Social Capital, Indigenous Community Capacity, and Disaster Management

Practicum Report
Spring 2016
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DISCLAIMER

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Executive Summary

Social Capital is the culmination of all the small individual relationships that create a community. The connection between Social Capital and disaster preparedness is more relevant than ever with global climate change and increasing severity and frequency of traumatic weather events. Small Hawaiian Homestead communities are particularly vulnerable to natural disasters due to their remote locations and close proximity to the ocean.

The Spring 2016 practicum class from the University of Hawai’I at Manoa’s Department of Urban and Regional Planning, working with the Department of Hawaiian Homelands and the National Disaster Preparedness Training Center, investigated the unique vulnerabilities that Hawaiian Homestead communities face. Compiled over the course of the semester, this report serves as a summary of the student's work, research and activities. The report also serves as a guide for creating and revising social capital, community capacity, and disaster preparedness training courses aimed at Hawaiian Homestead communities.

The practicum report is divided into five sections beginning with background information on the practicum class, the partnering agencies, and the Hawaiian Homestead community of Waimanalo. The middle part of the report gives a thorough framework and literature review covering social capital, building community capacity, recovery and stress models, Hawaiian values, community structure, hazards, preparedness and mapping. The fourth section summarizes the student’s community outreach activities and interviews. Section five concludes with recommendations for the partnering agencies going forward and implications for future research.

The students found that social capital is a key aspect for community preparedness and recovery in the case of a disaster. Due to its importance to preparedness, it should be a focus for organizations, including the NDTPC. HARP in Waimānalo should focus on the creation of social capital, using social capital to fulfill community goals, such as the evacuation route, and include a more detailed recovery plan in Ho’omākākaukau ‘O Waimānalo (Get Ready Waimānalo). The NDTPC should create a course tailored to social capital, and can use communities on Hawai‘i as an example of social capital. DHHL can help to build social capital in their communities throughout the islands through creating a Program Plan for disaster preparedness and building social capital.

The practicum class expanded upon a past practicum, Spring 2015. This practicum studied the Department of Hawaiian Homelands coastal communities and natural hazards. The Spring 2016 continued this research with an application of social capital and community preparedness.
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Acronyms List

ARC – American Red Cross
CERT – Community Emergency Response Team
CISD – Critical Incident Stress Debrief
CISM – Critical Incident Stress Management
DDHL – Department of Hawaiian Homelands
DURP – Department of Urban and Regional Planning
HHARP – Hawai’i Hazards Awareness and Resilience Program
HHCA – Hawaiian Homes Commission Act
HI-EMA – Hawai’i Emergency Management Agency
NDPC – National Domestic Preparedness Consortium
NDPTC – National Disaster Preparedness Training Center
NGO – Non-Government Organizations
REAP – Rural Economic Area Partnership
UHM – University of Hawai’i at Manoa
USDA – United States Department of Agriculture
Appendices

Appendix A: NDTPC Social Capital Exercise

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Acknowledgments

The Spring 2016 Practicum would like to thank our clients in the project: The Department of Hawaiian Homelands (DHHL) and the National Disaster Training and Preparedness Center (NDTPC). It was helpful as young professionals to be able to learn about the planning process and assist in a real world project. We hope that this report will be of use in the future, especially in the planning and disaster preparedness for local communities in the future. We would further like to thank Frencha Kalilimoku of HHARP for allowing the students to study Waimanalo and their successful community program.
1 Introduction

The Department of Urban Regional Planning Practicum Course is a classroom experience that integrates modern educational objectives, such as “learning community,” “service learning,” “critical thinking,” and “action oriented participatory research.” This research exercise has multiple aspects. It teaches the planning process and focuses on engaging the community. Each practicum is unique, involving different topics, students and clients with diverse skillsets and interests, but it always entails teamwork, client(s) orientation, and a final product.

The Spring 2016 Practicum assisted the Department of Hawaiian Home Lands (DHHL), and Dr. Karl Kim, the executive director of the National Disaster Preparedness Training Center (NDPTC). DHHL is interested in promoting grassroot strategies for disaster preparedness and community resilience building. NDPTC is in the process of creating and testing a training course on the topic of social capital and community capacity, specifically in regards to small island communities. In this context, the planning practicum with four students focused on defining key concepts, integrating them, and presenting them to some DHHL community members in Waimānalo. Feedback from the community is integrated in the final report.

The first section (Chapters 2, 3) of the report includes an introduction to DHHL and NDPTC as well as a comprehensive literature review focusing on several key concepts such as: Social capital-especially in the context of disasters-community capacity, bonding, linking, and bridging. These concepts are connected to ideas of trust, reciprocity, and mutual assistance in Native Hawaiian communities.

The second section (Chapter 4) of the report includes an overview of the practicum’s community outreach activities, findings, and observations. The outreach activities include the participation in the Waimānalo Disaster Preparedness Fair and NDPTC’s training on National Disaster Awareness for Community Leaders. The key concepts developed in the literature review are applied in the context of these activities.

The final section (Chapter 5) provides conclusions drawn by those practicum students who participated in community outreach activities, learned and shared experiences, and suggestions for Waimānalo community members, DHHL, and the NDPTC in moving forward with training, building social capital, and increasing community capacity.

Chapter 5 also includes a memorandum in support of the previous priority project: Waikupanaha Improvements/Ilauhole Street Extension (Figure 1.1), which proposes the extension of Waikupanaha Street and Ilauhole Street to serve as an evacuation route for Waimānalo community members in the case of an emergency (Department of Hawaiian Homelands, 2011).
Figure 1-1: Map Presented in DHHL Waimānalo Regional Plan 2011 of the Waikupanaha St. and Ilauhole St. Extension Project
2 Department of Hawaiian Homelands and the National Disasters Preparedness Training Center

This section introduces a brief description of the two clients of the Spring 2016 Practicum, focusing on their jurisdiction and objectives.

2.1 The Hawaiian Homes Commission Act & Department of Hawaiian Homelands

The Hawaiian Homes Commission Act (HHCA), is a federal law enacted in 1921 for the reconstruction of Native Hawaiian life following the illegal overthrow of the Hawaiian Monarchy in 1893 (Pitzer, 1994). The primary purpose of the plan was to assist in the development of economic self-sufficiency among Native Hawaiians, who are descendants having at least 50 percent Hawaiian blood, as defined by the HHCA. Approximately 200,000 acres of specified lands were allotted and placed under a trust. Homestead land may be used for residential, agricultural, pastoral, or aquaculture purposes under the law, and the HHCA provides loans and financial support for home construction, farm and ranch development, and water systems (Department of Urban and Regional Planning, 2015; 3).

Figure 2-1 provides a summary of the organizational structure of the department, that divides tasks into four different offices, namely administrative services offices, fiscal office, information and community relations office, and the planning office. This last office, deals with development and development studies, water resource management and archeological, historical and environmental research concerning homesteads and homesteaders. In particular, the planning office (PO) oversees the consultation with beneficiaries; the survey of beneficiaries, oriented to the creation of services and policies; regional plans; Island plans, GIS mapping, environmental reviews, special area plans; and program plans (e.g. South Point Resource Management Plan); and program plans.
Figure 2-1: The structure of DHHL (http://dhhl.hawaii.gov/wp-content/uploads/2011/06/DHHL_org_chart.jpg)
Program plans target specific topics, goals and issues, and provide a coherent framework for facing them, by establishing a clear vision, and defining strong guiding principles and implementation strategies. For example, the Ho’Omaluō Energy Plan (DHHL, retrieved May 2016) wants to achieve energy self-sufficiency and sustainability for Native Hawaiians and the broader community, by achieving five main objectives, each one connected to a series of activities. These objectives are:

1. Mālama ʻāina: respect and protect the land (e.g. by developing a strategic plan for the preservation of DHHL’s forest lands
2. Ko’o: facilitate the use of diverse and renewable energies, for example by seeking new partnerships
3. Kūkulu pono: Design and build energy efficient, self-sufficient and sustainable homes and communities
4. Kōkua nō i nā kahu: Provide energy efficiency, self-sufficiency, and sustainability opportunities to homesteaders and their communities
5. Ho’ona’a‘uao: Prepare and equip beneficiaries to promote a green, energy efficient lifestyle

Appropriate objectives can also be developed for disaster preparedness as part of DHHL plans.
2.2 National Disaster Preparedness Training Center

The NDPTC is part of the National Domestic Preparedness Consortium (NDPC) which was expanded in 2007 to include the University of Hawai‘i at Manoa (UHM). The mission of the NDPTC in Hawai‘i’s to utilize the unique geographic and cultural resources to collaboratively develop and deliver training and education about disaster preparedness, response, and recovery by incorporating urban planning and environmental management strategies. The Hawai‘i chapter of the NDPTC is directed by UHM professor, Dr. Karl Kim and co-directed by Dr. Dolores Foley. A meeting was held between the Department of Urban and Regional Planning (DURP) Practicum course early in the semester to discuss the goals of the Practicum and how it could assist the NDPTC further its mission. The DURP Practicum class, through a partnership with the NDPTC, is researching in support of the development and testing of a training course based on social capital and disaster response in indigenous communities. The Hawaiian Homestead community of Waimānalo was chosen based on early discussions with DHHL leadership, because its strong community activity, especially in terms of disaster preparedness.

2.3 Waimānalo

Waimānalo is a community on the windward side of Oāhu. Its name in Hawaiian means potable water because of the streams that feed into the community. It covers approximately 11 square miles and consists of residential, commercial and farming lands owned by the state, DHHL, and some private landowners (see Figure 2.1). Before 1850 Waimānalo was mainly used for raising cattle, however, in the 1850’s sugar became an important crop and dominated Waimānalo agricultural production (Department of Hawaiian Homelands, 2011). In 1925 some of the lands in Waimānalo were given to the Hawaiian Homes Commission and now it is home to almost 7,000 Native Hawaiians (Department of Hawaiian Homelands, 2011).

Waimānalo has a total population of around 10,000 residents, of which a 82% have a high school education, and only 15% have a college degree. The median age is around 35 for all of Waimānalo. 66% of the homes are owner occupied, and the median homeowner is 54 years old. Some of these homes are on DHHL lands, where people own the house but have a lease for the land they live on (DHHL, 2011).
Figure 2-2: Landowners in Waimānalo
2.4 Waimānalo Current Preparedness

Waimānalo was honored as a Hawai‘i Hazards Awareness and Resilience Program (HHARP) disaster resilient community by federal, state, and local government officials in 2015, during the Waimānalo Emergency Preparedness Fair (Department of Defense, 2015). The fair was held at the Hawai‘i National Guard Regional Training Institute by Hoʻomākaukau ‘O Waimānalo (Get Ready Waimānalo), a community preparedness committee comprised of members with hazard mitigation planning experience (Hoʻomākaukau ‘O Waimānalo, 2015; 5).

