Exploring emergency communication experiences in response to the 2010 Haiti earthquake: Lessons learned from international donors and local government agencies

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Presentation Outline

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2) Background
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Introduction

A 7.3 earthquake registered in Port-au-Prince, Haiti, on January 12, 2010 at 4:53 PM.

Over 250,000 people were killed and 300,572 injured (3000 amputees);

2.5 million displaced people with 1,342 Internal Displaced Populations (IDP) sites identified in the area affected by the earthquake (univalent to the city of Chicago);

60 percent of government, administrative and economic infrastructure was destroyed;

250,000 homes and 30,000 commercial buildings severely damaged;

Estimated loss of U.S $7.8 billion ($4.3 billion in physical damage and US $3.5 in economic losses)

“The most significant disaster requiring a large-scale multi-sectoral international response since the 2005 Pakistan earthquake” (OCHA, 2010)

A date that the Haitian population will never forget!

UN Office of Secretary General's special Advisor (OSGSE), 2012
“The Haiti earthquake is one of the highest in terms of loss of life in recent years, as far as we can tell. It is biblical, the tragedy that continues to stalk Haiti and the Haitian people”

Secretary of State, Hilary Clinton
Haiti Demographics 2015
Surface: 27,750 sq. km
Pop: 10,911,819
Density: 384 people per sq. km
Pop increase: 0.79% (81,973 people) (2015 Vs 2016)

Institut Haitien de Statistisqtiue et d’Informatique (IHSI), 2015
Background

Haiti’s long-term history of natural disasters is directly linked to its geographic location:

Natural events:
1) Hurricane Trajectory;
   Before 2010: Fay, Gustav, Hanna, and Ike - in the space of 30 days led to the deaths of more than 800 people in 2008;
   After 2010: Tropical Storm Isaac in August 2012 and Hurricane Sandy in October 2012;

2) Highly and complex seismic zone : North American and the Caribbean tectonic plates;
   Eight earthquakes have been reported as the deadliest ones, destroying cities and causing high death tolls in Haiti

3) Infectious diseases Outbreaks : Malaria, Dengue, Cholera outbreak (October 2010), Chikungunya and more recently Zika virus.

Socio-political : Several years of socio-political instability and economical struggles;

Weak Public Health Infrastructure.
## Haiti’s earthquake history

<table>
<thead>
<tr>
<th>Dates</th>
<th>Major destructions types and Cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1564 during Spanish colonization</td>
<td>Entire destruction of two cities: Concepción de la Vega and Santiago de los Caballeros.</td>
</tr>
<tr>
<td>November 9, 1701</td>
<td>The Tiburon Peninsula from Leogane to Petit Goave sink into sea.</td>
</tr>
<tr>
<td>November 21 &amp; 22, 1751</td>
<td>The recently build city of Port-au-Prince was completely destroyed by a 6.9 magnitude earthquake</td>
</tr>
<tr>
<td>June 3, 1770</td>
<td>Extended destruction of three communes Croix de Bouquets, Plain of the Cul-de-Sac to Port-au-Prince and along the north coast of the Tiburon Peninsula as far as Miragôane and Grand-Gôave was submerged by the elevated sea.</td>
</tr>
<tr>
<td>1783</td>
<td>Collapse of several edifices and destruction of major infrastructure in Santiago</td>
</tr>
<tr>
<td>May 7, 1842</td>
<td>Complete Destruction of Cap-Haitian in the North and half of the population died. Elevation of the sea to 60 meters in Port-de-Paix. Complete damage of the national Palace Sans-Souci and the monument la Citadelle Laferrière. Population was 10,000 thus 5,000 deaths.</td>
</tr>
<tr>
<td>August 4, 1946</td>
<td>8.0 Earthquake in the Dominican Republic shook Haiti severely, killed 1,600 people and produced a tsunami</td>
</tr>
<tr>
<td>January 12, 2010</td>
<td>7.3 earthquake in Port-au-Prince, Haiti and surrounding town, killed more than 150,000 people, injured 300,000 individuals, leaving 1.5 million displaced residents and over $8.5 billion U.S. in damage.</td>
</tr>
</tbody>
</table>
Haiti’s international airport

Before 2010

After 2010
View of one of the largest IDP camp, Canaan
Statement of the Problem

Few scholars have studied the sharing and coordinating of information during disasters;

Over 10,000 Non-Governmental Organization (NGO) working in Haiti: Haiti, was called “the republic of NGOs” after 2010;

According to United Nations Special Envoy to Haiti, Bill Clinton, Haiti had the second highest number of NGOs per capita in the world;

- What mechanism existed to assure the coordination of activities among NGOs?
- What standardized communication procedures existed at the national level to control the information channel between governmental, local and international agencies?

