

**Project Management Framework for the empowerment
of Disaster Susceptible Communities
during the post disaster phase.**

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of Disaster Susceptible Communities
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DEDICATION

This PhD research Thesis is dedicated to all people rebuilding their lives from a natural disaster and to all professional, part-time and volunteer Program/Project Managers. My role as a teacher in Project Management was rewarding in this exercise.

My deepest gratitude goes to my better half for her constant unflagging love and support. I did set time aside for her to share each other common interests in the arts and culture. This sharing helped me to rethink my ideas in community empowerment from different perspectives.

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ABSTRACT

The community is the first responder following a disaster who has the inner strengths to regroup, restore and rebuild for the future. Their assistance is the first step for family, kin, strangers and community members to work together to recover and rebuild their community. It is very important to recognize the community as being empowered (decision makers) of their fate but not to inform, consulted and having others to decide their fate. The role of the project manager is to oversee the project deliverables are completed within a defined budget, scope and cost; therefore, the Project Manager can ensure the empowerment of the community will take place. An empowered community from disasters will be resilient in the long-term because of their collective resources, knowledge and expertise. The Project Manager can assist during the disaster recovery for co-ordination and communication to empower the community for their long-term sustainability. The members within the Community help each other at the local and national level to rebuild the community as shown in disasters that occur at New Orleans, Tacloban City and California. Community collaboration has been successful in India and Asia by government and community working closely together in different types of influence/power relationships from ad hoc to empowerment; but unsuccessful in other parts of the world, such as in New Orleans with Hurricane Katrina.

Two case studies (San Francisco and Christ Church) were selected to investigate the aim of this PhD study. The aim is to develop a Project Management framework on how disaster susceptible communities can be empowered during the post-disaster recovery and reconstruction phases to become resilient and sustainable on the long term. Fourteen individuals (Project Managers and Community Leaders) in San Francisco were interviewed. In the case of Christchurch, eleven individuals (Project Managers and Community Leaders) were interviewed. The final framework and validation study were reviewed by 14 individuals (interviewees and researcher's global contacts in Emergency Mangement, Disaster Management and Project Management).

The following important themes came out of the interviews and refining the framework study:

1. community has "ownership" of disaster recovery projects;
2. community decision-making (empowerment) exists per Project Phase;
3. community decision-making is not final for funding approval;
4. community engagement activities (inform, consult, involve, collaborate and empower) exists for empowered communities;
5. people skills development for Project Managers working with large groups of people, such as the community; needs to be developed;
6. collaborative effort between community, government, NGOs and Project Managers must exist; and
7. collaboration between capital and community-led projects must exist.

As the result a Project Manager Framework was developed between the community, project manager and funders. In addition, strategies and challenges per Project Phases were developed for the Project Manager to make community empowerment a reality leading to a sustainable community. These frameworks were reviewed by external reviewers.

Keywords: Community, Disaster, Empowerment, Survivors, Project Management

Chapter 1 – Introduction

1.1 Background of the study

Natural Disasters can take many different forms, such as hurricanes, tornado, earthquakes, floods or mud slides. The impacted community may, or may not, be able to recover from the disaster in a timely manner. The collaboration of various stakeholders after a disaster takes place when the local capacity of the community is overwhelmed by the disaster (Moe, 2002). These stakeholders range from government organizations, emergency services, hospitals, utilities, and building regulators, to professionals such as engineers, contractors, suppliers, charity, groups, private businesses, and insurers and to various national and international contributors. The largest stakeholder group is the affected community; hence the most important stakeholder to rebuild the community by drawing on its assets (Lightfoot, 2014; Rowlands, 2013; Davidson, 2006; Chandrasekhar, 2012; Araki, 2013). The change in perspective for community to be the ‘most important’ gives the community motivation to become sustainable and resilient with new economic, social and cultural growth. Twigg (2004) cautions our perception of the disaster affected community: it is not a homogeneous group but linked by occupation, economic status, gender, religion and/or recreational interests. The community has skills and energy to offer, even when members have opposing views and priorities, varying power levels and varying ways to express their needs. From a disaster management perspective it is the spatial dimensions that define the communities at risk.

Bolin (2006) noted that local community agencies were forced to help find temporary housing for low-income residents, who may or may not be impacted in the 1989 Loma Prieta’s earthquake. In another example during the Hurricane Katrina in 2011, Bretherton (2011) stated that people responded as families saving other families, then groups of volunteers with cars, trucks and boats rescuing strangers. Similarly during the Hurricane Sandy in 2015, the first weeks after Hurricanes Sandy struck, volunteers and community members became the rescuers, caretakers and the final comforting companions to the dying. They were the first and often remain the sole line of response for weeks (Brennan, 2005). Furthermore, numerous studies from Asia have stressed effective community participation

in all phases of disaster management (Chandrarsekhar, 2012; Crawford, 2013; Magnin, 2007; Olofsson, 2007; Twigg, 2009; World Bank, 2005, 2008). The members within the community help each other at the local and national level to rebuild the community as shown in disasters that occur at New Orleans, Tacloban City and California (Anderson, 2008; Bolin, 2006). Community collaboration has been successful in India and Asia (Ainuddin, 2012; Bornstein, 2013; Chandrarsekhar, 2012) by government and community working closely together in different types of influence/power relationships from ad hoc to empowerment; but unsuccessful in other parts of the world, such as indicated in Davidson's work (Davidson, 2006) and in New Orleans with Hurricane Katrina (Barnshaw, 2006). Communities in New Orleans turned the situation around in which people restored their personal and community lives (Anderson, 2008; Barnshaw, 2006; Bolin, 2006) by working together to rebuild their community. This shows that there existed variation in community participation among different countries (Davidson, 2006).

According to the online Cambridge Dictionary, empowerment is “the process of gaining freedom and power to do what you want or to control what happens to you”. In other words, the community to be given the freedom and power to control what happens to the community during disaster recovery and long-term sustainment. The community to make, or participate, in the decision-making of their recovery and responsible for their actions with the major stakeholders in the disaster recovery project. Involvement in decision-making should take place at all phases of the project from initiation to closure.

1.2. Justification of the study

Rowlands (2013) emphasizes community's control and taking charge of the recovery process is achieved by maximizing community participation in its own recovery and the community managing the recovery process at the neighbourhood level. Araki (2013) observed that some communities might have the ability to promote such processes by themselves, but the majority need a facilitator to assist and empower them. The role of the Project Manager is important to empower the community by co-ordinating appropriate professionals, such as the social workers, and stakeholders to help the community in rebuilding itself during the disaster recovery and reconstruction whilst managing the

expectations of the affected community. However, it has been noted that project management during the aftermath of a disaster is poorly managed in current disaster management projects (Crawford, 2013). Crawford, (2013) is promoting for more innovative and participatory approaches to manage the disaster recovery projects whilst empowering the community.

Community are the first responders during the aftermath of a disaster. Numerous studies about single countries (Ainuddin, 2012; Bornstein, 2013; Chandrasekhar, 2012; Crawford, 2013; Magnin, 2007; Olofsson, 2007;) provide excellent examples on why the community is very important even when power and influence are low and why it is important to empower to disaster affected community. Rowlands (2013) indicates that empowering the community and maximizing the community's participation at the local level will give the community control of the process and enable it to take charge of its rebuilding. This means tapping into the community's resourcefulness; tapping local providers to supply materials and services (such as psychology and social work); and tapping workers to rebuild the community.

The community has inner strengths to regroup, restore and rebuild for the future. Their assistance is the first step for family, kin, strangers and community members to work together to recover and rebuild their community. It is very important to recognize the community as being empowered as decision makers of their fate but not to inform, consulted and having others to decide their fate. The role of the Project Manager is to oversee the project deliverables are completed within a defined budget, scope and cost; therefore the Project Manager can ensure the empowerment of the community will take place. An empowered community from disasters will be sustainable in the long-term because of their collective resources, knowledge and expertise. However, some communities might not have the sufficient resources, knowledge and expertise to successfully recover from a disaster. Therefore, the Project Manager can assist during the disaster recovery to empower the community for their long term sustainability.

No academic, or practical, presence of a framework for Project Manager could be found to work, or establish, empowerment of disaster susceptible communities before, during and after disaster recovery. The role of the Project Manager is co-ordinating resources, costs and time. The Project Manager obtains appropriate professionals, such as the social workers and community workers to work with the community. In NGO community-led projects sponsored by World Bank and International Development Banks, the Project Manager act as a facilitator and the community leaders obtained training in project management to run the projects (Sadiqi, 2017; World Bank 2008). The same situation does not occur for capital projects working with large capital projects. Facilitation skills for large communities in disaster recovery is needed. There is need for the Project Manager to have a framework “to walk the talk” – talk to the community face-to-face to work with them to sustain the community for a long-term. There is a need for the Project Manager to be customer-oriented (PMI, 2017). To achieve the “walk the talk” and customer-oriented a framework needs to be developed for the benefit of the community. The social worker and community worker work can be better utilized.

In summary, the research problem is:

- Community is the First Responder within the first 72 hours.
- Community has inner strengths to regroup, restore and rebuild for the future.
- First step for family, kin, strangers and community members to work together.
- Community recognize as being empowered (decision makers) of their fate; not have others to decide their fate.
- How can the Project Manager can ensure the empowerment of the community will take place?
- How can the Project Manager can assist recovery for co-ordination and communication for their long-term sustainability?

To address the above research problem, the following aim and objectives are formulated.

1.3. Aim and objectives

1.3.1. Aim

This study aims to develop a Project Management framework on how disaster susceptible communities can be empowered during the post-disaster phase to become resilient and sustainable on the long run.

1.3.2. Objectives

1. To review and analyze how communities responds following a disaster.
2. To explore the importance of empowerment of disaster affected community in post disaster phase.
3. To critically explore the key factors that need to be considered for empowerment of disaster prone community for long-term sustainability.
4. To critically analyse the role of the Project Manager in empowerment during the post-disaster phase.
5. To derive community empowerment methods/strategies.
6. To develop and validate a framework for Project Managers to empower disaster affected communities for long-term sustainability.

1.4. Research Methodology

This study used the Research Onion Model (Saunders et al., 2015) which visually display in one diagram (Figure 3-2) the various approaches, methods, and philosophies available to the researcher. The researcher select an appropriate category from each layer (techniques, time horizons, choices, strategies, approaches and philosophies) starting at the outer layer and moving towards the core. Combination of categories within each layer were utilized within the research project.

For this PhD study, the research technique of literature review was carried out to understand what actually happened, how many people were displaced and impacts of the disaster in written case studies. The case studies help to shape the PhD aims and objectives. A set of questions were formulated for Project Managers and Community Leaders (see attached appendices #1 and #2). The set of questions created the basis of semi-structured interviews with the Project Managers involved during the disaster recovery projects will be carried out to investigate the project management practices used on how disaster

susceptible communities can be empowered to become resilient and sustainable on the long term. Project Management and Community Leaders were interviewed based upon a set of interview questions addressing the PhD objectives.

Nineteen invitations were sent out by Deputy Program Manager, Neighborhood Empowerment Network, San Francisco in researcher's behalf on November 9, 2016. Fourteen individuals (Project Managers and Community Leaders) responded to be interviewed over SKYPE, Google Hangout and Phone. In the case of Christ Church, 30 invitations were sent via contacts in Wellington and Christ Church, New Zealand. Only 11 individuals were interviewed over SKPE, Google Hangout and Phone in February and March 2017, and October and November 2017. The validation study was sent by email to some of the interviewees and to the researcher's global contacts in different countries who work in Project Management and/or Disaster Management in June 2018. Fourteen individuals participated in the validation study.

For the data analysis of the qualitative data, content analysis was used. Nvivo software was used to structure and organise the data gathered from the interviews. The questions in the interview list were categorized by the PhD Objectives as part of the analysis. Once categorized by the objectives, key words were noted in the interview notes that formed the nodes within the Nvivo software tool for content analysis. Statistical analysis were not used in this study since no questionnaires were used. Cognitive analysis was not used in this study as well because it was not suitable for this study.

1.5. Scope and Limitations

The focus of this PhD study is on natural disasters, specifically geophysical. The principles of community empowerment is applicable to hydrological and climatological disasters as well. Hydrological and climatological disasters are becoming more frequent as global climate changes. The most devastating type of disaster has been earthquakes (Guha-Sapir, 2015). Earthquakes are sudden and devastating events to the community and its environment. A number of aftershocks will take place. It takes many years to rebuild.

Two disaster recovery case studies, that experienced earthquakes, were selected for comparative analysis to understand how Project Managers and Community Leaders can empower the community. The case studies were selected in San Francisco and Christ Church through assessment process on accessibility of interviewers.

When earthquake disaster occur co-ordination of local, national and global humanitarian organizations take place. The co-ordination is accomplished through a cluster approach created in 2005 and updated in 2010. The humanitarian organizations can be United Nations and non-United Nations organizations. The clusters are broken into main sectors of humanitarian action, for example, water, health and education, see Figure 1-1:

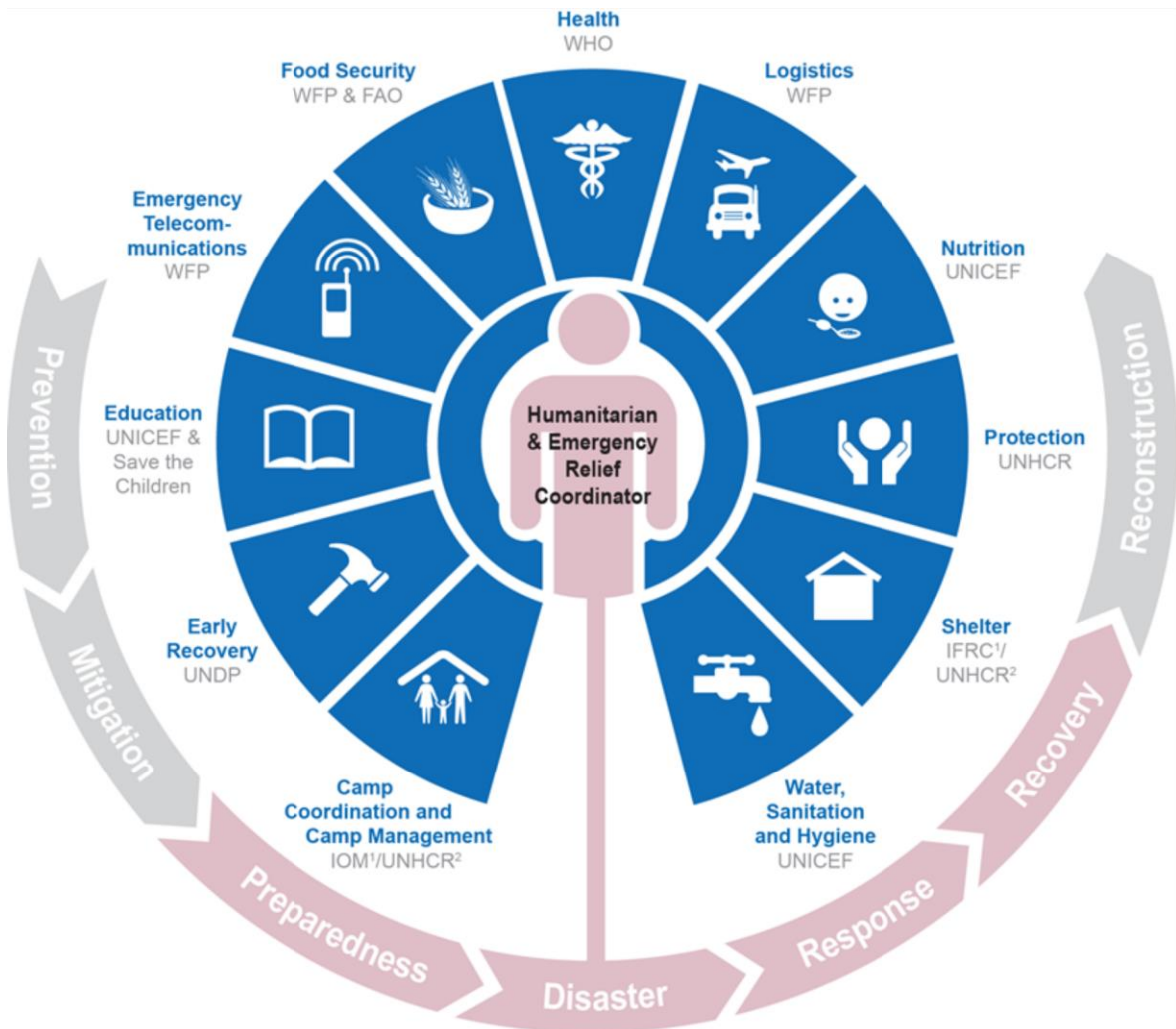


Figure 1-1: OCHA Sectors (Humanitarian Response, 2017)

Each of the sectors covers all disaster management phase. The PhD study focuses on the reconstruction phase. The reconstruction phase focuses on shelter and protection sectors. The interviews focus on Project Managers and Community Leaders discussing the reconstruction phase with no reference to any specific sector mentioned in Figure 1-1.

1.6. Contributions to Knowledge

The contribution to knowledge of this PhD study is a framework for Project Managers on how disaster susceptible communities can be empowered during the recovery phase of a disaster recovery project to become resilient and sustainable on the long run. At this time, NGO project managers are training community members on the use of project management to rebuild their communities on a small scale approach. How to build an environment of learning project management for community leaders in larger disaster recovery projects than NGO can handle becomes an important contribution. The larger disaster recovery projects can encompass several communities within a country. The result is a win-win approach for Project Managers, government and community to build a resilient and sustainable community for the long-term. There has been examples in which the community has been ignored, or rubber stamp, and disaster recovery projects has collapsed. Later on another disaster recovery project is created to do everything right, such as New Orleans.

Another major contribution is re-emphasizing building contingency risk plans for interest groups whose power status is considered to be very low but these interest groups become very powerful when Project Manager or Government directions are strongly disagreed by the public. Ignoring the impact of interest groups who can become powerful lobby group is a low probability but a very high risk to the Project Manager, especially for the location of gas plants and nuclear reactors near to communities. Organization Change Management practices have been emphasized in many project: keeping the stakeholders in constant communication and addressing stakeholders concerns with the project progress and outcomes. The end result is a successful project for various stakeholders , especially for the community.

Another contribution to knowledge is reconsidering who has “ownership” of the Disaster Recovery project: controlling the destiny of the project. The flexible framework is based as treating the community as "owners" of the project. Historically, projects were owned by stakeholders who had financial resources to carry out the project. Currently PMI, owners is defined financially but also customer-oriented. The project is customer-oriented based upon the customers (the disaster community). The community is a major stakeholder based upon its large size. A win-win relationships is established. The government wins by having community taking rein of its destiny to ensure well-established community; and the community wins by being recognized as "owners" of their destiny. Historically, church control the destiny of communities; the government took over through taxes, and now the community needs to organize itself since the government cannot provide services within the first 72 hours of disaster as it restores the infrastructure and supply chains to assist the community in recovery.

1.7. Organization of Thesis

The thesis is organised into seven chapters.

Chapter 1: The Introduction

This chapter provides an overview of the background of the study. It also provides a justification for conducting this study, its aim and objectives,an overview of the research methodology and the contribution to knowledge.

Chapter 2: Literature review

This chapter classifies key research areas related to this study, which is achieved through a comprehensive literature synthesis on the topics of disasters, Project Management and Community Participation and Empowerment.

Chapter 3: Research methodology

This chapter describes the research process and the methodological design used to fulfil the aim and objectives of this study. Detailed justifications of the research philosophy,

approach, methodological choice, strategies, time horizons and data collection and analysis procedures are provided.

Chapter 4: Data Analysis and Interpretation of results

This chapter analyses and presents the findings of the qualitative data collected during two case studies through semi-structured interviews.

Chapter 5: Cross Case Analysis

This chapter provides a detailed discussion of the results from the qualitative data presented in chapter 4. The formation of the set of guidelines and validation is also presented in this chapter.

Chapter 6: Conclusion

This chapter presents the conclusion regarding the aim and objectives of this research study. Furthermore, the contributions of this study to theory and practice are also discussed, followed by the research limitations and suggestions for future research studies.

Chapter 2 – Literature Review

2.1 Introduction

The following Chapter will review the literature on the main objective of this PhD Study: Project Manager and community empowerment. There are studies of community empowerment but very little on the role of the Project Manager with respect to community empowerment. The review will present the current state of academic thinking at this time.

2.2 Disasters

According to the Oxford Dictionary, the word “disaster” first appeared in the late 16th century: from Italian *disastro* ‘ill-starred event’, from *dis-* (expressing negation) + *astro* ‘star’ (from Latin *astrum*). The definition reference the disruption the orderly arrangement of nature (sky and earth). Oxford Dictionary currently defines “disaster” as “A sudden accident or a natural catastrophe that causes great damage or loss of life.” The current definition incorporates a sizeable financial, life and social loss.

The definition of disaster has changed over many years which affects the planning to deal with disasters and people: acts of God, acts of nature, joint effects of nature and society, and social constructions (Costine, 2015). Disaster was perceived as “Acts of Gods” took place during historical time (such as Greek and Maya time) in which disaster were the result of gods punishing human beings for their actions (White, et al., 2001). The rulers had to appease the gods to keep them calm. Then disasters were treated as “Acts of nature” took place during the Age of Enlightenment when the scientific method was being established in Europe. Disasters were caused by extremes of nature rather than by human intervention (Tobin and Montz, 1997). In essence, mother nature was blamed; human beings had to decrease the occurrence and impact of disaster required through the building of dams, rerouting rivers or building levees. This change in perspective of how to deal with disasters took place after the Lisbon earthquake in 1755 (Dynes 1997). Disaster became “Joint effects of nature and society” takes place when a hazard, such as forest fire or flood, impacts the society such as building settlements on flood basins of flooded rivers. It is combination of nature and society that creates a disaster. A flood occurring in a unpopulated area is not referred to as a disaster; but once the flood impacts a populated

area then a disaster arises (Costine, 2015). Disaster was thought as “social construction” based upon emergency management, government and community looking at disaster through the eyes of community members being impacted and viewing the people who experience disaster as the victims of powerful interests who have created the conditions leading or contributing to their hazard vulnerability and finally not searching for blame, such as settlement on flooded basins of rivers and lakes, loose reclaimed soil, and beaches not protected from hurricanes (Costine, 2015). Vulnerability is the result of economic, social, cultural, institutional, political and psychological factors that shape people’s lives and the environment that they live in (Twigg, 2004). These factors produce a range of unsafe conditions such as living in dangerous locations or in poor housing, ill-health, political tensions or a lack of local institutions (DFID, 2004). Over the past 30 years research has found that generally the poor tend to suffer the worst from disasters. In summary, the four theories of disaster in which individual community members can do:

- Acts of God: Do nothing.
- Acts of Nature: Use technology to control nature with, engineering, and money or do nothing.
- Disaster as joint effects of nature and society: Develop society to adjust through careful zoning, awareness of flood plains, seismic areas, wildfire zones, and other land use management.
- Social Constructions: Look at the basic reasons and causes of injustice and human vulnerability to hazards in society. (Costine, 2015)

Currently the word “disaster” is coaxed within social terms. United Nations Office for Disaster Risk Reduction (UNISDR) (2017) defines disaster as “*a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts*”. UNISDR (2017) stress the disaster can be immediate and localized, but often covers a wide geographical area and last over a long period of time. Recovering from a disaster will exceed the capacity of the community using its own resources to recover; therefore requiring external assistance, such other jurisdictions, national or international bodies.

Capacity is defined as “*the combination of all the strengths, attributes and resources available within an organization, community or society to manage and reduce disaster risks and strengthen resilience*” (UNIDSR, 2016). Capacity may include human knowledge and skills, social relationships, leadership and management. If a disaster occurs in which the community, or society, can cope without external assistance then the disaster event is known as an emergency. Emergency is defined as “*hazardous events that do not result in the serious disruption of the functioning of a community or society*” (UNIDSR, 2017).

Disasters can be sudden in time, such as a earthquake or a flash flood, or take place a over a period of time such as cyclical floods or droughts. How the community and people cope to these various disasters is based upon their capacity.

In 1988, the **Centre for Research on the Epidemiology of Disasters (CRED)** launched the Emergency Events Database (EM-DAT). EM-DAT was created with the initial support of the **World Health Organisation (WHO)** and the **Belgian Government**. EM-DAT contains **essential core data** on the occurrence and effects of over **22,000 mass disasters** in the world from **1900 to the present day**. The database is compiled from various sources, including UN agencies, non-governmental organisations, insurance companies, research institutes and press agencies. EMDAT (2016) has classified disasters into various groups (nature and technological). EM-DAT does not reference disaster by their social contexts.

Table #2-1 (types of disasters) lists various types of disasters from natural to technological, such as hurricanes, tornado, earthquakes, floods or mud slides. Natural disasters such as geophysical and extraterrestrial can occur suddenly without exact time of taking place. Monitoring of these disasters takes place but based upon probability. Meteorological, hydrological, climatological and biological disasters occur over a period of time. How community copes with these disasters is determination to control the impact.

Table 2-1: Types of Disaster (Typology) (Emdat, 2016)

Disaster Group	Disaster Subgroup	Examples
Natural	Geophysical	Earthquake, mass movement, and volcanic activity.
	Meteorological	Extreme temperature, fog and storm.
	Hydrological	Flood, landslide and wave action.
	Climatological	Drought, glacial lake outburst, and wildfire.
	Biological	Examples are epidemic, insect infestation and animal accident.
	Extraterrestrial	Examples are impact and space weather.
Technological	Industrial accident	Examples are chemical spill, collapse, explosion, fire, gas leak, poisoning, and radiation.
	Transport accident	Examples are air, road, rail, and water
	Miscellaneous accident	Examples are collapse, explosion, and fire.

Over the last ten years, China, the United States, India, the Philippines and Indonesia are most frequently hit by natural disasters. Asia (49.1%) suffered the most damages from natural disasters in 2015, followed by the Americas (36.7%) and Europe (6.8%) (Guha-Sapir, 2015). Earthquakes and tsunamis killed the most people (9,526) in 2015 compared to the average of 42,381 between 2005. Extreme temperatures claimed 7,418 deaths compared to 57,604 deaths in 2010. The number of deaths from floods (3,449) and storms (1,260) were, both, the lowest since 2005, far below their 2005-2014 annual averages (5,933 and 17,769, respectively).

2.3 Disaster Phases

United Nations Office for Disaster Risk Reduction (UNISDR) (2017) defines the following terms that will be used in this PhD study. As a disaster occurs, humanitarian organizations, emergency professionals, government and community become involved in the immediate response and long-term recovery phases. The four disaster management phases uniformly accepted are:

- Mitigation - Minimizing the effects of disaster.
Examples: building codes and zoning; vulnerability analyses; public education.

- Preparedness - The knowledge and capacities developed by governments, response and recovery organizations, communities and individuals to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters. (UNIDSR, 2017)
- Response – Actions taken directly before, during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected. Disaster response is predominantly focused on immediate and short-term needs and is sometimes called disaster relief. (UNIDSR, 2017)
- Recovery - The restoring or improving of livelihoods and health, as well as economic, physical, social, cultural and environmental assets, systems and activities, of a disaster-affected community or society, aligning with the principles of sustainable development and “build back better”, to avoid or reduce future disaster risk. (UNIDSR, 2017)

Two other terms that have been used in conjunction with recovery is reconstruction and rehabilitation:

- Reconstruction - The medium- and long-term rebuilding and sustainable restoration of resilient critical infrastructures, services, housing, facilities and livelihoods required for the full functioning of a community or a society affected by a disaster, aligning with the principles of sustainable development and “build back better”, to avoid or reduce future disaster risk.
- Rehabilitation – The restoration of basic services and facilities for the functioning of a community or a society affected by a disaster. (UNIDSR, 2017)

A note of caution, the term "post-disaster" is not a term found in UNIDSR terminology database but has been used to refer recovery and rebuild after the hazard event (earthquake) has taken place.

Once the disaster strikes, planned and unplanned disaster recovery actions are implemented and may extend for weeks, months, or even years. Disaster recovery involves more than

simply replacing what once existed but building better. This phase require great amounts of planning, coordination, and funding. The short-term recovery phase (response or relief phase) immediately follows the disaster event. Short-term recovery activities stabilizes the lives of the affected people to prepare them toward rebuilding their lives. The activities include the provision of temporary housing, distribution of emergency food and water, restoration of critical infrastructure, and clearance (but not removal or disposal) of debris (Coppola, 2006).

In long-term recovery after, or during the relief phase, the community begins to reconstruct and rehabilitate. For major disasters, recovery can lasts for years. In many cases, the community will need to be reinvented, accommodating the new information about the disaster while maintaining as much of its original culture and predisaster composure as possible (Coppola, 2006). The greatest opportunities for projects addressing vulnerability reduction for vulnerable groups. This phase requires considerable funding than the other disaster phases. Long-term recovery require a significant amount of coordination and planning if they are to be successful.

Each disaster phase is not in chronological order of time but rebuilding takes place when response and recovery does occur at the same time after the initial disaster incident. Contreras (2016) reviewed the fuzzy boundaries between the disaster phases. Contreras (2014) map through an UNDP article (2008) how disaster phases were defined by different experts in the following table:

Table 2-2: Earthquake - Post Disaster Phases (Contreras, 2016)

Post-Disaster Recovery Phases				Authors
Emergency	Restoration	Replacement Reconstruction	Developmental Reconstruction	Kates and Pijawka (1977)
Emergency	Restoration	Reconstruction I	Reconstruction II	Hogg (1980)
Heroic	Honeymoon (Community Cohesion) Disillusionment (Trigger Events)	Reconstruction (A New Beginning)		Samhsa (2000)
Principles and Planning		Implementation	Ensuring Sustainability	Shaw et al (2004)
Phase I	Phase II	Phase III	Phase IV	Karanti & Hayashi (2004)
Emergency	Restoration	Reconstruction Replacement	Reconstruction Development	Vale & Campanella (2005)
Relief	Early Recovery	Recovery	Development	UNDP (2208)
Emergency Response	Recovery	Revitalization	Pre-Disaster Damage Reduction Mitigation Period	Mural (2008)
Emergency Relief	Early Recovery	Reconstruction	On-Going Development	Brown et al. (2010)
Emergency Search and Rescue	Relief	Full-Fledged Recovery		Honjo (2011)

As noted, the definition of phases vary depending on the expert and supporting documentation. Contreras (2016) developed a list of 79 indicators such as physical, social, economic, institutional, cultural and ecological indicators. Contreras plans to include cultural indicators. The indicators are cross-referenced to the UNDP disaster phases. The indicators are status indicators of what has been completed in each phase. Some recovery indicators are completed but relief indicators are still outstanding. Therefore the four phases can occur at the same time. The results demonstrate defining recovery phases on measuring achievements through indicators rather than defining recovery phases in terms of elapsed time after a disaster. Therefore the recovery process must not only involve the reconstruction of buildings and the restoration of infrastructure, but also address the interactions between diverse groups and institutions with the aim of rebuilding people's lives and livelihoods, as well as restoring cultural assets and ecological conditions (Contreras, 2014).

Each phase is a set of activities for the community to prepare and to response and to recover after a disaster. The focus of this PhD study is on the Post-Disaster Recovery Phase.

2.4 Community as a First Responder

Community are the first responders after a disaster. Numerous studies about single countries (Ainuddin, 2012; Bornstein, 2013; Chandrasekhar, 2012; Crawford, 2013; Magnin, 2007; Olofsson, 2007;) provide excellent examples on why the community is very important even when power and influence are low and why it is important to empower to disaster affected community. Rowlands (2013) indicates that empowering the community and maximizing the community's participation at the local level will give the community control of the process and enable it to take charge of its rebuilding. This means tapping into the community's resourcefulness; tapping local providers to supply materials and services (such as psychology and social work); and tapping workers to rebuild the community.

The community has the inner strengths to regroup, restore and rebuild for the future. Their assistance is the first step for family, kin, strangers and community members to work

together to recover and rebuild their community. It is very important to recognize the community as being empowered (decision makers) of their fate but not to inform, consulted and having others to decide their fate. The role of the project manager is to oversee the project deliverables are completed within a defined budget, scope and cost (PMI, 2017); therefore the Project Manager can ensure the empowerment of the community will take place. An empowered community from disasters will be sustainable in the long-term because of their collective resources, knowledge and expertise. However, some communities might not have the sufficient resources, knowledge and expertise to successfully recover from a disaster. Therefore, the Project Manager can assist during the disaster recovery to empower the community for their long term sustainability.

2.5 Cultural Mindset for Recovery

How people recovered is influenced by their cultural mindset, even at a national level. "Moving to the good life" is reflective of the American culture and heritage to "move out west" to make your riches. This motto was built into the New Orleans disaster recovery plan (Bosman, 2007). Hurricane Katrina flooded 80% of the city of New Orleans, destroying residential homes, buildings, businesses and city infrastructure. The recovery plan recommended:

- (1) poor Blacks be moved to a "better place";
- (2) speculators can purchase property for wealthier individuals; and
- (3) planners started to develop proposals for a "new" city. (Bosman, 2007).

In contrast, Roombeek, Netherlands used the "right to return" cultural mindset after a major disaster (Bosman, 2007). Roombeek is a residential neighbourhood in the Dutch city of Enschede. On 13 May 2000, a fireworks storage depot blew up. Twenty-three residents were killed, hundreds were injured, well over 1500 people were displaced because their homes were demolished, and more than 200 firms were forced to relocate their enterprise. Before the fire, Roombeek neighborhood had many abandoned or partially used factories among residential homes.

The Dutch national leaders were committed to rebuilding Roombeek into a safe and secure manner so all former residents could return to their homes. The rapid recovery of Enchede is reminiscent of the recovery European cities experienced after World War II, with the aid of the Marshall Plan.

The community was consulted on the appropriate new home design for them to live and shared community grounds. In the first phase, much of the housing for low-income people was rebuilt, allowing those most in need to move home again. In a next phase, people who wished to build their own homes began to buy plots of land, work with architects and build their houses. The development of condominiums and cultural facilities followed. Six years after the disaster, a massive amount of rebuilding had been accomplished.

The recovery developed a leadership style that combined listening to people and consensus-building with an eye for quality and room for new solutions. The city was awarded the prestigious State Prize for Inspirational Building Clients in 2007.

With regard to patterns of participation and nonparticipation, a relatively large proportion of the citizens most directly concerned did participate. Almost half of the citizens in the inner part of the city, which was hit most severely by the explosion, actively contributed to the participation process (Denters, 2010).

2.6 Cultural Values for Recovery

Participants emphasised the importance of cultural practices and values in assisting recovery and adaptation. For example, core Ngāi Tahu/Māori values of manaakitanga (caring and hospitality, e.g. on marae) and kotahitanga (the iwi acting in one accord to support the people of Christchurch, regardless of race, culture or ethnic identification) (Thornley, 2013). Many participants reported that their communities were very connected before the earthquakes, which helped them to adapt afterwards. Especially important were informal connections, e.g. between family, friends, and neighbours. Pre-existing communication networks, e.g. digital communication via Facebook and texting, were also important, according to participants.

Lyttelton and Inner City East, in New Zealand, had a history of community action and collective problem-solving, and a 'culture of volunteerism'. Residents participated in community activities, neighbourhood events (e.g. street parties), residents' associations, and volunteer groups. After the earthquake, they continued to be involved, and wanted to 'have a say' about their future, taking part in official consultations like the council's Share An Idea process. Participants highlighted the key role of proactive community-led initiatives that had a 'just do it' attitude, and community leaders reported high energy and support for them.

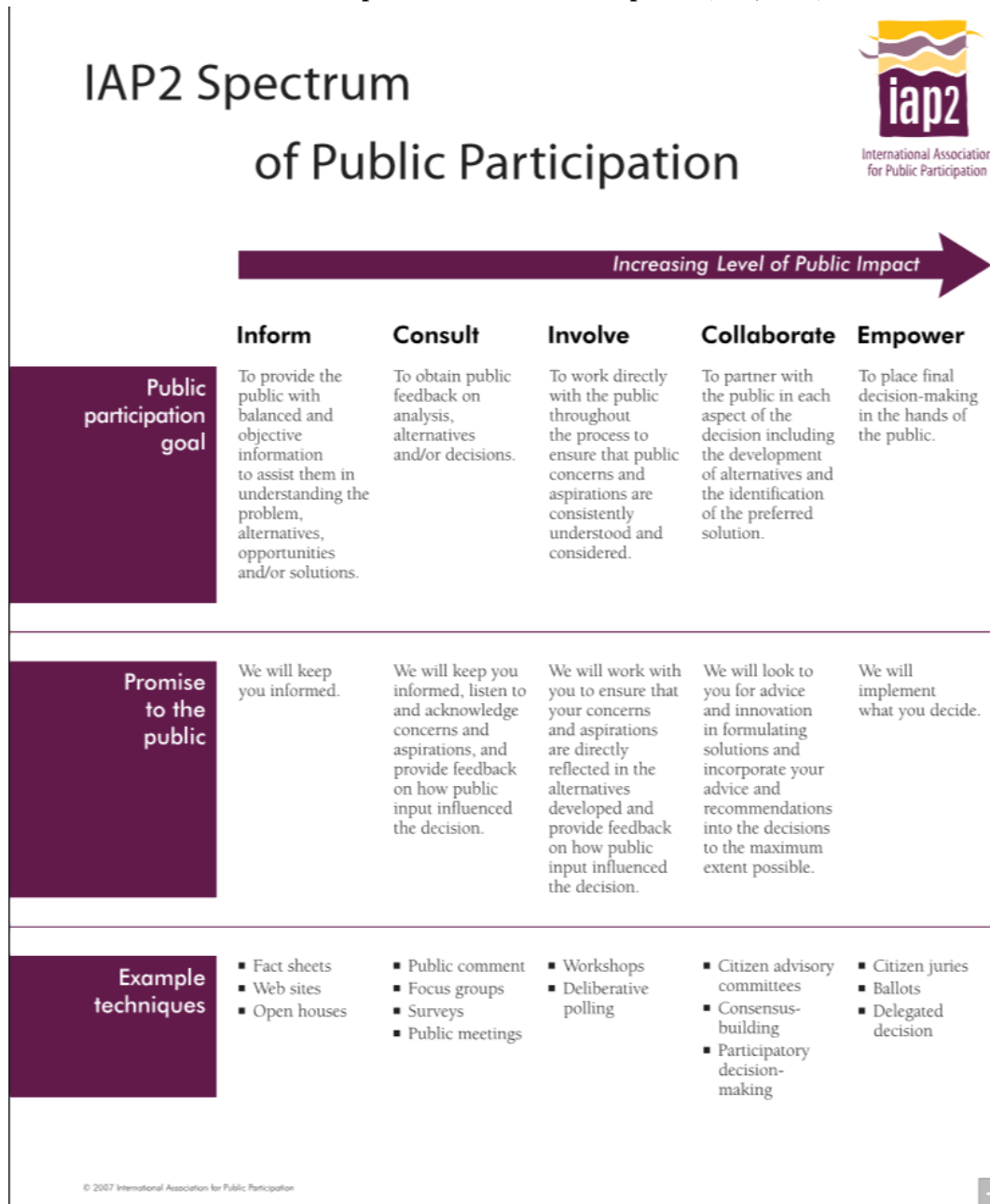
Many felt that spontaneous public art and creativity brought 'colour and life' and positivity, and symbolised resilience and regeneration. Art was nourishing and could lift people's spirits or challenge them to think differently.

2.7 Community Participation in Disaster Recovery

Community participation derives from the modern western theory of republican democracy. Its origin that can be traced back to ancient Greek city-states era and it mainly consists of theories such as direct democracy and participatory democracy (Jing, 2012). It is the features of western civil society between state authority and individual freedom that determines the inevitable emergence of public participation. Meaningful community participation in decision-making is a cornerstone of social stability and peace in civil democratic societies (UNDP, 2012). Community participation in decision-making about the community direction within disaster recovery is part and parcel of a democratic society.

Davidson's study (2006) proved that there existed variation in community participation among different countries as stakeholders in the disaster recovery project. Some of the communities were informed, consulted but were not empowered; in essence have no power to affect the deliverables of the project. The International Association of Public Participation (2006) developed the following guidelines on how the community can participate and be empowered.

Table 2-3: Spectrum of Public Participation (IPA, 2006)



As noted in Table #2-3, empowerment enables final decision-making in the community. The empowered community share responsibility in decision making and accountability by implementing their decisions. Following through on the decision indicates "ownership" and "responsibility" of their decisions (Victoria State, 2013). Legislative and policy frameworks within the state/country establish the level of power communities can decide: some were limited and some wide ranging within a defined time period. In the case of

collaboration, there is delegated decision-making, but the government retains the overall decision-making power.

The different types of public participation (inform to empower) is effective in different contexts. Slotterback (2013) gives a note of caution: that effective management of power differences between stakeholders and community can help the community trust the process; some powerful stakeholders might be reluctant in the process if they feel their power is diminished. Therefore the use different types of public participation is impacted by power differences but collaboration to create a win-win is most important.

2.8 Community Empowerment in Disaster Recovery

The premise of Table #2-3 above is those affected by a decision must be involved in the decision-making process (IAP, 2006). Work in San Francisco, based on the “Whole Community Approach” from the Federal Emergency Management Agency (2011), has enable communities members to be trained in leadership project management (San Francisco, 2016). The community will act immediately in an effective and efficient manner when trained and recognized (ADAP, 2004). Their performance goes beyond traditional disaster management practices of preparedness and response to mitigation and recovery (San Francisco, 2016) when masterly dealing with stressors (disasters). Community empowerment has great benefits for Emergency Management, government agencies, private and non-profit sector organizations when their budgets are impacted by economic constraints (FEMA, 2011).

Olshansky (2006) noted that in order for community empowerment to be successful, community organizations should be in place and have a working relationship with the government. It is very difficult to establish community empowerment immediately during response and recovery disaster phase. One strategy to establish empowerment is to find a patron (Vallance, 2012). The patron could be a church group or existing city civil groups with philanthropic initiatives. It helps if the patron has a high public profile, good relationships with the media and other networks, and is not controversial or overtly political.

Community empowerment in official decision making is the process of building relationships between community members and authorities as partners, to plan and work towards change in a community (Thornley, 2013). Participants in the more engaged communities said that their communities wanted to initiate local action and be involved in local and city-wide recovery, including planning for the future. They wanted officials to listen more to community perspectives, to explain the rationale behind decisions made, and to support the community to meet local needs. The officials include the Project Manager of the Disaster Recovery Projects.

2.9 Role of the Project Manager for Disaster Recovery

Project Manager is “the individual who provides leadership to the project team to accomplish the project objective, which can be a strategic position to be attained, purpose to be achieved, a product to be produced, or a service to be performed” (PMI, 2013). How the Project Manager accomplishes the defined project objective(s) is through the discipline of Project Management. Disaster recovery from the Project Manager’s perspective is the coordination of the reconstruction and restoration of the psycho-social, economic, built and natural environments of the community (Canterbury, 2012) through project management. Project management is “the application of knowledge, skills, tools and techniques to accomplish project requirements” (PMI, 2013). The Project Managers for disaster recovery projects can be from Emergency Management, NGOs, Consulting Professional Project Manager or Government Project Manager. The Project Manager is also aware that government, emergency management and disaster management professionals, such as United Nations Development Programme (UNDP), Federal Emergency Management Agency (FEMA), Office for the Coordination of Humanitarian Affairs (OCHA) and the World Bank, are promoting disaster risk reduction and community engagement techniques to ultimately reduce disaster recovery costs, reduce the loss of lives and build a resilient community. Their responsibilities can include preparing the project plan; emergency operational plans to reduce human loss; logistics support; coordination with public and private organizations in pre and post disaster phases; disaster awareness promotion; and community engagement.

2.10 Project Manager and Historical Context of Community

The Project Manager needs to apply a holistic review of the community: its history, political environment, economic environment, built environment, and infrastructure environment. Edginton (2010) also stressed that characteristics of the disasters, efforts made by governments and non-state organizations, and local community attitudes and relationships with government forms a framework for understanding the dynamics of the post-disaster reconstruction planning for the community. Understanding the context of the community gives the Project/Program Manager an understanding of the past, present and future dynamics they are dealing with in the community and its stakeholders.

Disaster recovery is the coordination of the reconstruction and restoration of the psycho-social, economic, built and natural environments of the community (Canterbury, 2012) through project management. The projects vary in size and complexity throughout the world. The project success depends on the community prior experience of similar disasters in the past being small and big.

2.11 Relationship Approach in Project Management

Research in "Relationship approach to project management" seeks to understand the social networks of actors and their behaviours in construction projects (Pryke, 2017). The building of trust between the actors (such as, vendors, team leads, Project Managers, architects, electricians) is essential for the success of construction projects. Communities being negatively impacted by the construction projects may organize themselves into protests (Pryke, 2017). Construction Project Managers need to apply effective community engagement strategies and adopt trust-building strategies early in the project with the community leaders (Teo, 2017). Establishing early contacts means the fears and concerns of the community are being listened and addressed as soon as possible.

Pryke (2017) and Teo (2017) focused on construction projects. Their ideas are applicable to disaster recovery projects: establish contacts with the community leaders as soon as possible. The project manager has both technical and soft leadership skills. The soft leadership skills are used to adapt Project Management methodologies to the socio-cultural

locales undergoing disaster recovery (Lin, 2017). According to Lin (2017), the community is main stakeholder. This is the starting point for effective stakeholder management and adopting project management methodologies to the specific socio-cultural context of the community.

The next step in relationship approach is the formation of a project-based alliance between different key stakeholders, including the Project Managers. A successful alliance was the formation of Stronger Christchurch Infrastructure Rebuild Team (SCIRT) after the Christ Church earthquake in 2010. The alliance overseen the vast programme of projects in disaster recovery (Walker, 2017). The unique partnership involved collaboration among key stakeholders (such as community, vendors, government and funders). The result was effective communication, information sharing, trust and a team work among all the partners.

2.12 Role of Project Management in Disaster Recovery

The disaster recovery goal “is for survivors to regain stability in their lives, livelihoods, and housing” (Maly and Shiozaki 2012, p. 56), whereas the goal of reconstruction is to “build a safe city,” “pursue an ideal city,” and “[recover] the functions of a disaster-stricken area and [restore] normal lives to disaster victims” (Murosaki 2007, p. 330). Project Management orientation towards social science and strategic orientation from engineering needs to be accomplished by the Project Managers running the disaster recovery projects in a very uncertain and changing environment that the life’s of loved ones, and parents, are impacted. The project team will consist of wide range of experts from engineering, construction, psychology, social work and community development to work together with various stakeholders to rebuild a resilient and sustainable community for future generations as future disasters come and go. The Project Management practices changes its style to work with survivors who make a community through:

- project strategic management approaches,
- flexibility in project/program management,
- control complexity and uncertainty,
- lessons learned from critical success factors from other disaster recovery projects,

- disaster response methodology,
- holistic review of community,
- training of NGOs by Project Managers with Disaster Management experience, and
- understanding how government and emergency management policies can vary between cities and countries impacting recovery. (PMI, 2017)

Flexibility and agility was stressed rather the rigidness of Project Management one assumes. Disaster recovery project becomes a “living recovery plan” that adapts and changes to deal with uncertainties faced by Project Managers, stakeholders and the community (survivors in this respect). Project Management has changed to meet requests from business organizations to make them more agile and provide opportunities for future growth while safeguarding the community needs. Disaster recovery projects requires a formality but similar flexibility used in Information Technology and Corporate Business Projects to help community rebuild their lives and to help government rebuild in phases.

Project Management is taught as a life skill at various locations such as community colleges, universities, and community centers. The life skills is to teach the individual how to run a project (PMI Education Foundation, Personal Communication). The project can a family gathering, concert, building a community center, or building an expressway. The skills can be used to participate in a Project Steering Committee/Project Control Board or run a project. To run a large project, such as community center or building an expressway, the individual is doing the work professionally. These individuals may decided to receive certification in Project Management to formally demonstrate their understanding of applying Project Management principles. To run a small project, such as family concert or community fair can be runned by community members as volunteers. All of the above projects can be found during disaster recovery as will demonstrated in the case studies selected.

2.13 Project Managers and Community-Driven Projects

In community-based projects project manager is in charge for a few communities, and the project manager overall leads the project. They are generally called as community

facilitators. The community based emergency planning principle mentions that the planning should be led by community itself and outsiders are facilitators only. The community is overall responsible for project direction at a conceptual level. However, stringent timeline and limited capacity at community may make the Project Manager responsible for the project direction. Community level projects in developing countries are primarily led by NGOs. Most of these projects are designed using community participation (June 2017, Asian Disaster Center, personal communication).

Yalegama (2016) study the critical success factors for a community-driven development project within Sri Lanka (Gemidiriya) from a community perspective. Community-driven projects are historically poverty reduction projects run by community involvement and funded by World Bank and International Development Banks. His study indicated the community members were involved in the planning and outcome of the project but they also had a few years of project management perspective. His findings are similar to the works in San Francisco on community leaders working on stressors. Yalegman (2016) recommends for community projects:

- 1) Provide community support in planning and implementation
- 2) Enable community funding
- 3) Enable community members to apply project management principles
- 4) Enable community engagement and empowerment principles throughout the project and into the future.

Yalegam (2016), World Bank (2008), Asian Disaster Center (Personal Communication, 2017) and Suvedi (Personal Communication - Nepal, 2017) focus is from the community perspective, the focus of this PhD study is how to give guidelines to Project Managers assigned by funding bodies, such as government and international banks to co-ordinate disaster recovery projects running into very sum of money and many years. Project Managers are professionals who seek to develop their reputation and careers working on public sector projects in a successful manner for the funding owners and community owners currently and into the future.

It takes time to find out the dynamics of a community and during an emergency using community leaders should be a preferred choice. Community engagement is often seen as lengthening a process however there are many examples whereby early and meaningful engagement gets a better and quicker response especially if projects end up not having community buy in and there are objections or even protests (New Zealand, personal communication). The government led projects may and may not have community participation as a key component of the project. One of the key components is engagement of Civil society organizations, and groups in government programmes is one of the solutions. This is demonstrated through the case studies of San Francisco and Christ Church which have extensive civic engagement.

Project Manager can re-use existing community network established depending on the extent of the emergency and who has experience. Many a times network/group are established under project and when project finishes, it tapers off. This is primarily in case of NGO project. Government in many countries are establishing a network, or working groups, on disaster management at community level which is through legislation. These network, and working groups, can be reused. Such as for Red Cross, they are on the ground for long time so the community groups established by them are likely to be reused.