HHARP was developed by Hawai‘i Emergency Management Agency (HI-EMA) in 2013 and was completed over eighteen months by Hoʻomākaukau ‘O Waimānalo, HI-EMA, City and County of Honolulu Department of Emergency Management, and the Hawai‘i National Guard. Its goal is to enhance community resilience to hazards by gathering community members through education and outreach programs and to promote hazard awareness by providing tools and mitigation resources for preparedness, response, and recovery of disasters (Department of Defense, 2015).

Hoʻomākaukau ‘O Waimānalo earned its StormReady and TsunamiReady designations through HHARP, which indicates that the community has (1) “a 24 hours warning point and emergency operations center (at the City and County and State); (2) “multiple ways to receive severe weather warnings and forecasts and multiple methods for alerting the public;” (3) “a system to monitor local weather conditions;” (4) “held community seminars to promote readiness;” and (5) “developed a formal hazardous weather plan” (Department of Defense, 2015).

The plan is drafted, implemented and reviewed by work groups, that meet often in order to develop goals and strategies based upon SMART objectives (Hoʻomākaukau ‘O Waimānalo, 2015) (See Table 2-1). The work groups include resource mapping of community, public outreach, training and exercise, mass care and shelter, evacuation and signage, and community resilience programs.
<table>
<thead>
<tr>
<th>S</th>
<th>Specific, tasks need to be focused on the work group kuleana</th>
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<tr>
<td>M</td>
<td>Measurable, objectives need to be quantifiable</td>
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<tr>
<td>A</td>
<td>Achievable, objectives need to be simple</td>
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<tr>
<td>R</td>
<td>Realistic, objectives need to be consistent with the ability and commitment of the work group</td>
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<td>T</td>
<td>Time, the timeline for achieving objectives needs to be stated</td>
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As part of the plan, a booklet was prepared and distributed to serve as a guide for disaster preparedness and response for the community members and families of Waimānalo. This is an essential piece in building preparedness and response strategies in the community as it deals with emergency/disaster guidelines for families, information on emergency shelters, suggestions and instructions for supply kits, and a resource list. The manual provides a precise structure that informs community members about disasters, emphasizing the importance of knowing and understanding what the resources, risks, and vulnerabilities are, and organizing the duties and responsibility in case of a disaster. Information focuses on the pre-, during-, and post- disaster scenarios and strategies, but does not yet include any long-term post-disaster guidelines. In this regard, this project will attempt to integrate findings on social capital with recommendations for long-term resilience goals. The kuleana (responsibility) of this initiative is carried by Frencha Kalillimoku, a Waimānalo resident, who provides information, inspiration, support, and to the efforts of creating a prepared and resilient community.
3 Framework and Literature Review

The Planning Practicum of Spring 2016 at UHM DURP provides a review of the literature to: Assist (1) NDPTC in its own creation and testing of a training course on the topic of social capital and community capacity, specifically in regards to indigenous island communities; (2) DHHL in promoting grassroots strategies for disaster preparedness and community resilience building. Section 3 defines key concepts, such as social capital—especially in the context of disasters, bonding, linking, bridging, and community capacity, and connect key concepts to the ideas of trust, reciprocity, mutual assistance, and community capacity, specifically in regards to climate change and disaster resilience. It also outlines the main elements of Hawaiian culture and society, and connect them to the broader framework on social capital and community capacity, as shown in Figure 3-1.
Figure 3-1: Social Capital Conceptual
3.1 Social Capital

Social capital is the connections people have to themselves, their neighbors, and their externalities on the community as a whole. It refers to the networks which affect social and economic activities, trust, and social norms within communities, creating stronger ties throughout the community. Social capital not only helps with community development and enhancement, but is also an asset during disaster recovery (Aldrich & Meyer, 2014; Nakagawa & Shaw, 2004; McCoy & Rash, 2001; Grootaert & van Bastelaer, 2001). Communities mutually benefit from collaboration, connection, and communication between its members (Cao et al., 2012). There are also financial externalities, “social capital facilitates the transmission of knowledge about technology and markets, which reduces market failures in information, as well as facilitates collective action” (Grootaert and Van Bastelaer, 2001). In the study done by Nakagawa and Shaw (2004), they found that during recovery after both the 1995 earthquake in Kobe, Japan and the 2001 earthquake in Gujarat, India, social capital was essential for the recovery of a community. After the Kobe Earthquake, areas were designated as redevelopment communities or “black zones”, where organizations were mandatorily created to help with the redevelopment of the town. Others though, like Mano, a “grey zone” community in Japan, had to create organization themselves and use existing social capital to rebuild their community. Mano organizations created their own building inspectors, a weekly newsletter, and lobbied for help rebuilding. The third group of communities in Japan after the Kobe Earthquake was the “white zone,” where there were no social organizations in place before the earthquake, and it was difficult for these communities to recover without pre-established social capital. Japanese communities had many roles in rehabilitation after the disaster, from rescue and relief, to rebuilding.

Some scholars criticize calling it social “capital” because it does not fit the three characteristics of capital: “extension in time, deliberate sacrifice in the present for future benefit, and alienability” (Nakagawa & Shaw, 2004, pg.8). However, others (Grootaert & van Bastelaer, 2001; Seigler, 2014) argue that social capital has a beneficial impact on economic outcomes and norms. Interactions produce beneficial outputs, which is likely to increase with higher levels of social capital. It takes two people for inputs and outputs, and the knowledge spillovers creates community externalities (Grootaert & van Bastelaer, 2001). Some research shows that social capital can have impacts on growth, equity, and poverty, making it acceptable to use the term “capital” (Grootaert, 1998).

Many scholars break social capital down into three categories, bonding (micro-level), bridging (meso-level), and linking (macro-level) (Nakagawa & Shaw, 2004; Aldrich & Meyer, 2014; Cao et al. 2012; Grootaert & van Bastelaer, 2001). These categories are based on the involvement and outreach of the individuals, and must be balanced. Bonding social capital are close-knit ties, also described as homophily. This means there are high levels of similarity between individuals. Bonding can be between family members, friends, neighbors, people
who know each other well and have close relationships. Bonding social capital has trust, established social norms, high local participation, and good community networks. Bonding can help with information sharing and conflict control in small groups (Nakagawa & Shaw, 2004; Aldrich & Meyer, 2014; Cao et al. 2012; Grootaert & van Bastelaer, 2001).

Bridging social capital is characterized by people who are similar to each other either through race, ethnicity, community ties or organizations. These connections are not as strong as bonded connections because the interactions are less frequent. Bridging social capital can add diversity to the capital network and increase information sharing through having access to more diverse resources. There are connections among various stakeholders throughout the community and even amongst communities (Nakagawa & Shaw, 2004, Aldrich & Meyer, 2014, Cao et al. 2012; Grootaert & van Bastelaer, 2001).

Linking social capital is the least connected category of social capital. It is characterized by ties between community members and their elected officials or the authorities, as well as larger non-government organizations (NGOs) and the private sector. Linking connections are important for reducing vulnerability of a community when they provide resources not available inside the community (Nakagawa & Shaw, 2004; Aldrich & Meyer, 2014; Cao et al. 2012; Grootaert & van Bastelaer, 2001).

### 3.1.1 Measuring Social Capital

Social capital may address common problems within communities. Researchers have looked for what role social capital plays in the growth and development of a community, and how policy can encourage this growth. The way to determine this is through developing best measures of social capital (Stone, 2001). There have been many attempts at, and criticisms for, measuring social capital. Stone (2001) notes that there has been a disconnect in the measurement and understanding of social capital, yielding inconsistent results.

There can be primary and secondary data for social capital. Primary data is collected strictly for social capital services. There are many factors people look at, which can be individual or encompassed in other questions (Stone, 2001). One of the most popular ways to obtain primary data on social capital is through the use of surveys. This collects specific data at the individual household level over a geographic area, which is then used to determine the social capital characteristics of the area. Other methods besides a survey may include observations, group discussions, or historical records of a community (Stone, 2001; Grootaert, Jones, Narayan & Woolcock, 2004). Secondary data could be collected for other research which is then used to determine social capital after the fact. This may not be the best form for looking at social capital due to its indirectness.

One criticism of social capital research is that researchers will create indicators of social capital out of the outcomes, there are cases in which the outcomes are not directly related to the indicators of social capital. These indicators are distinct from the outcomes, even though they can be related. There are two types of indicators, proximal and distal.
Proximal indicators are actually outcomes of the concepts of social capital with relation to networks, mutuality and trust. Distal indicators are not directly related to the concept of social capital. These factors may lack empirical evidence to relate them to core concepts of social capital, they may include; health status, education, crime or income, and may be indirect outcomes of social capital. It must be noted that in some cases these factors are not outcomes of social capital, and should not be used as indicators (Stone, 2001; Foxton & Jones, 2011). Existing survey questions and variables may confuse measurements of social capital, so there needs to be a clear and concise theoretical framework for measuring social capital (Stone, 2001; Foxton & Jones, 2011). A concise framework is needed to show that social capital is a multifaceted concept, understand it as a resource, and distinguish the difference between social capital and its outcomes.

Research suggests that the best indicators to look for when measuring social capital are networks (including family, friends, organizational, diverse, governmental, type and quality, community and individual engagement), trust (for family, neighbors, community, and institutions), and cooperation and reciprocity (Grootaert, 1998; Stone, 2001; Foxton & Jones, 2011; Seigler 2014). Stone (2001) explains there are three factors which can be used to determine social capital for a community: networks, trust and reciprocity. Networks can be formal (associations, community organizations, institutional, etc.) or informal (family bonds, neighborhoods, etc.). There are a variety of questions that may be asked in order to determine the complexity of one’s network associations, from “in the past 12 months have you sought help from the local government for problems concerning your community?” to “what kind of groups are you involved in?” (Stone, 2001). In order for the networks to be included in social capital, they must produce productive outcomes for the community (Grootaert, 1998). The networks, when linked to norms, show the social capital for a community. Norms include perceived trust and reciprocity for a community. Trust can be divided into multiple categories, like trust for institutions, neighbors/familiars and families. Reciprocity, or the general exchange of good or services, is seen in every network. These may occur in the short-term or long-term and they can be determined either by asking questions about behaviors of a community or through direct observations (Stone, 2001; Grootaert, Jones, Narayan & Woolcock, 2004; Foxton & Jones, 2011). Within these factors, the norms associated with them must be looked at (Stone, 2001). Grootaert, Jones, Narayan and Woolcock (2004) break these three categories into six for surveying households: groups and networks, trust and solidarity, collective action and cooperation, information and communication, social cohesion and inclusion, and empowerment and political action.

