/CARD's function is threefold: preparedness, response, and recovery so that nonprofits and faith-based organizations serving San Francisco's most vulnerable populations are ready for a disaster. They are also ready to play a central role in coordinating these organizations' disaster preparedness, response, and recovery efforts. COADs, VOADs, CARDs all serve as the backbone organizations referred to in the literature, the "separate organization(s) with staff and a specific set of skills to serve as the backbone for the entire initiative and coordinate participating

organizations and agencies” (Turner, 2012). The Center for Disaster Philanthropy (CDP) collaborative efforts are only partially driven by a separate governing effort. Regine Webster, Vice President, notes although “CDP’s mission is to transform disaster giving by providing timely and thoughtful strategies to increase donors’ impact during domestic and international disasters,” CDP operates somewhat outside of the sphere of disaster management as a funding organization and consulting group. As Webster states:

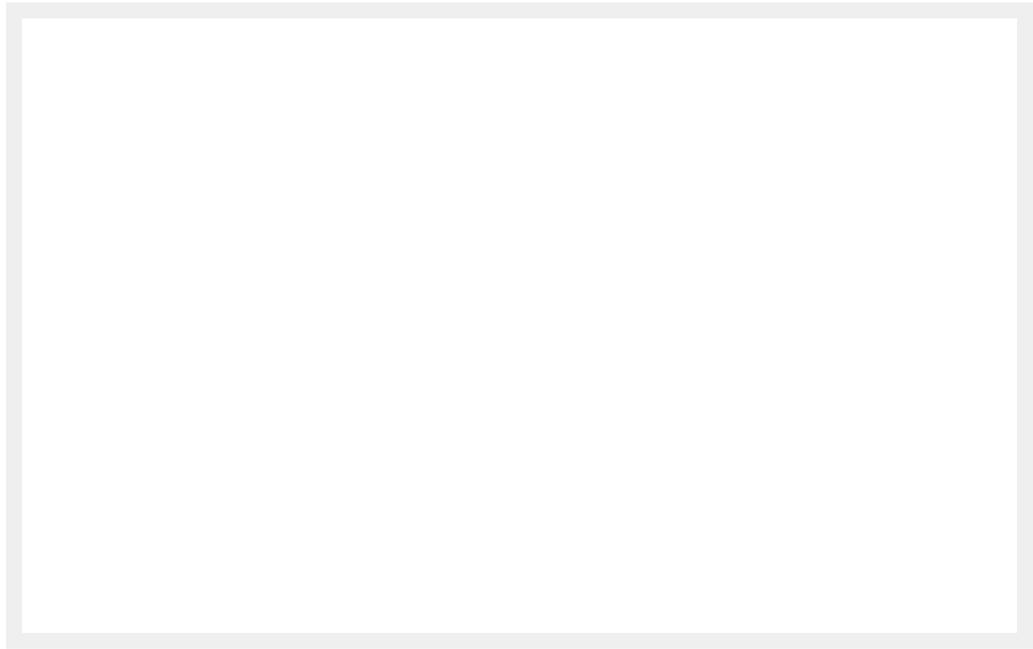
“CDP has an information sharing relationship with FEMA and others and depending upon the disaster, we would absolutely work with local nonprofits and liaise with local government but not, always - but we would always do our best to liaise with local funders as well as with local nonprofits.”

Although CDP views itself as only partial contributors in a collaborative governing effort, it may be as useful as fully engaged partners in a backbone organization. One might argue for some organizations; it’s as important to recognize when collaborative governance is needed and who those collaborative partners are rather than be “subsumed in the process” (Bryson, 2015) of another governing body. As Vangen (2018) noted in the literature, collaborative efforts do diminish autonomy of the organization, but a shared goal yields collaborative advantage. Even so, it is evident in CDP’s mission and goals that disaster management is a shared goal with other nonprofits, government, and for-profits. CDP wrote the Disaster Philanthropy Playbook (CDP, n.d.) which includes a set of tools and tip sheets designed to gather practical, proven strategies into appropriate, step-by-step actions funders can take to help their communities prepare, respond, and recover from major disasters. CDP is a trusted partner of FEMA, local governments, and nonprofits and even the for-profit sector as Google uses CDP to manage and

distribute its disaster philanthropy funds. The literature stated CSPs linkages of trust are essential and the power relationships shift as the new collaborative develops its structure or power dynamics. CDP is evidence of a collaborative model that suggests operators may exist outside the sphere and still be considered a partner. Perhaps this is because CDP has the financial resources to remain independent and engage as needed.