2.14 Project Success within Community Projects

Project success of disaster recovery projects is not just building houses, roads, sewers, and water with a defined time, budget and quality. Project success is rebuilding a living community to be sustainable. Sadiqi (2017) presents a graphic overview (Figure 2-1) of the importance community involvement in various post-disaster projects:

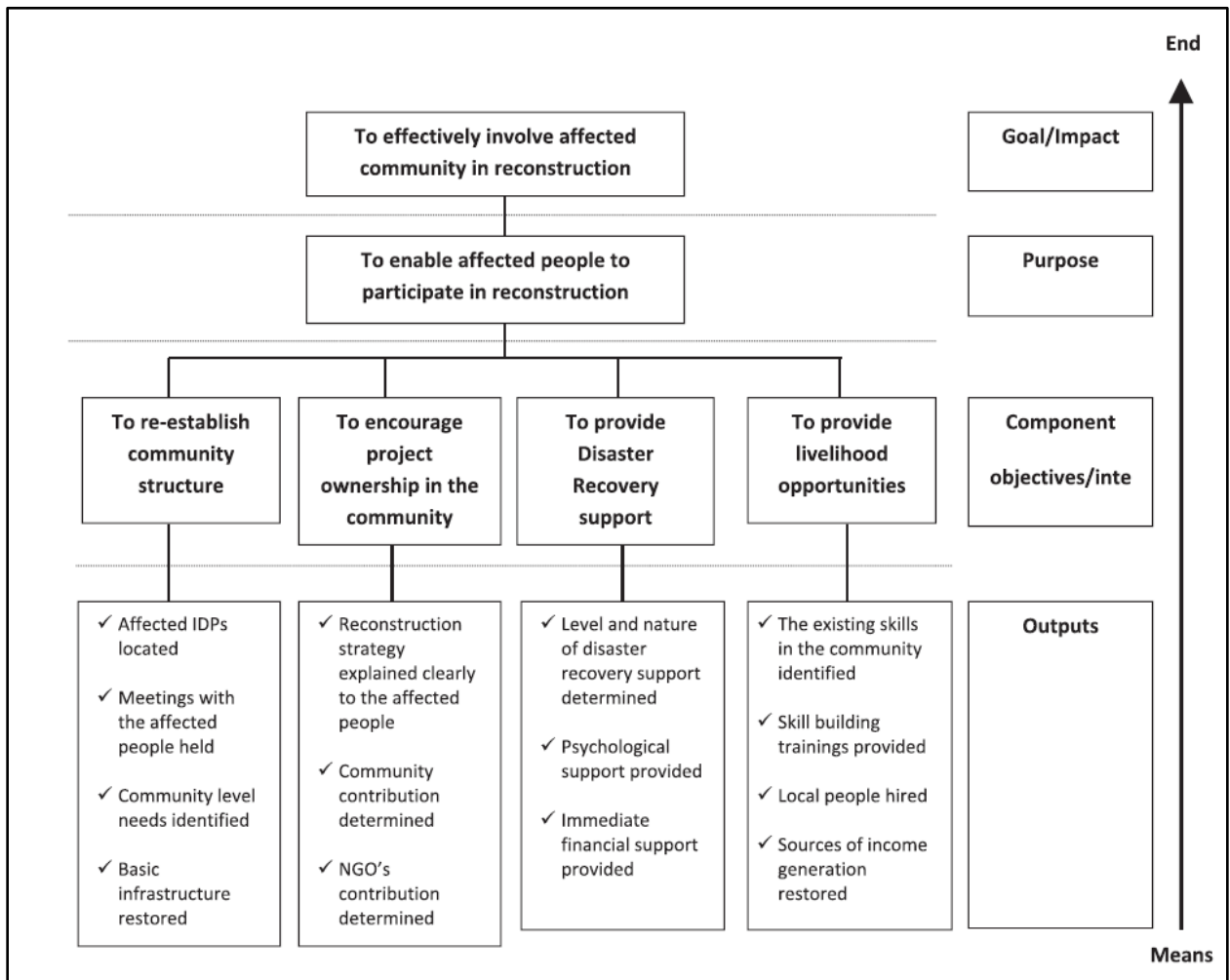


Figure 2-1: Importance of Community Involvement (Sadiqi, 2017)

Sadiqi stressed that project ownership and re-establish community structure from the community are strong determining success factors in any reconstruction project. Re-establish community structure is accomplished by community participation requirements for the discovery recovery project, and community involvement in restoring basic infrastructure needs (roads and bridges). Encouragement of project ownership means ownership and responsibility of project outcomes unto community reconstruction. Religious leaders can be used to call for people's unity and companionship to help each other in the task of rebuilding. Importance of community empowerment is based on government officials making citizens feel they are involved in decision-making of disaster recovery (Kweit, 2004).

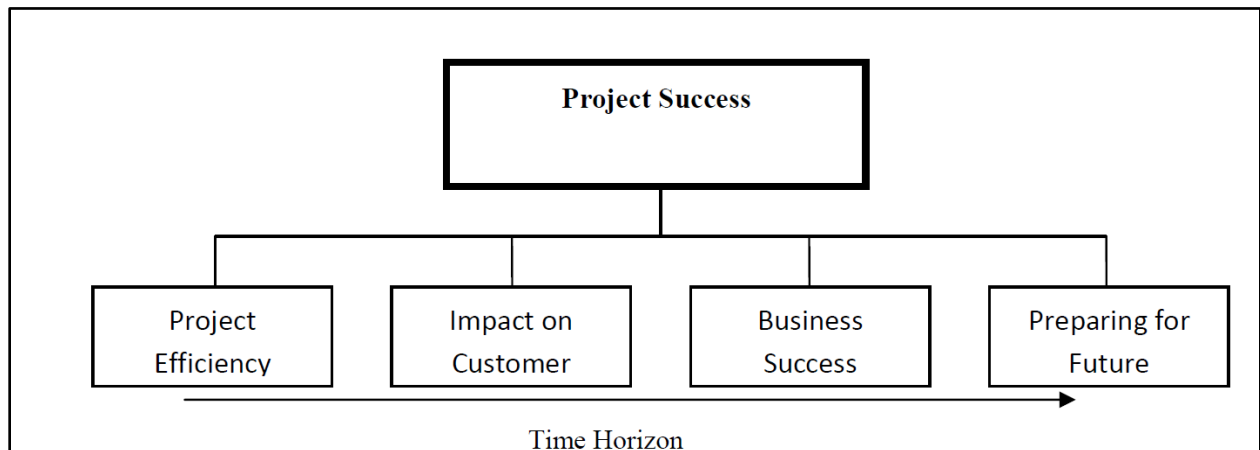


Figure 2-2: Dimension of Project Success (Shenhar, 1997)

According to Shenhar (1997) project success is based on:

- a) Project Efficiency – measure efficiency and effectiveness of project success
- b) Impact on Customer – meeting the needs and requirements of the customer
- c) Business success – measures increase in profits or improvement of services
- d) Preparing for the future – future opportunities

Preparing for the future and business success are very important for the community for the long-term. Community leaders need to be involved in the project to ensure the project success meets long-term needs of the community. Shenhar's project success factors should be included in the Project Charter of Disaster Recovery Projects when working with empowered communities.

2.15 Project Ownership

Project ownership in government projects differ from private sector projects. Different stakeholders are responsible for project cost and project benefits, respectively (Olsson, 2008). The Ultimate owner in government projects is the citizens who benefits from the project. The tax-payers are the legitimate stakeholders in how public money is spent. The ultimate decision maker in the project is the government who controls the revenue and costs of the project. The government defines the purpose of the project in terms of policies and makes political decisions about priority (Olsson, 2010).

Within community development projects, community members (beneficiaries of the project) influence the direction and execution of the projects rather than merely receive a share of project benefits (Achineo, 2018). Community project ownership entails the community participates fully, accepts and owns the outcome of a project at the end and beyond the project period (Achineo, 2018).

Project ownership and a sense of responsibility are strong determining success factors in any reconstruction project. “Projects that have people's contribution last longer because people don't take the aid for granted and they take great care of the houses even long after the houses have been handed over them” (Sadiqi, 2017).

2.16 Methods and Strategies for Empowerment

Davidson's article (2006) analyzed community participation in four post-disaster housing reconstruction projects (Colombia, El Salvador, and two in Turkey) to understand how the community participated in the projects. Despite good intentions, the level of community participation was informed. The ladder of community participation shown in Figure #2-3 is adapted from Amstein (1969) and Choguill (1996) work. The steps of the ladder outline strategies for community participation. Top of the ladder is empowerment, based upon decision-making roles, and collaborate step is based on community has control over the project. On the bottom of ladder, the community may be consulted about their needs to merely being informed what will take place in the project. The recommendation of the study was

- a) to have the community participate in the procurement process of the project: deciding the work to be completed and prioritizing the work to be completed.
- b) community participation should take place before the disaster rather than during post-disaster to make sound decisions in a non-chaotic environment.

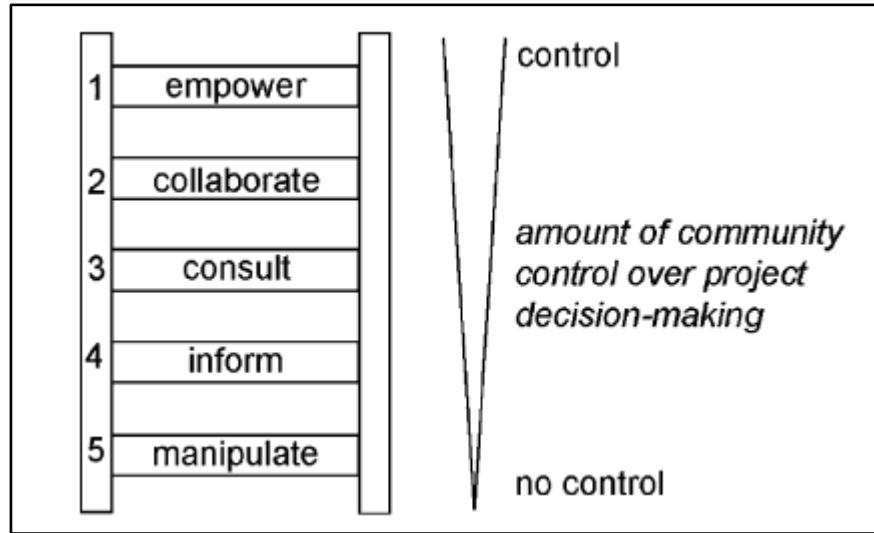


Figure 2-3: Ladder of community participation (Davidson, 2006)

Amstein's work (1969) proposed how citizen participation/community participation occurred in a developed country such as United States in the areas of urban renewal, anti-poverty and building model cities. The steps of citizen participation range over eight steps from Manipulation (Step 8) to Citizen Control (Step 1) as shown in Figure 2-4.

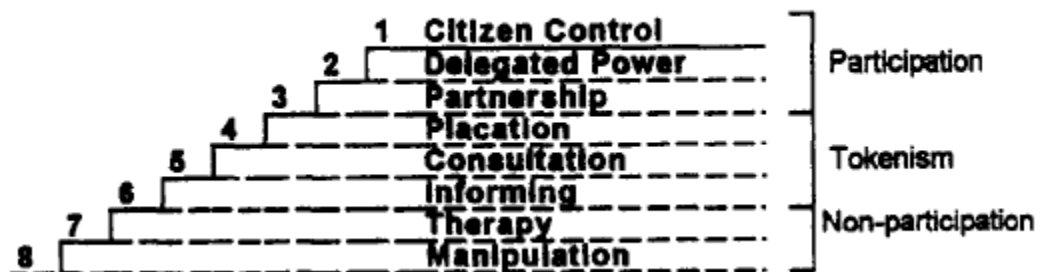


Figure 2-4: Amstein Ladder of Citizen Participation (Amstein, 1969)

Choguill's work (1996) modified Amstein's model of citizen participation to low-income communities in under-developed countries. The low-income communities did not want power alone to influence decisions of how the community was to shaped but also contribute their labour, time and money to build up their communities. Choguill's model is based on eight steps of community participation, similar to Amstein, with an emphasis on

partnership. Step 1 to 3 fall under Support, Step 4 to 6 fall under Manipulation, Step 7 fall Rejection and Step 8 fall under Neglect.

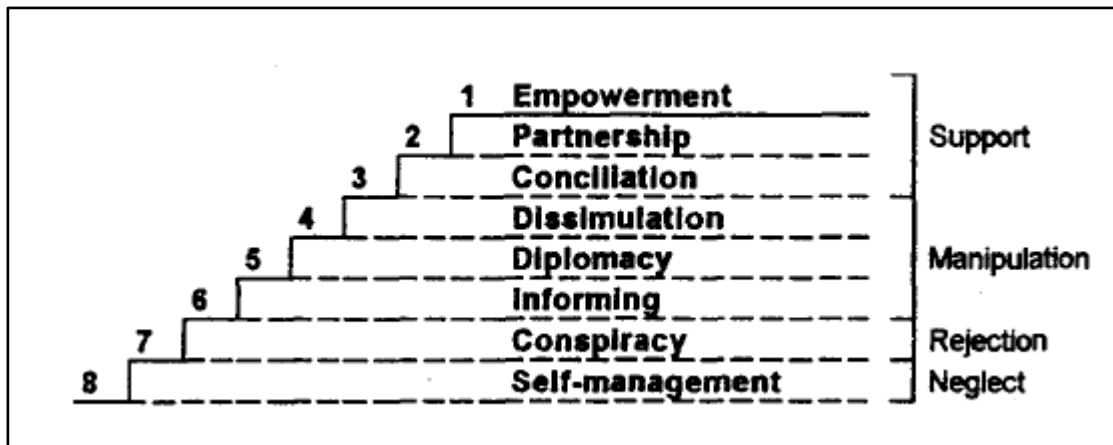


Figure 2-5: A ladder of community participation for underdeveloped countries. (Choguill, 1996)

The Support steps consists of empowerment, partnership and conciliation. Empowerment involves the community leaders being involved in formal-decision making bodies. Partnership involves a sharing of planning and decision-making through policy boards and working committees. Conciliation involves community members involved in advisory boards for their input. The Manipulation steps range from dissimulation (rubber-stamping), diplomacy to informing. The Neglect step is self-management; the community does the work through NGOs and themselves without government participation. Choguill's model presents methods and strategies for community empowerment that Davidson's work further explored through his cross-analysis study.

In 1990, the International Association of Public Participation Practitioners was formed to respond to professionals interested in standards and practices of public participation. The professionals are individuals, governments, institutions and other bodies that affect public interest.

The framework (Table 2-3) lays out the tools, techniques, methods and strategies of community participation from ad hoc to empowerment. This framework was used as a framework on community participation and empowerment.

Similarities from Inform to Empower are also found in Davidson's work and Choguill's work. The association provides explicit guidelines to professionals and even to those involved in Disaster Management. The association is global but a lot of work has been completed in Australia and New Zealand within Disaster Management. According to IAP2 Framework (Table 2-3) the methods/strategies of community participation are:

- 1) Inform
 - a. Keep community informed through Websites, Fact Sheets and Open Houses
- 2) Consult
 - b. Obtain community input on analysis, alternatives and/or decision through focus groups, surveys, and public meetings
- 3) Involve
 - c. Community concerns and aspirations are consistently understood and considered through workshops
- 4) Collaborate
 - d. Seek advice and incorporate the advice and recommendations into the solution through advisory committees
- 5) Empower
 - e. Place final decision-making in the hands of the community through citizen juries, ballots and delegated decisions.

IAP2 framework, with many case studies, can be found in the Journal of Public Deliberation. The Journal of Public Deliberation is an on-line journal of scholarship on deliberative democracy which provides many examples of community participation. The Journal is supported by the Deliberative Democracy Consortium and the International Association for Public Participation.

Community empowerment strategies used by the government and community were based on the following engagement steps of IAP2 within Christ Church:

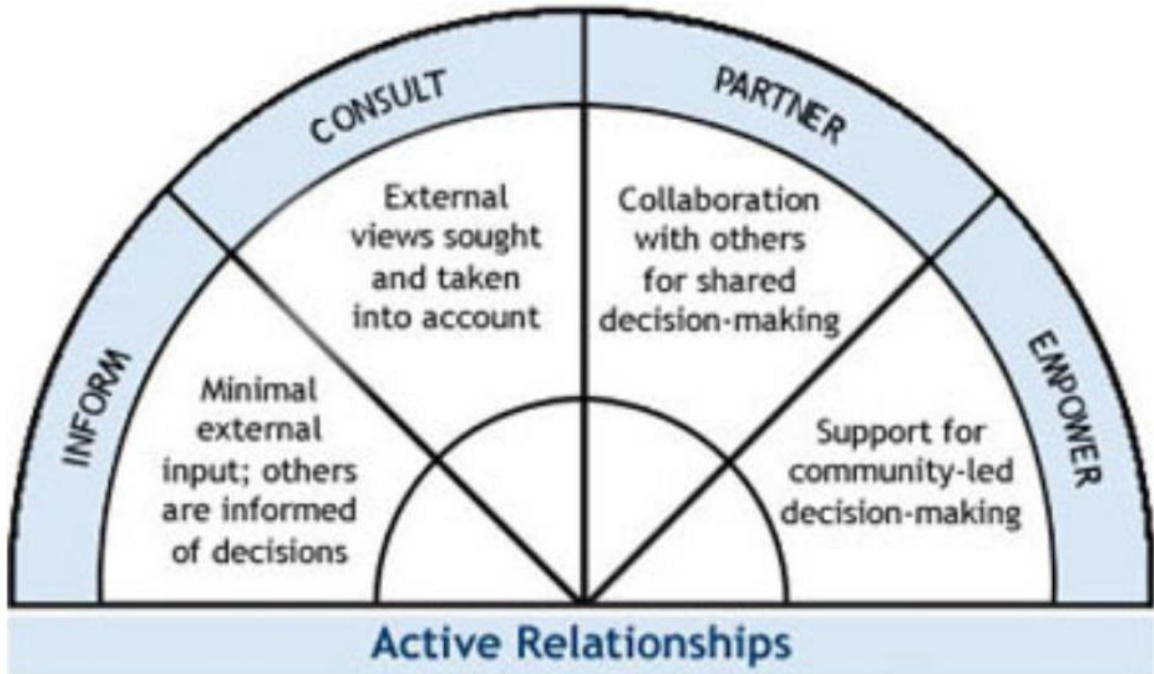


Figure 2-6: Active Relationships Matrix (Internal Affairs, 2017)

As shown in Figure #2-6, the definitions of partner and empower have been modified from the IAP2 standard of collaborate and empower. Partnership is the preferable term to be used in New Zealand rather than Collaborate. The same situation occurred with "empower". IAP2 stress final decision-making authority; but Christ Church Government stressed community-led decision-making rather final decision making which is made by the Government to release funds for the disaster recovery projects (Personal Communication, 2018).

Academic literature outlines the benefits of community empowerment with the assumption that the government is willing and able to accept post-disaster input from communities who wants to and is able to participate (Vallance, 2011). The IAP2 framework was used as a guideline for discussion with interviewees from San Francisco and Christ Church on the methods, strategies and factors for community empowerment that were used in their

respective communities. The methods/strategies could be used by Program/Project Managers in Disaster Recovery.

2.17 Key Factors for Community Empowerment

Christ Church City Council (2013) endorsed community empowerment: ‘Public participation is based on the belief that those who are affected by a decision have a right to be involved in the decision making process.’ Relationship between the empowered community, government and project manager is built to clarify specific community need, issues and opportunities for the community recovering a disaster.

Literature review based on material from Christ Church indicates community empowerment was endorsed in principle by Christ Church and New Zealand government. In practice, it was different story, Canterbury Earthquake Recovery Authority (CERA) controlled disaster recovery. Christ Church government encouraged community empowerment through the Share an Idea. The ideas collected were forwarded to CERA and CERA took over to deliver the recovery plan without further community input. Once CERA was disabled in five years time, the Regenerate Christ Church took over and community empowerment took place in practice. Literature from different countries stress community empowerment but Christ Church made it happen.

CERA (2016) identified the following factors that impact empowerment:

- Communicate and engage different communities who are at different recovery stages.
- Community members felt they were being talked to, rather than being listened and engaged.
- Communicate good and bad recovery outcomes on a regular basis.
- Recovery phase required community engagement and empowerment.
- Employ community development experts on the recovery project.
- Mentor and support community leaders to deliver on community and government recovery projects.

- Brand and market community activities as community-led and independent of government. Satisfaction of the local community is one of the main criteria to successful recovery is communication (Miao, 2016).

Environmental Planning Collaborative (2004) listed the following factors to empower the community:

- Level of Self-reliance.
- Formation of Community Advisory Boards for reconstruction.
- Financial assistance to affected community members, irrespective of religion, gender, social and economic status.
- Minimize relocation of community.

Sadiqi (2017) presented a graphic overview of the importance community empowerment in various post-disaster projects that summarizes Vahanvati and Ophiyandri recommendations on working with the community. Interviewees' comments were similar as the literature review. Interviewees indicated community is the "owner of the project", natural leaders, community participation styles, involvement in all project phases, and community initiatives. Community members show their empowerment through Project Control Board and community initiatives, Gap Filler and Student Army.

2.18 Framework for Project Managers

No framework for Project Managers to work with empowered community members in Disaster Recovery Project could not be found in the literature review and through the researcher contact's in Project Management, Emergency Management and Project Management on a Global level. The researcher also reviewed Social Work, Community Work and Urban planning literature. Interesting techniques in simulations were found in urban planning such as design charrette.

Design Charrette is a participatory planning that is particularly suitable for situations in which multidisciplinary professionals and non-professional stakeholders collaborate in a short period of time (Zhang, 2015). The method enables the local stakeholders to become

involved in the planning process and ensures that participant requests could be reflected in the final result. Design charrettes have been widely applied in urban planning in North America. In the past, the understanding of a disaster-struck area by residents was sporadic and fragmented. Therefore, the community would only consider reconstruction from their isolated perspectives and act according to their own will. The method considered sustainable development over the next 30 years, which expanded the view of the residents in time and space and helped them consider the entire situation.

Bourne's (2006) work on stakeholder management focus on monitoring stakeholder management and strengthening up the relationships. Rowland's (2013) work focus on how to have Project Managers can be more agile within disaster projects. Academic work does not cover how Project Managers should work with the community. There is mention of having community members, trained in Project Management, to carry out community projects with a Project Manager as a facilitator.

Mansuri (2013), World Bank, outlined how Project/Program Members should shape their projects:

- Project structures needs to allow for flexible, long-term engagement.
- Project designs and impact evaluations needs to incorporate political, social and economic analysis.
- Monitoring of project performance needs to incorporate mobile technology for real-time updates.
- Facilitator feedback as well as participatory monitoring from the community

Their a number of reports based on lessons learned how to work with community coming out of Conferences and Workshops (Faisal, 2011; Jing, 2012; Hidayat, 2010; CERA, 2016; Environmental Planning Collaborative, 2004) which is in the same line as Mansuri's article (2013).

Within the Disaster Management literature, Davidson's (2006) work on community participation maps out the different levels of community participation in various recovery projects. The researcher have had conversations with Dr. Davidson about his ideas and

researcher's ideas of exploring from a Project Management perspective. He was very encouraging and supportive. Dr. Davidson's work has been the driver for this PhD Study.

The Project Management Book of Knowledge is a set of guidelines of how Project/Program Managers carry out Projects. The book of knowledge is based on lessons learned to form a framework in which Program/Project Managers carry out their programs and projects. The International Public Participation (IAP) framework is also a framework from lessons learned of public participation. The lessons learned provide methods and strategies that can be used Program/Project Managers when working with the community. The Program/Project Managers select which method is applicable for their situation. The IAP2 framework was used in this PhD study to work from a common set of terms and practices. The IAP framework has been used in New Zealand to form a framework for community empowerment in disaster reconstruction projects. The framework was outlined through interviews not through literature review.

2.19 Project Management Framework for Empowerment

The following figure 2-7 represents the Project Management Framework for empowering the community recovering from a disaster. The Framework is based upon literature review with respect to the Research Objectives of this PhD, such as, strategies - to derive community empowerment methods/strategies.

After the initial disaster, the community is for the first 72 hours on their own to recover before emergency and disaster management professionals can assist. The victims are shocked, but have the skills and inner strength to save lives and rebuild their community with resources as survivors. The survivors (community) are empowered to participate with the implementation of the Disaster Management Plan and shape what projects and deliverables are to be created and delivered. The community's power standing changes to become a major stakeholder in the project that is recognized and worked closely with by other stakeholders in the project including the government. The Project Manager utilizes the community asset inventory to map the resources of the community, including gaps. Utilizing the asset inventory, the Project Manager knows how to work with the community

by tapping into the social capital to increase strength of the community, increase community participation, and have local agencies participate more efficiently and effectively. Mass panic mentality, unsuccessful collaboration with the community and many partners involved in Disaster, and lack of expertise will decrease drastically. The resultant projects are worked closely with the community (survivors). An additional step is to create project deliverables in suitable Projects for capacity building of the people within the community. Capacity building is job skills, training, social work, community work and psychiatry. Rebuilding the people who are survivors to become strong and resilient emotionally, psychologically, socially, spiritually and culturally. The people take pride in their community to make it sustainable for the future in many ways. Rebuilding the people skills and future endeavours will help the community and government and country to rebuild to become sustainable.

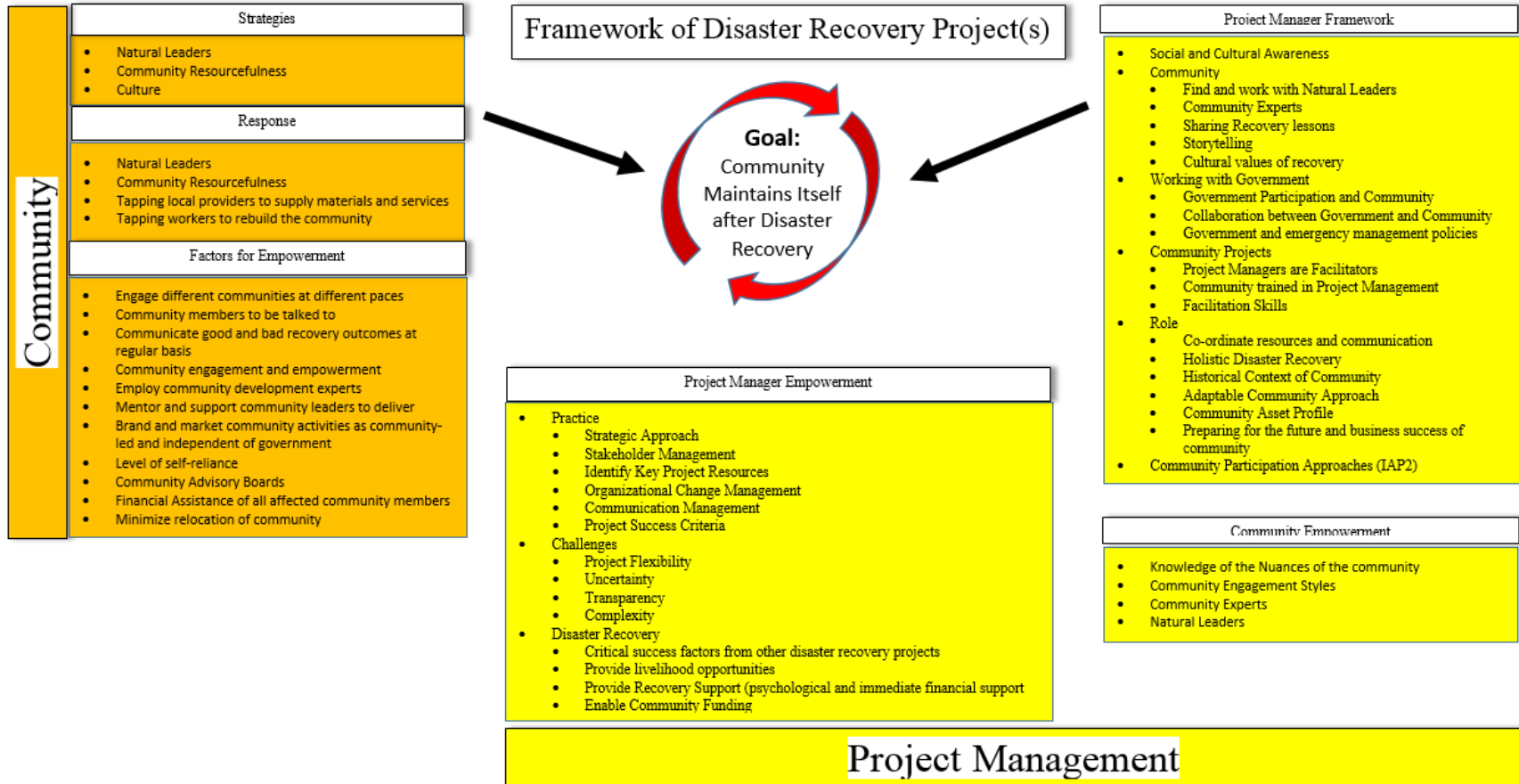


Figure 2-7: Project Management Conceptual Framework for Empowerment

2.20 Chapter Summary

Summarizing the above literature review, As Crawford (2013) stated project and stakeholder engagement are poorly managed in current disaster projects. Projects require a more innovative and participatory approach of its stakeholders from predict, respond, empower and to rebuild a resilient community. The Project Manager needs to understand the social, economic, built, natural and cultural background of the affected community to ensure effective and efficient rebuild of the community (Cantebury, 2012). How can people work together within the community is very important through the co-ordination and facilitation of the Project Managers. The community is empowered to participate with the implementation of the Disaster Management Plan and shape what projects and deliverables are to be created and delivered. The community's power standing changes to become a major stakeholder in the project that is recognized and worked closely with by other stakeholders in the project including the government.

In conclusion, the disaster recovery goal “is for survivors to regain stability in their lives, livelihoods, and housing” (Maly and Shiozaki 2012, p. 56), whereas the goal of reconstruction is to “build a safe city,” “pursue an ideal city,” and “[recover] the functions of a disaster-stricken area and [restore] normal lives to disaster victims” (Murosaki 2007, p. 330). The project team will consist of wide range of experts from engineering, construction, psychology, social work and community development to work together with various stakeholders to rebuild a resilient and sustainable community for future generations as future disasters come and go. The Project Management practices changes its style to work with survivors who make a community through:

- project strategic management approaches,
- flexibility in project/program management,
- control complexity and uncertainty,
- lessons learned from critical success factors from other disaster recovery projects,
- disaster response methodology,
- holistic review of community,
- training of NGOs by Project Managers with Disaster Management experience, and

- understanding how government and emergency management policies can vary between cities and countries impacting recovery (PMI, 2017).

Having briefly presented the literature review, the following section discusses the research methodology pertaining to this study.

Chapter 3 – Research Methodology

3.1. Introduction

Research is a systematic search for new and relevant knowledge. The systematic searching can be for various personal, professional or societal reasons, such as explore new ideas or perspectives, confirm new ideas, explain or describe. Various research methods and approaches have been explored for the best way to develop the aim of this study, such as research models, research philosophy, research approach, research strategies, validity and reliability. This chapter describes the research methodology adopted to achieve the aim and objectives of this study.

3.2. Research Methodology

Research methodology is the science of how research is completed. Remenyi (2003) described methodology as the “*overall approach to a problem which could be put into practice in a research process, from the theoretical underpinning to the collection and analysis of data*”. The methodology uses logical steps to describe, explain and predict to explore the research problem (Ménacère, 2016). The research methods are approaches used to gather data to be used as a basis for explanation, inference, prediction or action. The method should be appropriate and tailored to the needs and context of the researcher's study. This section describes the research methodology adopted to investigate the aim and objectives of this study.

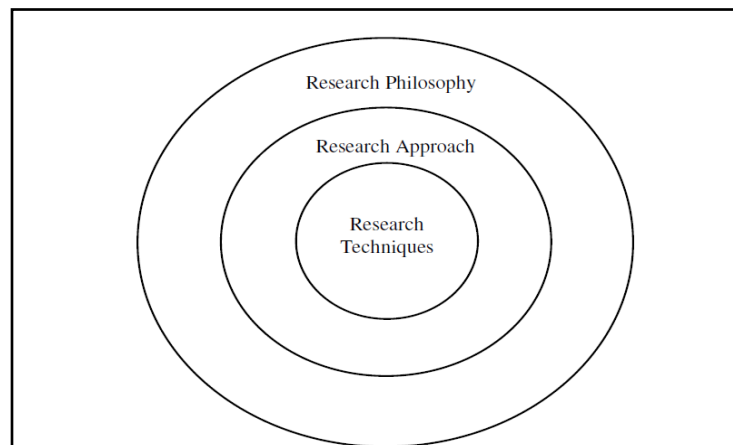


Figure 3-1: Nested Model or Hierarchical Model (Kaglioglou, 1998)

According to the nested model exhibited above (see Figure 3-1: Nested Model or Hierarchical Model), research philosophy is the first stage, followed by Research Approach stage and finally the Research Techniques stage. Kagioglou et al. (1998) did not distinguish between any specific classifications which research philosophy is used or which research approach is used and combinations as shown in research onion model developed by Saunders et al. The research onion breaks the research philosophy down into the more detailed phases from the philosophy to the time horizon and the techniques and procedures. The choice of a research methodology model depends on the researcher and the research objectives. This study will adopt the research onion because of the detailed structure.

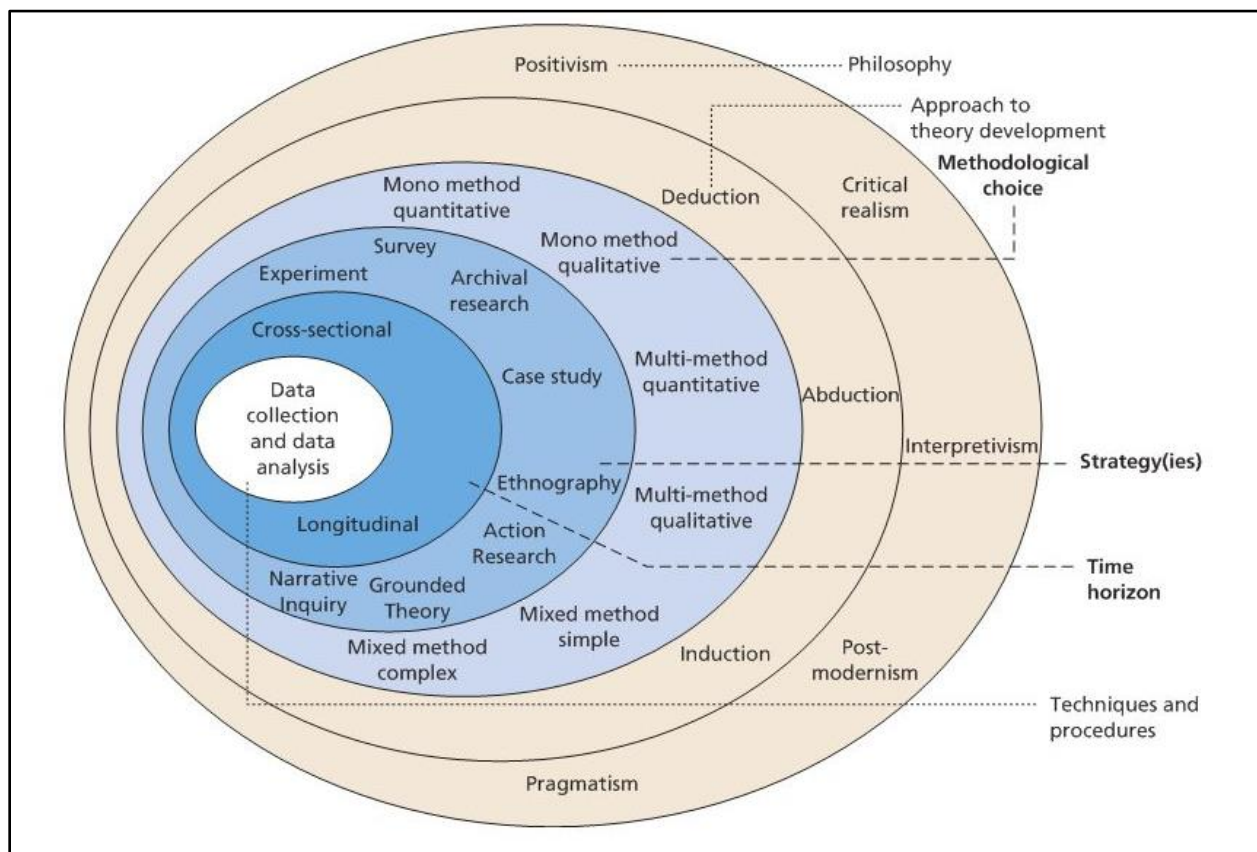


Figure 3-2: The Research Onion Model (Saunders, 2015)

This study will use one of the most relevant research model that being the Research Onion (Saunders et al., 2015) which visually display in one diagram (Figure 3-2) the various approaches, methods, and philosophies available to the researcher. The researcher will

select an appropriate category from each layer (techniques, time horizons, choices, strategies, approaches and philosophies) starting at the outer layer and moving towards the core. Combination of categories within each layer can be utilized within the research project. Each of the layers and categories will be discussed to outline the journey of research being taken for this study.

3.3. Research philosophy

The research philosophy of any research study is based on the key assumptions made about how reality is viewed (Ménacère, 2016). The assumptions is based on how the researcher views the world; therefore the assumptions influences the direction of the research project (Saunders, 2015). The key assumptions shape the research methods chosen as part of the research methodology.

The researcher needs to develop the skill of reflexivity, understanding their beliefs and assumptions, with the same diligence to examine the belief of others (Saunders, 2015).

As indicated in the research methodology, the worldly views of the researcher shapes the perception of the research in the following areas which Morgan and Smircich (1980) described:

- **Ontology** - what is knowledge (nature of reality). This will determine what researcher focus on, how the researcher perceives and approaches the research objectives.
- **Epistemology** - how do we know what is known (the acceptable knowledge in the field of study). This will determine the researcher further contribution to knowledge from their research.
- **Axiology** - what researcher values go into it (Values). The researcher examines their our own values and the research participants values in shaping the research study.

3.3.1. Ontological assumption

The researcher must decide whether social entities exist external to the social world, social entities are socially constructed through perceptions and actions, or somewhere in between. These assumptions shape how the researcher see the world. The following figure demonstrates the continuum between objectivism and subjectivism.

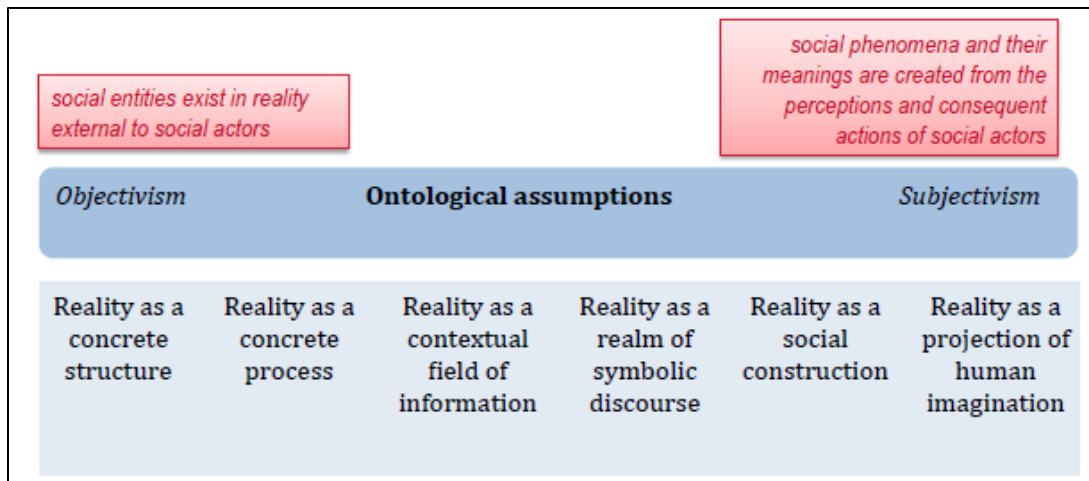


Figure 3-3: Ontological Assumption Spectrum (Morgan and Smircich, 1980)

Objectivism assumes social entities exist in reality external to the social actors; subjectivism assumes social entities are created from perceptions and actions of social actors (Saunders, 2009). Objectivism and subjectivism are the endpoints of ontological continuum assumptions. Definition of reality changes with a combination of objectivism and subjectivism from process to symbols to social construction. The ontological assumption used in this PhD study is subjectivism. The PhD study collects the subjective views of Project Managers and Community Leaders towards the use of community empowerment in disaster recovery projects.

3.3.2. Epistemological assumption

Epistemology involves an analysis of the pre-existing reality of the social world compared to how people invent the reality of the social world. Saunders (2009). Epistemology concerns the researcher’s assumptions about knowledge, what constitutes acceptable, valid and legitimate knowledge, and how we can communicate

knowledge to others (Burrell and Morgan 1979). Collis and Hussey (2009) define the extremes of epistemology as positivism and interpretivism; but Easterby-Smith (2012) use positivism and social constructivism. The meanings are the same. The following figure shows a continuum from positivism (pre-existing reality) to interpretivism (how people invent reality).

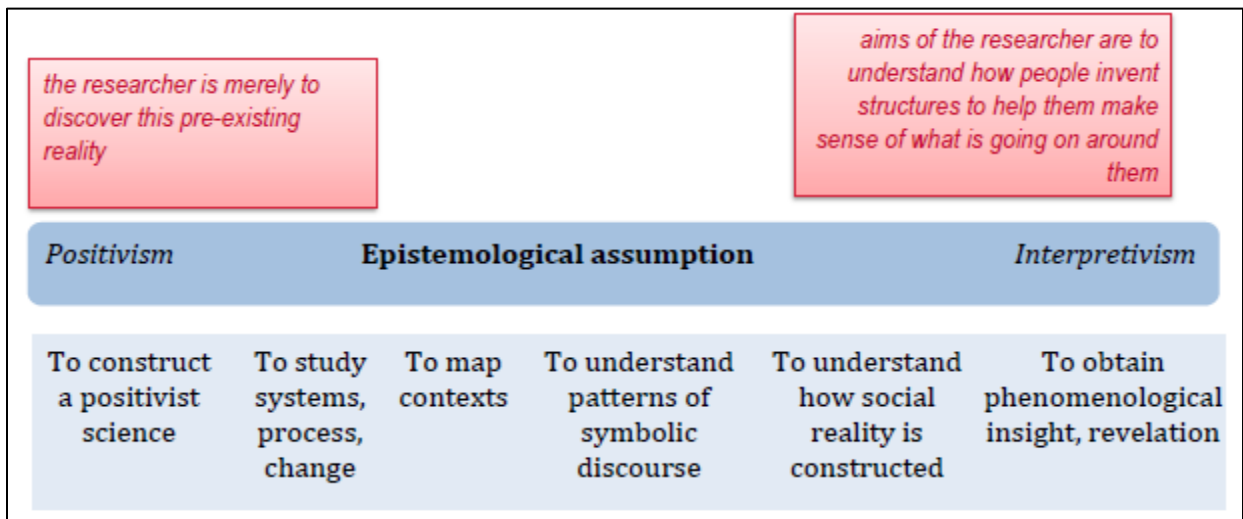


Figure 3-4: Epistemological Spectrum (Morgan and Smircich, 1980)

Positivism is where the social world exists externally, and can only be measured through

Table 3-1: Philosophical assumptions of research (Remenyi, 1998)

	Positivism	Interpretivism
The observer	Must be independent	Is part of what is being observed
Human Interest	Should be irrelevant	Are the main drivers of science
Explanations	Must demonstrate causality	Aim to increase general understanding of the situation
Research progress through	Hypotheses and deduction	Gathering rich data from which ideas are induced
Concepts	Need to be defined so that they can be measured	Should incorporate stakeholder perspectives
Unit of Analysis	Should be reduced to the simplest terms	May include the complexity of 'whole situation'
Generalisation Through	Statistical probability	Theoretical abstraction
Sampling requires	Large numbers selected randomly	Small number of cases chosen for specific reasons

objective methods as shown in Table 3-1. The researcher is independent from that being researched (Collis and Hussey, 2009); therefore the methods in natural sciences is applied to social sciences (Denscombe, 2014; Bryman and Bell, 2011). Interpretivism is determined by people factors (Easterby-Smith, 2012) as shown in the above Table 3-1. The epistemological assumption used in this PhD study is interpretivism. The PhD study collects the interpretations of Project Managers and Community Leaders towards the use of community empowerment in disaster recovery projects in best how to work with the community members.

3.3.3. Axiological assumption

Axiological assumption studies judgements about the researcher values (Saunders, 2009; Collis and Hussey, 2009) as shown in the following figure 3-5. The assumptions questions how the researcher deal with our own values and those of the research participants.

The researcher values ranges from value-free or value-laden. Collis and Hussey (2009) states the value-free assumptions are commonly found in natural science studies, but social sciences concerns the activities and behavior of people (value laden).

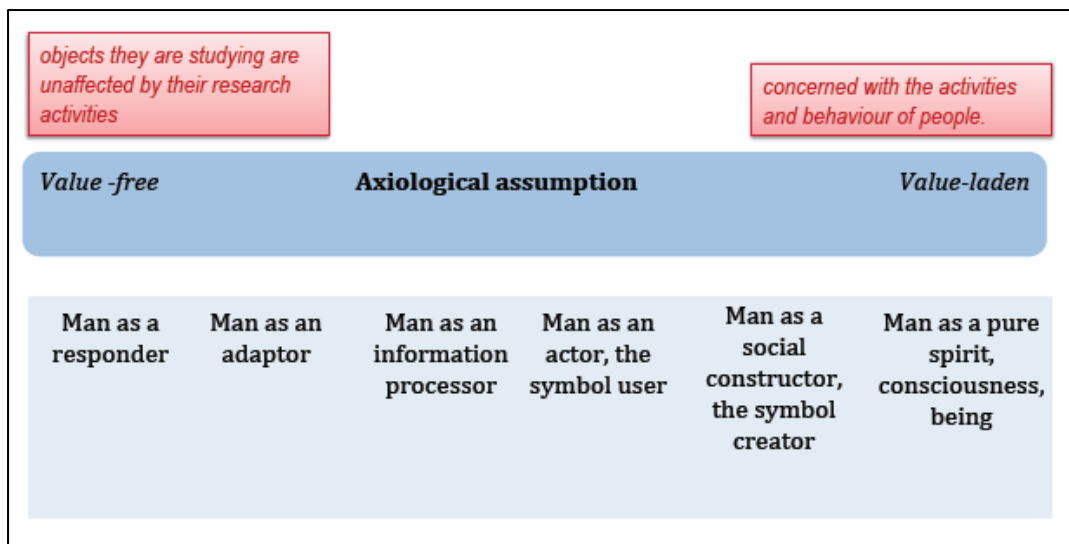


Figure 3-5: Axiological Assumption Spectrum (Morgan and Smircich, 1980)

The axiological assumption used in this PhD study is value-laden. The researcher values system can impact the PhD study on how professionals, community leaders and

community members can work together in a win-win relationship to rebuild the community and the community can share in controlling their destiny. The researcher has to be very conscious of their values which may shape how Project Managers and Community Leaders respond in the interview.

The following table 3-2 presents a concise summary of Ontology, Epistemology, and Axiology Assumptions; ontology (what is the nature of reality), epistemology (how can we know what we know) and axiology (how should we treat our own value when we do research). Within each assumption, the objectivism/subjectivism continuum is explained in detail, such as external social constructed for ontology. Objectivism is based on the natural sciences versus subjectivism in which the reality is socially constructed with multiple realities.

Table 3-2: Philosophical Assumptions Comparison (Collis and Hussey, 2009)

Assumption type	Questions	Continua with two sets of extremes		
		Objectivism	↔	Subjectivism
Ontology	<ul style="list-style-type: none"> • What is the nature of reality? • What is the world like? • For example: <ul style="list-style-type: none"> – What are organisations like? – What is it like being in organisations? – What is it like being a manager or being managed? 	Real External One true reality (universalism) Granular (things) Order	↔ ↔ ↔ ↔ ↔	Nominal/decided by convention Socially constructed Multiple realities (relativism) Flowing (processes) Chaos
Epistemology	<ul style="list-style-type: none"> • How can we know what we know? • What is considered acceptable knowledge? • What constitutes good-quality data? • What kinds of contribution to knowledge can be made? 	Adopt assumptions of the natural scientist Facts Numbers Observable phenomena Law-like generalisations	↔ ↔ ↔ ↔	Adopt the assumptions of the arts and humanities Opinions Narratives Attributed meanings Individuals and contexts, specifics
Axiology	<ul style="list-style-type: none"> • What is the role of values in research? How should we treat our own values when we do research? • How should we deal with the values of research participants? 	Value-free Detachment	↔ ↔	Value-bound Integral and reflexive

In summary, management, business and social research consist of five main philosophies: positivism, critical realism, interpretivism, postmodernism and pragmatism.

- Positivism relates to the natural scientist. The researcher works with observable social reality and generalisations are similar to the physical and natural sciences.
- Critical realism focuses on what is seen and experienced based on underlying structures of reality. Critical realists use historical analyses of society and organizations.
- Interpretivism is a subjectivist philosophy; people create multiple realities. Interpretivists focus on researching people's experiences and culture, as well the researcher's interpretations.
- Postmodernism focus on language and power relations. Postmodernists reveal worldviews that have been marginalised by dominant players with the area of study.
- Pragmatist focus on improving practice. Pragmatists use a wide range of research strategies, which is shaped by the research problems.

3.4. Adopted Research Philosophy Justification

The epistemological assumption of this study will be interpretivism. The stance is reflective to build a framework on how the Project Manager can empower a disaster community into a resilient and sustainable community in conjunction with other stakeholders. The ontological assumption pertaining to the study will be subjectivism: reality towards a social construction. This is because, the reality is defined by people interacting with one another and how to interact dependent upon the culture of the stakeholders. The axiological assumption will be towards value-laden: the researcher see themselves as a catalyst to changes how professionals work and community members as survivors.

3.5. Research Approach

Induction and Deduction are linked research approaches (*Miles and Hurbaman, 1994*). Deductive approach is which used when a theory is developed and then tested by empirical observation. It is a quantative approach when there is low risk and wealth of literature. It is a top-down approach from theory to hypothesis, observation and confirmation. Inductive approach is used when a theory is developed from the observation of empirical reality. It is a qualitative approach for a new topic with little existing literature.

In conclusion, if the research starts with theory, often developed from reading academic literature, and design a research strategy to test the theory, then deductive approach is used. If the research starts by collecting data to explore a phenomenon, generate or build theory, then an inductive approach. When collecting data to explore a phenomenon, identify themes and explain patterns, to generate a new or modify an existing theory to test through additional data collection, an abductive approach is used. Where there is a wealth of information in one context but far less in the context in which researching takes place may lend itself to an abductive approach enabling to modify an existing theory.