In 1996 the The World Bank issued the Social Capital Initiative to help understand the impact of social capital, aid in the formation of social capital, and development of indicators for measuring social capital. They identified 11 indicators: crime and violence, economics and trade, education, environment, finance, health, nutrition, population, water and sanitation, poverty and economic development, urban development, rural development, information technology, and economics and trade (Nakagawa & Shaw, 2004; Grootaert & van Bastelaer,
The goal for the World Bank was to create a system for donors to be able to invest in developing social capital to create stronger communities (Stone, 2001). The World Bank estimates that human capital represents up to 80% of a developing country’s wealth, though it can be difficult to create values overall because it is based on relationships unlike human and natural capital (Seigler, 2014). This is why the World Bank created the above indicators, to be able to tie funds into human capital.

In 2001, a Social Capital Benchmark Survey was conducted in the Charlotte region by McCoy and Rash. The survey was originally designed by the Saguaro Seminar: Civic Engagement in America, at Harvard University in 1999. They base social capital on these dimensions: trust, diversity of friendships, political participation, civic leadership and associational involvement, informal socializing, giving and volunteering, faith-based engagement, and equality of civic engagement across the community. There are two facets of trust, social trust and inter-racial trust. Social trust is trust of people interacted with on a regular basis, like neighbors, congregation members, or a clerk at a regularly visited store. The second type of trust is interracial trust, and how much different races trust one another in the community. Diversity of friendships is important to assess social trust in a network. Political participation is characterized by conventional participation (if people are registered to vote or interested in politics) and protest politics. The survey found that if a person had low levels of conventional participation, they were more likely to be involved with protests. Civic leadership refers to how often people participate in community organizations, and whether or not they had a leadership role in these groups. Associational involvement refers to organizations not necessarily bound by the town geographic limits, like sports teams or political parties. Informal socializing is how often people interact with their friends. Giving and volunteering is important for assessing how charitable a person is. Faith based engagement is how involved someone is in their religion (McCoy & Rash, 2001).
3.1.2 Building Social Capital

Although there is agreement on the importance of social capital in delivering social, economic, and cultural benefits, the possibility of increasing its magnitude is debated. On one hand, authors such as Putnam, Leonardi, & Nanetti (1993) consider social capital as a historic product, i.e. an asset that communities inherit from the past that can’t be enriched or enhanced. On the other hand, many authors believe that it is possible to build and increase social capital in communities and local governments (Evans, 1996; Skocpol, 1996). In general, the best way to increase and improve social capital is to enhance social networks and ties between individuals, families and institutions, or to create new ones, through social, physical, and/or economic projects that opportunities for gathering and sharing (Warren, 1999). The importance of creating spaces for ongoing public deliberation where community members can directly engage in the decision-making process, and “become participants in the complex, ambiguous, engaging conversations about democracy, participating in governance rather than spectators” is stressed (Evans and Boyte, 1992).

The creation of these opportunities and forums can take many forms and involve different layers and members of community. Fox (1996), using the example of indigenous Mexican communities, observed three types of patterns through which organizations that create a fertile ground for social capital (see Figure 3-2): (1) the collaboration between local and external civil society organizations; (2) independent grassroots initiatives; and (3) the convergence of government and society. First, a way to expand social networks and build up a stock of social capital, is to establish and/or strengthen the cooperation of communities with national and international civil organizations such as NGOs, charitable entities, and human rights or environmental groups. This type of tie offers individuals valuable incentives to network and partner up (Fox, 1996). Authoritarian environments represent the only means through which citizen can assemble without being sanctioned. The second social capital-building avenue observed by Fox (1996) consists of independent initiatives of citizens with a common agenda, such as social or political movements. These groups mobilize against or in support of political, environmental, or cultural issues, building internal and sometimes external ties, expanding both their social capital as well as their power in the political scene. An (extreme) example of grass root organizations that slowly formed, grew and took actions is the Zapatista National Liberation Army (Fox, 1996). In response to both domestic and foreign issues (e.g. oppression of poor citizens in Chiapas, repression, and the North American Free Trade Agreement), Zapatistas organized political oppositions village by village and built a large revolutionary group still active today.
Table 3-1: Possible Pathways to Social Capital Accumulation (Fox, 1996)

<table>
<thead>
<tr>
<th>State society convergence:</th>
<th>Local/outsider societal collaboration:</th>
<th>Independent societal scaling up:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coproduction between state reformists and local societal groups (synergistic collaboration)</td>
<td>Coproduction between local groups and external allies in civil society (religious, developmental, environmental, civic or political)</td>
<td>Bottom-up production of social capital through autonomous local social, civic or political/electoral initiatives in the absence of external support</td>
</tr>
</tbody>
</table>

Finally, the collaboration between government and communities refers to those initiatives or programs that want to support and encourage grassroots organizations by providing them the opportunity to expand their networks and increase their autonomy and power. An example of this type of initiative is the Regional Solidarity Funds for Indigenous Peoples that were oriented to not only transfer power and resources at the regional scale, but also to empower “ethnically and politically pluralistic councils” (Fox, 1996). Similarly, Warren (1999) discussed the role of local government in providing opportunities (or forums, as introduced above) for citizens to gather and join forces around specific issues. To this end, the author suggested that the public sector should intervene in the creation and enhancement of the social capital of its citizens, by finding ways of creating horizontal networking through a variety of programs. For example, initiatives such as job training or parenting skill programs can be organized as interactive forums where participants combine individual learning with collective participation, creating and bridging ties (Warren, 1999). An example of social capital building through government intervention, are the Rural Economic Area Partnership Programs (REAP) zones advocated by the United States Department of Agriculture (USDA). The intent of REAP zones is to address the economic and community development issue affecting many rural communities due to the stagnation of the economy and employment, patterns of low density, geographic isolation, and disconnection from markets, suppliers, and financial and information centers (USDA, 2016). These programs are oriented both to implementation as well as community empowerment, achieved “by building the skills of citizens and leaders to plan, implement, manage, and evaluate their own programs” (USDA, 2016). REAP are currently active in North Dakota, New York, and Vermont.
3.2 Building Community Capacity

Communities are commonly defined by a spatial or political context but a social community is composed of individuals, groups, and organizations that reach beyond any physical boundary. Common values and togetherness within a social setting is what truly connects people (Chaskin, 1999; Goodman, et. al., 1998; Oetzel, et. al., 2011). The theoretical framework for the Practicum course is based on the assumption that through increased capacity, communities become more resilient to disasters. While the ultimate goal of the course is to demonstrate how communities can build and foster capacity, an operational definition of community capacity is required first. Chaskin (1999) proposes the following definition:

Community capacity is the interaction of human, organizational, and social capital existing within a given community that can be leveraged to solve collective problems and improve or maintain the well-being of a given community. It may operate through informal processes and/or organized efforts by individuals, organizations, and the networks of association among them and between them and the broader systems of which the community is a part.

Oetzel, et. al. (2011) agrees that the concept of building community capacity is rooted in community organizations and involves multiple concepts. Having an operational definition to base our work upon it becomes possible to discuss the ways in which community capacity can be built and expanded upon.

The term capacity denotes an ability to perform a certain task. Within the community context, capacity relates to the fulfillment and sustaining of a community’s well-being. Without capacity, a community cannot last. A socially sustainable community has four fundamental characteristics: (1) a sense of community; (2) committed citizens; (3) mechanism of problem solving; and (4) access to resources (Chaskin, 1999). Based on these fundamentals, different communities with different needs will look/feel/act differently based on their local context and one’s ability to go beyond their community to have their social needs fulfilled. A more affluent, suburban neighborhood has different needs than a Hawaiian Homestead community in Waimānalo. More affluent people do not have the same reliance on their local neighborhoods for basic needs. For those less-affluent communities, or those who rely more on their neighbors for fellowship and support, it is more important to identify and remove barriers to services, public facilities, and institutions (Chaskin, 1999).

A community has a sense of place when there is a common connectedness that citizens mutually agree to. In Waimānalo Homestead, residents feel at home knowing that everyone in their community is of Hawaiian ancestry, and that common bond entails beliefs
and values they all share. People derive a sense of place from multiple aspects of community: Mentally, through a mutual trust or sense of belonging, or physically by belonging to the same organizations or sharing the same community assets, such as a school or park (Chaskin, 1999). Organizations and individuals play a strong role in community capacity building through their commitment to their community. They regularly invest time, energy, and resources into their community’s wellbeing. Often times, organizations create the environment necessary for stakeholders to emerge within a community and connect it to a broader system of civic engagement. Committed stakeholders become the mechanism for problem solving by turning their leadership into action. Other community members will look to them during times of crisis and conflict, for it is neighbors and friends who are the true first responders (Aldrich & Meyer, 2015). But, in times of disaster it is difficult to retain a sense of community because the main concern becomes self and family over others. (Heaps, et al., 2005)
3.3 Recovery and Stress Models

There has been a great deal of attention to mental health response and stress debriefing in the United States since the turn of the twenty-first century (Stebnicki, 2005; 675). The bleakness left in the aftermath of the September 11th terrorist attacks and Hurricane Katrina created a “historical trauma among Westerners that seems to have prompted a consciousness shift within the counseling field” (Stebnick, 2009; 675). While community members, medical professionals, and rescue workers are trained for first response and rescue in a spectrum of disaster situations, counselors and human service professionals are prepared for mental health rescues and assessing the psychological damages of disasters.

Social capital becomes a key element of recovery for both survivors and family members, but also for crisis counselors, who develop rapport and establish connections to survivors. Social capital is a public asset, the ability of establishing different types of formal and informal organizations that permit participants to interrelate and collaborate on the principles of mutual trust, reciprocity and cooperation (Dusaillant & Guzmàn, 2014). Social capital increases the opportunity to achieve common objectives and the capability to confront crisis situations. The density of networks is associated with the levels of trust among a group of individuals. Thus, social capital may be likened to a public good, with characteristics of indivisibility and non-rival consumption, unlike other forms of capital, such as physical, financial or human (Dusaillant & Guzmàn, 2014).

“The quality of the working relationship is paramount in facilitating and reinforcing coping and resiliency skills as well as supports and resources for the survivor of critical incidents” (Stebnicki, 2009; 677). Crisis counselors and human service professionals who are following models such as Acute Traumatic Stress Management or Critical Incident Stress Debrief must have the ability to listen, attend to, empathetically respond and empower survivors with the conditions to manage their lives following a critical incident. Disaster situations are opportunities to strengthen degrees of interpersonal trust, which ultimately affect social capital. These processes do not appear to be transitory; instead, they persist until at least the medium term, as trust keeps increasing (Dusaillant & Guzmàn, 2014).