World Bank, 2009
Research Questions

1. What were the communication experiences of local and international first responders during the Haiti’s 2010 disaster response?
   • How was the information shared between players on the ground?
   • What communication protocols and procedures existed and which were used?

2. How were the international agencies’ disaster response structures adapted to the Haiti response?

2. What are the similarities and the differences identified in the communication protocols/channels used by the local government and the international agencies during response phase?
Key Definitions

1) **Communication**: the existence of a standardized and organized method of information sharing in a multi agencies disaster response setting;

2) **Disaster**: Any emergency event, including natural disasters (earthquakes, tornadoes, hurricanes), accidents (plane crashes, fires), terrorist attacks, pandemic, or other emergencies (school shooting, community violence);

3) **Emergency**: Any incident, whether natural or manmade, that requires responsive action to protect life or property;

4) **Response**: Immediate actions to save lives, protect property and the environment, and meet basic human needs. Response also includes the execution of emergency plans and actions to support short-term recovery;

5) **Non-governmental Organization (NGO)**: An entity with an association that is based on interests of its members, individuals, or institutions. It is not created by a government, but it may work cooperatively with government;

6) **Incident Command System (ICS)**: A standardized on-scene emergency management construct specifically designed to provide for the adoption of an integrated organizational structure that reflects the complexity and demands of single or multiple incidents.

Psychological First Aid Online, 2016
Consequences of poor risk communication

- Promote distrust;
- Decreases compliance with recommended measures;
- Increases duration, complexity and cost of response effort requiring more elaborated means;
- Results in use of limited sources in a less productive and appropriate way.

McKay & Wax, 2016
Literature review
Literature Review

• Arroyo Diana Manilla, 2014 investigated on the Insufficient information shared by International NGOs.

  A lack of information sharing about disaster response operations with the population was confirmed and documented soon after the earthquake based on assessments performed in IDP camps.

• Heemskerk and Lloyd, 2010 also analyzed results of a survey in IDP camps in Port-au-Prince (PaP) in early 2010 to gather people’s perceptions about the work of INGOs; and found that people didn’t have a clear idea on what agencies were doing or planning to do.
Jean-Marc Biquet, 2013:

described and analyzed the international system’s shortcomings in responding to Haiti’s 2010 disasters;

First argument, he claims that the earthquake and cholera responses were inadequate because the resources mobilized, and the international promises to quickly ‘build back better’, did not match the results expected by the Haitian people;

Second argument, he stated that with respect to effective emergency response, the mainstream international humanitarian system itself is the problem, rather than the solution.
Gaps in the Literature

Little evidence on how information was shared with Haitian Government, between local and international agencies and with the communities;

A national disaster response plan for Haiti was not located and identified;

Past publications presented the internal communication models within the international agencies but there was little investigation on internal communication for the Haiti Non-Governmental Organizations (NGOs);

Excessive emphasis on the use of the technology as a critical mean of communication for disaster relief: social media, SMS, new technology platforms.
Study Objectives

The purpose of this study was to examine communication experiences of national and international disaster relief agencies personnel.

This study aimed to collect crucial information from key informants to generate a body of essential set of information reflecting the challenges experienced and the lessons learned by relief agencies during the Haiti 2010 disaster response.
Methodology
Participants of this study consisted of:
- Haitian local NGOs;
- Haitian government representatives;
- U.S. humanitarian agencies (Federal, private, and State).