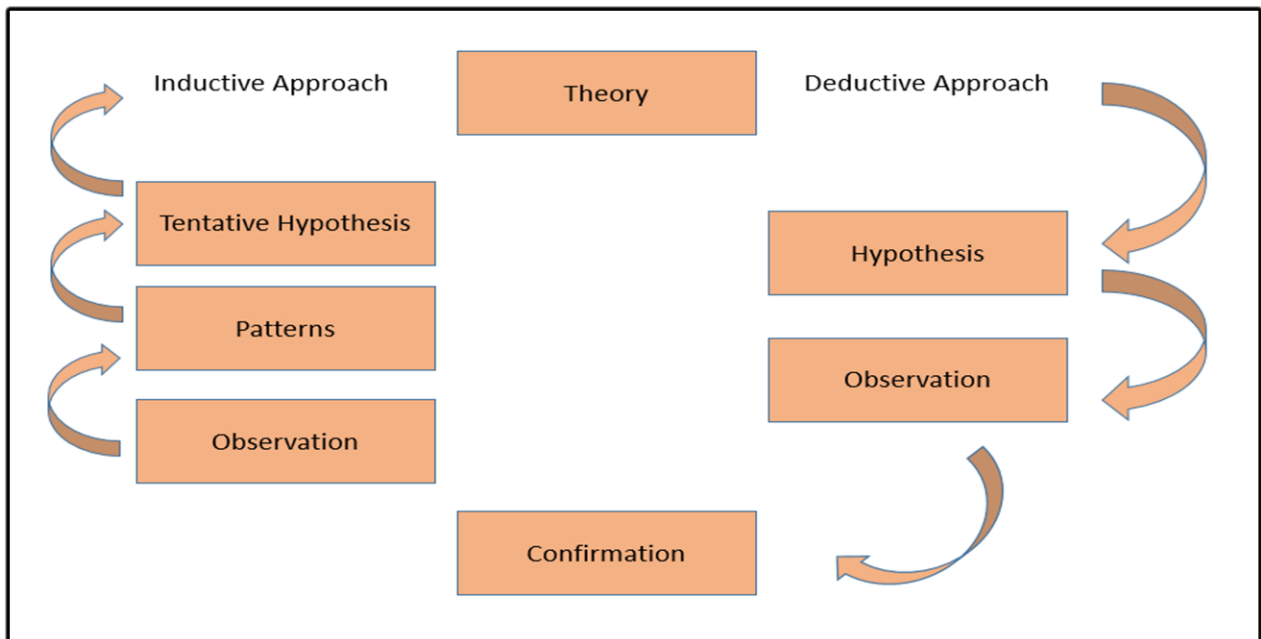


Figure 3-6: Abduction Approach (Saunders, 2015)

Abductive approach is a combination of deductive reasoning and inductive reasoning to create a new, or modify, an existing theory through further data collection through research. Figure 3-6 shows graphically how adductive approach combines inductive and deductive approach.

Table 3-3 (Saunders, 2015) demonstrates a detail comparison between deduction, induction and abduction. For Deduction, data collection is used to evaluate hypotheses related to verifying existing theory. For Induction, data collection is used to explore a phenomenon for theory generation and building. For Abduction, data collection combines exploring the phenomenon with testing through data collection for theory generation and/or modification.

Table 3-3: Deduction, Induction and Abduction (Saunders, 2015)

	Deduction	Induction	Abduction
Logic	In a deductive inference, when the premises are true, the conclusion must also be true	In an inductive inference, known premises are used to generate untested conclusions	In an abductive inference, known premises are used to generate testable conclusions
Generalisability	Generalising from the general to the specific	Generalising from the specific to the general	Generalising from the interactions between the specific and the general
Use of data	Data collection is used to evaluate propositions or hypotheses related to an existing theory	Data collection is used to explore a phenomenon, identify themes and patterns and create a conceptual framework	Data collection is used to explore a phenomenon, identify themes and patterns, locate these in a conceptual framework and test this through subsequent data collection and so forth
Theory	Theory falsification or verification	Theory generation and building	Theory generation or modification; incorporating existing theory where appropriate, to build new theory or modify existing theory

The abduction approach was used in for this study: taking existing stakeholder management approach and public participation spectrum to realign how these approaches to make the community resilient and sustainable.

3.6. Methodological Choices

Data collection can be using words (qualitative) rather than numbers (quantitative), or using closed-ended questions (quantitative hypotheses) rather than open-ended questions (qualitative interview questions) (Creswell, 2009). Qualitative research is used to explore participants facing a social problem through questions and observing participants' behaviors by engaging in their activities. Quantitative research is used to test theories by examining hypotheses. The data is analyzed using statistical procedures to support or refute the hypotheses. Mixed methods research combines both qualitative and quantitative forms approaches. The researcher begins with a broad survey to generalize results (quantitative approach) then follows with a qualitative approach using open ended interview questions to collect detailed views from the research participants.

Table 3-4 outlines the difference between quantitative, qualitative, and mixed methods. Qualitative method is based upon open-ended questions, interview data, observation data (field notes), document data and audio-visual data. Quantitative methods is based upon performance data, attitude data, and census data to create numbers. The numbers can be analyzed through statistics.

Table 3-4: Quantitative, Mixed and Qualitative Methods (Creswell, 2009)

Quantitative Methods	Mixed Methods	Qualitative Methods
Pre-determined	Both pre-determined and emerging methods	Emerging methods
Instrument based questions	Both open- and closed-ended questions	Open-ended questions
Performance data, attitude data, observational data and census data	Multiple forms of data drawing on all possibilities	Interview data, observation data, document data, and audio-visual data
Statistical analysis	Statistical and text analysis	Text and image analysis
Statistical interpretation	Across databases interpretation	Themes, patterns interpretation

Opoku (2016) summarizes the following characteristics between quantitative and qualitative approaches with respect to inductive/deductive, theory building/testing, subjective/objective, sampling size, and approach to respondents/participants.

Table 3-5: Key characteristics of qualitative and quantitative research (Opoku, 2016)

Qualitative research	Quantitative Research
Use inductive approach	Use deductive approach
Involves theory building	Involves theory testing
Employs subjective approach	Employs objective approach
Open and flexible approach	Closed and planned approach
Researcher is close to the respondents	Researcher is distant from respondents
Employs theoretical sampling	Employs random sampling
Uses explicative data analysis	Uses reductive data analysis
Low level of measurement	High level of measurement

The comparison are very concise for a researcher to develop their approach. Another component of research choice is mono, multi and mixed methods for data collection (Saunders, 2015):

- **Mono method** - single data collection technique and analysis procedures.
- **Multi-method** –more than one data collection technique with respective analysis techniques, but the method is either a quantitative or qualitative.
- **Mixed methods** - quantitative and qualitative data collection techniques and analysis procedures are used.

Opoku (2016) presents the following table to compare research philosophy, method and data collection tools that can be used with respect to each philosophy and method.

Table 3-6: Research philosophy, primary methods and data-collection tools (Opoku, 2016)

Philosophy	Primary methods	Data-collection tools
Positivist/postpositivist	Quantitative methods	Experiments
		Tests
		Scales
Interpretivist/constructivist	Qualitative methods	Interviews
		Observations
		Document reviews
		Visual Data analysis

A multi-method was used. The qualitative component was through the use of semi-structured interviews from Project Managers and Community Leaders. Archival approach was used by reading government documents on lessons learned of disaster recovery and community engagement.

3.7. Research Strategy

The aim of this section is the selection of a research strategy that meets the research aim and its objectives. A decision will be made from the available strategies, as outlined

by Sexton (2013): experiment, survey, archival research, ethnography, action research, grounded theory and case study.

The next step in selecting the appropriate research approach of abductive and mixed method is the selecting the appropriate strategies(s) as shown in the following grid. The researcher has to decide which strategies(s) to use from experiments, surveys, case studies, action research and ethnography strategies to firm their findings systematically.

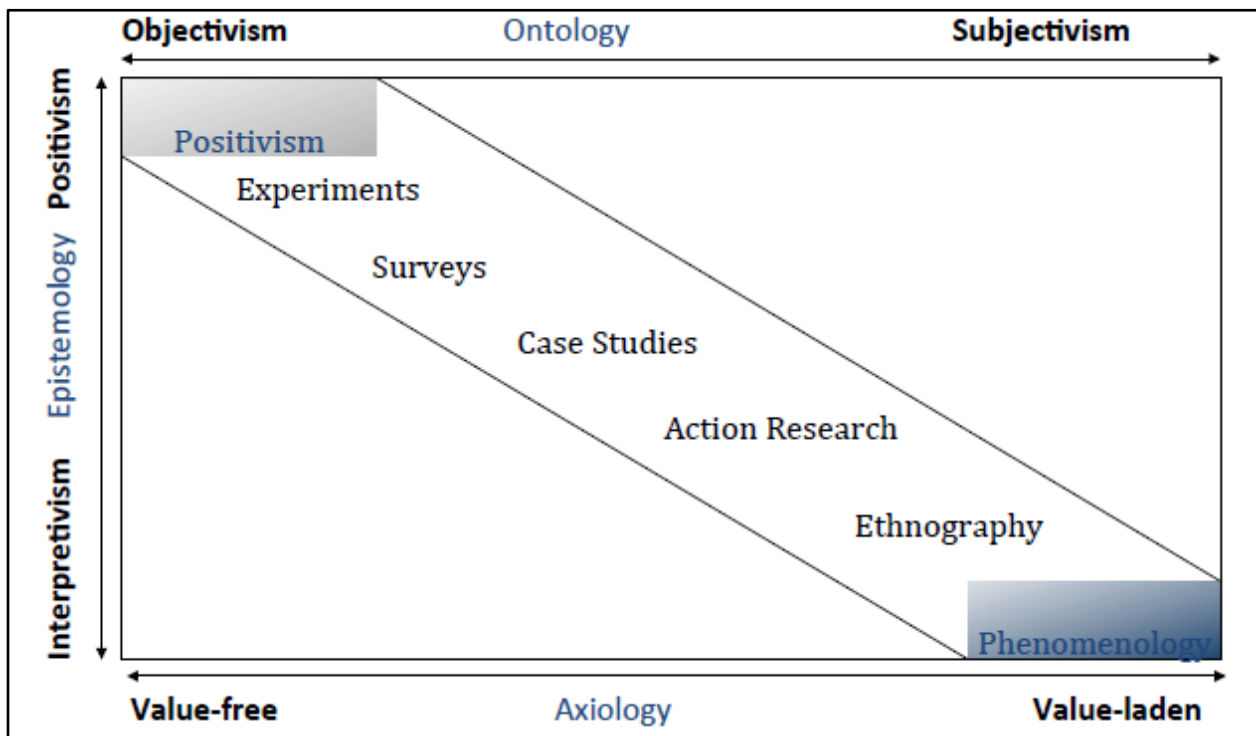


Figure 3-7: Research Strategy Model (Sexton, 2003)

3.7.1. Experiment

Experiment strategy studies the probability of a changing the independent variable to a cause a change in dependent variable (Bryman, 2012). The experiment uses hypotheses rather than research questions. The use of experiment strategy studying variable and hypothesis testing would not be appropriate. The proposal is not a study on variable relationships but changing a mindset from victim to survivor and its implications for Project Managers to implement projects and its working relationships with community

members. Further, as explained above, this study falls within the interpretivism research philosophy. Therefore, the use of experiments are not suitable for the study.

3.7.2. Survey

The survey strategy is used to answer the what, who, where, how much and how many questions found in questionnaires (Neuman, 2005). Questions that are used in exploratory and descriptive research using the deductive research approach. When probability sampling is used, findings are generated that are statistically representative of the whole population. This research strategy is based only using a set of questions to define the framework with this study. More than questions is required to input into the development of the framework; a combination of other research techniques is required. A questionnaire can be used in replacement of a survey since the questionnaire was used with other research techniques.

3.7.3. Action Research

Action Research uses multiple iterative steps from explore, evaluate to promote changes. The researcher transfers their skills and capabilities to the participants for them to become co-researchers in the Action Research (Levin (2007). According to Coghlan (2014), "*Action Research is an emergent and iterative process of inquiry that is designed to develop solutions to real organisational problems through a participative and collaborative approach, which uses different forms of knowledge, and which will have implications for participants and the organisation beyond the research project*". In his earlier works (2005), Coghlan define the following characteristics of Action Research:

- research *in* action, rather than research *about* action;
- a collaborative democratic partnership;
- concurrent with action;
- a sequence of events and an approach to problem solving.

Research in action means the researcher and participants work together as a team to research and implement the new ideas together at the same time. Action Research becomes a collaborative, democratic partnership. A cyclical process of planning, taking

action, evaluating the action, and further planning based on the action taken repeats a few times in an iterative fashion. The research is concurrent with the action. The end goal is to make the final action more effective than previously and at the same time build up a body of scientific knowledge. Action research uses a scientific approach to study and resolve the social or organizational issue with the participants. A scientific method of fact finding and experimentation involving collaboration and co-operation of the researcher(s) and members of the study is used.

Research about action means means the researcher studies the participants actions and behaviour to develop a theory; the participants are treated as subjects of the study. This approach is generally used for research.

The process becomes iterative as shown in the following figure 3-8. Action research strategy is working with the participants of the study to develop a change of way of doing things, implementing the change and having participants taking over. The researcher works with the research participants members, as a facilitator and teacher, to improve the situation within the group through experimenting and self-learning. Validation of the research results is through the deliberate iteration of action development.

Action Research strategy commences from a specific context and purpose as shown in Figure 3-8. Each cycle involves diagnosing (fact finding), planning action, taking action and evaluating the action. The evaluation provides direction and focus for the next cycle. The cycles can repeat from teasing out the issues, understanding the customer and project, acting on knowledge, and so forth. Action Research differs from other research strategies because of its focus on action related to multiple cycle to explore and evaluate and promote changes (Saudners, 2015).

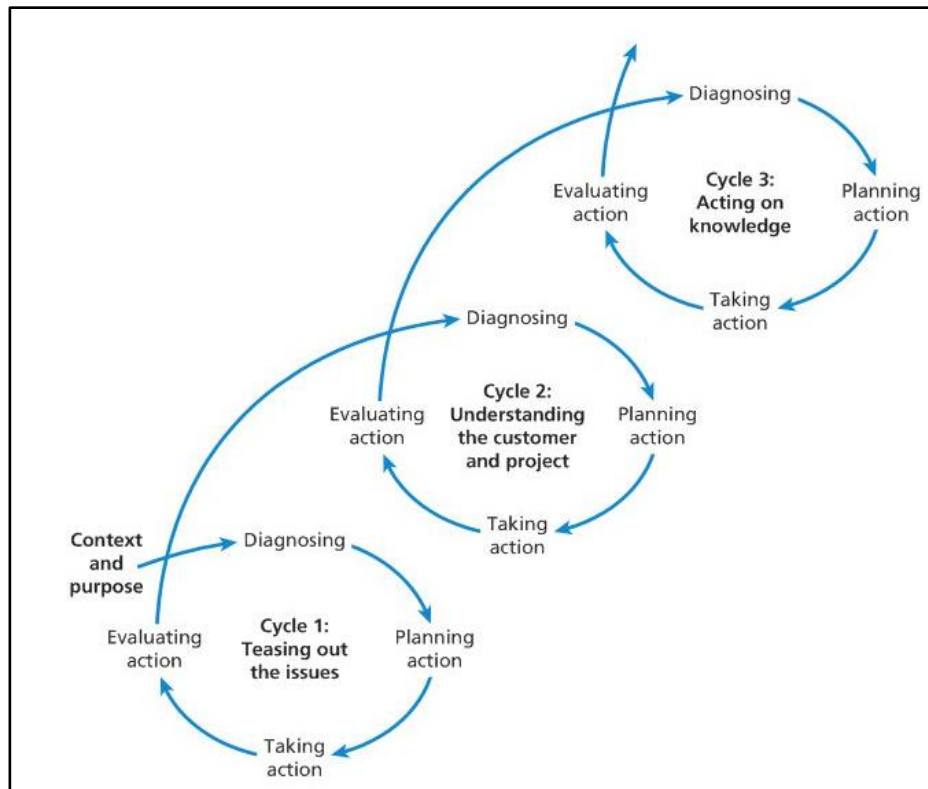


Figure 3-8: Three cycles of the Action Research spiral (Saunders, 2015)

Four different approaches of action research have appeared. The first approach is based upon Kurt Lewin's work on collaborative change management between researcher and clients in organization development. Researcher and clients work in cycles of planning, action and evaluating. The second approach is Participatory action Research (PAR). The research focuses on power and powerlessness, and how to empower people to construct and use their knowledge. The third approach is Action Learning. Action Learning reverses learning from lessons to learning from action in organizations. The starting point of learning is action: learning by doing. The fourth approach is Action Science. Action Science is based on Chris Argyris's work on cognitive processes of individuals based on "theories-in-use". "Theories-in-use" is based on Model I (strategies of control, self-protection, defensiveness and covering up embarrassment) and Model II (strategies eliciting valid information, free choice and commitment) approach to organizational learning.

Coghlan (2005) present the following table comparing research philosophy and strategises used in action research. Reflexivity is used to explore and deal with the researcher's value system and the participants' value system. Within positivism, reflexivity is methodological but for action research, reflexivity is epistemic (practical application). The researcher is working with research participants as equals. This is major shift in research work: research participants are equal partners to the researcher in the research study.

Table 3-7: Research Paradigms and Action Research (Coghlan, 2005)

Philosophical foundations	Positivism	Hermeneutic and postmodernism	Critical realism and action research
Ontology	Objectivist	Subjectivist	Objectivist
Epistemology	Objectivist	Subjectivist	Subjectivist
Theory	Generalizable	Particular	Particular
Reflexivity	Methodological	Hyper	Epistemic
Role of researcher	Distanced from data	Close to data	Close to date

Within the above framework, the team will apply quantitative, qualitative, and mixed methods appropriate to the context being studied.

Action Research increase the ability of the community, or organization members, to control their own destinies more effectively and improve their capacity in a more sustainable environment (Greenwood, 2007). The PhDstudy focus is on developing a framework on how Project Managers and community members can work together. It is not at the stage of implementation of the framework to the interested communities, hence action research strategy was not used.

3.7.4. Grounded Theory

Grounded Theory is a cyclical process incorporating data collection and analysis in the research (Charmaz 2011; Strauss and Corbin 1998; Suddaby 2006). The coding of data collected is iteratively reviewed: the coding categories becomes fine tune as the

researcher collects more data from new cases (Strauss and Corbin 1998). The purpose of sampling is therefore to pursue theoretical lines of enquiry rather than to achieve population representativeness.

Grounded theory research strategy is an interesting approach - collect data, analyze data, redesign data collection methodology and reapply collection process to obtain best data. For the research being carried out on the framework, grounded theory is not appropriate because of the long time commitment involved. Further, grounded theory is more appropriate when no or limited literature is available for a study. However, within the context of this study, there is literature related to disaster recovery and empowerment of community and role of Project Managers which can be used to provide a good theoretical background for the study.

3.7.5. Ethnography

The researcher uses ethnography to study the culture of a group by observing and interacting with the participants of the research. Ethnography is time intensive requiring the researcher to spend considerable amount of field work with the geographical area of study. The researcher must have extensive contacts within the geographical area to be readily accepted.

3.7.6. Narrative Inquiry

The researcher uses narrative inquiry to obtain complete stories from the participants rather than using questionnaires. Narrative inquiry is more applicable to historical analysis and bibliographical analysis of people and their experiences. The technique was used as a part of the literature review of the study but not as one of the main tools to carry out actual research in the field.

3.7.7. Archival and documentary research

Researchers using an archival or documentary research strategy therefore need to be sensitive to the fact that the documents they use were not originally created for a research purpose. Need to be sensitive to the nature and original purpose of the

documents you select, the way in which you analyze them and the generalizations that you can draw.

3.7.8. Case Study

Case studies are the “the preferred strategy when ‘how’ or ‘why’ questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context” (Yin, 2002, p. 13). Case studies can be exploratory, explanatory or descriptive (Yin, 1994). A common critique is the findings may not be generalized beyond the study context. However, Yin (2002) counters these critiques by pointing out that unlike quantitative studies that aim for statistical generalizations, i.e. generalizing from “sample” to “universal population”, the case study research aims for analytical generalization, such as from specific “result” to broader “theory”. This theory is then tested in other contexts using replication to test these and lend external validity to the results.

Case study research uses quantitative or qualitative research; at times uses a mixed methods approach, to completely understand fully the dynamics within the case. Eisenhardt (1989), suggests from 4 to 10 cases is ideal; Yin (1984) and Stake (1995) suggest that one can be acceptable. The researcher justify their choice by reference to the replication logic and the propositions that they are seeking to test.

Within the context of this study, case study research strategy has been selected due to number of reasons. The focus of this PhD study is on natural disasters, specifically geophysical. The most geophysical devastating disaster has been the earthquakes (Guha-Sapir, 2015) in terms of lifes and costs. Earthquakes are sudden and devastating events to the community and its environment. A number of aftershocks will take place. It takes many years to rebuild.

Two disaster recovery case studies were selected for comparative analysis to understand how Project Managers can empower the community. The case studies were selected in San Francisco and Christ Church through assessment process on

accessibility of interviewers. Within these two geographical regions, Project Managers and Community Leaders were interviewed to compare each others views and experience of community empowerment during disaster recovery.

3.8. Case Study Design

3.8.1. Introduction

A case study can contain one or multiple cases; multiple-case studies strengthens the generalisations (Yin, 2009). Four basic design types of case study research are shown in Figure 3-9. The researcher selects single or multiple-case studies, single-case embedded, multiple-case holistic, or multiple-case embedded.

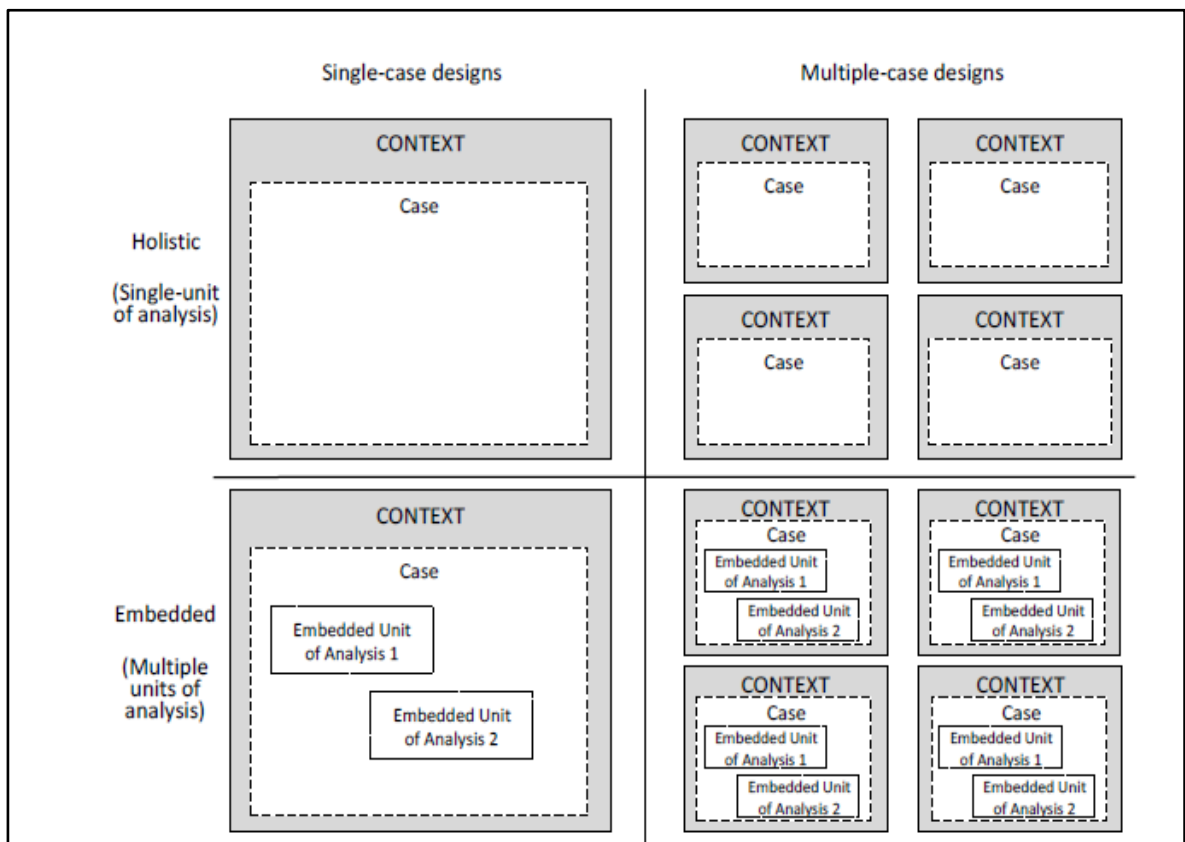


Figure 3-9: Basic types of design for case studies (Yin, 2009)

This study selected two case studies geographically apart in the world. The following potential case studies were proposed and reviewed on suitability:

A number of natural disaster sites were reviewed for selection ranging from geophysical to meteorological. The sites range from Cuba (hurricane); Philippines (typhoon); Japan (typhoon and earthquakes); Sri Lanka (typhoon); Red River, Canada (annual Flooding); Calgary, Canada (mountain flooding every 3 to 5 years); Chile (earthquake); San Francisco (earthquake); and Christchurch (earthquake). Due to language proficiency and accessibilities to the sites, San Francisco and Christ Church sites were final candidates for this study: earthquake sites. Within each of these sites, two sets of candidates were interviewed: Project Manager and Community Leader. Multiple case studies encouraged by Yin (2009) was used to strengthen the aim and objectives of this study by comparing two earthquake sites and comparing Project Manager and Community Leaders perspectives with each site. The multiple case and embedded approach ensured a comprehensive approach to validate each participant's perspective.

3.8.2. Unit of Analysis

The unit of analysis was the Project Management practices to empower disaster susceptible communities within the aforementioned case studies in San Francisco and Christchurch through the perspective of Project Manager and Community Leader.

3.8.3. Case Study Boundary

Case study boundary was set to two examples of disaster recovery sites impacted by geophysical disaster being an earthquake. Two case studies (San Francisco and Christ Church) were selected to investigate the aim of this study: to develop a Project Management framework on how disaster susceptible communities can be empowered during the post-disaster phase to become resilient and sustainable on the long run.

1. Community Response

- a. To review and analyze how communities responds following a disaster.

2. Community Empowerment

- a. To explore the importance of empowerment of disaster affected

community in post disaster phase.

3. Factors for Empowerment

- a. To critically explore the key factors that need to be considered for empowerment of disaster prone community for long-term sustainability.

4. Project Manager Empowerment

- a. To critically analyse the role of the Project Manager in empowerment during the post-disaster phase.

5. Community Strategies

- a. To derive community empowerment methods/strategies.

6. Project Manager Framework

- a. To develop and validate a framework for Project Managers to empower disaster affected communities for long-term sustainability.

The case studies are based on earthquake disaster in San Francisco and earthquake disaster in Christ Church. The reasons to select these case studies are discussed below:

- a. In the case of California, a very rich state who has developed a community empowerment program that is internationally recognized in the emergency management profession. The San Francisco's neighborhoods created a local network of organizations that advances community's overall preparedness on a daily basis, as well as provides essential support to its residents as they recover from a stressful event of any size, including earthquakes. More information can be found on their website: <http://empowersf.org/> . In addition, San Francisco has created a data visualization website displaying wellness indicators and community assets by neighbourhood. The neighbourhoods use Project Management software to monitor their individual neighbourhood improvement projects.
- b. In the case of New Zealand, the island has been struck by frequent earthquakes. A major earthquake struck the downtown center of Christ Church in 2010. The

first phase of disaster recovery has taken place; the second phase has started in 2017.

Each of the above case studies was compared against each other to understand and validate the process of community empowerment that is shaped by the community, severity of disaster, and frequency of disasters.

3.8.4. Case Study Selection

3.8.4.1. San Francisco

San Francisco was selected based on professional recommendations from Emergency Management Professionals in Toronto, Canada. The contact in San Francisco works for at the local government who established a unique and successful community resilience program. The contact arranged for interviews with Community Leaders and individuals with Project Management experience.

San Francisco's government emphasize the community deal with stressors in their everyday life, such as floods, Business Improvement Areas, parks and fires. The experiences from these stressors will help the community adapt for major natural disasters such as earthquakes. The community leaders are trained in Leadership and Project Management through Harvard University, Berkeley University and other universities. Emphasis on community dealing with stressors in everyday life, and their unique training in Leadership and Project Management, presents an unique approach to disaster preparedness that Project Managers can learn from when working with local communities to rebuild in the post-disaster phase. The lessons learned can form a framework/guidelines for Project Managers in other countries to work with communities as a major stakeholder in post-disaster recovery.

3.8.4.2. Christ Church

New Zealand was recommended by contact from San Francisco who assisted in selecting Community Leaders and Project Managers for the San Francisco study. New

Zealand had a major earthquake in Christ Church in 2012. The Disaster recovery project is in the second phase after 5 years of recovery.

Individuals were contacted in New Wellington and Christ Church. New Wellington had recent earthquakes in 2016. After discussion about my study, there were no takers for interview. I contacted my contact in Christ Church. My contact provided the researcher of this study with contacts. The researcher contacted engineering firms in the disaster recovery expressed the views they were responsible for buildings and infrastructure and not in the community. The result was a bias sample of people who wanted to understand how to work with the community and those who did not. Those who were interviewed gave incredible insight on the different approaches used with the community. They wanted to bounce some ideas to determine if they are the right track. One candidate allowed for three consecutive separate meetings. This candidate was a source of wealth and help the research to understand the difference of research papers and what is happening in the field.

The researcher thanks for his other contacts globally in Project Management and Disaster Recovery to understand the reality of disaster recovery in the field. Practical experience in disaster recovery would be have been a great benefit in the research to properly understand how Project Managers work and the factors that influence their approaches in Disaster Recovery. Hopefully these insights can be tapped in the final phase of the PhD study once a draft framework is created and reviewed by the researcher's global contacts.

3.9. Research Time Horizon

Another component of research is the time horizon of the case study:

- Cross sectional: study takes places at a particular point of time
- Longitudinal: study the change and development over a period of time (Saunders, 2009).

Cross sectional was applied against multiple geographical case studies impact by similar and different disaster types within the same approximate time period.

3.10. Research Techniques

Research techniques consist of data collection and analysis procedures. The following data collection techniques can be used in a case study: documents, archival records, interviews, direct observation, participant observation and physical artefact (Yin, 2014). Combination of qualitative and quantitative research can be used for data collection. The type of data collected can be primary data and secondary data (Saunders et al., 2016). Primary data is data collected within the researcher's own research study; while secondary data is obtained from existing sources. Sources of secondary data can be journal articles, books, past theses, archival records, legislations, and relevant websites, while primary data were collected through questionnaires, interviews, and documents. In this study, articles, books, past theses and relevant websites were used for secondary data; interviews were used for primary data collection. The data collected from the interviews undergo content analysis.

For this PhD study, the research technique of literature review was carried out to understand what actually happened, how many people were displaced and impacts of the disaster in written case studies. The case studies help to shape the PhD aims and objectives. A set of questions were formulated for Project Managers and Community Leaders (see attached appendices #1 and #2). The set of questions created the basis of semi-structured interviews with the Project Managers involved during the disaster recovery projects was carried out to investigate the project management practices used on how disaster susceptible communities can be empowered to become resilient and sustainable on the long term.

The following sections on data collection and data analysis techniques used in the PhD study will be explained.

3.10.1 Data Collection Technique

3.10.1.1. Interviews

According to Amaratunga et al. (2002), interviews are deemed to be the best method for data collection in case study. The interviews became the most important sources. Furthermore, the researcher can clarify any unclear answers with experts during the interview (Kumar, 2011). Saunders (2016) noted three ways to conduct interviews, namely, structured; semi-structured or unstructured. For structured interview, the interviewees' responses are limited; hence less richness of the data. For the unstructured interview, the interviewees express freely without restriction; but analysing the data might be more difficult due to the absence of consistencies (Myers, 2013). In the case semi structured interview, valuable information of real experiences, interviewee's interpretations, and recommendations are expressed freely and in detail. The following table lists various interview types (structured, semi-structured and unstructured) that can be used within the research study. The semi-structured interview was used.

Table 3-8: The characteristics of interview types (Opoku, 2016)

Structured Interview	Semi-structured interview	Unstructured interview
Mainly for quantitative data	Mainly for qualitative data	Mainly for qualitative data
Captures data speedily	Captures data slowly and is time-consuming	Captures data slowly and is time-consuming
Uses random sampling	Uses purposive sampling	Uses purpose sampling
Uses strict interview format	Uses flexible interview format or schedule	Uses flexible interview format or schedule
Data usually easy to analyse	Data may sometimes be difficult to analyse	Data may sometimes be difficult to analyse
Tends to positivist view of knowledge	Mixture of positivist and interpretivist view of knowledge	Mixture of positivist and interpretivist view of knowledge

The researcher prepared semi structured interview questions for the interviewees. The questions were sent to the PhD Supervisor team for their feedback. After receiving the PhD supervisor's feedback. The revised questions were sent to main contact in San

Francisco as part of approval process for interviews to take place. Once questions were revised, a list of potential interviewees was sent back to the researcher. No Pilot study group was used in this study.

3.10.1.2. Sampling of Participants and Interviewees

Sampling is required for research since there is limitation to research the entire population (Saunders, 2016). When deciding sampling technique, the researcher must consider time limitations, financial, and accessibility to the resources. Two strategies can be used in sampling: random sampling / probability sampling and non-random sampling / non-probability sampling. In random sampling, the chance of each element being selected from the population is usually equal, while, non-random sampling doesn't give an equal chance to each element being selected. The sampling in the qualitative research is not significant, whereas a sample is used to represent the study population in a quantitative research (Kumar, 2011).

In qualitative research sample size is not an important as in a statistical research (Kumar, 2011). The researcher should attain an adequate size for data collection. Saunders (2016) recommended non-random minimum sample size which is illustrated in Table 3-9.

Table 3-9: Minimum Size for Sample

Minimum Size for Non-Probability Sample (Saunders, 2016) Nature of Study	Minimum Sample Size
Semi-structure/in-depth Interviews	5-25
Ethnographic	35-36
Grounded Theory	20-35
Considering a homogenous population	4-12
Considering a heterogeneous population	12-30

Nineteenth invitations were sent out by Deputy Program Manager, Neighborhood Empowerment Network, San Francisco in researcher's behalf on November 9, 2016.

Fourteen individuals (Project Managers and Community Leaders) responded to be interviewed over SKYPE, Google Hangout and Phone.

Table 3-10: List of San Francisco Interviewees

San Francisco Interviewee Position	Group	ID
Community Consultant	Community Leader	SF_C_8
Project Manager with experience from Federal Government, Peace Corps, SF Chamber of Commerce, Public Affairs Consulting Company, Accenture Consulting	Project Manager	SF_P_11
Manager for Shopping Center	Community Leader	SF_C_13
Non-Profit Consultant	Project Manager	SF_P_1
Community Leader	Community Leader	SF_C_2
Community Worker	Community Leader	SF_C_3
Community Leader	Community Leader	SF_C_4
Community Leader	Community Leader	SF_C_5
Chief Operating Officer, Senior Center	Community Leader	SF_C_12
Community Leader	Community Leader	SF_C_6
Environmental Program Manager, San Francisco	Project Manager	SF_P_7
Project Manager	Project Manager	SF_P_9
Manager, Community NGO	Community Leader	SF_C_10

In the case of Christ Church, 30 invitations were sent via contacts, cold calls, and referrals in Wellington and Christ Church, New Zealand. Only 11 individuals were interviewed over SKPE, Google Hangout and Phone in February and March 2017, and October and November 2017. Those who said no were from Engineering and Architectural companies indicated their work centered on buildings and infrastructure not the community. The four individuals interviewed worked on Central Library reconstruction, Town Hall reconstruction, Community revitalization, and multiple community reconstruction. These individuals offered a wealth of information. One individual provided three hours of interviews over a three consecutive weeks. This individual provided a great deal of information of community engagement within Christchurch and active involvement of government in the process. The researcher is extremely grateful of the information and insights presented through the interviews.

Table 3-11: List of Christchurch Interviewees

Christchurch Interviewee Position	Group	ID
Project Manager – Town Hall	Project Manager	NZ_P_2
Project Manager – Central Library	Project Manager	NZ_P_1
Project Manager – Youth Development	Project Manager	NZ_P_3
Community Development Manager	Community Leader	NZ_C_4
Program Manager – Community Centres	Project Manager	NZ_P_7
IAP2 Practitioner – Community Centres	Project Manager	NZ_P_5
Stakeholder Engagement Advisor – Earthquake Monument	Community Leader	NZ_C_6
Disaster Insurance Consultant – Ministry of Business, Innovations	Community Leader	NZ_C_8
General Manager – Regenerate Christchurch	Project Manager	NZ_P_9
Former Minister of Earthquake Recovery	Community Leader	NZ_C_10
Project Manager of Live in Space (Community Initiative)	Project Manager	NZ_P_11

Project Management and Community Leaders were interviewed based upon a set of interview questions addressing the PhD objectives.

3.10.1.3. Data Collection Techniques and Research Objectives

This section presents the various data collection techniques (section 3.9.1.1) to meet the research objectives. Table shows the comparison between data collection techniques and objectives used in the study.

Table 3-12: Data Collection Techniques versus Research Objectives

Research Objective	Data Collection Techniques		
	Literature Review	Case Study – Interview	Validation
Community Response	√	√	√
Community Strategies	√	√	√
Community Empowerment	√	√	√
Project Manager Empowerment	√	√	√
Factors for Empowerment	√	√	√
Project Manager Framework	√	√	√

3.10.2 Data Analysis Technique

3.10.2.1. Content Analysis

Content Analysis is an analytical technique that codes and categorises qualitative data (text, images, web sites and videos) in order to analyse them quantitatively (numbers) (Saudners, 2015). Content Analysis is used to gather data from interviews to quantify texts in transcripts to identify themes. According to Bryman and Bell (2011), content analysis is "*an approach to documents that emphasizes the role of the researcher in the construction of the meaning of and in texts*".

Kulatunga, Amaratunga, and Haigh (2007), classified content analysis into four major approaches.

- i. The first approach is a word count analysis (counting the word frequency). Words that are repeated most indicate its importance.
- ii. The second approach is a conceptual content analysis (thematic analysis). This approach identifies common themes.
- iii. The third approach is the relational analysis (semantic analysis). This approach identifies similar concepts and their relationship between each other.
- iv. The fourth approach is the referential analysis. This approach focuses the subjective judgment of the researcher.

For the data analysis of the qualitative data, content analysis was used. Content data analysis is widely used in qualitative research to systemically classify and categorise a large amount of data into meaningful themes.

3.10.2.2. Coding of semi-structural interview data

Conversations were recorded and transcribed. Recorded notes were imported into NVivo for content analysis. The following steps were carried out to carry out the content analysis:

- a) Tag each interview question to the PhD Objectives
- b) Identify keywords when reading the Interview notes as Nodes within Nvivo

- c) Frequency analysis on the keywords (Nodes)
- d) Relate the Nodes to the PhD Objectives
- e) Wrote the results and quotes according to the PhD Objectives.

Nvivo software was used to structure and organise the data gathered from the interviews. The questions in the interview list were categorized by the PhD Objectives as part of the analysis. Once categorized by the objectives, key words were noted in the interview notes that formed the nodes within the Nvivo software tool for content analysis. Statistical analysis were not used in this study since no questionnaires were used. Cognitive analysis was not used in this study as well because it was not suitable for this study.

3.11. Validation

Embedded multiple case study was used to validate between the Project Managers and Community Leaders perspectives within two different physical settings who had experience earthquake disasters: San Francisco and Christchurch. In addition, a validation study was carried to validate the interviews with Project Managers, Community Leaders and against literature review. Project Managers and Community Leaders were interviewed to validate community empowerment from two different perspectives. The validation study, consisting of Figure 5-1, Section 5.3.4 and Section 5.3.5, was emailed to 23 individuals on June 6, 2018 to review the proposed framework. Fourteenth individuals responded. Some of the individuals participated in the PhD study and other individuals are the researcher's global contacts in the areas of Emergency Management, Disaster Management and Project Management. Their comments reshaped Figure 5.1 (visual representation of the Project Management Framework to empower communities during Disaster Recovery) into Figure 5-4.

The quality of the research design is judged by the use of various tactics to improve the validity and reliability of the study (Saunders, 2009) which was applied in this PhD study.

3.11.1. Reliability

Reliability is about achieving the same findings and conclusions if the research is repeated. (Bryman and Bell, 2011). Objective is to minimise the errors and biases during data collection (Amaratunga, 2002). It deals with whether the evidences and measures used are consistent, stable, dependable and predictable. In essence, the same findings can be produce by the same procedures.

3.11.2. Validity

Properties of validity ensures that the data collected or the propositions formed measure what the researcher actually wants to measure. According to Easterby-Smith (2012) validity is "*the extent to which measures and research findings provide accurate representation of the things they supposed to be describing*". Reliability concerns whether the research findings accurately reflect the social reality being studied (Collis and Hussey, 2009). The three types of validity are:

3.11.2.1. Construct validity

Establishing correct operational measures for the concepts, ideas and relationships being studied (Yin, 2009). Construct validity in this PhD study was met by using multiple data collection method (interview and literature review) within embedded multiple case study format. Embedded multiple case study format is:

- Two case studies (San Francisco and ChristChurch)
- Within each case study, a separate questionnaire for the Project Manager and Community Leader. The questionnaire set up the format for the semi-structure interviews.

3.11.2.2. Internal validity

Applies only for explanatory or causal studies only, but not for descriptive or exploratory studies. Validity seeks to establish a causal relationship. Internal validity was not used in this PhD Study.

3.11.2.3. External validity

Establishing a domain to which the study’s findings can be generalised. Similarly, research strategies can produce very reliable but with no validity if not designed properly. External validity will be a major outcome of the proposed framework to be used in different other countries, types of disasters, cultural and geographical areas by Program/Project Managers. Case studies will be selected by types of disasters within a similar and different countries. The framework will account for the variations noted.

The following table summarized the tactics used to ensure validity and reliability of the approach and findings of this study. The table is based upon Yin (2003b) overview of validity and realibility.

Table 3-13: Case Study Tactics for Four Design Tests (Yin, 2003b)

Tests	Case study tactic	Phase of Research in which tactic occurs
Construct validity	<ul style="list-style-type: none"> • Use of multiple sources of evidence • Establish chain of evidence • Have Key informants review draft case study report 	<ul style="list-style-type: none"> • Data collection • Data collection • Composition
Internal Validity	<ul style="list-style-type: none"> • Do pattern matching • Do explanation building • Address rival explanations • Use logic models 	<ul style="list-style-type: none"> • Data analysis • Data analysis • Data analysis • Data analysis
External validity	<ul style="list-style-type: none"> • Use theory in single-case studies • Use replication logic in multiple-case studies 	<ul style="list-style-type: none"> • Research design • Research design
Reliability	<ul style="list-style-type: none"> • Use of case study protocol • Develop case study database 	<ul style="list-style-type: none"> • Data collection • Data collection

The PhD study is a multiple-case embedded study to ensure replication of the findings. Following the empirical investigation, the findings of the study (mainly the framework developed) will be validated through contacts used in the study and international contacts the researcher has obtained over the years. In essence, 10 to 15 individuals were used to validate the framework proposed. The international contacts are from the Project Management field, Disaster Management and Emergency Management from Asia, North America, and South America.

3.12. Ethical Approval

According to Yin (2009) care must be taken when carrying out a research study along ethical lines. The care usually involves

- gaining informed consent from all research participants persons on the nature of the case study and formally soliciting their participation;
- protecting the participants from any harm;
- protecting the privacy and confidentiality of the participants; and
- taking special precautions to protect *especially vulnerable groups* (such as children).

This PhD Study followed the ethics requirements for Post-Graduate Study. The following ethical principles were followed:

- Respect the autonomy of human research subjects
- Do no harm to researchers or human research subjects
- Act justly towards those who contribute to your research

The following forms were used to meet the ethics requirements:

- Ethics Application Form UK PGRv5
- Invitation letter sample
- Research Participant Consent Form example
- Research Project Information Form
- Risk Assessment forms Research Projects v1

3.13. Summary

This chapter has presented the research methodology adopted for this study. Within the context of this study, case study research strategy has been selected due to number of reasons. Firstly, case studies falls within the interpretivism philosophy, which the study belongs to. Case study research strategy validated Project Managers experience and insights on community rebuilding. The qualitative data will validate the framework from a Project Management and Community perspective. Further, case study will provide the researcher to use multiple sources of evidence to gather a rich set of primary data. The next chapter discusses the data analysis and interpretation of results.

Chapter 4 – Data Analysis and Interpretation of Result

4.1. Introduction

As discussed in the research methodology chapter, this research uses two case studies to gather the data: San Francisco and Christ Church. The analyzing of data started by classifying the data related to the research study's objectives.

4.2. Case Study Background – San Francisco

4.2.1 Disasters in San Francisco

When one hears about disasters in San Francisco, one immediately visualizes earthquakes. Other types of disasters occur in San Francisco. The following figure indicates the numbers and types of disasters that occurred from 1950 to 2009 by counties in the State of San Francisco, United States.

County	Floods	Weather/Storm	Drought	Wildfire	Energy Shortage	Earthquake	Agricultural Emergency	Civil Disturbance	Landslide	Water Mngmt & Fish Shortage	Infrastructure related	Oil Spill	Flu	TOTAL
Alameda	11	6	3	3	2	1	1	1	0	0	1	1	1	31
Contra Costa	12	6	3	0	2	1	1	1	0	0	1	1	1	29
Marin	9	7	3	1	2	2	0	0	0	1	0	1	1	27
Napa	9	7	3	3	0	1	0	0	0	0	0	0	1	24
San Francisco	4	2	1	0	1	1	0	1	0	1	1	1	1	14
San Mateo	10	5	3	0	1	1	1	0	1	1	0	1	1	25
Santa Clara	9	4	3	2	2	2	2	0	0	0	0	0	1	25
Solano	9	6	3	2	0	1	1	0	1	0	0	1	1	25
Sonoma	8	9	3	2	1	0	0	0	0	1	0	1	1	26
TOTAL	81	52	25	13	11	10	6	3	2	4	3	7	9	

Figure 4-1: Disasters from 1950 to 2009 in San Francisco

Source: FEMA: California State Disaster History and CALEMA: Emergency & Disaster Proclamations and Executive Orders by Date (November 2003 – Current).

The county of San Francisco had 14 disasters from 1950 to 2009 (FEMA, 2009) as shown above. Earthquakes occur on a long-time horizon of 50 to 100 years apart but its impact on the community is major. As indicated Floods (4) and weather storms (2) are more frequent than other disasters. California is currently suffering a major drought where farms and river

basis are lost. Napa earthquake occurred in September 3, 2000 at a 5.2 magnitude. El Nino disaster occurred creating severe floods and landslide in February 2, 1998. Over 11, 000 people were displaced. The January 1997 floods in Yosemite Valley impacted 300 square miles. Several levees were broken and 23,000 homes were impacted.

The following table lists the significant earthquakes that taken place in the San Francisco area since 1836 (Earth Quake Safety, 2014).

Table 4-1: Earthquake History of the San Francisco Bay Area (Earth Quake Safety, 2014)

1836	M 6.8 South San Francisco Bay Region
1838	M 7 San Andreas fault San Francisco Peninsula
1865	M 6.5 San Andreas fault
1868	M 7 Hayward fault zone Hayward Earthquake
1892	M 6.5 Undetermined fault Vacaville Earthquake
1898	M 6.5 Rogers Creek fault Mare Island Earthquake
1906	M 7.8 San Andreas fault Great San Francisco Earthquake
1911	M 6.5 Calaveras fault Morgan Hill Earthquake
	68 year quiet period — 1911 to 1979*
1979	M 6.0 Undetermined fault Coyote Lake Earthquake
1980	M 6.0 Mt. Diablo-Greenville fault Livermore Earthquake
1984	M 6.3 Calaveras fault Morgan Hill Earthquake
1989	M 7.1 San Andreas fault Loma Prieta Earthquake

2001	M 5.1 West Napa fault Napa Earthquake
2007	M 5.6 Calaveras fault

Please note that there was a 68 quiet period from 1911 to 1979; no earthquakes over 6.0 Richter magnitude occurred. During this same period, the San Francisco had its greatest population growth. According to geologists, the San Francisco area will receive a major earthquake of 7.0 Richter in the next 15 to 20 years based on 75 probability of similar earthquake behavior found between 1836 and 1911.

In 1989 a major earthquake hit the San Francisco area: Loma Prieta. Loma Prieta earthquake measuring 7.1 on the Richter scale lasted 10 seconds on October 17, 1989, with little loss of life but over \$10 billion dollars in property damage. The following synopsis presents damage that occurred:

- Date: October 17, 1989
 - Location: Northern California
 - Disaster type: Magnitude 7.1 earthquake on the Richter scale
 - Casualties: 63
 - Injuries: 3,757
 - Displacement: 12,000 people
 - Estimated overall cost: \$10 billion property damage (\$15 billion in 2009 dollars)
 - Residential impact: 24,000 properties damaged
 - Economic impact: 2,600 businesses damaged
- (GAO, 2009).

Out of the 24,000 residential units damaged, the cities of Oakland and San Cruz were greatly impacted. Oakland experienced destruction or severe damage of 1,300 single-room units for low-income minority and elderly residents. These units had to be evacuated. Red Cross provided mass-care and shelter as the local government was overburdened. The

building owners decided to demolish the units rather than upgrade to earthquake safety standards.

4.2.2 San Francisco Disaster Profiles

Figure 4-2 (Earthquake Zones) indicates the earthquake faults in San Francisco area. The main concern is along the west side of San Francisco.

