EFFICACY OF INTERNATIONAL NON-GOVERNMENTAL ORGANIZATIONS IN AID DELIVERY FOLLOWING CATASTROPHES: A COMPARATIVE CASE STUDY OF THE 2010 HAITI EARTHQUAKE AND 2004 INDIAN OCEAN TSUNAMI AND EARTHQUAKE

By

LESLIE COREY SLOAN

Bachelor of Arts
Fire Administration and Fire Prevention Technology
Western Illinois University
Macomb, Illinois
1999

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Thesis Approved:

Dr. Marcus Hendershot
Thesis Chair and Advisor

Dr. Haley Murphy

Dr. Tristan Wu

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Name: LESLIE COREY SLOAN

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Title of Study: EFFICACY OF INTERNATIONAL NON-GOVERNMENTAL ORGANIZATIONS IN AID DELIVERY FOLLOWING CATASTROPHES: A COMPARATIVE CASE STUDY OF THE 2010 HAITI EARTHQUAKE AND 2004 INDIAN OCEAN TSUNAMI AND EARTHQUAKE

Major Field: FIRE AND EMERGENCY MANAGEMENT ADMINISTRATION

Abstract: International Non-Governmental Organizations (INGOs) respond to various disaster and catastrophes around the world each year. Disaster organizations provide various forms of aid to support the core elements of human survival – food, water, shelter, heat, and security – to victims who are in desperate need of immediate assistance and support for future recovery. This research examines the differences associated with catastrophic events and the efficacy of INGO response to them. Catastrophes and failed states are key variables in determining the effectiveness of INGO actions. Unstable countries – failed states and unorganized areas experiencing armed conflict – impede the ability of INGOs to deliver much-needed aid and spur recovery after these tragic events. Nonetheless, INGOs can, and, do, seek to intervene and provide assistance.

In some sense, the response to catastrophes in the midst of failed governance is the height of the INGO mission. However, recent news media accounts and emergency management research has called the efficacy of these organizations' response and recovery activities into question. A comparative research study of INGO actions following the 2010 Haiti earthquake and the 2004 Indian Ocean earthquake and tsunami is offered as a comparison to assess INGO effectiveness. The study focuses on the long-term recovery of the housing sector as its unit of analysis and finds that legitimate governmental institutions are necessary conditions for effective recovery operations. Criticisms of the INGO recovery in Haiti have some merit, but the failed state presented substantive obstacles to recovery that could not be readily overcome. When those barriers are not in place, such as in the Indonesian catastrophe, INGO efforts are considerably more efficient. Thus, these groups do have flaws (transparency being a critical one), but they perform adequately well when circumstances allow them to push forward the recovery effort.

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INTRODUCTION

INGO PROFITEERING OR REAL OBSTACLES TO RECOVERY?

A critical space exists within the contemporary literature surrounding those International Non-Governmental Organizations (INGOs) involved with the response and recovery efforts that follow catastrophic events. Specifically, that gap includes the efficacy of the aid efforts that take place after these destabilizing events. Ramachandran and Walz (2012) outline this debate with their review of the American Red Cross (ARC) response to the 2010 Haiti earthquake.

Ramachandran and Walz's (2012) research examines the flow of relief aid to INGOS, through a policy analyst lens. Their research focuses on systematic problems and suggests that these organizations need to improve levels of transparency, accountability, and oversight of disaster recovery projects. Specifically, they target the absence of external reviews of INGO funded programs. In the case of Haiti, they suggest that the lack of external oversight allowed a significant amount of funds to flow through INGOs and into a host of "private sub-contractors inside the Beltway (Ramachandran and Walz 2012:13).

Their analysis provides a historical and contextual overview of the state of Haiti before the 2010 earthquake, first by addressing the impoverished Haitian population, the

heightened levels of political corruption, and critically the failed diplomatic relations with the United States, and broader international community. This lack of international ties results from a decades-old dependence on foreign aid that began in the 1960s. Because of pervasive levels of corruption, non-governmental organizations (NGOs) and INGOs were established as intermediaries rather than route the aid directly to the Haitian government (Ramachandran and Walz 2010). The aid that flowed through INGOs essentially created a "*parallel quasi-government*" that with time became stronger than the Haitian government itself (Ramachandran and Walz 2012:37).

Ramachandran and Walz (2010) concluded that the bypassing of the Haitian government weakened the capacity of the nation and more importantly pulled in skilled foreign labor to the private sector. Because of a high level of imported labor, only small amounts of wage compensation remained local and supported the internal Haitian economy. In addition to the lack of economic multipliers, the authors also targeted INGO problems associated with transparency, accountability, and available public program data. They highlighted groups' high levels of overhead and fees, the conflicts between external donor goals, and private Haitian interests (Ramachandran and Walz 2012). In the end, their research suggests three policy recommendations for INGOs: 1) systematic evaluations of implemented programs; 2) use of International Aid Transparency Aid Initiative (IATI) transparency standards for financial and program data; and 3) new procurement practices for resource bidding and capacity building within the nation.

Ramachandran and Walz (2012) are not alone in their criticism of ARC recovery efforts. Recent journalistic accounts - Elliott, Eisinger and Sullivan (2014) and Elliott and Sullivan (2015) - pillory ARC's fundraising practices and its disaster recovery programs.

These reporters likewise found the actions of relief organizations wanting. Their articles tend to focus on the prevalence of INGO profiteering motives, the general lack of accountability within those efforts, and a lack of financial transparency.

In 2015 the authors analyzed ARC's response and recovery effort for the 2010 Haiti earthquake with a similar focus on funds raised and victims' unmet needs. In Haiti, the authors focused specifically on the longer-term response within the housing sector (i.e., the theme of this thesis). The authors indicate one of the primary recovery goals of the ARC in Haiti was building permanent homes and neighborhoods following the quake. Through its donor networks and other fundraising efforts, ARC raised approximately $488 million dollars for Haitian recovery programs. ARC reporting indicates that they built 130,000 homes in Haiti. However, Elliott and Sullivan (2015) claim that only six homes could be associated with ARC programs.

Numerous reasons were cited by the authors for this failure, including 1) language barriers; 2) the inability to identify and obtain land to construct homes; and 3) the lack of expertise operating in a failed state riddled with corrupt practices. In addition to these fundamental dilemmas, ARC struggled to find the local social capital necessary for the sustainable housing recovery (Elliott and Sullivan 2015). The authors conclude that ARC Chief Executive Officer (CEO), Gail McGovern utilized the Haiti earthquake as a "*spectacular fundraising opportunity*" (Elliott and Sullivan 2015:15). They claim McGovern's motivation was to repair the financial mismanagement of the previous ARC administration. In effect, it is claimed that she attempted to return the ARC to its original congressional mandate of effective humanitarian relief but failed to deliver needed support for immediate response and long-term recovery efforts. This practice is

commonly referred to as INGO's profiteering from a catastrophic event. In the instance of Haiti, the ARC allegedly faced a severe financial deficit and potentially used this disaster to generate liquidity while failing to deliver on its duties in response and recovery (Elliott and Sullivan 2015).

Although media accounts offer sensational accounts of ARC efforts in Haiti, they tend to underestimate the potential problems of operating in a context like Haiti. The question of INGO efficacy is very much a quandary. The literature varies in orientation from academic to journalistic, and it provides a prodigious number of successes and failures of INGOs in Haiti and across the world.

The successes in Haiti involve the day-to-day services provided by NGOs and INGOs, as well as the homes reconstructed by another group – Mission of Hope Haiti, a small NGO located in Florida. The Mission of Hope Haiti was successful in home reconstruction in Haiti at a reduced cost (C. McQuilkin, personal communication, September 30, 2015).

In contrast, by late 2011 ARC had embarked on a plan to construct new homes in the Haiti neighborhood of Carrefour-Feuilles. The vision of the ARC (2011) was to provide approximately 13,000 homes with nearly one-half million dollars of their donor fundraising efforts. ARC apparently was not successful in securing the land to reconstruct homes and this program subsequently failed. The nearly one-half million dollars in donor funds allegedly were transferred to other groups to continue the reconstruction work, which was never completed.

With these conflicting perspectives on INGO recovery efforts in mind, this thesis is concerned with the efficacy of INGO actors within catastrophic level disaster settings.

These massive scale events present enormous challenges for those organizations charged with the extended aspects of recovery. When those challenges are encumbered by chaotic (economic) institutional environments, such as those found in Haiti, clearly it raises the difficulty of response and recovery exponentially.

Clearly, one must be aware of the institutional frameworks (North 1992) – human derived rules and procedures – that are found in these settings; they play an essential role in recovery. An absence of a functioning economic framework, as can be found in Haiti, does not provide the structure necessary for adequate recovery. In some sense, it may be that INGOs are simply hamstrung by the lack of an effective institutional structure in some contexts, and it may be beyond the scope of any outside organization to effectively produce the desired recovery from these events. In other words, it may simply be asking too much for any organization to find success in these settings no matter how well they are run.

Along those lines, I am interested in whether, or not, if these charges of INGO profiteering represent legitimate views of real problems. In particular, I am pursuing the following research question:

Given the institutional challenges and the failed state context of Haiti, were INGO housing recovery efforts associated with the 2010 earthquake efficacious?

To answer this question, I am going to utilize a comparative research design that looks at the housing recovery efforts of two INGOS (i.e., ARC and Disaster Emergency Committee) within two separate catastrophic events (i.e., Haiti's 2010 earthquake and the 2004 Indian Ocean earthquake and tsunami).

Using this comparative leverage, I find that INGOs who develop local stakeholder trust and rapport, as well as partner with local host government's and local NGOs are efficacious in the recovery efforts. Regardless of a failed or conflict state – Banda Aceh. To the contrary, INGOs who do not develop local stakeholder trust and rapport, nor partner with the local host government and local NGOs are not efficacious. The failure of the INGOs to recognize the socio-economic and political environment before establishing their self-developed agenda for recovery is a failure point for the INGO before they every begin recovery efforts. This is regardless of how successful their relief efforts were in the response phase – Haiti.

THE HAITIAN CONTEXT AND THE 2010 EARTHQUAKE

The Republic of Haiti occupies the western portion of the island of Hispaniola - a part of the Greater Antilles Islands located in the Caribbean Sea (see, Figure 1.1). Haiti borders the Atlantic Ocean to the north and the Dominican Republic to the east. To the south, lies the Caribbean Sea and the Windward Passage, and the Gulf of Gonâve comprises the eastern border (United Nations Secretariat 2013; Central Intelligence Agency 2013). The island is part of the *Antilles island arc* that wraps around the Caribbean plate from Cuba to Curacao (Bakun, Flores, and ten Brink 2012:19). It comprises approximately 27,750 square miles of land, which is slightly smaller than the state of Maryland in the United States. The island has approximately 1,100 miles of coastline and is roughly 700 nautical miles from Miami, Florida (Hadden and Minson 2010).

[INSERT FIGURE 1.1 ABOUT HERE]

In the midst of huge riots against slavery, Haiti declared its independence from the French colonial empire on January 1st, 1804. It became the first black republic in the Caribbean region, but unfortunately, the violence and chaos of its origins have endured with time. It has an extensive legacy of coercive state violence and political corruption and has experienced some popular uprisings and regime changes (Lundy 2011; Jobe 2011). This broad reach of corruption and the lack of emergency response capacity would both be significant factors in the failure of Haiti to prepare and respond to the 2010 quake (Lundy 2011). Haiti, in fact, is the poorest country in the western hemisphere. It is the only country in the Americas on the United Nations Lesser Developed Countries (LDC) list, and it has continuously failed to sustain economic recovery and stabilization (Margeson and Taft-Morales 2010; Hou and Shi 2011; United Nations 2013).

At the time of the 2010 earthquake, the estimated population of Haiti was over ten million inhabitants, with approximately two million residing in the capital of Porta au Prince. The population density estimate for the country is 140.9 persons per square mile (Central Intelligence Agency 2013) indicative of closely built housing and the limited amount of land available for construction. The capital city, Port-au-Prince, is the economic hub of the country accounting for "*65% of Haiti's total business and 85% of Haiti's tax revenues*" (Hou and Shi 2011:2).

Haiti derives its name from the word *Arawak* or place name "*Ayti*" meaning mountainous land (Hadden and Minson 2010:3). It is, in fact, a rough and mountainous part of the Island of Hispaniola and it possesses an irregular coastline. There are only a few plains located on that end of the island, and the majority of the country's population congregates within those areas creating a dense context of overpopulation (Hadden and

Minson 2010). These flat lands also are valuable for agricultural uses making them valuable for purposes other than housing, with coffee being the major cash crop (Hadden and Minson 2010:8). One of these Haitian regions is particularly isolated – the Central Plateau. The Central Plateau's hard to reach as it is approximately 1,000 feet above sea level and bordered by two minor mountain ranges, Cahos and Noires Mountains (Hadden and Minson 2010).

In total, four main mountain ranges rise from the island, with nearly two-thirds of the total Haitian portion of Hispaniola located 1,600 feet above sea level (Hadden and Minson 2010). The northernmost mountain range is Cordillera Septentrional (as it is known in the Dominican Republic) only occupies space on Tortue Island in Haiti. The second range is Massif du Nord (Northern Massif) and rises to heights of 4,000 feet above sea level. The third mountain range is Matheux Mountains (Chaine des Matheux) and occupies the west-central portion of Haiti. The Trou d'Eau Mountains (Chaine du Trou d'Eau) are located further east from the Matheux mountains near the capital city of Port au Prince. The fourth mountain range is the Massif de la Selle (Hadden and Minson 2010).

The primary output of the Haitian economy is agriculture, with nearly 40% of the inhabitants engaged in farming activities (Central Intelligence Agency 2013). Haiti has a centuries-long history of rice production, but its surplus export economy was threatened in the 1970s. At that time, a series of international embargoes and naval blockades choked off Haiti's agricultural export business (Jobe 2011). During a series of economic embargoes, the people of Haiti became more and more dependent on foreign aid (e.g. Haiti imports 60% of its food supply from other regions of the world (Jobe 2011). Today,

the leading economic industry is clothing manufacturing and accounts for 90% of the country's exports (Margeson and Taft-Morales 2010).

The Haitian Natural Risk Profile

Given its Caribbean location and challenging geography, Haiti is vulnerable to multiple natural hazards – most critically hurricanes and geological events. The top ten natural disasters affecting Haiti, between 1900 and 2008, were typically earthquakes and tropical storms. Tropical storms clearly are Haiti's number one hazard, but earthquakes are a close second because of the instability of the plates in this region (Margeson and Taft-Morales 2010). The only other Haitian catastrophe listed in the top ten was the cholera outbreak of October 2010 (EM-DAT: The OFDA/CRED International Disaster Database 2013). Over 96% of the population is exposed to one or both risks, and these events have wide scale impacts (DesRoaches n.d.) Natural disasters, catastrophes, as well as deforestation of the land all have considerable effects on the lives of its inhabitants.

In short, the Haitian people, who already live under a failed state of government, are also subject to a near constant threat of natural disaster. Throughout Haiti's history, a disaster event occurs nearly every year, and a major disaster or catastrophe occurs once every five years (United Nations 2011). Examples of such events include Hurricane George in 1998 that destroyed 80% of Haiti's crops. Tropical Storm Jeanne in 2004 which killed 1,900 by direct storm effect and an additional 2,600 Haitians from flooding. The worst year, by far, was 2008 when three hurricanes (i.e. Gustav, Hanna, and Ike) and a tropical storm (i.e. Faye) struck the island. During that repeated affront, the island sustained over one billion dollars in damage, which would account for 15% of Haiti's

annual Gross Domestic Product (GDP). That level of loss exacerbates the challenges of living with an economy that already was in shambles (IFRC 2010).

The Catastrophic Shock

In 2010, over 80% of Haitians lived below the poverty level with 54% living in extreme poverty (i.e. living on less than $1.25 per day) (Central Intelligence Agency 2011). However, Haiti was making progress on multiple fronts before the 2010 quake. The United Nations (U.N.) had been in the country since 2004 assisting Haiti on multiple fronts. Specifically, U.N. personnel were working on security and stability, political processes, and human rights issues (Margeson and Taft-Morales 2010). The World Bank has also been assisting Haiti's government on financial matters and development of a comprehensive emergency response plan. The goal was to focus on disaster risk management and to created an effective response strategy that concentrated on the routine threats of tropical storms.

On Tuesday, January 12, 2010, at approximately 3:53 p.m. Central Standard Time (CST), a 7.0 Richter Scale magnitude earthquake struck the Republic of Haiti (see, Figure 1.2). The initial quake lasted approximately 35 seconds, with significant energy delivered over a 15-second period of that span. Roughly seven minutes later, a second earthquake measuring 6.0 magnitude further disturbed the island nation. Over the next several days another 80 aftershocks, greater than 4.5 magnitudes would keep the tectonic region of Haiti destabilized (Margeson and Taft-Morales 2010).

[INSERT FIGURE 1.2 ABOUT HERE]

Seismologists suggest that these earthquakes and aftershocks occurred along the north Hispaniola and east-west oriented Septentrional and Enriquillo-Plantain Garden

(EPGFZ) fault systems rather than on the Enriquillo fault zone (Hou and Shi 2011; Bakun, Flores, and ten Brink 2012; Fritz et. al 2012). The root source of the quakes was a reverse left-lateral strike slip fault of the Caribbean and North American tectonic plates (see, Figure 1.3) (Hou and Shi 2011; Bakun, Flores, and ten Brink 2012; Fritz et al. 2012).

[INSERT FIGURE 1.3 ABOUT HERE]

The earthquake epicenter was approximately 15 miles south-southwest of the capital city Porta-au-Prince, Haiti. The earthquake was shallow which allowed more surface energy dissipation when compared to a deeper quake (United States Geological Survey 2010; Hou and Shi 2011). Historically, the 2010 Haiti earthquake measured as the strongest earthquake to affect Haiti since two earthquakes struck the country in the 1700's (Arbon 2010; Fritz et al. 2012).

The Resulting Damage of the Quake

In contrast to the history of destructive earthquakes within this region, the 2010 Haiti earthquake 7.0 value ranks as the smallest regarding raw magnitude. The magnitude of earthquakes is evaluated by the *Richter scale* standard (Hou and Shi 2011), which was derived from the research of American Geologist Charles F. Richter. Richter provided an open-ended, logarithmic scale for measuring earthquake magnitude as waves on a seismograph (see, Figure 1.4). As the extent of his level increases, there is an upward magnitude increase by an exponential factor of ten (Hou and Shi 2011).

[INSERT FIGURE 1.4 ABOUT HERE]

Despite the average rank of this event on the scale, it is associated with the highest loss of life and it acted to damage more of the built environment than any other

7.0 magnitude earthquake in history (see, Figure 1.5) (Hou and Shi 2011). The capital city of Port-au-Prince suffered near complete devastation (see, Figure 1.6) creating a historical catastrophe (United States Geological Survey 2015).

[INSERT FIGURES 1.5 AND 1.6 ABOUT HERE]

The total damage estimate in Haiti was $7,804,000,000 (USD) equating to 120% of the 2009 Haiti GDP (Special Envoy to Haiti 2012). The breakdown of the total damage consists of $4,300,000 (USD) in direct damages and $3,500,000 (USD) in economic losses. The damage estimated to the housing sector alone is valued at $2,333,200,000 USD. An additional $739,000,000 (USD) was for emergency and temporary sheltering needs for approximately 2.3 million internally displaced people (IDPs), including 302,000 homeless children (IFRC 2010). As of December 2015, 59,720 Haitians remain displaced representing approximately 14,679 households (International Organization for Migration 2015).

CATASTROPHE AND THE FAILED STATE OF HAITI

Failed states, or those areas that lack functioning social contracts or systems of governance, present extreme challenges in the wake of such disaster events. As Cliff and Luckham (1999:27) suggest: "*humanitarian assistance may have to contend with a fractured, ineffective, or nonexistent state*" and "*part of post-conflict recovery will involve reconstituting the state.*" Buss and Gardner (2008) describe Haiti as a such a state and the bilateral and multilateral donor community certainly share this perspective. The Haitian failed state clearly placed extreme demands on the INGOs that responded to this particular catastrophe.

Natsios (1995) describes five symptoms of those complex humanitarian emergencies (CHEs) found in failed and conflict states. He suggests that: 1) the community will have a government incapable of providing essential services to the nation due to complete governmental and social service collapse; 2) the state of conflict will lead to violent and potentially fatal human rights violations; 3) the society will have an inability to secure a requisite food supply; 4) the event will acerbate levels of economic collapse and introduce problems of hyperinflation and further unemployment of the country's populace; and 5) the country is likely to exhibit mass migrations of internally displaced persons (IDPs) searching for food and fleeing conflict. Haiti would experience each of these symptoms and to date has not found an effective long-term treatment. This, of course, is a problem of political context. The politics of corruption found within the Haitian government has been an issue for over half a century (Lundy 2011; Jobe 2011; United Nations 2011). The country has experienced multiple coup d'états and repetitious regime changes. Haiti's failed state and dependence on foreign aid are a decades-old phenomenon, and they would prove to be a significant obstacle to those INGOs charged with response and recovery responsibilities for the 2010 earthquake catastrophe. This thesis seeks to systematically evaluate whether or not the activities engaged in by these groups were consistent with the profiteering charges that have been laid against them, or whether the failed state environment limited these organizations in ways that other organizations would have exhibited similar failures.

Figure 1.1 – Topographical Haiti map–Western nation on Hispaniola. (Maps of the World 2014)

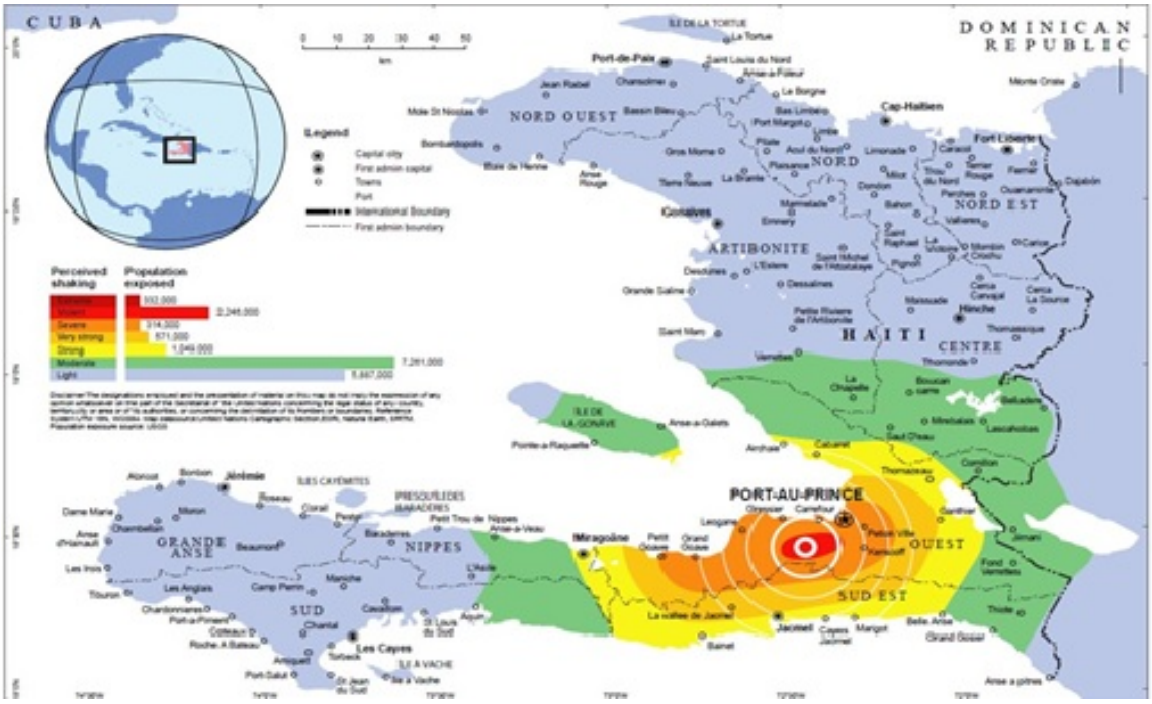

Figure 1.2 – 2010 Haiti earthquake populace affected (Ramchandran and Walz 2012)

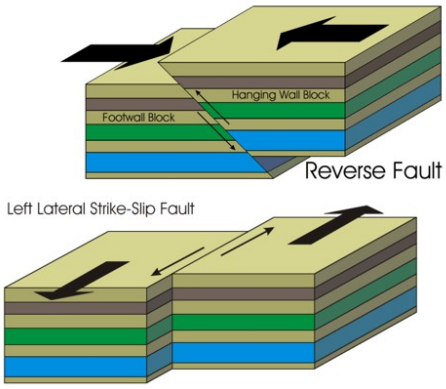

Figure 1.3 – Left lateral strike-slip fault / Reverse Fault, 2010 Haiti quake (USGS 2010)

Figure 1.4 – 2010 Haiti earthquake damage (ABC News 2010)

Figure 1.5 – Damage in Port-au-Prince Haiti following the 2010 earthquake (Millstein 2010)

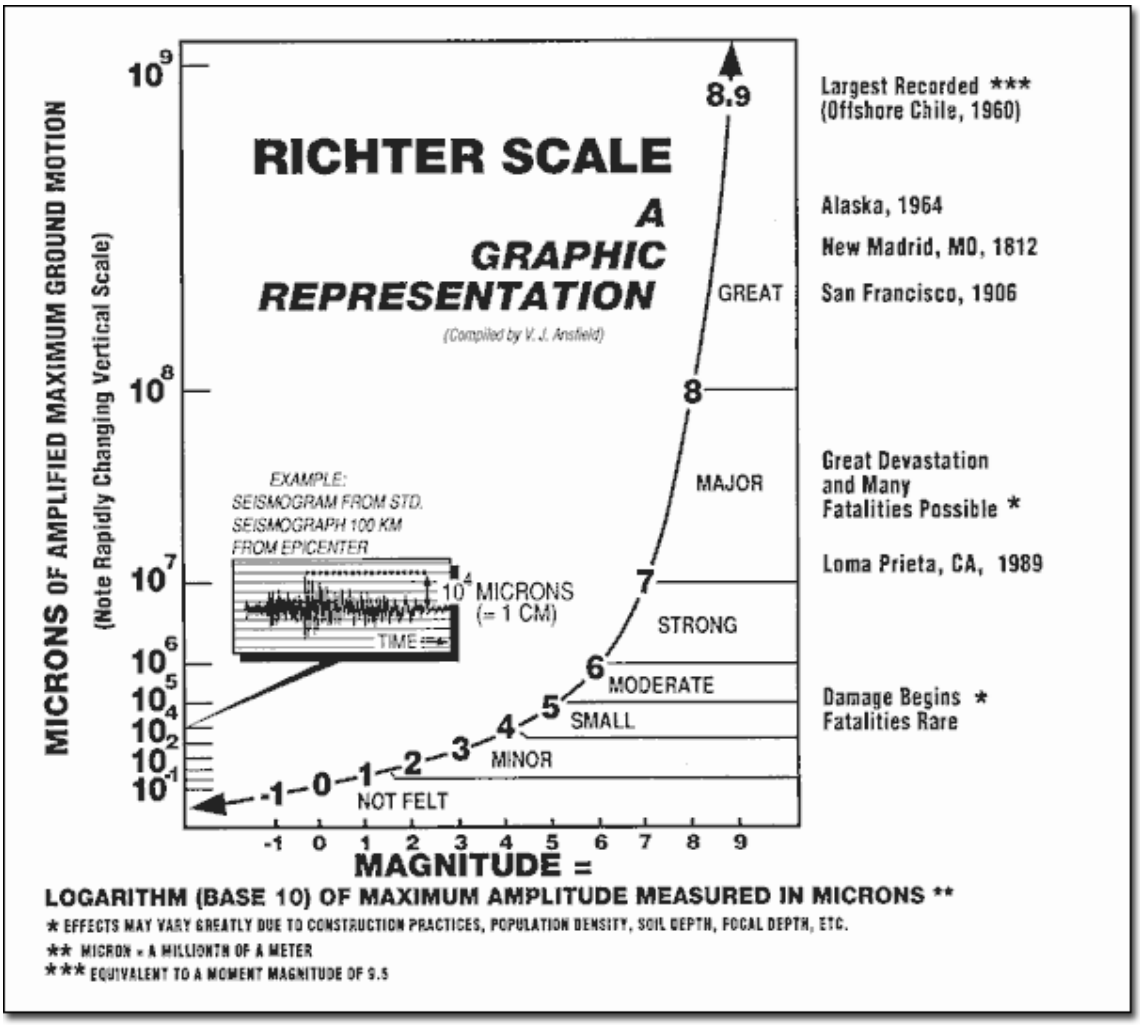

Figure 1.6 – The Richter Scale, a tool to measure the magnitude of earthquakes. (Emaze, n.d.)