Independence goes against the current CSP literature, yet the Google.org Philanthropy Team, views participation in a separate governing body as not necessary, maybe even an inhibitor. According to Ryan Galleher who manages Google.org's donation site, the flexibility of independence gives us "the ability to really quickly launch donation campaigns... we don't have to go through this big process with partner agreements." Leveraging Google's brand and reputation, donation pages linked to current and constantly updating information, extends a reach beyond any given nonprofit's ability. Organizations such as the Red Cross of Northern California may receive Google philanthropic donations through CDP, but Google isn't in the business of vetting nonprofits, but rather in amplifying information, simplifying the donation process, and stepping back to let CDP distribute and manage the funds. Ryan Galleher shared Google.org has matched users donations up to \$1M for external campaigns during Hurricanes Irma, and Harvey and makes some other grants throughout the year for disaster purposes. Here Google.org operates outside the sphere of typical CSPs but fully leveraging their product reach to share information and activate donors.

Figure 6.0 Elaboration of cross-sector positive engagement



Survey respondents indicate somewhat mixed feelings on the success of the collaborative efforts. The government partners point to two reasons for partial success. In Oakland, the emergency operations are too understaffed to engage in partnerships fully. Conversely, the San Francisco Fire Department sees its certified community responders as not fully leveraged. Nevertheless, they know the importance of collaboration, and when fully staffed or utilized, those responses would shift more positively.

In the nonprofit sector, a couple of issues interfere with a full positive response. Big City Emergency Managers point to the political shifts as one mayor is elected and another mayor leaves, forces collaborations to re-start and fight for their existence. However, the Executive Director of BCEM also highlights the collaborative advantage of the group. Last summer, the emergency manager in Harris County, Texas sent a message to the BCEM cohort: “if you want

some real lessons learned and you want some training, send your people down right now.” In the case of SF/CARD, the communication between partners is excellent. However, the needs to fulfill the SF/CARD mission often outweigh maintaining the collaboration.

For-profits experiences are mostly positive. The Google Crisis and Philanthropy teams both experience their legal hurdles. The Philanthropy team supports donors from over 30 countries but funding international relief is a challenge. Currently, they work with partners such as Center for Disaster Philanthropy and Network for Good. The Crisis team struggles with copyrights notices on content that prevents Google from distributing information without first involving its Legal and Partnerships team to request permission. Once fixed, the collaboration response might change. For now, it is more collaborative inertia (Vangen) - a grind, but worth it.