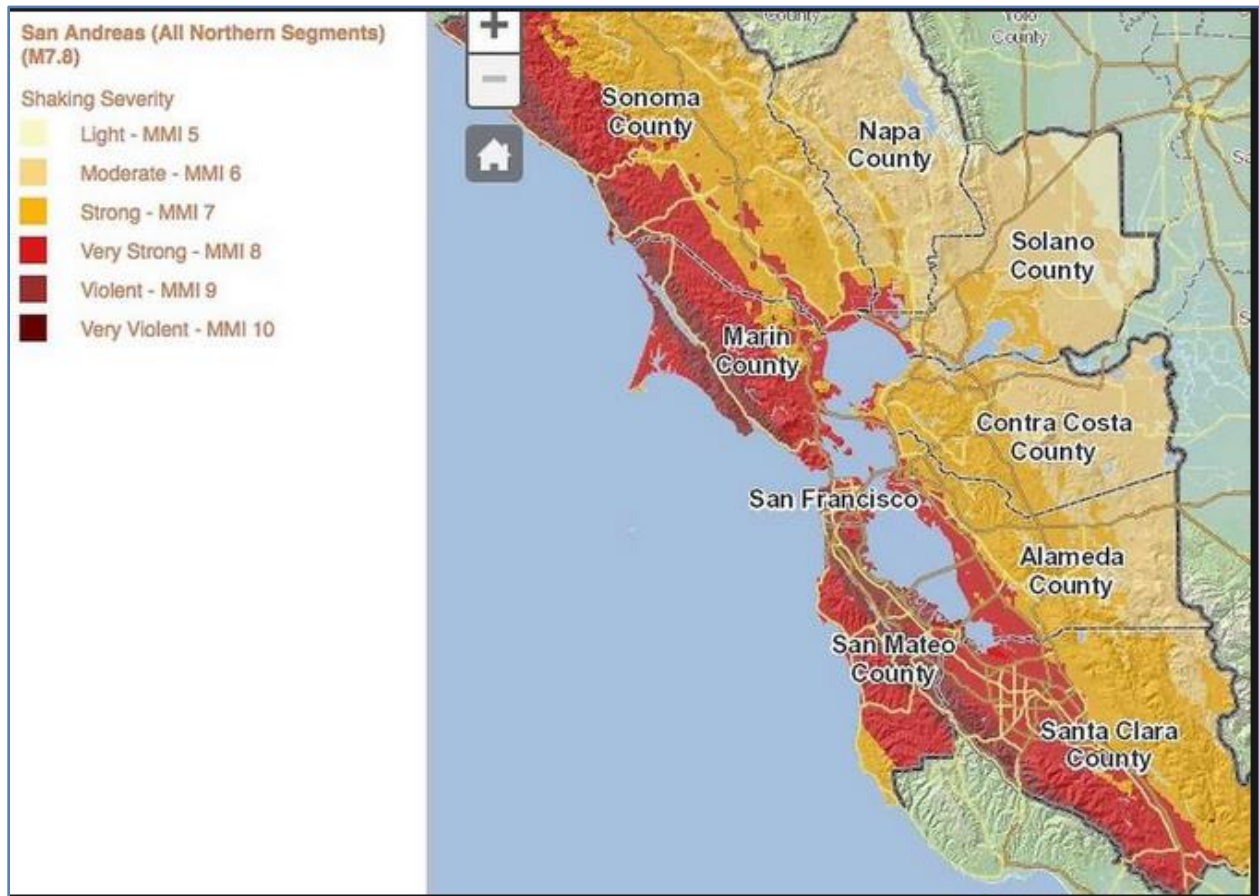


Figure 4-2: San Francisco - Earthquake Zones (Moffitt, 2016)

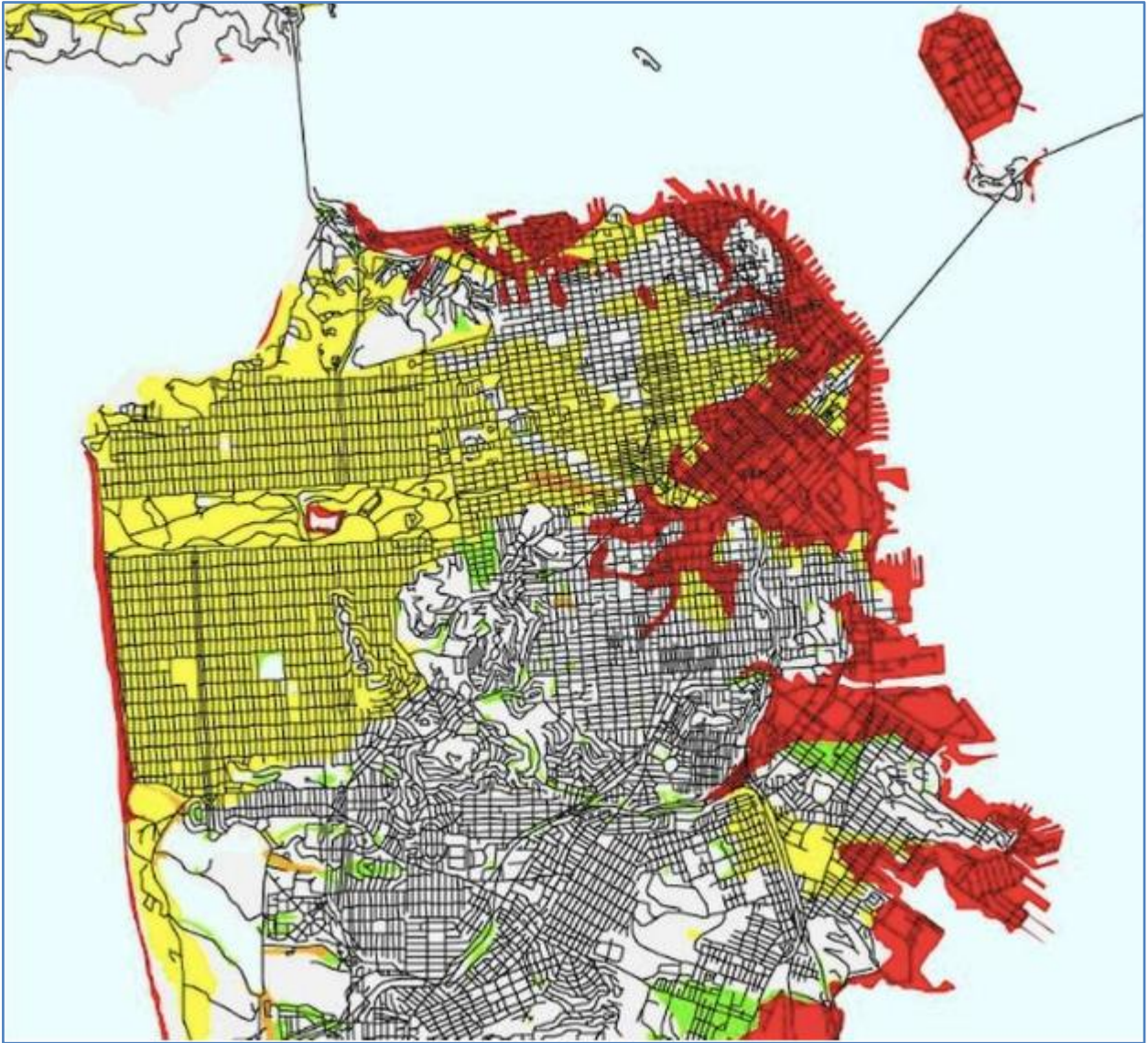


Figure 4-3: San Francisco - Liquefaction Zone (Moffitt, 2016)

Figure #4-4 (Population Distribution) shows high population zones along the eastern side of San Francisco; the same area as the high liquefaction zone noted in Figure #4-3.

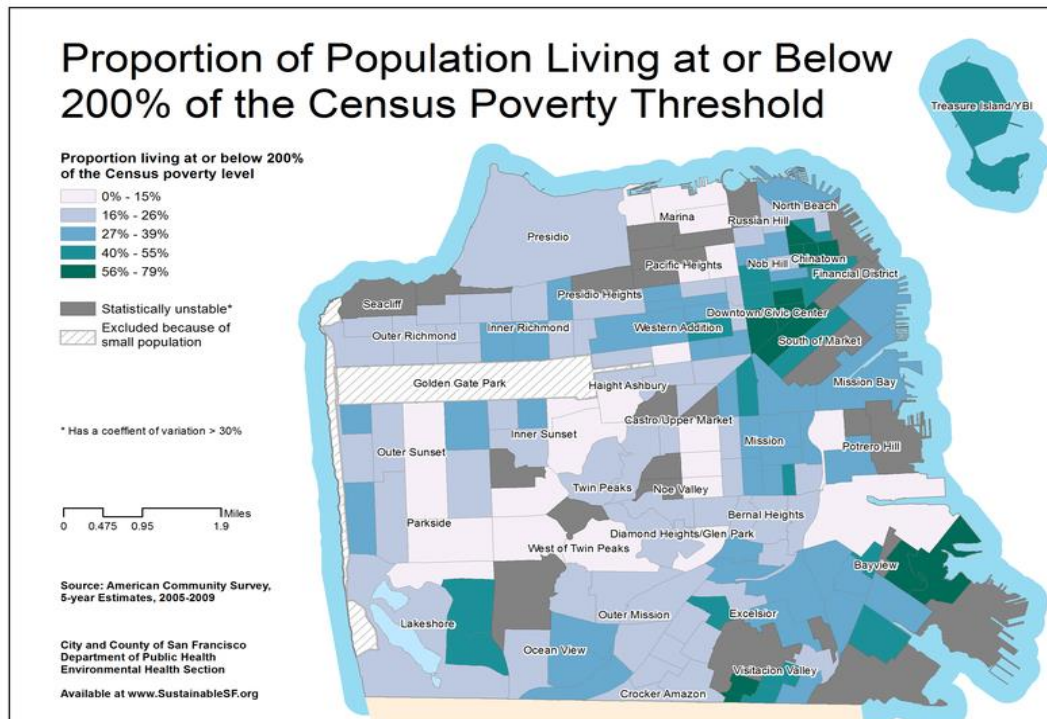


Figure 4-4: San Francisco - Population Distribution (SF Public Health, 2017)

4.2.3 Empowered Community in San Francisco

Community resilience within San Francisco refers to a community’s ability to recover quickly and function well in the wake of a severe disturbance. It goes beyond the two traditional elements of disaster resilience—preparedness and response—to include mitigation and recovery. A program has been established through the Empowered Community Program (ECP). The Empowered Community Program (ECP) offers communities a bottom-up planning and implementation process that puts community leadership in charge of creating their resilience strategy from the very beginning; as a result, it increases the likelihood of sustained participation by key local stakeholders at the neighborhood level (San Francisco, 2016).

The Program is rooted in the Federal Emergency Management Agency (FEMA)’s “Whole Community Approach” to emergency management, the ECP guides communities as they

work together to make informed decisions about how to invest in their neighborhood's physical and social infrastructure so that during times of stress, stakeholders can actively contribute to successful response and recovery. In addition to more "traditional" disasters (earthquakes, tsunamis, manmade, etc.), the onset of climate change will only increase the frequency and severity of stressors to strike communities over the coming decades. These stressors will generate a myriad of hazardous outcomes at the neighborhood level, including sustained lifeline and social service delivery disruption. As a result, vulnerable populations will be confronted with more life-threatening scenarios.

At its core, the ECP is a leadership development program that leverages an "experiential learning" model. By streamlining leaders' access to tools, resources, and technical support for achieving self-identified disaster resilience goals, the ECP increases local leaders' capacity to successfully meet a wide range of challenges, including public safety, health, economic and transportation concerns.

Servant leadership ensures the highest level of ownership by the Community and increases the likelihood of community members' sustained participation after the Program Management Team winds down its technical support. Facilitative leadership emphasizes the importance of using facilitation skills such as effective communication, active listening, and questioning techniques to help make decisions. Distributed leadership spreads authority and responsibility horizontally (rather than vertically, as in a traditional hierarchy). It enables individuals to take interdependent and collective action to accomplish shared goals. Instead of concentrating on one leader who makes key decisions and energizes the team, this type of leadership champions the contributions each participant makes and the influence they exert toward successful short-term outcomes. Distributed leadership empowers people to participate, collaborate, and learn from each other.

4.3. Case Study Background – Christ Church

4.2.1 History of Christ Church Earthquake

New Zealand consist of two main islands straddling the Pacific Mobile Belt, a tectonic plate boundary between the Pacific and Australian plates. Ninety-five percent of New Zealanders live within 200 kilometres of the plate boundary.

Every year thousands of earthquakes occur in New Zealand, many too small to be felt. From 1992 to 2007, New Zealand experienced over 30 earthquakes of magnitude 6 or more, most in remote and lightly populated locations. Recently, the Canterbury earthquake sequence in 2010-11 generated 12,000 aftershocks, 42 earthquakes over magnitude 5 and more than 4,400 of a magnitude 3 or greater. There were four earthquakes measuring 6.0 to 7.1 on the Richter scale:

- The first earthquake, Darfield earthquake, of magnitude 7.1Mw, occurred at 4:35am on 4 September 2010, 40 kilometre west of Christchurch at 10 kilometre depth. Some property damage occurred but no loss of life.
- The second major earthquake, Christchurch earthquake, of magnitude 6.3Mw, occurred at 12:51pm on Tuesday 22 February 2011 centered 6 miles southeast of Christchurch at a depth of 5 kilometre. There were 185 fatalities and numerous injuries.
- The third major earthquake, of magnitude 6.3Mw, occurred at 2:20pm on 13 June 2011, 10 kilometre southeast of Christchurch at 6 kilometre depth. Further property damage and some serious injuries occurred, but no loss of life.
- The fourth major earthquake, of magnitude 6.0Mw, occurred on 23 December 2011, two days before Christmas. There was further property damage, but no serious injuries.

(Platt, 2012)

4.2.2 CERA Formation

The Canterbury Earthquake Recovery Authority (CERA) was established as a government department on 29 March 2011 to lead and coordinate the Government's response and recovery efforts following the earthquakes of 2010 and 2011 in Canterbury.

CERA was disestablished on 18 April 2016 as the Government transitions from leading the recovery, to establishing long-term, locally-led recovery and regeneration arrangements.

Post-disaster recovery is dependent on speed of disaster recovery versus planning. This was shown with CERA experience for New Zealand's recovery and the backlash received from the public that their input was ignored. Government needed to get infrastructure (roads, sewers, and water) quickly. Planning takes time. Speed is important because many stakeholders want to recover quickly to work and live in their homes. One alternative is to plan more efficiently within the constraints of time (Johnson, 2016). Johnson suggested iteration, increasing planning capacity, decentralize the process, and rely on pre-disaster plans. Iteration refers to disaster recovery projects being implemented in stages; each stage is more elaborate than the previous stage. Charrette technique is used in urban planning is a multi-disciplinary approach carried out in a short period of time to explore short-term and long-term outcomes of disaster recovery of the community for long-term sustainability. Scenario based planning with models proves to be effective.

A number of community initiatives, such as Gap Filler and Open space in New Zealand, took place to address inaction of government. Community initiatives and non-governmental organizations (NGOs) emerge because of the speed of disaster recovery - time compression (Johnson, 2016).

Speed of recovery impacts the speed of communication (good and bad news of recovery).

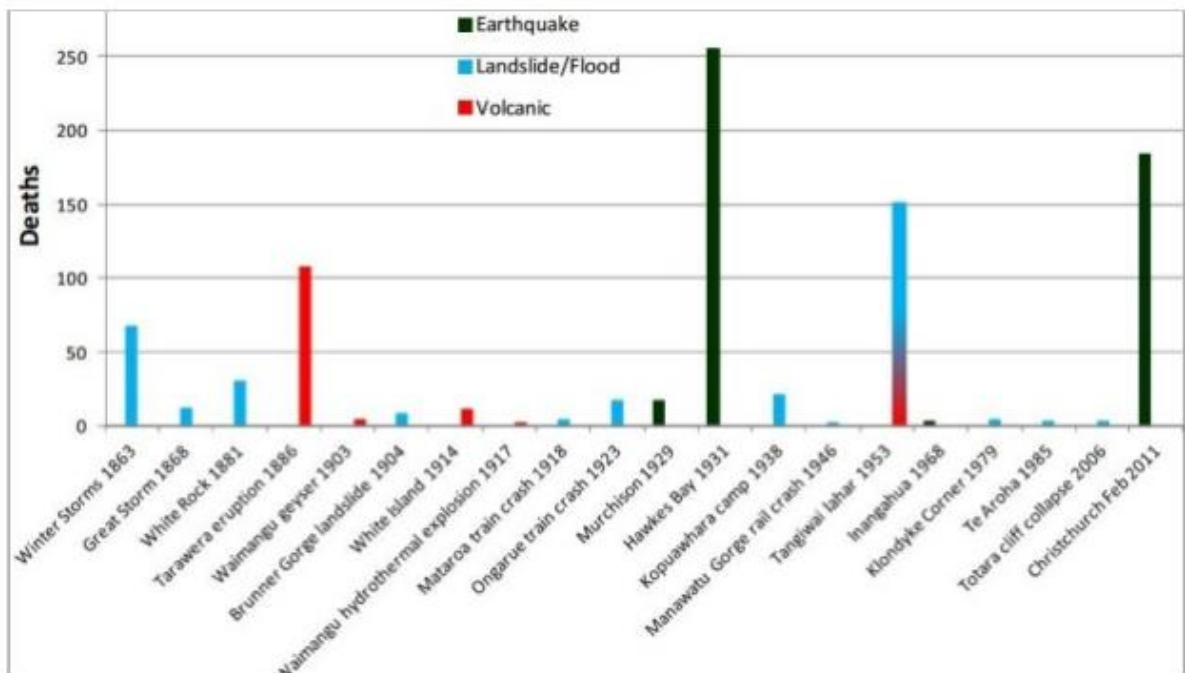
Controller and Auditor-General (2017) noted that CERA could more efficient in communication and community engagement no matter how much time and effort CERA tried the remedy the issue. CERA did not adapt its approach. Public's trust and confidence declined over the years for public to influence decision-making about the recovery.

4.2.3 Christchurch Central Recovery Plan

On 30 July 2012, the Christchurch Central Recovery Plan was developed by the Christchurch Central Development Unit (CCDU). The plan included input from residents, community groups and various government authorities. The vision is for a central Christchurch to become the thriving heart of an international city. Drawing on our rich natural and cultural heritage, and the skills and passion of our communities, to embrace opportunities for innovation and growth.

The Christchurch Central Recovery Plan (<https://www.youtube.com/watch?v=893n--sFilg>) aims to not only restore pre-quake Christchurch, but create an even better city. This includes improving the social, economic, cultural and environmental wellbeing of greater Christchurch and its communities. The plan proposes to significantly shrink the size of the CBD making it a more compact, people-friendly space framed with parks. The banks of the Avon River will be central to this vision allowing people to make the most of the city's scenic waterway. Public artworks chosen for Ōtākaro Art by the River will be inspired by or related to the river's history, ecology or geography.

4.2.4 Deaths in New Zealand



GNS Science

Figure 4-5: New Zealand – Natural Hazard Deaths (Edens, 2016)

4.2.5 Red Zone

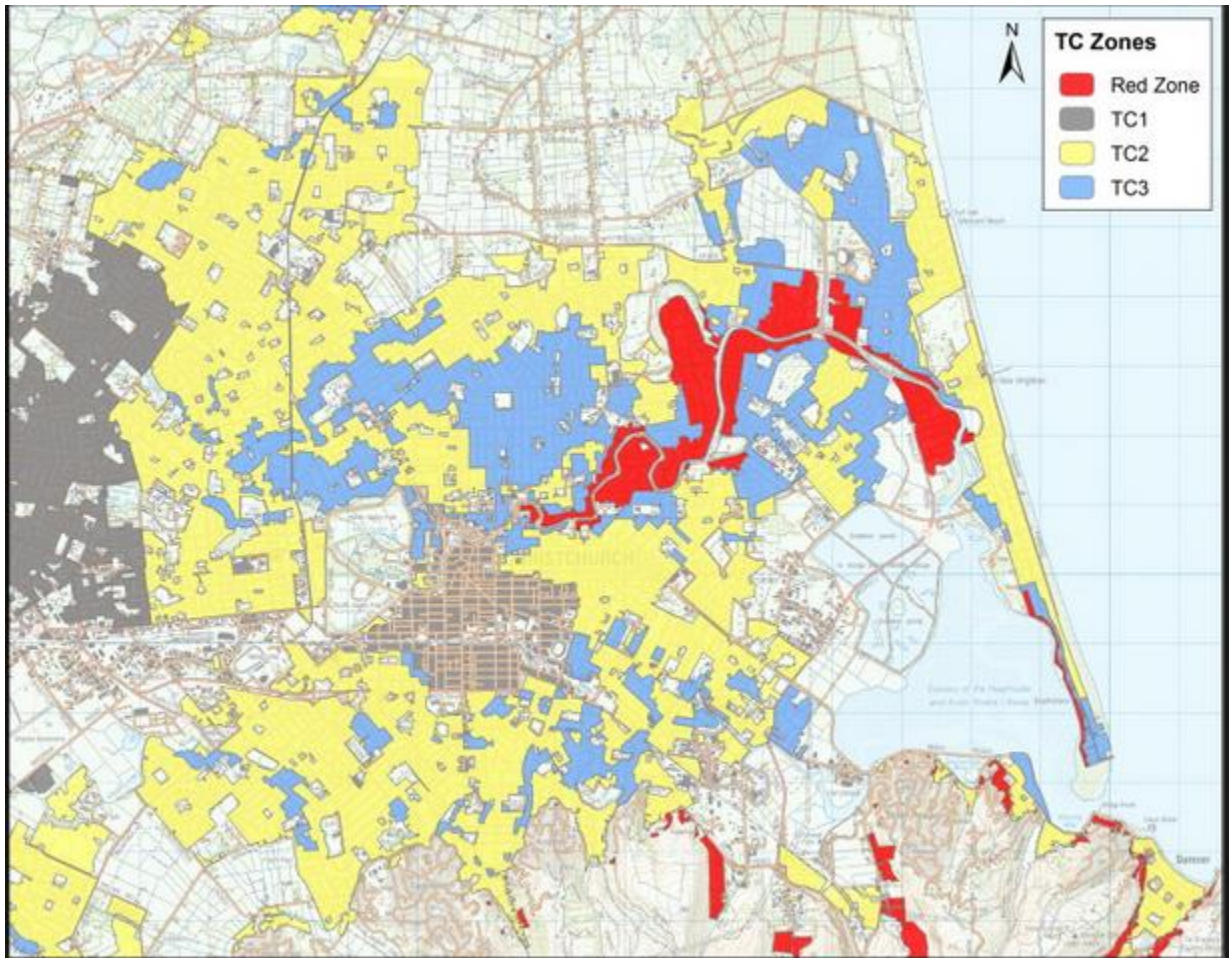


Figure 4-6: Christ Church - Red Zone District (Saunders and Becker, 2015)

The Red zone was the result of liquefaction. Liquefaction was much more extensive than in the September 2010 earthquake. Eastern sections of the city were built on a former swamp. Shaking turned water-saturated layers of sand and silt beneath the surface into sludge that squirted upwards through cracks. Properties and streets were buried in thick layers of silt, and water and sewage from broken pipes flooded streets. House foundations cracked and buckled, wrecking many homes. Despite the damage to homes, there were few serious injuries in residential houses in liquefaction areas. However, several thousand homes will have to be demolished, and some sections of suburbs will probably never be re-occupied.

In the weeks following the earthquake about 70,000 people were believed to have left the city due to uninhabitable homes, lack of basic services and continuing aftershocks. Timaru's population swelled by 20% and thousands of pupils registered at schools in other cities and towns. However, many were expected to return to Christchurch as conditions improved.

4.2.6 New Zealand Demography

In terms of employment, 74% of people aged 15 to 64 in New Zealand have a paid job, above the OECD employment average of 66%. Some 80% of men are in paid work, compared with 69% of women. In New Zealand, around 14% of employees work very long hours, more than the OECD average of 13%, with 20% of men working very long hours compared with 7% of women (OCED, 2018).

Good education and skills are important requisites for finding a job. In New Zealand, 74% of adults aged 25-64 have completed upper secondary education, close to the OECD average of 76%. This is truer of men than women, as 75% of men have successfully completed high-school compared with 73% of women. In terms of the quality of its educational system, the average student scored 509 in reading literacy, maths and science in the OECD's Programme for International Student Assessment (PISA). This score is higher than the OECD average of 497. On average in New Zealand, girls outperformed boys by 5 points, lower than the average OECD gap of 8 points.

Concerning the public sphere, there is a strong sense of community and high levels of civic participation in New Zealand, where 99% of people believe that they know someone they could rely on in time of need, higher than the OECD average of 88%, and the highest figure in the OECD. Voter turnout, a measure of citizens' participation in the political process, was 77% during recent elections, higher than the OECD average of 68%. Voter turnout for the top 20% of the population is an estimated 86%, whereas the participation rate of the bottom 20% is an estimated 75%. This difference is lower than the OECD average difference of 13 percentage points.

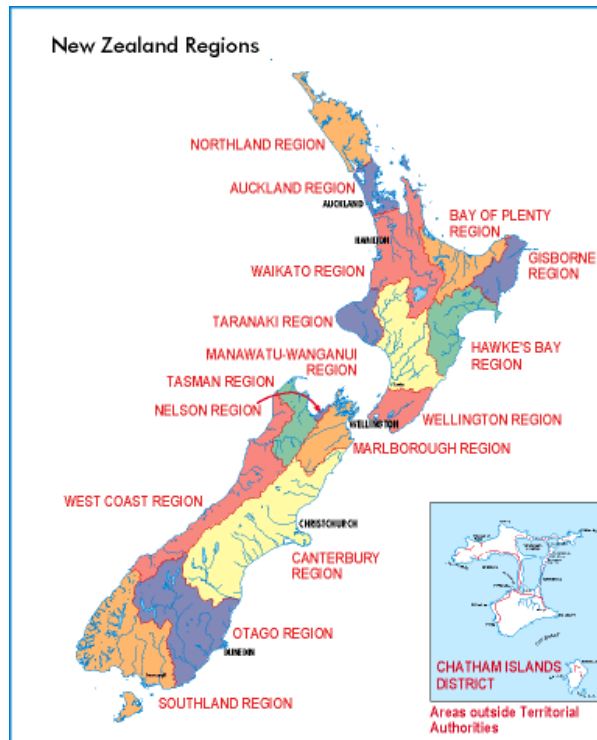


Figure 4-7: New Zealand Regions (OCED, 2018)

4.4. Interpretation of Results – San Francisco

4.3.1. Introduction

A number of people (13 in total) were interviewed in the San Francisco area ranging from Project Managers, Community Leaders and Community Consultants. This section will describe their experiences and insights on the guidelines for Project Managers to work with empowered communities. As the following table indicates most of the responses dealt with Project Manager Framework, Key Factors for Empowerment and Project Manager Empowerment (how the Project Manager empowers the community). Community strategies and Community Response are lowered because most of the interviewees were Project Managers rather Community Leaders. Detail review of each objective will be explained in the following sections.

Table 4-2: San Francisco - Nivo Analysis for all PhD Objective Nodes

Name	Source	Frequency Mentioned
Community Response	10	17
Community Strategies	13	43
Community Empowerment	12	34
Project Manager Empowerment	7	17
Key Factors for Empowerment	13	57
Project Manager Framework	13	79

4.3.2. Community Response

A set of interview questions were asked around Community response as shown in Appendix#1 and #2. According to ten interviewees, the responses shown in Table 4-3 were the noted community responses given.

Table 4-3: San Francisco - Nvivo analysis of the Community Response themes nodes

Name	Source	Frequency Mentioned
Community Funds	2	2
Community Prior Experience	2	2
Hiker Analogy	1	1
Power Recognition	2	2
Strength in Number	2	2

4.3.2.1. Community Funds

Prior experience of the community during disasters in San Francisco and New Orleans with the government indicates the community has limiting power as reiterated by SF_C_8 quote above. Limiting power is based upon the funds accessible by the community through direct funds or funds matching. The funders, such as the government and International Banks, have final say. It is the best interest of the funders to listen and work with the community on a long term basis. SF_C_2 commented: *“As shown with FEMA future directions, the first 72 hours the community is on its own, the community must take care of itself.* The

original philosophy that government takes care of its people is limited by available money and resources through taxes. Other approaches need to be considered, such as working with the community as it recovers and rebuilds after a disaster.

4.3.2.2. Community Prior Experience

Community input is shaped by community residents who lived in the community for a period of time. How the community interacts is impacted by such activities as by street design, neighborhood layout, stores, schools, community centers, parks and recreation centers. Such interactions helps the way community respond during a disaster. What works and does not work is the insight that community members can offer to Project Managers and governments. SF_P_1 indicates that: *“it is where the community live and work. They sense what happened in the past. They may not have to restore as the same way: parks and roads are different design dependent on changing values. Prefer curve roads rather than straight roads. Community involvement had measurable impacts”*.

4.3.2.3. Hiker Analogy

Interviewee SF_P_1 used the Hiker analogy to explain how community members can effectively respond and work after a disaster: *“Make do (repurpose and use things smartly) such as a hole in can serve many purposes. Educate the smart things to repurpose items: other ways to achieve the goals. Resources are smartly effectively used”*. The hiker analogy is applicable for short term needs within the disaster relief and disaster recovery phases. On a longer-term basis for the community members, finances and economics need to be addressed. Community members who are business owners are motivated to restart their lost business. Restart the lost business helps the other community members within the community to rebuild the community. Interviewee SF_P_11 used an investor analogy to describe how community can rebuilt itself financially and economically: *“There is a desire to come back. Business should not come back since it is an opportunity to call for change. Things to be destroyed to make upgrades”*. SF_P_11 indicates restart the former business or upgrade the previous business for new opportunities.

4.3.2.4. Power Recognition

Strength in numbers, network and reliable information has made the community been recognized as a major stakeholder in the project through a power relationship with the government so that the way they respond is of one unified voice. The power relationship is established when the government acknowledges the community. SF_C_8 comments on the power relationship of the community relative to the government: “*Community has limiting power. Community make two decisions out of large number of decisions. Government claims transparency. Community participate in the final phase of the project not the first phase. Government claim final phase was the current phase. Government does not like conflict; they do not want criticism. Hierarchical power structure: we made all the critical decisions. Bring particular people who are favorable to major decisions. Big decision is based on big capital made at top level not at the ground which really impacts the community. Community have to real capital to make real decisions*”. The key component is "real capital". Is the "real capital" money and/or power and/or how to work with the government. SF_C_8 indicates” *people have to learn how to ask questions and who to question. People have to learn how to make policy not influenced by others (professionals) who have their policies*”. The community needs to understand how to utilize its network and community assets to make themselves heard and respected as major stakeholders. Some communities in San Francisco have been successful to be recognized by the government and how to work with the government. Recognition and understanding government process takes time. For post-disaster recovery, recognition and understanding government processes should have been pre-established for quick recovery, else make take a few years as in the case of New Orleans. The result has been an incredible community response in New Orleans by taking care of themselves when the government ignored the community. Five years later the government has decided to work with the community. A waste of time and resources by the government.

4.3.2.5. Strength in Number

For the community to be heard they must be recognized by the Project Manager, government and funding agencies. Strengths of community when responding to disasters is based on being large in number and act in uniform and consistent manner. San Francisco interviewee, SF_C_3 , best describes their strength that was used: “*as constituents they are*

stronger together. Standing together gives them power. Standing together is based on what the members have in common. They should advocate for those in common – commonalities within the groups. Language and cultural and age barriers will exist. Therefore, we use this ‘strength’ when responding to disasters”. The community becomes strong through its numerous connections that community members have with one another as well as being constituents to the government, hence their response to disasters in a collective manner. The forming of these connections is through associations, such block parties or neighborhood parties. SF_C_13 describes how this formation takes place: *“More I know my neighbors who are the survivors to assist the people in my immediate area. Build relationships in my block. We would gather in a local place. This group of people who they know in the block to know most vulnerable, medical. Once assess, the group will go to the next block. Assess the next block. That will link to gather information to need extreme assistance and how to gather information”*. Once the community builds its network from one block to another block then the community can respond quickly in an efficient and effective manner. The community becomes acknowledge by their numbers and support for one another to shape the community future direction after disasters with accurate and reliable information. These principles are currently practiced by various San Francisco communities handling stressors (fires, drought, and power outages).

In summary to Community Response, the strength in numbers leaders to power recognition by the government and funding campaigns by the community to help the community rebuilt. The hiker analogy stress use whatever resources you have to rebuild yourself, be initiative.

Strengths in number, power recognition, community knowledge, community prior experience and hiker analogy are community responses to stressors and disasters. There were success and failures but very important in the post-disaster recovery. The next section dwells into Community Strategies.

4.3.3. Community Strategies

Community strategies expressed by interviewees are shown in the following table 4-4. Each of the strategies will be discussed consecutively.

Table 4-4: San Francisco - Nvivo analysis of the Community Strategies themes nodes

Name	Source	Frequency Mentioned
Collaboration between Community and Government	5	10
Public Participation	5	6
Young Community Leaders	1	1

4.3.3.1. Collaboration between Community and Government

Another important community strategy is collaboration between the disaster recovery professionals and the community members after the initial 72 hours. Interviewee SF_C_4 best describes the process: "*Citizens feel that government should do their job. Government is going to fix if the government has the capacity. At this time, FEMA encouraged 72 hours because they do not have the resources. Sandy Hurricane was an example. If the government does not deliver or on time then citizen becomes very upset. There is a potential to become a mob because of their anger. Police and military force brought in to control the mob. To offset potential anger, the community needs to be encouraged to continue help in the recovery. A means to control the anger*". If government and professionals ignore the community, then riots results because of frustrations on being ignored. Bad feelings result that last for many years. The disaster recovery deliverables will not be successful.

4.3.3.2. Public Participation

From the community perspective, the strategies that the community needs to approach the Project Manager and government is through public participation. Public participation is through inform, consult, collaborate and empowerment as discussed in Section 4.3.4 (Community Empowerment). The community has ideas and wisdom to shape the community through shared decision making. Belief in collaboration rather than conformational to form better relationships. A lot of infighting within city and community result. Meet with the community in group and one to one. Get to know them. In the current and past, Project manager priority is to spend the funds allocated as soon as possible. The Project Manager should get buy in from the community leader to ensure well-placed seed money.

4.3.3.3. Young Community Leaders

An important community empowered strategy outline by SF_C_10 suggest develop community leadership at young age. Start developing teenagers in community leadership roles from sports or church activities to interacting with local government. Time is needed to understand how to work with different Government officials and agencies, plus understanding the protocols. SF_C_10 summarizes "*start with younger community leaders to work with the City Government, understand the maze and need a culture to work the maze*". Community leaders, rather random citizen, is the best to work with the local government because of their knowledge of government functions, protocols and reputation. The random citizen will be at a disadvantage bringing forth community's' needs, concerns and advice. Interviewee SF_P_11 best describes the importance of knowledgeable citizen: "*Citizen has no glue; read information packages. The community leader has an informed perspective on the process. Capacity building is a cultural (mindset). Nurturing for mindset is accomplished through Block parties (let people know one another and network to one another). Know each other and where the skills are*". Once the community leaders are in place, then the community members need to support the community leaders on their directions. The support of the community comes through the attitudes and motivation of the community. In addition, the sharing of roles and responsibilities with the government. The government has indicated the community is on their own after a disaster for the first 72 hours. The community has to be organized to help its members. After the initial 72 hours, professionals are organized to assist the community for further recovery.

In summary, the community strategies identified to be successful were community to have young community leaders to engage the youth in rebuilding, collaboration between the community and government and an active public participation.

4.3.4. Community Empowerment

The key word of this objective is “empowering”. Reasons expressing for empowerment expressed by the interviewees ranges from intimate knowledge of the environment, people, community and future direction. The following table shows the noted community empowerment factors influencing the direction of community empowerment.

Table 4-5: San Francisco - Nvivo analysis of the Community Empowerment themes nodes

Name	Source	Frequency Mentioned
Community Engagement Styles	4	5
Community Representation through Natural Leaders	2	2
Involvement in all Project Phases	5	5
Knowledge of the Nuances of the community	2	2
Ownership of the Project	3	5

4.3.4.1. Community Engagement Styles

The San Francisco interviewee (SF_P_9) stress the use of empowerment in the decision making of rebuilding the community by community members. The interviewee summarizes empowerment as: *“Community ideas and wisdom helps to shape the community. Empower to be shape decision making. Would they go that far? That is part of empowerment.”* SF_P_9 indicates there are number of different types of participation other than empowerment in shaping the direction of the disaster recovery project: *“Cannot separate all the components of public participation. Community needs to be informed to start decision making. Sometimes they are working so much they don’t know how certain laws will impact them. The community has wisdom”*. Interviewee SF_C_6 explains the several types of community participation. The first technique is informed: *“Information is well done. Information overload and lack of clarification with no explanation. The expectation is providing most of the resources and understand that the community is doing the work. There is a lack of connection. Government not saying their roles and responsibilities”*. In summary, community felt a lack of connection to the recovery process; community not informed about their roles and responsibilities. Community has no say on the rebuilding the community. Another technique of community participation used is consult. The same interviewee (SF_C_6) commented about consult technique: *“Consult does not exist: City agencies working with themselves. Do not listen (active listen). They have their agenda. This agnostic approach is not getting anywhere. Belief in collaboration rather than conformational to form better relationships. A lot of infighting within city and community result...Community has kernels of knowledge. Meet with the community in*

group and one to one. Get to know them. Project manager cannot do this because they have a lot of money to spend. Get their buy in". City agencies does not consult with the community on the directions of rebuilding. The Project Manager focus is spending the funds as soon as possible without consultation. The interviewee cautions that buy in must be obtained from the community for the project deliverables (rebuilding the community) be successful to all parties. Community is not satisfied with the new location then the community will move to other locations. A lose-lose situation arises both for the Government, Agencies and community.

4.3.4.2. Community Representation through Natural Leaders

To make community empowerment be successful in the disaster recovery project is community representation. Interviewee SF_P_9 indicates that "*Not everyone can sit at the planning table.*" Not all community members be involved in the decision-making but through their natural leaders who are recognized looking after the community. The natural leaders can be found in sport activities (coach), religious activities (priest), social activities (festival) and cultural activities within the community. They manifest their leadership skills with easy rapport with people and organizing events for the benefit of the community. Their presence allows members to converse their views and being recognized to be listen and appropriate action to be taken. According to SF_C_10 the natural leader must: "

- a. Listen to the community*
- b. Prioritize with the community. Each community is different.*
- c. Find and rally around the members".*

The community natural leaders represent the community hence community is involved in decision-making. The community leaders are recognized by the community. This ensures rapid decision-making and implementation for the benefits of the community.

According to SF_C_13, "*Throughout the disaster recovery period, someone(s) identified the natural leaders for community improvement. Approach these leaders to be woven in and after disasters.*" The natural leaders need to be identified before a disaster, rather than afterwards. Once identified the recovery can come quickly using the established networks in all facets of the community from social, cultural, religious, business and economic life.

The natural leaders may need to be trained in how to work with the government and its process to assist the community. Within San Francisco, natural leaders are trained through a Leadership Academy program (Daniel Homsey, Personal Communication) to have better leaders and how to work with the government. This training enhances the natural leaders usefulness to the community and the community is confident that views and changes are appropriate for their sustainability.

In summary, "*Community is more engaged when they say these leaders are the correct one to rebuild the community*" according to SF_P_11. The natural leaders have a broad network of people rather small group of people to be representative.

4.3.4.3. Involvement in all Project Phases

The effectiveness of community empowerment is community involvement in all phases of the project. The interviewee SF_P_9 indicates community: "*Their involvement in the process.*" The community must be involved in all project phases and project process from beginning to end. SF_C_5 gave an interesting example in which many community representatives were involved at the beginning of the project but decreased drastically after a few sessions: they did not see themselves in the continuing process: "*In the MIT Project (identify resources and hazard on risk maps), 100 people attend a series of meetings involved in talking of planning and implementation of resiliency program. After 4 workshops the numbers dropped from 100 to 8 people now. They did not see themselves in the continuing process. They should have been involved*". Through the San Francisco's Neighborhood Emergency Response Team (NERT), community members are encouraged to be involved in all phases of the disaster recovery project. Membership, and representatives, do not drop off after a few sessions through this program. According to SF_P_7, "*events are planned yearly in which community members involved in all phases of initiation and planning and implementation. Should be part of their lives. Nert training takes 3.5 hours for 6 weeks based on simulation of disasters*".

SF_P_1 presented examples in which lack of community involvement led to some embarrassing situations for the government who did involve the community:

- a. *"City went out and close the signing the contract. Community member google the company and found the company losing money. The contract had to be rescheduled. Public is more aware than the government.*
- b. *Another example is a recycle water plant located in Golden Gate Park. Government proceed. Known from the offset cannot build in a park".*

Community involvement in all phases is very beneficial to the disaster recovery project to address community needs and gain community support for long-term sustainability.

4.3.4.4. Knowledge of the Nuances of the community

Interviewee SF_P_1 best explains the importance of community members being empowered based upon nuances of the community and one approach does not fit all communities in rebuilding after a disaster: *"Professionals did not understand the nuances of the community. The cookie approach not appropriate. New Orleans top down approach; afterwards 3 years later the bottom approach was used".* Community empowerment was ignored in New Orleans; three years later the community involvement is greatly appreciated and used extensively. How many times does this lesson must be repeated?

The community members live and work in the community. They know what happened in the past and the reasons why. According to SF_P_1, *"They may not want to restore as the same way as in the past. Parks and roads will be designed differently dependent on changing values, such that the current community prefer curve roads rather than straight roads".* According to SF_C_8 the community is knowledgeable of its nuances has a great benefit to the disaster recovery project:

- *"to understand what the culture wants*
- *to assess (talk to people, gather people together, a lot of discussion)*
- *how to engage the people*
- *help people facilitate for decision making and*
- *how to establish priority which affects them".*

A very important nuance of the community is transients. Transients can be professionals who work in another part of the city but live in the community, known as the bedroom

community. They move with the money. They have no social or cultural connection to the community. The children forms the linkage as SF_C_2 explains "*unless they have kids they do not connect. These observations are based upon 4th generation Hispanic within the community*".

In summary, community members have the history and wisdom to direct the growth of the community in which the Project Manager needs to tap for the attainment of a sustainable community. As SF_C_8 explains: "*They have needs but has a certain level of wisdom to be unlock if they want to surpass. They have the history and wisdom to know how to unlock that wisdom and newer wisdom is created. They are human beings that are connected*".

4.3.4.5. Ownership of the Project

Another reason for community empowerment is community should be the “owner of the project”; the community is responsible for the success and failures of the project. SF_C_4 indicates the "owner of the project" is the major stakeholder of the post-disaster recovery project. Their input and decision are very important. As a major stakeholder (a person controlling the direction of the project) will be paid attention by the Project Manager and government. SF_C_4 stresses: "*community owns the project. Owns is the ultimate responsibility for the benefits or deficiencies of the project. Own is an extension of the idea the citizen is responsible to their representatives (elected officials and professionals).*" Community empowerment is established when the community is acknowledged as the “owner” of the project. Owner is the ultimate responsibility for the benefits or deficiencies of the project. They are the major stakeholder; they are the owners. Once the owner concept has been accepted by the Project Manager then community knowledge and expertise can be utilized to build the community on a long-term basis. The community members take responsibility for the maintenance and growth of the community in many years ahead. The community strengthen is obtained through its social capital, community involvement and their empowerment techniques which is explained under the objective of factors of empowerment.

The result is a community deciding its destiny. To achieve this end the following areas explain the tools and techniques that are used: being “owners of the project”, community involvement in all phases of the project, community representation through natural leaders, and most importantly their intimate knowledge of the nuances of the community.

4.3.5. Project Manager Empowerment

The key words for this objective are role and Project Manager. According to the online Cambridge dictionary, the word “role” refers to duty: "the position or purpose that someone or something has in a situation, organization, society or relationship". The role(s) of a Project Manager defined in PMBOK are:

- a) focuses on specified project objectives
- b) controls the assigned project resources to best meet the project objectives
- c) manages the constraints (scope, schedule, quality, cost) of the individual projects.

The role of the Project Manager is to attain the project objectives using the assigned project resources in the best way possible. The assigned project resources are determined by the Project Manager and Project Sponsors. The assigned project resources also include community leaders and community members. The key is how the Project Manager works with the community in the best way possible; hopefully through community empowerment in the decision-making of the project deliverables. The Project Manager manages the various constraints upon the project. The most important constraints that impact community involvement in the project are schedule and cost. The Project Manager needs to work with schedule and cost limitations of the budget. If community involvement is felt to hamper the progress of the Project, then Project Manager will control the involvement of the community to meet the schedule, cost and deliverables assigned by the Project sponsors.

The following table indicates how Project Manager can empower the community. Each of these factors will be discussed sequentially.

Table 4-6: San Francisco - Nvivo analysis of the Project Manager Empowerment themes nodes

Name	Source	Frequency Mentioned
Communication	4	5
Identify Key Project Resources	1	2
Identify Major Stakeholders	5	5
Organizational Change Management	2	3

4.3.5.1. Communication

Interviewee SF_C_4 elaborates on the communication skills: *"needed skills for Project Managers to present the process improvement approach and Project Management approach to the community in simple terms. Visibly simple diagrams, such as simpler GANTT CHART. Super simplify the ideas to present to a large group of people."* Communicate in simple terms for all concerned parties ensures the best decision for a well sustained community. This ensures no understanding and total support for the directions of the Disaster Recovery Project.

Another effective communication technique is storytelling, the sharing of personal experiences to help in rebuilding. Storytelling is not only to tell a personal story but to have the audience relate the story on a personal level to heal their sufferings and gain strength. SF_C_8 explains the dynamics of storytelling healing powers: *"Storytelling is very healing and big piece to recovery. It helps people to come out of their isolation. It gains value and brings back to the community. Community members see each other"*.

Community feedback through surveys and brochures is effective. Another side of communication is face-to-face for people to open up and talk about their concerns. Listening and addressing their concerns forms rapport. As SF_C_4 explains: *"Person to person is the best way through the energy in the room, talk with each other and hear each other talk. People can voice their opinion. In a conversation, people will speak out"*. The importance of face-to-face is to have people open. By opening up, the fears and anxiety can be addressed to make the recovery process more smoother than through protests. During these face-to-face discussions ideas may be considered rebellious to the organizers,

but SF_C_4 stresses that the organizers must be open-minded. SF_C_12 confirms SF_C_4 views on the importance of face-to-face discussions as pertaining to seniors with no families around to support them: "*In Diamond Heights where isolation of seniors takes place, someone will check them. No families around*". SF_C_12 summarizes: "*Initial approach is to focus on everything then listen closely to the community. Community to guide in the field on what should be done*".

The discussion on communication has focused on what communication techniques can be used by a Project Manager to relate to the community, such as simple English, storytelling, and face-to-face. The community members also needed to be trained in communication on how to ask questions and who to ask in the government and disaster recovery professionals. Communication becomes two-way. SF_C_8 point out: "*people have to learn how to ask questions and who to ask question. People have to learn how to make policy not influenced by others (professionals) who have their policies*". Two- way communication ensures community, government and recovery professionals influence the policies which shape the community disaster recovery plan.

4.3.5.2. Identify Key Project Resources

The next key role of the Project Manager is to identify the key project resources to work on the project. The interviewee SF_P_9 indicates community members as project team: "*Their involvement in the process.*" The community must be involved in all project phases and project process from beginning to end. The Project Manager needs to understand how to utilize the community leaders and members as Project Team members. The Project Manager needs to understand the context of the community to help the community recover after a disaster but most importantly to be sustainable on the long term. The context is the community social, cultural, linguistic, economic and financial spheres. The community leaders are the natural leaders. The assigned leaders need to work and understand the process. Interviewee SF_P_9 indicates that "*Not everyone can sit at the planning table.*" Not all community members be involved in the project team but through their natural leaders who are recognized looking after the community.

4.3.5.3. Identify Major Stakeholders

A key role of the Project Manager is to identify who are the major stakeholders within the disaster recovery project. The major stakeholder is defined as owning the financial resources to implement the Project to benefit the funders. The funders can be government and/or funding agencies. SF_C_4 interviewee commented: *“They are the major stakeholder; they are the owners. The community tend to ignore to plan after the event. Their demands are not possible to fulfill. They become stakeholders with unreasonable expectations”*. Interviewee SF_C_4 stipulates: *“The community are the "owners" of the project. Owner is defined as the person ultimately responsible for the benefits or deficiencies of the project. Extending the idea that the citizen is responsible to their representatives (elected officials and professionals)”*. The major stakeholders are the one who benefits from the deliverables of the project. In this situation, it is the community who benefits through people working to build the economy and supporting the government through representatives.

4.3.5.4. Organizational Change Management

Another key role is communication - organizational change management. Keep the stakeholders, and most importantly the customers of the project, constantly informed through communication of the project progress, addressing the customers and stakeholder’s concerns and fears on a frequent basis. The ultimate intention is win-win for all.

Do not assume the community is homogeneous. The community has members with different interests and priorities. Organizational change management approach needs to be flexible to the divergent viewpoints. SF_C_6 describes divergent viewpoints as "hurding cats": *"cats go in different directions. Everyone has their own priorities. One must customize project management around needs and skills basis. Make the community feel they are esteemed and worth something. Getting the cats going one direction is the challenge. One must learn how to hurdle the cats since they may have better ideas. Customize the Project Management standards to the community"*. Leadership for Project Managers is needed to guide people. The community members need to express their needs

and fears. SF_C_12 indicates: *"the management of the different parts of the project to have leaders with appropriate skills"*. These skills are demonstrated through organizational change management to gain the support of the community and have the community involve in the progress of the Disaster Recovery Project.

In summary the role of the Project Manager to empower the community were discussed in the following areas: collaboration, identify key project resources and identify major stakeholders from the community.

4.3.6. Key Factors for Empowerment

The following table indicates the key factors for empowerment. Each factor will be discussed in detail.

Table 4-7: San Francisco - Nvivo analysis of the Key Factors for Empowerment themes nodes

Name	Source	Frequency Mentioned
Capacity Building	8	10
Coping (Cultural and Social)	4	5
Perception of Community Power	6	6
Social Capital	10	12
Survivor Mindset	8	9

4.3.6.1. Capacity Building

Interviewee SF_C_13 rephrases interviewee SF_C_12 community building by defining social capital as *"created by individuals who work in an area of concern for necessity or interest. The work they do often volunteer bring benefits to larger group of people. Bottom up approach in social capital. Brought to the community skills that they can utilize to the benefits of the community"*. The bottom-up approach is effective to tie the skills of community members for members to be shown as empowered stakeholders. Interviewee SF_C_3 outlines the next steps of the empowered community members by *"what assets you have, outreach and advocate for constituents, know politicians, form relationships and strategic alignment"*. These components are key factors to an empowered community that dictate its future direction to the government and funding agencies.

4.3.6.2. Coping (Cultural and Social)

Another key factor of empowerment is coping. Interviewee SF_C_6 summarizes the process coping through stressors: *“The problem is the buy-in. Understand what their role is and access to talented resource. Once the bridge fallen down then take action. Buy-in before the disaster is hard to sell. Community should work on projects that are not disasters. The work styles and resources can be harnessed.”* The work styles and community resources can be harnessed as demonstrated in the following examples:

- a) SF_P_7 indicates seniors in Philippines are very involved and have very good survival techniques. Ninety year old have fruit trees, banana and coconuts in the backyard. They remember fresh source under the high school when the area was a farm land. SF_P_7 summarizes: *“tremendous resources of immigrants who are very resourceful”* offer to their community in San Francisco after stressors and disasters.
- b) SF_P_1 indicates that the Asian population in San Francisco has a different outlook: a culture to not get involved. *“The people expect the Calvary to come in. A friend in Shanghai indicated the attention is to the government. Top down approach is used; send the army”*.
- c) SF_C_2, who is involved in social work, indicates the recent Chinese population has no Chinese professionals in social and community work. The Chinese are struck when American Black Social Workers help them; the Chinese clients thought the Black people were poor people and not professionals. SF_C_2 provides the following information to Project Managers about the melting pot in United States: *“United States is a melting pot. Immigrants come from different regions. The not cookie approach is not applicable. Project Manager must adjust and co-operate with the community”*.

An important coping place in San Francisco is the coffee shop. The coffee shop is important for local economic development to have shoppers and the community to interact. SF_P_7 indicates: *“The shop provides cultural and social opportunity for networking. Philippine restaurant and coffee shops (community or ethnic based) are formed”*.

4.3.6.3. Perception of Community Power

The next factor is the Government, NGOs, and funding agencies perception of the community power to affect redeveloping the community. Interviewee SF_C_4 explains community understanding as perceived by the government and how the community should proceed: *"Need to focus on what is tangible to the community. ... Community let the professionals to do the work. Fatigue factor for the community: Have to limit the amount of work to the community before they bail out. Citizens and professionals must establish a balance on what can be done by each other. Once ask citizens to do work of professionals then the citizens will push back"*. A working relationship be established between the community and professionals. Community to give direction and professionals to carry out the recovery process work. The professionals have the time and energy to carry out the work; community members' focus is on essential personal needs on food, money and job.

In summary, the key factors are social capital (neighborliness, connectivity within the community for assistance, help and getting working done). The survivor's mode of the community must be based on SMART principles. Make do, repurpose, and use things smartly to achieve the goals by "thinking out of the box" or viewing the resolution from a different angle. Once good information is given then resolution is achieved. Challenge of implementation is the perception of ownership versus realistic decision making.