CHAPTER II

LITERATURE REVIEW AND THEORY

CATASTROPHES ARE NOT JUST BIGGER DISASTERS

In Chapter I, I reviewed the 2010 Haiti earthquake and depicted it as a catastrophic event based upon a specific set of criteria established within the literature. While not specifically mentioned, the quake inherently caused significant losses and damage across critical sectors, including government, first response, public infrastructure, housing, and livelihoods. Catastrophes are unique and produce various levels of damage and the recovery results based on the specific impact risk (United Nations 2011). Compounding the catastrophic implications in Haiti were the pre-existing poverty levels, political corruption, and the failed state context among other variables. The failed state environment did not allow Haiti to respond to the needs of its citizens, leaving the response and recovery to the international community and many INGOs. Unfortunately, allegations of profiteering were made against some of these INGOS by several sources, potentially slowing the assistance and recovery processes. Tierney and Oliver-Smith (2012) elucidate catastrophes provide complex and challenging environments for those involved in response and recovery. To better understand the recovery efforts of Haiti's catastrophe through a systematic approach that is based on research literature, I will develop a recovery analysis framework in this chapter.

Do Definitions and Elements of Catastrophe Matter?

A hazard and risk analysis provides a trifurcated scale of events with which emergency managers can organize their responses to these events. The scale starts with 1) routine emergencies, which are regular day-to- day calls for service for emergency response agencies requiring no outside assistance; 2) disasters that affect a localized geographic area and may need help from neighboring jurisdictions (mutual aid); and 3) catastrophes affecting a significant spatial area that potentially calls for an international response (Quarantelli 2000).

The management of a disaster occurs at the local or regional level by restoring infrastructure, incident stabilization, and the return of the community to a pre-event status quo. A catastrophe, on the other hand, has a wide spatial impact that affects most of the population and infrastructure (Quarantelli 1996; Quarantelli 2000; Perry and Quarantelli 2005; Quarantelli et al. 2006; Tierney and Oliver Smith 2012; Lindell 2013). Therefore, the definition of disaster and catastrophe, as well as the elements comprising both, are crucial to understanding the topic of recovery. Simply defined, disaster mitigation occurs at the local or regional level, and catastrophe mitigation occurs at the national or international levels.

To obtain the perspective of a particular event, the defining elements of disasters and catastrophes require some analysis to foster a better understanding of the differences. Regardless of the definition, both disasters and catastrophes require multiple theoretical and disciplinary perspectives and cannot be bundled into one single definition (Bates and Peacock 1989). In this research, I will focus on the elements of catastrophe, rather than the definition, found in the literature on catastrophe.

The Different Elements of Catastrophes Verse Disaster

Quarantelli (1996) differentiates disasters and catastrophes with six primary elements. In catastrophes, most if not all of the infrastructure impact occurs over a large geographical area (Quarantelli 2000). The infrastructure loss parameters comprise the size, or development, of the affected area. Catastrophic impacts prohibit the affected population from sheltering with family and friends. This is commonly found in disasters, due to massive devastation of the housing sector. The result is masses of internally displaced persons (IDPs) left with an inability to find shelter. The failure to obtain the essential elements required for life distinguishes catastrophes from disasters. These key elements include such things as access to medical care (physical and mental), food, water, heat, shelter (short and long-term), and security (Tierney and Oliver-Smith 2012).

The catastrophe adversely affects national leadership and organized first responders (e.g., law enforcement, fire services, emergency medical services, emergency management, military services, health/hospital organizations, and social service/non-governmental organizations) who during disasters can respond to assist the affected population. The effect on the national leadership exacerbates the ability of the affected state to lead the response, relief, and recovery efforts. The unavailability of political leadership and their coordination, coupled with the loss of first-responders can be associated the catastrophe event rather than explicit role abandonment (UN 2005).

Essentially, first responders (i.e., civilian and professional) who survive the event, have no place to coordinate response operations due to the decimation of facilities and resources (Quarantelli 1996; Quarantelli et. al 2006). A primary reason for the lack of response is due to injury of personnel, deaths, or the inability to establish a single base of

operations and communicate critical information on resource needs. A lack of willingness to use their skill set to offer assistance is not the prohibiting factor. Tierney and Oliver Smith (2012) confirm that high casualty and mortality rates, coupled with social separation and dislocation, widespread damage, and less experienced personnel greatly impair the overall catastrophic response.

The lack of an initial national reaction brings a converging response to the catastrophe from the international community. As a part of this response, spontaneous volunteers and mounds of donations converge on the catastrophe area. The mass media coverage, particularly when there is a massive loss of life, similarly exacerbates the challenges that these catastrophe events represent.

During these developments, interruptions of everyday household routines occur, including significant and potentially long-term interruption of critical infrastructure and key resources (electricity, potable water, food supply, telephonic infrastructure, sewer, and mail service). These interruptions prevent affected victims from having a social time routine (i.e., the events and schedule that they are used to maintaining from day to day) (Quarantelli 1996; Quarantelli et al. 2006; Rodriguez et al. 2006).

Why Haiti was a Catastrophe and not a Disaster

In assessing if the Haitian earthquake was a disaster or catastrophe, I will revisit the elements previously identified by Quarantelli of catastrophe. Hou and Shi (2011) references this as the "*Catastrophe Model*" developed by Quarantelli (Hou and Shi 2011:29). The six elements of catastrophe described are 1) most of the built environment impacted; 2) local first responders are unable to perform their normal roles; 3) assistance from neighbors is negligible due to the spatial impact; 4) normal, daily social routines are

interrupted; 5) mass media provides 24-hour coverage of the event; and 6) the political "*arena*" is magnified greatly in a catastrophe when compared to a disaster (Quarantelli 2006:8; Rodriguez et al. 2006).

The Haitian government's initial damage assessment estimated the total damage from the earthquake at $7.804 billion (USD). The loss estimates represent $5.722 billion (USD) losses, or 70% of the earthquake impact, in the private sector. The public sector sustained $2.081 billion, or 30% of the total earthquake impact, representing *120%* of Haiti's 2009 Gross National Product (GDP) (Haiti PDNA 2011; Special Envoy to Haiti 2012).

The earthquake damage spanned a broad geographical area of Haiti and affected nearly the entire nation. Damage consisted of collapsed structures and damaged/destroyed transportation routes that were often blocked with sizeable debris. This included significant damage at the primary airports and seaports located in Port au Prince. The airport and seaport damage were significant, not only regarding the physical damage sustained but from a logistical perspective in receiving aid from the international community (Hou and Shi 2011).

The quake also damaged political institutions and processes such as the Presidential Palace, Parliament, Law Courts, and United Nations Stabilization Mission to Haiti (MINUSTAH). Most of the Haitian Ministry buildings and other public administration buildings were destroyed in the quake (see, Figure 2.1). This left the national government unable to respond to the needs of the Haitian people (Haiti PDNA 2011; Zanotti 2010). First responder coordination/response centers, all modes of communication with the outside world, hospitals, health clinics, transportation routes,

water supply and distribution systems, and the nation's power grid were disrupted. The only direct link of aid assistance for Haiti was from the Dominican Republic, and that response was in fact limited (Hou and Shi 2011).

[INSERT FIGURE 2.1 ABOUT HERE]

The earthquake destroyed 105,000 homes and damaged another 208,000 (see, Figure 2.2), which eliminated those traditional sheltering options often found in disasters (i.e., shelter with family or friends). The education sector had 1,300 schools collapse or unusable (Hooper 2015). Similarly, 50 hospitals/medical clinics collapsed or were so severely damaged they were not usable (Haiti PDNA 2011). The loss of this critical infrastructure created significant disruptions in the daily lives of Haitians for months on end (Hou and Shi 2011; Hooper 2015).

[INSERT FIGURE 2.2 ABOUT HERE]

The human death toll for this catastrophic event is estimated at 220,000, with another 300,000 injured and 1.5 million internally displaced (IDPs) Haitians. This was on top of the aforementioned adverse impact to the critical infrastructure and key resources (Hou and Shi 2011; Hooper 2015). Included amongst the deceased were 17% of the Haitian government workers. Several of the state’s leading officials thankfully survived – UN MINUSTAH Mission Head Hedi Annabi and Deputy Mission Head Luis Carlos da Costa and 83 of their staff. An additional 32 members of the UN MINUSTAH staff were missing. This level of infrastructure and human toll brought wide media convergence to Haiti, compounding relief aid, clogging transportation routes, and delaying much-needed aid delivery and recovery (Hou and Shi 2011).

The surviving Haitian leadership that attempted to respond to the earthquake essentially discarded of the government's ruling party candidate is making the political response to response and recovery untenable. This is not unusual in the history of the Haitian government. The eventual election of Michel Martelly as President created a political quagmire in the midst of catastrophe. Thus political events left a void of governance and leadership for the Haitian people at its time of greatest need (Saye 2010; Hou and Shi 2011). In short, resulting context of the earthquake in Haiti clearly meets the six elements identified by Quarantelli (Quarantelli 2006; Rodriguez et. al. 2006; Hou and Shi 2012).

Haiti Housing Sector Primary Damage Assessment

In February 2010, the Government of Haiti provided a post-disaster need assessment (PDNA) in support of the country's recovery and aid appeal to foreign donors and investors. The evaluation provided estimates of damages and losses sustained by the earthquake and provided an initial overview of the catastrophic impact that Haiti suffered. The methodology for the preliminary needs assessment was derived from the United Nations Economics Commission for Latin America and the Caribbean (ECLAC) (Haiti PDNA 2010). The ECLAC process examines a system of national accounts of the country to conduct damage assessments and convert them into estimations of economic losses (United Nations 2010).

The estimated damage to the housing sector was approximate $2.3 billion (USD), making it the most impacted sector. An additional $739 billion (USD) was estimated to be needed for emergency and temporary sheltering needs for the 1.5 million IDPs of which 302,000 were homeless children. The earthquake destroyed 105,000 homes and

damaged another 208,000, with the hardest hit area found in and around Port-au-Prince, Jacmel, and Leogane. Of those three critical locations, Leogane was nearly 80% destroyed (Haiti PDNA 2010). Haiti has no public housing, so the damage estimate covers private housing sector losses (Haiti PDNA 2010). Many of the IDPs (estimates as high as 263,000) were migrating to the north and west of Port au Prince in search of food, water, and shelter following the earthquake. That migration merely added to the complexity of catastrophe aid delivery (IFRC 2010).

[INSERT FIGURE 2.3 ABOUT HERE]

As of December 2015, 59,720 Haitians remain displaced representing approximately 14,679 households (International Organization for Migration 2015). The remaining Haitian IDPs reside in 37 displacement sites consisting of a variety of temporary construction, with 51% being makeshift tent shelters, 3% different transitional abodes, and the remaining 41% in t-shelters (International Organization for Migration 2015).

[INSERT FIGURE 2.4 ABOUT HERE]

THE DIFFERENT PHASES OF EMERGENCY MANAGEMENT

Mitigation Phase of Emergency Management

Mitigation potentially lessens the impacts to the physical and social environment. Regretfully, it is not considered ab initio as one of the top phases of emergency management, primarily due to the lack of available funding. Neal (1997) argues mitigation should be the first step of emergency management and occur pre-event rather than post. Mitigation is performing "*efforts that lessen the impacts of disaster*" (Phillips, Neal, and Webb 2012:327). FEMA defines mitigation as "…the effort to reduce the loss of life and property by lessening the impact of disasters (FEMA 2016). For mitigation to

be effective, we need to take action now — before the next disaster — to reduce human and financial consequences later (analyzing risk, reducing risk, and insuring against risk). Mitigation possesses the unique ability to influence who survives the impact of an event. It can also lessen the overall cost and time for an impacted area to recover (Emergency Management Handbook 2007; Phillips, Neal, and Webb 2012).

Mitigation is bifurcated into two primary areas: *structural* and *non-structural*. Structural mitigation affects the physical environment and efforts to strengthen it to identified hazards and risks to reduce the effects of event impacts (e.g., safe shelters for tornados, hardening of structures to resist tropical storms and seismic activities, as well as terrorist incidents). Non-structural mitigation involves the social element – social capital – and the human behavioral response to an event (e.g. public education on the hazards and risks, warning and notification methods, emergency operation plan development, proper land use planning and cataloging, and proper hygiene to reduce the spread of disease). The United States learned in the 90's that the subsidizing of mitigation efforts at the state and local level saved federal financial resources during recovery effort after the impact of an event on the nation (Coppola 2011; Phillips, Neal, and Webb 2012).

Planning Phase of Emergency Management

Planning is the cornerstone of the preparedness process and the anchor for the other phases of emergency management (Smith and Birkland 2012). Planning is defined as the making of contingencies that describe how personnel, equipment, and other resources are used to support incident management response activities. Plans provide the mechanisms and systems for setting priorities, integrating multiple entities and functions, and ensuring that communications and other systems are available and integrated into a

support network for the spectrum of incident management requirements (Blanchard 2007).

Hazard and risk analysis occur pre-event and help anchor the other phases of catastrophe management (Nigg 1995; Phillips, Neal, and Webb 2012). If this type of planning does not take place, then the other phases of emergency management are substantially less efficient. The planning process is described by the acronym POETE (Planning, Organization, Equipment, Training, and Exercises), which is a non-linear process of emergency management planning and part of the FEMA Threat Hazard Identification and Risk Assessment (THIRA) (FEMA 2009; FEMA 2013). This process consists of emergency managers, planners, stakeholders (public and private), and subject matter experts tasked with developing the most likely hazards to affect the area. This encompassing approach establishes the community participation (public and private), necessary to develop a suitable emergency operations plan – a general plan of primary and secondary responsibilities that will mitigate the impacts of identified hazards and risks (FEMA 2009; Smith and Birkland 2012; FEMA 2013).

An essential criterion of the planning process is that it is guided by the contemporary "*science of disaster*" (Phillips, Neal, and Webb 2012:219). Unfortunately, planning is often overlooked due to multiple conflicting variables that include a lack of financial resources, time, specialized training, and competing priorities. In lesser developed nations, a primary focus is on where meals and water are to resourced the next day (Tierney, Lindell, and Perry 2001; Phillips, Neal, and Webb 2012) thus it is not a surprise that such planning is not done. Regardless, planning is required to identify deficiencies and development of an improvement plan to close identified gaps.

Planning for disasters and catastrophes occurs at various levels. The most basic level is at the individual household level, followed by community, state, national, and international levels. The primary focus of the planning efforts consists of life safety, incident stabilization, protection of property, and the revitalization of damaged public infrastructure, environmental, and cultural elements. Planning is a never ending process due to the rotation of officials in planning positions, transient populations, technological changes, code enforcement, and land use/planning changes (Phillips, Neal, and Webb 2012). Planning is paramount to the success of the other, overlapping phases of emergency management, and requires a continuous generalized, flexible, and coordinated focus (Phillips, Neal, and Webb 2012).

Response Phase of Emergency Management

The response phase has several definitions within the research literature. The National Governor's Association met in 1979 and defined response as "*…the emergency assistance for casualties…seek to reduce the probability of secondary damage and to speed recovery expectations*" (National Governor's Association 1979:13; Phillips, Neal, Webb 2012). Tierney, Lindell, and Perry (2001:81) define response as "*actions taken at the tome disaster strikes that are intended to reduce threats to life safety, care for the victims and to contain secondary hazards and community losses*." FEMA defines response as: "*Response includes activities to address the immediate and short-term actions to preserve life, property, environment, and the social, economic, and political structure of the community. Response activities include:*

1. Emergency shelter, housing, food, water and ice;
2. Search and rescue;
3. Emergency medical and mortuary services;
4. Public health and safety;

5. Decontamination following a chemical, biological or radiological attack;
6. Removal of threats to the environment;
7. Emergency restoration of critical services (electric power, water, sewer, telephone);
8. Transportation, logistics, and other emergency services;
9. Private sector provision of needed goods and services through contracts or donations;
10. Secure crime scene, investigate and collect evidence."
(Blanchard 2007:508).

In fulfilling response duties, first responders focus their efforts on emergency operation center (EOC) activation for coordination and public warning/notification. From the EOC, personnel notify mutual aid partners for resource assistance – staff and equipment – and allocate those resources where they are needed, as well as develop an incident action plan (IAP) – a guide of objectives to mitigate the incident. The EOC provides for smooth interoperable communication, sheltering of IDPs, search and rescue, and health/medical care for the sick and injured. The EOC represents a flexible and decentralized form of adaptive management; one that provides the best possible assistance of the first responders working the event (Phillips, Neal, and Webb 2012). The initial focus of the EOC is response and mitigation of immediate needs. However, EOC planners are working toward the establishment of a transitional recovery plan. Once incident stabilization has been achieved, recovery becomes the focus of the affected jurisdiction.

Recovery Phase of Emergency Management

Long-term recovery – the focus of this thesis – requires a precise definition that is reflective of the whole community. FEMA defines recovery as, "*The implementation of prioritized actions needed to return an organization's processes and support functions to operational stability following an interruption or disaster*" (Blanchard 2007:1025).

Unfortunately, most recovery planning efforts occur post-disaster when emotions are high, the public is demanding action from the government, and hasty decisions are inevitable (Phillips 2016). This frequently leads to poor decision-making outcomes and extended periods of recovery. The core elements of recovery will include debris management, damage assessments, and use of, or development of, a dedicated recovery plan. This is best accomplished with a flexible team and relentless leadership dedication (Phillips, Neal, and Webb 2012; Phillips 2016). Once the core elements have developed, the recovery focus shifts to funding (resources), plan implementation, on-going assessments of the recovery progress, and a final assessment of full recovery as defined by the whole community (Phillips, Neal, and Webb 2012; Phillips 2016).

The international perspective shows that the response phase shares basic similarities to the United States. The key differences are found in ideas of resilience – the ability of a nation to incur the impact of a hazard and recover quickly. Resilience can more readily be found in wealthier nations (e.g., Canada, Australia, Japan, or New Zealand). Lesser developed countries (LDCs) (e.g., Haiti, Turkey, Indonesia, and India) lag in response and as a result incur higher death rates, direct losses to infrastructure, and relatively larger economic losses (Phillips, Neal, Webb 2012). The primary obstacles LDCs face include poverty, poor infrastructure, vulnerable populations, and lack of planning for hazards and risks (e.g., financial constraints, failed states, and increasingly technological hazards).

Recovery occurs in two basic steps, short-term and long-term. Short-term recovery is defined as the restoration of "*vital life support systems to minimum operating standards*" (Phillips 2016:7). Examples include, but are not limited to, power restoration,

basic health services, communications restoration, transportation routes opened, and reestablishing the drinking water distribution system. Long-term recovery "*may continue for some years after a disaster event*" (Philips 2016:7). Recovery is the most important part of emergency management but entertains less planning and focus than direct response obligations. The key to a successful recovery effort is knowledge of hazards and risk (specifically from a research-based perspective and its influence during the development of the comprehensive and integrated emergency management plan (see, Figure 2.5) (Phillips, Neal, and Webb 2012).

[INSERT FIGURE 2.5 ABOUT HERE]

Phases of Emergency Management Overlap

While a complete analysis of the overlap of the emergency management phases and social processes is beyond the scope of this research, it is a topic that requires brief overview to provide an understanding of the recovery process. Recovery is a systematic social process, which evolves over time (Phillips 2016). The system (affected area) is responding to the event (stressor), and demand will eventually exceed the ability and capability of the affected area to respond to the most significant the impact. Demand exceeds the capability paradigm. This tipping point segues to Neal's (1997) argument that the phases of disaster are not linear, they overlap, and provide active, and negative feedback loops based upon the leadership decision-making processes (e.g., a positive feedback process of pro-social behavior may occur following catastrophes by victims and IDPs (Rodriguez et al. 2006; Acosta and Chandra 2009)).

Neal (1997) argues that disaster – emergency management – phases overlap and need clarification theoretically and conceptually (Neal 2013). Simply put, phases of

disaster (emergency) management are necessary for researchers and practitioners to develop research, organize data, and draw conclusions from their analysis. The phases of emergency management are nothing more than a heuristic device for professionals and researchers (Neal 1997:259; Neal 2013:248).

Neal elucidates disaster (emergency) management phases may have some benefits for the organization of resources and possibly improving practitioner's capabilities, but that phases are irrelevant to those affected by the event. Neal identifies eight specific elements supporting his position, 1) all phases of emergency management are mutually inclusive, 2) phases of emergency management are multidimensional, 3) phases should represent social time verse objective time, 4) multiple perceptions of the event should be examined, 5) the culture affected should be reviewed for adjustments to disasters and hazards, 6) the phases of emergency management are tied to social change, 7) phases of emergency management are linked to determinism and/or 8) the phases are not relevant at all (Neal 1997). Neal's arguments are salient to all phases of emergency management, but potentially more useful to the impoverished national context is the topic of event time and social time. A conceptual and theoretical quagmire is created for practitioners and researchers, leaving the affected people in an emergency management abyss. As event and social time exploration continue, the abstract theory, within the research, will begin to clarify.

As examined, a common theme in recovery is the significance of the social process of recovery. This social process is not linear since affected individuals process recovery over different temporal and spatial periods (Nigg 1995; Tierney and Oliver-Smith 2012). The social process does not occur during or after the event occurs, but

before the event impact on the social element. Nigg (1995) quantifies this by looking at how decisions are made pre-event, during the event, and post-event. All communities are made up of subsets of social classes who experience a recovery that differ temporally and spatially, a theme echoed by Neal (1997) and Neal (2013). The literature here is succinct. Reconstruction and development are the dominant modes of recovery in the affected area. The sociological aspect of the event has simply been overlooked (Nigg 1995).

Neal (2013) argues any disruption of the "*rhythm of life*," created by social time – the perception of events – are disrupted until recovery has completed (Neal 2013:250). Specifically, Neal (2013) states people can correlate catastrophic events to calendar and clock time or a more social process. The social process of social time – rhythm of life – involves the inclusion of the social processes of recovery of IDPs (Phillips 2016). The understanding that recovery is not an "*outcome of recovery, but a social process*" of those affected is crucial to understanding the multiple dimensions of recovery, as all phases of emergency management link with each other (Nigg 1995:5).

UNDERSTANDING RECOVERY FROM CATASTROPHE

I have reviewed the phases of emergency management and specifically how they overlap and affect livelihoods and the rhythm of life. I now know that catastrophe recovery is more than reconstruction. Among other things, it includes social processes that are often overlooked in recovery. In the next subsection, I will look at how the local definition of recovery matters and how it shapes the processes of recovery from impact to substantive improvement – recovery to a permanent housing solution. In this instance, the significant area of focus is the development of a framework that can cover the INGO role

in the recovery process (e.g., from reconstruction and the social process to substantive improvement and complete recovery).

The Local Definition of Recovery Matters

Recovery is often synonymous with other words and scholars differ on a succinct definition (Quarantelli 1999; Tierney and Oliver-Smith 2012). While it allows emergency and disaster managers a temporal reference for a particular phase of disaster management, confusion tends to arise over how we should determine the definition and meaning of recovery (Quarantelli 1999). Absent a pre-defined, narrow definition, recovery simply is the return of an affected area to an acceptable level of activity/production (Quarantelli 1999; Tierney and Oliver-Smith 2012).

Many times recovery for a particular context is defined post-event when a series of hastily made decisions tend to take place (Phillips 2016). It is important to define recovery pre-event and to gather input from local stakeholders, including vulnerable populations such as women, those with functional access needs, the elderly, and the impoverished (Smith and Birkland 2012; Tierney and Oliver-Smith 2012; Phillips 2016). The concept is valid and applicable to emergency and disaster manager practitioners. It is also a logical argument and applies to those INGOs delivering aid following catastrophes (Smith and Birkland 2012).

Quarantelli (1999) addresses a variety of references to recovery and covers the need to conceptualize it both operationally and theoretically. Recovery must reference the different perspectives of the victims of the catastrophe. Tierney and Oliver-Smith (2012) illustrate the lack of data and literature on catastrophic recovery and emphasize the creation of suitable Emergency Operations Plans (EOP) that address definitions of

recovery. The best recovery definitions tend to occur when citizens and stakeholder reach a consensus in the pre-event period. Otherwise, a failure to establish key goals and reach them will result. Tierney and Oliver-Smith (2012) offer three examples of recovery failure in 2010: 1) the Haiti earthquake; 2) the British Petroleum oil spill in the Gulf of Mexico, and 3) the devastating flooding in Pakistan.