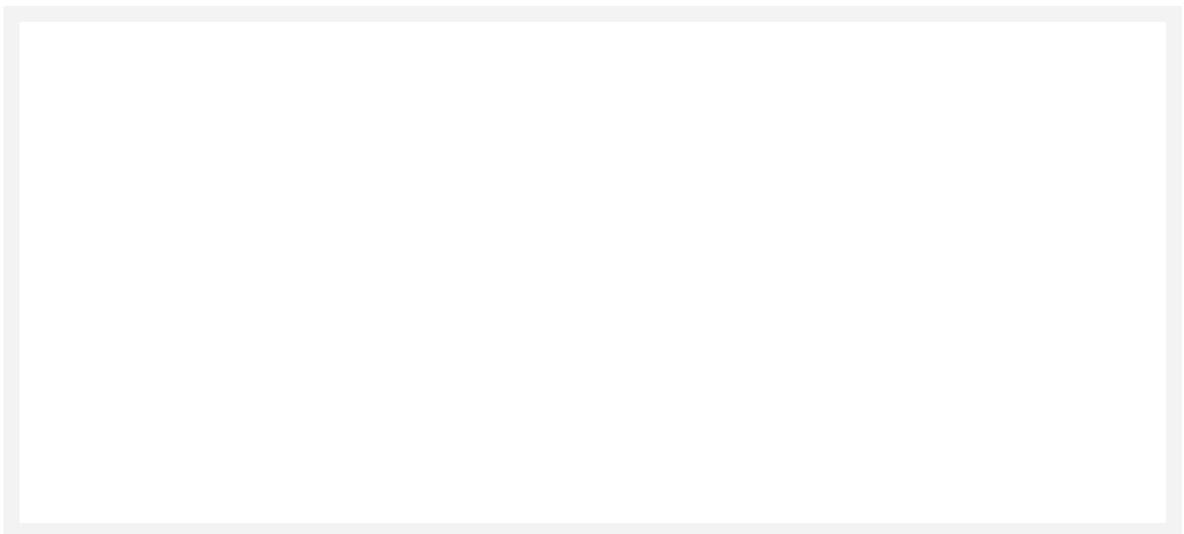


Figure 6 - Summary of the strength of more diverse networks and alliances

Disaster Management generates stronger more diverse alliances and networks

It's interesting to note that although survey responses indicate somewhat mixed feelings on the success of the collaborative efforts, 13 of the 15 respondents answered yes, stronger and more diverse alliances formed in disaster management efforts and two indicated the networks and alliances are partially stronger. The response was unanimous in the government and nonprofit sector. Oakland Emergency Services holds regular disaster council meetings which are open to the public. Although the interim director is relatively new to an organization he admits is woefully understaffed, he's scheduled meetings with the Port Authority, Oakland Airport and other emergency managers in the neighboring cities within the county of Alameda. He notes: "we try to meet up with different organizations to build relationships. Hopefully, we don't have to activate the Emergency Operations Center but if we do it's not the first time we've seen that individual concerning working on collaborative responses to incidents. We want to know who's who in the zoo". These relationships serve Oakland well as it works to fill positions within its department. Having a known, trusted alliance of partners to lean on from neighboring cities and within the county is invaluable in a disaster.

In the nonprofit sector, a diverse network is a standard operating practice across the sector and a necessity for responding to disasters. Seven of the seven nonprofits surveyed answered yes indicating nonprofits' networks and alliances strengthen in disaster management efforts. Responding to disasters simply cannot be done by a single nonprofit, even one as large as the Red Cross. John Ruiz, Regional Disaster Manager for the American Red Cross of Northern

California, leverages partnerships with faith-based organizations by training them and getting them up to speed to operate shelters when needed. Partners such as the Salvation Army deliver food services. Functional needs or medical equipment also require specialized nonprofits. And managing displaced animals requires partnerships with the local SPCA or Animal Care services. The government also leans on nonprofits as trusted community partners in times of disaster. Napa and Sonoma County's nonprofit partner, the Napa COAD built a network of nonprofit organizations that expanded to 40 trusted partners to manage the flood, two major wildfires, and an earthquake that have ravaged the North Bay since 2013. The value to the nonprofit and government sector is both interactional and synergistic (Austin and Seitanidi, 2012). Within the network are shared knowledge, improved trust and synergistic value as the benefits generated are a result of a partnership that would otherwise not have occurred to achieve disaster management specific outcomes.

The for-profit sector provides examples of diverse networks and as well as a couple of instances in which the collaboration only partially results in a widened network. It's worth investigating one case of why a for-profit only partially believes there is a more diverse network of support and alliances because of disaster management efforts. A representative from Facebook and also a noted climatologist, states that although Facebook has a diverse array of nonprofits and for-profits within its network, they don't work too closely with government organizations except through policy. At the time he was interviewed, he had recently left Facebook. Since his departure, two things within this research have changed. First, Facebook will be working even more closely with public entities as the government determines the extent to

which Facebook content was accessed and user information exploited. The level to which Facebook will need to cooperate, change business practice, and extend its network of support within the government sector is to be determined. This outcome is essential in disaster management. Facebook is the repository of a trove of community information and trust in its platform has been steadily eroding. Nevertheless on its website (n.d.) Facebook's recently re-defined mission shifted from "making the world more open and connected" to "give people the power to build community and bring the world closer together." This mission is essential in disaster management. San Francisco Department of Emergency Management sees building a network of support from the tech community in the Bay Area as critical to the evolution of disaster management. Recently, San Francisco emergency managers toured Facebook's Emergency Operations Center and spoke positively about tech partnerships stating:

"We have great partners in the tech industry, and there is so much creativity and innovation out there. Our relationships with organizations like Google and Facebook helped push us forward. Airbnb, Lyft, Uber, etc. whatever it is. It's in the way that we think about things. You can't think of the old emergency management way of a structuring an issue or a problem. You have to think about the way people think, communicate now and share information".