4.3.6.4. Social Capital

The use of social capital and capacity building by the community are additional important factors for empowerment as stated by interviewee SF_C_5: *"is when the community use their social capital to work in operations center. Employ resources in survival ring. Community is critical. Boots on the ground"*. Social capital refers to the community networks, community skills and community resources that are tapped by the community members to deal with various issues, especially after disasters. Social capital is a very important factor for empowerment of the community. Their decision-making power is based on the resources available to the community, their internal and external network for information and power. The researcher found that interviewee SF_C_5 had a very good description of social capital. Social capital is defined as the *"talent and resources and professional skills*

that are inherent in the neighborhood". The skills manifested by the community members will harness the community as an empowered community; community shapes the direction of the rebuilding the community. The first step is to build relationship within the community – people getting to know one another. Interviewee SF_C_5 show how to building relationship for disaster preparedness. "Twelve years ago setup a Halloween party which occurred on annual basis. A community garden was setup with a \$60 a year membership fund. The community hired professionals to maintain the garden. This is an example of buying into the idea to support the neighborhood. A Christmas tree with German candles was setup and neighbors invited to build the community. A spring barbeque was also arranged in which everyone was invited. Community was built and consistently reinforcing the community".

4.3.6.5. Survival Mindset

One of the key factors for empowerment is a survival mindset. One of the interviewee (IP1) indicates that community members are survivors after a disaster. The community members take control of their lives, especially after FEMA indicated the community is on their own for the first 72 hours. As survivors they must be SMART. The SMART acronym is used within the business world but can applied elsewhere. The acronym SMART means:

1. Specific
2. Measurable
3. Attainable
4. Relevant/Realistic
5. Time-Bound

The survivor mindset was emphasized as being advantageous for San Francisco community when dealing with stressors and disasters (earthquakes). Media perceptions of community suffering after a disaster is that of victims. The biggest disaster is of war. During the Second World War in United Kingdom, the British people continued with their lives. Interviewee SF_C_12 recall Nella Last Diaries of how mothers survive the bombing and kept on living. Their courage is representative of other people recovering from various disasters in the world. SF_C_12 indicates that: *"People experience give images of community that can work in disasters. Nella Last (Diaries from the Blitz during WW11) put into context what really can happen. The people within the*

community were angry and depressed but kept going on. There is a need to prepare: the initiation phase of the project should have the community be involved. People thoughts are important”.

Within the San Francisco area, the local government has developed programs in community leadership and project management for community leaders and community leaders to work SMART and be survivors through stressors (such house fires, and work shortages), rather than major disasters (such as earthquakes). Having the community work together in stressors will enable the community to adjust on a daily basis.

4.3.7. Project Manager Framework

Interview data indicated Project Manager Skills need to be fine-tuned to work with the community. The skills range from facilitation skills for large group discussion, feedback process, listening to the community, documentation skills (keep documentation simple for the community), natural leaders, and storytelling. This section reviews in detail what skills and guidelines were recommended by the various Interviewees.

Table 4-8: San Francisco - Nvivo analysis of the Project Manager Framework nodes

Name	Source	Frequency Mentioned
Agile to deal with unexpected events	2	2
Awareness of Connectedness	1	1
Collaborate with government and community	5	5
Community makeup and Leaders	2	2
Find and work with Natural Leaders	2	2
Participation (Information Gathering)	2	3
Simple English (Written and Oral)	1	1
Skills Development (Large Group Participation)	1	2
Social and cultural awareness	4	5

4.3.7.1. Agile to deal with unexpected events

Once the community leaders have been identified and working relationship established, how project management is applied needs to be agile to deal with unexpected events after

a disaster. Interviewee SF_C_3 indicates that "*Project manager needs to go back to Core principles: adapt and adjust. Simple and elaborate. Community is more engaged when they say these leaders are the correct one to rebuild the community. Broad network of people rather small group of people to be representative.*"

4.3.7.2. Awareness of Connectedness

Another aspect of the community the Project Manager needs to be aware is the connectedness within the community. Some people refer the degree of connectedness as social capital or as neighborliness. How the connectedness can be established is through children. SF_C_2 describes community participation based upon "*transplants in the community (come to work) by following the money. Unless they have kids – they do not connect within the community.*" No connection to the community means disjointed community. No one go to in times of need. Once there is connectedness, a strong community is formed. The connected community can then address their needs to the Mayor and local government. SF_C_2 has indicated different types of power to address government "*The community is the feet and ears of the community. They must voice together to work with organizations; more powerful as a group. ... In time they are grown to be listen by the Mayor.*"

4.3.7.3. Collaborate with government and community

The last section made mention about how to work with the government. The Project Manager must work with the government to help the community in rebuilding after a disaster. Six of interviewees discussed about Government's roles as shown in the following quotes.

Interviewee SF_C_4 stressed how collaboration should be arranged which impacted how disaster recovery services are delivered: "*Within San Francisco, the first 3 to 5 days are under control of the community after a disaster. After the 5 days, the resources of government, agencies then come to participate in the recovery. Local preparedness needs to be stressed. Scope the work to that size that community can do based on their skills and resources. Limit the work so that professionals can come to do the remaining work. More*

than that the community will bail out. ... Community let the professionals to do the work since fatigue factor for the community. Have to limit the amount of work to the community before they bail out. Citizens and professionals must establish a balance on what can be done by each other. Once ask citizens to do work of professionals then the citizens will push back". We are back to the discussion on the working relationship between community members and professionals the Project Manager needs to establish and maintain. There are excellent examples where professionals have excellent working relationship with the community. Maybe the Project Manager can learn from these examples. Interviewee SF_P_7 gave the following examples: "Some police districts are more connected to the community than others. Police Captain to share and talk to the community; he comes to the potluck events. ... Demography of the community impacts the participation for the police and fire. East coast not intimate as in west coast. Cultural difference is extremely liberal: Philadelphia not as open and friendly; based on history on relatives. Trust has changed. During the Boston marathon disaster, the city was locked down and people told to stay off the streets. Get the job down. In San Francisco – looks at the rights of the people".

The above comments reveal that some members of the government, such as the Police Captain, hears and works closely with the community. Other members of the government do not. This is what the Project Manager needs to understand and work it as the coordinator between the community and the government.

4.3.7.4. Community makeup and Leaders

Interviewee SF_C_3 stresses know the community makeup and its leaders. Establish working relationships with the leaders to ensure successful project deliverables and a sustainable community by the community members. Interviewee SF_C_3 recommends *"throughout the disaster recovery period, someone(s) identify the natural leaders for community improvement. Community asset profiling of leaders. Approach these leaders to be woven in and after disasters. Natural leaders to get buy-in for organizational work. Look at the ground level what actually happens rather before a disaster to obtain natural leaders"*.

4.3.7.5. Find and work with Natural Leaders

A cry from the community leaders and community professionals to build reassurance to Project Management Professionals how to work with a large community in an efficient and effective manner. Find and work with the natural leaders of the community is strongly recommended between Project Manager and the community. The natural leaders will be a definite asset to making the community resilient on the long term basis. The recommended skills for Project Managers range from facilitation skills for large group discussion, feedback process, listening to the community, documentation skills (keep documentation simple for the community), and storytelling. Another important recommendation is no two communities are alike; therefore, different approaches are applied to different communities.

4.3.7.6. Participation (Information Gathering)

Keeping communication simple so message(s) are clearly understood by all results in closer working relationships with community members, stakeholders and project team members. In other words, emphasis is on participation. Interviewee SF_P_1 stresses public participation needs to be further developed for the Project Manager: *"San Francisco like public participation. Professionals does not know how to make it work. Public walks away because they are not heard. Rubber stamp approach is felt"*. Interviewee SF_P_1 summarizes the recommended skills for the Project Manager to have a successful sustainable post-disaster recovery project. SF_P_1 recommend that Project Manager need a lot of training:

- *"How to have productive meeting and people involved and material brought*
- *What is the decision making process*
- *Stay involved in the project"*.

4.3.7.7. Simple English

The next step is improve communication skills, keep communication simple for non-technical community leaders to ensure the messages are simple, clear and distinct. Interviewee SF_C_4 elaborates on the communication skills: *"needed skills for Project Managers to present the process improvement approach and Project Management approach to the community in simple terms. Visibly simple diagrams, such as simpler GANTT CHART. Super simplify the ideas to present to a large group of people. Project*

simplification (known as process improvement) needs to be emphasized for people to implement. For successful project one needs a person (known as the gnat fly). The person asks "Why can we do a different way" within the meeting. This approach creates conflict with the managers running the meeting but the outcome is beneficial to recovery."

4.3.7.8. Skills Development

Project Manager needs to develop unique skills to work with the community. Interviewee SF_P_1 states that: *"Project Manager needs a lot of training: how to have productive meeting, people involved and material brought forth. If project plan has to be modified then how to modify through community participation. Not a lot of Project Managers are skilled for community input, participation and decision making"*. To assist the Project Manager is train the Community Leader how to work with Government and Project Managers. Interviewee SF_P_1 presents how the community leaders should be trained: *"How to train community leader? How to work in the public process to be productive? Community leaders has to have followers. How to plug leaders into community. Community rely on other communities experience where successful. Some communities not productive. Community leaders has to vision: opportunity to do something different"*. Interviewee SF_C_4 further elaborates community involvement to make the Project Manager successful: SF_C_4 states that: *"Disaster preparedness and community involvement is incorporated into neighbor improvements such as parks. Approach ensures involvement of community on daily basis rather than just a disaster basis. Daniel's approach looks at the broader conservation of the neighborhood rather than the outcome of the disaster"*.

4.3.7.9. Social and Cultural Awareness

The next area of improvement is social and cultural awareness of the community the Project Manager is working with. It is very difficult to get people involved in the recovery process, such as past experience of the community member's home country. The home country can be very authoritative; government will take control of everything and no community involvement is required. Interviewee SF_P_1 gave an example from Shanghai, China where the current San Francisco's Asians do not participate in disaster recovery:

"Social (50% Asian) different outlook. A culture to get not involved. ... Expect Calvary to come in. A friend in Shanghai indicates for community participation is very difficult. It is attention of the government. Top down approach is used. Send the army". Another impact of cultural is the cultural/ethnic background of care professionals. One assumes that American Negroid are disadvantage individuals with poor jobs. What happens when a recent Chinese immigrant goes to a San Francisco medical clinic to be treated for an upset stomach and an American Negroid Doctor comes into the office to treat the person. Interviewee SF_C_2 discusses how American Negroid social workers are helping recent Chinese immigrants. The Chinese immigrant is assuming a white American social worker. SF_C_2 quotes: *"Reversal of roles (black helping them of immigrants). 50% Chinese with no Chinese professionals. Number one issue."* A very powerful image of help offered by professionals coming from different cultural/ethnic backgrounds. The United States is a melting pot of Americans. Interviewee SF_C_2 recommends: *"Project Managers needs to be more agile in their approach. Project Manager are trained in a particular way. Trained in different order (cultural, economic, etc.). United States is a melting pot. Immigrants coming different regions. Not cookie approach. They need to adjust and co-operate with the community."*

A cry from the community leaders and community professionals to build reassurance to Project Management Professionals how to work with a large community in an efficient and effective manner. Find and work with the natural leaders of the community is strongly recommended between Project Manager and the community. The natural leaders will be a definite asset to making the community resilient on the long term basis. The recommended skills for Project Managers range from facilitation skills for large group discussion, feedback process, listening to the community and storytelling. Another important recommendation is no two communities are alike; therefore, different approaches are applied to different communities.

4.5. Interpretation of Results – Christ Church

A number of people (11 in total) were interviewed in the Christ Church ranging from Project Managers, Community Leaders, and a former Minister. This section will describe their experiences and insights on the guidelines for Project Managers to work with empowered communities. As the following table indicates most of the responses dealt with Project Manager Framework (the guidelines), Community Empowerment (strategies used by community for empowerment) and Project Manager Empowerment (how the Project Manager empowers the community). Community strategies and Community Response are lowered because most of the interviewees were Project Managers rather Community Leaders. Detail review of each theme will be explained in the following sections.

Table 4-9: Christ Church - Nvivo analysis of the PhD theme nodes

Name	Source	Frequency Mentioned
Community Response	5	11
Community Strategies	9	34
Community Empowerment	11	79
Project Manager Empowerment	10	64
Key Factors for Empowerment	6	16
Project Manager Framework	10	82

4.4.1. Community Response

The first objective of this PhD study is **Community Response - to *critically review and analyze how communities have responded following a disaster.*** A set of interview questions were asked around Community response as shown in Appendix#1 and #2. In order to develop a framework (guidelines) for Project Managers to assist in rebuilding communities, one needs to understand past and current practices of community involvement. How the community responded following a disaster was identified through community's disaster experience, funding experience and setting up work groups as shown in the following table.

Table 4-10: Christ Church - Nvivo analysis of the Community Response themes nodes

Name	Source	Frequency Mentioned
Disaster Experience	2	2
Funding	2	2
Work Group	3	3

4.4.1.1. Disaster Experience

Community response is shaped by previous historical experience on the frequencies of disasters and the community’s historical past. In the case of Christ Church public recorded history goes back a couple of hundred years. Interviewee NZ_P_9 discussed the Christ Church historical experience of earthquakes and recovering from earthquakes for Christ Church: *“Earthquake is part of our culture but not old enough in terms of 200 years of settlement...Major earthquake come every 50 years; intergenerational knowledge of going under table and run outside after tremor is deeply embedded.”* A couple of hundred years is very little compared to other countries such as Japan long history of disasters.

Community input is shaped by community residents who lived in the community for a period of time. How the community interacts is impacted by such activities as by street design, neighborhood layout, stores, schools, community centers, parks and recreation centers. NZ_P_1 indicates that: *“it is where the community live and work. They sense what happened in the past. They may not have to restore as the same way: parks and roads are different design dependent on changing values. Prefer curve roads rather than straight roads. Community involvement had measurable impacts”*. Such interactions helps the way community respond during a disaster. What works and does not work is the insight that community members can offer to Project Managers and governments.

4.4.1.2. Funding

Another response technique is community providing funding in disaster recovery. NZ_P_2 interviewee explains pro bono work: town council, industry and community provided the necessary funds for recovery. NZ_P_2 indicated that: *“They provide funding through well engaged community and value for money. Involved community all the way through pro bono work. Community funded by council; Industry partners will set up how they will help.*

The industry partners work through social responsibility such as paid leave for beach clean-up. In other words, goodwill/reputation. Councils are interested in these projects. Not enough money. The process is constantly checked to ensure concerns on community impact are monitored". Therefore the community members and businesses within the community provided funding in addition to the government. Providing funding makes the community a very important stakeholder in disaster recovery projects.

In summary, historical experience of disasters, community work groups, community funding initiatives and community residents were identified community responses in Christchurch.

4.4.1.3. Work Groups

The forming of community work groups is an example of how communities respond to a disaster. NZ_P_2 shows that community members want to assist in disaster recovery through the forming of community work groups. In this situation students wanted to contribute in the recovery: *"A student Volunteer Army was formed. It was set up by students by following earthquake with the university shutdown. Rather than sit home, the students decided to do work. They shovel liquefaction soil into piles for removal."* Community work groups proved to be very effective and received international recognition for their work.

4.4.2. Community Strategies

The next objective of the PhD is "**Community Strategies - to map out the community empowerment methods/strategies**" as expressed by interviewees. In order to develop a framework (guidelines) for Project Managers to assist in rebuilding communities, one needs to map out the community empowerment strategies that can and/or are being used to be decision-makers of the community's destiny. The strategies identified were buy-in into project, coping, informed on progress of project and talking and sharing as shown in the following table:

Table 4-11: Christ Church - Nvivo analysis of the Community Strategies themes nodes

Name	Source	Frequency Mentioned
Buy-in	3	3
Coping	4	4
Informed on Progress	2	3
Talking and Sharing	5	8

4.4.2.1. Buy-in

Interviewee NZ_P_2 presents an important strategy: community buy-in. NZ_P_2 stated; *“You must have buy-in the community. One example is community parks in which some students will be involved this summer.”* There was a need for recreational facilities but Council had no money to address the community's ideas. Over a period of time, Council decided to review and Community re-adjusted their wish list. At this time, facilities were built, open space available with community gardens.

The Christ Church community became disillusioned of the CERA progress, little community engagement during the first 5 years of disaster recovery, and government not addressing specific community needs. Interviewee NZ_P_9 indicated *“as the result, the community decided to take their own initiatives. Community initiatives started such as*

- o *Student volunteers to clean streets of mud. The students received international recognition of their work.*
- o *Gap filler project also received international recognition”.*

The researcher concurs with the interviewee recommendations to receive community input from community members who have lived in the area for some time and understand how the area can be utilized.

4.4.2.2. Coping

Interviewee NZ_C_8 follows in the same vein of interaction but stresses coping as another important community strategy. Interviewee NZ_C_8 stressed the strategy of talking and

sharing each other's experience about the earthquake and how each one is coping. *"The earthquakes had a profound effect on the families of those who lost their lives, those involved in the recovery process and the people of Christchurch and Canterbury. A memorial to acknowledge this is an important part of the city's recovery and history. This is an important feature for cultural and social recovery of people. Pubs and cafes to talk about disaster recovery which helps to rebuild people well-being"*. Christ Church community members cope through social and cultural activities has strong healing powers to rebuild the family and community.

4.4.2.3. Informed on Progress

Keeping the community informed on the progress of disaster recovery is another very important strategy. Interviewee NZ_C_6 elaborated: *"People are very resilient. Can actually look after themselves. Give them timeframes, such as drinking water is available in 3 weeks. People can prepare to cover for that delay."* Keeping the community informed on the recovery progress will in turn help the recovery projects be completed in time.

4.4.2.4. Talking and Sharing

Another important community strategy is culture – how to interact with people. This community strategy formed the basis of the formal Community Engagement Model for disaster recovery and regeneration with Christ Church. The Community Engagement Model is based upon historical Christ Church culture to talking and working together of the Maori people. Interviewee NZ_P_9 explains the concept of Ako and Talanoa as the cultural elements of interaction. *"Ako is peculiar to Christ Church based on bicultural treaty of 1840 Act with Maori. The concepts is contextual and is the foundational principle we operate in partnership and operate together. Talanoa is Polynesian background. Talanoa is how we talk together. The foundational principle of love, warmth, humour and respect is found in every conversation. Ako and Talanoa forms the core values to community engagement of Regenerate Christchurch"*.

"Makes the people feel very important when their ideas are heard and taken into consideration in the building of the earthquake memorial and other projects". Hearing and

being heard are strong motivators for community engagement according to interviewee NZ_C_8. Hearing and being heard is a strong community strategy.

In summary, the community empowerment strategies identified to be successful were community to have buy-in into the recovery projects, how the community is coping, and community is informed on progress of project to take temporary actions until permanent solutions are implemented and finally talking and sharing.

4.4.3. Community Empowerment

The next study's PhD objective is *Community Empowerment - to investigate the importance of empowering disaster affected communities in the post-disaster phase.*

The importance for Community to make, or participate, in the decision-making of their recovery and responsible for their actions is reviewed. Involvement in decision-making should take place at all phases of the project from initiation to closure. Reasons expressing for empowerment expressed by the interviewee's ranges from citizen advisory board, formal recognition, honour our members, involvement in Project Phases, Leadership Training, Meeting Community Needs, and Training in Project Management as show in the following table:

Table 4-12: Christ Church - Nvivo analysis of the Community Empowerment themes nodes

Name	Source	Frequency Mentioned
Citizen Advisory Board	3	6
Formal Recognition	3	4
Honour our Members	1	2
Involvement in Project Phases	2	8
Leadership Training	2	5
Meeting Community Needs	9	11
Training in Project Management	4	6

4.4.3.1. Citizen Advisory Board

Interviewee NZ_P_5 uses the IAP2 framework. A Citizen advisory group is setup during the initiation phase of the project. Collaboration and consultation are used as the building is being designed. As building is being built, the community is informed of the progress. Project Manager oversees the contractor to work is progressing. *"Community members want to assist in the construction. Christ Church is up in terms in health and safety regulation. Concern that community members going onto building site for safety regulations. Exploring ways for community during building, such as, doing the landscaping – planting trees". "Once the building is constructed, the Community does not have the energy to run building. Then get paid staff to run in behalf of the community. Some buildings takes a year to build. Community will use the facility. Staff to run the build."*

4.4.3.2. Formal Recognition

For Community empowerment to be present Interviewee NZ8 states formal recognition and endorsement by *"City council and Program/Project managers. City council provides strategic direction; Program/Project Manager carries out the community engagement"* needs to take place. With the endorsement various capital projects, such as the Central Library, Town Hall, community centers and Memorial Center was able to build with community input and endorsement as members are active decision-makers before City Council gave their approval. The endorsement set by City Council setup a framework for partnership through the Community Empowerment Model. There has been examples that Project Manager had previous community empowerment experience which help the Memorial project be very successful.

4.4.3.3. Honour our Members

Another excellent example of community empowerment is a National Earthquake Memorial that was erected in February 2017. According to NZ_C_8 interviewee the purpose of the memorial was *"to pay respect of those who died and were seriously injured; 185 people died on Feb 25, 2011 from 6.3 Richter earthquake. There was widespread damage and loss of lives. Memorial was to capture the experience of the earthquake"*. The memorial was placed near the water as suggested by the community. Part of the culture on the importance of water, river and land. NZ_C_8 stressed: *"Certain criteria of the*

community are very strong ideas. Makes the people feel very important when their ideas are heard and taken into consideration". Emphasis was placed on the process of community empowerment: "Understand the initial thoughts and process; they may not agree; but the Community is palatable on the process of how decisions were made". This brought people along the journey which is very important. If you have an "Unclear process – then failure takes place".

4.4.3.4. Involvement in Project Phases

An important empowerment strategy is the community to be involved in all phases of the project. Interviewee NZ_P_2 provided the following checklist of where community members are involved:

Does community involvement have measureable impacts?

Table 4-13: Christ Church - Involvement of Community Leaders by Project Phase

PM Processes	Interviewee NZ_P_2	
Project Integration (Yes/No)	<i>Yes</i>	
Project Scope (Yes/No)	<i>Yes, let them for public space which has cool ideas. Community said no based upon suggestions.</i>	
Project Time (Yes/No)	<i>Worry about decision making impact.</i>	
Project Cost (Yes/No)	<i>Depends on project (extras – yes; playground – match on dollar to dollar for extra money). Positive or negative. Crowd granting.</i>	
Project Quality (Yes/No)	<i>Yes in a positive way</i>	
Project Human Resources (Yes/No)		

Project Communication (Yes/No)	<i>Invested community (yes). New Brighton (suggestions – Facebook. Well connected – massive response. Annual plan – huge document. On local.</i>	
Project Risk (Yes/No)	<i>Could have positive risk (acceptance) help them achieve – invested long term – maintained for long term. Help them achieve something; proud and look after</i>	
Project Procurement (Yes/No)	<i>Set suppliers (yes). Funding for project. Installation through pro bono.</i>	
Project Stakeholder Management (Yes/No)?		

Project scope, project cost, project quality, project communication project risk and project procurement are identified Project Management processes the community have fruitful contribution to the project progress. Project Time phase is a very worrisome phase for the Project Manager. During the Recovery Phase in Christ Church, Canterbury Earthquake Recovery Authority (CERA) priority was on time: building infrastructure and buildings to get people lives back in order. Focusing on time, the Christ Church community became very frustrated with the government on not listening to the community. False hopes were created.

Interview NZ_P_3 indicated community input was received and used from scope to final approval of Request for Approval leading to a contract. Out of the above empowerment strategy, the community were involved in the initiation and planning phase of the Project only. Some of the members were on the Project Control Board during implementation. Once City Council approved, then contractors built the library based upon specifications and requirements given. *"Public consultation, workshops, polls, presentations, surveys (half of the population). Project Manager received 2400 respondents. The survey results demonstrated word count, common themes and design*

brief for the central library. Consultation took place in the Project Initiation phase through briefs. Consultations and engagement took place through presentations and feedback and email survey. Advisory committees were formed from churches, schools and representatives. "

After the February 2011 earthquake, the CERA ACT was approved by the Christ Church government. This was special legislation for five years and implemented after the earthquake disaster. Interview NZ_P_9 indicated that the "*philosophical approach is crisis approach - top-down driven approach. It was very much inform space, sometime consult within the local government. The Government mindset – we will do the work and keep you informed*". The Canterbury local government opposed this approach. The Christ Church local government decided to get the community involved on the future vision of the city through "Share an idea". This was one chance for community input from the public. The experts took the findings and created the Recovery Plan.

In April 2016 there was a transition from disaster recovery to regenerate. New legislation (Greater Christchurch Regeneration ACT went into act). The approach and commitment was community empowerment – "*a very extraordinary shift and very welcomed by the public*" according to NZ_P_9.

The Community Empowerment process was worked out in October 2016 through a community forum of over 100 most influential, vocal, some quiet, community leaders and stakeholders. The community engagement process was adopted from IAP2 and quality assurance framework. Community members be involved all phases of the project. Their involvement is through following groups within the project

- community reference groups (provide advice on the process);
- technical and community advisory groups (provide advice on content and work with project teams);
- number of community leaders come together on specific engagement methods for their planning processes

The Guiding Principles for Engagement was validated and endorsed by Regenerate Christchurch Board, Minister of Earthquake, Mayor of Christ Church and New Zealand Federal Government. The principles set guidelines how the community and government works together. This is how the Program/Project Manager brought into the project. All project documentation are followed through. According to NZ_P_9 "*Community feedback is valuable to the project. No technical advice given. Dealt with how the street or community center would look like.*" "This comment is reflective of the other interviewee (NZ_P_5 and NZ_C_8) that council makes the final decision, not the community. "*Collaboration takes place when delivering projects deliverables on how the community would use the community center and the library. Community provides input in how the programs, such as swimming and tennis, are delivered. Take the feedback back to council for approval.*" Council is the legal body to approve the contracts to proceed but the community is empowered in the decision-making before Council makes its decision.

4.4.3.5. Leadership Training

A Leadership and community program is also offered for community leaders. This is the most significant empowerment investment of community in learning development that came out of Greater Christchurch Recovery program. The program has ran for two years. It is one year program developed by community leaders and for community leaders. There are 12 partners (central government, local government, tertiary, get fellow, public and private philanthropy entities). Project management is a core strand of the program. The Regenerate organization is partnering with NGOs, such as Red Cross. Red Cross is exposed to formal methodology of PM and stakeholder engagement methodology. The participants come all walks of life, such as a mom (mid-60 in wheelchair; disability community advocate); geographic communities, ethnic community, different backgrounds and different professional arenas. They come together and be exposed to this training.

4.4.3.6. Meeting Community Needs

Interviewee NZ_P_5 indicates "*success of Community Participation by Project Manager will backfire unto project management if the project does not meet community needs*". The Christ Church disaster recovery through CERA proves the above statement to be true of

not working with in the community. In Regeneration phase, community empowerment is emphasized and shown in the following examples at community centers:

- o physical space layouts for separate rooms and the whole building;
- o type of sprung floor;
- o Old neighbourhoods like brick and timber. Newer neighbourhoods like glass and concrete
- o Building architecture represent the neighbourhood atmosphere

"Communities felt it was their facility. Government paid for the maintenance... The Physical building becomes a living building for the community".

4.4.3.7. Training in Project Management

Some of the community leaders are trained in project management and some are not in project management. It is their decision to get training in Project Management. *"Do not require project management experience from community members"* according to Interviewee NZ_P_9. An understanding of the principles of project management gives the community confidence to be involved in the decision making of the project deliverables; hence be empowered.

The result is a community deciding its destiny. To achieve this end the following areas explain the tools and techniques that are used: citizen advisory board, formal recognition, honour our members, involvement in Project Phases, Leadership Training, Meeting Community Needs, and Training in Project Management.

4.4.4. Project Manager Empowerment

The following topics were discussed how the role of the Project Manager can attain empowerment for the community: change in policy direction, collaboration, governance training, identify major stakeholders, minimize disruption of community life, organizational change management and project control board as shown in the following table.

Table 4-14: Christ Church - Nvivo analysis of the Project Manager Empowerment themes nodes

Name	Source	Frequency Mentioned
Change in Policy Direction	1	2
Colloboration	10	21
Governance Training	1	1
Identify Major Stakeholders	3	3
Minimize Disruption of Community Life	1	1
Organizational Change Management	4	7
Project Control Board	1	2

The role of the Project Manager is to attain the project objectives using the assigned project resources in the best way possible. The assigned project resources are determined by the Project Manager and Project Sponsors. The assigned project resources also include community leaders and community members. The key is how the Project Manager works with the community in the best way possible; hopefully through community empowerment in the decision-making of the project deliverables. The Project Manager manages the various constraints upon the project. The most important constraints that impact community involvement in the project are schedule and cost. The Project Manager needs to work with schedule and cost limitations of the budget. If community involvement is felt to hamper the progress of the Project, then Project Manager will control the involvement of the community to meet the schedule, cost and deliverables assigned by the Project sponsors.

4.4.4.1. Organizational Change Management

Project Manager to empower the community is to ask the right questions and keep the community informed on the progress according to NZ_P_2. The interviewee comments reflects the Organizational Change Management Principles – communicate at all times. *"The Project Manager found they struggle to ask the right questions from the community. They came with a solution then council will accept or approve the design concept. To progress the project by the level of consultation that was achieved. To push the project in a timely manner. Regular updates through websites was given. Because of the frequent*

earthquake aftershocks, the anxiety level of the community is high. There is a feeling how to move forward and having business come up soon." The community members' anxiety level is very high. The Project Manager needs through communication to address the high anxiety level to more manageable levels with no misunderstanding on the progress of the project. The community members will be treated as being heard and being empowered.

4.4.4.2. Change of Policy Direction

Project Manager needs to change policy direction from no settlement in unsafe grounds to settlement on a phase-in process and how to reclaim the unsafe grounds. This is an example of trust being taken away and trust rebuilt. A very hard challenge for Project Manager to empower the community. A hard decision for the government and Project Manager to make when the ground is unsafe. Government, Emergency Management and Project Managers' priority is to save life and not to allow any settlement on unsafe ground. In this situation, the Christ Church government indicated the land can be re-used at a future date. Community members reluctantly left the land for safety; they had to resettle another place and lost money from their lost home and land. Government reviews their decision in light of lost property. Project Manager and Government needs to take time to rebuild people confidence and resent to reclaim their homes and land over a period of time.

4.4.4.3. Collaboration

The following is an excellent example of government collaboration, leading to Project Manager with working with an empowered community. Red zone areas within Christchurch were defined by government as housing neighbours unsafe to return:

- There was significant and extensive damage area-wide land damage
- The success of engineering solutions may be uncertain in terms of design, its success and possible commencement given the ongoing seismic activity and
- Any repair would be disruptive and protracted for property owners.

The residents were forced to abandon their houses because of unsafe land sitting on sifting soils. More than six square kilometres of land (about 7350 properties) was zoned red due to land damage. Interviewee NZ_P_1 explains the empowerment principles utilized:

- *"Put people and communities at the center of what we do*

- *Listen first, then act – start from where our communities are at*
- *Utilize local expertise, knowledge and networks to help create collective responsibility and build momentum*
- *Be brave, honest, resourceful, visible and respectful*
- *Encourage a culture of inclusion and participation by reflecting diversity and promoting equity and accessibility.*

There are times where the planning is completed and community is consulted at the end of the planning. There are some community members who will speak up and say NO. The result is a delay in the project and/or protest. This sets the project back. The community must be involved in the front. Take the community to the beginning and walk them through. What you will realize is walking the community through process that their concerns were addressed. They need to be re-ensured. Once re-ensured they will accept the project directions and outcome." Now the government has agreed to implement a transition plan to allow residents to return to the red zone districts in a timely approach. Small steps will be taken to rebuild in the red zone through test and implementation. Confidence building by government and community will take as land is reclaimed from the red zone. The abandoned homes are reclaimed and the community establishes its roots. Now the Project Manager can work with an empowered community.

4.4.4.4. Governance Training

Training provided through Program/Project Manager on community governance is an excellent step for community to work with the government and directing their future destiny. Training in governance enables the Project Manager to empower the community by understanding how to work with the government for the betterment of the community. Interviewee NZ_P_5 explains Community Training in citizenship and governance. *“How to be citizen of the city. Participate and interact with the government structure and process. Community governance team is found in each community and neighbourhood. Their role is the eyes and ears of the community. Local community is aware of the local government is doing. Project Manager works with community governance team. Governances builds active citizens. Leaders in the council. Swing in the bureaucracy. How they can be useful*

building the community.” Governance training is the key to empowerment of the community that the Project Manager can provide.

4.4.4.5. Identify Major Stakeholders

A key role of the Project Manager is to identify who are the major stakeholders within the disaster recovery project. The major stakeholder is defined as owning the financial resources to implement the Project to benefit the funders. The funders can be government and/or funding agencies. NZ_P_3 stresses the community as a major stakeholder. In this situation few people remained in the community since government asked them to be relocated: *"The community must be considered as a major stakeholder. It is their City; the community lives there; and they enjoy living there. "* The identification and endorsement of these major stakeholders will ensure project success for the Project Manager, Government and the community. The involvement of Community leaders as decision-makers brings success to all.

NZ_P_3 demonstrates how to utilize stakeholder: *"Strong stakeholder management plan and to put it politely I have taken a small countries population around the Town Hall, which includes a variety of people from the Mayor to key Business leaders. We are being very loud and proud of our achievement, but there is always a risk that will put my head above the parapet once to many, but the benefits out way the risk".* The importance of the lies with the community living in the affected area. *"They are the silent majority, their voice and numbers carry a huge influence on the decisions being made. To properly tap in the silent majority leads to ensured well-run projects."*

4.4.4.6. Minimize Disruption of Community Life

Another area of empowering the community through Project Manager is minimizing disruption of community life when carrying out the project such as reconstructing residential streets for sewers, water and road repair. This simple act is powerful to empower the community by the Project Manager. Interviewee NZ_C_6 describes the situation: *"High disruptive work by work crews. The crews use road machines to do the repairs. Project Work Teams need to identify the vulnerable people, such as seniors requiring*

palliative care. Trying to find level of needs on street. Develop a registry on deliveries of care, such as palliative care. Ensure the palliative professional still provide care to seniors. The work crews ensure the palliative professionals will get to their clients during the repair work.” The Project Team tries to minimize disruption of community life and community assists the project team in any way possible, such as providing morning coffee and biscuits to the work teams.

Government gave sweeping power to contractors to rebuild the community which was too quick. People were upset on what took place. People are willing to wait to get work done. Chemical toilets were provided when street sewers were repaired. People will use the chemical toilets when they see the street sewers are repaired. Once the street sewers are operational, people can return to their homes and washrooms. When people are informed and respected on the progress, this gives the people empowerment by the Project Manager.

4.4.4.7. Project Control Board

Another important strategy described by Interviewee NZ_P_5 for empowerment is a joint community working group. The joint group forms the Project Control Board in which the Project Manager and Project Team works together to deliver the deliverables of the project. The established joint work group consist of 5 people which forms the project control group. The work group consists of 1 representative of community board, 1 president of community group, 1 rep from local neighbourhood association, and 2 project team members. The joint group (project control group) are the brains and ears of the case study to build. *“The work group is connected to the neighbourhood groups, council and mayor. Mayor and 12 council lords make up the core council. They have the final say. At the neighbourhood level, there are 7 neighbourhoods. Each local neighbourhood has 50, 000 people. Community ideas are discussed at the neighbourhood board, the community board, and Governors of the board.”*

In summary the role of the Project Manager to empower the community were discussed in the following areas: change in policy direction for the better of the community, collaboration between government and community, governance training for the community

to work efficiently and effectively with the government, identify major stakeholders in the community, minimize disruption of community life which will be appreciated by the community and they in turn will go out of their way for the contractors doing the work, organizational change management to decrease bad rumours and project control board consisting of community leaders working closely with Project Manager and Project Team.

4.4.5. Key Factors for Empowerment

The next PhD study objective is *Key Factors for Empowerment - to critically explore the key factors that needs to be considered for empowerment of disaster prone community for long-term sustainability* as expressed by the interviewees. The key factors identified by the interviewees are Community Well-Being, Final Decision-making, neighbourly help and social capital as shown in the following table:

Table 4-15: Christ Church - Nvivo analysis of the Key Factors for Empowerment themes nodes

Name	Source	Frequency Mentioned
Community Well Being	3	3
Final Decision Making	3	5
Neighbourly Help	1	1
Social Capital	1	2

4.4.5.1. Community Well-being

Another major factor is the process of empowerment and importance of the project to community well-being. Interview NZ_C_8 has shown through building the earthquake memorial. *"Bereaved families, seriously injured and survivors had the opportunity to comment at the start of the project on what they would like the Memorial to be, which contributed to the principles of the design brief and the selection of the site. A public exhibition on the shortlisted designs elicited more than 3,000 responses, which were considered by the Evaluation Panel before it recommended the Memorial Wall as the chosen design for the Canterbury Earthquake Memorial."* The memorial and community involvement in the design and location gave a sense of well-being to the community to give strength for empowering themselves in rebuilding their community.

4.4.5.2. Final Decision Making

Interviewee NZ_P_5 indicates that empowerment (final decision making) does not take place. *"Empowerment not take place because of the technicality of the project. No community input required for Technical decisions on roads and sewers. True empowerment takes place during local elections (every 3 years). Local body election is by ward on number of voters."*

Interviewee NZ_P_9 indicated through Regenerate Christchurch an Emerging Collective Model is approved. *"The model reflects everyone in context. People has to be center of everything who were impacted by the earthquake. How to get people to work with people to work with agencies and government: bottom-up approach and partnership"*. The collective model shapes the framework of empowerment within Christ Church. This model is based on the community leaders being involved in the decision-making prior to City Council approval to proceed with the project. City Council is made of representatives (community leaders) elected by community members. These representatives will change depending on the will of the people.

4.4.5.3. Neighbourly Help

Another factor for empowerment described by Interviewee NZ_C_4 is help: *"Social capital was referred to as a neighborhood in the old fashion way. You live in the street for many years. All kids grew up together. Help one another. It was called neighborly. Hard to work now because they are mobile; only identified by religion or sport or cultural. People help one another without being reimbursed."* Neighbourly help as shown above is based on social capital, historical background and cultural background. The Christ Church people come from different countries associate with people along common grounds of young families and children. As young children play in the neighborhood and attend elementary school, the children network and adult network build and grow. Religious facilities further developed helping one another. Neighbourly help is a key factor for empowerment.

4.4.5.4. Social Capital

One key factor of empowerment is the use of social capital. NZ_P_1 describes how social capital manifests in different community settings. The variation and resourcefulness will impact recovery as co-ordinated by the Project Manager:"

- a. *Synck is a business community which consists of small businesses. Business people focus on keeping the business going and little time for social capital.*
- b. *The town Lyleton is a strong community. They look after themselves. They have a strong identity. They are an artistic community, community members know each other for a long time with a strong social capital. People belong together. The community is very organized. They know what to do. They have resources and ready to use them.*
- c. *The town Summon has one road leading into the town and a beach. It is a strong and wealthy community.*
- d. *The town, New Brighton, has a new identity with little wealth but strong social capital.*
- e. *The town, Linworth, is a poor area, poor perception of themselves. The social capital is low. They have health and drug issues.*

As shown above, communities varied from one another in terms of social capital and resourcefulness. The variation implies an agile project management approach rather than a cookie approach. A comparative approach should be applied in the academic world when building social capital models for the practitioners. Agile models would enable better work collaboration with government bodies as redevelopment is taking place. The communities contains members with funding and leadership skills that benefit government overall plans.

In summary the key factors for empowerment of the community discussed were community well-being, participate in the decision-making before final approval by City Council to proceed, neighbourly help of each community members and social capital of connections and resources in which the community can organize themselves for a sustainable community.

4.4.6. Project Manager Framework

The last PhD study objective is *"Project Manager Framework - to develop a framework for Project Managers, and individuals trained in project management, to empower disaster affected communities for long-term sustainability."*

Table 4-16: Christ Church - Nvivo analysis of the Project Manager Framework themes nodes

Name	Source	Frequency Mentioned
Community Experts	3	5
Facilitation Skills	3	5
Organizational Change Management	3	12
Process-Oriented Project Manager	4	5
Public Participation	7	14
Sharing some of the lessons	2	3
Storytelling	1	2
Who Dictates Community Empowerment	3	4

What are skills and mindsets the Project Manager needs to master to attain an empowered community. Interview data indicated Project Manager Skills need to be fine-tuned to work with the community. The skills range from facilitation skills for large group discussion, using professional community experts, organizational change management, being a process-oriented Project Manager, public participation, sharing lessons with other professionals nearby and in other countries, and storytelling.

4.4.6.1. Community Experts

The Project Manager must become familiar with the community and bring the experts to supplement their Project Teams. Interviewee NZ_P_9 stipulates “

- o *For Short –tem: bring in experts on community engagement*
- o *Mid-term to long-term as investment for the project: train project management for community leader and government agencies. Project management is a life skill”.*

“Bring recognition into the project through community workers and social workers to address conflicts with the community and smoothen those conflicts” according to

Interviewee NZ_C_6. The project deliverables can be attained. *“Project manager and engineer may not see but the community worker can help. A 2 a.m. work is not allowed because residents will come in pajamas and shotgun. Community and engagement is important.”* The community leaders and government agencies can participate most effectively in the Project. *“Importance is not on having community developers, social workers on the team but how you listen, understand and action based upon suggestions given”* according to Interviewee NZ_C_8. *“Project Manager needs to demonstrate to listen, understand and take action upon the suggestion given. This is the important skill rather than skilled in community development”.*

4.4.6.2. Facilitation Skills

Facilitation skills is stressed by NZ_C_8 *“Facilitation is part of feedback: To open people and understand the principles of engagement. Project Manager should not be judging and select feedback in mutual way. A Platform of mutual exchange and an opportunity to mutual exchange”.* As a result half of the families participated in the Earthquake memorial. *“Understand the initial thoughts and process; they may not agree; but the Community is palatable on the process of how decisions were made. Bringing people along the journey is very important. The process is very important – community engagement is worthwhile. Unclear process then failure takes place”.* Project Manager is to get in front of people. Project Manager to oversee and overhear what the audience is saying. Audience sees the Project Manager sees and understand their considerations. Interviewee NZ_P_5 cautious that *“Project Manager is facilitating what the community wants. Sometimes Project Manager has limitations based upon bylaws and footprints.”*

Analysis of the Project Manager Framework indicated around Project Manager’s skills. The skills range from facilitation skills for large group discussion, using professional community experts, organizational change management, being a process-oriented Project Manager, public participation, sharing lessons with other professionals nearby and in other countries, and storytelling. Communication and public participation skills were shown to be very successful when carried by an organizational change management framework. The community and stakeholders are continuously of the project progress but most importantly

their commitment and support of the project was continuously monitored and adjust to ensure acceptance of the final products.

4.4.6.3. Organizational Change Management

The most important message of communication is "*Knowledge is power. People do not like spin but prefer Open and honest communication. They like to be inform not scared.*"

The communication principles discussed by the interviewer is the basis of organizational change management. Organizational change management is a promoted to be a key component of Program Management. Communication and stakeholder management is reinforced continuously to ensure complete stakeholder agreement and participation in the project. Doubts are removed; no protest takes place to derail the project at any time. In essence, communication and organizational change management are proactive approaches used by the Project Managers.

NZ_P_2 summarizes the content of communication: "*Project manager needs to go back to Core principles: adapt and adjust. Simple and elaborate. Community is more engaged when they say these leaders are the correct one to rebuild the community. Broad network of people rather small group of people to be representative.*"

4.4.6.4. Process-Oriented Project Manager

Project Manager should be a process oriented person according to NZ_P_5:

- *“Enabling and listen to a wide range of voices*
- *Find the common themes*
- *What the potential impacts that can take to affect delivering the project deliverables*
- *How Project Manager can interpret community feedback. One option is to build scenarios.”*

4.4.6.5. Public Participation

Another important skill for the Project Manager is public participation. Interviewee NZ_P_2 describe the principles of public participation that Project Manager can use for renovating Historical buildings in this case the Town Hall building: "*They through the*

matrix of public participation, talk about Australian examples on measuring on participation. No collaboration and empowerment took place empowering through informing they express. People want to be informed. Inform what is happening. ... They empower through representatives. Giving Project Status report. Not to tell what is commercially sensitive information. Interested in budget, schedule control. Community has confidence in professional to do the work. "

Interviewee NZ_P_3 who was responsible for the building of a central public library, discusses the same principle of Public Participation that Project Manager utilized: *"Consultation took place in the Project Initiation phase through briefs. Consultations and engagement took place through presentations and feedback and email survey. Advisory committees were formed from churches, schools and representatives. Out of the above engagement strategy, the community were involved in the initiation and planning phase of the project only. Once City Council approved, then contractors built the library based upon specifications and requirements given."*

Public participation in the Central Library and Town Hall has been inform and consult. Community input was received in preparation for contracts to rebuild two major facilities. Communication was well done. Community is satisfied with end-product.

An important lesson for Project Manager is to consider the disaster recovery and community empowerment as a journey to learn about the community empowerment process: the dos and do not.

“Community engagement importance is dictated by the impact it has on the project” noted by Interviewee NZ_C_8. *“On the impact of people – levels of community engagement; importance is on the mitigation of the impact of the project”*. Mitigation of the impact shapes the level and type of community engagement such as

- Noise level of the construction
- Traffic flow of the roads, streets and expressway
- Planting of trees.

4.4.6.6. Sharing Some of the Lessons

Interviewee NZ_P_9 indicated “*sharing some of the lessons we are learning and corporate entity as Regenerate Christ Church. It is a journey from initial earthquake to now – how to work with community engagement. Share lessons by talking and travelling Christ Church, East Coast of Australia and Southern Pacific islands. To share our stories and what we have learned what is worked and what has not worked and why. We have a long way to go with Christ Church: 10 more years of learning and to apply knowledge just for the physical reconstruction*”. A strong message for Project Managers to share their stories with other Project Managers in the same country and other countries.

4.4.6.7. Storytelling

NZ_P_2 uses storytelling to communicate project status to the community. The communication technique implies "ownership" to the community: "*Harness their energy. Storytelling to a large group of people. To relate to specific people; hence humanize it. Master of your own destiny. Compelled the environment. Communication is: Very powerful – storytelling to use humanize the event. People can relate and can contribute.*”

The Project Manager must have regular communication. Communication is vital. “*Bad news is important – at least it is communicated*” according to Interviewee NZ_C_6. Christ Church government was very reluctant to give bad news before earthquake took place. “*You must tell people immediately. People are very resilient. Can actually look after themselves. Give them timeframes, such as drinking water is available in 3 weeks. People can prepare to cover for that delay*”.

4.4.6.8. Who dictates Community Empowerment?

Who dictates community empowerment: city council and/or program/project managers? City council provides strategic direction. Program/Project Manager carries out community empowerment. A message repeated by several interviewees. City Council establish a strategic vision of how to empower a community for the long-term. Say is different from doing. This is what happened in the first few years of Christ Church Recovery. Christ Church is in their second phase of recovery, known as regeneration. This time say and do

are the same: community is empowered by involvement in the decision making of the project.

A cry from the community leaders and community professionals to build reassurance to Project Management Professionals how to work with a large community in an efficient and effective manner. Find and work with the natural leaders of the community is strongly recommended between Project Manager and the community. The natural leaders will be a definite asset to making the community resilient on the long term basis. The recommended skills for Project Managers range from facilitation skills for large group discussion, feedback process, listening to the community and storytelling. Another important recommendation is no two communities are alike; therefore, different approaches are applied to different communities.

4.6. Chapter Summary

Chapter #4 examined the findings both from San Francisco and Christchurch according to the research objectives. Within San Francisco and Christchurch, Project Manager and Community Leaders were interviewed to analyse approaches that was used. The next chapter focuses on a Cross analysis between San Francisco and Christchurch findings to find similiarties and differences in the approaches and follow up with a comparative analysis of the literature review.

Chapter 5 - Cross Case Analysis

This chapter aims to cross analyze the interview results from San Francisco and Christ Church based upon the PhD study objectives.

5.1.Case Study Background

5.1.1 San Francisco

San Francisco case study is based on a geological area that is currently earthquake stable but there is a probability of 60% within the next 10 to 20 years of a major earthquake. The 1989 and 1901 earthquake is still remembered vividly on the amount of damage it brought to San Francisco. The San Francisco want to better prepare and recover more quickly than previously. The focus on the case study is on community neighbourhoods using community empowerment, project management and community leadership to deal with stressors. Stressors are not as severe as earthquakes but offers opportunities for the neighbourhood to perform disaster recovery activities. The stressors can be local fires, local snow storms, gas fires and renovating streets and neighbourhoods. The neighbourhood/community needs to work with the local government. The views and suggestions offered from Project Managers, Community Leaders and Community Engagement Consultants offer an excellent working relationship be established between community, project management and consultants.

Much advice given from San Francisco were on how the community leaders works with its members, project managers and the local government. Each has a role in building a sustainable community from a major disaster.

5.1.2 Christ Church

Christ Church case study is based on a city recovering from a major earthquake that took place in 2010. The first five years was focused on disaster recovery of infrastructure projects to enable the city to be working. In New Zealand, the approach was a top-down approach during disaster recovery (first five years). Community input received but no decision making was encouraged.

The next five years is regeneration of the community in terms of cultural, social and economic. Now in the Regeneration Phase (next five years) it is holistic approach (bottom-up and top-down and lateral). Decision-making by community members is strongly encouraged. The dynamics in Christ Church differs than those from San Francisco – recovering from a recent major disaster. The focus is large projects to rebuild Town Halls, Civic Buildings, Public Libraries, Monuments, Parks, Recreational facilities and infrastructure road, water and sewer repairs. These projects range in millions of dollars taking a year or longer to complete. The focus of interviews were how Project Managers of Capital Projects work with the communities. The establishing and implementation of community engagement principles that the community leaders were involved in the decision making of the end products, such as Town Hall and Recreation facilities. The interviews revealed detail suggestions and examples of how Project Managers had and can work with communities. The result is mitigation of projects and building that community takes pride and will maintain on a long-term basis. The collective and engagement model is based on New Zealand and Maori culture of working and talking together. The cultural elements of relationships is built into the engagement model.

There are community initiatives, such as Live in Space and Gap Filler that use project management to carry out small projects. The Project Managers are facilitators and the community members develop and carry out the project entirely. The Community members are the final decision makers for project deliverables. Funding is obtained from City Council, but responsibility rests with the community. City Council would eventually want these community initiatives to be independent. At this time, the neighbourhoods are not at the same maturity as in San Francisco to carry out projects at the neighbourhood level consistently. The community initiatives are carried by an individual or a few community members.

Christ Church went through a learning process how to implement public participation styles. The government was aware of the IAP2 and its approaches. Christ Church implement in stages to become familiar and comfortable to work with the community. The community let out its frustration of non-involvement by establishing community initiatives

that receive international recognition, such as Share-an-Idea and Gap Filler. The country experienced a journey how to work with community empowerment with incredible potentials in the future.

Christ Church strongly discourages community members to be involved in rebuilding buildings. Their concern is safety and professional certifications to do the work. Christ Church is considering the use of community members to assist in some work activities such as landscaping. Researcher needs to look at job training programs for community members. Therefore community leaders is actively involved during the planning and initiation but not in the implementation phase. Some leaders will be on the project control board in all Project Phases but involved in carrying out the work.