Quarantelli (1999) describes the recovery process as reconstruction, rehabilitation, restoration, restitution, and finally recovery. In this case, reconstruction is the rebuilding of structures destroyed or damaged by an event (Quarantelli 1999; Tierney and Oliver-Smith 2012). Restoration is the restoring of the affected area to the pre-event condition. Rehabilitation takes place when social capital returns to the affected areas. Restoration those captures the emotional and psychological recovery of victims following the event (Acosta and Chandra 2009; Tierney and Smith 2012). Restitution is the overall return of a sense of normalcy and also relates to legal claims that often are associated with crimes or acts of terrorism (Tierney and Smith 2012).

This research utilizes the *systems theory* (Mileti 1999) perspective that focuses on recovery as the reestablishment of the built environment and the restitution of physical and social environments to a pre-event state (i.e., one that possesses resilience and sustainability). In other words, reconstruction will have occurred, environmental issues have been mitigated, and social capital concerns have been addressed. This can be thought of as the overarching system returning to a normal state and awaiting the next disruption (Tierney and Oliver-Smith 2012).

Immediate Needs and Short Term Recovery

Short-term recovery begins in the first few minutes, hours and days that follow a disaster or catastrophe event (Tierney and Oliver-Smith 2012). According to Lindell (2013), the primary goals during the first hours are incident stabilization, restoration toward the norm, and restoration of community activities as they were before impact. The key elements of short-term recovery include impact area security, sheltering, and restoring damaged or destroyed infrastructure (Quarantelli 2000; Tierney and Oliver-Smith 2012; Lindell 2013). Most citizens rely on the government of the affected state to plan and respond in this short term envelope (Coppola 2011). This is critical regarding the existing structures on the site and tasks such as demolition, code enforcement, and building inspections will take place.

The government also needs to coordinate spontaneous volunteers, donations management, and other incoming disaster aid (Lindell 2013; Phillips 2016). Very few residents experience this type of planning in third-world developing countries, and it may not be present in more developed economies either. The lack of planning and intervention results from a lack of physical, financial, and willingness to prepare and plan for disasters and catastrophes. Examples of this lack of preparation can be found in the 2004 Indian Ocean earthquake and tsunami, Hurricane Katrina in the United States in 2005, and the Haiti earthquake in 2010 (Coppola 2011).

Another critical short-term recovery activity is rapid debris clearance from roadways to allow access for first responders. The direct debris is from collapsed buildings, flora, fauna, and human remains, but the majority of the wreckage is from the built environment (Quarantelli 2000). Rapid clearance is a primary focus may include

more than simply pushing debris to the side of a road. The quick removal of debris allows access for first responders to search and rescue victims (Tierney and Oliver-Smith 2012; Phillips 2016). The first response effort, often coordinated and conducted by survivors (new groups), typically occurs before the arrival of first responders (Quarantelli 1996; Neal 2004; Roriguez et al. 2006).

The management of these activities is usually assigned to local emergency and social services, but a catastrophic event will prohibit such a local response (Quarantelli 2000; Coppola 2011). Disasters are typically followed by a significant convergence of first responders and aid organizations (Phillips 2016). In catastrophes, however, convergence is not possible for several days, if at all, and it reveals itself in the form of competition for resources in the affected area and inequity in aid relief delivery from the international response (Quarantelli 2000).

Short Term Recovery – Emergency Versus Temporary Sheltering

The literature has several definitions of emergency shelter after an event for IDPs. The first is the emergency shelter period, which lasts from hours to overnight. Emergency sheltering occurs when IDPs seek actual or potential shelter away from their permanent domicile (Quarantelli 1982). The International Recovery Platform (IRP) and United Nations Development Program (UNDP) define emergency shelter as spontaneous sheltering. Spontaneous sheltering is the seeking of a haven for those displaced during the first 72 hours of an event. Regardless of which definition use, this form of sheltering does not undertake feeding or the provision of basic life-sustaining resources (Quarantelli 1982, UNDP 2010; Phillips 2016).

There is a blurred line between emergency and temporary sheltering, and they can easily be confused. In disasters, temporary sheltering usually takes place when IDPs seek out the help of nearby family and friends. However, following a catastrophic impact this possibility is not an option due to the large geographic area affected. Temporary shelters are for those displaced for short or temporary unexpected stays. The UNDP define temporary shelter as emergency shelter lasting the first 60 days post event. Both definitions cover feeding and providing basic life sustaining resources for those displaced (Quarantelli 1982; Quarantelli 1995; UNDP 2010; Phillips 2016).

In addition to providing shelter and care for IDPs, vulnerable populations, pets, and IDPs with special medical and health needs require assistance. General sheltering sites are not necessarily equipped to handle the functional access and needs of IDPs. Therefore, consideration of these requirements is necessary for the planning phase to have resources dedicated to the problem. INGOs, NGOS, and Faith Based Organizations (FBO) are first organizations that can and do provide those resources and should be included in the planning and response phases of emergency management (United Nations 2008; UNDP 2010; Phillips 2016).

SUBSTANTIVE IMPROVEMENT – LONG TERM RECOVERY

As recovery transitions from emergency and temporary sheltering, five primary objectives or goals become the focus of longer term recovery. The ultimate aim at this stage is the reestablishment of permanent housing for those displaced by the catastrophic event. The permanent housing solution has to be sustainable by the occupants. It also has to be hazard resilient, meaning that it anticipates or mitigates future disaster risks. The

final two goals are dependent on the social norms of the area affected. The permanent housing solution must be culturally acceptable, not to the developer or donor, but to the stakeholders affected by the event. Moreover, it should do no harm to the environment (environment-friendly construction) (UNDP 2010; Phillips 2016).

Lindell (2013) indicates the long-term recovery is lengthy and includes a multi-discipline and multi-dimensional response from organizations. The interested organizations consider mitigation strategies – hazard source and land use planning – and select building construction practices that result in a hazard resilient recovery.
Long term recovery is only possible with economic development and funding streams – public and private – with historical and cultural preservation for relevant areas. Once the funding streams begin to flow, the mobilization of resources, such as personnel and equipment, begins and the process of recovery begins. As it continues, internal and external direction, control, and coordination should occur among the recovery organizations to ensure programs are succeeding and are cost effective. However, many times this does not occur and accountability and transparency become an afterthought within the recovery process. To prevent this lack of responsibility and oversight, Lindell (2013) suggests that legal counsel, independent auditors, and administrative should help support and document the progress of recovery at different temporal periods (Lindell 2013).

Long-Term Recovery – Temporary/Transitional Housing

Temporary or transitional, housing is the transition between emergency/temporary shelter to the development of housing arrangements for IDPs. The UNDP Shelter Guidance Document (2010) defines transitional sheltering (housing) as a "*habitable*

covered living space and secure, healthy living environment with the privacy and dignity to those within it during the period between a conflict or natural disaster and the achievement of a durable shelter solution" (UNDP 2010:14). The focus in this process of recovery is on returning IDP livelihoods to a sense of normalcy or routine. In temporary housing, IDPs may reside in mobile homes, leased apartments or safe/secure homes, or tent camps (e.g. Port au Prince, Haiti). The UNDP (2010), identify this as interim housing and it lasts from one-year post event to complete recovery to permanent housing (Quarantelli 1982; UNDP 2010; Phillips 2016). Many IDPs in Port au Prince continue to remain in the tempory housing (i.e., tent camps) over five years after the earthquake (International Organization for Migration 2015).

The UNDP offers four options for transitional sheltering (housing) with each having positive and negatives. The first is known as an "*In-Situ*" strategy for temporary/transitional shelters (UNDP:19). This sheltering type allows the IDPs to reside on or near their property during recovery. This provides less disruption to routine, allows for IDP participation in the recovery effort and permanent structure design, as well as maintaining the livelihood of the IDPs. During repair or reconstruction, the IDPs can also acquire additional land, if needed, for construction. "*In Situ*" sheltering is often seen as the sensible solution to longer term recovery, but it provides fewer creature comforts for the IDPs (UNDP 2010:19). The second alternative involves the conversion an existing public facility to residential use. The specifications can be planned, and the facility converted to provide for a routine atmosphere. Costs for this housing alternative can be prohibitive (UNDP 2010).

The remaining methods of recovery are passive and boil down to not providing temporary structure and allowing IDPs to locate their shelter. These shelter locations often are found with family or friends, long term rentals, long term motel/hotel stays, or long-term emergency shelter stays. This may be effective for extremely short-term sheltering, but will not suffice in a catastrophic event environment.

A less efficient but frequently used strategy is to create "*congregate*" encampments (UNDP 2010:27). This option is often used in less developed nations, and these encampments may bring more negative implications to the IDPs than positive results (see, Figure 2.6) A primary issue with these tent cities is the psychological stigma of being associated with the camps. It is also is exceedingly difficult for the host organization to provide all of the essential needs of the IDPs staying in the shelter for any length of time. This means that the camps begin ok but devolve over time. The strategy also has substantive problems on critical aspects of long-term recovery. Encampments typically prohibit the participation of the IDP community in recovery design and reconstruction process (e.g., their involvement will be based on location and access to the damaged or destroyed homes). Although encampments have some adverse effects, it clearly is the most cost efficient path for responding governments and INGOs. Thus, it is frequently used during recovery operations (UNDP 2010).

[INSERT FIGURE 2.6 ABOUT HERE]

Long-Term Recovery – Permanent Housing

Permanent housing ultimately is the accomplishment that marks recovery. Permanent housing allows IDPs to return to their repaired/reconstructed home in the same neighborhood, albeit one that hopefully is more resilient to anticipated hazards.

Alternatively, IDPs may be relocated to a home as part of an appropriate mitigation plan to lessen the impact of future disasters. Quarantelli and the UNDP do not make a clear distinction between the definition of the final step in the housing recovery. Unlike sheltering, a sharp demarcation line between temporary and permanent housing does not exist. During this period, IDPs are returning to their homes or new homes depending upon the mitigation program. They also are returning to their livelihoods and establishing social ties. A routine of normalcy is reestablished, and the rhythm of life resumes (Quarantelli 1982; Oliver-Smith 1990; Burke and Afnan 2005; United Nations 2008; UNDP 2010; Zanotti 2010; Tierney and Oliver-Smith 2012; Neal 2013; International Organization for Migration 2015; Phillips 2016).

HOUSING RECOVERY FOLLOWING CATASTROPHE EVENTS

Recovery following a catastrophic event occurs in multiple stages and along different theoretical dimensions. The need for a local definition and its importance in the affected community's definition of what recovery looks like makes it a very complex phenomenon. The process has some inherent conflicts, such as those that exist between donor/INGO visions and the stakeholders (i.e., differences on what recovery should look like post event). Assessment and identification of immediate needs must occur, with an emphasis on vulnerable populations, women, children, and the impoverished (Tierney and Oliver-Smith 2012). The recovery process is further complicated by the differences found between event time and social time and the overlapping phases of emergency management that eventually result in IDPs returning to permanent homes.

Shelter to Permanent Housing Transition Process

The transition process from sheltering to permanent housing is a delicate and emotional, social process of recovery. The focus should always remain on the personal safety of those involved in recovery efforts and IDPs. This can be achieved by defining targeted outcomes within the recovery plan that should be developed pre-disaster and modified post-disaster. If targeted outcomes have not been defined to match the definition of recovery, then issues may arise.

The critical first step of the housing recovery is to identify the leader (leadership team) that is going to implement the recovery plan. This person (team) will have to determine the partners and donors necessary to provide the funding mechanism for substantive recovery (Special Envoy to Haiti 2012). The core element of leadership that appears in the literature on recovery is the selection of a dedicated and relentless individual who can adapt and overcome the obstacles that will be encountered during the recovery effort (UNDP 2010; Phillips 2016).

The United Nations has developed a toolkit to assist INGOs and other organizations in their recovery efforts. This document is the LENNS toolkit and provides a flowchart and checklist guide for recovery efforts (United Nations 2009). A similar document, the IFRC shelter kit, is available from the International Federation of the Red Cross (IFRC 2009). These documents serve as reference guides for the recovery team from the sheltering to permanent housing. A solid process flow chart (see, Figure 2.7) is provided by Jha et al. (2010).

[INSERT FIGURE 2.7 ABOUT HERE]

Debris Management

Debris management is an early part of the recovery process and requires pre-disaster planning (Quarantelli 1999). Most communities spend time, energy, and funding on emergency response and limited efforts are put toward debris management pre-planning, which ends up being critical (Brown 2011; Phillips 2016). Debris management is "*…the clearing and disposal of waste generated by disasters*" (McEntire 2006:23). Debris consists of aggregates, vegetation, construction and demolition materials, and white goods (refrigerators, washers and dryers, and freezers) (Phillips 2016).

Debris management is bifurcated into two phases. Phase I is emergency clearance allowing access to the area for first responders. Phase I debris management allows for life safety response by emergency services and occurs during the response phase of emergency management (Phillips 2016). Typically, Phase I takes place during the day one to day three post-event impact (Fetter and Rakes 2012; Phillips 2016).

Phase II is the sorting of debris for proper disposal. Phase II is long-term debris management and involves the separation of rubble according to the community's pre- or post-debris master plan (Ekici et al. 2009; Fetter and Rakes 2012). This phase can last months to years depending on the complexity of the event (Fetter and Rakes 2012; Phillips 2016). Another significant consideration to be made for recovery planning and organizations is the subsequent use of debris as raw materials for the repair and reconstruction process. This has been a successful strategy for resource procurement in catastrophe settings (UNDP 2010). The final process is the removal of debris that is hazardous or of no use to the recovery process. Specially designed disposal methods are required to protect the environment from this form of debris, and it should be addressed

pre- or post-event (UNDP 2010; Phillips 2016).

Home Repair/Reconstruction and Construction Site Selection

The recovery organizations first decision often revolves around site selection and the future hazards that may be present within the surrounding area (IFRC 2009). The primary goal is to determine if IDPs can build back safely in the same area, or if that is not an option, an alternative site location must be explored. This decision is hazard/risk dependent, and the final location is crucial regarding mitigation. Obviously, if there have been repeated losses at the same place, relocating the affected area is the only option (UNDP 2010; Phillips 2016).

If the choice is to build back, on-site, then some positive synergies exist. A critical element is the maintenance of the social group cohort. Building back on site allows IDPs to shelter on-site, or nearby, and participate in the reconstruction and overall design process. This alternative also provides easy access to existing infrastructure and alleviates the costs of building infrastructure to meet the needs of IDPs (e.g. water distribution systems, sanitary systems, and access to the electrical grid) (UNDP 2010).

If relocation is the only option, numerous factors have to be considered (Dikmen 2006; UNDP 2010; Hooper 2015). The initial determination is whether relocation is a viable option for the area (Dikmen 2006; UNDP 2010; Hooper 2015). The second most critical decision involved land acquisition and the ability to determine land ownership rights. In third world developing countries, land tenure records are often not available and when so can be inaccurate (UNDP 2010).

These complex decisions are best made pre-event, but most jurisdictions do not provide planning on land tenure, land use, or relocation in the emergency operation plans.

If no pre-plan exists, a site assessment and relocation plan is required to relocate the affected area. This increases cost and slows the recovery efforts, thus increasing public pressure on government leadership and organizations to do something (even if it is wrong). Subject matter experts (SMEs) and personnel involved in technical assistance sub-specialties can assist in all facets of site location to relocation.

Regardless, a regional and whole community approach should involve all stakeholders in the relocation planning if it is pre- or post-event. The best institution to guide this process is the government, but as we have seen in Haiti, corruption and a failed state environments provide a weak foundation for recovery that often stalls. The delay and collapse of the recovery process are not necessarily due to a single variable but can be tied back to multiple variables associated with the failed state.

Reconstruction Program Implementation

Recovery is a social process that requires an orderly structure to be successful. Program implementation is a crucial element as well as the ability to show substantive and visible efforts of the recovery process through proper management practices. The method includes structure design, resourcing laborers and materials, site selection, and subject matter experts (SME's) as well as Technical Assistance (TA), and the involvement of local stakeholders (e.g., 95% of the reconstruction projects worldwide are constructed with owner input (LENNS 2009; UNPD 2010:54; Phillips 2016)).

There are two conceptual methods of program implementation in use around the world government execution and original implementation. These approaches are broken down into four particular areas, and the implementation elements include: 1) owner and community drove reconstruction; 2) government/donor/INGO oriented reconstruction,

3)contractor drove reconstruction; and 4) a hybrid method that consists of the first three methods. Each of the methods has positive and negative attributes of the recovery process. The determinants of method selection typically will include variables such as the area affected, availability of materials and resources, institutional stability, government stability, the skillset of the labor pool, and the involvement of the IDPs within their recovery effort (UNDP 2010). Regardless of approach, stakeholders must be involved in the effort of reconstruction and those organizations involved must establish a balance of coordination and collaboration for reconstruction success (UNDP 2010).

When owners, or the community, drive implementation it can create an environment of robust, relentless, and decisive local leadership to drive the reconstruction process. In this situation, the owner or community are provided a funding stream and must manage the whole rebuilding process. They hire contractors, SMEs, and additional TA may be procured at the owner's request. This often is an efficient method as it provides stakeholders the ability to implement, manage, and be involved in the reconstruction and recovery of an impact area (UNDP 2010).

Several factors affect the owner/community-driven implementation methods. Keys to the success of this approach include the available labor pool, the simplicity of construction design, limited completion of recovery pressure, and elements of self-initiative and reliance. Other factors to be considered are items like the ability of the owner/community to match the overall recovery needs of the impacted area, future concerns over resilience and hazard reduction, and the idiosyncratic use of SMEs and TA personnel (UNDP 2010; Phillips 2016). The potential for low overhead costs and stakeholder involvement act to improve stakeholder satisfaction with recovery efforts.

This, in turn, results in a shorter period of displacement and return to permanent housing as well as greater IDP occupancy rates. All of these characteristics add pride to the recovery process, which positively affects psychological and sociological recovery (UNDP 2010).

When successful, the owner/community method is valuable as it allows for sustainable housing and the preservation of local culture. Unfortunately, this implementation method will not succeed in some areas of the world, especially those found in lesser developed nations. Issues of extreme poverty, high population density, and an inadequate labor pool (i.e., one that does not possess the numbers and knowledge necessary to construct housing) adversely affect the recovery outcome. Other recovery priorities also present limitations such as the inability to build back with resilience and not reducing the future risk to the area (UNDP 2010).

Government driven programs are the fastest and easiest, as long as it is competent and possesses the knowledge base to initiate and complete complex construction efforts. The government can approach this by taking full control of the reconstruction or provide the authority for an organization to manage the program implementation (e.g. INGOs, NGOs, FBOS, and private organizations). In Haiti's case, the failed state and corruption prevented the international community from supporting this effort and existing organizations in Haiti did not possess the knowledge base to leave the program implementation (UNDP 2010; Ramachandran and Walz 2012). In most cases, when the government manages program implementation there is little input from stakeholders (IDPs affected) leading to limited satisfaction with the reconstruction effort.

The arguments against governmental implementation come from different corners. In some circumstances, affected IDPs will refuse to cooperate with the government, especially if it is an authoritarian context that engenders trust problems. Other concerns involve the ability to affect the physical environment. Governments may be unable to secure the available labor pool or knowledge base necessary for a successful recovery effort (e.g., failed states/economies).

In governmental implementation efforts, it is critical for the socio-political and economic climate to be in the balance so that coordination and collaboration (meshing) integration occur seamlessly. If this can happen, then it creates a "*complete and aligned*" mechanism of program implementation, thus providing the best scenario for reconstruction success (UNDP 2010:53).

The third method of program implementation involves hired contractors with funding provided by specific donors and INGOs. This strategy eliminates the need for a construction knowledge base. However, it loses the valuable synergy of training the local labor pool and improving the future knowledge base that is critical for risk reduction. Outside contractors, especially those who are experienced in catastrophe recovery, bring communication and coordination experience that may help stakeholders avoid confusion in the process. This is especially true when it comes to the value of hazard and risk reduction construction (Chandra and Acosta 2009; UNDP 2010).

Contractor driven implementation is dependent on donor and INGO funding streams. Thus budget changes can occur that delay the program and keep IDPs in shelters for longer periods. However, experienced contractors produce faster construction times, less fatigue on the local labor pool, and they have the ability to overcome problems

associated with the lack of construction knowledge within the local labor pool. It can also prohibit stakeholder involvement under the right circumstances. The "*one size fits all*" construction pitfall often leaves unmet IDP needs, and does not give adequate consideration to issues of diversity (UNDP 2010:54). The use of multiple contractors may offer some improvements in this regard.

Contracting, however, has some serious pitfalls. Hired contractors are often blind to issues of local culture and heritage, and that can result in construction that is not compatible with the affected area – materials that are not right for the climate or that are not sustainable by the homeowner/occupant (UNDP 2010:54). Another issue is the profit motives of hired contractors within a disaster/catastrophe setting. Contractors can and do cut corners during construction to fatten their margins, and those cutbacks affect sustainability and resiliency. Thus contracting approaches bring the need for independent oversight, INGO accountability, and transparency, as well as a lack of local knowledge on construction material selection.

The final method is a hybrid method of program implementation. This method applies a portion each of the above implementation methods. The key elements of this approach focus on the inherent strength of the community, government, and contractor driven implementation. The hybrid method involves the stakeholders (affected IDPs) in the reconstruction process, but intentionally avoids problems associated with missing labor skill sets. In these instances, the hybrid method relies on reconstruction SMEs and TAs to provide the needed skill set to achieve recovery with construction standards and appropriate site selection.

A hybrid method is a collaborative approach that allows training programs of the local labor pool to build upon their individual skillsets for future sustainability (UNDP 2010; Smith and Birkland 2012). Overall this increases the efficacy of reconstruction and improves IDP satisfaction regarding the recovery effort. Specifically, it helps target knowledgeable, skilled labor toward the affected area and uses the appropriate resources and materials for the region of the world (climate and culture). This makes available domestic resources that aid in resilience and hazard reduction.

Most importantly, the community approach to recovery involves the stakeholders. It provides a one-stop shop for resources with collaboration, and a cultivates the rapport and trust of the people located in the affected area. The final, and crucial element, is the formation of a stakeholder committee to provide input and oversight and to interface with governmental actors. The implementation, oversight, and involvement of local stakeholders is paramount to a fruitful and substantive recovery from a catastrophic impact (UNDP 2010).

Culturally Acceptable Housing Design and Construction

The building design is a critical element for reconstruction. Reconstructed houses must remain similar to pre-event conditions, account for expanding families, provide some variety, and be hazard resistance (Phillips 2016). Housing design must serve two roles – short term viability (sheltering) and long-term housing. The primary elements of appropriate building design include external appearance, basic layout, functionality, resilience to future hazards, climate adaptability, and sustainability based on risk (geography, geology, hydrology) (UNDP 2010).

The design of the reconstructed homes requires adaptation to the imminent hazards and risks of the impacted area (Phillips 2016). This also takes into account the need for more stringent building codes and the build-back-better philosophy (UNDP 2010). One recommended practice for the impacted area is to create a compliance code document and a catalog of construction design. These documents allow two-way communication and understanding between the IDP stakeholders and the organization chosen for implementation (UNDP 2010). Each of these documents should be publicly available, and their location made known through resource centers and public education.

As discussed earlier, local stakeholder involvement (especially vulnerable populations) is key to a successful recovery (Phillips 2016). A local stakeholder committee can streamline decision-making and provide local cultural guidance. That accomplishes multiple goals, including the preservation of local culture, history, heritage, and the maintenance of vernacular construction (e.g., the use of construction material locally available). This leads to the two options of how to build the structures back, engineered or non-engineered.

Engineered structures use SMEs and TA to construct homes that can withstand future impacts from the hazards and risks faced within the area. This method also takes into account current codes or more stringent codes that are often implemented following event impact. This approach is achieved by trained contractors or contractors who provide assistance to the owner/community, government, or through a hybrid method of implementation. If properly done, engineered structures can also maintain the natural appeal of the local culture and maintain resiliency to external forces (UNDP 2010).

Non-engineered structures, like those found in Haiti following the earthquake, are constructed by local labor who do not necessarily possess the ability to ensure hazard and risk resilience. Marshall et al. (2011) found non-engineered, vernacular structures in Port au Prince and Leogane, collapsed due to poor vernacular materials and craftsmanship. The inherited knowledge of the laborers constructing the homes may provide some measure of natural resistance to hazards and risks, but that may or may not be enough for future threats. Typically, the application of contemporary construction methods and building materials must be applied for true resilience to be accomplished.

The primary issues with hazard-resistant structures are costs and the altered appearance of the housing landscape. Structures built to withstand external forces and risks simply cost more. Construction materials are more expensive and may not be locally available or culturally suitable to the area. Also, SMEs and TA assistance are required if the local labor pool does not possess the skill set necessary for construction. After construction is completed, the future cost of maintenance is also needed, and occupants should not be pushed beyond their financial means to keep up the structure (UNDP 2010).

Architectural design should look at the history of disaster in the affected area and apply lessons learned during the recovery process. This applies to temporary sheltering and the ultimate permanent housing solution. Some attention is necessary for the socio-cultural aspects of the area, and those are best learned from local stakeholders. Seemingly little things, like doors and windows, can drive the difference between stakeholder satisfaction and dissatisfaction. If recovery is made correctly, it is only done once. It is

accepted by the local culture and resembles what the area looked like pre-impact, but resilient and sustainable.

Housing Reconstruction Materials and Resources

The selection of proper reconstruction materials affects eventual recovery outcomes and the local economy of the affected area. Seven considerations can be found in this selection of materials: 1) quality; 2) cost; 3) culturally appropriateness' 4) local knowledge on resources; 5) local availability; 6) economic externalities; and 7) environmental impact (UNDP 2010).

Quality and cost of reconstruction material are directly related. Poor quality materials will not withstand time or the external forces of future events. The quality of construction materials is often the result of poor craftsmanship during manufacture or the cost cutting off suppliers to increase profit margins, both of which are likely during the high demand caused by disaster events. Therefore, an analysis of the costs and benefit must occur before the decision is made to use of locally available construction materials. This analysis should look at the overall cost of program implementation to determine if it is sustainable and can be funded by one of the previously mentioned methods of implementation. If the costs do outweigh the local benefit, then the implementing organization must look beyond the domestic market to procure appropriate reconstruction materials (UNDP 2010).