Physical trauma is the main concern for emergency responders during times of crisis and often ignore the “hidden trauma” that arguably “leaves the deepest scars and changes people forever” (National Center for Crisis Management, 2016). The Acute Traumatic Stress Management (ATSM) was developed to offer emergency responders a stress response protocol that provides care beyond traditional emergency medical intervention, allowing first responders to address psychological needs (National Center for Crisis Management, 2016).

Traumatic stress is experienced by survivors of disasters such as hurricanes, floods, fires, tsunamis, and earthquakes. Such stress does not always have a beginning and an end,
but takes form in numerous ways, such as facing a serious illness or dealing with loss of a loved one (National Center for Crisis Management, 2016). ATSM was developed to provide practical tools for addressing a wide range of traumatic experiences and its “goal-directed” and facilitated process is designed to stabilize acute symptoms of stress. The ten stages of ATSM can be found in Table 3-1 (Lerner and Shelton, 2005).

**Table 3-2: Stages of ATSM (National Center for Crisis Management, 2016)**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stage 1: Assess for Danger/Safety for Self and Others</strong></td>
<td>Are there factors that can compromise your safety or the safety of others?</td>
</tr>
<tr>
<td><strong>Stage 2: Consider Mechanism of Injury</strong></td>
<td>How did the event physically and perceptually impact upon the individual?</td>
</tr>
<tr>
<td><strong>Stage 3: Evaluate the Level of Responsiveness</strong></td>
<td>Is individual alert and responsive? Under the influence of a substance?</td>
</tr>
<tr>
<td><strong>Stage 4: Address Medical Needs</strong></td>
<td>For those who are specifically trained to manage acute medical conditions</td>
</tr>
<tr>
<td><strong>Stage 5: Observe and Identify</strong></td>
<td>Who has been exposed to the event and who is evidencing signs of traumatic stress?</td>
</tr>
<tr>
<td><strong>Stage 6: Connect with the Individual</strong></td>
<td>Introduce yourself, state your title/position. Once s/he is medically evaluated, move the individual away from the stressor. Begin develop rapport.</td>
</tr>
<tr>
<td><strong>Stage 7: Ground the Individual</strong></td>
<td>Discuss the facts, assure safety if s/he is, have him tell his story. Discuss behavioral and physiological responses.</td>
</tr>
<tr>
<td><strong>Stage 8: Provide Support</strong></td>
<td>Be empathetic. Communicate a desire to understand the feelings that lie behind his/her words.</td>
</tr>
<tr>
<td>Stage</td>
<td>Questions</td>
</tr>
<tr>
<td>------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Stage 9: Normalize the Response</strong></td>
<td>Normalize, validate, and educate… “Normal person trying to cope with an abnormal event.”</td>
</tr>
<tr>
<td><strong>Stage 10: Prepare for the Future</strong></td>
<td>Review the event, bring the person to the present, describe events in the future and provide referrals.</td>
</tr>
</tbody>
</table>

ATSM presents techniques for developing connections with emotionally distraught victims of traumatic events and supports emergency responders when time is restricted and under immense pressure to restore order to disaster struck environments. ATSM is broad enough to be used in numerous situations dealing with diverse populations such as children, potentially violent, or depressed individuals (National Center for Crisis Management, 2016). It provides strategies to assist grieving individuals, and more importantly addresses the community’s own responses during a crisis.

Critical Incident Stress Debrief (CISD) is a seven phase small scale supportive crisis intervention process, and is one of several intervention techniques under the umbrella of the Critical Incident Stress Management (CISM) program (Mitchell, 2016). CISD was developed specifically for “small, homogenous groups who have encountered a powerful traumatic event” (Mitchell, 2016). This model aims at reducing distress and to restore group cohesion, which could be applicable for small communities such as Waimānalo. “It is a structured group storytelling process,” combined with practical information to facilitate community recovery (Mitchell, 2016).

CISD is not preferred as the first intervention to follow a disaster because it does not address physical medical and emergency needs (Mitchell, 2016). The debriefing should begin at least 24 hours after the critical incident, starting with the first of the seven phases (see table 3-2). The phases include, the introduction, facts, thoughts, reactions, symptoms, teaching, re-entry, and follow up (Mitchell, 1995; 270):
**Table 3-3: Stages of CISD (Mitchell, 1995)**

<table>
<thead>
<tr>
<th>Phase</th>
<th>Social Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phase 1: Introduction</strong></td>
<td>Introduce intervention team members, explain process, set expectations.</td>
</tr>
<tr>
<td>Team member introduction and description of the process. Carefully presented introduction sets the tone of the session, anticipates problem areas and encourages active participation.</td>
<td></td>
</tr>
<tr>
<td><strong>Phase 2: Fact</strong></td>
<td>To describe traumatic event from each participant's perspective on a cognitive level.</td>
</tr>
<tr>
<td>Only brief overviews of the facts are requested. It is easier to speak of what happened before getting into detail of how it impacted each participant. This phase is kept brief only to lower anxiety and letting group know that they have control of the discussion.</td>
<td></td>
</tr>
<tr>
<td><strong>Questions:</strong> Can you give me a thumbnail sketch of what happened in the situation from your viewpoint?</td>
<td></td>
</tr>
<tr>
<td><strong>Phase 3: Thoughts</strong></td>
<td>To allow participants to describe cognitive reactions and to transition to emotional reactions.</td>
</tr>
<tr>
<td>Transition from the cognitive domain toward the affective domain. Prompt questions that allow participants to speak of their thoughts rather than focus immediately on the most painful aspects of the event.</td>
<td></td>
</tr>
<tr>
<td><strong>Questions:</strong> What was your first thought or your most prominent thought once you realised what was happening?</td>
<td></td>
</tr>
<tr>
<td><strong>Phase 4: Reactions</strong></td>
<td>To identify the most traumatic aspect of the event for the participants.</td>
</tr>
<tr>
<td>The heart of the CISD, focusing on the impact the event had on the participants. Anger, frustration, sadness, loss, confusion, and other emotions may emerge.</td>
<td></td>
</tr>
<tr>
<td><strong>Questions:</strong> What is the very worst thing about this event for you personally?</td>
<td></td>
</tr>
<tr>
<td>Phase</td>
<td>Social Capital</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Phase 5: Symptoms</strong></td>
<td>Leading the group from the affective domain toward the cognitive domain.</td>
</tr>
<tr>
<td><strong>Questions</strong>: How has this tragic experience shown up in your life? What cognitive, physical, emotional, or behavioral symptoms have you been dealing with since this event?</td>
<td>To identify personal symptoms of distress and transition back to cognitive level/domain.</td>
</tr>
<tr>
<td><strong>Phase 6: Teaching</strong></td>
<td>The team conducting the CISD normalizes the symptoms brought up by the participants. They explain the participants’ reactions and offer stress management information. Other information specific to the incident could be shared during this phase. To educate as to normal reactions an adaptive coping mechanisms, provide cognitive anchor.</td>
</tr>
<tr>
<td><strong>Phase 7: Re-entry</strong></td>
<td>The participants may ask additional questions and make final statements. The CISD team summarizes what the program went over, final statements, and handouts are presented. To clarify ambiguities and prepare for termination, assess for follow up.</td>
</tr>
<tr>
<td><strong>Follow Up</strong></td>
<td>The CISD according to Mitchell, is typically followed by refreshments to facilitate the beginning of follow up services. The refreshments anchor the group while the team members speak to each participant one-on-one.</td>
</tr>
</tbody>
</table>
These phases in the debriefing process help not only the human service professionals build relationships with the community, but it also reestablishes a sense of community for the victims of the disaster. Building rapport and collectiveness within the community will increase social capital, which will then create stronger community capacity for recovery of future events.

3.3.1 Hawaiian Recovery and Healing

In the case of Hawaiian families and individuals, Thompson, McCubbin, Thompson, & Elver (1995) summarized three patterns; coherence, problem-solving communication and schema that were correlated to higher levels of resilience in Native families undergoing adversity. In the first case, coherence is the ability of a family of developing trust, predictability, and manageability that influence the capacity to foster one another’s wellbeing (Thompson et al., 1995). Second, communication is essential in the context of problem solving, because it emphasizes positive affirmation and confirmation, and contrasts provocative and subversive attitudes. Finally, schema, i.e. the family’s shared ethnic identity, defines the collective worldview and epistemology of members, enhancing both coherence and the resilience to adversity (Thompson et al., 1995). Traditional healing methods and techniques are culturally appropriate and effective methods of tackling adverse and traumatic situations, such as disaster. In this regard, the traditional treatment of ho’oponopono is particularly interesting, as it aims to restore harmony and maintain good relations and lōkahi within the ‘ohana and with the spiritual world (for the definition of Hawaiian terms see following paragraph). Ho’oponopono is a Hawaiian form of family therapy focused on positive relations within family members and the spiritual world, and is based on acts of restitution and spiritual cleansing (McCubbin et al., 2008).
3.4 Hawaiian Values and Community Structure

Defining the main elements of social capital for Native Hawaiian communities requires a reflection on the essential element of Hawaiian self and personality and on some of the values of cohesiveness, leadership, and cooperation. The concept of self for Hawaiians is holistic, as the kino (physical body) encloses not only the vital organs, but also the elements of the mental, emotional, and spiritual life of an individual (Pukui, Haertig, & Lee, 1972). The kino is infused with mana (divine and spiritual power) and possesses intelligence, emotions and character located in the 'ōpū (stomach) (Pukui et al., 1972), and is the central part of the conception of being, together with the 'ohana (family), makani 'aina wai (nature), and the Akua and Amakua (Gods and spirits) (McCubbin, Ishikawa, & McCubbin, 2008), as illustrated in Figure 3-2.

Figure 3-2: Traditional Native Hawaiian Conception of Psyche (McCubbin et al., 2008)

Hawaiian values and beliefs can be found and studied in behaviors and norms, such as language, protocols, cultural and religious practices, and arts (Minerbi, 1996). The discussion around these manifestations is open and rich, and many authors provided a summary and guide of the basic collective and individual values of this culture. In the
context of social capital and community building and their role in disaster management, eleven key principles were selected based on the work of various scholars (Goodyear-Kaopua, 2013; McCubbin et al., 2008; Minerbi, 1996; Pukui et al., 1972). These guiding principles include aloha, ‘aina, haʻahaʻa, kōkua, lōkahi, mana, ‘ohana, kuleana, alakaʻi, pono, laulima, and mālama. In order to clarify the role of these elements in the definition of social capital and community capacity and their relevance to disaster management, they were grouped in three clusters, namely core values, leadership and cooperation (see Figure 3-4).