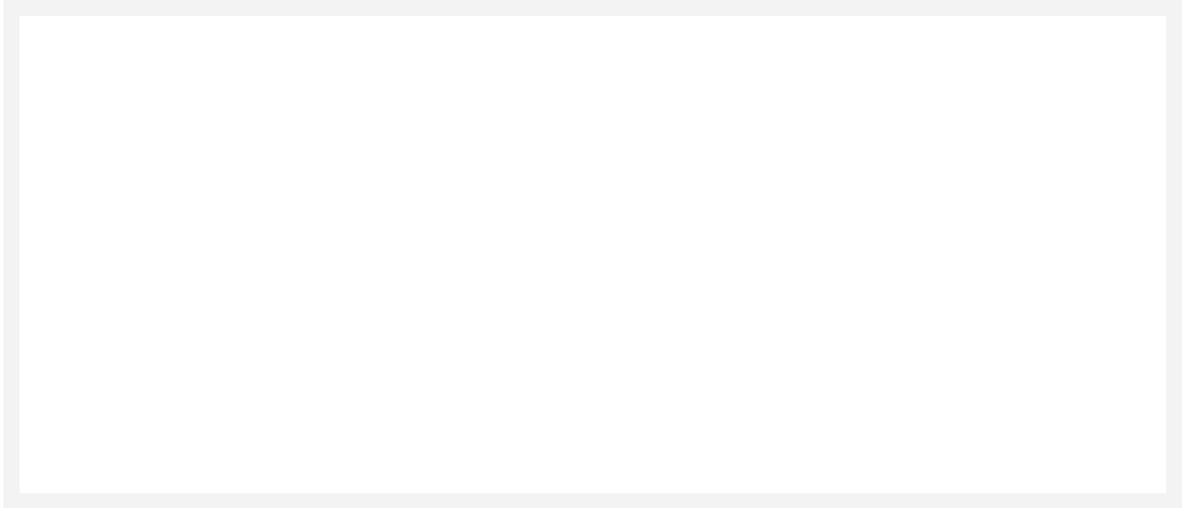
Why do they view each other so differently? Facebook views its relationship with the government sector is limited, yet the government sector views their relationships as more collaborative. This perception may once again suggest the organization that has the most power or resources may engage as needed on its terms. Until recently, Facebook could operate outside the sphere as it held both power and resources. That power dynamic is shifting. It may also suggest Facebook or any for-profit business may view disaster management as necessary, but

only a subset of a broader organizational mission - making money. And herein, is why it appears the government and nonprofit sectors rely on establishing networks of partnerships. Neither the government or nonprofit sector are in the business of monetizing humans but instead supporting civil society. Supporting civil society happens through a diverse network of support.

Even so, the information embedded within Facebook's platform is game-changing for the government sector as social media platforms are the way communities share and communicate with one another. Disaster preparedness, recovery, response, and mitigation efforts gain from a well-educated society. It's the interaction value referred to by Austin and Seitanidi (2012) whereby the benefits generated by working in partnership, such as shared knowledge and improved trust between partners serve both sectors. Equally crucial to Facebook at this point is another collaboration byproduct - associational value. Associational value (2012) refers to the benefits that accrue to partners by having a partnership, such as improved credibility. As Facebook positions to rebuild its reputation, deepening its existing network of support from nonprofits that are trusted by the community may be a strategic approach and a synergistic value to all partners and allies within the network. It is also an opportunity for each partner to step-back and recognizes the contributions of each partner in the shared goal. Stronger partnerships emerge when participating partners acknowledge the value each organization (Greenwald, 2008).