Christ Church is progressing very quickly in community empowerment with the great work of IAP2 in the Australia and Pacific area. Christ Church will in time reach the same maturity that San Francisco has achieved at the local community/neighbourhood level.

5.2. Cross Analysis and Triangulation

Table 5-1: Comparison of Node Themes

PhD Objectives	San Francisco Case Study	Christ Church Case Study
Community Response	Strength in Number Power Recognition Working knowledge of Government Community Network (Social Capital) Thinking SMART Hiker Analogy Community Funds Community Prior Experience	Community Work Groups Community Funding Disaster Experience
Community Strategies	Young Community Leaders Collaboration between Community and Government Define Scope of Work Public Participation	Community buy-in Tentative coping strategies during recovery Informed on Progress Culture of talking and helping
Community Empowerment	Knowledge of the Nuances of the community Community Engagement Styles "Owner of the Project" Involvement in all Project Phases Community Representation through Natural Leaders	Citizen Advisory Board Formal Recognition Honor our Members Involvement in Project Phases Leadership Training Meeting Community Needs Training in Project Management
Project Manager Empowerment	Identify Major Stakeholders Identify Key Project Resources Organizational Change Management Communication Leaders working with Leaders	Policy Change of Direction Collaboration Governance Training Identify Major Stakeholders Minimize Disruption of Community Life Organizational Change Management Project Control Board
Key Factors for Empowerment	Survival Mindset Think SMART Coping (Cultural and Social) Social Capital Capacity Building Perception of Community Power	Social Capital Neighborly help Final Decision Making Community Well Being
Project Manager Framework	Skills Development (Large Group Facilitation) Active Listening Skills Simple English (Written and Oral) Community makeup and Leaders Agile to deal with unexpected events Participation (Information Gathering) Social and Cultural Awareness Awareness of Connectedness Find and work with Natural Leaders Collaborate with government and community Awareness of Government Participation and Community	Community Experts Facilitation Skills Organizational Change Management Process-Oriented Project Manager Public Participation Sharing some of the lessons Storytelling Who Dictates Community Empowerment Collaboration (Red Zone)

The above table compares San Francisco and Christ Church themes on how community can be empowered and how Project Manager can assist in the empowerment. A exact match of themes within each PhD Objectives is noted. The difference pertains to the community engagement/empowerment maturity level of the sites selected. San Francisco site has a very extensive program on community empowerment in place which has been developed over a number of years through assistance of various prominent American universities, such as MIT and Harvard. In the case of Christchurch, community empowerment took a prominent role in the second phase of disaster recovery starting April, 2017 when the Regeneration Program was approved by the government. The result is a comparison of two sites at different maturity levels of community empowerment impacting disaster recovery. Christchurch is taking strides in community empowerment and will reach the same level within a few years. Closer examination of common themes listed above will be discussed in more detail.

5.2.1 Community Response

According to the literature review, the community was given preliminary information and ignored as active partners. Davidson's study (2006) proved that there existed variation in community participation among different countries. As a result, community participation have been inconsistent in disaster recovery due to different types of influence/power relationships from ad hoc to empowerment. Bolin (2006) noted that local community agencies were forced to help find temporary housing for low-income residents, who may or may not be impacted in the 1989 Loma Prieta's earthquake when the government could not provide assistance. In another example during the Hurricane Katrina in 2011, Bretherton (2011) stated that people responded as families saving other families, then groups of volunteers with cars, trucks and boats rescuing strangers. Similarly during the Hurricane Sandy in 2015, the first weeks after Hurricanes Sandy struck, volunteers and community members became the rescuers, caretakers and the final comforting companions to the dying. They were the first and often remain the sole line of response for weeks (Brennan, 2005).

Interviewee information gives a different dynamics of community response from San Francisco and Christ Church. One should not ignore the literature review because of the

case studies selected. San Francisco and Chrish Church disaster recovery were based on lessons learned. Strengths in number, power recognition, working knowledge of government processes, community networks, thinking SMART, and hiker analogy are community responses to stressors and disasters in San Francisco. For the community to be heard they must be recognized by the Project Manager, government and funding agencies. Strengths of community when responding to disasters is based on being large in number (see Section 4.3.2.5) and act in uniform and consistent manner. Strength in numbers, network and reliable information has made the community been recognized as a major stakeholder in the project through a power relationship with the government so that the way they respond is of one unified voice. The power recognition (see Section 4.3.2.4) is established when the government acknowledges the community.

The emphasis was on community prior experience which is shaped by community residents who lived in the community for a period of time (see Section 4.3.2.2). How the community interacts is impacted by such activities as by street design, neighborhood layout, stores, schools, community centers, parks and recreation centers. Such interactions helps the way community respond during a disaster. What works and does not work is the insight that community members can offer to Project Managers and governments.

Prior experience (see Section 4.3.2.2, 4.4.1.1) with the government indicates the community has limiting power. Limiting power is based upon the funds accessible by the community through direct funds or funds matching. The funders, such as the government and International Banks, have final say. As shown with FEMA future directions, the first 72 hours the community is on its own; the community must take care of itself. The original philosophy that government takes care of its people is limited by available money and resources through taxes.

The capacity of the community to respond was based on the community's coping, response and adaptive capacities (Cretney, 2016). The importance of social participation as an avenue to build relationships between community organizations and higher-level governance institutions allow for communities to take some level of ownership and control.

This reinforces the importance of moving away from the command and control approach that has focused on an intensive role of State and governance actors, relegating individuals and communities to passive roles in response and recovery (Singh-Peterson, 2015; Prior, 2013).

Interviewee SF_P_1 used the Hiker analogy (see Section 4.3.2.3) to explain how community members can effectively respond and work after a disaster: “*Make do (repurpose and use things smartly) such as a hole in can serve many purposes. Educate the smart things to repurpose items: other ways to achieve the goals. Resources are smartly effectively used*”. The hiker analogy is applicable for short term needs within the disaster relief and disaster recovery phases. On a longer-term basis for the community members, finances and economics need to be addressed.

Community response is shaped by previous historical experience (see Section 4.4.1.1) on the frequencies of disasters and the community’s historical past. In the case of Christ Church public recorded history goes back a couple of hundred years. In the case of Christ Church, the emphasis how to recover from the damages from the disaster through work groups (see Section 4.4.1.3) on addressing issues that have not been covered by the government. Community work groups proved to be very effective and received international recognition for their work.

In Christ Church, the emphasis was on community input which is shaped by community residents who lived in the community for a period of time. How the community interacts is impacted by such activities as by street design, neighborhood layout, stores, schools, community centers, parks and recreation centers. Such interactions helps the way community respond during a disaster. What works and does not work is the insight that community members can offer to Project Managers and governments. In addition to input is community access to fund-raising (see Section 4.4.1.2) and community work groups (see Section 4.4.1.3) helping in the recovery. Therefore the community members and businesses within the community provided funding in addition to the government. Providing funding makes the community a very important stakeholder in disaster recovery projects.

In summary, historical experience of disasters, community work groups, community funding initiatives and community residents were identified community responses in Christchurch. In the case of San Francisco, strengths in number, power recognition, working knowledge of government processes, community networks, thinking SMART, and hiker analogy are community responses to stressors and disasters in San Francisco.

5.2.2 Community Strategies

Literature review suggest trust with government and government to trust the community, working with community leaders, and participatory planning such as design charrette (scenario based planning) (Zhang, 2015). The literature review is triggered by interviewee comments to explore new techniques of participatory planning through urban planning and community development planning and other experience in the world from Vallance's (2012) work.

Under Community Strategies, San Francisco focus on the community be looking it current and young community leaders (see Section 4.3.3.3). How the leaders work within the community and work with the government. Start developing teenagers in community leadership roles from sports or church activities to interacting with local government. Time is needed to understand how to work with different Government officials and agencies, plus understanding the protocols. Community leaders, rather random citizen, is the best to work with the local government because of their knowledge of government functions, protocols and reputation. The random citizen will be at a disadvantage bringing forth community's needs, concerns and advice. Once the community leaders are in place, then the community members need to support the community leaders on their directions. The support of the community comes through the attitudes and motivation of the community. In addition, the sharing of roles and responsibilities with the government (see Section 4.3.3.1).

From the community perspective, the strategies that the community needs to approach the Project Manager and government is through public participation (see Section 4.3.3.2). Public participation is through inform, consult, collaborate and empowerment. The

community has ideas and wisdom to shape the community through shared decision making. Belief in collaboration rather than conformational to form better relationships. A lot of infighting within city and community result. Meet with the community in group and one to one. Get to know them.

Christ Church focus on being heard by the government, how to cope as recovery is taking place, establishing community initiatives to help the community recovery that have not been addressed by the government, and presenting symbols to motivate people and help people in the recovery.

The Christ Church residents come from different countries associate with people along common grounds of young families and children (see Section 4.4.2.4). As young children play in the neighborhood and attend elementary school, the children network and adult network build and grow. Religious facilities further developed helping one another. The community strategies is based upon the community feelings of empowerment.

The interviewees outlined a number a community strategies can be used: train young community leaders to work with community and government, collaborate with the government, public participation, community buy-in of recovery (see Section 4.4.2.1), culture of talking and listening (see Section 4.4.2.4) and being heard.

Community strategies used within Christ Church is based on social capital, historical background and cultural background. The strategies used in San Francisco centered on young community leaders, community leadership, and collaboration with the government. The strategies differ because Christ Church is recovering from a recent major earthquake. Strategies from literature review were found in urban planning as effective techniques.

5.2.3 Community Empowerment

Under Community Empowerment, San Francisco focus on advice given to Project Managers and Government of how to work with the community. Work with the community will build their empowerment process through knowledge of community nuances (see Section 4.3.4.4), involvement in all Project Phases (see Section 4.3.4.3), and giving the

community status as “ownership of the project” – community is in the driver seat of the project (see Section 4.3.4.5). The community is responsible for the success and failures of the project. SF_C_4 indicates the "owner of the project" is the major stakeholder of the post-disaster recovery project. Their input and decision are very important. As a major stakeholder (a person controlling the direction of the project) will be paid attention by the Project Manager and government. Once the owner concept has been accepted by the Project Manager then community knowledge and expertise can be utilized to build the community on a long-term basis. The community members take responsibility for the maintenance and growth of the community in many years ahead.

To make community empowerment be successful in the disaster recovery project is community representation (see Section 4.3.4.2). Interviewee SF_P_9 indicates that “*Not everyone can sit at the planning table.*” Not all community members be involved in the decision-making but through their natural leaders who are recognized looking after the community. The community leaders represent the community hence community is involved in decision-making. The community leaders are recognized by the community. This ensures rapid decision-making and implementation for the benefits of the community.

Christ Church emphasis is an overall community collective engagement model is formed on the basis partnership between the community, government and project managers. Emphasis is government formal recognition of community engagement in all projects (see Section 4.4.3.2). Providing training in governance, community leadership (see Section 4.4.3.5) and project management (see Section 4.4.3.7.) to enable community leaders on community advisory boards and project control boards (see Section 4.4.3.1) to understand and effectively deliver sound products and services for a sustainable community on the long-term (see Section 4.4.3.6).

The result is the formation of a Citizen advisory group and involvement in Project Control Board. Collaboration and consultation are used as the building is being designed. As building is being built, the community is informed of the progress (see Section 4.4.2.3).

Literature review has shown that the community are the first responders during the aftermath of a disaster. Numerous studies about single countries (Ainuddin, 2012; Bornstein, 2013; Chandrasekhar, 2012; Crawford, 2013; Magnin, 2007; Olofsson, 2007; Twigg, 2009; World Bank, 2005, 2008) provide incredible insightful information on why the community is very important even when power and influence are low and why it is important to empower to disaster affected community. Rowlands (2013) indicates that empowering the community and maximizing the community's participation at the local level will give the community control of the process and enable it to take charge of its rebuilding. This means tapping into the community's resourcefulness; tapping local providers to supply materials and services (such as psychology and social work); and tapping workers to rebuild the community. Victoria State, Australia (2013) indicates the empowered community share responsibility in decision making and accountability. Legislative and policy frameworks within the state/country establish the level of power communities can decide: some were limited and some wide ranging within a defined time period. In the case of collaboration, there is delegated decision-making, but the government retains the overall decision-making power. The different types of participation is effective in different contexts; empower may not be suitable for all situations. Slotterback (2013) noted that effective management of power differences between stakeholders and community can help the community trust the process; some powerful stakeholders might be reluctant in the process if they feel their power is diminished.

The community will act immediately in an effective and efficient manner when trained and recognized (ADAP, 2004). Their performance goes beyond traditional disaster management practices of preparedness and response to mitigation and recovery (San Francisco, 2016) when masterly dealing with stressors (disasters). Community empowerment has great benefits for Emergency Management, government agencies, private and non-profit sector organizations when their budgets are impacted by economic constraints (FEMA, 2011). The interviewees from San Francisco re-confirm and indicates how they people during stressors and disasters.

Successful disaster recovery and community stability require a process that achieves acceptance and a sense of involvement, from the stakeholders (Crawford et al., 2013). The success of a recovery project should also be measured in terms of that acceptance; a programme that is not perceived as legitimate has not succeeded in achieving of community acceptance.

Within Christ Church, community organizations (such as Rubble, Gap Filler and Agropolis) demonstrated effective community-led recovery projects that were internationally recognized. Many community residents felt their successes had brought joy to their lives and restored hope for the future of the city. In light of how the community felt deliberately left out of consultation and engagement by the government (Cretney, 2016). Community-based responses to the earthquakes included informal, spontaneous support and organised responses led by community and iwi (tribal) organisations. Most organised responses were initiated by existing community groups or leaders, but some new initiatives emerged, such as the creative arts project Gap Filler and the youth-led Student Volunteer Army.

Young people continued to be engaged in a range of creative post-earthquake initiatives. These included: Greening the Rubble (bringing colour and greenery to the vast tracts of demolished building sites and piles of rubble); Gap Filler (producing interesting and creative art works and activities that brought life to vacant spaces); and the Pallet Pavilion (a café and performance space created from re-cycled wooden pallets) (Mutch, 2013).

The literature review based on lessons learned shows the importance of empowerment through the workings of the Project Manager – CERA literature. Interviewees looked at Project Managers working with leaders, applying organizational change management, collaboration, and providing training in Project Management, Leadership and Governance. The training enabled the community leaders to be on Advisory Board and Project Control Board of the Disaster Recovery Projects.

The result is a community deciding its destiny. To achieve this end the following areas explain the tools and techniques that are used in Christ Church: citizen advisory board, formal recognition, honour our members, involvement in Project Phases, Leadership Training, Meeting Community Needs, and Training in Project Management.

5.2.4 Project Manager Empowerment

The role of the Project Manager is to attain the project objectives using the assigned project resources in the best way possible. The assigned project resources are determined by the Project Manager and Project Sponsors (see Section 4.3.5.2). The assigned project resources also include community leaders and community members. The key is how the Project Manager works with the community in the best way possible; hopefully through community empowerment in the decision-making of the project deliverables.

A key role of the Project Manager is to identify who are the major stakeholders (see Section 4.3.5.3, 4.4.4.5) within the disaster recovery project. The major stakeholder is defined as owning the financial resources to implement the Project to benefit the funders. The funders can be government and/or funding agencies. NZ_P_3 stresses the community as a major stakeholder.

Another key role is communication - organizational change management (see Section 4.3.5.4, 4.4.4.1). Keep the stakeholders, and most importantly the customers of the project, constantly informed through communication of the project progress, addressing the customers and stakeholder's concerns and fears on a frequent basis. The ultimate intention is win-win for all.

An empowered community from disasters will be sustainable in the LONG-TERM because of their collective resources, knowledge and expertise. However, some communities might not have the sufficient resources, knowledge and expertise to successfully recover from a disaster. Therefore, the Project Manager can assist during the disaster recovery to empower the community for their long-term sustainability.

Under Project Manager Empowerment, San Francisco and Christ Church focus on how to help the Program/Project Manager empower the community. Themes center on communication, stakeholder management, leaders working with leaders, organizational change management, working with vulnerable groups and policy change direction to better suit the community.

Project Manager needs to change policy direction (see Section 4.4.4.2) from no settlement in unsafe grounds to settlement on a phase-in process and how to reclaim the unsafe grounds. This is an example of trust being taken away and trust rebuilt. A very hard challenge for Project Manager to empower the community. A hard decision for the government and Project Manager to make when the ground is unsafe. Government, Emergency Management and Project Managers' priority is to save life and not to allow any settlement on unsafe ground. In this situation, the Christ Church government indicated the land can be re-used at a future date.

Training provided through Program/Project Manager on community governance (see Section 4.4.4.4) is an excellent step for community to work with the government and directing their future destiny. Training in governance enables the Project Manager to empower the community by understanding how to work with the government for the betterment of the community. Another important strategy described by Interviewee NZ_P_5 for empowerment is a joint community working group. The joint group forms the Project Control Board (see Section 4.4.4.7) in which the Project Manager and Project Team works together to deliver the deliverables of the project.

According to the literature review, the Project Manager needs to apply a holistic review of the community: its history, political environment, economic environment, built environment, and infrastructure environment. Edginton (2010) also stressed that characteristics of the disasters, efforts made by governments and non-state organizations, and local community attitudes and relationships with government forms a framework for understanding the dynamics of the post-disaster reconstruction planning for the community. Understanding the context of the community gives the Project/Program Manager an

understanding of the past, present and future dynamics they are dealing with in the community and its stakeholders.

In summary the role of the Project Manager to empower the community were discussed in the following areas within Christ Church: change in policy direction for the better of the community, collaboration between government and community, governance training for the community to work efficiently and effectively with the government, identify major stakeholders in the community, minimize disruption of community life (see Section 4.4.4.6) which will be appreciated by the community and they in turn will go out of their way for the contractors doing the work, organizational change management to decrease bad rumours and project control board consisting of community leaders working closely with Project Manager and Project Team.

5.2.5 Key Factors for Empowerment

The key factors within San Francisco are social capital (neighborliness, connectivity within the community for assistance, help and getting working done) (see Section 4.3.6.4). The survivor's mode of the community must be based on SMART principles. Make do, repurpose, and use things smartly to achieve the goals by "thinking out of the box" or viewing the resolution from a different angle. Once good information is given then resolution is achieved. Challenge of implementation is the perception of ownership versus realistic decision making. Within the San Francisco area, the local government has developed programs in community leadership and project management for community leaders and community leaders to work SMART and be survivors through stressors (such house fires, and work shortages), rather than major disasters (such as earthquakes). Having the community work together in stressors will enable the community to adjust on a daily basis. The bottom-up approach is effective to tie the skills of community members for members to be shown as empowered stakeholders. Interviewee SF_C_3 outlines the next steps of the empowered community members by "*what assets you have, outreach and advocate for constituents, know politicians, form relationships and strategic alignment*". These components are key factors to an empowered community that dictate its future direction to the government and funding agencies.

Communities varied from one another in Christ Church in terms of social capital (see Section 4.4.5.4) and resourcefulness (see Section 4.4.5.3). The variation implies an agile project management approach rather than a cookie approach. A comparative approach should be applied in the academic world when building social capital models for the practitioners. The communities contains members with funding and leadership skills that benefit government overall plans.

According to the literature review, social capital provides financial (e.g., loans and gifts for property repair) and nonfinancial resources (e.g., search and rescue, debris removal, child care during recovery, emotional support, sheltering, and information). Isolated individuals with few social ties are less likely to be rescued, seek medical help, take preventative action such as evacuate, and receive assistance from others, such as shelter (Dynes, 2005; Dynes 2006). Bridging social capital describes acquaintances or individuals loosely connected that span social groups and organizations, such as civic and political institutions, parent–teacher associations, and sports and interest clubs along with educational and religious groups (Small, 2010). Linking social capital connects community members with those in power will be the role of the Project Manager to successful disaster recovery of the affected community by emphasizing collaboration and empowerment of all concerned parties to re-shape a resilient and sustainable community.

For example, following the March 2011 earthquake, tsunami, and nuclear meltdowns, survivors in Japan indicated that many of the elderly and infirm were saved from the incoming tsunami not by their own actions but by the social capital, i.e. networks of neighbours, friends, and family and the resources (Aldrich, 2015). In another example, After the Aceh Tsunami struck the Indian coastline, Aldrich (2011) found that Indian villages with high levels of bonding and linking social capital received greater amounts of aid and assistance more quickly than communities which possessed only bonding capital. The villages who overcame collective action problems and efficiently extracted resources from donors and government officials also left out tsunami-affected villagers on the social margins of society.

For recovery to be sustainable in the long term, recovery project needs to be ‘owned’ and led by local communities and institutions. Community-led recovery work includes supporting communities to shape and lead their own recovery through building leadership capability, participating in decisions, developing neighborhood response plans and providing opportunities for communities to connect (CERA, 2015). A core purpose of local government is “to enable democratic local decision-making and action by, and on behalf of, communities”. This purpose implies that local government will be actively involved in building communities and fostering public participation in democratic processes (Keenan, 2016).

The Key factors of empowerment was amplified by a literature review with Holland through Bosman and Denters work. They indicated the Dutch people mindset was to build "a better place" rather than going to "a better place". Going to "better place" means transferring the community to another location, which global literature recommends no but happens in United States. The Dutch build a demolished community by building "a better place" for its community members. The community members participate in designing their new homes. This was encouraged by the lead architect and government. Community empowerment was made to happen. The same situation area arose in Christ Church and San Francisco. Interviewees stressed survival mindset, thinking SMART, social capital, capacity building, neighborly help, and collective model of working together.

The key factors for empowerment of the community within Christ Church were community well-being (see Section 4.4.5.1) , participate in the decision-making before final approval by City Council to proceed (see Section 4.4.5.2), neighborly help of each community members (see Section 4.4.5.3) and social capital of connections and resources (see Section 4.4.5.4) in which the community can organize themselves for a sustainable community.

The collective model shapes the framework of empowerment within Christ Church. The model is based on the community leaders being involved in the decision-making prior to City Council approval to proceed with the project. City Council is made of representatives

(community leaders) elected by community members. These representatives will change depending on the will of the people. The model also describes the workings within San Francisco.

5.2.6 Project Manager Framework

San Francisco and Christ Church interviewees stress Project Manager's Skills for the empowerment of the community. What are the major skills required to ensure an engaged community? The skills in San Francisco range from facilitation skills for large group discussion (see Section 4.3.7.6), feedback process, listening to the community, documentation skills (keep documentation simple for the community) (see Section 4.3.7.7), natural leaders (see Section 4.3.7.5), and storytelling. The skills in Christ Church range from communication, public participation (see Section 4.4.6.5), government collaboration, civic engagement, and funding.

Find and work with the natural leaders (see Section 4.3.7.5) of the community is strongly recommended between Project Manager and the community within San Francisco. For San Francisco, the interviewees stress that the community leaders and community professionals to build reassurance to Project Management Professionals how to work with a large community in an efficient and effective manner (see Section 4.3.7.3). Find and work with the natural leaders of the community is strongly recommended between Project Manager and the community (see Section 4.3.7.5). The natural leaders will be a definite asset to making the community resilient on the long term basis.

The natural leaders will be a definite asset to making the community resilient on the long term basis. The recommended skills for Project Managers range from facilitation skills for large group discussion, feedback process, listening to the community, documentation skills (keep documentation simple for the community), and storytelling.

Comments from San Francisco reveal that some members of the government, such as the Police Captain, hears and works closely with the community. Other members of the government do not. This is what the Project Manager needs to understand and work it as

the coordinator between the community and the government. For San Francisco, discussions pertained to Government focusing on collaboration.

Another important recommendation is no two communities are alike; therefore, different approaches are applied to different communities. Another aspect of the community the Project Manager needs to be aware is the connectedness within the community. Some people refer the degree of connectedness as social capital or as neighborliness. How the connectedness can be established is through children. SF_C_2 describes community participation based upon "*transplants in the community (come to work) by following the money. Unless they have kids – they do not connect within the community.*" No connection to the community means disjointed community. No one go to in times of need. Once there is connectedness, a strong community is formed. The connected community can then address their needs to the Mayor and local government.

Within Christ Church, the emphasis was on government collaboration. Now the government has agreed to implement a transition plan to allow residents to return to the red zone districts (unsafe land for the community) in a timely approach. Small steps will be taken to rebuild in the red zone through test and implementation. Confidence building by government and community will take as land is reclaimed from the red zone. The abandoned homes are reclaimed and the community establishes its roots. An excellent example of government collaboration with the community took place within the redevelopment of the red zone.

Communication and public participation skills were shown to be very successful when carried by an organizational change management framework. The community and stakeholders are continuously of the project progress but most importantly their commitment and support of the project was continuously monitored and adjust to ensure acceptance of the final products. Communication to inform the progress of the project and reduce resistance from various stakeholders. Christ Church interviewees stress this important skill. The communication principles discussed by the interviewer is the basis of

organizational change management. Organizational change management is promoted to be a key component of Program/Project Management. Communication and stakeholder management is re-enforced continuously to ensure complete stakeholder agreement and participation in the project. Doubts are removed; no protest takes place to derail the project at any time. In essence, communication and organizational change management are proactive approaches used by the Project Managers.

Another very important skill is public participation for the Project Manager. Christ Church interviewee SF_C_2 describe how public participation (see Section 4.4.6.5) is used to renovate a Town Hall building. Communication and public participation skills were shown to be very successful when carried out in an organizational change management framework. The community and stakeholders are continuously informed of the project progress but most importantly their commitment and support of the project are continuously monitored and adjust to ensure acceptance of the final products.

Fund raising activities by the community was shown to be rather strong in specific communities. The funds collected ensured need facilities that could be obtained by government sources. In Christ Church, the community can obtain additional funding for the project through community fund raising. Fund raising from the community allows needed resources into the community, such as communal gardens, parks and recreation centers that could not be originally implemented through the government plans. Fund raising implies ownership of the community of their well-being. The community then takes care of its resources and facilities to meet their needs.

Rowlands (2013) emphasizes community's control and taking charge of the recovery process is achieved by maximizing community participation in its own recovery and the community managing the recovery process at the neighbourhood level. Araki (2013) observed that some communities might have the ability to promote such processes by themselves, but the majority need a facilitator to assist and empower them. Within this context, the role of the Project Manager is to empower the community by co-ordinating appropriate professionals, such as the social workers, and stakeholders to help the

community in rebuilding itself during the disaster recovery and reconstruction whilst managing the expectations of the affected community.

However, it has been noted that project management during the aftermath of a disaster is poorly managed in current disaster management projects (Crawford, 2013). Crawford, (2013) is promoting for more innovative and participatory approaches to manage the disaster recovery projects whilst empowering the community.

The disaster recovery goal “is for survivors to regain stability in their lives, livelihoods, and housing” (Maly and Shiozaki 2012, p. 56), whereas the goal of reconstruction is to “build a safe city,” “pursue an ideal city,” and “[recover] the functions of a disaster-stricken area and [restore] normal lives to disaster victims” (Murosaki 2007, p. 330). Project Management orientation towards social science and strategic orientation from engineering needs to be accomplished by the Project Managers running the disaster recovery projects in a very uncertain and changing environment that the life’s of loved ones, and parents, are impacted. The project team will consist of wide range of experts from engineering, construction, psychology, social work and community development to work together with various stakeholders to rebuild a resilient and sustainable community for future generations as future disasters come and go.

Social capital alone is not sufficient to make a successful community recovery, local leadership is a very important in recovery (Bankoff, 2015). There are examples of priests and community leaders taking leadership in recovery, such as Village D'Est in New Orleans. The priests and community leaders build upon local networks and cultural bonds on a continuous basis, with flexible readiness (Usdin, 2014).

Within the San Francisco area, participative leadership style is developed by local universities, Harvard and MIT to help community leaders' work with the community and work with the government. Distributive leadership is also indicated in San Francisco policy reports for community leaders, but not implemented at this time. This leadership style is seen as a “shared, social influence process to structure activities and relationships in a

group or organization”. (Usdin, 2014). The communities are prepared to operate in unpredictable situations amid rapid changes.

A cry from the community leaders and community professionals from San Francisco and Christ Church to build reassurance to Project Management Professionals how to work with a large community in an efficient and effective manner. These elaborate views are similar to the message Edginton (2010) gives for the Project Manager needs to apply a holistic review of the community: its history, political environment, economic environment, built environment, and infrastructure environment. Recommendations is to find and work with the natural leaders of the community is strongly recommended between Project Manager and the community. The natural leaders will be a definite asset to making the community resilient on the long-term basis. The recommended skills for Project Managers range from facilitation skills for large group discussion, feedback process, listening to the community, documentation skills (keep documentation simple for the community), and storytelling. Another important recommendation is no two communities are alike; therefore, different approaches are applied to different communities.

Yalegam (2016) focus is from the community perspective, the focus of this PhD study is how to give guidelines to Project Managers assigned by funding bodies, such as government and international banks to co-ordinate disaster recovery projects running into very sum of money and many years. Project Managers are professionals who seek to develop their reputation and careers working on public sector projects in a successful manner for the funding owners and community owners currently and into the future.

In community-based projects generally project manager is in charge for a few communities, and the project manager overall leads the project. They are generally called as community facilitators. The community based emergency planning principle mentions that the planning should be led by community itself and outsiders are facilitators only. The community is overall responsible for project direction at a conceptual level. However, stringent timeline and limited capacity at community may make the Project Manager responsible for the project direction. Community level projects

in developing countries are primarily led by NGOs. Most of these projects are designed using community participation.

According to NZ_P_1 interviewee from Christ Church it would be great if in the event of an emergency the Project Manager chosen had a good understanding of the community and even a relationship with them. It takes time to find out the dynamics of a community and during an emergency using community leaders should be a preferred choice. Community empowerment is often seen as lengthening a process however there are many examples whereby early and meaningful engagement gets a better and quicker response especially if projects end up not having community buy in and there are objections or even protests. The government led projects may and may not have community participation as a key component of the project. One of the key components is empowerment of civil society organizations, and groups in government programmes is one of the solutions. This is demonstrated through the case studies of San Francisco and Christ Church. Both countries had extensive civic engagement.

Project Manager can re-use existing community network established depending on the extent of the emergency and who has experience. Many a times network/group are established under project and when project finishes, it tapers off. This is primarily in case of NGO project. Government in many countries are establishing a network, or working groups, on disaster management at community level which is through legislation. These network, and working groups, can be reused. Such as for Red Cross, they are on the ground for long time so the community groups established by them are likely to be reused.

5.3. Aim of PhD Study

The aim of this study is to develop a Project Management framework on how disaster susceptible communities can be empowered during the post-disaster phase to become resilient and sustainable on the long run.

5.3.1 Findings from the Literature

1. Davidson, C. H., et al. (2006). *Truths and myths about community participation in post-disaster housing projects* article was a cross-country analysis of community participation and empowerment. The article indicated no community empowerment took place. This article was my catalyst to study project management and community empowerment. My journey had provided proof of community empowerment taking place.
2. Barnshaw, J. 2006. “*Beyond Disaster: Locating Katrina within an Inequality Context*” article on the community members in New Orleans looking after themselves when the government tried to get themselves organized. This article showed the resourcefulness of people.
3. FEMA material (Federal Emergency Management Agency (FEMA), *A Whole Community Approach to Emergency Management: Principles, Themes, and Pathways for Action*) stipulated that the community members must look after themselves for the first 72 hours after a disaster. The same plans applied to New Zealand. These articles formed the foundation for my journey towards community empowerment through project management carried out by professional Program/Project managers and community leaders trained in project management.
4. International Association of Public Participation (<http://www.iap2.org/>) provided literature review on the different levels of public participation from inform to empowerment. This framework was used extensively in Australia and New Zealand. The framework helped me to understand the use of professional standards for public participation. This framework is the foundation for the Regenerate Christ Church.
5. Yalagama, S., Chileshe, N., Ma, T. (2016). *Critical success factors for community-driven development projects* article provide clarification in the operations of community driven projects by Community leaders in all facets of the project. Conversations with Project Managers for Development Banks had described community leaders, rather than Project Manager, running the project and the Project Manager is a facilitator. I found an academic justification for community empowerment during project management. Other articles center on NGO, project management and community; the focus was on NGO and Project Management.

6. Academic search had to examine community work, social work and eventually urban planning to obtain answers how community empowerment took place. The urban planning literature, such as Zhang, H. Mao, Z, and Zhang, W. (2015). *Design Charrette as Methodology for Post-Disaster Participatory Reconstruction: Observations from a Case Study in Fukushima, Japan.* (2015). The article gave examples of participation techniques in terms of virtual scenarios of how a street or neighbourhood would look like. These examples proved very insightful.
7. Aldrich, D., Meyer, M.A., (2015) *Social Capital and Community Resilience* article provided the dynamics of Social Capital (resources and energy of community) for the basis of community empowerment.
8. Bosman, F. Bakker, H, de Wit, P. Noorthoorn, E., Fullilove, R., and Fullilove, M. (2007). *Envisioning “Complete Recovery” as an Alternative to “Unmitigated Disaster”* article define national culture of rebuilding when comparing New Orleans versus Netherlands.
9. Shenhar, A. J., Levy, O., & Dvir, D. (1997). *Mapping the dimensions of project success* article recommends that program/project success must account for the long-term success of the community in terms business return, community term and long-term sustainability of the community.

5.3.2 Findings from the Interviews

Interview analysis on Project Manager and community empowerment differ from the literature review carried out. There needs to be a comparison with New Zealand study with its frequent disasters and rebuilding projects to confirm the San Francisco findings.

International Association of Public Participation (<http://www.iap2.org/>) provided a framework was used extensively in Australia and New Zealand. The framework helped me to understand the use of professional standards for public participation. This framework is the foundation for the Regenerate Christ Church. The professionals prefer to use community participation rather than community empowerment. The community participation levels and wording was the same as community empowerment. Once I started to use community participation a number of professionals were interested in talking to me

about community empowerment – decision making of community future by community members. The professionals are in total support of community empowerment and making it a reality in New Zealand.

The areas of improvement for Project Managers and Community Leaders suggested are the following:

1. Training of Project Manager:
 - a. Facilitation skills – how to run large group meetings; and
 - b. Improve decision making process with large groups.
2. How to work with empowered communities in post-disaster:
 - a. Work collaboratively between the government and professionals.
 - b. Caution given on rubber stamping on community input to the process. Community input selected after major decisions made.
 - c. Understand the government process to be successful.
 - d. First 72 hours community is own their own; therefore the community must be organized and take control of their destiny.
 - e. Understand the power of the community through the following saying: :
"It takes a village to raise a child. All the members of the community is required to help each other in post-disaster.
 - f. Throughout the disaster recovery period, identify the natural leaders for community improvement. Community asset profiling of leaders. Approach these leaders to be woven in and after disasters. Natural leaders to get buy-in for organizational work. Look at the ground level what actually happens rather before a disaster to obtain natural leaders. Community is more engaged when they say these leaders are the correct one to rebuild the community. Broad network of people rather small group of people to be representative.
 - g. Project manager needs to go back to Core principles: adapt and adjust. Simply and elaborate.

5.3.3 Project Management Framework for Empowement

The following figure (Figure 5-1) represents the visual representation of the Project Management Framework to empower communities during Disaster Recovery. The framework is based upon literature review and a research project carried out in San Francisco (November 2016) and Christchurch (February/March 2017 and November 2017) interviewing Project Managers and Community Leaders.

The framework is based upon three main players: Community, Project Management (Project Managers – Professionals, NGOs/NPOs, and Part-timer Project Managers) and Funders and Government. Key words of each of the research objectives are used as labels for each text box, such as Response - "to review and analyze how communities respond following a disaster".

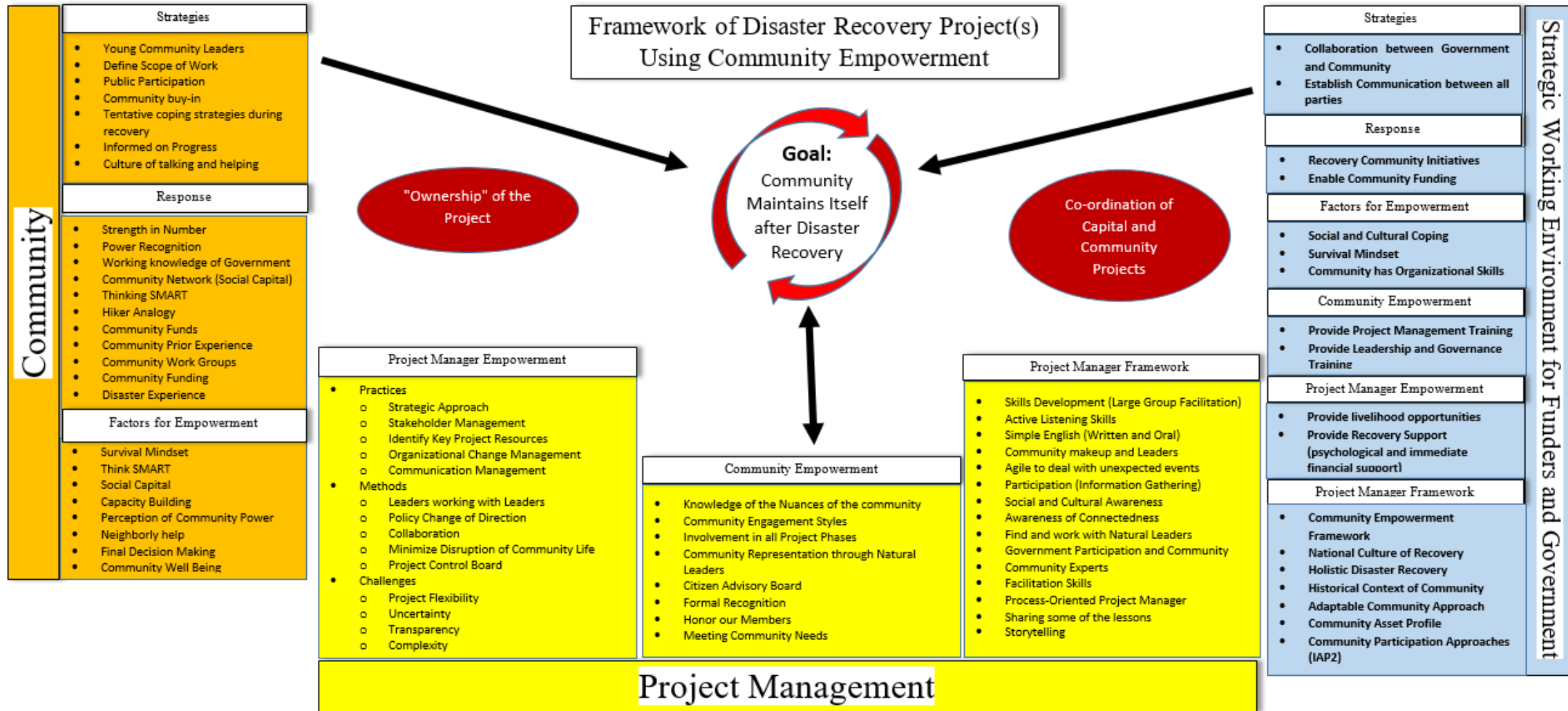


Figure 5-1: Project Management Framework

5.3.3.1 Strategic Working Environment for Government and Funding Agencies

The Strategic Working Environment (blue box in Figure 5-1) is based upon the recommendations from the San Francisco and Christ Church interviewees plus from the literature review. The emergency management committee works together in the response phase of the Disaster Recovery. The recovery and reconstruction and regeneration phases of the Disaster Recovery government and non-government agencies implement various projects coming out of the Disaster Recovery Plan.

In order for community empowerment to exist and be operational within the post-disaster recovery phases, the government and non-government agencies need to follow the following guidelines:

1. A Government Framework of community empowerment at the policy and operational level for the community to be involved in decision-making on from planning, prioritizing of projects and implementation in disaster recovery projects.

The engagement principles are:

- a. Put people and communities at the center of what we do
 - b. Listen first, then act – start from where our communities are at
 - c. Utilize local expertise, knowledge and networks to help create collective responsibility and build momentum
 - d. Be brave, honest, resourceful, visible and respectful
 - e. Encourage a culture of inclusion and participation by reflecting diversity and promoting equity and accessibility.
2. Understand the national culture of recovery forming the foundations of government agencies and institutions. "Moving to the good life" is reflective of the American culture and heritage to "move out west" to make your riches. In contrast, Netherlands used the "right to return" cultural value after a major disaster. The rapid recovery of Enchede, Netherlands, is reminiscent of the recovery European cities experienced after World War II, due in no small part to the aid of the Marshall Plan.
 3. Disaster Recovery touches all aspects of the community in a holistic manner:
 - f. Infrastructure

- g. Housing
 - h. Social
 - i. Cultural
 - j. Environment
 - k. Physical and mental health
4. Collaboration between Government and Community by training in the following areas for the community:
 - i. Civic Governance Training – how to work with the government;
 - ii. Leadership Training for Community Leaders and Young People; and
 - iii. Project Management as a life skill.
 5. Collaboration between Government and Community through power recognition. Each partner has resources. The focus is on leaders working with leaders from different domains: government and community.
 6. Community Leaders involvement in all Project Phases of Disaster Recovery
 - i. Project Phases
 1. Capital Projects (Initiation and Planning). Implementation phase is carried out by designated professionals, contractors and workers.
 2. Community Projects (All Phases). Implementation phase is carried by community members who provided the skills and/or trained in specific skills the duties require.
 - ii. Citizen Advisory Board
 1. Providing input and decisions in Capital Projects for the Initiation and Planning Phases.
 - iii. Project Control Board/Project Steering Committee
 1. Community leaders present in all phases of project providing input, advice and decision.
 7. Approaches for disaster recovery is adaptable to the community makeup. Each community is different in terms of social capital, economics, social and cultural.
 8. Community has “ownership of the project” based upon the long-term success criteria of the project: a sustainable community.

9. The community members use a survival, not victim, mindset to regain their lives from a Disaster. For the first 72 hours, the community members are on their own to response to the disaster before professionals can be brought in for recovery.
10. Community has organization skills, such as
 - i. Funding
 - ii. Social Capital
 - iii. Leaders
 - iv. Leadership training
 - v. Power Recognition.

These skills vary from one community to another. Understanding these organizational skills can assist the disaster recovery with the professionals.
11. Based upon the community organizational skills, the community, or group of communities, can set up community initiatives to help community members in recovery. Energy level of Community and Professionals for Recovery will vary in the short and long-term.
12. Community participation ranges from inform, consult, involve, collaborate and empower. Each of these techniques needs to be utilized during disaster recovery. Empowerment (decision-making involvement by community leaders) needs to be actively present.

5.3.3.2 Framework for the Program/Project Manager

The Strategic Working Environment forms the strategic direction of Community Empowerment. With this framework the Program/Project Manager can work with the community leaders and members on various projects through their various decision-making roles. Community empowerment framework is recommended by practitioners to be set up prior to a disaster on the amount of time to set up the framework. If the framework is not in place, it can be a year to setup in terms of setting up policies and implementing the policies. That year the government and Project Manager will experience frustration and protest from the community.

The guidelines for Program/Project Managers of capital projects and community projects:

1. Apply the principles of organizational change management to communicate the good and bad news of the project(s) progress. Communicating the good and bad news regularly to offset bad rumours from overcoming good rumours.
2. Communicate in simple terms for all people to understand on all aspects of the project. Reports and progress charts are explained in simple terms.
3. Story telling has proven to be an effective tool of communicating, by relating content on a personal level of community members experience in disaster recovery.
4. Use community experts to assist in the disaster recovery projects. Their expertise will decrease impacts on the projects outcome and progress.
5. Carry out a asset profile of the community by mapping out the leaders, natural leaders, religious centers, shopping centers, medical clinics, recreational assets. The profile will provide the existing resources that can be utilized in a unique partnership of recovery and long-term growth.
6. Gauge and provide civic governance skills for the community to work with the government and understand its processes. The governance skills will enhance the partnership work for recovery and long-term growth.
7. Another aspect of the community asset profile is awareness of the social, cultural and historical background of the community. Focus should be on:
 - a. Prior Disaster/Stressor Experience
 - b. Coping Strategies to be used for Interim recovery
 - c. Social, cultural, economic makeup of the community(ies)
8. The community asset profile should also gauge the community organizational skills. The organizational skills should focus on
 - a. Thinking SMART and being adaptable to bring solutions to the community.
 - b. Social Capital resources.
 - c. Funding Capabilities of the community

- d. Power Recognition of how community and government can work together.

The mapping of these organizational skills is in other words project resource mapping. The next step is to utilize the mapping for recovery. The community can utilize interim measures until permanent solutions are in place, such as chemical toilets versus sewers.

9. The Program/Project Manager must be heard by Community Members by being physically present at public meetings and other occasions. The Manager must
 - a. Listen to Community Wisdom
 - b. Facilitate small and large group meetings
 - c. Act upon Community Wisdom where appropriate.
10. Soft skills development to focus on social and cultural awareness of the community to order project success of disaster recovery. The soft skills need to focus:
 - a. How people talk and share of ideas and work
 - b. How people talk and share about their emotional recovery
 - c. What value(s) is placed on relationships
 - d. Awareness of connectedness within the community
11. Community buy-in to proceed with the project.
12. Knowledge of IAP2, or equivalent, Public Participation Framework
13. Work with Community Leaders in terms of:
 - a. skills development of leaders if required
 - b. recognition within the community and government. How the leaders can work together.
 - c. recognize and utilize the energy levels of Community members and Professionals for recovery on short and long-term work
14. Clarification on the major stakeholders
 - a. Community is a major stakeholder especially during the recovery phase when they get empowered. They assist the government in fulfilling the government obligations and provide information and decisions to the government.

- b. City government is a major stakeholder during disaster recovery. They oversee on the roles and responsibilities of the recovery phase. They are the Managers and Beneficiaries.
- c. Operationally the government work with the Community in response and preparation to ensure community to survive on their own.
- d. From the neighbourhood perspective, the government outreach to assist the neighbours.

15. Project success is based on the community as major stakeholder because of their:

- a. Their knowledge base
- b. Resource based you work from
- c. Community lives with the consequences after the project is completed.

16. Project Management

- a. identify major stakeholders
- b. identify key project resources
- c. agile to change direction of project
- d. Apply Organizational Change Management
- e. Use community engagement experts
- f. Be a Process-oriented Project Manager
- g. Mitigation of Project Impact by using community empowerment techniques with community leaders.

5.4. Refining the Framework

5.4.1. Introduction

Refining the framework study, consisting of Figure 5-1, Section 5.3.4 and Section 5.3.5, was emailed to 23 individuals on June 6, 2018 to review the proposed framework. Some of the individuals participated in the PhD study and other individuals are the researcher's global contacts in the areas of Emergency Management, Disaster Management and Project Management. There written and/or oral comments by Skype, Google Hangout, telephone and/or email were to be returned no later than the end of June 2018. The Figure 5.1 represents the visual representation of the Project Management Framework to empower communities during Disaster Recovery. The

framework is based upon literature review and a research project carried out in San Francisco (November 2016) and Christchurch (February/March 2017 and November 2017) interviewing Project Managers and Community Leaders.

The framework is based upon three main players: Community, Project Management (Project Managers – Professionals, NGOs/NPOs, and Part-timer Project Managers) and Funders and Government. Key words of each of the research objectives are used as labels for each text box, such as Response - "to review and analyze how communities respond following a disaster".

The following reviewers were contacted:

Table 5-2: Refining Framework Study Reviewers

Categories	Code	Candidate
Community	V_C1	Part of Study
	V_C2	Part of Study
	V_C3	Part of Study
Project Management	V_P1	External
	V_P2	External
	V_P3	External
	V_P4	External
	V_P5	Part of Study
	V_P6	External
Disaster Management	V_D1	External
	V_D2	External
	V_D3	External
	V_D4	External
	V_D5	External

Four interviewees out of 24 reviewers participated in the study: 2 from Christchurch and 2 from San Francisco. The remaining 16 out of 24 reviewers were global contacts who specialized in Project Management, Emergency Management and/or Disaster Management.

Overall, there are 6 individuals specializing in Project Management, 3 individuals were Community Leaders, and 5 individuals specializing in Disaster Management. The reviews were validalite across specialization, case study (San Francisco and Christchurch) and external global contacts to present a strong framework.

5.4.2. Refining Framework Findings

5.4.2.1. Introduction

Comments and suggestions by the reviewers, as shown in Table 5-2 will be reviewed by Community, Project Management and Disaster Management Reviewers. Their suggestions will reshape the Visual Model mentioned in the Refining the Framework Study.

5.4.2.2. Community Reviewers

Reviewer V_C1 commented on the community empowerment labels and words within the visual model as not being in alignment with the community engagement terms namely Informing, Consulting, Involving, Collaborating and Empowering. The visual model should explicitly include these terms to clearly show the levels of community engagement and what is empowerment to the reader. Empowerment is one level of engagement, for example, a binding citizens referendum is a method to empower citizens with a majority determining a decision.

The framework (Table 2-3) is used extensively within Australia and New Zealand. The IAP2 framework is based on the following core values for community engagement/public participation (Mene, personal communication):

- 1) Is based on the belief that those who are affected by a decision have a right to be involved in the decision-making process
- 2) Includes the promise that the public's contribution will influence the decision
- 3) Promotes sustainable decisions by recognising and communicating the needs and interests of all participants, including decision makers

- 4) Seeks out and facilitates the participation of those potentially affected by or interested in a decision
- 5) Seeks input from participants in designing how they participate
- 6) Provides participants with the information they need to participate in a meaningful way
- 7) Communicates to participants how their input affected the decision

Section 2-15 (Methods of Strategies and Empowerment) outlined various academic approaches that have been explored and outlines the benefits of community empowerment with the assumption that the government is willing and able to accept post-disaster input from communities who wants to and is able to participate (Vallance, 2011). The IAP2 framework was used as a guideline for discussion with interviewees from San Francisco and Christ Church on the methods, strategies and factors for community empowerment that were used in their respective communities.

The document "Quality Assurance Standard for Engagement in Australia" defines the framework, terms and usage as a standard to be used by Project Managers in Australia and New Zealand. The guiding principles for engagement (Mene, personal communication).

- Put communities at the centre of what we do
- Listen first, then act – start from where communities and environments are at
- Utilise local expertise, knowledge and networks to help create collective responsibility and build momentum
- Be brave, honest, resourceful, respectful and visible
- Encourage a culture of inclusion and participation by reflecting diversity and promoting equity & accessibility

The result is the Community Engagement Model (Figure 5-2) based upon the interplay of community leads, organization leads, organization acts and community acts to create a shared leadership and action.



Figure 5-2: Community (& Stakeholder) Engagement Model (Mene, Personal Communication)

The following figure (Figure 5-3) shows how the IAP2 framework as applied to the Regeneration Plan in Christ Church (Mene, personal communication).



Figure 5-3: Collective Model for Regeneration Christchurch (Mene, Personal Communication)

The other confusing use of words relating to "post-disaster" and "disaster recovery". Within Christchurch the term "regenerate" is being used for the later stages of "disaster recovery". The first phase was five years for disaster recovery; the next five years is regenerate. Regenerate Christchurch is at the heart of leading Christchurch from recovery to regeneration. There is a desire for Christchurch to be a vibrant city that has opportunities for people to grow, connect and thrive.