Building materials must be suitable for the affected area. Climate degradation of the material is the primary concern for material, especially in tropical climates where high heat, humidity, and salinity content leads to rapid deterioration. Insects and other vermin must be included in determinations made by program implementation

organizations. The final aspect of material is the cultural acceptance of the material by the IDPs and occupants of the reconstructed home. Local awareness of the reconstruction material is invaluable, especially for organizations not familiar with traditional construction methodologies and material use in the affected area (UNDP 2010).

A significant concern, following catastrophes, is the availability of the reconstruction material and existing competition for the material from other organizations. The supply and the demand for construction materials are exceeded following catastrophes, which requires materials to be imported/transported to the affected area. This affects not only the cost, but local acceptability, and the resilience of the material to local environmental effects. This tends to create a future dependence on foreign materials for future maintenance. The best method, if possible and available, is the use of high-quality construction material from the affected. This can be potentially achieved with SMEs and TA from contemporary construction personnel (UDNP 2010; Marshall et al. 2011).

If a local material is available and can be of use, it does provide a positive impact on the local economy by providing a cash infusion that can generate jobs for victims of the event. The reverse is also true. If the material is not available or of poor quality, Marshall et al. (2011) suggest that it has the potential to destroy local building material businesses and reduce available jobs. In some instances, foreign construction material has forced the closure of local firms. This causes a further drag on the economy and adversely affects the livelihoods of those affected by a catastrophic event.

Disaster settings also bring out the potential for insect infested construction material and the importation of insects and vermin not indigenous to the affected area.

The program implementing organization must be familiar with these issues and gain local knowledge from stakeholders to get a biological/environmental understanding of material sourcing. A proper debris management program can aid this process by reusing debris and recycling clean, woody debris and aggregate for the reconstruction process (Phillips 2016).

Use of Local Labor in Repair/Reconstruction

A delicate economic balance must be maintained when identifying the local labor pool following a catastrophe. All persons can provide positive input to the recovery process. This includes skilled construction workers, volunteers, skilled labor in demolishing damage structures, recycling professionals, and SMEs. Regardless of skilled or unskilled labor, a huge demand exists following catastrophe recovery (UNDP 2010; Phillips 2016).

The short and long-term impact on existing businesses and the labor pool requires thoughtful analysis. First, evaluations of the number of people capable of providing labor for the reconstruction program must be conducted. Second, the implementing organziations must establish a competitive wage – one high enough to gather sufficient workers, but not high enough to bring in foreign laborers. Reconstruction jobs can help establish a damaged financial market and help bolster business profits among those affected. However, if the wage is too high it will tend to draw in international workers, who have special skills, and they will take the jobs from the local labor pool. This will apply further pressure on an already fragile economy.

Three techniques are used for labor sourcing following a catastrophe. The first is food for work. A reconstruction implementation organization will hire a local labor pool

and in return for labor will provide food for their family. This accomplishes two things, it provides local skilled workers with a job and self-worth, as well as providing some of the basic essential elements of survival for those affected. The community, as a whole, also benefits as they begin to see the visible signs of recovery associated with the efforts of their family, friends, and neighbors. This is a part of the social and psychological healing of the affected area. It will not be possible for all to participate, however, and vulnerable populations must be covered by food aid programs (UNDP 2010).

The second strategy is cash for work. This program provides a base salary for the work the laborer provides. It infuses cash directly into the local economy for the laborer to support themselves and their family. Again, this brings a sense of self-worth, positively impacts the IDPs livelihoods and affects the social and psychological healing (UNDP 2010; Special Envoy to Haiti 2012). This method is consonant as it tends to replace laborers' jobs that were lost in the disaster event.

Owner labor is the final method. The owners of homes for reconstruction are provided construction materials and the technical assistance necessary to begin rebuilding their homes. This reduces overall recovery costs while accomplishing the same things as the previous two concepts. The drawback is the lack of stimulus in the form of cash and liquidity. Cash flow is a serious problem in these settings, and monetary support is necessary for the basic elements of survival for laborers and their families (food, water, shelter, heat, and security) (UNDP 2010).

[INSERT FIGURE 2.7 ABOUT HERE]

ROLES OF INGOs IN RECOVERY FROM CATASTROPHE

To this point in the research, catastrophe recovery discussions revolved around specific processes for those organizations tasked with implementing response and recovery activities (i.e., from emergency sheltering to permanent housing to create substantial recovery). Now I am going to segue to the organizational level discuss the role of INGOs following global catastrophes. In this section, I will examine the INGO role in catastrophe response, aid relief, and the recovery process.

International Non-Governmental Organizations Defined

Tornquist-Chesnier (2004:253) describe INGOs as "…*private, non-profit associations that cannot exercise public prerogative.*" An additional definition describes INGOs as "…*an organization independent of the government whose primary mission is not commercial but focuses on social, cultural, educational, and other types of issues*" (Coppola 2011:). Regardless of definition, INGOs play critical roles in food delivery, temporary sheltering, and transitional housing, sewer and sanitation, and primary or secondary medical care (Natsios 1995). INGOs also are important in reestablishing the social, economic, and development sectors following disaster events (Chandra and Acosta 2009).

INGOs have existed since the early nineteenth century (Yves-Saunier 2009; Hannigan 2012). The first legal non-governmental (NGO) recognition was formed in Belgium in 1919. However, since the 1970's, NGO have become major players in development (reconstruction), human rights, environment (recovery), and humanitarian relief efforts (Yves-Saunier 2009; Hannigan 2012).

INGO Structure and Framework in the Global Landscape

The distinction between NGOs and INGOs occurred in Strasbourg, France on April 24, 1996, and is associated with an international legal statute for NGOs operating internationally. The European Convention on the Recognition of the Legal Personality of International INGOs provides the framework for this distinction. INGOs, operating internationally, do so under the international law. The law sets rules developed by member states of the United Nations to regulate relationships and interactions of INGOs in sovereign nations following catastrophes. The public law also applies to governmental actors and non-state actors. The influence of non-state actors on negotiations and monitoring is increasing with the rapid growth of INGOs over past several decades (Tornquist-Chesnier 2004). International law provides the legal framework that INGOs operate (Coppola 2011; Natsios 1995). Specifically, Article 71 of the UN charter allows the:

> "… [*Economic and Social Council may make suitable arrangements for consultation with non-governmental organizations, which are concerned with matters within its competence. Such arrangements may be made with international organizations and, where appropriate, with national organizations after consultation with the Member of the United Nations concerned.*]" (United Nations n.d.).

Four primary units of the United Nations govern INGOs and their aid relief efforts abroad. These first units are the World Food Program, the Office of the United Nations High Commissioner for Refugees, the United Nations Children's Fund (UNICEF), and the United Nations Development Program (UNDP), with the latter being lackluster in performance and quality (Natsios 1995). The United Nations created the Department of Humanitarian Affairs (DHA), in 1991, to oversee worldwide humanitarian responses to manage the international relief aid more efficiently (Natsios 1995).

Modern day INGOs, developed after 1945, operate under the auspices of the United Nations (UN) (Hannigan 2012). The crucial element of the INGO response is the direct request from the sovereign nation for assistance from the international community, including INGOs. The request typically originates from the United Nations with an appeal for aid and assistance to the affected nation (Cliffe and Luckham 1999). The management of INGO services is via a board of directors, with term limits to create diversity, guided by the mandates and vision of the individual mission and vision of the organization. These boards, often historically based, provide an essential guide for fundraising and obtaining donations to meet organizational goals and objectives (Natsios 1995). Foreign INGOs works under the same premise as the United States-based NGOs but differ slightly in scope and practice.

The rapid growth of INGOs in the international community creates several issues and concerns. The most significant problem resides in the failure of international law to accommodate the rapid INGO expansion, allowing INGOs to provide direct influence in drafting and monitoring organizational norms and assessments (Tornquist-Chesnier 2004). The continued lack of accountability and transparency to the public are relatively consistent issues withing these groups. Donors frequently are unable to determine how the INGO applies their donations, especially if the donor does not tie specific criteria for application of their funding (Tornquist-Chesnier 2004).

INGO Funding Mechanisms and Methods

The act of donation to INGOs who participate in disaster and catastrophe response is an altruistic behavior for many people. Phillips (2016) separates the motives for individuals contributions into three primary categories: individual altruism, collective

altruism, and situational altruism (Phillips 2016:379-380). Individual altruism occurs when donors target cases they determine to be worthy (e.g., feeding hungry children worldwide). Collective altruism is a social arrangement where a jurisdiction or social element of society decides to take care of each other independent of external funding (e.g., a particular need in a community such as a family experiencing extraordinary medical expenses from an illness or injury). The final altruistic focus is situational and focuses specifically on the impact of disasters and catastrophes worldwide (e.g., the SMS text message drive by the ARC following the 2010 Haiti earthquake).

INGOs are funded through a multitude of methods and mechanisms. The most prominent methods include donations, fundraisers/drives, government grants, bilateral agreements, multilateral agreements, governmental pledges, and other philanthropic and organizational foundations. Larger INGOs, such as the America Red Cross, Catholic Charities, Oxfam International, Doctors Without Borders, have continuous fundraising methods throughout the year. Smaller INGOs are disaster and catastrophe centric in their fundraising efforts.

Donations and fundraisers/drives are reasonably straight forward and are sponsored by the INGO. They focus on a specific time of year – peak disaster and catastrophe seasons worldwide – to ensure they have adequate resources to respond to future recovery efforts. Large scale donors may have specific programs they ask the INGO to focus on and thus tie specific criteria to the contribution. Otherwise, donations may target general aspects of response and recovery including humanitarian relief, hazard, and risk reduction, reconstruction and development, medical and health needs, and vector-borne illness reduction.

INGOs are successful at raising millions of dollars each year for these types of missions (Coppola 2011; Hannigan 2012; Ramachandran and Walz, 2012; Phillips 2016). A clear example can be found with the Haiti earthquake catastrophe when the American Red Cross (ARC) raised approximately $32 million dollars with $10 donations to their organization via short message service (SMS) texting via mobile devices (Ramachandran and Walz 2012).

INGOs also apply for and receive grants and contracts through governmental agencies. Subsidies and contracts are tied to a specific area of response and recovery. However, grants and contracts have many bureaucratic elements within their underlying agreements. INGOs must fulfill these different criteria and maintain the proper reporting and compliance with agreements to maintain funding streams. An example of a grant or contract is the application and receipt of a grant from the United States Agency for International Development (USAID) (ARC 2010; ARC 2011). ARC received funds from USAID for programs and projects in Hait to rebuild housing, infrastructure, hospitals/health clinics, and other destroyed critical infrastructure and key resources (CI/KR) (ARC 2010; ARC 2011; IFRC 2010; Special Envoy to Haiti 2012). Governments can also pledge funds, as well as technical assistance, directly to affected countries government (bilateral donations) as long as governmental institutions are legitimate and stable (Coppola 2011). The events following the Haiti earthquake prohibited the Haitian government from receiving significant funding. In that instance, only 3% of the pledges were routed to the government, and the remainder essentially funneled through a network of INGOs (ARC 2010; ARC 2011; Ramachandran and Walz 2012; Phillips 2016). Unfortunately, the by-passing of governmental institutions is not a

limited phenomenon, and it occurs worldwide due to the prevalence of failed states and intrastate conflict (Maren 1997; Cliffe and Luckham 1999; Polman 2010; Special Envoy to Haiti 2012).

Multilateral donations represent a joint effort between a coalition of nations international governance organizations, such as the United Nations OECD, and World Development Banks, such as the World Bank and the Inter-Asia Development Bank (IADB). These complex cooperative agreements will include critical resources such as financial contributions, technical assistance, and the subject matter experts necessary to improve coordination and development of response and recovery strategies. These efforts often have a prospective development structure and expand outside of the disaster and catastrophe event, making the long-term focus economic development or stabilization (Coppola 2011; OECD 2016).

INGO Accountability and Transparency of Programs

The United Nations Development Program (UNDP) estimates over 36,000 INGOs are operating worldwide. The annual budget for the organizations, estimated by the Office of Economic Cooperation and Development (OECD) tops $120 billion (USD) (Polman 2010). That figure does not include the billions of dollars collected by faith-based organizations (FBOs) and not-for-profit organizations for relief and recovery. Therefore the economic scale is quite large (Polman 2010).

Cuny (1983) views INGO accountability and efficacy as largely a mixed bag with considerable upside. INGOs, from his perspective, are successful at connecting aid relief to reconstruction. He focuses on the specific contexts of geography, politics, and culture of the affected nation state. Cuny suggests that an INGO possesses the ability and

capacity to identify the barriers potentially encountered within a theater. Also, INGOs can effectively route the best field staff to a particular event. The integration of an INGO and a local NGO or non-profit also allows for local disaster knowledge, resources, and a more efficient decentralized decision-making process.

INGOs operate in challenging environments. Numerous issues plague INGOs in determining their success or failure in aid delivery. Chandra and Acosta (2009) address those challenges that take place during the integration of INGOs into the public sector disaster command structure. Specifically, they note that INGOs are unlikely to be successful when there is an inability to obtain clear mission assignments, a lack of secure funding streams to operate, an absence of operational coordination, and finally extensive duplication of efforts by other competing NGOs/INGOs. Chandra and Acosta (2009) attribute these challenges to inadequate policy and guidance from all levels of the public and private sector. They add that the literature is woefully unclear on guidance requirements for operations that follow catastrophe level events (Chandra and Acosta 2009).

INGOs have expanded exponentially since the 1960's, just as donors have contributed billions of dollars for aid delivery following catastrophes (Cuny 1983; Ramachandran and Walz 2012). The rapid expansion of INGOs has created the need for transparency and accountability on source donations and program/project expenditures in aid delivery (Natsios 1995; Ramachandran and Walz 2012).

Up to now, INGOs have been less than forthcoming regarding financial transparency. They do not provide data or evidence of independent or third party oversight for aid delivery following catastrophes (Buss and Gardner 2008; Bosch 2010;

Polman 2010; Moss 2011; Ramachandran and Walz 2012). The prior research on transparency predominately focuses on the most salient catastrophic events that have been located within the United States. However, research and publicly available data on INGO aid delivery outside of the US context have similarly been limited following catastrophic events (especially in developing countries). The lack of this type of data poses a significant issue to research on the success and failure of programs implemented by INGOs following catastrophe events.

Recent fiscal scandals including INGOs have created a need for better accountability, transparency, and oversight. Ebrahim (2003) discusses this lack of transparency and monitoring of INGOs and ground the existing level of secrecy to past scandals, a general lack of trust, and the explosive growth of INGOs and competition for resources. Each of these elements affects the overall mission success of INGOs. Given the rising level of competition for resources, significant concerns have been generated on the exaggeration of response and recovery assessments of INGOs.

To combat these tendencies for overstatement of results, Ebrahim (2003) argues for the establishment of greater levels of internal and external accountability. Regarding internal accountability, that concept covers the responsibility for INGOs to monitor individuals' actions and their consistency with the organizational mission and vision (Ebrahim, 2003). External accountability, on the other hand, refers to INGOs obligations' to meet broader standards within the disaster response and recovery industry. Ebrahim (2003) outlines five mechanisms to improve INGO standards. These include production and review of financial disclosure statements, the performance of program assessments and evaluations (often self-assessed by the NGO), participation in

international disaster response networks, higher standards of self-regulation based on industry accepted practices or standards, and social audits (Ebrahim 2003).

CATASTROPHE RECOVERY – THE MAKING OF A MASTERPIECE

To this point, I have succinctly defined catastrophe and identified those elements that separate disasters from catastrophes. INGOs are now critical in the response and recovery to both types of events. These organizations provide immediate short-term relief to the impacted area and assist in long-term recovery through a variety of methods (Chandra and Acosta 2009). Many checklists and guides exist to aid these INGOs in the recovery process (UNDP 2010; Phillips 2016) Unfortunately, many of the actual programs implemented by INGOs may not lead to fruition and challenges of profiteering by scholars, and the media are emerging. These questions about INGO effectiveness stem in part from a lack of program data that when exists is not made public. The data that is publicly available tends to lack the validity associated with independent oversight (Ramachandran and Walz 2012).

To better understand these problems, I am going to conduct, a comparative analysis of the housing sector recovery associated with two otherwise similar catastrophes. The use of housing sector reconstruction as an assessment of recovery is a critical part of the literature (Haas, Kates, and Bowden 1977; Bolin 1985; Oliver-Smith 1990; Comerio 1997; Dynes 2002; Ramachandran and Walz 2012; Lindell 2013; Hooper 2015).

Specifically, I am looking at two INGOs within two separate catastrophes to determine what worked and what did not work – successful or unsuccessful INGO

activity. Viewed in the proper context, INGO efforts toward long-term housing reconstruction require extensive collaboration between governments, INGOs, and other local organizations. Thus it can act as a standard bearer for how well INGOs are performing under tough situations. Essentially, I am seeking to understand whether claims of INGO profiteering are legitimate or whether they represent a clear lack of success in inordinately difficult circumstances.

Figure 2.1 Collapsed Haiti Presidential Palace (Filter The Feed 2016

Figure 2.2 Haiti Housing Sector Damage (US Air Force 2011)

Theme/Sub-theme:	Damage			Losses		
	Public	Private	Total	Public	Private	Total
Environment & disaster risk management	**3.00**	**0.00**	**3.00**	**321.40**	**1750.00**	**496.40**
Social sectors	**153.80**	**805.40**	**959.40**	**197.80**	**355.60**	**553.30**
Water and sanitation	20.90	13.10	34.00	8.40	193.00	201.40
Health	94.70	101.70	196.40	187.70	86.10	273.70
Education	38.20	395.60	434.00	1.70	41.50	43.20
Food safety and nutrition	0.00	295.00	295.00	0.00	35.00	35.00
Infrastructure	**628.1**	**2 538.60**	**3 166.7**	**774.2**	**520.60**	**1294.8**
Housing	0.00	2333.2	2333.20	459.40	279.30	738.70
Transport	188.50	118.6	307.10	91.60	197.50	289.10
Telecommunications	66.00	28.00	94.00	24.00	22.00	46.00
Energy	20.80	0.00	20.80	37.23	0.00	37.23
Urban and community infrastructure	352.80	58.80	411.60	162.00	21.80	183.80
Production sectors	**3.10**	**394.00**	**397.10**	**0.00**	**933.30**	**933.30**
Agriculture	3.10	49.90	53.00	0.00	96.00	96.00
Industry	0.00	74.60	74.6	0.00	267.70	267.70
Retail	0.00	148.70	148.7	0.00	490.60	490.60
Finance and banking	0000	98.20	98.2	0.00	0.00	0.00
Tourism	0.00	22.60	22.6	0.00	79.00	79.00
Total	**781.80**	**3,738.00**	**4,526.2**	**1,293.4**	**1,984.50**	**3,277.8**

Note: These estimates have not yet been arbitrated, prioritized or validated by the government.

Figure 2.3 Haiti Government Preliminary Damage and Loss Assessment by sector (PDNA 2010)

Figure 2.4 Haiti tent city aerial view in 2012 (CNN 2012)

Figure 2.5 Phases of Emergency Management (National Library of Medicine 2011)

Figure 2.6 Haiti tent city close up on living conditions (Sacramento Bee 2010)

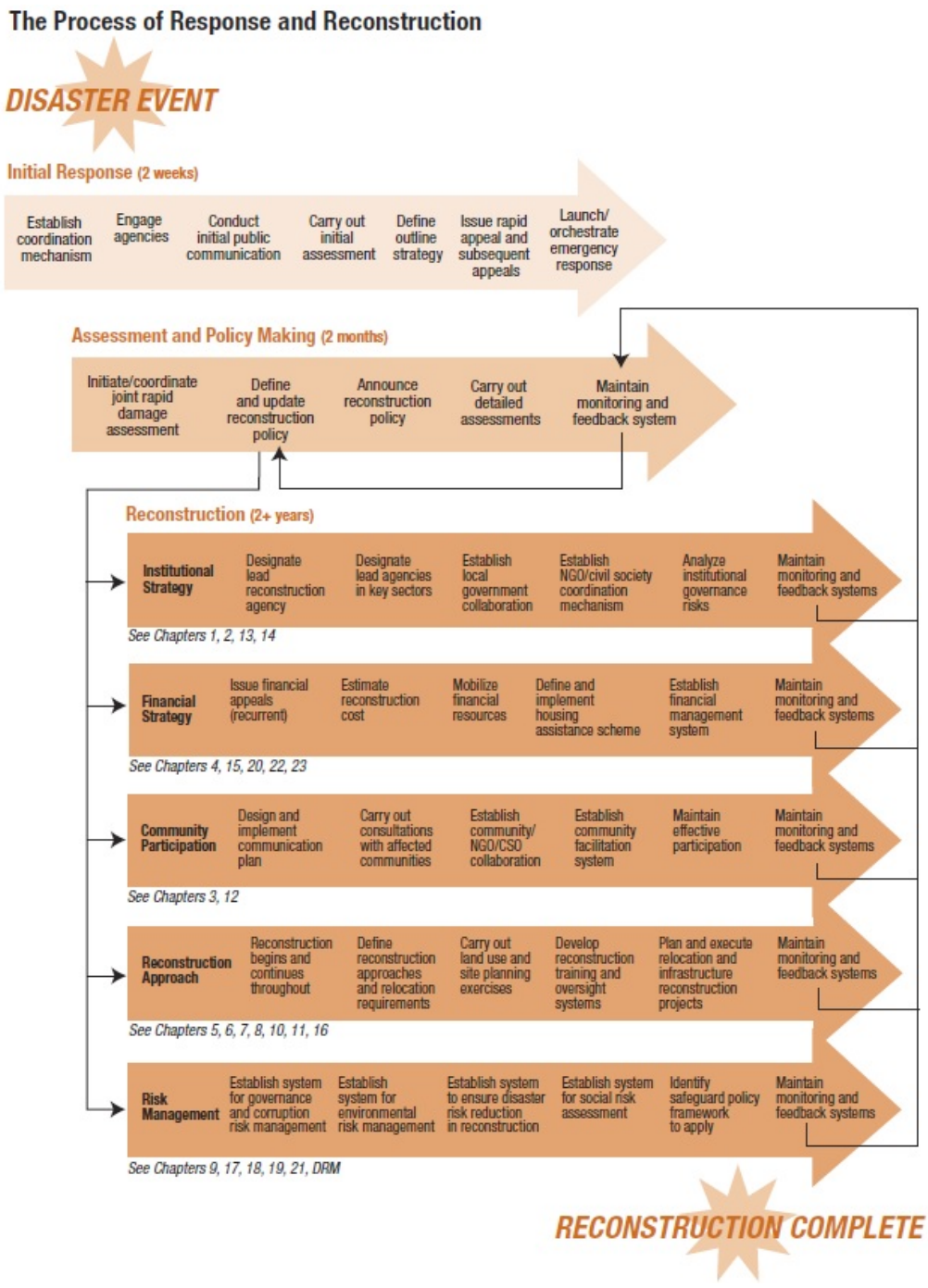

Figure 2.7 Flow chart of catastrophe reconstruction (Jha et al. 2010)

CHAPTER III

RESEARCH DESIGN

In Chapter II, I classified the 2010 Haiti earthquake as a catastrophe that met the elements established by Quarantelli's catastrophe model. Emergency management phases were examined and found to be social processes that are non-linear and overlapping temporally. As I reviewed the process of recovery, I found that local stakeholder involvement was necessary to define recovery goals and that their inclusion is crucial for successful recovery. While most of the 24-hour news cycle media focus on the humanitarian response and death tolls, there are numerous INGOs and other organizations working behind the scenes. The overarching goal is substantive recovery – long-term recovery – of the affected area, which means the context aesthetically is similar to pre-event conditions yet resilient and sustainable to the primary hazards and risks of the location. This section presents a systematic, comparative qualitative research design, with the use of most similar systems design, as well as the parallel case to the Haiti earthquake; the 2004 Indian Ocean earthquake and tsunami.

A QUALITATIVE RESEARCH APPROACH

Qualitative Disaster Research (QDR) roots itself in Prince's (1920) study of the Halifax explosion (Scanlon 1997; Phillips 2014). Prince's study involved the collision of two ships (one of which was carrying munitions) and the catastrophic explosion that

followed. This event was the beginning of social change research in disasters. Prince's use of his personal observations, interviews, and records/documents over the period of two years produced a systematic and theoretically grounded study of the Halifax disaster. This research act as the seminal foundation of qualitative research methods in the study of disasters and recovery (Creswell 2013; Creswell 2014). The best formal definition of qualitative research is provided by Denzin and Lincoln, as "*…a situated activity that locates the observer in the world. Qualitative research consists of a set of interpretive material practices that made the world visible.*" (Denzin and Lincoln 2011:3).

QDR provides a broad range of data collection methods. This breadth is critical as most research designs and studies do not clearly tie into one particular method of study (King, Keohane, and Verba 1994). QDR is a logical way to evaluate the uncertain and disrupted contexts found in disaster settings (King, Keohane, and Verba 1994; Phillips 2014). Researchers in all fields of social and behavioral research (particularly anthropology) have applied qualitative methods to their research questions and gained a stronger understanding of the social process (Kalof, Dan, and Dietz 2008; Phillips 2014).

Disaster research came into existence in the early 1950s when the National Academy of Sciences and the National Opinion Research Center (NORC) sent numerous researchers into the field. Phillips (2014) explains that these early roots emphasized qualitative research strategies that can measure challenging variables and operationalize research designs necessary to understand complex and chaotic disaster and catastrophe settings.

Typically, it is not possible to have a ready-made research design available for a particular event in some unknown area of the world. Thus the flexibility of qualitative

methodology is imperative. Also, lengthy-time-consuming data collection efforts necessary for quantitative research design is simply not possible in disaster settings. Efforts and resources typically go to the most critical needs of immediate response and short-term recovery, making systematic sampling and quantitative research much more challenging than normal settings. Clearly, quantitative and qualitative analysis have something to contribute to disaster research (Phillips 2014). Regardless of the method of study, the contribution to the field of study is key to the selection of the appropriate methodology (Rugg and Petrie 2007).

Qualitative disaster research allows the researcher to conduct and collect vivid, in-depth descriptions of the phenomenon studied. QDR enables the researcher to describe the social effects of disaster to the reader in a way not available in quantitative research (Phillips 2014; Patton 2015). In a simple analogy, the loss of a house can be reflected as a statistic or a numeral. However, in qualitative research, the researcher examines the social impact of the loss of the home on its residents. It can consider its meaning to them socially, psychologically, and emotionally. It can capture aspects of depth versus breadth within catastrophic impacts (Patton 2015).