Consideration of the most vulnerable in long-term disaster management

Figure 7.0 - Summary of the consideration of most vulnerable



Of the 15 respondents, 53% responded yes - the most vulnerable are a consideration in long-term disaster management strategy, 40% responded partially true, and 7% responded no. A closer look by sector reveals the government sectors response was split with 50% responding yes and 50%, responding the most vulnerable are partially considered. The nonprofit sector also saw a split with 43% responding yes, and 43% responding the most vulnerable are partially considered in long-term strategies. There was one nonprofit who responded, without hesitation, “no” to the question, further elaborating that the most vulnerable are not only not considered but are put at an even higher risk. This response was from Mike Brune, Executive Director of the Sierra Club. In his experience, he notes that the most vulnerable are hardest hit by disasters. They are the least prepared and mostly live in communities in the direct path of harm. Also, all post-disaster chemical waste dump sites are in their low-income neighborhoods. It’s these chemical processing plants that place residents at even greater long-term health risk. Numerous

Environmental Injustice reports found on the NAACP website (n.d.) back his argument. But there is hope that this is shifting. Recently the NAACP, teamed with FEMA, the National VOAD, and local community responders in Florida in new program aims to ensure emergency plans are more in tune with the people they serve in low-income communities.

Several respondents indicate the most vulnerable are only partially considered. The nonprofit, Big City Emergency Managers (BCEM) notes there is positive movement in long-term urban planning for the most vulnerable communities in disasters, but emergency managers still struggle with how to reach everyone. A mandate to develop an action plan comes from FEMA as post-hurricane legal settlements and rulings increased the urgency to better meet the needs of individuals with disabilities and others with access and functional needs in disasters. Even so, emergency managers wrestle with how to reach the other identified vulnerable community - those living below the poverty level. San Francisco's Emergency Management Director explained "when you talk about communities that are already and impoverished or have other major challenges, disaster resilience is not at the top of their list. They are thinking about how do I get food on the table". In general, the nonprofit sector's primary function is to care for the most vulnerable, but the overwhelming needs outweigh the resources to do so.

Interestingly, the 75% of the corporate sector responded yes to the survey question. Doug Tom, an architect in San Francisco, is guided by new San Francisco building codes which are strict for essential service facilities such as hospitals, schools, and municipal buildings. Residents are undertaking seismic retrofitting at a heightened pace as the San Francisco braces for the next big earthquake. Currently under study is the stability of San Francisco's latest

skyscrapers. The results could perhaps present future vulnerabilities in both people and property as the buildings are densely populated and on terrain at risk of liquefaction in a quake. As the city expands, how it does so must also be considered in disaster management mitigation.

Google responded yes to Google's consideration of the vulnerable in its products although both admitted: "more can be done." The Facebook response was more insightful noting the measurements may be biased.

"Yes, Facebook is accessible to most people but are we building stronger communities at the lower end - my gut says not well enough. Tech companies suffer from imposing a goal they need to measure but only measuring with their tools. There are narrower interest groups that now have a community, and those are easy to measure, but I am not sure how well it is done outside of the tool within the real community".

Nevertheless, building codes and social media tech products are available to the masses equally and do provide possibilities in design in both real and online communities that will protect the most vulnerable in a disaster. For example, Google's SOS Alerts connects the public with news, maps, and whenever available, updates from local authorities, emergency resources, donation opportunities - organized in one place for access and sharing. Similarly, Facebook Safety Check allows users to connect with friends and loved ones during a crisis, give or find help to people in the affected area, and create or donate to fundraisers to support recovery efforts. Although the corporate sector can point to these areas as evidence of inclusion of the vulnerable in its decision-making strategies, it is not the primary motivation for its existence. Corporations produce revenue first or risk becoming vulnerable as well. In many ways, disaster preparation strategies are a survival tactic for the corporate sector. When disaster strikes, it

impacts the corporation's workforce as well as sales and sometimes, its infrastructure. Ensuring communities are resilient mitigates corporate vulnerabilities as well.

Section 5: Implications and Recommendations

Is there more that can be done, and the follow-up, what more is needed, offered experts the opportunity to provide their recommendations. It appears more appropriate to move this analysis to the recommendations section as the responses inspired a revised Cross-Sector Resiliency model as well the foundation from which to develop a set of key performance indicators.