Targeted population N=20; Final population N=17; RR=85%

Participants were recruited through:
- Direct contact with humanitarian relief agencies working in Haiti;
- Published articles/ books;
- Key informants (snowball methodology).
List of agencies

A) U.S. based organizations / institutions:

The Centers for Disease Control and Prevention (CDC)
Massachusetts General Hospital/ DMAT team
Haitian-American Coalition organization
University of Miami (UM)
The project Medishare
University of Nebraska Medical Center (UNMC)
Urban Search and Rescue Task force 3 (FEMA, ESF9)
The United Stated Agency for International Development (USAID)

B) Haitian based organizations/ institutions:

Haiti Ministry of Interior
Partners in Health (PIH/ZL)
Bureau of Civil Protection (DPC) / Consultant for UNDP
Konbit Sante Organization
Haiti Red Cross
Haiti Air Ambulance
Study Design

A Phenomenological Study was conducted to understand and examine the first responders' experiences;
A phone-based interview with first responders who participated in Haiti’s disaster response and recovery relief effort in 2010

The data structure:
- qualitative information
- aggregated quantitative data (demographic information).
Data Collection Tool

- Questionnaire consisted of eight open-ended questions
- Interview guide was developed and used
- Five different themes and domains
  1) Disaster experience and Perception of Communication
  2) Existence and use of communication protocols
  3) Collaboration among organizations
  4) Challenges and Lessons learned
  5) Recommendations/ Perspective
- Phone interview lasted 30 - 45 min
- Translated questionnaires (French, English)
Validity and Reliability

- Pre-test of the questionnaire and interview guide prior to data collection phase
- Test re-test process: A second validation interview was performed with a small number of participants (10%);
- Confidentiality of all records using coding system (XXYY1-01012016)

Possible Bias associated with the study:
- Temporal Effect: Time of this study, six years after the earthquake (recall bias)
Data Collection Process

- Submission and Approval by UNMC IRB
- Invitation messages via emails
- Confirmation of participation
- Consent information obtained
- Date and time schedules/ Additional contact information shared
- Phone interview / transcript / Audio records: 2 systems Tape a Call application and portable digital voice recorder (backup)
- Interviews in English and French/ Haitian Creole (translated questionnaires)
- Timeline: Feb 5 – March 5, 2016
Data Analysis

A deductive approach was used to regroup data collected and to look for similarities and differences among respondents’ information;

N-Vivo 11 (QSR International) was used for the data management and sorting

- Transcripts (French & English)
- Audio records
- Worksheets
- Published Articles
Figure 5. Data Analysis Steps