Reviewer V_C2 has extensive experience with community neighbourhoods and government in the areas of emergency and disaster management. Discussions focused on clarity of the problem statement in relationship towards research aim and objectives. Reviewer recommended to read some major concept documents (municipal, state and national level) that shaped their programs to include within the validation study.

Reviewer V_C3 has extensive experience working with community groups. The insights (reminders) will help to reshape the visual model by showing the workings of the community. The visual model and guidelines is a great aim; but need to consider the flexibility of a Project Management framework as working with communities can be very different and impact on scope and time frames. Project Management Empowerment also requires the Government budget holders or usual decision makers to allow community empowerment to happen. Empowerment must be wanted - some communities may want other organisations to take on the responsibility. Depending on the circumstances may need to have a look which Project Manger is the best fit for the actual job. The Project Manager can be very focused on delivery to time, budget and scope and working with communities does not always fit within these parameters.

The "Shape your Place" toolkit and Suburban Master Plans should be reviewed in terms of community engagement since the website it is about how communities can work outside of times of disaster on projects to build community capacity. Please review at the Canterbury District Health Board "All Right" Campaign to assist mental health as

this has become a big issue in Christchurch given the ongoing earthquakes and insurance issues.

What the Project Manager needs to deliver in the scope, budget and time frame may not match what the community want. Not sure the Project Manager can ensure the empowerment of the community they can assist and facilitate but at the end of the day the community needs to want to be empowered and take ownership. The Project Manager can assist during the disaster recovery for co-ordination and communication to empower the community for their long-term sustainability. Need to make sure the Project Manager is not forced upon the community - who is the Project Manager employed by? Empowerment require more of an independent facilitator to be a buffer between the Government/funders that holds the purse strings/regulatory authority and the community who may wish to do things differently.

On the question of funders, funders can also be industrial partners who may be able to offer in the process, such as a town may have a major industry such as mining, fishing, forestry, or car manufacturer. They can have a major influence on recovery, such as, do they stay or withdraw; therefore community will stay or withdraw. There is often Pro Bono and industry input to support communities - not always local, more and more large organisations and companies have staff social responsibility policies whereby staff are given time off to assist the community or charity.

Important for the attitude of the community to move forward. New Brighton spent a great deal of community energy stating they were ignored and everything was bad out in the east and reinforced with with multiple media such that the rest of Christchurch would not go out there even though they were running many successful events. A change from Victim to survival changed their communications spin to very positive highlighting all the great things in the area and has led to a change in perception of the area and more positive new coverage. If you keep sending the same negative message then people will believe it the reverse can also be true.

From experience those communities with high capacity prior to disaster can recover quicker. Different communities have different expectations. Those that may be more entitled shout for more; whereas those that were already disadvantaged did not always consider themselves "worthy" or entitled. Important to look at home ownership, income, and education with regards to community capacity. Less existing community capacity will take time to build; therefore impact on Project Manager's Scope. Higher capacity may equal higher expectations therefore impact on Project Manager's budget.

Within communities there can be various factions, especially if you have a number of strong community leaders with a different agenda, for example, New Brighton started with one post earthquake community group but ended up with five main groups all with different focus - this split resources and caused some confusion for the community as a whole.

Need to be careful through the process that the people who put themselves forward as community leaders and say they speak for the community actually have the backing of the community. This is often where paths divide and split the existing capacity to achieve the main objective of disaster recovery. Note that during a recent call for community to be involved in a community-led revitalisation plan those that came forward were not representative of the community as a whole. They were the older aged homeowners of European descent; whereas the area demographics show a high level of rental accommodation, diverse ethnic groups and many families. Leaders working with leaders from different domains, such as, government and community, needs to happen for recovery. Sometimes it is more of the grass roots employees who do the work. Organisation leaders can do the work due to their position / status be imposing and not bring forth the best from the community. The openness of the Government organisation will need to be flexible and other constraints within the organisation may not allow this to happen. Will there be an expectation that the community leaders given this much time for free as this will restrict those who would come forward and may impact upon the level of representation and who represents the community - Community Leaders are often self appointed or self nominated need to make sure they

are representative of the community as a whole or at least they understand the diversity of the community they are representing.

Leadership Training for Community Leaders and Young People, as well as some training for Government as to how to work with the communities.

Should look to see where community can be involved in the implementation of capital projects so they have a vested interest for future custodianship, for example, community planting days in parks, facilities and reserves rather than a landscape firm to implement a scheme or community added artwork to the building 1 & 2 can be the same do these need to be separated out? May be opportunities for the communities to be involved in the decision making not just through appointed community leaders especially if there is doubt over being representative of the community - We have used Facebook and Survey Monkey along side drop in sessions to get feedback - this had a far greater reach and response - need to look at different ways of allowing the community to speak up.

Project resource mapping will depend on the questions asked and how these skills can be worked into the recovery process, for example, a chef may be able to help with a community BBQ to build capacity and knowledge of healthy eating at the same time a knitting group may be a great way of up skilling people but at the same time sharing their views especially for people who would not either express their views out loud at a community meeting or put their views in writing - the traditional methods of community participation and feedback can often exclude the minorities and less confident.

5.4.2.3. Project Management Reviewers

Reviewer V_P1's suggestions focused on adding additional training courses for Project Managers and the Community:

- Offer basic training in disaster recovery for community members and Project Managers

- Consider competency development in "sense-making" for the Project Manager. Sensemaking is a term introduced by Karl Weick in 1995. The term refers to how people cope with the unknown to be able to act on it. Therefore leaders can deal with their changing environments through visioning, relating, and inventing (Ancona, 2012).
- Consider competency development in "Project Resilience" for the Project Manager. The project is consider as an "organism" rather than from a "mechanistic" perspective. The "mechanistic" approach has work broken down, executed and controlled as interlocking parts. The "organism" is constantly challenged by the environment, such as risk, uncertainty and complexity. Project success depends on being "resilient": the ability to notice, interpret, prepare for, and recover from such challenges (Kutsch, 2016). The concept of resilience is similar to project agility that Crawford (2012, 2013) stresses for disaster recovery projects.
- Considered a basic/introductory course in Disaster Medicine (CRIMEDIM: <https://crimedim.uniupo.it/>) for Project Managers. CRIMEDIM is a university-wide academic center that conducts research, education and training in the field of disaster medicine and humanitarian health. The center is committed to promote innovative research projects and to foster learning and training programs using state of the art technologies to enhance the resilience of health systems in emergency, disaster and humanitarian crisis.

Reviewer V_P2's suggestions focused on leadership skills for the Project Manager as working with an empowered community in all phases of Disaster Mangement. Leadership skills required to work with empowered communities were identified by interviewees as listed within the Project Management component of the Visual Model. Researcher inquired with a colleague, who teaches Project Management and Leadership at a Canadian University (2018), to identify some of the common themes and patterns on leadership:

- Design Thinking & Innovation
- Co-creation & Experimentation
- Agility & Change Mastery

- Transparency & Vulnerability
- Peak Performance & Optimal Focus through Neuroscience
- Leading with Passion & Purpose
- Discovering Core DNA
- Emotional Bank Accounts & Interpersonal Mastery
- Improvisational and Impromptu Communication
- Risk & Standing Up/Out
- Inspiring through Story Mastery
- Leading in times of VUCA (volatility, uncertainty, complexity and ambiguity)
- Disruptive and Distributed Leadership

Not all these topics are 'new' but there has certainly been an renewed emphasis placed on some of these areas more recently. The above themes and patterns are very relevant to Project Managers working in Disaster Recovery Projects. As a footnote, Distributed Leadership concept (leaders working with leaders) was being discussed in San Francisco as means of working with various types of leaders from Emergency Management, Disaster Management and the Community.

According to the Project Management Book of Knowledge Version 6 (2017) the following qualities and skills of a Project Manager should be present in projects:

- "Being a visionary
- Being optimistic and positive
- Being collaborative
- Managing relationships and conflict by
 - Building trust
 - Satisfying concerns
 - Seeking consensus
 - Balancing competing and opposing goals
 - Applying persuasion, negotiation, compromise, and conflict resolution skills

- Developing and nurturing personal and professional networks
 - Taking a long-term view that relationships are just as important as the project
 - Continuously developing and applying political acumen
- Communicating by:
 - Spending sufficient time communicating
 - Managing expectations
 - Accepting feedback graciously
 - Giving feedback constructively; and
 - Asking and listening
- Being respectful
- Exhibiting integrity and being culturally sensitive, courageous, a problem solver and decisive
- Giving credit to others where due
- Being a life-long learner who is results- and action-oriented
- Focusing on the important things, including
 - Continuously prioritizing work by reviewing and adjusting as necessary
 - Finding and using a prioritization method that works for them and the project
 - Differentiating high-level strategic priorities, especially those related to critical success factors for the project
 - Maintaining vigilance on primary project constraints
 - Remaining flexible on tactical priorities
 - Being able to sift through massive amounts of information to obtain the most important information
- Having a holistic and systemic view of the project, taking into account internal and external factors equally
- Being able to apply critical thinking
- Being able to build effective teams, be service-oriented, and have fun and share humor effectively with team members".

Some of these qualities and skills were mentioned by the interviewees but not all.

Reviewer V_P2's commented the term "Disaster Recovery Plan" seems all encompassing as it includes response, recovery, reconstruction, and regeneration. Re-titling the plan and corresponding visual – perhaps to something like "Disaster Management Plan" and "Framework for Disaster Management Plan Using Community Empowerment" – would help people better understand this as a plan and framework for how Project Managers can empower communities in all phases of disaster management and not in "recovery" alone. There is major emphasis among global thought leaders about disaster risk reduction (DRR), which seeks to mitigate in advance the loss people and communities suffer when disaster does unfortunately strike. Would the empowerment concept be applicable to DRR, too? Relating to DRR as well, would ensure relevance to what organizations like the United Nations are prioritizing when it comes to disaster. V_P2's comment is very relevant since community empowerment is present all phases of disaster management. The PhD study focus was on exploring how community empowerment framework can be established during post-disaster. The interviewees are indicating community empowerment has to form before post-disaster.

Reviewer V_P3 is a well known researcher in Project Management. He commented that all in all, the visual framework seems relevant to the practice of Project Management but needs to be reviewed the theoretical basis before giving a more detail review. The theoretical basis was not presented in the validation study. The Project Manager's role is not deliver within time, cost and scope but rather to contribute to building a resilient community. In that sense, one of the levers Project Manager might use is empowerment of communities. The goal in the visual "to maintain the community after disaster" should be rephrased. As it stands, the goal is vague and not measurable.

Reviewer V_P4 has extensive experience in Project Management, Disaster Management and Social Entrepreneurship. The first comment focuses on the definition of Post-Disaster. Within the PhD Study Post-Disaster phase refers to the recovery and

reconstruction phase. Literal definition of Post-Disaster is immediate after the disaster, as opposed to two to 5 years after immediate disaster relief needs (disaster relief phase) have been met and community is in process of re-construction. How the word "post-disaster" is defined greatly effects what can be included in the framework. If "post-disaster" is defined immediately after a disaster, the timeline is extensive, with many different needs based on which part of the time-line the research is focusing.

The reviewer's extensive field work shows that empowerment of the community through pre-planning is integral as most Disaster Management Plans at government levels are made in isolation, and so even though they exist the critical stakeholder (such as, the Community) was never engaged and as such, when disaster does strike they are unable to quickly act, and work with the external assistance providers. The reviewer's comment is very true and is reinforced by PhD research interviewees and validators of this study. The reviewer encouraged the research to review the Sphere Standards (<http://www.spherehandbook.org/>).

Reviewer V_P4 was confused if Funders and government are responsible for the ideas display in the visual diagram? There seem to be many overlapping areas, which can lead to confusion. It is important to clarify who is (or should be) leading and who is following, for example, for development of a community asset profile, while the government agency may be funding the work, would it not be the community that is actually responsible and in the leadership role for the work? And would this also not be dependent on which country this is? (Some governments are much more controlling than others) Don't want to confuse, but it is important to highlight the dependencies/responsibilities. Funders/Government are responsible for the following:

- Provide Project Management Training: Funder/Government provides funding training, but NOT responsible for delivering the training. The delivering of training should be the job of professional disaster PM's and preferably BEFORE a disaster strikes.
- Provide Leadership and Governance Training - Funder/Government provides funding training, but NOT responsible for delivering the

training. The delivering of training should be the job of professional disaster PM's and preferably BEFORE a disaster strikes.

- Funding development Funding development and testing of a disaster management plan

Therefore funding is provided from the funder/government; but the Project Manager is responsible for the various assets, such as training and Community Asset Profile.

Another offshoot of the Strategic Working Environment of Funders and Government component is the researcher's assumptions to define its roles. The assumptions are as follows:

1. Funders and Government provide contracts for Disaster Recovery through projects
2. Within the contract the scope of work is defined
3. Within the contract, the framework is defined of how to work with the community using community empowerment principles, such as Institute of Public Participation framework (IAP2).
4. The framework of community framework is an approved framework of how government works with the community.

If all of the above assumptions exist, then Project Manager can work with empowered communities. This principle exist with Regenerate Christchurch Program and Government. San Francisco has something similar. My visual diagram indicates if assumption #3 and #4 does not exist, then Project Manager is left to their own discretion of how to work with empowered communities. Project Manager needs a framework to work with - the visual diagram. If assumption #3 and #4 does not exist and community is not empowered, then how should Project Manager proceed. At this time, Project Manager follows the contract and proceeds. Project Manager will inform community of progress through public meetings and brochures.

Therefore the three components of the visual diagram (community, Project Manager, and Funders and Government) can have different mixtures from one country to another. My PhD is to draw the initial diagram. Future studies will confirm the interplay of the three components in different countries.

Reviewer V_P5 has extensive global project management experience working with United Nations and International NGOs. A thoughtful Framework has been created. For the Framework to have an chance to be effective during a disaster recovery that all critical participants prior to a disaster must be identified, trained and drilled, and have supporting policies and procedures to begin implementation. Implementation requires transparency, flexibility, social and cultural awareness, and collaboration, etc. that needs to occur BEFORE a disaster. From the community perspective, the question remains how does one activate a reasonable portion of the population to prepare for disaster and understand how to recover. The link below shows we have made little progress (<http://www.govtech.com/em/disaster/Survey-Respondents-Say-a-Disaster-Is-Imminent-in-the-Next-Five-Years.html>). Faith-based could be a good place to mobilize the community. In San Francisco, the Interfaith Council, selected churches and temples are mobilizing to support their congregations and community. They will certainly be important in recovery. From the Project Managers' perspective, in their normal, day-to-day duties Project Managers all too frequently do not have training and skills to work and communicate effectively with the public. In a disaster recovery mode they will be thoroughly tested, especially if they have directly suffered.

Reviewer V_P6 needed a clearer understanding of the research aim:

- Is the problem that the community needs to be empowered overall and the proposed framework will enable for that empowerment? or,
- Is the problem that the community *is* empowered by there is not sufficient structure for disaster recovery to support their efforts and thus the framework enables for that structure?

The PhD research aim is "*to develop a Project Management framework on how disaster susceptible communities can be empowered during the post-disaster phase to become resilient and sustainable on the long run*". The problem is "that the community needs to be empowered overall and the proposed framework will enable for that empowerment" through the recognition of Project Managers' role in disaster recovery projects. Recognition and acknowledgment is very important to make community empowerment happen. The Framework is for Project Manager to establish a sustainable community. The funders and government need to be on board with the community empowerment. The two case studies used show community empowerment existed: San Francisco (extensively developed) and Christchurch through International Association of Public Participation (IAP2) framework. The research shows how the Christchurch community is being empowered and eventually leading to the same community/neighbourhood structure found in San Francisco. The PhD study of these case studies help to answer the Reviewer V_P6's first question. The researcher was very surprised about the level of community empowerment within New Zealand. The "Regenerate Christchurch program" is heavily focused on the IAP2 framework. Nice surprise.

Once the research aim was clarified, Research V_P6 wanted a more detail explanation why the research was carried out. When the researcher drew up the the visual model a number of things become more clearer. The visual model contains three main components (Community, Project Manager and Strategic Working Environment of Funders and Government). The visual model shows how the Project Manager can work and establish an empowered community if the community and strategic working environment are in place. What happens if one of the components are not in place (Strategic Working Government) then the visual model is misaligned: this is what happened with Hurricane Katrina striking New Orleans. The impact on the community recovery was deplorable. The New Orleans was a catalyst to the PhD study. The second catalyst was Davidson's work (2006) on comparative analysis of community empowerment.

Reviewer V_P6 also suggested a review of where coordination is desperately needed. Suggestion requires further study.

Review V_P6 asked the following interesting question: "How does this fit in – or does it? – with the need for financial support for disaster recovery efforts? I would imagine in some of the poorest communities without financial support, it is limiting. The resource support is certainly covered in your framework. How do the two interconnect"? Interviewees in San Francisco indicated that community has skills and resources to recover but their energy level will drop. They need professionals to assist in rebuilding. What will happen if financial funds are not high enough? The suggestion requires further study.

Reviewer V_P6 discussed about the importance of Project Management as a life skill for the empowered community. The philosophy is endorsed by Project Management Institute Education Foundation in which the reviewer and researcher is closely affiliated. PMIEF emphasize project management as a life skill. Skill training is provided through PMIEF programs with schools and universities and NGOs. PMIEF does not touch not community empowerment or how Project Manager can work with it. The suggestion of placing "Project Management as a life skill" within Strategic Working environment is excellent.

5.4.2.4. Disaster Management Reviewers

Reviewer V_D1 indicates the topic is very important as recovery is in general complex and countries struggle on including the community dimension is makes it more interesting/challenging. The term "post-disaster" phase needs to be defined more carefully; same comment from Review V_P4. Recovery phase, and reconstruction terms need to be defined as these terms are used differently by different agencies. The terms need to be defined in terms of time line or activities it covers.

The research scope needs to be further sharpen: what aspect of recovery the researcher is trying to address. In the past, community-led projects had some recovery but was

there were problems, such as, project not being scalable, led in ad hoc fashion, or had limited capacity. The reviewer felt the problem needs to be further explored: was it in project design, the community empowerment missing, or was it in policy.

A couple of specific comments were made:

- Civic Governance Training (how to work with the government) to be provided. Should governance be fixed under recovery or under disaster preparation.
- For the first 72 hours the community is on their own. When we are focussing on recovery, response issue should be avoided.

Reviewer V_D2 has extensive experience in emergency and disaster management in Chile and Japan. The reviewer is also certified Project Manager. The reviewer has developed successful community resilience programs within Chile. According to the reviewer, the researcher's perspective that your research project presents is correct. The countries that have made most progress in strengthening their capacity to face disasters are those that have built a solid social base, sustained by the "principles of self-care and mutual aid". Only from this base, the formal disaster management system is articulated to continue with the task. Building, maintaining and developing this social base is an arduous and long-term work, which has its origin in a cultural substratum maintained from experience and memory of past disasters. Each disaster is an experience and a learning that prepares the community for the next disaster (and so on). This innate ability must be trained and strengthened like a muscle. It is necessary to install permanent training programs to teach people to recognize, coexist and respond to the risk in case it becomes a disaster. This type of programs always has an excellent reception, especially by women who own their homes. They appreciate receiving tools to protect their family. During the reconstruction process, it is essential to have spaces for information and participation. Nowadays, no other way of working is accepted, other than in collaboration with those affected by the disaster. This helps a lot in the emotional, social and also economic recovery of those who lost their goods or one of their relatives. Personal reconstruction is the road to collective reconstruction. All these processes must be accompanied and supported by local governments and specialized

external professionals who help guide, organize and develop the community's capacities to become protagonists of their own reconstruction process. In Japan it is said that the reconstruction ends when a person finished to thank, and begins to be thanked for others. It is very important that the capacities installed in the communities affected by disasters can be projected to the future and converted into tools that can serve others who suffer new disasters. This will be the best way to verify that the initial work was worth it.

Reviewer V_D3 has extensive experience in disaster and emergency management in Thailand and United States. As a reader, he would like to see a comparative table showing within in each of the project life cycle phases: how you could empower community members? Strategies? Challenges? that would Lead toward building resiliency. Building a disaster resilient community MUST begin with the first phase of disaster planning, and then incorporated into the remaining three phases, namely mitigation, response, and recovery phases. Moe's integrated disaster management framework (2006) shows two approaches: proactive and reactive. The researcher would like to build resiliency in recovery phase, believing that only reactive approach provides opportunities to build resiliency. Proactive approach must be used to build resiliency throughout all disaster management phases. The emergency management philosophy of community being on their own for the first 72 hours after a disaster is based upon disaster preparedness.

Reviewer V_D4 comments centered on the reasons for the research and on the outcomes. Reasons and outcomes should have been mentioned in the validation study. If the researcher explicitly put in the validation study such as objectives, novelty, next steps, projections, it would have better understanding for readers and community people. As well, if researcher could define topics such as:

- similarities and differences between your both cases of study (San Francisco and Christchurch) even when both are based on the same hazard (earthquake). Similiarities and differenes were discussed in the analysis

section of the PhD Thesis but not laid out in the validation study. The validation study combined literature, and both case studies.

- ideas or projections about how this framework will be implemented
- ideas or projections about possible actions for transferring or sharing this framework to/with developing countries.

Reviewer V_D5 is a university researcher in the areas of built environment, disaster management and project management. The visual model is good showing the three components of community, project management and strategic working environment:

- a) The strategic working environment of funders and government component should be relabelled as funders. Funders provide funding through contracts for Project Managers to do their work. The suggestion is to incorporate standards as community engagement framework, such as IAP2, within the contract on how to work with the community and government. In addition, the funders will ask for community input into the contracts based upon the the community engagement framework. Contracts define what, when, where and how the work is to be completed by the Project Managers.
- b) The Project Management component focuses on the Project Manager. The labels: "Project Manager Empowerment" and "Project Management Framework" is found to be confusing and needs to be changed. "Project Management Framework" refers to soft skills that Project Manager should have or need to have when working with the community. The label will be changed accordingly to "Project Manager Skills". "Project Manager Empowerment" refers to professional standards of Project Management that Project Managers follows to work with stakeholders including the community. The professional standards can be found in Project Management Book of Knowledge, PMI Standard Books in Organizational Change Management, Portofolio Management, Program Management as well Prince Standards. The label will be changed accordingly to "Project Management Standards". The "Community Empowerment" lable is self-explanatory on activities that the Project Manager can work with the empowered community.

- c) The community component does not require any changes.

The bullets throughout the visual model needs to be clearer for the reader. Clarity can be attained through the use of action words for each bullet. The visual model becomes a visual framework of how the Project Manager works with the Community, Project Management and Funders. To complement the visual model, guidelines within the framework providing explanations will be written expanding upon the bullets, labels, and components. The written framework will be kept brief.

The visual model focuses on the post-disaster recovery and reconstruction phases. Therefore the PhD study focuses on these two phases. The circle "Co-ordination of Capital and Community Projects" will be placed as a future research endeavour and taken off the visual model. The circle refers how Project Managers co-ordinated different types of projects from infrastructure capital projects, housing projects to community-led projects to sustain the community. Community-led projects have been researched separately from other projects because of its unique dynamics. The researcher found examples of community-led projects in Christ Church addressing specific community needs. The Christ Church government was aware of these projects. The next step is a formal integration of community-led projects with capital projects to help the empowered community. This step will re-inforce the concept "ownership of projects" belongs to the community.

The community engagement activities namely Informing, Consulting, Involving, Collaborating and Empowering should also be incorporated into the visual model. The Project Manager will use one or more of these activities when working with the community. The focus of this research study is on "empowering". The Project Manager needs to understand what community engagement activities are at their disposal.

5.4.2.5. Refined Findings Summary

The visual model requires revision to be cleared for the Project Managers. The visual model is a visual drawing showing how the Project Manager works with the

Community, Funders and Project Management to work with an empowered community during disaster recovery and reconstruction. Reviewer V_P6 needed a clearer understanding of the research aim:

- Is the problem that the community needs to be empowered overall and the proposed framework will enable for that empowerment? or,
- Is the problem that the community *is* empowered by there is not sufficient structure for disaster recovery to support their efforts and thus the framework enables for that structure?

The PhD research aim is "*to develop a Project Management framework on how disaster susceptible communities can be empowered during the post-disaster phase to become resilient and sustainable on the long run*". The problem is "that the community needs to be empowered overall and the proposed framework will enable for that empowerment" through the recognition of Project Managers' role in disaster recovery projects. Recognition and acknowledgment is very important to make community empowerment happen. The Framework is for Project Manager to establish a sustainable community. The funders and government need to be on board with the community empowerment. The two case studies used show community empowerment existed: San Francisco (extensively developed) and Christchurch through International Association of Public Participation (IAP2) framework. The research shows how the Christchurch community is being empowered and eventually leading to the same community/neighbourhood structure found in San Francisco. The PhD study of these case studies help to answer the Reviewer V_P6's first question. The researcher was very surprised about the level of community empowerment within New Zealand. The "Regenerate Christchurch program" is heavily focused on the IAP2 framework. Nice surprise.

Once the research aim was clarified, Research V_P6 wanted a more detail explanation why the research was carried out. When the researcher drew up the the visual model a number of things become clearer. The visual model contains three main components (Community, Project Manager and Strategic Working Environment of Funders and Government). The visual model shows how the Project Manager can work and

establish an empowered community if the community and strategic working environment are in place. What happens if one of the components are not in place (Strategic Working Government) then the visual model is misaligned: this is what happened with Hurricane Katrina striking New Orleans. The impact on the community recovery was deplorable. The New Orleans was a catalyst to the PhD study. The second catalyst was Davidson's work (2006) on comparative analysis of community empowerment.

The visual model and guidelines is a great aim; but need to consider the flexibility of a Project Management framework as working with communities can be very different and impact on scope and time frames. Project Management Empowerment also requires the Government budget holders or usual decision makers to allow community empowerment to happen. Empowerment must be wanted - some communities may want other organisations to take on the responsibility.

The Project Manager's role is not deliver within time, cost and scope but rather to contribute to building a resilient community. In that sense, one of the levers Project Manager might use is empowerment of communities.

Empowerment require more of an independent facilitator to be a buffer between the Government/funders that holds the purse strings/regulatory authority and the community who may wish to do things differently.

The researcher's perspective that your research project presents is correct. The countries that have made most progress in strengthening their capacity to face disasters are those that have built a solid social base, sustained by the "principles of self-care and mutual aid". Building, maintaining and developing this social base is an arduous and long-term work, which has its origin in a cultural substratum maintained from experience and memory of past disasters. Each disaster is an experience and a learning that prepares the community for the next disaster (and so on). This innate ability must be trained and strengthened like a muscle. All recovery processes must be accompanied and supported

by local governments and specialized external professionals who help guide, organize and develop the community's capacities to become protagonists of their own reconstruction process.

The Strategic Work Environment section (blue box) requires major revision. Funders provides funds for disaster recovery projects to take place. The funders are not responsible to carry out the action. Funders provide funding through contracts for Project Managers to do their work. The suggestion is to incorporate standards as community engagement framework, such as IAP2, within the contract on how to work with the community and government. In addition, the funders will ask for community input into the contracts based upon the the community engagement framework. Contracts define what, when, where and how the work is to be completed by the Project Managers.

The Project Management compenent focuses on the Project Manager. The labels: "Project Manager Empowerment" and "Project Management Framework" is found to be confusing and needs to be changed. "Project Management Framework" refers to soft skills that Project Manager should have or need to have when working with the community. The label will be changed accordingly to "Project Manager Skills". "Project Manager Empowerment" refers to professional standards of Project Management that Project Managers follows to work with stakeholders including the community. The professional standards can be found in Project Management Book of Knowledge, PMI Standard Books in Organizational Change Management, Portofolio Management, Program Management as well Prince Standards. The label will be changed accordingly to "Project Management Standards".

The Community component needs to be revisited to include dynamics within the community that can impact community engagement. Community engagement activities from inform, consult to empowerment needs to be included in the visual drawing. The Project Manager needs to be aware of various community engagement activities and how to utilize for disaster recovery projects.

The bullets need to be changed to action words for easy readability.

The written framework needs to be revised to provide the Project Manager explanations of the concepts, labels and bullets. The written framework becomes an explanatory tool for Project Manager to do their work. Visual model and written framework is an academic framework but has an operational focus for something the Project Manager can utilize in the field. The framework needs to be further simplified when used to be used in the field. The Project Manager may become overwhelmed with the amount of detail presented.

Re-titling the plan and corresponding visual – perhaps to something like “Disaster Management Plan” and “Framework for Disaster Management Plan Using Community Empowerment” – would help people better understand this as a plan and framework for how Project Managers can empower communities in all phases of disaster management and not in “recovery” alone. There is major emphasis among global thought leaders about disaster risk reduction (DRR), which seeks to mitigate in advance the loss people and communities suffer when disaster does unfortunately strike. Would the empowerment concept be applicable to DRR, too? Relating to DRR as well, would ensure relevance to what organizations like the United Nations are prioritizing when it comes to disaster. For the Framework to have a chance to be effective during a disaster recovery that all critical participants prior to a disaster must be identified, trained and drilled, and have supporting policies and procedures to begin implementation. Implementation requires transparency, flexibility, social and cultural awareness, and collaboration, etc. that needs to occur BEFORE a disaster. Something to think for future study.

5.4.3. Revised Framework

The framework is based upon three major stakeholders: Community members, Project Management (Project managers, practitioners, professionals, and NGOs/NPOs), and Funders and Government.

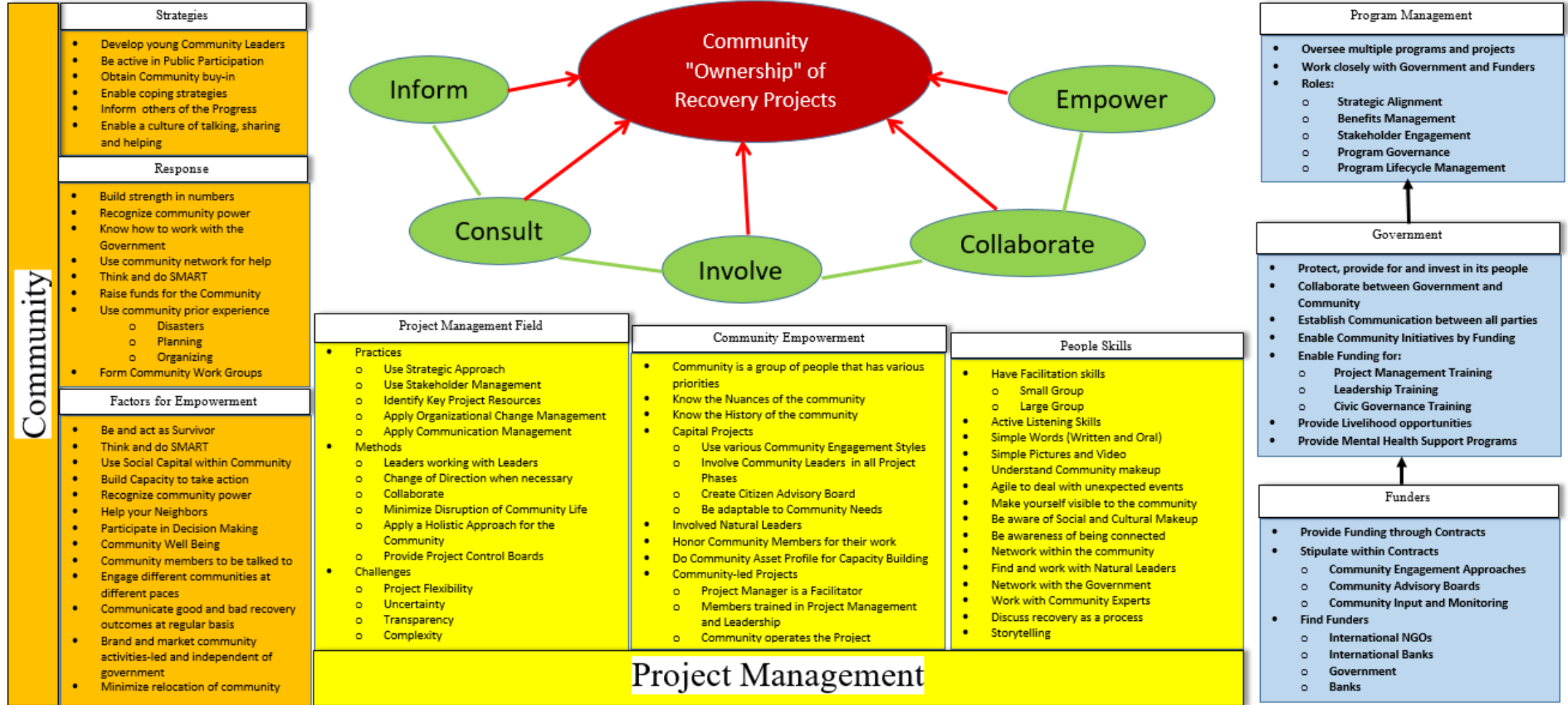


Figure 5-4: Revised Project Management Framework

Framework

The above revised figure (Figure 5-4) represents the visual representation of the Project Management Framework to empower communities during Disaster Recovery and reconstruction. The framework is based upon literature review, a research project carried out in San Francisco (November 2016) and Christchurch (February/March 2017 and November 2017) interviewing Project Managers and Community Leaders, and a validation study carried out by case study reviewers and global external reviewers from the fields of emergency management, disaster management and project management.

Reviewers and interviewees recommended that community engagement is an ongoing activity present in all phases of Disaster Management (mitigation, preparedness, response, recovery and reconstruction). Disaster plans are created in preparation for disaster to recover quickly and minimize damages. Financiers need to supply sufficient funds through bonds and long term financing for recovery. Setting up these financial resources takes time, even obtaining international loans which needs time to be repaid.

The visual diagram only pertains to the recovery and reconstruction phases. The PhD study focused on a Project Management framework on how disaster susceptible communities can be empowered during the post-disaster recovery and reconstruction phase to become resilient and sustainable on the long run. The study do not focus on the other phases of disaster management such as mitigation, preparedness and response. There is a lot of research on mitigation and preparedness in relationship to community empowerment. Focus on recovery and reconstruction was to examine if community empowerment can occur after a disaster and what are the steps to implement. The Project Manager is responsible to obtain resources to carry out project, including hiring experts. The experts are community leaders, community workers and social workers to assess the community in terms of capacity, resources, leadership and working experience with government. Training will be provided to bring Project Manager, Project team and community up to par. Skills can be provided but relationship building takes time. Time is taken for community to deal with the response phase: family and loved one immediate needs of health, food, shelter and job. Christchurch progress to full community engagement to regeneration took

five years. Community gave input to plans at City level which was passed unto the National Government. The national government took the ideas and created the recovery plan without further community involvement. Within San Francisco, community is involved in all phases of disaster management. A ready state was achieved where the community daily working on improving their community through project management and emergency management.

The visual diagram is a framework, or road map, how project manager can work with empowered community to deliver projects for a sustainable community. Six components are shown: community (orange), project management (yellow), program management (blue), government (blue) and funders (blue), "ownership" (red circle) and community engagement activities (green circles). The Project Manager's role is not deliver within time, cost and scope but rather to contribute to building a resilient community. In that sense, one of the "levers" Project Manager might use is empowerment of communities. The other "levers" is the community, project management, government, funders, "ownership" of the project, and community engagement activities.

The red circle in the center of the visual diagram represents Community "Ownership" of Recovery Projects. Recognition of the community as taking "ownership" of disaster recovery projects. Community input and involvement through decision-making and implementation helps the community towards long-term sustainability and controlling their destiny.

The green circles represent the Community Engagement Activities based upon IAP2 spectrum. The green circles point to the red circle (Community "ownership" of the disaster recovery projects). These are the community engagement activities to achieve community "ownership". Each activity with one another is needed in different combinations to achieve "ownership". The IAP2 Federation has developed the Spectrum to help groups define the public's role in any public participation process especially disaster recovery projects. The ultimate intention for the community is being involved in the empower phase. Table 2-3 (IAP2 Framework, 2006) shows a range of community engagement activities from inform,

consult, involve, collaborate and empower. The first row is public participation goal for each of the community engagement activities. The activities range information to decision-making.

The second row pertains government/funders promise to the public on commitment for each engagement activity. The Community Engagement Circle is extremely important on how Project Managers engages an empowered community.

The components (Community, Project Management, Funder and Government) are broken down into tables and bullets. The key words of each of the research objectives are used as labels for each text box, such as Response - "to review and analyze how communities respond following a disaster". The other key words used in the above Research Aim section.

Funders

One of main components is funders. Funders can be government, international banks, and funding agencies. The funds release through contracts: legal documents on what, how and when the work to be completed. Project manager takes action to implement. How to carry out the contract is based on project manager training and experience. Within the contract, professional standard of community engagement (IAP2) is referenced for all parties to follow when working with the community. One of the engagement activities is empowerment: decision-making from planning, prioritizing of projects and implementation in disaster recovery projects. The engagement principles that are stipulated within the contract are:

- l. Put people and communities at the center of what we do
- m. Listen first, then act – start from where our communities are at
- n. Utilize local expertise, knowledge and networks to help create collective responsibility and build momentum
- o. Be brave, honest, resourceful, visible and respectful
- p. Encourage a culture of inclusion and participation by reflecting diversity and promoting equity and accessibility.

What is achieved is a culture of recovery forming the foundations of government agencies and institutions. "Moving to the good life" is reflective of the American culture and heritage to "move out west" to make your riches. In contrast, Netherlands used the "right to return" cultural value after a major disaster. The rapid recovery of Enchede, Netherlands, is reminiscent of the recovery European cities experienced after World War II, due in no small part to the aid of the Marshall Plan. The culture "right to return" and rebuilt for long-term sustainability is achievable and benefit for all concerned.

Funders may obtain community input. IAP2 and interviewees strongly encourages community input into shaping the contracts. Davidson and IAP2 research indicated that the greatest community impact is through procurement and risk management by deciding the best cost and design for the contract outcome. The community shapes the contract but board approves, such as city council within the two case studies of the PhD study.

Funders can also be industrial partners who may be able to offer in the process, such as a town may have a major industry such as mining, fishing, forestry, or car manufacturer. They can have a major influence on recovery, such as, do they stay or withdraw; therefore community will stay or withdraw. There is often Pro Bono and industry input to support communities - not always local, more and more large organisations and companies have staff social responsibility policies whereby staff are given time off to assist the community or charity.

Funders and Government are responsible to provide funding for various training programs that will be a great benefit. The training programs will be delivered through the Project Manager auspices, or through Government programs, for disaster recovery prior to a disaster. The training programs can be:

- Project Management Training as a life skill to community members and government staff.
- Leadership Training.
- Civic Governance Training: how to work with the government;

- Basic training in disaster recovery for Community members and Project Managers
- Competency development in "sense-making" for the Project Manager. "Sense-making" refers to how people cope with the unknown to be able to act on it. Therefore leaders can deal with their changing environments through visioning, relating, and inventing.
- A basic/introductory course in Disaster Medicine (CRIMEDIM) for Project Managers.

The end result of all projects and funding is to achieve real opportunities to innovate as a part of rebuilding.

Program Management

The Program Manager oversees multiple programs and projects carried by various Project Managers within disaster recovery and reconstruction. The PhD study focused on the various project managers (Professional Project Managers, Practitioners, professionals, NGOs/NPOs). The Program Manager carries out the following roles:

- Strategic Alignment (benefits aligned with the goals and objectives of the Disaster Recovery Project)
- Benefits Management (defines, creates, maximize and delivers benefits)
- Stakeholder Engagement (identifies and analyzes stakeholder needs , manages expectations, and communicates to stakeholder support)
- Program Governance (enables and performs program decision-making and maintains program support)
- Program Lifecycle Mangement (facilitate program definition, program delivery, and program closure).

The San Francisco case study used program management to oversee all neighbourhood community engagement programs and projects. Within Christchurch a program manager was interviewed, but the decision centered on community engagement and project management.

Community

Another main component is the community. The community members use a survival, not victim, mindset to regain their lives from a Disaster. For the first 72 hours, the community members are on their own to respond to the disaster before emergency and disaster management professionals can be brought in for recovery. Community has organizational skills, such as, funding, social events, church gatherings and social capital. These skills vary from one community to another. Understanding these organizational skills can assist the disaster recovery with the professionals. Based upon the community organizational skills, the community, or group of communities, can set up community initiatives to help community members in recovery. Energy level of Community and Professionals for Recovery will vary in the short and long-term.

Those communities with high capacity prior to disaster can recover quicker. Different communities have different expectations. Those that may be more entitled shout for more; whereas those that were already disadvantaged did not always consider themselves "worthy" or entitled. Important to look at home ownership, income, and education with regards to community capacity. Less existing community capacity will take time to build; therefore impact on Project Manager's Scope. Higher capacity may equal higher expectations therefore impact on Project Manager's budget.

The capacity of the community is shaped by its social capital. Social capital provides financial (e.g., loans and gifts for property repair) and nonfinancial resources (e.g., search and rescue, debris removal, child care during recovery, emotional support, sheltering, and information). Social capital refers to the community networks, community skills and community resources that are tapped by the community members to deal with various issues, especially after disasters. Social capital is a very important factor for empowerment of the community. Their decision-making power is based on the resources available to the community, their internal and external network for information and power. The skills manifested by the community members will harness the community as an empowered community; community shapes the direction of the rebuilding the community. The first step is to build relationship within the community – people getting to know one another.

Getting to know one another is accomplished through community events. The key factors for social capital are neighborliness, connectivity within the community for assistance, help and getting working done. Linking social capital connects community members with those in power will be the role of the Project Manager to successful disaster recovery of the affected community by emphasizing collaboration and empowerment of all concerned parties to re-shape a resilient and sustainable community. Trust that is developed with neighbours and networks will make social capital strong. In summary:

- a) horizontal connections (neighbours, friends, and family) will save lives during disasters
- b) vertical connections (government representative, non-government agency, or authority figure) sped up recovery processes
- c) horizontal connections improve mental health
- d) should invest in social, not physical, infrastructure for disaster mitigation/accleration.

(Aldrich, 2018)

To understand what level of social capital exists, a community asset profile needs to be created. The Community Asset Profile can be accomplished by community members and/or through Project Manager by mapping out resources, such as the leaders, natural leaders, religious centers, shopping centers, medical clinics, recreational assets. The profile will provide existing resources that can be utilized in a unique partnership of recovery and long-term growth. Another aspect of the community asset profile is awareness of the social, cultural and historical background of the community. Profile should include:

- a) Prior Disaster/Stressor Experience
- b) Coping Strategies to be used for Interim recovery
- c) Social, cultural, economic makeup of the community.

The community asset profile should also gauge the community organizational skills such as:

- a) Thinking SMART and being adaptable to bring solutions to the community.
- b) Social Capital resources.

- c) Funding Capabilities of the community
- d) Power Recognition of how community and government can work together.

The mapping of these organizational skills is in other words project resource mapping. The next step is to utilize the mapping for recovery, such as, the community can utilize interim measures until permanent solutions are in place, such as chemical toilets versus sewers.

Within communities there can be various factions, especially if you have a number of strong community leaders with a different agenda, for example, one town started with one post-earthquake community group but ended up with five main groups all with different focus. This split resources and caused some confusion for the community as a whole.

Within the San Francisco area, the San Francisco government has developed an Empowered Communities Program's Neighbourhood HUB Initiative to harness social capital for neighbourhoods to take care of themselves. This initiative supports neighborhoods to create a local network of organizations for overall preparedness on a daily basis, as well as provides essential support to residents as they recover from a stressful event (fire, blackout, tremor or earthquake) of any size. Projects are created by the community to rebuilt part of the neighbourhood. The community members are trained in project management and leadership to create and implement the projects. The Empowered Community Program (ECP) offers communities a bottom-up planning and implementation process that puts community leadership in charge of creating their resilience strategy from the very beginning; as a result, it increases the likelihood of sustained participation by key local stakeholders at the neighborhood level. The capacity of neighborhood-level leadership is to create and nurture local networks in trust and reciprocity. The network will serve the needs of vulnerable residents before, during, and after times of stress. The network extends from the individual to neighbours to family or community organizations to civic organizations.

The Program is rooted in the Federal Emergency Management Agency (FEMA)'s "Whole Community Approach" to emergency management. The three core principles of Whole Community approach are:

- a) Understanding and meeting the actual needs of the whole community,
- b) Engaging and empowering all parts of the community, and
- c) Strengthening what works well in communities on a daily basis.

The Whole Community Approach and ECP guides communities as they work together to make informed decisions about how to invest in their neighborhood's physical and social infrastructure so that during times of stress, stakeholders can actively contribute to successful response and recovery. In addition to more "traditional" disasters (earthquakes, tsunamis, manmade, etc.), the onset of climate change will only increase the frequency and severity of stressors to strike communities over the coming decades. These stressors will generate a myriad of hazardous outcomes at the neighborhood level, including sustained lifeline and social service delivery disruption. As a result, vulnerable populations will be confronted with more life-threatening scenarios.

Social capital and networking helps the community to be strong, resilient, and sustainable for the long-term. Another aspect of people is mental health issues. Having networks and place to talk to share our pains help us individually to be strong. Within Christchurch, an extensive mental health program has been setup since 2013 to address children experiencing the impacts of earthquakes when they were younger: All right?

Project Management

One needs to consider the flexibility of a Project Management framework as working with communities can be very different and have an impact on scope and time frames. Project Managers require the Government budget holders, or usual decision makers, to allow community empowerment to happen. Empowerment must be wanted: some communities may want other organisations to take on the responsibility. Depending on the circumstances may need to have a look which Project Manager is the best fit for the actual job. The Project Manager can be very focused on delivery to time, budget and scope and working with communities does not always fit within these parameters. The Project Manager can ensure the empowerment of the community they can assist and facilitate but at the end of the day the community needs to want to be empowered and take ownership. The Project

Manager can assist during the disaster recovery for co-ordination and communication to empower the community for their long-term sustainability.

What the Project Manager needs to deliver in the scope, budget and time frame may not match what the community want. According to Project Management Institute, the Talent Triangle represent the idea skill set of the Project/Program Manager. The ideal skills is broken into three components. The following figure shows the three components and a number of skills within each component:

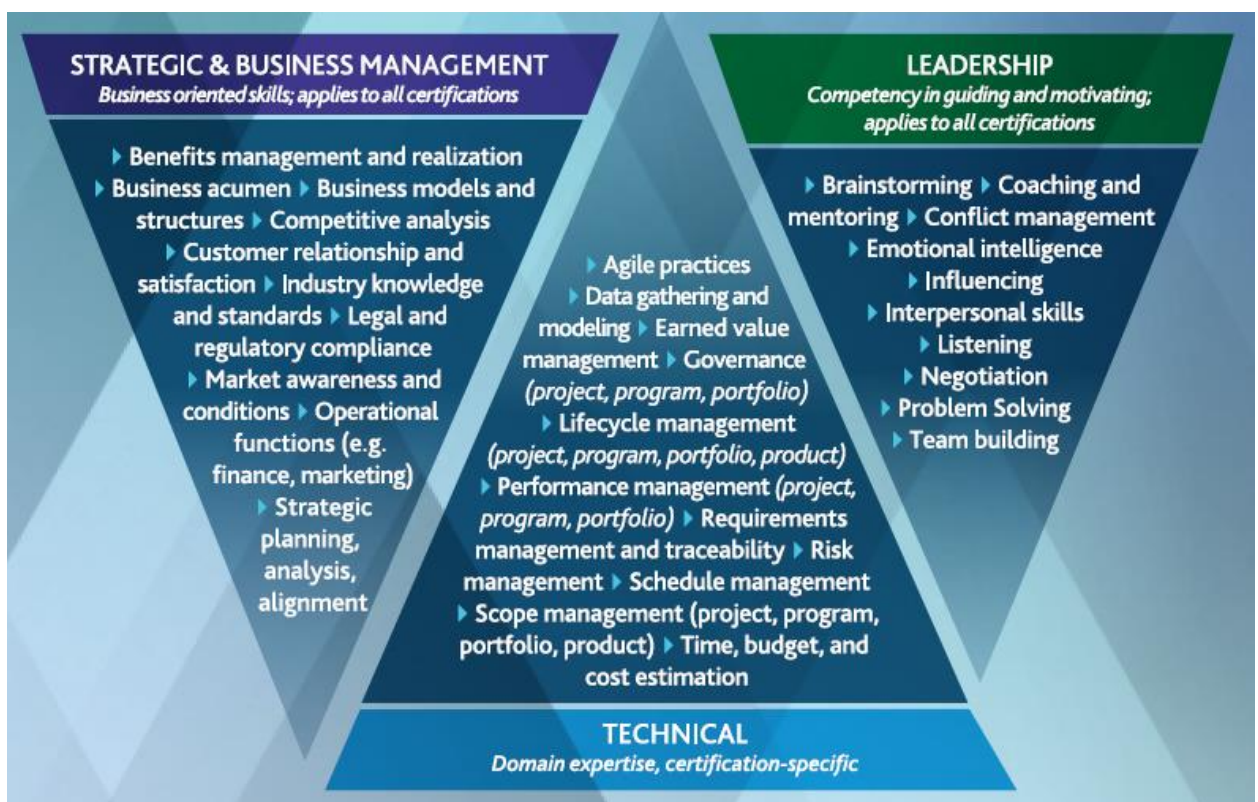


Figure 5-5: Project Manager Talent Triange

(<https://www.pmi.org/-/media/pmi/documents/public/pdf/certifications/talent-triangle-flyer.pdf> , 2015))

The leadership component (one third of Project/Program Manager ideal skill set) applies to competency in guiding and motivating. When the Project/Program Manager works with communities their leadership and soft skills need to be emphasized greatly. The Project/Program Manager are seen as independent facilitators/co-ordinators to be a buffer

between the Government/funders that holds the purse strings/regulatory authority and the community who may wish to do things differently. The Program/Project Manager must be heard by Community Members by being physically present at public meetings and other occasions. The Manager must:

- a. Listen to Community Wisdom
- b. Facilitate small and large group meetings
- c. Act upon Community Wisdom where appropriate.

Their soft skills development must focus on social and cultural awareness of the community to enable project success of disaster recovery projects. The soft skills need to focus:

- a. How people talk and share of ideas and work
- b. How people talk and share about their emotional recovery
- c. What value(s) is placed on relationships
- d. Awareness of connectedness within the community.

Other skills that Project/Program Manager developing are:

- Design Thinking & Innovation
- Co-creation & Experimentation
- Agility & Change Mastery
- Transparency & Vulnerability
- Peak Performance & Optimal Focus through Neuroscience
- Leading with Passion & Purpose
- Discovering Core DNA
- Emotional Bank Accounts & Interpersonal Mastery
- Improvisational and Impromptu Communication
- Risk & Standing Up/Out
- Inspiring through Story Mastery
- Leading in times of VUCA (volatility, uncertainty, complexity and ambiguity)
- Disruptive and Distributed Leadership

The above skills will enable the Project/Program Manager to be versatile and agile within disaster recovery projects.

Communication takes place in simple words for all people to understand on all aspects of the project. Reports and visual progress charts are explained in simple words. Story telling becomes an effective tool of communicating, by relating content on a personal level of community members experience in disaster recovery. In addition to these soft skills, the Project Manager needs to apply the principles of organizational change management as trained Project Manager to communicate the good and bad news of the project(s) progress. Communicating the good and bad news regularly to offset bad rumours from overcoming good rumours.