As each sector examines its resources and value, leveraging and exploiting those resources and value is essential in long-term recovery strategies. The nonprofit sector, in particular, remains a trusted partner, valued by the individual citizens and the collaborative partners as earnest in its commitment to serving those most at-risk during times of disaster and non-disaster periods. Although the sector may lack funding, it makes up for in authenticity. Even so, there are more opportunities for the sector to explore innovations that move the CSP toward its shared goal of a prepared community pre-disaster and resilient, post-disaster.

What more can be done - exploring the Jesuit concept of Magis

There are six values known as the principle of the Jesuits. One of those is magis - meaning "more" (Greger, 2012). Specifically, magis is a challenge to strive for excellence toward the universal good. When asked if "more" can be done, all 15 interviewees responded yes. The

question extends further suggesting respondents offer what still needs fixing or what outcome is to come. Survey responses varied but common themes emerged. Table 4 is a distillation of the top responses areas of improvement for what more needs to be done:

Table 4: Common Themes - What equals More

Common Themes - What equals MORE	# of responses
Organizational Structure	3
Leadership	4
Communication	4
Community Participation	6
Education	3
Funding	5
Exploiting partner value	5
Innovations	3
Equity	13

After analyzing the responses, the themes were further combined and synthesized for clarity to form both the Cross-sector Resiliency model and key performance indicators. The Bay Area disaster management collaborations have yielded mostly favorable outcomes. More emphasis may be placed in the following areas to move closer to the shared goal:

1. **Equity** - the most vulnerable are the hit hardest by disasters. More must be done in all sectors to ensure at-risk populations are prepared and able to recover significantly faster after a disaster.
2. **Community participation** - training citizens to see preparedness and readiness as a priority so citizens may care for themselves and neighbors in a disaster.
3. **Funding** - disaster management at all levels lacks resources to adequately address the overwhelming needs to prepare and recover from catastrophic events.
4. **Innovation** - in the coming years, reliance on predictive analytics could save hundreds of thousands of lives. Additionally, technology platforms that accurately present the need and distribute funding to address will increase resilience. More can be done to innovate across all sectors.
5. **Excellence (Magis)** - Unwavering commitment and inclusion from all sectors (for-profit, nonprofit, government, and citizens) to raise the bar. Excellence involves leading, listening, learning, participating, understanding and maximizing the value of each partner, and sharing information, wealth, and power more.

The structured interviews provided qualitative data of representatives from the nonprofit, for-profit, and government sectors. What is missing emerges from the “more” question. Specifically, where does community participation fit into the collaborative structure and what impact will an active and engaged civil society have in disaster management response,

recovery, mitigation, and preparation? Survey respondents indicate community participation is vital to the disaster management model.

Figure 8 is a model and includes the fourth participant in the disaster collaborative partnership - an active civil society. It also merges concepts presented in the literature review such as the Sector Partnership model presented in Figure 1, page 8 and the Disaster Life Cycle model, Figure 2, on page 22. Disasters are an opportunity to activate individual citizens as well. Individuals acting on their own are a weak force within the CSP. When one voice evolves to include the unified voices of many - a significant player emerges within the partnership revealing a hidden driver in community resilience and response. An active civil society produces a change in the for-profit, nonprofit, and public sector response. For-profits are comprised of individuals often within the impacted community. That workforce helps drive corporate social responsibility policies. The community votes and protests. Government officials not in line with community priorities are unelectable. And it's individuals who support nonprofits by donating time and funds to those organizations that best align with his or her values and commitments. The civil sector shares equal status in the collaborative effort.

Figure 8 - the Cross-Sector Disaster Resiliency model

Source: Author's creation, 2018.

Table 5 represents a set of key performance indicators that comprise a high-impact cross-sector disaster partnership:

Table 5: Cross-Sector Resiliency Key Performance Indicators

Interim Outcome	Definition	Possible Indicators
Amongst Citizens		
Increased media coverage on the topic of disasters	Quantity and quality of coverage generated in print, broadcast or social media.	Number of stories. Data analytics to support the number of views and or posts.
Changed attitudes or belief towards disasters as more frequent, more urgent	Target audiences' feelings about the issue.	Percentage of audience members saying the issue is important to them.
Increased knowledge of disaster preparedness	Recognition that the problem exists and familiarity with preparedness.	Percentage of citizens with knowledge of disasters. Numbers of citizens signing up for emergency alerts. Number of citizens signed up for NERT/CERT training.
Increased political will or support for disaster management	Willingness of private citizens to act in support of disaster management policies.	Percentage of private citizens willing to take action on behalf of disaster management.
Amongst and within the Sectors	Definition	Possible Indicators
Collaborative action amongst partners	Recognition that issue needs a multi-sector solution. Respect and understanding of what each partners' contribution. The shared goal of the importance of addressing the issue.	Number of new organizations signing on as collaborators.