<table>
<thead>
<tr>
<th>Core Values</th>
<th>Leadership</th>
<th>Cooperation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aloha</td>
<td>‘Haʻahaʻa</td>
<td>Kōkua</td>
</tr>
<tr>
<td>Pono</td>
<td>Kuleana</td>
<td>‘Ohana</td>
</tr>
<tr>
<td>‘Aina</td>
<td>Alakaʻi</td>
<td>Laulima</td>
</tr>
<tr>
<td>Mālama</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lōkahi</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 3-3: Clusters of values (adapted from Goodyear-Kaopua, 2013; Hawaiian Independence, 2016; McCubbin et al., 2008; Minerbi, 1996; Pukui et al., 1972)

3.4.1 Some Core Values

Some of the core values of Hawaiian culture include aloha, pono, ‘aina, mālama, and lōkahi, and, highlight the deep and holistic relationship between Hawaiians, their land, and their spirituality. Aloha is the most popular of these values, and the most (sometimes the only) known world of the Hawaiian language. It goes far beyond its function as a greeting, and symbolizes sentiments of affection, compassion, and love (McCubbin et al., 2008). This concept can be applied both to individuals and systems, as it includes sentiment of personal cordiality, mercy, and sympathy, but also community cohesiveness, goodwill, and mutual kindness (McCubbin et al., 2008). Another essential concept in understanding Hawaiian culture is pono, which refers to the proper behavior, or the individual sense of justice and “right”, reflected in the proper behavior towards oneself and the ‘ohana (McCubbin et al., 2008; Minerbi, 1996). The concept of ‘aina, which literally translates to “that which feeds us”, refers to the land, the environment and nature in general. This concept highlights once again the holistic nature of Hawaiian culture and individuals, and consists of three dimensions; physical, psychological and spiritual. The physical ‘aina represents the homeland, the land of the ancestors, but also the source of nourishment and life, as it provides food and shelter. Whereas, the psychological and spiritual dimensions are related to the provision of mental health and the support of the daily relationship between individuals and the spiritual world, as a source of guidance and strength (McCubbin et al., 2008). Strongly tied to the concept of ‘aina, is the value of mālama, which represents at the
same time the attitude of caring with aloha and the principle of respect. The combination of this concept with the stewardship of nature and the environment, i.e. mālama ʻaina, is one of the cornerstone of Hawaiian culture and the guiding principle of today’s movements for independent Hawaiʻi (Hawaiian Independence, 2016). In this regard, the care and respect for the land and the balanced relationship between human-kind and nature are the roots of the independence movement, as opposed to the Western model of domination, exploitation and exhaustion of the land. Finally, lōkahi represents unity and harmony and is the overarching value guiding the broader structure of Hawaiian society. In this regard, McCubbin et al. (2008) described this value as a triangle combining ‘aina, kanaka (human-kind) and ke akua (the gods), underlining the role of this element as the strength behind the balance between men, gods, and the environment.

3.4.2 Leadership
The description of leadership in Hawaiian communities can be summarized by the combination of the concepts of haʻahaʻa, alakaʻi, and kuleana. First, haʻahaʻa represents modesty and humility, and is the element that interconnects people to one another with sentiments of respect and caring, as opposed to arrogance (McCubbin et al., 2008). This element is essential in Native Hawaiian culture as it allows to balance humility and self-respect, and humility and confidence, and becomes an essential characteristic for good leadership. Alakaʻi represents the ability to guide, direct, and lead, and acquired a great relevance in the cultural renaissance and resilience of Hawaiian people. This concept describes a good leader that needs to have loyalty and expertise, but also aloha and mana, and needs to be and act pono (McCubbin et al., 2008). Finally, kuleana literally translates to “right, privilege and responsibility” and can be interpreted as the active commitment and contributions to the community (Goodyear-Kaopua, 2013).

3.4.3 Cooperation
When describing community capacity and social capital, it is essential to understand what are the basic components of a culture and how cooperation is organized within their communities. In regard to Hawaiian communities, these elements include kōkua, laulima, and ʻohana. First of all, to kōkua means to help or to assist, and refers to the empathic and mutual system of give and take present between family members, families, and neighbors, especially in times of need (McCubbin et al., 2008). More specifically, cooperation is achieved also through laulima (literally “many hands”), which translates into “to work together” (Minerbi, 1996) or “joint action” (wehewehe.org), symbolizing the collective and systematic effort towards the achievement of goals or problem solving.

Finally, ʻohana represents the core of Hawaiian society and organization, not only as a building block of society, but also as a model of organization and management. “Members of the ʻohana, like taro shoots, are all from the same root” (Pukui et al., 1972). The Hawaiian family includes the extended network of blood relatives (pili koko), and informal
relationships of friendship (McCubbin et al., 2008). The function of the ‘ohana is to emotionally, physically and financially support its members, and it can be defined as “the most practical of socio-economic-educational units” (Pukui et al., 1972). ‘Ohana’s were essential in the management of the ‘ahupua’a (land division), both for their internal organization and their network. On one hand, the division of responsibilities and duties among families was important to the efficient management of natural resources, and to mālama ‘aina. While the internal organization of family guaranteed that duties were adequately divided among members and performed properly (Pukui et al., 1972). Hawaiian family ties were also important in the preservation and communication of knowledge, as they were the means of passing teachings, rituals, and kapu (taboos) from one generation to another (Pukui et al., 1972). The general structure of the ‘ohana includes (1) makuas (parents) and relatives in the same generation as the parents, such as uncles and aunties, (2) kupunas (grandparents or the elderlies), and (3) the keiki (kids) (Pukui et al., 1972).

In sum, when leadership is expressed in cultural ways consistent with core Hawaiian values, as described above, it engenders behaviors and cooperative actions organized around the extended family so that indigenous social capital can be better mobilized for disaster preparedness of the local community.
3.5 Hazards, Preparedness and Mapping

Social capital is extremely important in the post-disaster redevelopment of a community, not only in the physical structure, but the social structure as well (Nakagawa & Shaw, 2004). Aldrich & Meyer (2014) state that historically, communities work together to recover from a disaster, with this they can leverage their social capital to recover in the community (Ada & Bolat, 2010). They also express that typically, individuals with high social capital are more likely to reach out and get help from community members because they have more trust in their neighbors; there is more financial help as well as resources for these people. Those with fewer connections may have a difficult time reaching out for help after a disaster when they need it (Aldrich & Meyer, 2014). Disaster management can be divided into two parts, mitigation and response. Mitigation focuses on preparedness, physical vulnerability of a place, and prevention, also known as the Disaster Cycle. Response to a disaster can include search and rescue, reconstruction and rehabilitation of an area (Nakagawa & Shaw, 2004). Social capital is important in all aspects of the Disaster Cycle from mitigation, preparedness and response to the recovery process afterwards. Other people's knowledge and experience can help to better prepare their community for a disaster. When there is strong social capital, everyone benefits from working together in all steps of disaster management and knowledge (Ada & Bolat, 2010). When it comes to emergency preparedness in communities, there must be bonding, bridging, and linking social capital, and there must be a strong leader who can bring the community together and facilitate linking social capital and encourage community members to be proactive with preparedness (Nakagawa & Shaw, 2004; Ada & Bolat, 2010).

In recent years there has been an increase in the use of the internet for connecting to other people and social groups throughout the world, which can be especially useful in the context of disasters (Cao et al., 2012; Procopio & Procopi, 2007). In New Orleans, after Hurricane Katrina, the internet played a vital role in connecting people to their friends and family around the United States. It also allowed the victims to connect to others and socially recover from the disaster. The internet has increased their bridging social capital and networks through the ability to get emotional support after the crisis (Procopio & Procopio, 2007). Recently, the focus on disaster management strategies has been at the community level, both for the pre- and post-disaster analysis. Communities with more connections and resources are likely to be more resilient and recover more quickly from a disaster (Nakagawa & Shaw, 2004; Ada & Bolat, 2010).
3.5.1 Disaster Management in Hawai’i

Severe weather events occur often, but they are only considered a disaster when they affect people. Unfortunately, in Hawaii, there are a few misconceptions about hazards because nothing has hit the island in quite a few years. A few myths are: The Big Island will block hurricanes from hitting other islands, or they only hit Kauai, and if something does happen, the government will be available to help us (Hwang & Okimoto, 2014). Recent trends show that the number of major disaster events has increased in the past 50 years (Aldrich & Meyer, 2004).

In terms of traditional knowledge, the topic of natural disasters is present and recurring in the Hawaiian language, mo’olelo (chants), oral histories, mythology, and proverbs. An example of this narrative, are the precise names of waves based on many characteristics, indicating a deep knowledge of natural phenomena such as tsunamis. Chun (2004) and Professor Morgan (Department of Oceanography, University of Hawai‘i at Mānoa), reviewed the meaning and usage of these terms used by Nāmakaokeahi (2004), and provided the following Hawaiian to English translations (Nāmakaokeahi, 2004, p.xi):

<table>
<thead>
<tr>
<th>Hawaiian</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ka-nalu</td>
<td>The wave</td>
</tr>
<tr>
<td>Ka-nalu-akea</td>
<td>The broad/wide wave</td>
</tr>
<tr>
<td>Ka-kai-akea</td>
<td>The broad/wide sea</td>
</tr>
<tr>
<td>Moana akea</td>
<td>The broad/wide ocean</td>
</tr>
<tr>
<td>Nalu-hoo-hua</td>
<td>Swelling-wave</td>
</tr>
<tr>
<td>Nalu-hoo-hoku</td>
<td>Increasing wave</td>
</tr>
<tr>
<td>Manana-mana-akea</td>
<td>Broad/wide branching out</td>
</tr>
</tbody>
</table>

Furthermore, Nāmakaokeahi (2004) describes some post-disaster recovery strategies adopted by ancient Hawaiian. In particular, he described how after “the ses rose meeting the fresh water” (p.E-1) (i.e. flood), chiefs focused on re-populating the land and the islands, by first of all increasing the production of food and fish.