Qualitative studies require rigor and transferability to maintain research validity. The rigor of study occurs in a multitude of methods, with the most common being data triangulation. Triangulation allows the researcher the ability to utilize data from multiple sources for the establishment of valid inferences and conclusions. Triangulation of data is invoked to check data validity and establish transferability (Patton 2015). A caveat, however, is that the researcher frequently ends up with more variables than valid data points (Patton 2015; Berg and Lune 2012).

COMPARATIVE RESEARCH DESIGN

The comparative research design is found in political science as well as a variety of other disciplines, including social science and disaster research. The fundamental concept of comparative research design is the use contrast between two or more contexts, which furthers knowledge of systematic relationships found within the different settings. This method can be inductive (observation first) or deductive (theory-driven observation) in nature. This allows a systematic and methodical research design for the study of two nations or other units of analysis such as groups, institutions or events. The goal is to allow the researcher to identify and analyze specific patterns, themes, and circumstances with a focus on the dependent variable (what is sought to be explained) or independent (that which explains) variables (Anckar 2008).

Ultimately, the comparative approach is useful to researchers that study questions associated with small sample sizes (n). That is the case in this study, where I am focusing on housing recovery from catastrophe in failed state environments, and I seek to understand the efficaciousness of INGO efforts. The unit of analysis is failed states with a catastrophe event – a number that thankfully is not that large.

Most Different Systems Design (MDSD)

The primary approaches to comparative design are Most Similar Systems Design (MSSD) and Most Different Systems Design (MDSD) (Anckar 2008). Most different systems design (MDSD) is the comparison of two or more cases with conflicting criteria and single common factor that can be thought of as the dependent variable. The method looks at alternative contexts that are as different as feasibly possible and then considers

the systematic effects of the common denominator where the contexts are similar. MDSD does not apply any strict or rigid rules for independent variable development. If differences are discovered during data collection, it does not provide an explanation as long as the similarity exists and its effects can be discerned (Anckar 2008).

Most Similar Systems Design (MSSD)

Most similar systems are the alternative comparative strategy, and it is more frequently used than most dissimilar strategies. It is a practical research design that seeks to determine the effects of a singular factor that exhibits variance in otherwise similar or consistent contexts. The dependent variable is the source of variance and can either be present or not present in the study or exhibit disparities in form. Extraneous variables are considered constant and thus are irrelevant to the observed variance of the dependent variable. The researcher seeks to determine whether outcomes are different by variance in the sampling factor (Anckar 2008).

Unfortunately, MSSD design is not a seamless technique - not all variables can be kept constant in most contexts. The research design literature provides two primary methods of MSSD, one of which is stricter than the other. The first allows the researcher the ability to choose the countries and phenomena to study. This allows the researcher to identify the control variables and focus strictly on the dependent variable during data collection. The second method is similar to the first but does not take into account a strict process or identification of control variables pre-data collection. No matter which research design the researcher chooses, MDSD or MSSD, there will be adverse consequences if the sample size is small and not all variables can be accounted for in the analysis (Anckar 2008).

This study utilizes an MSSD structure to evaluate systematic differences in INGO housing recovery effectiveness following catastrophic events. I use a layered comparative strategy wherein I identify two otherwise similar catastrophic events in failed state environments and then assess two different INGO recovery efforts in each context. This will help my perspective on whether the ARC effort in Haiti was generally effective but limited by the failed state environment. It also will provide me with some leverage on how different groups perform in these environments.

COMPARATIVE LEVERAGE – THE 2004 INDIAN OCEAN EARTHQUAKE

The two cases presented in this study are going to be Haiti and Banda Aceh following catastrophic earthquake/earthquake-tsunami events. The primary criteria for this particular case selection were grounded in need to identify failed, or conflict state, environments that had experienced catastrophes that engendered an international response. For my thesis work, I selected the 2004 earthquake-tsunami that devastated Banda Aceh, Indonesia.

Banda Aceh, which is located on the island of Sumatra, Indonesia (see, Figure 3.1) is part of the archipelago in Southeast Asia separating the Indian and Pacific Oceans. It primarily is a flat land with rising mountain ranges as you move further inland (CIA World Book 2015) The archipelago consists of a group of 17,508 islands, of which 6,000 are inhabited, including Banda Aceh. Indonesia is the largest of the isle states. Indonesia consists of 1,904,569 square miles, with 1,811,569 square miles of land and 93,000 square miles of water. Land use in Indonesia is predominately agriculture. The coastlines encompass 54,716 square miles. (see, Figure 3.1) In comparison, Indonesia is

approximately three times smaller than the state of Texas but is the fourth most populated nation in the world. It contains thousands of acres of forest land; second only to the Amazon forest in Brazil, (CIA World Book 2015).

[INSERT FIGURE 3.1 ABOUT HERE]

The Dutch colonized the Indonesia archipelago in the early 17th century. Japan ruled from 1942 to 1945 but surrendered the archipelago shortly after the end of World War II. Indonesia claimed its independence after the surrender but was embroiled in internal conflict before the Netherlands allowed them to become a sovereign nation in 1949. Much like Haiti, Indonesia has a long history of corruption and conflict with the government with martial law being declared in 1957 (CIA World Book 2015).

Indonesia is the largest economy in Southeast Asia. The primary economic base is agriculture and industry. Examples of farm exports include rubber, meats, fish, cocoa, coffee, and indigenous spices and herbs. Examples of industrial exports include petroleum as the main export. Other industry exports include textiles, wearing apparel, including shoes, appliances, mining, building and construction material, and tourism (CIA World Book 2015). Indonesian island countries export to countries all across the globe. The primary beneficiaries of these exports are China, Japan, the United States, Singapore, India, Malaysia, South Korea, and Singapore. The annual exports of Indonesia in 2015 are estimated at 148.4 billion (USD) (CIA World Book 2015).

An attempted coup de taut in 1965 failed, and the President Soekarno remained in power. Due to external pressure, Soekarno was eventually ousted as leader and replaced by President Suharto from 1967 to 1988 before extreme rioting ended his presidency. The country remained in a state of turmoil and conflict until 1999 when free and fair elections

were first held. The current President, Joko Widodo, has been President since October 2014 (CIA World Book 2015).

Banda Aceh is at the center of an on-going conflict between rebel groups and the government in Jakarta. The conflict in Aceh Province began in 1976 after the Indonesian Government disregarded the economic interests of the Acehnese people regarding the export of natural resources – specifically regarding liquefied natural gas (LNG). Aceh declared their independence from Indonesia on December 4, 1976, resulting in a nearly three decades of conflict (Clarke et. al 2010). The Free Aceh Movement (GAM) trained fighters in Libya from 1976 to 1989. Over 600 rebel soldiers prepared to fight for Aceh's independence, prompting the Indonesian Government to respond with military force to stop the resistance. The deadliest part of the conflict occurred between 1989 and 1998 where an estimated 10,000 to 26,000 Acehnese died in the conflict, and over 1.4 million people were displaced (United Nations 2011).

In 1998 military operations scaled back, due to reversals of Indonesian governmental policies. This engendered a series of ceasefires that significantly reduced the number of skirmishes. However, in 1999, the Indonesian Government launched new military operations in Aceh Province to counter an insurgent stronghold (Clark et al. 2010). Numerous skirmishes interrupted occurred between 1991 and 2001 with GAM controlling nearly 60% of Aceh by early 2001. In January 2002, the Indonesian Government announced a special autonomous state for the Aceh Province and the implementation of Sharia Law (Clarke et al. 2010). This agreement ultimately failed, and the conflict resumed.

In 2004, the conflict was ongoing due to the failed peace accord in 2002. The decades-old conflict was over Aceh's independence from the Government of Indonesia

(GOI) and the Free Aceh Movement (GAM). The conflict was heightened by the presence of Indonesian troops in Aceh and disputes over natural resources, resulting in numerous skirmishes following the failed agreement in 2002. Historically, the issue centered on an impoverished area, despite significant sources of natural resources in Aceh and a decent GDP attributed to the natural resource – primarily liquefied natural gas – weak Aceh Provincial leadership, and weak institutions/infrastructure. However, the earthquake and tsunami ended the conflict when a peace agreement was signed between GOI and GAM on August 15, 2005. Although, there was distrust between both parties the peace accords held and the conflicted area found common ground in recovery (da Silva 2010).

Banda Aceh Natural Risk Profile

Banda Aceh and Indonesia are prone to numerous hazards. The most prominent risk is volcanoes. The archipelago has 76 active volcanos, the most in the world. The hazard and risk assessment of Indonesia also includes seismic activity, floods, droughts, tsunamis, and forest fires. An important aspect of the natural hazard risk profile is the lack of awareness of earthquakes producing tsunamis. Many people living in the area do not recall the deadly earthquake and tsunami of 1907, which claimed numerous lives in the Aceh Province. This lack of awareness, along with poverty and 30 years of conflict in the Aceh Province led to the inordinate death toll from the 2004 earthquake-tsunami that is also known as the Boxing Day tsunami (Birnbaum et al. 2004; CIA World Book 2015).

Indonesia is located along the interface between the India and Burma tectonic plates. This area is also known as the Sundra Trench (Disaster Emergency Committee 2010). (see, Figure 3.2) At approximately 6:59 p.m. central standard time (CST) a Richter scale magnitude 9.1 to 9.3 earthquake occurred about 124 miles off the coast of Sumatra,

Indonesia. As a point of reference, the largest earthquake recorded on the Richter scale measured 9.4. to 9.6 and occurred off the coast of Chile, South America in May 1960. Seismologists believe the India tectonic plate slid underneath the Burma tectonic plate causing the shock, also known as a subduction, creating a megathrust fault (Birnbaum et al. 2004). (see, Figure 3.3) A megathrust fault is more likely to cause a devastating tsunami when compared to other tectonic plate shifting. During the tectonic plate movement, a rupture of approximately 745 to 807 miles occurred along the India-Australian-Eurasian tectonic plate systems. This raised the seafloor by several meters creating a tsunami and catastrophe for many countries across the Indian and Pacific Oceans (Birnbaum et al. 2004; USGS 2004; USGS 2005).

[INSERT FIGURE 3.2, 3.3 AND 3.4 ABOUT HERE]

The Indian Ocean earthquake affected areas over 3,728 miles away from the quake's epicenter. Seismologist modeled the earthquake and tsunami and believed the first wave arrived along the coastline of Sumatra within ½ hour of the quake. Based on computer modeling, scientists believe the first 403 miles that ruptured along the India-Australian-Eurasian tectonic plates created the catastrophic tsunami (USGS 2004; USGS 2005). The tsunami devastated the Aceh province coastline and as far inland as 1.8 to 3.1 miles destroying, severely damaging, killing, or causing serious injury to the built, environment, and social conditions. Unfortunately, due to the amount of damage from the tsunami, there are limited means to distinguish the harm caused by the earthquake, and that generated a tsunami (Birnbaum et al. 2004).

On Sunday morning, December 26, 2004, shortly before 8:00 a.m. a 9.1 magnitude earthquake, the largest to strike the area in nearly 40-years, struck off the

north coast of Sumatra, Indonesia. The epicenter was approximately 155 miles south-southeast of Banda Aceh, Sumatra, Indonesia. The quake occurred over a 10-minute period. The earthquake was the fourth strongest earthquake to affect the world since 1900 and largest since the 1964 Alaska earthquake that affected Prince William Sound (BAPPENAS 2005; Clarke et. al 2010).

The earthquake occurred at a depth of approximately 19 miles, which is shallow comparable to Indonesia's location to sea level. It thus created significant vertical motion in the Indian Ocean that created a devastating tsunami (BAPPENAS 2005). The rapid movement of the tsunami allowed it to reach coastal areas across the vast expanse of the Indian Ocean. The tsunami raced toward the Aceh Province arriving approximately 30 minutes after the earthquake and left a cascading catastrophe event (Clarke et. al 2010; Birnbaum et al. 2004; and Bezebaruah 2013). In many places, seawater reached inland for nearly three miles (Clarke et al. 2010) The Indonesian Meteorology Department, *Badan Meteorologi dan Geofisikia*, estimated the tsunami traveled approximately 621 miles in two hours that mean the speed of the tsunami was similar to the cruising speed of a commercial airliner (BAPPENAS 2005; Birnbaum et al. 2004).

Local buildings and structures are not built to withstand such a violent movement, and they collapsed trapping people under rubble and debris. Damage occurred to other infrastructure including mosques, hospitals, clinics, schools, and other governmental buildings (Clark et al. 2010). The northern portion of Sumatra, which includes the Aceh Province, sustained the direct impact from the earthquake and tsunami, which overlapped with the area of violent conflict (United Nations 2011). The death toll was highest in Banda Aceh, Aceh Besar, and Aceh Java. The estimated death count in the northern Aceh

Province was over 100,000 with an additional 12,000 persons reported missing. The tsunami killed nearly 170,000 people (approximately 70% were women) and displaced over 500,000 people in the Aceh Province alone (da Silva 2010; United Nations 2011). The Indonesia earthquake, along with the ensuing tsunami, produced the greatest loss of life and property damage in Indonesia since the eruption of the volcano Krakatoa in 1883 (PDLA 2005). Five hundred thousand internally displaced persons were left in the wake of the event with over 250,000 houses either partially or wholly destroyed (PDLA 2005).

[INSERT FIGURE 3.5 ABOUT HERE]

The Banda Aceh Conflict and Catastrophe

The 2004 Indian Ocean earthquake and tsunami presented a catastrophic event in a country that was experiencing conflict between the Province of Banda Aceh and the Indonesian Government. This is a decades-old conflict between the Free Aceh Movement's (GAM) and the Indonesian government. In December 2002, a *Cessation of Hostilities Agreement* occurred between GAM and the Indonesian government. It lasted until May 2003 when the conflict resumed in earnest. This action was the largest military operation of the Indonesian Government since the invasion of Timor, in 1975. This operation involved nearly 60,000 Indonesian Government troops resulting in numerous conflicts and social dislocation in Aceh Province. The skirmishes continued until December 26, 2004, earthquake and subsequent tsunami (Clarke et. al 2010).

At the time of the tsunami, Indonesia had scaled back the martial law in an attempt to bring peace to the Aceh Province (The Consultant Group of Indonesia 2005). The conflict at that time was classified as low-intensity, but it had claimed approximately 10,000 lives and destroyed critical infrastructure and key resources (CI/KR) in Aceh

Province. The subsequent earthquake-tsunami substantially exacerbated the vulnerabilities of citizens and degraded the environment. The resulting effect was that this area was at greater risk of landslide and flooding from environmental mismanagement. It also altered the coping strategies found within the population. Crime and corruption increased during the disbursement of relief aid. The intrastate conflict had already reduced the capacity of the government to provide essential services, and the catastrophe brought the situation to the brink of collapse (United Nations 2011).

Catastrophes can also have uniting effects that strengthen a country's capacity for response in a shared recovery effort. Land use and capability issues become known, especially with worldwide media attention to these problems. That type of care can lead to better disaster mitigation strategies, appropriate coping techniques, and reduction in poverty. Disaster reduction strategies require innovation and creativity, along with the involvement of stakeholders from the local and international communities to achieve this type of success (United Nations 2011; Afnan and Burke 2005; Klitzsch 2014).

In the Aceh Province, the Indonesian Government protected the forested areas of conflict. The protection of environmental and natural resources during the conflict proved crucial to the degradation of the environment or loss of natural resources. This reduced the potential impact of logging activities, both legal and illegal. Post recovery, logging was allowed to begin again and therefore Aceh Province now faces greater future risks from landslides and flooding (United Nations 2011).

The 2004 earthquake-tsunami was a catalyst for peace. In January 2005, a crisis management initiative was developed in Helsinki to put an end to the conflict (Clark et al. 2010). That initiative ultimately resulted in the signing of the Helsinki Peace Accord in

August 2005, resolving nearly thirty years of conflict between GAM and the Indonesian Government (Beardsley and McQuinn 2009; United Nations 2011). Beardsley and McQuinn (2009) indicated the earthquake-tsunami was beneficial in that it limited the ability of both groups to pursue conflict. The presence of the international community during response and recovery provided the incentive for peace. The sustainability of peace, however, continues to rest on local provincial and governmental relations (Beardsley and McQuinn 2009). The stabilization of the conflict and Aceh Province can be seen in the free elections of December 2006. The economy also has stabilized, and Aceh is improving measures of political freedom in the region today (Clarke et al. 2010).

INGOS RESPONSIBLE FOR RECOVERY EFFORTS

The INGO response to the Indian Ocean earthquake and tsunami was the largest international response to an event post-World War II. My INGO thesis focus is on the International Federation of Red Cross and Red Crescent Societies and the Disaster Emergency Committee (DEC). The DEC is a United Kingdom collaboration of NGOs who provide catastrophe relief and long-term recovery. Some of the prominent members of the DEC are the British Red Cross, CARE International, and Oxfam GB (da Silva 2010).

DATA COLLECTION

Data collection began with a broad search of databases, news articles, journal articles, texts, papers, reports, videos, and monographs on the 2010 Haiti earthquake and the 2004 Indian Ocean earthquake-tsunami. There was no differentiation between the search terminologies for the two case studies. As research progressed, the search narrowed to categories of data sources referencing INGOs, Haiti and Banda Aceh, preliminary damage assessments, sheltering, and reconstruction of the housing sector. The primary data sources for this research include, but are not limited to, archived data from national websites, primary documents prepared by international non-governmental organizations, on-line electronic news sites, still photographs, and video documentaries on the Haiti earthquake and Indian Ocean earthquake-tsunami. Yin (2014) describes these sources, along with cultural and physical data, as primary sources of evidence for case study and comparative research.

Data collection occurred over several months, from January 2015 through August 2016. Data extrapolated from the publicly available data sources included: Haiti's Post-Disaster Needs Assessment (PDNA) and the preliminary loss and damage assessment following the Indian Ocean earthquake and tsunami. Data are also from INGOs, including the ARC, the United States Agency for International Development (USAID), Disaster Emergency Committee (Indonesia), World Bank, the Tsunami Evaluation Committee (TEC), The Collaborative Group on Indonesia, the International Organization for Migration (IOM), Indonesian and Haitian governmental reports, reports from the United Nations (UN) contractors and subsidiaries, the Special Envoy to Haiti, and numerous bilateral and multilateral donor organizations. Data triangulation

application occurred where data sources allowed and were publicly available (Patton 2015). Accessible public data from INGOs was limited in this research, as made numerous requests for direct data from INGOs (i.e. Special Envoy to Haiti, the Clinton Foundation, and the American Red Cross).

Figure 3.1 Overview of Indonesia. (World of Maps 2016).

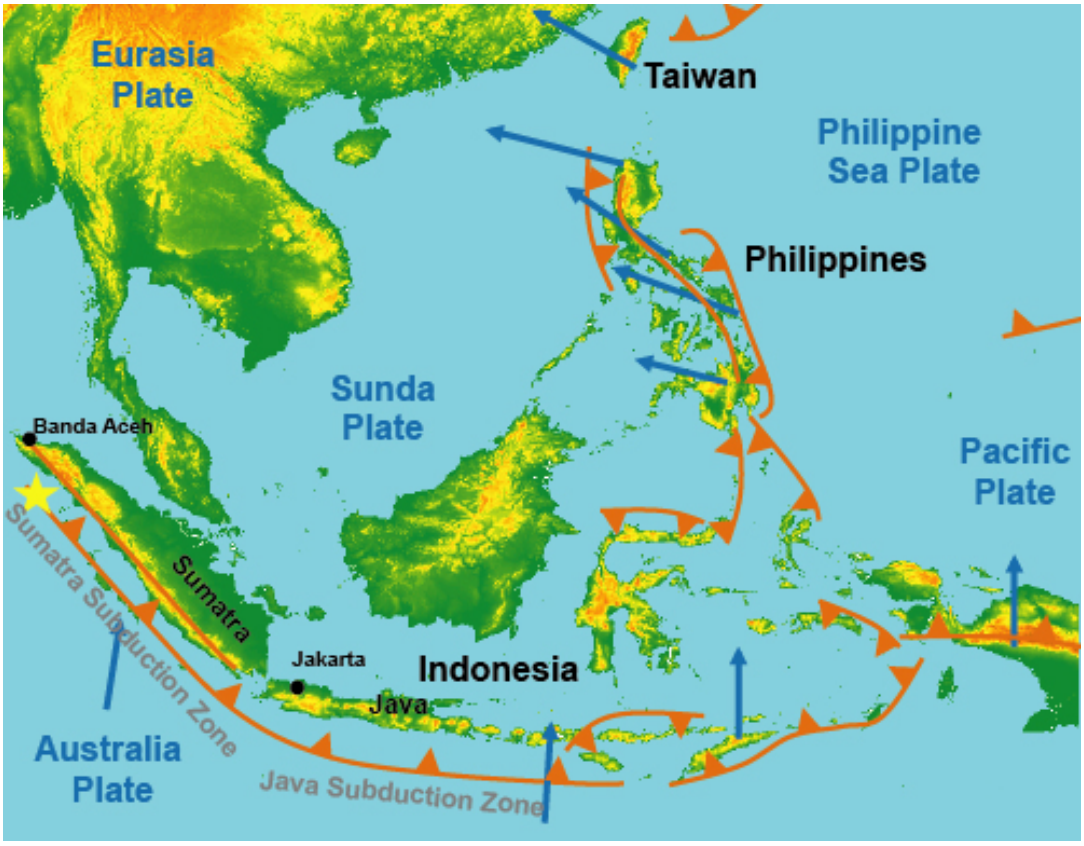

Figure 3.2. Indonesia Fault Zone Systems (Air World Wide Maps 2014).

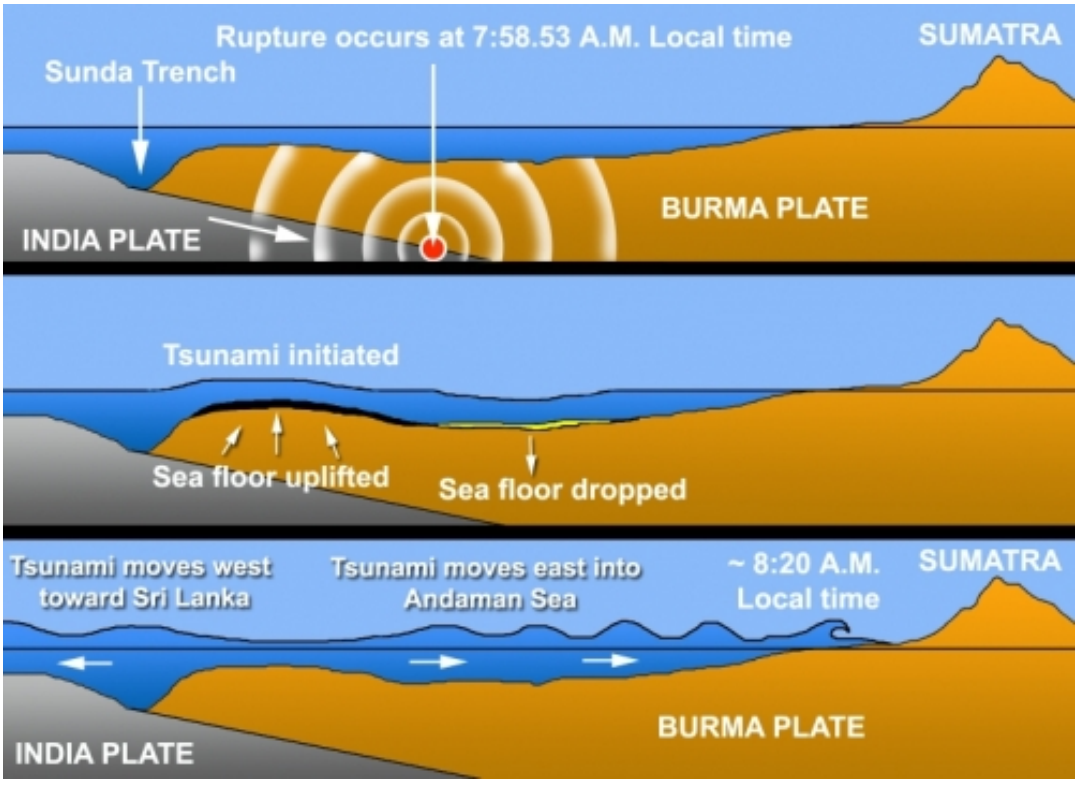

Figure 3.3 Megathrust Faults and Tsunami Generation (USGS 2005).

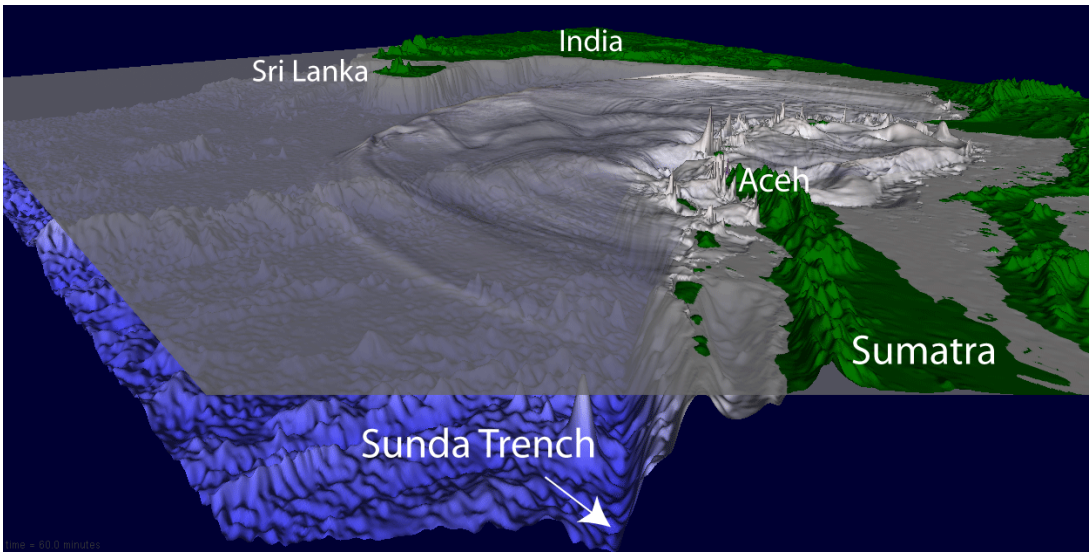

Figure 3.4 USGS Overview of the 2004 Indian Ocean Earthquake (USGS 2008).