1. Preparing and conducting Phone Interviews

2. Raw data Interview transcripts

3. Organizing and revising raw data
   3a. Translation of transcripts French/English

4. Primary level coding (Structure)
   4a. Memos/Note taking
   4b. Interview Guide/Research questions

5. Secondary level coding (pattern)

6. Nodes regrouping Themes (5)

7. Themes regrouped into domain

8. Domains linked to research questions

9. Information display in Tables
<table>
<thead>
<tr>
<th>Structural Coding list (Level 1)</th>
<th>Pattern Coding list (Level 2)</th>
<th>Themes (Domains)</th>
<th>Research Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Background Information of local and international relief agencies personnel and Previous experiences</td>
<td>Local and international agencies’ personnel experiences and capabilities to respond to the Haiti earthquake (Disaster response experiences)</td>
<td>1. What was the communication experiences of local and international first responders during the Haiti’s 2010 disaster response?</td>
</tr>
<tr>
<td>Number of trips</td>
<td>Key responsibilities of agencies and personnel during disaster response activities</td>
<td>Existence and use of a national response protocols proposed by the Haitian Government to lead and facilitate coordination among local and international relief agencies</td>
<td>1a. What national communication protocols and procedures existed and were used?</td>
</tr>
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<td>Key responsibilities</td>
<td>Background Information of local and international relief agencies personnel and Previous experiences</td>
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<td>Experiences</td>
<td>Key responsibilities of agencies and personnel during disaster response activities</td>
<td>Existence and use of a national response protocols proposed by the Haitian Government to lead and facilitate coordination among local and international relief agencies</td>
<td>1a. What national communication protocols and procedures existed and were used?</td>
</tr>
<tr>
<td>National plan</td>
<td>Knowledge and evidence of an existed national disaster response plan in Haiti</td>
<td>Existence and use of a national response protocols proposed by the Haitian Government to lead and facilitate coordination among local and international relief agencies</td>
<td>1b. How was the information shared between actors on the ground?</td>
</tr>
<tr>
<td>Details</td>
<td>Description of national response plan</td>
<td>Collaboration within and between agencies</td>
<td>1b. How was the information shared between actors on the ground?</td>
</tr>
<tr>
<td>Example of application</td>
<td>Knowledge and evidence of an existed national disaster response plan in Haiti</td>
<td>Description of national response plan</td>
<td>Existence and use of a national response protocols proposed by the Haitian Government to lead and facilitate coordination among local and international relief agencies</td>
</tr>
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<td>Communication Efficiencies</td>
<td>Knowledge and evidence of an existed national disaster response plan in Haiti</td>
<td>Existence and use of a national response protocols proposed by the Haitian Government to lead and facilitate coordination among local and international relief agencies</td>
<td>1b. How was the information shared between actors on the ground?</td>
</tr>
<tr>
<td>Internal communication</td>
<td>Description of agencies’ structure on the ground</td>
<td>Perception of Communication procedures reported by agencies’ staff based on their collaboration with relief agencies staff</td>
<td>2. How international agencies disaster response structure was adapted to the Haiti disaster context?</td>
</tr>
<tr>
<td>External communication</td>
<td>Collaboration with local and international agencies</td>
<td>Perception of Communication procedures reported by agencies’ staff based on their collaboration with relief agencies staff</td>
<td>2. How international agencies disaster response structure was adapted to the Haiti disaster context?</td>
</tr>
<tr>
<td>Other communication methods</td>
<td>Description of agencies’ structure on the ground</td>
<td>Perception of Communication procedures reported by agencies’ staff based on their collaboration with relief agencies staff</td>
<td>2. How international agencies disaster response structure was adapted to the Haiti disaster context?</td>
</tr>
<tr>
<td>Perception</td>
<td>Description of agencies’ structure on the ground</td>
<td>Perception of Communication procedures reported by agencies’ staff based on their collaboration with relief agencies staff</td>
<td>2. How international agencies disaster response structure was adapted to the Haiti disaster context?</td>
</tr>
<tr>
<td>Observation</td>
<td>Description of agencies’ structure on the ground</td>
<td>Perception of Communication procedures reported by agencies’ staff based on their collaboration with relief agencies staff</td>
<td>2. How international agencies disaster response structure was adapted to the Haiti disaster context?</td>
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<td>Agencies’ Structure</td>
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<td>Perception of Communication procedures reported by agencies’ staff based on their collaboration with relief agencies staff</td>
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<td>Collaboration</td>
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<td>Perception of Communication procedures reported by agencies’ staff based on their collaboration with relief agencies staff</td>
<td>2. How international agencies disaster response structure was adapted to the Haiti disaster context?</td>
</tr>
<tr>
<td>New protocols /Adapted protocols</td>
<td>Description of agencies’ structure on the ground</td>
<td>Perception of Communication procedures reported by agencies’ staff based on their collaboration with relief agencies staff</td>
<td>2. How international agencies disaster response structure was adapted to the Haiti disaster context?</td>
</tr>
<tr>
<td>Same protocols</td>
<td>Description of agencies’ structure on the ground</td>
<td>Perception of Communication procedures reported by agencies’ staff based on their collaboration with relief agencies staff</td>
<td>2. How international agencies disaster response structure was adapted to the Haiti disaster context?</td>
</tr>
<tr>
<td>Challenges</td>
<td>Lessons Learned</td>
<td>Reported strengths and limitations (challenges) of Local and international agencies</td>
<td>3. What are the similarities and the differences identified in the communication protocols/channels used by the local government agencies and the international responding agencies during and after the response phase?</td>
</tr>
<tr>
<td>Lessons learned</td>
<td>Strengths</td>
<td>Reported strengths and limitations (challenges) of Local and international agencies</td>
<td>3. What are the similarities and the differences identified in the communication protocols/channels used by the local government agencies and the international responding agencies during and after the response phase?</td>
</tr>
<tr>
<td>Limitations</td>
<td>Limitations (challenges)</td>
<td>Reported strengths and limitations (challenges) of Local and international agencies</td>
<td>3. What are the similarities and the differences identified in the communication protocols/channels used by the local government agencies and the international responding agencies during and after the response phase?</td>
</tr>
<tr>
<td>Strengths</td>
<td>Language Barrier</td>
<td>Reported strengths and limitations (challenges) of Local and international agencies</td>
<td>3. What are the similarities and the differences identified in the communication protocols/channels used by the local government agencies and the international responding agencies during and after the response phase?</td>
</tr>
<tr>
<td>Improvement</td>
<td>Local and international agencies’ Perspectives and communication improvement plans</td>
<td>Reported strengths and limitations (challenges) of Local and international agencies</td>
<td>3. What are the similarities and the differences identified in the communication protocols/channels used by the local government agencies and the international responding agencies during and after the response phase?</td>
</tr>
<tr>
<td>No improvement</td>
<td>Local and international agencies’ Perspectives and communication improvement plans</td>
<td>Reported strengths and limitations (challenges) of Local and international agencies</td>
<td>3. What are the similarities and the differences identified in the communication protocols/channels used by the local government agencies and the international responding agencies during and after the response phase?</td>
</tr>
</tbody>
</table>
Results
# Characteristic of study population