Table 3.3 describes some of the natural disasters which impact Hawaii, as well as some of the preparedness measures that can be taken for them by individuals and families.
Table 3-5: Individual and Family Preparedness for Disasters in Hawaii

<table>
<thead>
<tr>
<th>Hazard Type</th>
<th>Hazard Description</th>
<th>Individual Preparedness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastal Erosion</td>
<td>Erosion is caused by waves, tides, currents, or drainage along the beaches and dunes. Erosion can be caused by: human impacts, wave and current changes, and sea level rise.</td>
<td>This is widespread in Hawai‘i, and all over beaches have been affected. There are shoreline setbacks for building along beaches. This differs for each island and some take into account erosion rates, others do solely shoreline setbacks.</td>
</tr>
<tr>
<td>Drought</td>
<td>A drought is caused by excessively long amounts of time with limited precipitation. This reduces groundwater supply.</td>
<td>Rainwater catchment systems are one way to locally store water in case of a drought. Another way is to reduce water consumption.</td>
</tr>
<tr>
<td>Earthquake</td>
<td>Earthquakes are caused through the movement of tectonic plates. This causes the ground to shake. They can also be caused by magma building up around active volcanoes.</td>
<td>Earthquakes are less common on the Island of Oahu, however, know the procedures for what you should do if you feel an earthquake. In your home be sure to have heavy objects closer to the ground, and secure top-heavy furniture like dressers to the wall. If you are outside or in the car, stay away from anything that can fall on you.</td>
</tr>
<tr>
<td>Flooding</td>
<td>Flooding can relate to flash flooding, with shorter time periods of excessive rain, or longer onset flooding after days of rainfall. They can also happen in situations where rainfall exceeds pipe capacity.</td>
<td>Look at the Federal Emergency Management Agency’s (FEMA) Flood Insurance Rate Maps (FIRM) to see if where you live is prone to floods or high surf, if they do, invest in flood insurance. Avoid driving on flooded roads. Avoid going into the water. If there is a flash flood and you are stuck in your house, vertically evacuate.</td>
</tr>
<tr>
<td><strong>Hazard Type</strong></td>
<td><strong>Hazard Description</strong></td>
<td><strong>Individual Preparedness</strong></td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Tsunami</td>
<td>Tsunamis are series of waves with long wavelengths and periods. They are typically triggered by earthquakes. They can also be triggered by underwater volcanoes and landslides. The waves can be 30 feet high, and can penetrate a few miles inland depending on the strength. The series of waves can last for a couple of hours.</td>
<td>Listen for sirens after an earthquake event. If a tsunami has been triggered they will go off. Move immediately to higher ground. If you feel an earthquake, and it is strong enough to make it difficult for you to walk or move while it is happening, make your way to higher ground. Stay away from beaches, and wait until you get the “all clear” to return to your house if it is in the coastal area. Evacuate to shelters or safe zones.</td>
</tr>
<tr>
<td>Hurricanes and Storm Surge</td>
<td>Hurricanes are severe tropical storms that happen during a certain season (June 1 – November 30 in Hawaii). They have heavy rainfall and can have winds exceeding 155 miles per hour. Hurricanes create storm surge, which is the rise in water a storm creates above the normal tides. This increases flooding in areas impacted by hurricanes.</td>
<td>Having window coverings and roof bracings can help protect your house. Also, evacuate to emergency shelters, especially if you are in a flood zone. Begin gathering emergency supplies now, and an evacuation plan. Have insurance for your house if it is in the flood and hurricane zone.</td>
</tr>
<tr>
<td>Landslides</td>
<td>This is the downward movement of soils, rocks, and plants on steep surfaces like mountains.</td>
<td>Look at where past landslides have occurred, this may show a trend. Stay away from those areas.</td>
</tr>
<tr>
<td>Fire</td>
<td>Fires occur during dry conditions when there has been a shortage of precipitation. Fires in Hawai’i are almost completely caused by people.</td>
<td>Design your property to effectively battle fires.</td>
</tr>
<tr>
<td>Hazard Type</td>
<td>Hazard Description</td>
<td>Individual Preparedness</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>High Surf</td>
<td>High surf is when there are waves crashing on shore that are at least 10 feet. The waves are created by swells from storms north of the islands. This affects different shores at different times during the year.</td>
<td>Use caution if you are entering the water, but follow advice given on public beaches. If the lifeguards say don’t swim, then don’t get in the water.</td>
</tr>
</tbody>
</table>

Sources: *Homeowner’s Handbook to Prepare for Natural Hazards*; City and County of Honolulu, Hawai’i Disaster Preparedness.

Currently, to help people prepare for natural disasters on O‘ahu, there are organizations which offer classes on preparedness. The NDPTC offers classes to small groups or communities on a range of topics such as: disaster recovery and response, awareness, coastal resilience, and flood risk reduction. The American Red Cross (ARC) has classes on how to be prepared for a disaster, first aid and other health programs. Honolulu has a Community Emergency Response Team (CERT), which is a group of volunteers who can act as first responders after a disaster. They are trained in search and rescue, preparedness, emergency and first aid, and more. You can also get involved with local disaster support groups or through being involved in the local government.

There are numerous reports that advise citizens on what they should have in an emergency kit, how they should plan to evacuate is a disaster strikes, what to bring to a shelter, and know how to get in touch with families. One of the reports, by Hwang and Okimoto (2014) recommends that emergency supplies include: a first aid kit, a flashlight with extra batteries, a seven-day supply of food with a method for opening and cooking the food if need be, and at least one gallon of water per person per day. Some of the items for a shelter are similar to the emergency kit. The guidelines for an evacuation kit include: one gallon of water per person per day, and one small bag with medications, foods, can opener, personal needs items, first-aid kit, flashlight and extra batteries, clothes, towels, and sleepwear. If you plan to use a shelter, try to walk there because during an event, roads may be congested, damaged, or closed. Also find out ahead of time if the shelter is for hurricanes or tsunamis (Hwang & Okimoto, 2014).
3.5.2 Hazards in Waimānalo
There are multiple hazards which have the ability to impact Waimānalo. They include: tsunami, landslides, hurricanes, high surf, flash flooding, fires, earthquakes, droughts, and coastal erosion. Many of these events can coincide with each other, creating a larger impact on the community.

Along the coast, Waimānalo is in the tsunami evacuation zone. A greater portion of Waimānalo is in the extreme tsunami evacuation zone (ETEZ) (see Figure 3-4). The ETEZ models the inundation potential for an extreme tsunami triggered by a 9+ magnitude earthquake in the Aleutian-Alaskan arc region. The Aleutian-Alaskan region earthquakes pose the greatest risk to Hawai‘i due to their close proximity to the islands (Butler, 2014). The closer an earthquake is, if it generates a tsunami, the quicker the tsunami will reach Hawaii. The regular tsunami evacuation zone is shown in red on the map, while the extreme tsunami zone is shown in yellow. For any tsunami not rated “extreme”, the people within the red area should evacuate.

Figure 3-4 shows the village center and surrounding residential lands closer in to indicate the location of hurricane evacuation shelters. Pope Elementary School is the shelter in the extreme tsunami zone, and Waimānalo Elementary/Intermediate school is safe outside of the ETEZ. The pre-schools in Waimānalo are in the ETEZ, and the fire station lies just outside of it. From the map, there are numerous parcels in the two zones. The main highway for access in Waimānalo, Kalanianaole Highway, is also in the two zones. From this, it can be concluded that it may be beneficial to have another evacuation route out of Waimānalo during an emergency. This idea was originally proposed in 2006, and is still a priority project for DHHL in Waimānalo (Department of Hawaiian Homelands, 2011). More on this possible evacuation route is discussed in Chapter 5.

There are no emergency shelters for tsunami’s in Waimānalo, as well as no set evacuation plan except to go inland and uphill if you feel the ground shake or hear the tsunami sirens (City and County of Honolulu, Evacuate!!!, 2015). The Regional Waimānalo Plan, 2011 discusses the importance of having an evacuation plan, and lists it as a top priority for the future of Waimānalo. Their plan was developed before the extreme tsunami evacuation zones were created, so updates are needed to the plan. However, the basics of the plan still remain. There is a need to provide information of evacuation routes to all citizens of Waimānalo. The residents should know when they need to evacuate and where they should go and where they should stay (safe staging access). Methods for informing citizens may include signage or public outreach and education (Department of Hawaiian Homelands, 2016). Currently all of the designated shelters are for hurricanes only, however, Waimānalo Elementary and Intermediate school is outside of the ETEZ, and may be safe to use as a shelter in the case of a tsunami. If this is not a suitable location, there should be a safe zone set up so people know where to go to take refuge from a tsunami.
Figure 3.4: Waimanalo Tsunami Evacuation Zones and 5-foot Contour Lines

SDEM
Approximate Feet about sea-level
Tsunami Evacuation Zone
Extreme Tsunami Evacuation Zone
Safe Zone
Pre-School
Elementary School
Fire Station
Park

Waimanalo Tsunami Evacuation Zones and 5-foot Contour Lines
Waimanalo, Oahu
3.6 Expected Findings

Students of the Planning Practicum - Spring 2016 participated in the Emergency Preparedness Fair with Ms. Frencha Kalilimoku of HHARP on April 9, 2016 at the Church of Jesus Christ of Latter-day Saints in Kailua, HI and the NDTPC Course: Natural Disaster Awareness for Community Leaders at The Church of Jesus Christ of Latter-day Saints on April 23, 2016. Social capital, as it exists in Waimânalo today, is expected to have a great influence on most members of the homestead community due to the efforts by HHARP to increase community capacity and disaster resilience. Table 3-4 presents the main parties involved in three phases: before, during, and post disasters, and how the community is expected to have developed social capital and community resilience in each phase.

The main parties involved in disaster preparedness in the community are: Waimânalo community members (Ms. Frencha Kalilimoku, HHARP, LDS Church, etc.), NDPTC, and DHHL. One objective for the practicum course through participation of this workshop is to analyze the level and effectiveness of communication between these main parties. Some questions the researchers attempted to answer are:

- Does HHARP and DHHL maintain a relationship that promotes progressive planning and preparation for future disasters?
- What is the nature of interactions between Waimânalo community members and HHARP and how are HHARP objectives and goals reflective of the needs of the community?
- How can the NDPTC encourage social capital in Waimânalo and what can be improved?

Table 3-6: Social Capital Expected Findings

<table>
<thead>
<tr>
<th>Social Capital</th>
<th>Before</th>
<th>During</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main Parties</strong></td>
<td>Community NDPTC DHHL</td>
<td>Community: Family, Friends Police, Fire, National Guard</td>
<td>Community Crisis Counselors Police, Fire, National Guard</td>
</tr>
<tr>
<td><strong>Collectiveness</strong></td>
<td>Preparedness Workshops (HHARP) Social Capital Courses (NDPTC)</td>
<td>Social Capital Preparedness</td>
<td>ATSM CISD Other Programs for Recovery</td>
</tr>
</tbody>
</table>
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4 Community Outreach Activities

The practicum objective involves community outreach and participant feedback to support the findings of the literature review in section 3. The literature review included the definition of key concepts in the study of social capital and community capacity in small island communities, and the following section provides a comprehensive overview of how these concepts, such as bonding, bridging, and linking may be manifested in native Hawaiian communities. Some organizations involved in the movement for a resilient community in Waimānalo are NDPTC and Ho’omakaukau ‘O Waimānalo. The efforts of members and volunteers in these organizations are especially influential to the success in creating a resilient community in Waimānalo.