Figure 3.5 Damage in Aceh Province, Sumatra - 2004 Earthquake and Tsunami (Reuters 2005)

CHAPTER IV

ANALYSIS – HAITI

The research design for my study is comparing most similar systems following catastrophes. The intent of the study was to make observations and analyze the methods to determine their efficacy following the catastrophe. I break the analysis down into two separate chapters. Chapter four covers the 2010 Haiti earthquake and recovery efforts and methods used by INGOs. The chapter also introduces the criteria for analysis, which INGO leadership and collaboration between the affected government, housing design and construction – debris management, design/material sourcing, and local stakeholder engagement - and recovery completion and accountability in recovery. The focus of the chapter will be the work of the American Red Cross, program implementation, and cross sector collaboration with the Haitian government and other INGOs/NGOs operating in Haiti. The comparison INGO is the cooperation of the INGO Mission of Hope-Haiti and their partner organizations who collaborated in the construction of houses following the earthquake.

CRITERIA FOR EVALUATION

Leadership and Collaboration

Leadership, coordination, and cooperation are crucial elements in all phases of emergency – catastrophe - management. The elements allow for the effective flow of information and reduce the duplication of efforts during all phases of emergency management, especially the critical phases of response and recovery. As I mentioned in Chapter 2, recovery requires relentless local leadership to drive the recovery and reconstruction process. A local leader provides the knowledge and skillset needed to communicate the definition of recovery and source the skilled laborers and materials to begin recovery.

Unfortunately, leadership capacity following a catastrophe is often limited as potential leaders may be victims of the catastrophe – injured or killed – and unable to provide this necessary function (Quarantelli 1996). INGOs responding within the country are not involved in the local planning effort and are often ineffective upon arrival due to a lack of local leadership knowledge. As I mentioned in Chapter 2, local involvement by all stakeholders is an important part of the planning process for disasters and catastrophes.

The lack of local leadership places the INGO recovery efforts in a quagmire. The challenge arises when Incident Action Plans (IAPs) are self-developed by INGO leadership with little to no input or integration into the government's internal recovery efforts. This includes local NGO recovery efforts and local stakeholder grass root efforts (Chandra and Acosta 2009). The self-developed IAP does not guarantee alignment with the government or the populace’s definition of recovery, which I determined to be a significant component of catastrophe recovery. Primarily, this is attributed to a lack of an

international policy or guidance on how INGOs integrate into the affected areas response and recovery team – government, NGOs, not for profits, contractors - when they arrive to provide assistance and communication of IAP objectives and tasks (Chandra and Acosta 2009).

Design and Construction

Debris and site selection

Debris and site selection are initial and crucial steps in the recovery – reconstruction – process. Catastrophes produce considerable amounts of debris requiring management and removal. This is part of the pre-disaster recovery planning and is often found in a jurisdiction's debris management plan. Unfortunately, most debris management planning occurs after a catastrophe has occurred and the public is demanding action. Several obstacles are immediately apparent, in the absence of a waste management plan, 1) how to remove the rubble, 2) where to move the rubble – a safe and secure location not creating additional safety and health hazards, 3) what debris is re-usable for repair or reconstruction efforts, 4) the long-term management and removal of debris that is not usable or hazardous to the populace (Philips 2016).

Site selection is a secondary consideration in the recovery – reconstruction – process. The ability of government and INGOs to determine who owns land available for reconstruction is a difficult, labor intensive, and nearly impossible task in areas where land records are not efficiently maintained. The lack of land ownership (parcel identification as it is called in the United States) is required by the recovery leadership in obtaining the permissions needed to begin repairs, reconstruction, or relocation of damaged or destroyed neighborhoods (UNDP 2011; Phillips 2016). Also, there is a

primary need to maintain the area's culture and heritage in the recovery process and is imperative in the reconstruction and site selection process (Phillips 2016)

Design and material sourcing

Culturally acceptable design and material sourcing is imperative to the recovery process. As I mentioned in Chapter two, These complex decisions are best made pre-event, but most jurisdictions do not provide planning on land tenure, land use, or relocation in the emergency operation plans. If no pre-plan exists, a site assessment and relocation plan is required to relocate the affected area. This increases cost and slows the recovery efforts, thus increasing public pressure on government leadership and organizations to do something (even if it is wrong). Subject matter experts (SMEs) and personnel involved in technical assistance sub-specialties can assist in all facets of site location to relocation (UNDP 2011).

Regardless, a regional and whole community approach should involve all stakeholders in the relocation planning if it is pre- or post-event. The best institution to guide this process is the government, but as we have seen in Haiti, corruption and a failed state environments provide a weak foundation for recovery that often stalls. The delay and collapse of the recovery process are not necessarily due to a single variable but can be tied back to multiple variables associated with the failed state.

Engagement with local stakeholders

Recognizing the need for a pre-disaster recovery plan is a crucial step for all jurisdictions, domestically and internationally. The second step is identifying and coordinating local stakeholders into a recovery working group. All parties concerned require representation in the pre or post-catastrophe process. This particularly is the case for marginalized populations - elderly, impoverished, those with functional needs

(McEntire 2006; Phillips 2016).

Recovery is a systematic social process. Local, national, and private stakeholders are involved in the planning process (Chandra and Acosta 2009). The post-disaster period brings about heightened emotions, and the need to do something is prevalent, providing the opportunity for hastily made and poor decisions (Brown et al. 2011; Phillips 2016).

Completion and accountability

Frederick C. Cuny (1983) viewed INGO accountability failure as an organizational response failure and success. His perspective of success is connecting aid relief to reconstruction. Cuny's idea kept INGO aid-centric to survivors and the aid response as emergent. In his view, this accountability to the victims allows ownership and provides responsibility in self-recovery. In doing so, Cuny believes financial accountability and transparency will occur in the naturalistic setting (Cuny 1983).

Cuny (1983) focused on specific areas of understanding the contexts of geography, politics, and culture of the affected nation state. In doing so, the INGO possesses the ability and capacity to determine barriers potentially encountered once in the theater. INGOs can also determine the best field staff to the event. Integration with a local NGO or non-profit allows for local disaster knowledge, resources, and decisions made from the area, thus decentralizing the current decision-making process. An essential balanced and collaborative approach by INGOs is crucial for recovery and reconstruction efficacy (Cuny 1983).

RED CROSS ANALYSIS – HAITI

The Haiti earthquake destroyed 105,000 houses and damaged 188,383 houses, with the hardest hit area around Port-au-Prince, Jacmel, and Leogane. Leogane was nearly 80% destroyed (PDNA 2010). Haiti has no public housing, so the damage estimate is limited to the private sector (PDNA 2010). The damage estimated in the housing sector is approximately $2,333,200,000 USD. An additional $739,000,000 (USD) is assessed for emergency and temporary sheltering needs for approximately 2.3 million internally displaced people (IDPs), including 302,000 homeless children (IFRC 2010; ARC 2010; ARC 2011). The catastrophe produced over 25 million tons of debris (ARC 2011).

Applying Cuny's concept seemed straightforward as I began my analysis. However, INGO transparency and accountability program data was difficult to discover and examine following the Haiti earthquake (Ramachandran and Walz 2012). Numerous requests were made to INGOs, via e-mail, for data to analyze on housing program reconstruction. I received no response from the large INGOs and quasi-governmental agencies I requested data from – Special Envoy to Haiti, American Red Cross, the Clinton Foundation, and the Haiti Relief Commission. If I received a response, it was the INGO was overworked and understaffed to provide me the data I was requesting. This information was essential for me to determine the efficacy of INGOs in their recovery and reconstruction program efforts in Haiti. The data located and analyzed was extrapolated from qualitative reports self-developed by the INGOs. I was able to find some complete data reports from INGOs who responded to the Haiti earthquake. However, they covered program areas unrelated to housing reconstruction programs. i.e. Christian Aid (2012) and Medicines Sans Frontieres (2012).

Leadership and Collaboration

I found the IFRC, ARC, and partner agencies entered the 2010 Haiti earthquake response boldly with a solid western vision of recovery (IFRC 2010). The overarching goals of the IFRC and ARC in the first weeks following the quake were developing trust and rapport with the Haitian people. Aside from the short-term response, the ARC established and focused on INGO long-term recovery coordination, rebuilding damaged communities with housing repair and reconstruction, meeting the needs of vulnerable populations, and filling gaps in the response phase of the catastrophe (IFRC 2010).

Many of the IDPs, with estimates as high as 263,000 persons, were migrating to the north and west of Port au Prince in search of food, water, and shelter following the earthquake. This migration added to aid delivery complexity (IFRC 2010). As of December 2015, 59,720 Haitians remain displaced representing approximately 14,679 households (International Organization For Migration 2015). The remaining Haitian IDPs reside in 37 displacement sites consisting of a variety of construction. Roughly, 51% are in makeshift tent shelters, 3% are in other forms of transitional shelters (t-shelters) and tents, and 41% are using t-shelters as houses (International Organization For Migration 2015).

[INSERT FIGURE 4.1 ABOUT HERE]

The IFRC and ARC arrived in Haiti and found the destruction and level of need to be overwhelming even for their large group capacity. They located tens of thousands of Haitian's living in "flimsy" shelters that were not resistant to the hazard risk profile for the nation (IFRC 2010:7). The response from the international community was the largest response since the 2004 Indian Ocean tsunami (IFRC 2010). United Nation's Emergency

Relief Coordinator John Holmes said, "Despite the heroic efforts of many colleagues on the ground and the continuing efforts of all who are working to support them from outside the country, the magnitude of the disaster and the conditions in Haiti continue to pose enormous challenges" (IFRC 2010:7). Also, most of the donor aid was focused on Port au Prince – the populace center and most densely populated area in Haiti. This was despite the fact that the earthquake affected the Leogane area more severely. The damage to the capital was devastating, with 60% to 70% of housing infrastructure damaged or destroyed in certain districts (IFRC 2010).

[INSERT FIGURE 4.2 ABOUT HERE]

In Leogane, over 80% of the city was estimated to be damaged or destroyed. The areas, outside of Port au Prince, were found to be underserved by local NGOs and INGOs. The mass migration of Haitian's from Port au Prince to the rural areas added to the underserving of the Haitian populace. This boded well for the IFRCs and ARCs concern about coordination and collaboration with other NGOs and INGOs in the country. The lack of coordination and cooperation led to a lack of inclusiveness of the Haitian people and self-developed IAPs by INGOs with little to no involvement of local stakeholders. Also, I found on-going power and communication outages hampered efforts of coordination and collaboration with the government and partner organizations (ARC 2011).

Design and Construction

Debris and site selection

The ARC and their partner organizations envisioned the building of core houses for 150,000 Haitian's, with the ARC specifically responsible for 6,500 basic houses in

partnership with Habitat for Humanity (ARC 2011). These basic houses would be hazard resistant to Haiti's natural hazards profile and provide access to clean drinking water and toilet facilities. Their approach was simplistic; they would repair or rebuild, build new houses when necessary, and use debris from the earthquake for repair and reconstruction. I was unable to locate a rebuilding plan for these basic houses. However, I found data in the ARC reports that a primary home was generally a transitional shelter, contrary to the western belief of basic home construction. Unfortunately, by early 2011 only 2,889 basics houses were constructed aiding roughly 14,400 Haitians (ARC) 2011.

The ARC blamed their lack of success on land ownership conflicts and debris removal. I found that Haiti had an informal land title system before the earthquake and that the system suffered destruction of nearly all administrative buildings during the quake, leaving any vital records destroyed or illegible. Haiti lacked the essentials of a functioning society on property rights, and that lacuna brought the reconstruction effort to a virtual standstill for the INGOs and other aid organizations working on reconstruction (IFRC 2010). The INGOs indicated that the inability to obtain land ownership information, begin debris removal, and actively engage local stakeholders with the knowledge and skillset to rebuild was lacking. This was especially true when the ARC attempted to target those vulnerable local populations during the first year of the effort (ARC 2011).

Rubble and debris management were a significant issue in clearing building sites for reconstruction. The ARC indicated they were working with the Haitian government and local leaders to ameliorate the land ownership issue, but

a decimated governmental staff and limited landowner documentation caused substantial delay.

Design and material sourcing

One focus of the ARC was emergency sheltering and long-term housing solutions for Haitian IDPs. The ARC provided shelter kits, consisting of Tarpaulins (tarps), plastic sheeting, rope, tools, essential household supplies, and information on safety in emergency shelters to tens of thousands of people. The construction of these tent camps consisted of poorly constructed houses that often were located in hazardous areas, such as hillsides, slopes, and areas prone to flooding. Due to the severe damage from the earthquake and previous deforestation of the land, housing resource materials were in very short in supply. This required the ARC and their partner organizations to bring in requisite resources for the IDPs from other areas of the world.

The IFRCs temporary housing plan involved the construction of transitional shelters as a housing resolution for vulnerable populations – the elderly, ill, and orphaned children. The second focus was for families who owned and could prove ownership of land to construct transitional housing or live with a host family outside the affected area. The final vision was permanent housing for Haitians, restoring their lives to pre-catastrophe conditions.

The ARC proposed permanent structures, built with water and bathrooms; that would improve the Disaster Risk Reduction (DRR) component. The DRR relates to the two primary hazards Haiti faces, tropical cyclones and seismic activity. Also, these houses were designed so that they could be easily dismantled for relocation if it became necessary. This type of house would serve

approximately 150,000 Haitian citizens. However, due to the lack of local stakeholder input, the ARC decided the construction and options for the houses. Other housing could be repaired, if possible, or demolished and rebuilt on existing land or relocated to a new settlement outside of Port au Prince in a new community. The ARC estimated that 25% of the houses were repairable and 20% required demolition or major repair in Port au Prince. The reconstruction materials were primarily to consist of recycled rubble.

By the end of 2010, the ARC had spent approximately $221 million USD on sheltering and housing in Haiti, which accounted for 33% of the total donor-funded aid (ARC 2011). The IFRC also provided assistance with cash grants to the host family to relieve the additional strain of housing IDPs. In all, 437,000 households received housing to aid in the first six months following the quake, with the IFRC assisting 125,650 of these houses. (IFRC 2010). The housing aid totaled approximately $42,131,362 US dollars (USD) (IFRC 2010). A caveat to the extrapolated data is the lack of explanation of exactly what aid individuals or households received for housing.

Engagement with local stakeholders

I found limited engagement of the ARC and their partners with local stakeholders. This limited the ARC and their partners from determining the local definition of recovery and what Haiti would look like following recovery. The INGOs were left with self-developed agendas on recovery, and they followed these agendas and the vision of their donors. This is counter to the lessons learned from the Indian Ocean catastrophe and recovery literature, thus hampering ARC and partner organization efficacy.

The IFRC blamed logistical and transportation issues as the primary reason for the lack of inclusiveness, as well troubles coordinating with other organizations. The INGOs quantify this by discussing the numerous meetings held on the mission and vision of recovery for Haiti. The INGOs also experienced linguistic barriers. Most Haitian's and local NGOs spoke a different language than English and were unable to understand or communicate the INGO vision to the populace. This particularly was the case with the numerous INGO planning meetings, where objectives and tasks were developed for recovery (IFRC 2010).

I found that the massive loss of life of the Haitian government leadership and impoverished country were significant hardships that were nearly impossible for INGOs to ameliorate during their recovery efforts. I could not find a specific ARC operational contingency plan to overcome the primary obstacles of poverty, except exorbitant donations from the international community, power outages, failed communications, and lack of national leadership. Instead, the IFRC elucidated the lack of coordination was a direct result of the lack of strategic leadership in operational decision-making by the Haitian government, local NGOs, and INGOs (IFRC 2010).

Completion and Accountability

IFRC Secretary General Becke Geleta said, "*Disaster response is a sprint, but disaster recovery is a marathon*" (IFRC 2011:17). The IFRC, along with their partners, devoted enormous resources to Haiti. Resource allocation was extensive and included a massive deployment of Emergency Response Units (ERUs) with four designated for sheltering/housing operations. These units

consist of highly specialized and trained personnel in disaster and catastrophe relief aid response (IFRC 2010).

The American Red Cross (ARC) raised over $488 million USDs in aid relief for Haiti in the days and weeks after the earthquake. A staggering $32 million USD was raised by short message system (SMS) text message, with 67% of donor funding delivered by the general public. During the first year, the ARC expended $245 million USD in relief aid to Haiti. ARC CEO Gail McGovern said the "*Pace of recovery is slow*" (ARC 2011:i). McGovern's statement correlated with challenges in reconstruction the IFRC met with land ownership confirmation. Land ownership issues slowed rebuilding and pace of recovery for housing reconstruction for any organization (ARC 2011).

[INSERT FIGURE 4.3, 4.4 AND 4.5 ABOUT HERE]

By the end of 2011, expenditures increased to $330 million USD. The ARC shifted their efforts from a response and relief to rebuilding Haiti. Along with their partner agencies, 36,270 people received houses in 2011. The number of houses – although the exact definition of a house or home is unknown - provided by the ARC after the earthquake is 100,000 as of December 2011 (ARC 2012). Also, the ARC and partner organizations provided over 4 million (USD) in housing vouchers for "household goods" and for home repair (ARC 2011: 13). Data extrapolation came from a qualitative self-assessment report written by the ARC. No expanded definitions were present for housing data to explain specific reconstruction or housing programs or what the received donor dollars funded (ARC 2012). It was impossible to determine the credibility and validity of data presented.

[INSERT FIGURE 4.6 ABOUT HERE]

The ARC faced similar challenges in 2011. However, security problems and a Cholera outbreak in the fall of 2010 were difficulties that slowed construction and relief efforts. The construction that did occur was of basic houses (i.e., most likely transitional shelters versus the Western view of houses), the upgrade of houses built by other organizations working to rebuild Haiti, and the repairs to houses damaged by the quake (ARC 2012).

In 2012, the ARC continued the mission of repairing and reconstructing housing affected by the quake. The ARC indicates the reach of their aid is to four million Haitians, which is nearly half the total 2010 population of Haiti. The ARC provides the caveat, "*Many of the people reached by the American Red Cross in Haiti received multiple services.*" ARC Chief Executive Officer Gail McGovern stated in the report, "*Recovery from such a devastating disaster takes time*" (ARC 2013:i) The ARC report suggests Haitians received safer houses for their efforts. In context, it appeared the ARC committed to transitioning to long-term recovery (ARC 2013).

[INSERT FIGURE 4.7 AND 4.8 ABOUT HERE]

According to the ARC report, $126 million USD had been spent on housing and neighborhood revitalization. This donor funding expenditure helped construct houses, upgrade houses built by other organizations, and continue with the on-going repair efforts of houses damaged b the quake. The ARC suggests in the report they constructed 14,0000 transitional and permanent houses, affecting 70,000 people in 2012. Also, they transitioned 20,000 IDPs from camp settlements by "*subsidizing rent*" (ARC 2013:2). Again, specific ARC program identification and information or details on donor funding expenditures were not provided in the report (ARC 2013).

By 2014, I found the ARC indicating spending of 144 million (USD) for "*housing and neighborhood recovery over the last four years*" (ARC 2014:2). They suggest in their report that their efforts have placed 108,900 Haitian's in safer housing. Unfortunately, the ARC does not elaborate on the specific meaning of housing or neighborhood recovery. Instead, I found they generalized their assessment by indicating they assisted in the upgrading of "*transitional shelters to permanent houses*" housing "*tens of thousands of Haitians*" (ARC 2014:2). Specifically, their report indicates the INGO has relocated 5,400 families – consisting of 27,000 individuals – from the Capital City tent camps to long-term housing. During 2014, the ARC reported that 90% of the IDPs are back in their communities – no elaboration on the type of housing the IDPs are occupying – with 172,000 Haitians remaining in tent camps. I found the generalizations of ARC housing programs troubling in determining the efficacy on a long-term housing recovery solution for Haitians with the lack of data provided or data extrapolated from their self-generated qualitative reports.

[INSERT FIGURE 4.9 AND 4.10 ABOUT HERE]

In 2015, the IFRC and ARC issued their final report on the 2010 Haiti earthquake response. The ARC report indicated they engaged with local stakeholders in the Carrefour-Feuilles neighborhood of Port au Prince. They show that they learned from the stakeholders the reconstruction of houses in the neighborhood were "vital" (ARC 2015:3). The 2015 report also indicates the IFRC/ARC reached 4.5 million Haitians – nearly half the population in 2010 – and 132,000 of those reached were through housing and neighborhood repair and reconstruction programs. The report indicates they have upgraded 15,000 transitional or permanent houses with repair or reconstruction, as well as aiding 27,000

Haitians with rent subsidies (ARC 2015) However; no specific data was provided on what the ARC means "reached" in their qualitative report (ARC LAMIKA 2014:1). I found that the number of houses repaired or reconstructed by the ARC was suspect.

[INSERT FIGURES 4.11 ABOUT HERE]

MISSION OF HOPE – HAITI COLLABORATION

Leadership and Collaboration

The Mission of Hope – Haiti (MOH) is a little INGO, located in headquarters in Cedar Park, Texas, and Titanyen, Haiti. MOH has been providing mission trips and program implementation annually, as individual groups, since 1972. The organization is a faith-based organization (FBO, with a vision consisting of five core resolutions. These resolutions include:

- Relational proclamation: Love through relationship building,
- Evangelical saturation: Spreading the word of God,
- Indigenous mobilization: Developing Haiti national leaders to lead their recovery,
- Holistic Transformation: Commitment from beginning to end, at all levels of recovery,
- Excellent implementation: Responsible use of MOH and Haitian talent and resources.

Formally founded in 1988 as an INGO, Mission of Hope Haiti has developed collaboration with many other organizations to bring recovery projects to Haiti over several decades. Examples of collaborative organizations, following the 2010 Haiti earthquake, include 401 Bridge – a multi-year partnership, the National Football League, and New Story Charity – a two-year partnership. Their focus is faith-based, along with housing construction and improving the livelihoods of the Haitian people. MOH-Haiti completed three projects and was working on a fourth program at the time of this writing. Two of the four projects are related to housing reconstruction (MOH-Haiti 2016)

Following the 2010 earthquake, MOH-Haiti has partnered with several organizations to reconstruct and develop communities in different areas of Haiti. Their goals were to move the Haitian IDPs from tent cities into permanent houses – block houses that are resistant to Haiti's natural hazard risks. Through early 2016, MOH-Haiti and their partner organizations have constructed over 600 houses – described in detail in the following section – serving over 500 families and counting (MOH Haiti 2016).

Design and Construction

Debris and site selection

MOH-Haiti does not provide detail on the debris removal process in their programs. However, their site selection process occurred through the Haiti Relief Commission (HRC) granting of land for home reconstruction. Due to MOH-Haiti's response to Haiti for Hurricane Matthew, I was unable to gain further information on the exact methods of site selection or debris removal. However, the HRC was responsible for working to identify land through volunteer land donation and public areas for housing construction and debris removal (Special Envoy to Haiti 2012)

Design and material sourcing

The initial vision of MOH-Haiti was to construct 500 hazard resilient houses following the 2010 quake. They focused on hazard resilient construction of blockhouses with three rooms in their reconstruction programs implementation. Also, they developed a small plot of land for farming, a detached bathroom, fruit trees, and close access to essential services for Haitian families. The source of the material for the block construction was not located during my analysis. The cost of the original houses built in the community of Leveque was $6,000.

The current project, as a result of the earthquake, is known as NFL Community at Bercy. This is a partnership between New Story Charity and NFL Player Elvis Dumervil. The vision is to construct 250 plus, block style, hazard resistant houses at the cost of $6,500. Similar to Leveque, the entire houses will have a small plot of land for farming and close access to essential services needed by Haitian families – church, food, water, medical, and other essential services required for survival. These finished communities will be Bercy and Labodrie Haiti. Hurricane Matthew has provided a challenge in this reconstruction program, but it is continuing as of this writing (MOH-Haiti 2016).

[INSERT FIGURE 4.12 ABOUT HERE]

Engagement with local stakeholders

MOH-Haiti does not specifically identify how they identified local stakeholders to engage in Haiti. However, it is in the core vision and resolution statement. My historical analysis of FBOs indicates a normal engagement method is with a local FBO, NGO, or other organization. Since MOH-Haiti also has a headquarters in Haiti, this seems plausible due to established relationships and programs on-going throughout the year. Also, the immediate response to Hurricane Matthews destruction quantifies this statement (MOH Haiti 2016)

Completion and Accountability

I e-mailed a personal communication to both INGOs on September 26, 2015. I received a response from Ms. Cammie McQuilkin, with MOH-Haiti, on September 30, 2015. Ms. McQuilkin stated in her personal e-mail communication on their mission to Haiti, "*Good Afternoon Corey, Mission of Hope Haiti has built a total of 520 homes to*

date at six thousand dollars a home on average. If you have more questions, please let me know what would be the best time to call and a good phone number to reach you. I hope you have a great day. Cammie."

I responded back via a personal communication via e-mail and thanked Ms. McQuilkin for her quick response on September 30, 2015. Ms. McQuilkin responded, via e-mail, on October 1, 2015, and indicated their INGOs development director for Haiti would be willing to speak and meet with me to discuss specific aspects of their housing sector reconstruction in Haiti. Ms. McQuilkin asked me to let her know when I would like to speak with their development director for Haiti. Through April 2016, MOH Haiti has constructed 615 hazard resilient houses and are currently working with New Story Charity and NFL Player Elvis Dumervil to build an additional 250 plus houses. This project is well underway, with over 50 houses constructed at the time of this writing (MOH Haiti 2016).

I was unable to obtain current numbers from MOH-Haiti due to their extensive involvement in response to Hurricane Matthew. However, my analysis revealed the houses they had constructed, following the quake, has withstood the impact of Hurricane Matthew with minimal damage. I was unable to get additional information on the progress of their mission in Haiti, although I know it continues with their recovery work from Hurricane Matthew (MOH-Haiti 2016).

THIRD PARTY EVIDENCE

United Nations Evaluation Group – Haiti Response and Recovery Efforts

In Haiti, several variables affected the donor and Haitian government relationship. The primary reason was the failed state and lack of trust of the government. INGOs were the first pass through for donor funding with 99% of the funds going to INGOs, charities, and private contractors. Only 1% of the initial donor funding was provided to the Haitian government. This lack of collaboration leads to an unsuccessful recovery response in the affected area. Ramachandran and Walz (2012) claim throughout the totality of the Haiti recovery effort, only 3% of donor aid was provided by the Haitian government (UNEG 2010).