<table>
<thead>
<tr>
<th></th>
<th>U.S Participants</th>
<th>Haiti Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Male</strong></td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>6</td>
</tr>
</tbody>
</table>

**Years of Experience Reported by First Responders**

- **< 1 year**: 35%
- **1 - 5 years**: 17%
- **6 - 10 years**: 12%
- **11 - 15 years**: 18%
- **16 - 20 years**: 0%
- **21 - 25 years**: 18%
- **25+ years**: 0%
## Classification of agencies

<table>
<thead>
<tr>
<th>Country</th>
<th>Agency profile</th>
<th>Level</th>
<th>Structure Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haiti</td>
<td>Haiti governmental ministry and affiliated offices (2)</td>
<td>National</td>
<td>Public</td>
</tr>
<tr>
<td></td>
<td>Non-Governmental Agency (2)</td>
<td>Departmental</td>
<td>Mix/Private</td>
</tr>
<tr>
<td></td>
<td>Humanitarian Relief Agency (1)</td>
<td>National</td>
<td>Independent</td>
</tr>
<tr>
<td>USA</td>
<td>US Government Agency/ affiliated offices (2)</td>
<td>Central</td>
<td>Federal</td>
</tr>
<tr>
<td></td>
<td>US Federal Agency (2)</td>
<td>Regional</td>
<td>Federal</td>
</tr>
<tr>
<td></td>
<td>Non-Profit Organizations (2)</td>
<td>Local</td>
<td>Mix/Private</td>
</tr>
<tr>
<td></td>
<td>U.S. Hospitals (2)</td>
<td>State</td>
<td>State</td>
</tr>
<tr>
<td></td>
<td>U.S. Universities (1)</td>
<td>Local</td>
<td>State/Private</td>
</tr>
</tbody>
</table>
Internal communication plan (N=11, RR: 67%)

Haitian agencies:

- Limitation of the Haiti government to communicate with their Ministers;
- No clear evidence if Haiti local organizations had a developed internal communication plan;
- Trained and experienced local relief agencies had little trouble using their pre-existed internal communication plan.

U.S. agencies:

- Standard communication procedures existed for U.S. Federal Agencies;
- Adaptations were made to pre-existed communication procedures;
- Small INGOs and Hospital Universities didn’t have a written communication plan but verbal instructions were provided;
- Communication procedures were quickly modified after relief agencies had reached Haiti because of the complexity of the disaster.
External communication procedures (N=17, RR: 100%)

Haitian Agencies:

- Most respondents described the first 4 weeks as a real “Chaos”;
- UN cluster system was the only access to information at the central level;
- UN logistics base “the Tower of Babel”;
- Reported conflicts among international relief agencies
- Reported frustration for the Haitian local relief agencies to communicate with international agencies

U.S. agencies:

- Limited coordination even among U.S. agencies;
- Too many different emergency response protocols were used;
- Urban Search and Rescue teams lacking of professionalism, unethical practices;
- Absence of the Haitian Government leadership and authority to guide international relief agencies’ response plans.
Strengths and Limitations of relief agencies (N=16, RR: 94%)