Increased innovation within the each sector	Sectors see disaster management as an area to innovate within their respective sector.	Number of evolutionary or revolutionary innovations within the sector (disaster management as an opportunity).
Increased innovation jointly among the partners	Sectors see disaster management as an area to innovate in collaboration with sectors.	Number of evolutionary or revolutionary innovations in the field of disaster management only achieved with partners
Increased funding and equitable distribution	Sectors improve sustainable sources of revenue beyond initial response support.	Increase in funding for initiatives in recovery, mitigation, and preparedness. Impact investments and program-related investments from for-profits and nonprofits advancing the field of disaster management.
Increased understanding of long-term impact (3-4 years)	Recognition that the immediate issue has a long-term impact on society.	Number or existence of strategies that look toward long-term impact.
Increased consideration of vulnerable (people/property) in policy and action	Recognition and willingness to develop solutions that address vulnerable people and property.	Number of vulnerable populations that are identified and considered in management of immediate needs post-disaster, and mitigate the impact of future disasters. Total investment by corporations, nonprofits and government in support and resources.

New political champions	High-profile individuals, government leaders, corporations, nonprofits, and who adopt disaster management as an issue and publicly advocate for assisting in efforts.	Number of elected officials who prioritize disaster management. Number of nonprofits who incorporate disaster management strategies in operational plans. Number of corporations that add disaster management and mitigation to corporate social responsibility initiatives.
Stronger Coalitions	Mutually beneficial relationships with other organizations or individuals who support or participate in disaster management.	Number, type, and strength of organizational relationships developed with related partners. Number, type, and strength of relationships with unlikely partners.
Increased knowledge within the sector	Sector recognition of disaster life cycle impact on organizations. Iterative learning documented to improve response.	Number of meetings/opportunities for shared learning within the sector.
Increased knowledge among partners	Partners recognition of disaster life cycle impact on individual sectors.	Number of meetings/opportunities for shared learning among partners.
Increased commitment to standardization of the measurements toward a shared goal	Partners development of after-action plans that are shared in each sector and collectively with recommended changes.	Number of partners in each sector that contribute to metrics. Number of partners active in recommendation reports.

Prioritization for separate oversight/decision-making body amongst the sectors	Identification of sector stakeholders and point of contact for communication and decision-making.	The number of organizations that identify a point of contact to serve in a separate oversight/decision-making body in disaster management.
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Section 6: Conclusions

The study collected data from 15 experts with experience as a partner in disaster management. The overall goal was to provide evidence to support the hypothesis that post-disaster resiliency depends on nonprofit, for-profit, and the public sectors agreement to invest in long-term collaborative partnerships to ensure innovative solutions. Indeed this is true and supported by the qualitative data which was coded to interpret the findings.

100% of the interviewees have examples to share in which disaster management has resulted in innovations. True, the innovations range from improving and incorporating lessons learned and communication strategies from previous disasters to more significant advances such as predictive analytics and tech tools which support public safety on a broader scale. And yet, more innovation is needed to manage disasters throughout the life cycle of response, recovery, mitigation, and preparation. Innovations in technology and construction are examples where safety may be improved.

Secondly, although not all operate within the sphere of collaboration, the reasons why appear rooted in the organization's access to resources (funds) and therefore, power. It doesn't

seem to diminish the commitment to the goal, just the rank in priority. Nevertheless, it also appears the collaborations that are active and engaged do produce positive results in the movement toward more sustainable and long-term solutions. Appointing resources specific to manage the partnership demonstrates a commitment and also streamlines communication between partners. All partners report that partnering in disaster emergency management efforts has widened their network and deepened alliances. In the Bay Area, this exists between cities and counties. They share resources and information. This mutual aid underpins why all sectors believe collaboration is positive but not without its challenges as nearly half have experience “collaborative inertia”(Vangen, 2018) a bit of a grind but worth the effort.