In addition to the soft skills, the Project/Program Manager must have expertise in Strategic and Business Management, and Technical Skills. The Project/Program Manager must be agile in a very complex, uncertain and changing environment. Flexibility and agility was stressed rather the rigidity of Project Management one assumes. Disaster recovery project becomes a “living recovery plan” that adapts and changes to deal with uncertainties faced by Project Managers, stakeholders and the community (survivors in this respect). Project Management has changed to meet requests from business organizations to make them more agile and provide opportunities for future growth while safeguarding the community needs.

There needs to be a clarification on who is the major stakeholder(s) in a disaster recovery project. Community is a major stakeholder especially during the recovery phase when they get empowered. They assist the government in fulfilling the government obligations and provide information and decisions to the government. Project success is based on the community as major stakeholder because of their:

- a) Their knowledge base
- b) Resource based you work from
- c) Community lives with the consequences after the project is completed.

City government is a major stakeholder during disaster recovery. They oversee on the roles and responsibilities of the recovery phase. Operationally the government work with the

community in response and preparation to ensure community to survive on their own. From the neighbourhood perspective, the government outreach to assist the neighbours.

Community members are involved who input through inform, consult and involve phases of community engagement. Approaches for disaster recovery is adaptable to the community makeup. Each community is different in terms of social capital, economics, social and cultural. Government has used Facebook and Survey Monkey alongside drop in sessions to get feedback. Need to look at different ways of allowing the community to speak up through the community engagement activities from IAP2 (inform, consult, involve, collaborate and empower). Community Leaders are involved in all Project Phases of Disaster Recovery through the use of collaboration and empowerment engagement activities to participate in final decision-making. Government and Project/Program Manager encourages the formation of Citizen Advisory Boards. The Board provide input and decisions in Capital Projects for the Initiation and Planning Phases. Community involvement in Project Control Board/Project Steering Committee ensure input, advice and decision from community leaders present in all phases of the project. Within Capital Projects, community members are involved in Initiation and Planning. Implementation phase is carried out by designated professionals, contractors and workers. There has been examples where the community has been involved in the implementation of capital projects so they have a vested interest for future custodianship, for example, community planting days in parks, facilities and reserves rather than a landscape firm to implement a scheme or community added artwork to the buildings. Within community-led project, community leaders and members are involved in all project phases. Implementation phase is carried by community members who provided the skills and/or trained in specific skills the duties require.

Municipal governments are involved in promoting community-led projects to transform public, or private places, into community spaces, such as a street party, community clean-ups, artwork, transform a vacant lot, and hold an event. The government would train community members in project management and implement a project from idea to implementation and maintenance. One such initiative in Christchurch is "Shape your place

toolkit". Other local organizations within Christchurch also used the same approach with the community, such as Gap Filler, Life in Vacant Spaces, and Greening the Rubble. Funding can range from traditional door-knocking and online crowdfunding through to Council funding or corporate sponsorship. Community members leading and carrying out the project under the guidance of professional Project Managers. Project Management becomes a life skill for everyone.

Appendix #3 (Project Phases and Community Empowerment) summarizes the above discussion on how the Project Manager can understand the challenges and strategies of empowering community members they will face in the Initiation Phase, then Planning Phase, Monitoring and Controlling, and finally the Closing Phase as building for long-term resilience. The table becomes the Project Manager explicit guidelines step by step.

5.5. Communicate the Findings

The Visual framework (Figure 5-4) was reviewed by 14 reviewers (internal and external to the PhD study). The next step is to have the concepts reviewed by a wider base of professionals in the emergency, disaster, project management, and community leadership areas. The concepts will be discussed in the following academic journals:

- “Factors for empowering community during Disaster Recovery” in International Journal of Disaster Response and Emergency Management (IJDREM)
- “Disaster Recovery for a Large Group of People as a Project” in International Journal of Project Management
- "Ownership" of the Disaster Recovery Project: Community” in Disaster Management and Prevention: An International Journal.

The content of Appendix #4: “How could the Project Manager empower community members per Project Phases leading to building resilience?” will be further reviewed through a book format. The book will summarize the PhD study and findings, and elaborate upon Visual Framework (Figure 5-4) and Project Phases versus Challenges/Strategies (Appendix #4). Journal academic articles will not have enough space of 8 to 10 pages to explain the two frameworks.

5.6. Market the Framework

Once further review is completed through communication (Section 5.5) then the framework can be market for different cities and countries that are in the process of disaster recovery or planning for disaster recovery. The following approaches will be used to further strengthen the Visual framework and Project Phase table for different environments:

- Promote material to be in disaster recovery contracts of how to work with material
- Promote academic article on people skills of project managers
- Present at Conferences (such as Project Management, Disaster Management, and Emergency Management)
- Promote material as value to funding agencies to understand best practices
- Speak to Non-profits/NGOs and Community Associations: a training session.

5.7. Implement the Visual Framework

The visual diagram (Figure 5-4) is a framework how a project manager can work with empowered community to deliver projects for a sustainable community. Six components are shown: community (orange), project management (yellow), program management (blue), government (blue) and funders (blue), "ownership" (red circle) and community engagement activities (green circles). The green circles represent the Community Engagement Activities based upon IAP2 spectrum. The IAP2 Federation has developed the Spectrum to help groups define the public's role in any public participation process especially disaster recovery projects. The ultimate intention for the community is being involved in the empower phase – decision making. The different types of public participation (inform to empower) is effective in different contexts. Therefore the use different types of public participation is impacted by power differences but collaboration to create a win-win is most important. The Project Manager's role is not deliver within time, cost and scope but rather to contribute to building a resilient community. In that sense, one of the "levers" Project Manager might use is empowerment of communities. The other "levers" is the community, project management, government, funders, "ownership" of the project, and community engagement activities. The Project Managers can be leading

capital projects or even community-led projects. Community-led projects has experienced issues in not being scalable, ad hoc and limited capacity. These issues are overcome in disaster recovery projects where government and Program Managers oversee all projects.

The visual diagram is based upon the findings from San Francisco and Christchurch. San Francisco has developed an international recognized model of community empowerment at the neighbourhood level. Model incorporates emergency management, disaster management and project management to be carried out by the community members on a daily basis. All phases of disaster management are carried out incorporated. The community makes the decision and implements the decision to modify the neighbourhood as required when dealing with stressors, such as fires, snowstorms, droughts, and earthquakes. The San Francisco government provides the following services:

- a) We plan with people ... not for them
- b) We design with people ... not for them
- c) The plan and design is scalable, duplicate, and sustainable.

Community leaders are the Project Managers who oversee Projects which has a begin and an end. Program Managers are present to oversee numerous projects in the neighbourhood(s) over a long period of time - years.

In the case of Christchurch, community engagement activities (inform to empower) took some time but was achieved through trials and errors by the Christchurch government and the community. Initially, the community was asked for feedback on how the new Christchurch should look like. The feedback initiative was internationally recognized. Eventually the community leaders were invited unto Project Control Board and Citizen Advisory Committees of Capital Projects for their input and decisions as contracts were created and implemented. The leaders received project management training. There is some progress of having community members implement the capital project in specific areas, such as gardening, landscaping and painting. The Regenerate Christchurch was implemented last year which encouraged community leaders and members to be formally recognized in the decision-making process. Recently, Christchurch government is encouraging community-led projects by the community. Community runs the project

from concept to implementation to maintenance. There has been some local organizations helping community members run their own projects. Christchurch is not at the same stage as San Francisco of incorporating all phases of disaster management at the community level. Given some time and Christchurch will reach the same state and may surpass.

The countries that have made most progress in strengthening their capacity to face disasters are those that have built a solid social base, sustained by the "principles of self-care and mutual aid". Only from this base, the formal disaster management system is articulated to continue with the task. Building, maintaining and developing this social base is an arduous and long-term work, which has its origin in a cultural substratum maintained from experience and memory of past disasters. Each disaster is an experience and a learning that prepares the community for the next disaster (and so on). This innate ability must be trained and strengthened like a muscle. It is necessary to install permanent training programs to teach people to recognize, coexist and respond to the risk in case it becomes a disaster. Through the use of Project Management as a life skill, the empowered community can achieve a sustainable community for the long-term. The visual diagram shows to the Project/Program Manager how to achieve the goal.

The Visual framework is based upon interviews and reviews by Project Managers, Community leaders, and external reviewers. The framework shows three players (Community, Project Manager and Funders) work with each other during disaster recovery using community empowerment. The players understand each other resources, strategies and approaches that can be used. The components (Community, Project Management, Funder and Government) are broken down into tables and bullets:

1. The Community component (orange in color) consist of three boxes (strategies, response and factor for empowerment). The boxes are labelled by key words of each of the research objectives are used as labels for each text box, such as Response - "to review and analyze how communities respond following a disaster". The other key words used in the above Research Aim section. The bullets are

obtained from the interviewers, reviewers and literature review of what is involved for strategies or response or factors for empowerment by the community.

2. The Project Manager component (yellow in color) consist to three boxes (Project Management Field, Community Empowerment, and People Skills). The Project Management Box represents the strategic, business, and technical skills of a Project Manager. The Community Empowerment Box represents how the Project Manager can and work with an empowered community. The People skills box represents the Project Manager's people skills to work with large groups of people in the community. The bullets are obtained from the interviewers, reviewers and literature review.
3. The Funder component (blue in color) consist of three boxes (Program Manager, Government and Funders). The Government and Funders provide funding for the disaster recovery projects. The Program Manager oversees all disaster recovery projects (capital and community projects). The Program Manager box represent the major roles of Program Management. The Government box represent the role of the government, community engagement relationships and funding role. The Funders box represent funding bodies (Government, NGOs, and Banks) who provide funds for disaster recovery. The funders stipulate within the disaster recovery contracts the use of community advisory boards, community engagement techniques (green circles in the diagram) and empowerment opportunities for decision making. The bullets are obtained from the interviewers, reviewers and literature review.

The Visual Framework is the baseline for implementation in different cities and countries wishing to use community empowerment within their disaster recovery projects. The baseline is based upon input from interviewers, reviewers and literature review. The next step is to assess the new setting against the baseline to develop plans for implementation. Variation will be found along the bullets in each of the boxes due to socio-cultural context and how government operates within the setting. Adjustments will be made to the implementation plans and baseline if necessary. In time, the baseline will be flexible for many different disaster recovery settings.

The Visual Framework can be used Program Managers, Project Managers, Community Associations, Government and Funders.

The Government:

1. Can stipulate within training programs for Project Management and Governance the Visual Framework be discussed as framework of how Project Managers and Community members can work together.
2. Can stipulate as framework on government officials can collaborate with community members.

The funders:

1. Can stipulate the framework be part of the Request for Proposal and Contracts on how Project Managers work with community within disaster recovery projects.

The Program Managers

1. Program Managers oversee all disaster recovery projects. The Program Manager can stipulate to Project Managers to work with Community members, community members to work with government, and government to work with Project Managers to establish community empowerment.

5.8. Implement Framework by Project Phases

Project Phases and Community Empowerment table (Appendix #4) summarizes how the Project Manager can understand and works with the challenges and strategies of empowering community members during the Initiation Phase, then Planning Phase, Monitoring and Controlling, and Closing Phases. The challenges and strategies are based upon interviewers, reviewers and literature review. The Project Phase Table is the baseline for implementation in different cities and countries wishing to use community empowerment within their disaster recovery projects by project phases. The next step is to assess the new setting against the baseline to develop plans for implementation. Adjustments will be made to the implementation plans and baseline if necessary. In time, the Project Phase table will be flexible for many different disaster recovery settings.

5.9. Summary

This chapter provided a cross-analysis of San Francisco and Christchurch findings to address Research Aim and Research objectives. The cross-analysis provided similarities and differences between the two cities per each research objective (Section 5.2). Once completed, the cross-analysis was compared to literature review per research objective on similarities, differences and gaps (Section 5.3). A validation study was created based upon the cross analysis after literature review. A visual diagram was created summarizing the information with explanation to the framework (Section 5.3). Fourteen out of twenty-four individuals reviewed the validation study and gave their feedback (Section 5.4). The visual diagram and text was revised based upon their input (Section 5.4.3). The next chapter will conclude the finding per research objectives, limitations of the study, contributions to knowledge (theory and practice) and further research).

Chapter 6 - Conclusion

6.1 Introduction

This chapter summarises and concludes the thesis through the following sections:

- Achievement of the Phd Objectives
- Contributions to Knowledge (Theory and Practice)
- Limitations
- Further Studies

6.2 Achievement of Objectives

As discussed in Chapter #1, this study is to develop a Project Management framework on how disaster susceptible communities can be empowered during the post-disaster recovery/reconstruction phase to become resilient and sustainable on the long run. The role of the Project Manager is important to empower the community by co-ordinating appropriate professionals, such as the social workers, and stakeholders to help the community in rebuilding itself during the disaster recovery and reconstruction phases whilst managing the expectations of the affected community. However, it has been noted that project management during the aftermath of a disaster is poorly managed in current disaster management projects (Crawford, 2013). Crawford, (2013) is promoting for more innovative and participatory approaches to manage the disaster recovery projects whilst empowering the community. There is a lot of research in the preparation of disasters for communities to minimize the impact of disasters and establish a quick recovery. This PhD study focused on the recovery and reconstruction phases since there is very little research literature on how communities can organize themselves for quick recovery and reconstruction after a disaster through community empowerment. To achieve the above aim, the following objectives were carried out:

1. To review and analyze how communities responds following a disaster.
2. To explore the importance of empowerment of disaster affected community in post disaster phase.
3. To critically explore the key factors that need to be considered for empowerment of disaster prone community for long-term sustainability.

4. To critically analyse the role of the Project Manager in empowerment during the post-disaster phase.
5. To derive community empowerment methods/strategies.
6. To develop and validate a framework for Project Managers to empower disaster affected communities for long-term sustainability.

The following sections demonstrate that each research objective has been attained to meet the aim of the PhD Research.

6.2.1. Research objective #1: To review and analyze how communities responds following a disaster.

Research Objective #1 was accomplished by the researcher conducting a detailed and comprehensive literature review as shown in Chapter #2 and by the interviews in San Francisco and Christchurch as found in Chapter #4 and #5. According to the literature review in Chapter #2, the community was given preliminary information and ignored as active partners. Davidson's study (2006) proved that there existed variation in community participation among different countries. As a result, community participation have been inconsistent in disaster recovery due to different types of influence/power relationships from ad hoc to empowerment. During Hurricane Katrina in 2011, Bretherton (2011) stated that people responded as families saving other families, then groups of volunteers with cars, trucks and boats rescuing strangers. Similarly during the Hurricane Sandy in 2015, the first weeks after Hurricanes Sandy struck, volunteers and community members became the rescuers, caretakers and the final comforting companions to the dying. They were the first and often remain the sole line of response for weeks (Brennan, 2005).

In the case study of Christ Church, the emphasis how to recover from the damages from the disaster through work groups (see Section 4.4.1.3) on addressing issues that have not been covered by the government. Community work groups proved to be very effective and received international recognition for their work. Strengths in number, power recognition, working knowledge of government processes, community networks, thinking SMART, and hiker analogy are community responses to stressors and disasters in San Francisco. Strengths of community when responding to disasters is based on being large in number

(see Section 4.3.2.5) and act in uniform and consistent manner. Strength in numbers, network and reliable information has made the community been recognized as a major stakeholder in the project through a power relationship with the government so that the way they respond is of one unified voice. The power recognition (see Section 4.3.2.4) is established when the government acknowledges the community.

The capacity of the community to respond was based on the community's coping, response and adaptive capacities (Cretney, 2016). The importance of social participation as an avenue to build relationships between community organizations and higher-level governance institutions allow for communities to take some level of ownership and control. This reinforces the importance of moving away from the command and control approach that has focused on an intensive role of State and governance actors, relegating individuals and communities to passive roles in response and recovery (Singh-Peterson, 2015; Prior, 2013).

In summary, historical experience of disasters, community work groups, community funding initiatives and community residents were identified community responses in Christchurch. In the case of San Francisco, strengths in number, power recognition, working knowledge of government processes, community networks, thinking SMART, and hiker analogy are community responses to stressors and disasters in San Francisco.

6.2.2. Research objective #2: To explore the importance of empowerment of disaster affected community in post disaster phases.

Research Objective #2 was accomplished by the researcher conducting a detailed and comprehensive literature review as shown in Chapter #2 and by the interviews in San Francisco and Christchurch as found in Chapter #4 and #5. According to the literature review in Chapter #2, successful disaster recovery and community stability require a process that achieves acceptance and a sense of involvement, from the stakeholders (Crawford et al., 2013). The success of a recovery project should also be measured in terms of that acceptance; a programme that is not perceived as legitimate has not succeeded in achieving of community acceptance.

Victoria State, Australia (2013) indicates the empowered community share responsibility in decision making and accountability. Legislative and policy frameworks within the state/country establish the level of power communities can decide: some were limited and some wide ranging within a defined time period. In the case of collaboration, there is delegated decision-making, but the government retains the overall decision-making power. The different types of participation is effective in different contexts; empower may not be suitable for all situations. Slotterback (2013) noted that effective management of power differences between stakeholders and community can help the community trust the process; some powerful stakeholders might be reluctant in the process if they feel their power is diminished. The literature review based on lessons learned shows the importance of empowerment through the workings of the Project Manager – CERA literature.

San Francisco focus on advice given to Project Managers and Government of how to work with the community. Work with the community will build their empowerment process through knowledge of community nuances (see Section 4.3.4.4), involvement in all Project Phases (see Section 4.3.4.3), and giving the community status as “ownership of the project” – community is in the driver seat of the project (see Section 4.3.4.5). The community is responsible for the success and failures of the project.

Christ Church emphasis is an overall community collective engagement model is formed on the basis partnership between the community, government and project managers. Emphasis is government formal recognition of community engagement in all projects (see Section 4.4.3.2). Providing training in governance, community leadership (see Section 4.4.3.5) and project management (see Section 4.4.3.7.) to enable community leaders on community advisory boards and project control boards (see Section 4.4.3.1) to understand and effectively deliver sound products and services for a sustainable community on the long-term (see Section 4.4.3.6). The result is a community deciding its destiny. To achieve this end the following areas explain the tools and techniques that are used in Christ Church: citizen advisory board, formal recognition, honour our members, involvement in Project Phases, Leadership Training, Meeting Community Needs, and Training in Project Management.

To make community empowerment be successful in the disaster recovery project is community representation (see Section 4.3.4.2). The community leaders represent the community hence community is involved in decision-making. The community leaders are recognized by the community. This ensures rapid decision-making and implementation for the benefits of the community.

6.2.3. Research objective #3: To critically explore the key factors that need to be considered for empowerment of disaster prone community for long-term sustainability

Research Objective #3 was accomplished by the researcher conducting a detailed and comprehensive literature review as shown in Chapter #2 and by the interviews in San Francisco and Christchurch as found in Chapter #4 and #5. According to the literature review in Chapter #2, one of the most key factor for empowerment is social capital. Social capital provides financial (e.g., loans and gifts for property repair) and nonfinancial resources (e.g., search and rescue, debris removal, child care during recovery, emotional support, sheltering, and information). Communities varied from one another in Christ Church in terms of social capital (see Section 4.4.5.4) and resourcefulness (see Section 4.4.5.3). The variation implies an agile project management approach rather than a cookie approach. A comparative approach should be applied in the academic world when building social capital models for the practitioners. The communities contains members with funding and leadership skills that benefit government overall plans. The key factors within San Francisco are social capital (neighborliness, connectivity within the community for assistance, help and getting working done) (see Section 4.3.6.4). Challenge of implementation is the perception of ownership versus realistic decision making. Within the San Francisco area, the local government has developed programs in community leadership and project management for community leaders and community leaders to work SMART and be survivors through stressors (such house fires, and work shortages), rather than major disasters (such as earthquakes). Having the community work together in stressors will enable the community to adjust on a daily basis. The bottom-up approach is effective to tie the skills of community members for members to be shown as empowered stakeholders.

For recovery to be sustainable in the long term, recovery project needs to be ‘owned’ and led by local communities and institutions. Community-led recovery work includes supporting communities to shape and lead their own recovery through building leadership capability, participating in decisions, developing neighborhood response plans and providing opportunities for communities to connect (CERA, 2015). A core purpose of local government is “to enable democratic local decision-making and action by, and on behalf of, communities”. This purpose implies that local government will be actively involved in building communities and fostering public participation in democratic processes (Keenan, 2016).

The key factors for empowerment of the community within Christ Church were community well-being (see Section 4.4.5.1) , participate in the decision-making before final approval by City Council to proceed (see Section 4.4.5.2), neighborly help of each community members (see Section 4.4.5.3) and social capital of connections and resources (see Section 4.4.5.4) in which the community can organize themselves for a sustainable community. The collective model shapes the framework of empowerment within Christ Church. The model is based on the community leaders being involved in the decision-making prior to City Council approval to proceed with the project. City Council is made of representatives (community leaders) elected by community members. These representatives will change depending on the will of the people. The model also describes the workings within San Francisco.

6.2.4. Research objective #4: To critically analyse the role of the Project Manager in empowerment during the post-disaster phase.

Research Objective #4 was accomplished by the researcher conducting a detailed and comprehensive literature review as shown in Chapter #2 and by the interviews in San Francisco and Christchurch as found in Chapter #4 and #5. According to the literature review in Chapter #2, the Project Manager needs to apply a holistic review of the community: its history, political environment, economic environment, built environment, and infrastructure environment. Understanding the context of the community gives the

Project/Program Manager an understanding of the past, present and future dynamics they are dealing with in the community and its stakeholders. The role of the Project Manager is to attain the project objectives using the assigned project resources in the best way possible. The assigned project resources are determined by the Project Manager and Project Sponsors (see Section 4.3.5.2). The assigned project resources also include community leaders and community members.

A key role of the Project Manager is to identify who are the major stakeholders (see Section 4.3.5.3, 4.4.4.5) within the disaster recovery project. The major stakeholder is defined as owning the financial resources to implement the Project to benefit the funders. The funders can be government and/or funding agencies. Interviewee NZ_P_3 stresses the community as a major stakeholder.

Another key role is communication - organizational change management (see Section 4.3.5.4, 4.4.4.1). Keep the stakeholders, and most importantly the customers of the project, constantly informed through communication of the project progress, addressing the customers and stakeholder's concerns and fears on a frequent basis. The ultimate intention is win-win for all.

In summary the role of the Project Manager to empower the community were discussed in the following areas within Christ Church: change in policy direction for the better of the community, collaboration between government and community, governance training for the community to work efficiently and effectively with the government, identify major stakeholders in the community, minimize disruption of community life (see Section 4.4.4.6) which will be appreciated by the community and they in turn will go out of their way for the contractors doing the work, organizational change management to decrease bad rumours and project control board consisting of community leaders working closely with Project Manager and Project Team.

6.2.5. Research objective #5: To derive community empowerment methods/strategies.

Research Objective #5 was accomplished by the researcher conducting a detailed and comprehensive literature review as shown in Chapter #2 and by the interviews in San Francisco and Christchurch as found in Chapter #4 and #5. According to the literature review in Chapter #2, academics suggest trust with government and government to trust the community, working with community leaders, and participatory planning such as design charrette (scenario based planning) (Zhang, 2015). The literature review in urban planning is triggered by one of the interviewee's comments to explore new techniques of participatory planning through urban planning and community development planning and other experience in the world from Vallance's (2012) work.

Under Community Strategies, San Francisco focus on the community be looking it current and young community leaders (see Section 4.3.3.3). Start developing teenagers in community leadership roles from sports or church activities to interacting with local government. Time is needed to understand how to work with different Government officials and agencies, plus understanding the protocols. Community leaders, rather random citizen, is the best to work with the local government because of their knowledge of government functions, protocols and reputation. Once the community leaders are in place, then the community members need to support the community leaders on their directions. The support of the community comes through the attitudes and motivation of the community. In addition, the sharing of roles and responsibilities with the government (see Section 4.3.3.1).

From the community perspective, the strategies that the community needs to approach the Project Manager and government is through public participation (see Section 4.3.3.2). Public participation is through inform, consult, involvement, collaboration and empowerment. The community has ideas and wisdom to shape the community through shared decision making.

Community strategies used within Christ Church is based on social capital, historical background and cultural background. The strategies used in San Francisco centered on young community leaders, community leadership, and collaboration with the government.

The strategies differ because Christ Church is recovering from a recent major earthquake. Strategies from literature review were found in urban planning as effective techniques.

6.2.6. Research objective #6: To develop and validate a framework for Project Managers to empower disaster affected communities for long-term sustainability

Research Objective #6 was accomplished by the researcher conducting a detailed and comprehensive literature review as shown in Chapter #2 and by the interviews in San Francisco and Christchurch as found in Chapter #4 and #5. San Francisco and Christ Church interviewees stress Project Manager's Skills for the empowerment of the community. What are the major skills required to ensure an engaged community? The skills in San Francisco range from facilitation skills for large group discussion (see Section 4.3.7.6), feedback process, listening to the community, documentation skills (keep documentation simple for the community) (see Section 4.3.7.7), natural leaders (see Section 4.3.7.5), and storytelling. The skills in Christ Church range from communication, public participation (see Section 4.4.6.5), government collaboration, civic engagement, and funding.

Another important recommendation is no two communities are alike; therefore, different approaches are applied to different communities. Another aspect of the community the Project Manager needs to be aware is the connectedness within the community. Some people refer the degree of connectedness as social capital or as neighborliness. How the connectedness can be established is through children. No connection to the community means disjointed community. No one go to in times of need. Once there is connectedness, a strong community is formed. The connected community can then address their needs to the Mayor and local government.

Communication and public participation skills were shown to be very successful when carried by an organizational change management framework. The community and stakeholders are continuously of the project progress but most importantly their

commitment and support of the project was continuously monitored and adjusted to ensure acceptance of the final products. Communication and stakeholder management is reinforced continuously to ensure complete stakeholder agreement and participation in the project. Doubts are removed; no protest takes place to derail the project at any time. In essence, communication and organizational change management are proactive approaches used by the Project Managers.

Another very important skill is public participation for the Project Manager. Christ Church interviewee SF_C_2 describes how public participation (see Section 4.4.6.5) is used to renovate a Town Hall building. Communication and public participation skills were shown to be very successful when carried out in an organizational change management framework.

The disaster recovery goal “is for survivors to regain stability in their lives, livelihoods, and housing” (Maly and Shiozaki 2012, p. 56), whereas the goal of reconstruction is to “build a safe city,” “pursue an ideal city,” and “[recover] the functions of a disaster-stricken area and [restore] normal lives to disaster victims” (Murosaki 2007, p. 330). Project Management orientation towards social science and strategic orientation from engineering needs to be accomplished by the Project Managers running the disaster recovery projects in a very uncertain and changing environment that the lives of loved ones, and parents, are impacted. The project team will consist of a wide range of experts from engineering, construction, psychology, social work and community development to work together with various stakeholders to rebuild a resilient and sustainable community for future generations as future disasters come and go.

A cry from the community leaders and community professionals from San Francisco and Christ Church to build reassurance to Project Management Professionals how to work with a large community in an efficient and effective manner. These elaborate views are similar to the message Edginton (2010) gives for the Project Manager needs to apply a holistic review of the community: its history, political environment, economic environment, built environment, and infrastructure environment.

According to NZ_P_1 interviewee from Christ Church it would be great if in the event of an emergency the Project Manager chosen had a good understanding of the community and even a relationship with them. It takes time to find out the dynamics of a community and during an emergency using community leaders should be a preferred choice. Community empowerment is often seen as lengthening a process however there are many examples whereby early and meaningful engagement gets a better and quicker response especially if projects end up not having community buy in and there are objections or even protests. The government led projects may and may not have community participation as a key component of the project. One of the key components is empowerment of civil society organizations, and groups in government programmes is one of the solutions. This is demonstrated through the case studies of San Francisco and Christ Church. Both countries had extensive civic engagement.

The above discussion centered on people skills of the Project Manager needs to be highly developed when working with empowered communities. Figure 5-4 (Revised Project Management Framework) is conglomeration of all Research Objectives #1 to #6 into one visual diagram. The visual diagram shows what components the Project Manger needs to work with the empowered community (Community; Project Management; Program Management, Government and Funders). Within each component each research objective is address by showing the key points from literature review, interview notes and validation study review. Using qualitative embedded case study research method the interview material was cross-validated to ensure internal validation of findings. External validation was achieved by over 15 reviewers. The external reviewers were from San Francisco and Christchurch plus the researcher's global contacts in emergency management, disaster management and project management. Therefore, the visual diagram is representative of the Project Management Framework to work with empowered community. The aim of the PhD Study is addressed with detail explanations of the various components and bullets presented in figure 5-4 (Revised Project Management Framework).

The focus of Figure 5-4 was Project Management (yellow boxes) as the framework "To develop and validate a framework for Project Managers to empower disaster affected communities for long-term sustainability".

Change the focus in Figure 5-4 from the Project Management (yellow boxes) to the Community (orange boxes). The focus changes to the "community framework". Now, the central focus is the community. We know the inner workings of the community but need to understand how to work with Project Management (yellow boxes) and Program Management, Government, and Funders (blue boxes). The figure becomes a Framework for the Community. The PhD study recorded in detail from the community perspective on community empowerment through the interviews, literature review and validation study.

Change the central focus in Figure 5-4 focus to the Program Management, Government and Funders (blue boxes). A new framework appears. The Program Management, Government and Funders gets to understand how to work with Project Managers and the Community. There is multiple project managers doing their individual projects working with the community. The Program Management, Government and Funders see the overall picture of all projects working with multiple empowered communities. The PhD study did discuss at a general level of the workings in Program Management, Government and Funders; but not a detail level. Detail discussions is left for future research.

Therefore, Figure 5-4 shows three frameworks (Project Management; Community; and Program Management, Government and Funders) – a complete framework for disaster recovery of a empowered community. Objective #6 of the PhD has been further expanded to visualize the model from different perspectives on the community "ownership" of disaster recovery projects.

6.3 Important Findings

The following important findings came out of the literature review, interviews and refining the framework study:

1. community has "ownership" of disaster recovery projects;
2. community decision-making (empowerment) exists per Project Phase;
3. community decision-making is not final for funding approval;
4. community engagement activities (inform, consult, involve, collaborate and empower) exists for empowered communities;
5. people skills development for Project Managers working with large groups of people, such as the community;
6. collaborative effort between community, government, NGOs and Project Managers;
7. collaboration between capital and community-led projects within a disaster recovery project ensures the community drives rebuilding the community for a long-term.

6.4 Contribution to Knowledge

This research contributes to theory and practice in several ways.

6.4.1. Contribution to Theory

- Project management stakeholder management focused on addressing key stakeholders on an individual basis rather than focusing on a large of people. There has been examples in the literature and newspapers of lobby groups stopping gas plant construction or companies creating nuclear pellets. The lobby groups are ignored by Project Manager and Key Stakeholders of having very little impact on the project. Time has proven otherwise. This PhD study examined how to work with empowered communities ("lobby group") within disaster recovery for the benefit of government and community. The community has a major stake in it's sustainability.
- Davidson (2012) work on community empowerment through comparative analysis and to determine where the community can have the most impact was the procurement phase (building of Request of Proposal and Contracts). The International Association Public Participation (IAP) developed standards of how to participate with the public to shape future developments in the community via projects. Academic research in community engagement formed the background to

Davidson and IAP work. This PhD research was to develop a theory of community empowerment for Project Managers to work in different settings on this world.

- Develop a collective framework for the Project Manager to work with the community, funders, government and NGOs when non existed. Community development, social work and urban planning had various techniques which help to develop the framework.
- Novel approach for project management to work with large group of people. The people takes "ownership of project" rather original focus of stakeholder management to address major stakeholder who held the financial strings.

6.4.2. Contribution to Practice

- Framework for Project Managers to work in Disaster Recovery using community, project management, funders and government.
- Framework for the Community to work in Disaster Recovery using community, project management, funders and government.
- Framework for the Program Management, Government, and Funders to work in Disaster Recovery using community, project management, funders and government.
- Community engagement techniques in capital projects and community-led projects.
- Community empowerment techniques when to apply at what times.
- Strong emphasis on soft skills for the Project/Program Manager.
- How Project/Program Managers can work other types of lobby groups that may impact other types of projects, such as nuclear reactors.

6.5 Limitations

The research study was an explanatory study using qualitative analysis with embedded case study approach. Cross-validation was achieved internally and externally within the study.

Qualitative analysis was based upon semi-structured interviews. Semi-structured interviews is appropriate for explanatory study. The use content analysis proved very fruitful in terms of the findings. The interviews were carried out through Skype, Google Hangout and

telephone calls. The time span to interview was over couples of months per case study with a lot of follow-up calls. I wish face-to-face interviews could have taken place to have interviews line up with one another within a short period of time. Visiting the area during the interviews will have given added perspectives of the disaster recovery taking place in San Francisco and Christ Church.

Serious limitation was experienced using the phrase "community engagement" versus "community empowerment". There was no problem with using the phrase "community empowerment" in the San Francisco area. Problems arose when using "community empowerment" in the New Zealand area (Wellington and Christ Church). Few responses for interviews took place when the researcher used "community empowerment". Responses picked up quickly when the researcher use the phrase "community engagement". The project managers were uncomfortable with empowerment. The project managers and community leaders were familiar with Community Engagement (IAP2 framework). The New Zealanders are very familiar with empowerment but prefer to use community engagement. The emphasis was different techniques of community engagement can be applied. A very hard lesson for research. The term maybe comfortable in the academic world but not in the practical world. The researcher needs to be aware of the meaning of words, and connotations, in different settings. Same explanation on word usage was given by community development workers in Australia and New Zealand.

6.6 Further Studies

- The PhD study used two earthquake examples (San Francisco and Christchurch) as the basis to develop the Project Management Framework. The framework was validated using external reviewers who work globally in emergency management, disaster management and/or project management. The external viewers indicated what tweeking was required for other countries and settings. The framework needs to be confirmed in other countries and different types of disaster, such as annual flood, typhoons and hurricanes.
- Further study on a maturity model of community empowerment and project management. Christchurch progressed towards community empowerment through Regenerate Christchurch last year. Christchurch will reach the same level of community empowerment

and disaster management as San Francisco in time. What are the steps to have other cities, and countries, to reach Christchurch and San Francisco maturity level.

- What happens if the government are much more controlling than others (China) or less controlling than others (Haiti), how does Project/Program Manager adjust or accommodate? What happens if the government is not democratic to encourage community empowerment what other mechanisms are available for community input into recovery? One example of study can be China.
- Research in the co-ordination of Capital Projects and Community-led Projects by Program Managers in a wholistic fashion within the disaster recovery plan. Recently community-led projects have been endorsed by the Christchurch government and after the disaster. After the disaster, the government discouraged community-led project because of safety reasons. The community-led project continued and received international recognition for their work. The synergy between capital and community-led projects for the overall community and benefits will show great potential at a holistic level. This study will benefit for Program Managers and Government.
- Framework was centered on disaster recovery projects. Apply the framework to all disaster phases (pre-disaster and response). Community empowerment and relationship building needs time to develop.
- Research on Project/Program Manager primary role and how its changes depending on the type of project. As shown in disaster recovery projects, the Project Manager needs highly developed soft skills, especially in facilitation. How should the Project Manager demonstrate their soft skills to be less intimidating to the community/public?
- Apply action research methodology to confirm the feasibility of the framework by working with the community leaders and members, emergency management, and disaster management professional for a specific community. An offset will be to incorporate this approach with university courses on internship of community engagement and built environment. I have been teaching part-time since 2000 at a university and community colleges in Canada. Some of the courses, such as MS Project, used a case study approach for students to master MS Project software and their Project Management skills within a four month period.

- The PhD research was explanatory using qualitative embedded case study approach. Measuring the relationships in Visual Diagram (Figure 5-4) was not achieved at this time but open for future research. Consider the six components in the visual diagram as levelers for the Project/Program Manager to rebuilt the empowered. Amount of adjusting of these levelers is the discretion of project manager depending on the context. The visual model presents framework on the components and bullets that need to be adjusted by the Program/Project Manager.
- Another potential study is budgetary management for community-led projects who receive funds to carry out the project within the community. Most of the budget (65%) goes to administration and remaining portion is used for the actual project. A review of monetary and in-kind resources within the community to achieve its goal of resilience.

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ETHICS APPROVAL



Research, Innovation and Academic
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4 November 2016

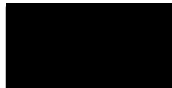
Dear Tony,

RE: ETHICS APPLICATION SBSR1617-03 – Participatory Project Management Framework for the empowerment of Disaster Susceptible Communities on their social and cultural sectors during the post disaster phase.

Based on the information you provided, I am pleased to inform you that your application SBSR1617-04 has been approved.

If there are any changes to the project and/ or its methodology, please inform the Panel as soon as possible by contacting S&T-ResearchEthics@salford.ac.uk

Yours sincerely,



Prof Mohammed Arif
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APPENDICES

1. Project Manager Questionnaire

a) Stakeholder Analysis

- (an understanding on the perception of Project Management about power understanding of various stakeholders)
- Who are the major Stakeholders involved in a disaster recovery project:
 - Government
 - Local
 - Regional
 - Federal
 - INGOs
 - NGOs
 - Emergency Management Office
 - Funding bodies
 - Consultants
 - Community
 - Community Organizations
 - Others
- For the major stakeholders selected please indicate their power, impact and urgency within the project.
- Would the community be considered a major stakeholder? Yes or No? Why?
- Does the Social Capital within the community influences the performance and success of the disaster recovery project in terms of: (Please comment)
 - Social Network
 - Social Resources

b) Public Participation Relationship to the Community

- Culture of the Organization (NGOs, INGOs, funding agencies)
 - During the disaster recovery project, does the culture of the organization:
 - Impact community participation in disaster recovery, in what ways?
 - Impact upon recovery services and the community; in what ways?
 - Once the organization has finished their work:
 - What is the impact on culture of the community?
 - What is the impact on the other organizations delivery of services?
- What is the relationship between culture of the organization and culture of the community during disaster recovery:
 - Please comment
 - Symbiotic, opposing, submission, etc.
- Using the Public Participation Diagram which technique(s) did you use in your projects involving the community:
 - Information (fact sheets, web sites)
 - Consultation (surveys, public meetings)
 - Engagement (workshops)
 - Collaboration (advisory committees, consensus-building)
 - Empowerment (ballots, delegated decision)
- Should the community be an empowered stakeholder in the project?
 - In what capacity should the community participate during the various project phases?
- The International Association of Public Participation reviewed how the community can participate in various phases and why it was advantageous. Please comment their participation in:
 - Initiation (Concept planning and Options analysis)

- Planning (Preliminary and Detailed Design)
 - Execution
 - Monitoring and Controlling
 - Closing?
- Does community involvement have measureable impacts in
 - Project Integration (Yes/No)
 - Project Scope (Yes/No)
 - Project Time (Yes/No)
 - Project Cost (Yes/No)
 - Project Quality (Yes/No)
 - Project Human Resources (Yes/No)
 - Project Communication (Yes/No)
 - Project Risk (Yes/No)
 - Project Procurement (Yes/No)
 - Project Stakeholder Management (Yes/No)?
 - Any Comments?
 - Do you have any comments of about the power Standing of Community relative to other stakeholders
 - Any comments how 90% return of population and 90% of business return can be achieved through Project Management and stakeholder management?
- c) Future Perspective
- c. Community Understanding
(Understanding perception of community by Program/Project Managers which impacts the outcome of disaster reconstruction projects of hard assets (buildings and infrastructure) and people)
- i. Perception of the community during a disaster:
 1. What is your understanding of a victim?
 2. What is your understanding of a survivor?
 3. Do you see the community after a disaster as a victim or survivor during the following disaster phase and why:
 - a. Mitigation
 - b. Preparation
 - c. Disaster recovery
 - d. Reconstruction
 4. How would you align project management activities for victims?
 5. How would you align project management activities for survivors?
 6. How would you involve victims versus survivors in disaster recovery?
 - ii. What ways can you work to build capacity of Community through projects in terms of
 1. Economic
 2. Social
 3. Cultural
 4. HR
 5. Jobs
 6. Others
 - iii. Any recommendations about the following items on the community
 1. Capacity building
 2. Resilience
 3. Sustainability
 - iv. In what ways should the community continue to be empowered after the disaster recovery project to become resilient and sustainable in the long term?
 - v. Is there any way the Project Manager can assist in the project?

- vi. How can the agility of the project performance of disaster recovery projects be achieved?
- vii. In what ways can the community assist within the project and after the project is completed for sustainability?
- viii. Does the culture of the organization, such as a funder, NGO, INGO and/or government within the disaster recovery stage shapes community participation (inform, consult, involve, collaborate, and empower) during the project and after the project?
- ix. Do you have an understanding of Community Resilience and should you? How should the resilience concepts be utilized within the project and its final outcomes?
- x. Do you have an understanding of Disaster Management Practices and should you? How the practices should be utilized?

2. Community Leader Questionnaire

a) Stakeholder Analysis

- (an understanding on the perception of Project Management about power understanding of various stakeholders)
- Who are the major Stakeholders involved in a disaster recovery project:
 - Government
 - Local
 - Regional
 - Federal
 - INGOs
 - NGOs
 - Emergency Management Office
 - Funding bodies
 - Consultants
 - Community
 - Community Organizations
 - Others
- Of the major stakeholders indicate there by power, impact and urgency in the project
- What strategies are used for the respective stakeholder
- Would the community be considered a major stakeholder? Yes or No? Why?
- Does the Social Capital within the community influences the performance and success of the disaster recovery project in terms of: (Please comment)
 - Social Network
 - Social Resources

b) Public Participation Relationship to the Community

- Culture of the Organization (NGOs, INGOs, funding agencies)
 - During the disaster recovery project, does the culture of the organization:
 - Impact community participation in disaster recovery, in what ways?
 - Impact upon recovery services and the community; in what ways?
 - Once the organization has finished their work:
 - What is the impact on culture of the community?
 - What is the impact on the other organizations delivery of services?
 - What is the relationship between culture of the organization and culture of the community during disaster recovery:
 - Please comment
 - Symbiotic, opposing, submission, etc.
- Using the Public Participation Diagram which technique(s) did you use in your projects involving the community:
 - Inform
 - Consult
 - Involve
 - Collaborate
 - Empower
- Should the community be an empowered stakeholder in the project?
 - In what capacity should the community participate during the various project phases?
- The International Association of Public Participation reviewed how the community can participate in various phases and why it was advantageous. Please comment their participation in:
 - Initiation (Concept planning and Options analysis)
 - Planning (Preliminary and Detailed Design)
 - Implementation and Monitoring

- Community involvement had measureable impacts in
 - Procurement
 - Risk Management
 - Change Management
 - Any Comments?
- Do you have any comments of about the power Standing of Community relative to other stakeholders
- Any comments how 90% return of population and 90% of business return can be achieved through Project Management and stakeholder management?

c) Future Perspective

d. Community Understanding

(Understanding perception of community by Program/Project Managers which impacts the outcome of disaster reconstruction projects of hard assets (buildings and infrastructure) and people)

- xi. Perception of the community during a disaster:
 1. What is your understanding of a victim?
 2. What is your understanding of a survivor?
 3. Do you see the community after a disaster as a victim or survivor during the following disaster phase and why:
 - a. Mitigation
 - b. Preparation
 - c. Disaster recovery
 - d. Reconstruction
 4. How would you align project management activities for victims?
 5. How would you align project management activities for survivors?
 6. How would you involve victims versus survivors in disaster recovery?
- xii. What ways can you work to build capacity of Community through projects in terms of
 1. Economic
 2. Social
 3. Cultural
 4. HR
 5. Jobs
 6. Others
- xiii. Any recommendations about the following items on the community
 1. Capacity building
 2. Resilience
 3. Sustainability
- xiv. In what ways should the community continue to be empowered after the disaster recovery project to become resilient and sustainable in the long term? Is there any way the Project Manager can assist?
- xv. Do you have an understanding of Community Resilience and should you? How should the resilience concepts be utilized within the project and its final outcomes?
- xvi. Do you have an understanding of Disaster Management Practices and should you? How the practices should be utilized?

3. Sample of Transcript

Researcher:

- What is **empower** to you? Define empower based upon your community.

Interviewer:

- **Empower** – individuals recognized the wisdom within themselves to make change and to create.

Researcher:

- Would they implement the change: depends on what it is and how big?

Interviewer:

- Some give and take of not being provincial (same old thing again) and not being so remote (Developer making money with no connection to the community). Somewhere in between.
- Want community center, better transportation, to jobs and to walk.
- People may not rebuild community but they want jobs,

Researcher:

- **Owner** of the community

Interviewer:

- **Their ideas and wisdom helps to shape the community**
- **Empower to be shape decision making.** Would they go that far? That is part of empowerment. Their involvement in the process.

4. Project Phases and Community Empowerment

How could the Project Manager empower community members per Project Phases leading to building resilience?

Project Phases	Strategies	Challenges
Initiation	<ul style="list-style-type: none"> • Provide leadership to the project team, including the community, to accomplish project objectives • Co-ordinate the reconstruction and restoration of the psycho-social, economic, built and natural environments of the community • Arrange for a wide range of experts from engineering, construction, psychology, social work and community work unto the Project Team • Apply whole Community Approach to meet actual needs, engaging and empowering all parts of the community to be stipulated within the contract • Provide a formality of the project management process but a flexibility to help the community rebuild their lives with the assistance of the government • Define project success by the project efficiency, impact on the community (meeting their needs and requirements), business success (increase in profits or improvement of services), and preparing for future opportunities • Perform asset profile of community resources, such as, leaders, religious centers, shopping centers, medical clinics and recreational assets. • Perform social, cultural and economic profile of community. • Perform capability analysis, such as, coping strategies, fund raising, and skills of people • Use public participation framework (inform to empower) when working with the community, funders and government 	<ul style="list-style-type: none"> • Organizational skills (funding, events) vary from one community to another • Capacity to recover varies from one community to another. Check out home ownership, income and education. • Capacity in community is shaped by its social capital. • Decision-making power of the community is based on internal and external resources available and the community's horizontal and vertical networks. • Different communities have different expectations • Community factions form because of strong community leaderships. • Empowerment must be wanted. Some communities may want other organizations to take the responsibility rather than the community. • Project Manager lack of soft skills in facilitation and working with large groups will have great impact on community input and support • Power recognition of community and government working together • Government willing to work with the community using different public participation activities (inform, consult, involve, collaborate, and empower) • Government maturity level to participate in recovery projects • The Project Manager found they struggle to ask the right questions from the community. • Funding challenges to meet project objectives. May require the community to find additional funding to meet those objectives.

	<ul style="list-style-type: none"> • Use public participation framework within a civil democratic society • Establish a power recognition of community and government working together • Mitigate project impacts through community engagement on their experience and insights such as noise level of the construction; traffic flow of the roads, streets and expressway; and planting of trees • Provide training for community members in Project Management, Leadership and Civic Governance Training • Enable community members to apply project management principles • Provide mental health support for short-term and long-term recovery. • Have Project Manager trained in soft skills such as facilitation of large groups and communication in simple words and visuals. • Create Citizen advisory group from churches, schools and natural leaders • Interpret community feedback through scenario building. • How you listen, understand and act based upon suggestions given is more important than having community developers, social workers on the team 	
Planning	<ul style="list-style-type: none"> • Provide community support in planning and implementation • To encourage project ownership in the community • To provide Disaster Recovery Support, such as psychological support and immediate financial support • To provide livelihood opportunities by using existing skills within the community, skills building, local people hired and sources of income generation restored • Use urban planning techniques such as appreciate inquiry, charrettes, and enquiry by design. The community works 	<ul style="list-style-type: none"> • Community with little capacity will impact time to build; hence impact the scope of the project. Less existing community capacity will take to build; therefore impact on scope • Community with high capacity has higher expectations therefore impact on the project budget

	<p>professional to explore different scenarios that would be appropriate.</p> <ul style="list-style-type: none"> • Have intensive community feedback during this phase. Surveys and workshops are carried out intensively to receive input and validate the input. The input shapes the project objectives. No technical advice is given by the community. The community deals with how the street or community center would look like. Design team listen and develop concepts and come back in a month and get feedback. It is a reiteration process. Agreed on fully developed concept. Then fully technical concepts are developed to meet building codes and regulations. At that point, community involvement decrease drastically. Contract is establish. Building contractor start doing the work. • Engage community leaders intensively in Project Risk Management for mitigation of the project outcomes. • Engage community leaders in the drafting of the contract. • Communicate and utilize interim measures as permanent solutions are being work out in the recovery project, such as the use of chemical toilets when the sewers being rebuilt • Work with Community Leaders through <ul style="list-style-type: none"> ○ Citizen Advisory Boards ○ Project Steering Committee • Listen to community input which has measureable impacts on the project, such as potential contractor has bad work experience. • Understand the workings of government and funders as they make the final decision to approve the project based upon community input and decision-making. 	
Execution	<ul style="list-style-type: none"> • Work with Community Leaders <ul style="list-style-type: none"> ○ Project Steering Committee participation • Project Manager works with community leaders on the uncertainties to be flexible. 	<ul style="list-style-type: none"> • Community member's participation in the execution of the project is restricted by health and occupational safety standards. For community members want to do the work. Need workers to follow standards and insurance skills.

	<ul style="list-style-type: none"> • In Capital Projects, community members encourage to do the work such as landscaping, planting and artwork onto buildings. Other work is carried by professionals depending upon the health and safety standards. • In Community-led projects, community members carry all types of work depending on the members' skills and expertise. • Communicate frequently to Community, and other stakeholders, on the progress and delays of the project. The community can adjust their activities depending upon the delays. • Bring recognition into the project through community workers and social workers to address conflicts with the community and smoothen those conflicts. The project deliverables can be attained. • Public Participation activities goes from empower, collaborate, involve, consult to inform at the beginning of this phase. 	
Monitoring and Controlling	<ul style="list-style-type: none"> • Impact evaluations needs to incorporate political, social and economic analysis • Work with Community Leaders <ul style="list-style-type: none"> ○ Project Steering Committee participation • Project Manager works with community leaders on the uncertainties faced on the project. • Communicate frequently to Community, and other stakeholders, on the progress and delays of the project. The community can adjust their activities depending upon the delays. • Public participation remains at inform and consult during this phase. • In Community-led projects, community members carry all types of work plus monitor and control. Project Manager is the facilitator. 	<ul style="list-style-type: none"> • In capital projects, Community members would not like to do the project management tasks such as follow up on work and negotiating. Community does not want to be accountable for the resources, scheduling and cost. • Community wants to be involved in the project team. They want to be the Project Manager. Project manager facilitates the meeting. Community would like to facilitate.

Closing	<ul style="list-style-type: none"> • Work with Community Leaders <ul style="list-style-type: none"> ○ Project Steering Committee participation ○ Confirm who maintains the project outcomes, such as a community center. • Public Participation activities goes from inform, consult, involve, collaborate to empower once the project outcome is open to be used by the community, such as a community center. 	<ul style="list-style-type: none"> • Community to take ownership of maintenance <ul style="list-style-type: none"> ○ Varies from one community to another. Some will take ownership while others hire staff to maintain.
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