Strengths:

• Implemented Field Office & Haitian Staff (U.S.);

• Having international disaster relief experiences (U.S.);

• Proximity to Haiti (U.S);

• Identified the resilience capabilities (HA);

• Motivation and determination of Haitian medical staff to work above and beyond their capabilities with little resources (HA);

Limitations:

• No Logistics/ limited Transportations (U.S./HA);

• Weak leadership of the Haitian government (U.S./HA);

• Safety of the deployed first responders (U.S.);

• Political aspect of the humanitarian response (HA/U.S.)

• Prolonged response phase (18 months) (U.S./HA)
Existence/use of a National response plan (N=17, RR: 100%)

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>19%; n=3 (HA)</td>
<td>81%; n=14 (U.S./HA)</td>
</tr>
</tbody>
</table>

- Partially used by the Division of the Civil Protection (DPC) for small scale disasters at the regional level;
- The activation of the emergency operation system involved several local and international agencies;
- Little implication of the Haitian government officials besides the Minister of Interior and the Minister of Health.
At the National / Governance Level:
- Compliance to the International Health Regulations (IHR) as proposed by the Global Health Security Agenda in 2003 (US);
- The Haiti Government should structure their response plan; be more selective in the resources and agencies to assist with the response (U.S/ HA);
- Education of the Haiti politicians/ legislators/ Governmental staff (HA).

At the Operation / Execution Level:
- Regulation and control of the country’s airports and ports (U.S);
- Consolidation of all emergency response plan used in Haiti in 2010 to create a one standardized plan (HA).

At the Community Level:
- Development of risk communication protocols and improve leadership capabilities at the community level (U.S/ HA);
- Development of safety and emergency response protocols for vulnerable groups of the population (U.S/HA).
Discussion

- This study was an opportunity to investigate the experiences of two groups of agencies’ simultaneously;

- The findings of study were concordant with other published results from previous investigations: evidence of communication limitations;

- Uncertainty of improvement communication plans in Haiti, but public awareness of disaster mitigation and readiness level of the Haitian population should be higher after January 12, 2010.
Conclusion

- Communication challenges were reported at all levels of the Haitian governance structure;

- Few Haitian local agencies had an internal emergency communication plan prior to 2010;

- U.S. agencies had to modify their emergency communication protocols/procedures to fit the needs of the Haitian population;

- The Haiti 2010 earthquake was an opportunity to test the U.N. cluster system;

- Haiti and U.S. relief agencies identified their communication strengths and limitations and now have the opportunity to improve their response capabilities.

There is no “one size fits all” communication protocol that can be used in a disaster response effort, some adaptation will always be needed.
Limitations & Strengths

Limitations are:

1) Geographic
2) Sample (methodology)
3) Time
4) Intervention / single reviewer.
5) Communication

Strengths are:

1) Language
2) Topic
3) Response rate
4) Research questions
5) Cultural Competency
Recommendations for future studies

To reinforce the findings of this study, it would be recommended to include subjects and participants from other countries;

Using mixed-method approach, increasing the sample size, involving participants from other regions, and adding additional variables would greatly reinforce the findings;

To explore findings from agencies’ from other regions of Haiti to help understand how disaster relief efforts were deployed and experienced in other regions of Haiti;

An analysis of the structural determinants of decision-making at the top level of governance during a crisis would have generated remarkable findings

Finally, increasing the size of the research with additional capacity to review the coding process would help reduce bias and validate the quality and effectiveness of interview transcripts and interpretations.
“The Situation in Haiti is difficult but we have hope and we can help”

Noticel, 2016
Acknowledgements

Members of my Advisory Committee:

Dr. Philip Smith, Dr. Sharon Medcalf, Dr. Denise Britigan, Dr. Jason Coleman for providing indispensable guidance throughout the development and finalization phases of this thesis;

The agencies’ representatives for their time and collaboration;

The U.S. State department through the Fulbright Program for granting me a two years scholarship

On a personal note:

My sisters and my Mother for her unconditional support;

Last but not least,

“In memory of those who lost their lives in the 2010 earthquake”. 