Office of the Special Envoy to Haiti

The Special Envoy to Haiti was developed by the United States to provide oversight of the Haitian response, from the United States perspective, with an emphasis on accountability and transparency of donor program data (Special Envoy to Haiti 2011). Donor aid increased following the 2010 Haiti earthquake, nearly tripling from 2009 to 2010 to $1.12 billion (USD). $1.42 million was committed or spent on aid relief, and $977 million was committed to reconstruction – development. The money disbursed primarily – 99% - was channeled through bilateral, multilateral, INGO, and unspecified recipients. Of these disbursements, 12% was channeled to the Haitian government and 33% to support the public sector infrastructure. This report conflicts with the United Nations Evaluation Group and other literature on the disbursement and spending of funds on Haiti recovery programs. Given the conflicting information, it was difficult for me to determine INGO efficacy following the Haiti earthquake (Special Envoy to Haiti 2012).

United States Independent Evaluation Team Review of Haiti Response

Guha-Sapir et al. (2011) indicated 277,00 tarps, 37,000 tents, and 24,000 rolls of plastic were distributed to Haitians in the first four months following the quake. Through June of 2011, 47,500 transitional shelters were funded, however, by the end of June 2011, only 5,000 transitional houses had been constructed. Their report indicates the removal of debris – 25 million tons – and land ownership issues were the primary causes of delay in construction efforts. On debris removal, Guha-Sapir et al. indicate only 1% of the rubble had been removed as of June 2011, which poses a significant issue for Haiti to recover and home reconstruction to begin (US UET 2011).

IDPs were also estimated higher by Guha-Sapir's (2011) report at 1.6 million people, including an estimated 661,000 IDPs who were migrating out of Port au Prince to find food, water, and shelter. Other IDPs were found in densely populated, spontaneous tent settlements in Port au Prince and 30% were found with host families in the Port au Prince area, placing enormous financial, physical, and financial strains on the host families (Guha-Sapir et al. 2011).

The shelter cluster – the working group of partner organizations on housing IDPs – indicated that they were reaching 100,000 Haitians in the first four months following the quake. Specifically, funding was available for 96,504 transitional shelters, but only 5,000 had been built by the end of June 2011. The primary reason cited was debris removal issues and the inability of INGOs to determine land ownership to begin repair or reconstruction (Guha-Sapir et al. 2011).

CONCLUSION ON INTEREST GROUP EFFICACY

The IFRC, ARC, and partner agencies began the Haiti earthquake response with humanitarian relief and long-term recovery plans. While on paper, the intervention and restoration plan appeared plausible and sustainable, the data is not available to make a complete assessment of the effectiveness of the programs implemented. However, I discovered, the IFRC, ARC, and partner agencies failed to understand the complexities of a failed state. This includes the ability to locate the IDPs that were migrating across the nation to find food, water, and shelter. Also, the INGOs did not anticipate the loss of government leadership and the level of corruption associated with the Haitian government. This led to the inability of the INGO to determine land ownership quickly enough to move from the sheltering stage to the permanent housing continuum outlined in general recovery plan templates (IFRC 2010).

The ARC raised over $488 million USDs in aid relief for Haiti following the earthquake. A staggering $32 million USD was raised by short message system (SMS) text message, with 67% of donor funding delivered by the general public (ARC 2013). The ARC report indicates they spent 100% of the donated funds on Haitian relief efforts in their final report in 2015. However, raw data, comprehensive strategic plans, and extrinsic analysis on the results of the funded programs are not publicly available. The only data located publicly were the self-assessments from the INGOs. As noted by Elliott and Sullivan (2015) the questions about whether the ARC constructed and repaired houses, how they classified repair and reconstructed houses, and the use of donor aid are legitimate lines of inquiry. Unfortunately, the lack of publicly available data only allows for supposition.

While the failures of the IFRC, ARC, and their partner agencies in housing construction vision and planning are significant, it cannot rest entirely on the INGOs. The organizations did their best to provide relief to the Haitian people in a complex nation of corruption that were exposed to significant natural hazards. This can be quantified with the shelters and transitional housing given to the Haitian people, not to mention the immediate aid relief and medical care of the populace (ARC 2015).

Therefore, I conclude the INGO long-term recovery failures can be attributed to multiple variables outside INGO control. The primary variables are a weak Haitian government – including those leaders killed and injured in the quake- weak institutions, the lack of INGO knowledge on the Haitian socio-economic climate, and communication difficulties about housing reconstruction with the Haitian people.

The reliance on extrapolated data from qualitative INGO self-developed reports and independent groups in the conflict created confusion and frustration during the analysis process. I was unable to determine if the ARCs reconstruction methods and programs implemented were successful. The United States Government Accountability reports provided scattered data on the success of the US response to the Haiti earthquake. The report descriptions include mixed results, lack of transparency, and accountability of INGOs and partner organizations as the buzzwords of their reports on the USAID response to the Haiti earthquake (GAO 2011; GAO 2012; GAO 2013).

Therefore, the ARC, IFRC, and partner INGOs were effective in their response and delivery of relief aid but were not successful in the long term recovery and reconstruction of the housing sector from my data analysis. This is due in part, to the failure of the simple land ownership system employed by the Haitian government, the

massive loss of life – including Haitian government leaders - and the inability of the INGOs to anticipate and provision for a contingency plan for unanticipated variables. The final and most influential factor in my research was the lack of requested and publicly available data for a thorough analysis of ARC programs following the 2010 Haiti earthquake (ARC 2015).

To the contrary, Mission of Hope-Haiti has been successful in their recovery and reconstruction efforts in Haiti. Their core resolutions align with the global recovery templates and literature on the use of available labor pool skill sets, resources, and empowering the indigenous population to take ownership of their recovery. Following this method of empowerment, national leaders are developed that will assist Haiti in the future as they struggle with seismic and tropical storm hazards. Regardless of the lack of all data required, MOH-Haiti continues to provide reconstruction efforts in Haiti from the 2010 quake, as well as damage caused by Hurricane Matthew which struck in 2016 (MOH-Haiti 2016).

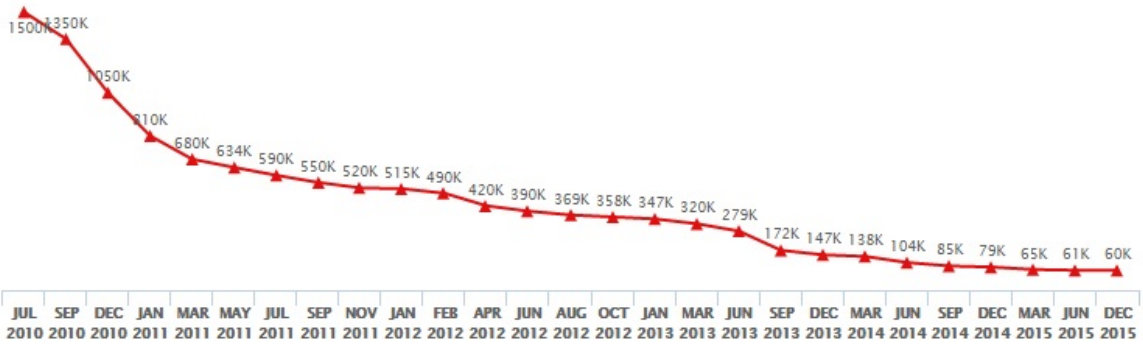

Figure 4.1. International Organization for Migration IDP trend following the Haiti Earthquake (IOM 2016)

Figure 4.2 American Red Cross transitional shelters in La Pieste, Port au Prince, Haiti (ARC 2011)

Theme/Sub-theme:	Damage			Losses		
	Public	Private	Total	Public	Private	Total
Housing	0.00	2333.2	2333.20	459.40	279.30	738.70
Transport	188.50	118.6	307.10	91.60	197.50	289.10
Telecommunications	66.00	28.00	94.00	24.00	22.00	46.00
Energy	20.80	0.00	20.80	37.23	0.00	37.23
Urban and community infrastructure	352.80	58.80	411.60	162.00	21.80	183.80

Figure 4.3. Haiti Housing sector losses in US dollars. (PDNA 2010)

Shelter		Total
Households provided with emergency shelter materials		172,700
Households provided with emergency shelter materials for replacement	Planned	Reached
	80,000	41,885
Households provided with improved shelter solution	Planned	Completed
	30,000	2,645
Households provided with a transitional/upgradable shelter		2,524
Households provided with other shelter solution		121
Expenditure for shelter through September 2010		40.8 million Swiss francs

Figure 4.4 Shelter expenditures from the IFRC one-year report (IFRC 2010)

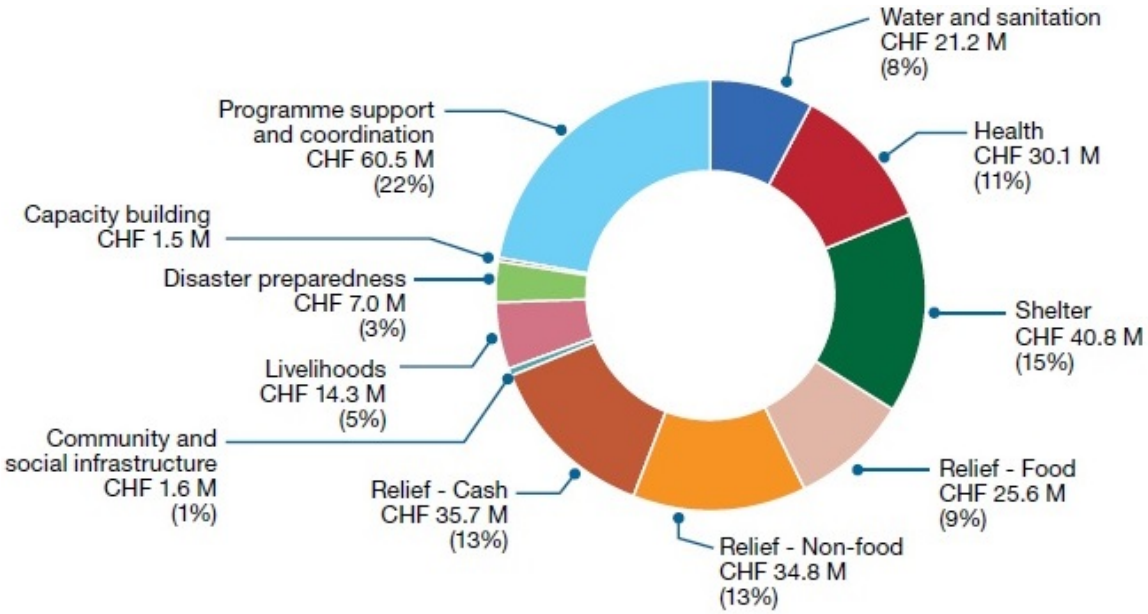

Figure 4.5. Total IFRC expenditures by sector through September 2010. (IFRC 2010)

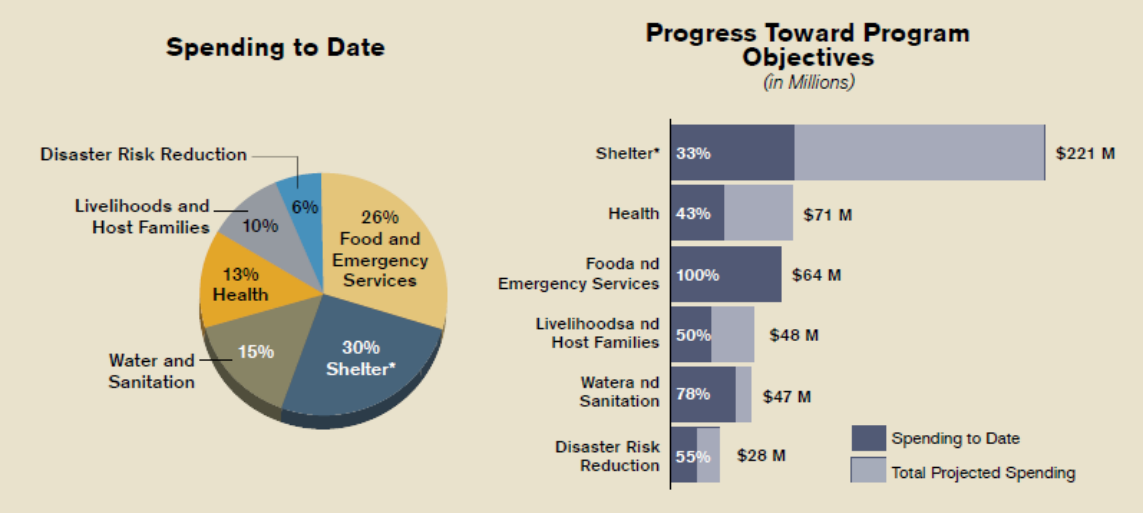

Figure 4.6. American Red Cross expenditures from the Haiti one-year report. (ARC 2011)

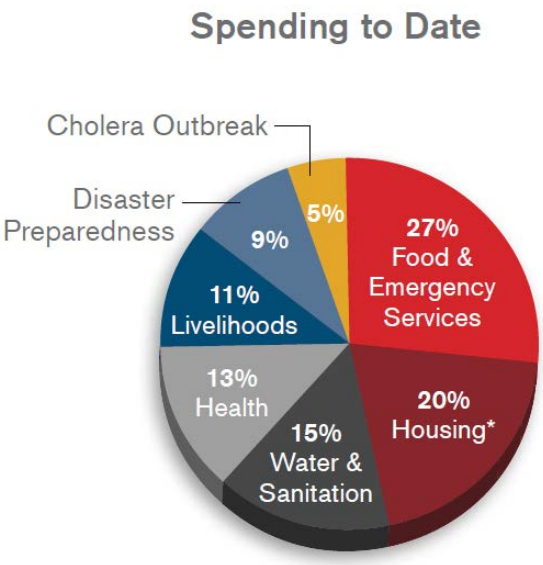

Figure 4.7. ARC spending by sector through early 2012. (ARC 2012)

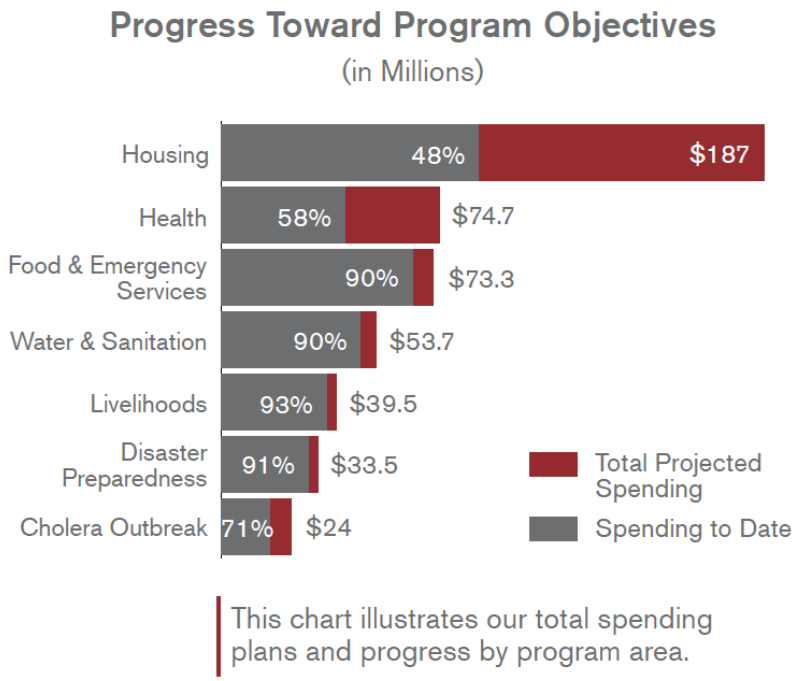

Figure 4.8. ARC program area expenditures and progress through 2011 (ARC 2012)

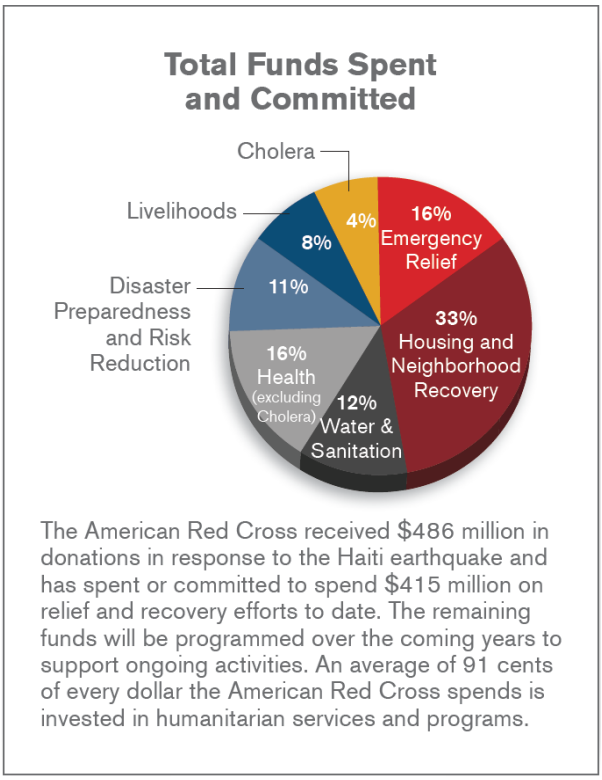

Figure 4.9. ARC donor funds spent and committed through early 2013 (ARC 2013).

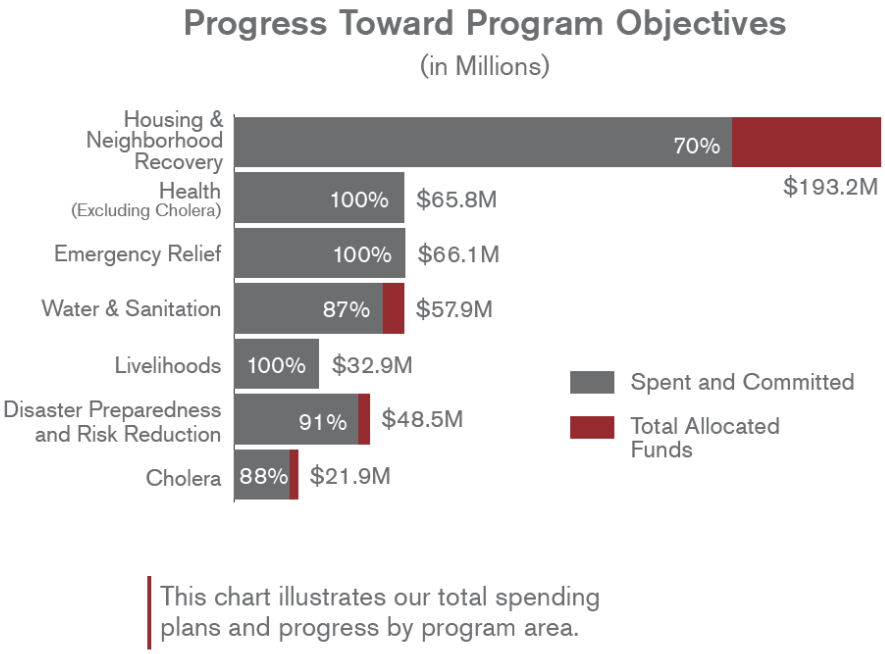

Figure 4.10. ARC progress chart toward their objectives (ARC 2013).

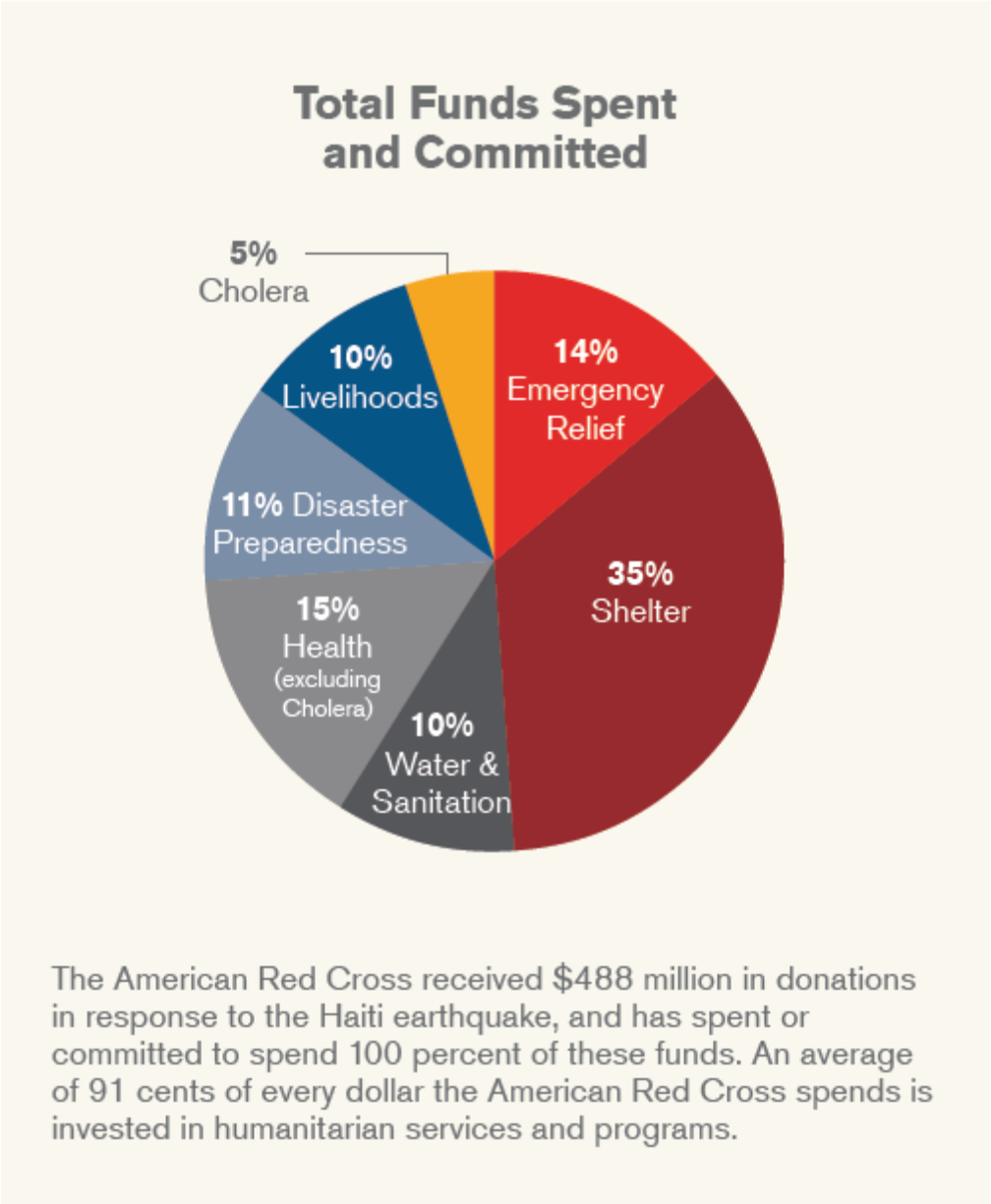

Figure 4.11 Total ARC funds spent and committed through 2015 (ARC 2015)

Figure 4.12 Mission of Hope-Haiti housing reconstruction. (MOH-Haiti 2016)

CHAPTER V

ANALYSIS – BANDA ACEH

Chapter five covers the 2004 Indian Ocean earthquake and tsunami and recovery efforts and methods used by INGOs. The criteria for analysis was developed and introduced in chapter 4 and will remain the same. The criteria for analysis are INGO leadership and collaboration between the affected government, housing design and construction – debris management, design/material sourcing, and local stakeholder engagement - and recovery completion and accountability in recovery. The focus of the chapter will be the work of the American Red Cross, program implementation, and cross sector collaboration with the Indonesian government – specifically Banda Aceh and other INGOs/NGOs. The comparison INGO is the cooperation of the Disaster Emergency Committee (DEC) – a conglomeration of INGOs from the United Kingdom and their partner organizations in the construction of houses following the earthquake and tsunami.

RED CROSS ANALYSIS – BANDA ACEH

The International Federation of Red Cross and Red Crescent Societies (IFRC) approach to the 2004 Indian Ocean earthquake and subsequent catastrophic tsunami was the largest single relief effort since World War II. Over five million people were affected, creating 1.8 million internally displaced persons (IDPs), and damaging or destroying 580,000 homes that equated to 1.48 billion or 32% of the housing sector (WHO 2013).

1670,000 persons were killed or reported missing, and 37% of the Banda Aceh population was killed or displaced (da Silva 2010; WHO 2013). Considering that most of the damage and deaths were located within two and a half miles of the coastline in Aceh Province (WHO 2013) those estimates are simply shocking. The overall objective of the IFRC effort was to improve the conditions for those living in the affected area through repair and reconstruction of damaged houses (IFRC 2011). The reconstruction process (see, Figure 5.1) provided new homes that were disaster resistant to the natural disaster risk profile (IFRC 2011).

[INSERT FIGURE 5.1 AND 5.2 ABOUT HERE]

Leadership and Collaboration

The IFRC established five core principles to guide their response to the Indian Ocean catastrophe. These principles guided the initial response and long-term recovery efforts, bringing success in all aspects of their activities in the affected area. The focus of the IFRC was on clear governance and management of the relief and long-term recovery process. An attempt was made to clearly define the roles and responsibilities of all actors and the beneficiaries of aid (IFRC 2011).

Organizational policies and guidelines were established and followed by all players to help limit confusion. The use of local volunteers and the youth of the area was instrumental in gaining, trust, rapport, and support for program development and implementation. Once volunteers/youth were involved the human resource management of all actors began with the use of subject matter experts and technical assistance when appropriate. The final focus was the mobilization of local and global financial institutions and the inventory of local resource available for projects. This was followed by global

sourcing strategies to acquire those missing materials for program implementation (IFRC 2011). I found that these core principles aligned with the recovery continuum supported by recovery literature and it largely proved effective for the IFRC during the Indian Ocean earthquake and tsunami response.

The IFRC and ARC recognized the need for partnerships and worked closely with the troubled nation to develop those networks. Also, they partnered with other INGOs and private sector organizations to ensure collaborative efforts to reduce duplication. They understood that there was potential strength in partnerships. It increased community mobilization and the allocation of resources to acquire personnel and necessary materials. They also engaged commercial financial institutions operating in the region, as well as global institutions to develop grants, loans, and other financial needs for long-term recovery. These partnerships empowered local stakeholders and created a social mobilization that undergirds the IFRC and ARC termed the Movement (ARC 2006; ARC 2009; IFRC 2011). This ultimately led to the quicker recovery of the area when compared to the Haiti earthquake.