Where the sectors do agree is that caring for and preparing vulnerable populations needs to continue to be a priority. Although nonprofits primary role is to consider the vulnerable and do, they also admit it’s not enough as the needs are overwhelming and the resources are limited. For-profits respond with in-kind donations, funds, and in the case of the tech partners interviewed - disaster management tools. It’s still not enough, and more must be done. Encouraging for-profits to consider “impact investments” or program-related investments (PRI’s) in nonprofit organizations may create a sustainable funding source for nonprofit organizations to care for its clients beyond the response phase of the disaster life cycle.

The key perhaps is activating private citizens. Each disaster triggers an outpouring of support from all sectors including citizens. The response phase is where disaster management is at peak performance. Maintaining that level of enthusiasm, altruism, and determination is the challenge as the disaster moves through the cycles of recovery, mitigation, and preparedness.

Disasters offer an opportunity to for each person to act with purpose and meaning. An engaged community shapes government and corporate social responsibility policies and initiatives. And an involved citizenry that knows how to care for its neighbors, assisting those most in need, donating funds, time, and resources is an equal partner in the cross-sector resiliency model.

It's important to acknowledge this survey was limited in both time and scope. 15 expert opinions are too limited to generalize and indeed other states, cities, counties, and countries may respond differently. Nevertheless, the survey was limited to a region that is more accessible and has experienced disaster emergency managers in the field. Input from private citizens would be useful. To date, no extensive marketing survey exists of this population. Data that supports how a more engaged civil society may push toward sustainable solutions in disaster management is potentially a game changer and worth exploring. This area of study is magis and something "more" I can do.

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Appendices

Appendix A: Structured Interview Questions

1. In what ways has responding to disasters contributed to innovations in your organization?
2. Is there a separate body driving the collaborative efforts and how is decision making structured?
3. Has the collaborative process been positive? What challenges/barriers or gaps does your organization still experience w/in this partnership and what might help or overcome/fill them?
4. Were stronger and more diverse networks and alliances formed as part of working with government, nonprofit and corporations?
5. Are the sectors considering the most vulnerable (property and people) in long-term strategies for recovery, mitigation and preparedness?
6. In your opinion, what still needs fixing or an outcome yet to be achieved? Rather what “more” can be done?

Appendix B - Expert Interviews

Nonprofit Sector		
Name	Title	Organization
John Ruiz	Regional Disaster Officer	American Red Cross of the Bay Area and Northern California
Brian Whitlow	Executive Director	SF/CARD - Community Agencies Responding to Disasters
Dorothee Stangle	Director	Napa Valley COAD - Community Organizations Active in Disasters
Mike Brune	Executive Director	Sierra Club
Len Marabella	Executive Director	Catholic Charities of Santa Rosa
Regine Webster	Vice President	Center for Disaster Philanthropy
Ron Pater	Executive Director	Big City Emergency Managers
Public Sector		
Anne Kronenberg	Executive Director	City and County of San Francisco, Department of Emergency Management
Mitch Green	Interim Director	City of Oakland, Office of Emergency Services
Kevin Twohey	Emergency Services Coordinator	Napa County
Captain Erica Arteseros	Program Coordinator	San Francisco Fire Department, Neighborhood Emergency Response Team (NERT)
For-Profit Sector		
Pete Giencke	Project Manager	Google Crisis Response Team
Ryan Galleher	Program Manager	Google.org - Philanthropic Donations
Doug Tom	Principal	TEF Architects
Anonymous	Sustainability and Climatologist	Formerly Facebook, Self-Employed

Author's Bio

Jane Tobin is an independent consultant with over 25 years of experience in event marketing. Her professional background includes managing and producing over 100 events for Bay Area nonprofits including large-scale community events such as Bay to Breakers, the San Francisco Marathon, and Opera in the Park. She also founded a nonprofit animal welfare organization and now serves as a commissioner on the San Francisco Animal Control and Welfare Commission. She is currently working toward earning a master's in Nonprofit Administration from the University of San Francisco.