4.1 National Disasters Preparedness Training Center

The NDPTC is approved to develop and deliver training programs related to disaster management in coastal communities. The institution’s focus is on the “five mission areas: Prevention, Protection, Mitigation, Response, and Recovery” (NDPTC, 2016). The training courses offered on the Hawai’i Islands include the development of awareness, resilience, and preparedness.

4.2 Ho’omakaukau ‘O Waimānalo, Community Preparedness Committee

The objective of Ho’omakaukau ‘O Waimānalo is to “educate and train residents of the Waimānalo Community about the ‘All Hazards Approach’ to disaster preparedness, mitigation, response and recovery” (Ho’omakaukau ‘O Waimānalo, 2015: 5). The organization meets their objectives through public outreach, training and exercises, creating space and preparing community to shelter community members in the case of an emergency, creating evacuation signage, and holding community resilience programs.

4.2.1 Public Outreach and Information

The purpose of public outreach is to reach out to all members of the Waimānalo community. Ho’omakaukau ‘O Waimānalo encourages the public and vulnerable populations to get involved in individual and community disaster preparedness. This is done through emergency/disaster preparedness fairs, where organizations promoting disaster management present their work and involvement on the island of the Oahu. They are also committed to scheduling speakers from local and state emergency management agencies and preparedness organizations.

4.2.2 Training and Exercises

Ho’omakaukau ‘O Waimānalo coordinates and schedules training courses for members of their community. Some organizations invited to hold training courses include:
CERT, ARC, and NDPTC. These training sessions extend influence to individuals, families, and businesses in Waimānalo. Ho’omakaukau ‘O Waimānalo also holds table tops on disaster preparedness with residents, community organizations, businesses, elected officials, volunteers, and private and public agencies (Ho’omakaukau ‘O Waimānalo, 2015).

4.2.3 Mass Care and Sheltering
Ho’omakaukau ‘O Waimānalo is committed to analyzing ways to feed and shelter Waimānalo residents in the case of an emergency. They have established the concept of the ‘Hub,’ or to have a designated center for shelter in disaster situations. The organization in cooperation with the ARC continue to work with food establishments in Waimānalo for emergency feeding. Radio operators are also established in disaster situations.

4.2.4 Evacuation and Signage
Evacuation routes are established, and the organization is working with the City and County of Honolulu to establish Tsunami warning signs and designated refuge centers.

4.2.5 Community Resilience Programs
Ho’omakaukau ‘O Waimānalo provides the community the opportunity to develop and maintain StormReady and TsunamiReady programs with NOAA. The organization also involves the community in developing and maintaining the requirements for a Resilient Ready program with the Hawai‘i Emergency Management Emergency (Ho’omakaukau ‘O Waimānalo, 2015: 12).

4.3 UH Manoa Department of Urban and Regional Planning Practicum Outreach
The planning practicum participated in one meeting with a community leader and two outreach activities. The students and the instructor met Frencha Kalilimoku, facilitator for HHARP and longtime Waimānalo resident. They also participated in the Emergency Preparedness Fair with Ho’omakaukau ‘O Waimānalo, and the Natural Disaster Awareness for Community Leaders Course, held by NDPTC.

4.3.1 Meeting with Frencha Kalilimoku, HHARP
On February 26, 2016 the practicum team met with HHARP Facilitator and community leader Frencha Kalilimoku, to discuss the goals of the practicum and learn more about the preparedness efforts of Waimānalo. During the meeting, Ms. Kalilimoku introduced the achievements and future directions of the Ho’omakaukau ‘O Waimānalo initiative, and discussed the current issues of the community. It was highlighted that Waimānalo was the first community in the State of Hawai‘i to receive the Resilient Community Award, due to the continuous effort toward classes and training on natural and manmade disasters. So far, 103 community members have been trained in disaster preparedness, representing the 1.04% of
the population of Waimānalo, and Ms. Kalilimoku wishes to increase this number by involving at least 10% of “mail boxes” (Kalilimoku, 2016), i.e. households. In terms of future concerns and directions, the community leader expressed her desire of having an enhanced and functioning evacuation road that can be used in case of a disaster as an alternative to Kalanianaole Highway. In particular, the attention was drawn on the back road connecting the end of Ilauhole Street with Waikupanaha Street, in the Southern part of Waimānalo, mauka (towards the mountains) of the Waimānalo Beach Park. Lastly, Ms. Kalilimoku expressed her concerns towards the disaster preparedness of kupuna, caregivers and housing facilities.

4.3.2 Emergency Preparedness Fair

The objective of our group’s participation in the preparedness fair was to inform community members of the significance of social capital in disaster preparedness, analyze the current existence and level of engagement with social capital in Waimānalo, and receive feedback from community members on how social capital is manifested in their community. The practicum group was provided a booth where students posted maps of tsunami evacuation zones and flyers defining and promoting social capital. The flyer included (1) Description of social capital, a diagram and summary of literature review; (2) Questions; (3) List of resources; and (4) Contacts for emergency management (see Figures 4-1 and 4-2).
Figure 4-1: Social Capital Flyer Handed out to Community Participants at the Emergency Preparedness Fair Spring 2016; Side A
“It’s not about what you know, it’s about who you know” — University of Minnesota

Social Capital & Community Capacity

What is Social Capital?
- The networks and relationships within a community, which help the community to function efficiently.

Are you prepared for a natural disaster?
- Do you have your evacuation kit and plan ready?

How will you respond to a natural disaster?
How do you plan to recover from a natural disaster?

BEFORE:
Adaptation – make sure your house is ready for any sort of disaster, this includes boarding up your house, or tying down heavy objects.
Get involved with the training courses offered by organizations in your area to help be prepared for a disaster.
Become more involved with your community to increase social ties.
Prepare - Have an evacuation kit and a family plan. Know how you will get in touch with family members and friends.

DURING:
Evacuate when you need to!
Stay safe!
When you can, stay off the roads.
Don’t stand in floodwaters.

AFTER:
What is your KULEANA?
Recovery, know what you need to do to help your family and friends after a disaster.
Use your resources wisely.
Contact your family and friends, listen for the all clear to return to your homes.
Adapt for future disasters. When you rebuild, do so in a way to help prepare you for future disasters.
4.3.3 Emergency Preparedness Fair Evaluation

The emergency preparedness fair was held at the Church of Jesus Christ of Latter-Day Saints on Saturday, April 9, 2016 in Kailua, HI. Participants included, but not limited to, the ARC, National Weather Service, Honolulu Fire Department, Honolulu Police Department, Department of Emergency Management, The Hawai‘i Voluntary Organizations Active in Disaster, NDPTC and Hawai‘i Emergency Agency.

The University of Hawai‘i practicum students prepared a map of Waimānalo tsunami zones as a supplement to the activities that were planned for fair participants (see Figure 4-2). Most participants who visited the practicum table were from the Kailua community, and the few who resided in Waimānalo were outside of the tsunami zone and moved on to the next table. There appeared to be a disconnect between the community members, revealing the need for growth in bridging social capital. Hosts of community events such as the preparedness fair could benefit from promoting the relationship between communities, and supporting a collaborative environment between neighboring communities.

Figure 4-3: Practicum students attending the Preparedness Fair in Kailua

Another issue that became evident was the dismissive response from most of the participants to a map of Waimānalo tsunami zones. The few participants who resided in
Waimānalo expressed their satisfaction with living outside of the extreme tsunami zone with little concern for their neighbors who lived inside of the tsunami zone. Future workshops could include lessons on bonding, stressing the significance of collaboration in disaster situations.

With the exception of volunteers, the participants of the preparedness fair were predominantly middle aged to senior residents. The younger generation of residents, especially those who will become new homeowners appeared to be absent, which could hinder the development of social capital in this community. Another important apparent absence is that of elected officials and/or community leaders, underlining the lack of linking ties and weakening the overall social capital of the community as well as its disaster preparedness.

*Figure 4-4: Practicum students interacting with participants of the Preparedness Fair in Kailua*
Figure 4-5: Students talking with Community Members
4.3.4 NDTPC Natural Disaster Awareness for Community Leaders Course

The course was geared towards individuals and community members who would want to be leaders in the case of an emergency. This course is designed to help create a preparedness plan. The course is broken down into five modules with three exercises. There were 25 people in attendance including the instructor, his wife, and the community members who orchestrated the workshop, most of which were adults or kupuna. Most of the community members in attendance seemed to have some personal interest in preparedness and being a leader for their community. Community members included people who wanted to learn how to be better prepared, CERT members, members from other communities who wanted to bring knowledge back to their community, students, farmers and families. This seemed to be a good bridging experience for the community members in attendance who did not know each other, and bonding for those who did.

Figure 4-6: Group activity during the NDPTC course (Source: Fred Hyun)

While there were people with numerous backgrounds at the workshop, there were a few groups which were notably missing. There were no people from the local government, retired police or fire officials, or neighborhood board members. There was also an apparent lack of involvement from other community organizations like the canoe club, Hawaiian Homes Association, Hawaiian Civic Club, schools, local businesses, youths and local churches. More people in attendance would have increased bridging social capital.
4.3.4.1 Course Evaluation

Overall the community seemed to enjoy the course. The instructor had a personal stake in Hawaii, so he could relate to the attendees; he had also been involved on Kauai in the recovery process after Hurricane Iniki, so he could provide real life experience and takeaways from that experience. There were mostly Waimānalo community members there, along with the students, one man from Kaneohe with Kailua CERT, and a woman from Aina Haina’s Preparedness Committee. There seemed to be too much instruction and not enough workshop time, the activities weren’t fully completed by any of the groups. The idea behind the workshops was to get stakeholders to the table to come up with a preliminary plan to involve members of the community.

The more time the community has to work together through the exercises, the more social capital they are building through relationships and trust. The final exercise was particularly useful because it assigned each group a different disaster, and they had to come up with a plan based on what they learned throughout the course, from exercises one and two, and their personal knowledge.

Figure 4-7: Community members and students collaborating during one of the group exercises

Figure 4-8: Community members listening as other groups present their preliminary plans
4.3.4.2 Findings from the Course

More participants would have increased bridging social capital. Handing out the participant's guide was beneficial for members who may not have access to either internet or a printer. There seemed to be a heavy focus on disasters, but the information could have been more tailored to the community at hand. The course relates to social capital in a few ways. It focuses on strong community leaders, who are essential in the preparedness and recovery of a disaster. The course describes the importance of creating partnerships, which can be associated with bridging and linking social capital. This would have been beneficial to more community members who were not in attendance. The course stressed the importance of preparedness and everyone having a role to play. One of the activities focused on figuring out who had skills in the community to provide assistance before and after a disaster, like carpenters, contractors, farmers, electricians, tree trimmers, and first responders. One community member noted that though there are numerous skilled workers in Waimānalo, they may be hesitant to write their name down on a list with their services, but they believed that if it came down to it, everyone in the community would band together to help recover. The topic of the evacuation route was brought up in one of the groups during discussion, and the community members seemed to have lost hope or belief that the road would ever be constructed because the proposal had been around for so long.