While the partnerships were developing, coordination and collaboration were occurring at higher levels in the INGO hierarchy. The IFRC and ARC realized the need not only for operational coordination and but also for the development of a long-term strategic plan for recovery within the affected area. This clarified roles and responsibilities, and improved information sharing and communication about specific needs that were shared with partner organizations (ARC 2009).

Design and Construction

The IFRC initiated two specific models for repair and reconstruction in the areas affected by the 2004 Indian Ocean catastrophe. While the exact methodologies for construction were not contained in their qualitative reports, the fundamental concept was explained. The two concepts were donor-driven and owner driven repair or reconstruction. The donor driven concept involved the location of beneficiary homes by the jurisdictional government. Thus a relationship with the affected government was established within the process. The government identified the vulnerable populations and areas that were unsafe for reconstruction. In this case, the government relocated the neighborhoods to relocation sites to new areas that were vetted and selected for rebuilding. The IFRC provided the subject matter experts (SMEs) and technical assistance (TA) necessary for reconstruction of houses. The SMEs and TA were instrumental in conducting the careful planning required to build back better community layouts and to provide safer homes that were consistent with the nation's natural hazard risk profile (e.g., flooding and drainage issues and seismic hazards).

The owner-driven process supported homeowners – beneficiaries – with the reconstruction of their homes. The IFRC named this the "*Community Recovery and Reconstruction Partnership (CRRP)*" and partnered with the United Nations Habitat program for the initial grant. It then acquired global assistance from the World Bank (IFRC 2011:9). This program provided grants, loans, and cash to beneficiaries to help reconstruct their homes. Critically, these beneficiaries remained in their communities and received valuable social support from their network of neighbors, friends, and family (IFRC 2011).

The CRRP assisted 15,000 families in affected areas (see, Figure 5.3) and was completed in 2010 (IFRC 2011). A caveat to this extrapolated data is that there was no country delineation on the assistance provided. It was also generalized to the region with specific mention of the four most affected areas. These areas were India, Indonesia, the Maldives, and Thailand (IFRC 2011).

The American Red Cross (ARC) supported over five million people in the areas affected by the Indian Ocean earthquake and tsunami. In collaboration with the IFRC and over 100 sister organizations, the ARC concentrated efforts on the nation states affected by the quake and tsunami – Indonesia, the Maldives, Sri Lanka, and Thailand (ARC 2009). The ARC estimates that it assisted 650,000 people in the affected area and constructed 57,000 plus homes. Again, like the IFRC, the ARC generalized their construction information among the nations affected, thus limiting my ability to specifically identify which nation's received specific long-term recovery reconstruction aid (ARC 2009).

The ARC followed the same methodology for reconstruction as the one established by the IFRC donor and owner driven construction. They referred to this as a grass roots initiative that involved networking with the affected governments and the beneficiaries of aid. The ARC claims this was not a new initiative, but one that was occurring before, during, and after the Indian Ocean catastrophe. The group was already operating in the affected areas and providing services, and those preexisting connections were extremely valuable in the relief and recovery effort (ARC 2009).

The ARC claims they raised 3.1 billion Swiss Franc, with over 69% of the donations coming from the public (ARC 2009). The ARC priority was housing as they

viewed houses as financial assets and a resource for the beneficiaries. This aid assisted in the construction of 58,000 plus homes, which accounted for nearly 12% of the total housing needs of the affected areas in India, Indonesia, the Maldives, Sri Lanka, and Thailand (ARC 2009). As in the Haiti earthquake, the ARC stressed that "recovery is a marathon and not a sprint." It would require years for the areas affected by the Indian Ocean catastrophe to recover (ARC 2009:6).

[INSERT FIGURE 5.3 ABOUT HERE]

Debris and site selection

The IFRC and ARC initiated cash for work programs to address debris management and clean-up. This program involved local stakeholders being put to work to earn a temporary income through the clearing of block roadways and drainage ditches and using debris for reconstruction when possible. This effort was necessary as it infused much-needed cash into local and national economies. The debris program cleared 13,000 acres of land, 14 miles of roadway, and 15 miles of drainage ditches across the affected area. The IFRC implemented this program where the labor pool existed and was able to conduct the work. The IFRC claimed success for the effort, suggesting that it provided a cleaner environment, quicker construction of permanent and safer housing, and a cleaner environment (ARC 2006). The qualitative reports were generalized in their definition of the programs. Specific program data for each country could not be extrapolated from the reports I analyzed.

Design and material sourcing

Specifics on housing construction and material sourcing were not found in the IFRC or ARC data that I analyzed. However, given the large area affected, the

importation of materials was plausible to support these reconstruction efforts. If this is the case, logistical and transportation issues were likely encountered as the INGOs attempted to access the areas that sustained the most damage. The long-term recovery goal for the IFRC and ARC was the construction of 213,000 permanent homes across the affected area, which would involve the assistance of 1.8 million IDPs. The ARC use of the owner driven concept constructed 3,000 homes across the affected area and that supported 15,000 IDPs (ARC 2006). As a caveat, there were extensive descriptions of the construction of temporary or transitional shelters that included what materials were used and the partnerships involved. Those accounts did not address where the materials were resourced (ARC 2006; ARC 2009; IFRC 2011).

Completion and Accountability

The long-term recovery goal for the IFRC and ARC was the construction of 213,000 permanent homes across the affected area that would assist 1.8 million IDPs. The ARC use of the owner driven concept constructed 3,000 homes across the affected area benefitting 15,000 IDPs (ARC 2006). As of 2006 and 2011, challenges remained for the IFRC and ARC in their recovery work. These challenges include a lack of permanent housing for IDPs, political uncertainties, and security concerns in a conflict area (ARC 2006).

Regardless of the challenges, the IFRC, ARC, and their partner organizations have faced, they have constructed nearly 60,000 homes and reached over 4.8 million people affected by the Indian Ocean earthquake and tsunami (ARC 2006; ARC 2009; IFRC 2011). This was made possible by the generous donations of the public. The ARC

received over 576 million dollars (USD), and the IFRC received 3.1 billion Swiss Francs. The ARC had committed 225.2 million of the dollars by the end of 2006 (ARC 2006).

Also, the IFRC and ARC remained accountable to the affected area, beneficiaries, host governments, donors, and other partners. The INGOs implemented a program where local stakeholders assisted to identify vulnerable populations who were in the most need of assistance. They also worked through their international secretariat on internal and external audits and shared this information with their stakeholders on their website – www.ifrc.org/tsunami - every six months. Also, the IFRC secretariat shared data with donors, beneficiaries, host governments, and other partners for collaborative analysis to determine efficacy (ARC 2009).

DISASTER EMERGENCY COMMITTEE COLLABORATION

Leadership and Collaboration

The Disaster Emergency Committee (DEC) is a collaboration of United Kingdom INGOS. The participating INGOs were Action Aid, British Red Cross, CAFOOD UK, CARE International, Christian Aid, Concern, Help the Aged, Islamic Relief, Merlin, Oxfam GB, Save the Children UK, Tearfund, and World Vision. These INGOs formulated a leadership and collaboration plan to aid in health services, humanitarian relief, and long-term housing reconstruction (da Silva 2010). However, following the Indian Ocean event, there was limited guidance on collaboration or a framework for reconstruction following such a large geographical catastrophe. Thus INGOs faced the monumental task of strategic planning and cooperation (da Silva 2010).

Since the 2004 Indian Ocean catastrophe the United Nations Development Program (UNDP) has developed a field guide for disaster and catastrophe reconstruction.

This guide is known as the Transitional Settlement and Reconstruction After Disasters. The first guide was available in 2008 followed by Shelter After Natural Disasters: Transitional Settlements to Reconstruction in 2010 (da Silva 2010). The DEC learned during the Indian Ocean event that the engagement of local stakeholders, as well as the building local trust and rapport, were imperative for a successful recovery effort. This is an element of both UNDP documents (da Silva 2010; UNDP 2010)

The DEC began with a basic planning collaboration and an attempt to understand the socio-economic and conflict context of Aceh Province, their main area of focus. The initial plan called for a quantitative and qualitative damage assessment for a common operating picture for DEC leadership and strategic plan development. The second priority was to establish clear lines of governance and define roles and responsibilities to DEC member organizations. The final step was to secure funding for the mission objectives (da Silva 2010). Once the three basic tenants of response were established, the DEC began working on identifying the prospective beneficiaries of their aid, the method of assistance, potential partners, and plan development and implementation (da Silva 2010)

Design and Construction

Debris and site selection

The DEC provided limited debris removal as part of their efforts in the recovery process. I found the tsunami produced approximately 141,259 tons of debris in Banda Aceh province. Most organizations used the United Nations Development Program (UNDP) Tsunami Recovery Waste Management program to manage debris in affected areas. This program managed debris and recycled usable debris to cover furniture, provide fuel for kilns at area businesses and homes, and rubble to build infrastructure –

roads (da Silva 2010). I found the IFRC and ARC methods of debris removal were more successful when compared to the efforts of the DEC.

Site selection was predominately the work of the Indonesian Government and Aceh Province. It was, however, a participatory process that involved local stakeholders and property owners. Most of the land ownership documents and site markers had been destroyed in the catastrophic event and were unavailable to the property owners. This left nearly 300,000 parcels of land in Banda Aceh without documentation on parcel ownership. The Indonesian Government, in collaboration with partner agencies, conducted site assessments and community mapping – with the use of Global Positioning Systems (GPS) – to determine parcel locations. The process was known as the Reconstruction Land Administration System and was aided by the World Bank. It was a community and local stakeholder-driven program with assistance from the government and outside organizations. It quickly gained community support and ensured landowners reclaimed their land. An example is women and orphans who may have a right to the land. In cases of disputes a mobile court was established to ensure the rights of the property owner were maintained. The mobile courts also assisted in keeping land values at a fair market value and the Indonesian Government assisted by adding 300,000 parcels of land to the process. These parcels are above the 300,000 parcels previously identified as being destroyed, thus resulting in 600,000 parcels of land available for reconstruction (da Salva 2010).

Design and material sourcing

The extreme damage and large geographical area affected resulted in most of the construction material coming from other regions of the world or materials recycled from

the debris. However, care was given to ensure that imported materials were conducive to the environment and culturally acceptable to the property owner. The property owners remaining on or near build sites made for a participatory process. This nearby locus helped to keep social systems intact and maintain the families as functional as possible. If the area was deemed unsafe for reconstruction, relocation was the only option but was considered a last resort for the partner INGOs and the Indonesian Government (da Silva 2010).

The affected populace was provided a basic house design that complied with Banda Aceh Codes as well as the Sphere Standard (i.e., a global reconstruction standard). Each house required a minimum of 388 to 484 square foot plot and met each of the standards mentioned above. These plots may seem small compared to Western standards, but it was larger than most Acehnese people had before the catastrophe (see, Figure 5.4). Each house was required to be sufficient to house four to five family members. Not only were the houses larger, but they were built back safer. In the few instances when construction occurred in unsafe areas the rebuilding had taken place before strategic and operational planning (da Silva 2010).

Engagement with local stakeholders

The DEC was committed to the participation of those affected by the Indian Ocean event before implementing recovery efforts and reconstruction. Coordination took place between beneficiaries and the Indonesian Government in program development and during implementation. The participation of local stakeholders was at the heart of the recovery effort. They understood that strategic level recovery had to begin at the local level and that they needed trust, rapport, and ownership of the recovery process among

those affected in Banda Aceh. I found that they were successful at being in contact with those affected and maintaining open lines of communication. The groups appeared to be accountable to the beneficiaries and the host nation and generally seem transparent on their efforts. Before program implementation, each organization understood their strategic role in the recovery effort and the operational aspects of the plan. This can be seen through the houses that were selected and the metrics utilized to determine achievement (da Salva 2010).

[INSERT FIGURE 5.4 ABOUT HERE]

Completion and Accountability

The DEC and the Government of Indonesia both used the numbers of houses reconstructed as the metric of achievement. However, they attempted to incorporate context within their assessment. The context involved elements of the local understanding of socio-economic and political conditions. This was completed with the assistance of the Government of Indonesia and Aceh provincial leaders.

The DEC collected approximately 382 million British Pounds with 7.42% of the funding for housing reconstruction in the Aceh Province. The programs were implemented and completed over a three-year period after the catastrophe. They constructed 13,700 houses from internal funding. An additional 6,200 houses were built from other fund sources resulting in nearly 20,000 houses reconstructed. I found that the DEC was effective in its methods of reconstruction, just as the IFRC and ARC had been. They developed a strategic plan and applied the plan to accomplish program implementation. This allowed for a successful recovery in the affected areas of Aceh Province.

THIRD PARTY EVIDENCE

Unlike Haiti, third party evidence was lacking for the Indian Ocean tsunami. However, I analyzed the United Nations Development Program report and the Disaster-Conflict Interface and found some evidence of the elements of recovery that are imperative for recovery and reconstruction in Banda Aceh. While the earthquake and tsunami were not the end cause of peace between the GOI and GAM it acted as a catalyst deescalated the conflict. The participatory efforts by the INGOs to involve local stakeholders and the mantra of "doing no harm" during their recovery efforts was crucial (UNDP 2011). Some believe the peace accord increased the hazards and risk to Banda Aceh as it allowed new access to the forested areas of Aceh for materials that may lead to deforestation that creates future risks of enhanced flooding and landslides (UNDP 2011). I disagree with this assessment because land use planning and code enforcement was utilized within the Aceh Province. The effort resulted in the creation of the Crisis Prevention and Recovery Unit (CPRU). CPRU is responsible for a establishing a strategic approach to crisis prevention and holistic recovery in future disaster events. While the criminal element will always be present, the provincial government, as well as local stakeholders, working together may prevent this from coming to fruition like it has in Haiti.

CONCLUSION ON INTEREST GROUP EFFICACY

I found the IFRC, ARC, and partner agencies successful in their recovery efforts in the affected areas. They began with a strategic and operational plan for program implementation and engaged local stakeholders in that process. This is essential to the

recovery effort, as literature clearly dictates. This can also be quantified in the difference between the two catastrophes. Haiti is still recovering, with limited reconstruction efforts, due to land ownership issues and the failed state environment. While in Indonesia, specifically, Banda Aceh, the government, and the GAM found a way to use the catastrophe to compromise for the betterment of Aceh. Although trust and overall peace were tensive within the first year, it was stable enough to allow an international response to conduct recovery and reconstruction efforts within most of the area affected.

The IFRC and ARC were less than forthcoming with specific program data in their qualitative reports; I found them to be trustworthy based on other literature and photographic evidence from Banda Aceh. However, like Haiti, the IFRC and ARC raw data, comprehensive strategic plans, or an extrinsic analysis on the results of the funded programs are not available publicly. The only data located publicly were the self-assessments from the INGOs.

As mentioned in the Haiti analysis, the complete reliance on extrapolated data from qualitative INGO self-developed reports and independent groups are problematic. I found this to be frustrating as I conducted my analysis of both catastrophic events. Overall, I found the efforts of the IFRC, ARC, and partner INGOs were effective in their response and delivery of relief aid and housing recovery in Banda Aceh. Several similar impediments to recovery were encountered that were similar to Haiti. The difference I found was the involvement of the Indonesian Government and participatory process the INGOs engaged in Banda Aceh and other affected areas of the Indian Ocean catastrophe.

I also concluded that the limited work conducted by the DEC in Banda Aceh successful, similar to that of the IFRC and ARC. The DEC entered the recovery process

with a strategic and operational plan that engaged local stakeholders and beneficiaries. They also involved the Indonesian Government in the recovery process and relied upon the host nation to take responsibility and ownership of their recovery. This was not found in the Haiti recovery efforts.

Like Haiti, there are many variables I attribute to success, with the most important being the data publicly available for analysis. However, not all of the data I needed was available for analysis to determine and understand their overall level of success. The IFRC, ARC, and DEC followed the recovery continuum of self-empowerment, national leaders developed from participation that will assist Banda Aceh and the affected areas in the future as they struggle with their natural hazard profile.

Figure 5.1 ARC housing reconstruction in Indonesia (ARC 2006)

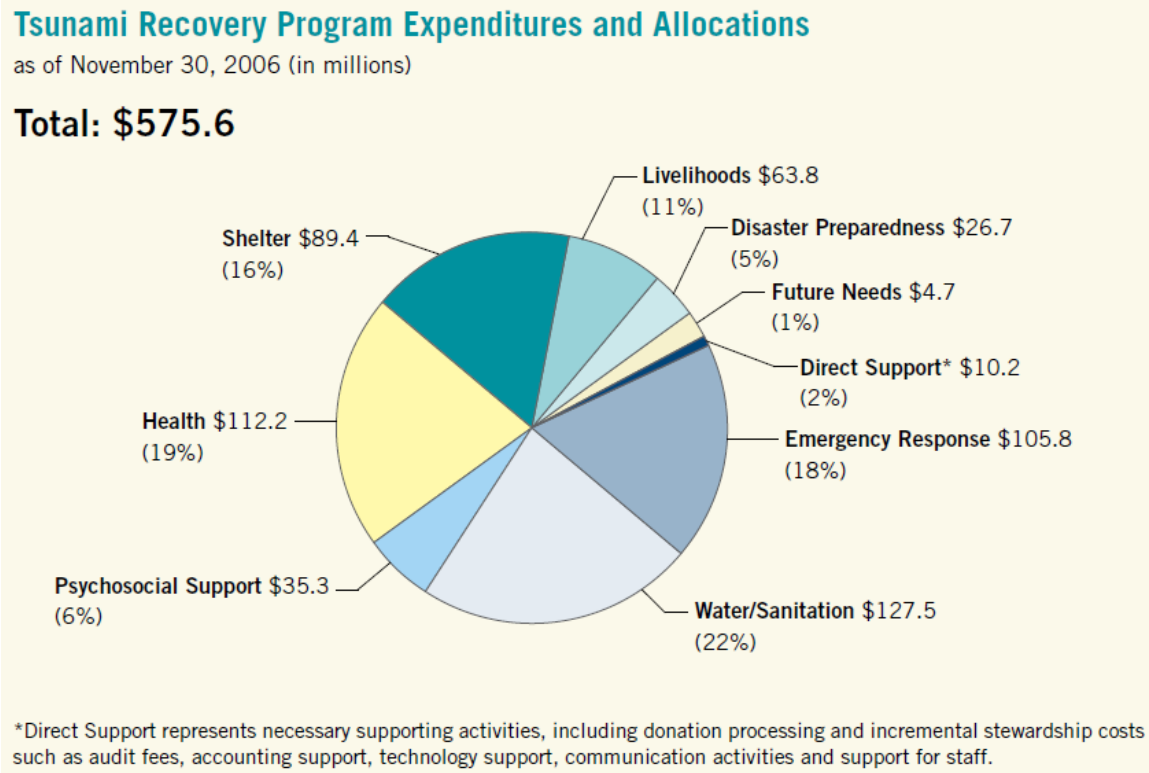

Figure 5.2 ARC program expenditures and allocations through November 2006 (ARC 2006)

EXPENDITURE BY REGION & COUNTRY BY ACCOUNTS GROUP									2010/01-2010/12
REGION	TOTAL	Major Countries			Minor Country	Support			
COUNTRY	EXPENSES	Indonesia	Sri Lanka	Maldives	Seychelles	East Africa Reg	South Asia Reg	Geneva	Kuala Lumpur
Shelter - Relief	36,776	36,776	-	-	-	-	-	-	-
Construction - Housing	5,858,352	-	4,700,577	1,157,775	-	-	-	-	-
Construction - Facilities	4,746,777	341,459	4,405,318	-	-	-	-	-	-
Construction Materials	31	-	31	-	-	-	-	-	-
Clothing & textiles	17,957	16,195	1,762	-	-	-	-	-	-
Food	1,726	-	1,726	-	-	-	-	-	-
Water, Sanitation & Hygiene	7,819,164	121,532	7,142,259	555,373	-	-	-	-	-
Medical & First Aid	1,074,258	27,800	1,046,458	-	-	-	-	-	-
Teaching Materials	18,650	14,544	4,106	-	-	-	-	-	-
Utensils & Tools	113	17	96	-	-	-	-	-	-
Other Supplies & Services	901,608	470,703	346,632	84,273	-	-	-	-	-
Relief items, Construction, Supplies	**20,475,412**	**1,029,026**	**17,648,965**	**1,797,421**	**-**		**-**	**-**	**-**
Land & Buildings	102,526	(9,802)	33,019	-	79,310	-	-	-	-
Vehicles	30,966	26,581	4,385	-	-	-	-	-	-
Computers & Telecom	66,655	32,593	25,692	-	3,598	-	-	-	4,773
Office & Household Equipment	20,632	2,103	18,368	-	161	-	-	-	-
Others Machinery & Equipment	3,746	-	3,551	-	195	-	-	-	-

Figure 5.3 IFRC Expenditures by region through 2010 (IFRC 2011)

Figure 5.4 DEC housing reconstruction Banda Aceh Sumatra (de Silva 2010)

CHAPTER VI

CONCLUSION

INGO EFFICACY IN CATASTROPIC SETTINGS

In Haiti, the IFRC, ARC, and MOH-Haiti initially were all effective. The IFRC and ARC were effective in short-term recovery and relief, during the response phase of emergency management. However, once they were faced with the monumental task of identifying land to underlie the reconstruction effort, they stumbled and never recovered. MOH-Haiti, who has a presence in Haiti, may have assisted in the initial response, but most of their work was in the long term recovery efforts of housing reconstruction. They were successful in their operations based on funding based on my analysis. I found no evidence in my analysis that indicated any of the three INGOs worked with or collaborated with the Haitian government. This is certainly due to the long tenured dependence on foreign aid and high levels of corruption in the failed state.

Was one INGO efficient and the other INGO ineffective?

The comparative leverage of the recovery efforts following the Indian Ocean earthquake and tsunami was remarkable. It provided information necessary to understand the value of the pre-existing socio-economic and political climate. It also highlighted the need to engage local stakeholders and the critical role that the government plays in the recovery process from catastrophe. It also stressed the importance strategic and operational planning at the INGO level both regarding strategic and operational outcomes. The data available today, coupled with technology, allows all INGOs to develop response and recovery plans that are based upon a

nation's natural hazards risk profile. There is no reason this is not a policy recommendation we should strive to replicate.

FUTURE RESEARCH AND REFLEXIVITY

When clear and succinct rules and mission assignments are not provided to INGOs by a coherent local or international governmental organizations, then relief and recovery efforts are encumbered. The United Nations has four primary subsidiaries that share responsibility but at the same time lack the authority to implement policy. The creation of a coherent international authority with enforcement capabilities might reduce the duplication of efforts and aid appropriate recovery in failed state environments following catastrophe.

INGOs need to understand the context of the nation state they are responding to pre-response. Contextually this includes cultural, social, economic, environmental, religious, and other factors unique to particular areas of the world. Collaborating with an in-country NGO or non-profit group can foster this effort. In conflict states, the INGOs must understand the dynamics of the conflict, as well as the capacities for peace to develop response strategies and ensure staff safety (UN 2011).

It is crucial for INGOs to develop appropriate strategic and operation response and recovery plans pre-disaster. The literature suggests the failure of the ARC to understand the context, including land tenure issues, attributed to its inability to accomplish their mission programs and projects. Efforts must be made to incorporate into the INGO strategic plan level accountability and transparency. That transparency should include not only donors but also beneficiaries, the public, host governments, and researchers. The current self-assessments are not meeting the objectives of these clients, yet we continue to donate to our charities of choice without

question. Innovative and creative ideas come out of the academic community that is systematic and potentially more efficient. However, the lack of raw data inhibits academic analysis and garners suspicion that INGOs have something to hide.

Cash for work and money for grants are one example of a prospective area for future research. These programs allow liquidity to flow into the affected community at its most critical point. Survivors go back to work, and it develops useful domestic resources. Depending on the complexity of the catastrophe, these types of efforts may be limited, and the importation of resources and technical assistance from the international community becomes necessary. Regardless, the quicker survivors can get back to work and improve their livelihoods in their affected community the more efficient and effective the recovery (da Silva 2010).

The lack of fieldwork was an obvious detriment to my research. It made it difficult to place the catastrophes and nation states into a clear context. I have not traveled to these areas of the world and lack the introspective needed to comprehend the various circumstances of each situation. It did not allow me to obtain the vivid, rich descriptions required of qualitative disaster research of the catastrophes with a social perspective. Archival and documents can only explain context to a certain extent.

I did learn that most large NGOs and INGOs data are insular organizations. They have no desire to provide raw data to the public or academic community. International NGOs did not respond to my official requests for raw data. I relied on qualitative, self-assessed narratives to extract what quantitative data were available within the sector metrics. The results, from my perspective, are less than stellar. However, the results show several areas of improvement. Of these, the need for ultimate accountability and transparency of INGOs is paramount for researchers and other practitioners.

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VITA

LESLIE COREY SLOAN

Candidate for the Degree of

Master of Science

Thesis: EFFICACY OF INTERNATIONAL NON-GOVERNMENTAL ORGANIZATIONS IN AID DELIVERY FOLLOWING CATASTROPHES: A COMPARATIVE CASE STUDY OF THE 2010 HAITI EARTHQUAKE AND 2004 INDIAN OCEAN TSUNAMI AND EARTHQUAKE

Major Field: FIRE AND EMERGENCY MANAGEMENT ADMINISTRATION

Biographical:

Education:
Completed the requirements for the Master of Science in Fire and Emergency Management Administration at Oklahoma State University, Stillwater, Oklahoma in December 2016

Completed the requirements for the Master of Arts in Sociology and Criminal Justice, Lincoln University, Jefferson City, Missouri in 2011

Completed the requirements for the Bachelor of Arts in Fire Administration and Fire Prevention Technology Western Illinois University, Macomb, Illinois in 1999

Experience:
NTA EMS Rescue, Bethany, Missouri
Deputy Chief of EMS and Deputy Harrison County, MO Emergency Manager

Missouri State Emergency Management Agency, Jefferson City, Missouri
Emergency Management Coordinator

Cameron, Missouri Police Department, Cameron, Missouri
Chief of Police and Emergency Management Director

Professional Memberships:
International Association of Emergency Managers (IAEM)
Missouri Emergency Management Association (MOEMA)
Southwest Missouri Type III Incident Support Team (SWMOIST)– COMM Unit