Figure 4-9: One Student presenting Activity 3 to the Group
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5 Conclusion and Implications for Further Research

5.1 Waimānalo Community Preparedness

Overall, the community of Waimānalo has achieved important results and outcomes, and it can be considered well prepared. The HHARP facilitator, Ms. Frencha Kalilimoku, is devoted and motivated to expanding the initiative, and her enthusiasm and leadership will be much needed in the future. To this end, the practicum team identified some key elements that hopefully can be addressed by the community, its members and its leaders to improve their disaster readiness and planning.

First of all, the “Ho’omakaukau ‘O Waimānalo” plan and HHARP’s initiatives are not widespread in the community. Many members of the community may not be aware of the existence of such efforts towards disaster preparedness, and may be missing the opportunity of being informed as well as trained. The team suggests focusing even more on outreach, by expanding the contacts and reaching out to new channels of distribution and communications, with special attention to the younger generations. For example, the community of Hau‘ula (North Shore of Oahu) plan to increase awareness for their preparedness program by involving teachers and children in school. Based on the preparedness plan, they created a homework assignment that was then distributed and given to students to take home and go over with their parents. Furthermore, the HHARP initiatives, meeting, and projects should be advertised more through the internet, and the “Ho’omakaukau ‘O Waimānalo” manual should be made available for download online.

Second, in terms of future expansion of the “Ho’omakaukau ‘O Waimānalo” plan, attention should be drawn on the post disaster process, identifying long-term strategies of recovery. This would be something beneficial for the community, as it would increase the resilience of its members, guiding them in the social, physical and economic reconstruction. In this regard, long-term recovery strategies should focus on creation of social and organizational cohesion, and the increase of social capital through bonding, bridging, and linking ties.

Third, HHARP, Ms. Kalilimoku and other Waimānalo community members and stakeholders, should continue to group together and join their forces to advocate for the creation of the evacuation route connecting Waikupanaha Street and Ilauhole Street. In this regard, the practicum team wrote a memo (see Section 5.5) that wants to support and to guide this process and encourage the initiative of the community.
Lastly, future efforts should focus on creating a preparedness plan to help the *kupuna* during a disaster, especially those who are less mobile or alone and living in the senior homes or by themselves.
5.2 Recommendation for Department of Hawaiian Homelands

Based on the findings of this research, the main recommendation to DHHL is to increase its involvement in disaster preparedness in general as well as the initiatives of single communities such as Waimānalo. The first recommendation is to attend the events hosted by HHARP, NDPTC classes, and other community gatherings geared around disaster preparedness. In terms of social capital, this would allow the understanding of each community’s interactions and networks (bonding and bridging), as well as the building of new or renewed ties with the institution (linking). Their presence will also help reinforce DHHL’s stance on the importance of disaster preparedness.

Second, DHHL can use Waimānalo as an example for other communities, highlighting the ongoing efforts behind the “Ho’omakaukau ‘O Waimānalo” plan, the enthusiasm of the involved members of the community, and the importance of a strong community leadership within the DHHL lands. One first step in this direction is to posts the “Ho’omakaukau ‘O Waimānalo” online on the DHHL webpage so that community members can download it, and hopefully be inspired. Furthermore, it would be interesting and beneficial to DHHL to involve students and younger homesteaders through the creation of volunteer opportunities. This would spark the initiative of communities, reinforcing the leadership roles, increasing disaster preparedness and resilience.

Third, DHHL should consider creating a Program Plan for all homestead communities. This plan should include clear and consistent objectives for disaster preparedness and recovery, and be primarily focused on building community capacity and increasing social capital, as seen in the example of USDA’s REAP Programs (see Section 3.1.2). In particular, the practicum team suggests four key objectives:

1. Increase natural disaster awareness of community leaders and members. For example, hosting or participating in NDPTC courses (e.g. “Natural Disaster Awareness for Community Leaders”).
2. Establish scheduled meetings for community leaders to develop skills in leadership and enhance engagement with their respective communities.
3. Have a DHHL representative attend preparedness fairs (and similar events) held by organizations in the communities. This helps to connect with other disaster preparedness agencies attending these events.
4. Have a general framework (see Figure 5-1) that each community can adopt and tailor to their specific needs and hazards.
Figure 5-1: Framework Considerations for a General Disaster Plan
5.3 Recommendations for the National Disaster Preparedness Training Center

Our experience attending the NDPTC course “Natural Disaster Awareness for Community Leaders” was overall positive. The course material was informative and delivered in a professional and engaging way. The practicum students want to highlight the importance of the instructor in this learning opportunity, and recommend the agency to focus on finding and training individuals with profound cultural and geographic knowledge of the area and the community, in order to create trust and interest. One improvement that we believe is necessary, is the better balance between activities and lecture, ensuring that all contents are properly delivered and that the group activities are completed.

In terms of content, the main suggestion is to include a definition of social capital, and focusing on mechanisms of bridging and linking. Bonding ties do not need to be addressed in detail, as it can be assumed that a good level of bonding already exists between participants, that they are involved in the community, and that they are already aware of the procedures before and during disaster. Therefore, it would be interesting to provide participants with ideas and inspirations to increase their social capital at higher scales, with examples such as participatory budgeting.

The literature review and the findings of the community outreach activities represent a general framework for the study of social capital, and can be used by NDPTC as an inspiration for the content of a future course on the role of social capital in disaster management. In addition to these contents, the practicum team created a group activity that can be used in this course. This activity is based on the class attended by the team, and is oriented to: (1) the identification of the main characteristics of a community; (2) the identification of potential hazards; (3) the reflection on the existing bonding, bridging, and linking ties of participants; (4) the benefits connected to these networks (i.e. how these can help before, during, and after a disaster); (5) the understanding of when these ties are needed (preparedness, response, recovery); and (6) how social capital can be used to organize disaster management and preparedness. An example of this activity is found in appendix 1.

5.4 Limitations of the Practicum

The students were only able to participate in two community events over the course of the semester. They would need to participate in more events in order to have more accurate observations of the bonding, bridging and linking social capital as well as the social norms.
5.5 Waimānalo Emergency Access Road

There is a need for an additional evacuation route out of Waimānalo. There is only one major road in and out for some of the residents living in the area. The emergency backup road was originally planned in 2006. DHHL submitted a funding request and received both the funding and support for the project in 2009 by Senator Waters, however the funding was lost and the route was not built. The project came up again in the 2011 Regional Plan for Waimānalo by DHHL. It is listed as a priority project in conjunction with the extensions of Waikupanaha Street and Ilauhole Street. The roadway improvements include a small section which will be gated off, connecting the two roads. This portion will only be opened in the case of an emergency, and only certain community leaders would have the key to open the connection. The community members will need to get support from their local representatives in order to get funding for the design of the road, which is estimated to be $100,000 and an estimated $12 million to construct the roadway improvements for both Waikupanaha Street and Ilauhole Street. There are a few sources of funding which may be available for the construction of the road, including City and County of Honolulu Capital Improvements project Fund, Federal Highway Administration funds, State funds, and New Market Tax Credits (Department of Hawaiian Homelands, 2011).

The evacuation route is important for the community in case of a tsunami. It not only provides an additional way out for families more on the Makapu side of Waimānalo, but there could also be an additional route connecting to Oluolu Street, which would provide the families there and on the beach side an alternative route to Kalanianaole Highway. Kalanianaole Highway is a two lane road, with one lane in either direction. On the weekends it is congested, and in the case of a tsunami it could be gridlocked, where there is sufficient warning. A second road would provide relief from Kalanianaole Highway, and get more families to safety faster.

Figure 5-2 illustrates the approximate location of the connection road per the 2011 Regional Plan for Waimānalo. It shows that the route would be on DHHL lands, so getting landowners permission would be relatively simple. The route is also outside of both the tsunami and extreme tsunami zones. Families on the ocean-side of Kalanianaole Highway are not on DHHL land, however, they would also benefit from the alternate route, so their support would be helpful in obtaining funding for the project. The connection from Oluolu Street to the emergency route would be through state land, so they would need to support the project as well.

The community will need to utilize bonding, bridging and linking social capital in order to get funding for the road (see Figure 5-3). They would need to show that they as a collective community support and need the project to better their community and provide access in case of a disaster. This will show their representatives with the city and state to allocate funds for the planning and design of the alternative route.
Figure 5-2: Waikupunaha Street and Ilauhole Street Extensions with Emergency Access Road
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Figure 5-3: Organizational List and Planning Goals for an Alternative Emergency Access Road
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5.6 Final Presentation and Conclusion

The students presented their findings to their clients at the conclusion of the semester. Overall the clients were pleased with the findings of the report. The NDTPC questioned whether or not they should design a course centered on the topic of social capital. The students suggested that it would be a beneficial course to the NDTPC and communities, especially coupled with other courses the NDTPC has to offer. By creating a course based on social capital they have the opportunity to build social capital in communities, and focus on disaster preparedness. DHHL questioned as to whether or not there is a Hawaiian term that could be comparable to social capital. This could be a focus for further research for a course tailored to social capital for indigenous communities, especially on the Islands of Hawai‘i. Another aspect of social capital that could be explored further is a compilation of kapuna knowledge, and using that knowledge as a resource to teach future generations how to be prepared for disasters as well as to shape development in the future.
6 Resources


Kalilimoku, F. (2016, February 26), Personal Interview.


The practicum is a classroom experience that integrates modern educational objectives, such as “learning community”, “service learning”, “critical thinking”, and “action oriented participatory research”. This research exercise has multiple objectives. It teaches the planning process and focuses on involving and engaging the community. Each practicum is unique, involving different topics, students and clients with different and diverse skills and interests, but it always involves teamwork, client(s) orientation, and a final product.

The Spring 2016 Practicum assisted (1) The Department of Hawaiian Home Lands (DHLL), and (2) Dr. Karl Kim, the executive director of the National Disaster Preparedness Training Center (NDPTC). DHHL is interested in promoting grass-root strategies for disaster preparedness and community resilience building. NDPTC is researching a training course on the topic of social capital and community capacity, specifically in regards to small island communities. In this context, the planning practicum with 4 students focused in defining key concepts, integrating them, and presenting them to a DHHL community. The project was also presented to DHHL and NDPTC representatives. The instructor was Professor Luciano Minerbi (luciano@hawaii.edu)